UPDATE #2 TO THE TECHNICAL DRAINAGE STUDY

FOR

RACEL AND TIOGA

RESIDENTIAL DEVELOPMENT

ADV-18-101

CITY OF LAS VEGAS

July 2021

Prepared for:

Andrew Acuna
Adaven Homes
10091 Park Run Drive, Suite 110
Las Vegas, NV 89145
(702) 365-8588

7-8-2021

TANEY ENGINEERING

6030 S. Jones Blvd.
Las Vegas, NV 89118
Phone (702) 362-8844
Fax (702) 362-5233

HYDROLOGIC CRITERIA AND DRAINAGE MANUAL

DRAINAGE STUDY INFORMATION FORM

Name of Development: Racel & Tioga Development Date: July 8, 2021

Location of Development: a) Descriptive (Cross Streets) North/South: Racel

East/West: Tioga

b) Section: 10 Township: 19S Range: 60E

c) APN : 125-10-402-001 & 005

Name of Owner: Adaven Homes

Telephone No.: (702) 365-8588 Fax No.: E-Mail Address:

Address: 10091 Park Run Drive, #110 Las Vegas, NV 89145

Contact Person-Name: Lee Gong, P.E. **Telephone No.:** (702) 362-8844

* **E-Mail Address:** LeeG@taneycorp.com **Fax No.:** (702) 362-5233

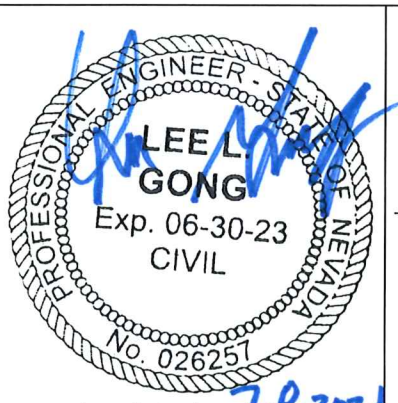
Firm: Taney Engineering

Address: 6030 S. Jones, Suite 100, Las Vegas NV. 89118

Type of Land Development/Land Disturbance Process:

☐	Rezoning	☒	Subdivision Map	☐	Clearing and Grading Only
☐	Parcel Map	☐	Planned Unit Development	☐	Other (Please specify below)
☐	Large Parcel Map	☐	Building Permit		

1. Total Owned Land Area: At Site: 4.56+/- acres Being Developed/Disturbed: 5.34 +/- acres
2. Is a portion or all of the subject property located in a designated FEMA Flood Hazard Area? ☐ **Yes**** ☒ **No**
3. Is the property bordered or crossed by an existing or proposed Clark County Regional Flood Control District Master Planned Facility? ☐ **Yes**** ☒ **No**
4. Proposed type of development (Residential, Commercial, Etc.): Residential
5. Approximate upstream land area which drains to the subject site: 750+/- acres
6. Has the site drainage been evaluated in the past? ☒ **YES** ☐ **NO** If yes, please identify documentation: HTE: 13-46531
7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: The site has two discharge points, the first discharge point will be to Racel St. and the second discharge point will be to an existing drainage easement in Verona Estates.
8. Briefly describe your proposed schedule for the subject project: A.S.A.P



Engineer's Seal

Submit this form as part of the required drainage study to the local entity which has jurisdiction over the subject property. This form may provide sufficient information to serve as the Conceptual Drainage Study.

*New Required Field

****Review and concurrence of the Clark County Regional Flood Control District is required.**

Local Entity File No.

Revision	Date

REFERENCE:

STANDARD FORM 1

Updated 05/01/2008

TANEY ENGINEERING
6030 S. JONES BLVD. LAS VEGAS, NV 89118
PHONE: (702) 362-8844 | FAX: (702) 362-5233
TANEYCORP.COM

Job No. ADV-18-101

Date: July 8, 2021

JURISDICTION:

Albert Sung, P.E.
Flood Control
City of Las Vegas Public Works
333 N. Rancho Drive
Las Vegas, NV 89106

Update #2 to the Technical Drainage Study for Racel and Tioga

Dear Mr. Sung,

Taney Engineering is pleased to submit the Technical Drainage Study Update #2 for ***Racel and Tioga.*** This update addresses changes to the project site plan for the residential development by the intersection of Ackerman Avenue and Tioga Way. It is a four-unit residential development site with one entrance on Tioga Way. The site is approximately 2.5 acres and located on APN 179-31-113-002.

