

Exterior Building Color & Material Samples (Photo)
Color Drawdowns
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TIMA
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Archaeological Resources
Airport Vicinity Development Checklist
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Parking Master Plan
Water Study
Wastewater Study
Stormwater Waiver Application

Memo: Scottsdale Mall Rezoning – Trip Generation Comparison

Date: 01/22/16
 TO: City of Scottsdale
 FROM: Eric Maceyko, P.E., PTOE
 Bryan Martin, P.E.

INTRODUCTION

Clayton Companies is planning a new mixed-use retail / office / residential development on an existing occupied lot located within the Scottsdale Mall generally located on the northwest corner of Drinkwater Boulevard and 2nd Street in the City of Scottsdale. The new proposed development includes 5,500 square feet of retail use, 5,500 square feet of office use, two (2) dwelling units with a total area of 3,440 square feet, and one (1) dwelling unit with a total area of 3,000 square feet on a gross parcel area of 0.15 acres.

RESULTS

Table 1 provides the total anticipated trip generation for the proposed mixed-use development during the day and peak hours of traffic for a typical weekday.

Table 1: Total Trip Generation – Proposed Development

Time Period	Day			AM Peak Hour			PM Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Weekday	255	253	508	29	5	34	23	58	81

The proposed mixed-use development is anticipated to generate less daily traffic and evening peak hour entering traffic than the existing development for the typical weekday. The proposed mixed-use development is anticipated to generate more morning peak hour traffic and evening exiting peak hour traffic than the existing development for the typical weekday.

Figure 1 provides an aerial photograph of the property vicinity and the adjacent streets. The property lies within the existing Scottsdale Mall.



Figure 1: Vicinity Map

Figure 2 provides the proposed site plan. The building will contain four stories of development.

