DS #: 05242

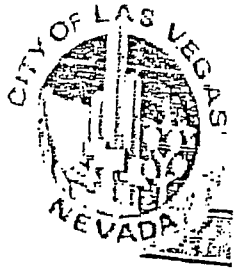
APN: 126.12.501.004

PROJECT: Skye Canyon Parcels 2.08 & 2.09

SUBMITTAL: 1st

SCANNED BY/DATE:

CHECKED BY/DATE:



CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM				DATE: March 3, 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:**
Skye Canyon Parcels 2.08 & 2.09				Westwood Professional Services
Cross Streets:	Skye Village Road and Skye Canyon Park Drive			Century Communities Nevada, LLC
File Number:	F:\Depot\DSMemos\DS05242A.doc			Bart Anderson, P.E., DevCo
Parcel Number:	126-12-501-004			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 #
1st Submittal	2/03/2020	2/24/2020	See Comments Below	$400.00	3730987: $400
			TOTAL FEES (LDDRS):	**$400.00**	**----**

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:
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. Provide a copy of the zoning/planning conditions associated with this site with the next submittal to verify compliance with conditions. *Flood Control* will not issue conditional approval of the drainage study without the associated zoning/planning conditions (issued by the *City Council*). Any associated conditions of approval that revise the site drainage parameters will require that the drainage study be revised and resubmitted.

2. Sites with a grade difference of 2 feet above or below existing grades are required to have approval from the *City of Las Vegas Planning and Development Department.* The engineer must submit copies of the grading plans and detail sheet with a letter justifying the grade difference to the *City Planning Department* (229-6301). The engineer must provide *City Planning* approval with the next submittal.

3. The site is adjacent to or crosses an existing or proposed Clark County Regional Flood Control District (CCRFCD) master planned facility. Therefore, CCRFCD concurrence is required prior to final approval of the drainage study.
   Please note that effective March 15, 2019, the CCRFCD adopted new requirements for drainage study concurrence submittal. Follow the link below for specific guidance.
   http://gustfront.ccrfcd.org/LandDev/LandDev.aspx

When it's applicable, structural calculations of facilities must be approved by the City prior to submittal to the Clark County Regional Flood Control District for their review and concurrence.

4. The study considers the Skye Canyon Phase 3A and 3B/C Infrastructure in place and functioning along with the upstream Skye Canyon Detention Basins 1 & 2 (DB1 and DB2). No occupancy permits within onsite 2.08/2.09 will be issued prior to the substantial completion of Phase 3A, and Phase 3B/C Infrastructure.

5. The site is adjacent to and discharges to a designated waterway of the U.S. per Section 404 of the Clean Water Act. Under the Clean Water Act, a party must obtain a Section 404 permit from the Army Corps of Engineers before discharging any dredged or fill material into "waters of the United States". Provide clear delineation of the WOTUS boundary in relation to the site and provide documentation of the required 404 permit or mitigation, whichever is applicable.

6. Revise the pipe call out on Exhibit E to reflect P3 as shown on the Interim Condition Recommended Flood Control Facility Summary.

7. A WSPG report sheet for the "Northeast" system was included in the report immediately after the "North" system output documents. However, there are full "Northeast" system reports with different flow values, invert elevations, and results. It appears that this separate report sheet may have been included inadvertently and should be omitted. Please address in the next submittal.

8. It is noted that Interim drainage facilities and associated public drainage easements are proposed to be removed with the onsite development.

9. All drainage easements must be public drainage easements to be privately maintained and common lots to be labeled on the grading plans and to be dedicated as such in the final map.

10. Landscape areas are not allowed to drain over the sidewalk. Provide flow lines with grades and sidewalk under drains for all landscape areas draining to the street (Common Element C). Revise all pertinent details accordingly.

11. Revise the Adjacent/Perimeter Street Check Table to include/reference the correct high side TC elevations for the following:

LOT	Missing/Correction
7	Add to Summary Table
70	Missing adjacent street calculation (Tigerleap)
71	Incorrect high side TC used
89	Incorrect high side TC used
111	Incorrect high side TC used; Review Section Detail 16/1
121	Incorrect high side TC used

12. Revise Section Detail 13/1 to reflect soild grouted as required per the Adjacent/Perimeter Street Check Table.

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
JKS

T/R/S: T19S/R59E/S12
AREA F-12

Westwood

5740 S. Arville St., Suite 216
Las Vegas, NV 89118

Main (702) 284-5300

westwoodps.com
(888) 937-5150

CEN1905

March 4, 2020

Linda Hartman-Maynard
City of Las Vegas
Department of Building and Safety
333 S. Rancho Drive
Las Vegas, NV 89101

Re: Justification Letter for Proposed 2-foot Grade Difference from Existing Ground for Skye Canyon 2.08/2.09
(Portion of APN: 126-12-501-004)

Dear Ms. Hartman-Maynard:

Westwood Professional Services, respectfully submits this justification letter in support of proposed grades greater than 2-feet above and below existing ground on the subject site. The subject site is located in the Skye Canyon master planned community at the northwest corner of Skye Canyon Park Drive and Skye Village Road. The parcel acreage is approximately 29.6 gross acres. The proposed development will consist of 164 single family residential lots.

Although the intent is to match existing grade, this site must accommodate the grade of the existing conditions surrounding the site. The site has an average west-to-east existing grade of 3.5% and the south-to-north existing grade is essentially flat. Based on the master drainage study for the area, our site must drain into the northern wash. Meeting this drainage criteria along with the existing topography and surrounding infrastructure, matching the existing grade is unachievable.

Thank you for considering this justification letter. Please contact me at (702) 284-5300 if you have any questions.

Sincerely,

WESTWOOD PROFESSIONAL SERVICES

Kevin Bross, P.E.
Project Manager II

CC:
Todd Winner, Century Communities
Chelsea Jensen, Westwood Professional Services

PLANS APPROVED
PLANNING
Dept. of Planning
City of Las Vegas, Nevada
2' GRADE DIFFERENCE ONLY
LHM MAR 12 2020

Conforms to the minimum requirement of LVMC Title 19; applicable Master Plan Development standards and/or Conditions of Approval. Make No Change Without Approval. Plan Is Not a Permit to Violate Any Ordinance.

Westwood

TECHNICAL DRAINAGE STUDY

Skye Canyon Parcels 2.08 and 2.09

City of Las Vegas, Nevada

January 2020

Prepared For:

Century Communities Nevada, LLC
6345 S. Jones Blvd.
Las Vegas, NV 89118

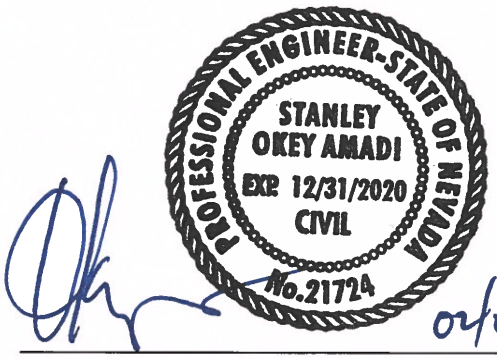
TECHNICAL DRAINAGE STUDY
Skye Canyon 2.08 & 2.09

City of Las Vegas, Nevada

Job No.: CEN1905-000
Date: January 2020

Prepared By:
Westwood Professional Services, Inc.
5740 S. Arville Street, Suite 216
Las Vegas, Nevada 89118
Phone: 702-284-5300 ▪ Fax: 702-284-5399

Prepared For:
Century Communities of Nevada, LLC
6345 South Jones Blvd.
Las Vegas, NV 89118
Phone: 702-873-5338



02/03/20

Stanley Okey Amadi, P.E., CFM
NV Professional Engineer No. 21724

Assisted by
D'Amato Hyche
Georgia Dunkerly

Westwood

5740 S. Arville St., Suite 216
Las Vegas, NV 89118

Main (702) 284-5300

westwoodps.com
(888) 937-5150

February 03, 2020

Ms. Jennifer Shinn, P.E.
City of Las Vegas Public Works
333 Rancho Drive (7th Floor)
Las Vegas, NV 89101

Re: Technical Drainage Study for Skye Canyon Parcels 2.08 & 2.09
File CEN1905.000

Dear Ms. Shinn:

This letter certifies that all items provided on the Technical Drainage Study for Skye Canyon Parcels 2.08 & 2.09 submittal CD match the paper version bound into the study.

Please contact me if you have any questions.

Sincerely,

WESTWOOD PROFESSIONAL SERVICES

D'Amato Hyche

D'Amato Hyche,
Graduate Engineer I, Water Resources Department

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE STUDY INFORMATION FORM

Name of Development: Skye Canyon Parcels 2.08 & 2.09 Date: January 2020

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

East/West: Skye Canyon Park Drive

b) Section: 12 Township: 19S Range: 59E

c) APN: A Portion of APN 126-12-501-004

Name of Owner: Century Communites of Nevada, LLC

Telephone No.: 702-873-5338 Fax No.: E-mail Address: Rick.Barron@centurycommuniti

Address: 6345 South Jones Blvd Las Vegas NV 89118

Contact Person – Name: Stanley Okey Amadi, P.E., CFM Telephone No.: (702) 284-5300

*E-mail Address: stanley.amadi@westwoodps.com Fax No.: (702) 284-5399

Firm: Westwood Professional Services

Address: 5740 S. Arville #216 Las Vegas NV 89118

Type of Land Development/Land Disturbance Process:

☐	Rezoning	☐	Subdivison 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: 273.5 +/- Ac Being Developed/Disturbed: 29.6 +/- Ac

2. Is a portion or all of the subject property located in a 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:

6. Has the site drainage been evaluated in the past? ☒ Yes** ☐ No If yes, please identify documentation:

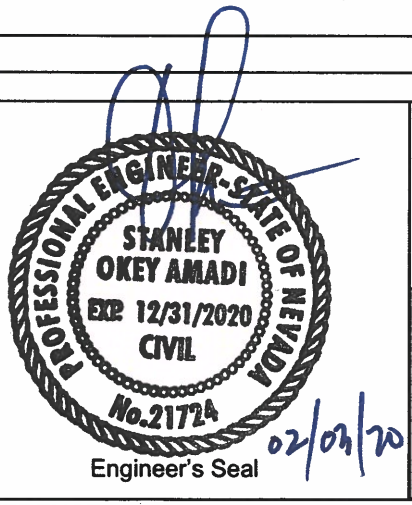
Technical Drainage Study Update for Skye Canyon Phase 3B and 3C Infrastructure (DS4953),

Master Drainage Study Update #4 for Skye Canyon (DS2700)

7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: To the north as surface flows, northeast, and.....

.....southeast through three different storm drain facilities.

8. Briefly describe your proposed schedule for the subject project: Phase 1 ASAP; Phase 2 immediately after Phase 1



02/03/20

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.

*Newly 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

Updated 05/01/2008

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 (CCRFCD) 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 CCRFCD Hydrologic Criteria and Drainage Design Manual (Design Manual).

An appointment must be made to preview this checklist in conjunction with CCRFCD 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	
X	-	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.)
X	-	Copies of all conditions of approval for development related to this property. (e.g. zoning, use permit, tentative map, etc.) Verify compliance with conditions.
X	-	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. S.D.K. 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	
X	-	(1) 24" X 36" copy of the Grading Plan, (including all Detail Sheets) sealed by the engineer.
X	-	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.
X	-	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.)

II. GRADING PLAN INFORMATION		
Yes	No	
X	-	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.
X	-	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.
X	-	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.
X	-	Back of lot elevations and lot drainage pattern for all lots including common lots.
X	-	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.
X	-	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.)
X	-	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.
X	-	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	
-	N/A	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.
-	N/A	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.
-	N/A	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.
X	-	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.
X	-	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.

III. Local Entity Criteria - City of Las Vegas – Manual Section 1600		
Yes	No	
-	N/A	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.
-	N/A	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.

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE SUBMITTAL CHECKLIST

Project Name: Skye Canyon Parcels 2.08 & 2.09	Map ID:
Firm Name: Westwood Professional Services	Engineer: Stanley Okey Amadi, P.E., CFM
Address: 5740 S. Arville #216	
City: Las Vegas	State: NV Zip: 89118
Phone Number: (702) 284-5300	Fax Number: (702) 284-5399
Property Owner: Century Communites of Nevada, LLC	
Address: 6345 South Jones Blvd	
City: Las Vegas	State: NV Zip: 89118

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	
X	-	Design Manual **Standard Form 1** with the engineer's seal and signature.
X	-	Design Manual **Standard Form 4**.
X	-	2 copies of the 24" x 36" Drainage Plan.
-	N/A	A notarized letter from the adjacent property owner(s) allowing off-site grading or discharge.

II. MAPS AND EXHIBITS

Yes	No	
X	-	A copy of a current Flood Insurance Rate Map (FIRM) with the site delineated.
X	-	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

DRAINAGE SUBMITTAL CHECKLIST

II. MAPS AND EXHIBITS (Continued)

Yes	No	
X	-	Off-site drainage basin maps for existing, interim and future conditions showing the existing topography, basin boundaries, concentration points, and flows in cfs.
X	-	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.
X	-	Vicinity Map with local and major cross streets identified and a north arrow.

III. DRAINAGE PLAN

Yes	No	
X	-	Sheet size: 24" x 36" sealed by a registered engineer in the State of Nevada.
X	-	Minimum scale: 1" = 60'.
X	-	Project name.
X	-	Vicinity Map with local and major cross streets.
X	-	Revision box.
X	-	North arrow and bar scale.
X	-	Engineer's/consultant's address and phone number.
X	-	Elevation datum and benchmark.
X	-	Legend for symbols and abbreviations.
X	-	Cut/fill scarps, where applicable.
X	-	Street names, grades, widths.
X	-	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.
X	-	Existing contours encompassing the site and 100 feet beyond with spot elevations for important locations, where appropriate.
X	-	Minimum finish floor elevations with top-of-curb elevations at upstream end of lot.
X	-	Proposed typical street sections.

REFERENCE:	STANDARD FORM 2

DRAINAGE SUBMITTAL CHECKLIST

III. DRAINAGE PLAN (Continued)

Yes	No	
-	N/A	Streets with off-set crowns.
X	-	Proposed contours or spot elevations in sufficient detail to exhibit intended drainage patterns and slopes.
X	-	Property lines.
X	-	Right-of-way lines and widths, existing and proposed.
X	-	Existing improvements and their elevations.
X	-	Delineation of proposed on-site drainage basins indicating area and 10-year and 100-year storm peak flows at basin concentration points.
X	-	Concentration points and drainage flow direction with Q_{100} and V_{100} and D_{100} in streets.
X	-	Cumulative flows, velocity, and direction of flow at upstream and downstream ends of site for the 10-year and 100-year flows.
X	-	Location and cross-section of street capacity calculations.
X	-	Cross-sectional detail for channels, including cutoff wall locations.
X	-	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.
X	-	Existing and proposed drainage easements and widths shown with sufficient detail. A cross sectional detail must be provided that shows appropriate lining and reinforcement.
-	N/A	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.
-	N/A	Location and detail of flood walls illustrating depth of flow, proposed grouting height, etc.
X	-	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.
X	-	Building and/or lot numbers.
X	-	Alignment of all existing, proposed, or future Regional Facilities adjacent to the site.
-	N/A	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**

DRAINAGE SUBMITTAL CHECKLIST

III. DRAINAGE PLAN (Continued)

Yes	No	
-	N/A	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.
X	-	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.
X	-	Street slopes for perimeter and interior streets. The minimum slope is 0.4 percent.
-	N/A	Location and detail of best management practice (BMP) for parking lots and low impact development (LID) (if required).

IV. HYDROLOGIC ANALYSIS

Yes	No	
X	-	Appropriate soil information and Soils Map for existing and future conditions with subbasins and property delineated.
X	-	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.
X	-	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.
X	-	Use of correct precipitation values in and around the McCarran Airport rainfall area.
X	-	A discussion in the text of the hydrologic analysis justifying subbasin boundaries and cutoffs, supporting assumptions, and calculations.
X	-	A summary table of stormwater flows showing basin area, Q_{10} and Q_{100} for both individual basins and combined basin flows, where applicable.
X	-	Copies of supporting technical information referenced from a previously approved study and a statement accepting these results.
X	-	On-site facilities must perpetuate flows through or around the site without significantly impacting adjacent property owners in accordance with current Nevada Drainage Law.
-	N/A	Calculation for impervious area for parking lots and LIDs (if required).

REFERENCE:	STANDARD FORM 2

DRAINAGE SUBMITTAL CHECKLIST

V. HYDRAULIC ANALYSIS

Yes	No	
-	N/A	Flow split calculations and supporting documentation or reference for the method of flow split calculations used.
X	-	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 x v $\leq$ 8. Q_{10} d x v $\leq$ 6 and 12 foot dry lane for rights-of-way $\geq$ 80 feet. Calculations must be labeled by street name as indicated on the Grading Plan.
X	-	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.
-	N/A	Appropriate hydraulic calculations for block wall openings assuming a 50 percent vertical clogging factor. (Assume the lower half of the opening is plugged.)
X	-	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.
X	-	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.
-	N/A	A complete water surface profile analysis (HEC-2, HEC-RAS, etc.) for channel flows and FEMA Zone A flood zones. • 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.
X	-	Provide a 50 percent clogging factor in the capacity calculation for drop inlets.
X	-	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.
X	-	The mitigation of nuisance water, both during construction and in the fully developed condition, must be addressed.
-	N/A	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 (CCRFCD) 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 CCRFCD Hydrologic Criteria and Drainage Design Manual (Design Manual).

An appointment must be made to preview this checklist in conjunction with CCRFCD 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	
X	-	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.)

II. GRADING PLAN INFORMATION		
Yes	No	
X	-	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.
X	-	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.
X	-	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.
X	-	Back of lot elevations and lot drainage pattern for all lots including common lots.
X	-	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.
X	-	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.)
X	-	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.
X	-	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	
-	N/A	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.
-	N/A	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.
-	N/A	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.
X	-	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.
X	-	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.

III. Local Entity Criteria - City of Las Vegas – Manual Section 1600		
Yes	No	
-	N/A	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.
-	N/A	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.

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(SHG/Westwood, DS 4931G)
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1 INTRODUCTION

1.1 Project Overview & Study Purpose

Century Communities is proposing a single-family residential development, identified as Skye Canyon 2.08 & 2.09 (hereinafter referred to as the project site), within the Skye Canyon Phase 3B/3C portion of the Skye Canyon master planned community in Las Vegas, Nevada. The proposed development is approximately 30-acres and is located at the northwest corner of the intersection of Skye Village Road and Skye Canyon Park Drive. The proposed project will be constructed in two phases as described below in Section 1.2 of this report.

The purpose of this study is to provide a detailed hydrologic and hydraulic analysis of the project site and to substantiate the hydraulic design in order to protect the property from onsite and offsite runoff in accordance with local storm water management criteria. It is also considered the purpose of this study to show conformance with the drainage patterns previously established by previous drainage studies. This study also provides an inventory of the existing drainage facilities in the vicinity of the site, as well as recommend site specific facilities necessary to control runoff impacting the project site. This report presents a summary of the hydrologic and hydraulic analyses, methodology and results of the technical drainage study.

The entire Skye Canyon property has been master-planned as addressed by the *Master Drainage Study for Kyle Canyon* (SHG, DS4420). In addition, several updates to the master drainage study have been processed and are identified as follows:

- Skye Canyon Master Drainage Study - Update #1 to Kyle Canyon Master Drainage Study addressed changes in land use plan for the Phase 1, Phase 2 and detention basin areas of the site and was approved by the City of Las Vegas on March 05, 2015.
- Skye Canyon Master Drainage Study - Update #2 addressed downstream drainage impacts resulting from the changes in land use plan for the Phase 1, Phase 2 and detention basin areas and was approved by the City of Las Vegas on November 23, 2015.
- Skye Canyon Master Drainage Study - Update #3 addressed changes in the land use plan, re-alignment of Sheep Mountain Parkway, introduction of the Kyle Canyon Interchange Project, and relocation of the Skye Canyon downstream MPU facility to Log Cabin Way. This study was approved by the City of Las Vegas on August 15, 2016.
- Skye Canyon Master Drainage Study - Update #4 addressed a change in the Skye Canyon downstream MPU facility alignment from Log Cabin Way to Moccasin Road. This study was conditionally approved by the City of Las Vegas on October 10, 2017.
- Skye Canyon Master Drainage Study - Update #5 addressed changes in land use plan for the downstream portion of Skye Canyon Master Plan area located east of US-95 now referred to as Sunstone. This study was approved by the City of Las Vegas on January 28, 2019.
- Skye Canyon Master Drainage Study - Update #6 addressed changes in land use plan for western region of US-95, inclusive of the 3A, 3B, & 3C area. The update

is currently under review and the subject study has been designed in conformance to Update #6.

1.2 Description of Project

The project site is located within Township 19 South, Range 59 East and Section 12, on the southeast corner of the 275 acres of APN 126-12-501-004. The project site is bound by an existing wash to the north, Skye Village Road to the east, and undeveloped land to the west and Skye Canyon Park Drive to the south. A location map identifying the site in relation to the surrounding streets has been prepared as Exhibit A, included in Appendix A.

The project site will be constructed in two phases, and this study technically addresses both phases of development, inclusive of separate sets of improvement plans for each phase. Phase 1 consists of 84 residential lots within the southern and eastern portions of the project site and includes the site entrance from Skye Canyon Park Drive and a secondary access to Skye Village Road. Phase 2 consists of the remaining 80 residential lots within the western and northern portions of the project site.

The entitlements for the subject project site are currently under review the CLV Planning Department and the Notice of Final Actions will be provided as soon as they are approved.

1.3 FEMA Flood Zone Designation

The project site boundary has been delineated on current FEMA FIRM Panel Map 32003C1750E, dated September 27, 2002. Per the FIRM Panel, the project site is located within a FEMA designated Zone 'X' (unshaded). Zone 'X' (unshaded) is described by FEMA as *areas determined to be outside the 0.2% annual chance floodplain*. Exhibit B, identifying the project site on the FEMA FIRM Map, has been included in Appendix A for reference.

1.4 CCRFCD Facility Information

The project site has been delineated on the current 2018 Clark County Regional Flood Control District (CCRFCD) Las Vegas Valley Flood Control Master Plan Update (2018 MPU, Reference 1) Facility Figures as Exhibit C1, included in Appendix A. Per the 2018 MPU, CCRFCD Facility Moccasin – Hualapai Branch (MOHU) 0061 and 0076 are located along Skye Canyon Park Drive and within Skye Village Road adjacent to the project site. The runoff generated by the project site discharges parts of the basin into the CCRFCD facility thru the existing wash/arroyo directly north of the site and thru the existing storm drain stub at the southeast corner of the site.

1.5 Referenced Documents

The following studies and associated improvement plans have been reviewed and deemed acceptable for reference by this study. Westwood concurs with the referenced and adopted hydrologic and hydraulic analyses from the studies and the results established therein.

- *Technical Drainage Study for Skye Canyon Phase 3A Infrastructure – Update #2*, prepared by SHG/Westwood (DS4931; hereinafter referred to as the Phase 3A Study), technically designed the roadway and drainage infrastructure improvements within/surrounding the Phase 3A area. The Phase 3A improvement plans have been utilized for the existing storm drain lateral connection in Skye Village Road for extension to onsite facilities. Street hydraulic section for surface flows in Skye Village Road have

also been referenced from the Phase 3A Study. Relevant reference material from the Phase 3A Study has been included in Appendix E.

- *Technical Drainage Study for Skye Canyon Phases 3B & 3C Infrastructure – Update #1*, prepared by SHG/Westwood (DS4953; hereinafter referred to as the Phases 3B-3C Study), technically designed the roadway and drainage infrastructure improvements within/surrounding the Phases 3B & 3C area. The Phase 3B-3C Study has been utilized to establish existing condition drainage patterns and flow rates as well as the planned developed condition drainage pattern within the Phase 3B & 3C area. Street hydraulic sections for surface flows in Skye Canyon Park Drive adjacent to the site have also been referenced from the study. The Phase 3B-3C Study was shown to be in conformance of with Skye Canyon Master Drainage Study; therefore, the Phase 3B-3C Study has also been utilized to show conformance with master planned ultimate condition drainage patterns. Relevant reference material from the Phase 3B 3C Study has been included in Appendix F.

- *Skye Canyon Master drainage Study Update 6* prepared by Westwood (DS 4420; hereinafter referred to as Update 6 Study). The Update 6 Study was recently submitted for review, and it addresses land use changes and drainage pattern revisions west of US-95. The Master Drainage Study has been utilized to establish the ultimate condition drainage patterns and flow rates within and around the site. It should be noted that the boundary of Parcels 2.08/2.09 (formerly 2.08a & 2.08b) will no longer extend west to the alignment of Egan Crest Drive north of Skye Canyon Park Drive. Relevant reference material from the Update 6 Study has been included in Appendix G.

2 METHODOLOGY

2.1 Compliance

The methodologies utilized in the preparation of this study are in compliance with the Clark County Regional Flood Control District's Hydrologic Criteria and Drainage Design Manual (CCRFCD Manual, Reference 2).

2.2 Hydrologic Modeling

Modeling:

The SCS Unit Hydrograph Method (SCS Method) was utilized to determine peak flow rates. The SCS Method utilizes precipitation, drainage area, curve number and lag time parameters to determine peak flow rates. The SCS Method routine within the U.S. Army Corp of Engineers HEC-1 Flood Hydrograph Package program was utilized to model the drainage basins analyzed by this study.

Curve Number:

The SCS curve number loss rate methodology was utilized to approximate infiltration for the drainage subbasins. The soils information within the watershed was obtained from the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey of the Las Vegas Valley Area (Soil Survey, Reference 3). The project site is located mostly within Soil Type 155 with a very small portion along the northern boundary within Soil Type 400 as identified on Exhibit D included in Appendix A.

- Soil Type 155 is comprised of 100% Hydrologic Soil Group (HSG) 'D'. The Soil Type is described as Cave gravelly fine sandy loam, 4 to 15 percent slopes.
- Soil Type 400 is comprised of 100% HSG 'D'. The Soil Type is described as Tencee very gravelly fine sandy loam, 2 to 8 percent slopes.

The developed project site utilizes a land use representative of "commercial" based on Foot Note 3 on the CCRFCD Manual Table 602A for residential lots less than 6,000 ft^2. The soil data information, including CCRFCD Manual reference tables, have been included in Appendix B.

Lag Time:
The lag time is defined as the time measured from the center of mass of excess rainfall to the time to peak of the outflow hydrograph. The lag time is related to the time of concentration as 0.6 times the time of concentration. The time of concentration is defined as the time required for runoff to flow from the hydraulically most distant point of a basin to the outlet point of the basin. Standard Form 4, as outlined in the CCRFCD Manual, was utilized to determine the lag times for the basins modeled. The lag time computations have been included in Appendix B.

2.3 Hydraulic Modeling & Criteria

Street Flow:
Street flow hydraulic computations have been performed utilizing the FlowMaster Version 8i software by Bentley Systems. In accordance with the CCRFCD Manual, the depth times velocity factor (DxV) for street flow in the 10-year storm event must be less than or equal to 6 with a maximum depth of 1-foot. The DxV for street flow in the 100-year storm event must be less than or equal to 8 with a maximum depth of 2-feet. For streets of 80-ft and greater rights-of-way width, a 12-ft dry lane (not including the center turning lane) must be provided during the 10-year storm event.

Drop Inlets:
Drop inlets have been assessed using an in-house computation spreadsheet that utilizes equations outlined in Section 805 of the CCRFCD Manual, which includes a 50% clogging factor in determining sizes.

Storm Drains:
The hydraulic analysis for the existing and proposed storm drains has been performed utilizing the Windows version of the Water Surface and Pressure Gradient (WSPGW) Hydraulic Analysis System software by the Los Angeles County Department of Public Works. As outlined in the CCRFCD Manual, storm drain facilities are designed to maintain its hydraulic gradient line (HGL) at a minimum of 1-ft below above finished grade and limit the flow velocities in the facility to remain within the range of 3 ft/s and 25 ft/s.

3 EXISTING DRAINAGE CONDITION

3.1 Definition of Existing Condition

The existing condition considers the Skye Canyon Phases 3A and 3B & 3C drainage and roadway infrastructure in place and functioning. The parcel (2.10) west of the project site (Parcels 2.08 and 2.09) are currently undeveloped with localized minor washes conveying towards the site. The existing wash located immediately north of the project site is

currently designated a waterway of the U.S. per Section 404 of the Clean Water Act and is undeveloped in the existing condition of the site.

The existing condition is equivalent to the proposed condition of the Phase 3B-3C Study. Therefore, the drainage patterns and flow rates for the existing condition have been referenced from the Phase 3B-3C Study. Refer to Appendix F for reference material from the Phase 3B 3C Study.

3.2 Discussion of Existing Condition

The existing project site is mostly comprised of drainage Basins 2.08a and 2.08b from the Phase 3B-3C Study. Due to the aforementioned parcel boundary revisions, the project site no longer extends west up to the alignment of Egan Crest Drive north of Skye Canyon Drive. Thus, the adjacent western Parcel 2.10 is now slightly larger in area. However, drainage patterns for the site and surrounding parcels remain generally the same as analyzed in the Phase 3B-3C Study. Onsite flows are generally conveyed in an easterly direction toward the interim ditch adjacent to Skye Village Road which routes the flows to the 30-in RCP storm drain stub at the southeast corner of the site and northeast to the adjacent wash.

Offsite runoff from west currently conveys thru the site within localized washes. However, per the master plan, the flows will discharge north and be conveyed east by the adjacent wash to be captured by the lateral storm drain at the northeast corner of the site.

4 PHASE 1 INTERIM DRAINAGE CONDITION

4.1 Definition of Phase 1 Interim Condition

The Phase 1 interim condition considers the Phase 1 portion of the project site to be fully constructed and the remaining Phase 2 portion of the project site to remain mass graded. All offsite areas are assumed to remain unchanged from the existing condition with perimeter streets and associated drainage facilities in place and functioning.

4.2 Discussion of Phase 1 Interim Condition

Refer to Exhibit E, included in Appendix A, for a detailed illustration of the Phase 1 interim condition drainage patterns.

Offsite:

Surface flows conveyed along Skye Canyon Park Drive and Skye Village Road adjacent to the site will remain the same in quantity and drainage pattern as in the existing condition as referenced from the Phase 3A Study and the Phases 3B-3C Study. The adjacent undeveloped area (future Parcel 2.10) directly west that impacts the site has been analyzed as Basin OFFI-1 in the interim condition. Flows from OFFI-1 will be capture and conveyed north along the western boundary of the site by a proposed earthen swale to discharge into the norther arroyo along the northern boundary of the site. the Parcels west of the project site remain undeveloped as referenced from the 3B 3C Study. No offsite areas will drain through the project site.

Onsite:

The project site is analyzed as three basins identified as BAS1-I, BAS2 and BAS3-I. BAS1-I and BAS3-I comprise mainly of the rough graded future Phase 2 portion of the site; although BAS1-I also includes Lots 13 thru 14, Lots 46 thru 54 and Lots 90 thru 114 of Phase 1. BAS2 comprises of the remainder Phase 1 portion of the site. Runoff from BAS1-I and BAS2 will combine at the low point within the knuckle of Millholm Avenue. Note that a portion of BAS1-I will discharge into Skye Village Road as surface flow and has been prorated as subbasin BAS1-I(C). Basin BAS3-I will sheet flow north into the adjacent arroyo.

4.3 Summary of Phase 1 Interim Condition Flows

A summary of the Phase 1 interim condition flow rates, as determined by HEC-1 analysis has been included on Exhibit E and the supporting HEC-1 model has been provided in Appendix B for reference. Please note that ultimate condition flow rate for the project site has been conservatively utilized for Phase 1 interim condition.

4.4 Summary of Phase 1 Interim Condition Street Flows

The Phase 1 interim condition flow rates are considered equal to if not less than the ultimate condition flow rates. Therefore, street flow and facility sizing computations have been based on the ultimate condition flows. Please refer to Section 5.4 of this report for detailed discussion of street flows.

5 ULTIMATE DRAINAGE CONDITION

5.1 Definition of Ultimate Condition

The ultimate condition considers both Phase 1 and Phase 2 of the project site to be fully constructed. Similar to the Phase 1 interim condition, all perimeter roadways and associated drainage infrastructure are assumed to be in place and functioning. The adjacent Parcels 2.10 to the west is also assumed to be developed and site planning and entitlements for the site are also ongoing concurrent with Parcels 2.08 and 2.09.

5.2 Discussion of Ultimate Condition

Refer to Exhibit F, included in Appendix A, for a detailed illustration of the ultimate condition drainage patterns. The onsite high points and low points established by the Phase 1 interim condition remain in the same locations in the ultimate condition. This study conservatively utilizes ultimate condition flow rates for the street flow computations and facilities design. BAS2 remains as analyzed in the interim condition while the remainder of the site is reanalyzed as BAS1. An additional set of drop inlets and storm drain system is proposed along Millholm Avenue to discharge flows to the arroyo and reduce surface flows at the low point in the knuckle. Thus, the facilities at the low point have been designed for the higher interim condition flows (49 cfs interim vs 31 cfs ultimate).

5.3 Summary of Ultimate Condition Flows

A summary of the ultimate condition flow rates, as determined by HEC-1 analysis has been included on Exhibit F and the supporting HEC-1 model has been provided in Appendix B for reference.

5.4 Summary of Ultimate Condition Street Flows

The 100-year street flow summary tables have been included on Exhibit F, and the supporting FlowMaster street flow computations have been included in Appendix C for reference. Review of the street flow summary tables shows that the criteria set forth in Section 2.3 of this report are satisfied.

The onsite basins have been prorated to establish more accurate flows for the street flow calculations and facilities design. Note that due to the grade difference between the site and Skye Village Road, it is not possible to provide a high point in Barsket Avenue; thus, a portion of the site (subbasin BAS1(F)) will discharge into Skye Village Road which is contrary to the master plan. However, the flow is anticipated to be captured by the existing nuisance inlet at the northeast corner of the site. Thus, the onsite discharge to Skye Village Road is considered acceptable.

6 SUMMARY OF DRAINAGE FACILITIES

Existing Offsite Facilities:
The existing 60" RCP in Skye Canyon Park Drive and the existing 8-ft by 7-ft RCA storm drain in Skye Village Road were both previously designed by the Phase 3A Study as CCRFCD Facilities MOHU 0076 & MOHU 0061 respectively and updated with the Update #6 Study. Therefore, the WSPGW model for the lateral stub from the Skye Village system has been referenced from Update #6 study (refer to Appendix E).

The existing wash located north of the project site is assumed to remain unchanged in both conditions of development with project site grading proposed outside the limits of the banks of the wash except at the three discharge locations for onsite flows. The flowline of the wash is a minimum of 10-FT below the proposed project site grading, and much of the flow in the wash has been diverted by the upstream Skye Canyon Detention Basin #2. Therefore, no analyses of the wash have been performed by this study.

Proposed Drop Inlets and Storm Drain:
Three primary storm drain systems have been proposed for the project site, two for the north two-third of the project site discharging into the adjacent arroyo and one for the south one-third of the project site connecting into the existing stub from the storm drain in Skye Village Road.

Drop inlet hydraulic sizing computations, WSPGW storm drain models, and drop inlet control nomographs have been performed for the storm drain infrastructure and have been included in Appendix C for reference. For a detailed illustration and summary of the storm drain facilities, please refer to Exhibit F provided in Appendix A.

North System
The north storm drain system consists of two inlets and one WSPGW model. The two inlets (DI#1 & DI#2) are on-grade and will capture a portion of the flows in Millholm Avenue to discharge north into the arroyo through a drainage easement, with 24" RCP storm drain. Note that the starting water surface elevation (WSE) utilized is conservatively set at the top-of-pipe. The WSPGW model (NORTH.WSW) have been provided for the north system and have been shown that the facilities have adequate capacity and will maintain the HGLs to satisfy the required criteria.

Northeast System

The northeast system consists of two inlets (DI#3 & DI#4) in sump located at the low point in the Knuckle of Millholm Avenue and one WSPGW model. Flows captured by the inlets will also discharge north into the arroyo thru a drainage easement with a 30" RCP storm drain. The starting water surface elevation (WSE) utilized is also conservatively set at the top-of-pipe. The WSPGW model (NE.WSW) have been provided for the north system and have been shown that the facilities have adequate capacity and will maintain the HGLs to satisfy the required criteria.

Southeast System

The southeast system consists of one drop inlet (DI#5) in sump and a 24" RCP lateral that connects to the existing 30" RCP stub. The WSPGW model (SE.WSW) is modelled to include the two existing downstream segments of 30" RCP; thus, the starting water surface elevation (WSE) utilized is adopted from the connection to the Skye Village Drive system. The WSPGW model (SE.WSW) have been provided for the north system and have been shown that the facilities have adequate capacity and will maintain the HGLs to satisfy the required criteria.

Emergency Overflow:

Two emergency overflow sections have been provided for the two low point sump areas onsite. One for the emergency overflow of DI#3 & DI#4 and the other for the emergency overflow of DI#5.

7 FINISHED FLOORS

A spreadsheet showing the finished floor analysis has been included in Appendix D. Please note that both phases have been analyzed together in the provided finished floor analysis. All proposed finished floors have been adequately flood protected above twice the depth of flow in the adjacent streets, up to 18-inches measured at the high side of the lot. The finished floor elevations have been designed in accordance with and to satisfy both the CLV and CCRFCD criteria.

8 CONCLUSIONS & RECOMMENDATIONS

1. This project is in compliance with the applicable drainage laws as recognized by the state of Nevada. This project is in compliance with the CCRFCD "*Hydrologic Criteria and Drainage Design Manual*" (Reference 1).

2. The project site is not located within a FEMA designated Special Flood Hazard Area (SFHA). The project site and the proposed improvements are located within a FEMA flood Zone "X" (shaded and unshaded). Therefore, FEMA notification will not be required.

3. The project site is proposed to be constructed in two phases, and two sets of improvement plans accompany this study. Therefore, this study technically designs and analyses the entire property, so no additional studies will be required for the development.

4. This study assumes that perimeter roadway and drainage infrastructure improvements are in place and functioning.

5. The proposed street flows and drainage facilities satisfy CLV and CCRFCD criteria.

6. Proposed finished floors are adequately flood protected meeting criteria against design flows and potential overflow conditions.

7. Ongoing maintenance of the drainage systems is required to maintain the designed levels of functionality and integrity summarized herein. Failure to provide adequate maintenance can prevent the drainage systems from performing in accordance with their designed intent. It is the responsibility of the owner of the facilities to provide routine maintenance and to ensure that the drainage systems are functioning as intended.

8. The Phase 1 and Phase 2 improvement plans have been provided to accompany this study and are shown to support the drainage patterns and conclusions detailed.

9 REFERENCES

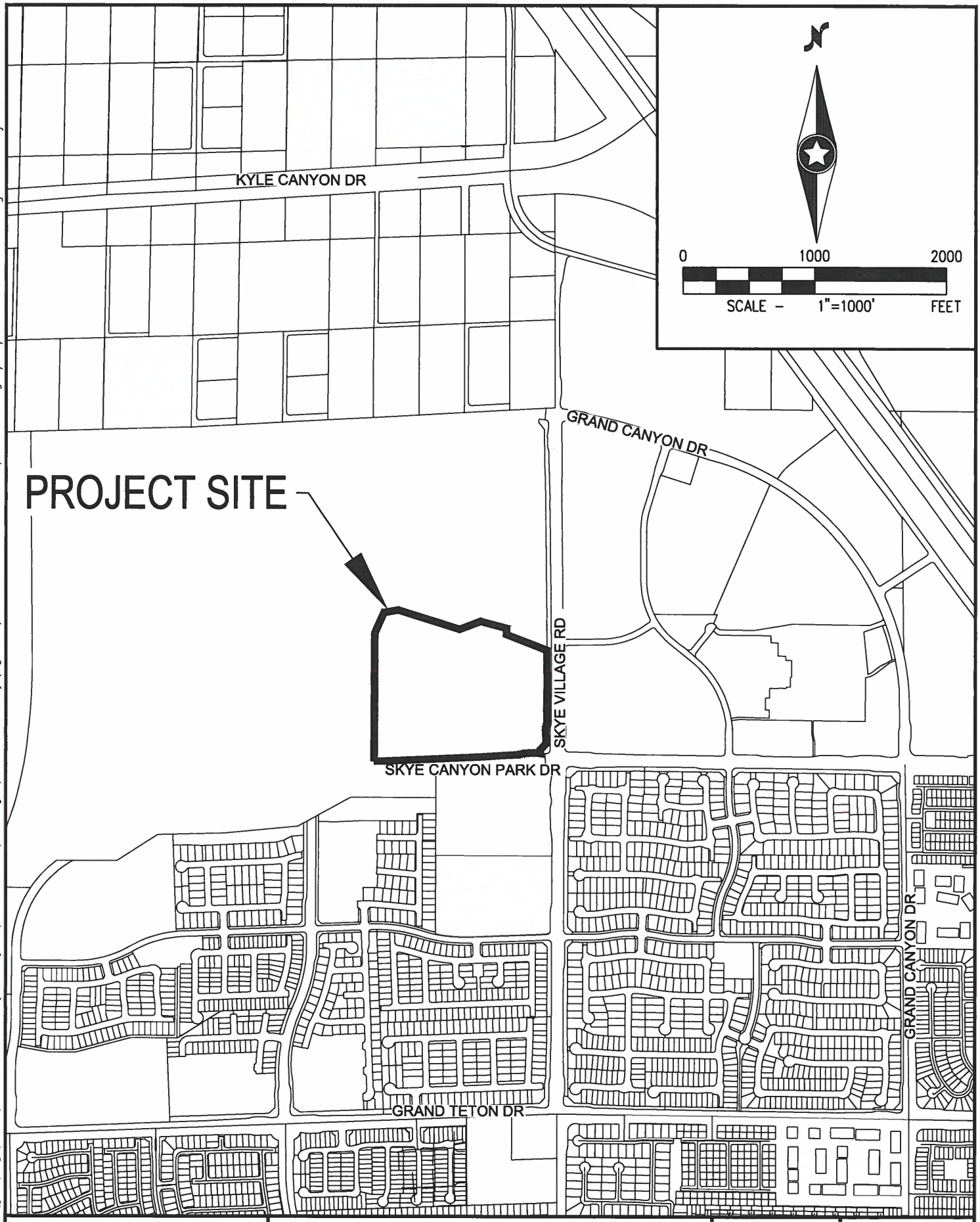
1. *Las Vegas Valley Flood Control Master Plan Update*, SNC Lavalin/Atkins, in association with Louis Berger Group, February 2019

2. *Hydrologic Criteria and Drainage Design Manual.* Clark County Regional Flood Control District, 1999

3. *Web Soil Survey of Las Vegas Valley Area, Nevada. U.S. Department of Agriculture, Natural Resources Conservation Service*

APPENDIX A

Exhibits



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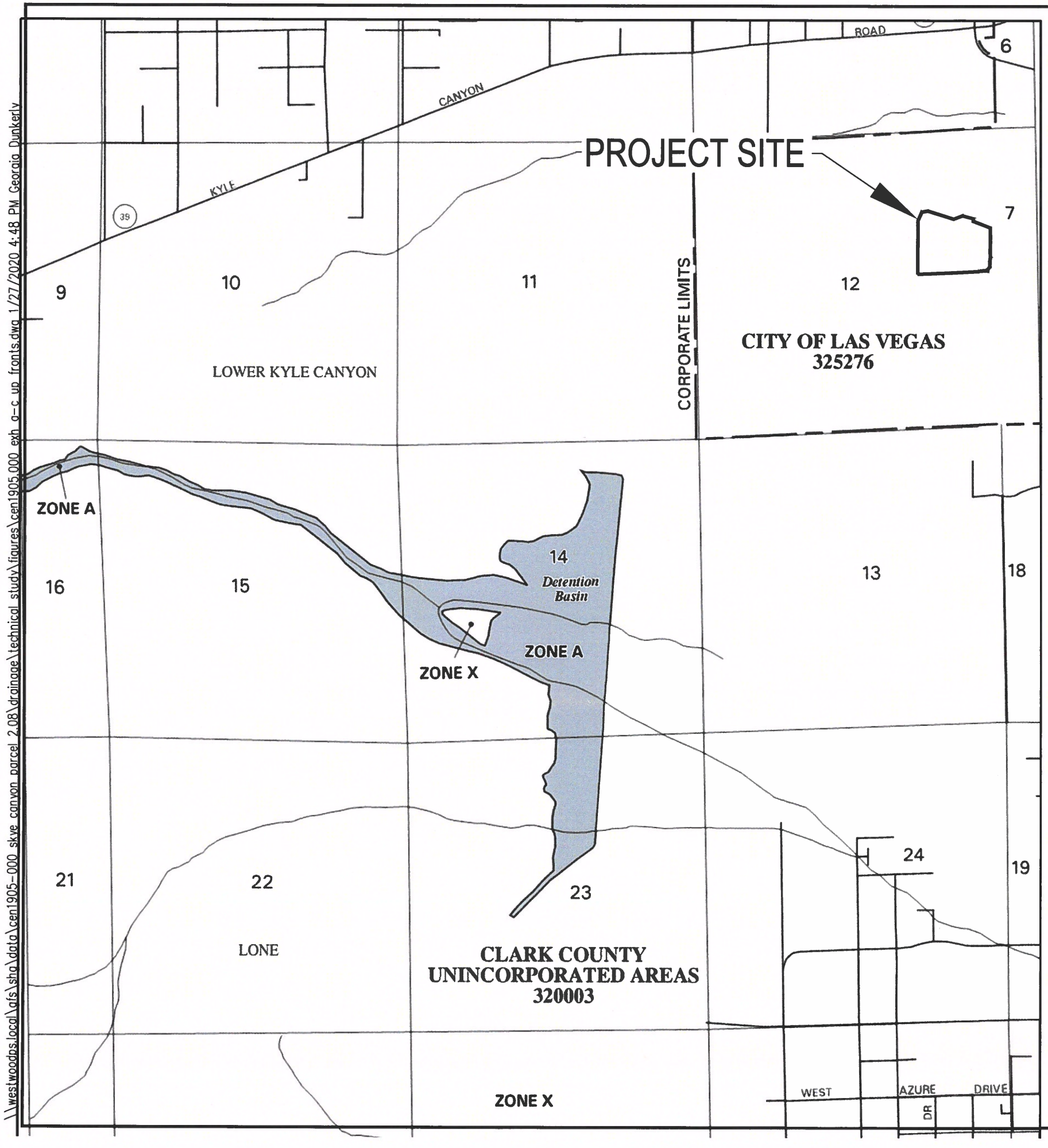
CENTURY COMMUNITIES

SKYE CANYON 2.08 AND 2.09

VICINITY MAP

DATE: JAN 2020	PROJECT NO. CEN1905.000
DRAFTER: GNS	
DESIGNER: GNS	EXHIBIT A
CHECKED: SOA	SHEET 1 OF 1



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SCALE – 1"=40' FEET

PANEL 1750 E

FIRM

FLOOD INSURANCE RATE MAP

CLARK COUNTY, NEVADA AND INCORPORATED AREAS

PANEL 1750 OF 4090

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
LAS VEGAS, CITY OF	325276	1750	E
CLARK COUNTY, UNINCORPORATED AREAS	320003	1750	E

Notice to User: The **Map Number** shown below should be used when **placing** map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
32003C1750 E

MAP REVISED:
SEPTEMBER 27, 2002

Federal Emergency Management Agency

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.

ZONE A99 Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain Boundary
- Floodway Boundary
- Zone D Boundary
- Coastal Barrier Boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

- (A)—(A) Cross Section Line
- (23)—(23) Transect Line
- 07°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4276000M — 1000-meter Universal Transverse Mercator grid values, zone 11
- 600000 FT — 5000-foot grid ticks
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel).
- M1.5 — River Mile

MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

September 27, 2002; to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change floodway.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

MAP SCALE 1" = 2000'

1000 0 2000 4000 FEET

METERS

Westwood
5740 S. Arville Street
Suite 216
Las Vegas, NV 89118
Phone (702) 284-5300
Fax (702) 284-5399
www.wwpro.com
Westwood Professional Services, Inc.

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

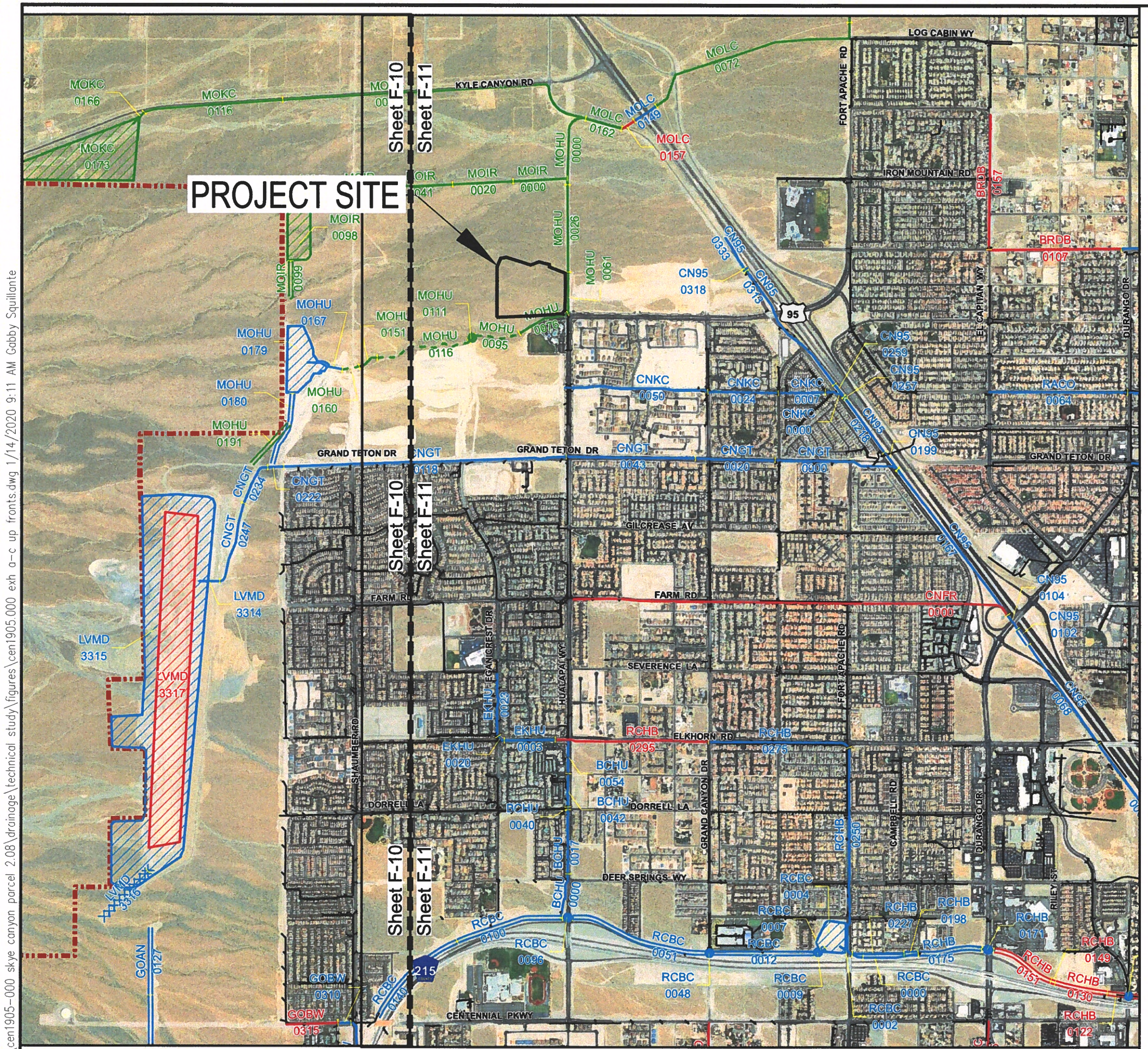
CENTURY COMMUNITIES

SKYE CANYON 2.08 AND 2.09
FEMA FIRM PANEL MAP

DATE: JAN 2020
DRAFTER: GNS
DESIGNER: GNS
CHECKED: SOA
PROJECT NO. CEN1905.000

EXHIBIT B
SHEET 1 OF 1

\\westwoodps.local\ofs\shg\data\cen1905-000 skye canyon parcel 2.08\drainage\technical study\figures\cen1905.000 exh o-c up fronts.dwg 1/27/2020 4:48 PM Georgia Dunkerly



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REGIONAL FLOOD CONTROL DISTRICT

2018 LAS VEGAS VALLEY FLOOD CONTROL MASTER PLAN UPDATE

FIGURE F-10

FLOOD CONTROL FACILITIES

LEGEND

- Ultimate Development Boundary
- Existing Facilities
- Category A Proposed Facilities
- Category B Proposed Facilities
- Local Existing Facilities
- Detention Basin
- Culvert or Bridge Crossing
- Stormdrain
- Lined Channel
- Unlined Channel
- Levee/Dike
- Natural Wash/Floodway
- ID-Mile Separator

Remove & Replace/Parallel Facilities

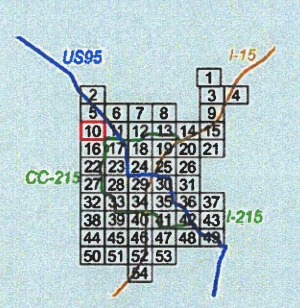
Category A	Category B
Channel	Channel
Stormdrain	Stormdrain
Crossing	Crossing

N

0 500 1,000 2,000 3,000 Feet

Scale: 1 inch = 2,000 feet

AerialSource: Esri World Imagery 2017



ATKINS

Member of the SNC-Lavalin Group

Louis Berger

REGIONAL FLOOD CONTROL DISTRICT

2018 LAS VEGAS VALLEY FLOOD CONTROL MASTER PLAN UPDATE

FIGURE F-11

FLOOD CONTROL FACILITIES

LEGEND

- Ultimate Development Boundary
- Existing Facilities
- Category A Proposed Facilities
- Category B Proposed Facilities
- Local Existing Facilities
- Detention Basin
- Culvert or Bridge Crossing
- Stormdrain
- Lined Channel
- Unlined Channel
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Remove & Replace/Parallel Facilities

Category A	Category B
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Stormdrain	Stormdrain
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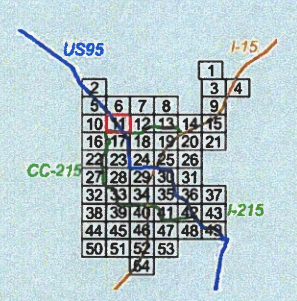
N

0 500 1,000 2,000 3,000 Feet

Scale: 1 inch = 2,000 feet

AAerialSource: Esri World Imagery 2017



ATKINS

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Louis Berger

Westwood

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5740 S. Arville Street
Suite 216
Las Vegas, NV 89118
westwoodps.com

Westwood Professional Services, Inc.

