

Larson Engineering, Inc.
6380 E. Thomas Road, Suite 300
Scottsdale, AZ 85251
480.212.4200
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Sewer Basis of Design Report

For

Hayden and McDowell

Scottsdale, ARIZONA

FINAL Basis of Design Report	
<input type="checkbox"/> APPROVED	
<input type="checkbox"/> APPROVED AS NOTED	
<input checked="" type="checkbox"/> REVISE AND RESUBMIT	
<small>Disclaimer: If approved, the approval is granted under the condition that the final construction documents submitted for city review will match the information herein. Any subsequent changes in the water or sewer design that materially impact design criteria or standards will require re-analysis, re-submittal, and approval of a revised basis of design report prior to the plan review submission.; this approval is not a guarantee of construction document acceptance. For questions or clarifications contact the Water Resources Planning and Engineering Department at 480-312-5685.</small>	
BY Idillon	DATE 9/7/2021

PREPARED BY:

Larson Engineering, Inc.
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July 30, 2021

Prepared by: MH

Address comments on submitted plans:

- 1) Grease interceptors shall be in serviceable and inspect-able locations, not under parking stalls. DS&PM 7-1.411
- 2) New sewer services shall be 6" min per MAG 440-3 (similar) and connected perpendicular to sewer. Place clean out in 8ft PUE and outside of a drive aisle. Refer to markups on utility plans. 7-1.409
- 3) Sewer loading calculated incorrectly. Both are proposed as restaurants per site plan and preapp meeting. Correct values. DS&PM 7-1.403
- 4) Address comments on utility plan.



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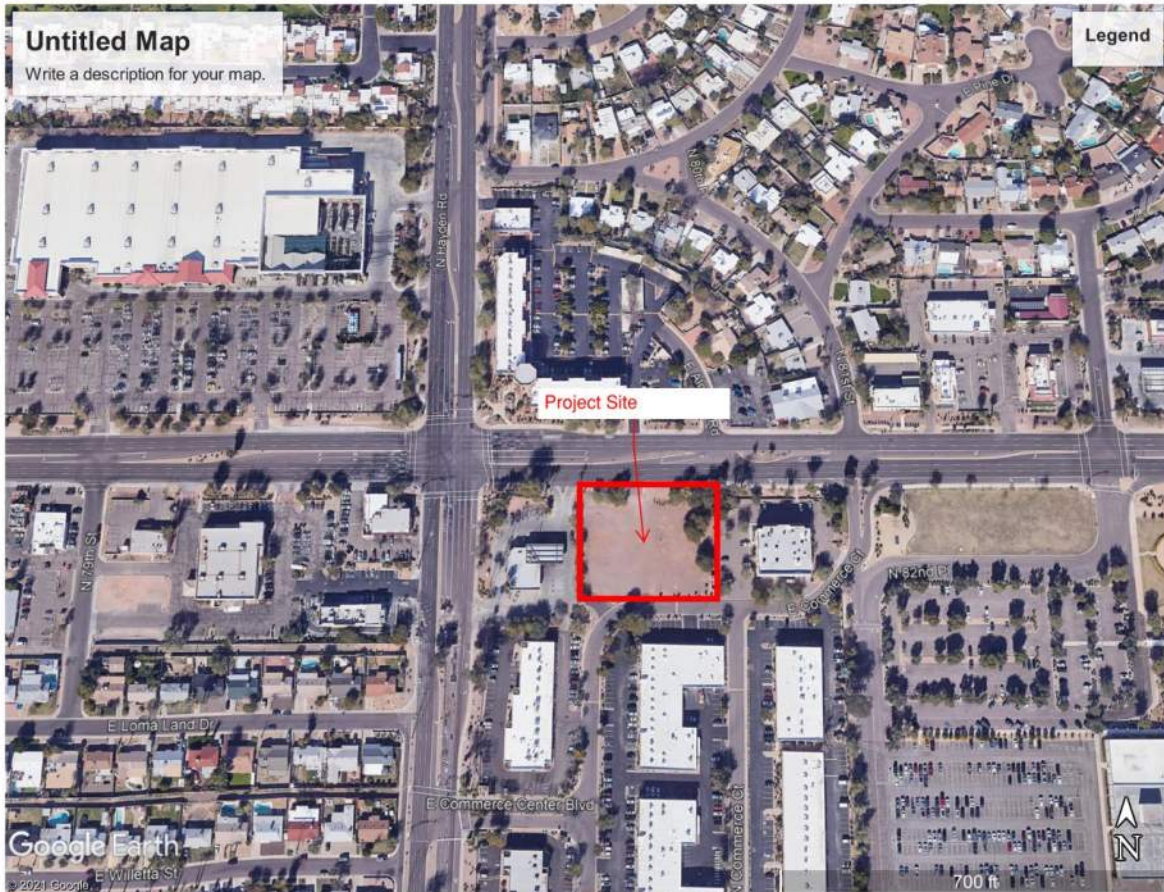
Appendix:

Sewer Exhibit

Calculations

Introduction

The proposed Hayden and McDowell Commercial (The Project) is located at 8101 E McDowell Road in Scottsdale, Arizona. The parcel number for this project is 131-09-002N. The Project consists of adding two new buildings, curbing, refuse container and landscaping. The buildings are 2,400 square feet and 4,000 square feet in size. The Project is located just east of the intersection of Hayden Road at McDowell Road. See Location Map below:



Updated text

The Project will not alter the existing zoning, which is C-3. The surrounding area at his locations is commercial businesses and consists of commercial services and offices. The new buildings will remain consistent with the City of Scottsdale's general plan.

Design Documentation

Wastewater Design Flows are based on criteria provided in the City of Scottsdale's Design Standards & Policies Manual Chapter 7 dated 2018. This criteria was compared to the information provided in Chapter 9 Title 18 of the Arizona Administrative Code and was more conservative, thus satisfying both codes. Specifically, the design criteria used are as follows:

incorrect statement

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These are to be restaurants. Loading is 1.2 gpd/ft² per 2018 DS&PM. Peaking factor is 6.

- Average Daily Flow
- Peaking Factor (peak hour)
- Minimum Full Flow Velocity
- Maximum Full Flow Velocity
- Manning's Coefficient (n):

Updated and calculations updated

- ✗ 0.5 Gallons/SF/Day
- ✗ 3
- 2.5 ft/s
- 10 ft/s
- 0.013

Wastewater Calculations are attached in the Appendix for reference. The Manning Equation was utilized to analyze the proposed system.

Existing Conditions

The Project will not alter the existing zoning, which is C-3.

An existing 8" sewer pipe exists along the north side of Commerce Court. The proposed buildings will utilize the new 6" PVC tap to connect to the City's system.

Proposed Conditions

The attached Wastewater Exhibit shows the tie in location for the proposed sewer. This Project proposes to use 6-inch SDR35 PVC pipe. The tie in is seen in the Sewer Exhibit. All maintenance of the private onsite system is the responsibility of the owner.

Computations

Based on the attached calculations, the projected Peak flow discharge into the City of Scottsdale's Wastewater System is 7,600 GPD and the projected average daily flow discharge is 3,200 GPD. The proposed wastewater collection system is designed to provide adequate capacity to serve the proposed Project. The proposed pipe is SDR35 PVC at 6 inch diameter. The slope is proposed at approximately 2% and the depth of cover of the pipe will be a minimum of 4' to top of pipe.

Summary

The Proposed Wastewater Distribution System has been analyzed to ensure all City of Scottsdale Design Standards and Policies Manual Chapter 7 requirements are being met. Figure 7.1-2 of that manual provided the demand and peaking factors included in the analysis and stated in this report. The Appendix includes computations of the system with the pipe running full to ensure velocity requirements and sizing of the system meets the City of Scottsdale's requirements.

Enclosed is a set of drawings and spreadsheets which summarize the design and capacity of the system. The spreadsheets show the use average daily flow rate and peak flow rates for the project. This project is proposed to start as soon as approval is obtained and completed within 6 months. Please refer to the attached Sewer exhibit for layout of the sewer lines and connections.

