

Summerlin West Village 27

Technical Drainage Study for Lake Mead Boulevard

Street Y to Mountain Run Drive

Street Y

Street Z to Lake Mead Boulevard

HYDROLOGIC CRITERIA AND DRAINAGE MANUAL
DRAINAGE STUDY INFORMATION FORM

Name of Development: Lake Mead Boulevard – Street Y to Mountain Run Drive Date: June 2022

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

East/West: Mountain Run Drive

b) Section: 23 and 14 Township: 20S Range: 59E

c) APN : 137-22-101-005, 137-21-501-001, 137-22-301-005, AND 137-21-701-001

Name of Owner: Howard Hughes Company, LLC

Telephone No.: (702) 791-4201 Fax No.: (702) 791-4450 E-Mail Address: April.Chapman@howardhughes.com

Address: 10845 Griffith Peak Drive, Suite 160, Las Vegas, NV 89135

Contact Person-Name: Molly Anderson, PE Telephone No.: (702) 551-0330

* E-Mail Address: molly.anderson@atkinsglobal.com Fax No.: (702) 263-7200

Firm: Atkins

Address: 2270 Corporate Circle, Ste 200, Henderson, NV 89074

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	☒	Roadway Improvements

1. Total Owned Land Area: At Site: +/- 518 acres Being Developed/Disturbed: 18.86 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

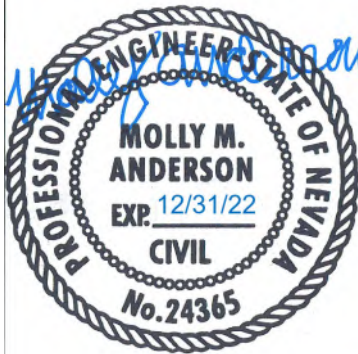
4. Proposed type of development (Residential, Commercial, Etc.): Public - Roadway Improvements

5. Approximate upstream land area which drains to the subject site: 350 acres

6. Has the site drainage been evaluated in the past? ☒ YES ☐ NO If yes, please identify documentation: Master Conceptual Drainage Study for Summerlin West Villages 27/30A/31 Tributary to GPDB.

7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: Grand Park Detention Basin

8. Briefly describe your proposed schedule for the subject project: ASAP



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# 5514 Local Entity File No.	Revision	Date

REFERENCE:

STANDARD FORM 1

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE SUBMITTAL CHECKLIST

Project Name:	:	Map ID:
Firm Name:		Engineer:
Address:		
City:	State:	Zip:
Phone Number:	Fax Number:	
Property Owner:		
Address:		
City:	State:	Zip:
Reviewed By:	Date Received:	Date Accepted for Review:

The following checklist is intended as a guide for the engineer preparing a Technical Drainage Study to submit to the local entity and Clark County Regional Flood Control District (if necessary). The listed items are the minimum information required prior to the entity performing a review. The engineer will remain responsible to ensure the Technical Drainage Study is prepared within the guidelines as set forth in the Clark County Regional Flood Control District (CCRFCD) Hydrologic Criteria and Drainage Design Manual (MANUAL).

This document is intended as an aid in preparing Technical Drainage Studies. Each study submitted is reviewed for compliance with local and regional criteria. This form is not intended to be all inclusive and does not limit the extent of the information, calculations or exhibits which may be necessary to properly evaluate the intended land use.

If items are not applicable for the subject site, provide N/A.

I. GENERAL REQUIREMENT

Yes	No	
_____	_____	Design Manual Standard Form 1 with the engineer's seal and signature.
_____	_____	Design Manual Standard Form 4 .
_____	_____	2 copies of the 24" x 36" Drainage Plan.
_____	_____	A notarized letter from the adjacent property owner(s) allowing off-site grading or discharge.

II. MAPS AND EXHIBITS

Yes	No	
_____	_____	A copy of a current Flood Insurance Rate Map (FIRM) with the site delineated.
_____	_____	A copy of the current CCRFCD Master Plan Update Figure, (F-x), for Flood Control Facilities and Environmental areas with the site delineated.

REFERENCE:

STANDARD FORM 2

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE SUBMITTAL CHECKLIST

II. MAPS AND EXHIBITS (Continued)

Yes No

- | | | |
|-------|-------|--|
| _____ | _____ | Off-site drainage basin maps for existing, interim and future conditions showing the existing topography, basin boundaries, concentration points, and flows in cfs. |
| _____ | _____ | On-site drainage basin maps for existing and proposed conditions showing the existing topography, basin boundaries, concentration points, and on-site and off-site flows in cfs. |
| _____ | _____ | Vicinity Map with local and major cross streets identified and a north arrow. |

III. DRAINAGE PLAN

Yes No

- | | | |
|-------|-------|---|
| _____ | _____ | Sheet size: 24" x 36" sealed by a registered engineer in the State of Nevada. |
| _____ | _____ | Minimum scale: 1" = 60'. |
| _____ | _____ | Project name. |
| _____ | _____ | Vicinity Map with local and major cross streets. |
| _____ | _____ | Revision box. |
| _____ | _____ | North arrow and bar scale. |
| _____ | _____ | Engineer's/consultant's address and phone number. |
| _____ | _____ | Elevation datum and benchmark. |
| _____ | _____ | Legend for symbols and abbreviations. |
| _____ | _____ | Cut/fill scarps, where applicable. |
| _____ | _____ | Street names, grades, widths. |
| _____ | _____ | Proposed future and existing spot grades for top of curbs and street crowns at lot lines, grade breaks, and along curb returns on both sides of the street. |
| _____ | _____ | Existing contours encompassing the site and 100 feet beyond with spot elevations for important locations, where appropriate. |
| _____ | _____ | Minimum finish floor elevations with top-of-curb elevations at upstream end of lot. |
| _____ | _____ | Proposed typical street sections. |