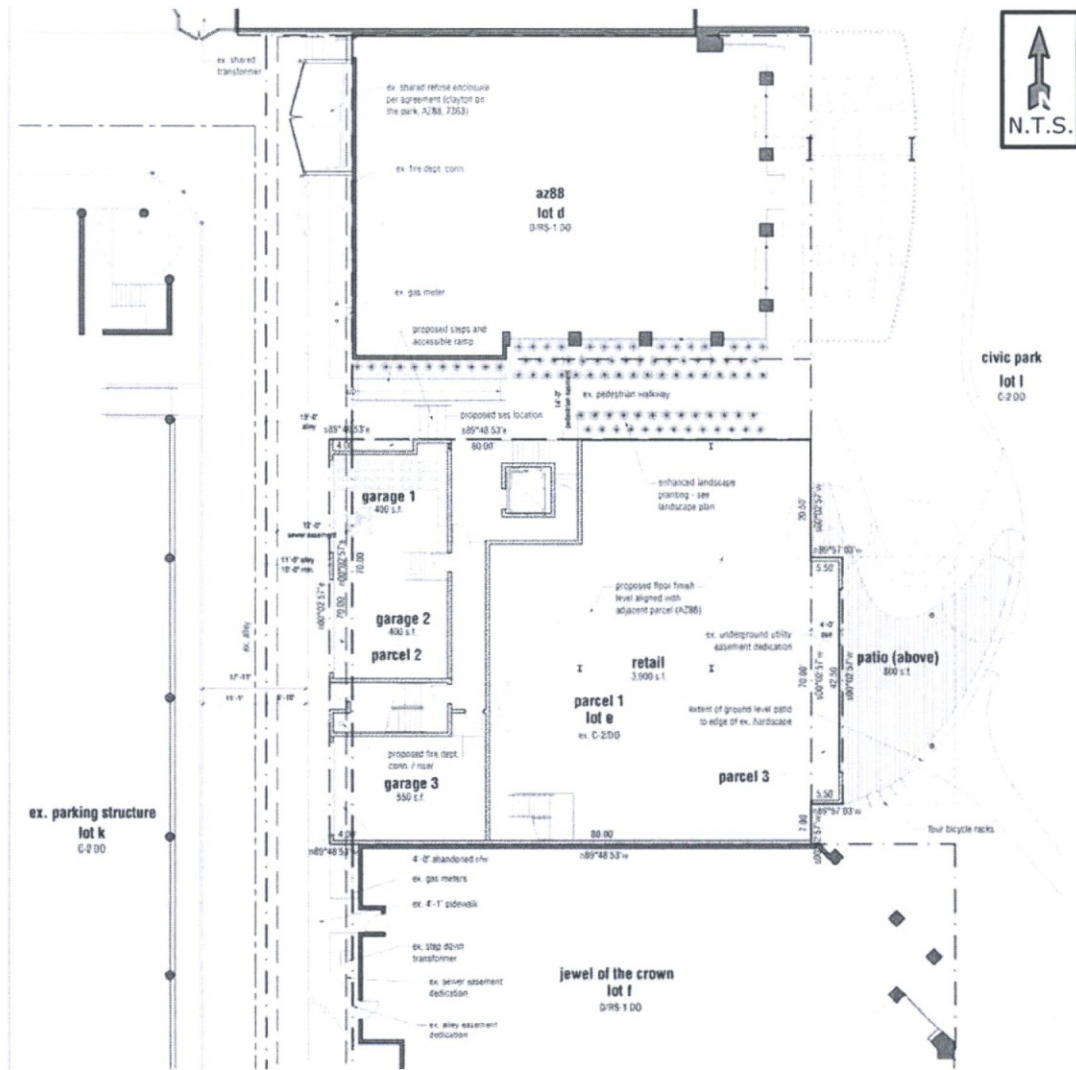


Figure 2: Proposed Site Plan

TRIP GENERATION – EXISTING DEVELOPMENT

The estimated trip generation was determined through the procedures and data contained within the Institute of Transportation Engineers (ITE) Trip Generation, 9th Edition, published in 2012. This document provides traffic volume data from existing developments throughout North America that can be utilized to estimate vehicle trips that might be generated from developments. The traffic data are provided for 172 different categories. The estimated traffic volume is dependent upon independent variables defined by the characteristics and size of each land use category.

The existing site is zoned for a restaurant use with 6,884 square feet of building area. ITE Land Use Code 931, Quality Restaurant, was utilized as this is most consistent with the type of restaurant likely to occupy this space. The independent variable available for this land use category to predict trips is 1,000 Square Feet of Gross Floor Area. Only average rates are provided in Trip Generation for this land use.

Appendix A provides the complete results of these calculations. **Table 2** summarizes the total trip generation for the existing development during the day and peak hours of traffic for a typical weekday.

Table 2: Total Trip Generation – Existing Development

Time Period	Day			AM Peak Hour			PM Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Weekday	310	309	619	3	3	6	35	17	52

TRIP GENERATION – PROPOSED DEVELOPMENT

Trip Generation and the previously detailed methodology were also utilized to estimate the potential trips generated by the proposed development. There is considerable data for retail and office developments. The exact nature of the retail / office development is unknown. Therefore, the most probable land use was utilized based on the size and location of the project. ITE Land Use Code 826, Specialty Retail, was utilized for the retail uses. ITE Land Use Code 715, Single Tenant Office Building, was utilized for the office uses. The independent variable available for these land use categories to predict trips is 1,000 Square Feet of Gross Floor Area. Both equations and average rates are provided in Trip Generation. Both methods were calculated separately for each time period. The largest volumes considering both calculation methods were utilized for the estimate of the weekday generated traffic. It should be noted that some of the values produced by the equations were significantly higher than the average rates and what would be expected based on the clusters of data points near a development of this size. To provide a conservative estimate these values were still utilized.

There is also considerable data for residential developments. For this study, ITE Land Use Code 230, Residential Condominium/Townhouse, was utilized. Three (3) independent variables – dwelling unit, vehicle, and person – are available for the ITE Land Use Codes to predict trips. The most easily determined independent variable for a typical residential project is the number of dwelling units. Also, both equations and average rates are provided in Trip Generation. Both methods were calculated separately for each time period. The largest volumes considering both calculation methods were utilized for the estimate of the weekday generated traffic.

Appendix B provides the complete results of these calculations. **Table 3** summarizes the total trip generation for the proposed development during the day and peak hours of traffic for a typical weekday.

Table 3: Total Trip Generation – Proposed Development

Time Period	Day			AM Peak Hour			PM Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Weekday	255	253	508	29	5	34	23	58	81

TRIP GENERATION COMPARISON

Table 4 provides a comparison of the total trip generation for the existing and proposed development during the day and peak hours of traffic for a typical weekday.