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CENTURY COMMUNITIES

SKYE CANYON 2.08 AND 2.09

2018 CCRFCD FACILITY MAP

DATE: JAN 2020
DRAFTER: GNS
DESIGNER: GNS
CHECKED: SOA
PROJECT NO. CEN1905.000

EXHIBIT C1

SHEET 1 OF 1

ID / Mile	Status	Facility Description	Length (ft.)	Flow (cfs)	HEC-1 Node	HEC-1 Model	Tributary Area (sq.mi.)	Channel Slope (%) **
BCHU		**BELTWAY CHANNEL - HUALAPAI**						
0000	E	12' X 5' RCAP	653	206	DBA3-C	WEST3	0.84	1.11
0017	E	8' X 5' RCAP	1218	218	CBA3-C	WEST3	0.84	1.33
0040	E	66" RCP	60	57	DNW26-C	WEST3	0.51	1.04
0042	E	60" RCP	615	57	DNW26-C	WEST3	0.51	1.42
0054	E	54" RCP	615	57	DNW26-C	WEST3	0.51	1.23
BRDB		**BRENT DRAINAGE SYSTEM**						
0000	E	36" RCP WITH 18" ORIFICE PLATE	2170	36	BRDB	WEST3	2.37	0.40
0021	E	45,080 CFS PMF SPILLWAY		45080	CBRDB	WEST3	2.37	
0022	E	450 AC-FT SOUTH ENVIRONMENTAL ENHANCEMENT AREA		1585	CBRDB	WEST3	2.37	
0033	E	ENERGY DISSIPATOR	100	1052	CNW147W	WEST3	1.75	
0043	E	20' X 7' RCBC	135	1052	CNW147W	WEST3	1.75	0.50
0045	E	CONC CHNL 12'W 7'D 2:1 SS	983	1052	CNW147W	WEST3	1.75	2.00
0058	E	12' X 6' RCB	1688	951	CNW113-C	WEST3	1.47	1.81
0167	P	8' X 6' RCB	2550	951	CNW113-C	WEST3	1.47	2.40
0167	P	12' X 7' RCB	2580	621	CNW96-C	WEST3	0.84	0.25
CN95		**CENTENNIAL PKWY CHANNEL WEST / U.S 95 BRANCH**						
0000	E	20' X 7' RCB	3335	2778	CNWB83-C	WEST3	3.35	2.00
0068	E	20' X 7' RCB	2300	2725	CNW103-C	WEST3	3.04	2.10
0102	E	CONC CHNL 20'W 9'D 0:1 SS	375	2548	2CNW89-C	WEST3	2.65	1.77
0104	E	2- 12' X 10' RCB	300	2548	2CNW89-C	WEST3	2.65	1.10
0167	E	16' X 8' RCB	3521	2548	2CNW89-C	WEST3	2.65	1.58
0199	E	15' X 9' RCB	407	1467	2CNW72-C	WEST3	1.13	0.41
0218	E	15' X 9' RCB	1227	1467	2CNW72-C	WEST3	1.13	0.82
0257	E	TRANSITION STRUCTURE	59	1467	2CNW72-C	WEST3	1.13	0.77
0259	E	15' X 9' RCB	264	599	CNW74-C	WEST3	0.40	0.77
0313	E	10' X 6' RCB	2680	599	CNW74-C	WEST3	0.40	2.50
0316	E	TRANSITION STRUCTURE	60	599	CNW74-C	WEST3	0.40	1.50
0333	E	5' X 5' RCB	670	259	NW62-S	WEST3	0.16	1.50
CNFR		**CENTENNIAL PKWY CHANNEL WEST / FARM ROAD**						
0000	P	8' X 6' RCB	8350	776	CNW89-C	WEST3	1.05	2.00
CNGT		**CENTENNIAL PKWY CHANNEL WEST / GRAND TETON BRANCH**						
0000	E	10' X 5' RCB	2376	543	CNW71-E	WEST3	0.47	2.58
0020	E	10' X 5' RCB	1570	543	CNW71-E	WEST3	0.47	3.50
0043	E	8' X 6' RCB	2470	543	CNW71-E	WEST3	0.47	3.80
0116	E	6' X 5' RCAP	5472	349	KYLEDET	KYLEDB	58.61	3.72
CNKC		**CENTENNIAL PKWY CHANNEL WEST / KYLE CANYON BRANCH**						
0000	E	12' X 4' RCB	377	954	CNW72-C	WEST3	0.74	4.58
0007	E	10' X 5' RCB	674	954	CNW72-C	WEST3	0.74	3.28
0024	E	8' X 5' RCB	1385	954	CNW72-C	WEST3	0.74	2.40
0050	E	72" RCP	2757	437	NW45-S	WEST3	0.31	3.50
CNWE		**CENTENNIAL PKWY CHANNEL WEST**						
0165	E	CONC CHNL 36'W 9'D 0:1 SS	1130	3771	CNW3B3-C	WEST3	5.64	0.60
0200	E	CONC CHNL 36'W 9'D 0:1 SS	1340	3523	CNW2D4-C	WEST3	5.14	1.00
0226	E	2- 18' X 8.5' RCBC @ RIO VISTA	100	3523	CNW2D4-C	WEST3	5.14	0.51
0241	E	CONC CHNL 36'W 9.5'D 0:1 SS	405	3523	CNW2D4-C	WEST3	5.14	0.51
0251	E	CONC CHNL 35'W 9'D 0:1 SS	575	3234	CNW2D3-C	WEST3	4.64	0.51
0271	E	CONC CHNL 32'W 10'D 0:1 SS	229	3234	CNW2D3-C	WEST3	4.64	0.51
0274	E	32' X 10' RCBC @ TENAYA	142	3234	CNW2D3-C	WEST3	4.64	0.51
0277	E	CONC CHNL 32'W 9'D 0:1 SS	579	3234	CNW2D3-C	WEST3	4.64	0.64
0287	E	CONC CHNL 32'W 8'D 0:1 SS	865	2992	CNW2B2-C	WEST3	3.83	1.59
0301	E	2- 15' X 7' RCB	1738	2992	CNW2B2-C	WEST3	3.83	1.30
0304	E	22' X 7' RCB	3410	2992	CNW2B2-C	WEST3	3.83	1.85
0314	E	22' X 7' RCB	763	2922	CNWBD2-N	WEST3	3.45	1.94
EKBU		**ELKHORN SPRINGS AND BUFFALO**						
0000	E	60" RCP	1046	255	NW134-C	WEST3	0.46	0.89
EKDB		**ELKHORN SPRINGS DETENTION BASIN**						
0000	E	GRASS CHNL 15'W 5.8'D 3.5:1 SS	2575	221	CNW150-C	WEST3	1.41	0.39
0025	E	4' X 3' RCB	160	106	ELKBASIN	WEST3	0.84	0.50
0026	E	48" RCP	1270	106	ELKBASIN	WEST3	0.84	1.23
0049	E	60" RCP	1095	106	ELKBASIN	WEST3	0.84	0.13
0070	E	48 AC-FT ELKHORN SPRINGS DETENTION BASIN		456	CNW133-C	WEST3	0.84	

ID / Mile	Status	Facility Description	Length (ft.)	Flow (cfs)	HEC-1 Node	HEC-1 Model	Tributary Area (sq.mi.)	Channel Slope (%) **
EKHU		**ELKHORN AND HUALAPAI**						
0003	E	6' X 4' RCAP	580	393	CNW26-C	WEST3	0.51	3.61
0020	E	6' X 5' RCAP	150	393	CNW26-C	WEST3	0.51	3.61
0023	E	8' X 5' RCAP	1200	393	CNW26-C	WEST3	0.51	0.90
GOEC		**GOWAN NORTH - EL CAPITAN BRANCH**						
0176	P	78" RCP	1320	190	CCPFR-C	GOW3A	0.46	1.15
GONO		**GOWAN NORTH SYSTEM**						
0511	P	6' X 5' RCB	1320	326	CCPHW-C	GOW3A	0.60	1.14
LVMD		**LAS VEGAS WASH - MIDDLE**						
2507	E	2- 13' X 9' RCB	2831	1808	CNW168-C	CWEST3	4.43	0.36
2525	E	24' X 8' RCB	1140	1508	CNW159-C	CWEST3	3.92	0.40
2550	E	24' X 8' RCB	1445	1312	CD161-C	CWEST3	3.42	0.40
2574	E	24' X 8' RCB	1430	1312	CD161-C	CWEST3	3.42	0.41
2599	E	CONC CHNL 24'W 7'D 2:1 SS	1577	1268	CNW162-C	CWEST3	3.10	0.51
2632	E	18' X 5' RCB	1443	695	CNW138-C	WEST3	1.16	0.47
2661	E	18' X 5' RCB	3003	695	CNW138-C	WEST3	1.16	0.78
2711	E	10' X 5' RCB	2440	560	CNW139-C	WEST3	0.93	2.00
2737	E	8' X 5' RCB	265	560	CNW139-C	WEST3	0.93	2.25
2763	E	6' X 5' RCB	1505	560	CNW139-C	WEST3	0.93	2.41
2789	E	6' X 5' RCB	910	560	CNW139-C	WEST3	0.93	2.00
MOHU		**MOCCASIN-HUALAPAI BRANCH**						
0000	P0	13' X 6' RCB	1476	924	2CNW33-C	LOWER3	2.08	1.80
0026	P0	11' X 6' RCB	1654	560	CNW45-N	LOWER3	1.25	0.50
0061	P0	9' X 6' RCB	779	560	CNW45-N	LOWER3	1.25	0.50
0076	P0	60" RCP	1000	263	CNW45-C	LOWER3	1.03	3.00
0095	P0	NATURAL WASH	855	263	CNW45-C	LOWER3	1.03	3.00
0111	P0	6' X 5' RCBC @ EGAN CREB DR	164	263	CNW45-C	LOWER3	1.03	6.10
0116	P0	NATURAL WASH	1900	263	CNW45-C	LOWER3	1.03	3.00
0151	P0	54" RCPC @ SHAUMBER	438	72	MODB1	LOWER3	0.86	2.00
MOIR		**MOCCASIN - IRON MOUNTAIN BRANCH**						
0000	P0	60" RCP	1080	410	CNW33-C	LOWER3	0.83	4.50
0020	P0	54" RCP	1181	71	MODB2	LOWER3	0.56	3.20
0041	P0	42" RCP	1238	71	MODB2	LOWER3	0.56	5.00
0065	P0	60" RCP	1099	71	MODB2	LOWER3	0.56	0.40
MOKC		**MOCCASIN AND KYLE CANYON**						
0000	P0	9' X 6' RCB	6140	1072	CNW35-C	LOWER3	2.69	3.40
MOLC		**MOCCASIN - LOG CABIN BRANCH**						
0000	P0	20' X 10' RCB	2206	2265	2CNW64	LOWER3	6.06	0.35
0072	P0	12' X 8' RCB	4493	2265	2CNW64	LOWER3	6.06	2.56
0149	E	13' X 8' RCB	520	1817	CNW62-N	LOWER3	4.88	2.00
0157	P	13' X 8' RCB	288	1817	CNW62-N	LOWER3	4.88	1.40
0162	P0	13' X 6' RCB	435	1817	CNW62-N	LOWER3	4.88	1.80
MSMV		**MOUNTAIN SPA/VISTA RANCH**						
0000	E	6- 12' X 5' RCBC @ GRAND TETON	273	639	CNW163-C	CWEST3	1.69	0.40
0005	E	GRASS CHNL 130'W 4.5'D 10:1 SS	6325	259	CNW155-C	WEST3	4.46	0.40
0125	E	GRASS CHNL 130'W 4.5'D 10:1 SS	1330	66	CNW147E	WEST3	1.55	0.40
RACO		**RACEL STREET COLLECTOR**						
0000	E	14' X 7' RCB BAFFLED ENERGY DISSIPATOR	87	424	CNW111S	WEST3	0.55	0.29
0001	E	78" RCP	3245	424	CNW111S	WEST3	0.55	2.46
0064	E	78" RCP	2650	347	DNW111S	WEST3	0.44	2.09
RCBC		**RANCHO ROAD SYSTEM - BELTWAY CHANNEL**						
0000	E	6' X 5' RCB	1062	173	FADB	WEST3	1.54	1.34
0002	E	54" RCP OUTLET WITH 41" CRIFICE	503	173	FADB	WEST3	1.54	2.38
0003	E	2,341 CFS PMF SPILLWAY		2341	FADBIN	WEST3	1.54	
0004	E	76 AC-FT FORT APACHE DETENTION BASIN		658	FADBIN	WEST3	1.54	
0007	E	ENERGY DISSIPATOR	100	658	FADBIN	WEST3	1.54	
0009	E	12' X 6' RCBC @ FORT APACHE DETENTION BASIN	133	658	FADBIN	WEST3	1.54	1.79
0012	E	CONC CHNL 12'W 6'-7"D 0:1 SS	1937	658	FADBIN	WEST3	1.54	3.15
0048	E	12' X 6' RCBC @ GRAND CANYON	140	559	CMNA1	WEST3	1.27	3.15
0051	E	CONC CHNL 12'W 5'-8"D 0:1 SS	2650	559	CMNA1	WEST3	1.27	3.44
0096	E	1- 10' X 6' AND 1- 6' X 6' RCBC @ HUALAPAI WAY	190	559	CMNA1	WEST3	1.27	1.93
0100	E	CONC CHNL 12'W 5.5'D 0:1 SS	2085	475	CDMNA1	WEST3	0.43	2.88

ID / Mile	Status	Facility Description	Length (ft.)	Flow (cfs)	HEC-1 Node	HEC-1 Model	Tributary Area (sq.mi.)	Channel Slope (%) **
RCBC		**RANCHO ROAD SYSTEM - BELTWAY CHANNEL**						
0140	E	CONC CHNL 10'W 5'D 0:1 SS	2155	475	CDMNA1	WEST3	0.43	1.65
RCHB		**RANCHO ROAD SYSTEM - BELTWAY**						
0053	E	2- 12' X 8' RCBC @ SOUTH RAMP CONNECTOR	85	1465	CDW1C1-C	WEST3	3.55	1.40
0054	E	CONC CHNL 21'W 8'D 0:1 SS	432	1465	CDW1C1-C	WEST3	3.55	1.51
0062	E	TRANSITION STRUCTURE	130	1465	CDW1C1-C	WEST3	3.55	1.51
0065	E	24' X 7' RCB	480	1465	CDW1C1-C	WEST3	3.55	0.30
0074	E	24' X 6' RCB	50	1414	CNWBC6-C	WEST3	3.41	0.30
0075	E	20' X 6' RCBC @ BELTWAY	428	1414	CNWBC6-C	WEST3	3.41	2.81
0083	P	20' X 4' RCB	950	1414	CNWBC6-C	WEST3	3.41	2.49
0101	P	CONC CHNL 20'W 5'D 0:1 SS	980	1414	CNWBC6-C	WEST3	3.41	2.38
0120	E	20' X 6' RCBC @ GRAND MONTECITO	120	1414	CNWBC6-C	WEST3	3.41	1.00
0122	P	CONC CHNL 16'-20'W 5'D 0:1 SS	350	1414	CNWBC6-C	WEST3	3.41	1.84
0130	P	CONC CHNL 16'W 5.5'D 0:1 SS	1012	1414	CNWBC6-C	WEST3	3.41	2.67
0149	P	CONC CHNL 16'W 5-5.5'D 0:1 SS	87	1115	CNWBC3	WEST3	2.99	2.27
0151	P	CONC CHNL 16'W 5'D 0:1 SS	1255	1115	CNWBC3	WEST3	2.99	2.65
0171	E	16' X 6' RCBC @ EL CAPITAN WAY	234	1115	CNWBC3	WEST3	2.99	1.75
0175	E	CONC CHNL 14'W 7'D 0:1 SS	1220	1115	CNWBC3	WEST3	2.99	2.93
0158	E	CONC CHNL 14'W 7'D 0:1 SS	225	788	CNWBA6-C	WEST3	1.88	2.93
0227	E	12' X 6' RCB	995	788	CNWBA6-C	WEST3	1.88	1.73
0250	E	12' X 6' RCB	4020	788	CNWBA6-C	WEST3	1.88	1.12
0275	E	7' X 6' RCB	2650	535	CNW66-C	WEST3	1.04	3.30
0295	P	7' X 6' RCB	2980	431	CNW53-C	WEST3	0.80	3.60
TSDB		**TULE SPRINGS DRAINAGE SYSTEM**						
0000	E	2- 10' X 4' RCBC @ ECHO GRANDE	100	25	TULEDB	WEST3	1.37	1.64
0002	E	36" RCP WITH 22" ORIFICE PLATE	320	25	TULEDB	WEST3	1.37	0.33
0010	E	14,013 CFS PMF SPILLWAY		14013	CTULEDB	WEST3	1.37	
0011	E	117 AC-FT NORTH ENVIRONMENTAL ENHANCEMENT AREA		551	CTULEDB	WEST3	1.37	
0012	E	ENERGY DISSIPATOR	260	333	CNW148-C	WEST3	0.59	
0023	P	78" RCP	1320	333	CNW148-C	WEST3	0.59	0.80
0059	P	72" RCP	2640	333	CNW148-C	WEST3	0.59	1.03

*The HEC-1 node shown identifies the controlling concentration point for the associated facility and is located upstream of this facility due to decreasing peak flow with increasing tributary area caused by storm distribution transitions, depth area reduction factors, or attenuation of flow from routing.
**As-built or design slopes were used when available. All other slopes are based on existing topography. The user should verify the facility slope listed prior to performing any facility specific analysis.
^ For parallel facilities, the existing facility flow equals its normal depth capacity, and the proposed parallel facility flow equals the remaining flow (i.e. HEC-1 Node flow = existing facility normal depth capacity + proposed parallel facility flow).

REGIONAL FLOOD CONTROL DISTRICT

2018 LAS VEGAS VALLEY FLOOD CONTROL MASTER PLAN UPDATE

FACILITY INVENTORY FIGURE F-11

LEGEND

ID (Facility Identifier) AABB
Parent Stream Name
Stream Name
Mile 0000
Distance Above Confluence with Parent Stream (Miles)
Miles in Hundredths

Existing Facility.....E
Proposed or Modified Facility.....P
Contingency Level
Category A.....P
Category B.....P0

Bottom Width.....W
Depth.....D
Side Slope, H:V.....SS

Construction Features

Cast in Place Concrete Pipe	CIPCP	Reinforced Concrete Arch Culvert	RCAC
Corrugated Metal Arch Pipe Culvert	CMAP	Reinforced Concrete Box	RCB
Corrugated Metal Pipe Culvert	CMPC	Reinforced Concrete Box Culvert	RCBC
High Density Polyethylene	HDPE	Reinforced Concrete Pipe	RCP
Horizontal Elliptical Reinforced Concrete Pipe	HERCP	Reinforced Concrete Pipe Culvert	RCPC
Reinforced Concrete Arch Pipe	RCAP	Storm Sewer Pipe	SSP

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CENTURY COMMUNITIES

SKYE CANYON 2.08 AND 2.09

2018 CCRFCD FACILITY INVENTORY

DATE: JAN 2020
DRAFTER: GNS
DESIGNER: GNS
CHECKED: SOA
PROJECT NO. CEN1905.000

EXHIBIT C2
SHEET 1 OF 1

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PROJECT SITE

NW17-C
NW23-C
NW51-C
NW64
NW50-C
NW102-C
NW130-W
NW129-C
NW115-C
NW116-C
NW21-C
NW35-C
NW62-N
NW100-W
NW114-C
NW62-S
NW33-C
NW96-C
NW113-C
NW45-N
NW74-C
NW75-C
NW111N
NW45-C
NW111S
NW72-C
NW45-S
NW109-C
NW29-C
NW71-W
NW71-E
NW89-C
NW28-C
NW55-C
NW27-C
NW103-C
NW66-C
NW53-C
NW26-C
NWBB1-C
NW77-C
NWBA3-C
NWBA6-C
NWBB3-C
NWBC3
CDMNA1
NWBC2-C
NWBD

OFF16
OFF18
OFF20
OFF21
GD10

1155
1400
1610
1191

KYLE CANYON RD
FORT APACHE RD
LOG CABIN WY
IRON MOUNTAIN RD
EL CAPITAN WY
DURANGO DR
GRAND TETON DR
GILCREASE AV
FARM RD
EGAN CREST DR
SEVERENCE LA
ELKHORN RD
LUMBER RD
DORRELL LA
GRAND CANYON DR
CAMPBELL RD
RILEY ST
DEER SPRINGS WY

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REGIONAL FLOOD CONTROL DISTRICT

2018 Las Vegas Valley Master Plan Update

Figure W-2B
Upper Northern Las Vegas Wash Watershed

Legend

- Flow Arrows
- Concentration Points (NodeID, flow(cfs))
- Existing Facilities
- Category A Proposed Facilities
- Category B Proposed Facilities
- Ultimate Development Boundary
- Watershed
- Subbasins (BasinID)
- Soils (MUSYM)
- 1: Undeveloped Land, Open desert
- 2: Parks, Golf Courses
- 3: Rural, 0.5-1 units per acre (uses 1 unit/acre)
- 4: Low-Density Residential, 1-2 units per acre (uses 2 units/acre)
- 5: Medium-Density Residential, 2-4 units per acre (uses 3 units/acre)
- 6: High-Density Residential, 4-8 units per acre (uses 6 units/acre)
- 7: Public Facility and Residential, 8-12 units/acre
- 8: Very High-Density Residential, 12 units/acre or more
- 9: Commercial, Retail, Casino, High Rise Condominiums
- 10: Light Industrial
- 11: Heavy Industrial
- 12: Schools
- 13: Lakes

Scale: 1 inch = 0.5 mile

0 0.25 0.5 1 Miles

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SKYE CANYON 2.08 AND 2.09
2018 CCRFCD WATERSHED MAP

DATE: JAN 2020
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DESIGNER: GNS
CHECKED: SOA

PROJECT NO.
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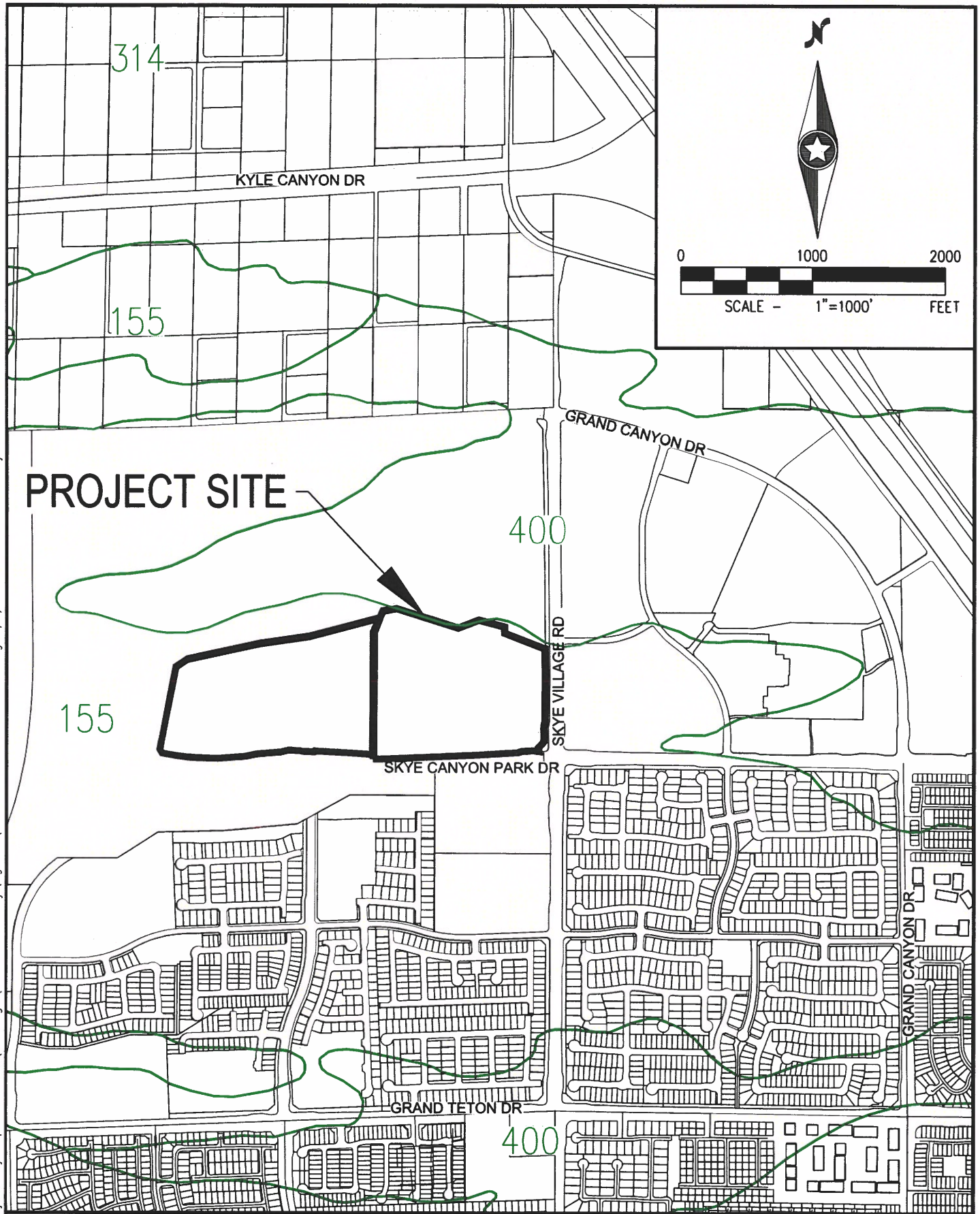
SHEET 1 OF 1



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SKYE CANYON 2.08 AND 2.09

SOILS MAP

DATE: JAN 2020	PROJECT NO. CEN1905.000
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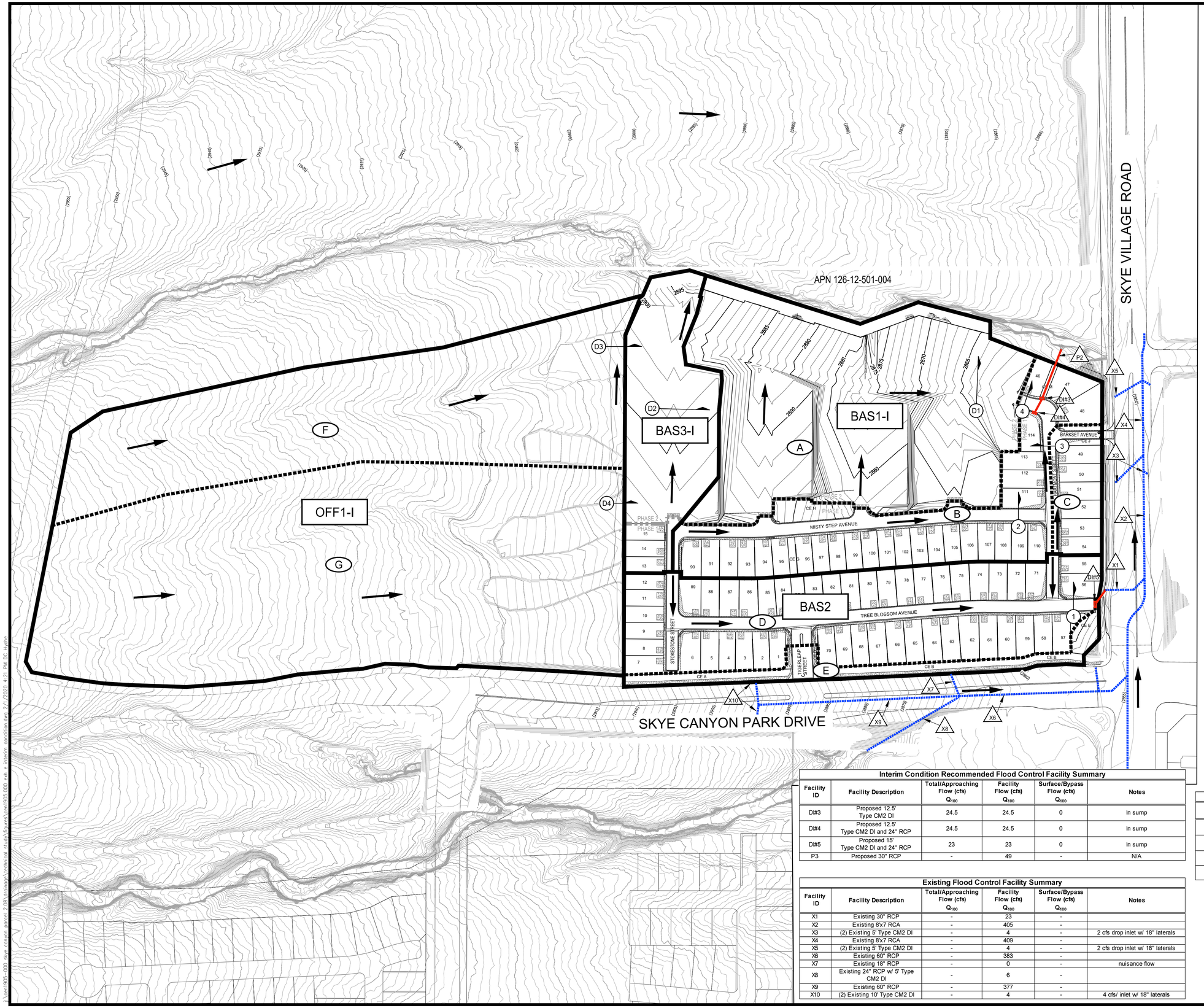

0 120 240
SCALE – 1"=120' FEET

LEGEND

- BASIN BOUNDARY
- PRORATED SUBBASIN BOUNDARY
- PROJECT PHASE BOUNDARY
- EXISTING DRAINAGE FACILITY
- PROPOSED DRAINAGE FACILITY
- ID — BASIN ID
- ID — PRORATED SUBBASIN ID
- FLOW DIRECTION
- ID — FLOWMASTER SECTION
- ID — FACILITY ID

Interim Condition Flow Rate Summary

Basin ID	Area (ac)	Q_{100} (cfs)
BAS1-I	20.8	52
BAS2	8.8	27
BAS3-I	8.8	11
OFF1-I	30.8	70

Prorated Flow Summary

Basin ID	Q_{100} (cfs)	Area (acres)	100-yr Unit Flow (cfs/acre)
BAS1-I	52	20.8	2.5
BAS2	27	8.8	3.1
OFF1-I	70	30.8	2.3
Subbasin ID	**Q_{100} (cfs)**	**Area (acres)**	**100-yr Unit Flow (cfs/acre)**
BAS1-I(A)	36	14.45	2.5
BAS1-I(B)	13	5.21	2.5
BAS1-I(C)	3	1.12	2.5
TOTAL	***52***	***20.8***	
BAS2(D)	23	7.54	3.1
BAS2(E)	4	1.26	3.1
TOTAL	***27***	***8.8***	
OFF1-I(F)	25	11.12	2.3
OFF1-I(G)	45	19.65	2.3
TOTAL	***70***	***30.8***	

Interim Condition Recommended Flood Control Facility Summary

Facility ID	Facility Description	Total/Approaching Flow (cfs) Q_{100}	Facility Flow (cfs) Q_{100}	Surface/Bypass Flow (cfs) Q_{100}	Notes
DI#3	Proposed 12.5' Type CM2 DI	24.5	24.5	0	In sump
DI#4	Proposed 12.5' Type CM2 DI and 24" RCP	24.5	24.5	0	In sump
DI#5	Proposed 15' Type CM2 DI and 24" RCP	23	23	0	In sump
P3	Proposed 30" RCP	-	49	-	N/A

Existing Flood Control Facility Summary

Facility ID	Facility Description	Total/Approaching Flow (cfs) Q_{100}	Facility Flow (cfs) Q_{100}	Surface/Bypass Flow (cfs) Q_{100}	Notes
X1	Existing 30" RCP	-	23	-	
X2	Existing 8'x7 RCA	-	405	-	
X3	(2) Existing 5' Type CM2 DI	-	4	-	2 cfs drop inlet w/ 18" laterals
X4	Existing 8'x7 RCA	-	409	-	
X5	(2) Existing 5' Type CM2 DI	-	4	-	2 cfs drop inlet w/ 18" laterals
X6	Existing 60" RCP	-	383	-	
X7	Existing 18" RCP	-	0	-	nuisance flow
X8	Existing 24" RCP w/ 5' Type CM2 DI	-	6	-	
X9	Existing 60" RCP	-	377	-	
X10	(2) Existing 10' Type CM2 DI	-	4	-	4 cfs/ inlet w/ 18" laterals

Interim Condition 100-Year Street Flow Summary

Section ID	Q_{100} (cfs)	Slope (%)	Depth (ft)	Velocity (fps)	DxV
1 Q = BAS2(D)	23.0	2.00	0.42	3.95	1.7
		4.08	0.37	5.31	2.0
2 Q = BAS1-I(B)	13.0	0.50	0.43	2.04	0.9
		4.28	0.32	4.73	1.5
3 (Half Street) Q = BAS1-I(C)	3.0	1.00	0.31	2.26	0.7
4 Q = BAS1-I(A)	36.0	0.50	0.57	3.00	1.7

Interim Condition Onsite Hydraulic Section Summary

Section ID	Q_{100} (cfs)	Section Description	Slope (%)	Depth (ft)	Velocity (fps)
Section D1 Q = BAS1-I(A)	36.0	Ditch Section	3.57	0.31	3.56
Section D2 Q = BAS3-I	11.0	Ditch Section	1.00	0.15	1.57
Section D3 Q = OFF1-I(F+G)	70.0	Ditch Section	0.65	2.18	4.90
Section D4 Q = OFF1-I(G)	45.0	Ditch Section	0.65	1.85	4.39

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CITY OF LAS VEGAS, NV

CENTURY COMMUNITIES

SKYE CANYON 2.08 AND 2.09 INTERIM CONDITION

12S 59E

DATE: JAN 2020
DRAFTER: GNS
DESIGNER: GNS
CHECKED: SOA
PROJECT NO. CEN1905.000

EXHIBIT E
SHEET 1 OF 1

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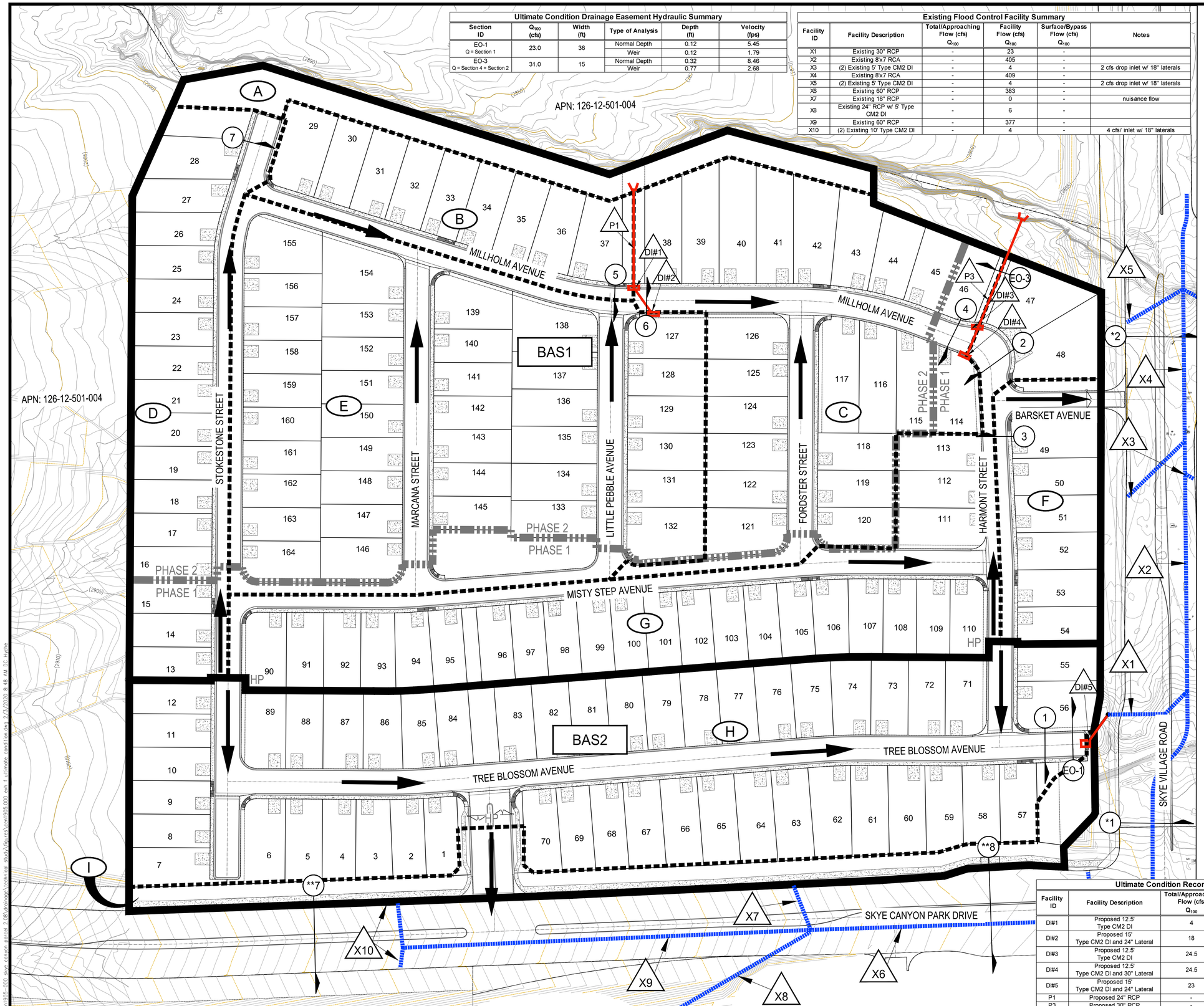
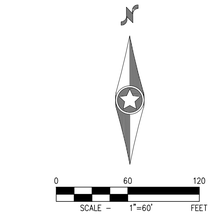
Ultimate Condition Drainage Easement Hydraulic Summary

Section ID	Q_{100} (cfs)	Width (ft)	Type of Analysis	Depth (ft)	Velocity (fps)
EO-1 Q = Section 1	23.0	36	Normal Depth	0.12	5.45
			Weir	0.12	1.79
EO-3 Q = Section 4 + Section 2	31.0	15	Normal Depth	0.32	8.46
			Weir	0.77	2.68

Existing Flood Control Facility Summary

Facility ID	Facility Description	Total/Approaching Flow (cfs) Q_{100}	Facility Flow (cfs) Q_{100}	Surface/Bypass Flow (cfs) Q_{100}	Notes
X1	Existing 30" RCP	-	23	-	
X2	Existing 8'x7 RCA	-	405	-	
X3	(2) Existing 5' Type CM2 DI	-	4	-	2 cfs drop inlet w/ 18" laterals
X4	Existing 8'x7 RCA	-	409	-	
X5	(2) Existing 5' Type CM2 DI	-	4	-	2 cfs drop inlet w/ 18" laterals
X6	Existing 60" RCP	-	383	-	
X7	Existing 18" RCP	-	0	-	nuisance flow
X8	Existing 24" RCP w/ 5' Type CM2 DI	-	6	-	
X9	Existing 60" RCP	-	377	-	
X10	(2) Existing 10' Type CM2 DI	-	4	-	4 cfs/ inlet w/ 18" laterals





LEGEND

- BASIN BOUNDARY
- PRORATED SUBBASIN BOUNDARY
- PROJECT PHASE BOUNDARY
- EXISTING DRAINAGE FACILITY
- PROPOSED DRAINAGE FACILITY
- ID — BASIN ID
- (ID) — PRORATED SUBBASIN ID
- FLOW DIRECTION
- (ID) — FLOWMASTER SECTION
- ID — FACILITY ID

Ultimate Condition Flow Rate Summary

Basin/Concentration Point ID	Area (ac)	Q_{100} (cfs)	Q_{10} (cfs)
BAS1	20.8	59	30
BAS2	8.8	27	14

Prorated Flow Summary

Basin ID	Q_{100} (cfs)	Q_{10} (cfs)	Area (acres)	100-yr Unit Flow (cfs/acre)	10-yr Unit Flow (cfs/acre)
BAS1	59	30	20.8	2.8	1.4
BAS2	27	14	8.8	3.1	1.6

Subbasin ID	Q_{100} (cfs)	Q_{10} (cfs)	Area (acres)	100-yr Unit Flow (cfs/acre)	10-yr Unit Flow (cfs/acre)
BAS1(A)	2	1	0.8	2.8	1.4
BAS1(B)	4	2	1.6	2.8	1.4
BAS1(C)	12	6	4.2	2.8	1.4
BAS1(D)	7	4	2.4	2.8	1.4
BAS1(E)	18	9	6.4	2.8	1.4
BAS1(F)	3	2	1.1	2.8	1.4
BAS1(G)	12	6	4.2	2.8	1.4
TOTAL	***59***	***30***	***20.8***		
BAS2(H)	23	12	7.5	3.1	1.6
BAS2(I)	4	2	1.2	3.1	1.6
TOTAL	***27***	***14***	***8.8***		

Ultimate Condition 100-Year Street Flow Summary

Section ID	Q_{100} (cfs)	Slope (%)	Depth (ft)	Velocity (fps)	DxV
1 Q = BAS2(H)	23.0	4.08	0.37	5.31	2.0
		2.00	0.42	3.95	1.7
2 Q = BAS1(G)	12.0	4.28	0.38	5.47	2.1
		0.50	0.51	2.65	1.4
3 Q = BAS1(F)	3.0	0.50	0.34	1.73	0.6
4 Q = BYPASS FROM DI#2 + BAS1(C)	19.0	4.38	0.35	5.22	1.8
		0.50	0.48	2.33	1.1
5 Q = BAS1(B)	4.0	4.19	0.28	4.20	1.2
		2.50	0.30	3.44	1.0
6 Q = BAS1(E)	18.0	4.19	0.43	5.94	2.6
		1.00	0.52	3.84	2.0
7 Q = BAS1(D)	7.0	1.00	0.40	2.67	1.1
*2 Q = REF	7.0	0.58	0.38	2.14	0.8
**7 Q = REF	13.0	4.75	0.35	5.35	1.9
**8 Q = REF	14.0	1.50	0.41	3.57	1.5

*Referenced from the Phase 3A Study
**Referenced from the Phase 3BC Study

Ultimate Condition Recommended Flood Control Facility Summary

Facility ID	Facility Description	Total/Approaching Flow (cfs) Q_{100}	Facility Flow (cfs) Q_{100}	Surface/Bypass Flow (cfs) Q_{100}	Notes
DI#1	Proposed 12.5' Type CM2 DI	4	4	0	N/A
DI#2	Proposed 15' Type CM2 DI and 24" Lateral	18	11	7	N/A
DI#3	Proposed 12.5' Type CM2 DI	24.5	24.5	0	In sump (Interim Flows)
DI#4	Proposed 12.5' Type CM2 DI and 30" Lateral	24.5	24.5	0	In sump (Interim Flows)
DI#5	Proposed 15' Type CM2 DI and 24" Lateral	23	23	0	In sump
P1	Proposed 24" RCP	-	15	-	N/A
P3	Proposed 30" RCP	-	49	-	N/A

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CENTURY COMMUNITIES

SKYE CANYON PARCELS 2.08 AND 2.09

ULTIMATE DRAINAGE CONDITION MAP

DATE: JAN 2020
DRAFTER: GNS
DESIGNER: GNS
CHECKED: SOA

PROJECT NO.
CEN1905.000

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APPENDIX B

Hydrologic Analyses

Precipitation Data

Westwood
Multi-Disciplined
Surveying & Engineering

Rainfall and Precipitation Computation

Project Name: SKYE CANYON 2.08 AND 2.09
Date: 1/28/2020
File Name: CEN1905 Precipitation Calcs.xls
By: GND

Data:

Reference:

Project is located in: Township: 19 S. Range: 59 E. Section: 12 — APN Map

Site is NOT located in the McCarran Airport Rainfall Area — Figure 513*

Rainfall Depth-Duration-Frequency 10-Year, 6-Hour: 1.30 inches — Figure 503*

Rainfall Depth-Duration-Frequency 100-Year, 6-Hour: 2.00 inches — Figure 506*

Precipitation Adjustment Ratios:

10-Year: 1.24 — Table 501*
100-Year: 1.43 — Table 501*

Calculations:

P_{10} = 1.61 — 10-Year Precipitation (in)
P_{100} = 2.86 — 100-Year Precipitation (in)

P10/P100= 0.56 — HEC-1 Multiple Ratio Value

Equations:

P=(Rainfall)*(Precipitation Adjustment Ratio)

* Equations taken from the Clark County Regional Flood Control District - Hydrologic Criteria and Drainage Desi

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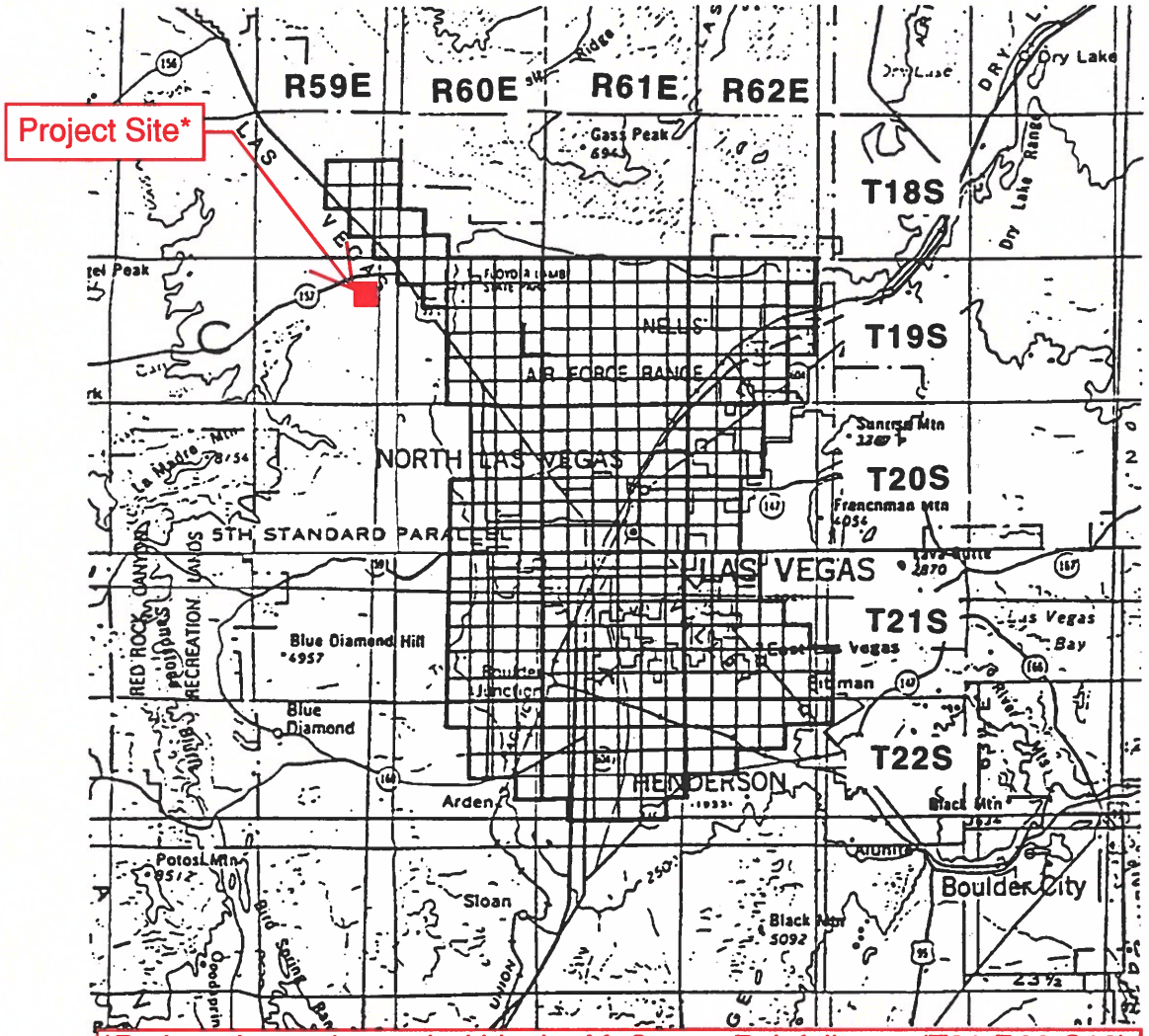
McCARRAN AIRPORT RAINFALL AREA



*Project site not located within the McCarran Rainfall area (T21-R60-S12)

TOWNSHIP	RANGE	SECTIONS	TOWNSHIP	RANGE	SECTIONS
18 South	59 East	13-15,22-26,36	20 South	62 East	4-9,16-20,29-32
18 South	60 East	30-32	21 South	60 East	1-4,9-16,21-28,33-36
19 South	60 East	1-6,8-16,21-28,33-36	21 South	61 East	ALL SECTIONS
19 South	61 East	ALL SECTIONS	21 South	62 East	4-9,15-23, 25-36
19 South	62 East	2-11,14-23,27-34	22 South	60 East	1-4,10-15,24
20 South	60 East	1-3,10-15,21-28,33-36	22 South	61 East	1-24,26-29
20 South	61 East	ALL SECTIONS	22 South	62 East	1-10,17-18

Notes:
1. Refer to Table 505 and Figure 516 Depth-Duration- Frequency values in the McCarran Airport Rainfall Area.
2. Refer to Table 506 and Figure 517 for Time-Intensity-Frequency values on the McCarran Airport Rainfall Area.

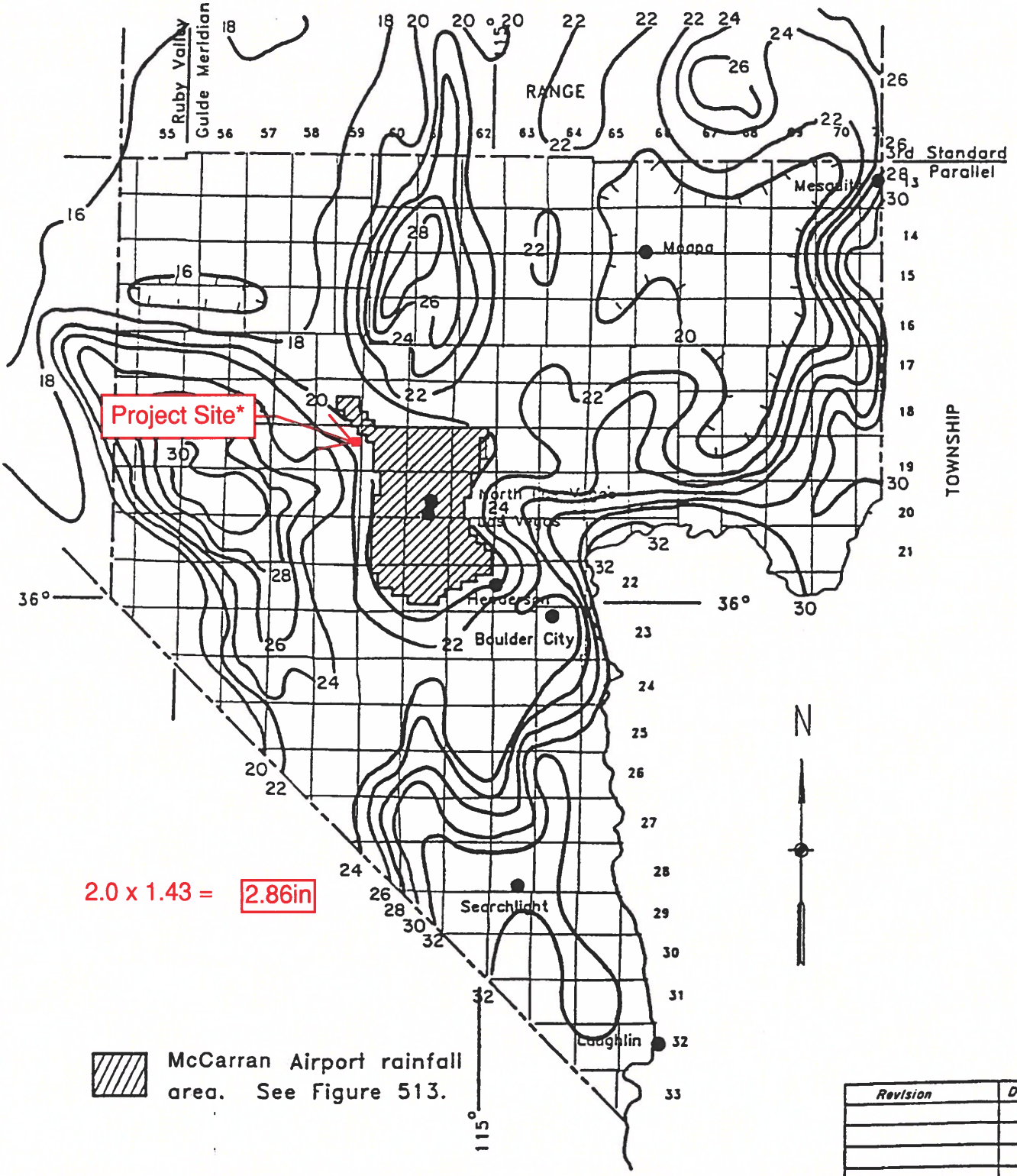
Revision	Date

WRC ENGINEERING

REFERENCE:
USACE, Los Angeles District, 1988

FIGURE 513

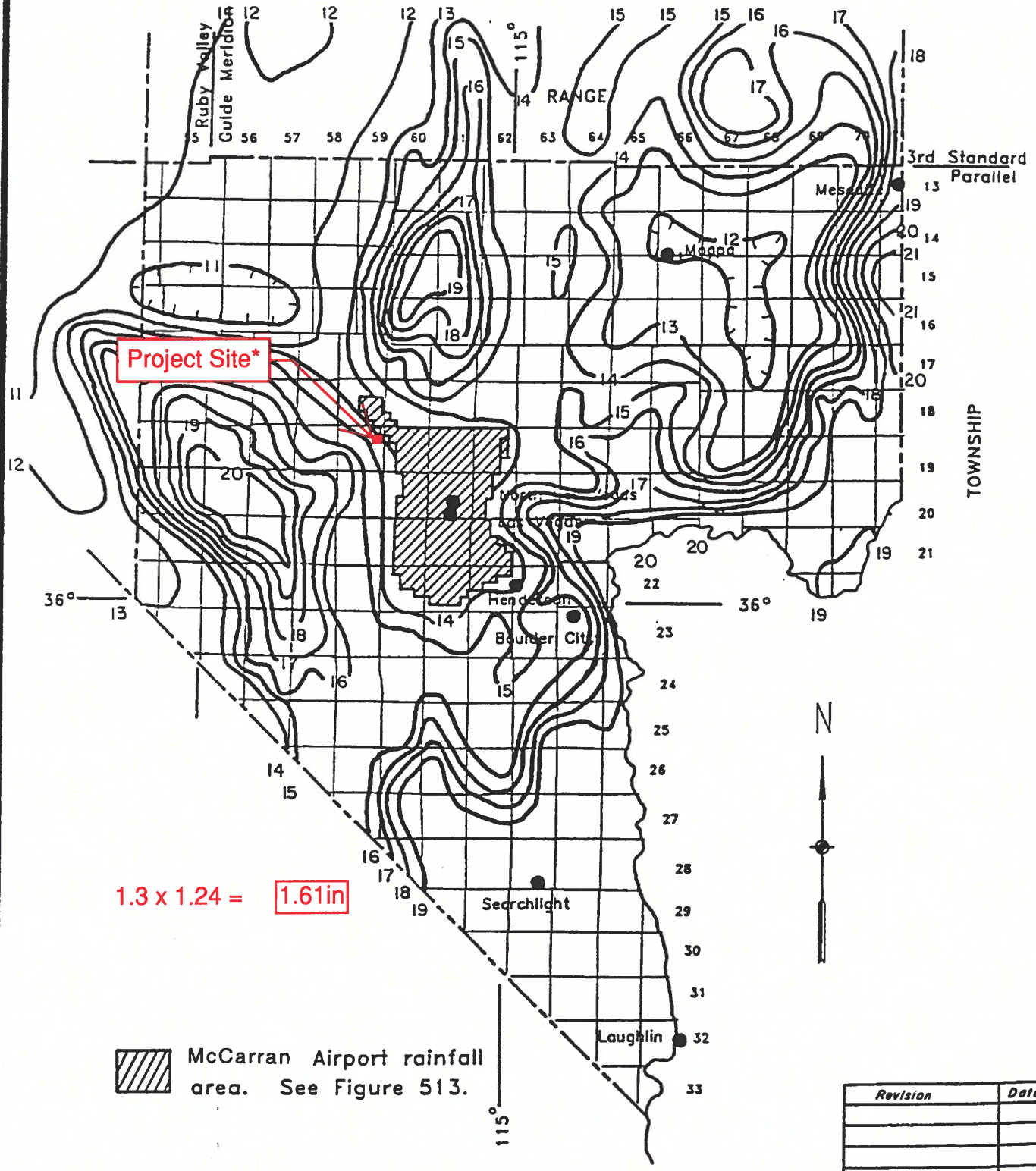
RAINFALL DEPTH-DURATION-FREQUENCY
100-YEAR, 6-HOUR
(DEPTHS IN TENTHS OF INCHES)



Revision	Date

WRC ENGINEERING	REFERENCE: NOAA ATLAS 2, VOLUME VII NEVADA, 1973	FIGURE 506

RAINFALL DEPTH-DURATION-FREQUENCY
10-YEAR, 6-HOUR
(DEPTHS IN TENTHS OF INCHES)



Revision	Date

WRC ENGINEERING	REFERENCE: NOAA ATLAS 2, VOLUME VII NEVADA, 1973	FIGURE 503

PRECIPITATION ADJUSTMENT RATIOS

Recurrence Interval	Ratio to NOAA Atlas 2
2-year	1.00
5-year	1.16
10-year	1.24
25-year	1.33
50-year	1.39
100-year	1.43

NOTE:
1. Multiply the values obtained from the NOAA Atlas 2 by the above ratios to obtain the adjusted precipitation values.
2. NOAA Atlas 2 values for use with TR-55 shall not be adjusted by the above ratios.
3. Tables 505 and 506 require no adjustments.

Revision	Date

SIX HOUR DEPTH-AREA REDUCTION FACTORS

Drainage Area (Square Miles)	Six-Hour Depth-Area Reduction Factor
0.0	1.00
0.5	0.98
1.0	0.97
2.0	0.93
4.0	0.91
6.0	0.90
8.0	0.88
10.0	0.86
20.0	0.79
30.0	0.74
50.0	0.68
100.0	0.60
150.0	0.55
200.0	0.51
300.0	0.46
400.0	0.42
500.0	0.39

NOTES:
1. A graphical representation of these factors is presented in Figure 514.
2. Consult with the local entity and/or the CCRFCD for guidance in using the Depth-Area Reduction Factors for drainage areas greater than 200 square miles.

Revision	Date

SIX-HOUR STORM DISTRIBUTIONS

Storm Time (In Minutes)	Percent of Total Storm Depth SDN3	SDN4	SDN5	Storm Time (In Minutes)	Percent of Total Storm Depth SDN3	SDN4	SDN5
0	0.0	0.0	0.0	185	32.2	37.6	43.0
5	2.0	2.0	2.0	190	35.2	41.5	47.7
10	5.7	5.8	5.9	195	40.9	46.2	51.4
15	7.0	7.5	8.0	200	49.9	53.0	56.1
20	8.7	9.9	11.0	205	59.0	61.0	63.0
25	10.8	12.6	14.4	210	71.0	71.0	71.0
30	12.4	13.7	15.0	215	74.4	73.2	72.0
35	13.0	14.5	16.0	220	78.1	75.6	73.1
40	13.0	14.9	16.8	225	81.2	78.2	75.2
45	13.0	15.1	17.1	230	81.9	79.9	77.9
50	13.0	15.5	18.0	235	83.5	81.3	79.0
55	13.0	15.6	18.2	240	85.1	82.3	79.5
60	13.0	15.9	18.7	245	85.6	83.0	80.4
65	13.3	16.2	19.0	250	86.0	83.5	81.0
70	14.0	16.9	19.7	255	86.8	84.4	82.0
75	14.2	17.2	20.2	260	87.6	85.1	82.6
80	14.8	17.9	21.0	265	88.8	86.4	84.0
85	15.8	18.9	22.0	270	91.0	88.5	85.9
90	17.2	20.1	23.0	275	92.6	90.8	88.9
95	18.1	21.1	24.1	280	93.7	92.4	91.0
100	19.0	22.0	25.0	285	95.0	94.4	93.8
105	19.7	22.8	25.9	290	97.0	96.8	96.6
110	19.9	23.2	26.5	295	97.6	97.3	97.0
115	20.0	24.0	28.0	300	98.2	97.8	97.4
120	20.1	24.6	29.0	305	98.5	98.2	97.9
125	20.4	25.2	30.0	310	98.7	98.4	98.1
130	21.4	26.0	30.5	315	98.9	98.6	98.3
135	22.9	26.9	30.9	320	99.0	98.8	98.5
140	24.1	27.6	31.0	325	99.3	99.1	98.9
145	24.9	28.3	31.7	330	99.3	99.2	99.0
150	25.1	28.6	32.1	335	99.4	99.3	99.2
155	25.6	29.2	32.7	340	99.5	99.4	99.3
160	27.0	30.2	33.3	345	99.8	99.7	99.6
165	27.8	31.2	34.6	350	99.8	99.8	99.7
170	28.1	32.1	36.1	355	99.9	99.9	99.9
175	28.3	33.2	38.1	360	100.0	100.0	100.0
180	29.5	35.2	40.8				

Notes
1. For drainage areas less than 8 square miles in size, use SDN 3.
2. For drainage areas greater than or equal to 8 square miles and less than 12 square miles in size, use SDN 4.
3. For drainage areas greater than or equal to 12 square miles, use SDN 5.
4. A graphical representation of these values is presented on **Figure 515**.

Revision	Date

REFERENCE:

TABLE 503

Soils & Curve Number Data

Westwood
Multi-Disciplined
Surveying & Engineering

Soil Data & Curve Number Computation

Project Name & Number: CEN1905.000 SKYE CANYON PARCELS 2.08 AND 2.09
Date: 1/30/2020
By: GND/DCH

Data:

Reference:
Web Access: 10/2019
NRCS Soil Data

Soil Type - Soil Survey Area & Version, Soil Description				A	B	C	D
LV	155	Las Vegas Valley (NV788)	Cave gravelly fine sandy loam, 4 to 15 percent slopes	0%	0%	0%	100%
LV	400	Las Vegas Valley (NV788)	Tencee very gravelly fine sandy loam, 2 to 8 percent slopes	0%	0%	0%	100%

Note: The basins which are composed entirely of roadway utilize the 98 curve number for roadway regardless of soil type. Therefore, no curve number computations are provided for these basins. This applies to all conditions.

