

FINAL Basis of Design Report

☐ APPROVED

☒ APPROVED AS NOTED

☐ REVISE AND RESUBMIT



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.

BY Idillon

DATE 8/9/2021

SEWER BASIS OF DESIGN REPORT FOR PEPIN RESTAURANT REMODEL

Scottsdale, Arizona

19 May 2021

PREPARED FOR

Aline Architecture Concepts
7340 East Main Street, #210
Scottsdale, Arizona 85251

DEVELOPER

Pepin Restaurant
7363 East 2nd Street
Scottsdale, Arizona 85251

SITE ADDRESS

7363 East 2nd Street
Scottsdale, Arizona 85251

Address comments below on final plans:
1) Confirm that existing sewer service line is minimum 6-inch in size and per MAG 440-3. If not connect new sewer service line on southern 3rd of fronting sewer line.

PREPARED BY



4450 north 12th street, #228
phoenix, arizona 85014
CYPRESS # 21.091



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INTRODUCTION: PROJECT DESCRIPTION AND LOCATION

The Project is known as 'Pepin Restaurant Remodel' and is located at 7363 East 2nd Street in Scottsdale, Arizona. The proposed project consists of the renovation and remodel of the existing Pepin restaurant building and patio.

The utility provider for sewer facilities is the City of Scottsdale.

EXISTING CONDITIONS

Per available utility maps and as-built records, an existing 8" PVC sewer main is located in the alley immediately west of the Project. The existing building is 5,326 square feet, and has an existing 6" service lateral connecting to said main. Refer to Appendix A for City of Scottsdale Sewer Quarter Section Map.

PROPOSED CONDITIONS

The existing building is intended to be redeveloped by the current user and to maintain its restaurant use. An addition of approximately 2,500 sf of patio space on the upper level is to be included as part of the redevelopment. The redeveloped building will have 7,826 square feet, including patio area. The design team intends to retain the existing sewer service connection for the redeveloped building. The sewer service is anticipated to provide adequate sizing to service the renovated restaurant. Refer to Appendix B for Preliminary Floor Plan.

REQUIRED COMPUTATIONS

EXISTING SEWER DEMAND:

Average Day Demand (Bar/Restaurant): $1.2 \text{ GPD/SF} \times 5,326 \text{ SF} = 6,391.2 \text{ GPD}$

Peak Demand(Bar/Restaurant): $6 \times 5,326 = 31,956 \text{ GPD}$

PROPOSED SEWER DEMAND:

Average Day Demand (Bar/Restaurant): $1.2 \text{ GPD/SF} \times 7,826 \text{ SF} = 9,391.2 \text{ GPD}$

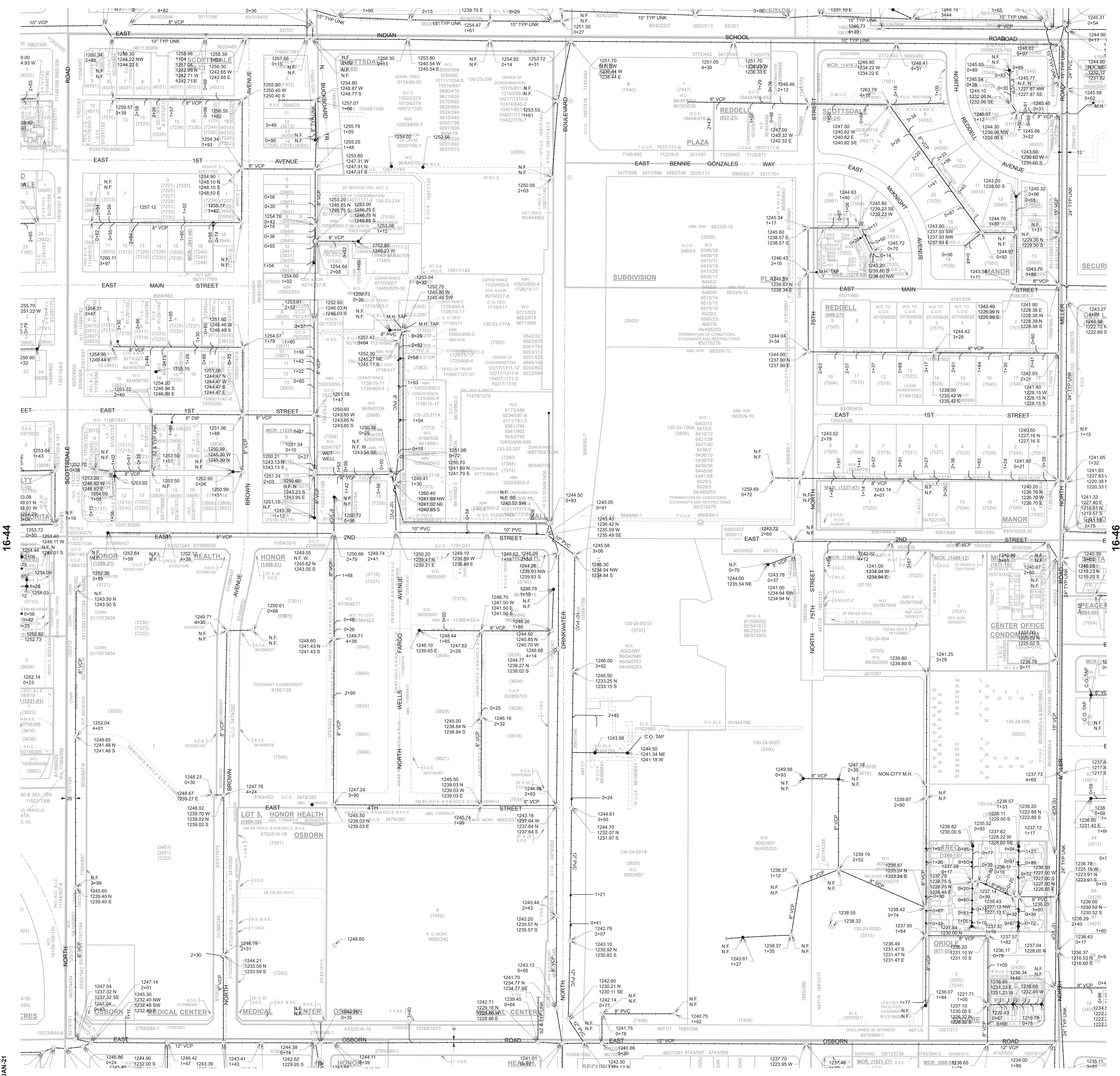
Peak Demand (Bar/Restaurant): $6 \times 7,826 = 46,956 \text{ GPD}$

