BAKERSFIELD

THE SOUND OF *Something Better*

November 15th, 2023

New Gen Engineering Group, Inc.
dba McIntosh & Associates
10800 Stockdale Highway, Suite 103
Bakersfield, CA 93311

RE: Preliminary Drainage for Maple Ridge Apartments Review

Dear Mr. Neptune:

We have completed our review of the preliminary drainage study for the Maple Ridge Apartments (APN 386-050-38) dated October 19th, 2023 and signed on October 20th, 2023. As a result of our review, we conditionally approve with the following comments:

1. We will require a comprehensive drainage study with the submittal of the grading plans.
2. Please provide an electronic copy of the calculations. As a back up to the hard copy submitted, the City is asking all the engineering firms to submit a PDF copy.

Should you have any questions, please contact Stephan Trujillo at (661) 326-3576.

Very truly yours,

GREGG STRAKALUSE
Public Works Director

By: _____
Adrian Castro
Civil Engineer III – Subdivisions

S:\2023 File System\Parcel Maps\9000s\9900\Technical Reports\Drainage Letters(Permanent)\MC DS Preliminary Drainage for Maple Ridge Apartments Appr.docx

McINTOSH & ASSOCIATES
NEW GEN ENGINEERING GROUP

Land Surveying

Civil Engineering

Photogrammetry

G P S

Planning

Environmental

Landscape Architecture

Petroleum Engineering

October 19, 2023

Manny Behl
City of Bakersfield,
1600 Truxtun Avenue
Bakersfield, California 93301

Attn: Manny Behl; Subdivision

Re: APN 386-050-38 – Preliminary Drainage for Maple Ridge Apartments to support GPA/ZC 22-0127
Mc# 021-051.00

Dear Manny Behl,

The purpose for this letter is to demonstrate that the drainage runoff from the proposed apartment project will be mitigated accordingly. The proposed Watershed will consist of 12.40 acres of the apartment site and 10.71 acres of the current terrain which will discharge to the existing conveyance point. The discharge from this watershed will flow into a proposed retention/detention basin were 1.06 ac-ft will be retained from the apartment site. The remaining undeveloped runoff of 6.75 cfs will be released into the natural course of drainage by a flow through on the northerly end of this sump. The proposed retention/detention basin will be constructed to handle up to 1.42 ac-ft.