Table 4: Trip Generation Comparison

TIME PERIOD	PROPOSED	EXISTING	COMPARISON
WEEKDAY			
Day	508	619	-111
AM Peak Hour Entering	29	3	26
AM Peak Hour Exiting	5	3	2
PM Peak Hour Entering	23	35	-12
PM Peak Hour Exiting	58	17	41

The proposed mixed-use development is anticipated to generate less daily traffic and evening peak hour entering traffic than the existing development for the typical weekday. The proposed mixed-use development is anticipated to generate more morning peak hour traffic and evening exiting peak hour traffic than the existing development for the typical weekday.

Please contact me at (480) 503-2250, extension 125 if you have any questions or would like to discuss this memorandum.

ATTACHMENTS:

- A. Existing Development Trip Generation
- B. Proposed Development Trip Generation



Expires: 6/30/2014

ATTACHMENT A
EXISTING DEVELOPMENT TRIP GENERATION

PROJECT	SCOTTSDALE MALL REZONING			
PARCEL	EXISTING DEVELOPMENT			
ITE LAND USE CATEGORY AND CODE	QUALITY RESTAURANT - 931			
INDEPENDENT VARIABLE	1,000 SQUARE FEET			
SIZE	6.884			
		TRIPS		
		ENTERING	EXITING	TOTAL
WEEKDAY DAILY		50%	50%	
NUMBER OF STUDIES	15			
AVERAGE SIZE	9			
MINIMUM RATE	33.41	115	115	230
AVERAGE RATE	89.95	310	309	619
MAXIMUM RATE	139.80	481	481	962
STANDARD DEVIATION	36.81			
EQUATION: NOT PROVIDED	NA	NA	NA	NA
LARGEST OF AVERAGE OR EQUATION		310	309	619
AM PEAK HOUR ADJACENT STREET		50%	50%	
NUMBER OF STUDIES	11			
AVERAGE SIZE	9			
MINIMUM RATE	0.25	1	1	2
AVERAGE RATE	0.81	3	3	6
MAXIMUM RATE	1.60	6	5	11
STANDARD DEVIATION	0.93			
EQUATION: NOT PROVIDED	NA	NA	NA	NA
LARGEST OF AVERAGE OR EQUATION		3	3	6
AM PEAK HOUR GENERATOR		82%	18%	
NUMBER OF STUDIES	14			
AVERAGE SIZE	9			
MINIMUM RATE	0.87	5	1	6
AVERAGE RATE	5.57	31	7	38
MAXIMUM RATE	10.37	58	13	71
STANDARD DEVIATION	3.79			
EQUATION: NOT PROVIDED	NA	NA	NA	NA
LARGEST OF AVERAGE OR EQUATION		31	7	38
PM PEAK HOUR ADJACENT STREET		67%	33%	
NUMBER OF STUDIES	24			
AVERAGE SIZE	9			
MINIMUM RATE	2.42	11	6	17
AVERAGE RATE	7.49	35	17	52
MAXIMUM RATE	18.64	86	42	128
STANDARD DEVIATION	4.89			
EQUATION: NOT PROVIDED	NA	NA	NA	NA
LARGEST OF AVERAGE OR EQUATION		35	17	52
PM PEAK HOUR GENERATOR		62%	38%	
NUMBER OF STUDIES	16			
AVERAGE SIZE	9			
MINIMUM RATE	3.24	14	8	22
AVERAGE RATE	9.02	38	24	62
MAXIMUM RATE	15.89	68	41	109
STANDARD DEVIATION	4.55			
EQUATION: NOT PROVIDED	NA	NA	NA	NA
LARGEST OF AVERAGE OR EQUATION		38	24	62