The proposed demand will increase from the existing condition. A sewer flow calculation demonstrates that the capacity in the sewer service connection is an order of magnitude larger than the projected flows. See Appendix C for Sewer Flow Calculation.

CONCLUSION

CYPRESS respectfully submits this report as the Preliminary Wastewater Design Report for the proposed the Pepin Restaurant Remodel Development. The proposed wastewater system shall be designed in accordance with ADEQ, International Building Code, and the City of Scottsdale standards.

Appendix A
City of Scottsdale Sewer Quarter Section Map



GENERAL NOTES:

- THIS IS A COMPUTER GENERATED DRAWING. FOR ANY REVISIONS PLEASE CONTACT THE CITY OF SCOTTSDALE GIS DEPARTMENT AT (480) 312-7752.
- THE SECTION LINE BEARING AND DISTANCES ARE BASED ON THE CITY OF SCOTTSDALE GPS SURVEY OF SEPTEMBER, 1991. BEARINGS ARE IN DD 88 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:

- Cleanout
- Lift Station
- Manhole
- Non-GPS Point
- Plug
- Sewer Service Point
- Sewer Tap Point
- Sewer Valve
- Treatment Plant
- Sewer Main - Gravity
- Sewer Main - Force
- Sewer Main - Private

VICINITY MAP

SCALE: 1" = 100'

