SUPPLEMENT #1 TO ADDENDUM #2
TO THE
TECHNICAL DRAINAGE STUDY
FOR
THE HUNTRIDGE

DS 5769
W.O. # CW-2222
October 1, 2024

10/1/2024

Prepared for:

CivilWorks
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Prepared by:

Impulse
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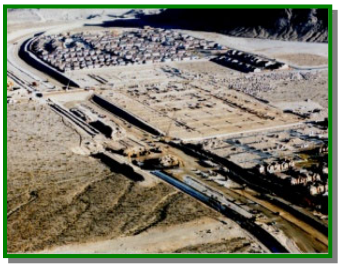
$$I = \int F \cdot dt$$


Civil Engineering


Land Planning


Flood Control


Utilities

Impulse
Civil Engineering & Planning
7485 West Azure Drive, Suite 226
Las Vegas, NV 89130
PHONE 702-815-0720
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October 1, 2024

City of Las Vegas
Public Works – Flood Control
495 South Main Street
Las Vegas, NV 89101

Re: The Huntridge, DS 5769
Supplement #1 to Addendum #2 to the Technical Drainage Study

Submitted for your approval is the ***First Supplement to the Second Addendum to the Technical Drainage Study for The Huntridge,*** a proposed 1.66-acre commercial development, being restoration on APN: 162-02-110-016 and additional buildings on 162-02-110-017. The site is completely located within a FEMA Special Flood Hazard Area (Unshaded) Zone X as shown on Community Panel Number 32003C2170F, and is adjacent to a Category A Proposed Clark County Regional Flood Control District (CCRFCD) Master Planned Facility (FLBN-0280) according to the CCRFCD Master Plan Update, Figure F-30. CCRFCD concurrence should be required.

If you have any questions or require additional information, please do not hesitate to call me at (702) 308-7115.

Sincerely,
IMPULSE CIVIL ENGINEERING

Peter J. Laas, P.E.
Principal

$$I = \int F \cdot dt$$

Print Form

HYDROLOGIC CRITERIA AND DRAINAGE MANUAL

DRAINAGE STUDY INFORMATION FORM

Name of Development: The Huntridge Date: 10/1/2024

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

East/West: Charleston Boulevard

b) Section: 2 Township: 21 S Range: 61 E

c) APN : a portion of 162-02-110-016 & 162-02-110-017

Name of Owner: Brass Monkey, LLC c/o CivilWorks, INC

Telephone No.: (702) 534-1816 Fax No.: (702) 534-1825 E-Mail Address: bap@civilworksonline.com

Address: 4945 W Patrick Lane, Las Vegas, NV 89118

Contact Person-Name: Peter Laas **Telephone No.:** 702-815-0720

* **E-Mail Address:** plaas@ImpulseCivil.net **Fax No.:** 702-478-8535

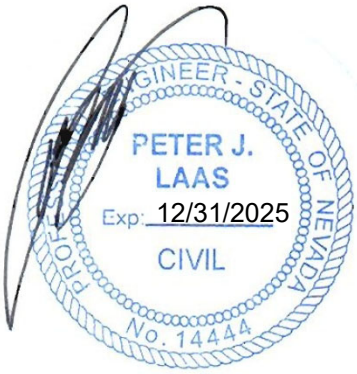
Firm: Impulse Civil Engineering

Address: 7485 West Azure Avenue, Suite 226, Las Vegas NV 89130

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: 1.66 AC+- Being Developed/Disturbed: 1.66 AC+-
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.): Commercial
5. Approximate upstream land area which drains to the subject site: 50 ACRES
6. Has the site drainage been evaluated in the past? ☐ **YES** ☒ **NO** If yes, please identify documentation:
   We could not find an applicable study for the site
7. If known, please briefly identify the proposed discharge point(s) of runoff from the site:
   The northeast corner of the site into the existing streets
8. Briefly describe your proposed schedule for the subject project: As soon as possible



10/1/2024

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.**

DS-5769

Local Entity File No.

