Exterior Building Color & Material Samples

Color Drawdowns

Archaeological Resources

Airport Vicinity Development Checklist

Parking Study

Trip Generation Comparison

Parking Master Plan

STARKJAMES

October 4, 2016

Attn: Fire Marshal Jim Ford
CC: Ricky King

RE: 6922 Variance Request
#613-PA-2016
6922 East 5th Avenue
Scottsdale, AZ 85251

Dear Fire Marshal Ford,

This letter is in reference to our proposed building at 6922 East 5th Avenue. The project has been through the pre-application process (613-PA-2016) and is currently being reviewed by Dan Symer for a Rezoning Request and amendments to Development Standards Section 5.3006 of the Zoning Ordinance.

We have met with Ricky King to discuss Fire Code requirements applicable to the proposed building.

According to Scottsdale's amendment to 607.1.1 of the 2012 IFC, where elevators are provided in buildings four or more stories above grade plane or four or more stories below grade plane, at least one elevator shall be provided for fire department emergency access to all floors and that elevator car needs to be a minimum of 6'x7' clear inside face of car.

The ground floor of the proposed building consists of a small office and the residential entrance from the street is kept entirely separate from that of the ground floor office. The second floor contains two small one-bedroom sleeping units, not to house rental tenants, but intended to house our grown children when they are visiting. Also on the second floor is our private office and the entrance to our private living area above. The third story contains our private living area and the fourth floor is made up of our master bedroom/bath, intended for the use of only two people.

Our lot is 30' wide and 65' deep. Due to the existing setback and stepback requirements, the proposed top story of our private residence is limited to a little over 800 square feet. While a standard residential elevator and stairs could occupy only about 100 s.f. of floor space, the requirement for a gurney elevator nearly doubles that area, equaling approximately 20% of the entire top floor area.

We believe due to the small number of building occupants, the separation of office and residential access, the fact that the upper three stories are comprised entirely of our private residence, and the restrictive square footage allowed by the site, that the requirement to accommodate a large gurney elevator places undue hardship on us as the owners.

We would appreciate your consideration of our request for a variance from Section 607.1.1

If you have any questions, please feel free to call me at 425.417.5999 or email me at bruce@raskinpartners.com

Thank you,

Bruce and Kim Raskin

Approved
S. Ford
Deputy Chief / F Marshal
City of Scottsdale Fire
10/10/2016

6922 EAST 5TH AVENUE #200
SCOTTSDALE ARIZONA 85251
OFFICE 480.994.7340
FAX 480.994.7344
WWW.STARKJAMES.COM

23-ZN-2016
10/19/16

NOEENGINEERING
706 E. Bell Road
Suite 108
Phoenix, AZ 85022
(602) 368-8489

September 21, 2016

City of Scottsdale
7474 East Indian School Road
Scottsdale, Arizona 85251

Re: Preliminary Water and Sewer Basis of Design Report
China Mist Mixed Use Project
7363 E. Scottsdale Mall
Scottsdale, Arizona
Q/S #16-45
APN 130-23-210A
COS Project No. 33-DR-2016

Dear Sir or Madam:

A four-story mixed use development is proposed at this location. The development will replace the existing single-story restaurant. The attached report provides documentation of the

If you have any questions regarding this letter, please feel free to contact us.

Sincerely,

NOEENGINEERING

David M. Noe, P.E.
Principal

DMN/st

Accepted w/ Comments
Scottsdale Water
Resources Dept.
Doug Mann 9.28.16

33-DR-2016
9/22/2016

TABLE OF CONTENTS

REPORT

FIGURES

APPENDIX

China Mist Mixed Use Project – 7363 E. Scottsdale Mall
Preliminary Basis of Design Report

1. Background/Narrative

A four-story mixed use development is proposed at this location. The site is shown on the attached boundary survey of the existing property, Figure 1. The existing site's Assessor's Parcel Number is 130-23-210A. An aerial image view of the site is attached as Figure 2.

The development will replace the existing single-story restaurant. The first level will be a retail use, the second level will be an office use, the third and fourth floors will be residential. The retail level and office level will have appropriate bathrooms and improvements to serve those uses. The third level has two residences, each with 2-1/2 bathrooms and the fourth level has one residence, also with 2-1/2 bathrooms.

A copy of the site plan, showing the first floor level, is attached to this report as Figure 3.

1.1 Proposed Building

Level	Use	Area
First Level	Retail	3,500 sf
First Level Mezzanine	Retail	2,000 sf
Second Level	Office	5,388 sf
Third Level	Residence	3,531 sf
Fourth Level	Residence	3,125 sf
Total		17,544

2.1 Existing Water System

The project lies within quarter section 16-45.

There is an existing 8" diameter ACP City of Scottsdale water line in E. 2nd Street, approximately 380 feet south of the site. The size of the existing water line along the east side of the site is an 8" diameter ACP water line. A portion of that map is attached to this report as Figure 4. The water line is looped, connected to an 8" ACP City of Scottsdale water line in N. Brown Avenue.

The existing water meter serving the parcel is 2". As part of the new project, it will be replaced with a 1-1/2" water meter.

OK

2.2 Existing Sewer System

Actually 2 sewers - 1 Active, 1 abandoned - SEE SITE PLAN

There is an existing City of Scottsdale 8" PVC line west of the site and an existing sewer tap into the property. This tap will be reused as part of this development.

3.1. Proposed Water Demand

The proposed water demand according to the attached table prepared by the project mechanical engineer is 314.5 fixture units. This table is included in the Appendix portion of the report. This demand is equivalent to approximately 110 gallons per minute.

Alternatively, the water demand can be calculated as follows

Use	Area/Unit	Fire Flow	Duration	
1st Level Retail	3,500 sf	0.7 gpdpsf	3	7,350 gpd
1st Level Mezz. Retail	2,000 sf	0.7 gpdpsf	3	4,200 gpd
2nd Level Office	5,388 sf	0.5 gpdpsf	3	8,082 gpd
3rd Level Residence	3,531 sf	155 gpd	3	465 gpd
4th Level Residence	3,125 sf	155 gpd	3	930 gpd
Total				21,027 gpd

21,027 gpd / 1,440 min/day = 15 gal/min.

3.2. Proposed Sewer Demand

The proposed sewer demand according to the attached table prepared by the project mechanical engineer is 250 fixture units. This table is included in the Appendix portion of the report.

Alternatively, the sewer demand can be calculated as follows

Use	Area/Unit	AV*day	PH	Subtotal
1st Level Retail	3,500 sf	0.5 gpdpsf	3	5,250 gpd
1st Level Mezz. Retail	2,000 sf	0.5 gpdpsf	3	3,000 gpd
2nd Level Office	5,388 sf	0.4 gpdpsf	3	6,466 gpd
3rd Level Residence	1 unit	155 gpd	4.5	630 gpd
4th Level Residence	2 units	155 gpd	4.5	1,260 gpd
Total				16,606 gpd

16,606 gpd / 1,440 min/day = 12 gal/min.

