

DS #: 05216-1

APN: 137-24-212-007

PROJECT: Summerlin Village 21 NP-1 Park-Update #1

SUBMITTAL: 3rd

SCANNED BY/DATE:

CHECKED BY/DATE:



CITY OF LAS VEGAS		DATE:
INTER-OFFICE MEMORANDUM		October 1, 2020
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:	
	Summerlin Village 21 NP-1 Park – Update #1	
Cross Streets:	NWQ of Ridge Pine Street & Far Hills Blvd.	
File Number:	F:\Depot\DSMemos\DS5216C.doc	
Parcel Number:	137-26-212-007	
Zoning Action:	CRG-77901	
FEMA Flood Zone	YES	NO X
Proposed Storm Drain	YES	NO X
		COPIES TO: GCW Engineers / Surveyors Howard Hughes Company Bart Anderson, P.E., DevCo

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1 st Submittal	11/12/2019	11/26/2019	Not Approved	\$400.00	3642100: \$400
2 nd Submittal (Supplement)	12/19/2019	1/8/2020	Approved	N/C	N/C
3 rd Submittal	9/21/2020	10/1/2020	See Comments Below	\$100.00	4004297: \$100
TOTAL FEES (LDDRS):				\$500.00	----

REMARKS:

3rd Submittal: Update #1 for minor onsite grading revisions

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

X	is approved subject to conformance to all City standards and the following conditions:
	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. *City of Las Vegas* does not allow HDPE pipe in public right-of-ways or public drainage easements. Note that *City of Las Vegas* only allows the use of HDPE storm drain pipes for privately owned and privately maintained storm drain systems which serve and are located exclusively on private properties. Any proposed HDPE storm drain pipes must also meet all design criteria established by the *Clark County Regional Flood Control District* and must be installed per *Clark County Regional Transportation Commission Uniform Standard Drawings and Specifications*.

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

ays

T/R/S: T20S/R59E/26

AREA K-26



UPDATE #1 TO THE TECHNICAL DRAINAGE STUDY FOR

SUMMERLIN VILLAGE 21 NP-1 PARK

62021-660-1

SEPTEMBER 2020

PREPARED FOR:
HOWARD HUGHES COMPANY, LLC
10845 GRIFFITH PEAK DRIVE,
SUITE 160
LAS VEGAS NEVADA, 89135

Prepared by GCW, Inc.

1555 South Rainbow Blvd
Las Vegas, NV 89146

P: 702.804.2000
F: 702.804.2298

info@gcwengineering.com
www.gcwengineering.com

HYDROLOGIC CRITERIA AND DRAINAGE MANUAL
DRAINAGE STUDY INFORMATION FORM

Name of Development: Summerlin Village 21 NP-1 Park Date: September 2020

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

East/West: Farhills Avenue

b) Section: 26 Township: 20 Range: 59

c) APN : 137-26-212-007, 137-26-212-017

Name of Owner: Howard Hughes Company, LLC

Telephone No.: (702) 791-4000 Fax No.: _____ E-Mail Address: chris.anderson@howardhughes.com

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

Contact Person-Name: Steve Jones, P.E. Telephone No.: (702) 804-2000

E-Mail Address: SJones@gcwengineering.com Fax No.: (702) 804-2299

Firm: GCW, Inc.

Address: 1555 South Rainbow Blvd, Las Vegas, Nevada 89146

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	☐	Park

1. Total Owned Land Area: At Site: 1.45 Being Developed/Disturbed: 1.45

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

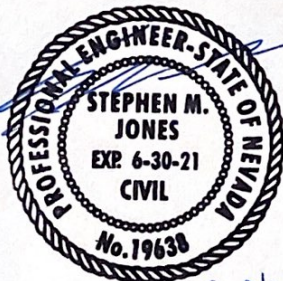
4. Proposed type of development (Residential, Commercial, Etc.): Park

5. Approximate upstream land area which drains to the subject site: 0

6. Has the site drainage been evaluated in the past? ☒ YES ☐ NO If yes, please identify documentation: Update #1 to the Flood Control Mater Plan Update Summerlin West Planning Area, Summerlin West Village 21 Ridge Pine Street (Far Hills Avenue to Street A)

7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: Storm Drain in Ridge Pine Street

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



Engineer's Seal

9/18/2020

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

Local Entity File No. _____

REFERENCE:

STANDARD FORM 1



62021-660-1

September 21, 2020

Oh Sang Kwon, P.E.
City of Las Vegas, Public Works
333 N. Rancho Drive, 7th Floor
Las Vegas, NV 89106

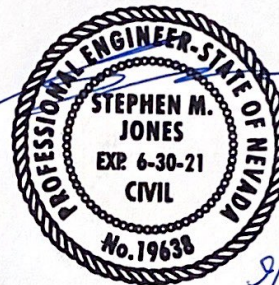
Re: Update #1 to the Technical Drainage Study for Summerlin Village 21 NP-1 Park

Dear Mr. Kwon,

This letter is to certify that all documents provided on electronic submittal (CD) match the hardcopy version of the study.

Cordially,

Steve Jones, P.E.
GCW, Inc.



1555 South Rainbow Boulevard
Las Vegas, Nevada 89146



O 702.804.2000
F 702.804.2299



info@gcwengineering.com
acwenaineeringa.com

**UPDATE #1 TO THE
TECHNICAL DRAINAGE STUDY
FOR SUMMERLIN VILLAGE 21
NP-1 PARK**

62021-660-1

September 2020

Authored By:

Nelson Baggs, E.I.

Prepared by:

**GCW, Inc.
1555 S. Rainbow Blvd.
Las Vegas, NV 89146
Phone: (702) 804-2000
Fax: (702) 804-2299**

62021-660-1

September 21, 2020



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

**Re: Update #1 to the Technical Drainage Study for Summerlin Village 21 NP-1 Park
(DS5216B)**

Dear Mr. Sung:

The purpose of this letter is to update the above-referenced project by addressing changes to the grading. Details regarding the revision are addressed below.

Since the previous approval, minor grading adjustments have been made. These adjustments did not affect any prorated basins and the flow patterns remain the same. Note that the ponding depth at the designed inlets is still adequate. The proposed condition drainage figure, inlet calculations, and grading plan sheet from the previously approved submittal have been included for your verification.

Cordially,

GCW, INC.

A handwritten signature in blue ink, appearing to read "Nelson Baggs".

Nelson Baggs, E.I.
Flood Control Division

APPENDIX



**SUPPLEMENT TO THE
TECHNICAL DRAINAGE STUDY
FOR SUMMERLIN VILLAGE 21
NP-1 PARK**

62021-660-1

December 2019

**Prepared for:
The Howard Hughes Company, LLC
10845 Griffith Peak Drive, Suite 160
Las Vegas, Nevada 89135
Phone: (702) 791-4000**

CITY OF LAS VEGAS		DATE:
INTER-OFFICE MEMORANDUM		January 8, 2020
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:	
	Summerlin Village 21 NP-1 Park	
Cross Streets:	NWQ of Ridge Pine Street & Far Hills Blvd.	
File Number:	F:\Depot\DSMemos\DS5216B.doc	
Parcel Number:	137-26-212-007	
Zoning Action:	CRG-77901	
FEMA Flood Zone	YES	NO X
Proposed Storm Drain	YES	NO X
COPIES TO:		
		GCW Engineers / Surveyors
		Howard Hughes Company
		Bart Anderson, P.E., DevCo

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1 st Submittal	11/12/2019	11/26/2019	Not Approved	\$400.00	3642100: \$400
2 nd Submittal (Supplement)	12/19/2019	1/8/2020	See Comments Below	N/C	N/C
TOTAL FEES (LDDRS):				\$400.00	----

REMARKS:

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

X	is approved subject to conformance to all City standards and the following conditions:
	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.

Note that the Clark County Regional Flood Control District (District) has begun efforts to update the Hydrologic Criteria and Drainage Design Manual (HCDDM) and is requesting participation from the engineering community. The District is collecting comments and suggestions on errors, clarifications, or changes needed to the current Manual and/or content and usability enhancements to be incorporated into the updated Manual. Additional information on procedures and deadline to provide feedback and comments are available online at (<http://www.ccrfcd.org/hcddmupdate.html>).

1. *City of Las Vegas* does not allow HDPE pipe in public right-of-ways or public drainage easements. Note that *City of Las Vegas* only allows the use of HDPE storm drain pipes for privately owned and privately maintained storm drain systems which serve and are located exclusively on private properties. Any proposed HDPE storm drain pipes must also meet all design criteria established by the *Clark County Regional Flood Control District* and must be installed per *Clark County Regional Transportation Commission Uniform Standard Drawings and Specifications*.