Land Use	A	B	C	D
Residential (<6,000 sf)*	89	92	94	95

*Commercial land use per Note 3

INTERIM CONDITION

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
BAS1-I	LV	155	35.6%	Residential (<6,000 sf)*	0%	0%	0%	100%	89	92	94	95	6.07	33.86
	LV	155	64.2%	Newly Graded	0%	0%	0%	100%	77	86	91	94	10.93	60.33
	LV	400	0.2%	Newly Graded	0%	0%	0%	100%	77	86	91	94	0.03	0.17
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									17.03	94.4

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
BAS3	LV	155	98.9%	Newly Graded	0%	0%	0%	100%	77	86	91	94	3.71	92.92
	LV	155	1.1%	Residential (<6,000 sf)*	0%	0%	0%	100%	89	92	94	95	0.04	1.09
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									3.75	94.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
OFF1-I	LV	155	100.0%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	30.76	88.00
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									30.76	88.0

ULTIMATE CONDITION

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
BAS1	LV	155	99.9%	Residential (<6,000 sf)*	0%	0%	0%	100%	89	92	94	95	20.75	94.86
	LV	400	0.1%	Residential (<6,000 sf)*	0%	0%	0%	100%	89	92	94	95	0.03	0.14
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									20.78	95.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
BAS2	LV	155	100.0%	Residential (<6,000 sf)*	0%	0%	0%	100%	89	92	94	95	8.78	95.00
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									8.78	95.0

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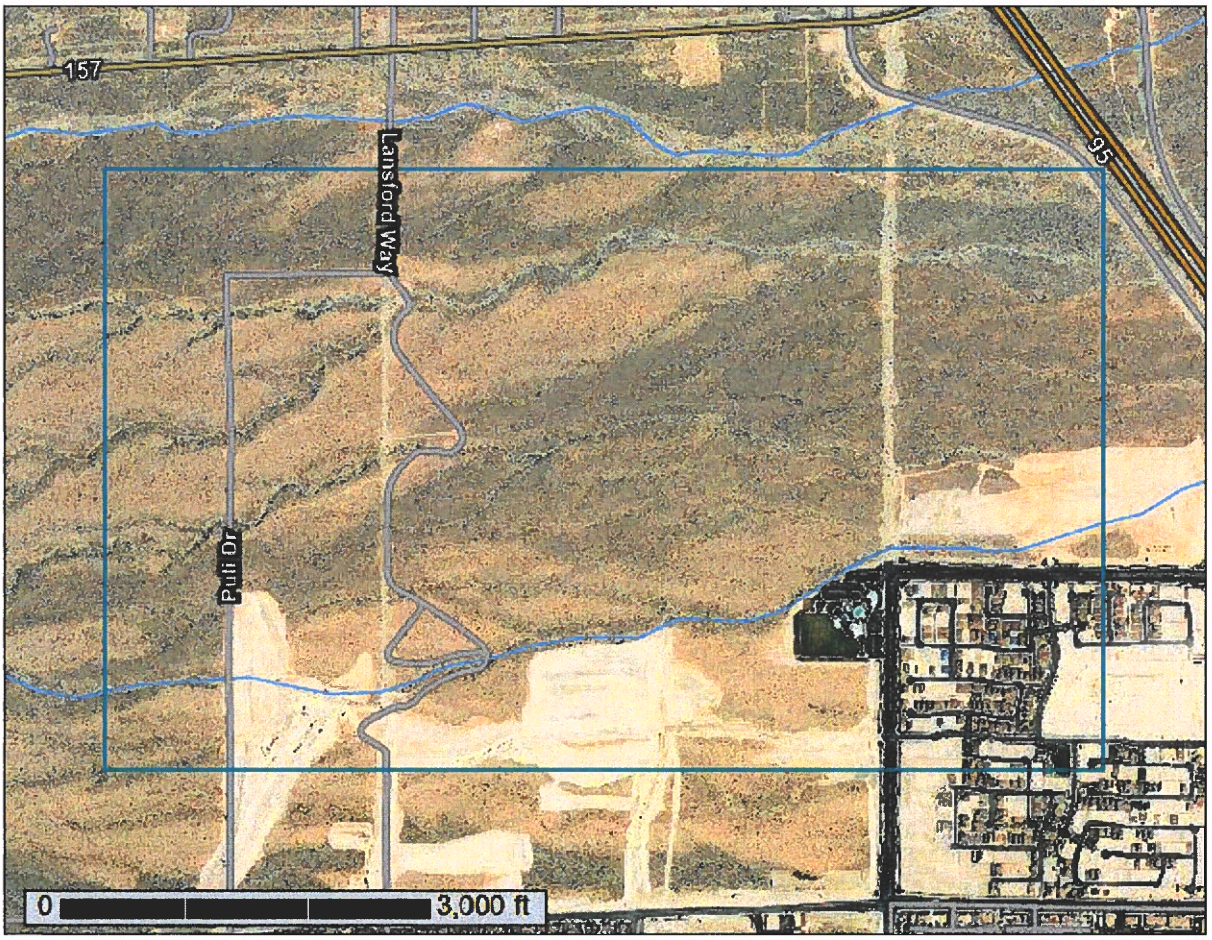
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Las Vegas Valley Area, Nevada, Part of Clark County



January 28, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

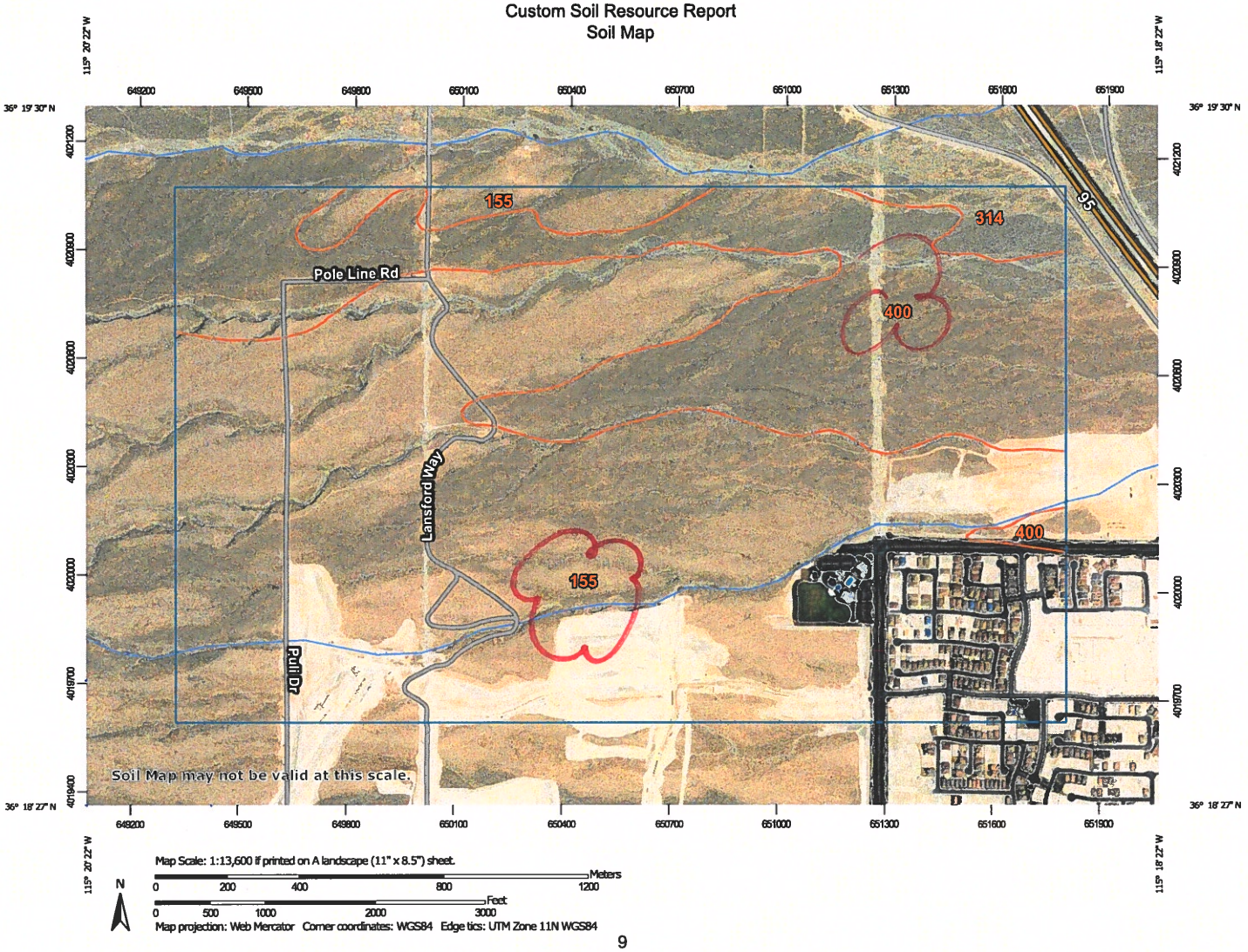
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:13,600 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 200 400 800 1200

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Las Vegas Valley Area, Nevada, Part of Clark County
Survey Area Data: Version 14, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 3, 2016—Oct 1, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND	MAP INFORMATION
	imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
155	Cave gravelly fine sandy loam, 4 to 15 percent slopes	642.7	70.5%
314	Weiser-Wechech association	18.9	2.1%
400	Tencee very gravelly fine sandy loam, 2 to 8 percent slopes	250.1	27.4%
Totals for Area of Interest		**911.6**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The

delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Las Vegas Valley Area, Nevada, Part of Clark County

155—Cave gravelly fine sandy loam, 4 to 15 percent slopes

Map Unit Setting

National map unit symbol: hr9w
Elevation: 2,000 to 4,800 feet
Mean annual precipitation: 4 to 12 inches
Mean annual air temperature: 57 to 70 degrees F
Frost-free period: 180 to 280 days
Farmland classification: Not prime farmland

Map Unit Composition

Cave and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cave

Setting

Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Mixed alluvium

Typical profile

H1 - 0 to 15 inches: gravelly fine sandy loam
H2 - 15 to 60 inches: indurated

Properties and qualities

Slope: 4 to 15 percent
Depth to restrictive feature: 4 to 20 inches to petrocalcic
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water storage in profile: Very low (about 1.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Other vegetative classification: LIMY 3-5" P.Z. (030XB019NV_3)
Hydric soil rating: No

314—Weiser-Wechech association

Map Unit Setting

National map unit symbol: 1tf6l
Elevation: 1,610 to 4,850 feet
Mean annual precipitation: 5 to 7 inches
Mean annual air temperature: 57 to 70 degrees F
Frost-free period: 180 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Weiser, very rarely flooded, and similar soils: 70 percent
Wechech and similar soils: 15 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Weiser, Very Rarely Flooded

Setting

Landform: Fan remnants
Landform position (two-dimensional): Summit
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium derived from limestone and dolomite

Typical profile

H1 - 0 to 6 inches: extremely gravelly fine sandy loam
H2 - 6 to 60 inches: extremely gravelly sandy loam

Properties and qualities

Slope: 2 to 8 percent
Percent of area covered with surface fragments: 5.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Very rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: Arid Active Alluvial Fans (R030XB005NV)

Hydric soil rating: No

Description of Wechech

Setting

Landform: Fan remnants
Landform position (two-dimensional): Summit
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Alluvium derived from limestone and dolomite

Typical profile

H1 - 0 to 2 inches: very gravelly sandy loam
H2 - 2 to 7 inches: very gravelly sandy loam
H3 - 7 to 13 inches: very gravelly sandy loam
H4 - 13 to 60 inches: cemented material

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 8 to 14 inches to petrocalcic
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 50 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 0.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Arid Active Alluvial Fans (R030XB005NV)
Hydric soil rating: No

Minor Components

Threelakes

Percent of map unit: 6 percent
Landform: Fan remnants
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: CALCAREOUS LOAM 5-7 P.Z. (R030XA066NV)
Hydric soil rating: No

Weiser, very rarely flooded

Percent of map unit: 5 percent
Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: GRAVELLY FAN 5-7 P.Z. (R030XB075NV)
Hydric soil rating: No

Typic torriorthents, sandy-skeletal, occasionally flooded

Percent of map unit: 4 percent
Landform: Drainageways
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: VALLEY WASH (R030XB028NV)
Hydric soil rating: No

400—Tencee very gravelly fine sandy loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: hrc1
Elevation: 2,400 to 5,700 feet
Mean annual precipitation: 4 to 10 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 180 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Tencee and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tencee

Setting

Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Alluvium derived from limestone and dolomite

Typical profile

H1 - 0 to 9 inches: very gravelly fine sandy loam
H2 - 9 to 15 inches: very gravelly sandy loam
H3 - 15 to 19 inches: indurated

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 7 to 20 inches to petrocalcic
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0

Available water storage in profile: Very low (about 1.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Hydric soil rating: No

Soil Information for All Uses

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Water Features

This folder contains tabular reports that present soil hydrology information. The reports (tables) include all selected map units and components for each map unit. Water Features include ponding frequency, flooding frequency, and depth to water table.

Hydrologic Soil Group and Surface Runoff

This table gives estimates of various soil water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or

soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

Surface runoff refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. The concept indicates relative runoff for very specific conditions. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

Report—Hydrologic Soil Group and Surface Runoff

Absence of an entry indicates that the data were not estimated. The dash indicates no documented presence.

Hydrologic Soil Group and Surface Runoff–Las Vegas Valley Area, Nevada, Part of Clark County			
Map symbol and soil name	**Pct. of map unit**	**Surface Runoff**	**Hydrologic Soil Group**
155—Cave gravelly fine sandy loam, 4 to 15 percent slopes			
Cave	100	Very high	D
314—Weiser-Wechech association			
Weiser, very rarely flooded	70	Low	A
Wechech	15	Very high	D
Threelakes	6	Low	A
Weiser, very rarely flooded	5	Low	B
Typic torriorthents, sandy-skeletal, occasionally flooded	4	Very low	A
400—Tencee very gravelly fine sandy loam, 2 to 8 percent slopes			
Tencee	100	Very high	D

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Standard Form 4

Westwood

Multi-Disciplined
Surveying & Engineering

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL
TIME OF CONCENTRATION

Project Name & Number: CEN1905.000 SKYE CANYON PARCELS 2.08 AND 2.09
Description: INTERIM & ULTIMATE CONDITION LAG TIMES
By: GND/DCH
Date: 1/30/2020

SUB-BASIN DATA						INITIAL / OVERLAND TIME (Ti)			TRAVEL TIME (Tt)					Tc	Tc Check Urbanized Basins		Tlag
DESIG:	DEV./EX. (D or E)	CN	K [1]	AREA Ac	AREA Mi^2 [2]	INITIAL LENGTH Feet	SLOPE %	Ti Min [3]	TRAVEL LENGTH Feet	SLOPE %	V1 VELOCITY FPS [4]	V2 VELOCITY FPS [5]	Tt Min [6]	Tc Calc. [7]	Total Length Feet [8]	Tc Check [9]	Tlag Hours [10]
INTERIM CONDITION																	
BAS1-I	D	94.4	0.856	17.03	0.0266	103	1.46	3.93	800	1.18	2.19	3.32	5.31	9.24	903	15.017	0.092
BAS3-I	D	94.0	0.851	3.75	0.0059	118	1.00	4.87	1180	2.86	3.41	5.17	4.63	9.50	1298	17.211	0.095
OFF1-I	E	88.0	0.772	30.76	0.0481	180	2.22	6.08	1655	3.81	2.89	5.74	6.24	12.32			0.123
ULTIMATE CONDITION																	
BAS1	D	95.0	0.864	20.78	0.0325	100	1.00	4.25	1800	2.42	3.14	4.76	7.20	11.45	1900	20.556	0.115
BAS2	D	95.0	0.864	8.78	0.0137	100	1.00	4.25	1300	3.39	3.72	5.63	4.61	8.86	1400	17.778	0.089

[1] K = 0.0132 (CN) - 0.39
[2] A = Area/640
[3] Ti = (1.8 (1.1-K) L^0.5)/S^0.33
[4] For Existing Conditions: V1 = 14.8 * (S/100)^0.5
For Developed Conditions: V1 = 20.2 * (S/100)^0.5
[5] For Existing Conditions: V2 = 29.4 * (S/100)^0.5
For Developed Conditions: V2 = 30.6 * (S/100)^0.5
[6] Tt = L/(60*V)
[7] Tc = Ti + Tt
[8] Total L = Initial L + Travel L
[9] Tc = (L/180) + 10
[10] Tlag = (0.6*Tc)/60
[11] Min Tlag =0.05

Note: For Travel Time Calcs: V1 applies to first 500 feet and V2 applies to remaining distance.

REFERENCE :

STANDARD FORM 4

Interim Condition HEC-1 Model

INT

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1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              JUN   1998              *
 *            VERSION 4.1               *
 *                                      *
 *  RUN DATE   30JAN20  TIME  14:56:21  *
 *                                      *
 ****************************************
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****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
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X     X  XXXXXXX   XXXXX          X
X     X  X       X     X        XX
X     X  X       X               X
XXXXXXX  XXXX    X       XXXXX   X
X     X  X       X               X
X     X  X       X     X         X
X     X  XXXXXXX   XXXXX         XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM


```
         LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 *** FREE ***
                    *DIAGRAM
                1   ID     WESTWOOD PROFESSIONAL SERVICES
                2   ID     SKYE CANYON PARCELS 2.08 AND 2.09
                3   ID     TECHNICAL DRAINAGE STUDY
                4   ID     INTERIM DRAINAGE CONDITION
                5   ID
                6   ID     RETURN PERIOD ------- 100 & 10-YEAR
                7   ID     DISTRIBUTION -------- 6-HOUR SDN3
                8   ID     PROJECT NO. --------- CEN1905.000
                9   ID     FILENAME ------------ INT.H1
               10   ID     DATE ---------------- JAN. 2020
               11   ID     MODELED BY ---------- GND/CAA/DCH
               12   ID
               13   ID        PRECIPITATION STORM EVENT RATIOS
               14   ID        STORM EVENT            RATIO
               15   ID        100-YR                 1.00
               16   ID        10-YR                  0.59
               17   IT       5       0       0     300
               18   IO       5       0       0
               19   IN       5       0       0
               20   JR    PREC    1.00    0.56
                    *

               21   KK  BAS1-I
               22   BA  0.0266
               23   PB    2.86
               24   PC       0   0.020   0.057   0.070   0.087   0.108   0.124   0.130   0.130   0.130
               25   PC   0.130   0.130   0.130   0.133   0.140   0.142   0.148   0.158   0.172   0.181
               26   PC   0.190   0.197   0.199   0.200   0.201   0.204   0.214   0.229   0.241   0.249
               27   PC   0.251   0.256   0.270   0.278   0.281   0.283   0.295   0.322   0.352   0.409
               28   PC   0.499   0.590   0.710   0.744   0.781   0.812   0.819   0.835   0.851   0.856
               29   PC   0.860   0.868   0.876   0.888   0.910   0.926   0.937   0.950   0.970   0.976
               30   PC   0.982   0.985   0.987   0.989   0.990   0.993   0.993   0.994   0.995   0.998
               31   PC   0.998   0.999   1.000
               32   LS       0    94.4
               33   UD   0.092
                    *

               34   KK    BAS2
               35   BA  0.0137
               36   LS       0    95.0
               37   UD   0.089
                    *

               38   KK  BAS3-I
               39   BA  0.0059
               40   LS       0    94.0
               41   UD   0.095
                    *
```

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          LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


            42          KK  OFF1-I
            43          BA  0.0481
            44          LS       0    88.0
            45          UD   0.123
                        *
            46          ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

    21      BAS1-I
                .
                .
    34          .        BAS2
                .          .
                .          .
    38          .          .      BAS3-I
                .          .          .
                .          .          .
    42          .          .          .      OFF1-I

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************                 ************************************
 *                                      *                 *                                  *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                 *    U.S. ARMY CORPS OF ENGINEERS  *
 *               JUN   1998             *                 *    HYDROLOGIC ENGINEERING CENTER *
 *            VERSION 4.1               *                 *         609 SECOND STREET        *
 *                                      *                 *       DAVIS, CALIFORNIA 95616    *
 *  RUN DATE   30JAN20  TIME  14:56:21  *                 *          (916) 756-1104          *
 *                                      *                 *                                  *
 ****************************************                 ************************************


                            WESTWOOD PROFESSIONAL SERVICES
                            SKYE CANYON PARCELS 2.08 AND 2.09
                            TECHNICAL DRAINAGE STUDY
                            INTERIM DRAINAGE CONDITION

                            RETURN PERIOD ------- 100 & 10-YEAR
                            DISTRIBUTION -------- 6-HOUR SDN3
                            PROJECT NO. --------- CEN1905.000
                            FILENAME ------------ INT.H1
                            DATE ---------------- JAN. 2020
                            MODELED BY ---------- GND/CAA/DCH

                               PRECIPITATION STORM EVENT RATIOS
                               STORM EVENT            RATIO
                               100-YR                 1.00
                               10-YR                  0.59

   18 IO          OUTPUT CONTROL VARIABLES
                        IPRNT          5  PRINT CONTROL
                        IPLOT          0  PLOT CONTROL
                        QSCAL         0.  HYDROGRAPH PLOT SCALE

      IT          HYDROGRAPH TIME DATA
                         NMIN          5  MINUTES IN COMPUTATION INTERVAL
                        IDATE      1   0  STARTING DATE
                        ITIME       0000  STARTING TIME
                           NQ        300  NUMBER OF HYDROGRAPH ORDINATES
                       NDDATE      2   0  ENDING DATE
                       NDTIME       0055  ENDING TIME
                       ICENT          19  CENTURY MARK

                    COMPUTATION INTERVAL     .08 HOURS
                         TOTAL TIME BASE   24.92 HOURS

            ENGLISH UNITS
                 DRAINAGE AREA         SQUARE MILES
                 PRECIPITATION DEPTH   INCHES
                 LENGTH, ELEVATION     FEET
                 FLOW                  CUBIC FEET PER SECOND
                 STORAGE VOLUME        ACRE-FEET
                 SURFACE AREA          ACRES
                 TEMPERATURE           DEGREES FAHRENHEIT

      JP          MULTI-PLAN OPTION
                        NPLAN          1  NUMBER OF PLANS
```

INT

JR MULTI-RATIO OPTION
RATIOS OF PRECIPITATION
1.00 .56

1

PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

					RATIOS APPLIED TO PRECIPITATION	
OPERATION	STATION	AREA	PLAN		RATIO 1	RATIO 2
					1.00	.56
HYDROGRAPH AT						
+	BAS1-I	.03	1	FLOW	52.	26.
				TIME	3.50	3.50
HYDROGRAPH AT						
+	BAS2	.01	1	FLOW	27.	14.
				TIME	3.50	3.50
HYDROGRAPH AT						
+	BAS3-I	.01	1	FLOW	11.	6.
				TIME	3.50	3.50
HYDROGRAPH AT						
+	OFF1-I	.05	1	FLOW	70.	29.
				TIME	3.58	3.58

*** NORMAL END OF HEC-1 ***

Ultimate Condition HEC-1 Model

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1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JUN  1998               *
*            VERSION 4.1               *
*                                      *
*  RUN DATE   15JAN20  TIME  14:28:27  *
*                                      *
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*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*        DAVIS, CALIFORNIA 95616       *
*            (916) 756-1104            *
*                                      *
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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX         XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
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NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1 HEC-1 INPUT PAGE 1

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         LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

*** FREE ***
                       *DIAGRAM
             1         ID     WESTWOOD PROFESSIONAL SERVICES
             2         ID     SKYE CANYON PARCELS 2.08 AND 2.09
             3         ID     TECHNICAL DRAINAGE STUDY
             4         ID     ULTIMATE DRAINAGE CONDITION
             5         ID
             6         ID     RETURN PERIOD ------- 100 & 10-YEAR
             7         ID     DISTRIBUTION -------- 6-HOUR SDN3
             8         ID     PROJECT NO. --------- CEN1905.000
             9         ID     FILENAME ------------ ULT.H1
            10         ID     DATE ---------------- JAN. 2020
            11         ID     MODELED BY ---------- GND/CAA
            12         ID
            13         ID        PRECIPITATION STORM EVENT RATIOS
            14         ID        STORM EVENT             RATIO
            15         ID        100-YR                  1.00
            16         ID        10-YR                   0.59
            17         IT       5       0       0     300
            18         IO       5       0       0
            19         IN       5       0       0
            20         JR    PREC    1.00    0.56
                       *

            21         KK    BAS1
            22         BA  0.0325
            23         PB    2.86
            24         PC       0   0.020   0.057   0.070   0.087   0.108   0.124   0.130   0.130   0.130
            25         PC   0.130   0.130   0.130   0.133   0.140   0.142   0.148   0.158   0.172   0.181
            26         PC   0.190   0.197   0.199   0.200   0.201   0.204   0.214   0.229   0.241   0.249
            27         PC   0.251   0.256   0.270   0.278   0.281   0.283   0.295   0.322   0.352   0.409
            28         PC   0.499   0.590   0.710   0.744   0.781   0.812   0.819   0.835   0.851   0.856
            29         PC   0.860   0.868   0.876   0.888   0.910   0.926   0.937   0.950   0.970   0.976
            30         PC   0.982   0.985   0.987   0.989   0.990   0.993   0.993   0.994   0.995   0.998
            31         PC   0.998   0.999   1.000
            32         LS       0    95.0
            33         UD   0.115
                       *

            34         KK    BAS2
            35         BA  0.0137
            36         LS       0    95.0
            37         UD   0.089
                       *
            38         ZZ
```

1 SCHEMATIC DIAGRAM OF STREAM NETWORK

```
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

    21        BAS1
                .
                .
    34          .        BAS2
```

```
 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              JUN  1998               *
 *           VERSION 4.1                *
 *                                      *
 *  RUN DATE   15JAN20  TIME  14:28:27  *
 *                                      *
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****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*          (916) 756-1104              *
*                                      *
****************************************
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WESTWOOD PROFESSIONAL SERVICES
SKYE CANYON PARCELS 2.08 AND 2.09
TECHNICAL DRAINAGE STUDY
ULTIMATE DRAINAGE CONDITION

RETURN PERIOD ------- 100 & 10-YEAR
DISTRIBUTION -------- 6-HOUR SDN3
PROJECT NO. --------- CEN1905.000
FILENAME ------------ ULT.H1
DATE ---------------- JAN. 2020
MODELED BY ---------- GND/CAA

PRECIPITATION STORM EVENT RATIOS

STORM EVENT	RATIO
100-YR	1.00
10-YR	0.59

```
  18 IO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

     IT           HYDROGRAPH TIME DATA
                       NMIN          5  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1   0  STARTING DATE
                      ITIME       0000  STARTING TIME
                         NQ        300  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      2   0  ENDING DATE
                     NDTIME       0055  ENDING TIME
                      ICENT         19  CENTURY MARK

                   COMPUTATION INTERVAL     .08 HOURS
                        TOTAL TIME BASE   24.92 HOURS

          ENGLISH UNITS
               DRAINAGE AREA         SQUARE MILES
               PRECIPITATION DEPTH   INCHES
               LENGTH, ELEVATION     FEET
               FLOW                  CUBIC FEET PER SECOND
               STORAGE VOLUME        ACRE-FEET
               SURFACE AREA          ACRES
               TEMPERATURE           DEGREES FAHRENHEIT

     JP          MULTI-PLAN OPTION
                      NPLAN          1  NUMBER OF PLANS

     JR          MULTI-RATIO OPTION
                     RATIOS OF PRECIPITATION
                    1.00       .56
1
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PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN		RATIOS APPLIED TO PRECIPITATION RATIO 1	RATIO 2
					1.00	.56
HYDROGRAPH AT						
+	BAS1	.03	1	FLOW	59.	30.
				TIME	3.50	3.58
HYDROGRAPH AT						
+	BAS2	.01	1	FLOW	27.	14.
				TIME	3.50	3.50

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*** NORMAL END OF HEC-1 ***
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APPENDIX C

Hydraulic Analyses

Interim Condition Street Computations

Worksheet for Section 1 (min%)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	2.000	%
Discharge	23.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.48
0+05.00	0.38
0+05.38	0.38
0+06.50	0.00
0+07.50	0.08
0+07.50	0.12
0+23.00	0.43
0+38.50	0.12
0+38.50	0.08
0+39.50	0.00
0+40.62	0.38
0+41.00	0.38

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.48)	(0+07.50, 0.08)	0.013
(0+07.50, 0.08)	(0+38.50, 0.08)	0.016
(0+38.50, 0.08)	(0+41.00, 0.38)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Worksheet for Section 1 (min%)

Results

Normal Depth		0.42	ft
Elevation Range	0.00 to 0.48 ft		
Flow Area		5.83	ft²
Wetted Perimeter		37.19	ft
Hydraulic Radius		0.16	ft
Top Width		36.93	ft
Normal Depth		0.42	ft
Critical Depth		0.49	ft
Critical Slope		0.00590	ft/ft
Velocity		3.95	ft/s
Velocity Head		0.24	ft
Specific Energy		0.66	ft
Froude Number		1.75	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.42	ft
Critical Depth	0.49	ft
Channel Slope	2.000	%
Critical Slope	0.00590	ft/ft

Cross Section for Section 1 (min%)

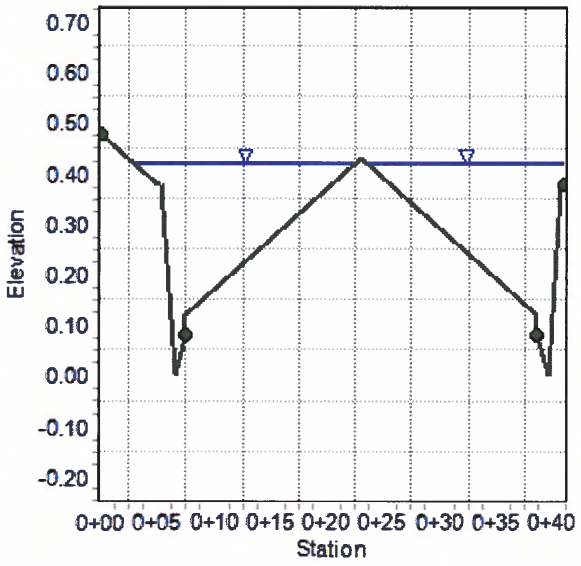
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	2.000	%
Normal Depth	0.42	ft
Discharge	23.00	ft³/s

Cross Section Image



Worksheet for Section 1 (max%)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.080	%
Discharge	23.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.48
0+05.00	0.38
0+05.38	0.38
0+06.50	0.00
0+07.50	0.08
0+07.50	0.12
0+23.00	0.43
0+38.50	0.12
0+38.50	0.08
0+39.50	0.00
0+40.62	0.38
0+41.00	0.38

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.48)	(0+07.50, 0.08)	0.013
(0+07.50, 0.08)	(0+38.50, 0.08)	0.016
(0+38.50, 0.08)	(0+41.00, 0.38)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Worksheet for Section 1 (max%)

Results

Normal Depth		0.37	ft
Elevation Range	0.00 to 0.48 ft		
Flow Area		4.34	ft²
Wetted Perimeter		29.92	ft
Hydraulic Radius		0.14	ft
Top Width		29.71	ft
Normal Depth		0.37	ft
Critical Depth		0.49	ft
Critical Slope		0.00600	ft/ft
Velocity		5.31	ft/s
Velocity Head		0.44	ft
Specific Energy		0.81	ft
Froude Number		2.45	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.37	ft
Critical Depth	0.49	ft
Channel Slope	4.080	%
Critical Slope	0.00600	ft/ft

Cross Section for Section 1 (max%)

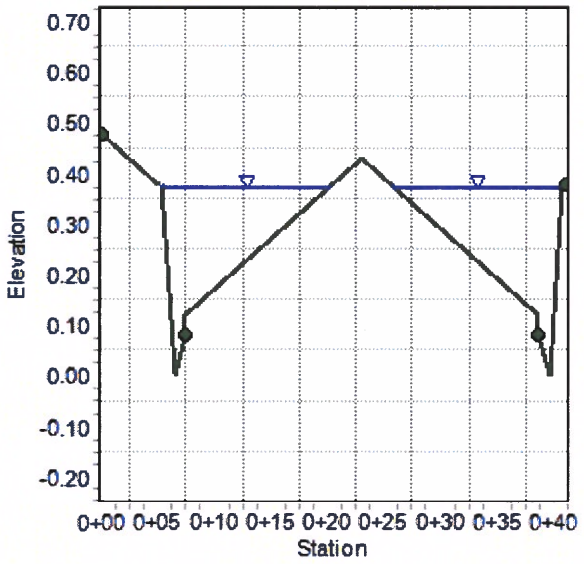
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.080	%
Normal Depth	0.37	ft
Discharge	23.00	ft³/s

Cross Section Image



Worksheet for Section 2 (min%)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.500	%
Discharge	13.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.48
0+05.00	0.38
0+05.38	0.38
0+06.50	0.00
0+07.50	0.08
0+07.50	0.12
0+23.00	0.43
0+38.50	0.12
0+38.50	0.08
0+39.50	0.00
0+40.62	0.38
0+41.00	0.38

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.48)	(0+07.50, 0.08)	0.013
(0+07.50, 0.08)	(0+38.50, 0.08)	0.016
(0+38.50, 0.08)	(0+41.00, 0.38)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Worksheet for Section 2 (min%)

Results

Normal Depth		0.43	ft
Elevation Range	0.00 to 0.48 ft		
Flow Area		6.38	ft²
Wetted Perimeter		38.98	ft
Hydraulic Radius		0.16	ft
Top Width		38.70	ft
Normal Depth		0.43	ft
Critical Depth		0.42	ft
Critical Slope		0.00649	ft/ft
Velocity		2.04	ft/s
Velocity Head		0.06	ft
Specific Energy		0.50	ft
Froude Number		0.88	
Flow Type	Subcritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.43	ft
Critical Depth	0.42	ft
Channel Slope	0.500	%
Critical Slope	0.00649	ft/ft

Cross Section for Section 2 (min%)

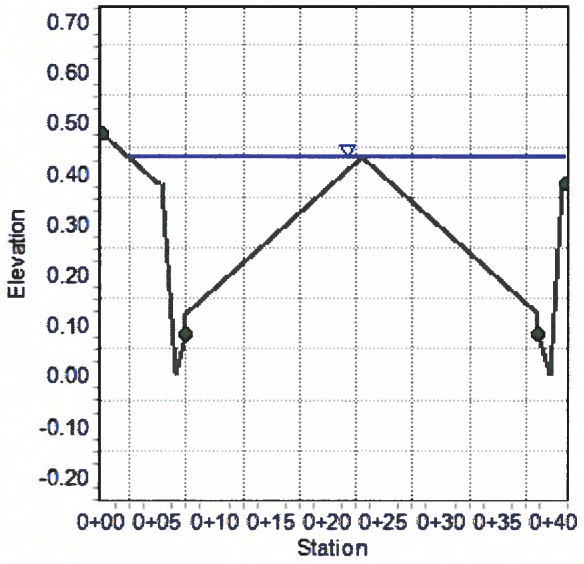
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.500	%
Normal Depth	0.43	ft
Discharge	13.00	ft³/s

Cross Section Image



Worksheet for Section 2 (max%)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.280	%
Discharge	13.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.48
0+05.00	0.38
0+05.38	0.38
0+06.50	0.00
0+07.50	0.08
0+07.50	0.12
0+23.00	0.43
0+38.50	0.12
0+38.50	0.08
0+39.50	0.00
0+40.62	0.38
0+41.00	0.38

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.48)	(0+07.50, 0.08)	0.013
(0+07.50, 0.08)	(0+38.50, 0.08)	0.016
(0+38.50, 0.08)	(0+41.00, 0.38)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Worksheet for Section 2 (max%)

Results

Normal Depth		0.32	ft
Elevation Range	0.00 to 0.48 ft		
Flow Area		2.75	ft²
Wetted Perimeter		23.58	ft
Hydraulic Radius		0.12	ft
Top Width		23.38	ft
Normal Depth		0.32	ft
Critical Depth		0.42	ft
Critical Slope		0.00658	ft/ft
Velocity		4.73	ft/s
Velocity Head		0.35	ft
Specific Energy		0.66	ft
Froude Number		2.43	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.32	ft
Critical Depth	0.42	ft
Channel Slope	4.280	%
Critical Slope	0.00658	ft/ft

Cross Section for Section 2 (max%)

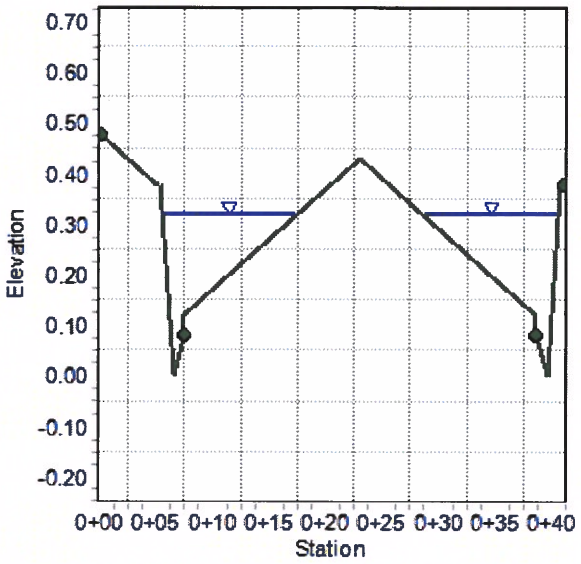
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.280	%
Normal Depth	0.32	ft
Discharge	13.00	ft³/s

Cross Section Image



Worksheet for Section 3 (Half Street)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	1.000	%
Discharge	3.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.48
0+05.00	0.38
0+05.38	0.38
0+06.50	0.00
0+07.50	0.08
0+07.50	0.12
0+23.00	0.43

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.48)	(0+07.50, 0.08)	0.013
(0+07.50, 0.08)	(0+23.00, 0.43)	0.016

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.31	ft
Elevation Range	0.00 to 0.48 ft	
Flow Area	1.33	ft²
Wetted Perimeter	11.59	ft
Hydraulic Radius	0.11	ft

Worksheet for Section 3 (Half Street)

Results

Top Width		11.49	ft
Normal Depth		0.31	ft
Critical Depth		0.33	ft
Critical Slope		0.00715	ft/ft
Velocity		2.26	ft/s
Velocity Head		0.08	ft
Specific Energy		0.39	ft
Froude Number		1.17	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.31	ft
Critical Depth	0.33	ft
Channel Slope	1.000	%
Critical Slope	0.00715	ft/ft

Cross Section for Section 3 (Half Street)

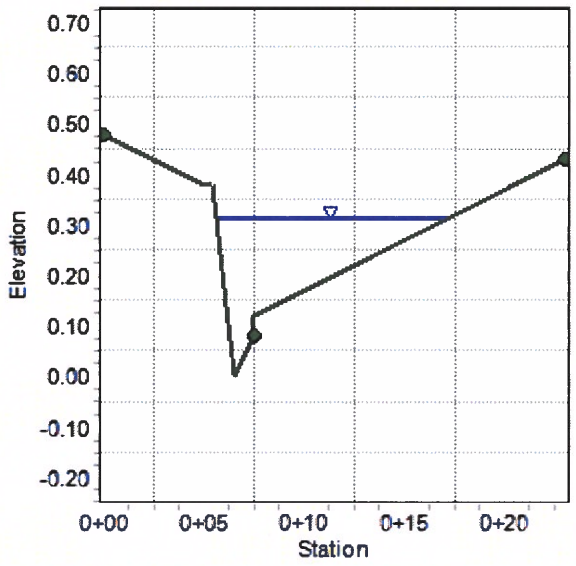
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	1.000	%
Normal Depth	0.31	ft
Discharge	3.00	ft³/s

Cross Section Image



Worksheet for Section 4

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.500	%
Discharge	36.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.48
0+05.00	0.38
0+05.38	0.38
0+06.50	0.00
0+07.50	0.08
0+07.50	0.12
0+23.00	0.43
0+38.50	0.12
0+38.50	0.08
0+39.50	0.00
0+40.62	0.38
0+41.00	0.38

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.48)	(0+07.50, 0.08)	0.013
(0+07.50, 0.08)	(0+38.50, 0.08)	0.016
(0+38.50, 0.08)	(0+41.00, 0.38)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Worksheet for Section 4

Results

Normal Depth		0.57	ft
Elevation Range	0.00 to 0.48 ft		
Flow Area		11.99	ft²
Wetted Perimeter		41.50	ft
Hydraulic Radius		0.29	ft
Top Width		41.00	ft
Normal Depth		0.57	ft
Critical Depth		0.57	ft
Critical Slope		0.00525	ft/ft
Velocity		3.00	ft/s
Velocity Head		0.14	ft
Specific Energy		0.71	ft
Froude Number		0.98	
Flow Type	Subcritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.57	ft
Critical Depth	0.57	ft
Channel Slope	0.500	%
Critical Slope	0.00525	ft/ft

Cross Section for Section 4

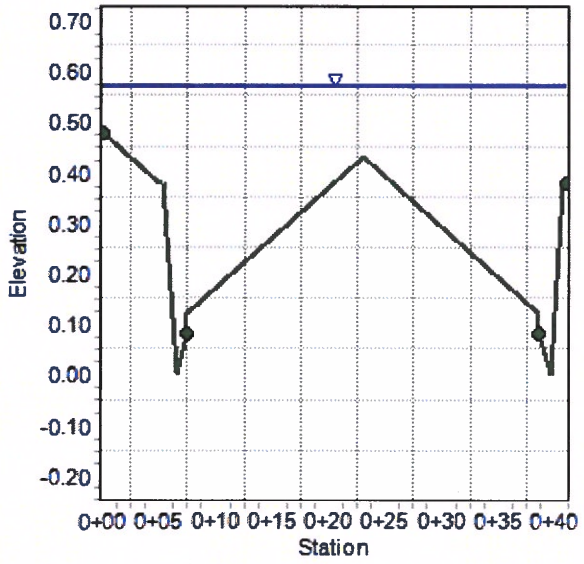
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.500	%
Normal Depth	0.57	ft
Discharge	36.00	ft³/s

Cross Section Image



Ditch Section Computations

Worksheet for Section D1

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	3.570	%
Discharge	36.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	2863.04
0+01.86	2863.00
0+20.18	2862.66
0+28.43	2862.49
0+55.55	2862.00
0+56.54	2861.98
0+57.96	2862.00
0+66.98	2862.12
0+75.26	2862.09
0+78.79	2862.04
0+82.87	2862.00
0+85.20	2861.94
0+90.32	2861.89
0+91.95	2861.88
0+95.02	2861.86
1+05.52	2862.00
1+22.16	2862.30
1+56.47	2862.93
1+58.14	2862.96
1+58.53	2862.97
1+58.67	2862.98
1+59.89	2862.99

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient

Worksheet for Section D1

Input Data

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 2863.04)	(1+59.89, 2862.99)	0.022

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth		0.31	ft
Elevation Range	2861.86 to 2863.04 ft		
Flow Area		10.10	ft²
Wetted Perimeter		68.62	ft
Hydraulic Radius		0.15	ft
Top Width		68.61	ft
Normal Depth		0.31	ft
Critical Depth		0.37	ft
Critical Slope		0.01222	ft/ft
Velocity		3.56	ft/s
Velocity Head		0.20	ft
Specific Energy		0.51	ft
Froude Number		1.64	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.31	ft

Worksheet for Section D1

GVF Output Data

Critical Depth	0.37	ft
Channel Slope	3.570	%
Critical Slope	0.01222	ft/ft

Cross Section for Section D1

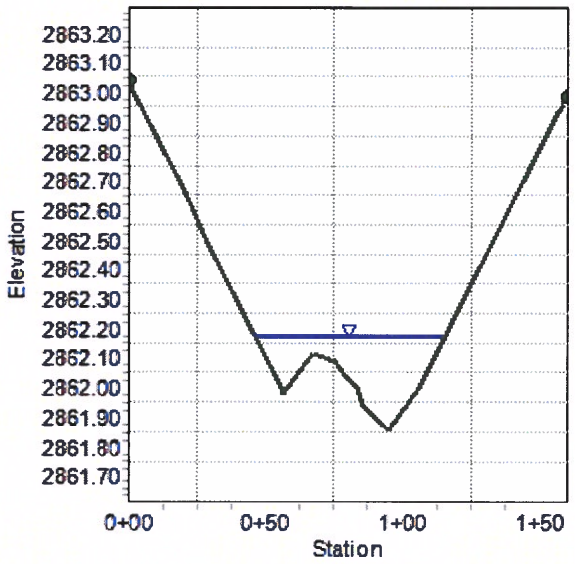
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	3.570	%
Normal Depth	0.31	ft
Discharge	36.00	ft³/s

Cross Section Image



Worksheet for Section D2

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	1.000	%
Discharge	11.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	2899.35
0+25.97	2899.00
0+26.41	2899.00
0+27.42	2899.00
0+30.06	2899.01
0+44.20	2899.03
0+46.26	2899.03
0+62.14	2899.00
0+63.74	2899.00
0+64.05	2899.00
0+98.13	2899.39

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 2899.35)	(0+98.13, 2899.39)	0.022

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.15	ft
Elevation Range	2899.00 to 2899.39 ft	

Worksheet for Section D2

Results

Flow Area		7.00	ft²
Wetted Perimeter		62.50	ft
Hydraulic Radius		0.11	ft
Top Width		62.50	ft
Normal Depth		0.15	ft
Critical Depth		0.14	ft
Critical Slope		0.01512	ft/ft
Velocity		1.57	ft/s
Velocity Head		0.04	ft
Specific Energy		0.19	ft
Froude Number		0.83	
Flow Type	Subcritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.15	ft
Critical Depth	0.14	ft
Channel Slope	1.000	%
Critical Slope	0.01512	ft/ft

Cross Section for Section D2

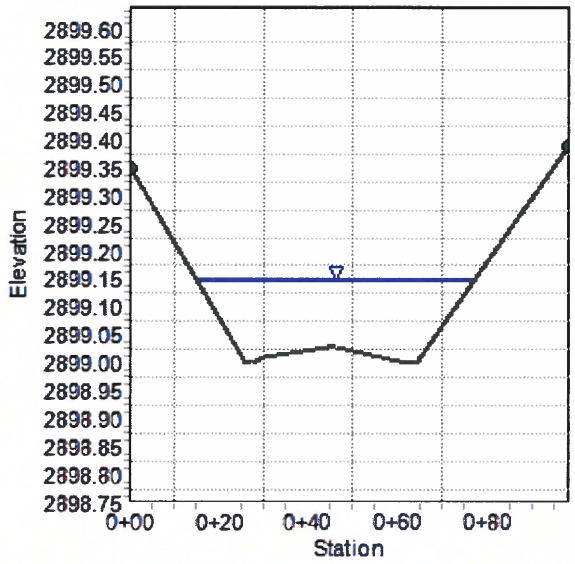
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	1.000	%
Normal Depth	0.15	ft
Discharge	11.00	ft³/s

Cross Section Image



Worksheet for D3 Section

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	0.650	%
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	70.00	ft^3/s

Results

Normal Depth	2.18	ft
Flow Area	14.28	ft^2
Wetted Perimeter	13.80	ft
Hydraulic Radius	1.03	ft
Top Width	13.09	ft
Critical Depth	2.02	ft
Critical Slope	0.00973	ft/ft
Velocity	4.90	ft/s
Velocity Head	0.37	ft
Specific Energy	2.56	ft
Froude Number	0.83	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	2.18	ft
Critical Depth	2.02	ft
Channel Slope	0.650	%
Critical Slope	0.00973	ft/ft

Cross Section for D3 Section

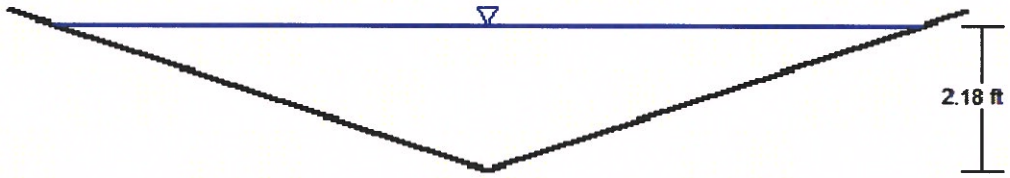
Project Description

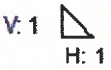
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	0.650	%
Normal Depth	2.18	ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	70.00	ft^3/s

Cross Section Image





Worksheet for D4 Section

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	0.650	%
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	45.00	ft^3/s

Results

Normal Depth	1.85	ft
Flow Area	10.25	ft^2
Wetted Perimeter	11.69	ft
Hydraulic Radius	0.88	ft
Top Width	11.09	ft
Critical Depth	1.70	ft
Critical Slope	0.01032	ft/ft
Velocity	4.39	ft/s
Velocity Head	0.30	ft
Specific Energy	2.15	ft
Froude Number	0.81	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.85	ft
Critical Depth	1.70	ft
Channel Slope	0.650	%
Critical Slope	0.01032	ft/ft

Cross Section for D4 Section

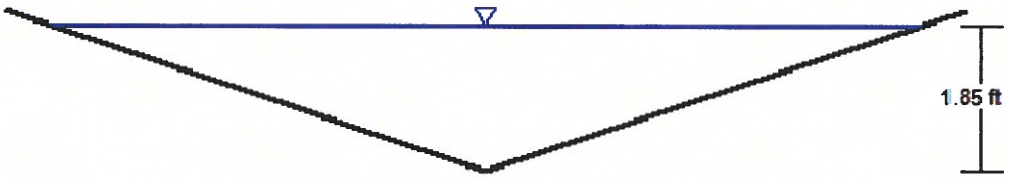
Project Description

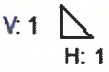
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	0.650	%
Normal Depth	1.85	ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	45.00	ft^3/s

Cross Section Image





Ultimate Condition Street Computations

Worksheet for Section 1 (MIN%)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	2.000	%
Discharge	23.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.48
0+05.00	0.38
0+05.38	0.38
0+06.50	0.00
0+07.50	0.08
0+07.50	0.12
0+23.00	0.43
0+38.50	0.12
0+38.50	0.08
0+39.50	0.00
0+40.62	0.38
0+41.00	0.38

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.48)	(0+07.50, 0.08)	0.013
(0+07.50, 0.08)	(0+38.50, 0.08)	0.016
(0+38.50, 0.08)	(0+41.00, 0.38)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Worksheet for Section 1 (MIN%)

Results

Normal Depth		0.42	ft
Elevation Range	0.00 to 0.48 ft		
Flow Area		5.83	ft²
Wetted Perimeter		37.19	ft
Hydraulic Radius		0.16	ft
Top Width		36.93	ft
Normal Depth		0.42	ft
Critical Depth		0.49	ft
Critical Slope		0.00590	ft/ft
Velocity		3.95	ft/s
Velocity Head		0.24	ft
Specific Energy		0.66	ft
Froude Number		1.75	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.42	ft
Critical Depth	0.49	ft
Channel Slope	2.000	%
Critical Slope	0.00590	ft/ft

Cross Section for Section 1 (MIN%)

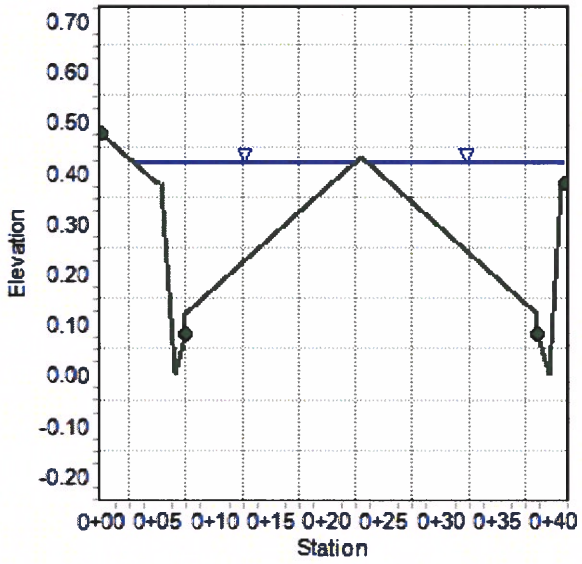
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	2.000	%
Normal Depth	0.42	ft
Discharge	23.00	ft³/s

Cross Section Image



Worksheet for Section 1 (MAX%)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.080	%
Discharge	23.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.48
0+05.00	0.38
0+05.38	0.38
0+06.50	0.00
0+07.50	0.08
0+07.50	0.12
0+23.00	0.43
0+38.50	0.12
0+38.50	0.08
0+39.50	0.00
0+40.62	0.38
0+41.00	0.38

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.48)	(0+07.50, 0.08)	0.013
(0+07.50, 0.08)	(0+38.50, 0.08)	0.016
(0+38.50, 0.08)	(0+41.00, 0.38)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Worksheet for Section 1 (MAX%)

Results

Normal Depth		0.37	ft
Elevation Range	0.00 to 0.48 ft		
Flow Area		4.34	ft²
Wetted Perimeter		29.92	ft
Hydraulic Radius		0.14	ft
Top Width		29.71	ft
Normal Depth		0.37	ft
Critical Depth		0.49	ft
Critical Slope		0.00600	ft/ft
Velocity		5.31	ft/s
Velocity Head		0.44	ft
Specific Energy		0.81	ft
Froude Number		2.45	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.37	ft
Critical Depth	0.49	ft
Channel Slope	4.080	%
Critical Slope	0.00600	ft/ft

Cross Section for Section 1 (MAX%)

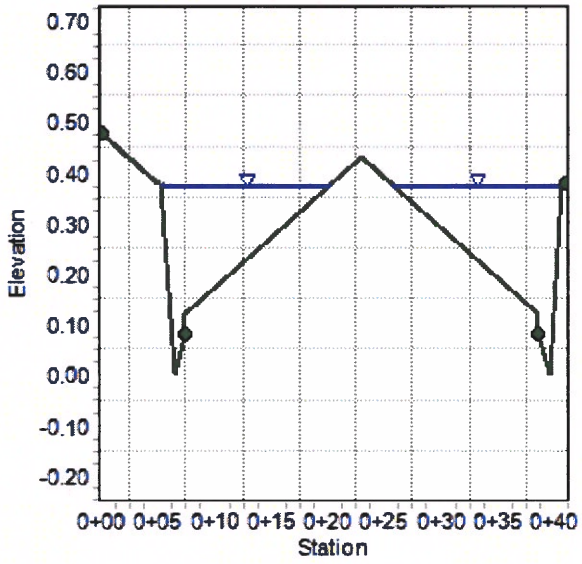
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.080	%
Normal Depth	0.37	ft
Discharge	23.00	ft³/s

Cross Section Image



Worksheet for Section 2 (MIN%)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.500	%
Discharge	12.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.38
0+00.38	0.38
0+01.50	0.00
0+02.50	0.08
0+02.50	0.12
0+18.00	0.43

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.38)	(0+02.50, 0.08)	0.013
(0+02.50, 0.08)	(0+18.00, 0.43)	0.016

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.51	ft
Elevation Range	0.00 to 0.43 ft	
Flow Area	4.52	ft²
Wetted Perimeter	18.32	ft
Hydraulic Radius	0.25	ft
Top Width	18.00	ft

Worksheet for Section 2 (MIN%)

Results

Normal Depth		0.51	ft
Critical Depth		0.50	ft
Critical Slope		0.00583	ft/ft
Velocity		2.65	ft/s
Velocity Head		0.11	ft
Specific Energy		0.62	ft
Froude Number		0.93	
Flow Type	Subcritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.51	ft
Critical Depth	0.50	ft
Channel Slope	0.500	%
Critical Slope	0.00583	ft/ft

Cross Section for Section 2 (MIN%)

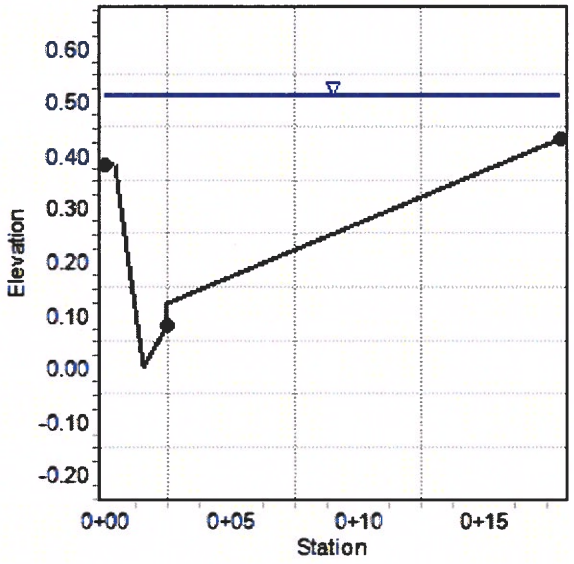
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.500	%
Normal Depth	0.51	ft
Discharge	12.00	ft³/s

Cross Section Image



Worksheet for Section 2 (MAX%)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.280	%
Discharge	12.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.38
0+00.38	0.38
0+01.50	0.00
0+02.50	0.08
0+02.50	0.12
0+18.00	0.43

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.38)	(0+02.50, 0.08)	0.013
(0+02.50, 0.08)	(0+18.00, 0.43)	0.016

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.38	ft
Elevation Range	0.00 to 0.43 ft	
Flow Area	2.20	ft²
Wetted Perimeter	15.06	ft
Hydraulic Radius	0.15	ft
Top Width	14.95	ft

Worksheet for Section 2 (MAX%)

Results

Normal Depth		0.38	ft
Critical Depth		0.50	ft
Critical Slope		0.00583	ft/ft
Velocity		5.47	ft/s
Velocity Head		0.46	ft
Specific Energy		0.84	ft
Froude Number		2.51	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth		0.00	ft
Length		0.00	ft
Number Of Steps		0	

GVF Output Data

Upstream Depth		0.00	ft
Profile Description			
Profile Headloss		0.00	ft
Downstream Velocity		Infinity	ft/s
Upstream Velocity		Infinity	ft/s
Normal Depth		0.38	ft
Critical Depth		0.50	ft
Channel Slope		4.280	%
Critical Slope		0.00583	ft/ft

Cross Section for Section 2 (MAX%)

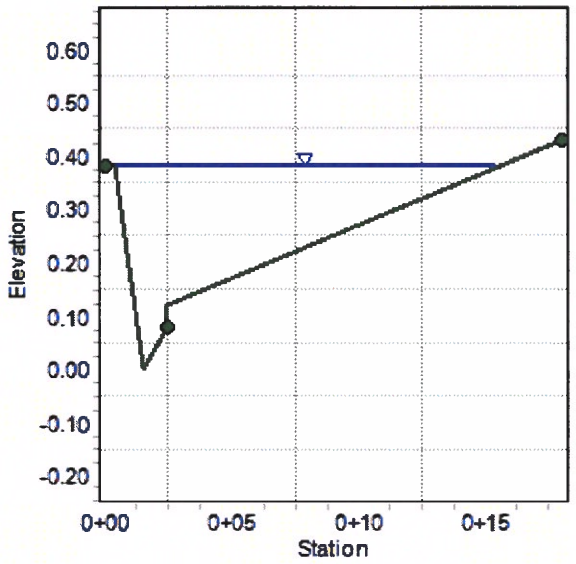
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.280	%
Normal Depth	0.38	ft
Discharge	12.00	ft³/s

Cross Section Image



Worksheet for Section 3 (MIN%)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.500	%
Discharge	3.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.48
0+05.00	0.38
0+05.38	0.38
0+06.50	0.00
0+07.50	0.08
0+07.50	0.12
0+23.00	0.43

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.48)	(0+07.50, 0.08)	0.013
(0+07.50, 0.08)	(0+23.00, 0.43)	0.016

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.34	ft
Elevation Range	0.00 to 0.48 ft	
Flow Area	1.73	ft²
Wetted Perimeter	13.32	ft
Hydraulic Radius	0.13	ft

Worksheet for Section 3 (MIN%)

Results

Top Width		13.22	ft
Normal Depth		0.34	ft
Critical Depth		0.33	ft
Critical Slope		0.00718	ft/ft
Velocity		1.73	ft/s
Velocity Head		0.05	ft
Specific Energy		0.39	ft
Froude Number		0.84	
Flow Type	Subcritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.34	ft
Critical Depth	0.33	ft
Channel Slope	0.500	%
Critical Slope	0.00718	ft/ft

Cross Section for Section 3 (MIN%)

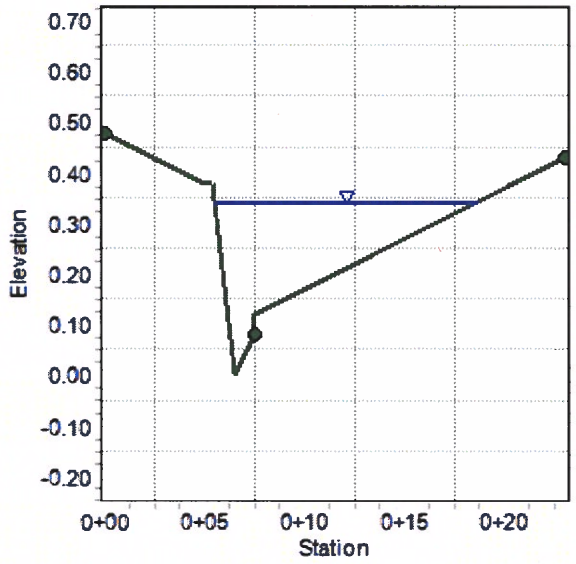
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.500	%
Normal Depth	0.34	ft
Discharge	3.00	ft³/s

Cross Section Image



Worksheet for Section 4 (MIN%)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.500	%
Discharge	19.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.48
0+05.00	0.38
0+05.38	0.38
0+06.50	0.00
0+07.50	0.08
0+07.50	0.12
0+23.00	0.43
0+38.50	0.12
0+38.50	0.08
0+39.50	0.00
0+40.62	0.38
0+41.00	0.38

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.48)	(0+07.50, 0.08)	0.013
(0+07.50, 0.08)	(0+38.50, 0.08)	0.016
(0+38.50, 0.08)	(0+41.00, 0.38)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Worksheet for Section 4 (MIN%)

Results

Normal Depth		0.48	ft
Elevation Range	0.00 to 0.48 ft		
Flow Area		8.16	ft²
Wetted Perimeter		41.26	ft
Hydraulic Radius		0.20	ft
Top Width		40.94	ft
Normal Depth		0.48	ft
Critical Depth		0.47	ft
Critical Slope		0.00600	ft/ft
Velocity		2.33	ft/s
Velocity Head		0.08	ft
Specific Energy		0.56	ft
Froude Number		0.92	
Flow Type	Subcritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.48	ft
Critical Depth	0.47	ft
Channel Slope	0.500	%
Critical Slope	0.00600	ft/ft

Cross Section for Section 4 (MIN%)

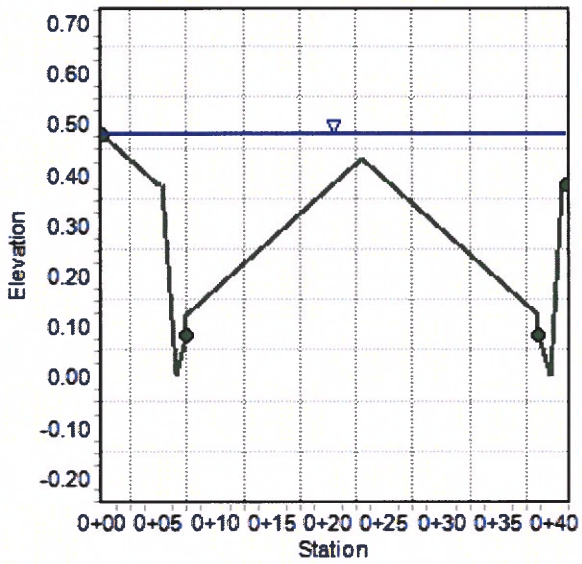
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.500	%
Normal Depth	0.48	ft
Discharge	19.00	ft³/s

Cross Section Image



Worksheet for Section 4 (MAX%)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.380	%
Discharge	19.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.48
0+05.00	0.38
0+05.38	0.38
0+06.50	0.00
0+07.50	0.08
0+07.50	0.12
0+23.00	0.43
0+38.50	0.12
0+38.50	0.08
0+39.50	0.00
0+40.62	0.38
0+41.00	0.38

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.48)	(0+07.50, 0.08)	0.013
(0+07.50, 0.08)	(0+38.50, 0.08)	0.016
(0+38.50, 0.08)	(0+41.00, 0.38)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Worksheet for Section 4 (MAX%)

Results

Normal Depth		0.35	ft
Elevation Range	0.00 to 0.48 ft		
Flow Area		3.64	ft²
Wetted Perimeter		27.33	ft
Hydraulic Radius		0.13	ft
Top Width		27.12	ft
Normal Depth		0.35	ft
Critical Depth		0.47	ft
Critical Slope		0.00621	ft/ft
Velocity		5.22	ft/s
Velocity Head		0.42	ft
Specific Energy		0.77	ft
Froude Number		2.51	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.35	ft
Critical Depth	0.47	ft
Channel Slope	4.380	%
Critical Slope	0.00621	ft/ft

Cross Section for Section 4 (MAX%)

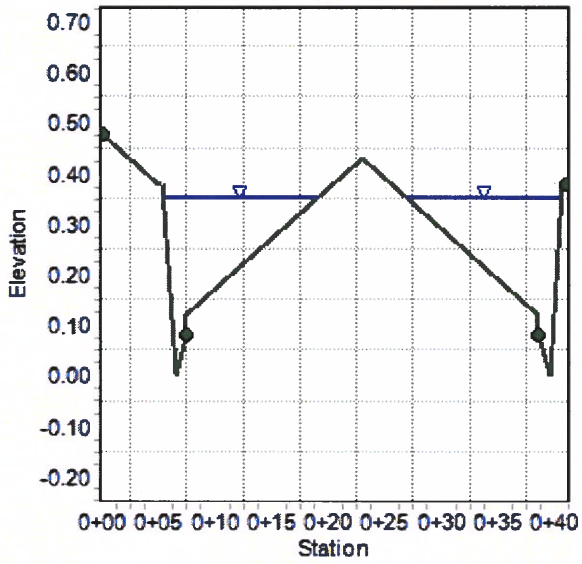
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.380	%
Normal Depth	0.35	ft
Discharge	19.00	ft³/s