3.3. Proposed Fire Sprinkler Demand

The proposed construction is Type IIA. According to the 2012 International Fire Code, the proposed fire sprinkler demand can be calculated as follows:

Use	Area	Fire Flow	Duration
1st Level Retail	3,500 sf	1,500 gpm	2 hrs
1st Level Mezz. Retail	2,000 sf	1,500 gpm	2 hrs
2nd Level Office	5,388 sf	1,500 gpm	2 hrs
3rd Level Residence	3,531 sf	1,500 gpm	2 hrs
4th Level Residence	3,125 sf	1,500 gpm	2 hrs
Total for Building	17,544 sf	2,000 gpm	2 hrs

For an individual floor, the fire flow is 1,500 gpm; for the building the fire flow is 2,000 gpm. The code allows a reduction of up to 50%, as approved by the Fire Marshall, for buildings with an approved NFPA 13 automatic sprinkler system installed in accordance with Section 903.1.1..

FH Flowtest reqd w/ Bldg sprinkler submittal.

Figures

Fig 1

N.W. COR. SEC. 26, T.2N., R.4E. FND. BRASS CAP IN HANDHOLE, STAMPED "CITY OF SCOTTSDALE"

S89°39'16"E(R2) 2629.64'(R2)
S89°45'50"E(R1,M) (BASIS OF BEARING) 2629.63'(M)
N. LINE NW 1/4, SEC. 26, T.2N., R.4E.
479.00'(M)
FND. BRASS CAP IN HANDHOLE

INDIAN SCHOOL ROAD

837.93'(R1) 838.06'(M)

N.E. CORNER NW 1/4, NW 1/4, SEC. 26, T.2N., R.4E. FND. BRASS CAP IN HANDHOLE

1312.57'(M)

N. 1/4, SEC. 26, T.2N., R.4E. FND. C.O.S. BRASS CAP IN HANDHOLE

N. SCOTTSDALE RD.

N00°02'51"E(M) 1329.06'(M)

0 5 10 20
SCALE: 1" = 10'

LEGEND:

- BRASS CAP IN HANDHOLE
- FOUND AS NOTED
- WATER VALVE
- FIRE HYDRANT
- WATER METER
- BACKFLOW PREVENTER
- GAS METER
- LIGHT POST
- (1) SCHEDULE B HEX
- (#) TREE (#) TRUNK SIZE INCHES
- SAGUARO CACTUS
- MONUMENT LINE
- PROPERTY LINE
- EASEMENT LINE
- CONCRETE — CONCRETE HATCH COLOR & PATTERN
- AC PVMT — ASPHALT HATCH COLOR & PATTERN

(R1) RECORDED DATA PER THE SUBDIVISION OF SCOTTSDALE MALL AS RECORDED IN BK. 170, PG. 2, M.C.R.

(R2) RECORDED DATA PER THE PLSS SUBDIVISION RECORD OF SURVEY "MARICOPA COUNTY GEODETIC DENSIFICATION AND CADASTRAL SURVEY AS RECORDED IN BK. 734, PG. 1, M.C.R.

(M) MEASURED INFORMATION FROM FIELD DATA COLLECTION.

(C) CALCULATED INFORMATION FROM RECORDED DOCUMENTS AS NOTED.

15' ALLEY 170/2

14' PEDESTRIAN ACCESS EASEMENT 98-0462309

LOT D
A.P.N. 130-23-209
DEED NO. 20030026838, M.C.R.

CONCRETE

S89°48'53"E 84.00'

80.00'

24.1'

BLDG. CORNER IS 0.3' N. OF PROPERTY LINE

21.9'

7.1'

15.6'

RAMP

BLDG. CORNER IS 0.4' E. OF PROPERTY LINE

11' ALLEY

LOT K
A.P.N. 130-23-216

PARCEL 2
280 SQ.FT.±
0.006 AC.±

LOT E
SCOTTSDALE MALL
BK. 170, PG. 2, M.C.R.

PARCEL 1
5,600 SQ.FT.±
0.129 AC.±

BLDG. INFO.
ADDRESS:
7363 E. 2ND ST.
SCOTTSDALE, AZ. 85251
AREA:
5,328 SQ.FT.±
ZONED: C-2
HEIGHT: 18.5'±
A.P.N. 130-23-210A
DEED NO. 20101091185, M.C.R.

PARCEL 3
234 SQ.FT.±
0.005 AC.±

BLDG. CORNER IS 0.3' W. OF PROPERTY LINE

4' R/W ABANDONED

4' UNDERGROUND UTILITY ESMT.

LOT L
A.P.N. 130-23-217A

BLDG. CORNER IS 0.4' W. OF PROPERTY LINE

12' SEWER ESMT.

STAIRS 6.2'

STEPS 12.4'

BLDG. CORNER IS 0.1' N. OF PROPERTY LINE

0.6' BETWEEN BLDGS.

BLDG. CORNER IS 0.1' N. OF PROPERTY LINE

BLDG. CORNER IS 0.2' W. OF PROPERTY LINE

FND. IRON BAR, N89°48'53"W
W/ NO CAP
N70°45'17"W, 0.20'
FROM S.W. CORNER
(NOT ACCEPTED)

70.1'
72.8'
84.00'
80.00'

LOT F
A.P.N. 130-23-211A
DEED NO. 20030249158, M.C.R.

15' ALLEY 170/2

N00°02'57"E(R1) 376.74'(R1,C)

12' SEWER ESMT.

S89°45'39"E(R1,C)
15.00'(R1,C)

S89°57'03"E 5.50'

N89°57'03"W 5.50'

CONCRETE

OHU

S00°09'02"W(R1,C) 330.14'(R1,C)

S00°09'17"W(R1,C) 334.94'(R1)

S00°09'02"W(R1,C) 334.95'(C)

S00°03'40"W(R1,C) 331.82'(C) 331.03'(R1)

N00°14'21"E 36.65'

DRINKWATER BOULEVARD

S.W. COR., N.W. 1/4, N.W. 1/4, SEC. 26, T.2N., R.4E. FND. BRASS CAP FLUSH, STAMPED "CITY OF SCOTTSDALE", NO PUNCH

N89°53'11"W(M) 469.42'(M)

FND. PUNCHED BRASS CAP FLUSH

N89°55'19"W(C) 412.76'(C)
N89°53'20"W(R1) 402.14'(R1)

N89°45'39"W(R1,C) 433.08'(C) 433.24'(R1)

EAST 2ND STREET

NO.	DATE	REVISION

PURPOSE: A.L.T.A. SURVEY

DRAWN BY: PJE
CHECKED BY: JDH

HUNTER ENGINEERING
CIVIL AND SURVEY
10450 N. 74TH ST., SUITE 200
SCOTTSDALE, AZ 85258
P 480 991 3985
F 480 991 3986

ARIZONA LAND SURVEYOR
JERRY D. HEATH JR.
45535
Expires 3/31/2016

ALTA/ACSM LAND TITLE SURVEY

THOSE PORTIONS OF SCOTTSDALE MALL, ACCORDING TO BOOK 170 OF MAPS, PAGE 2, RECORDS OF MARICOPA COUNTY, ARIZONA, LOCATED WITHIN THE NORTHWEST QUARTER OF SECTION 26, TOWNSHIP 2 NORTH, RANGE 4 EAST, OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA.

SECTION: 26
TWNSHP: 2N.
RANGE: 4E.

