

DS #:

5222

APN:

137-26-212-001, 137-26-212-002

PROJECT:

Summerlin Village 21B Crystal Canyon Parcels A and B

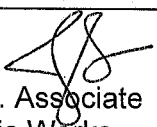
SUBMITTAL:

3rd

SCANNED BY/DATE:

CHECKED BY/DATE:



CITY OF LAS VEGAS		DATE:
INTER-OFFICE MEMORANDUM		March 12, 2020
TO: Land Development Services Department of Building & Safety		FROM: Jennifer Shinn, P.E.  Flood Control, Engr. Associate Department of Public Works
SUBJECT:	Drainage Study for:	COPIES TO:
	Summerlin Village 21B Crystal Canyon Parcels A and B	RCI Engineering
Cross Streets:	Carriage Hill Drive and Far Hills Avenue	Woodside Homes of Nevada, LLC
File Number:	F:\Depot\DSMemos\DS05222B.doc	Bart Anderson, P.E., DevCo
Parcel Number:	137-26-212-001, 137-26-212-002	CCRFCD
Zoning Action:		
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	11/21/2019	12/19/2019	See Comments Below	\$400.00	3653840: \$400
2 nd Submittal	2/11/2020	3/4/2020		\$400.00	3740442: \$400
3 rd Submittal	3/5/2020	3/12/2020	Conditionally Approved	N/C	--
TOTAL FEES (LDDRS):				\$800.00	----

REMARKS:

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

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

***** The Conditional Approval of this Drainage Study is to allow the engineer/developer to submit the Improvement Plans to City Land Development Only**

1. **This drainage study is acceptable in concept;** however, *City of Las Vegas* will not formally accept the study until the *Clark County Regional Flood Control District (CCRFCD)* has issued a letter of concurrence. The engineer should contact the CCRFCD to confirm that they have begun their review.
2. Label all existing storm drain facilities with the CLV drawing number(s).

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, conditional acceptance 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.

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/JKS

T/R/S: T20S/R59E/S26
AREA K-26

Supplement to the
**TECHNICAL DRAINAGE STUDY
FOR SUMMERLIN VILLAGE 21B
PARCELS A AND B
CRYSTAL CANYON**

Prepared for:

**Woodside Homes of Nevada
4670 South Fort Apache Road, Suite 200
Las Vegas, NV 89147
Phone: (702) 889-7824**

March 2020

PROJECT 4320.0009

**RCI Engineering
500 South Rancho Drive, Suite 17
Las Vegas, NV 89106
www.rcinevada.com**

HYDROLOGIC CRITERIA AND DRAINAGE MANUAL
DRAINAGE STUDY INFORMATION FORM

Name of Development: Summerlin Village 21B Crystal Canyon Parcels A and B Date: March 5, 2020

Location of Development: a) Descriptive (Cross Streets) North/South: Carriage Hill Drive
East/West: Far Hills Avenue

b) Section: 26 Township: 20 South Range: 59 East

c) APN : 137-26-212-001, 137-26-212-002

Name of Owner: Woodside Homes of Nevada LLC

Telephone No.: 702-889-7824 Fax No.: _____ E-Mail Address: _____

Address: 4670 South Fort Apache Road, Suite 200, Las Vegas, NV 89147

Contact Person-Name: Rick J. Read, P.E. Telephone No.: 702-453-0800

* E-Mail Address: rread@rcinevada.com Fax No.: 702-453-0801

Firm: RCI Engineering

Address: 500 South Rancho Drive, Suite 17 Las Vegas, Nevada 89106

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: 27.6 acres Being Developed/Disturbed: 27.6 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: 0 acres

6. Has the site drainage been evaluated in the past? ☒ YES ☐ NO If yes, please identify documentation: Update #1 to the Flood Control Master Plan Update Summerlin West Planning Area

7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: East into storm drain in Carriage Hill Drive

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

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.**

Engineer's Seal

Local Entity File No.

Revision

Date

REFERENCE:

STANDARD FORM 1



March 5, 2020

City of Las Vegas
333 N. Rancho Drive
Las Vegas, NV 89106

RE: Crystal Canyon- Summerlin Village 21 Parcel A & B

Jennifer Shinn PE,

The purpose of this letter is to address the e-mail comment letter dated March 5, 2020 regarding the above-referenced project. The comment from the e-mail has been addressed below.