The original study was completed by Taney Engineering and approved by City of Las Vegas on July 17, 2019 (DS-5127B). Concurrence was also approved by Clark County on April 6, 2020 (PW 19-17575). No offsite flow conditions have changed from the approved study. This update is for the changes in the proposed drainage easement design. The overall drainage patterns remain the same as approved.

Due to design constraints the concrete channel design within the drainage easement has been revised. The drainage pattern and flow being intercepted is still in consistent with the approved TDS. The only change is the change in the shape of the channel. Instead of a trapezoidal channel, now the flow will be routed in a concrete flume. Lastly, the proposed finished floor elevations have been set at a vertical distance above the gutter flow line of at least twice the depth of flow in the gutter flow line up to a maximum of 18 inches above the water surface elevation in the street per section 304.4 of the HCDDM. The proposed finished floor elevations have been flood protected to a minimum of twice the depth of flow.

If there are any question or you need any additional information, please do not hesitate to contact our office.

Sincerely,
TANEY ENGINEERING

Gaurang Mistry, E.I.

APPENDIX

APPENDIX A

Hydraulic Calculations

APPENDIX B

Improvement Plans

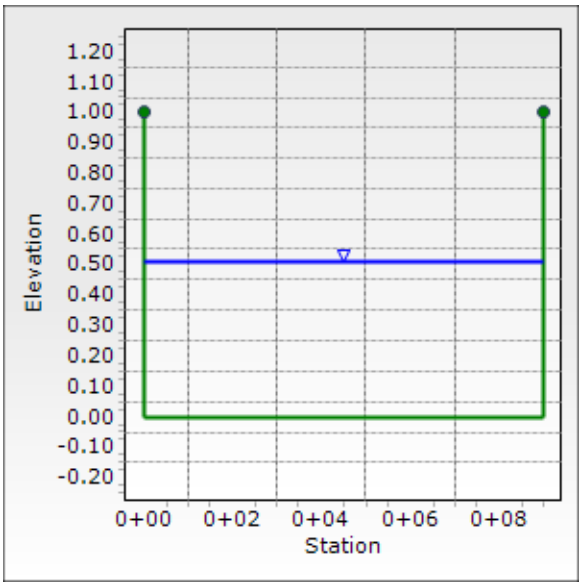
APPENDIX A

Hydraulic Calculations

Cross Section for 9' Concrete Flume

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Channel Slope	1.07 %
Normal Depth	0.51 ft
Discharge	32.00 cfs



Worksheet for 9' Concrete Flume

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Channel Slope	1.07 %
Discharge	32.00 cfs

Section Definitions

Station (ft)	Elevation (ft)
0+00.0	1.00
0+00.0	0.00
0+09.0	0.00
0+09.0	1.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.0, 1.00)	(0+09.0, 1.00)	0.013

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results	
Normal Depth	0.51 ft
Roughness Coefficient	0.013
Elevation	0.51 ft
Elevation Range	0.0 to 1.0 ft
Flow Area	4.6 ft²
Wetted Perimeter	10.0 ft
Hydraulic Radius	0.46 ft
Top Width	9.00 ft
Normal Depth	0.51 ft
Critical Depth	0.73 ft
Critical Slope	0.33 %
Velocity	7.01 ft/s
Velocity Head	0.76 ft
Specific Energy	1.27 ft
Froude Number	1.734
Flow Type	Supercritical

GVF Input Data

Worksheet for 9' Concrete Flume

GVF Input Data	
Downstream Depth	0.00 ft
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.00 ft
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	0.51 ft
Critical Depth	0.73 ft
Channel Slope	1.07 %
Critical Slope	0.33 %

APPENDIX B

Improvement Plans