JOB NO.: CLAY023-SA

SCALE: 1"=10'

SHEET 2 OF 2

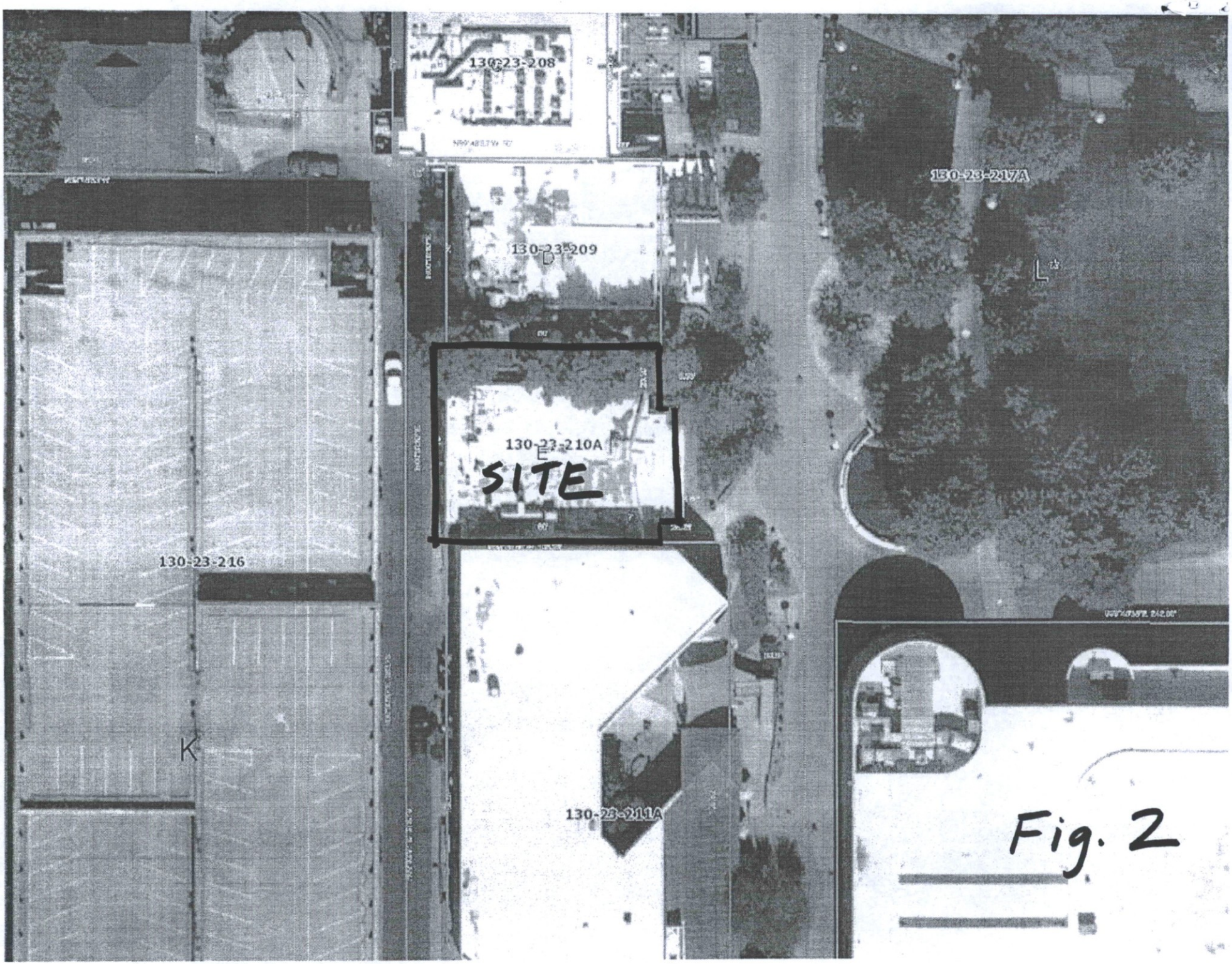
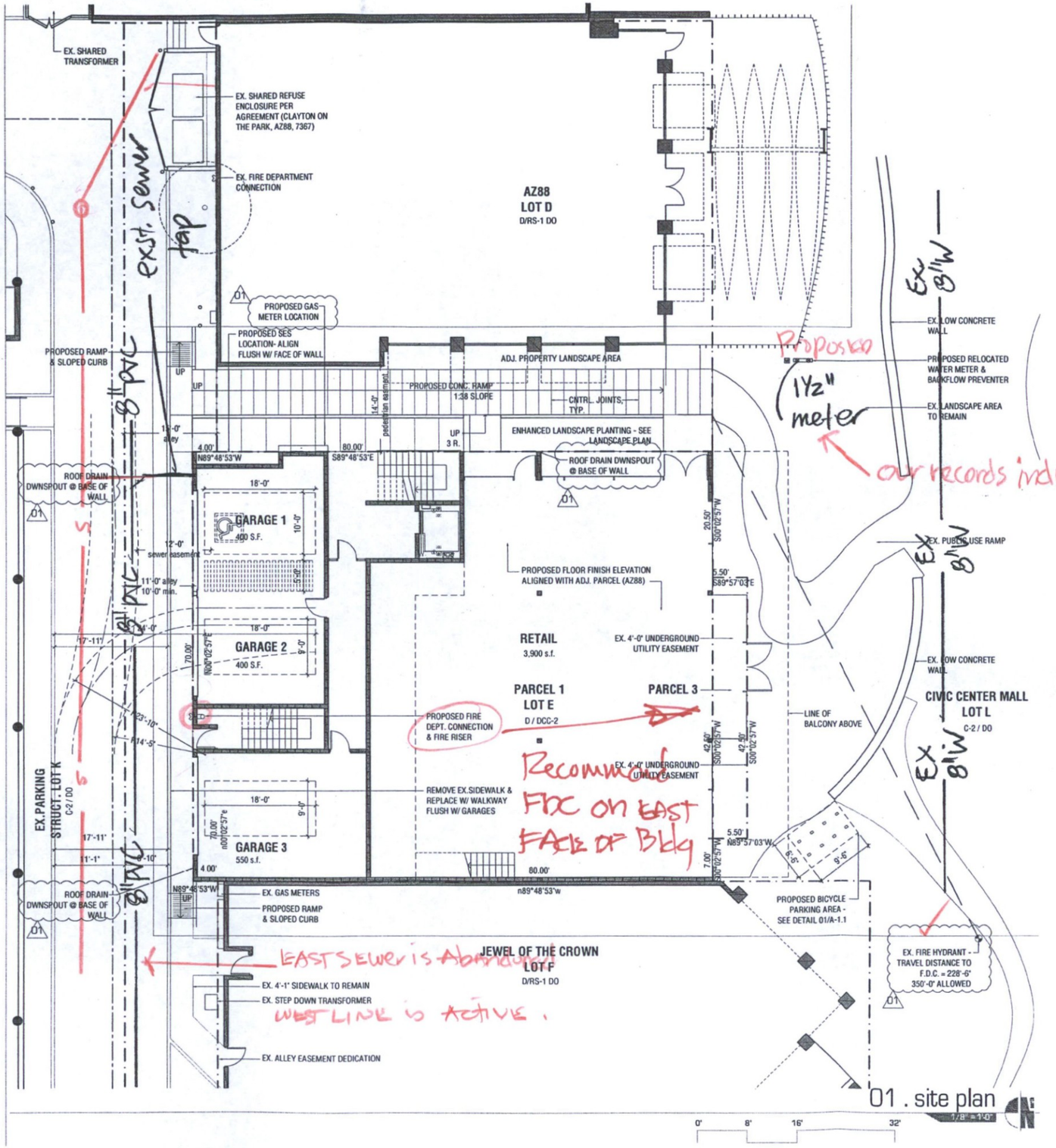

