ADDENDUM #1 TO UPDATE #2 TO THE TECHNICAL DRAINAGE STUDY
FOR
MONTALADO NORTH

W.O. #WL-2123
February 22, 2024

Prepared for:

The WLB Group
3663 East Sunset Road, Suite 204
Las Vegas, NV 89120
Phone: (702) 458-2551

Prepared by:

Impulse
Civil Engineering & Planning
7485 West Azure Avenue, Suite 226
Las Vegas, NV 89130
Phone: 702-815-0720 · Fax: 702-478-8535

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


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
FAX 702-478-8535

February 22, 2024

City of Las Vegas
Public Works – Flood Control
731 South 4th Street
Las Vegas, Nevada 89101

Re: Addendum #1 to Update #2 to the Montalado North Technical Drainage Study

Submitted for your approval is Addendum #1 to Update #2 to the ***Technical Drainage Study for Montalado North*** a proposed 20.32 acre single family residential development, being APNs: 126-25-401-007, 126-25-401-008, 126-36-101-001, & 126-36-101-002. The site is completely within a FEMA Special Flood Hazard Area Zone X as shown on Community Panel Number 32003C1750E, and is not adjacent to nor traversed by any Clark County Regional Flood Control District (CCRFCD) Master Planned Facilities according to the CCRFCD Master Plan Update, Figure F-16, so CCRFCD concurrence should not be required.

If you have any questions, please call me at (702) 815-0720.

Sincerely,
IMPULSE CIVIL ENGINEERING

Peter J. Laas, P.E.
Principal

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

HYDROLOGIC CRITERIA AND DRAINAGE MANUAL

DRAINAGE STUDY INFORMATION FORM

Name of Development: Montalado North Date: 2/22/2024

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

East/West: Ann Road

b) Section: 25 & 36 Township: 19S Range: 59E

c) APN : 126-25-401-007, 126-25-401-008, 126-36-101-001, & 126-36-101-002

Name of Owner: International LLC c/o WLB Group

Telephone No.: (702) 458-2551 Fax No.: (702) 434-0491 E-Mail Address: pvalentine@wlbgroup.com

Address: 3663 E. Sunset Road, Las Vegas, Nevada 89120

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: 20 AC+- Being Developed/Disturbed: 20 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.): Single Family Residential
5. Approximate upstream land area which drains to the subject site: 150 ACRES
6. Has the site drainage been evaluated in the past? ☐ **YES** ☒ **NO** If yes, please identify documentation:
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 wash
8. Briefly describe your proposed schedule for the subject project: As soon as possible
   this project will begin construction around August of 2021

2/22/2024

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.

Revision	Date

DS-5458

Local Entity File No.

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

STANDARD FORM 1

Updated 05/01/2008

The format for this Addendum is as follows – the City of Las Vegas comment is listed first in bold and then followed by the response. A copy of the City of Las Vegas Comment letter is included at the rear of this letter.

RESPONSE TO COMMENTS

Comment 1. Sheet GR-03: Cross Section U shown on the eastern boundary of the project site is not located on Sheet DT-04 as the cross section states. Provide the section on Sheet DT-04.

Response 1. We have coordinated the plan and the sections.

Comment 2. An 8ft x 4ft RCB is proposed on the western boundary of the project site on sheet GR-03 and Standard Form 6, but the channel is show as a 96-in RCP on DT-05. Revise accordingly.

Response 2. We have corrected the detail.

Comment 3. The graded sump located at the western boundary of the project site and entrance of the transition structure, is adjacent to undeveloped area. Provide riprap protection from the edge of the graded sump location to the Right-of-Way limit to mitigate sediment and debris to prevent clogging to the proposed transition structure and RCB.

Response 3. We have added rip rap to the to the plan.

Comment 4. The headwater depth versus the rise of the proposed transition box structure does not meet the 1.5 ratio as stated in Section 1002.4 of CCRFCD HCDDM. Revise design and calculation accordingly.

Response 4. We provided a nomograph with Update 2 that reflected a 1.0 ratio that exceeds the criteria stated in Section 1002.4 of the Manual. This nomograph is provided at the rear of this letter for the convenience of review.

Comment 5. Standard Form 6 shows the transition structure with a 20ft x 5ft opening at the entrance, but the structure section B-B on Sheet S0.2 shows a 20ft x 4ft. Revise accordingly.

Response 5. We have corrected the Standard Form 6.