Comment 1: The maximum drop inlet length allowed in the CLV is 20'. Please revise inlet 4 to be a 20' inlet.

Response: Drop inlet #4 has been revised to 20 feet. A revised calculation has been enclosed for that drop inlet. The calculation based on a reduced length of the inlet by 2.5 feet shows that the ponding depth at the inlet will be 0.42 feet which is still below top of curb. The previous calculation using a 22.5 foot long inlet showed a ponding depth of 0.38 and reducing the length only resulted in an increase of ponding depth of 0.04 feet. That flow is easily contained in the street and no negative impact is made by reducing that length. Sheets G-4 and P-6 from the Unit 1 improvement plans have been enclosed. Figure 6 REV was revised so that the figure shows the latest information and has been enclosed. The revised drop inlet calculation and the previous submittals calculation have also been enclosed.

If you have any questions or require additional information please do not hesitate to contact us.

Sincerely,

Rick J. Read, P.E.

RCI Engineering

500 S. Rancho, Suite 17 - Las Vegas, NV 89106
Main 702.453.0800 www.RCINEVADA.com Fax 702.453.0801

Rick Read

From: Jennifer Shinn <jshinn@LasVegasNevada.GOV> on behalf of Jennifer Shinn
Sent: Thursday, March 5, 2020 9:57 AM
To: Rick Read
Cc: Chris Zrinyi
Subject: RE: Summerlin Village 21B Crystal Canyon Parcels A & B

Rick,
Yes, just the updated sheets as well as a copy of the new calc is acceptable.

Thanks,

Jennifer Shinn

Engineering Associate
Department of Public Works | City Engineering Division
Phone: (702) 229-6131
333 N. Rancho, floor | Las Vegas, NV 89106



lasvegasnevada.gov



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

From: Rick Read <rread@rcinevada.com>
Sent: Thursday, March 5, 2020 9:36 AM
To: Jennifer Shinn <jshinn@LasVegasNevada.GOV>
Cc: Chris Zrinyi <czzrinyi@rcinevada.com>
Subject: RE: Summerlin Village 21B Crystal Canyon Parcels A & B

EXTERNAL EMAIL: This email originated from outside the organization, do not click links or open attachments unless you recognize the sender and know the content is safe.

Jennifer,

I did not realize that the maximum length was 20-feet. I used a 20 foot inlet in the calculation and the ponding is still below top of curb (0.42 ft). So it works OK. There are 4 different plans sets for this Project. Since this is a minor change, may we submit just the plan sheets that changed?

Thanks,

Rick J. Read, PE



500 South Rancho Drive, Suite 17
Las Vegas, NV 89106
Direct 702-998-2102

From: Jennifer Shinn [mailto:jshinn@LasVegasNevada.GOV]
Sent: Wednesday, March 4, 2020 2:40 PM
To: Rick Read <rread@rcinevada.com>
Subject: Summerlin Village 21B Crystal Canyon Parcels A & B

Hi Rick,

I finished my review of the addendum but have 1 comment that needs to be addressed before I can conditionally approve the study:
The maximum drop inlet length allowed in CLV is 20'. Please revise Inlet 4 to be a maximum of 20'. If inlets are in series, they shall be spaced a minimum of 20' apart.

You may provide the updated calcs and plans as a no charge supplement. Let me know when you submit it so I can pull it from the stack, review, and kick it out ASAP.

Let me know if you have any questions.

Thanks,

Jennifer Shinn

Engineering Associate
Department of Public Works | City Engineering Division
Phone: (702) 229-6131
333 N. Rancho, floor | Las Vegas, NV 89106



lasvegasnevada.gov



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



March 5, 2020

City of Las Vegas
Flood Control
333 N Rancho Dr.
Las Vegas, NV 89106

**RE: Certification Letter for Paper and Digital Plans for the
 Technical Drainage Study for Summerlin Village 21 Parcels A and B.**

Jennifer Shinn PE,

This letter has been provided as certification that the paper version of the plans match the digital PDF plans on the CD submitted with the drainage study.

Sincerely,
RCI Engineering

Rick J. Read, P.E.