130-23-208
130-23-209
130-23-210A
SITE
130-23-216
130-23-211A
130-23-217A
K
L

Fig. 2



parking calculations

PARKING REQUIRED:
- -RESIDENTIAL DWELLING UNITS: 3 THREE-BEDROOM UNITS= 0 PARKING
- -REQUIRED PURSUANT TO SECTION 9.104.H.3.D. OF THE ZONING ORDINANCE.
- -OFFICE AND RETAIL SPACE: 12,986 SQUARE FEET- 2,000 (SQUARE FOOT
- -WAIVER PER SECTION 9.104.H.3.C.III OF THE ZONING ORDINANCE) / 350 = 31.39
- -TOTAL PARKING REQUIRED: 0 + 31.39= 31.39 OR 32 SPACES
- -ACCESSIBLE PARKING REQUIRED = 5 * 0.04 = 0.24 OR 1SPACE

PARKING PROVIDED:
- -TOTAL PARKING PROVIDED: 3 GARAGE SPACES + 53 IMPROVEMENT DISTRICT
- -CREDITS (12 OF WHICH ARE A LEASE AGREEMENT) = 56 SPACES
- -TOTAL ACCESSIBLE PARKING PROVIDED= 1 SPACE
- -BICYCLE PARKING REQUIRED: 2 SPACES (1 RUNG)
- -BICYCLE PARKING PROVIDED: 8 SPACES (4 RUNGS)

applicable codes

2012 INTERNATIONAL BUILDING CODE
2012 INTERNATIONAL MECHANICAL CODE
2012 INTERNATIONAL FIRE CODE
2012 INTERNATIONAL ENERGY CONSERVATION CODE
2012 INTERNATIONAL GREEN CONSTRUCTION CODE
2011 NATIONAL ELECTRIC CODE
2012 INTERNATIONAL PLUMBING CODE
2012 INTERNATIONAL EXISTING BUILDING CODE
2009 INTERNATIONAL CODE COUNCIL / AMERICAN NATIONAL STANDARDS INSTITUTE A117.1 ACCESSIBILITY CODE
2010 AMERICANS WITH DISABILITIES ACT ACESSIBILITY GUIDELINES

project summary

THIS PROJECT CONSISTS OF A NEW THREE STORY MIXED USE STRUCTURE W/ GROUND LEVEL RETAIL, SECOND LEVEL OFFICE, AND THIRD FLOOR RESIDENTIAL. GARAGE FOR THE RESIDENTIAL UNIT PROVIDED OFF THE ALLEY ON THE GROUND FLOOR. A LADDER ON THE THIRD FLOOR ENCLOSED FROM VIEW TO PROVIDE ACCESS TO ROOF.

legal description

LOTS 72 AND 73, INDIAN PLAZA PROPERTIES, ACCORDING TO BOOK 76 OF MAPS, PAGE 20, RECORDS OF MARICOPA COUNTY, AZ

building data

PROPERTY ADDRESS: 7363 E. SCOTTSDALE MALL, SCOTTSDALE, AZ 85251

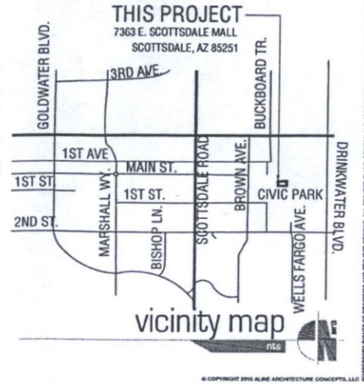
EXISTING ZONING	C-2 DO
PROPOSED ZONING	DOWNTOWN CIVIC CENTER TYPE 2
FIRST LEVEL AREA (RETAIL)	3,500 S.F.
FIRST LEVEL MEZZANINE (RETAIL)	2,000 S.F.
FIRST LEVEL GARAGES + CORRIDOR (RES.)	1,496 S.F.
SECOND LEVEL AREA (OFFICE)	5,388 S.F.
THIRD LEVEL AREA (RES.)	3,531 S.F.
FOURTH LEVEL AREA W/ MEZZANINE (RES.)	3,125 S.F.
INTERIOR BUILDING AREA TOTAL	**19,040 S.F.**
EXTERIOR BUILDING AREA TOTAL (PATIOS + CIRC.)	**7,508 S.F.**
BUILDING AREA TOTAL	**26,548 S.F.**
OCCUPANCY TYPE	M (RETAIL), B (BUSINESS), R-2 (MULTI-FAMILY)
CONSTRUCTION TYPE	II-A (SPRINKLERED)
MAXIMUM HEIGHT	66'-0" (MECHANICAL INCLUDED)
NUMBER OF DWELLING UNITS	3 UNITS
MAXIMUM ALLOWED DENSITY	50 UNITS / ACRE
MAXIMUM PROPOSED DENSITY	22 UNITS / ACRE

site data

APN	130-23-120A
SITE AREA (NET)	6,114 S.F. OR .14 ACRES
SITE AREA (GROSS)	6,359 S.F. OR .15 ACRES
GFAR ALLOWED	BASE: (1.3 X 6391.2) = 8308.56 S.F.
	RESIDENTIAL BONUS: (0.5 X 6163.5) = 3081.75 S.F.
	TOTAL: 11,504.16 S.F.
GFAR PROVIDED	11,000 S.F.
OPEN SPACE	(0%) 0 S.F.
PARKING REQUIRED	DWELLING UNIT #1 (3 BDRMS.): 0 SPACES
	DWELLING UNIT #2 (3 BDRMS.): 0 SPACES
	DWELLING UNIT #3 (3 BDRMS.): 0 SPACES
	OFFICE + RETAIL: (12986-2000 / 350) = 31.39 SPACES
	TOTAL = 32 SPACES
	ACCESSIBLE PARKING REQ'D: (5 X .04) = 1 SPACE
PARKING PROV'D	53 IMPROVEMENT DISTRICT CREDITS (12 LEASED)
	3 ON SITE GARAGE SPACES
	TOTAL: 56 (1 ADA)
BIKE PARKING REQUIRED	2 SPACES (1 RUNG)
BIKE PARKING PROVIDED	**8 SPACES (4 RUNGS)**

general limitations

CONSTRUCTION TYPE	III-A (SPRINKLERED)
ALLOWABLE AREA	55,500 SQ. FT.
BUILDING TOTAL AREA (AIR CONDITIONED)	19,521 SQ. FT.
BUILDING TOTAL AREA	26,109 SQ. FT.
ALLOWABLE HEIGHT	4 STORY
ACTUAL HEIGHT	4 STORY



architecture + concepts
aline
7363 east scottsdale mall
scottsdale, az 85251

2nd drb submittal

china mist mixed use

revisions
09.14.16 city comments

date issued: september 14, 2016 c.o.s. # 862-PA-2015
project # 1503c c.o.s. # 33-dr-2016