We feel that we have completely addressed all of the concerns expressed in the comment letter generated from the review of the initial study. 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

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM				DATE: February 21, 2024
TO: **Land Development Services** Department of Building & Safety				FROM: Oh-Sang Kwon, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT:	Drainage Study for:			**COPIES TO:**
Montalado North – Update #2				Impulse Civil Engineering
Cross Streets:	Shaumber Road and Ann Road			International LLC c/o WLB Group
File Number:	F:\Depot\DSMemos\DS5458F.doc			Bart Anderson, P.E., DevCo
Parcel Number:	126-25-401-007, 126-25-401-008, 126-36-101-001, & 126-36-101-002			CCPW
Zoning Action:	21-0064-TMP1; 21-0064-VAC1			
FEMA Flood Zone	YES	NO **X**		
Proposed Storm Drain	YES **X**	NO		

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1st Submittal	5/27/2021	6/14/2021	Not Approved	$400.00	4308989: $400
2nd Submittal	7/12/2021 & 7/29/2021	7/22/2021 & 8/10/2021	Not Approved	$400.00	4367684: $400
3rd Submittal	8/12/2021	8/12/2021	Approved	$0.00	N/C
4th Submittal & Supplement	1/18/2022 & 1/31/22	2/1/2022	Approved	$100.00	4608945: $100
5th Submittal	8/9/2023	8/22/2023	Not Approved	$100.00	5395009: $100
6th Submittal	2/13/2024	2/21/2024	See Comments Below	$400.00	5427964: $400
			TOTAL FEES (LDDRS):	**$1,400.00**	----

REMARKS:

5th & 6th Submittal: Update #2 for revision to the walls around the northeast and northwest corners of the site

4th Submittal: Update #1: Construction of onsite Public Drainage Easement if BLM patent easement is not approved. Also, addressed interim drainage protection along the western boundary.

The Drainage Study for the subject project has been reviewed and:

	is approved subject to conformance to all City standards and the following conditions:
X	must be resubmitted or supplemented including the following:
	is conditionally approved subject to Clark County Regional Flood Control District concurrence.
	is conditionally approved subject to Clark County Public Works Department concurrence.

1. **Sheet GR-03:** Cross Section U shown on the eastern boundary of the project site is not located on Sheet DT-04 as the cross section states. Provide the section on Sheet DT-04.

2. An 8ft x 4ft RCB is proposed on the western boundary of the project site on sheet GR-03 and Standard Form 6, but the channel is show as a 96-in RCP on DT-05. Revise accordingly.
3. The graded sump located at the western boundary of the project site and entrance of the transition structure, is adjacent to undeveloped area. Provide riprap protection from the edge of the graded sump location to the Right-of-Way limit to mitigate sediment and debris to prevent clogging to the proposed transition structure and RCB.
4. The headwater depth versus the rise of the proposed transition box structure does not meet the 1.5 ratio as stated in Section 1002.4 of CCRFCD HCDDM. Revise design and calculation accordingly.
5. Standard Form 6 shows the transition structure with a 20ft x 5ft opening at the entrance, but the structure section B-B on Sheet S0.2 shows a 20ft x 4ft. Revise accordingly.

***** The City of Las Vegas Flood Control is standardizing the file naming of drainage studies and plans during the digitizing process. When saving the project files in the CD or thumb drive, please follow the system below:**

If drainage study only contains one combined file, use the following naming convention in Document Title:

1st Submittal DS and Plans (for first and original submittal);

2nd Submittal DS and Plans (for second submittal (addendum #1)) etc.

If drainage study contains multiple files, use the following naming convention in Document Title:

1st Submittal DS (for the report of the drainage study)

1st Submittal Plan 1 (could be the drainage condition maps)

1st Submittal Plan 2 (could be the improvement plans) etc.