REFERENCE:

STANDARD FORM 2

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE SUBMITTAL CHECKLIST

III. DRAINAGE PLAN (Continued)

Yes No

- | | | |
|--------------------------|--------------------------|---|
| ☐ | ☐ | Streets with off-set crowns. |
| ☐ | ☐ | Proposed contours or spot elevations in sufficient detail to exhibit intended drainage patterns and slopes. |
| ☐ | ☐ | Property lines. |
| ☐ | ☐ | Right-of-way lines and widths, existing and proposed. |
| ☐ | ☐ | Existing improvements and their elevations. |
| ☐ | ☐ | Delineation of proposed on-site drainage basins indicating area and 10-year and 100-year storm peak flows at basin concentration points. |
| ☐ | ☐ | Concentration points and drainage flow direction with Q_{100} and V_{100} and D_{100} in streets. |
| ☐ | ☐ | Cumulative flows, velocity, and direction of flow at upstream and downstream ends of site for the 10-year and 100-year flows. |
| ☐ | ☐ | Location and cross-section of street capacity calculations. |
| ☐ | ☐ | Cross-sectional detail for channels, including cutoff wall locations. |
| ☐ | ☐ | Existing and proposed drainage facilities, appurtenances, and connections (i.e., sidewalk, ditches, swales, storm drain systems, unimproved and improved channels, and culverts, etc.) stating size, material, shape, and slope with plan and profile and HGL calculations. |
| ☐ | ☐ | Existing and proposed drainage easements and widths shown with sufficient detail. A cross sectional detail must be provided that shows appropriate lining and reinforcement. |
| ☐ | ☐ | Location and detail of existing, proposed, and future block wall openings. Minimum size is 16" x 48". Wrought iron gate is required for flows > 10 cfs. |
| ☐ | ☐ | Location and detail of flood walls illustrating depth of flow, proposed grouting height, etc. |
| ☐ | ☐ | Perimeter retaining wall locations. All existing and proposed walls (retaining screen and flood) must be shown with adjacent ground elevations. Flood walls with 8-inch concrete masonry unit. |
| ☐ | ☐ | Building and/or lot numbers. |
| ☐ | ☐ | Alignment of all existing, proposed, or future Regional Facilities adjacent to the site. |
| ☐ | ☐ | Limits of existing floodplain based on current FIRM or best available information; limits of proposed floodplains based on best available information. |

REFERENCE:

STANDARD FORM 2

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE SUBMITTAL CHECKLIST

III. DRAINAGE PLAN (Continued)

Yes No

- | | | |
|-------|-------|--|
| _____ | _____ | For areas in Zone A, AE, AH, and AO, base flood elevations (BFEs) must be shown for each lot; BFEs may be listed on each lot, or in a table. Finish floor elevations must be a minimum of 18 inches above BFE. |
| _____ | _____ | Appropriately elevated "humps" 6 inches above the 100 year water surface elevation at site accesses where the intent is to protect the site from the Q_{100} flows. |
| _____ | _____ | Street slopes for perimeter and interior streets. The minimum slope is 0.4 percent. |
| _____ | _____ | Location and detail of best management practice (BMP) for parking lots and low impact development (LID) (if required). |

IV. HYDROLOGIC ANALYSIS

Yes No

- | | | |
|-------|-------|--|
| _____ | _____ | Appropriate soil information and Soils Map for existing and future conditions with subbasins and property delineated. |
| _____ | _____ | Input and output information for existing conditions from computer models (HEC-1 or TR-55). The flow routing diagram must be provided with HEC-1 models. |
| _____ | _____ | Input and output information for future conditions from computer models (HEC-1 or TR-55). The flow routing diagram must be provided with HEC-1 models. |
| _____ | _____ | Use of correct precipitation values in and around the McCarran Airport rainfall area. |
| _____ | _____ | A discussion in the text of the hydrologic analysis justifying subbasin boundaries and cutoffs, supporting assumptions, and calculations. |
| _____ | _____ | A summary table of stormwater flows showing basin area, Q_{10} and Q_{100} for both individual basins and combined basin flows, where applicable. |
| _____ | _____ | Copies of supporting technical information referenced from a previously approved study and a statement accepting these results. |
| _____ | _____ | On-site facilities must perpetuate flows through or around the site without significantly impacting adjacent property owners in accordance with current Nevada Drainage Law. |
| _____ | _____ | Calculation for impervious area for parking lots and LIDs (if required). |

REFERENCE:

