FINAL WATER 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

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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 water facilities is the City of Scottsdale.

EXISTING CONDITIONS

Per available utility maps and as-built records, an existing 8" ACP water 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 domestic service via a 2" meter. The new building expansion area is 6,200 sf. Refer to Appendix A for City of Scottsdale Water Quarter Section Map & Offsite Improvement Plan.

FIRE FLOW REQUIREMENTS

The total building area after the redevelopment will be 48,640 square feet. The building is type VB construction. Per the International Fire Code, Table B105.1, the existing building with the new expansion requires a minimum fire flow of 6,000 GPM for a 5-hour duration. Per Table B105.2, the redeveloped building will have automatic sprinklers installed resulting in an allowable 75% reduction in fire flow requirements. Required fire flow will be 2,000 GPM for a 2-hour duration. A flow test was completed on October 5th, 2021 on the existing fire hydrant immediately west of the existing office building. 3,959 GPM is available at the existing fire hydrant after accounting for City of Scottsdale required PSI and Safety Factor adjustments. Refer to Appendix B for Fire Flow Results.

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 and reuse the existing 2" water service connection east of the redeveloped building. This is anticipated to provide adequate sizing and pressure to supply the intended domestic service to the building.

REQUIRED COMPUTATIONS

EXISTING WATER DEMAND:

Average Day Demand (Office unit): 0.000834/SF x 42,440 SF = 35.56 GPM
Peak Hour Demand: 3.5 x 35.56 = 124.47 GPM
Maximum Day Demand + Fire Flow Demand: 2 x (35.56 GPM) + 2,000 GPM = 2,071.12 GPM

PROPOSED WATER DEMAND:

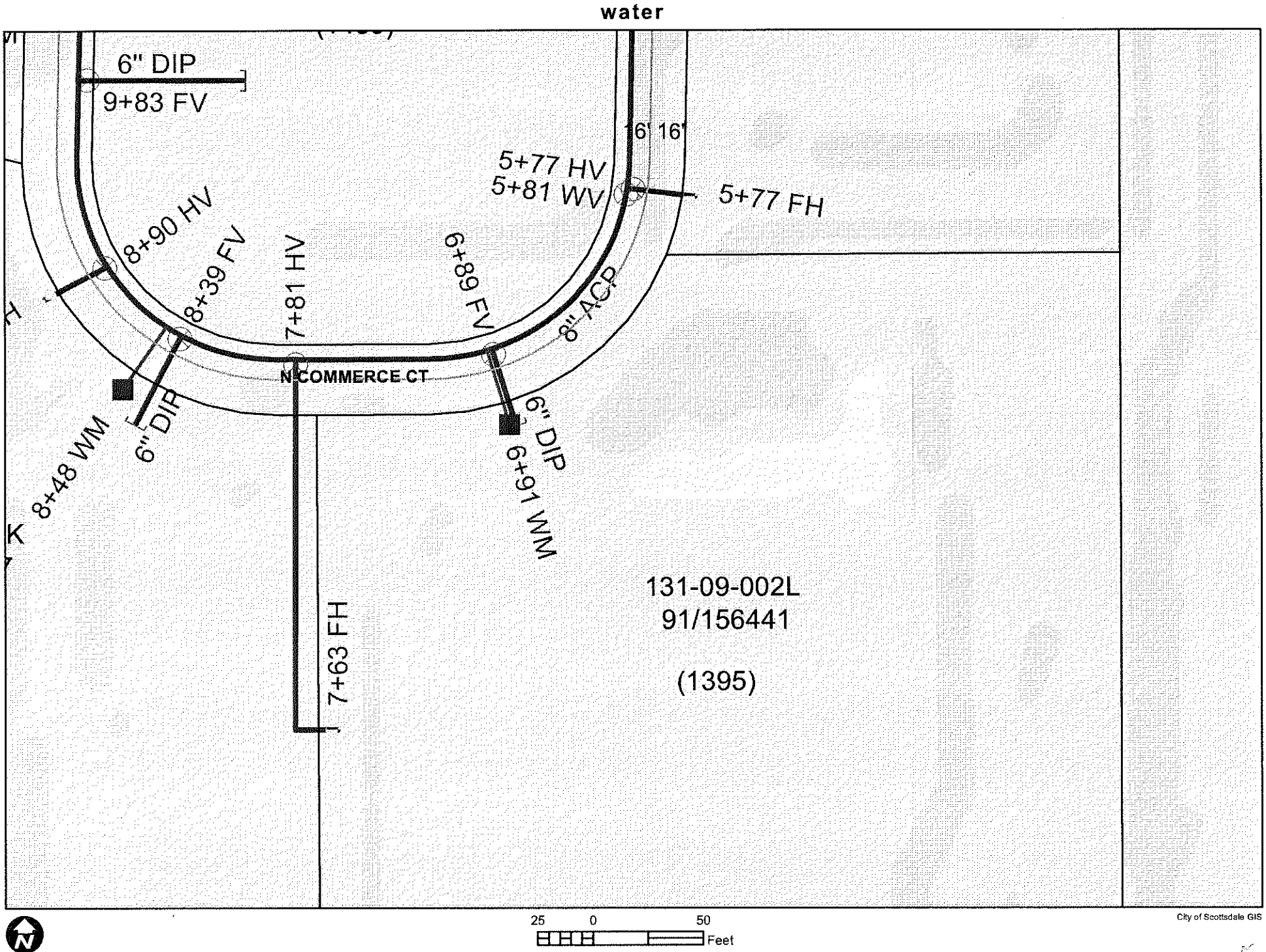
Average Day Demand (Bar/Restaurant unit): 0.000834/SF x 48,640 SF = 40.57 GPM
Peak Hour Demand: 3.5 x 40.57 = 141.98 GPM
Maximum Day Demand + Fire Flow Demand: 2 x (40.57 GPM) + 2,000 GPM = 2,081.14 GPM