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Thank you for your prompt review of the proposed wastewater collection system.

Sincerely,

Larson Engineering, Inc.

A handwritten signature in black ink, appearing to read 'Michael Hreha', written in a cursive style.

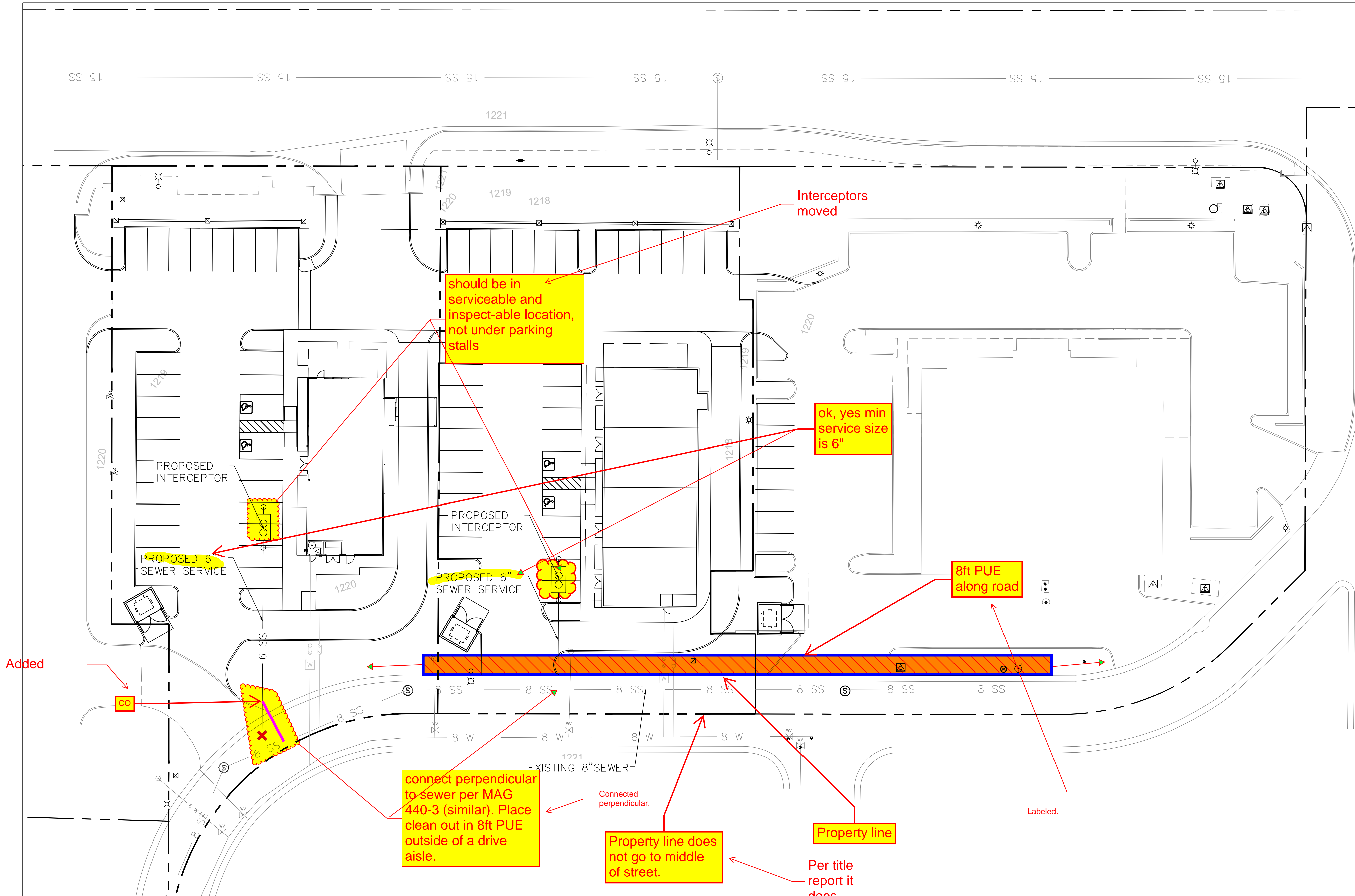
Michael Hreha, P.E.
Land Development Manager