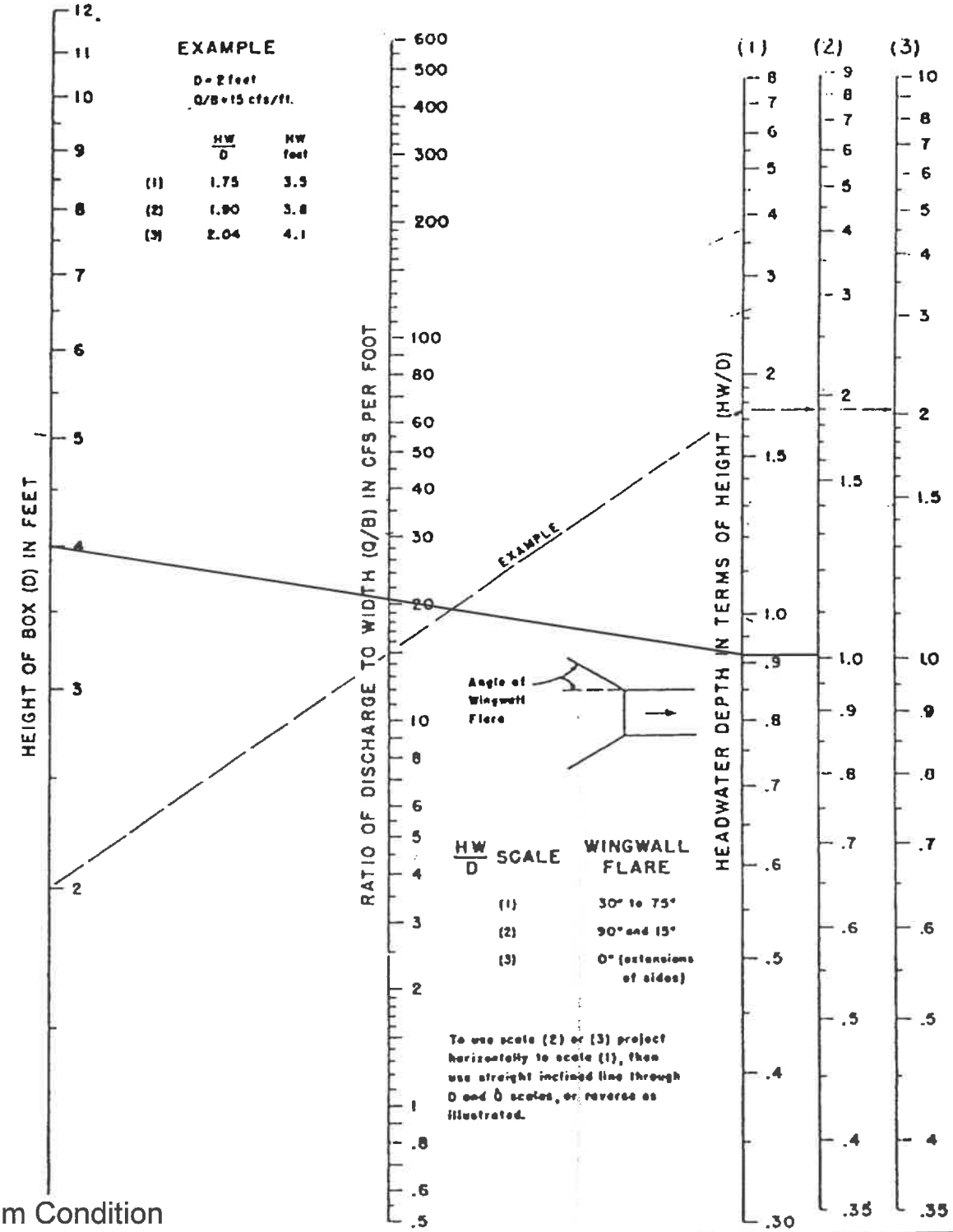
NOTE: Please be advised that all land surface area disturbances over 1 acre or any area adjacent to a water way must submit to the Nevada Division of Environmental Protection a "Notice of Intent" to discharge that certifies a stormwater pollution prevention plan has been developed and is maintained on site; for inclusion in the Stormwater General Permit No. NVR100000. A phased construction unit in a contiguous subdivision is considered under construction until all stripped or disturbed surface areas have been covered by paving, building construction or planting. For more information, including forms and applications see http://ndep.nv.gov/bwpc/storm01.htm or call (775) 687-9429.

NOTE: Any future changes to the proposed design (or design assumptions) as outlined in the approved drainage study and attached preliminary grading plan which affect drainage must be addressed in a Drainage Study Update and accepted by the *City of Las Vegas Flood Control Section.* Additionally, final approval of a drainage study is valid for a period of one (1) year. If the proposed construction has not been completed in that time period, the *City of Las Vegas* reserves the right to require additional conditions and/or submission and acceptance of a complete drainage study update prior to further construction of a project.