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

ays

T/R/S: T20S/R59E/26

AREA K-26

PERMISSION LETTER FOR IMPROVEMENT PLANS

March 13, 2020

GCW, Inc.
1555 S. Rainbow Blvd.
Las Vegas, Nevada 89146

Re: Permission to change and process revisions

To Whom It May Concern:

This letter is to grant permission to GCW, Inc. to designate another Professional Engineer registered in the State of Nevada, to change and process revisions to the projects in which I had stamped and/or design oversight during my employment at G. C. Wallace, Inc., GCW, Inc.

This letter authorizes GCW, Inc. to designate another Professional Engineer to make civil revisions and/or provide client requested services. In accordance with Nevada Revised Statutes, any revision to plans is to be clouded and sealed by a registered professional engineer licensed to perform work in the State of Nevada, and all revisions made to the plans henceforth shall be the responsibility of the Engineer sealing the revision.

Cordially,



Christine Cobb
No. 024211



Drop Inlet Sizing Calculation

Project Name: NP-1 PARK

By: NB

Date: 190916

Grate Inlet Headwater Depth		
12"X12" Grate Inlet		
FACILITY 1		
Known:		
Q=	Flow (cfs)	2.0
W=	Width of Grate (ft)	1.0
L=	Length of Grate (ft)	1.0
D=	Diameter of Circle (in)	
Cf=	Clogging Factor (%)	50
Weir Conditions:		
$Hw=(Q/(Cw \cdot P))^{2/3}$		
Cw=	Weir Coefficient	3.0
P=	Perimeter of grate (ft)	4.0
Pc=	Perimeter (w/clogging) (ft)	2.0
Hw=	Headwater depth (ft)	0.48
Orifice Conditions:		
$Hw=(Q/(Co \cdot Ac))^2/2 \cdot g$		
Co=	Orifice Coefficient	0.65
Ag=	Grate Area (ft ²)	1.0
Gf=	Grate Opening Factor	0.80
Ac=	Grate Open Area (w/ clogging) (ft ²)	0.4
Hw=	Headwater depth (ft)	0.92
Worst Case Scenario Occurs Under Orifice Conditions		
Headwater Depth (ft) = 0.9		



Drop Inlet Sizing Calculation

Project Name: NP-1 PARK

By: NB

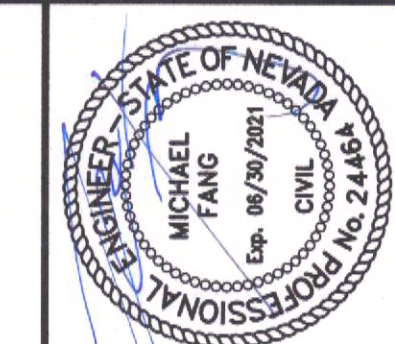
Date: 190916

Grate Inlet Headwater Depth		
12"X12" Grate Inlet		
FACILITY 4		
Known:		
Q=	Flow (cfs)	1.5
W=	Width of Grate (ft)	1.0
L=	Length of Grate (ft)	1.0
D=	Diameter of Circle (in)	
Cf=	Clogging Factor (%)	50
Weir Conditions:		
$Hw = (Q / (Cw * P))^{2/3}$		
Cw=	Weir Coefficient	3.0
P=	Perimeter of grate (ft)	4.0
Pc=	Perimeter (w/clogging) (ft)	2.0
Hw=	Headwater depth (ft)	0.39
Orifice Conditions:		
$Hw = (Q / (Co * Ac))^2 / 2 * g$		
Co=	Orifice Coefficient	0.65
Ag=	Grate Area (ft ²)	1.0
Gf=	Grate Opening Factor	0.80
Ac=	Grate Open Area (w/ clogging) (ft ²)	0.4
Hw=	Headwater depth (ft)	0.50
Worst Case Scenario Occurs Under Orifice Conditions		
Headwater Depth (ft) = 0.5		

SM

NON SID PROJECT
A.P.N. 137-26-212-007 & -017
2020
AREA = 1.45 ACRES

SHEET INDEX		
NO.	DWG	DESCRIPTION
1	CV	COVER SHEET
2	PD	PROJECT DATA SHEET
3	NT	GENERAL NOTES
4	HC1	HORIZONTAL CONTROL
5	MG	MASTER GRADING PLAN
6	DT1	SECTIONS
7	MU1	MASTER UTILITY PLAN