Cross Section Image



Worksheet for Section 5 (MIN%)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	2.500	%
Discharge	4.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.48
0+05.00	0.38
0+05.38	0.38
0+06.50	0.00
0+07.50	0.08
0+07.50	0.12
0+23.00	0.43

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.48)	(0+07.50, 0.08)	0.013
(0+07.50, 0.08)	(0+23.00, 0.43)	0.016

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.30	ft
Elevation Range	0.00 to 0.48 ft	
Flow Area	1.16	ft²
Wetted Perimeter	10.79	ft
Hydraulic Radius	0.11	ft

Worksheet for Section 5 (MIN%)

Results

Top Width		10.69	ft
Normal Depth		0.30	ft
Critical Depth		0.36	ft
Critical Slope		0.00686	ft/ft
Velocity		3.44	ft/s
Velocity Head		0.18	ft
Specific Energy		0.48	ft
Froude Number		1.84	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.30	ft
Critical Depth	0.36	ft
Channel Slope	2.500	%
Critical Slope	0.00686	ft/ft

Cross Section for Section 5 (MIN%)

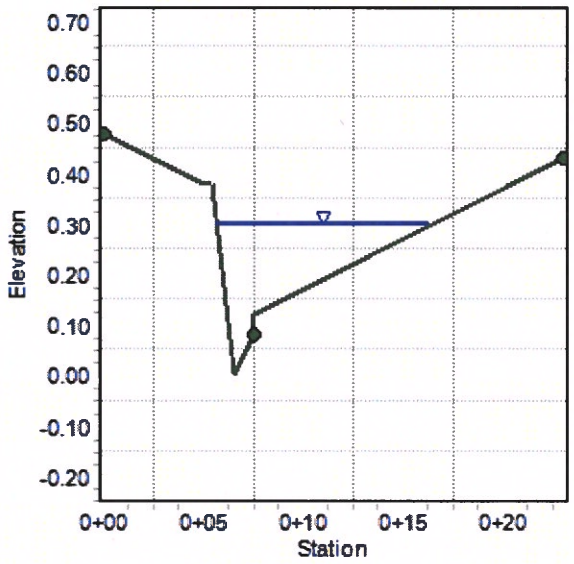
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	2.500	%
Normal Depth	0.30	ft
Discharge	4.00	ft³/s

Cross Section Image



Worksheet for Section 5 (MAX%)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.190	%
Discharge	4.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.48
0+05.00	0.38
0+05.38	0.38
0+06.50	0.00
0+07.50	0.08
0+07.50	0.12
0+23.00	0.43

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.48)	(0+07.50, 0.08)	0.013
(0+07.50, 0.08)	(0+23.00, 0.43)	0.016

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth		0.28	ft
Elevation Range	0.00 to 0.48 ft		
Flow Area		0.95	ft²
Wetted Perimeter		9.68	ft
Hydraulic Radius		0.10	ft

Worksheet for Section 5 (MAX%)

Results

Top Width		9.59	ft
Normal Depth		0.28	ft
Critical Depth		0.36	ft
Critical Slope		0.00683	ft/ft
Velocity		4.20	ft/s
Velocity Head		0.27	ft
Specific Energy		0.55	ft
Froude Number		2.35	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.28	ft
Critical Depth	0.36	ft
Channel Slope	4.190	%
Critical Slope	0.00683	ft/ft

Cross Section for Section 5 (MAX%)

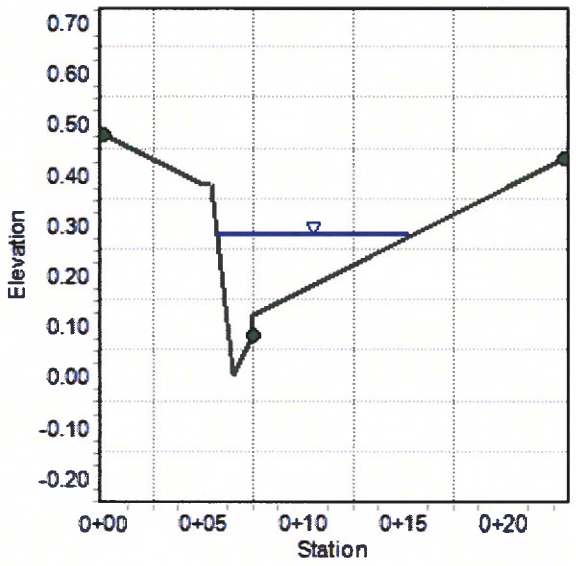
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.190	%
Normal Depth	0.28	ft
Discharge	4.00	ft³/s

Cross Section Image



Worksheet for Section 6 (MIN%)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	1.000	%
Discharge	18.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.38
0+00.38	0.38
0+01.50	0.00
0+02.50	0.08
0+02.50	0.12
0+18.00	0.43

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.38)	(0+02.50, 0.08)	0.013
(0+02.50, 0.08)	(0+18.00, 0.43)	0.016

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.52	ft
Elevation Range	0.00 to 0.43 ft	
Flow Area	4.69	ft²
Wetted Perimeter	18.34	ft
Hydraulic Radius	0.26	ft
Top Width	18.00	ft

Worksheet for Section 6 (MIN%)

Results

Normal Depth		0.52	ft
Critical Depth		0.57	ft
Critical Slope		0.00538	ft/ft
Velocity		3.84	ft/s
Velocity Head		0.23	ft
Specific Energy		0.75	ft
Froude Number		1.33	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.52	ft
Critical Depth	0.57	ft
Channel Slope	1.000	%
Critical Slope	0.00538	ft/ft

Cross Section for Section 6 (MIN%)

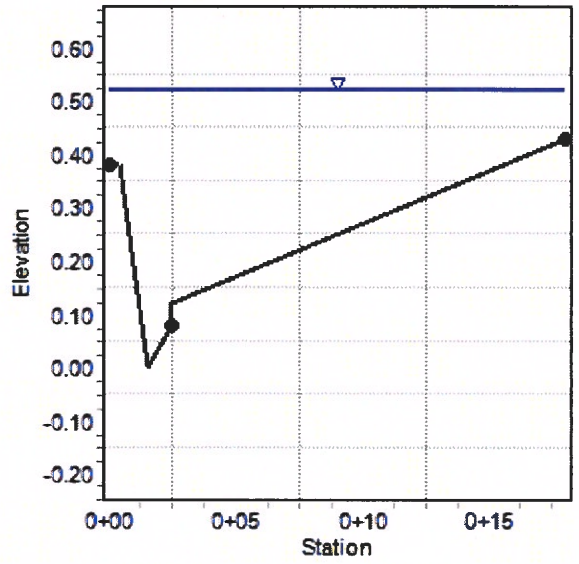
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	1.000	%
Normal Depth	0.52	ft
Discharge	18.00	ft³/s

Cross Section Image



Worksheet for Section 6 (MAX%)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.190	%
Discharge	18.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.38
0+00.38	0.38
0+01.50	0.00
0+02.50	0.08
0+02.50	0.12
0+18.00	0.43

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.38)	(0+02.50, 0.08)	0.013
(0+02.50, 0.08)	(0+18.00, 0.43)	0.016

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.43	ft
Elevation Range	0.00 to 0.43 ft	
Flow Area	3.03	ft²
Wetted Perimeter	18.01	ft
Hydraulic Radius	0.17	ft
Top Width	17.86	ft

Worksheet for Section 6 (MAX%)

Results

Normal Depth		0.43	ft
Critical Depth		0.57	ft
Critical Slope		0.00539	ft/ft
Velocity		5.94	ft/s
Velocity Head		0.55	ft
Specific Energy		0.98	ft
Froude Number		2.54	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.43	ft
Critical Depth	0.57	ft
Channel Slope	4.190	%
Critical Slope	0.00539	ft/ft

Cross Section for Section 6 (MAX%)

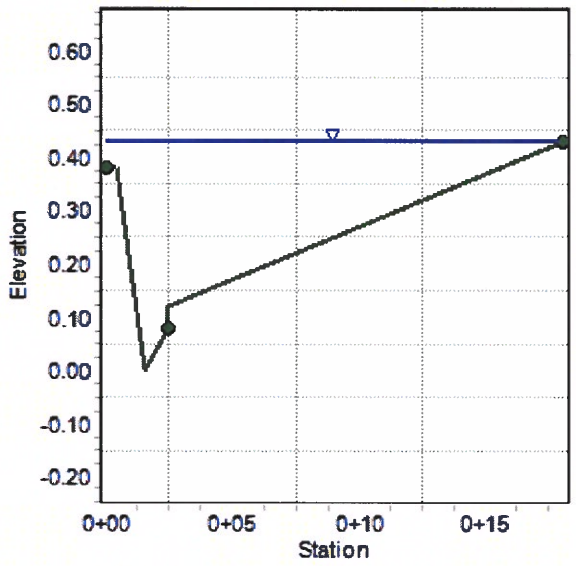
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.190	%
Normal Depth	0.43	ft
Discharge	18.00	ft³/s

Cross Section Image



Worksheet for Section 7

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	1.000	%
Discharge	7.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.48
0+05.00	0.38
0+05.38	0.38
0+06.50	0.00
0+07.50	0.08
0+07.50	0.12
0+23.00	0.43

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.48)	(0+07.50, 0.08)	0.013
(0+07.50, 0.08)	(0+23.00, 0.43)	0.016

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.40	ft
Elevation Range	0.00 to 0.48 ft	
Flow Area	2.62	ft²
Wetted Perimeter	17.86	ft
Hydraulic Radius	0.15	ft

Worksheet for Section 7

Results

Top Width		17.75	ft
Normal Depth		0.40	ft
Critical Depth		0.43	ft
Critical Slope		0.00652	ft/ft
Velocity		2.67	ft/s
Velocity Head		0.11	ft
Specific Energy		0.51	ft
Froude Number		1.23	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.40	ft
Critical Depth	0.43	ft
Channel Slope	1.000	%
Critical Slope	0.00652	ft/ft

Cross Section for Section 7

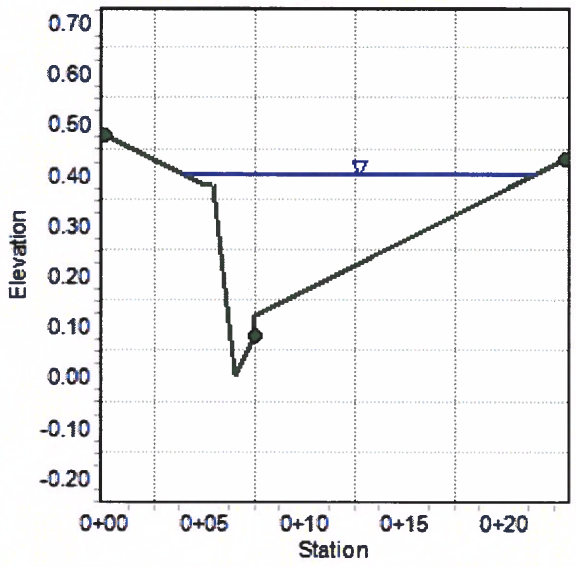
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	1.000	%
Normal Depth	0.40	ft
Discharge	7.00	ft³/s

Cross Section Image



Drop Inlet Sizing Computations

Curb Inlet Sizing Computation

Westwood
Multi-Disciplined
Surveying & Engineering

Project Name & Number:	**CEN1905.000 SKYE CANYON PARCELS 2.08 AND 2.09**
Date:	**JAN. 2020**
By:	**GND**

	Notes:		
	Facility ID:	DI#1	
	Drainage Condition:	ULT	
	Source of Flow:	Q100 = BAS1(B) = 4 CFS	
	Inlet Type:	Type CM2 (Continuous Grade)	
	Inlet Length:	12.5-ft	
	Number of Grates	4	
	Input:	**Variable:**	**Input:**
	Street Flow (cfs)	Q	4.0
	Longitudinal Slope (ft/ft)	S_o	0.0419
	Manning's Coefficient	n	0.016
	Street Flow Velocity (fps)	V	4.20
	Street Flow Depth (ft)	D	0.28
	Street Cross Slope (ft/ft)	S_x	0.02
	Grate Width (ft)	W	1.5
	Grate Depression (in)	D_g	2.0
	Length of Grate (ft)	L_g	9.75
	Length of Curb Opening (ft)	L_c	12.00
	Clogging Factor - Grate (%)	CF_g	50%
	Clogging Factor - Curb (%)	CF_c	50%
	Effective Grate Length (ft)	L_{ge}	4.9
	Effective Curb Opening Length (ft)	L_{ce}	6.00
	Output (Grate):	**Equation:**	**Output (Grate):**
[1]	R_f - Frontal Flow Factor	$1-0.09*(V-V_x)$ if $V>V_x$; else Frontal Flow Factor=1	1.00
[2]	V_o - Splash Over Velocity (fps)	$V_x=p+q*Lg-r*L_{ge}\text{^}2+sy*L_{ge}\text{^}3$; where	10.19
		p=0.30,q=4.85,r=1.31,sy=0.15 (for Vane Grate)	
[1]	E - Grate Flow Ratio	Frontal Flow/Side Flow	0.56
[2]	Q_w - Frontal Flow (cfs)	$Q_w = Q[1-(1-(W/T))^{2.67}]$	2.24
[1]	Q_s - Side Flow (cfs)	$Q_s = Q-Qw$	1.8
	T - Side Flow Spread (ft)	$(D-D_g)/S_x$	5.67
[1]	R_s - Side Flow Factor	$1/(1+(0.15*V^{1.8})/(S_x*L_{ge}^{2.3}))$	0.28
[1]	Q_{gi} - Intercepted Flow (cfs)	$(R_f*E+R_s*(1-E))*Q$	2.7
	Output (Curb):	**Equation:**	**Output (Curb):**
[1]	S_e - Equivalent Cross Slope (ft/ft)	S_x+S_g*E	0.082
	Q_{sx} - Remaining Flow After Grate Interception (cfs)	$Q-Q_{gi}$	1.271
	S_g - Gutter Cross Slope (ft/ft)	D_g/W	0.111
[1]	L_t - Effective Interception Length (ft)	$0.60*Q_{sx}^{0.42}*S_o^{0.30}*(1/n*S_e)^{0.6}$	13.71
[1]	Q_{ci} - Intercepted Flow (cfs)	$(1-(1-L_{ce}/L_t)^{1.8})*Q_{sx}$	0.8
		or Q_{sx} if L_t is less than L_{ce}	
	Output (Combination):	**Equation:**	**Output (Combination):**
	Total Intercepted Flow (cfs)	Intercepted (Grate) + Intercepted (Curb)	**4**
	Bypass Flow (cfs)	Street Flow - Total Intercepted Flow	**0**

[1] Formula referenced from the CCRFCD Manual

[2] Formula referenced from FHWA Urban Drainage Design Manual (HEC-22)

Curb Inlet Sizing Computation

Westwood
Multi-Disciplined
Surveying & Engineering

Project Name & Number:	**CEN1905.000 SKYE CANYON PARCELS 2.08 AND 2.09**
Date:	**JAN. 2020**
By:	**GND**

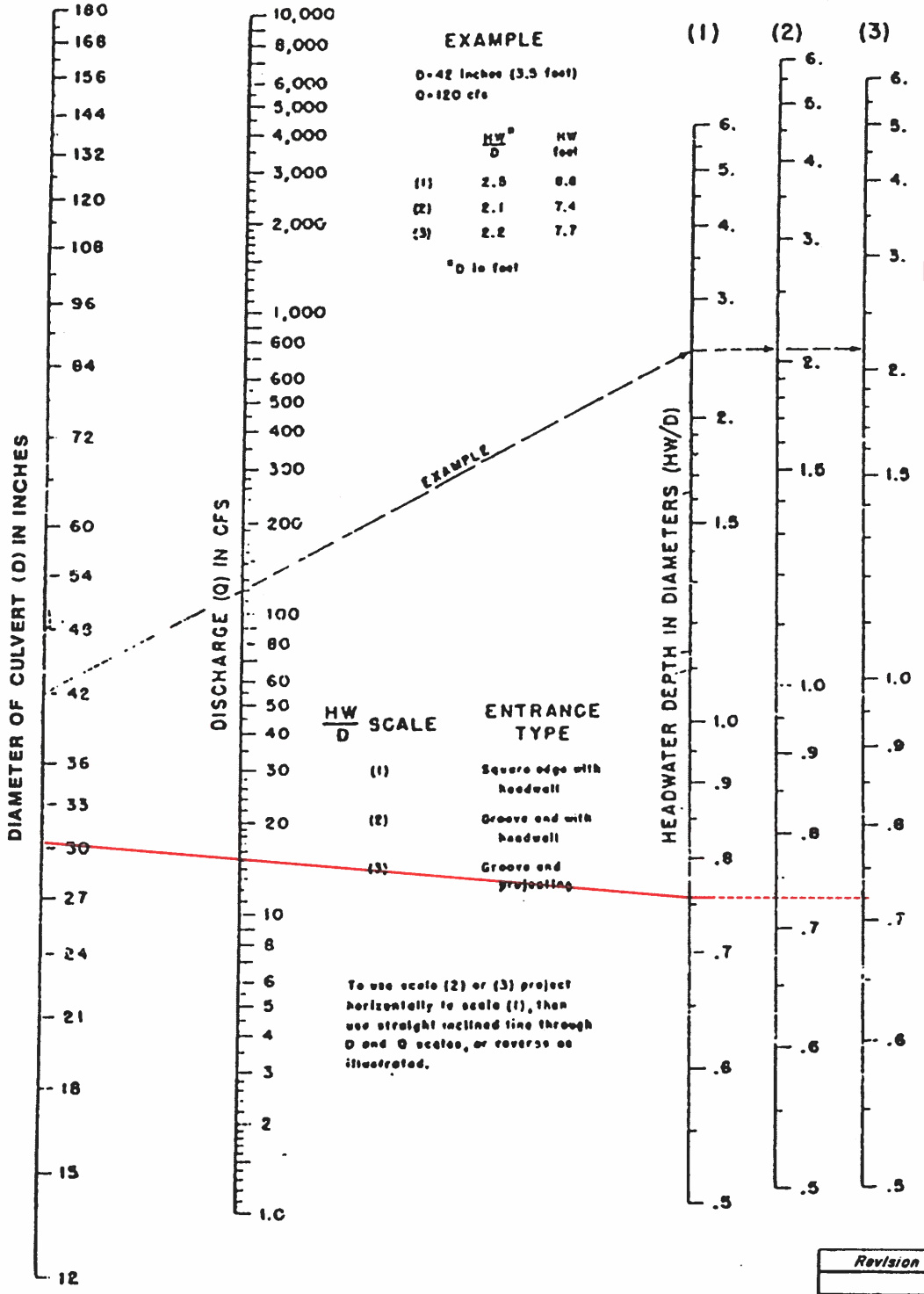
	Notes:		
	Facility ID:	DI#2	
	Drainage Condition:	ULT	
	Source of Flow:	Q100 = BAS1(E) = 18CFS	
	Inlet Type:	Type CM2 (Continuous Grade)	
	Inlet Length:	15.-ft	
	Number of Grates	5	
	Input:	**Variable:**	**Input:**
	Street Flow (cfs)	Q	18.0
	Longitudinal Slope (ft/ft)	S_o	0.0419
	Manning's Coefficient	n	0.016
	Street Flow Velocity (fps)	V	5.94
	Street Flow Depth (ft)	D	0.43
	Street Cross Slope (ft/ft)	S_x	0.02
	Grate Width (ft)	W	1.5
	Grate Depression (in)	D_g	2.0
	Length of Grate (ft)	L_g	12.25
	Length of Curb Opening (ft)	L_c	14.50
	Clogging Factor - Grate (%)	CF_g	50%
	Clogging Factor - Curb (%)	CF_c	50%
	Effective Grate Length (ft)	L_{ge}	6.1
	Effective Curb Opening Length (ft)	L_{ce}	7.25
	Output (Grate):	**Equation:**	**Output (Grate):**
[1]	R_f - Frontal Flow Factor	1-0.09*(V-V_x) if V>V_x; else Frontal Flow Factor=1	1.00
[2]	V_o - Splash Over Velocity (fps)	V_x=p+q*Lg-r*L_{ge}^2+sy*L_{ge}^3 ; where	15.33
		p=0.30,q=4.85,r=1.31,sy=0.15 (for Vane Grate)	
[1]	E - Grate Flow Ratio	Frontal Flow/Side Flow	0.28
[2]	Q_w - Frontal Flow (cfs)	$Q_w = Q[1-(1-(W/T))^{2.67}]$	4.97
[1]	Q_s - Side Flow (cfs)	Q_s = Q-Qw	13.0
	T - Side Flow Spread (ft)	$(D-D_g)/S_x$	13.17
[1]	R_s - Side Flow Factor	$1/(1+(0.15*V^{1.8})/(S_x*L_{ge}^{2.3}))$	0.26
[1]	Q_{gi} - Intercepted Flow (cfs)	$(R_f*E+R_s*(1-E))*Q$	8.3
	Output (Curb):	**Equation:**	**Output (Curb):**
[1]	S_e - Equivalent Cross Slope (ft/ft)	S_x+S_g*E	0.051
	Q_{sx} - Remaining Flow After Grate Interception (cfs)	$Q-Q_{gi}$	9.663
	S_g - Gutter Cross Slope (ft/ft)	D_g/W	0.111
[1]	L_t - Effective Interception Length (ft)	$0.60*Q_{sx}^{0.42}*S_o^{0.30}*(1/n*S_e)^{0.6}$	42.98
[1]	Q_{ci} - Intercepted Flow (cfs)	$(1-(1-L_{ce}/L_t)^{1.8})*Q_{sx}$	2.7
		or Q_{sx} if L_t is less than L_{ce}	
	Output (Combination):	**Equation:**	**Output (Combination):**
	Total Intercepted Flow (cfs)	Intercepted (Grate) + Intercepted (Curb)	**11**
	Bypass Flow (cfs)	Street Flow - Total Intercepted Flow	**7**

[1] Formula referenced from the CCRFCD Manual

[2] Formula referenced from FHWA Urban Drainage Design Manual (HEC-22)

NOMOGRAPH – INLET CONTROL RCP

DI#1: Q=15 CFS



Revision	Date

WRC ENGINEERING

REFERENCE: USDOT, FHWA, HDS, No. 5, 1985

FIGURE 1005

Curb Inlet Sizing Computation

Westwood
Multi-Disciplined
Surveying & Engineering

Project Name & Number:	**SKYE CANYON PARCELS 2.08 AND 2.09**
Date:	**1/16/2020**
By:	**GND**

Notes:		
Facility ID:	DI#3	
Drainage Condition	INT	
Source of Flow	Q100 = 1/2 (BAS1-I(A) + BAS1-I(B)) = 1/2(36+13) = 24.5	
Design Flow (cfs)	24.5	
Inlet Type:	Type CM2 (Sump)	
Inlet Length:	12.5-ft	
Number of Grates:	4	
Input:	**Variable:**	**Input:**
Depth at Inlet (ft)	D	0.71
Grate Width (ft)	W	1.50
Length of Grate (ft)	L_g	9.75
Length of Curb Opening (ft)	L_c	12.00
Height of Curb Opening (ft)	H	0.50
Weir Coef. - Curb Opening	W_c	2.3
Weir Coef. - Grate	W_g	3.0
Orifice Coef.	O_c	0.67
Grate Coef.	G_c	0.60
Clogging Factor - Grate (%)	CF_g	50
Clogging Factor - Curb (%)	CF_c	50
Output (Grate):	**Equation:**	**Output (Grate):**
Effective Weir Length (ft)	$2*W+L_g$	12.75
Adjusted Effective Weir Length (ft)	$2*(1-CF_g/100)*W+(1-CF_g/100)*L_g$	6.38
Grate Open Area (sf)	$W*L_g$	14.63
Adjusted Grate Open Area (sf)	Grate Open Area * $G_c*(1-CF_g/100)$	4.39
Controlling Flow Type (weir/orifice)	If D<1.792*(Adj. Grate Open Area/Adj. Eff. Length)	weir
	use weir, else orifice	
Intercepted Flow (cfs)	weir: $W_g*(\text{Adj. Eff. Weir Length})*D^{1.5}$	11.4
	orifice: $O_c*(\text{Adj. Grate Open Area})*(64.4*D)^{0.5}$	
Output (Curb):	**Equation:**	**Output (Curb):**
Effective Weir Length (ft)	L+1.8*W	14.70
Adjusted Effective Weir Length (ft)	$L+1.8(1-CF_c/100)*W$	13.41
Curb Open Area (sf)	L*H	6.00
Adjusted Curb Open Area (sf)	Curb Open Area * $(1-CF_c/100)$	3.00
Controlling Flow Type (weir/orifice)	If D<H, weir, else orifice	orifice
Intercepted Flow (cfs)	weir: $W_c*(\text{Adj. Eff. Weir Length})*D^{1.5}$	13.52
	orifice: $O_c*(\text{Adj. Curb Open Area})*(64.4*(D-H/2))^{0.5}$	
Output (Total):	**Equation:**	**Output (Total):**
Capacity Intercepted Flow (cfs)	Intercepted (Grate) + Intercepted (Curb)	**24.9**

Curb Inlet Sizing Computation

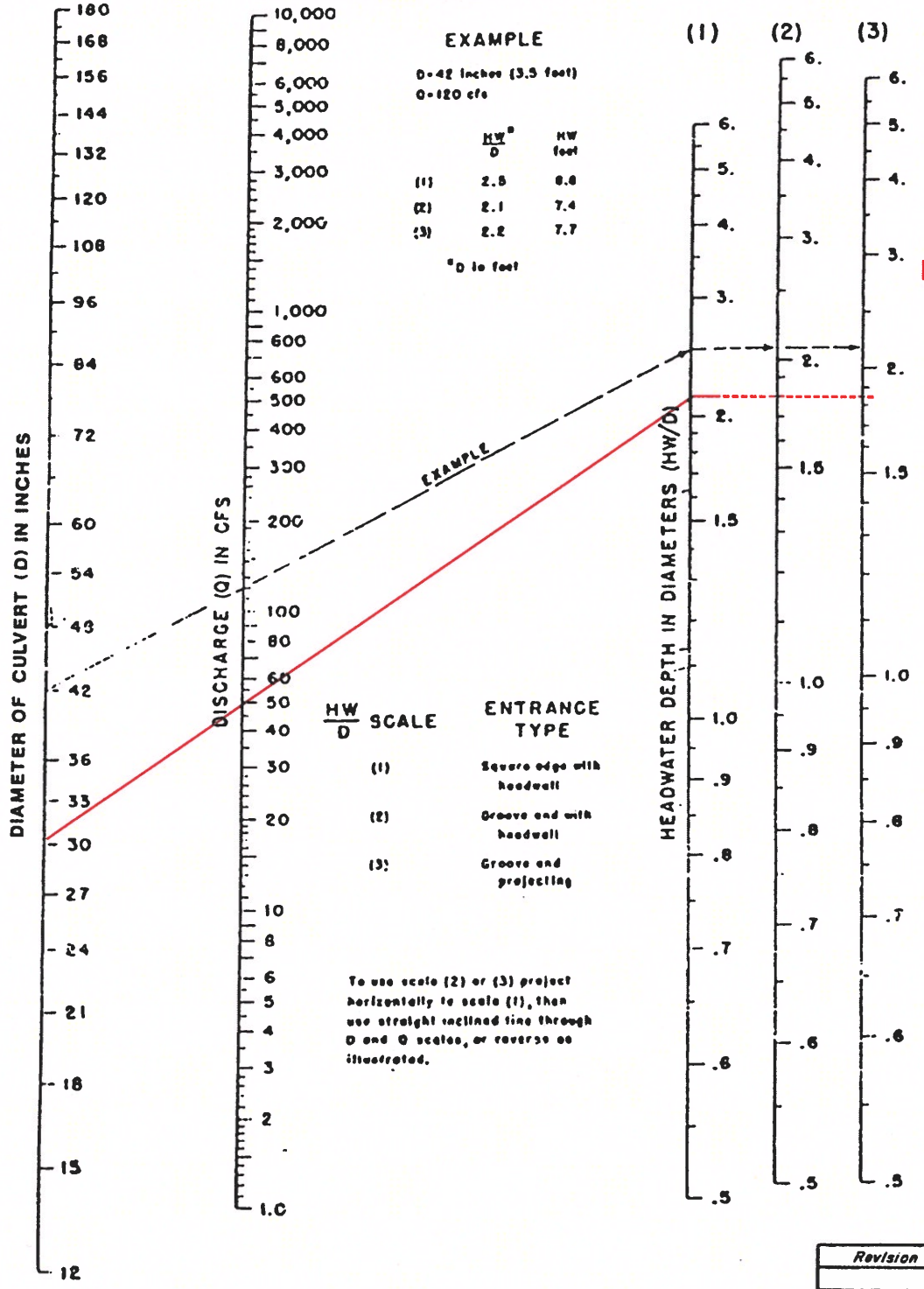
Westwood
Multi-Disciplined
Surveying & Engineering

Project Name & Number:	**SKYE CANYON PARCELS 2.08 AND 2.09**
Date:	**1/16/2020**
By:	**GND**

Notes:		
Facility ID:	DI#4	
Drainage Condition	INT	
Source of Flow	Q100 = 1/2(BAS1-I(A) +BAS1-I(B)) = 1/2(36+13) = 24.5	
Design Flow (cfs)	24.5	
Inlet Type:	Type CM2 (Sump)	
Inlet Length:	12.5-ft	
Number of Grates:	4	
Input:	**Variable:**	**Input:**
Depth at Inlet (ft)	D	0.71
Grate Width (ft)	W	1.50
Length of Grate (ft)	L_g	9.75
Length of Curb Opening (ft)	L_c	12.00
Height of Curb Opening (ft)	H	0.50
Weir Coef. - Curb Opening	W_c	2.3
Weir Coef. - Grate	W_g	3.0
Orifice Coef.	O_c	0.67
Grate Coef.	G_c	0.60
Clogging Factor - Grate (%)	CF_g	50
Clogging Factor - Curb (%)	CF_c	50
Output (Grate):	**Equation:**	**Output (Grate):**
Effective Weir Length (ft)	$2*W+L_g$	12.75
Adjusted Effective Weir Length (ft)	$2*(1-CF_g/100)*W+(1-CF_g/100)*L_g$	6.38
Grate Open Area (sf)	$W*L_g$	14.63
Adjusted Grate Open Area (sf)	Grate Open Area * $G_c*(1-CF_g/100)$	4.39
Controlling Flow Type (weir/orifice)	If D<1.792*(Adj. Grate Open Area/Adj. Eff. Length)	weir
	use weir, else orifice	
Intercepted Flow (cfs)	weir: $W_g*(\text{Adj. Eff. Weir Length})*D^{1.5}$	11.4
	orifice: $O_c*(\text{Adj. Grate Open Area})*(64.4*D)^{0.5}$	
Output (Curb):	**Equation:**	**Output (Curb):**
Effective Weir Length (ft)	L+1.8*W	14.70
Adjusted Effective Weir Length (ft)	$L+1.8(1-CF_c/100)*W$	13.41
Curb Open Area (sf)	L*H	6.00
Adjusted Curb Open Area (sf)	Curb Open Area * $(1-CF_c/100)$	3.00
Controlling Flow Type (weir/orifice)	If D<H, weir, else orifice	orifice
Intercepted Flow (cfs)	weir: $W_c*(\text{Adj. Eff. Weir Length})*D^{1.5}$	13.52
	orifice: $O_c*(\text{Adj. Curb Open Area})*(64.4*(D-H/2))^{0.5}$	
Output (Total):	**Equation:**	**Output (Total):**
Capacity Intercepted Flow (cfs)	Intercepted (Grate) + Intercepted (Curb)	**24.9**

NOMOGRAPH – INLET CONTROL RCP

DI#3: Q=49 CFS



Revision	Date

WRC ENGINEERING

REFERENCE: USDOT, FHWA, HDS, No. 5, 1985

FIGURE 1005

Curb Inlet Sizing Computation

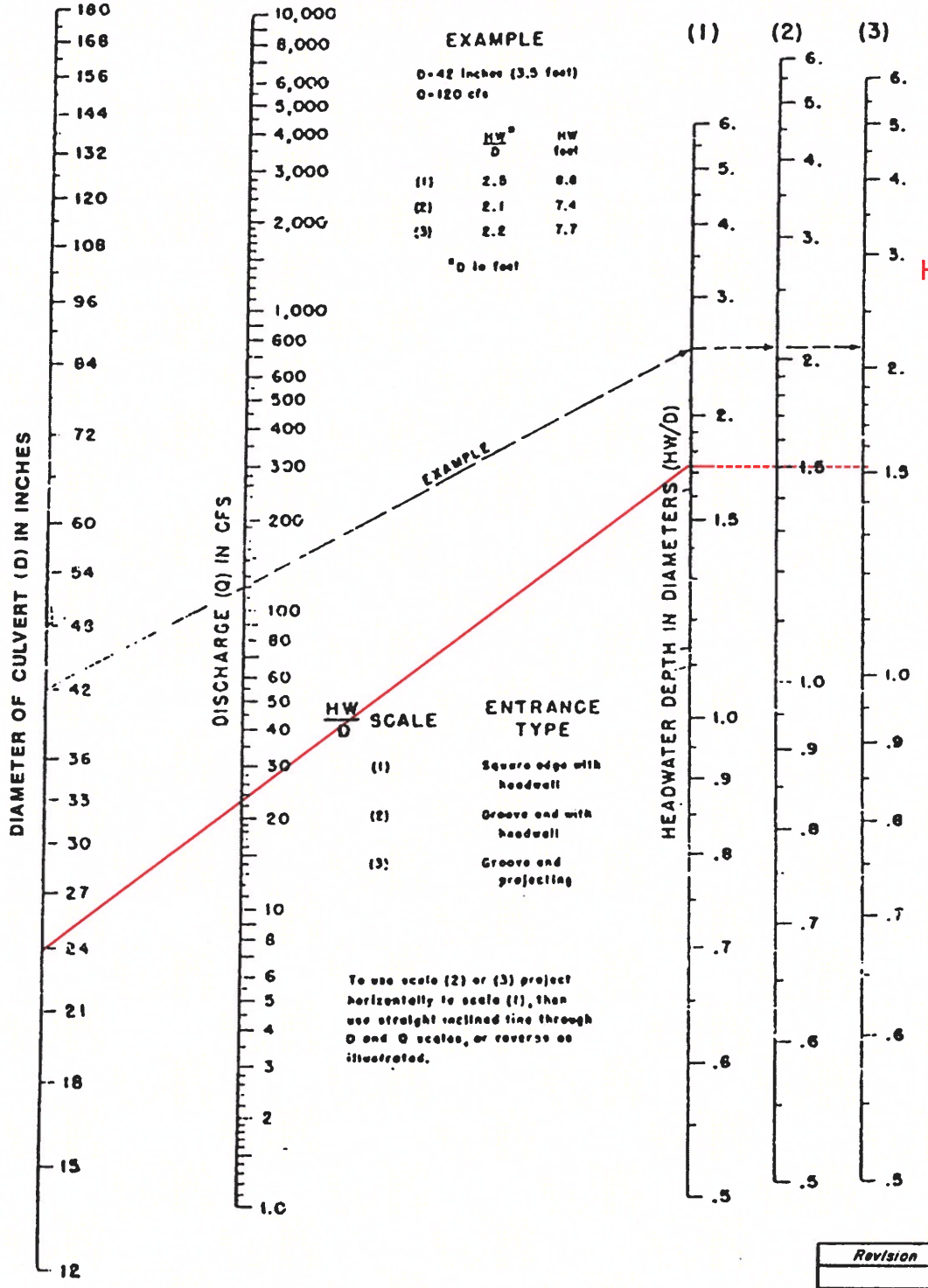
Westwood
Multi-Disciplined
Surveying & Engineering

Project Name & Number:	**CEN1905.000 SKYE CANYON PARCELS 2.08 AND 2.09**
Date:	**JAN. 2020**
By:	**GND**

Notes:		
Facility ID:	DI#5	
Drainage Condition	ULT	
Source of Flow	Q100 = Baisn2(D) = 23 CFS	
Design Flow (cfs)	23.0	
Inlet Type:	Type CM2 (Sump)	
Inlet Length:	15.-ft	
Number of Grates:	5	
Input:	**Variable:**	**Input:**
Depth at Inlet (ft)	D	0.67
Grate Width (ft)	W	1.50
Length of Grate (ft)	L_g	12.25
Length of Curb Opening (ft)	L_c	14.50
Height of Curb Opening (ft)	H	0.50
Weir Coef. - Curb Opening	W_c	2.3
Weir Coef. - Grate	W_g	3.0
Orifice Coef.	O_c	0.67
Grate Coef.	G_c	0.60
Clogging Factor - Grate (%)	CF_g	50
Clogging Factor - Curb (%)	CF_c	50
Output (Grate):	**Equation:**	**Output (Grate):**
Effective Weir Length (ft)	$2*W+L_g$	15.25
Adjusted Effective Weir Length (ft)	$2*(1-CF_g/100)*W+(1-CF_g/100)*L_g$	7.63
Grate Open Area (sf)	$W*L_g$	18.38
Adjusted Grate Open Area (sf)	Grate Open Area * $G_c*(1-CF_g/100)$	5.51
Controlling Flow Type (weir/orifice)	If D<1.792*(Adj. Grate Open Area/Adj. Eff. Length)	weir
	use weir, else orifice	
Intercepted Flow (cfs)	weir: $W_g*(\text{Adj. Eff. Weir Length})*D^{1.5}$	12.5
	orifice: $O_c*(\text{Adj. Grate Open Area})*(64.4*D)^{0.5}$	
Output (Curb):	**Equation:**	**Output (Curb):**
Effective Weir Length (ft)	L+1.8*W	17.20
Adjusted Effective Weir Length (ft)	$L+1.8(1-CF_c/100)*W$	15.91
Curb Open Area (sf)	L*H	7.25
Adjusted Curb Open Area (sf)	Curb Open Area * $(1-CF_c/100)$	3.63
Controlling Flow Type (weir/orifice)	If D<H, weir, else orifice	orifice
Intercepted Flow (cfs)	weir: $W_c*(\text{Adj. Eff. Weir Length})*D^{1.5}$	15.87
	orifice: $O_c*(\text{Adj. Curb Open Area})*(64.4*(D-H/2))^{0.5}$	
Output (Total):	**Equation:**	**Output (Total):**
Capacity Intercepted Flow (cfs)	Intercepted (Grate) + Intercepted (Curb)	**28.3**

NOMOGRAPH – INLET CONTROL RCP

DI#5: Q=23 CFS



HW/D	1.71
D	24
HW	3.4

Revision	Date

WRC ENGINEERING

REFERENCE: USDOT, FHWA, HDS, No. 5, 1985

FIGURE 1005

WSPGW Model (NORTH)

Ultimate Condition WSPG Summary Begins at SDDI #2 to system outlet at north end of the Project Site								
WSPG Station	**Storm Drain Dimension**	**Invert Elevation (ft)**	**Q_{100} (cfs)**	**WSE (ft)**	**Velocity (ft/s)**	**FG Elevation**	**Facility Description**	**HGL Check[1]**
1000.000	24" RCP	2867.56	15.00	2869.56	4.77	2872.42	System Outfall	N/A
1119.920	24" RCP	2868.58	15.00	2869.98	6.41	2875.40	SDDI #1	OK
1121.920	24" RCP	2868.78	11.00	2870.99	0.40	2875.40		OK
1121.920	24" RCP	2868.78	11.00	2870.99	3.50	2875.40		OK
1166.330	24" RCP	2869.22	11.00	2871.08	3.61	2874.30	SDDI #2	OK

```
                                                                    NORTH
T1 SKYE CANYON PARCEL 2.08
T2 STORM DRAIN JAN 2020
T3 24" RCP TO THE SYSTEM OUTLET NORTH
SO   1000.0002867.560 24      .013               2869.560
R    1119.9202868.580 24      .013
WE                     1      .013                                      -15.0   1
R    1121.9182868.778  1      .013                                      -15.0   1
R    1121.9192868.779  1      .013                                      -15.0   1
R    1121.9202868.780  1      .013                                       -6.0   1
JX   1121.9202868.780  1 42   .013    4.0          2868.780        90.0
WX                    24      .013
R    1166.3302869.220 24      .013                                              1
SH   1166.3302869.220 24      .013
CD   1  3   0    .000   8.120  12.5000  .000  .000   .00
CD   2  3   0    .000   8.980  15.0000  .000  .000   .00
CD  18  4   1    .000   1.500     .000  .000  .000   .00
CD  24  4   1    .000   2.000     .000  .000  .000   .00
CD  36  4   1    .000   3.000     .000  .000  .000   .00
CD  42  4   1    .000   3.500     .000  .000  .000   .00
CD  48  4   1    .000   4.000     .000  .000  .000   .00
Q           11.000   .0
```

FILE: NORTH.WSW W S P G W - EDIT LISTING - Version 14.10 Date: 1-30-2020 Time: 3:51:40

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING PAGE 1

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	1	3	0	.000	8.120	12.500	.000	.000	.00										
CD	2	3	0	.000	8.980	15.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														

W S P G W PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON PARCEL 2.08

HEADING LINE NO 2 IS -

STORM DRAIN JAN 2020

HEADING LINE NO 3 IS -

24" RCP TO THE SYSTEM OUTLET NORTH

W S P G W PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2867.560	24	2869.560

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1119.920	2868.580	24	.013	.000	.000	.000	0

ELEMENT NO 3 IS A WALL ENTRANCE *

U/S DATA	STATION	INVERT	SECT	FP
	1119.920	2868.580	1	.013

ELEMENT NO 4 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1121.918	2868.778	1	.013	.000	.000	-15.000	1

ELEMENT NO 5 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1121.919	2868.779	1	.013	.000	.000	-15.000	1

ELEMENT NO 6 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1121.920	2868.780	1	.013	.000	.000	-6.000	1

ELEMENT NO 7 IS A JUNCTION * * * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1121.920	2868.780	1	42	0	.013	4.000	.000	2868.780	.000	90.000	.000

RADIUS	ANGLE
.000	.000

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 8 IS A WALL EXIT *

U/S DATA	STATION	INVERT	SECT
	1121.920	2868.780	24

ELEMENT NO 9 IS A REACH * * *

					NORTH				
	U/S DATA	STATION	INVERT	SECT	N		RADIUS	ANGLE	ANG PT	MAN H
		1166.330	2869.220	24	.013		.000	.000	.000	1
ELEMENT NO 10 IS A SYSTEM HEADWORKS				*		*				
	U/S DATA	STATION	INVERT	SECT			W S ELEV			
		1166.330	2869.220	24			.000			

WATER SURFACE PROFILE LISTING Date: 1-30-2020 Time: 3:51:42

SKYE CANYON PARCEL 2.08
STORM DRAIN JAN 2020
24" RCP TO THE SYSTEM OUTLET NORTH

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	2867.560	2.000	2869.560	15.00	4.77	.35	2869.91	.00	1.40	.00	2.000	.000	.00	1 .0
.000	.0085					.0044	.00	2.00	.00	1.26	.013	.00	.00	PIPE
1000.000	2867.560	2.000	2869.560	15.00	4.77	.35	2869.91	.00	1.40	.00	2.000	.000	.00	1 .0
33.665	.0085					.0041	.14	2.00	.00	1.26	.013	.00	.00	PIPE
1033.665	2867.846	1.815	2869.661	15.00	5.01	.39	2870.05	.00	1.40	1.16	2.000	.000	.00	1 .0
15.197	.0085					.0040	.06	1.81	.55	1.26	.013	.00	.00	PIPE
1048.862	2867.976	1.707	2869.683	15.00	5.25	.43	2870.11	.00	1.40	1.41	2.000	.000	.00	1 .0
10.953	.0085					.0043	.05	1.71	.65	1.26	.013	.00	.00	PIPE
1059.815	2868.069	1.618	2869.687	15.00	5.51	.47	2870.16	.00	1.40	1.57	2.000	.000	.00	1 .0
8.150	.0085					.0047	.04	1.62	.74	1.26	.013	.00	.00	PIPE
1067.965	2868.138	1.540	2869.678	15.00	5.78	.52	2870.20	.00	1.40	1.68	2.000	.000	.00	1 .0
.073	.0085					.0053	.00	1.54	.82	1.26	.013	.00	.00	PIPE
1068.038	2868.139	1.470	2869.609	15.00	6.06	.57	2870.18	.00	1.40	1.77	2.000	.000	.00	1 .0
HYDRAULIC JUMP														
1068.038	2868.139	1.255	2869.394	15.00	7.23	.81	2870.21	.00	1.40	1.93	2.000	.000	.00	1 .0
32.513	.0085					.0083	.27	1.26	1.23	1.26	.013	.00	.00	PIPE
1100.551	2868.415	1.282	2869.697	15.00	7.05	.77	2870.47	.00	1.40	1.92	2.000	.000	.00	1 .0
16.391	.0085					.0076	.12	1.28	1.18	1.26	.013	.00	.00	PIPE

SKYE CANYON PARCEL 2.08
STORM DRAIN JAN 2020
24" RCP TO THE SYSTEM OUTLET NORTH

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1116.942	2868.555	1.337	2869.891	15.00	6.72	.70	2870.59	.00	1.40	1.88	2.000	.000	.00	1 .0
2.978	.0085					.0067	.02	1.34	1.09	1.26	.013	.00	.00	PIPE
1119.920	2868.580	1.396	2869.976	15.00	6.41	.64	2870.61	.00	1.40	1.84	2.000	.000	.00	1 .0
WALL	ENTRANCE													
1119.920	2868.580	2.402	2870.982	15.00	.50	.00	2870.99	.00	.36	12.50	8.120	12.500	.00	0 .0
1.124	.0991					.0000	.00	2.40	.06	.13	.013	.00	.00	BOX
1121.044	2868.691	2.290	2870.982	15.00	.52	.00	2870.99	.00	.36	12.50	8.120	12.500	.00	0 .0
.874	.0991					.0000	.00	2.29	.06	.13	.013	.00	.00	BOX
JUNCT STR	.0000					.0000	.00	2.20	.06		.013	.00	.00	BOX
1121.920	2868.780	2.206	2870.986	11.00	.40	.00	2870.99	.00	.29	12.50	8.120	12.500	.00	0 .0
WALL	EXIT													
1121.920	2868.780	2.206	2870.986	11.00	3.50	.19	2871.18	.00	1.19	.00	2.000	.000	.00	1 .0
28.127	.0099					.0023	.07	2.21	.00	.99	.013	.00	.00	PIPE
1150.047	2869.059	2.000	2871.059	11.00	3.50	.19	2871.25	.00	1.19	.00	2.000	.000	.00	1 .0
16.282	.0099					.0022	.04	2.00	.00	.99	.013	.00	.00	PIPE
1166.330	2869.220	1.861	2871.081	11.00	3.61	.20	2871.28	.00	1.19	1.02	2.000	.000	.00	1 .0

Program Package Serial Number: 7189
WATER SURFACE PROFILE LISTING Date: 1-31-2020 Time: 8:42:12

SKYE CANYON PARCEL 2.08
STORM DRAIN JAN 2020
RCP TO SYSTEM OUTLET NORTHEAST

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS) / Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip Type Ch
1000.000	2848.880	2.500	2851.380	52.00	10.59 / 1.74 /	2853.12	.00	2.32	.00	2.500	.000	.00	1 .0
137.380	.0055				.0161	2.21	2.50	.00	2.50	.013	.00	.00	PIPE
1137.380	2849.630	3.958	2853.588	52.00	10.59 / 1.74 /	2855.33	.00	2.32	.00	2.500	.000	.00	1 .0
WALL	ENTRANCE												
1137.380	2849.820	5.716	2855.536	52.00	.73 / .01 /	2855.54	.00	.81	12.50	7.560	12.500	.00	0 .0
JUNCT STR	.0000				.0000	.00	5.72	.05		.013	.00	.00	BOX
1137.380	2849.820	5.728	2855.548	26.00	.36 / .00 /	2855.55	.00	.51	12.50	7.560	12.500	.00	0 .0
WALL	EXIT												
1137.380	2849.820	5.728	2855.548	26.00	8.28 / 1.06 /	2856.61	.00	1.79	.00	2.000	.000	.00	1 .0
44.010	.0666				.0132	.58	5.73	.00	.94	.013	.00	.00	PIPE
1181.390	2852.750	3.433	2856.183	26.00	8.28 / 1.06 /	2857.25	.00	1.79	.00	2.000	.000	.00	1 .0

WSPGW Model (NE)

Ultimate Condition WSPG Summary Begins at SDDI #4 to system outlet at northeast end of the Project Site								
WSPG Station	**Storm Drain Dimension**	**Invert Elevation (ft)**	**Q_{100} (cfs)**	**WSE (ft)**	**Velocity (ft/s)**	**FG Elevation**	**Facility Description**	**HGL Check[1]**
1000.000	30" RCP	2847.88	49.00	2849.55	14.10	N/A	System Outfall	N/A
1135.380	30" RCP	2851.32	49.00	2853.61	10.41	2859.20	SDDI #3	OK
1137.380	30" RCP	2851.32	49.00	2856.82	0.71	2859.20		OK
1137.380	30" RCP	2851.32	24.50	2856.83	0.36	2859.20		OK
1181.610	30" RCP	2852.26	24.50	2857.01	4.99	2859.30	SDDI #4	OK

```
                                                                    NE
T1 SKYE CANYON PARCEL 2.08
T2 STORM DRAIN JAN 2020
T3 RCP TO SYSTEM OUTLET NORTHEAST
SO   1000.0002847.880 30      .013               2850.380
R    1135.3802851.320 30      .013
WE                     1      .013
R    1137.3802851.320  1      .013                                    00.0   1
JX   1137.3802851.320  1 30   .013   24.5           2851.320        90.0
WX                    30      .013
R    1181.6102852.260 30      .013                                    00.0   1
SH   1181.6102852.260 30      .013

CD   1  3   0    .000   8.560  12.5000  .000  .000   .00
CD   2  3   0    .000   8.980  15.0000  .000  .000   .00
CD  18  4   1    .000   1.500     .000  .000  .000   .00
CD  24  4   1    .000   2.000     .000  .000  .000   .00
CD  30  4   1    .000   2.500     .000  .000  .000   .00
CD  36  4   1    .000   3.000     .000  .000  .000   .00
CD  42  4   1    .000   3.500     .000  .000  .000   .00
CD  48  4   1    .000   4.000     .000  .000  .000   .00
Q            24.500   .0
```

FILE: NE.WSW W S P G W - EDIT LISTING - Version 14.10 Date: 2- 1-2020 Time:11: 5:13

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	1	3	0	.000	8.560	12.500	.000	.000	.00										
CD	2	3	0	.000	8.980	15.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON PARCEL 2.08

HEADING LINE NO 2 IS -

STORM DRAIN JAN 2020

HEADING LINE NO 3 IS -

RCP TO SYSTEM OUTLET NORTHEAST

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2847.880	30	2850.380

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1135.380	2851.320	30	.013	.000	.000	.000	0

ELEMENT NO 3 IS A WALL ENTRANCE *

U/S DATA	STATION	INVERT	SECT	FP
	1135.380	2851.320	1	.013

ELEMENT NO 4 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1137.380	2851.320	1	.013	.000	.000	.000	1

ELEMENT NO 5 IS A JUNCTION * * * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1137.380	2851.320	1	30	0	.013	24.500	.000	2851.320	.000	90.000	.000

RADIUS	ANGLE
.000	.000

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 6 IS A WALL EXIT *

U/S DATA	STATION	INVERT	SECT
	1137.380	2851.320	30

ELEMENT NO 7 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1181.610	2852.260	30	.013	.000	.000	.000	1

NE

ELEMENT NO 8 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1181.610	2852.260	30	.000

SKYE CANYON PARCEL 2.08
STORM DRAIN JAN 2020
RCP TO SYSTEM OUTLET NORTHEAST

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2847.880	1.666	2849.546	49.00	14.10	3.09	2852.63	.00	2.29	2.36	2.500	.000	.00	1 .0
29.856	.0254					.0228	.68	1.67	2.05	1.61	.013	.00	.00	PIPE
1029.856	2848.638	1.691	2850.330	49.00	13.86	2.98	2853.31	.00	2.29	2.34	2.500	.000	.00	1 .0
45.442	.0254					.0211	.96	1.69	1.99	1.61	.013	.00	.00	PIPE
1075.298	2849.793	1.766	2851.559	49.00	13.22	2.71	2854.27	.00	2.29	2.28	2.500	.000	.00	1 .0
25.193	.0254					.0188	.47	1.77	1.83	1.61	.013	.00	.00	PIPE
1100.491	2850.433	1.847	2852.280	49.00	12.60	2.47	2854.75	.00	2.29	2.20	2.500	.000	.00	1 .0
15.908	.0254					.0169	.27	1.85	1.67	1.61	.013	.00	.00	PIPE
1116.399	2850.838	1.936	2852.773	49.00	12.02	2.24	2855.02	.00	2.29	2.09	2.500	.000	.00	1 .0
10.337	.0254					.0152	.16	1.94	1.52	1.61	.013	.00	.00	PIPE
1126.736	2851.100	2.034	2853.134	49.00	11.46	2.04	2855.17	.00	2.29	1.95	2.500	.000	.00	1 .0
6.263	.0254					.0139	.09	2.03	1.36	1.61	.013	.00	.00	PIPE
1132.999	2851.260	2.147	2853.406	49.00	10.92	1.85	2855.26	.00	2.29	1.74	2.500	.000	.00	1 .0
2.381	.0254					.0128	.03	2.15	1.20	1.61	.013	.00	.00	PIPE
1135.380	2851.320	2.286	2853.606	49.00	10.41	1.68	2855.29	.00	2.29	1.40	2.500	.000	.00	1 .0
WALL	ENTRANCE													
1135.380	2851.320	5.502	2856.823	49.00	.71	.01	2856.83	.00	.78	12.50	8.560	12.500	.00	0 .0
2.000	.0000					.0000	.00	5.50	.05	.00	.013	.00	.00	BOX

SKYE CANYON PARCEL 2.08
STORM DRAIN JAN 2020
RCP TO SYSTEM OUTLET NORTHEAST

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1137.380	2851.320	5.503	2856.823	49.00	.71	.01	2856.83	.00	.78	12.50	8.560	12.500	.00	0 .0
JUNCT STR	.0000					.0000	.00	5.50	.05		.013	.00	.00	BOX
1137.380	2851.320	5.514	2856.834	24.50	.36	.00	2856.84	.00	.49	12.50	8.560	12.500	.00	0 .0
WALL	EXIT													
1137.380	2851.320	5.515	2856.835	24.50	4.99	.39	2857.22	.00	1.69	.00	2.500	.000	.00	1 .0
44.230	.0213					.0036	.16	5.52	.00	1.11	.013	.00	.00	PIPE
1181.610	2852.260	4.752	2857.012	24.50	4.99	.39	2857.40	.00	1.69	.00	2.500	.000	.00	1 .0

WSPGW Model (SE)

Ultimate Condition WSPG Summary Begins at SDDI #5 to mainline at southeast end of the Project Site								
WSPG Station	**Storm Drain Dimension**	**Invert Elevation (ft)**	**Q_{100} (cfs)**	**WSE (ft)**	**Velocity (ft/s)**	**FG Elevation**	**Facility Description**	**HGL Check[1]**
962.880	30" RCP	2835.05	23.00	2841.34	4.69	2852.57	CONNECTION TO MAINLINE	OK
1000.000	30" RCP	2837.32	23.00	2841.52	4.69	2853.25	EX. SDMH #1	OK
1076.510	30" RCP	2841.99	23.00	2842.68	21.09	2854.05	SDMH #1	OK
1076.510	24" RCP	2842.49	23.00	2843.27	20.15	2854.05	SDMH #1	OK
1125.160	24" RCP	2849.81	23.00	2851.52	8.06	2858.60	SDDI #5	OK

```
                                                                                                SE
T1 SKYE CANYON PARCEL 2.08
T2 STORM DRAIN JAN 2020
T3 RCP TO SYSTEM OUTLET SOUTHEAST
SO    962.8802835.050 30      .013                2841.338
R     999.9982837.318 30      .013                                        15.0   1
R     999.9992837.319 30      .013                                        15.0
R    1000.0002837.320 30      .013                                        15.0
R    1076.5072841.987 30      .013                                        15.0   1
R    1076.5082841.988 30      .013                                        15.0
R    1076.5092841.989 30      .013                                        15.0
R    1076.5102841.990 30      .013                                         9.0
JX   1076.5102842.490 24      .013
R    1125.1602849.810 24      .013
SH   1125.1602849.810 24      .013

CD   1  3   0    .000   9.500  10.0000  .000  .000   .00
CD   2  3   0    .000   8.980  15.0000  .000  .000   .00
CD  18  4   1    .000   1.500     .000  .000  .000   .00
CD  24  4   1    .000   2.000     .000  .000  .000   .00
CD  30  4   1    .000   2.500     .000  .000  .000   .00
CD  36  4   1    .000   3.000     .000  .000  .000   .00
CD  42  4   1    .000   3.500     .000  .000  .000   .00
CD  48  4   1    .000   4.000     .000  .000  .000   .00
Q            23.000   .0
```

FILE: SE.WSW W S P G W - EDIT LISTING - Version 14.10 Date: 2- 1-2020 Time:11:19: 5

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING PAGE 1

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	1	3	0	.000	9.500	10.000	.000	.000	.00										
CD	2	3	0	.000	8.980	15.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														

W S P G W PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON PARCEL 2.08

HEADING LINE NO 2 IS -

STORM DRAIN JAN 2020

HEADING LINE NO 3 IS -

RCP TO SYSTEM OUTLET SOUTHEAST

W S P G W PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	962.880	2835.050	30	2841.338

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	999.998	2837.318	30	.013	.000	.000	15.000	1

ELEMENT NO 3 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	999.999	2837.319	30	.013	.000	.000	15.000	0

ELEMENT NO 4 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1000.000	2837.320	30	.013	.000	.000	15.000	0

ELEMENT NO 5 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1076.507	2841.987	30	.013	.000	.000	15.000	1

ELEMENT NO 6 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1076.508	2841.988	30	.013	.000	.000	15.000	0

ELEMENT NO 7 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1076.509	2841.989	30	.013	.000	.000	15.000	0

ELEMENT NO 8 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1076.510	2841.990	30	.013	.000	.000	9.000	0

ELEMENT NO 9 IS A JUNCTION * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1076.510	2842.490	24	0	0	.013	.000	.000	.000	.000	.000	.000

RADIUS ANGLE

```
                                                        SE
                                                                                                .000    .000
ELEMENT NO  10 IS A REACH              *         *     *
                   U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                              1125.160 2849.810   24              .013                           .000     .000      .000     0
ELEMENT NO  11 IS A SYSTEM HEADWORKS                    *                 *
                   U/S DATA   STATION    INVERT  SECT                                  W S ELEV
                              1125.160 2849.810   24                                      .000
```

WATER SURFACE PROFILE LISTING Date: 2- 1-2020 Time:11:19: 8

SKYE CANYON PARCEL 2.08
STORM DRAIN JAN 2020
RCP TO SYSTEM OUTLET SOUTHEAST

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
962.880	2835.050	6.288	2841.338	23.00	4.69	.34	2841.68	.00	1.63	.00	2.500	.000	.00	1 .0
37.118	.0611					.0031	.12	6.29	.00	.81	.013	.00	.00	PIPE
999.998	2837.318	4.170	2841.489	23.00	4.69	.34	2841.83	.00	1.63	.00	2.500	.000	.00	1 .0
999.999	2837.319	4.186	2841.505	23.00	4.69	.34	2841.85	.00	1.63	.00	2.500	.000	.00	1 .0
1000.000	2837.320	4.202	2841.522	23.00	4.69	.34	2841.86	.00	1.63	.00	2.500	.000	.00	1 .0
16.320	.0610					.0031	.05	4.20	.00	.81	.013	.00	.00	PIPE
1016.320	2838.316	3.270	2841.585	23.00	4.69	.34	2841.93	.00	1.63	.00	2.500	.000	.00	1 .0
HYDRAULIC JUMP														
1016.320	2838.316	.765	2839.081	23.00	18.06	5.07	2844.15	.00	1.63	2.30	2.500	.000	.00	1 .0
10.857	.0610					.0772	.84	.77	4.28	.81	.013	.00	.00	PIPE
1027.177	2838.978	.758	2839.736	23.00	18.28	5.19	2844.93	.00	1.63	2.30	2.500	.000	.00	1 .0
21.363	.0610					.0841	1.80	.76	4.36	.81	.013	.00	.00	PIPE
1048.540	2840.281	.733	2841.014	23.00	19.18	5.71	2846.72	.00	1.63	2.28	2.500	.000	.00	1 .0
15.576	.0610					.0961	1.50	.73	4.66	.81	.013	.00	.00	PIPE
1064.116	2841.231	.708	2841.939	23.00	20.11	6.28	2848.22	.00	1.63	2.25	2.500	.000	.00	1 .0
12.391	.0610					.1098	1.36	.71	4.97	.81	.013	.00	.00	PIPE
1076.510	2841.990	.684	2842.675	23.00	21.09	6.91	2849.58	.00	1.63	2.23	2.500	.000	.00	1 .0