site plan

sk-1.0

Fig. 3

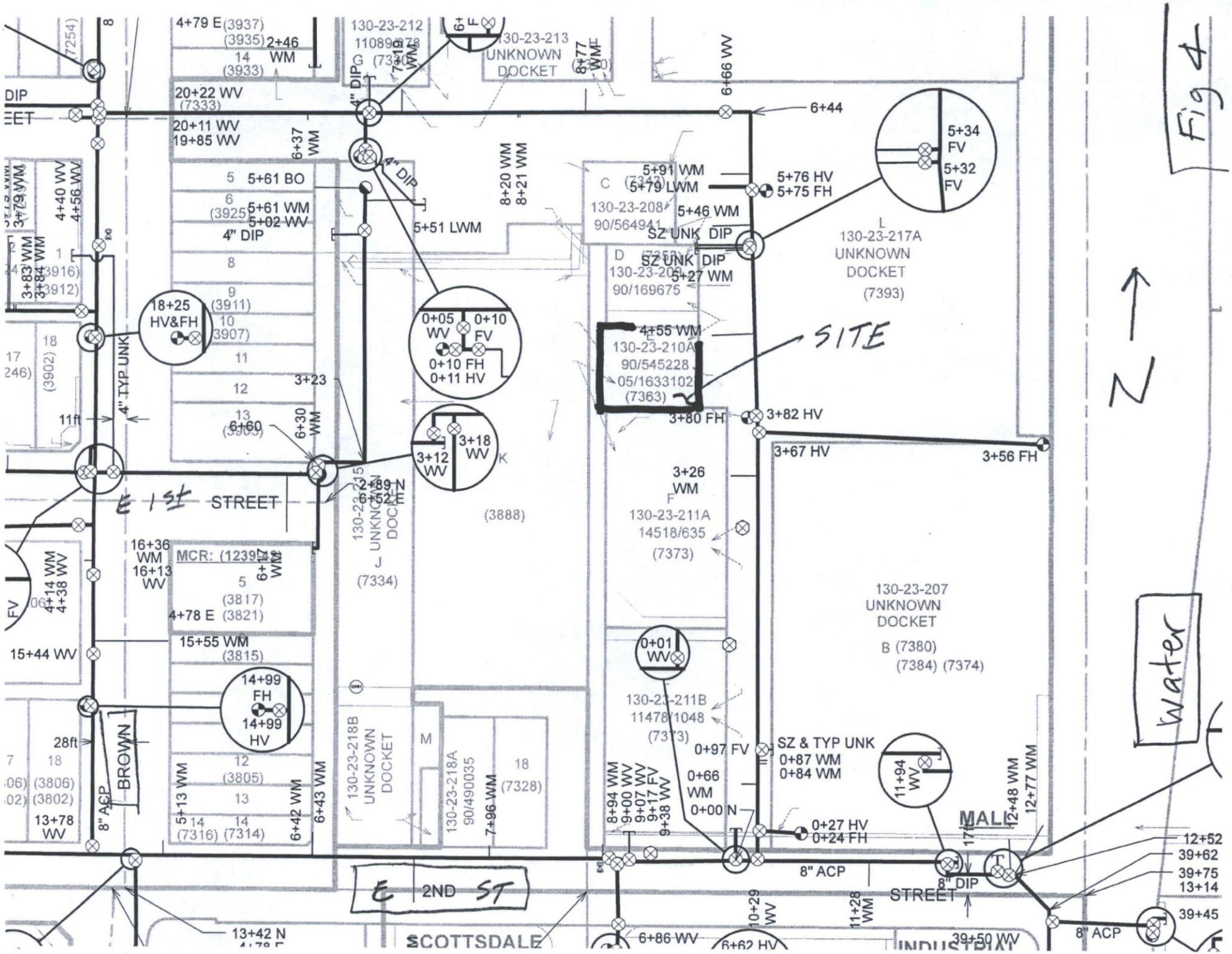


Fig 4
SITE
N
E 1st STREET
E 2ND ST
SCOTTSDALE
STREET
MALL
Water
130-23-207
UNKNOWN
DOCKET
B (7380)
(7384) (7374)
130-23-217A
UNKNOWN
DOCKET
(7393)
130-23-208
90/564941
130-23-209
90/169675
130-23-210A
90/545228
05/1633102
(7363)
130-23-211A
14518/635
(7373)
130-23-211B
11478/1048
(7373)
130-23-212
110896
130-23-213
UNKNOWN
DOCKET
130-23-215
UNKNOWN
DOCKET
(7334)
130-23-218A
90/490035
130-23-218B
UNKNOWN
DOCKET
(3888)
MCR: (1239
4+79 E (3937)
(3935) 2+46
14 (3933)
20+22 WV
(7333)
20+11 WV
19+85 WV
6+37 WM
4" DIP
5+61 BO
5+61 WM
5+02 WV
4" DIP
5+51 LWM
8+20 WM
8+21 WM
5+91 WM
5+79 LWM
5+46 WM
SZ UNK DIP
SZ UNK DIP
5+27 WM
6+66 WV
6+44
5+34
FV
5+32
FV
5+76 HV
5+75 FH
4+55 WM
3+80 FH
3+82 HV
3+67 HV
3+56 FH
3+26
WM
3+23
6+30
WM
6+60
3+18
WV
3+12
WV
2+89 N
6+52 E
0+05
WV
0+10
FV
0+10 FH
0+11 HV
18+25
HV&FH
4" TYP UNK
11ft
3+79 WM
4+40 WV
4+56 WV
3+83 WM
3+84 WM
4+14 WM
4+38 WV
16+36
WM
16+13
WV
4+78 E (3821)
15+55 WM
(3815)
15+44 WV
14+99
FH
14+99
HV
28ft
BROWN
8" ACP
13+78
WV
5+13 WM
6+42 WM
6+43 WM
7+96 WM
0+01
WV
0+97 FV
SZ & TYP UNK
0+87 WM
0+84 WM
0+66
WM
0+00 N
0+27 HV
0+24 FH
11+94
WV
8+94 WM
9+00 WV
9+07 WV
9+17 FV
9+38 WV
12+48 WM
12+77 WM
12+52
39+62
39+75
13+14
39+45
8" ACP
8" DIP
10+29
WV
11+28
WM
6+86 WV
6+62 HV
39+50 WV
13+42 N