[illegible]

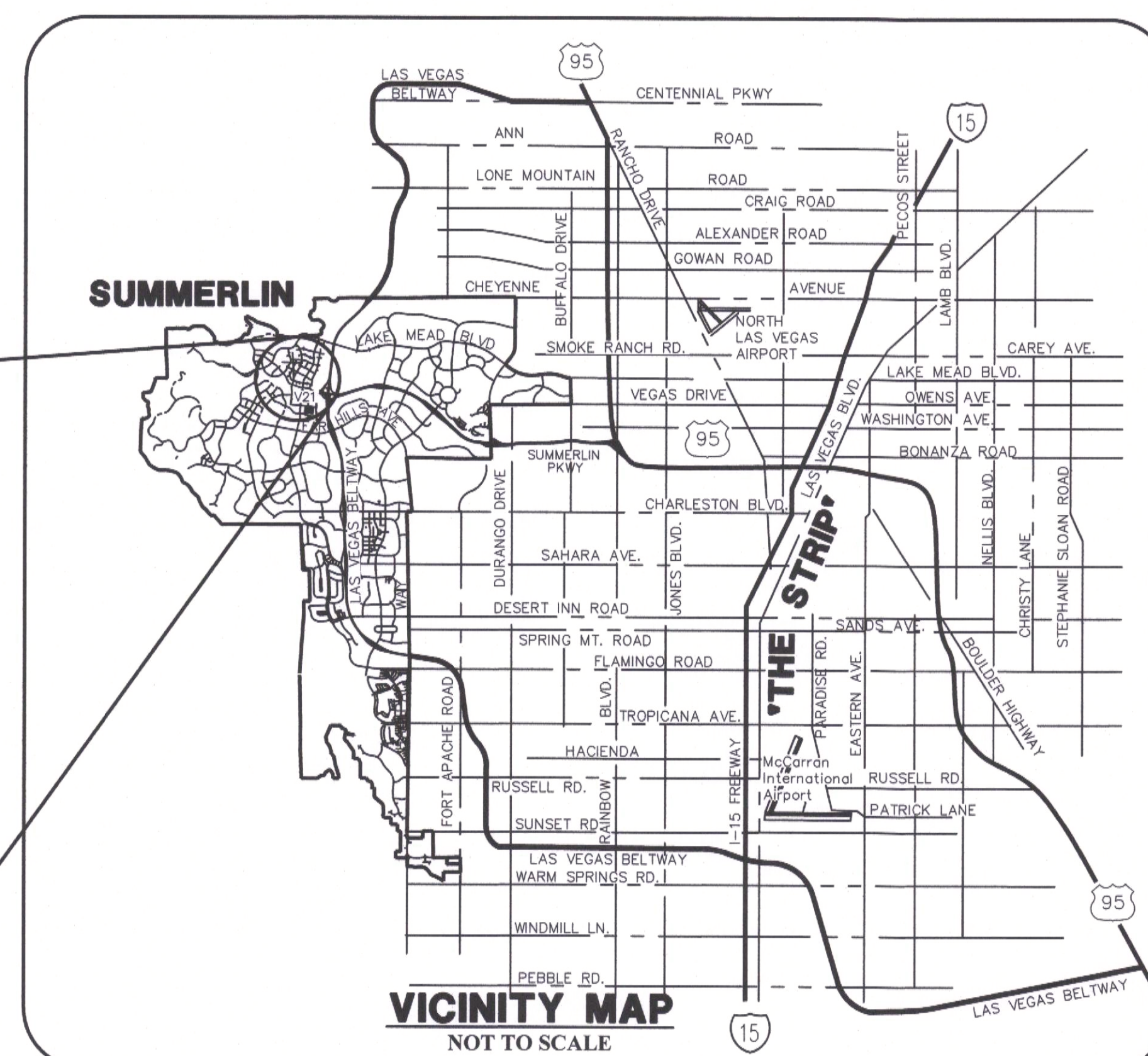
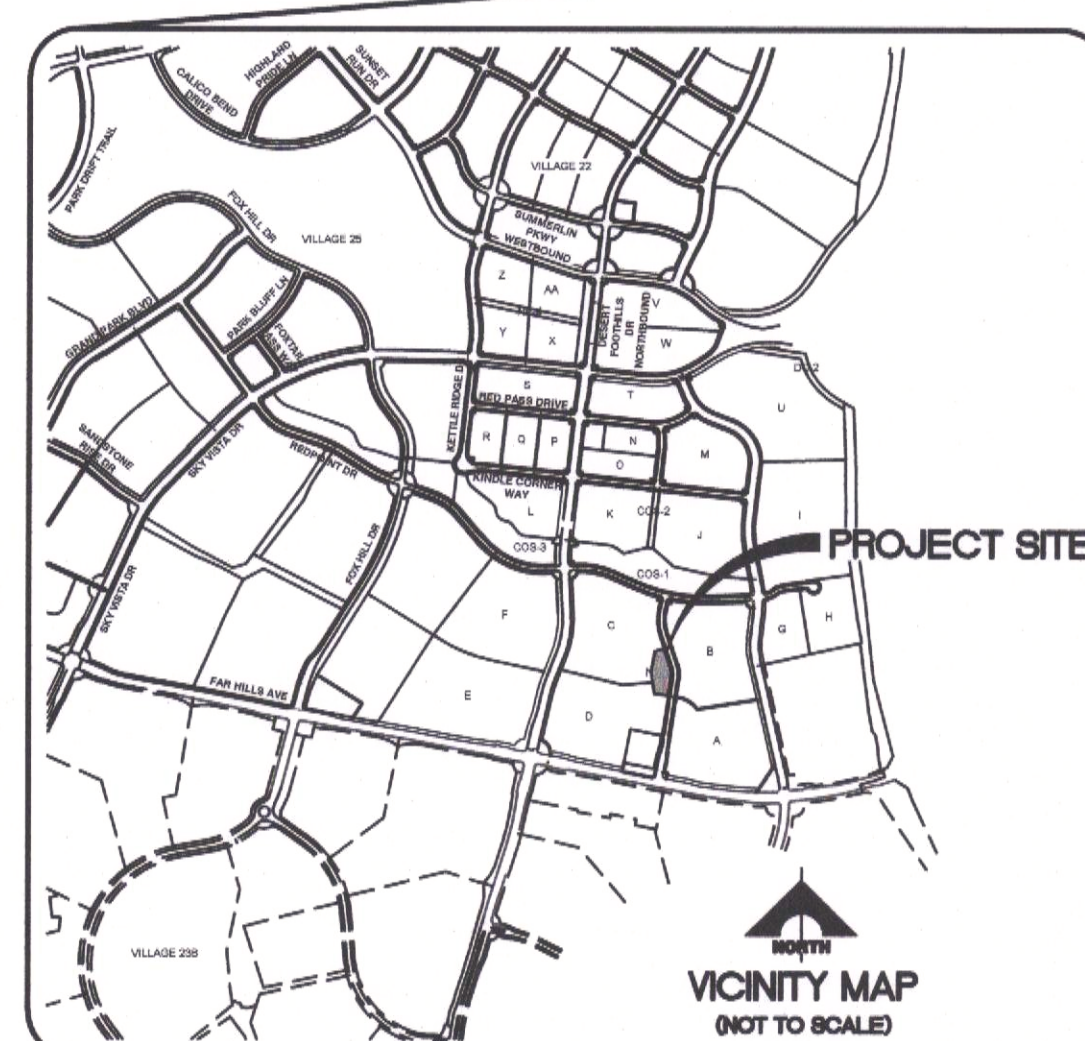
PROJECT NO.	
62021-660-1	
DESIGN:	CS
DRAWN:	CS
CHECK:	CC
PLOT DATE:	09-21-20