STANDARD FORM 2

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE SUBMITTAL CHECKLIST

V. HYDRAULIC ANALYSIS

Yes No

- | | | |
|-------|-------|---|
| _____ | _____ | Flow split calculations and supporting documentation or reference for the method of flow split calculations used. |
| _____ | _____ | Normal depth street flow calculations and cross section diagrams for all interior and perimeter streets. Provide "d x v" products for the Q_{100} and Q_{10} flows representing the worst case for interior and all perimeter streets. $Q_{100} d \times v \leq 8$. $Q_{10} d \times v \leq 6$ and 12 foot dry lane for rights-of-way ≥ 80 feet. Calculations must be labeled by street name as indicated on the Grading Plan. |
| _____ | _____ | A summary table of interior and exterior street capacity calculations showing the street name, Q_{100} flow, slope, depth of flow, velocity and depth times velocity product and streets needing to meet 12 foot dry lane criteria. |
| _____ | _____ | Appropriate hydraulic calculations for block wall openings assuming a 50 percent vertical clogging factor. (Assume the lower half of the opening is plugged.) |
| _____ | _____ | Appropriate hydraulic calculations at drainage easement entrance and discharge locations to set finish floor elevations. Hydraulic calculations must include submerged weir, superelevation and tee intersection losses, where appropriate. |
| _____ | _____ | Provide necessary freeboard requirements to set the finished floor elevations of all proposed buildings, 2 x depth of flow or depth of flow plus 18 inches of freeboard, whichever is less. The minimum requirement is 6 inches above adjacent upstream top of curb. Buildings adjacent to drainage easements must always be provided with 18 inches of freeboard above the Q_{100} weir height or flow depth, whichever is greater. |
| _____ | _____ | A complete water surface profile analysis (HEC-2, HEC-RAS, etc.) for channel flows and FEMA Zone A flood zones. <ul style="list-style-type: none"> • Field survey data. • Input and output information. • Plotted cross-sections based on survey with proper encroachments. • A map showing the location of the cross-sections. • Analysis of both sub and super-critical flow segments. • A summary table and a discussion of the results in the text of the report. |
| _____ | _____ | Provide a 50 percent clogging factor in the capacity calculation for drop inlets. |
| _____ | _____ | Hydraulic calculations for culverts and storm drains. D-Load calculations must be provided for storm drain pipes in public rights-of-way, including headwater pool inundation. |
| _____ | _____ | The mitigation of nuisance water, both during construction and in the fully developed condition, must be addressed. |
| _____ | _____ | Provide BMP type, size and supporting calculations for parking lots and LIDs (if required). |

REFERENCE:

STANDARD FORM 2



CITY OF LAS VEGAS

MINIMUM DRAINAGE STUDY CRITERIA STANDARD FORM 2 CHECKLIST SUPPLEMENT

(Revised 5/18/11)

The following checklist is intended as a supplemental guide for the engineer preparing a Technical Drainage Study submittal to the City of Las Vegas. This supplement focuses on requirements specific to the City of Las Vegas. The requirements presented are in addition to the Clark County Regional Flood Control District (CCRFCDD) Manual Standard Form 2. The listed items are the minimum information required prior to the City performing a review. The engineer will remain responsible to ensure the Technical Drainage Study is prepared within the guidelines as set forth in the CCRFCDD Hydrologic Criteria and Drainage Design Manual (Design Manual).

An appointment must be made to preview this checklist in conjunction with CCRFCDD Standard Form 2 prior to the City accepting a new drainage study for review. The engineer must contact the Flood Control Section at (702) 229-6541 to schedule a submittal appointment.

If items are not applicable for the subject site, provide N/A.

I. GENERAL REQUIREMENT		
Yes	No	
		A notarized letter from the adjacent property owner(s) allowing off-site grading. (A copy of the letter must be received prior to final acceptance of the drainage study.)
		Copies of all conditions of approval for development related to this property. (e.g. zoning, use permit, tentative map, etc.) Verify compliance with conditions.
		An electronic copy of the complete submittal is required to be submitted with one original hard copy of the study. Electronic documents should be on a universal computer-readable digital output device replicating your submittal. An Indexed Portable Document Format (PDF) or Print Ready CAD file formats with a minimum of 300dpi are the desired formats. If figures are in color, they must be scanned in color and saved as a separate file. _____ by initial here, the engineer on record acknowledges that the electronic copy is an identical replicate of the original hard copy submitted to the City of Las Vegas.

II. GRADING PLAN INFORMATION		
Yes	No	
		(1) 24" X 36" copy of the Grading Plan, (including all Detail Sheets) sealed by the engineer.
		Proposed future and existing spot grades for top of curbs and street crowns at lot lines, grade breaks, and along curb returns on both sides of the street. Note: Proposed top of curb elevations must be provided for both sides of roadways even if only half street construction is required.
		Label existing topography at a minimum 5 foot elevation interval including adjacent developments, finished floor elevations of existing buildings and top of existing curbs extending 100 feet around the perimeter of the site. (*Measured from the centerline of the adjacent roadway.)

CITY OF LAS VEGAS MINIMUM DRAINAGE STUDY CRITERIA CHECKLIST

II. GRADING PLAN INFORMATION		
Yes	No	
		Proposed on-site and off-site storm drains and other flood control facilities with plan and profile sheets for public storm drains showing the class of pipe, (Class III, IV, V, etc.), design hydraulic grade line, (HGL) and 100 year storm flow. A public drainage easement must be provided over on-site storm drains conveying off-site flows. An overflow path must be provided over all storm drains.
		All existing and "to be constructed" walls with cross-sections showing wall type, (e.g. block wall, retaining wall, flood wall, etc.), with limits clearly defined, adjacent ground elevations. Wall heights must meet current ordinances and in no case exceed 14 feet above the adjacent property.
		Street slopes for both interior and perimeter streets. Note: The minimum slope for a roadway is 0.4 percent, a minimum 18-inch storm drain must be provided where minimum slopes cannot be met.
		Back of lot elevations and lot drainage pattern for all lots including common lots.
		Sites with a grade difference two feet above or below existing ground are required to have approval from City of Las Vegas Current Planning. Current Planning approval is required prior to final approval of the drainage study.
		On-site facilities must perpetuate flows through or around the site without significantly impacting adjacent property owners. (The project must pass flows through the site every 600 feet where the project is blocking flow paths.)
		This project uses a solid grouted stem wall (or approved alternate) at the back of sidewalk to provide erosion protection for landscaped areas where the depth of flow in the roadway exceeds the back of walk elevation. A corresponding cross-section detail is included.
		Commercial and Common Lot Landscape areas are not allowed to drain over the sidewalk. The grading plans show flow lines with grades and sidewalk under drains for all landscape areas draining to the public ROW.