Original

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Friday, October 04, 2019

Project Units: U.S. Customary Units

Notes:

Curb and Gutter Analysis: DI 4

Notes:

Gutter Input Parameters

Longitudinal Slope of Road: 0.0050 ft/ft

Cross-Slope of Pavement: 0.0200 ft/ft

Uniform Gutter Geometry

Manning's n: 0.0160

Gutter Width: 2.0000 ft

Design Flow: 23.0000 cfs

Gutter Result Parameters

Width of Spread: 26.6025 ft

Gutter Depression: 0.0000 in

Area of Flow: 7.0769 ft²

E_o (Gutter Flow to Total Flow): 0.1883

Gutter Depth at Curb: 6.3846 in

Inlet Input Parameters

Inlet Location: Inlet in Sag

Percent Clogging: 0.0000 %

Inlet Type: Sweeper Combo

Grate Type: P - 1-7/8

Grate Width: 2.0000 ft

Grate Length: 13.3300 ft

Length of Inlet: 15.0000 ft

Curb opening height: 6.0000 in

Local Depression: 4.0000 in

Inlet Result Parameters

Perimeter: 22.6000 ft

Effective Perimeter: 22.6000 ft

Area: 36.4940 ft²

Effective Area: 36.4940 ft²

Depth at curb face (upstream of local depression): 0.3842 ft

Computed Width of Spread at Sag: 19.2121 ft

Flow type: Weir Flow

Efficiency: 1.0000

Clogging Factor (50%)

Grate, $13.33 \times 1.5 = 20'$

Curb Opening $15.0 \times 1.5 = 22.5'$

22.5' Long Type CM2 Inlet W/2.5' Sweeper (8 Grates)

Intercept 23 cfs

Bypass 0 cfs

Ponding Depth = 0.38

REVISED

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Friday, October 04, 2019

Project Units: U.S. Customary Units

Notes:

Curb and Gutter Analysis: DI 4

Notes:

Gutter Input Parameters

Longitudinal Slope of Road: 0.0050 ft/ft

Cross-Slope of Pavement: 0.0200 ft/ft

Uniform Gutter Geometry

Manning's n: 0.0160

Gutter Width: 2.0000 ft

Design Flow: 23.0000 cfs

Gutter Result Parameters

Width of Spread: 26.6025 ft

Gutter Depression: 0.0000 in

Area of Flow: 7.0769 ft²

Eo (Gutter Flow to Total Flow): 0.1883

Gutter Depth at Curb: 6.3846 in

Inlet Input Parameters

Inlet Location: Inlet in Sag

Percent Clogging: 0.0000 %

Inlet Type: Sweeper Combo

Grate Type: P - 1-7/8

Grate Width: 2.0000 ft

Grate Length: 11.6670 ft

Length of Inlet: 13.3300 ft

Curb opening height: 6.0000 in

Local Depression: 4.0000 in

Inlet Result Parameters

Perimeter: 20.9300 ft

Effective Perimeter: 20.9300 ft

Area: 32.1089 ft²

Effective Area: 32.1089 ft²

Depth at curb face (upstream of local depression): 0.4146 ft

Computed Width of Spread at Sag: 20.7324 ft

Flow type: Weir Flow

Efficiency: 1.0000

Clogging Factor (50%)

Grate, $11.67 \times 1.5 = 17.5'$

Curb Opening $13.33 \times 1.5 = 20'$

20' Long Type CM2 Inlet W/2.5' Sweeper (7 Grates)

Intercept 31 cfs

Bypass 0 cfs

Ponding Depth = 0.42

CHANGED BY .04 FT.

UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UNDERGROUND OR OVERHEAD 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. CONTRACTOR TO NOTIFY ENGINEER OF ANY CHANGES OR DISCREPANCIES.

FAST

Call before you dig

UnderGround
1-702-432-5300

FREEWAY AND ARTERIAL
SYSTEM OF TRANSPORTATION



CALL BEFORE
YOU DO
OVERHEAD

1-702-227-2929

CITY OF LAS VEGAS BENCHMARK, MONUMENT ID 5LV0926W6
RIVET AND PLATE IN TOP OF CURB AT THE SE CORNER OF
CARRIAGE HILL AND FAR HILLS.

ELEVATION = 984.288 METERS
ELEVATION = 3229.29 U.S. SURVEY FEET (NAVD 88)

NORTH 79°08'32" WEST, BEING THE BEARING OF A PORTION OF
"FAR HILLS AVENUE" AS SHOWN BY MAP THEREOF IN BOOK 158,
PAGE 87 OF PLATS, OFFICIAL RECORDS, CLARK COUNTY, NEVADA.