SEWER EXHIBIT

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Arizona Professional Engineer
 Call 811 or visit Arizona811.com

IRKAA
 ARCHITECTS
 2233 EAST THOMAS ROAD, PHOENIX, ARIZONA 85016
 602-955-3900



NOTICE OF ALTERNATE BILLING OR PAYMENT CYCLE: THIS CONTRACT MAY ALLOW THE OWNER TO REQUIRE THE SUBMISSION OF BILLING OR ESTIMATES IN BILLING CYCLES OTHER THAN THIRTY DAYS. THIS CONTRACT MAY REQUIRE OWNER TO MAKE PAYMENT CERTIFICATION AND APPROVAL OF BILLING AND ESTIMATES. A WRITTEN DESCRIPTION OF SPECIFIC BILLING CYCLE APPLICABLE TO THE PROJECT IS AVAILABLE FROM OWNER OR DESIGNATED AGENT.

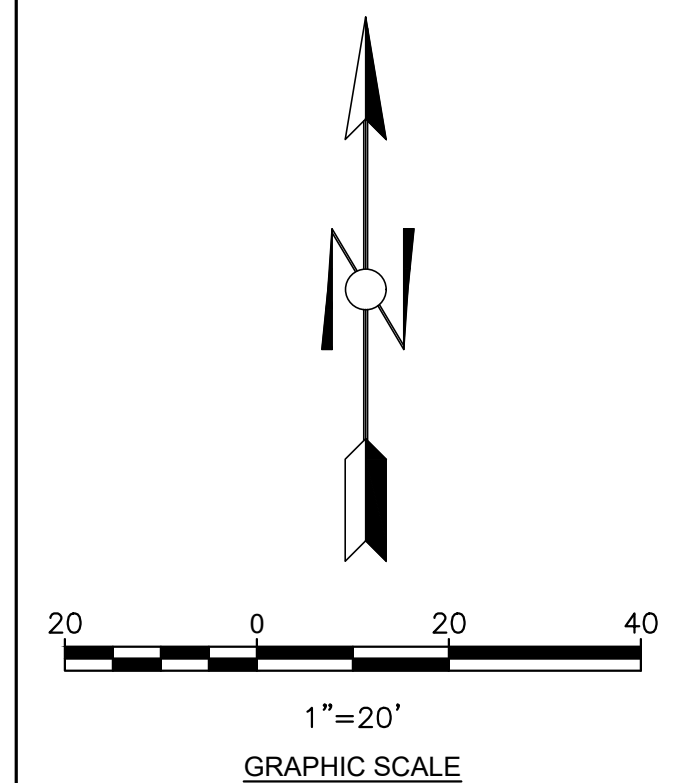
MCDOWELL - HAYDEN RETAIL
 8101 E MCDOWELL ROAD, SCOTTSDALE AZ 85257
 E OF SEC OF MCDOWELL RD AND HAYDEN RD
 DATE: 07-15-2021 (PRELIMINARY)

PRELIMINARY SEWER PLAN

design by: -
 drawn by: -
 checked by: -

C4

project: 18107.00



v1, site plan added from CDS case folder for reference by LDillon 9/7/21

PROJECT DIRECTORY

ARCHITECT:
 RKA ARCHITECTS, INC.
 2233 EAST THOMAS ROAD
 PHOENIX, ARIZONA 85016
 CONTACT: NEIL FEASER
 PHONE: (602) 955-3900
 FAX: (602) 955-0496
 E-MAIL: nfeaser@rkaa.com

SITE DATA

PARCEL NUMBER: 131-09-002N
 EXISTING ZONING: C-3
 SITE AREA: 1.397 ACRES (60,885 S.F.)