Sincerely,

Sean E Reed

Sean Reed

661•834•4814

Fax 661•834•0972

2001 Wheelan Court

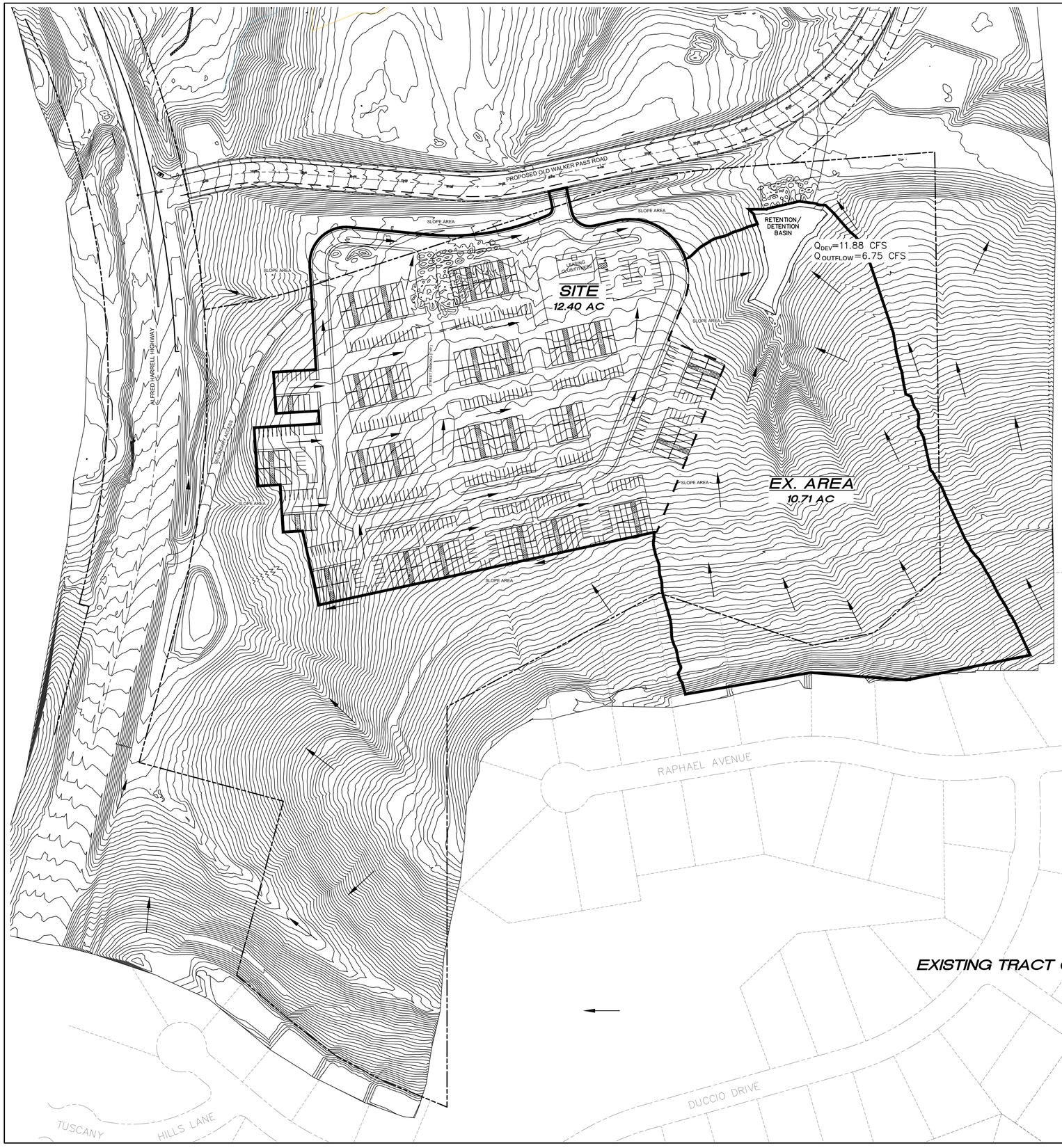
Bakersfield, CA 93311

www.mcintoshassoc.com

mcengr@mcintoshassoc.com

REGISTERED PROFESSIONAL ENGINEER
SEAN E. REED
No. 64620
CIVIL
STATE OF CALIFORNIA

10/20/23



Provided Sump Capacity

Freeboard (ft)= **1** **Lowest Inlet Elev =** **320.0**
Water Surface Elev = **319.0** **Bottom Basin Elev =** **315.0**

Depth from Design Water Surface = 4 feet

Abtm =	Bottom Area of Sump	12,926	sq ft	=	0.30 acres
Amid =	Half Depth Area of Sump	15,398	sq ft	=	0.35 acres
Atop =	Area of Design Water Level	18,009	sq ft	=	0.41 acres

Prismoidal Formula: Volume = 1/6 x(Abtm+4Amid+Atop) x D
Volume = 1/6 x (0.30+1.41+0.41) x 4.0 = 1/6 x (2.12) x 4.0

Provided Sump Capacity = **61,686 Cu. FT** **1.42 AC-FT**

Required Sump Capacity

TABLE OF RUNOFF COEFFICIENTS		MAPLE RIDGE APTS	C x A =
R-1, 6000 SF	0.42		
R-1, 6750 SF	0.4		
R-1, 7500 SF	0.38		
R-1, 10000 SF	0.34		
R-1, 15000 SF	0.27		
R-2	0.55	11.85	6.52
R-3, R-4, M-H	0.8		
Commercial	0.9		
Industrial	0.8		
Parks	0.15		
Grasslands, Type A Soil	0.15		
Grasslands, Type B Soil	0.25		
Grasslands, Type C Soil	0.35		
Grasslands, Type D Soil	0.45		
Pavement, drives & roofs	0.95	0.55	0.52
Backyards	0.05		
Lawn-landscape 2% slope	0.17		
Lawn-landscape 2-7% slope	0.22		
Lawn-landscape 7% slope	0.35		

$\sum$ C x A = **7.04**

= **Total Acres** 12.40

Required Sump Capacity = 0.15 x C x A = 0.15 X $\sum$ C x A = **1.06** **AC-FT**

SUBAREA NAME	C Runoff Coef.	I Intensity IN/HR	A Total Area AC.	rslt Tc Time Conc. MIN.	L Length Feet	dH Elev. Diff. Feet	Sg Gutter Slope Ft/Ft	Q Flow CFS	Street Type	V Vel. FPS	Trial Tc MIN.	Roof to Gutter Time MIN.	Tm Travel Time MIN.	Curb Cap In
MAPLE RIDGE APTS														
Existing Area	0.35	1.80	10.71	**10.00**	844	191.0	22.63%	6.75		n/a	10.00	0.00	n/a	
Site Area	0.57	1.69	12.40	**11.93**	1000	53.0	5.30%	11.88		8.60	11.93	10.00	1.94	
AREA (Total)								18.63						
					1100									

Required Proposed Capacity = 0.15 x C x A = 1.06 ac-ft **Site Area**
C = 0.57 A= 12.40 acres

REGISTERED PROFESSIONAL ENGINEER
ROBERT E. REED
No. 64620
CIVIL
STATE OF CALIFORNIA
10/20/23

LEGEND

- TRACT BOUNDARY
- CENTERLINE
- WATERSHED BOUNDARY
- FLOW DIRECTION

N

SCALE: 1" = 50'
50' 25' 0' 50' 100'

THIS PLAN IS A PRELIMINARY LAYOUT AND SUBJECT TO CHANGE.

McINTOSH & ASSOCIATES
NEW GEN ENGINEERING GROUP
10800 STOCKDALE HWY, STE 103
BAKERSFIELD, CALIFORNIA 93311
(661) 834 – 4814

JOB NO. 21-051
DATE: 10/19/23
DRAWN BY: SAM
ISSUED FOR CONCEPTUAL

BY
REVISIONS
DATE

AURORA BOREALIS DEVELOPMENT, LLC
MAPLE RIDGE APARTMENTS

PROPOSED SITE DRAINAGE EXHIBIT

AutoCAD FILE: 21051054A

SHEET 1 OF 1 SHEETS