SEWER

QUARTER SECTION MAP

16-45

NW 1/4 SEC. 26 T2N R4E

SCOTTSDALE GEOGRAPHIC INFORMATION SYSTEMS

3629 North Drinkwater Boulevard
Scottsdale, Arizona 85251

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THE CITY OF SCOTTSDALE

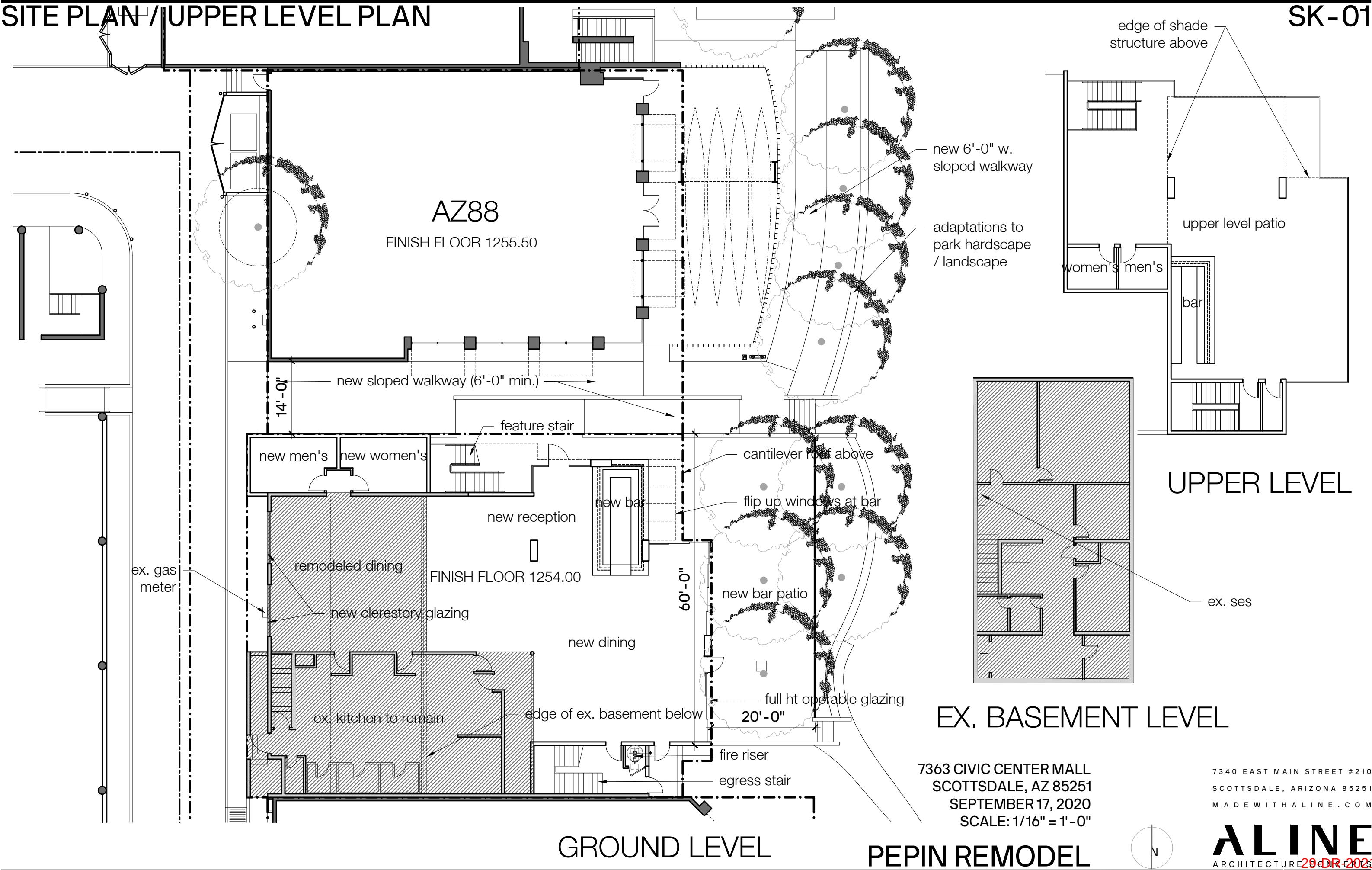
10-JAN-21

Appendix B

Preliminary Floor Plan

SITE PLAN / UPPER LEVEL PLAN

SK-01



EX. BASEMENT LEVEL

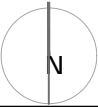
UPPER LEVEL

GROUND LEVEL

PEPIN REMODEL

7363 CIVIC CENTER MALL
SCOTTSDALE, AZ 85251
SEPTEMBER 17, 2020
SCALE: 1/16" = 1'-0"

7340 EAST MAIN STREET #210
SCOTTSDALE, ARIZONA 85251
MADEWITHALINE.COM



ALINE
ARCHITECTURE

20-09-2021
7/14/2021

Appendix C

Sewer Flow Calculation

Sewer Design Report Calculations

Pepin Restaurant Remodel

Sewage Flow Per Day (From DSPM 7-1.403)

Total Flow (GPD)	9,391
Dry Peaking Factor	6.000
Dry Peak Flow (GPD)	46,956

$$Q = \frac{1.49}{n} AR^{2/3} S^{1/2}$$

Where:

Q = flow in cfs

n = Manning's Roughness Coefficient

A = Cross sectional area of flow

SYSTEM MINIMUM SLOPE

n =	0.013
Pipe diameter (in) =	8
Pipe Slope (ft/ft) =	0.005

SYSTEM MAXIMUM SLOPE

n =	0.013
Pipe diameter (in) =	8
Pipe Slope (ft/ft) =	0.02

Full Flow*

Depth of flow (in) =	6.00
φ (radian) =	4.19
Area (in2) =	40.44
Wetted Perimeter (in) =	16.76
Hydraulic Radius (in) =	2.41
Velocity (ft/sec) =	2.78
d/D ratio =	0.75
Pipe Capacity (GPD)	504,917

Full Flow*

Depth of flow (in) =	6.00
φ (radian) =	4.19
Area (in2) =	40.44
Wetted Perimeter (in) =	16.76
Hydraulic Radius (in) =	2.41
Velocity (ft/sec) =	5.56
d/D ratio =	0.75
Pipe Capacity (GPD)	1,009,833

Design Flow

Depth of flow (in) =	3.79
φ (radian) =	3.04
Area (in2) =	23.48
Wetted Perimeter (in) =	12.15
Hydraulic Radius (in) =	1.93
Velocity (ft/sec) =	2.40
d/D ratio =	0.47

Design Flow

Depth of flow (in) =	2.60
φ (radian) =	2.43
Area (in2) =	14.16
Wetted Perimeter (in) =	9.70
Hydraulic Radius (in) =	1.46
Velocity (ft/sec) =	3.98
d/D ratio =	0.32

*Full Flow refers to d/D of 0.75 per AAC R18-9-E301.4.01.D.2.e