GCV
ENGINEERS & SURVEYORS

1555 S. RAINBOW BLVD.
LAS VEGAS, NV 89146
T: 702.804.2000
F: 702.804.2299
gowngengineering.com

THE HOWARD HUGHES COMPANY, LLC SUMMERLIN VILLAGE 21 NP-1 PARK COVER SHEET	DRAWING CV
	1 OF 7 SHEETS
	1

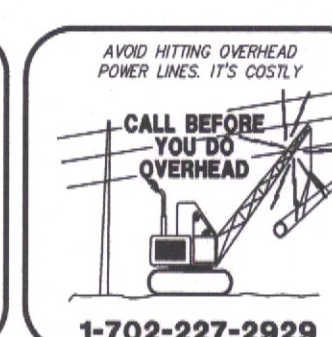
650.130	L20-0009
---------	----------



THE HOWARD HUGHES COMPANY, LLC
10845 GRIFFITH PEAK DRIVE, SUITE 160
LAS VEGAS, NEVADA 89135
OFFICE PHONE NO. (702) 791-4300

GCV
ENGINEERS & SURVEYORS

1555 S. RAINBOW BLVD.
LAS VEGAS, NV 89146
T: 702.804.2000
F: 702.804.2299
gcwengineering.com



THE CONTRACTOR SHALL BE RESPONSIBLE TO INVESTIGATE AND VERIFY THE ACTUAL LOCATION AND DEPTH OF ALL EXISTING UNDERGROUND FACILITIES AT LEAST 48 HOURS IN ADVANCE OF THE PERFORMANCE OF ANY WORK.

KEVIN ORROCK
VICE PRESIDENT

I CERTIFY THAT THE GRADING PLANS ARE IN CONFORMANCE WITH THE APPROVED DRAINAGE STUDY DS5216 ON FILE AT THE CITY OF LAS VEGAS FOR THIS PROJECT.