III. Local Entity Criteria - City of Las Vegas – Manual Section 1600		
Yes	No	
		Concrete valley gutters are required in parking lots with slopes less than 1 percent. Slopes through cul-de-sac must be at a 1 percent minimum where flow is drained through the cul-de-sac.
		Ten-foot wide public drainage easements to be privately maintained are allowed for flow less than 20 cfs. The depth of flow entering the easement must be checked using the submerged weir calculation.
		The limits of the flood zones and the base flood elevations (BFE) must be shown on all grading plans for all developments within a Special Flood Hazard Zone A, AO, AE, etc.
		Minimum finish floor elevation is 6 inches above highest adjacent top of curb. Finish floor calculations must include allowances for super elevations on curves and velocity head for tee intersections.
		Finished floor elevations for buildings adjacent to public drainage easements must be a minimum of 18 inches above the Q100 weir of submerged weir elevation, whichever is greater.

CITY OF LAS VEGAS MINIMUM DRAINAGE STUDY CRITERIA CHECKLIST

III. Local Entity Criteria - City of Las Vegas – Manual Section 1600		
Yes	No	
		Lots with “B and C Type Drainage” that drain from one lot to another through a drainage easement shall be required to install an underground nuisance drainage system or a 2-foot valley gutter. 16” x 24” minimum block wall openings are required for both options.
		Bubblers are required across 80 foot and greater ROW streets. When flows exceed 10 cfs, bubblers larger than 18 inches will be required up to a maximum of 36”. Inlets must be sized to match the pipe size provided.

- Contact the Flood Control Section regarding the drainage study review fee. These fees are payable at the time of submittal.
- The Drainage Study must be conditionally approved prior to submitting improvement plans to the Civil and Planning Development of the Department of Building and Safety for review.

This document is intended as an **aid** in preparing Technical Drainage Studies for the City of Las Vegas. Each study submitted is reviewed for compliance with local and regional criteria. This form is not intended to be all-inclusive and does not limit the extent of the information, calculations or exhibits which may be necessary to properly evaluate the intended land use.

Engineer's Certification

Atkins certifies that the information contained herein has been prepared in accordance with generally accepted engineering principles and practices, and to the best of our knowledge, is true and correct.

This letter certifies that all items in the **Update #1 Addendum #1 to the Technical Drainage Study for Lake Mead Boulevard (Street Y to Mountain Run Drive) and Street Y (Street Z to Lake Mead Boulevard)** electronic submittal matches the paper version bound into the study.



Molly M. Anderson, PE (NV #24365)
Senior Engineer

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Comment Response Letter

Your reference: DS #5514C

Albert Sung
City of Las Vegas Public Works / Flood Control
495 S. Main Street
Las Vegas, NV 89101

June 2022

RE: Update #1 Addendum #1 to the Technical Drainage Study for Lake Mead Boulevard (Street Y to Mountain Run Drive) and Street Y (Street Z to Lake Mead Boulevard)

Dear Albert,

This letter and the attached documents have been prepared as an Update #1 Addendum #1 to the *Technical Drainage Study (TDS) for Summerlin West Village 27 Lake Mead Boulevard (Street Y to Mountain Run Drive) and Street Y (Street Z to Lake Mead Boulevard)*.

Comment #1: It appears that the subject update is just a reconfirmation for the changes addressed in the Update to another study “Summerlin West Village 27 – Lake Mead Boulevard – Park Drift Trail to Mountain Run Drive (DS5455)”.

The subject update will not be approved prior to the conditional approval of the above stated update study.

Comment response: The furthest downstream pipe on Lake Mead was updated as well as the most upstream pipe on this subject project. These are the only two pipes that changed. So while the two projects are related by the removal of the Mountain Run Drive intersection, there was a pipe change on each of the two subject projects.

Comment #2: The proposed 36”-storm drain in Lake Mead Boulevard is very close to the street curb. Note that the minimum clearance between the edge of storm drain and the lip of the curb is 3’. Adjust and label the clearance distance between the storm drain and the street curb in the next submittal.

Comment response: A special agreement was reached with the city of Las Vegas regarding the minimum clearance due to this portion of Lake Mead Boulevard being a privately maintained street. Documentation of this agreement can be found in Appendix B.

Comment #3: The subject project is based on the premise that a downstream project, “Lake Mead Boulevard (Park Drift Trail to Mountain Run Drive)” and the associated facilities are in place for flood flow perpetuation. The subject drainage study will not be approved prior to the final approval of the Summerlin West Village 27 - Lake Mead Boulevard (Park Drift Trail to Mountain Run Drive) drainage study.

Comment response: Understood.

Comment #4: Second Request: Detail Cross Sections for Lake Mead Boulevard and Street Y showed roll curb for street improvements. Contact Mr. Victor Bolanos of City Traffic Engineering Division at (702) 229-6901 for review and approval prior to the final approval of the subject drainage study.