Per the City of Scottsdale Design Standards & Policies Manual, Section 6-1.416 –M, minimum meter size is 2". The existing 2" water service from the west will be sufficient to support the minimum meter requirement.

CONCLUSION

CYPRESS respectfully submits this report as the Final Water Design Report for the proposed Western Tech Office Development. The proposed water system shall be designed in accordance with ADEQ, International Building Code, and the City of Scottsdale standards.

Appendix A
City of Scottsdale Water & Offsite Improvement Plan



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10/14/2021 8:54:30 AM

CITY OF SCOTTSDALE
INFORMATION TECHNOLOGY

MOTOROLA ACCESS DRIVE

MCDOWELL ROAD

0 40 80 120

C.O.#A-1
Rim=17.63 AS
Inv.=10.50 AS

M.H.#A-7
18.33 AB Rim=18.08
10.49 AB Inv.=10.32

54 L.F. 8" V.C.P. S=0.0034 AB

LINE "A"

18.36 AB M.H.#A-6
09.23 AB Rim=18.23
09.33 AB Inv.=10.08 E&W
09.13 AB Inv.=10.12 S.

B=90.24 E
11+34.09 S.

87 L.F. 8" V.C.P. S=0.0034 AB

LINE "C"

260'

C.O.#C-1
Rim=18.16 AS
Inv.=10.80 AS

Sewer Cleanout
MAG Det. 441
(Typical) AB

C.O.#B-1 AB
Rim=17.41 AS
Inv.=09.10 AS

LINE "B"

M.H.#B-6 AB
Rim=16.91
Inv.=08.41

200 L.F. 8" V.C.P. S=0.0034 AS

COMMERCE COURT DR.

150 L.F. 8" V.C.P. S=0.0034 AS

321 L.F. 8" V.C.P. S=0.0034 AS

M.H.#B-5 AB
Rim=16.77 AB
Rim=16.65
Inv.=08.91 AB
08.79 AB

M.H.#B-4 AB
Rim=16.44 AB
Rim=16.34
Inv.=08.63 AB
08.70 AB

143'

M.H.#B-3 AB
Rim=16.11 AB
Rim=16.16
Inv.=08.40 AB
08.47 AB

LINE "B"

182 L.F. 8" V.C.P. S=0.0034 AB

6' Typ.