Revision	Date

REFERENCE: $I = \int F \cdot dt$

STANDARD FORM 1

Updated 05/01/2008

Addendum #2 of this study was approved by the City of Las Vegas on June 25, 2024 and submitted to Clark County Regional Flood Control District (CCRFCD) for concurrence the same day. On August 1, 2024, Ms. Brittney Duncan of CCRFCD emailed Albert Sung of the City of Las Vegas with a list of concerns she had with the study which are as follows:

1. We did not see easements called out where public water is draining through the site. Should the owner apply for easements since the entrance onsite is an existing entrance and "6-inch freeboard is not required"?
2. The depth of flow calculations was checked along the southside of the proposed buildings, near the entrance of the alley and Maryland Pkwy to find that the existing buildings and proposed additions are not protected to 1.5 feet above the water surface elevation in Maryland Pkwy nor the 0.48 feet above the flow line. We do not see the elevations on the plans matching the hydraulic calculations that show otherwise.
3. The hydraulic calculations are also showing the proposed finished floor elevations not meeting the 2XD, which is also not meeting criteria 903.6 from the Manual; we have concern that the parking stalls are utilized as full conveyance.
4. The hydraulic calcs are shown in the original submittal but there are no updated calculations to show the revised finish floor elevations or slopes and we do not see updated plans calling out the adjusted design to provide freeboard for the buildings in the Alley. For example, the hydraulic calculations in the drainage study show existing finish floor is 84.85 and another elevation 85.85 but do not see it on the plans.
5. Charleston's existing and interim condition for the VXD shows 35.38 and east area shows 6.17. We are concerned with the potential adverse impact the inundation of the 100-year storm could cause because of the proposed buildings on the south side of the site, causing a safety concern. Is it a possibility to limit the CofO until CharMar project is complete, which would solve a lot of the safety concerns?
6. The plans do not show existing parcels east of property to verify there is no negative impact from the project Huntridge.
7. The details do not call out the retaining wall on southeast side of proposed building

On August 5, 2024 a conference call was held to discuss the concerns expressed by Ms. Duncan. The following people attended the call:

Ching Wang, CCRFCD
Brittney Duncan, CCRFCD
Brandon Potts, CivilWorks
Pete Laas, Impulse Civil Engineering
Albert Sung, City of Las Vegas

During the course of the meeting, most of the issues were resolved but there was still a concern about potential flooding and the calculations not meeting Section 903.6 of the

CCRFCD Manual. Ching offered a condition that there be no certificate of occupancy until the Maryland Parkway storm drain facility was complete which would eliminate all of the concerns. At the conclusion of the meeting, it was agreed that the City would determine the timing of the Maryland Parkway storm drain project and relay the information to Brandon Potts who would confer with his client to see if the condition was acceptable. As an alternative, it was agreed that the alley could be analyzed with ineffective flow area where car tires would normally be using the current flow rate to see if the proposed curb at least provided protection to 2·d100 criteria.

On August 21, 2024, with no update the study was put on hold by CCRFCD. On September 30, 2024, Ching inquired as to the status of the project. On October 1, Albert requested a formal supplement explaining the history and including the normal depth calculations based on pre-storm drain conditions to eliminate the Maryland project condition. The normal depth calculations are included at the rear of this supplement. There are no plans associated with this submittal.

If you have any questions or require additional information, please do not hesitate to call me at (702) 308-7115.

Sincerely,
IMPULSE CIVIL ENGINEERING

Peter J. Laas, P.E.
Principal

Existing Building in Alley 100-year
Worksheet for Irregular Channel

Project Description	
Project File	c:\hydrology\haestad\fmw\huntridg.fm2
Worksheet	alley alternate proposed Existing Bldg 2
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

Input Data				
Channel Slope	0.013000 ft/ft			
Elevation range: 84.94 ft to 86.00 ft.				
Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
29.50	85.85] NEW CURB	29.50	70.00	0.016
30.00	85.85]			
30.00	85.35			
31.50	85.32			
31.50	85.85] INEFFECTIVE FLOW AREA			
33.00	85.85]			
33.00	85.29			
43.00	85.08			
43.00	85.85] INEFFECTIVE FLOW AREA			
44.50	85.85]			
44.50	85.05			
50.00	84.94 ← FL			
70.00	85.35			
70.00	86.00			
Discharge	28.00 cfs			

Results		
Wtd. Mannings Coefficient	0.016	
Water Surface Elevation	85.35	ft
Flow Area	7.63	ft²
Wetted Perimeter	37.40	ft
Top Width	36.75	ft
Height	0.41	ft ← d_{100}
Critical Depth	85.40	ft
Critical Slope	0.006044	ft/ft
Velocity	3.67	ft/s
Velocity Head	0.21	ft
Specific Energy	85.56	ft
Froude Number	1.42	
Flow is supercritical.		
Flow is divided.		