The response was that Howard Hughes Corporation is currently working with City Traffic Engineering Division to determine a necessary “clear zone” and to obtain approval for the use of roll-curb.

Approval from the City Traffic must be obtained prior to the final approval of the drainage study.

Comment response: An agreement has been reached between THHC and City Traffic. Please see email in Appendix B.

Comment #5: All offsite interim flood control facilities such as but not limited to berms/ditches and temporary sumps are privately owned and to be privately maintained by the Howard Hughes Company. Provide a note as such on the grading plans.

Comment response: The note was shown on the included grading plans from the Technical Drainage Study Update #1 and are attached for convenience. Example shown on Sheet 13 attached.



Molly M. Anderson, PE (NV #24365)
Senior Engineer

Appendix A. Comment Letter

CITY OF LAS VEGAS			DATE:
INTER-OFFICE MEMORANDUM			May 12, 2022
TO: Land Development Services Department of Building & Safety			FROM: Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT:	Drainage Study for:		COPIES TO:
Summerlin West V27 Lake Mead Blvd & Street Y – Update #1 (Street Y to Mountain Run Dr. & Street Z to Lake Mead Blvd.)			Atkins
Cross Streets:	Lake Mead Boulevard & Mountain Run Drive		Howard Hughes Company, LLC
File Number:	F:\Depot\DSMemos\DS5514C.doc		Bart Anderson, P.E., DevCo
Parcel Number:	137-22-101-005, 137-21-501-001, 137-22-301-005 & 137-21-701-001		
Zoning Action:	N/A		
FEMA Flood Zone	YES	NO	X
Proposed Storm Drain	YES	X	NO

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1 st Submittal	10/26/2021 & 11/9/2021	11/17/2021	Not Approved	\$400.00	4511665: \$400
2 nd Submittal	1/25/2022	2/16/2022	Conditional Approval	\$400.00	4618907: \$400
3 rd Submittal	4/26/2022	5/12/2022	See Comments Below	\$100.00	4755179: \$100
			TOTAL FEES (LDDRS):	\$900.00	----

REMARKS:

3rd Submittal: Update #1

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 the following conditions:

1. It appears that the subject update is just a reconfirmation for the changes addressed in the Update to another study "*Summerlin West Village 27 – Lake Mead Boulevard – Park Drift Trail to Mountain Run Drive (DS5455)*".

The subject update will not be approved prior to the conditional approval of the above stated update study.

2. The proposed 36"-storm drain in Lake Mead Boulevard is very close to the street curb. Note that the minimum clearance between the edge of storm drain and the lip of the curb is 3'. Adjust and label the clearance distance between the storm drain and the street curb in the next submittal.

The following comments are repeated until they are complete:

3. The subject project is based on the premise that a downstream project, "*Lake Mead Boulevard (Park Drift Trail to Mountain Run Drive)*" and the associated facilities are in place for flood flow perpetuation. The subject drainage study will not be approved prior to the final approval of the *Summerlin West Village 27 - Lake Mead Boulevard (Park Drift Trail to Mountain Run Drive)* drainage study.
4. **Second Request:** *Detail Cross Sections for Lake Mead Boulevard and Street Y showed roll curb for street improvements. Contact Mr. Victor Bolanos of City Traffic Engineering Division at (702) 229-6901 for review and approval prior to the final approval of the subject drainage study.*

The response was that *Howard Hughes Corporation* is currently working with *City Traffic Engineering Division* to determine a necessary "clear zone" and to obtain approval for the use of roll-curb.

Approval from the *City Traffic* must be obtained prior to the final approval of the drainage study.

5. All offsite interim flood control facilities such as but not limited to berms/ditches and temporary sumps are privately owned and to be privately maintained by the *Howard Hughes Company*. Provide a note as such on the grading plans.

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.

END OF REMARKS
HDR/AYS

T/R/S: T20S/R59E/22
AREA K-22

Appendix B. Email Correspondence

B.1. Storm Drain Distance from Curb

B.2. Clear Zone Roll Curb

B.1. Email Correspondence – Storm Drain Distance from Curb

From: Ortiz, Tony

Sent: Tuesday, August 24, 2021 5:13 PM

To: Oh-Sang Kwon <okwon@LasVegasNevada.GOV>; Matthew Meyer <mmeyer@lasvegasnevada.gov>

Cc: Carl Anderson <Carl.Anderson@howardhughes.com>; Milstead, Caron

<Caron.Milstead@atkinsglobal.com>; Barcos, Nicolas <Nicolas.Barcos@atkinsglobal.com>; Elledge,

Joshua <Joshua.Elledge@atkinsglobal.com>; McCabe, Kathy M <Kathy.McCabe@atkinsglobal.com>

Subject: V27 Lake Mead Blvd. (Mountain Run to 4125 Reservoir) Storm Drain Location

Matthew/Oh-Sang,

Thanks for taking the time to meet with us today. This e-mail is being sent to recap the decisions made in our discussion. Please see the following bullet points:

1. CLV agreed that the storm drain pipe and manholes in Lake Mead may be closer to the curb line than required by code considering Lake Mead will be a private street in that area.
2. In areas where the manholes are directly adjacent to the curb, the plans must call out that the collar should be monolithic and not be poured with the curb.
3. A detail shall be provided on the plans showing the alignment of the manholes in areas where they are directly adjacent to the curb.

Please feel free to let us know if you would like to revise or add to any of these statements.