JUNCT STR	.0000					.1077	.00	.68	5.32		.013	.00	.00	PIPE			
1076.510	2842.490	.784	2843.274	23.00	20.15	6.31	2849.58	.00	1.71	1.95	2.000	.000	.00	1	.0		
2.632	.1505					.0968	.25	.78	4.65	.70	.013	.00	.00	PIPE			

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1079.142	2842.886	.790	2843.676	23.00	19.94	6.17	2849.85	.00	1.71	1.96	2.000	.000	.00	1	.0		
8.735	.1505					.0895	.78	.79	4.57	.70	.013	.00	.00	PIPE			
1087.877	2844.200	.819	2845.019	23.00	19.01	5.61	2850.63	.00	1.71	1.97	2.000	.000	.00	1	.0		
6.680	.1505					.0786	.52	.82	4.27	.70	.013	.00	.00	PIPE			
1094.557	2845.206	.849	2846.054	23.00	18.12	5.10	2851.15	.00	1.71	1.98	2.000	.000	.00	1	.0		
5.309	.1505					.0690	.37	.85	3.99	.70	.013	.00	.00	PIPE			
1099.865	2846.004	.880	2846.884	23.00	17.28	4.64	2851.52	.00	1.71	1.99	2.000	.000	.00	1	.0		
4.330	.1505					.0607	.26	.88	3.72	.70	.013	.00	.00	PIPE			
1104.196	2846.656	.912	2847.568	23.00	16.48	4.21	2851.78	.00	1.71	1.99	2.000	.000	.00	1	.0		
3.593	.1505					.0533	.19	.91	3.47	.70	.013	.00	.00	PIPE			
1107.788	2847.197	.947	2848.143	23.00	15.71	3.83	2851.97	.00	1.71	2.00	2.000	.000	.00	1	.0		
3.018	.1505					.0469	.14	.95	3.23	.70	.013	.00	.00	PIPE			
1110.807	2847.651	.982	2848.633	23.00	14.98	3.48	2852.12	.00	1.71	2.00	2.000	.000	.00	1	.0		
2.558	.1505					.0413	.11	.98	3.01	.70	.013	.00	.00	PIPE			
1113.365	2848.036	1.020	2849.055	23.00	14.28	3.17	2852.22	.00	1.71	2.00	2.000	.000	.00	1	.0		

2.178	.1505					.0364	.08	1.02	2.80	.70	.013	.00	.00	PIPE				
1115.543	2848.363	1.059	2849.423	23.00	13.62	2.88	2852.30	.00	1.71	2.00	2.000	.000	.00	1	.0			
1.862	.1505					.0321	.06	1.06	2.61	.70	.013	.00	.00	PIPE				

SKYE CANYON PARCEL 2.08
STORM DRAIN JAN 2020
RCP TO SYSTEM OUTLET SOUTHEAST

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1117.405	2848.644	1.101	2849.744	23.00	12.98	2.62	2852.36	.00	1.71	1.99	2.000	.000	.00	1	.0			
1.591	.1505					.0283	.05	1.10	2.42	.70	.013	.00	.00	PIPE				
1118.996	2848.883	1.144	2850.027	23.00	12.38	2.38	2852.41	.00	1.71	1.98	2.000	.000	.00	1	.0			
1.358	.1505					.0250	.03	1.14	2.25	.70	.013	.00	.00	PIPE				
1120.354	2849.087	1.190	2850.277	23.00	11.80	2.16	2852.44	.00	1.71	1.96	2.000	.000	.00	1	.0			
1.153	.1505					.0221	.03	1.19	2.09	.70	.013	.00	.00	PIPE				
1121.506	2849.260	1.239	2850.499	23.00	11.25	1.97	2852.47	.00	1.71	1.94	2.000	.000	.00	1	.0			
.971	.1505					.0196	.02	1.24	1.93	.70	.013	.00	.00	PIPE				
1122.478	2849.406	1.291	2850.697	23.00	10.73	1.79	2852.48	.00	1.71	1.91	2.000	.000	.00	1	.0			
.807	.1505					.0174	.01	1.29	1.79	.70	.013	.00	.00	PIPE				
1123.284	2849.528	1.346	2850.874	23.00	10.23	1.63	2852.50	.00	1.71	1.88	2.000	.000	.00	1	.0			
.656	.1505					.0155	.01	1.35	1.65	.70	.013	.00	.00	PIPE				
1123.940	2849.626	1.405	2851.031	23.00	9.75	1.48	2852.51	.00	1.71	1.83	2.000	.000	.00	1	.0			
.515	.1505					.0138	.01	1.40	1.51	.70	.013	.00	.00	PIPE				
1124.455	2849.704	1.469	2851.173	23.00	9.30	1.34	2852.52	.00	1.71	1.77	2.000	.000	.00	1	.0			

.378	.1505					.0124	.00	1.47	1.39	.70	.013	.00	.00	PIPE			
1124.833	2849.761	1.539	2851.300	23.00	8.87	1.22	2852.52	.00	1.71	1.68	2.000	.000	.00	1	.0		
.240	.1505					.0112	.00	1.54	1.26	.70	.013	.00	.00	PIPE			

Program Package Serial Number: 7189

WATER SURFACE PROFILE LISTING Date: 2- 1-2020 Time:11:19: 8

SKYE CANYON PARCEL 2.08
STORM DRAIN JAN 2020
RCP TO SYSTEM OUTLET SOUTHEAST

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1125.072	2849.797	1.616	2851.413	23.00	8.45	1.11	2852.52	.00	1.71	1.57	2.000	.000	.00	1	.0		
.088	.1505					.0101	.00	1.62	1.13	.70	.013	.00	.00	PIPE			
1125.160	2849.810	1.706	2851.516	23.00	8.06	1.01	2852.52	.00	1.71	1.42	2.000	.000	.00	1	.0		

Outlet Protection Computations

Westwood
Multi-Disciplined
Surveying & Engineering

Pipe Culvert Outlet Protection Computation

Project Name: Skye Canyon Parcels 2.08 and 2.09
Project Number: CEN1905.000
Date: 2/1/2020
By: DCH
Facility ID SDDI 2 to system outlet (NORTH)

Equations:

$(d_{50}/D)*(Y_t/D)^{1.2}/(Q/D^{2.5}) = 0.023$ — Equation 760*
$D_a = 1/2(D+Y_n)$ (used in place of D if Fr>1) — Equation 762*
$L = (1/(2 \tan \theta))(A_t/Y_t-W)$ — Equation 764*
$A_t = Q/V$ — Equation 765*

Known Information:

Q =	15	Flow (cfs)
D =	2.0	Diameter of Pipe (ft)
1/(2 tan θ)=	5.0	Expansion factor for circular conduits (Figure 714)
V =	5	Allowable downstream velocity (typ=5 ft/s)
Fr =	0.0	Froude Number (0 if full)
Y_n =	1.3	Normal Depth of flow in Pipe Culvert (ft)*
		* Not necessary if Fr<1 (Enter 0 if unknown)
Y_t =	0.8	Tailwater Depth (Enter 0.4D if unknown)
D_a =	N/A	Only replaced as D, if Fr>=1

Riprap Erosion Protection Check (Figure 712):

Applicable only if $Q/D^{2.5} \leq 6$

$Q/D^{2.5}$ = ***2.65*** ← ***See Figure 712 for Recommended Riprap Type***
$Q/D^{1.5}$ = 5.30
Y_t/D 0.40

Solve For:

A_t = 3.0	Req'd Area of flow at allowable velocity (ft2)
Y_t = 0.80	Tailwater Depth (ft)

D_{50} = 0.37	**Average Size Riprap (ft)**
D_{50} = 4	**Average Size Riprap (in)**

L = 8.8	**Length of Protection (ft)**
***L = 8.8**	***For: D<3.5-ft, L_{min}=3D. For: D>=3.5-ft, L_{min}>= 4D. $L_{max(required)}$=10D**
****L(max) = See *L**	**** For $Q/D^{2.5} > 6.0$:**
	L_{max} = 10D+D/4, for every whole number $Q/D^{2.5} > 6$

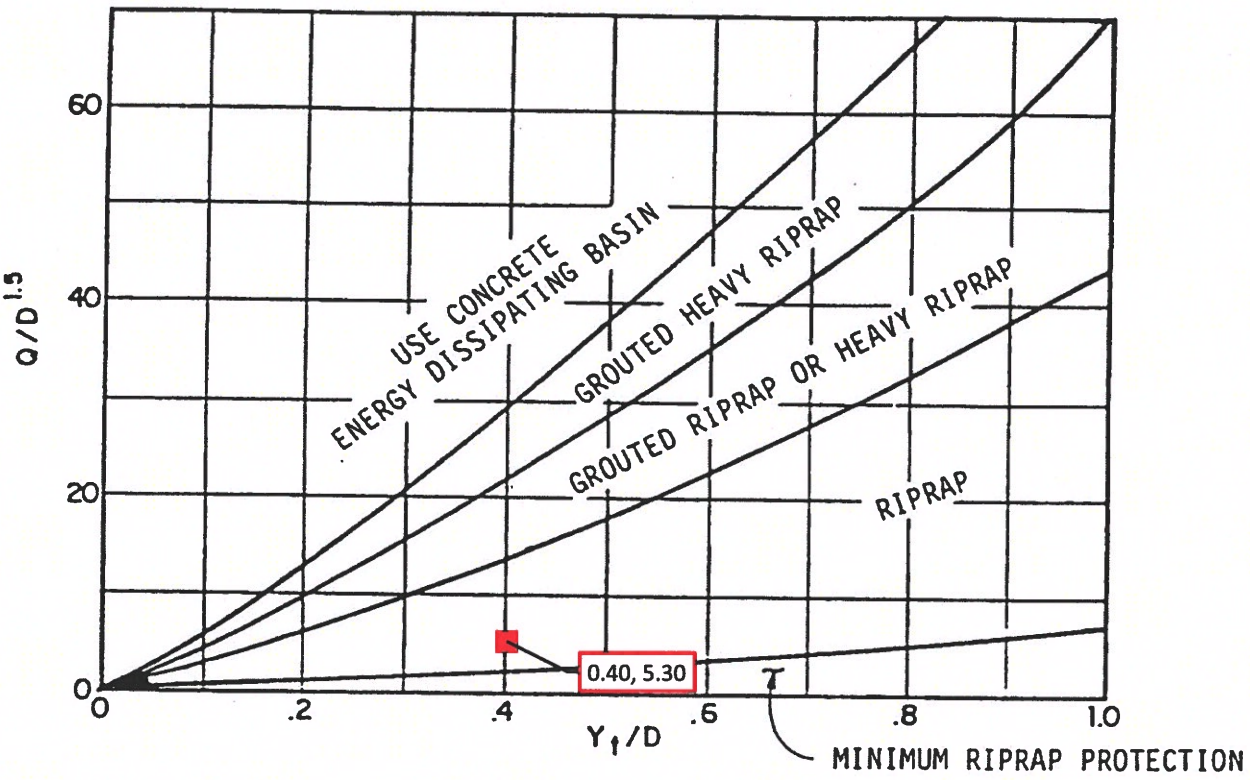
Notes:

Provide D_{50} = 12-inch riprap for a length of 10-ft

* Equations taken from the Clark County Regional Flood Control District - Hydrologic Criteria and Drainage Design Manual

5740 S. Arville St., Suite 216 - Las Vegas, NV 89118
Ph. 702-284-5300 - Fx. 702-284-5399

RIPRAP EROSION PROTECTION AT CIRCULAR CONDUIT OUTLET



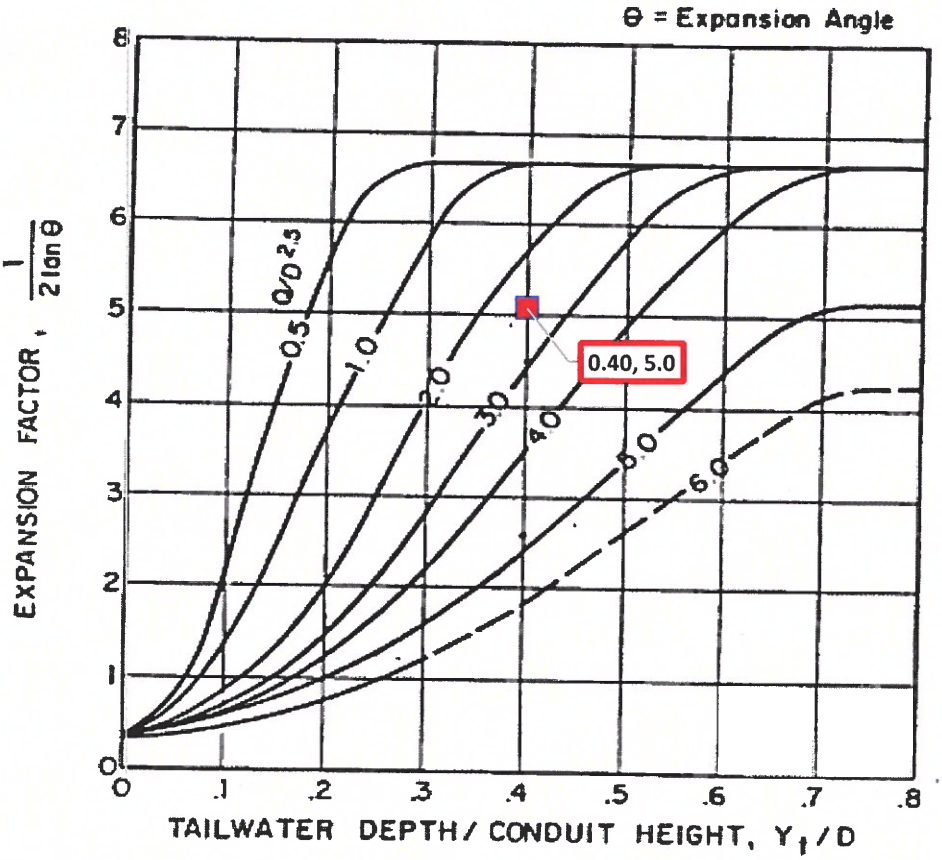
Notes:

1. Use H_a instead of H whenever culvert has supercritical flow in the barrel.
2. Minimum Riprap Protection: Use Riprap for a distance of 3H downstream for 18" to 36" equivalent round pipe size and 4D downstream for 42" and larger equivalent round pipe size.

Revision	Date

WRC ENGINEERING	REFERENCE: USDCM, DRCOG, March 1969 (with modifications)	FIGURE 712

EXPANSION FACTOR FOR CIRCULAR CONDUITS



Revision	Date

WRC ENGINEERING	REFERENCE: USDCM, DRCOG, March 1969 (with modifications)	FIGURE 714

Westwood
Multi-Disciplined
Surveying & Engineering

Pipe Culvert Outlet Protection Computation

Project Name: Skye Canyon Parcels 2.08 and 2.09
Project Number: CEN1905.000
Date: 2/1/2020
By: DCH
Facility ID SDDI 4 to system outlet (NE)

Equations:

$(d_{50}/D)*(Y_t/D)^{1.2}/(Q/D^{2.5}) = 0.023$	Equation 760*
$D_a = 1/2(D+Y_n)$ (used in place of D if Fr>1)	Equation 762*
$L = (1/(2 \tan \theta))(A_t/Y_t-W)$	Equation 764*
$A_t = Q/V$	Equation 765*

Known Information:

Q =	49	Flow (cfs)
D =	2.5	Diameter of Pipe (ft)
1/(2 tan θ)=	2.4	Expansion factor for circular conduits (Figure 714)
V =	5	Allowable downstream velocity (typ=5 ft/s)
Fr =	2.1	Froude Number (0 if full)
Y_n =	1.6	Normal Depth of flow in Pipe Culvert (ft)*
		* Not necessary if Fr<1 (Enter 0 if unknown)
Y_t =	1.0	Tailwater Depth (Enter 0.4D if unknown)
D_a =	2.5	Only replaced as D, if Fr>=1

Riprap Erosion Protection Check (Figure 712):

Applicable only if $Q/D^{2.5} \leq 6$

$Q/D^{2.5}$ = ***4.96***	← ***See Figure 712 for Recommended Riprap Type***
$Q/D^{1.5}$ = 12.40	
Y_t/D 0.40	

Solve For:

A_t = 9.8	Req'd Area of flow at allowable velocity (ft2)
Y_t = 1.00	Tailwater Depth (ft)

D_{50} = 0.86	**Average Size Riprap (ft)**
D_{50} = 10	**Average Size Riprap (in)**

L = 17.5	**Length of Protection (ft)**
***L = 17.5**	***For: D<3.5-ft, L_{min}=3D. For: D>=3.5-ft, L_{min}>= 4D. $L_{max(required)}$=10D**
****L(max) = See *L**	**** For $Q/D^{2.5}$ > 6.0:**
	L_{max} = 10D+D/4, for every whole number $Q/D^{2.5}$ > 6

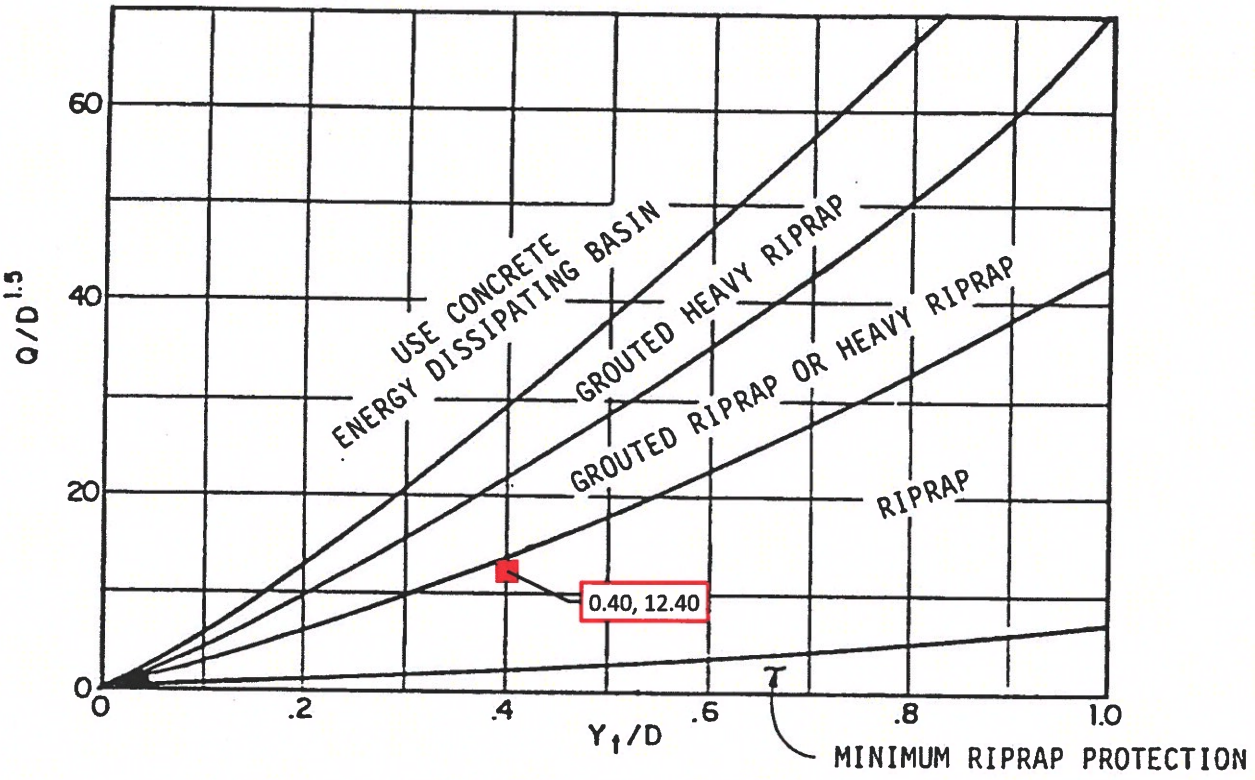
Notes:

Provide D_{50} = 12-inch riprap for a length of 17.5-ft

* Equations taken from the Clark County Regional Flood Control District - Hydrologic Criteria and Drainage Design Manual

5740 S. Arville St., Suite 216 - Las Vegas, NV 89118
Ph. 702-284-5300 - Fx. 702-284-5399

RIPRAP EROSION PROTECTION AT CIRCULAR CONDUIT OUTLET



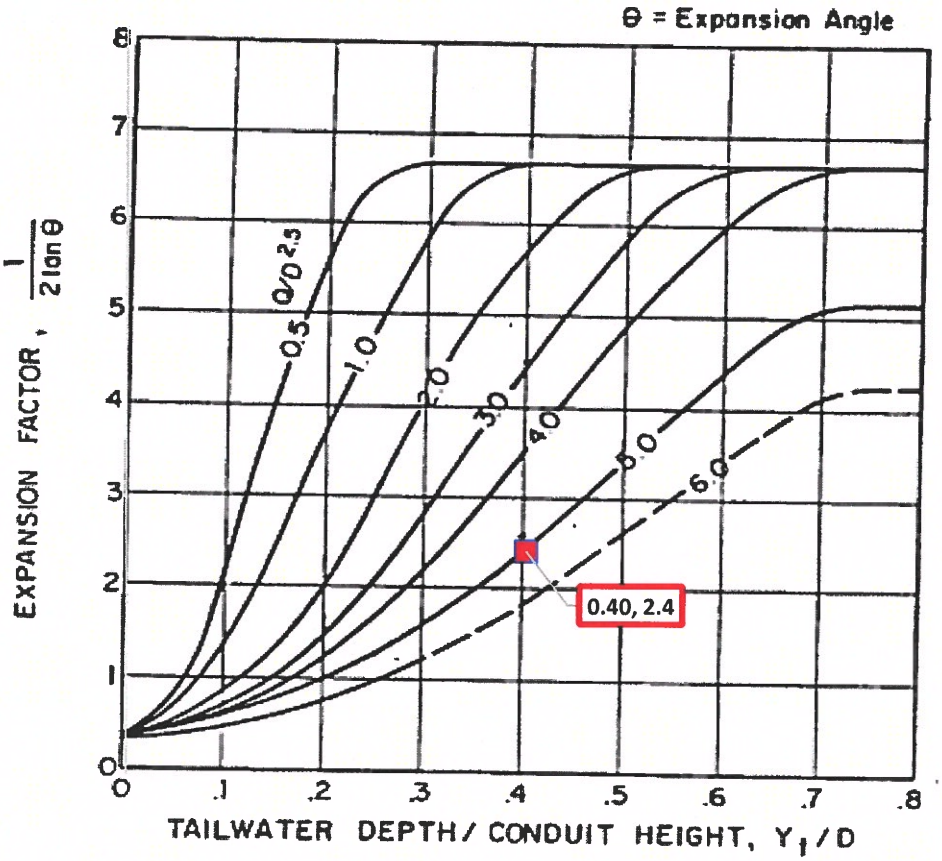
Notes:

1. Use H_a instead of H whenever culvert has supercritical flow in the barrel.
2. Minimum Riprap Protection: Use Riprap for a distance of 3H downstream for 18" to 36" equivalent round pipe size and 4D downstream for 42" and larger equivalent round pipe size.

Revision	Date

WRC ENGINEERING	REFERENCE: USDCM, DRCOG, March 1969 (with modifications)	FIGURE 712

EXPANSION FACTOR FOR CIRCULAR CONDUITS



Revision	Date

WRC ENGINEERING

REFERENCE:
USDCM, DRCOG, March 1969 (with modifications)

FIGURE 714

APPENDIX D

Finished Floor Analysis

SKYE CANYON PARCELS 2.08 AND 2.09
FINISH FLOOR - CITY OF LAS VEGAS JURISDICTION

INPUT INFORMATION					FINISHED FLOORS					NOTES
Lot Number	Hydraulic Section Utilized	T/C[1] (ft)	F/L[2] (ft)	D_{100} (ft)	Flowline F.F.$_{min}$[3] (ft)	T/C + 6" F.F.$_{min}$[4] (ft)	F.F.$_{Design}$ (ft)	Flowline Check	T/C + 6" Check	See References on Last Sheet
1	1	2893.03	2892.55	0.42	2893.39	2893.53	2894.8	OK	OK	
2	1	2894.82	2894.34	0.42	2895.18	2895.32	2896.6	OK	OK	
3	1	2896.66	2896.18	0.42	2897.02	2897.16	2898.4	OK	OK	
4	1	2898.31	2897.83	0.42	2898.67	2898.81	2900.1	OK	OK	
5	1	2899.66	2899.18	0.42	2900.02	2900.16	2901.4	OK	OK	
6	1	2900.47	2899.99	0.42	2900.83	2900.97	2902.3	OK	OK	
7	1	2904.02	2903.54	0.42	2904.38	2904.52	2905.9	OK	OK	
8	1	2902.90	2902.42	0.42	2903.26	2903.40	2904.8	OK	OK	
9	1	2901.55	2901.07	0.42	2901.91	2902.05	2903.4	OK	OK	
10	1	2902.33	2901.85	0.42	2902.69	2902.83	2904.2	OK	OK	
11	1	2903.00	2902.52	0.42	2903.36	2903.50	2904.9	OK	OK	
12	1	2903.36	2902.88	0.42	2903.72	2903.86	2905.2	OK	OK	
13	5	2903.36	2902.88	0.3	2903.48	2903.86	2905.2	OK	OK	
14	5	2903.12	2902.64	0.3	2903.24	2903.62	2905.0	OK	OK	
15	5	2902.67	2902.19	0.3	2902.79	2903.17	2904.5	OK	OK	
16	5	2902.22	2901.74	0.3	2902.34	2902.72	2904.1	OK	OK	
17	5	2901.77	2901.29	0.3	2901.89	2902.27	2903.6	OK	OK	
18	5	2901.32	2900.84	0.3	2901.44	2901.82	2903.2	OK	OK	
19	5	2900.87	2900.39	0.3	2900.99	2901.37	2902.7	OK	OK	
20	5	2900.42	2899.94	0.3	2900.54	2900.92	2902.3	OK	OK	
21	5	2899.97	2899.49	0.3	2900.09	2900.47	2901.8	OK	OK	
22	5	2899.52	2899.04	0.3	2899.64	2900.02	2901.4	OK	OK	
23	5	2899.07	2898.59	0.3	2899.19	2899.57	2900.9	OK	OK	
24	5	2898.62	2898.14	0.3	2898.74	2899.12	2900.5	OK	OK	
25	5	2898.17	2897.69	0.3	2898.29	2898.67	2900.0	OK	OK	
26	5	2897.74	2897.26	0.3	2897.86	2898.24	2899.6	OK	OK	
27	5	2897.32	2896.84	0.3	2897.44	2897.82	2899.2	OK	OK	
28	5	2896.85	2896.37	0.3	2896.97	2897.35	2898.7	OK	OK	
29	5	2896.04	2895.56	0.3	2896.16	2896.54	2897.9	OK	OK	
30	5	2894.59	2894.11	0.3	2894.71	2895.09	2896.5	OK	OK	
31	5	2892.76	2892.28	0.3	2892.88	2893.26	2894.6	OK	OK	
32	5	2890.67	2890.19	0.3	2890.79	2891.17	2892.6	OK	OK	
33	5	2888.58	2888.10	0.3	2888.70	2889.08	2890.5	OK	OK	

SKYE CANYON PARCELS 2.08 AND 2.09 FINISH FLOOR - CITY OF LAS VEGAS JURISDICTION										
INPUT INFORMATION					FINISHED FLOORS					NOTES
Lot Number	Hydraulic Section Utilized	T/C[1] (ft)	F/L[2] (ft)	D_{100} (ft)	Flowline $F.F._{min}$[3] (ft)	T/C + 6" $F.F._{min}$[4] (ft)	$F.F._{Design}$ (ft)	Flowline Check	T/C + 6" Check	See References on Last Sheet
34	5	2886.48	2886.00	0.3	2886.60	2886.98	2888.4	OK	OK	
35	5	2884.39	2883.91	0.3	2884.51	2884.89	2886.3	OK	OK	
36	5	2882.30	2881.82	0.3	2882.42	2882.80	2884.2	OK	OK	
37	5	2879.84	2879.36	0.3	2879.96	2880.34	2881.7	OK	OK	
38	3	2875.23	2874.75	0.34	2875.43	2875.73	2877.1	OK	OK	
39	3	2873.08	2872.60	0.34	2873.28	2873.58	2875.0	OK	OK	
40	3	2870.89	2870.41	0.34	2871.09	2871.39	2872.8	OK	OK	
41	3	2868.70	2868.22	0.34	2868.90	2869.20	2870.6	OK	OK	
42	3	2866.50	2866.02	0.34	2866.70	2867.00	2868.4	OK	OK	
43	3	2864.40	2863.92	0.34	2864.60	2864.90	2866.3	OK	OK	
44	3	2862.50	2862.02	0.34	2862.70	2863.00	2864.4	OK	OK	
45	3	2861.06	2860.58	0.34	2861.26	2861.56	2862.9	OK	OK	
46	4	2860.04	2859.56	0.57	2860.70	2860.54	2861.8	OK	OK	
47	4	2859.99	2859.51	0.57	2860.65	2860.49	2861.9	OK	OK	
48	4	2860.25	2859.77	0.57	2860.91	2860.75	2862.1	OK	OK	
49	4	2861.40	2860.92	0.57	2862.06	2861.90	2863.3	OK	OK	
50	4	2861.90	2861.42	0.57	2862.56	2862.40	2863.8	OK	OK	
51	4	2862.40	2861.92	0.57	2863.06	2862.90	2864.3	OK	OK	
52	4	2862.89	2862.41	0.57	2863.55	2863.39	2864.8	OK	OK	
53	4	2863.39	2862.91	0.57	2864.05	2863.89	2865.3	OK	OK	
54	4	2863.71	2863.23	0.57	2864.37	2864.21	2865.6	OK	OK	
55	1	2863.71	2863.23	0.42	2864.07	2864.21	2865.6	OK	OK	
56	1	2862.01	2861.53	0.42	2862.37	2862.51	2865.1	OK	OK	
57	1	2861.89	2861.41	0.42	2862.25	2862.39	2863.8	OK	OK	
58	1	2863.08	2862.60	0.42	2863.44	2863.58	2865.0	OK	OK	
59	1	2864.31	2863.83	0.42	2864.67	2864.81	2866.2	OK	OK	
60	1	2865.97	2865.49	0.42	2866.33	2866.47	2867.9	OK	OK	
61	1	2868.18	2867.70	0.42	2868.54	2868.68	2870.1	OK	OK	
62	1	2871.00	2870.52	0.42	2871.36	2871.50	2872.9	OK	OK	
63	1	2873.40	2872.92	0.42	2873.76	2873.90	2875.3	OK	OK	
64	1	2875.80	2875.32	0.42	2876.16	2876.30	2877.7	OK	OK	
65	1	2878.17	2877.69	0.42	2878.53	2878.67	2880.1	OK	OK	
66	1	2880.31	2879.83	0.42	2880.67	2880.81	2882.2	OK	OK	

SKYE CANYON PARCELS 2.08 AND 2.09 FINISH FLOOR - CITY OF LAS VEGAS JURISDICTION										
INPUT INFORMATION					FINISHED FLOORS					NOTES
Lot Number	Hydraulic Section Utilized	T/C[1] (ft)	F/L[2] (ft)	D_{100} (ft)	Flowline $F.F._{min}$[3] (ft)	T/C + 6" $F.F._{min}$[4] (ft)	$F.F._{Design}$ (ft)	Flowline Check	T/C + 6" Check	See References on Last Sheet
67	1	2882.24	2881.76	0.42	2882.60	2882.74	2884.9	OK	OK	
68	1	2883.95	2883.47	0.42	2884.31	2884.45	2885.8	OK	OK	
69	1	2885.77	2885.29	0.42	2886.13	2886.27	2887.7	OK	OK	
70	1	2887.68	2887.20	0.42	2888.04	2888.18	2889.5	OK	OK	
71	1	2863.61	2863.13	0.42	2863.97	2864.11	2865.3	OK	OK	
72	1	2865.01	2864.53	0.42	2865.37	2865.51	2866.7	OK	OK	
73	1	2866.91	2866.43	0.42	2867.27	2867.41	2868.6	OK	OK	
74	1	2869.20	2868.72	0.42	2869.56	2869.70	2870.9	OK	OK	
75	1	2871.58	2871.10	0.42	2871.94	2872.08	2873.3	OK	OK	
76	1	2873.98	2873.50	0.42	2874.34	2874.48	2875.7	OK	OK	
77	1	2876.38	2875.90	0.42	2876.74	2876.88	2878.1	OK	OK	
78	1	2878.70	2878.22	0.42	2879.06	2879.20	2880.4	OK	OK	
79	1	2880.79	2880.31	0.42	2881.15	2881.29	2882.5	OK	OK	
80	1	2882.70	2882.22	0.42	2883.06	2883.20	2884.4	OK	OK	
81	1	2884.62	2884.14	0.42	2884.98	2885.12	2886.4	OK	OK	
82	1	2886.66	2886.18	0.42	2887.02	2887.16	2888.4	OK	OK	
83	1	2888.70	2888.22	0.42	2889.06	2889.20	2890.4	OK	OK	
84	1	2891.98	2891.50	0.42	2892.34	2892.48	2893.7	OK	OK	
85	1	2894.08	2893.60	0.42	2894.44	2894.58	2895.8	OK	OK	
86	1	2896.29	2895.81	0.42	2896.65	2896.79	2898.0	OK	OK	
87	1	2898.31	2897.83	0.42	2898.67	2898.81	2900.0	OK	OK	
88	1	2899.66	2899.18	0.42	2900.02	2900.16	2901.4	OK	OK	
89	1	2900.47	2899.99	0.42	2900.83	2900.97	2902.2	OK	OK	
90	4	2901.46	2900.98	0.57	2902.12	2901.96	2903.3	OK	OK	
91	4	2900.35	2899.87	0.57	2901.01	2900.85	2902.2	OK	OK	
92	4	2898.57	2898.09	0.57	2899.23	2899.07	2900.4	OK	OK	
93	4	2896.46	2895.98	0.57	2897.12	2896.96	2898.3	OK	OK	
94	4	2894.56	2894.08	0.57	2895.22	2895.06	2896.4	OK	OK	
95	4	2892.69	2892.21	0.57	2893.35	2893.19	2894.5	OK	OK	
96	4	2889.92	2889.44	0.57	2890.58	2890.42	2891.8	OK	OK	
97	4	2887.99	2887.51	0.57	2888.65	2888.49	2889.8	OK	OK	
98	4	2886.07	2885.59	0.57	2886.73	2886.57	2887.9	OK	OK	
99	4	2884.15	2883.67	0.57	2884.81	2884.65	2886.0	OK	OK	

SKYE CANYON PARCELS 2.08 AND 2.09 FINISH FLOOR - CITY OF LAS VEGAS JURISDICTION										
INPUT INFORMATION					FINISHED FLOORS					NOTES
Lot Number	Hydraulic Section Utilized	T/C[1] (ft)	F/L[2] (ft)	D_{100} (ft)	Flowline $F.F._{min}$[3] (ft)	T/C + 6" $F.F._{min}$[4] (ft)	$F.F._{Design}$ (ft)	Flowline Check	T/C + 6" Check	See References on Last Sheet
100	4	2882.22	2881.74	0.57	2882.88	2882.72	2884.1	OK	OK	
101	4	2880.30	2879.82	0.57	2880.96	2880.80	2882.1	OK	OK	
102	4	2878.38	2877.90	0.57	2879.04	2878.88	2880.2	OK	OK	
103	4	2876.45	2875.97	0.57	2877.11	2876.95	2878.3	OK	OK	
104	4	2874.53	2874.05	0.57	2875.19	2875.03	2876.4	OK	OK	
105	4	2872.61	2872.13	0.57	2873.27	2873.11	2874.4	OK	OK	
106	4	2870.61	2870.13	0.57	2871.27	2871.11	2872.4	OK	OK	
107	4	2868.42	2867.94	0.57	2869.08	2868.92	2870.3	OK	OK	
108	4	2866.37	2865.89	0.57	2867.03	2866.87	2868.2	OK	OK	
109	4	2864.69	2864.21	0.57	2865.35	2865.19	2866.5	OK	OK	
110	4	2863.42	2862.94	0.57	2864.08	2863.92	2865.3	OK	OK	
111	4	2862.39	2861.91	0.57	2863.05	2862.89	2864.2	OK	OK	
112	4	2862.05	2861.57	0.57	2862.71	2862.55	2863.8	OK	OK	
113	4	2861.55	2861.07	0.57	2862.21	2862.05	2863.3	OK	OK	
114	3	2859.97	2859.49	0.34	2860.17	2860.47	2861.9	OK	OK	
115	3	2860.98	2860.50	0.34	2861.18	2861.48	2862.9	OK	OK	
116	3	2862.59	2862.11	0.34	2862.79	2863.09	2864.5	OK	OK	
117	3	2864.21	2863.73	0.34	2864.41	2864.71	2866.0	OK	OK	
118	3	2869.21	2868.73	0.34	2869.41	2869.71	2871.0	OK	OK	
119	3	2869.98	2869.50	0.34	2870.18	2870.48	2871.8	OK	OK	
120	3	2870.54	2870.06	0.34	2870.74	2871.04	2872.4	OK	OK	
121	3	2870.62	2870.14	0.34	2870.82	2871.12	2872.4	OK	OK	
122	3	2870.00	2869.52	0.34	2870.20	2870.50	2871.8	OK	OK	
123	3	2869.24	2868.76	0.34	2869.44	2869.74	2871.0	OK	OK	
124	3	2868.47	2867.99	0.34	2868.67	2868.97	2870.3	OK	OK	
125	3	2867.70	2867.22	0.34	2867.90	2868.20	2869.5	OK	OK	
126	3	2867.30	2866.82	0.34	2867.50	2867.80	2869.1	OK	OK	
127	2	2877.68	2877.20	0.51	2878.22	2878.18	2879.5	OK	OK	
128	2	2878.43	2877.95	0.51	2878.97	2878.93	2880.3	OK	OK	
129	2	2879.18	2878.70	0.51	2879.72	2879.68	2881.0	OK	OK	
130	2	2879.93	2879.45	0.51	2880.47	2880.43	2881.8	OK	OK	
131	2	2880.68	2880.20	0.51	2881.22	2881.18	2882.5	OK	OK	
132	2	2881.52	2881.04	0.51	2882.06	2882.02	2883.4	OK	OK	

SKYE CANYON PARCELS 2.08 AND 2.09 FINISH FLOOR - CITY OF LAS VEGAS JURISDICTION										
INPUT INFORMATION					FINISHED FLOORS					NOTES
Lot Number	Hydraulic Section Utilized	T/C[1] (ft)	F/L[2] (ft)	D_{100} (ft)	Flowline $F.F._{min}$[3] (ft)	T/C + 6" $F.F._{min}$[4] (ft)	$F.F._{Design}$ (ft)	Flowline Check	T/C + 6" Check	See References on Last Sheet
133	5	2881.31	2880.83	0.3	2881.43	2881.81	2883.1	OK	OK	
134	5	2880.56	2880.08	0.3	2880.68	2881.06	2882.3	OK	OK	
135	5	2879.81	2879.33	0.3	2879.93	2880.31	2881.6	OK	OK	
136	5	2879.06	2878.58	0.3	2879.18	2879.56	2880.8	OK	OK	
137	5	2878.31	2877.83	0.3	2878.43	2878.81	2880.1	OK	OK	
138	5	2877.56	2877.08	0.3	2877.68	2878.06	2879.3	OK	OK	
139	5	2888.80	2888.32	0.3	2888.92	2889.30	2891.0	OK	OK	
140	5	2889.48	2889.00	0.3	2889.60	2889.98	2891.5	OK	OK	
141	5	2890.21	2889.73	0.3	2890.33	2890.71	2892.0	OK	OK	
142	5	2890.74	2890.26	0.3	2890.86	2891.24	2892.6	OK	OK	
143	5	2891.26	2890.78	0.3	2891.38	2891.76	2893.1	OK	OK	
144	5	2891.78	2891.30	0.3	2891.90	2892.28	2893.6	OK	OK	
145	5	2892.31	2891.83	0.3	2892.43	2892.81	2894.1	OK	OK	
146	5	2892.91	2892.43	0.3	2893.03	2893.41	2894.7	OK	OK	
147	5	2892.45	2891.97	0.3	2892.57	2892.95	2894.2	OK	OK	
148	5	2891.92	2891.44	0.3	2892.04	2892.42	2893.7	OK	OK	
149	5	2891.40	2890.92	0.3	2891.52	2891.90	2893.2	OK	OK	
150	5	2890.87	2890.39	0.3	2890.99	2891.37	2892.6	OK	OK	
151	5	2890.35	2889.87	0.3	2890.47	2890.85	2892.1	OK	OK	
152	5	2889.91	2889.43	0.3	2890.03	2890.41	2891.7	OK	OK	
153	5	2889.63	2889.15	0.3	2889.75	2890.13	2891.4	OK	OK	
154	5	2889.35	2888.87	0.3	2889.47	2889.85	2891.1	OK	OK	
155	5	2898.08	2897.60	0.3	2898.20	2898.58	2899.8	OK	OK	
156	5	2898.53	2898.05	0.3	2898.65	2899.03	2900.3	OK	OK	
157	5	2898.98	2898.50	0.3	2899.10	2899.48	2900.7	OK	OK	
158	5	2899.43	2898.95	0.3	2899.55	2899.93	2901.2	OK	OK	
159	5	2899.88	2899.40	0.3	2900.00	2900.38	2901.6	OK	OK	

SKYE CANYON PARCELS 2.08 AND 2.09
FINISH FLOOR - CITY OF LAS VEGAS JURISDICTION

INPUT INFORMATION					FINISHED FLOORS					NOTES
Lot Number	Hydraulic Section Utilized	T/C[1] (ft)	F/L[2] (ft)	D_{100} (ft)	Flowline F.F.$_{min}$[3] (ft)	T/C + 6" F.F.$_{min}$[4] (ft)	F.F.$_{Design}$ (ft)	Flowline Check	T/C + 6" Check	See References on Last Sheet
160	5	2900.33	2899.85	0.3	2900.45	2900.83	2902.1	OK	OK	
161	5	2900.78	2900.30	0.3	2900.90	2901.28	2902.5	OK	OK	
162	5	2901.23	2900.75	0.3	2901.35	2901.73	2903.0	OK	OK	
163	5	2901.68	2901.20	0.3	2901.80	2902.18	2903.4	OK	OK	
164	5	2902.03	2901.55	0.3	2902.15	2902.53	2903.8	OK	OK	

Where:

1: Top of Curb at High Side of Lot

2: TC-0.38 (For Roll Curb), TC-0.5 (For L Curb)

3: Minimum Allowable Finished Floor Elevation above flowline elevation @ high side of lot = (2 x D_{100}) + F/L

4: City of Las Vegas minimum allowable finished floor elevation = T.C. @ high side of lot + 6-inches

5: These lots have an adjacent solid grouted wall that protects the FF.

City of Las Vegas Finished Floor Criteria:

-The finished floor shall be set a vertical distance above the gutter flowline of at least twice the depth of flow in the gutter flowline up to a maximum of 18 inches above the WSEL in the street.

-The finished floor shall be set a vertical distance of at least 6-inches above the highest adjacent top of curb.

Supplemental Finish Floor Checks

Drainage Easements Check - Emergency Overflow							
Lot Number	High TC/FL[1]	Section	Flow Depth[2]	Min FF[3]	Design FF	Check	Solid Grout
46	2859.71	EO-3	0.77	2860.48	2861.80	OK	No
47	2859.71	EO-3	0.77	2860.48	2861.90	OK	No
56	2859.41	EO-1	0.36	2859.77	2865.10	OK	No

1: High TC/FL is at the high side of the drainage easement flowline or the highest TC adjacent to the easement if flow is weiring over the curb.

2: Flow depth is either normal depth or weir depth (whichever is higher).

3: Min FF is the High TC/FL plus the Flow Depth plus 18 inches.

Adjacent/Perimeter Street Check									
Lot Number	Street	High TC[1]	High FL[2]	Section	Flow Depth[3]	Min FF[4]	Design FF	Check	Solid Grout
1	SKYE CANYON PARK DR	2891.24	2890.74	2*	0.38	2891.50	2894.8	OK	No
2	SKYE CANYON PARK DR	2893.62	2893.12	2*	0.38	2893.88	2896.6	OK	No
3	SKYE CANYON PARK DR	2896.00	2895.50	2*	0.38	2896.26	2898.4	OK	No
4	SKYE CANYON PARK DR	2898.38	2897.88	2*	0.38	2898.64	2900.1	OK	No
5	SKYE CANYON PARK DR	2900.75	2900.25	2*	0.38	2901.01	2901.4	OK	No
6	SKYE CANYON PARK DR	2903.13	2902.63	2*	0.38	2903.39	2902.3	CHECK	Yes
29	STOKESTONE ST	2896.61	2896.13	5	0.30	2896.73	2897.9	OK	No
48	SKYE VILLAGE RD	2850.07	2849.57	8*	0.41	2850.39	2862.1	OK	No
48	BARSKET AVE	2858.70	2858.22	3	0.34	2858.90	2862.1	OK	No
49	SKYE VILLAGE RD	2851.47	2850.97	8*	0.41	2851.79	2863.3	OK	No
49	BARSKET AVE	2858.86	2858.38	3	0.34	2859.06	2863.3	OK	No
50	SKYE VILLAGE RD	2851.75	2851.25	8*	0.41	2852.07	2863.8	OK	No
51	SKYE VILLAGE RD	2852.02	2851.52	8*	0.41	2852.34	2864.3	OK	No
52	SKYE VILLAGE RD	2852.32	2851.82	8*	0.41	2852.64	2864.8	OK	No

Lot Number	Street	High TC[1]	High FL[2]	Section	Flow Depth[3]	Min FF[4]	Design FF	Check	Solid Grout
53	SKYE VILLAGE RD	2852.70	2852.20	8*	0.41	2853.02	2865.3	OK	No
54	SKYE VILLAGE RD	2852.88	2852.38	8*	0.41	2853.20	2865.6	OK	No
55	SKYE VILLAGE RD	2853.18	2852.68	8*	0.41	2853.50	2865.6	OK	No
56	SKYE VILLAGE RD	2853.84	2853.34	8*	0.41	2854.16	2865.1	OK	No
56	TREE BLOSSOM AVE	2860.89	2860.41	1	0.42	2861.25	2865.1	OK	No
57	SKYE CANYON PARK DR	2858.48	2857.98	2*	0.38	2858.74	2863.8	OK	No
58	SKYE CANYON PARK DR	2858.68	2858.18	2*	0.38	2858.94	2865.0	OK	No
59	SKYE CANYON PARK DR	2860.52	2860.02	2*	0.38	2860.78	2866.2	OK	No
60	SKYE CANYON PARK DR	2863.18	2862.68	2*	0.38	2863.44	2867.9	OK	No
61	SKYE CANYON PARK DR	2865.36	2864.86	2*	0.38	2865.62	2870.1	OK	No
62	SKYE CANYON PARK DR	2867.40	2866.90	2*	0.38	2867.66	2872.9	OK	No
63	SKYE CANYON PARK DR	2869.80	2869.30	2*	0.38	2870.06	2875.3	OK	No
64	SKYE CANYON PARK DR	2872.21	2871.71	2*	0.38	2872.47	2877.7	OK	No
65	SKYE CANYON PARK DR	2874.60	2874.10	2*	0.38	2874.86	2880.1	OK	No
66	SKYE CANYON PARK DR	2876.98	2876.48	2*	0.38	2877.24	2882.2	OK	No
67	SKYE CANYON PARK DR	2879.36	2878.86	2*	0.38	2879.62	2884.9	OK	No
68	SKYE CANYON PARK DR	2881.73	2881.23	2*	0.38	2881.99	2885.8	OK	No
69	SKYE CANYON PARK DR	2884.11	2883.61	2*	0.38	2884.37	2887.7	OK	No

Lot Number	Street	High TC[1]	High FL[2]	Section	Flow Depth[3]	Min FF[4]	Design FF	Check	Solid Grout
70	SKYE CANYON PARK DR	2885.65	2885.15	2*	0.38	2885.91	2889.5	OK	No
71	HARMONT ST	2862.75	2862.27	1	0.42	2863.11	2865.3	OK	No
89	STOKESTONE ST	2902.69	2902.21	1	0.42	2903.05	2902.2	CHECK	Yes
90	STOKESTONE ST	2903.36	2902.88	5	0.30	2903.48	2903.3	CHECK	Yes
110	HARMONT ST	2863.71	2863.23	4	0.57	2864.37	2865.3	OK	No
111	MISTY STEP AVE	2863.23	2862.75	4	0.57	2863.89	2864.2	OK	No
114	HARMONT ST	2861.05	2860.57	4	0.57	2861.71	2861.9	OK	No
117	FORDSTER ST	2868.44	2867.96	3	0.34	2868.64	2866.0	CHECK	Yes
120	MISTY STEP AVE	2869.45	2868.97	4	0.57	2870.11	2872.4	OK	No
121	MISTY STEP AVE	2872.65	2872.17	3	0.34	2872.85	2872.4	CHECK	Yes
126	WILLHOLM AVE	2871.61	2871.13	3	0.34	2871.81	2869.1	CHECK	Yes
127	WILLHOLM AVE	2875.52	2875.04	3	0.34	2875.72	2879.5	OK	No
132	MISTY STEP AVE	2880.37	2879.89	4	0.57	2881.03	2883.4	OK	No
133	MISTY STEP AVE	2887.76	2887.28	4	0.57	2888.42	2883.1	CHECK	Yes
138	WILLHOLM AVE	2881.05	2880.57	5	0.30	2881.17	2879.3	CHECK	Yes
139	WILLHOLM AVE	2886.28	2885.80	5	0.30	2886.40	2891.0	OK	No
145	MISTY STEP AVE	2891.57	2891.09	4	0.57	2892.23	2894.1	OK	No
146	MISTY STEP AVE	2897.94	2897.46	4	0.57	2898.60	2894.7	CHECK	Yes
154	WILLHOLM AVE	2893.67	2893.19	5	0.30	2893.79	2891.1	CHECK	Yes
155	WILLHOLM AVE	2896.04	2895.56	5	0.30	2896.16	2899.8	OK	No
164	MISTY STEP AVE	2891.46	2890.98	4	0.57	2892.12	2903.8	OK	No

1: High TC is the elevation at the high side of the adjacent perimeter street

2: 0.5-ft is subtracted from the High TC to obain the High FL elevation

3: Flow depth is the normal depth in adjacent perimeter street

4: Min FF is the High FL plus twice the depth of flow.

Specific Energy Check							
Lot Number	High TC[1]	High FL[2]	Section	Specific Energy[3]	Min FF[4]	Design FF	Check
32	2890.67	2890.29	5	0.48	2890.77	2892.60	OK
33	2888.58	2888.20	5	0.48	2888.68	2890.50	OK
37	2879.84	2879.46	5	0.48	2879.94	2881.70	OK
41	2868.70	2868.32	4	0.71	2869.03	2870.60	OK
42	2866.50	2866.12	4	0.71	2866.83	2868.40	OK
47	2859.99	2859.61	2	0.62	2860.23	2861.90	OK
48	2860.17	2859.79	2	0.62	2860.41	2862.10	OK
52	2862.96	2862.58	3	0.39	2862.97	2864.80	OK
53	2863.39	2863.01	3	0.39	2863.40	2865.30	OK
57	2861.89	2861.51	1	0.66	2862.17	2863.80	OK
58	2863.08	2862.70	1	0.66	2863.36	2865.00	OK

1: High TC is the elevation at the high side of the adjacent perimeter street

2: 0.48-ft is subtracted from the High TC to obain the High FL elevation

2: Specific energy depth is taken from FlowMaster calculation for street directing flow toward lot.

3: Min FF is the High FL plus the specific energy depth.

APPENDIX E

Reference Material
Technical Drainage Study for Skye Canyon Phase 3A
Infrastructure – Update #2
(DS4931)

Approval Letters

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM				DATE: September 18, 2019
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: **Skye Canyon – Phase 3A Infrastructure – Update #2**			**COPIES TO:** Slater Hanifan Group
Cross Streets:	Skye Village Road & Grand Canyon Drive			M F Land LLC / Ninety-Five Management LLC
File Number:	F:\Depot\DSMemos\DS4931G.doc			Bart Anderson, P.E., DevCo
Parcel Number:	125-07-201-007 & Portion of 125-07-101-009			CCRFCD
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 #
1st Submittal	11/6/2017	1/22/2018	Not Approved	$400.00	491017: $400
2nd Submittal	4/18/2018	5/24/2018	Not Approved	$400.00	495171: $400
3rd Submittal	8/2/2018	8/16/2018	Conditional Approval	$400.00	497829: $400
CCRFCD	1/17/2019	1/31/2019	Concurrence Recv'd	N/C	N/C
4th Submittal	5/29/2019	6/12/2019	Not Approved	$100.00	3148964: $100
Memo Revision	6/25/2019	6/25/2019	Approved	N/C	N/C
5th Submittal	8/22/2019	9/18/2019	See Comments Below	$100.00	3539924: $100
			TOTAL FEES (LDDRS):	**$1,400.00**	**----**

REMARKS:

5th Submittal: Update #2

4th Submittal: Update #1 to revise laterals size and configuration at two locations in Grand Canyon Drive

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. **Sheet D-02** of *Canyon View Lane*: Provide an additional drop inlet (L=5') at SDMH #5 on the south side of *Canyon View Lane.*

The following conditions are repeated until they are complete:

1. *Skye Canyon Phase 3A* onsite developments are to be flood protected by *Detention Basin 2*. No occupancy permits within onsite *Phase 3A* will be issued prior to the substantial completion of *Detention Basin 2*.

2. The future MPU facility within Skye Village Road north of the Skye Village/Grand Canyon/Iron Mountain intersection to the proposed MPU facility at the Kyle Canyon interchange area shall be substantially complete before occupancy of residential Units beyond Phase 3A, 3B and 3C. This includes residential development within Phases 4 & 6 and the development of Phase 5 as shown on the Development Phasing Exhibit dated 12/4/2017.

3. **Exhibit I** shows the future abandonment of Phase 3A storm drain improvements (P15 & P33A) once the Ultimate MPU facilities are in place. The City requires that facilities be removed from the roadway if they are no longer needed. These facilities will need to be included in the Maintenance Bond.

4. Update **Exhibit I,** Facility P31 to show the 7' x 5' RCB .

5. Phase 3A includes interim drainage facilities located outside of roadways that shall require Public Drainage Easements to be Privately Maintained by the Master Developer. The Plans have preliminarily identified these easements. Provide an exhibit that shows the easements limits along with legal descriptions for Flood Control to verify easement limits. Once Flood Control has concurred with the easement limits, the plans shall be revised to reflect the final easement locations. Public drainage easements must be recorded by separate document prior to the final acceptance of the improvement plans unless they are to be recorded by parcel or final map.

6. Revise the easement location along *Grand Canyon Drive* to reflect the HEC-RAS analysis for the earthen channel.

7. The engineer must provide a table on the grading plans that shows a quantity estimate of all drainage improvements within Public Drainage Easements. All drainage improvements within Public Drainage Easements must be bonded and inspected.

8. Flood Control understands that the new *Skye Canyon Master Plan Amendment* (MPA) is being included as a part of the 2018 MPU process. Any changes not incorporated in the 2018 MPU must be approved by *City of Las Vegas* and *Clark County Regional Flood Control District* (CCRFCD) and shall be adopted by the *City of Las Vegas City Council* prior to the final approval of the subject improvement plans.

9. The *Design Report for Moccasin Road CCRFCD Flood Control Facility (US95 / Kyle Canyon Road Interchange to CCRFCD Facility LVUP 1076/1077)* must be conditionally approved (90% submittal) prior to the final approval of the subject improvement plans. The connection to these MPU facilities has been shown on the Grand Canyon Improvement plans.

10. The subject *Phase 3A Infrastructure Drainage Study* addresses the included street improvements of *Skye Village Road, Skye Park Drive, Street "E", Grand Canyon Drive*, culvert crossings and storm drain systems with the streets. Technical drainage studies will be required for the future onsite parcels as they develop.

11. Since the streets network and the associated storm drain facilities will eventually be accepted by the ***City of Las Vegas***, the engineer/developer must coordinate with *City of Las Vegas Streets & Sanitation Department* for their review and approval prior to the final approval of the improvement plans.

12. Structural plans for the storm drain improvements must be submitted for review by Flood Control and the Building Department. Provide a soil report, structural calculations and specifications, wet stamped structural sets and a grading plan to the *City of Las Vegas Building Department* for processing (call *Building Department* to confirm their submittal requirements). The engineer must provide a copy of *Building Department* approval of the structures to *City Flood Control Section* prior to the final acceptance of the improvement plans. The structural approval is also required to be submitted to CCRFCD prior to concurrence.

13. The submitted RCA plans generally show the required 5-foot minimum stem wall height before the arch section. Revise the RCA plans to show the 5-foot stem wall on all details and sections.
14. The interim channels adjacent to the infrastructure roadways are the Maintenance responsibility of the Master Developer.
15. The project proposed to build temporary drainage facilities including drainage berms/swales over the *Phase 3A* site and along the west side of *Skye Village Road*. Prior to the final plans approval the developer must complete a ***Maintenance and Liability Agreement*** for the interim drainage improvements and post a minimum maintenance bond of $50,000 or 50-percent of the construction cost for the improvements, whichever is greater. The engineer must submit an estimate of the quantities for construction the facility and an exhibit that adequately shows the location and limits of the drainage facilities to *City Flood Control* for approval. Once the drainage study is conditionally approved, the engineer/developer should contact the *City's Land Development Section* (702-229-6371) to begin the agreement process.

    In order for the maintenance bond to be released in the future, a drainage update/letter will be required to justify that the berms/swales are no longer necessary and can be removed.
16. **Sheet D-22:** Revise the pipe material of the storm drain lateral between SDMH #16 and the RCA to RCP instead of C900 PVC.
17. Revise the cross section details to show the Drainage Easements.
18. **Sheet S1.14** Revise the detail to reflect a 3-wire Cable Fence.
19. Structural details shall be revised to show the invert slab construction joint to be a minimum of 3-inches above the slab invert at the wall locations.

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.

In an effort to increase administrative efficiency, for all original and re-submittal packages including updates and the addenda, the City of Las Vegas Public Works Department requires both a hardcopy and a digital copy (PDF) on CD for the drainage study.

A letter sealed and signed by a Nevada registered civil engineer must be included in every submittal certifying documents on the electronic CD matches 100% of the hardcopy submittal. The new submittal requirement is effective on May 1, 2019. If there are any questions regarding these new requirements, please contact Albert Sung in the City Flood Control Section at (702) 229-6541.

Sample Letter to certify CD.pdf

END OF REMARKS
ays

T/R/S: T19S/R60E/07
AREA G-07

Referenced Exhibits

LEGEND

- BASIN BOUNDARY
- PRORATE BOUNDARY
- ID — BASIN ID
- ID — PRORATE BASIN ID
- ID — CONCENTRATION POINT ID
- FLOW DIRECTION
- ID — FLOWMASTER SECTION

N

SCALE – 1"=150' — 0 150 300 FEET

Proposed Condition Flow Rate Summary

Basin/Concentration Point ID	Area (ac)	Q_{100} (cfs)	Q_{10} (cfs)
Basins			
2.02	17.8	53	26
2.03	17.5	52	26
2.04a	1.4	3	1
2.04b	1.3	3	1
2.05a	13.5	40	19
2.05b	7.4	21	10
2.06	19.9	61	30
STR1	2.6	10	5
STR2	1.6	6	3
STR3	2.2	8	4
STR4	1.9	6	3
SVR1	2.7	10	5
SVR2	6.4	20	10
OFF1	141.0	280	108
OFF2	18.6	45	18
OFF3	96.0	185	71
OFF4	39.0	80	31
OFF5	88.8	179	69
OFF11	18.7	38	15
OFF12	8.2	21	8
Referenced Basins			
[1]WSPD0	0.6	2	1
[1]WSPD3	1.4	5	2
[1]WGRC1A	1.4	4	2
[1]WGC3	28.4	89	42
[1]WPF4	5.7	19	9
[1]WSHA4	1.4	6	3

[1]Referenced from the "Smith's" Study.
[2]Referenced from the "Master Drainage Study Update No.4".