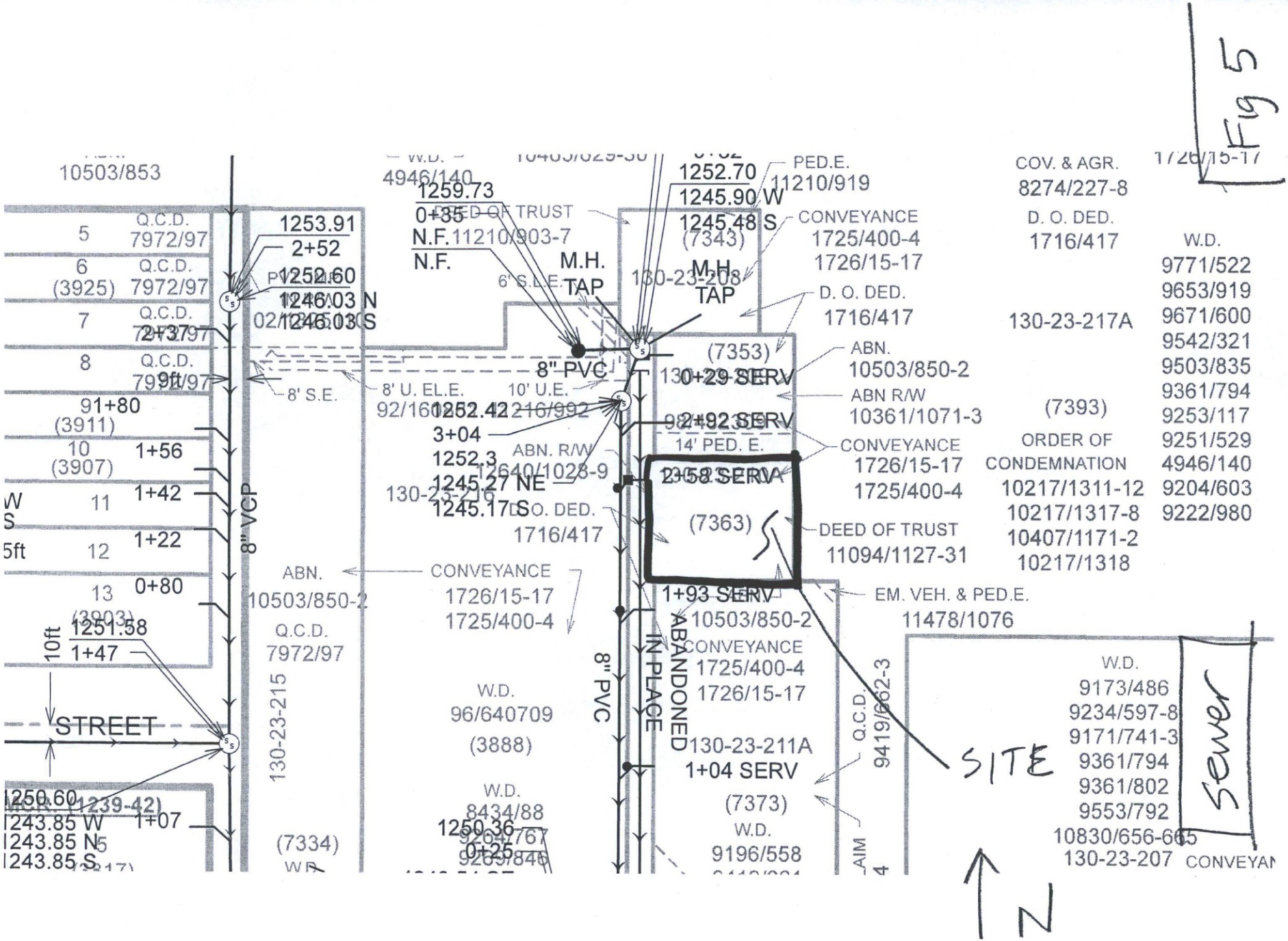


Fig 5
10503/853
5
Q.C.D.
7972/97
6
(3925)
7
8
9ft
91+80
(3911)
10
(3907)
1+56
11
1+42
W
S
5ft
12
1+22
13
0+80
(3903)
10ft
1251.58
1+47
STREET
1250.60
1243.85 W
1243.85 N
1243.85 S
1+07
(7334)
1253.91
2+52
1252.60
1246.03 N
1246.03 S
2+37
8" VCP
8' S.E.
130-23-215
W.D.
4946/140
1259.73
0+35
N.F.
N.F.
DEED OF TRUST
11210/903-7
6' S.L.E.
M.H.
TAP
8" PVC
8' U. EL.E.
10' U.E.
92/160
1252.42
3+04
1252.3
1245.27 NE
1245.17 S
ABN. R/W
12640/1028-9
130-23-216
D. O. DED.
1716/417
ABN.
10503/850-2
CONVEYANCE
1726/15-17
1725/400-4
Q.C.D.
7972/97
W.D.
96/640709
(3888)
W.D.
8434/88
9264/767
9269/846
1250.36
0+25
8" PVC
IN PLACE
ABANDONED
1252.70
1245.90 W
1245.48 S
(7343)
M.H.
TAP
130-23-208
PED.E.
11210/919
CONVEYANCE
1725/400-4
1726/15-17
D. O. DED.
1716/417
(7353)
0+29 SERV
ABN.
10503/850-2
ABN R/W
10361/1071-3
92+92 SERV
14' PED. E.
CONVEYANCE
1726/15-17
1725/400-4
2+58 SERV
(7363)
DEED OF TRUST
11094/1127-31
1+93 SERV
10503/850-2
CONVEYANCE
1725/400-4
1726/15-17
130-23-211A
1+04 SERV
(7373)
W.D.
9196/558
Q.C.D.
9419/662-3
EM. VEH. & PED.E.
11478/1076
SITE
COV. & AGR.
8274/227-8
D. O. DED.
1716/417
130-23-217A
(7393)
ORDER OF
CONDEMNATION
10217/1311-12
10217/1317-8
10407/1171-2
10217/1318
W.D.
9771/522
9653/919
9671/600
9542/321
9503/835
9361/794
9253/117
9251/529
4946/140
9204/603
9222/980
W.D.
9173/486
9234/597-8
9171/741-3
9361/794
9361/802
9553/792
10830/656-665
130-23-207
sewer
N

Appendix

FIXTURE UNIT CALCULATIONS

MARK	DESCRIPTION	QUANTITY	WASTE		WATER	
			DFU	TOTAL DFU	WSFU	TOTAL WSFU
DF	DRINKING FOUNTAIN	6	0.5	3.0	0.3	1.5
SK	SINK	20	2.0	40.0	2.0	40.0
CW	COMMERCIAL CLOTHES WASHER	3	3.0	9.0	4.0	12.0
LAV	LAVATORY	15	1.0	15.0	2.0	30.0
WC	WATER CLOSET (FLUSH TANK)	14	4.0	56.0	5.0	70.0
MS	MOP SINK	3	2.0	6.0	3.0	9.0
MS	Mop Sink	2	2.0	4.0	3.0	6.0
LAV	Lavatory	8	1.0	8.0	2.0	16.0
WC	Water closet (Flush Tank)	8	4.0	32.0	5.0	40.0
TB	Ice Machine	2	0.5	1.0	0.3	0.5
HS	Hand Sink	4	2.0	8.0	2.0	8.0
SR	Soda Rack	2	0.5	1.0	0.3	0.5
PS	Prep Sink	2	6.0	12.0	3.0	6.0
DW	Dishwashing Machine	2	2.0	4.0	1.4	2.8
SK1	3 Compartment Sink	2	9.0	18.0	3.0	6.0
SD	SODA DISPENSER	2	0.0	0.0	0.3	0.5
IM	Ice Machine	2	0.5	1.0	0.3	0.5
HB	HOSE BIBB	4	0.0	0.0	2.5	10.0
DW	DISHWASHING MACHINE	3	2.0	6.0	1.4	4.2
KS	KITCHEN SINK	3	2.0	6.0	4.0	12.0
SHR	SHOWER	8	2.0	16.0	4.0	32.0
CW	RESIDENTIAL CLOTHES WASHER	1	2.0	2.0	3.0	3.0
TUB	BATHTUB	1	2.0	2.0	4.0	4.0
TOTAL				250.0		314.5

5. Show in calculations that the minimum water pressure requirements are met at the highest proposed finish floor elevation (with and without fire flow).