Thank you,

Tony Ortiz, PE

Project Manager, Land Development
Engineering, Design and Project Management
Tel: (725) 735-3058

Atkins, member of the SNC-Lavalin Group

2270 Corporate Center Drive, Suite 200, Henderson, NV 89074

B.2. Email Correspondence – Clear Zone Roll Curb

Anderson, Molly

From: Lucien Paet <lpaet@LasVegasNevada.GOV>
Sent: Thursday, February 3, 2022 5:13 PM
To: Carl Anderson; April Chapman
Cc: Bart Anderson; Vincent Esposito; Rick Schroder; Victor Bolanos; Kyle Lynch; Julie Cleaver; Steve Swanton
Subject: RE: Canceled: Summerlin Mountain Run & Lake Mead clear zone follow up

EXTERNAL EMAIL - Do not click any links or open any attachments unless you trust the sender and know the content is safe

Yes, we are satisfied with the clear zones you presented in the exhibit you sent today and on 1/24/22.

Thanks,

Lucien Paet, P.E.

Engineering Project Manager
Public Works | Transportation Engineering
702-229-6145

495 S. Main Street, 1st Floor | Las Vegas, NV 89101



lasvegasnevada.gov



Your opinion is important! Click [here](#) to take a short survey.

We need to hear from you. Please take an additional short survey.

<http://www.rtcnv.com/pedcomfort>

From: Carl Anderson <Carl.Anderson@howardhughes.com>
Sent: Thursday, February 03, 2022 4:22 PM
To: April Chapman <April.Chapman@howardhughes.com>; Lucien Paet <lpaet@LasVegasNevada.GOV>
Cc: Bart Anderson <banderson@LasVegasNevada.GOV>; Vincent Esposito <Vincent.Esposito@howardhughes.com>; Rick Schroder <rschroder@LasVegasNevada.GOV>; Victor Bolanos <vbolanos@LasVegasNevada.GOV>; Kyle Lynch <klynch@dtjdesign.com>; Julie Cleaver <julia.cleaver@howardhughes.com>; Steve Swanton <sswanton@LasVegasNevada.GOV>
Subject: RE: Canceled: Summerlin Mountain Run & Lake Mead clear zone follow up

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Lucien,

Per Monday's (1/31/21) meeting, it was discussed that the Village 27 Lake Mead section with roll curb was approved per the attached provided exhibit. Can you please provide confirmation?

Thank you!

Carl Anderson, PE | Manager, Engineering
The Howard Hughes Corporation
Summerlin | 10845 Griffith Peak Drive | Suite 160 | Las Vegas, NV 89135

702.791.4518 direct | 702.859.0572 mobile

-----Original Message-----

From: Carl Anderson

Sent: Monday, January 24, 2022 9:53 AM

To: April Chapman <April.Chapman@howardhughes.com>; Lucien Paet <lpayet@lasvegasnevada.gov>

Cc: Bart Anderson <banderson@lasvegasnevada.gov>; Vincent Esposito <Vincent.Esposito@howardhughes.com>; Rick Schroder <rschroder@lasvegasnevada.gov>; Victor Bolanos <vbolanos@lasvegasnevada.gov>; Kyle Lynch <klynch@dtjdesign.com>; Julie Cleaver <julia.cleaver@howardhughes.com>; Steve Swanton <sswanton@lasvegasnevada.gov>

Subject: RE: Canceled: Summerlin Mountain Run & Lake Mead clear zone follow up

Good morning Lucien/All,

I have attached the clear zone information for V27 Lake Mead - Park Drift to Mountain Run that we can discuss in detail.

When is your team available to meet this week to make up for last week's cancellation?

Thank you,

Carl Anderson, PE | Manager, Engineering The Howard Hughes Corporation Summerlin | 10845 Griffith Peak Drive | Suite 160 | Las Vegas, NV 89135
702.791.4518 direct | 702.859.0572 mobile

-----Original Message-----

From: April Chapman <April.Chapman@howardhughes.com>

Sent: Tuesday, January 18, 2022 7:22 AM

To: Lucien Paet <lpayet@lasvegasnevada.gov>

Cc: Carl Anderson <Carl.Anderson@howardhughes.com>; Bart Anderson <banderson@lasvegasnevada.gov>; Vincent Esposito <Vincent.Esposito@howardhughes.com>; Rick Schroder <rschroder@lasvegasnevada.gov>; Victor Bolanos <vbolanos@lasvegasnevada.gov>; Kyle Lynch <klynch@dtjdesign.com>; Julie Cleaver <julia.cleaver@howardhughes.com>; Steve Swanton <sswanton@lasvegasnevada.gov>

Subject: Re: Canceled: Summerlin Mountain Run & Lake Mead clear zone follow up

Thanks for letting us know. If you are sick hope you feel better.

Regards,

April

> On Jan 18, 2022, at 7:19 AM, Lucien Paet <lpayet@lasvegasnevada.gov> wrote:

>

> EXTERNAL EMAIL - Do not click any links or open any attachments

> unless you trust the sender and know the content is safe

>

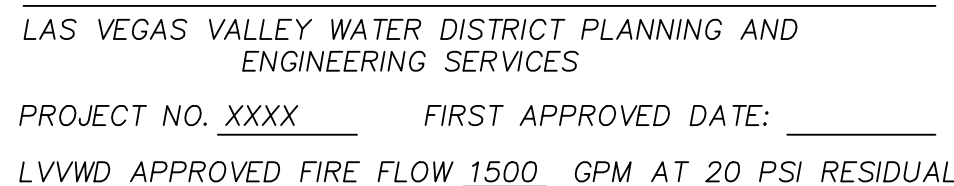
> I'm most likely out this week so I'm canceling and we'll try for sometime next week.