ATTACHMENT B
PROPOSED DEVELOPMENT TRIP GENERATION

PROJECT	SCOTTSDALE MALL REZONING			
PARCEL	PROPOSED DEVELOPMENT			
ITE LAND USE CATEGORY AND CODE	RESIDENTIAL CONDOMINIUM / TOWNHOUSE - 230			
INDEPENDENT VARIABLE	DWELLING UNITS			
SIZE	3			
		TRIPS		
		ENTERING	EXITING	TOTAL
WEEKDAY DAILY		50%	50%	
NUMBER OF STUDIES	56			
AVERAGE SIZE	179			
MINIMUM RATE	1.53	3	2	5
AVERAGE RATE	5.81	9	8	17
MAXIMUM RATE	11.79	18	17	35
STANDARD DEVIATION	3.11			
EQUATION: $\text{LN}(T) = 0.87 * \text{LN}(X) + 2.46$	$R^2 = 0.80$	15	15	30
LARGEST OF AVERAGE OR EQUATION		15	15	30
AM PEAK HOUR ADJACENT STREET		17%	83%	
NUMBER OF STUDIES	59			
AVERAGE SIZE	213			
MINIMUM RATE	0.15	0	0	0
AVERAGE RATE	0.44	0	1	1
MAXIMUM RATE	1.61	1	4	5
STANDARD DEVIATION	0.69			
EQUATION: $\text{LN}(T) = 0.80 * \text{LN}(X) + 0.26$	$R^2 = 0.76$	1	2	3
LARGEST OF AVERAGE OR EQUATION		1	2	3
AM PEAK HOUR GENERATOR		19%	81%	
NUMBER OF STUDIES	54			
AVERAGE SIZE	196			
MINIMUM RATE	0.15	0	0	0
AVERAGE RATE	0.44	0	1	1
MAXIMUM RATE	0.97	1	2	3
STANDARD DEVIATION	0.68			
EQUATION: $\text{LN}(T) = 0.82 * \text{LN}(X) + 0.15$	$R^2 = 0.80$	1	2	3
LARGEST OF AVERAGE OR EQUATION		1	2	3
PM PEAK HOUR ADJACENT STREET		67%	33%	
NUMBER OF STUDIES	62			
AVERAGE SIZE	205			
MINIMUM RATE	0.18	1	0	1
AVERAGE RATE	0.52	1	1	2
MAXIMUM RATE	1.24	3	1	4
STANDARD DEVIATION	0.75			
EQUATION: $\text{LN}(T) = 0.82 * \text{LN}(X) + 0.32$	$R^2 = 0.80$	2	1	3
LARGEST OF AVERAGE OR EQUATION		2	1	3
PM PEAK HOUR GENERATOR		64%	36%	
NUMBER OF STUDIES	52			
AVERAGE SIZE	199			
MINIMUM RATE	0.18	1	0	1
AVERAGE RATE	0.52	1	1	2
MAXIMUM RATE	1.24	3	1	4
STANDARD DEVIATION	0.75			
EQUATION: $T = 0.34 * (X) + 35.87$	$R^2 = 0.82$	24	13	37
LARGEST OF AVERAGE OR EQUATION		24	13	37

PROJECT	SCOTTSDALE MALL REZONING			
PARCEL	PROPOSED DEVELOPMENT			
ITE LAND USE CATEGORY AND CODE	SINGLE TENANT OFFICE BUILDING - 715			
INDEPENDENT VARIABLE	1,000 SQUARE FEET			
SIZE	5.500			
		TRIPS		
		ENTERING	EXITING	TOTAL
WEEKDAY DAILY		50%	50%	
NUMBER OF STUDIES	15			
AVERAGE SIZE	105			
MINIMUM RATE	5.33	15	14	29
AVERAGE RATE	11.65	32	32	64
MAXIMUM RATE	35.68	98	98	196
STANDARD DEVIATION	8.19			
EQUATION: $LN(T) = 0.60 * LN(X) + 4.30$	$R^2 = 0.53$	103	102	205
LARGEST OF AVERAGE OR EQUATION		103	102	205
AM PEAK HOUR ADJACENT STREET		89%	11%	
NUMBER OF STUDIES	43			
AVERAGE SIZE	162			
MINIMUM RATE	0.75	4	0	4
AVERAGE RATE	1.80	9	1	10
MAXIMUM RATE	4.57	22	3	25
STANDARD DEVIATION	1.51			
EQUATION: $T = 1.67 * (X) + 21.93$	$R^2 = 0.77$	28	3	31
LARGEST OF AVERAGE OR EQUATION		28	3	31
AM PEAK HOUR GENERATOR		NA	NA	
NUMBER OF STUDIES	NA			
AVERAGE SIZE	NA			
MINIMUM RATE	NA	NA	NA	NA
AVERAGE RATE	NA	NA	NA	NA
MAXIMUM RATE	NA	NA	NA	NA
STANDARD DEVIATION	NA			
EQUATION: NOT PROVIDED	NA	NA	NA	NA
LARGEST OF AVERAGE OR EQUATION		NA	NA	NA
PM PEAK HOUR ADJACENT STREET		15%	85%	
NUMBER OF STUDIES	43			
AVERAGE SIZE	162			
MINIMUM RATE	0.79	1	3	4
AVERAGE RATE	1.74	2	8	10
MAXIMUM RATE	5.14	4	24	28
STANDARD DEVIATION	1.49			
EQUATION: $T = 1.52 * (X) + 34.60$	$R^2 = 0.78$	6	37	43
LARGEST OF AVERAGE OR EQUATION		6	37	43
PM PEAK HOUR GENERATOR		NA	NA	
NUMBER OF STUDIES	NA			
AVERAGE SIZE	NA			
MINIMUM RATE	NA	NA	NA	NA
AVERAGE RATE	NA	NA	NA	NA
MAXIMUM RATE	NA	NA	NA	NA
STANDARD DEVIATION	NA			
EQUATION: NOT PROVIDED	NA	NA	NA	NA
LARGEST OF AVERAGE OR EQUATION		NA	NA	NA