MICHAEL FANG, P.E. 24464

DATE

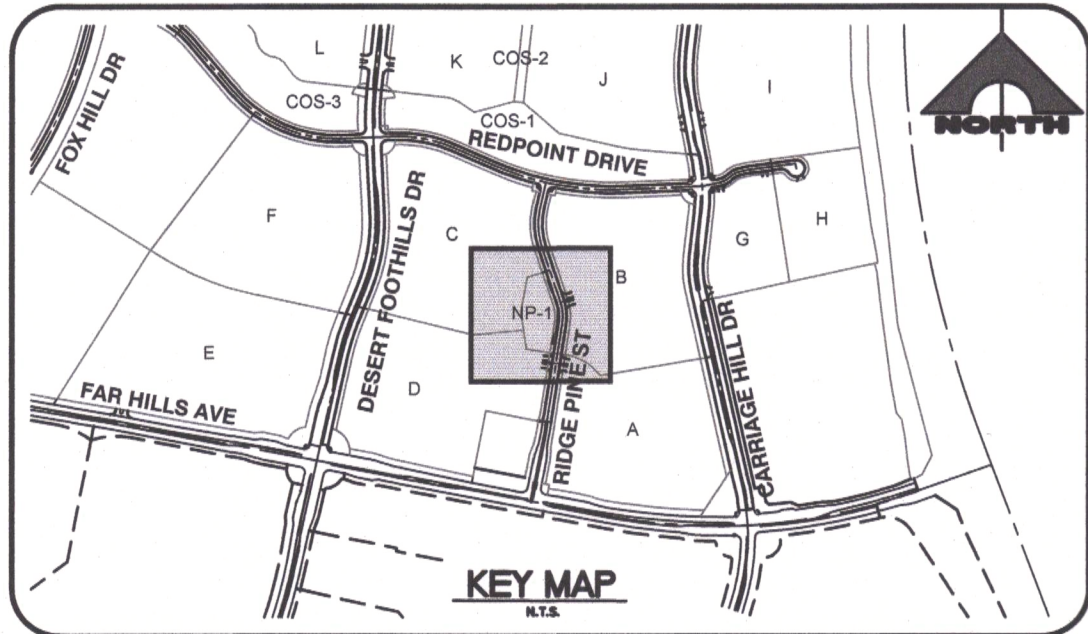
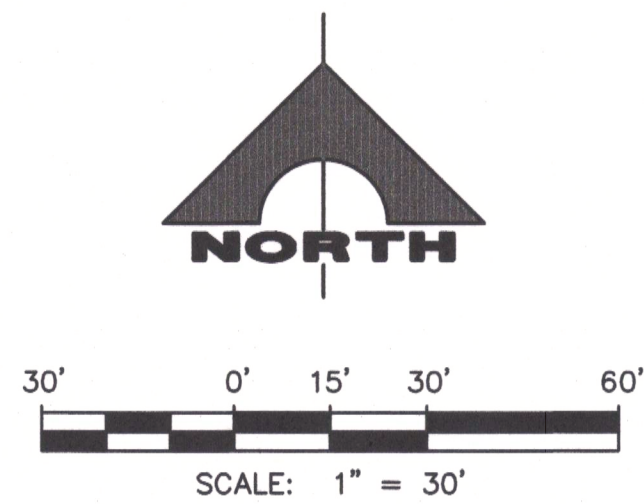
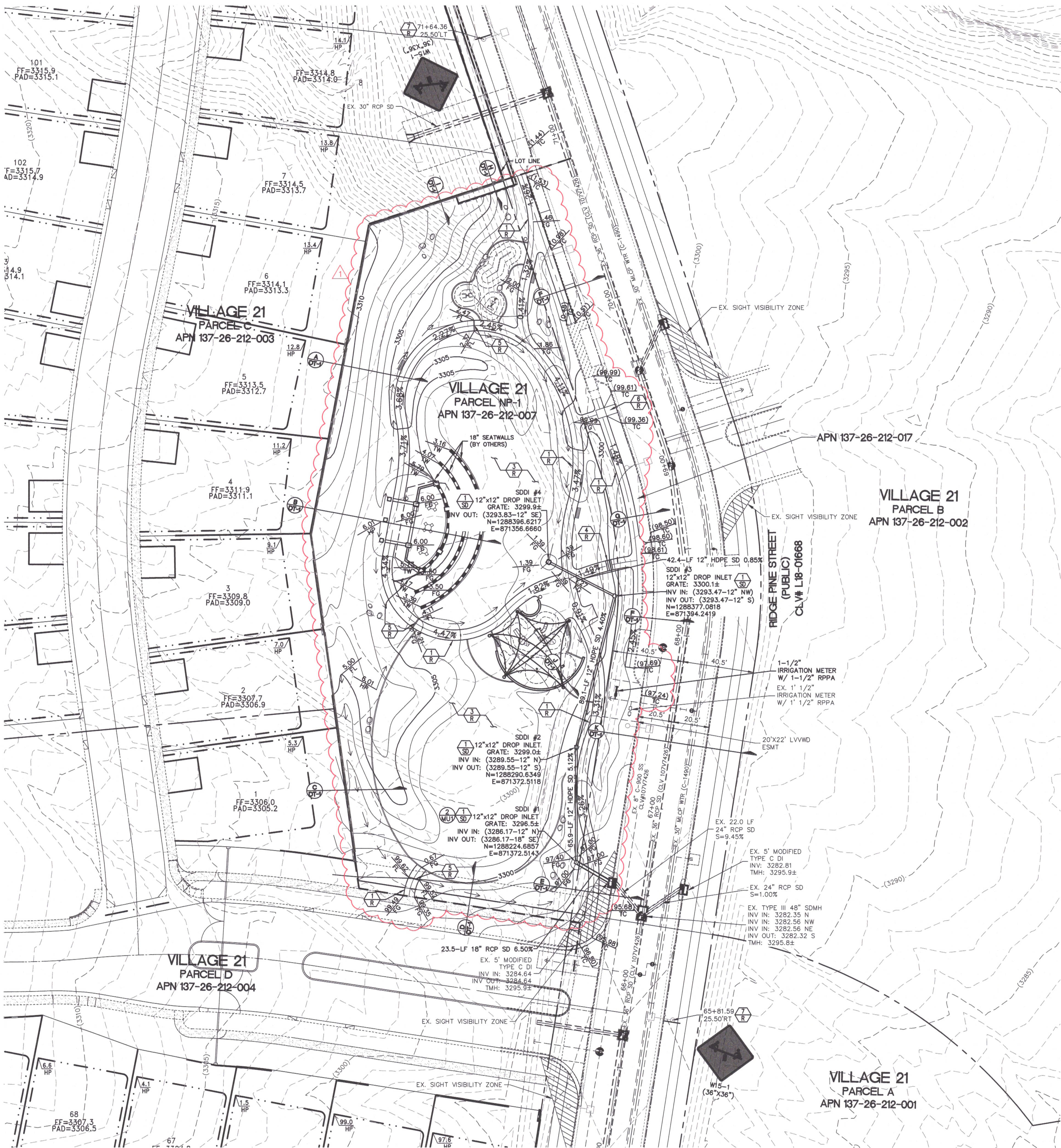
LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES

PROJECT NO. 137119 FIRST APPROVAL DATE: _____

LVVWD APPROVED FIRE FLOW: TOTAL N/A GPM / ON-SITE N/A GPM

SHEETS: CV, PD, NT, MU1

CITY OF LAS VEGAS FIRE DEPARTMENT



CONSTRUCTION NOTES

- ROADWAY**
- PROPOSED SIDEWALK SEE LANDSCAPE PLANS
 - INSTALL DECORATIVE/RETAINING WALLS. SEE STRUCT. PLANS
 - INSTALL GRASS SURFACE, SEE LANDSCAPE ARCHITECTURAL PLANS
 - INSTALL STAIRS, SEE LANDSCAPE ARCHITECTURAL PLANS
 - INSTALL 6" PVC PIPE SIDEWALK UNDERDRAIN
 - INSTALL ADA RAMP PER USD DWG. No. 235
 - MOUNT SIGN TO EXISTING STREET LIGHT POLE IN LIEU OF SIGN POST
- STORM DRAIN**
- PRECAST DRAINAGE BASIN-INLET JENSEN MODEL NO. 1212-DI (SEE PLANS FOR HEIGHT), GRATED LID OR EQUAL

NOTE:
ALL ONSITE STORM DRAIN FACILITIES ARE PRIVATELY OWNED AND MAINTAINED.

DRAINAGE CERTIFICATION

I CERTIFY THAT THE GRADING PLANS ARE IN CONFORMANCE WITH THE APPROVED DRAINAGE STUDY D55216 ON FILE AT THE CITY OF LAS VEGAS FOR THIS PROJECT.

MICHAEL FANG, P.E. 24464 DATE 9/21/20

BASIS OF BEARING AND COORDINATES

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.

LINEAR UNIT: US SURVEY FOOT (FTUS)
DATUM (REFERENCE FRAME): NAD 83 (2011) EPOCH 2010.00
SYSTEM: NEVADA COORDINATE REFERENCE SYSTEM (NCRS)
ZONE: LAS VEGAS HIGH ELEVATION ZONE

PROJECTION: TRANSVERSE MERCATOR
STANDARD PARALLEL (AND LATITUDE OF GRID ORIGIN): 36°15'00"N
LONGITUDE OF CENTRAL MERIDIAN: 114°58'00"W
NORTHING AT GRID ORIGIN: 400,000.00 M (1,312,333.3333 FTUS)
EASTING AT CENTRAL MERIDIAN: 300,000 M (984,250.0000 FTUS)
SCALE FACTOR ON CENTRAL MERIDIAN: 1.000135 (EXACT)

- NOTES:**
- ALL DISTANCES AND BEARINGS SHOWN HEREON ARE PROJECTED (GRID) VALUES BASED ON THE PRECEDING PROJECTION DEFINITION. THE PROJECTION WAS DEFINED SUCH THAT PROJECTED (GRID) DISTANCES ARE EQUIVALENT TO "GROUND" DISTANCES IN THE PROJECT AREA.
 - GRID BEARINGS SHOWN HEREON (OR IMPLIED BY GRID COORDINATES) DO NOT EQUAL GEODETIC BEARINGS DUE TO MERIDIAN CONVERGENCE.

BENCHMARK

BM#	DESCRIPTION	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. 7LV0934SW6	FIND RIVET AND PLATE IN TOP OF CURB SE CORNER OF DESERT MOON RD. AND SKY VISTA DR. T20S,R59E,S34	3318.31 (FEET)	1,011.422 (METERS)

Call before you Dig
Avoid cutting underground utility lines. It's costly.

OR
1-800-227-2800

FAST
Call before you UnderGround
1-702-432-5300
FREEMAN AND KIRKLAND SYSTEM OF TRANSPORTATION

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.

CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

PROJECT NO. 62021-660-1

DESIGN: CS
DRAWN: CS
CHECK: CC

PLOT DATE: 09-21-20
PLOT TIME: 09:37:36

REVISIONS

NO.	DATE	BY	DESCRIPTION
1	09/21/2020	GCW	APPROVED FOR CONSTRUCTION

THE HOWARD HUGHES COMPANY, LLC

SUMMERLIN VILLAGE 21 NP-1 PARK

MASTER GRADING PLAN

DRAWING MG

5 OF 7 SHTS

ENGINEER MICHAEL FANG
P.E. 24464
CIVIL
GCW ENGINEERS & SURVEYORS
1555 S. RAINBOW BLVD.
LAS VEGAS, NV 89146
T: 702.804.2000
F: 702.804.2299
gcsengineering.com

PROJECTS: 62021-660-1 (THIS PROJECT) 62021-660-1001 (GCW)

ALEXANDER SANTOS