PROPOSED USE: RETAIL / RESTAURANTS
 CONSTRUCTION TYPE: V-B

BUILDING AREA:
 PAD A: RESTAURANT WITH DRIVE THRU 2,400 S.F.
 PAD A: PATIO SEATING 350 S.F.
 PAD B: RETAIL-RESTAURANT WITH DRIVE THRU 4,000 S.F.

TOTAL BUILDING AREA: 6,750 S.F.
 MAX. ALLOWABLE F.A.R. 0.80
 F.A.R. PROVIDED: 0.11
 MAX. BUILDING HEIGHT: 36'-0"
 BUILDING HEIGHT PROVIDED: 30'-0"

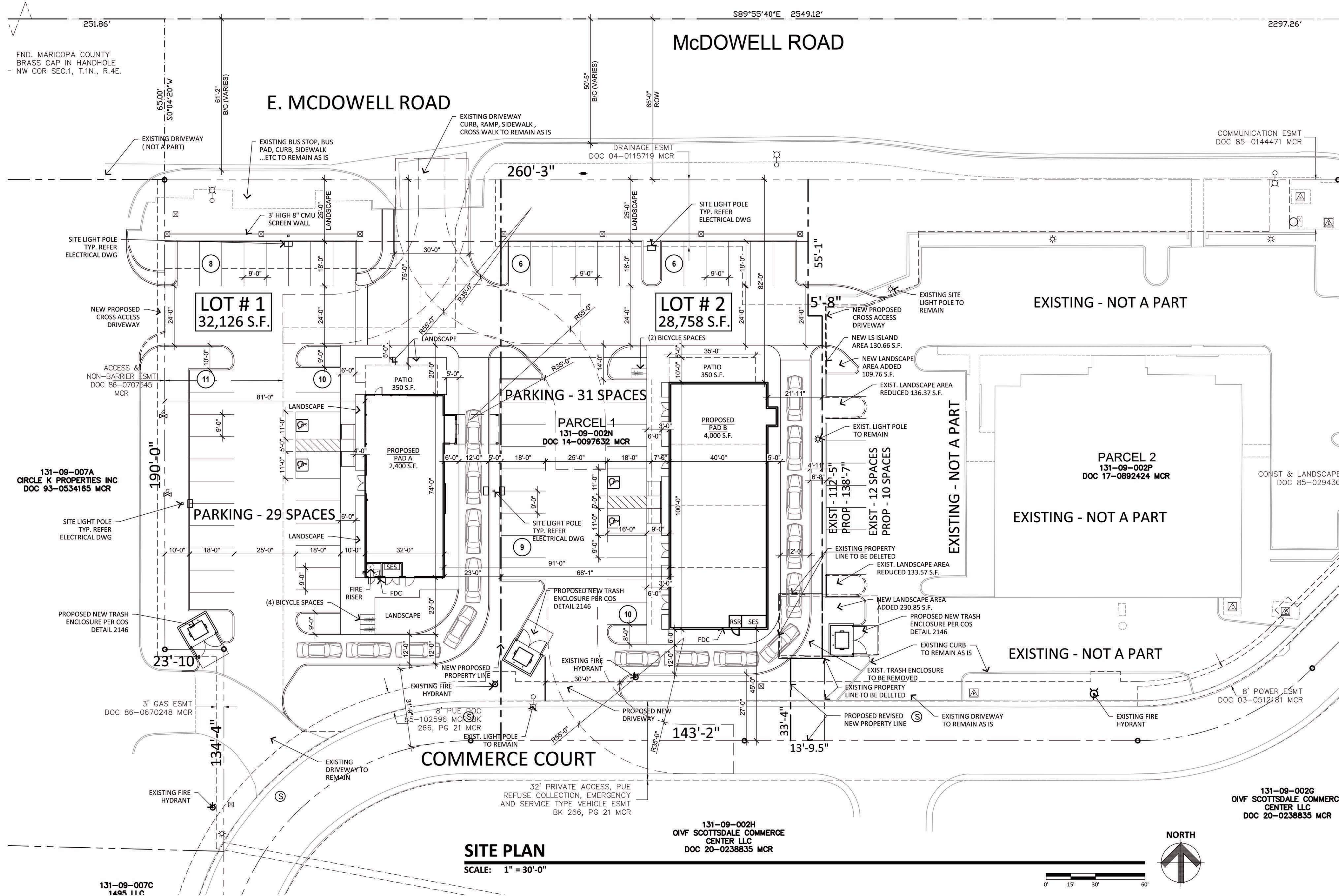
OPEN SPACE REQUIRED:
 UP TO 12' HEIGHT - 60,885 X 0.10 6,088.5 S.F.
 ABOVE 12' - 60,885X0.004X(30-12) 4,383.7 S.F.
 TOTAL OPEN SPACES REQUIRE: 10,472.2 S.F.
 TOTAL FRONT OPEN SPACES REQUIRE: 50% 5,236.1 S.F.