Proposed Condition Flow Rate Summary

Basin/Concentration Point ID	Area (mi^2)	Q_{100} (cfs)	Q_{10} (cfs)
Concentration Points			
CP1 Q = [1]RDB2 + OFF1 + CP2a + OFF7 + OFF8 + OFF2 + SVR2 + CP2	2.6	974	477
CP1A Q = CP2 + OFF2 + SVR2	1.4	687	322
CP2 Q = CP3A + SVR1 + OFF3	0.2	639	299
CP2a Q = 2.05b + STR1 + 2.04a	<0.1	32	16
CP3 Q = CP8 + [4]PARK	1.1	385	195
CP3a Q = CP3 + OFF4	1.2	459	226
CP4 Q = STR2 + STR3 + 2.03 + 2.04b	<0.1	67	33
CP5 Q = CP4 + 2.02 + STR4	<0.1	126	62
CP6 Q = [1]RDB1 + [3]WC20 + [4]WPF4 + [4]WSHA4	0.9	156	100
CP7 Q = CP6 + [4]ALA4 + [3]CN1D	1.0	208	122
CP8 Q = CP7 - OFF5	1.1	366	189
DBN Q = OUTFLOW	<0.1	27	14
WC9a Q = 2.06 + CP2a + DBN + [4]WSPD3 + [4]WGC3 + [4]WSPD0	0.1	178	87
CP10 Q = CP1 + 2.05A + OFF11	2.7	1039	508
CP11 Q = OFF12 + CP5 + DIV1	<0.1	810	418
CP12 Q = WC9a + [4]WC7 + [4]WGRC1A + DIV2	0.2	519	266
Referenced Concentration Points			
[1]RDB1	0.9	71	57
[2]RDB2	1.0	84	64
[4]WC20	0.1	85	40
[3]PARK	<0.1	35	13
[4]WC7	0.1	119	51

[1]Referenced from the "CB1" Study
[2]Referenced from the "CB2" Study
[3]Referenced from the "Smith's" Study
[4]Referenced from the "Master Drainage Study Update No.4"
[5]Referenced from the "Parks" Study
[6] Referenced from the "Parcel 2.16" Study

Prorated Flow Summary

Basin ID	Q_{100} (cfs)	Area (acres)	100-yr Unit Flow (cfs/acre)
2.02	53	17.84	3.0
Subbasin ID	Q_{100} (cfs)	Area (acres)	100-yr Unit Flow (cfs/acre)
2.02a	43	14.39	3.0
2.02b	10	3.45	3.0
TOTAL	*53*	*17.84*	

REFERENCED STREET SECTION FOR PEREIIMETER CHECKS

Proposed Condition 100-Year Street Flow Summary

Section ID	Q_{100} (cfs)	Slope (%)	Depth (ft)	Velocity (fps)	DxV
1 (Q = 1/2 (SVR1))	5	0.58	0.35	1.96	0.7
2 (Q = 1/2 (SVR1) + Facility P18 Bypass)	7	0.58	0.38	2.14	0.8
3 (Q = 1/2 (SVR2) + Facility P20 Bypass)	13	0.58	0.46	2.38	1.1
4 (Q = 1/2 (SVR2) + Facility P23 Bypass)	17	0.58	0.51	2.43	1.2
5 (Q = STR2)	5	3.24	0.3	4.01	1.2
		1.56	0.33	2.94	1.0
6 (Q = 2.05b + STR1-Half Street Capacity)	9	2.3	0.42	4.44	1.9
*8 (Half Street Capacity)	22	2.3	0.56	4.76	2.7
*GC1 (Q = STR2 + STR3)	14	2.73	0.46	5.15	2.4
*GC2 (Q = STR2 + STR3 + 1/3 (STR4))	16	1.48	0.53	4.03	2.1
*GC3 (Q = Facility P5 Bypass + 2/3 (STR4))	15	1.48	0.52	4.0	2.1

Proposed Condition 10-Year Street Flow Summary

Section ID	Q_{10} (cfs)	Slope (%)	Depth (ft)	Velocity (fps)	DxV	Dry Lane (ft)
10YR (Q = SVR1 +SVR2)	15	0.58	0.48	2.4	1.2	21.5

Conservative Flow Utilized to represent the Entire Skye Village Road Alignment

SEE EXHIBIT F FOR EXTENTS OF OFFSITE BASINS

CP1 · 4 · CP1A · 10YR · GRAND CANYON DRIVE · STR3 · OFF11 · CP10 · DIV1 456 cfs · GC1 · CP4 · OFF1 · 5 · 2.05a · STR2 · SVR2 · SKYE PARK DRIVE · 2.03 · GC2 · STR4 · OFF12 · CP11 · 3 · OFF2 · a · 2.04b · 229 cfs · DIV2 · 2.02 · CP5 · 2.05b · 2.04a · b · GC3 · STR1 · CP2a · STREET E · DBN · OFF3 · CP2 · 6 · 2 · *WSPD0 · WC9a · CP12 · PROJECT SITE · SKYE CANYON PHASE 3 (SMITH'S CENTER) SHG OLY1602.000 CLV# DS4796 · 1 · *WSPD3 · *WGRC1A · SVR1 · OFF4 · CP3A · 2.06 · *WGC3 · CP3 · OFF5 · CP8 · *PARK · SKYE CANYON PARK DRIVE · SKYE CANYON PHASE 1 INFRASTRUCTURE SHG OLY1401.001 CLV# DS4661 · *WC7 · SKYE CANYON PARK SHG OLY1401.003 CLV# DS4707

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CONSULTING ENGINEERS & PLANNERS
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PHONE (702) 284-3300 FAX (702) 284-3399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

NINETY-FIVE MANAGEMENT, LLC.

SKYE CANYON PHASE 3A INFRASTRUCTURE
PROPOSED CONDITION DRAINAGE MAP

DATE: JULY 2018
DRAFTER: ETM
DESIGNER: ETM
CHECKED: LL
PROJECT NO.
OLY1609.000

EXHIBIT G
SHEET 1 OF 1

K:\oly\1609.000 skye canyon phase 3a_3c\drainage\update study\3a\update - 2\figures\oly1609 up2 exhibit g proposed condition drainage map.dwg 5/10/2019 1:35 PM JOE Vance

LEGEND

- BASIN BOUNDARY
- PRORATE BOUNDARY
- 000 — PRORATE ID
- ID — BASIN ID
- ID — CONCENTRATION POINT ID
- FLOW DIRECTION
- ID — FACILITY ID
- EXISTING SD FACILITIES
- PROPOSED SD FACILITIES
- TO BE REMOVED IN ULTIMATE CONDITION
- FUTURE SD FACILITIES
- PROPOSED DITCHES
- ID — DITCH LABELS
- CULVERT TO BE REMOVED IN ULTIMATE CONDITION

N

0 150 300
SCALE — 1"=150' FEET

Prorated Flow Summary

Basin ID	Q_{100} (cfs)	Area (acres)	100-yr Unit Flow (cfs/acre)
OFF1	280	141.00	2.0
OFF3	185	98.00	1.9
OFF4	80	39.00	2.1
2.05a	40	13.50	3.0
2.03	52	17.50	3.0
2.02	53	17.8	3.0

Subbasin ID	Q_{100} (cfs)	Area (acres)	100-yr Unit Flow (cfs/acre)
OFF1A	27	13.4	2.0
OFF1B	253	127.6	2.0
TOTAL	***280***	***141.0***	
OFF3A	1	0.7	1.9
OFF3B	173	90.0	1.9
OFF3C	10	5.3	1.9
TOTAL	***185***	***96.0***	
OFF4A	5	2.6	2.1
OFF4B	75	36.4	2.1
TOTAL	***80***	***39.0***	
2.05a-A	2	0.7	3.0
2.05a-B	5	1.7	3.0
2.05a-C	33	11.1	3.0
TOTAL	***40***	***13.6***	
2.03A	9	2.9	3.0
2.03B	31	10.5	3.0
2.03C	12	4.1	3.0
TOTAL	***52***	***17.5***	
2.02A	9	2.9	3.0
2.02B	3	1.1	3.0
2.02C	31	10.4	3.0
2.02D	10	3.4	3.0
TOTAL	***53***	***17.8***	

Recommended Flood Control Facility Summary

Facility ID	Facility Description	$Q_{proposed}$ (cfs)	$Q_{ULTIMATE}$ (cfs)	Notes
X1	Existing 66" RCP	240	32	
X2	Existing 60" RCP	319	359	
X3	Existing 8'x5' RCB	335	412	Ties into Facility P12
X4	Existing 54" RCP	28	28	
X5	(2) Existing 12.0' Type CM2 D.I.	N/A	53	26 cfs/ drop inlet with 24" laterals
X6	Existing 60" RCP	51	64	
X7	Existing 60" RCP	28	280	
X8	Existing 5' x 5' RCB	160	301	
X9	DB2 Sediment Basin	1039	N/A	
X11	DB2 Sediment Basin Spillway	883	N/A	CP10 - 85CFS
P1	Proposed 30" RCP	40	40	To collect basin 2.05a Flow
P2	Not Used	N/A	N/A	
P3	Proposed 30" RCP	55	55	Stub for parcels 2.03, 2.04
P4	Proposed 30" RCP	55	55	
P5	Proposed 5.0' Type CM2 D.I.	5	5	w/ 18" Lateral
P5a	Proposed 18" RCP	N/A	5	Capped Stub for Future Drop Inlet
P6	Proposed 36" RCP	60	66	
P7	Proposed 36" RCP	53	53	Assumes all Parcel 2.02 flow is conservatively collected at Facility P7
P8	Proposed 42" RCP	113	118	
P8a	DB2 Sediment Basin Discharge Ditch	456	N/A	
P8b	Proposed 6'x3' RCB	456	N/A	
P8c	Beginning of Existing Wash	610	N/A	CP11
P8d	Proposed 8'x3' RCB	381	N/A	CP11-229 cfs
P9	Proposed 36" RCP	10	10	Capped Stub for Future Parcel Flow
P9a	Proposed 72" RCP	229	N/A	CP11-381 cfs
P9b	Proposed 60" RCP	229	N/A	
P9c	Proposed 60" RCP	229	N/A	
P10	Proposed 15.0' Type CM2 D.I.	11	11	w/ 36" Lateral
P10a	Proposed 18" RCP	N/A	11	Capped Stub for Future Drop Inlet
P11	Proposed 72" RCP	366	N/A	Interim Improved Inlet
P11a	Proposed 60" RCP	366	359	
P12	Proposed 8'x7' RCA	382	412	
P14	Proposed 42" RCP	80	29.5	
P16	Proposed 8'x7' RCA	382	445.8	Alignment is plugged and provided for future use only
P17	Proposed 8'x7' RCA	459	479	
P18	(2) Proposed 5.0' Type CM2 D.I.	4	4	2 cfs/ drop inlet with 18" laterals
P19	Proposed 8'x7' RCA	426	483	
P20	(2) Proposed 5.0' Type CM2 D.I.	4	4	2 cfs/ drop inlet with 18" laterals
P21	Proposed 6'x6' RCB	185	309	
P22	Proposed 10'x9' RCA	639	876	
P23	(2) Proposed 5.0' Type CM2 D.I.	6	6	3 cfs/ drop inlet with 18" laterals
P24	Proposed 10'x9' RCA	618	879	
P25	Proposed 42" RCP	45.0	69	
P26	Proposed 10'x9' RCA	679	932	
P27	Proposed 36" RCP	N/A	61	Capped Stub for Future Parcel Flow
P28	Proposed 10'x9' RCA	679	983	
P29	(2) Proposed 20.0' Type CM2 D.I.	17	17	8.5 cfs/ drop inlet with 18" laterals
P30	Proposed 5.0' Type CM2 D.I.	Nuisance	Nuisance	
P31	Proposed 7'x5' RCB	364	398	
P32	Proposed 10'x9' RCA	687	1335	
P33a	Proposed 36" RCP	Nuisance	Nuisance	
P34	Proposed 15.0' Type CM2 D.I.	8	8	w/ 18" Lateral
P35	Proposed 24" RCP	8	8	
P36	Proposed 20.0' Type CM2 D.I.	17	17	w/ 24" Lateral
P37	Proposed 24" RCP	25	25	
P38	Proposed 18" RCP	3	3	
P39	Proposed 54" RCP	28	28	
*F1	Future 36" RCP	N/A	73	
*F2	Future 18" RCP	N/A	10	
*F3	Future 36" RCP	N/A	76	
*F4	Future 36" RCP	N/A	66	
*F5	Future 42" RCP	N/A	170	
*F6	Future 60" RCP	N/A	301	Connects to Existing Regional Facility
*F7	Future Moccasin Facility Collection Berm	N/A	1330	
NU	Facility has been provided for collection and conveyance of nuisance flow only.			

X- Depicts an Existing Facility P- Depicts a Proposed Facility F- Depicts a Future Facility
*Flow summarized adopted from the Skye Canyon Master Drainage Study Update

Interim Ditch Section Summary

Section ID	Section Description	Q_{100} (cfs)	Slope (%)	Depth (ft)	Velocity (fps)
OFF1-A (Q = OFF1A)	Earthen Trapezoidal-Ditch w/ 3:1 Side Slopes and Min 1.5-ft Deep	27.0	1.10	0.82	4.43
OFF2 (Q = OFF2)	Earthen Trapezoidal-Ditch w/ 3:1 Side Slopes and Min 1.5-ft Deep	45.0	0.90	1.13	4.77
OFF3 (Q = OFF3C)	Earthen V-Ditch w/ 3:1 Side Slopes and Min 1.5-ft Deep	10.0	1.70	0.88	4.32
OFF4 (Q = OFF4A)	Earthen V-Ditch w/ 3:1 Side Slopes and Min 1.5-ft Deep	5.0	0.50	0.85	2.30
205a-A (Q = 2.05a-A)	Earthen V-Ditch w/ 3:1 Side Slopes and Min 1-ft Deep	2.0	5.00	0.39	4.33
205a-B (Q = 2.05a-B)	Earthen V-Ditch w/ 3:1 Side Slopes and Min 1-ft Deep	7.0	2.70	0.70	4.71
205a-C (Q = 2.05a-C)	Earthen V-Ditch w/ 3:1 Side Slopes and Min 2-ft Deep	33.0	1.00	1.52	4.77
203-A (Q = 2.03A)	Earthen V-Ditch w/ 3:1 Side Slopes and Min 1-ft Deep	9.0	1.50	0.86	4.02
203-B (Q = 2.03B)	Earthen V-Ditch w/ 3:1 Side Slopes and Min 2-ft Deep	43.0	0.50	1.91	3.93
203-C (Q = 2.03C)	Earthen V-Ditch w/ 3:1 Side Slopes and Min 1.5-ft Deep	12.0	1.50	0.96	4.32
202-A (Q = 2.02A)	Earthen V-Ditch w/ 3:1 Side Slopes and Min 1-ft Deep	9.0	2.50	0.79	4.87
202-B (Q = 2.02B)	Earthen V-Ditch w/ 3:1 Side Slopes and Min 1-ft Deep	12.0	2.00	0.91	4.81
202-C (Q = 2.02C)	Earthen V-Ditch w/ 3:1 Side Slopes and Min 2-ft Deep	31.0	0.50	1.69	3.62
MPU (Riprap) (Q = CP1)	Trapezoidal Ditch; 3:1 SS, 18-ft Base and Min 4-ft Deep w/ 8" Riprap	974.0	0.50	4.83	6.21
MPU (Earthen) (Q = CP1)	Earthen Trapezoidal Ditch; 3:1 SS, 45-ft Base and Min 3-ft Deep	974.0	0.25	2.93	6.19

SEE EXHIBIT F FOR EXTENTS OF OFFSITE BASINS

Referenced facility that BAS1-1 will contribute to

Recommended Flood Control Facility Summary

Facility ID	Facility Description	Total/Approaching Flow (cfs) Q_{100}	Facility Flow (cfs) Q_{100}	Surface/Bypass Flow (cfs) Q_{100}	Notes
P5	5.0' Type CM2 D.I.	16	5	11	
P10	15.0' Type CM2 D.I.	15	11	4	
P18	(2) 5.0' Type CM2 D.I.	2.5	1.5	1	Flow collect per inlet
P20	5.0' Type CM2 D.I.	3.5	2	1.5	Flow collect per inlet
P23	5.0' Type CM2 D.I.	6.5	3	3.5	Flow collect per inlet
P29	5.0' Type CM2 D.I.	8.5	8.5	0	Flow collect per inlet
P30	5.0' Type CM2 D.I.	Nuisance	Nuisance	0	
P34	15.0' Type CM2 D.I.	9	8	1	
P36	20.0' Type CM2 D.I.	22	17	5	

SKYE CANYON PHASE 3
(SMITH'S CENTER)
SHG OLY1602.000
CLV# DS4796

SKYE CANYON PHASE 1
INFRASTRUCTURE
SHG OLY1401.001
CLV# DS4661

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO	DESCRIPTION	DATE	BY	APP. DATE	APP

NINETY-FIVE MANAGEMENT, LLC.

SKYE CANYON PHASE 3A INFRASTRUCTURE
FACILITIES MAP

DATE: MAY 2019
DRAFTER: ETM
DESIGNER: ETM
CHECKED: LL
PROJECT NO: OLY1609.000

EXHIBIT I
SHEET 1 OF 1

J:\oly1609-000 skye canyon phase 3a 3c 3c-1\drainage\update studies\update 2\Xhapes\oly1609_ph2_exhibit_facilities map.dwg 5/10/2019 3:20 PM DC Hicks

Referenced FlowMaster Sections

Section - 2 (100-Yr)
Worksheet for Irregular Channel

Project Description	
Worksheet	Section - 2 (100-Yr)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Channel Slope	0.58	%
Discharge	7.00	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Method	Improved Lotter's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.013	
Water Surface Elevation	0.38	ft
Elevation Range	0.00 to 0.99	
Flow Area	3.3	ft²
Wetted Perimeter	25.34	ft
Top Width	24.47	ft
Actual Depth	0.38	ft
Critical Elevation	0.39	ft
Critical Slope	0.54	%
Velocity	2.14	ft/s
Velocity Head	0.07	ft
Specific Energy	0.46	ft
Froude Number	1.04	
Flow Type	Supercritical	

Calculation Messages:
Flow is divided.

Roughness Segments		
Start Station	End Station	Mannings Coefficient
0+00.00	0+02.00	0.013
0+02.00	0+39.00	0.016
0+39.00	0+52.00	0.013
0+52.00	0+89.00	0.016
0+89.00	0+91.00	0.013

Natural Channel Points	
Station (ft)	Elevation (ft)
0+00.00	0.50
0+00.50	0.48
0+00.50	0.00
0+02.00	0.13
0+02.00	0.17
0+39.00	0.91
0+39.00	0.99

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Section - 2 (100-Yr)
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
0+52.00	0.99
0+52.00	0.91
0+89.00	0.17
0+89.00	0.13
0+90.50	0.00
0+90.50	0.48
0+91.00	0.50

Notes: Q = 1/2 (SVR1) + Facility P18 Bypass

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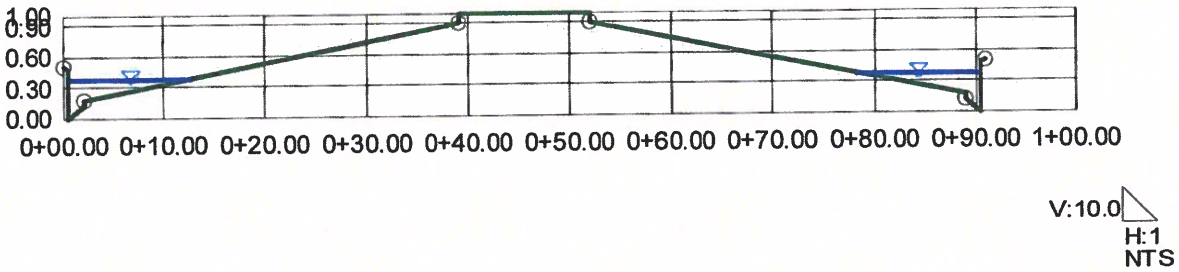
Section - 2 (100-Yr)
Cross Section for Irregular Channel

Project Description	
Worksheet	Section - 2 (100-Yr)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.013	
Channel Slope	0.58	%
Water Surface Elevation	0.38	ft
Elevation Range	0.00 to 0.99	
Discharge	7.00	cfs



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Referenced WSPGW Model

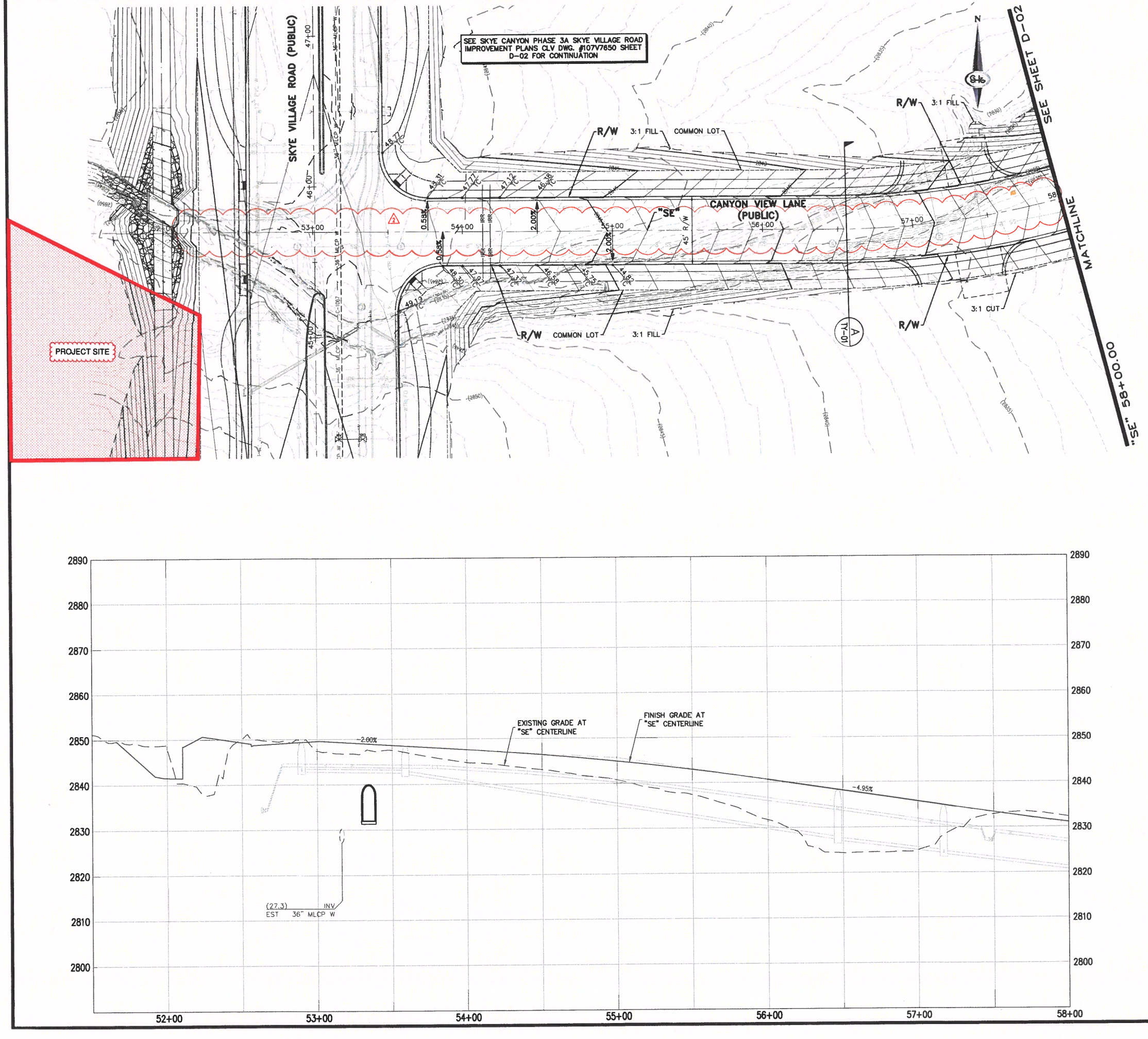
```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE (PROPOSED CONDITION)
SO    823.0702824.250 11      .015                2833.250
R     903.0702824.570 11      .015
TS    953.0702824.770  5      .015
R     993.0702824.890  5      .015
JX    993.0702824.890  3  6   .015  280.000         2824.890          00.0
R    1028.0702825.020  3      .015
R    1069.0702825.190  3      .015                                  46.983    .000 0
R    1110.0702825.360  3      .015                                 -46.983    .000 0
JX   1110.0702825.360  3 18   .015    4.15          2826.440          45.0
R    1320.0702826.200  3      .015
JX   1320.0702826.200  3 18   .015    4.15          2826.200          60.0
R    1762.5702827.970  3      .015
R    1935.0702828.660  3      .015
JX   1935.0702828.660  3 42   .015   36.800         2828.660          45.0
R    1995.0702828.900  3      .015
JX   1995.0702828.900  3 18   .015    3.0           2828.90           60.0
R    2635.0702831.460  3      .015
TS   2670.0702831.580  9      .015
TS   2700.0702831.680  8      .015
JX   2700.0702831.680  2  6   .015  170.8           2831.68           00.0
R    2725.0702831.800  2      .015
R    2742.0702831.890  2      .015                                  19.481    .000 0
R    2759.0702831.980  2      .015                                 -19.481    .000 0
R    2829.0702832.330  2      .015
JX   2829.0702832.330  2 18 18.015    2.30    2.30  2732.30 2732.30  60.0 60.0
R    3035.3902833.360  2      .015
JX   3035.3902833.360  2 18   .015    2.30          2833.360          46.0
R    3077.9302833.570  2      .015
JX   3077.9302833.570  2 18   .015    2.30          2833.570          60.0
R    3363.0402835.050  2      .015
JX   3363.0402835.050  2 42   .015   74.000         2835.050          45.0
R    3409.9802835.230  2      .015
R    3457.1002835.470  2      .015                                  44.996    .000 0
R    3475.1002835.560  2      .015
R    3521.4702835.790  2      .015                                 -34.320    .000 0
R    3564.4702836.010  2      .015
TS   3574.4702836.060 10      .015
R    3648.4702836.810 10      .015                                      45.00
JX   3648.4702836.810 60 30   .015   19.000         2836.810          00.0
R    3703.9702838.470 60      .015                                      45.00 1
R    3739.4102839.490 60      .015                                           1
R    4044.3302846.840 60      .015                                           1
R    4121.3302848.690 60      .015                                    -46.00
SH   4121.3302848.690 60      .015
CD   5  3   0    .000   9.000   18.000  .000  .000   .00
```

CONNECTION TO EXISTING

```
                    ------------------- WARNING - Junction Analysis - Irregular Channel--------------------
3077.930  2833.570    5.855  2839.426    459.00    9.83    1.50  2840.93     .00    4.68     7.50                2        0   .0
  72.020    .0052                                          .0031      .23     5.86     .69   4.784    .015                IR-COV
3149.949  2833.944    5.571  2839.515    459.00   10.31    1.65  2841.17     .00    4.68     7.80                2        0   .0
  68.512    .0052                                          .0035      .24     5.57     .76   4.784    .015                IR-COV
3218.462  2834.300    5.307  2839.607    459.00   10.81    1.82  2841.42     .00    4.68     7.89                2        0   .0
  70.169    .0052                                          .0040      .28     5.31     .82   4.784    .015                IR-COV
3288.631  2834.664    5.058  2839.722    459.00   11.34    2.00  2841.72     .00    4.68     7.98                2        0   .0
  74.409    .0052                                          .0045      .33     5.06     .89   4.784    .015                IR-COV
3363.040  2835.050    4.851  2839.901    459.00   11.83    2.17  2842.07     .00    4.68     8.00                2        0   .0
JUNCT STR   .0000                                          .0019      .00     4.85     .95            .015                IR-COV
                    ------------------- WARNING - Junction Analysis - Irregular Channel--------------------
 FILE: PSVR.WSW                          W S P G W - CIVILDESIGN Version 14.08                                  PAGE     7
                         Program Package Serial Number: 7189
                                          WATER SURFACE PROFILE LISTING                 Date: 8- 5-2019  Time: 5:38:38
                       SKYE CANYON INFRASTRUCTURE - PHASE 3A
                         BY OLYMPIA COMPANIES
                           SKYE VILLAGE ROAD MAINLINE (PROPOSED CONDITION)
************************************************************************************************************************ ********
        | Invert |  Depth |  Water |    Q    |  Vel     Vel  |  Energy | Super |Critical|Flow Top|Height/|Base Wt|       |No Wth
 Station |  Elev  |  (FT)  |  Elev  |  (CFS)  |  (FPS)   Head |  Grd.El.|  Elev | Depth  | Width  |Dia.-FT|or I.D.|  ZL   |Prs/Pip
---------|--------|--------|--------|---------|-------|-------|---------|-------|--------|--------|-------|-------|-------|-------
 L/Elem  |Ch Slope|        |        |         |       |SF Ave|    HF    |SE Dpth|Froude N|Norm Dp |  "N"  | X-Fall|  ZR   |Type Ch
*********|********|********|********|*********|*******|*******|*********|*******|********|********|*******|*******|*******|*******
3363.040  2835.050    6.288  2841.338    385.00    7.73     .93  2842.27     .00    4.16     6.76                2        0   .0
  46.940    .0038                                          .0019      .09     6.29     .50   4.696    .015                IR-COV
3409.980  2835.230    6.168  2841.398    385.00    7.86     .96  2842.36     .13    4.16     7.04                2        0   .0
  47.120    .0051                                          .0020      .09     6.30     .53   4.215    .015                IR-COV
3457.100  2835.470    5.964  2841.434    385.00    8.11    1.02  2842.45     .00    4.16     7.38                2        0   .0
  18.000    .0050                                          .0021      .04     5.96     .56   4.243    .015                IR-COV
3475.100  2835.560    5.888  2841.448    385.00    8.20    1.04  2842.49     .12    4.16     7.46                2        0   .0
```


STARTING WATER SURFACE ELEVATION FOR "SE MODEL"

Referenced Improvement Plans



STORM DRAIN NOTES

1. CONSTRUCT TYPE "CM2" DROP INLET (USDCCA STD. DWG. NO. 412.1 & 421)
2. CONSTRUCT 60" TYPE III MANHOLE WITH TYPE IA RISER (USDCCA STD. DWG. NO. 404.1 AND 406.1)
3. INSTALL 18" RCP (USDCCA STD. DWG. NO. 503.2)
4. INSTALL 36" RCP (USDCCA STD. DWG. NO. 503.2)
5. INSTALL 36" WATER QUALITY C900 PVC (USDCCA STD. DWG. NO. 503.2)
6. INSTALL 42" RCP (USDCCA STD. DWG. NO. 503.2)

NOTES

1. ALL RCP SHALL BE CLASS III UNLESS OTHERWISE SHOWN.
2. ALL PIPE LENGTHS ARE MEASURED ALONG PIPE CENTERLINE TO CENTER OF MANHOLE OR INSIDE EDGE OF DI OR RCB/RCA.
3. ALL DROP INLETS SHALL INCLUDE STORM WATER MANAGEMENT STAMP AND DETAIL PER USDCCA STD. DWG. NO. 421.
4. SEE STRUCTURAL PLANS FOR ADDITIONAL STRUCTURAL DETAILS AND CONNECTIONS.
5. ALL PIPES ARE PUBLICLY MAINTAINED.
6. ADD SPECIAL INSPECTION REQUIRED FOR PIPE SEGMENTS WITH SACRIFICIAL CONCRETE.
7. SEE UTILITY PLAN AND PROFILE SHEETS FOR UTILITY ADJUSTMENTS AND RELOCATIONS.

DROP INLET NOTE

WHERE 10 FEET PARALLEL SEPARATION IS NOT PRACTICABLE:

CAST-IN-PLACE MONOLITHIC POUR WITH WATERSTOP BETWEEN SLAB AND WALLS. BASE, WALLS AND TOP TO BE CONSTRUCTED WITH WATERSTOPS, CENTER BULB, OR FLAT STRIP (VINYLEX, GREENSTREAK PLASTIC PRODUCTS OR APPROVED EQUAL).

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY DS-4931 ON FILE AT THE CITY OF LAS VEGAS FOR THE SUBJECT PROJECT

JERRY SLATER, P.E. 14167 — DATE

FLOOD ZONE

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE "X (OUTSIDE THE 500-YEAR FLOOD PLAIN) ON THE FLOOD INSURANCE RATE MAP (FIRM) PANEL: 32003C1735E, DATED SEPTEMBER 27, 2002

NOTE:

PROPERTY OWNER IS RESPONSIBLE TO MAINTAIN THE BEST MANAGEMENT PRACTICES, SUCH AS BUT NOT LIMITED TO, THE REMOVAL OF ACCUMULATED SEDIMENT AND DEBRIS AND CARE OF VEGETATION.

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES

PROJECT NO. 126439 — FIRST APPROVED DATE: _____

SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.
1	REVISED STORM DRAIN				

NINETY-FIVE MANAGEMENT LLC

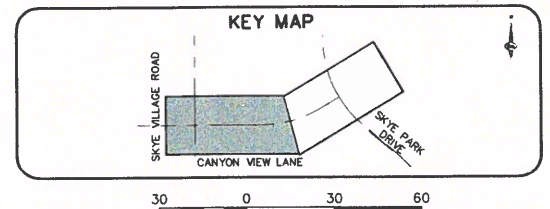
SKYE CANYON II PHASE 3A
CANYON VIEW LANE
STORM DRAIN PLAN AND PROFILE - "SE" 51+50.00 TO "SE" 58+00.00

DATE: 2/14/19
DRAFTER: DAM
DESIGNER: DAM
CHECKED: JSR
PROJECT NO. OLY1609-000

PROFESSIONAL ENGINEER - STATE OF NEVADA - JERRY SLATER - No. 14167 - Exp. 12/31/2020 - CIVIL

D-01
SHEET 8 OF 22
DWG# 107V7653

KEY MAP

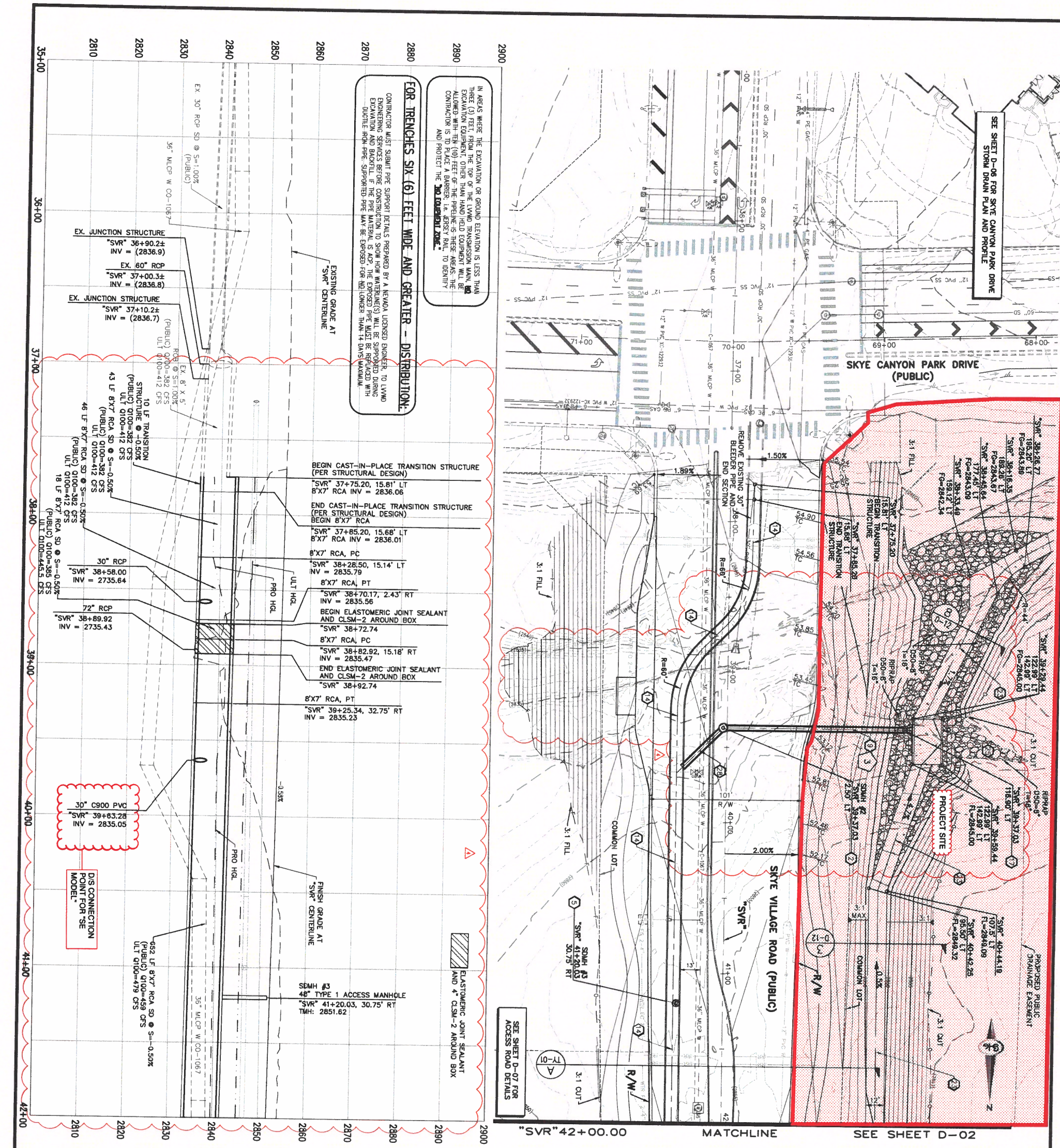


30 0 30 60
SCALE FEET

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY. CALL BEFORE YOU DO OVERHEAD 1-702-227-2929

FAST Call before you Under Ground. 1-702-432-5500

Call before you Dig Call 811 or 1-800-227-2600



STORM DRAIN NOTES

1. CONSTRUCT TYPE "Da2" DROP INLET (USDCCA STD. DWG. NO. 412.1 & 421)
2. CONSTRUCT 60" TYPE III MANHOLE (USDCCA STD. DWG. NO. 406.1)
3. CONSTRUCT 60" TYPE III MANHOLE WITH TYPE IA RISER (USDCCA STD. DWG. NO. 404.1 AND 406.1)
4. CONSTRUCT NDOT TYPE 4 MANHOLE (NDOT STD. PLAN R-4.3.2)
5. CONSTRUCT 48" TYPE I RCA ACCESS MANHOLE (SEE SHEET S1.12)
6. INSTALL 18" RCP (USDCCA STD. DWG. NO. 503.2)
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18. CONSTRUCT BRICK AND MORTAR PLUG (SEE DETAIL 3, DRAWING D-12)
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NOTES

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4. SEE STRUCTURAL PLANS FOR ADDITIONAL STRUCTURAL DETAILS AND CONNECTIONS.
5. ALL PIPES IN PUBLIC ROW ARE PUBLICLY MAINTAINED.
6. ADD SPECIAL INSPECTION REQUIRED FOR PIPE SEGMENTS WITH SACRIFICIAL CONCRETE.
7. SEE UTILITY PLAN AND PROFILE SHEETS FOR UTILITY ADJUSTMENTS AND RELOCATIONS.
8. ALL INTERIM DRAINAGE FACILITIES TO BE PRIVATELY MAINTAINED.

DROP INLET NOTE

WHERE 10 FEET PARALLEL SEPARATION IS NOT PRACTICABLE: CAST-IN-PLACE MONOLITHIC POUR WITH WATERSTOP BETWEEN SLAB AND WALLS. BASE WALLS AND TOP TO BE CONSTRUCTED WITH VARIATIONS, CENTER BULB, OR FLAT STRIP (VINYLEX, GREENSTREAK PLASTIC PRODUCTS OR APPROVED EQUAL).

LEGEND

(1) STORM DRAIN LATERAL # (SEE SHEETS D-08 THRU D-11)

FLOOD ZONE

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE 'X' (OUTSIDE THE 500-YEAR FLOOD PLAIN) ON THE FLOOD INSURANCE RATE MAP (FIRM) PANEL 32003C1725E, DATED SEPTEMBER 27, 2002

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY DS-6931 ON FILE AT THE CITY OF LAS VEGAS FOR THE SUBJECT PROJECT

JERRY SLATER, P.E. 14167 — DATE

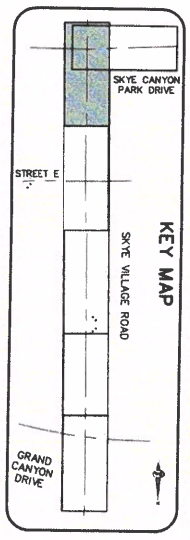
NOTE:

PROPERTY OWNER IS RESPONSIBLE TO MAINTAIN THE BEST MANAGEMENT PRACTICES, SUCH AS BUT NOT LIMITED TO, THE REMOVAL OF ACCUMULATED SEDIMENT AND DEBRIS AND CARE OF VEGETATION.

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. 126441 — FIRST APPROVED DATE: ____

KEY MAP



SCALE 30 0 30 60 FEET

Call before you Dig 811 1-800-227-2600

Call before you dig Underground Service Alert 1-702-486-4300

CALL BEFORE YOU DIG OVERHEAD POWER LINES, ITS COSTLY! 1-702-227-2929

NINETY-FIVE MANAGEMENT LLC

SKYE CANYON II PHASE 3A
SKYE VILLAGE ROAD
STORM DRAIN PLAN AND PROFILE - "SVR" 35+00.00 TO "SVR" 42+00.00

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.
1	REVISED STORM DRAIN				

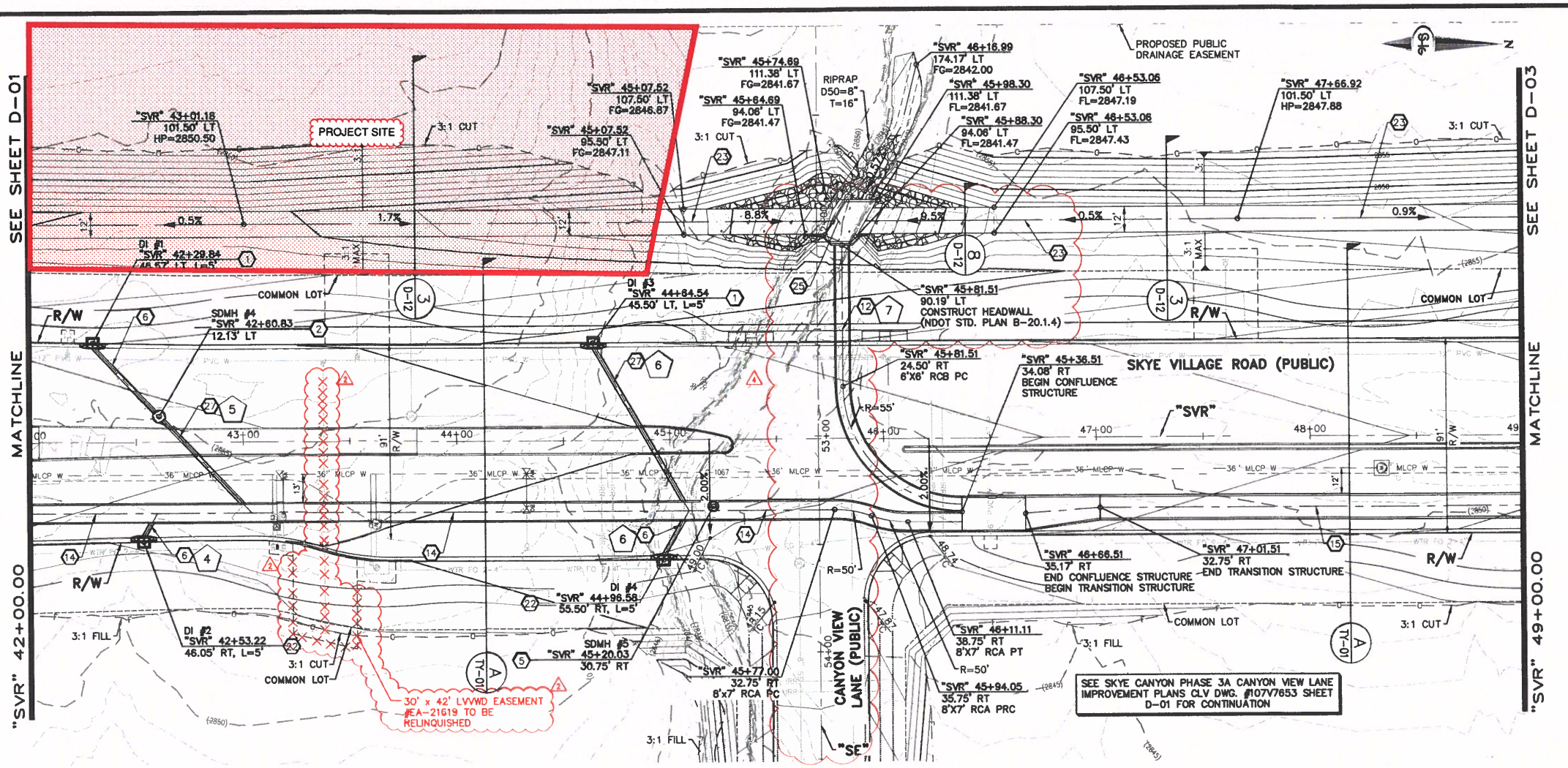
DATE: 1/28/19
DRAFTER: DAM
DESIGNER: DAM
CHECKED: JSR
PROJECT NO. OLY1609-000

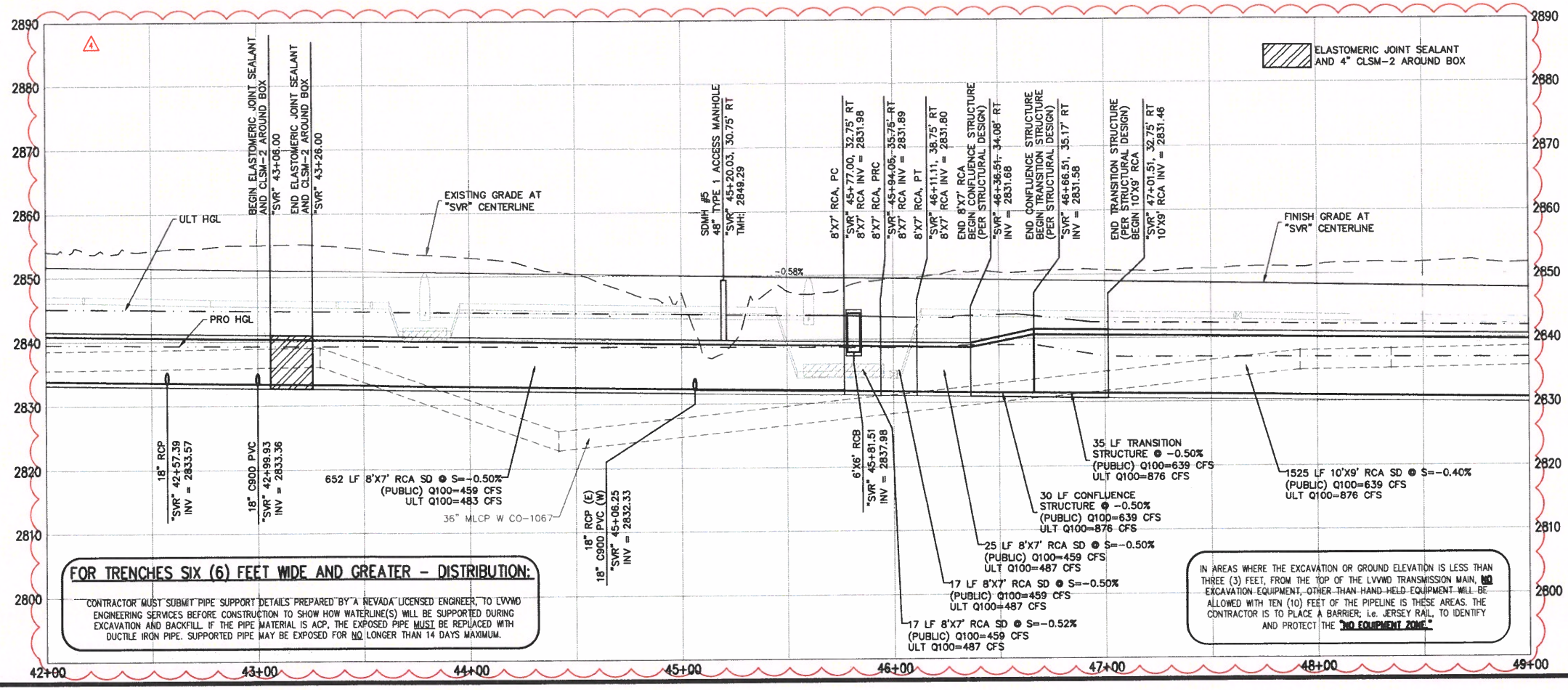
D-01
SHEET 11 OF 61
DWG NO. 1077650

JERRY SLATER — STATE OF NEVADA — PROFESSIONAL ENGINEER — No. 14167 — 7-2019

SLATER HANIFAN GROUP a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

L18-02144





FOR TRENCHES SIX (6) FEET WIDE AND GREATER - DISTRIBUTION:

CONTRACTOR MUST SUBMIT PIPE SUPPORT DETAILS PREPARED BY A NEVADA LICENSED ENGINEER, TO LVVWD ENGINEERING SERVICES BEFORE CONSTRUCTION TO SHOW HOW WATERLINE(S) WILL BE SUPPORTED DURING EXCAVATION AND BACKFILL. IF THE PIPE MATERIAL IS ACP, THE EXPOSED PIPE MUST BE REPLACED WITH DUCTILE IRON PIPE. SUPPORTED PIPE MAY BE EXPOSED FOR NO LONGER THAN 14 DAYS MAXIMUM.

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LEGEND

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I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY DS-4931 ON FILE AT THE CITY OF LAS VEGAS FOR THE SUBJECT PROJECT

JERRY SLATER, P.E. 14167 — DATE

FLOOD ZONE

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NOTE:
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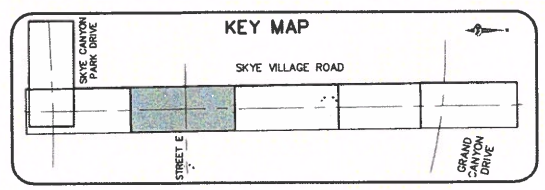
APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. 126441 — FIRST APPROVED DATE: ____

KEY MAP



30 0 30 60
SCALE — FEET

SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300
FAX (702) 284-5399

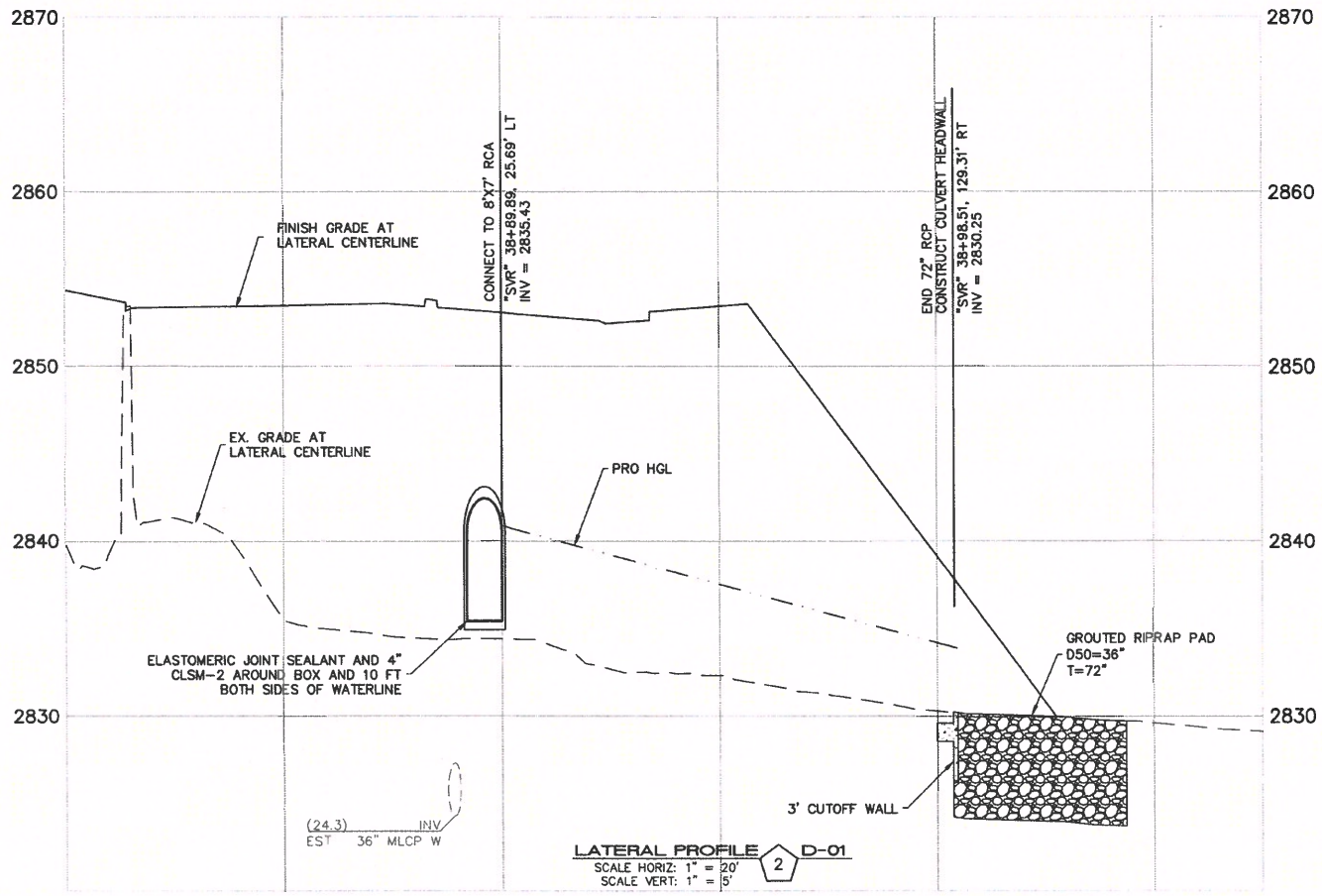
NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.
1	REVISED STORM DRAIN				
2	REMOVE WATER STUB				

NINETY-FIVE MANAGEMENT LLC
SKYE CANYON II PHASE 3A
SKYE VILLAGE ROAD
STORM DRAIN PLAN AND PROFILE - "SVR" 42+00.00 TO "SVR" 49+00.00

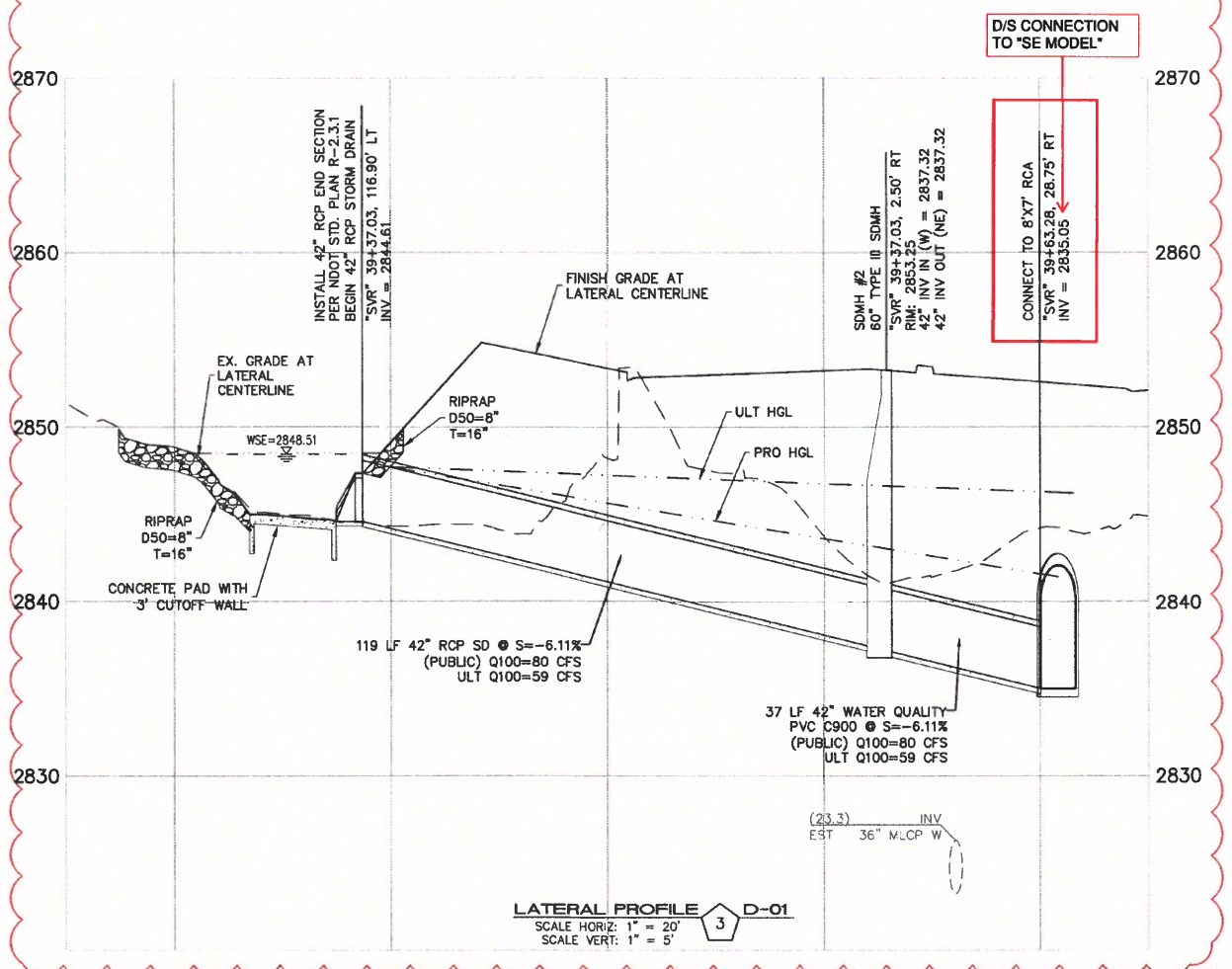
DATE: 1/28/19
DRAFTER: DAM
DESIGNER: DAM
CHECKED: JSR
PROJECT NO.
OLY1609-000

PROFESSIONAL ENGINEER - STATE OF NEVADA
JERRY SLATER
No. 14167
Exp. 06/30/2020
CIVIL

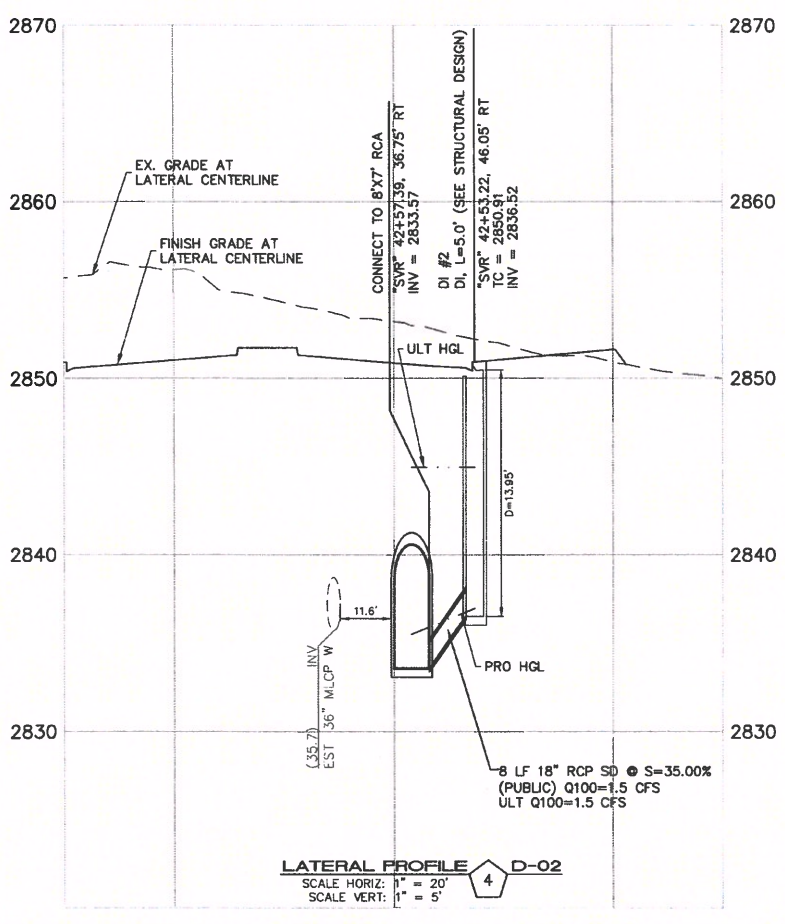
D-02
SHEET 12 OF 61
DWG NO. 107V7650



LATERAL PROFILE 2 D-01
SCALE HORIZ: 1" = 20'
SCALE VERT: 1" = 5'



LATERAL PROFILE 3 D-01
SCALE HORIZ: 1" = 20'
SCALE VERT: 1" = 5'



LATERAL PROFILE 4 D-02
SCALE HORIZ: 1" = 20'
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APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. 126441 FIRST APPROVED DATE: _____

SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.
1	NEVADA STORM DRAIN				

NINETY-FIVE MANAGEMENT LLC

SKYE CANYON II PHASE 3A
SKYE VILLAGE ROAD
STORM DRAIN LATERAL PROFILE

DATE: 1/28/19
DRAFTER: DAM
DESIGNER: DAM
CHECKED: JSR
PROJECT NO. OLY1609-000

PROFESSIONAL ENGINEER - STATE OF NEVADA - JERRY S. SLATER - Exp. 06/30/2020 - CIVIL - No. 14167

D-08
SHEET 18 OF 61
DWG NO. 107V7650

APPENDIX F

Reference Material
Technical Drainage Study for Skye Canyon – Phases 3B and 3C Infrastructure – Update #1
(DS4953Crev)

Approval Letters

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM			DATE: June 13, 2019 REVISED September 26, 2019
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: Skye Canyon – Phases 3B & 3C Infrastructure – Update #1		COPIES TO: Slater Hanifan Group
Cross Streets:	NWC of Skye Village Road & Skye Canyon Park Drive		M F Land LLC / Ninety-Five Management LLC
File Number:	F:\Depot\DSMemos\DS4953Crev.doc		Bart Anderson, P.E., DevCo
Parcel Number:	126-12-101-002		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 #
1st Submittal	2/8/2017	3/9/2018 & 5/15/2018	Not Approved	$400.00	493315: $400
2nd Submittal	9/11/2018	10/10/2018	Conditional Approval	$400.00	498970: $400
3rd Submittal	5/30/2019	6/13/2019 & Revised 9/26/2019	See Comments Below	$100.00	3151006: $100
			TOTAL FEES (LDDRS):	**$900.00**	----

REMARKS: Revised 9/26/2019 to reflect improvement plans.