PROJECT	SCOTTSDALE MALL REZONING			
PARCEL	PROPOSED DEVELOPMENT			
ITE LAND USE CATEGORY AND CODE	SPECIALTY RETAIL CENTER - 826			
INDEPENDENT VARIABLE	1,000 SQUARE FEET			
SIZE	5.500			
		TRIPS		
		ENTERING	EXITING	TOTAL
WEEKDAY DAILY		50%	50%	
NUMBER OF STUDIES	4			
AVERAGE SIZE	25			
MINIMUM RATE	21.30	59	58	117
AVERAGE RATE	44.32	122	122	244
MAXIMUM RATE	64.21	177	176	353
STANDARD DEVIATION	15.52			
EQUATION: $T = 42.78 * (X) + 37.66$	$R^2 = 0.69$	137	136	273
LARGEST OF AVERAGE OR EQUATION		137	136	273
AM PEAK HOUR ADJACENT STREET		NA	NA	
NUMBER OF STUDIES	NA			
AVERAGE SIZE	NA			
MINIMUM RATE	NA	NA	NA	NA
AVERAGE RATE	NA	NA	NA	NA
MAXIMUM RATE	NA	NA	NA	NA
STANDARD DEVIATION	NA			
EQUATION: NOT PROVIDED	NA	NA	NA	NA
LARGEST OF AVERAGE OR EQUATION		NA	NA	NA
AM PEAK HOUR GENERATOR		48%	52%	
NUMBER OF STUDIES	4			
AVERAGE SIZE	60			
MINIMUM RATE	5.33	14	15	29
AVERAGE RATE	6.84	18	20	38
MAXIMUM RATE	14.08	37	40	77
STANDARD DEVIATION	3.55			
EQUATION: $T = 4.91 * (X) + 115.59$	$R^2 = 0.90$	69	74	143
LARGEST OF AVERAGE OR EQUATION		69	74	143
PM PEAK HOUR ADJACENT STREET		44%	56%	
NUMBER OF STUDIES	5			
AVERAGE SIZE	69			
MINIMUM RATE	2.03	5	6	11
AVERAGE RATE	2.71	7	8	15
MAXIMUM RATE	5.16	12	16	28
STANDARD DEVIATION	1.83			
EQUATION: $T = 2.40 * (X) + 21.48$	$R^2 = 0.98$	15	20	35
LARGEST OF AVERAGE OR EQUATION		15	20	35
PM PEAK HOUR GENERATOR		56%	44%	
NUMBER OF STUDIES	3			
AVERAGE SIZE	75			
MINIMUM RATE	4.59	14	11	25
AVERAGE RATE	5.02	16	12	28
MAXIMUM RATE	6.18	19	15	34
STANDARD DEVIATION	2.31			
EQUATION: NOT PROVIDED	NA	NA	NA	NA
LARGEST OF AVERAGE OR EQUATION		16	12	28

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

December 2, 2015

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

Re: Preliminary Basis of Design Report
Parkview Mixed Use Project
7363 E. Scottsdale Mall
Scottsdale, Arizona
Q/S #16-45
APN 130-23-210A

Acceptable As Noted
City of Scottsdale
Water Resources Administration
9379 E. San Salvador
Scottsdale, AZ 85258

Doug Mann
12.10.15

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

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2.	Existing System
3.	Proposed Demand

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Figure 3	Lower Level Proposed Floor Plan
Figure 4	City of Scottsdale Water Line Map

APPENDIX

1	Fixture Unit Calculations
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Parkview 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.