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NOTE:
POST-CONSTRUCTION BMP'S (PCBMPs)/CONTROL MEASURES NOTED ON THE GRADING PLANS ARE MANDATORY PERMANENT REGULATORY STORMWATER POLLUTION CONTROLS. THESE PCBMPs MUST BE INSTALLED PER THE APPROVED PLANS AND MUST BE PERMANENTLY MAINTAINED.



ANTHONY ORTIZ PE#18849 1/19/2022
DATE

CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED DRAINAGE STUDY FOR THIS SITE ON FILE AT THE CITY OF LAS VEGAS FOR THIS PROJECT.

DS#5514

GRID NORTH AS DEFINED BY THE CENTRAL MERIDIAN OF THE NEVADA COORDINATE REFERENCE SYSTEM (NCRS), LAS VEGAS HIGH ELEVATION ZONE, NORTH AMERICAN DATUM OF 1983; SAID MERIDIAN BEING COINCIDENT WITH 114°58' WEST OF THE GREENWICH MERIDIAN.

CITY OF LAS VEGAS BENCHMARK: D.368 (REVISED 2008)
 NAVD88 ELEVATION: 989.574 METERS (3,246.63 FEET)
 FWD USC&GS DISC SET IN ROCK RIDGE 150 SOUTH OF CHARLESTON BLVD. & WEST OF DETENTION BASIN.
 T21S,R59E,S03

Call before you Dig
AVOID CUTTING UNDERGROUND
UTILITY LINES. IT'S COSTLY.

Call
811

OR
1-800-642-2444

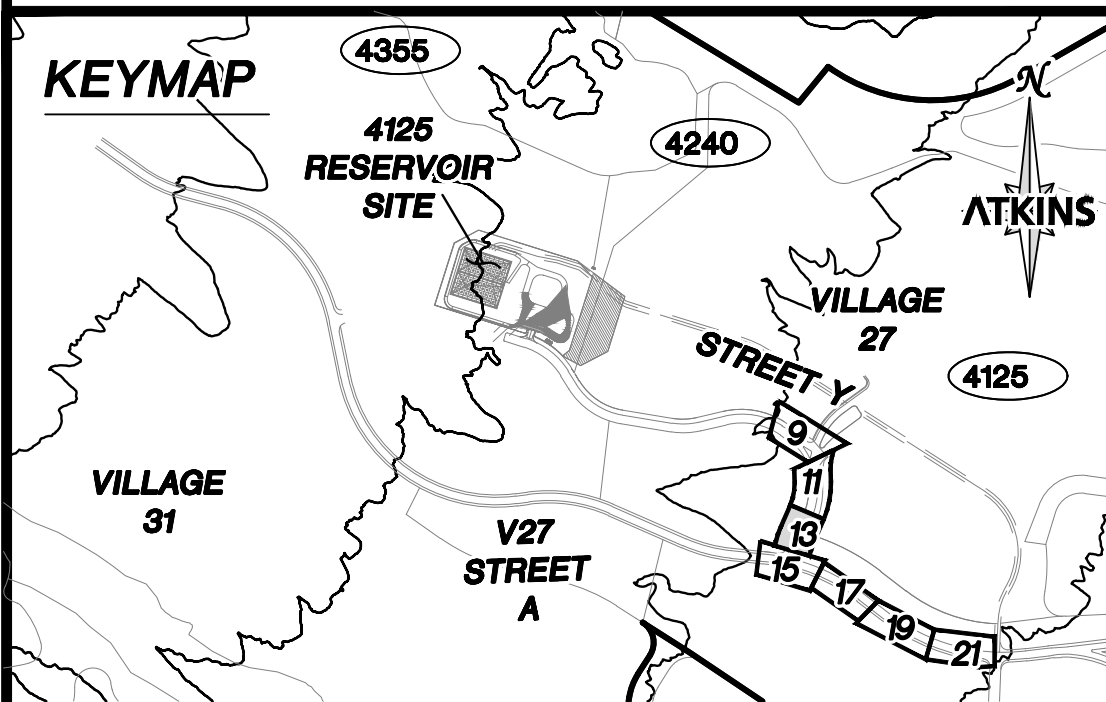
**AVOID HITTING OVERHEAD
POWER LINES. IT'S COSTLY.**

**CALL BEFORE
YOU DO
OVERHEAD**

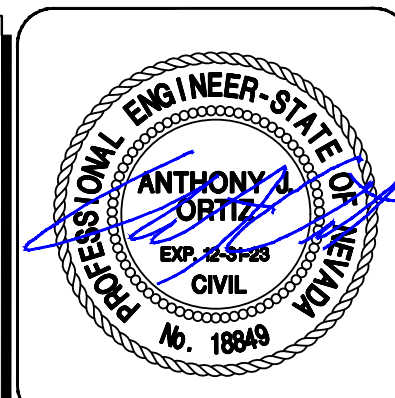
1-702-227-2929

- ① INSTALL STORM DRAIN PIPE. SEE PLAN AND PROFILE SHEETS FOR ADDITIONAL NOTES AND INFORMATION.
- ② INSTALL TYPE III STORM DRAIN MANHOLE PER CCAUSD #406
- ③ INSTALL TYPE "CM2" DROP INLET PER CCAUSD #421 & #422
- ④ REMOVE CAP AND CONNECT TO EXISTING STORM DRAIN STUB
- ⑤ STUB AND PLUG STORM DRAIN FOR FUTURE CONNECTION PER DETAIL SHEET 28, OR APPROVED EQUAL
- ⑥ INSTALL WINGWALL HEADWALL PER NDOT DS-18A, AND DS-18B