FL = 84.94

$+ 2d_{100} = 0.82$

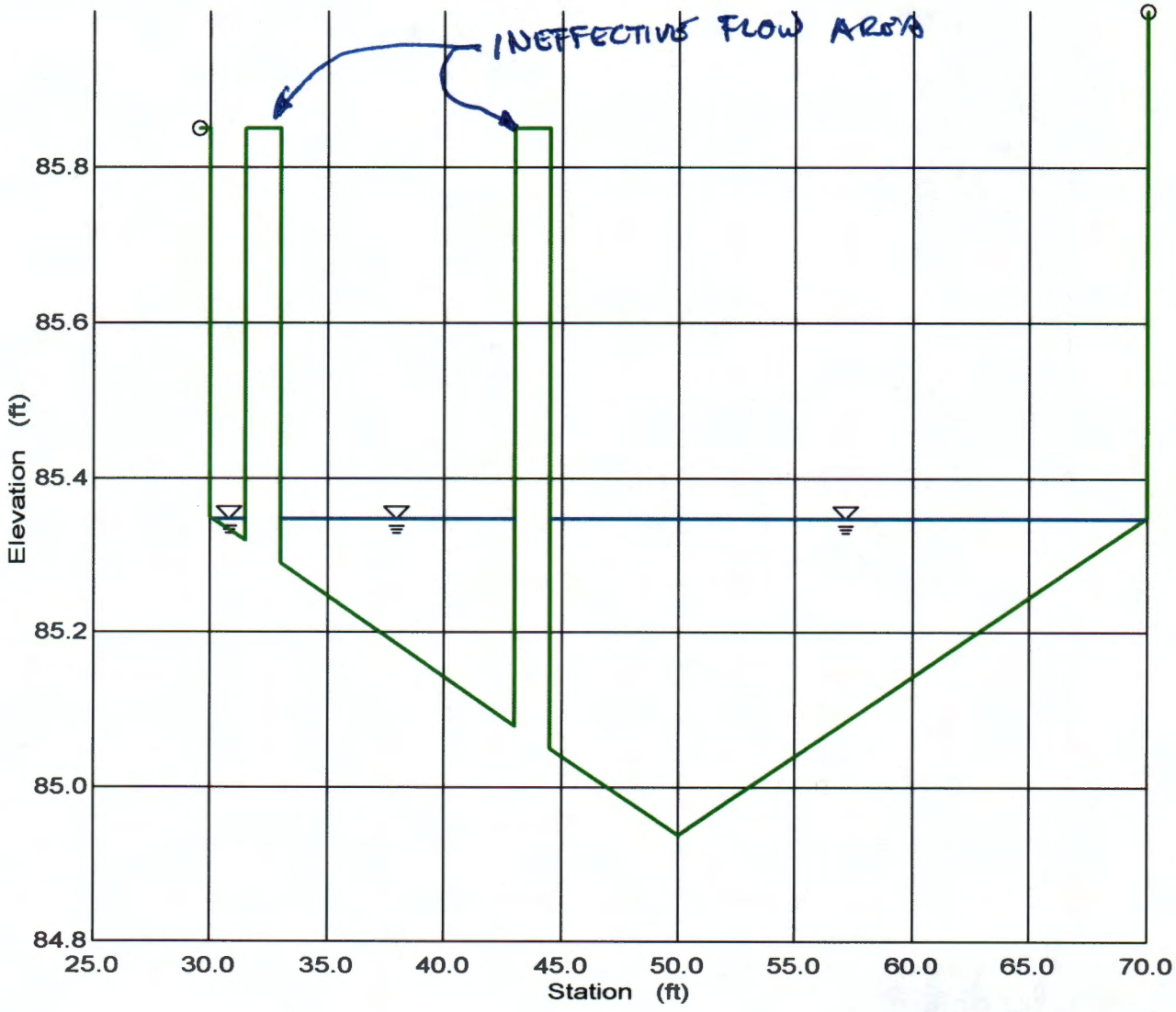
85.76 < 85.85

∴ BLDG IS PROTECTED

Cross Section
Cross Section for Irregular Channel

Project Description	
Project File	c:\hydrology\haestad\fmw\huntridg.fm2
Worksheet	alley alternate proposed Existing Bldg 2
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