ALL STRUCTURES SHOWN OR INDICATED ON THIS SUBMITTAL WITHIN THE PROPERTY REQUIRE A BUILDING PERMIT APPLICATION AND SUBMITTAL THIS INCLUDES BUILDINGS, ABOVE GROUND TANKS, SIGNS, RETAINING WALLS, FENCES, TRASH ENCLOSURES, SHADE STRUCTURES, STAIRWAYS, RAMPS, LIGHT FIXTURES, ETC. THIS DOES NOT INCLUDE ANY FLOOD CONTROL STRUCTURES SUCH AS PIPES, CULVERTS, ARCH CULVERTS, HEADWALLS, ETC. THIS DOES NOT INCLUDE ANY WORK WITHIN A PUBLIC STREET RIGHT-OF-WAY. THIS DOES NOT INCLUDE PRIVATE STREETS. THE REVIEW OF CIVIL IMPROVEMENT AND/OR GRADING PLANS DOES NOT INCLUDE ANY REVIEW OF ANY STRUCTURE THAT REQUIRES A BUILDING PERMIT APPLICATION."

ACCORDING TO THE FEMA FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NUMBERS 32003C2150E AND 32003C2125E DATED SEPTEMBER 27, 2002, THE SITE IS LOCATED IN A ZONE "X"

OWNER RESPONSIBLE TO PROVIDE SURVEY MONUMENTATION AS
REQUIRED BY CITY OF LAS VEGAS AND CLARK COUNTY UNIFORM
STANDARD DRAWING NUMBER 243. OWNER IS ALSO RESPONSIBLE TO
REPLACE ALL SURVEY MONUMENTATION DAMAGED, DESTROYED, OR
OBSOLETE DURING CONSTRUCTION.

NO STRUCTURE, VEGETATION, OR OBJECTS OF ANY KIND IS PERMITTED OVER TWENTY-FOUR (24) INCHES IN HEIGHT (MEASURED FROM THE TOP OF THE ADJACENT CURB IF CURB EXISTS) WITHIN THE SIGHT VISIBILITY ZONES.