3rd Submittal: Update #1 to shift the storm drain alignment in Iron Mountain Road 1-ft to the north from Station "IMR" 107+46.33 to Station "IMR" 83+26.07

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.

Flood Control understands that there is a Land Use change along the west side of Shaumber Road. A Drainage Study Update will be required to verify flow impacts and storm drain size for Shaumber Road prior to development.

The following conditions are repeated until they are complete:

1. The site is adjacent to or crosses an existing or proposed *Clark County Regional Flood Control District* (CCRFCD) master planned facility. Therefore, CCRFCD concurrence is required prior to final approval of the drainage study. CCRFCD requires receipt of structural approval from the Building Department prior to concurrence.

2. *Skye Canyon Phases 3B & 3C* onsite developments are to be flood protected by *Detention Basin 2* and the *Skye Canyon Phase 3A Infrastructure*. No occupancy permits within onsite *Phases 3B & 3C* will be issued prior to the substantial completion of *Detention Basin 2 with the outfall facility (from Detention Basin 2 in Iron Mountain Road to Skye Village Road)* and the substantial completion of the *Skye Canyon Phase 3A Infrastructure*.

3. The future MPU facility within Skye Village Road north of the Skye Village/Grand Canyon/Iron Mountain intersection to the proposed MPU facility at the Kyle Canyon interchange area shall be substantially complete before occupancy of residential Units beyond Phases 3A, 3B and 3C. This includes residential development within Phases 4 & 6 and the development of Phase 5 as shown on the *Development Phasing Exhibit* dated 12/4/2017.

4. The implementation of the CCRFCD Master Plan for the Skye Canyon Master Development is being progressed with the recent 90% design submittal of the *Moccasin Rd. CCRFCD Flood Control Facility – US95/Kyle Canyon Rd Interchange to Moccasin Rd. (Skye Canyon Developer Funded)* and the *Moccasin Rd. CCRFCD Flood Control Facility – Moccasin Rd to CCRFCD Facility LVUP 1076/1077(CCRFCD Funded)*. Once building permits are released for 75% of the Skye Canyon Development west of US-95 these critical facilities shall be substantially complete in accordance with the provisions of Title 19.02.130 D.

5. The implementation of the CCRFCD Master Plan is being progressed with the recent bid opening of the NDOT US-95 facilities from the CC-215 interchange north to the Kyle Canyon interchange. Construction of the associated CCRFCD MPU facilities allows for the utilization of the existing MPU facilities constructed with the Horse Interchange. The development of Phases 3A, 3B and 3C west of US-95 shall maximize the flow collection into this facility prior to allowing flows to cross US-95 using the existing culvert system.

6. *Flood Control* acknowledges that the new *Skye Canyon Master Plan Amendment* (MPA) was included as a part of the 2018 MPU process. Any changes not incorporated in the 2018 MPU must be approved by *City of Las Vegas* and *Clark County Regional Flood Control District* (CCRFCD) and shall be adopted by the *City of Las Vegas City Council* prior to the final approval of the subject improvement plans.

7. The subject *Phases 3B and 3C Infrastructure Drainage Study* addresses the included street improvements of *Iron Mountain Road, Skye Canyon Park Drive, Shaumber Road*, culvert crossings and storm drain systems with the streets. Technical drainage studies will be required for the future onsite parcels as they develop.

8. Structural plans for the storm drain improvements must be submitted for review by *Flood Control* and the *Building Department*. Provide a soil report, structural calculations and specifications, wet stamped structural sets and a grading plan to the *City of Las Vegas Building Department* for processing (call *Building Department* to confirm their submittal requirements). The engineer must provide a copy of *Building Department* approval of the structures to *City Flood Control Section* prior to the final acceptance of the improvement plans.

9. Phase 3A, 3B, and 3C include storm drain improvements that will be abandoned in the future. These abandoned facilities will impact the adjoining Phase 3B and 3C development parcels. The individual parcel development shall address the impact and removal of these improvements as well as include the removal of these items in the associated improvements and Bond.

10. The project proposed to build temporary drainage facilities including drainage berms/swales over the *Phases 3B, 3C* site and along the west side of *Shaumber Road*. Prior to the final plans approval the developer must complete a ***Maintenance and Liability Agreement*** for the interim drainage improvements and post a minimum maintenance bond of $50,000 or 50-percent of the construction cost for the improvements, whichever is greater. The engineer must submit an estimate of the quantities for construction the facility and an exhibit that adequately shows the location and limits of

the drainage facilities to *City Flood Control* for approval. Once the drainage study is conditionally approved, the engineer/developer should contact the *City's Land Development Section* (702-229-6371) to begin the agreement process.

In order for the maintenance bond to be released in the future, a drainage update/letter will be required to justify that the berms/swales are no longer necessary and can be removed.

11. Provide off-site grading permission for areas outside of the Skye Canyon Development impacted by these infrastructure improvements. Provide the notarized letter of off-site grading permission prior to final approval of the improvement plans.

12. Provide drop inlets upstream of the roadway cross fall transitions to collect flow before it spills across the intersections.

13. The interim channels adjacent to the infrastructure roadways are the Maintenance responsibility of the Master Developer.

14. **Iron Mountain Road Improvement Plans**:

    Sheet PP-05: Label the length of the proposed drop inlet at Sta. 94+36.89.

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/pbj

T/R/S: T19S/R59E/12
AREA: F-12

Referenced Exhibits

J:\oly\609-000 skye canyon phase 3b 3c\drainage\phase 3b 3c study\addendum\figures\oly1609 tds exhibit f interim condition drainage map.dwg 9/5/2018 3:00 PM Lont Leavitt

LEGEND

- BASIN BOUNDARY
- PRORATE BOUNDARY
- ID — BASIN ID
- ID — PRORATE BASIN ID
- ID — CONCENTRATION POINT ID
- FLOW DIRECTION
- ID — FLOWMASTER SECTION

N

SCALE - 1" = 300'

0 300 600 FEET

Interim Condition Flow Rate Summary

Basin/Concentration Point ID	Area (ac)	Q_{100} (cfs)
Basins		
EX1	60.0	161
EX2	58.1	139
EX3a	14.2	35
EX3b	17.1	44
EX7	18.9	46
EX8	8.3	20
EX9	12.0	21
STR1	3.9	12
STR2	2.8	9
STR3	2.8	9
STR4	4.7	18
STR5	2.9	10
STR6	5.6	19
STR7	1.1	4
2.08a	15.8	49
2.08b	19.4	61
2.09	21.1	61
2.09T	3.2	3
2.31	3.2	8
2.32	20.3	62
2.32b	24.8	74
2.327b	0.6	1
5.01	0.6	<1
5.01b	18.7	64
	203	68
Referenced Basins		
Sb41	5.8	20
Sb42	4.9	15
Sb43	2.1	7
*WP14	5.7	19
*WSN44	1.4	5
WG4A	8.0	23
SON10	14.2	42

*Referenced from the "Master Drainage Study Update No. 4"
*Referenced from the "Parcel 2.15 Study"

Concentration Point ID	Area (mi²)	Q_{100} (cfs)
CP1	1.1	217
Q = RCB2 + EX1 + STR2		114
CP2a	1.2	271
Q = CP1 + 0.7*2.32T + 1/2 STR1		139
CP2b	1.2	350
Q = CP2a + EX3 + STR1 + 2.32		182
CP2c	0.1	141
Q = 0.5*(CP2a + 2.32)*0.8 + 2.32b		68
CP3a	1.5	709
Q = CP2 + 2.09T + 2.09 + 2.31		340
CP3b	0.2	243
Q = CP3a + 2.08T + 2.08a + DI		92
CP4	0.2	317
Q = EX2 + STR3 + STR4 + EX3a		118
CP5	0.1	178
Q = CP4		69
RCP3	<0.1	16
Q = *WC20 + *WP14 + *WSN44		8
CP7	<0.1	105
Q = *WSN + *WC20 + *WP14 + *WSN10 + EX7 + STR5 + STR6 + EX8		49
CP8	1.1	331
Q = CP7 + EX8 + STR6		170
CP9	1.1	393
Q = CP8 + 2.08b		191
RCP2	1.1	393
Q = CP8 + DI		203
RCP10	1.6	420
Dow Homes Compansion Pond		217
Dow Homes Compansion Pond	1.6	781
RCP12	<0.1	355
Dow Homes Compansion Pond		148
Dow Homes Compansion Pond	1.3	70
Referenced Contentra Inlet Points		731
*WC20	<0.1	358
*RDB1	0.9	86
*RDB2	1.0	40
*PARK	<0.1	57
		64
		38
		13

*Referenced from the "Master Drainage Study Update No. 4"
*Referenced from the "Parcel 2.15 Study"
*Referenced from the "Master Drainage Study Update No. 4"
*Referenced from the "Parcel 2.16 Study"

Prorated Flow Summary

Basin ID	Q_{100} (cfs)	Area (acres)	100-yr Unit Flow (cfs/acre)
EX1	161	68.03	2.4
EX2	139	58.09	2.4
EX3b	44	17.12	2.6
E38	20	8.31	2.4

Subbasin ID	Q_{100} (cfs)	Area (acres)	100-yr Unit Flow (cfs/acre)
A1	67	28.17	2.4
A2	34	14.25	2.4
B	61	25.61	2.4
TOTAL	161	68.03	2.4
C	101	42.36	2.4
D	38	15.73	2.4
TOTAL	139	58.09	
E	13	5.23	2.6
F	31	11.89	2.6
G	10	4.05	2.4
H	8	3.51	2.4
TOTAL	44	17.12	
L	14	5.76	2.4
M	6	2.55	2.4
TOTAL	20	8.31	

Interim Condition 10-Year Street Flow Summary

Section ID	Q_{10} (cfs)	Slope (%)	Depth (ft)	Velocity (fps)	DxV	Dry Lane (ft)
SH10	8	1.00	0.37	2.8	1.0	15.0
(Q = Most Conservative Shearwater Street Basin)		3.24	0.32	4.2	1.4	17.5
*IM10	6	4.00	0.38	3.9	1.5	21.0
(Q = Basin STR1)		4.00	0.35	4.8	1.7	22.5
SC10	10	4.75	0.32	5.1	1.6	24.0
(Q = Most Conservative Skye Canyon Park Street Basin)						

*Modeled as Half Street

Interim Condition 100-Year Street Flow Summary

Section ID	Q_{100} (cfs)	Slope (%)	Depth (ft)	Velocity (fps)	DxV
1	16	2.00	0.41	4.1	1.7
(Q = STM4)					
2	10	2.00	0.36	3.8	1.4
(Q = STR3 + Facility P7 Bypass)					
*3b	9	2.00	0.42	4.2	1.8
(Q = *WSN11 + *WP42)					
*4	13	1.00	0.43	3.0	1.3
(Q = STR3)					
*5	6.5	4.00	0.35	5.2	1.8
(Q = 1/2STR1 + Facility P17 Bypass)					
*9	8	1.50	0.43	3.6	1.6
(Q = 1/2STR1 + Facility P20 Bypass + Basin 2.32T)					
6	10	2.00	0.36	3.8	1.4
(Q = STR5)					
7	13	1.00	0.35	5.4	1.9
(Q = 1/2STR7 + Facility P27 Bypass)					
8	14	1.5	0.41	3.57	1.5
(Q = 1/2STR6 + Facility P30 Bypass)					
*9	7	3.44	0.38	3.59	1.4
(Q = 1/2STR5 + 1/2STR7)					

*Modeled as a Half Street Section
*Referenced from the "Master Drainage Study Update No. 4"

Recommended Flood Control Drop Inlet Summary

Facility ID	Facility Description	Total/Approaching Flow (cfs) Q_{100}	Facility Flow (cfs) Q_{100}	Surface/Bypass Flow (cfs) Q_{100}	Notes
P7	20.0' Type CM2 D.I.	16	15	1	0.5 cfs bypass per inlet
P8 & P10	17.5' Type CM2 D.I.	10	10	0	
P14	17.5' Type CM2 D.I.	13	13	0	
P17	17.5' Type CM2 D.I.	9	8	1	1 cfs bypass per inlet
P20	17.5' Type CM2 D.I.	7	6	1	1 cfs bypass per inlet
P23	20.0' Type CM2 D.I.	8	8	0	
P27	10.0' Type CM2 D.I.	10	7	3	1.5 cfs bypass per inlet
P30	10.0' Type CM2 D.I.	13	8	5	2.5 cfs bypass per inlet
P32	17.5' Type CM2 D.I.	14	13	1	0.5 cfs bypass per inlet

*Note that in some areas one half of the roadway will not be built. Therefore the notes identify the quantity bypassed by each drop inlet.

SEE EXHIBIT E FOR EXTENTS OF OFFSITE BASINS

SKYE CANYON PHASE 2 INFRASTRUCTURE SHG OLY1501.001 CLV# DS4739

SKYE CANYON PHASE 1 INFRASTRUCTURE SHG OLY1401.001 CLV# DS4661

SKYE CANYON PARK INFRASTRUCTURE SHG OLY1401.003 CLV# DS4707

SKYE CANYON PARCEL 2.16 SHG OLY1607.002 CLV# DS4842

SKYE CANYON PARCEL 2.15 SHG PAR1603.000 CLV# DS4840

SKYE CANYON PHASE 3 (SMITHS CENTER) SHG OLY1602.000 CLV# DS4796

PROJECT SITE

SHAUMBER ROAD · IRON MOUNTAIN ROAD · SKYE CANYON PARK DRIVE · EGAN CREST DRIVE · SKYE VILLAGE ROAD · GRAND TETON DR · FUTURE MOCCASIN COLLECTION BERM

0 CFS (76 CFS) = (106 CFS) 233 CFS 64 CFS 30 CFS 30 CFS

INTERIM Q=0 CFS AFTER BERM IN PLACE Q=709 CFS

INTERIM Q=709 CFS AFTER BERM IN PLACE Q=0 CFS

EX. 8'X5' RCB (CNGT 004)

EX. 10'

EXHIBIT F	
SHEET 1 OF 1	
PROJECT NO.	OLY1609.000
CHECKED:	LL
DESIGNER:	ETM
DRAFTER:	ETM
DATE:	SEPT 2018

NINETY-FIVE MANAGEMENT, LLC.

SKYE CANYON PHASE 3B, 3C INFRASTUCTURE

INTERIM CONDITION DRAINAGE MAP

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

Referenced FlowMaster Sections

Section - 7 (100-Yr)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.750	%
Discharge	13.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.50
0+00.50	0.48
0+00.50	0.00
0+02.00	0.13
0+02.00	0.17
0+39.00	0.91
0+39.00	0.99
0+52.00	0.99
0+52.00	0.91
0+89.00	0.17
0+89.00	0.13
0+90.50	0.00
0+90.50	0.48
0+91.00	0.50

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.50)	(0+02.00, 0.17)	0.013
(0+02.00, 0.17)	(0+39.00, 0.91)	0.016
(0+39.00, 0.91)	(0+52.00, 0.91)	0.013
(0+52.00, 0.91)	(0+89.00, 0.13)	0.016
(0+89.00, 0.13)	(0+91.00, 0.50)	0.013

Section - 7 (100-Yr)

Options

Current Roughness Weighted Method	Improved Lotter's Method
Open Channel Weighting Method	Improved Lotter's Method
Closed Channel Weighting Method	Horton's Method

Results

Normal Depth		0.35	ft
Elevation Range	0.00 to 0.99 ft		
Flow Area		2.43	ft²
Wetted Perimeter		21.58	ft
Hydraulic Radius		0.11	ft
Top Width		20.79	ft
Normal Depth		0.35	ft
Critical Depth		0.46	ft
Critical Slope		0.00545	ft/ft
Velocity		5.35	ft/s
Velocity Head		0.44	ft
Specific Energy		0.79	ft
Froude Number		2.76	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.35	ft
Critical Depth	0.46	ft
Channel Slope	4.750	%
Critical Slope	0.00545	ft/ft

Section - 7 (100-Yr)

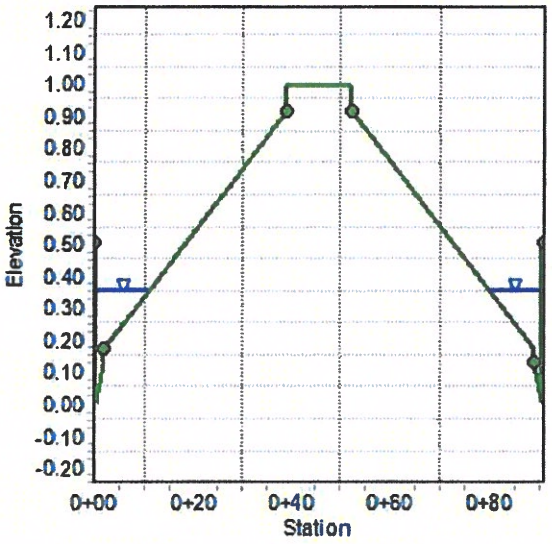
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.750	%
Normal Depth	0.35	ft
Discharge	13.00	ft³/s

Cross Section Image



Section - 8 (100-Yr)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	1.500	%
Discharge	14.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.50
0+00.50	0.48
0+00.50	0.00
0+02.00	0.13
0+02.00	0.17
0+39.00	0.91
0+39.00	0.99
0+52.00	0.99
0+52.00	0.91
0+89.00	0.17
0+89.00	0.13
0+90.50	0.00
0+90.50	0.48
0+91.00	0.50

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.50)	(0+02.00, 0.17)	0.013
(0+02.00, 0.17)	(0+39.00, 0.91)	0.016
(0+39.00, 0.91)	(0+52.00, 0.91)	0.013
(0+52.00, 0.91)	(0+89.00, 0.13)	0.016
(0+89.00, 0.13)	(0+91.00, 0.50)	0.013

Section - 8 (100-Yr)

Options

Current Roughness Weighted Method	Improved Lotter's Method
Open Channel Weighting Method	Improved Lotter's Method
Closed Channel Weighting Method	Horton's Method

Results

Normal Depth		0.41	ft
Elevation Range	0.00 to 0.99 ft		
Flow Area		3.92	ft²
Wetted Perimeter		27.95	ft
Hydraulic Radius		0.14	ft
Top Width		27.03	ft
Normal Depth		0.41	ft
Critical Depth		0.48	ft
Critical Slope		0.00514	ft/ft
Velocity		3.57	ft/s
Velocity Head		0.20	ft
Specific Energy		0.61	ft
Froude Number		1.65	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.41	ft
Critical Depth	0.48	ft
Channel Slope	1.500	%
Critical Slope	0.00514	ft/ft

Section - 8 (100-Yr)

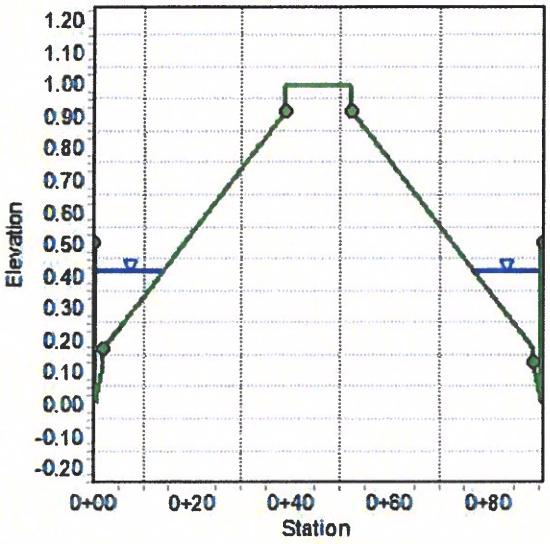
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	1.500	%
Normal Depth	0.41	ft
Discharge	14.00	ft^3/s

Cross Section Image



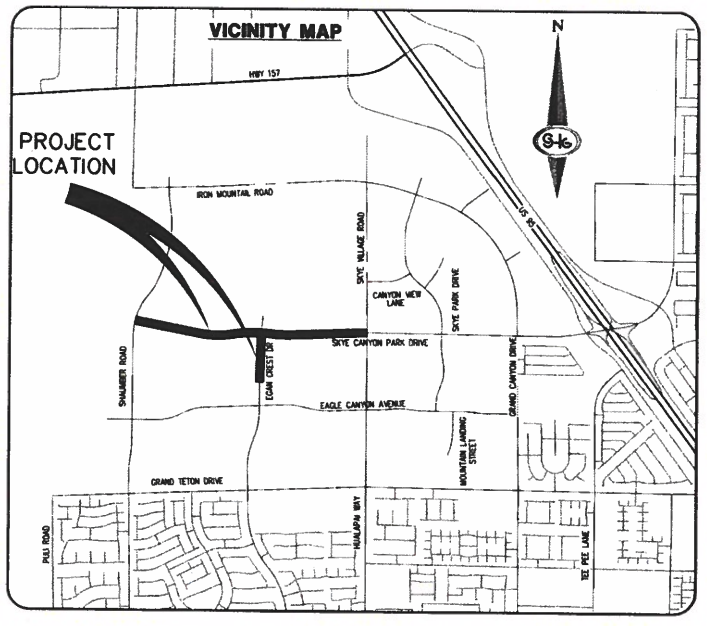
Referenced Improvement Plans

IMPROVEMENT PLANS

FOR

SKYE CANYON PHASE 3B, 3C
SKYE CANYON PARK DRIVE
SHAUMBER RD TO SKYE VILLAGE RD

APN:126-12-101-002
17.9 AC



BENCHMARK

MONUMENT ID: USDA (1934) 19

U.S. DEPARTMENT OF AGRICULTURE BRASS DISC AT SOUTHWEST CORNER OF U.S. 95 AND KYLE CANYON ROAD

ELEVATION = 2817.61 FEET. 858.810 METERS
NAVD 88 DATUM

PER THE CITY OF LAS VEGAS BENCHMARK BOOK – 2008 ADJUSTMENT (UPDATED 05/24/2010)

BASIS OF BEARING

NORTH 89°16'30" WEST, BEING THE BEARING OF THE SOUTH LINE OF THE NORTHWEST QUARTER (NW1/4) OF SECTION 7, TOWNSHIP 19 SOUTH, RANGE 60 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF IN FILE 147, PAGE 71 OF PLATS IN THE CLARK COUNTY RECORDER'S OFFICE, NEVADA.

OWNER

M F LAND LLC
% OLYMPIA COMPANIES LLC
11411 SOUTHERN HIGHLANDS
PARKWAY, SUITE 300
LAS VEGAS, NV 89141

DEVELOPER

NINETY-FIVE MANAGEMENT LLC
% OLYMPIA COMPANIES LLC
11411 SOUTHERN HIGHLANDS
PARKWAY, SUITE 300
LAS VEGAS, NV 89141
PH (702) 220-6565
FX (702) 220-6566

ENGINEER

SLATER HANIFAN GROUP
5740 S. ARVILLE STREET #216
LAS VEGAS, NV 89118
(702) 284-5300

APPROVALS

CITY ENGINEER–ALLEN E. PAVELKA PE #9029 DATE

APPROVAL OF THESE PLANS BY THE CITY ENGINEER IS LIMITED TO THOSE IMPROVEMENTS CONSTRUCTED IN THE DEDICATED OF RIGHT-OF-WAY, AND/OR DEDICATED EASEMENTS. THIS APPROVAL DOES NOT AUTHORIZE CONSTRUCTION OF ANY IMPROVEMENTS THAT DEVIATE FROM ADOPTED STANDARDS AND/OR SPECIFICATIONS EXCEPT THOSE SPECIALLY LISTED UNDER DEVIATIONS FORM STANDARDS. THE ENGINEER SHALL RESOLVE ANY DEVIATION OTHER THAN THOSE LISTED IN DEVIATIONS FROM STANDARDS IN FAVOR OF THE UNIFORM STANDARD DRAWINGS AND SPECIFICATIONS, CLARK COUNTY AREA, NEVADA.

CHRIS KNIGHT DATE
DIRECTOR, BUILDING AND SAFETY

THIS PLAN MEETS THE APPLICABLE STANDARDS OF THE PLANNING DEPARTMENT.

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES MANAGER
PROJECT NO. 12640B DATE:
SHEETS:
LVVWD APPROVED FIRE FLOW XXXX GPM AT XX PSI RESIDUAL

APPROVAL BY THE FIRE DEPARTMENT HAVING JURISDICTION IS REQUIRED PRIOR TO OBTAINING FINAL APPROVAL FROM THE LAS VEGAS VALLEY WATER DISTRICT.

LAS VEGAS FIRE AND RESCUE DATE

NV ENERGY DATE

NV ENERGY ACKNOWLEDGES THAT WE HAVE RECEIVED YOUR PLANS AND WILL PROVIDE SERVICE TO ALL ELECTRICAL NEEDS ASSOCIATED WITH THIS PROJECT. NV ENERGY RESERVES THE RIGHT TO ADDRESS ANY EXISTING OR FUTURE CONFLICTS ONCE THE FINAL DESIGN IS COMPLETED. THE NEW SERVICE AND THE RESOLUTION OF ANY CONFLICTS WILL BE ACCOMPLISHED PURSUANT TO THE NEVADA PUBLIC UTILITY COMMISSION'S RULES AND REGULATIONS.

CENTRAL TELEPHONE CO. DBA CENTURYLINK DATE

THE AFFIXED CENTRAL TELEPHONE CO. DBA CENTURYLINK APPROVAL DOES NOT ASSUME OR GUARANTEE LIABILITY FOR KNOWN OR UNKNOWN CONFLICTS WITH EXISTING OR PROPOSED IMPROVEMENTS. RESOLUTION OF ANY CONFLICT WILL BE ACCOMPLISHED PURSUANT TO LOCAL ORDINANCES, NEVADA REVISED STATUES AND/OR PUBLIC UTILITY COMMISSION RULES AND REGULATIONS.

SOUTHWEST GAS CORPORATION DATE

COX COMMUNICATIONS LAS VEGAS, INC. DATE

INDEX OF DRAWINGS

SHT. NO.	DWG NO.	DESCRIPTION
1	G-01	COVER SHEET
2	G-02	GENERAL NOTES
3	G-03	ABBREVIATIONS, LEGEND, AND QUANTITIES
4	TY-01	ROADWAY SECTIONS
5	PP-01	CONSTRUCTION PLAN – "SCP" 37+50 TO "SCP" 43+50
6	PP-02	CONSTRUCTION PLAN – "SCP" 43+50 TO "SCP" 50+00
7	PP-03	CONSTRUCTION PLAN – "SCP" 50+00 TO "SCP" 56+50
8	PP-04	CONSTRUCTION PLAN – "SCP" 56+50 TO "SCP" 62+50
9	PP-05	CONSTRUCTION PLAN – "SCP" 62+50 TO "SCP" 68+50
10	PP-06	CONSTRUCTION PLAN – "SCP" 68+50 TO "SCP" 72+00
11	PP-07	CONSTRUCTION PLAN – ARROYO GRADING
12	PP-08	CONSTRUCTION PLAN – "ECD" 29+50 TO "ECD" 35+50
13	PP-09	CONSTRUCTION PLAN – "ECD" 35+50 TO "ECD" 38+20
14	LAT-01	STORM DRAIN LATERALS I
15	LAT-02	STORM DRAIN LATERALS II
16	GR-01	GRADING SHEET I
17	GR-02	GRADING SHEET II
18	DTL-01	STORM DRAIN DETAILS
19	UTL-01	UTL PLAN & PROFILE – "SCP" 37+50 – "SCP" 43+50
20	UTL-02	UTL PLAN & PROFILE – "SCP" 43+50 – "SCP" 50+00
21	UTL-03	UTL PLAN & PROFILE – "SCP" 50+00 – "SCP" 56+50
22	UTL-04	UTL PLAN & PROFILE – "SCP" 56+50 – "SCP" 62+50
23	UTL-05	UTL PLAN & PROFILE – "SCP" 62+50 – "SCP" 68+50
24	UTL-06	UTL PLAN & PROFILE – "SCP" 68+50 – "SCP" 72+00
25	UTL-07	UTL PLAN & PROFILE – "ECD" 29+50 – "ECD" 35+50
26	UTL-08	UTL PLAN & PROFILE – "ECD" 35+50 – "ECD" 38+20
27	UTL-09	UTILITY LATERAL I
28	UTL-10	UTILITY LATERAL II
29	UTL-11	UTILITY LATERAL III
30	TR-01	TRAFFIC PLAN I
31	TR-02	TRAFFIC PLAN II
32	TR-03	TRAFFIC PLAN III

SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

NINETY-FIVE MANAGEMENT LLC

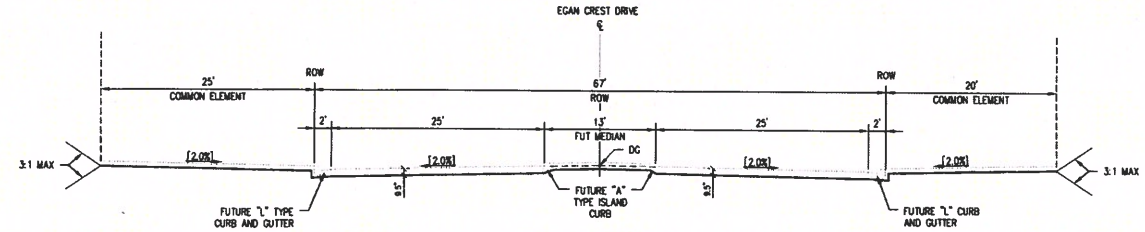
SKYE CANYON PHASE 3BC
SKYE CANYON PARK
COVER SHEET

DATE: 9/8/18
DRAFTER: HF
DESIGNER: HF
CHECKED: DY
PROJECT NO.
OLY1609-000

PROFESSIONAL ENGINEER – STATE OF NEVADA
DERICK D.J YORO
Exp: 06/30/2020
No. 16396
CIVIL
9/18/18

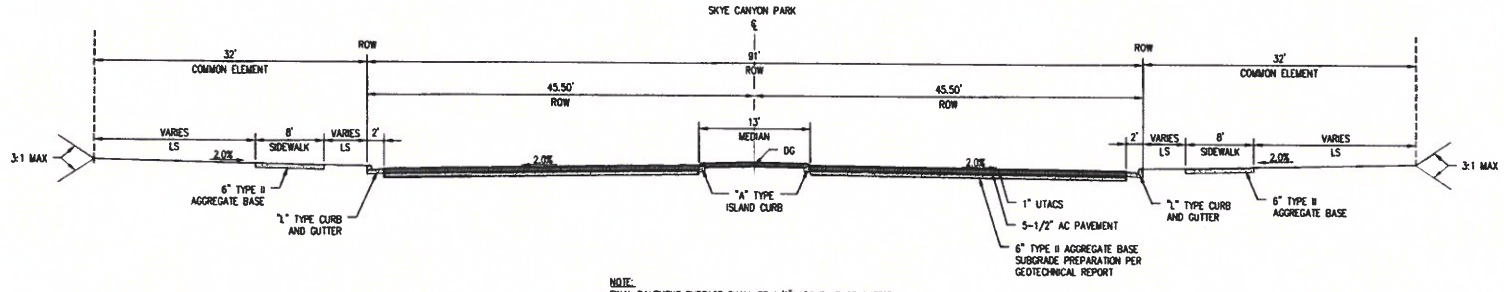
G-01
SHEET 1 OF 32

K:\OLY1609-000 SKYE CANYON PHASE 3A 3B 3C\DWG\MAP\OLY-G-COVER SHEET.DWG 9/8/2018 3:31 PM Bert Rios



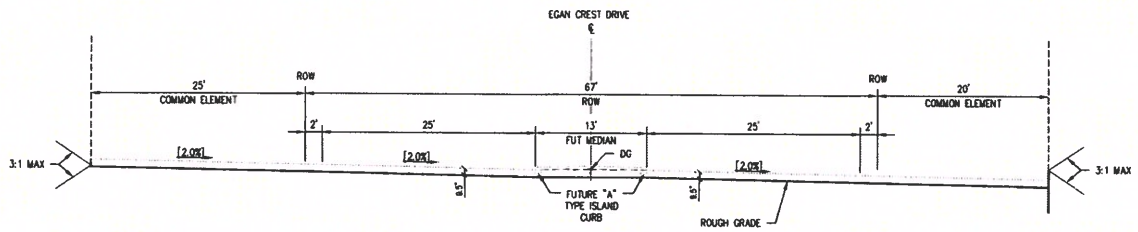
NOTE:
FINAL PAVEMENT SURFACE SHALL BE 1/2" ABOVE LIP OF GUTTER.
PAVEMENT SHALL BE FLUSH WITH LIP OF GUTTER AT SIDEWALK RAMPS.

EGAN CREST DR (EAGLE CANYON TO SKYE CANYON PARK) — D
NOT TO SCALE

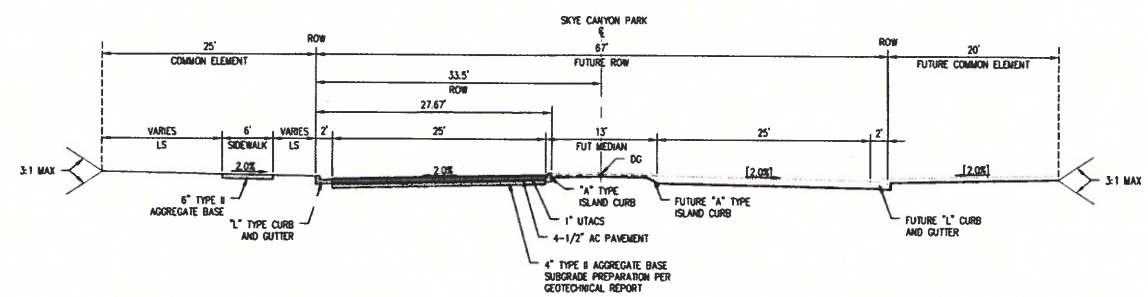


NOTE:
FINAL PAVEMENT SURFACE SHALL BE 1/2" ABOVE LIP OF GUTTER.
PAVEMENT SHALL BE FLUSH WITH LIP OF GUTTER AT SIDEWALK RAMPS

SKYE CANYON PARK (SKYE VILLAGE TO EGAN CREST) — C
NOT TO SCALE



EGAN CREST DR (EAGLE CANYON TO SKYE CANYON PARK) — B
NOT TO SCALE



NOTE:
FINAL PAVEMENT SURFACE SHALL BE 1/2" ABOVE LIP OF GUTTER.
PAVEMENT SHALL BE FLUSH WITH LIP OF GUTTER AT SIDEWALK RAMPS

SKYE CANYON PARK (SHAUMBER TO EGAN CREST) — A
NOT TO SCALE

SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

NINETY-FIVE MANAGEMENT LLC

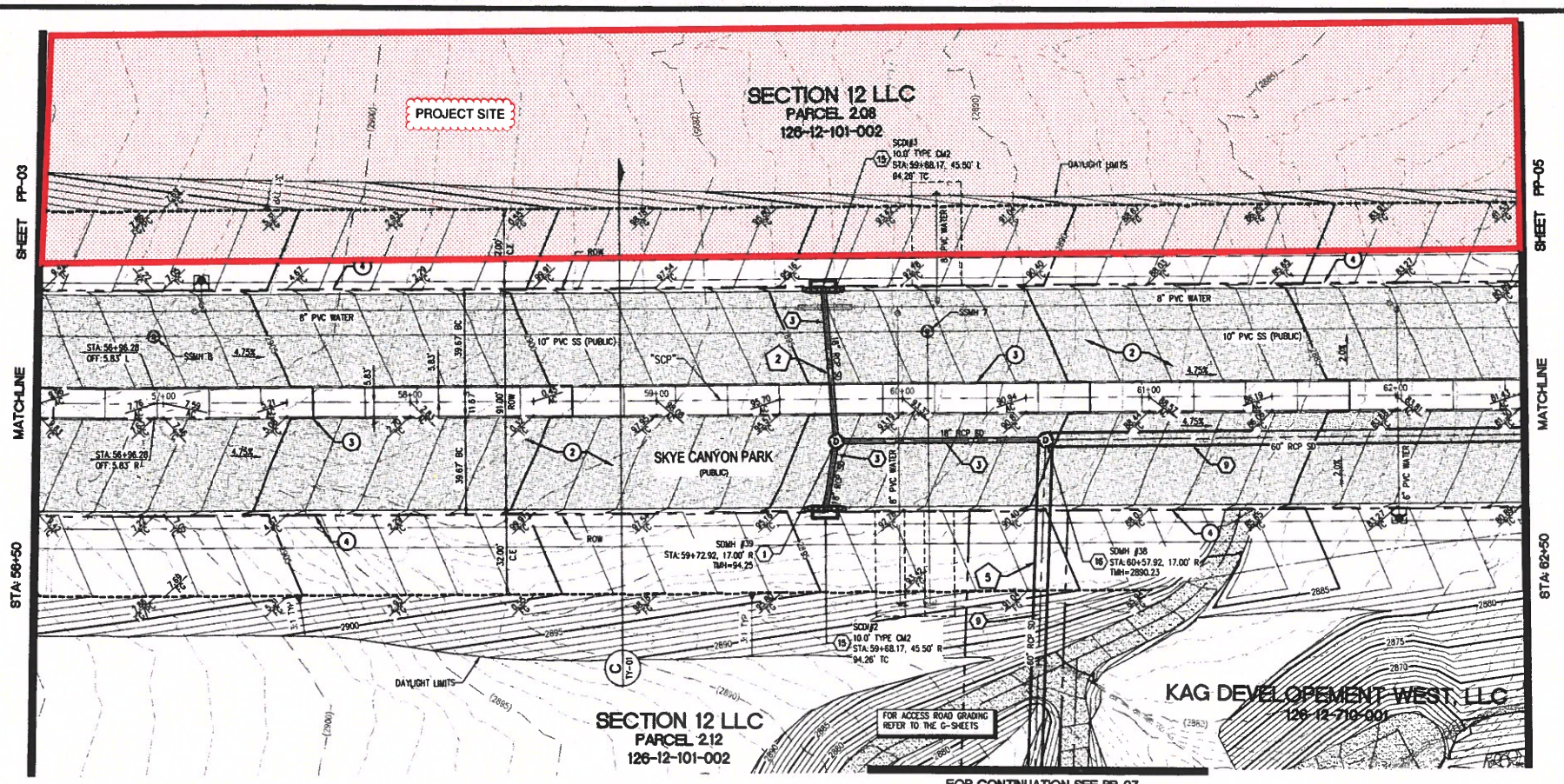
SKYE CANYON PHASE 3BC
SKYE CANYON PARK AND EGAN CREST DRIVE
ROADWAY SECTIONS

DATE: 9/8/18
DRAFTER: HF
DESIGNER: HF
CHECKED: DY
PROJECT NO.
OLY1609-000

DERRICK D.J YORO
Exp: 08/30/2020
CIVIL
No. 16396
STATE OF NEVADA
9/8/18

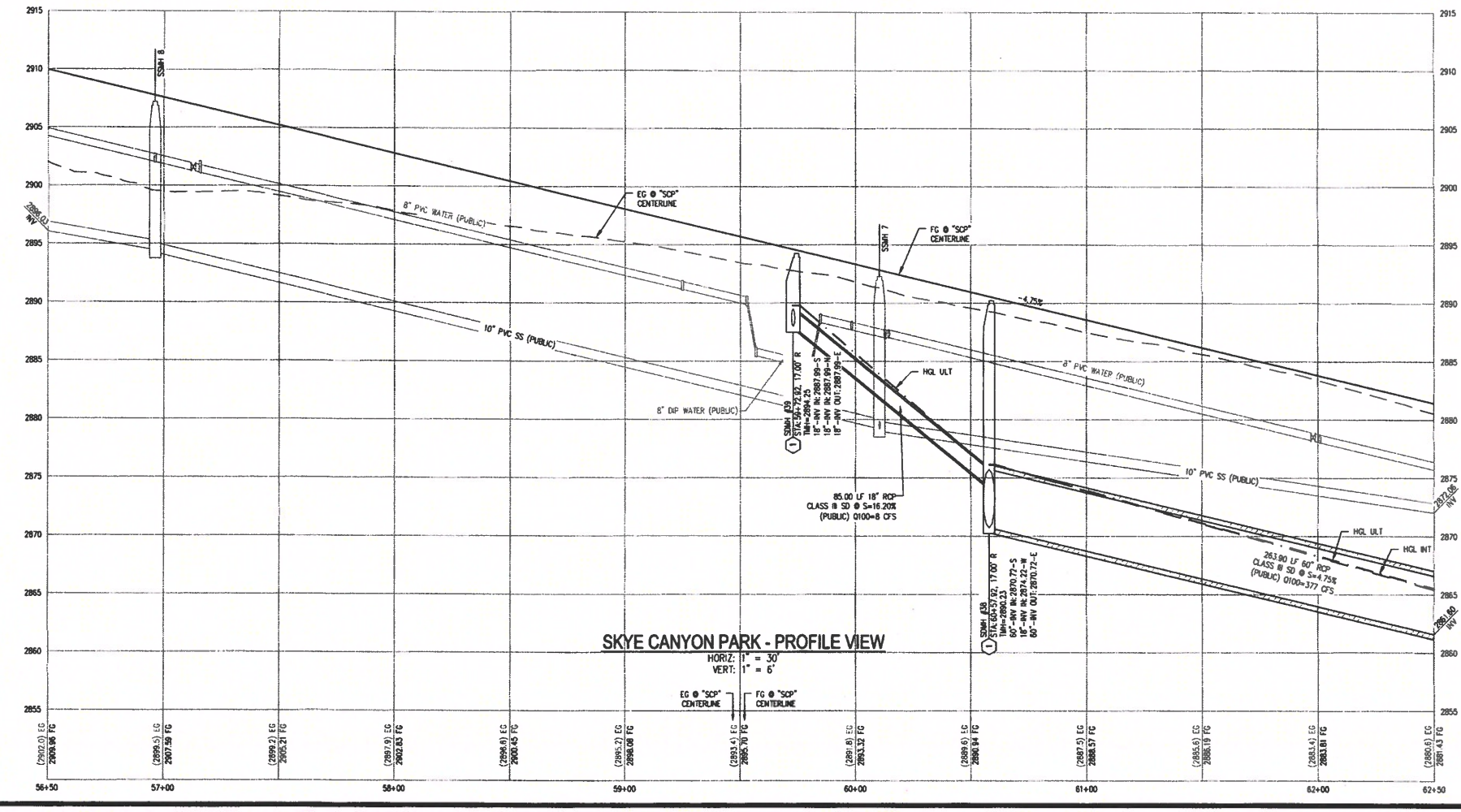
TY-01
SHEET 4 OF 32

J:\OLY1609-000 SKYE CANYON PHASE 3A, 3B 3C\DWG\MPREVIEW\3B-PLOT\OLY1609-000-TY-SECTIONS 9/8/2018 3:31 PM Bert Rowe

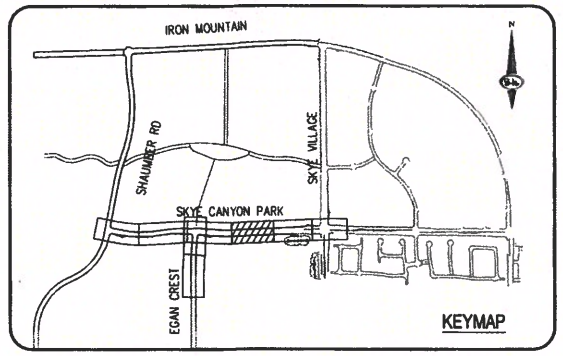


SKYE CANYON PARK - PLAN VIEW
(PUBLIC)

SCALE: 1"=30 FEET



SKYE CANYON PARK - PROFILE VIEW
HORIZ: 1" = 30'
VERT: 1" = 6'



CONSTRUCTION NOTES

1	CONSTRUCT 1" UTACS OVER 4.5" PBS OVER 4" TYPE II AGGREGATE BASE (SEE TY SHEETS)
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5	CONSTRUCT SIDEWALK RAMP (CASE II) WITH TACTILE WARNING PANEL (USDCCA STD. DWG. NO 235)
6	CONSTRUCT BUS TURN-OUT (USDCCA STD. DWG. NO. 234.1)
7	CONSTRUCT CONCRETE SIDEWALK (USDCCA STD. DWG. 234)
P	PROTECT IN PLACE (VERIFY LOCATION AND ELEVATION OF EX. IMPROVEMENT)

STORM DRAIN NOTES

1	CONSTRUCT 48" TYPE II-SD MANHOLE (USDCCA STD. DWG. NO. 405.2)
2	CONSTRUCT 60" TYPE III MANHOLE (USDCCA STD. DWG. NO. 406.1)
3	INSTALL 18" RCP (USDCCA STD. DWG. NO. 503.2)
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NOTES

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4. SEE STRUCTURAL PLANS FOR ADDITIONAL STRUCTURAL DETAILS AND CONNECTIONS.
5. ALL PIPES ARE PUBLICLY MAINTAINED.
6. ADD SPECIAL INSPECTION REQUIRED FOR PIPE SEGMENTS WITH SACRIFICIAL CONCRETE.
7. DIMENSIONS ARE TO BE BACK OF CURB, FACE OF CURB, OR FACE OF MEDIAN UNLESS OTHERWISE NOTED
8. SEE TY-SHEETS FOR TYPICAL SECTIONS.
9. SEE UT-SHEETS FOR WATER AND SEWER PLAN AND PROFILES.

DROP INLET NOTE

WHERE 10 FEET PARALLEL SEPARATION IS NOT PRACTICABLE:

CAST-IN-PLACE MONOLITHIC POUR WITH WATERSTOP BETWEEN SLAB AND WALLS. BASE, WALLS AND TOP TO BE CONSTRUCTED WITH WATERSTOPS, CENTER BULB, OR FLAT STRIP (VINYLEX, GREENSTREAK PLASTIC PRODUCTS OR APPROVED EQUAL).

LEGEND

(X) STORM DRAIN LATERAL # (SEE LAT SHEETS)

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY DS-4831 ON FILE AT THE CITY OF LAS VEGAS FOR THE SUBJECT PROJECT

DERICK YORO, P.E. 16396 — DATE 9/9/18

FLOOD ZONE

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE "X" (OUTSIDE THE 500-YEAR FLOOD PLAIN) ON THE FLOOD INSURANCE RATE MAP (FIRM) PANEL: 32003C1750E, DATED SEPTEMBER 27, 2002

NOTE:
PROPERTY OWNER IS RESPONSIBLE TO MAINTAIN THE BEST MANAGEMENT PRACTICES, SUCH AS BUT NOT LIMITED TO, THE REMOVAL OF ACCUMULATED SEDIMENT AND DEBRIS AND CARE OF VEGETATION.

APPROVED FOR CONSTRUCTION

LVVWD ENGINEERING SERVICES MANAGER — DATE

PROJECT NO. 126408

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY. CALL BEFORE YOU DIG OVERHEAD 1-702-227-2929

FAST Call Before you Dig UnderGround. 1-702-433-5800

Call Before you Dig Avoid hitting underground utility lines. It's costly. Call 811 or 1-800-227-2600

SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

NINETY-FIVE MANAGEMENT LLC

SKYE CANYON PHASE 3BC
SKYE CANYON PARK
CONSTRUCTION PLAN - "SCP" 56+50 TO "SCP" 62+50

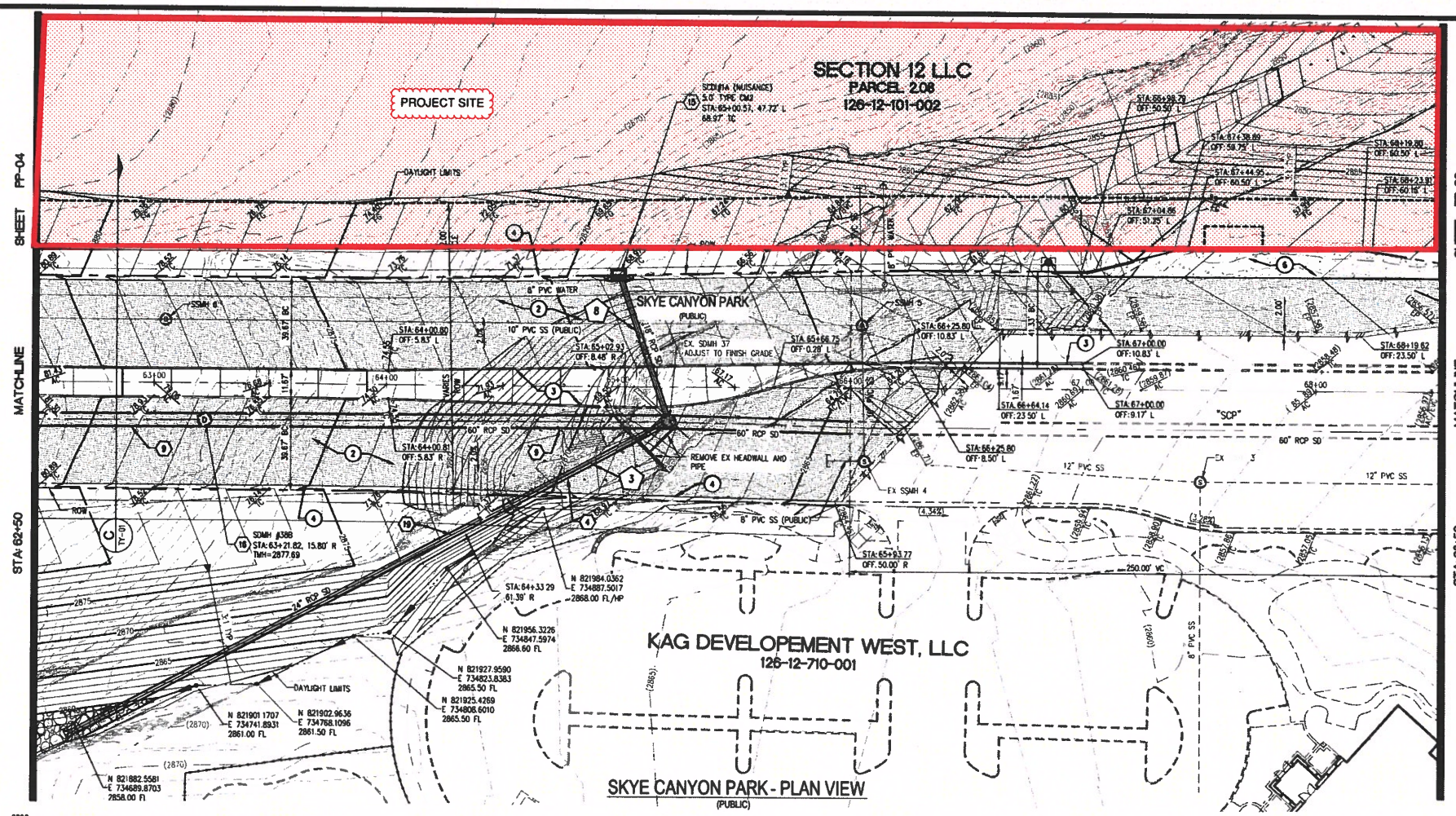
DATE: 9/8/18
DRAFTER: HF
DESIGNER: HF
CHECKED: DY

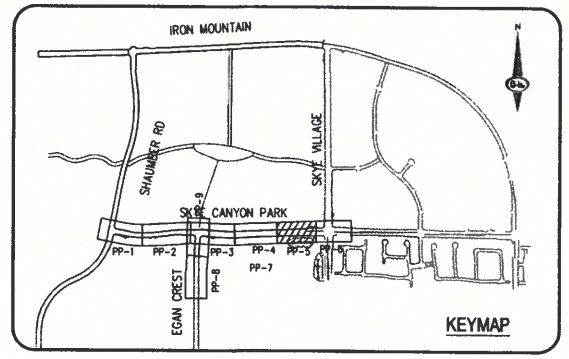
PROJECT NO.
OLY1609-000

DERICK D. YORO — No. 16396 — CIVIL — STATE OF NEVADA — PROFESSIONAL ENGINEER — 9/9/18

PP-04
SHEET 8 OF 32

J:\OLY1609-000 SKYE CANYON PHASE 3A 3B 3C\DWG\MPWORK\3A-3B-3C\OLY1609-000-PMP-SCENE 8/8/2018 3:33 PM Mark Shaw





CONSTRUCTION NOTES

1	CONSTRUCT 1" UTACS OVER 4.5" PBS OVER 4" TYPE II AGGREGATE BASE (SEE TY SHEETS)
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P	PROTECT IN PLACE (VERIFY LOCATION AND ELEVATION OF EX. IMPROVEMENT)

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NOTES

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LEGEND

X — STORM DRAIN LATERAL # (SEE LAT SHEETS)

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY DS-4931 ON FILE AT THE CITY OF LAS VEGAS FOR THE SUBJECT PROJECT.