2. *Existing 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 not shown on the City of Scottsdale quarter section water map for the site. 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.

3. *Proposed 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.

- Recommend separate metering for mixed use dev.
- each restaurant facility requires a separate grease interceptor located on private property.

Figures

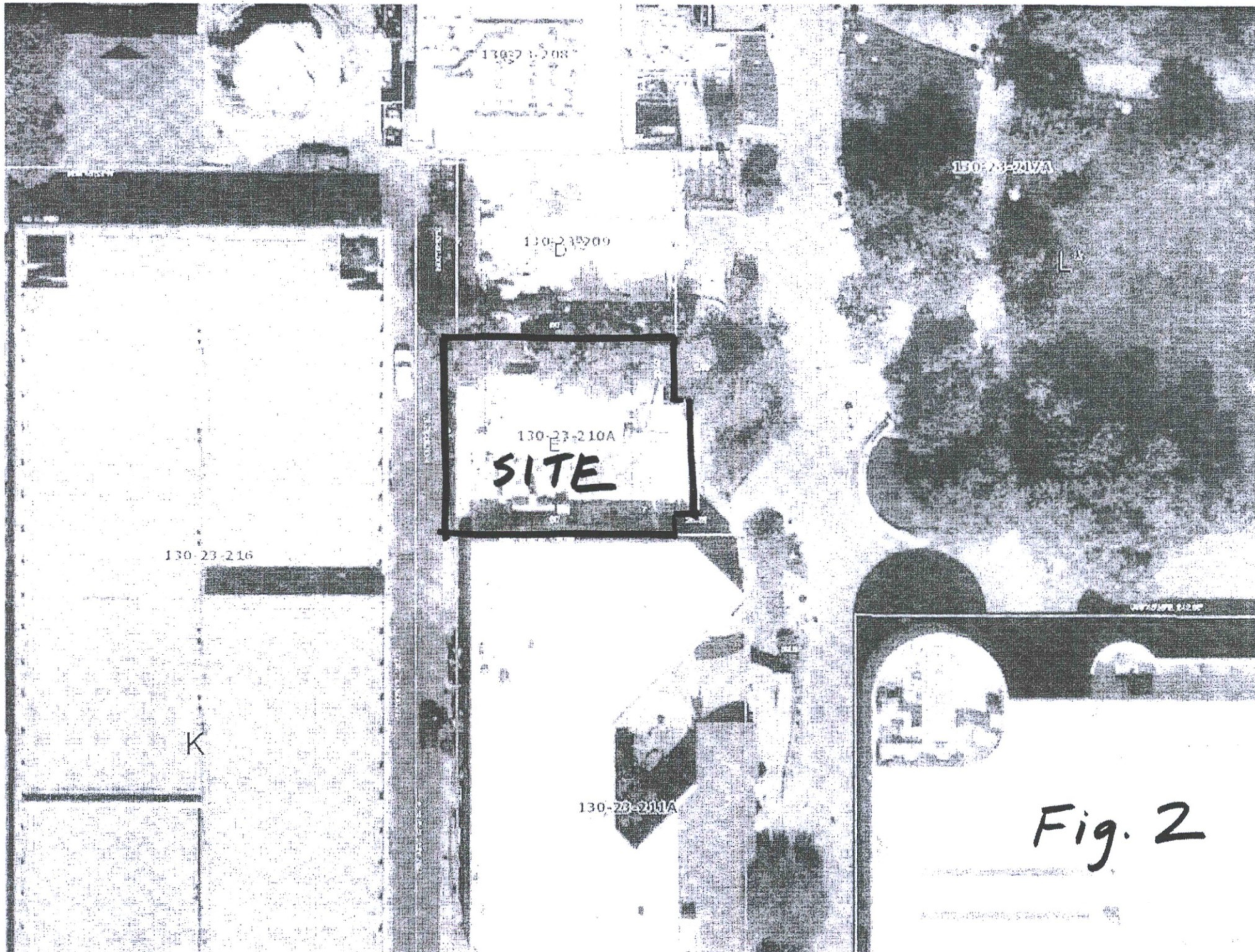
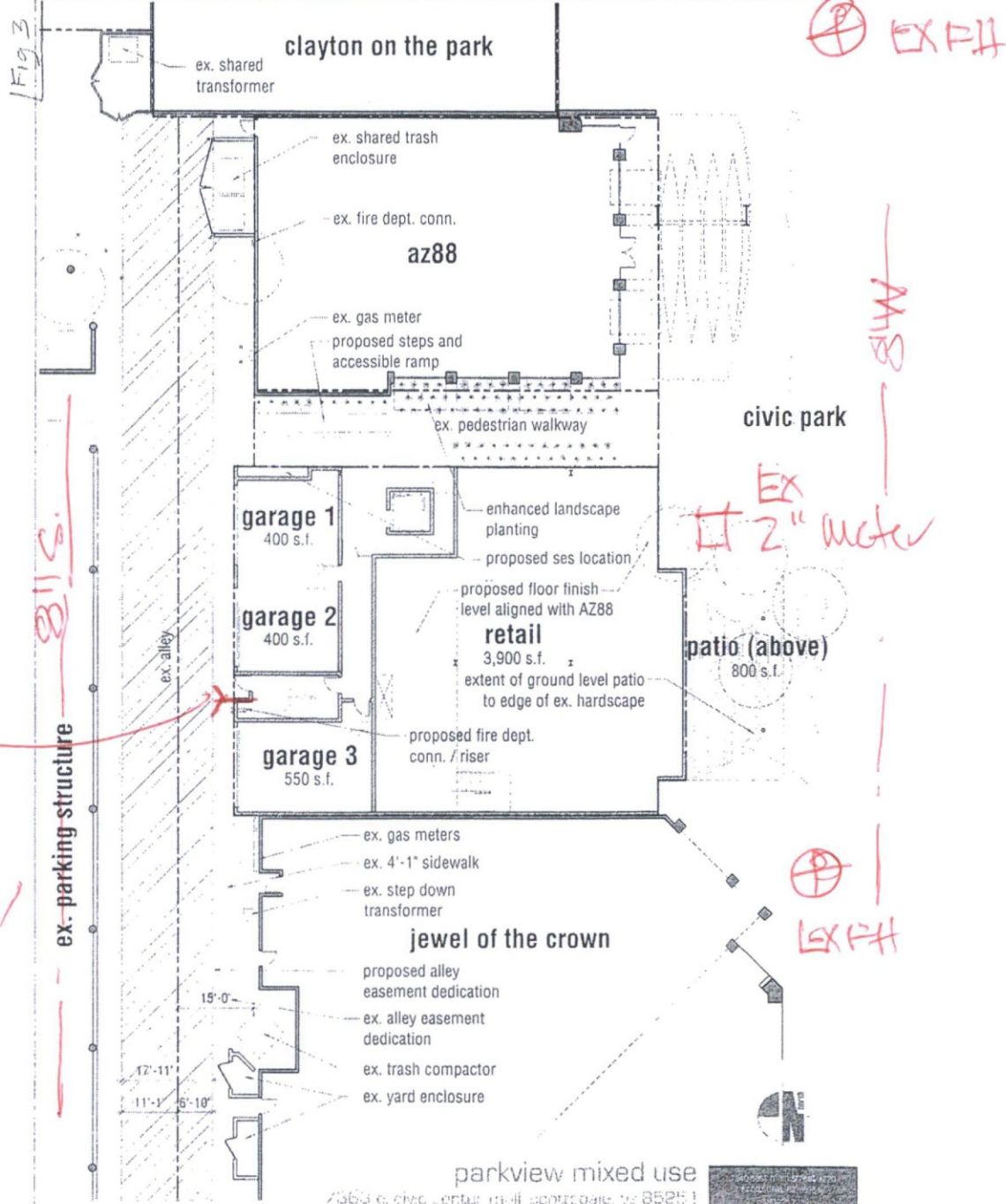