END OF REMARKS
HDR/CLV

T/R/S: T19S/R59E/25
AREA F-25

NOMOGRAPH – INLET CONTROL BOX CULVERT



Interim Condition
HW/D=1.0, D=4'
HW=4'
Q=431, B=20, Q/B=21.55

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

Revision	Date

WRC ENGINEERING	REFERENCE: USDOT, FHWA, HDS No.5, 1985	FIGURE 1004

Summary of Results

					(Optional)			HGL with respect	Pressure Gasket
STATION	INVERT	SOFFIT	EGL	HGL	GRADE	LOCATION	DESCRIPTION	to FG	Required?
19296.71	2889.58	2893.58	2896.40	2893.58	2897.20		Outlet	OK	NO
19392.17	2891.32	2895.32	2898.13	2895.32					NO
19397.17	2891.32	2895.32	2898.18	2895.36	2900.35		End Bend	OK	NO
19475.97	2892.78	2896.78	2899.63	2896.81					NO
19480.97	2892.78	2896.78	2899.68	2896.86	2902.10		Begin Bend	OK	NO
19629.07	2895.47	2899.47	2902.29	2899.47					NO
19634.07	2895.47	2899.47	2902.33	2899.52	2906.20		SDMH #10	OK	NO
19886.53	2905.67	2909.67	2912.49	2909.67					NO
19891.53	2905.67	2909.67	2912.53	2909.72	2916.70		SDMH #9	OK	NO
20042.06	2910.52	2914.52	2917.33	2914.52					NO
20047.06	2910.52	2914.52	2917.38	2914.56	2922.00		End Bend	OK	NO
20125.11	2911.77	2915.77	2918.82	2916.01					NO
20130.11	2911.77	2915.77	2918.87	2916.05	2923.73		Begin Bend	OK	NO
20235.98	2913.64	2917.64	2920.46	2917.64					NO
20240.98	2913.64	2917.64	2920.50	2917.69	2923.90		Bend	OK	NO
20261.08	2913.64	2917.64	2921.60	2921.15					NO
20266.08	2913.87	2917.87	2922.16	2921.71	2923.90		Inlet	OK	NO

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

Storm Drain Manning's n (typ=0.013)= 0.013

CONDUIT DATA											FLOW DATA									
STATION			PIPE	BOX		IRREG		#	INVERT ELEV		L	S	A	Φ	Q	V	V2/2g	Sf	Ave.	PIPE Frict
FROM (ft)	TO (ft)	T/R	D (in)	SPAN (ft)	RISE (ft)	AREA (ft^2)	HYD RAD (ft)		D/S (ft)	U/S (ft)	(ft)	(%)	(ft^2)		(cfs)	(ft/s)	(ft)	(ft/ft)	S_f (ft/ft)	H_f (ft)
	19296.71			8	4					2889.58										
19296.71	19392.17	R		8	4			1	2889.58	2891.32	95.46	1.82%	32.00	0.0049	431.0	13.47	2.82	0.0095	0.0095	0.90
19392.17	19397.17	T		8	4			1	2891.32	2891.32	5.00	0.00%	32.00	0.0049	431.0	13.47	2.82	0.0095	0.0095	
19397.17	19475.97	R		8	4			1	2891.32	2892.78	78.80	1.85%	32.00	0.0049	431.0	13.47	2.82	0.0095	0.0095	0.75
19475.97	19480.97	T		8	4			1	2892.78	2892.78	5.00	0.00%	32.00	0.0049	431.0	13.47	2.82	0.0095	0.0095	
19480.97	19629.07	R		8	4			1	2892.78	2895.47	148.1	1.82%	32.00	0.0049	431.0	13.47	2.82	0.0095	0.0095	1.40
19629.07	19634.07	T		8	4			1	2895.47	2895.47	5.0	0.00%	32.00	0.0049	431.0	13.47	2.82	0.0095	0.0095	
19634.07	19886.53	R		8	4			1	2895.47	2905.67	252.5	4.04%	32.00	0.0049	431.0	13.47	2.82	0.0095	0.0095	2.39
19886.53	19891.53	T		8	4			1	2905.67	2905.67	5.0	0.00%	32.00	0.0049	431.0	13.47	2.82	0.0095	0.0095	
19891.53	20042.06	R		8	4			1	2905.67	2910.52	150.5	3.22%	32.00	0.0049	431.0	13.47	2.82	0.0095	0.0095	1.42
20042.06	20047.06	T		8	4			1	2910.52	2910.52	5.0	0.00%	32.00	0.0049	431.0	13.47	2.82	0.0095	0.0095	
20047.06	20125.11	R		8	4			1	2910.52	2911.77	78.0	1.60%	32.00	0.0049	431.0	13.47	2.82	0.0095	0.0095	0.74
20125.11	20130.11	T		8	4			1	2911.77	2911.77	5.0	0.00%	32.00	0.0049	431.0	13.47	2.82	0.0095	0.0095	
20130.11	20235.98	R		8	4			1	2911.77	2913.64	105.9	1.77%	32.00	0.0049	431.0	13.47	2.82	0.0095	0.0095	1.00
20235.98	20240.98	T		8	4			1	2913.64	2913.64	5.0	0.00%	32.00	0.0049	431.0	13.47	2.82	0.0095	0.0095	
20240.98	20261.08	R		20	4			1	2913.64	2913.64	20.1	0.00%	80.00	0.0049	431.0	5.39	0.45	0.0011	0.0053	0.11
20261.08	20266.08	T		20	4			1	2913.64	2913.87	5.0	4.60%	80.00	0.0049	431.0	5.39	0.45	0.0011	0.0011	