PARKING REQUIRED:
 PAD-A: RESTAURANT: 1 PER 120 S.F. - 2400/120 20 SPACES
 PAD-A: OUTDOOR PATIO - (350 S.F.-350 / 350) 00 SPACES
 PAD-B: RESTAURANT: 1 PER 120 S.F. - 2400 / 120 20 SPACES
 PAD-A: OUTDOOR PATIO - (350 S.F.-350 / 350) 00 SPACES
 PAD-B: RETAIL: 1 PER 250 S.F. - 1600 / 250 07 SPACES
 TOTAL PARKING REQUIRED: 47 SPACES

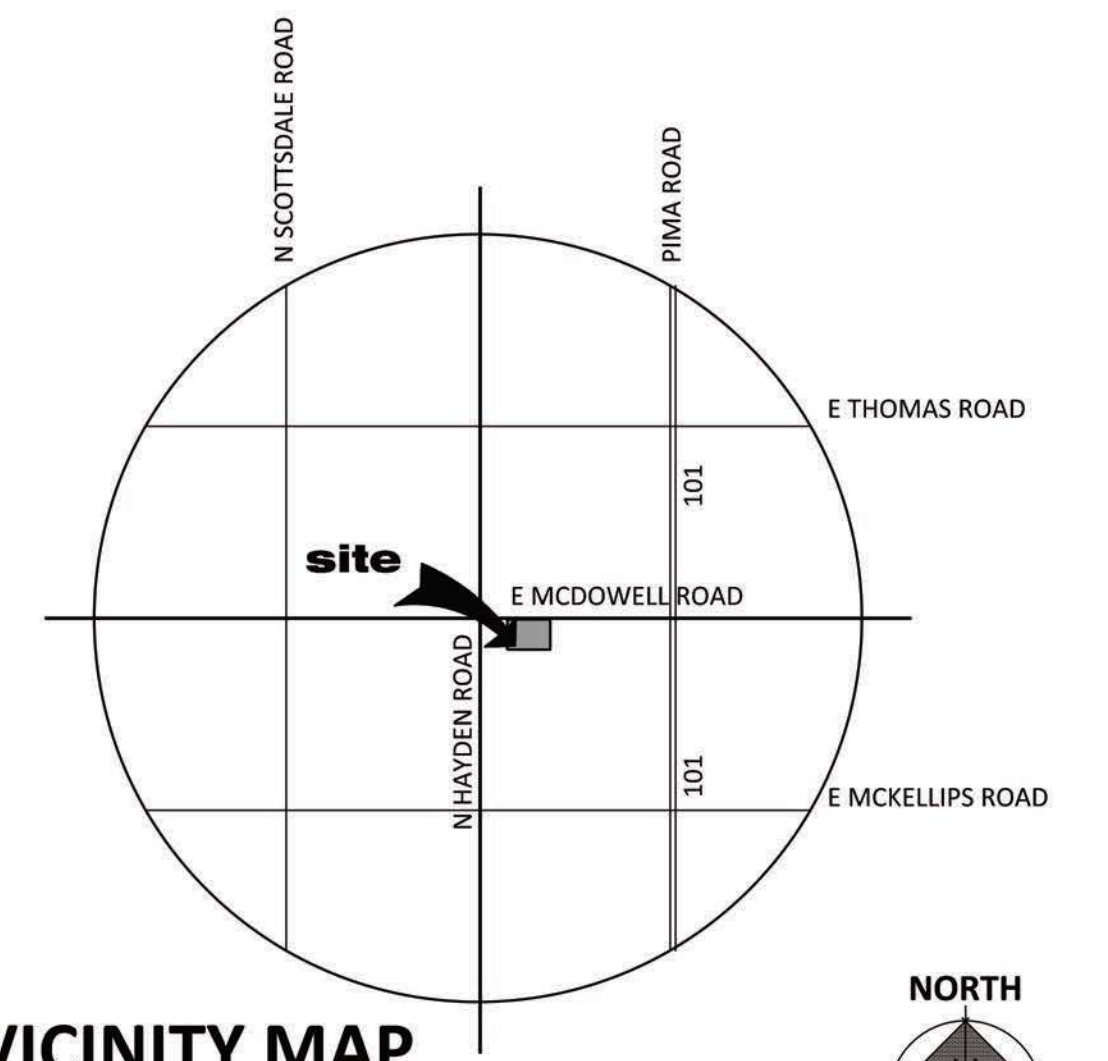
PARKING PROVIDED:
 PAD-A 29 SPACES
 PAD-B 31 SPACES
 TOTAL PARKING PROVIDED: 60 SPACES