AVERAGE DAY WATER DEMANDS				
Land Use	Inside Use	Outside Use	Total Use	
Residential Demand per Dwelling Unit:				
< 2 DU/ac	208.9	276.7	485.6	per unit
2 – 2.9 DU/ac	193.7	276.7	470.4	per unit
3 – 7.9 DU/ac	175.9	72.3	248.2	per unit
8 – 11.9 DU/ac	155.3	72.3	227.6	per unit
12 – 22 DU/ac	155.3	72.3	227.6	per unit
High Density Condominium	155.3	30	185.3	per unit
Resort Hotel (includes site amenities)	401.7	44.6	446.3	per room
Service and Employment:				
Restaurant	1.2	0.1	1.3	per sq.ft.
Commercial/Retail	0.7	0.1	0.8	per sq.ft.
Commercial High Rise	0.5	0.1	0.6	per sq.ft.
Office	0.5	0.1	0.6	per sq.ft.
Institutional	670	670	1340	per acre
Industrial	873	154	1027	per acre
Research and Development	1092	192	1284	per acre
Special Use Areas:				
Natural Area Open Space	0	0	0	per acre
Developed Open Space – Parks	0	1786	1786	per acre
Developed Open Space – Golf Course	0	4285	4285	per acre

FIGURE 6.1-2 AVERAGE DAY WATER DEMANDS IN GALLONS PER DAY

6. Pipes and nodes - ID, demand, pressure, elevation, hydraulic grades, length, status, diameter, velocity, headloss / 1000 ft.
7. Reservoirs and pumps - ID, elevation, hydraulic grade, inflow, outflow.
8. PRVs - ID, elevation, upstream and downstream hydraulic grade.
9. Include diagrams clearly showing all water pipe and node references.
10. Pay particular attention to water demand factors used for restaurants or specialty developments.
11. Use scour analysis where surface flows exceed 500 cubic feet per second (cfs).

F. Summary

1. Provide a summary of the proposed water improvements stating that all the city's design standards and policies have been met or indicate any variance or exception. Note why the developer is requesting any variance or exception.
2. Include a brief project schedule indicating the proposed start and completion of the developments improvements.

Disc Meter Size	Safe Max. Capacity (gal./min.)	Safe Max. Capacity (gal./day)	Recommended Max. Capacity (gal./min.)	Recommended Max. Capacity (gal./day)
1/2	15	21,600	8	10,800
5/8	20	28,800	10	14,400
3/4	30	43,200	15	21,600
1	50	72,000	25	36,000
1 1/2	100	144,000	50	72,000
2	160	230,400	80	115,200
Compound Meter Size	**Safe Max. Capacity (gal./min.)**	**Safe Max. Capacity (gal./day)**	**Recommended Max. Capacity (gal./min.)**	**Recommended Max. Capacity (gal./day)**
3	320	460,800	160	230,400
4	500	720,000	250	360,000
6	1,000	1,440,000	500	720,000
Turbine Meter Size	**Safe Max. Capacity (gal./min.)**	**Safe Max. Capacity (gal./day)**	**Recommended Max. Capacity (gal./min.)**	**Recommended Max. Capacity (gal./day)**
3	350	504,000	180	259,200
4	1,000	1,440,000	500	720,000
6	2,000	2,880,000	1,000	1,440,000

FIGURE 6.1-4 METER CAPACITIES

6-1.417

BACKFLOW PREVENTION & CROSS CONNECTION CONTROL

All metered services within the city, other than single family residential, require the installation of an approved backflow prevention device immediately adjacent to the meter on private property unless approved otherwise by the Water Resources Department. To determine the type of backflow protection required for a specific use, see Scottsdale Revised Code, Chapter 49, Division 3 Backflow Prevention and Cross Connection Control. The back flow prevention valve and the service line will be of equal size, unless the engineer submits calculations with final plans demonstrating that losses through a smaller device do not adversely effect water pressure to the building.

For installation requirements see the current version of the COS Standard Detail No. 2351 through 2356, www.ScottsdaleAZ.gov/design/COSMAGSupp. The backflow prevention device is to be owned and maintained by the property owner.

1. All backflow prevention devices shall be shown to scale and stationed on the plans. The location of backflow preventers and the adjacent meter shall take into consideration opportunities to screen with landscaping or consolidate into common areas providing utility service to a building. Generally, backflow preventers shall not be located at:
   a. Entrances to buildings unless appropriately screened.
   b. At locations where they interfere with opening car doors.
   c. Areas of high visibility
2. Every effort must be made to locate the water meter and vault in an area that can accommodate a properly installed backflow assembly.

4. The water line and sanitary sewer line will run parallel to each other, with 9 feet of separation to the pipes' centerline in order to maintain 6 feet of clearance at manholes.
5. Deflections in the sanitary sewer line shall be designed to nominal fitting angles within standard tolerances and will occur at the same locations where the water line is deflected.

See Section 6-1.302 for related water system criteria.

DESIGN FLOWS

7-1.403

A. Residential

Sanitary sewer lines 8 to 12 inches in diameter will be designed using 100 gallons per capita per day (gpcpd) and a peaking factor of 4.

Sanitary sewer lines larger than 12 inches in diameter will be designed using 105 gpcpd and a peaking factor developed from "Harmon's Formula":

$$Q_{max} = Q_{avg} [1+14 / (4+P1/2)]$$

$$P = Population / 1,000$$

Residential densities are to assume 2.5 persons per dwelling unit, apartment or town home.

B. Commercial and Industrial

Wastewater flows for uses other than those listed below shall be based upon known regional or accepted engineering reference sources approved by the Water Resources Department.

AVERAGE DAY SEWER DEMANDS		
Land Use	**Demand**	**Peaking Factor**
Commercial/Retail	0.5 per sq. ft.	3
Office	0.4 per sq. ft.	3
Restaurant	1.2 per sq. ft.	6
High Density Condominium	140 per room	4.5
Resort Hotel (includes site amenities)	380 per room	4.5
School: without cafeteria	30 per student	6
School: with cafeteria	50 per student	6
Cultural	0.1 per sq. ft.	3

FIGURE 7.1-2 AVERAGE DAY SEWER DEMAND IN GALLONS

HYDRAULIC DESIGN

7-1.404

No public sanitary sewer lines will be less than 8 inches in diameter unless permission is received in writing from the Water Resources Department.

Sanitary sewer lines should be designed and constructed to give mean full flow velocities of not less than 2.5 fps, based upon Manning's Formula, using an "*n*" value of 0.013.

Conversely, to prevent abrasion and erosion of the pipe material, the maximum velocity will be limited to 10 fps at estimated peak flow. Where velocities exceed this maximum figure, the engineer will be required to submit a hydraulic analysis along with construction recommendations to the Water Resources Department for consideration. In no case will velocities greater than 15 fps be allowed.

Actual velocities will be analyzed under peak flow conditions for each reach of pipe.