- ① ADJUST EXISTING WATER VALVE TO GRADE
- ② ADJUST EXISTING WATER ACCESS MANHOLE TO GRADE
- ③ REMOVE, RELOCATE & INSTALL EXISTING WATER AVAR
- ④ ADJUST EXISTING WATER TEST STATION TO GRADE
- ⑤ ADJUST EXISTING WATER AVAR TO GRADE
- ⑥ REMOVE, RELOCATE & INSTALL EXISTING WATER TEST STATION



UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN OR UTILITIES NOT SHOWN IN THEIR PROPER LOCATION.

[illegible]

ATKINS
22270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7275
Fax: +1.702.263.7200

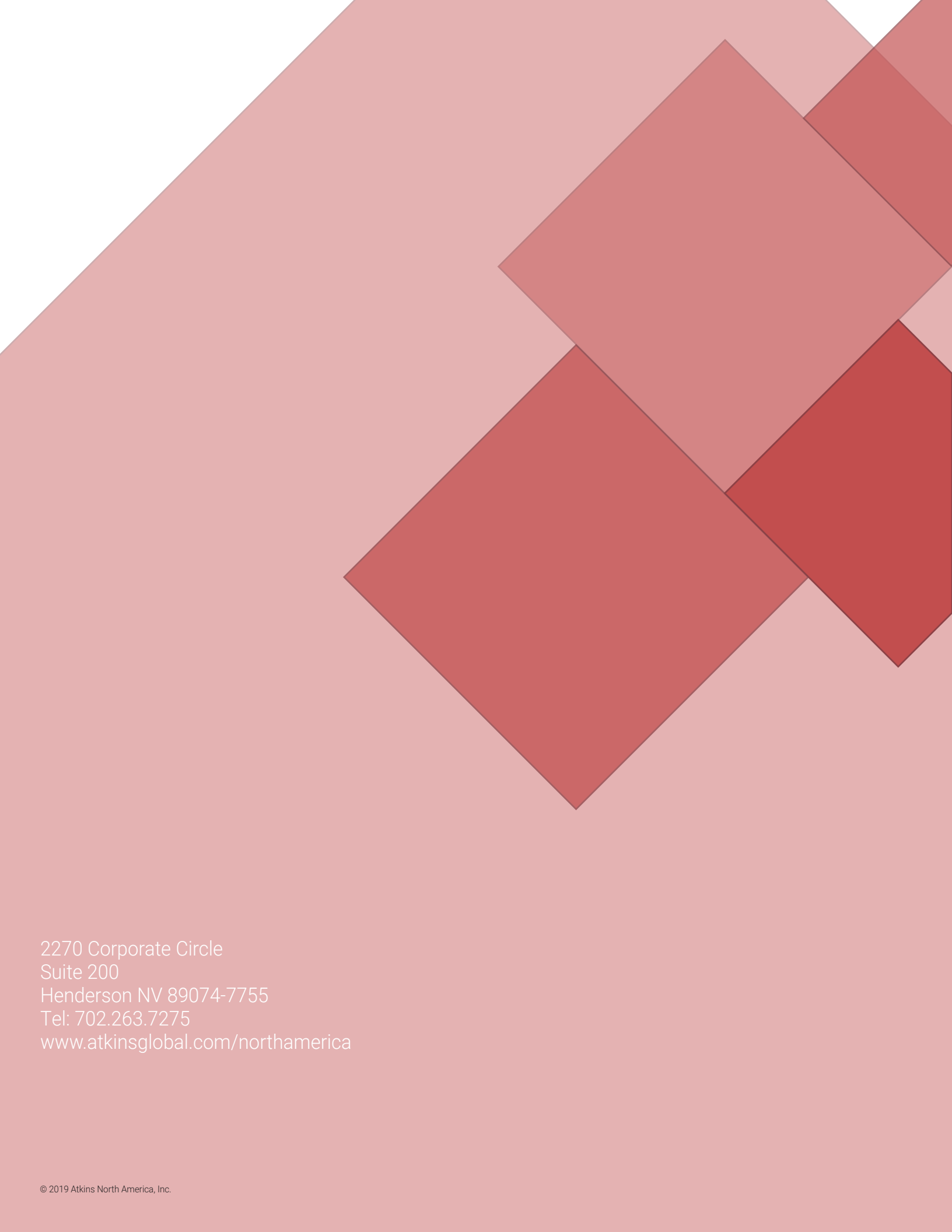


SUMMERLIN®

SUMMERLIN WEST VILLAGE 27
V27 STREET A - STREET Y TO MOUNTAIN RUN DRIVE
STREET Y - STREET Z TO V27 STREET A

XXXXXX	DESIGNED BY: B. MOCHITTAK
CLV L22-00626	DRAWN BY: K. HENDRY
DATE: MAY, 2022	CHECKED BY: N. BARCOS
DRAWING NO.	HORIZ.: 1"=20' VERT.: N/A
	13/29

C:\pw work\atknay01\dms56807\66946-08-GRAD-G1.dwg LAYOUT: 13 GRADING PLAN May 25 2022 - 12:13PM



2270 Corporate Circle
Suite 200
Henderson NV 89074-7755
Tel: 702.263.7275
www.atkinsglobal.com/northamerica