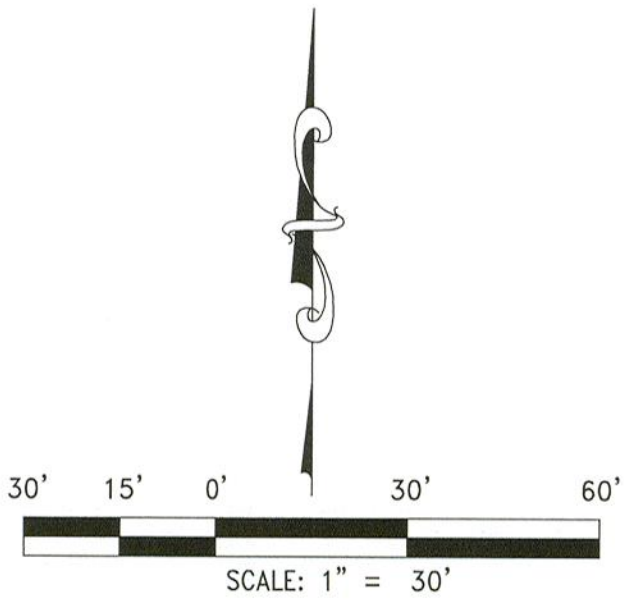
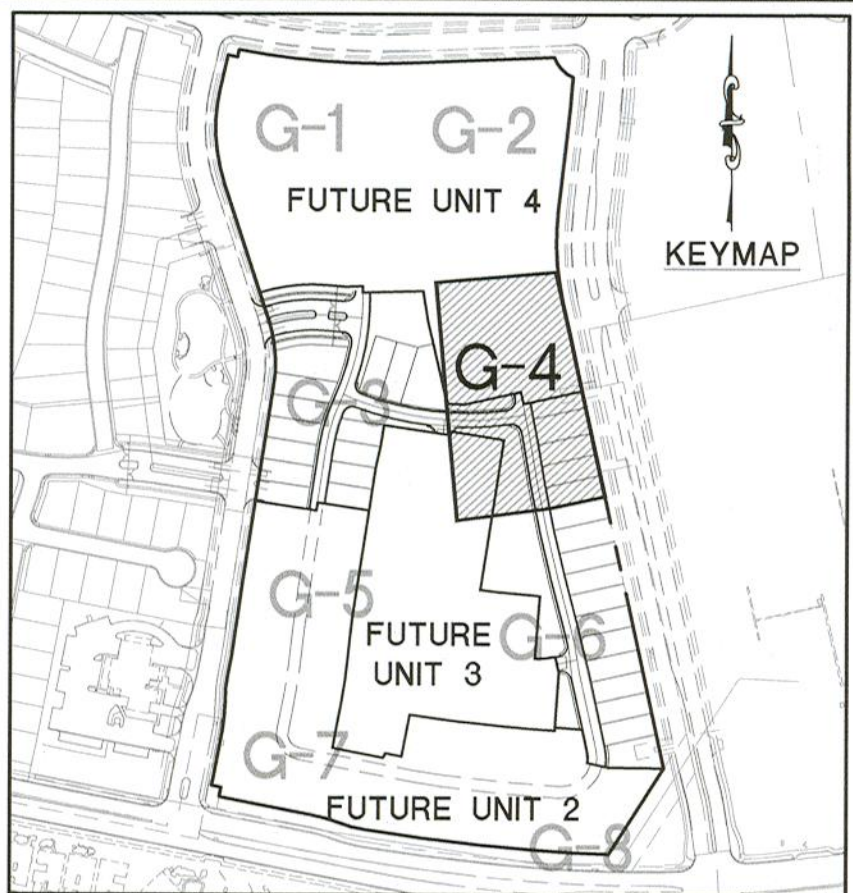
1. CONTRACTOR IS RESPONSIBLE FOR DUST AND EROSION CONTROL DURING CONSTRUCTION.
2. SEE DETAILED SHEET FOR ON-SITE PAVEMENT SECTIONS. CONTRACTOR TO VERIFY WITH SOILS REPORT.
3. SEE FINAL MAP FOR EXACT PROPERTY LINE DIMENSIONS.
4. ENGINEER TO BE NOTIFIED OF ANY DISCREPANCIES IMMEDIATELY.
5. THESE PLANS SHALL NOT, IN PART OR IN WHOLE, BE USED FOR CONSTRUCTION UNTIL APPROVED AND SIGNED BY THE GOVERNING AGENCIES.
6. ALL GRADING SHALL CONFORM TO SOILS REPORT RECOMMENDATIONS.
7. DURING CONSTRUCTION, SURVEYORS AND CONTRACTORS MUST VERIFY THAT ALL STREETS AND LOTS HAVE POSITIVE DRAINAGE. SAME MUST UTILIZE AT LEAST THREE GRADES ON VERTICAL TANGENTS TO VERIFY SLOPES.
8. SOIL REPORT NOTE:
GRADING SHALL BE IN ACCORDANCE
WITH SOILS REPORT PREPARED BY:
ENGINEER: GEOTEK
PROJECT NO. 14740-LV
DATED: APRIL 10, 2019
9. CUT/FILL ESTIMATES
EXISTING TO FINISH GRADE ELEVATIONS
NET CUT: 95,014 CY
NET FILL: 101,956 CY
10. SEE DETAIL 56/D-4 FOR TYPICAL LOT DRAINAGE
11. FOR STORMWATER RUN-OFF MANAGEMENT NOTES REFER TO SHEET N-1

ALL ON-SITE STORM DRAINS AND THE ASSOCIATED FACILITIES ARE PRIVATELY OWNED AND TO BE PRIVATELY MAINTAINED BY THE HOA.

ALL PRIVATE STREETS ARE P.O.E.; PUBLIC
SEWER EASEMENTS AND PUBLIC DRAINAGE
EASEMENTS TO BE PRIVATELY MAINTAINED
BY HOA.