Fig. 2



FDC
Location
??
Verify w/
F.D.

Fig 3

EX FH

MIB

Ex
2" water

EX FH

ground level

parkview mixed use
7363 e. civic center rd. hightland, co 80251
date: september 21, 2015
scale: 1/16" = 1'-0"
n/a

www.alinearchitect.com
www.alineconcept.com
architecture concepts
aline

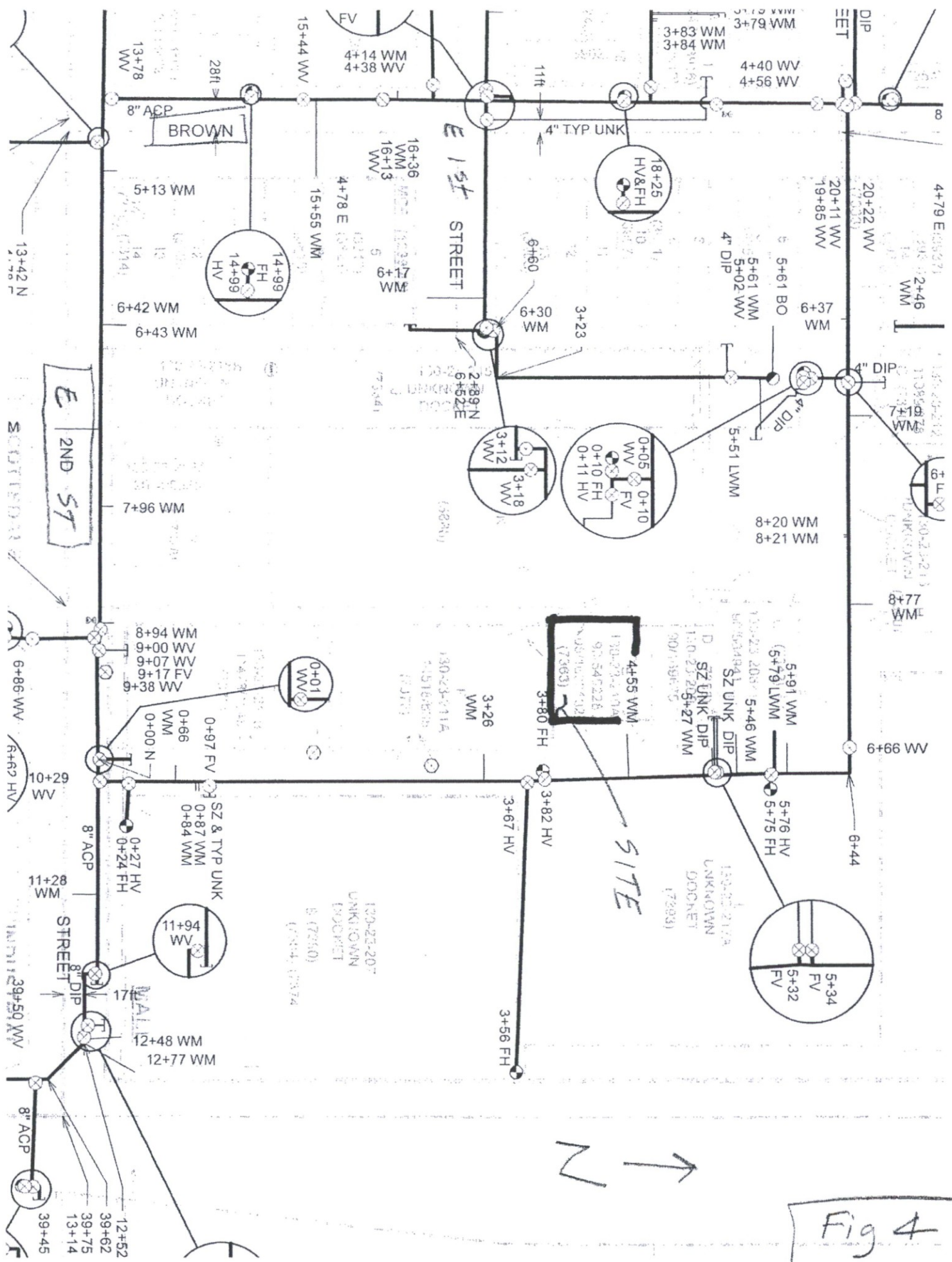


Fig 4

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

TRANSPORTATION IMPACT + MITIGATION ANALYSIS

Monday, November 16, 2015

China Mist Mixed Use
#862-PA-2015
7363 East Scottsdale Mall
Scottsdale, Arizona 85251

Existing Condition: 5,344 s.f. restaurant / 2,000 s.f. basement - $7344 / 300 = 24.5$ space parking demand.

Proposed Conditions: 5,500 s.f. retail, 5,500 s.f. office, 3 residential units - $11,000 / 350 = 31.4$ space + $[3 \times 2 = 6$ space] = 38 space parking demand total.

Residential parking to be provided on site.

Trip generation increase is thusly a net six (6) visitors per any given operational period. Impact to traffic and parking is negligible.

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