Section Data		
Wtd. Mannings Coefficient	0.016	
Channel Slope	0.013000	ft/ft
Water Surface Elevation	85.35	ft
Discharge	28.00	cfs



Proposed Cabaret 100-year
Worksheet for Irregular Channel

Project Description	
Project File	c:\hydrology\haestad\fmw\huntridg.fm2
Worksheet	alley alternate proposed cabaret 2
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

Input Data				
Channel Slope	0.013000 ft/ft			
Elevation range: 83.99 ft to 86.00 ft.				
Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
29.50	84.89] NEW CURB	29.50	70.00	0.016
30.00	84.89]			
30.00	84.39			
31.50	84.36			
31.50	84.89] INEFFECTIVE FLOW AREA			
33.00	84.89]			
33.00	84.33			
43.00	84.13			
43.00	84.89] INEFFECTIVE FLOW AREA			
44.50	84.89]			
44.50	84.10			
50.00	83.99 ← FL			
70.00	84.43			
70.00	86.00			
Discharge	28.00 cfs			

$FL = 83.99$

$+ \; 2d_{100} = 0.82$

$84.81 < 84.89$

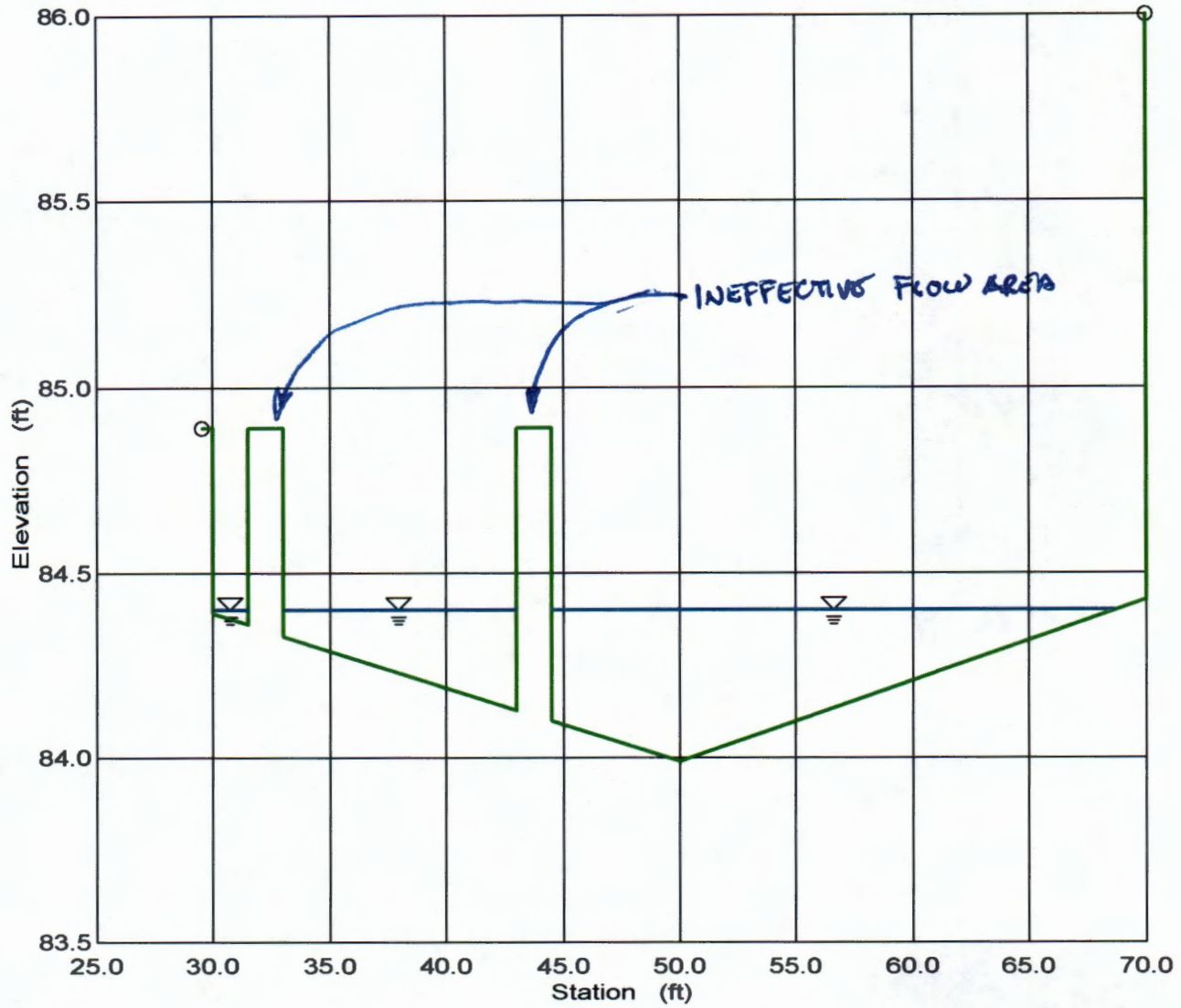
∴ BLDG IS PROTECTED

Results		
Wtd. Mannings Coefficient	0.016	
Water Surface Elevation	84.40	ft
Flow Area	7.55	ft²
Wetted Perimeter	36.39	ft
Top Width	35.68	ft
Height	0.41	ft ← d_{100}
Critical Depth	84.46	ft
Critical Slope	0.006052	ft/ft
Velocity	3.71	ft/s
Velocity Head	0.21	ft
Specific Energy	84.61	ft
Froude Number	1.42	
Flow is supercritical.		
Flow is divided.		

Cross Section
Cross Section for Irregular Channel

Project Description	
Project File	c:\hydrology\haestad\fmw\huntridg.fm2
Worksheet	alley alternate proposed cabaret 2
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

Section Data		
Wtd. Mannings Coefficient	0.016	