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APPENDIX B

FIRE-FLOW REQUIREMENTS FOR BUILDINGS

SECTION B101
GENERAL

B101.1 Scope. The procedure for determining fire-flow requirements for buildings or portions of buildings hereafter constructed shall be in accordance with this appendix. This appendix does not apply to structures other than buildings.

SECTION B102
DEFINITIONS

B102.1 Definitions. For the purpose of this appendix, certain terms are defined as follows:

FIRE-FLOW. The flow rate of a water supply, measured at 20 pounds per square inch (psi) (138 kPa) residual pressure, that is available for fire fighting.

FIRE-FLOW CALCULATION AREA. The floor area, in square feet (m^2), used to determine the required fire flow.

SECTION B103
MODIFICATIONS

B103.1 Decreases. The Fire Marshal is authorized to reduce the fire-flow requirements for isolated buildings or a group of buildings in rural areas or small communities where the development of full fire-flow requirements is impractical.

B103.2 Increases. The Fire Marshal is authorized to increase the fire-flow requirements where conditions indicate an unusual susceptibility to group fires or conflagrations. An increase shall not be more than twice that required for the building under consideration.

B103.3 Areas without water supply systems. For information regarding water supplies for fire-fighting purposes in rural and suburban areas in which adequate and reliable water supply systems do not exist, the Fire Marshal is authorized to utilize NFPA 1142 or the *International Wildland-Urban Interface Code.*

B103.4 Outside storage use. The Fire Marshal is authorized to require a fire-flow of no less than 2,000 gpm (7571 L/min) where combustible materials, *hazardous materials* and other items are stored or used outside.

SECTION B104
FIRE-FLOW CALCULATION AREA

B104.1 General. The fire-flow calculation area shall be the total floor area of all floor levels within the *exterior walls*, and under the horizontal projections of the roof of a building, except as modified in Section B104.3.

B104.2 Area separation. Portions of buildings which are separated by *fire walls* without openings, constructed in accordance with the *International Building Code*, are allowed to be considered as separate fire-flow calculation areas.

B104.3 Type IA and Type IB construction. The fire-flow calculation area of buildings constructed of Type IA and Type IB construction shall be the area of the three largest successive floors.

Exception: Fire-flow calculation area for open parking garages shall be determined by the area of the largest floor.

SECTION B105
FIRE-FLOW REQUIREMENTS FOR BUILDINGS

B105.1 One- and two-family dwellings. The minimum fire-flow and flow duration requirements for one- and two-family *dwellings* having a fire-flow calculation area that does not exceed 3,600 square feet (344.5 m^2) shall be 1,000 gallons per minute (3785.4 L/min) for 1 hour. Fire-flow and flow duration for *dwellings* having a fire-flow calculation area in excess of 3,600 square feet (344.5 m^2) shall not be less than that specified in Table B105.1.

Exception: A reduction in required fire-flow of 50 percent, as *approved*, is allowed when the building is equipped with an *approved automatic sprinkler system.*

B105.2 Buildings other than one- and two-family dwellings. The minimum fire-flow and flow duration for buildings other than one- and two-family *dwellings* shall be as specified in Table B105.1.

Exception: A reduction in required fire-flow of up to 50 percent, as *approved*, is allowed when the building is provided with an *approved* NFPA 13 *automatic sprinkler system* installed in accordance with Section 903.3.1.1. The resulting fire-flow shall not be less than 1,500 gallons per minute (5678 L/min) for the prescribed duration as specified in Table B105.1. No reductions are allowed for NFPA 13D or 13R systems other than Group R-3 single-family homes.

SECTION B106
REFERENCED STANDARDS

ICC	IBC—12	International Building Code	B104.2, Table B105.1
ICC	IWUIC—12	International Wildland-Urban Interface Code	B103.3
NFPA	1142—12	Standard on Water Supplies for Suburban and Rural Fire Fighting	B103.3

B106.1 Additional requirements. See Chapter 5 of this code for additional requirements.

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TABLE B105.1
MINIMUM REQUIRED FIRE-FLOW AND FLOW DURATION FOR BUILDINGS

FIRE-FLOW CALCULATION AREA (square feet)					FIRE-FLOW (gallons per minute)[b]	FLOW DURATION (hours)
Type IA and IB[a]	Type IIA and IIIA[a]	Type IV and V-A[a]	Type IIB and IIIB[a]	Type V-B[a]		
0-22,700	0-12,700	0-8,200	0-5,900	0-3,600	1,500	2
22,701-30,200	12,701-17,000	8,201-10,900	5,901-7,900	3,601-4,800	1,750	
30,201-38,700	17,001-21,800	10,901-12,900	7,901-9,800	4,801-6,200	2,000	
38,701-48,300	21,801-24,200	12,901-17,400	9,801-12,600	6,201-7,700	2,250	
48,301-59,000	24,201-33,200	17,401-21,300	12,601-15,400	7,701-9,400	2,500	
59,001-70,900	33,201-39,700	21,301-25,500	15,401-18,400	9,401-11,300	2,750	
70,901-83,700	39,701-47,100	25,501-30,100	18,401-21,800	11,301-13,400	3,000	3
83,701-97,700	47,101-54,900	30,101-35,200	21,801-25,900	13,401-15,600	3,250	
97,701-112,700	54,901-63,400	35,201-40,600	25,901-29,300	15,601-18,000	3,500	
112,701-128,700	63,401-72,400	40,601-46,400	29,301-33,500	18,001-20,600	3,750	
128,701-145,900	72,401-82,100	46,401-52,500	33,501-37,900	20,601-23,300	4,000	4
145,901-164,200	82,101-92,400	52,501-59,100	37,901-42,700	23,301-26,300	4,250	
164,201-183,400	92,401-103,100	59,101-66,000	42,701-47,700	26,301-29,300	4,500	
183,401-203,700	103,101-114,600	66,001-73,300	47,701-53,000	29,301-32,600	4,750	
203,701-225,200	114,601-126,700	73,301-81,100	53,001-58,600	32,601-36,000	5,000	
225,201-247,700	126,701-139,400	81,101-89,200	58,601-65,400	36,001-39,600	5,250	
247,701-271,200	139,401-152,600	89,201-97,700	65,401-70,600	39,601-43,400	5,500	
271,201-295,900	152,601-166,500	97,701-106,500	70,601-77,000	43,401-47,400	5,750	
295,901-Greater	166,501-Greater	106,501-115,800	77,001-83,700	47,401-51,500	6,000	
—	—	115,801-125,500	83,701-90,600	51,501-55,700	6,250	
—	—	125,501-135,500	90,601-97,900	55,701-60,200	6,500	
—	—	135,501-145,800	97,901-106,800	60,201-64,800	6,750	
—	—	145,801-156,700	106,801-113,200	64,801-69,600	7,000	
—	—	156,701-167,900	113,201-121,300	69,601-74,600	7,250	
—	—	167,901-179,400	121,301-129,600	74,601-79,800	7,500	
—	—	179,401-191,400	129,601-138,300	79,801-85,100	7,750	
—	—	191,401-Greater	138,301-Greater	85,101-Greater	8,000	

For SI: 1 square foot = 0.0929 m^2, 1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895 kPa.

a. Types of construction are based on the *International Building Code*.

b. Measured at 20 psi residual pressure.