M.H.#A-5 AB
17.70 AB Rim=18.19
Inv.=09.40 AB
09.57 AB

82 L.F. 8" V.C.P. S=0.0034 AB

M.H.#A-4 AB
18.20 AB Rim=17.90
Inv.=09.12 AB

FOR SANITARY SEWER PROFILE SEE SHEET 7

292 L.F. 8" V.C.P. S=0.0034

170 L.F. 8" V.C.P. S=0.0034

85 L.F. 8" V.C.P. S=0.0034

M.H.#A-3 AB
17.34 AB Rim=17.69
Inv.=08.06 AB
08.16 AB

6" FIRE LINE
2" WATER SERV.
6" SEWER SERV.
(TYP.)

2486 N
0+00 S.

LINE "A"

LINE "A"

COMMERCE COURT DR.

285 L.F. 8" V.C.P. S=0.0034 AB

7 S.Y. Pvmt. 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"

M.H.#A-2 AB
Rim=16.52
Inv.=07.11 AB
07.01 AB

M.H.#B-2 AB
Rim=15.74 AB
Rim=15.90
Inv.=08.11 AB
08.02 AB

M.H.#B-1 AB
Rim=15.48
Inv.=07.68 AB
07.70 AB

HAYDEN ROAD

10" H.P. Gas

8" W

36' S

0+00 E

CAUTION - High Pressure Gas Line in This Area.

Rim=16.60 M.H.#A-1 16.67 AB
Inv.=01.25 E. 02.67 AB
Inv.=1195.29 N&S.

(FUTURE 48' W. 8" W

Revision:
△ Added Future 48' Water Line 5-16-84 L.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

9374

SCOTTSDALE COMMERCE CENTRE

ON-SITE SEWER PLAN

DESIGN	J.R.W.	SCALE	JOB NO.	DATE	SHEET
DRAWN	J.R.W.	1"=40'	6513	3-9-84	6 OF 8
CHECK	R.R.A.				

ellis-murphy civil engineers & land surveyors

SCADS4

Appendix B
Fire Flow Test Results

Arizona Flow Testing LLC

HYDRANT FLOW TEST REPORT

Project Name:	Not Provided
Project Address:	1395 North Hayden Road, Scottsdale, Arizona, 85257
Client Project No.:	Not Provided
Arizona Flow Testing Project No.:	21535
Flow Test Permit No.:	C66449
Date and time flow test conducted:	October 5, 2021 at 7:20 AM
Data is current and reliable until:	April 5, 2022
Conducted by:	Floyd Vaughan – Arizona Flow Testing, LLC (480-250-8154)
Witnessed by:	Ray Padilla –City of Scottsdale-Inspector (602-541-0586)

Raw Test Data

Static Pressure: **98.0 PSI**
(Measured in pounds per square inch)

Residual Pressure: **80.0 PSI**
(Measured in pounds per square inch)

Pitot Pressure: **27.0 PSI**
(Measured in pounds per square inch)

Diffuser Orifice Diameter: One 4-inch Pollard Diffuser
(Measured in inches)

Coefficient of Diffuser: .9

Flowing GPM: **2,233 GPM**
(Measured in gallons per minute)

GPM @ 20 PSI: **4,929 GPM**

Data with 26 PSI Safety Factor

Static Pressure: **72.0 PSI**
(Measured in pounds per square inch)

Residual Pressure: **54.0 PSI**
(Measured in pounds per square inch)

Scottsdale requires a maximum Static Pressure of 72 PSI for AFES Design.

Distance between hydrants: Approx..: 360 Feet

Main size: Not Provided

Flowing GPM: **2,233 GPM**

GPM @ 20 PSI**:** **3,959 GPM**

Flow Test Location **North**