Channel Slope	0.013000	ft/ft
Water Surface Elevation	84.40	ft
Discharge	28.00	cfs



Proposed Black Box 100-year
Worksheet for Irregular Channel

Project Description	
Project File	c:\hydrology\haestad\fmw\huntridg.fm2
Worksheet	alley alternate proposed black box 2
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

Input Data				
Channel Slope	0.015000 ft/ft			
Elevation range: 82.49 ft to 86.00 ft.				
Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
29.50	83.39] NEW CURB	29.50	70.00	0.016
30.00	83.39]			
30.00	82.89			
31.50	82.86			
31.50	83.39] INEFFECTIVE FLOW AREA			
33.00	83.39]			
33.00	82.83			
43.00	82.63			
43.00	83.39] INEFFECTIVE FLOW AREA			
44.50	83.39]			
44.50	82.60			
50.00	82.49 ← FL			
70.00	83.10			
70.00	86.00			
Discharge	28.00 cfs			

FL = 82.49
+ $2d_{100}$ = 0.84

83.33 < 83.39

∴ BLDG IS PROTECTED

Results		
Wtd. Mannings Coefficient	0.016	
Water Surface Elevation	82.91	ft
Flow Area	6.84	ft²
Wetted Perimeter	31.62	ft
Top Width	30.86	ft
Height	0.42	ft ← d_{100}
Critical Depth	82.99	ft
Critical Slope	0.005970	ft/ft
Velocity	4.10	ft/s
Velocity Head	0.26	ft
Specific Energy	83.17	ft
Froude Number	1.53	
Flow is supercritical.		
Flow is divided.		

Cross Section
Cross Section for Irregular Channel

Project Description	
Project File	c:\hydrology\haestad\fmw\huntridg.fm2
Worksheet	alley alternate proposed black box 2
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

Section Data		
Wtd. Mannings Coefficient	0.016	
Channel Slope	0.015000	ft/ft
Water Surface Elevation	82.91	ft
Discharge	28.00	cfs