ACCESSIBLE SPACES REQUIRED: 03 SPACES
 ACCESSIBLE SPACES PROVIDED: 04 SPACES

BICYCLE SPACES REQUIRED: 10% - MIN. 2 06 SPACES
 BICYCLE SPACES PROVIDED: 06 SPACES

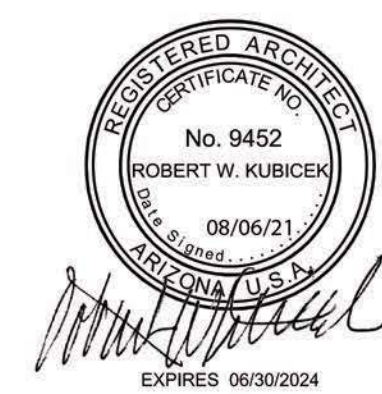


SITE PLAN
 SCALE: 1" = 30'-0"



THIS SITE PLAN HAS BEEN PREPARED WITHOUT THE AID OF A SURVEY. ALL PROPERTY BOUNDARIES ARE ROUGH APPROXIMATIONS. THIS DRAWING IS TO BE USED FOR CONCEPTUAL PURPOSES ONLY AND IT IS NOT TO BE THE BASIS FOR ANY LEGALLY BINDING DOCUMENTATION.

MCDOWELL - HAYDEN RETAIL
 8101 E MCDOWELL ROAD SCOTTSDALE AZ 85257
 E OF SEC OF MCDOWELL RD AND HAYDEN RD
 DATE: 07-15-2021 (PRELIMINARY)



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SP-1 A
 RKA# 18107.00



CALCULATIONS

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Hayden and McDowell							
Wastewater Flows							
Description	Use	Bldg Sqft	Demand ADF (Gal/SF/Day)	Avg. Daily Flow (GPD)	Peak Factor	Peak Flow (GPD)	Peak Daily Flow (GPM)
Commercial/Retail	Commerical	4,000	0.5	2,000	2	4,000	2.78
Commercial/Retail	Commerical	2,400	0.5	1,200	3	3,600	2.50

Demand and Peak Factors based on City of Scottsdale's Design Standards & Policies Manual Chapter 7 Dated January 2010.

O'Reilly Auto Parts					
Pipe Diameter (in)	Pipe Length (FT)	Pipe Slope(%)	Peak Daily Flow (gpm)	Max Capacity (GPM)	Velocity (ft/sec)
6	30	2.0%	2.78	564.4	6.4
6	30	2.0%	2.50	564.4	6.4

there are 2 restaurants proposed?

should be 20 and 12 gpm respectively, still acceptable and not a capacity issue in public sewer.

Updated.