NO STRUCTURES AND NO TREES OR VEGETATION TALLER
THAN THREE FEET ALLOWED WITHIN CLV SEWER EASEMENT

- 2 CONSTRUCT AC PAVEMENT PER DETAILS 1 THRU 5 ON SHEET
- 3
- 4 CONSTRUCT "L" TYPE CURB AND GUTTER PER CAAUSD #216
- 5 CONSTRUCT "R" TYPE CURB AND GUTTER PER CAAUSD
- 6 #217.2.51
- 7 CONSTRUCT #1 SIDEWALK PER CAAUSD #234 (5-INCH
- 8 THICK WHEN CONTIGUOUS TO "ROLL" TYPE CURB)
- 9 CONSTRUCT #5 SIDEWALK PER CAAUSD #234 (5-INCH
- 10 THICK WHEN CONTIGUOUS TO "ROLL" TYPE CURB)
- 11 CONSTRUCT #6 CROSSWALK PER CAAUSD #235
- 12 IMPROVEMENT STD DWG #6-64
- 13 CONSTRUCT SIDEWALK RAMP USING ARMOR TILE TRUNCATED
- 14 DOMES OR EQUIVALENT PER CAAUSD #235 (CASE I)
- 15 CONSTRUCT SIDEWALK RAMP USING ARMOR TILE TRUNCATED
- 16 DOME OR EQUIVALENT IMPROVEMENT STD DWG #7-75
- 17 CONSTRUCT #5 TRANSITION FROM "L" TYPE CURB AND GUTTER
- 18 TO "R" TYPE CURB AND GUTTER PER DETAIL 57 SHEET 0-4
- 19 CONSTRUCT "A" TYPE CURB AND GUTTER PER CAAUSD #219
- 20 CONSTRUCT #1 "CM2" DROP INLET PER CAAUSD #412.1,
- 21 CAAUSD #421, 1 GRATE
- 22 CONSTRUCT #2 "CM2" DROP INLET PER CAAUSD
- 23 #412.1, CAAUSD #421, 4 GRATES
- 24 CONSTRUCT #20 "CM2" DROP INLET PER CAAUSD #412.1,
- 25 CAAUSD #421, 7 GRATES
- 26 CALL BOX
- 27 CONSTRUCT #1 TYPE II-SD MANHOLE PER CAAUSD #405.2
- 28 CONSTRUCT SIDEWALK RAMP USING ARMOR TILE TRUNCATED
- 29 DOMES OR EQUIVALENT PER CAAUSD #235 (CASE II)
- 30 CONSTRUCT #1 HIGH PAVEMENT RAMP FROM SIDEWALK
- 31 PER CAAUSD #225.51 SECTION 3 OF 3
- 32 INSTALL 3" WIDE RIPRAP D50-60 THICKNESS=12"
- 33 CONSTRUCT ELECTRONICALLY CONTROLLED ACCESS GATES
- 34
- 35 CONSTRUCT #4 WIDE PEDESTRIAN ACCESS GATE



FOR REVIEW ONLY		
REV	DESCRIPTION	BY APPRO. DATE
	DATE: March 05, 2020	
	HORIZ. SCALE: 1"=30'	
	VERT. SCALE: N/A	
	DRAWN BY: SRC	
	DESIGNED BY: MJD	
	CHECKED BY: CRZ	
	APPROVED BY: CRZ	
	PROJECT #:	4320.0009

Woodside Homes®
 BETTER BY DESIGN

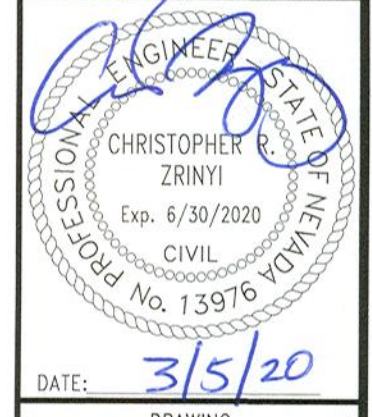
RCI ENGINEERING
 500 SOUTH RANCHO DRIVE, SUITE 17, LAS VEGAS, NV 89106
 PH#702.453.0800 FAX#702.453.0801
www.rcienvirob.com

IMPROVEMENT PLANS FOR
CRYSTAL CANYON UNIT 1
SUMMERLIN VILLAGE 21 PARCEL A AND B
A SINGLE FAMILY RESIDENTIAL SUBDIVISION

GRADING PLANS (SHEET 4 OF 8)

CITY OF LAS VEGAS

NEVADA



G-4
SHT 6 OF 29
CLV DRAWING NUMBER
CLV PROJECT #

I HEREBY CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED DRAINAGE STUDY DS #05222 ON FILE WITH CITY OF LAS VEGAS FOR THIS PROJECT.

CHRISTOPHER ZRINYI, PE NO. 13976

DATE _____

