FINAL SEWER BASIS OF DESIGN REPORT
FOR
WESTERN TECH OFFICE

Scottsdale, Arizona

January 19th, 2022

DEVELOPER
Capital Project Management
7447 East Indian School Road, #205
Scottsdale, Arizona 85251

SITE ADDRESS
1395 North Hayden Road
Scottsdale, Arizona 85257

PREPARED BY
CYPRESS CIVIL
4450 north 12th street, #228
phoenix, arizona 85014
CYPRESS # 21.148

TABLE OF CONTENTS

INTRODUCTION: PROJECT DESCRIPTION AND LOCATION

The Project is known as 'Western Tech Office' and is located at 1395 North Hayden Road in Scottsdale, Arizona. The proposed project consists of the renovation and remodel of the existing office building and parking area.

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 dedicated private roadway northwest of the Project. The existing building is 42,440 sf and is connected to the said main for sewer service via a 6" sewer lateral. The new building expansion area is 6,200 sf. Refer to Appendix A for City of Scottsdale Sewer Quarter Section Map.

PROPOSED CONDITIONS

The existing building is intended to maintain its current office use. An addition of approximately 6,200 sf of building at the northeast corner of the Project as part of the redevelopment. The redeveloped building will have 48,640 square feet. 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 expanded office.

REQUIRED COMPUTATIONS

EXISTING SEWER DEMAND:
Average Day Demand (Bar/Restaurant): 0.4 GPD/SF x 42,440 SF = 16,976 GPD
Peak Demand(Bar/Restaurant): 3 x 16,976 = 50,928 GPD

PROPOSED SEWER DEMAND:
Average Day Demand (Bar/Restaurant): 0.4 GPD/SF x 48,640 SF = 19,456 GPD
Peak Demand (Bar/Restaurant): 3 x 19,456 = 58,368 GPD

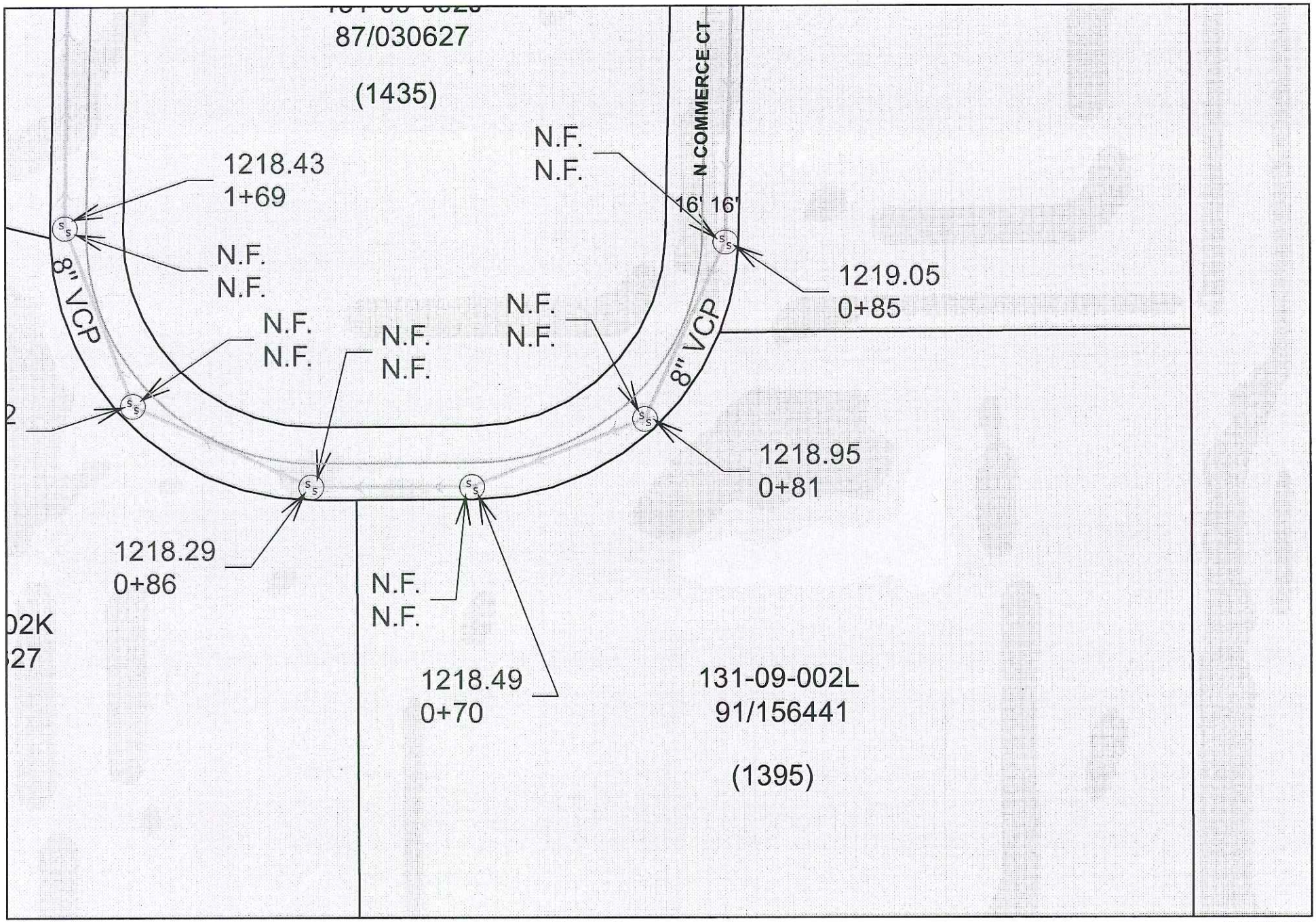
The proposed demand will increase from the existing condition. A sewer flow calculation demonstrates that the capacity in the sewer service connection is an order of magnitude larger than the projected flows. See Appendix B for Sewer Flow Calculation.

CONCLUSION

CYPRESS respectfully submits this report as the Final Wastewater Design Report for the proposed the Western Tech Office 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

sewer



25 0 50 Feet

City of Scottsdale GIS

dhol
10/14/2021 8:56:23 AM

CITY OF SCOTTSDALE INFORMATION TECHNOLOGY


MOTOROLA ACCESS DRIVE
McDOWELL ROAD
HAYDEN ROAD
COMMERCE COURT DR.
LINE "A"
LINE "B"
LINE "C"
C.O.# A-1 Rim = 17.63 AS Inv. = 10.50 AS
C.O.# C-1 Rim = 18.16 AS Inv. = 10.80 AS
C.O.# B-1 AB Rim = 17.41 AS Inv. = 09.70 AS
Sewer Cleanout MAG Det. 441 (Typical) AB
200 L.F. 8" V.C.P. S = 0.0034 AS
150 L.F. 8" V.C.P. S = 0.0034 AS
182 L.F. 8" V.C.P. S = 0.0034 AB
292 L.F. 8" V.C.P. S = 0.0034
170 L.F. 8" V.C.P. S = 0.0034
285 L.F. 8" V.C.P.
FOR SANITARY SEWER PROFILE SEE SHEET 7
6" FIRE LINE 2" WATER SERV. 6" SEWER SERV. (TYP.)
7 S.Y. Pvm't. Replcmnt. MAG Det. 200 Type "B" AB
5' Dia. Precast M.H. MAG Det. 420 Break Into Exist. 36" Line Drop Sewer Conn. AB MAG Det. 426 Type "B"
CAUTION - High Pressure Gas Line in This Area
M.H.# A-1 Rim = 16.60 16.67 AB Inv. = 01.25 E. 02.67 AB Inv. = 1195.29 N. & S.
Bench Mark - Rebar in H.H. @ Intersection of Hayden Rd. & McDowell Rd. ELEV. = 1219.56
Bench Mark = B.C. on S.E. Cor. of Irr. Structure S.W. Cor. of Intersection of Hayden Rd. & McDowell Rd. ELEV. = 1220.80
NOTE: Survey Data Supplied by P.C.I. Assoc. April 13, 1983
AB = "As-Built"
AS = "As-Staked"
263-1100
Revision: Added Future 48" Water Line 5-16-84 L.S.
9374
SCOTTSDALE COMMERCE CENTRE
ON-SITE SEWER PLAN
DESIGN J.R.W. DRAWN J.R.W. CHECK R.R.A.
SCALE 1" = 40'
JOB NO. 6513
DATE 3-9-84
SHEET 6 of 7
ellis-murphy consulting engineers / land surveyors

Appendix B
Sewer Flow Calculation

CYPRESS CIVIL

SITE CONSULTING
SURVEY
SITE ENGINEERING

Sewer Design Report Calculations
Western Tech Office

Sewage Flow Per Day (From DSPM 7-1.403)

Total Flow (GPD)	19,456
Dry Peaking Factor	3.000
Dry Peak Flow (GPD)	58,368

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

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) =	6
Pipe Slope (ft/ft) =	0.005

Full Flow*

Depth of flow (in) =	4.50
ϕ (radian) =	4.19
Area (in2) =	22.75
Wetted Perimeter (in) =	12.57
Hydraulic Radius (in) =	1.81
Velocity (ft/sec) =	2.30
d/D ratio =	0.75
Pipe Capacity (GPD)	234,450

Design Flow

Depth of flow (in) =	3.79
ϕ (radian) =	3.68
Area (in2) =	18.84
Wetted Perimeter (in) =	11.03
Hydraulic Radius (in) =	1.71
Velocity (ft/sec) =	2.21
d/D ratio =	0.63

SYSTEM MAXIMUM SLOPE

n =	0.013
Pipe diameter (in) =	6
Pipe Slope (ft/ft) =	0.02

Full Flow*

Depth of flow (in) =	4.50
ϕ (radian) =	4.19
Area (in2) =	22.75
Wetted Perimeter (in) =	12.57
Hydraulic Radius (in) =	1.81
Velocity (ft/sec) =	4.59
d/D ratio =	0.75
Pipe Capacity (GPD)	468,899

Design Flow

Depth of flow (in) =	2.60
ϕ (radian) =	2.87
Area (in2) =	11.74
Wetted Perimeter (in) =	8.62
Hydraulic Radius (in) =	1.36
Velocity (ft/sec) =	3.80
d/D ratio =	0.43

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