DERICK YORO P.E. 16396 — DATE 9/10/18

FLOOD ZONE

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APPROVED FOR CONSTRUCTION

LVVWD ENGINEERING SERVICES MANAGER — DATE

PROJECT NO. 126408

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FAST. Call before you UnderGround. 1-702-452-5300

Call before you Dig. Call 811. 1-800-227-2600

SLATER HANIFAN GROUP
a Westwood team
8740 S. ARVILLE STREET #210, LAS VEGAS, NV 89118
PHONE (702) 254-5300 FAX (702) 254-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

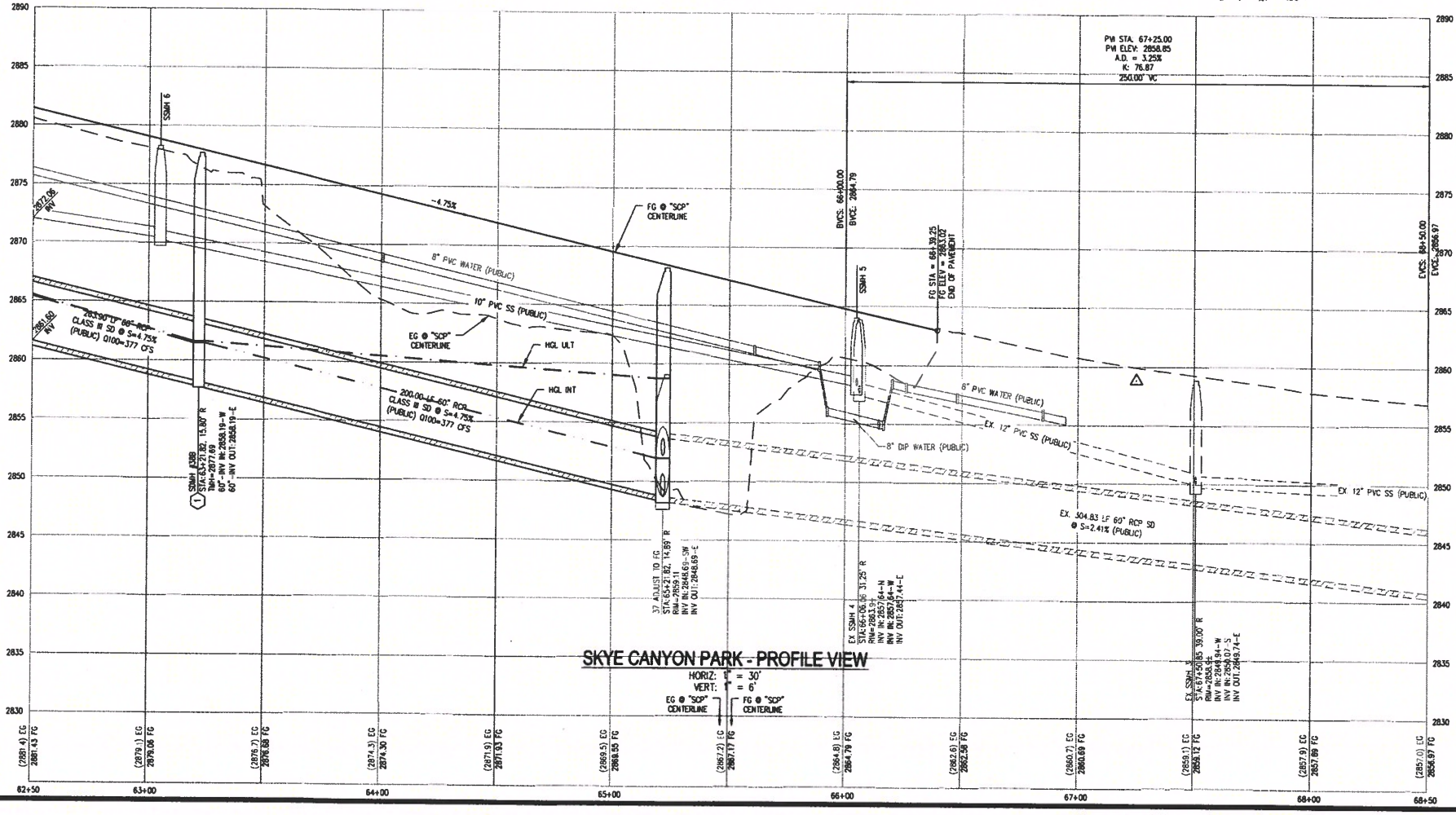
NINETY-FIVE MANAGEMENT LLC

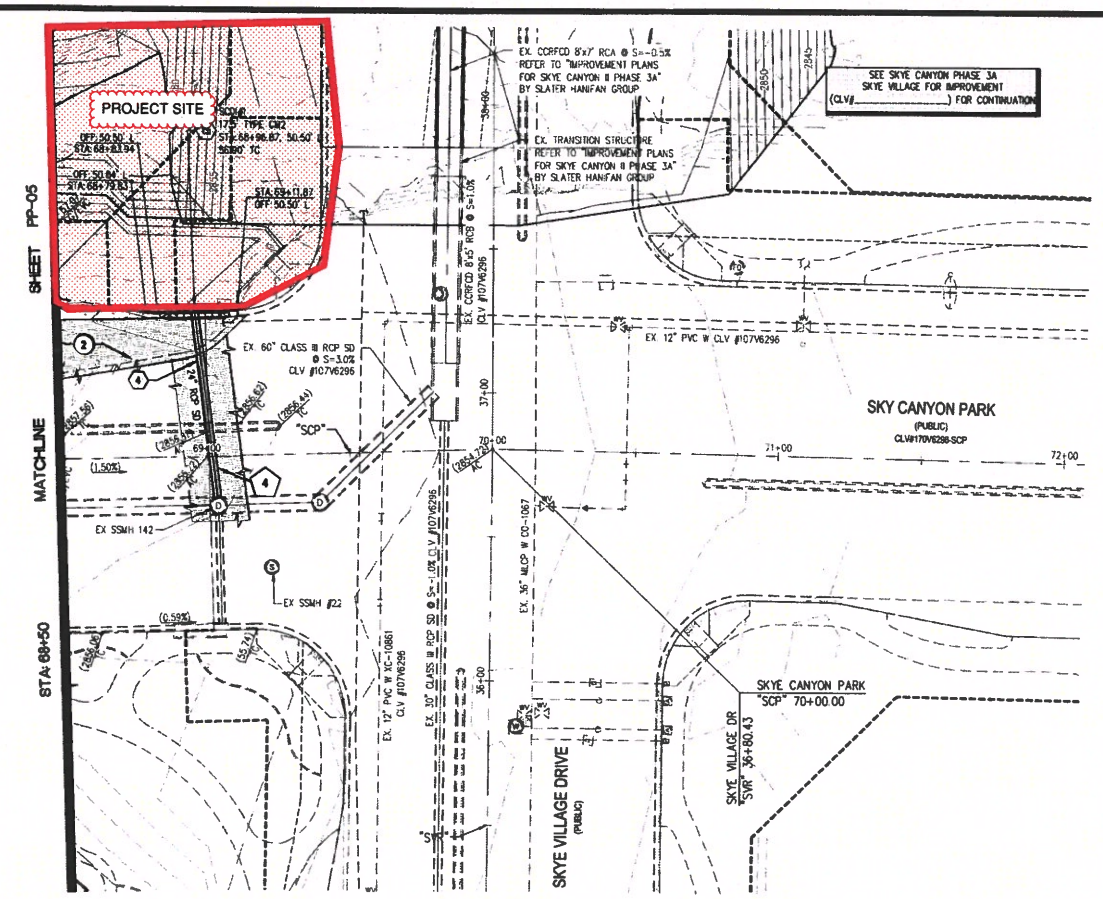
SKYE CANYON PHASE 3BC
SKYE CANYON PARK
CONSTRUCTION PLAN - "SCP" 62+50 TO "SCP" 68+50

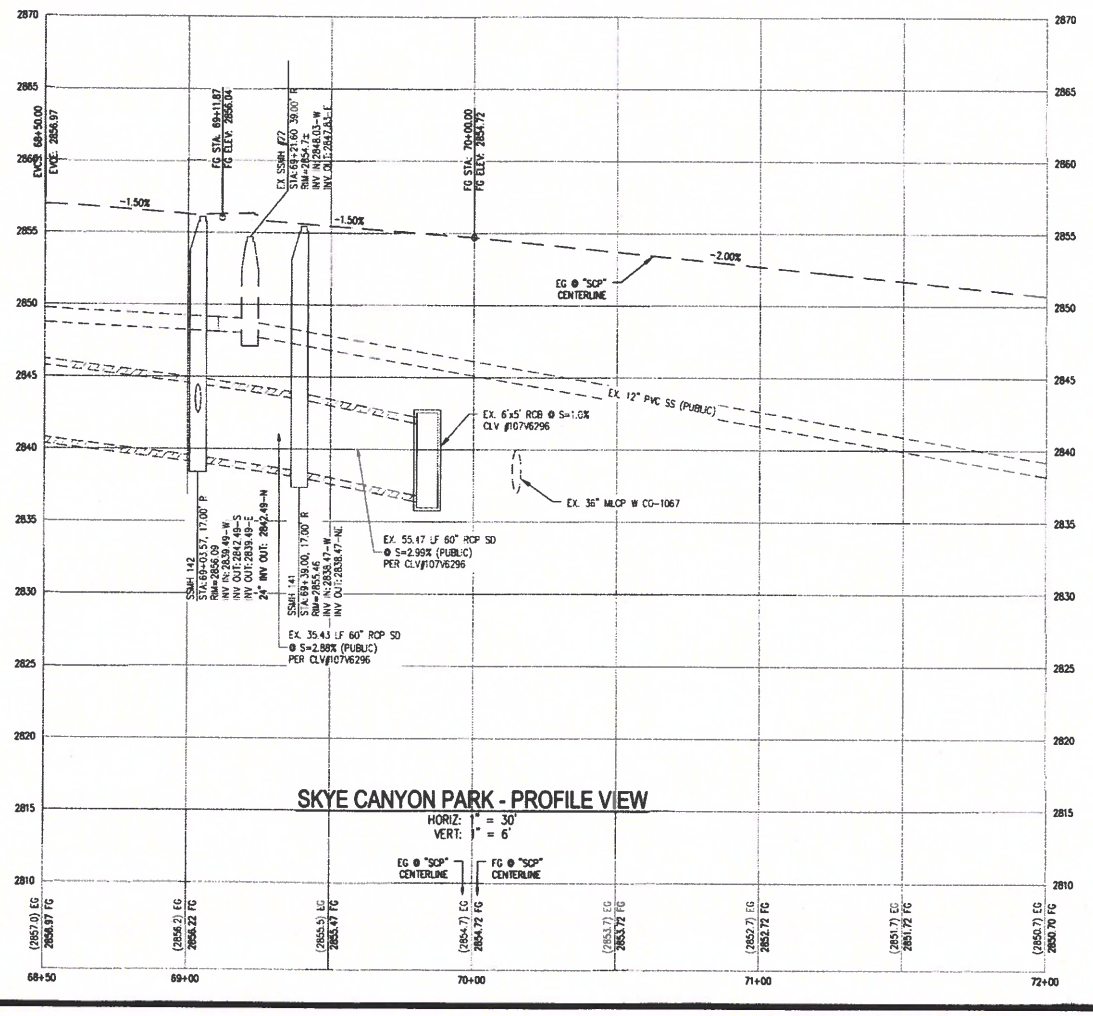
DATE: 9/8/18
DRAFTER: HF
DESIGNER: HF
CHECKED: DY
PROJECT NO. OLY1609-000

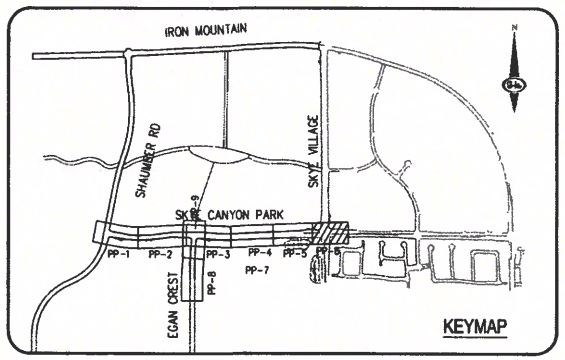
PROFESSIONAL ENGINEER - STATE OF NEVADA — DERICK D. YORO — Exp: 06/30/2020 — CIVIL — No. 16396 — 9/10/18

PP-05
SHEET 9 OF 32









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LEGEND

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I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY DS-4931 ON FILE AT THE CITY OF LAS VEGAS FOR THE SUBJECT PROJECT

DERICK YORO, P.E. 16396 — DATE 9/10/18

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APPROVED FOR CONSTRUCTION

LVVWD ENGINEERING SERVICES MANAGER — DATE

PROJECT NO. 126408

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FAST Call Before you Dig UnderGround. 1-702-433-8300 REPRESENTING THE NEVADA SYSTEM OF TRANSPORTATION

Call before you Dig Avoid digging accidents when you dig. Call 811 or 1-800-227-2600

SLATER HANIFAN GROUP a Westwood team
8740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

NINETY-FIVE MANAGEMENT LLC

SKYE CANYON PHASE 3BC
SKYE CANYON PARK
CONSTRUCTION PLAN - "SCP" 68+50 TO "SCP" 72+00

DATE: 9/10/18
DRAFTER: HF
DESIGNER: HF
CHECKED: DY

PROJECT NO.
OLY1609-000

NEVADA PROFESSIONAL ENGINEER — STATE OF NEVADA — DERICK D. J. YORO — Exp: 06/30/2020 — CIVIL — No. 16396 — 9/10/18

PP-06
SHEET 10 OF 32

J:\OLY1609-000 SKYE CANYON PHASE 3A 3B 3C\DWG\MARRON\3B-CLSV\OLY1609-000-PMP-3C.DWG 9/10/2018 8:27 AM Bert Rhem

NINETY-FIVE MANAGEMENT LLC

SKYE CANYON PHASE 3BC
EGAN CREST DRIVE
STORM DRAIN LATERALS I

NO	DESCRIPTION	DATE	BY	APP. DATE	APP

SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-4300 FAX (702) 284-4399

DATE: 9/8/18
DRAFTER: HF
DESIGNER: HF
CHECKED: DY
PROJECT NO. OLY1609-000

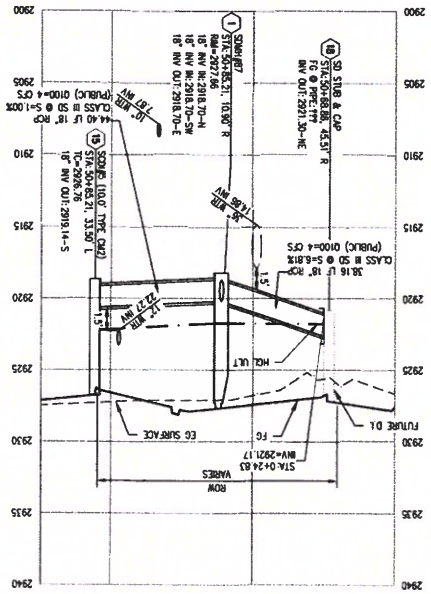
SHEET 14 OF 32
LAT-01

STATE OF NEVADA PROFESSIONAL ENGINEER No. 16398 DERICK D. YORO Expir. 06/30/2020 DATE 9/8/18

J:\OLY1600-000 SNC Centre PHASE 3A 3B 3C\DRAWING\3B-C\SVLS\1600-000-LAT01.dwg 9/4/2018 3:35 PM Derl Ross

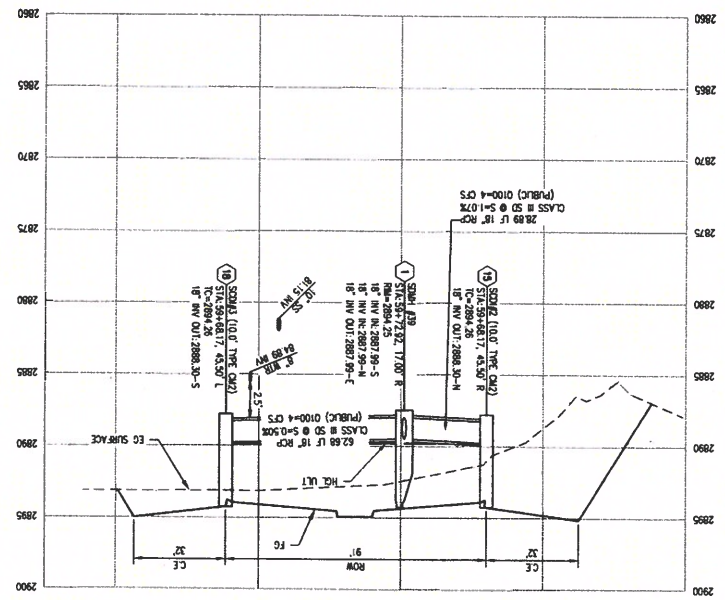
1 SKYE CANYON PARK STORM DRAIN @ 50+85.21

SCALE: HORZ 1"=30' VERT 1"=6'
SEE SHEET: PP-03



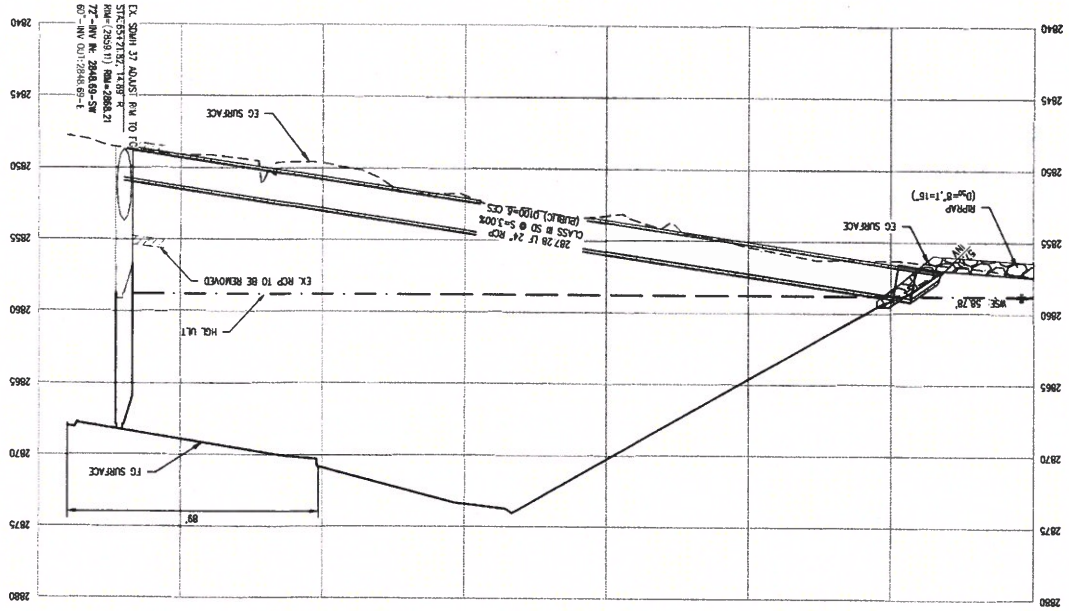
2 SKYE CANYON PARK STORM DRAIN @ 59+72.92

SCALE: HORZ 1"=30' VERT 1"=6'
SEE SHEET: PP-04



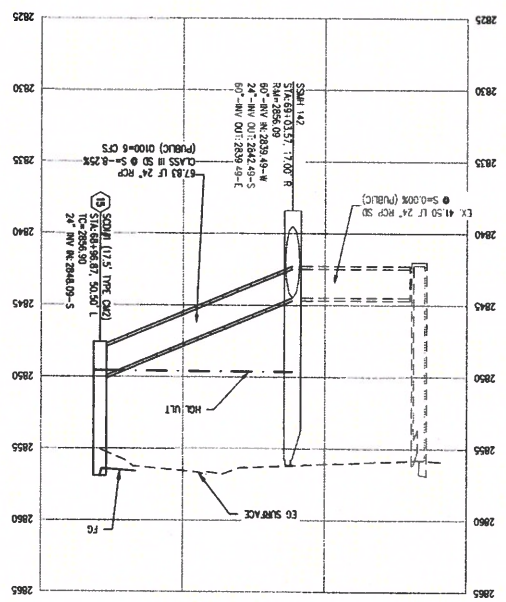
3 SKYE CANYON PARK STORM DRAIN @ 65+21.82

SCALE: HORZ 1"=30' VERT 1"=6'
SEE SHEET: PP-05



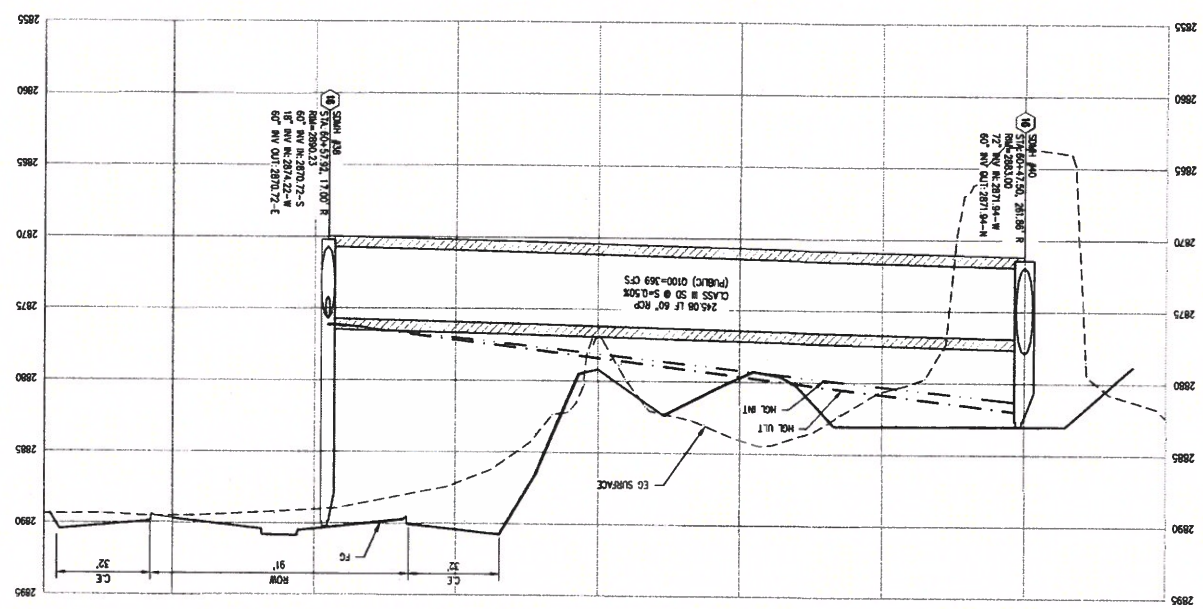
4 SKYE CANYON PARK STORM DRAIN @ 69+03.57

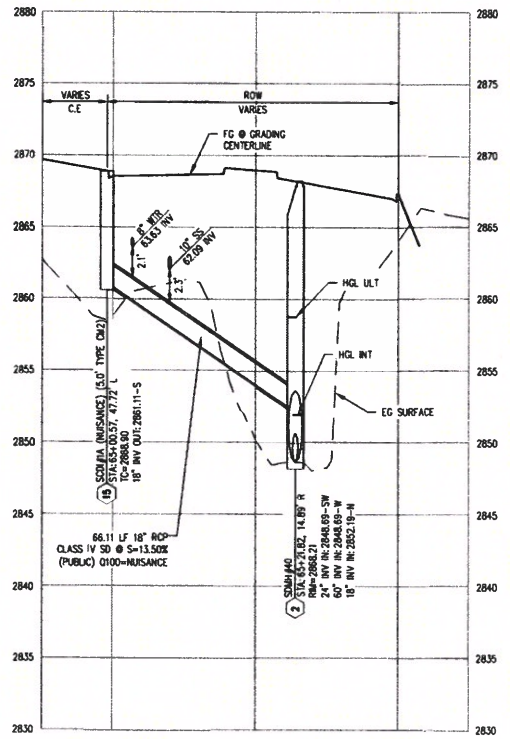
SCALE: HORZ 1"=30' VERT 1"=6'
SEE SHEET: PP-06



5 SKYE CANYON PARK STORM DRAIN @ 60+57.92 (1)

SCALE: HORZ 1"=30' VERT 1"=6'
SEE SHEET: PP-04

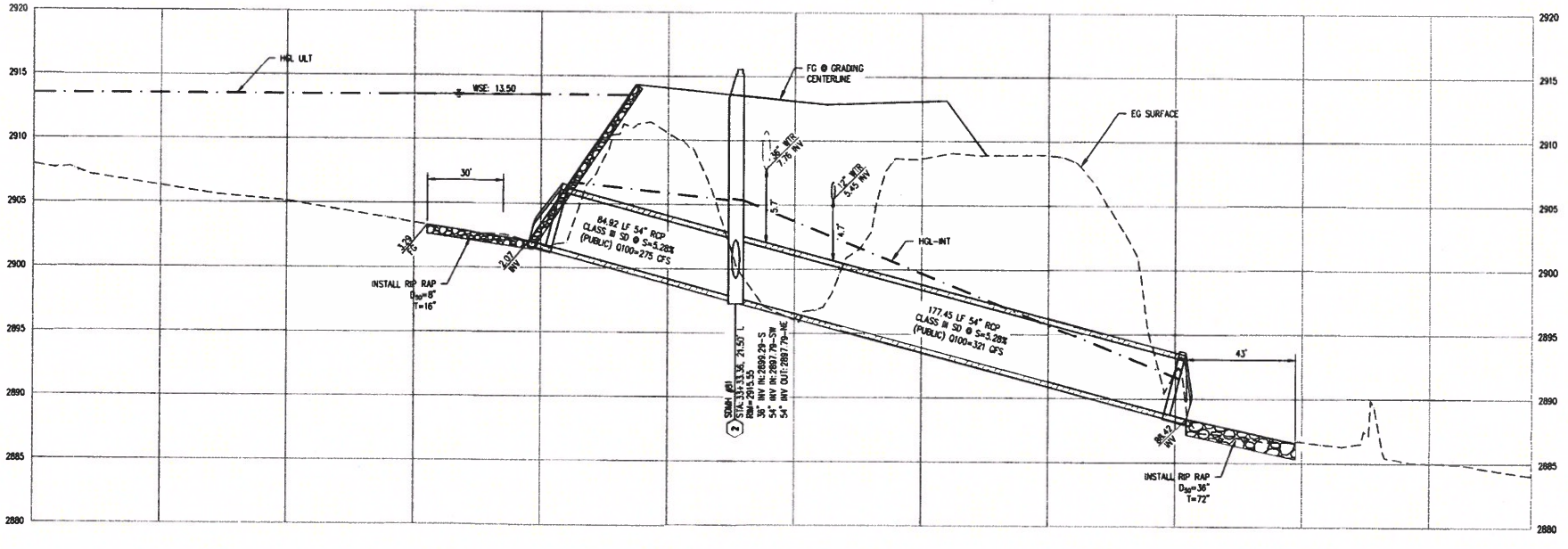




SKYE CANYON PARK
STORM DRAIN @ 65+21.82

SCALE: HORZ 1"=30" VERT 1"=6"
SEE SHEET: PP-05

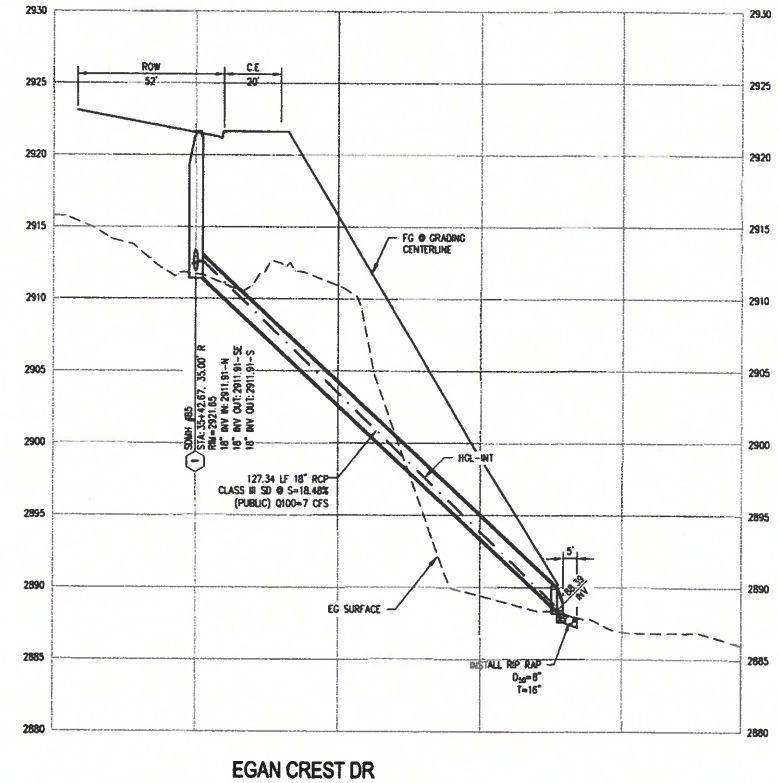
8



EGAN CREST DR
STORM DRAIN @ 33+33.36

SCALE: HORZ 1"=30" VERT 1"=6"
SEE SHEET: PP-08

7



EGAN CREST DR
STORM DRAIN @ 35+45.67

SCALE: HORZ 1"=30" VERT 1"=6"
SEE SHEET: PP-08

6

SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

NINETY-FIVE MANAGEMENT LLC

SKYE CANYON PHASE 3BC
EGAN CREST DRIVE
STORM DRAIN LATERALS LL

DATE: 9/8/18
DRAFTER: HF
DESIGNER: HF
CHECKED: DY
PROJECT NO.
OLY1609-000

PROFESSIONAL ENGINEER – STATE OF NEVADA
DERICK D. J. YORO
Exp: 06/30/2020
CIVIL
No. 16396
9/6/18

LAT-02
SHEET 15 OF 32

J:\OLY1609-000 SKYE CANYON PHASE 3A 3B 3C\DWG\MYRON\3A-C\OLY1609-000-LAT.DWG 9/6/2018 3:39 PM Bert Rios

APPENDIX G

Reference Material

Technical Drainage Study for Skye Canyon MDS, Update #4

(DS4402O)

Approval Letters

CITY OF LAS VEGAS **INTER-OFFICE MEMORANDUM**				**DATE:** **April 25, 2018**
TO: **Land Development Services** Department of Public Works				**FROM:** Oh Sang Kwon, P.E. Flood Control Section Department of Public Works
SUBJECT:	Drainage Study for:			**COPIES TO:**
Skye Canyon Master Drainage Study – Update #4 Supplemental Info.				Slater Hanifan Group
Cross Streets:	Fort Apache Road & Moccasin Road			KAG Development South, LLC
File Number:	F:\Depot\DSMemos\DS4420P.doc			Bart Anderson, P.E., DevCo
Parcel Number:	125-06-001-001			CCRFCD
Zoning Action:				CCPW
FEMA Flood Zone	YES	NO **X**		NDOT; NV Energy
Proposed Storm Drain	YES **X**	NO		PB America, Inc.

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Transaction #
1st Submittal	6/22/2010	7/13/2010	Not Approved	$1,000.00	147216: $1000
2nd Submittal	9/17/2010	10/4/2010	Not Approved	$400.00	153788: $400
3rd Submittal	10/15/2011	11/14/2011	Not Approved	$400.00	153788: $400
4th Submittal	2/13/2012	3/1/2012	Conditional Approval	$400.00	274196: $400
CCRFCD	5/23/2012	5/24/2012	Concurrence Recv'd	N/C	N/C
5th Submittal NDOT Comments	9/10/2012	9/19/2012	Conditional Approval	N/C	N/C
6th Submittal	12/4/2014	12/30/2014	Conditional Approval	$400.00	378889: $400
7th Submittal	2/17/2015	3/3/2015	Conditional Approval	$400.00	385987: $400
8th Submittal	3/16/2015	4/6/2015	See Comments Below	$400.00	388961: $400
CCRFCD	4/2/2015	4/6/2015	Concurrence Recv'd	N/C	N/C
9th Submittal	6/23/2015	7/21/2015	See Comments Below	$400.00	403025: $400
Revised Memo	8/12/2015	8/12/2015	See Comments Below	N/A	N/A
10th Submittal	10/19/2015	11/23/2015	Conditional Approval	$400.00	N/A
11th Submittal	4/19/2016	5/16/2016 & 8/15/2016	See Comments Below	$400.00	440941: $400
12th Submittal	7/25/2017	9/7/2017 & 10/11/2017	See Comments Below	$400.00	488746: $400
13th Submittal Supplement	3/22/2018	4/25/2018	Conditional Approval	N/A	N/A
			TOTAL FEES (LDDRS):	**$4,600.00**	----

REMARKS: **13th Submittal: Supplement to address CLV comments as part of a CCRFCD Concurrence submittal request for Update # 4 – Overall Master Plan Revision of Skye Canyon development. The Skye Canyon Master Plan MPU Facilities are being incorporated into the 2018 CCRFCD Master Plan. A separate MPA is not required at this time. Further changes to the Skye Canyon Master Drainage Study shall require an MPA that must be submitted to *City of Las Vegas* and *CCRFCD* for approval and shall be adopted by the *City of Las Vegas City Council* prior to the final approval of the subject Overall Master Study.**

The City of Las Vegas will not allow further residential development outside of the limits of Phase 2 at this time until the New Master Plan is approved.

The Master 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 Department of Public Works concurrence.
	is conditionally approved subject to Nevada Department of Transportation concurrence.
	is conditionally approved subject to BLM concurrence/approval.

The Supplemental information to Update #4 provides additional information that addresses some of the CLV comments from our Conditional Approval of October 2017 as a part of the CCRFCD submittal to obtain CCRFCD Concurrence. The changes are primarily in two areas:

- A 150 cfs increase to the proposed Moccasin Road MPU Facility from Skye Canyon Park Drive to the Upper Las Vegas Wash (due to removal of an upstream diversion across Moccasin Road to the north).
- Local facility/flow updates in the vicinity of US 95 from Kyle Canyon Road to Brent Lane. The MPU facility currently under construction along US 95 to the south allows for Skye Canyon to connect to existing US 95 facilities and ultimately make US 95 a 100-yr cutoff through this reach. Local facilities in this area are proposed/revised accordingly.

1. The overall concept presented in the Master Plan Update #4 for Skye Canyon appears to satisfy the intent of providing regional connectivity of proposed Master Planned facilities without impacting the National Monument. Specific Technical Drainage Studies shall be required to address the specific impacts of each proposed Master Planned facility and the interaction with proposed facilities needed for each phase of development.
2. The Master Plan Update #4 includes a revised Concept for the Regional Flood Control Master Plan Facilities that are identified to be constructed by the Master Developer. Generally these MPU Facilities are shown on Exhibit J, dated July 24, 2017 and include the following general alignments; Skye Village Road - from W. Skye Canyon Park Dr. to Oso Blanca Rd., Iron Mountain Rd. - from the DB #2 outfall to Skye Village Rd., Oso Blanco Rd. – from Skye Village Rd. through the Kyle Canyon/US-95 Interchange to Log Cabin Way., Log Cabin Way – from east of US-95 to N. Skye Canyon Park Dr., and N. Skye Canyon Park Dr. – from Log Cabin Way to Moccasin Rd. The proposed MPU Facility within the Moccasin Rd. alignment – from N. Skye Canyon Park Dr. to the existing Upper Las Vegas Wash MPU Facility is identified to be constructed by the City.
3. Update #4 discussed that *due to the updated plan of constructing the ultimate MPU facilities with the infrastructure improvements, there are no longer interim facilities proposed in place of ultimate facilities*. Based upon that premise, Flood Control requests that Exhibit J be revised to show that flows west of US-95 are routed south to connect into the existing MPU facility that was extended with the Horse Interchange project. This flow connection matches the CCRFCD Master Plan and basin routing. The facilities between CHD02B and CHD06B along the west side of US-95 are local facilities that shall be constructed by the Master Developer and identified as such on a Revised Exhibit J. The result will reduce the impacts to the east side of US-95. Review and revise the flows for facilities 26 thru 26-3 and 17 thru 17-2. *The provided Supplement to Update #4 has updated Exhibit J to show the local facility and the removal of culverts in Oso Blanca (that currently allow flows to cross US-95) to convey flows south to the existing MPU facility that was extended with the Horse Interchange project.*

4. The provided Phasing Plan (Exhibit O) has identified the schematic facilities necessary within each Phase. Flood Control concurs that the construction of Phase 3 & 4 MPU infrastructure is critical to the success of the Phased developments. Changes and timing of the Phases and the corresponding infrastructure improvements shall require Updated Phasing Plans that are approved by the City of Las Vegas and Regional Flood Control prior to the approval of future Master Drainage Study updates.

5. The implementation of the CCRFCD Master Plan is being progressed with the recent bid opening of the NDOT US-95 facilities from the CC-215 interchange north to the Kyle Canyon interchange. Construction of the associated CCRFCD MPU facilities allows for the utilization of the existing MPU facilities constructed with the Horse Interchange. Phased development west of US-95 shall maximize the flow collection into this facility prior to allowing flows to cross US-95 using the existing culvert system. The Ultimate Condition will have the west side of these culvert systems removed, no longer having flows cross US-95 as per the CCRFCD Master Plan and also noted within the NDOT concurrence dated March 8, 2018.

6. The premise of the Master Plan Update #4 for Skye Canyon is to continue to show a new CCRFCD Master Plan Detention Basin that is located outside of the Skye Canyon development. The City of Las Vegas is in the process of applying for BLM grants for this detention basin site located along Kyle Canyon Road west of the Skye Canyon Development. This ultimate facility shall be included in the 2018 MPU as a CCRFCD facility. The intent of the Detention Basin (157DB) is to reduce developed flows to maintain the existing condition flow rate in the ultimate condition and reduce the size of the downstream regional facilities. The concept for the addition of this detention basin to the CCRFCD Master Plan is acceptable to the City and will require the submittal of technical studies to refine the facility parameters.

7. The Supplemental information to Update #4 has revised Exhibit J to no longer show that a portion of the developed flows will drain north of Moccasin into the BLM land and the National Monument to mimic existing drainage patterns. Concentrated flow discharges at EC19 and EC20 are now routed east and connected to EC21. As provided in this Supplemental information, *"No flow from Skye Canyon will discharge onto BLM land, therefore BLM concurrence is not required."* Detailed drainage studies that specifically address the impacts of development and storm discharge along the Moccasin corridor west of Skye Canyon Park Dr. shall be provided prior to the City removing the requirement of BLM and National Park Service concurrence.

8. The ***Master Land Use Plan*** has been provided however, any further changes to the adopted Master Land Use Plan shall require a complete update to the Master Drainage Study.

9. A copy of the approved 404 Permit from the Army Corps of Engineers has been provided.

10. Flood Control requires an interim condition drainage analysis in support of the Phasing Plan that clearly shows the impacts to each Phase, existing washes, upstream concentration points and the downstream concentration points. Flood Control needs to make sure that each Phase of Development is protected during the interim and full build-out of this overall project.

11. The interim conditions of the detention basin outfall impacts are being addressed with the technical drainage studies for each basin. This discharge impact must be accounted for in the interim condition without negatively impacting the existing downstream neighborhoods.

12. High velocity flows within the future MPU facilities is a critical concern of the City and Regional Flood. Where velocities exceed 25 fps the City is considering 6,000 psi concrete with 2-inches of sacrificial concrete on the invert. Where velocities exceed 35 fps, additional design mitigation shall be reviewed on a case by case basis. The engineer shall review the velocity impacts and recommend a course of action for City approval with each technical drainage study for the corresponding facilities.

13. CCRFCD concurrence has previously been provided. A new concurrence for Update #4 shall be provided from CCRFCD after Conditional Approval by the City of Las Vegas.
14. CCPW concurrence has been provided covering Update #4.
15. NDOT concurrence has been provided covering Update #4. NDOT concurrence for Update #4 supports the proposed MPU facilities and the elimination of the flows crossing US-95 per the Master Plan and shown on the revised Exhibit J.

The following comments are repeated until they are complete:

1. Please note that the Traffic Study must be approved prior to final approval of the Master Drainage Study. If the street layout does not match the Master Drainage Study, an update to the Master Drainage Study must be submitted to address the changes.
2. Per a meeting held in August 18, 2011 between the developer and the *City of Las Vegas*, it was agreed that NV Energy's approval of any proposed drainage facilities within their access easements (such as the proposed detention basins) must be obtained prior to the final approval of the Master Drainage Study. Please provide documentation for such approval or acknowledgment.
3. Please note that any future technical drainage study submittals that differ from the Master Drainage Study (ie. Changes in pods, infrastructure, flows etc.) will require an update to the Master Drainage Study and this update must be approved by the *City of Las Vegas Flood Control Section* prior to final approval of technical drainage study.
4. The proposed detention basins will require coordination with the State of Nevada, Division of Water Resources Dam Safety and will require the State's approval prior to permitting.
5. Please note that the proposed 100-year flood protection facilities identified on Exhibit J must be constructed by the Master Developer as a part of the master planned infrastructure. Technical drainage studies are required for each phase of the master planned infrastructure improvements. The technical drainage studies for the infrastructure improvements may be submitted with conditional approval of this Master Drainage Study. However, final approval for the Master Drainage Study must be obtained prior to conditional approval of the infrastructure drainage studies.
6. Technical drainage studies are required for each of the Pod's. The technical drainage studies for the Pod's may not be submitted until the conditional approval of the pertinent infrastructure drainage study is obtained. Final approval for the infrastructure drainage study must be obtained prior to conditional approval of the impacted Pod drainage studies.
7. Building permits for the homes within the individual Pod's will not be issued until construction of the street and flood control infrastructure around the Pod is substantially complete or interim protection is provided per the approved technical drainage study.
8. The design of debris basins at all major culvert entrances to limit the amount of sediment and debris entering the storm drain facilities will be required in a future infrastructure study.
9. Please note that all detention basins must be designed per CCRFCD criteria including a low flow facility around the detention basin.
10. Please note that all proposed interim facilities must be maintained by the master developer.
11. Provide a legal description of the proposed detention basins prior to recordation of the parent final map.
12. Continue to coordinate the proposed drainage facilities with *Sheep Mountain Parkway* project. Please contact Greg McDermott, P.E., at (702)-229-2143 to coordinate the proposed drainage facilities. The detention basin outfall facilities need to account for the future *Sheep Mountain Parkway* improvements.

NOTE: Any future changes to the proposed design (or design assumptions) as outlined in the approved master drainage study and attached preliminary grading plan which affect drainage must be addressed in a Drainage Study Amendment 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
Osk/pbj

T/R/S: T19S/R60E/6 & 7
AREA G-6, 7, & F-12

REGIONAL FLOOD CONTROL DISTRICT

Steven C. Parrish, P.E.
General Manager/Chief Engineer

BOARD OF DIRECTORS

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City of Las Vegas

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City of Boulder City

April 27, 2018

Mr. Oh Sang Kwon, P.E.
City of Las Vegas Department of Public Works
333 North Rancho Drive
Las Vegas, NV 89106

DISTRICT CONCURRENCE: **UPDATE #4 - SKYE CANYON MASTER DRAINAGE STUDY (DS4420P) (RFCD No. 18-10009)**

Dear Mr. Kwon:

Clark County Regional Flood Control District (District) reviewed Technical Drainage Study dated July 25, 2017, Addendum No. 1 dated March 22, 2018 for above-mentioned project as submitted by SLATER HANIFAN GROUP. In addition, District is in receipt of the Conditional Letter of Acceptance from City of Las Vegas Department of Public Works dated April 25, 2018.

District concurs with acceptance of this Technical Drainage Study by City of Las Vegas Department of Public Works with the following condition:

> Per District's Uniform Regulations for the Control of Drainage, Section VIII.D.13, the Lead Entity shall provide As-Built plans or record drawings to the District after completion and final inspection of such privately installed flood control facilities that have regional flood control significance.

District's review of this project was limited to issues of Regional Flood Control Significance as defined in *Uniform Regulations for the Control of Drainage*.

Please be aware that as additional information becomes available and/or restudies of Flood Insurance Studies are performed, information submitted by SLATER HANIFAN GROUP may be superseded. Compliance with regulatory elements and design standards specified in *Uniform Regulations for the Control of Drainage* does not imply a guarantee that properties will be free from flooding or flood damage. The District, its officials, or employees assume no liability for information, data, or conclusions presented by consulting engineers. We, therefore, make no warranties, either expressed or implied, in conducting this review.

STEVEN C. PARRISH, P.E.
General Manager/Chief Engineer

BY:
Ching C. Wang, P.E.
Senior Civil Engineer

Todd Myers, P.E.
Engineering Director FOR

CCW:cr

c: Lant K. Leavitt, P.E., Slater Hanifan Group

P:\Letters and Memos\Local Drainage\Land Development & Drainage\2018\L-18-10009as-built doc

600 S. Grand Central Parkway, Suite 300 • Las Vegas, Nevada 89106-4511
(702) 685-0000 • FAX: (702) 685-0001
Website: http://www.regionalflood.org

Department of Public Works

500 S Grand Central Pky • Box 554000 • Las Vegas NV 89155-4000
(702) 455-6000 • Fax (702) 455-6040

Denis Cederburg, P.E., Director • E-Mail: dlc@ClarkCountyNV.gov

Drainage Study Concurrence Letter

Date: March 12, 2018
Firm: SHG
Engineer: Lant K. Leavitt, P.E.
Address: 5740 S. Arville Street, Suite 216, Las Vegas, NV 89118
Phone: (702) 284-5300
Fax: (702) 284-5399
E-mail: lleavitt@shg-inc.com

Subject: Technical Drainage Study Update #4 for Skye Canyon Master Drainage Study (CLV)
Location: SW of Moccasin Road and Fort Apache Road
APN: 125-06-101-001, et.al.
Sec, Township, Range: S06, T19S, R60E
Flood Zone & Panel: Zone X, 1735F, 1750F, Dated November 16, 2011
Application Tracking #: pw18-11404

Submittals	Date Received	Date Returned	Reviewer	Miscellaneous
Technical	02/15/2018	03/12/2018	WG	
Supplement	02/15/2018	03/12/2018	WG	

The above-referenced project is located within the **City of Las Vegas** adjacent to Clark County unincorporated areas. The drainage study was submitted to the County for concurrence on February 15, 2018. In addition, the County has received the City of Las Vegas acceptance letter dated October 12, 2017 for the Technical Drainage Study (DS4420O).

The County concurs with the acceptance of this Drainage Study by the City of Las Vegas. Please note that the County's review of this development is limited to drainage issues significant to Clark County unincorporated areas.

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SUSAN BRAGER • LARRY BROWN • JAMES B. GIBSON • MARILYN KIRKPATRICK • LAWRENCE WEEKLY
YOLANDA T. KING, County Manager

The County's review is solely based on the information submitted by the Engineer of Record. The County's review is strictly limited to compliance with minimum County Codes and Standards. The Engineer of Record is responsible for researching and addressing situations that may require designs above and beyond the minimum codes for issues of public safety and impacts to upstream, downstream and adjacent properties. The County assumes no liability for information data, designs or conclusions of the Engineer of Record.

Wade Gerstenkorn
Associate
Development Review
wade@ClarkCountyNV.gov

W. Layne Weber, P.E., CFM
Principal Engineer
Development Review
wlweber@ClarkCountyNV.gov

cc: Oh Sang Kwon, P.E., City of Las Vegas

Referenced Exhibits

I:\cen1908-000 skye canyon mds update\drainage\conceptual study\figures\cen1908 up6 exhibit e proposed drainage onsite_recover.dwg 12/5/2019 12:39 PM Jonathon Rocha

SEE EXHIBIT G ULTIMATE OFFSITE WEST HYDROLOGIC MAP

SEE EXHIBIT F ULTIMATE OFFSITE EAST HYDROLOGIC MAP

PROJECT SITE

COMPARISON FLOW RATE FOR PROJECT SITE

787 cfs

NOTE:
- 5-FT INDEX TOPOGRAPHIC CONTOURS SHOWN ON EXHIBIT
- FOR BASIN BOUNDARY (UNCHANGED BASINS), REFER TO MDS UPDATE #6 FOR SUNSTONE ULTIMATE CONDITION HYDROLOGY

LEGEND
- BASIN BOUNDARY (UNCHANGED BASIN)
- BASIN BOUNDARY
- MATCHLINE SEE EXHIBIT FOR MAP EXTENSION
- ID — BASIN ID
- (ID) — CONCENTRATION POINT ID
- ID → ID — FLOW DIRECTION
- ID → ID / ID — FLOW SPLIT

Ultimate Condition Flow Rate Summary
Skye Canyon West Basins

Basin/Concentration Point ID	Area (sq. mi)	Q_{100} (cfs)	Q_{10} (cfs)
WAAR2	1.1	4	1
WAAR3	3.3	9	3
WAAR5	6.0	18	6
WAAR6	2.4	6	2
WGAC2	6.4	21	9
WGAC3	30.4	94	47
WGED1A	29.5	74	32
WGED1B	11.9	35	17
WL10B	13.3	49	22
WL12	31.4	84	36
WL13A	12.3	34	15
WL14	23.2	60	27
WL1A	50.0	82	38
WL1B	36.2	103	36
WL2	19.0	54	25
WL3A	6.0	25	10
WL4B	8.9	27	12
WL5A	10.0	32	15
WL5B	3.9	12	5
WL6A	10.0	30	14
WL7	11.6	34	16
WL8	17.4	48	22
WL9A	16.2	49	22
WL9B	11.0	36	16
WML10	28.7	81	38
WML11	18.4	49	25
WML14	16.2	59	29
WML17	18.3	59	29
WML18	12.3	17	8
WML20	19.7	54	27
WML21	12.3	40	20
WMLA2	28.3	67	33
WMLA3	23.0	73	37
WMLA4	6.1	21	10
WMLA8	24.2	73	37
WMLA9	14.4	55	28
WMLA4	13.1	37	18
WMLA4	4.8	17	9
WPF1A	20.3	59	29
WPF1B	17.4	58	31
WPF5	9.4	11	4
WPF8	1.2	4	2
WPF9	1.9	4	2
WPRK10	10.0	19	7
WPRK11	2.2	5	2
WPRK13	2.2	5	2
WPRK5	2.0	5	2
WPRK6	13.7	28	10
WPRK7	1.0	3	1
WPRK8	0.5	2	1
WPRK9	1.0	4	2
WSCH2	12.0	37	16
WEST ROADWAY BASINS			
WEGL1	3.4	12	6
WEGL2	4.8	18	9
WEGL3	0.5	2	1
WEGN2	2.1	7	3
WEGN3	3.3	10	6
WGRC1B	3.2	10	5
WGRC2	2.6	9	5
WGRT1	11.7	30	18
WRN1	0.6	2	1
WRN2	2.2	7	3
WRN3	2.7	9	5
WRN4	0.7	3	2
WRN5	2.1	8	4
WSCP3	3.5	13	7
WSCP4	2.8	25	14
WSHA1	2.4	8	4
WSHA3B	1.5	6	3
WSHA4	1.4	6	3
WSHA5	2.4	8	4
WSHP1	6.4	19	9
WSKV1A	1.2	4	2
WSKV2	0.4	2	1
WSKV3	3.5	11	6
WSKV4	2.0	7	3
WSKV1B	4.2	14	7
WSPD1	0.7	3	1
WSPD2	2.1	7	4
WSPD3	0.8	3	2
WSPD4	2.3	8	4
WGS95	8.0	28	15

Ultimate Condition Flow Rate Summary
Skye Canyon West Concentration Points

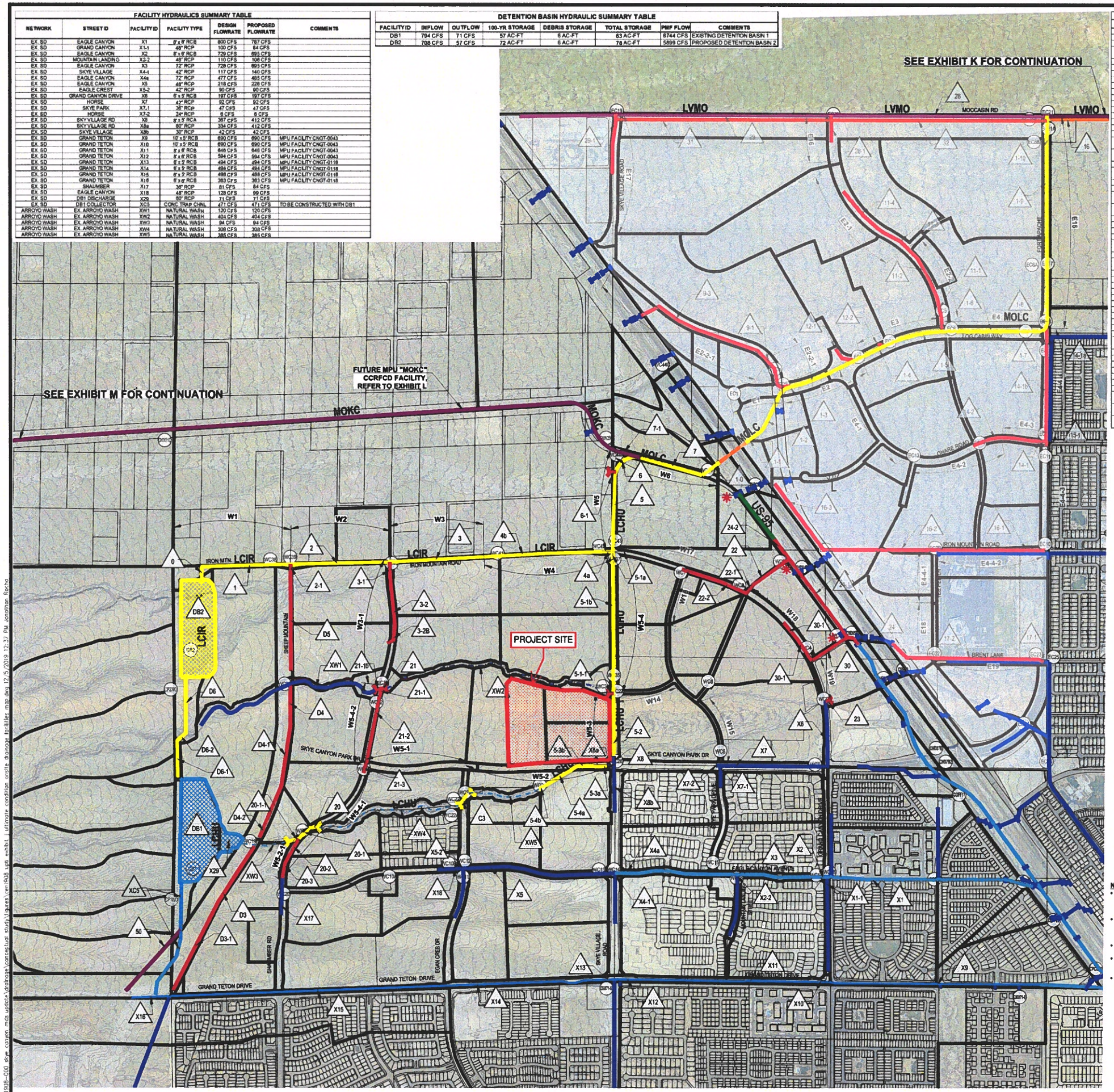
Basin/Concentration Point ID	Area (sq. mi)	Q_{100} (cfs)
WCH1	0.02	37
Q = WCH1 + WSHP1 + WSHA1 (LS = WSP3)	0.03	64
Q = WCH2 + WSHP2 (LS = WSP4)	0.05	105
Q = WSHA1 + WSHA3B + WSHA4 + WSHA5 + WSCH2	0.08	105
WCH3	0.04	62
Q = WCH3 + WMLA4	0.10	180
WCH4	0.02	38
Q = WCH3 + WCH4	0.17	315
WCH5A	0.03	60
Q = WCH5A + WMLA4 + WMLA8 + WMLA9	0.05	99
Q = WCH5A + WMLA4 + WMLA8 + WMLA9 + WMLA4	0.07	127
WCH6	0.12	228
Q = WCH6 + WMLA4 + WMLA8 + WMLA9 + WMLA4	0.18	352
WCH7	0.04	62
Q = WCH7 + WMLA4 + WMLA8 + WMLA9 + WMLA4	0.25	458
WCH8	0.03	44
Q = WCH8 + WPRK8 + WPRK9 + WMTL1	0.05	106
WCH9	0.36	695
Q = WCH9 + WCH8 + WPRK8 + WPRK9 + WMTL1 + WL10B	0.43	787
WCH10	0.50	83
Q = WCH10 + WCH9 + WPRK8 + WPRK9 + WMTL1 + WL10B	0.93	1787
WCH11	0.07	127
Q = WCH11 + WCH10 + WPRK8 + WPRK9 + WMTL1 + WL10B	1.00	1914
WCH12	0.03	60
Q = WCH12 + WCH11 + WPRK8 + WPRK9 + WMTL1 + WL10B	1.00	1914
WCH13	0.04	67
Q = WCH13 + WCH12 + WPRK8 + WPRK9 + WMTL1 + WL10B	1.00	1914
WCH14	0.06	174
Q = WCH14 + WCH13 + WPRK8 + WPRK9 + WMTL1 + WL10B	1.00	1914
WCH15	0.04	67
Q = WCH15 + WCH14 + WPRK8 + WPRK9 + WMTL1 + WL10B	1.00	1914
WCH16	0.04	67
Q = WCH16 + WCH15 + WPRK8 + WPRK9 + WMTL1 + WL10B	1.00	1914
WCH17	0.04	67
Q =

FACILITY HYDRAULICS SUMMARY TABLE

NETWORK	STREET ID	FACILITY ID	FACILITY TYPE	DESIGN FLOWRATE	PROPOSED FLOWRATE	COMMENTS
EX. SD	EAGLE CANYON	X1	8'x 8' RCB	800 CFS	787 CFS	
EX. SD	GRAND CANYON	X1-1	48" RCP	100 CFS	84 CFS	
EX. SD	EAGLE CANYON	X2	8'x 8' RCB	729 CFS	695 CFS	
EX. SD	MOUNTAIN LANDING	X2-2	48" RCP	110 CFS	106 CFS	
EX. SD	EAGLE CANYON	X3	72" RCP	729 CFS	695 CFS	
EX. SD	SKYE VILLAGE	X4-1	42" RCP	117 CFS	146 CFS	
EX. SD	EAGLE CANYON	X4a	72" RCP	477 CFS	485 CFS	
EX. SD	EAGLE CANYON	X5	48" RCP	218 CFS	228 CFS	
EX. SD	EAGLE CREST	X5-2	42" RCP	90 CFS	90 CFS	
EX. SD	GRAND CANYON DRIVE	X6	8'x 5' RCB	187 CFS	197 CFS	
EX. SD	HORSE	X7	42" RCP	92 CFS	92 CFS	
EX. SD	SKYE PARK	X7-1	36" RCP	47 CFS	47 CFS	
EX. SD	HORSE	X7-2	24" RCP	6 CFS	6 CFS	
EX. SD	SKY VILLAGE RD	X8	8'x 5' RCA	367 CFS	412 CFS	
EX. SD	SKY VILLAGE RD	X8a	60" RCP	334 CFS	412 CFS	
EX. SD	SKYE VILLAGE	X8b	30" RCP	42 CFS	42 CFS	
EX. SD	GRAND TETON	X9	10' x 5' RCB	690 CFS	690 CFS	MPU FACILITY CNQT-0043
EX. SD	GRAND TETON	X10	10' x 5' RCB	690 CFS	690 CFS	MPU FACILITY CNQT-0043
EX. SD	GRAND TETON	X11	8' x 8' RCB	846 CFS	846 CFS	MPU FACILITY CNQT-0043
EX. SD	GRAND TETON	X12	8' x 8' RCB	594 CFS	594 CFS	MPU FACILITY CNQT-0043
EX. SD	GRAND TETON	X13	8' x 5' RCB	494 CFS	494 CFS	MPU FACILITY CNQT-0043
EX. SD	GRAND TETON	X14	8' x 5' RCB	494 CFS	494 CFS	MPU FACILITY CNQT-0118
EX. SD	GRAND TETON	X15	8' x 5' RCB	488 CFS	488 CFS	MPU FACILITY CNQT-0118
EX. SD	GRAND TETON	X16	8' x 4' RCB	383 CFS	383 CFS	MPU FACILITY CNQT-0118
EX. SD	SHAUMBER	X17	36" RCP	81 CFS	84 CFS	
EX. SD	EAGLE CANYON	X18	48" RCP	128 CFS	99 CFS	
EX. SD	DRY DISCHARGE	X29	60" RCP	71 CFS	71 CFS	
EX. SD	DB1 COLLECTOR	XC5	CONC TRAP CHNL	471 CFS	471 CFS	TO BE CONSTRUCTED WITH DB1
ARROYO WASH	EX. ARROYO WASH	XW1	NATURAL WASH	120 CFS	120 CFS	
ARROYO WASH	EX. ARROYO WASH	XW2	NATURAL WASH	404 CFS	404 CFS	
ARROYO WASH	EX. ARROYO WASH	XW3	NATURAL WASH	94 CFS	94 CFS	
ARROYO WASH	EX. ARROYO WASH	XW4	NATURAL WASH	308 CFS	308 CFS	
ARROYO WASH	EX. ARROYO WASH	XW5	NATURAL WASH	385 CFS	385 CFS	

DETENTION BASIN HYDRAULIC SUMMARY TABLE

FACILITY ID	INFLOW	OUTFLOW	100-YR STORAGE	DEBRIS STORAGE	TOTAL STORAGE	PMF FLOW	COMMENTS
DB1	794 CFS	71 CFS	57 AC-FT	6 AC-FT	63 AC-FT	6744 CFS	EXISTING DETENTION BASIN 1
DB2	708 CFS	97 CFS	72 AC-FT	6 AC-FT	78 AC-FT	5899 CFS	PROPOSED DETENTION BASIN 2



FACILITY HYDRAULICS SUMMARY TABLE - 100-YR

NETWORK	STREET ID	FACILITY ID	FACILITY TYPE	LENGTH (FT)	SLOPE	FLOW (CFS)	COMMENTS
WEST SD	DB2 OUTLET	0	60" RCP	800'	0.40%	70 CFS	
WEST SD	W1	1	60" RCP	1099'	0.40%	78 CFS	
WEST SD	W2	2	42" RCP	1226'	7.80%	157 CFS	
WEST SD	INFLOW FROM SHEEP MOUNTAIN CHNL	2-1	18" RCP	68'	4.40%	19 CFS	
WEST SD	W3	3	54" RCP	1181'	3.20%	299 CFS	
WEST SD	W3-1	3-1	42" RCP	191'	3.00%	132 CFS	
WEST SD	W3-1	3-2	42" RCP	599'	1.70%	119 CFS	
WEST SD	W3-1	3-2b	36" RCP	150'	1.00%	59 CFS	
WEST SD	W4	4a	7'x5' RCB	115'	1.50%	388 CFS	
WEST SD	W4	4b	60" RCP	1500'	3.00%	378 CFS	
WEST SD	W5	5	13' x 8' RCB	931'	1.80%	1330 CFS	PER KYLE INTERCHANGE HYDRAULIC SUPPLEMENT
WEST SD	ARROYO WASH INFLOW	5-1-1	7'x 5' RCB	75'	0.50%	509 CFS	
WEST SD	W5-4	5-1a	10' x 8' RCA	100'	0.40%	1339 CFS	
WEST SD	W5-4	5-1b	10' x 8' RCA	1854'	0.40%	977 CFS	
WEST SD	W5-3	5-2	8' x 7' RCA	779'	0.50%	494 CFS	
WEST SD	W5-2	5-3a	60" RCP	79'	3.00%	412 CFS	
WEST SD	W5-2	5-3b	60" RCP	301'	3.00%	359 CFS	
WEST SD	CONVEYS FLOW TO SD 5-3a	5-4a	60" RCP	491'	3.00%	359 CFS	
WEST SD	INFLOW FROM ARROYO WASH	5-4b	8' x 6' RCB	50'	2.80%	359 CFS	
WEST SD	W5	6	13' x 6' RCB	445'	1.80%	1330 CFS	PER KYLE INTERCHANGE HYDRAULIC SUPPLEMENT
WEST SD	N/A	6-1	(6) 10' X 4' RCB	62'	N/A	N/A	INTERIM COLLECTOR PRIOR TO COMPLETION OF FACILITY 7-1. CAPPED/PLUGGED IN ULTIMATE CONDITION
WEST SD	W8	1-0	12' X 8' RCB	274'	N/A	1998	
WEST SD	W8	7	12 X8' RCB	722'	1.80%	1998 CFS	PER KYLE INTERCHANGE HYDRAULIC SUPPLEMENT
WEST SD	MPU FACILITY	7-1	9' X 6' RCB	309'	5.00%	1201 CFS	MOKC-0000 MPU FACILITY(SEE CP CNW35C) SIZES PER KYLE INTERCHANGE HYDRAULIC SUPPLEMENT
WEST SD	DISCHARGE TO ARROYO WASH	20	60" RCP	109'	2.00%	201 CFS	
WEST SD	W5-2-1	20-1	48" RCP	194'	2.00%	180 CFS	
WEST SD	INFLOW FROM DB1	20-1-1	48" RCP	135'	2.20%	94 CFS	
WEST SD	W5-2-1	20-2	36" RCP	340'	3.00%	84 CFS	
WEST SD	W5-2-1	20-3	36" RCP	193'	3.50%	84 CFS	
WEST SD	DISCHARGE TO ARROYO WASH	21	54" RCP	42'	4.00%	244 CFS	
WEST SD	W5-4-2	21-1	42" RCP	100'	2.50%	124 CFS	
WEST SD	INFLOW FROM ARROYO WASH	21-1b	54" RCP	68'	3.40%	120 CFS	
WEST SD	W5-4-2	21-2	36" RCP	863'	3.40%	82 CFS	
WEST SD	W5-4-1	21-3	36" RCP	105'	1.30%	82 CFS	
WEST SD	N/A	22	36" RCP	426'	2.20%	73 CFS	
WEST SD	N/A	22-1	36" RCP	146'	2.20%	73 CFS	
WEST SD	W17	22-2	24" RCP	800'	2.00%	18 CFS	
WEST SD	W18 OUTLET TO WASH	23	36" RCP	56'	3.40%	288 CFS	
WEST SD		24	60" RCP	248'	1.50%	301 CFS	
WEST SD		24-1	36" RCP	1,140'	1.50%	75 CFS	
WEST SD		24-2	18" RCP	294'	1.50%	10 CFS	
WEST SD	N/A	30	42" RCP	478'	2.50%	170 CFS	
WEST SD	W18	30-1	36" RCP	600'	1.20%	58 CFS	
WEST SD	DISCHARGE FROM SB	50	CONC TRAP CHNL	1017'	1.50%	471 CFS	12' BOTTOM WIDTH. 5' DEEP (TO BE CONSTRUCTED BY GRAND TETON/SHEEP MTN INTERCHANGE, REPLACES FACILITY XC5)
WEST SD	ARROYO WASH CULVERT	C3	8' X 5' RCB	184'	6.10%	306 CFS	
WEST SD	SHEEP MOUNTAIN CHNL	D3	EARTHEN TRAP CHNL	815'	3.60%	31 CFS	20' BOTTOM WIDTH. 3:1 SIDE SLOPES. 3' DEEP
WEST SD	SHEEP MOUNTAIN CHNL	D3-1	EARTHEN TRAP CHNL	1,239'	1.70%	31 CFS	8' BOTTOM WIDTH. 3:1 SIDE SLOPES. 3' DEEP
WEST SD	SHEEP MOUNTAIN CHNL	D4	EARTHEN TRAP CHNL	534'	4.50%	11 CFS	5' BOTTOM WIDTH. 3:1 SIDE SLOPES. 3' DEEP
WEST SD	SHEEP MOUNTAIN CHNL	D4-1	EARTHEN TRAP CHNL	757'	1.50%	11 CFS	5' BOTTOM WIDTH. 3:1 SIDE SLOPES. 3' DEEP
WEST SD	SHEEP MOUNTAIN CHNL	D4-2	EARTHEN TRAP CHNL	691'	1.00%	11 CFS	5' BOTTOM WIDTH. 3:1 SIDE SLOPES. 3' DEEP
WEST SD	SHEEP MOUNTAIN CHNL	D5	EARTHEN TRAP CHNL	1252'	1.20%	8 CFS	5' BOTTOM WIDTH. 3:1 SIDE SLOPES. 3' DEEP
WEST SD	CHANNEL TO DB2	D6	CONCRETE TRAP CHNL	723'	3.00%	235 CFS	12' BOTTOM WIDTH. 3:1 SIDE SLOPES. 3' DEEP TO BE CONSTRUCTED WITH DB2
WEST SD	CHANNEL TO DB2	D6-1	EARTHEN TRAP CHNL	451'	0.90%	10 CFS	5' BOTTOM WIDTH. 3:1 SIDE SLOPES. 3' DEEP TO BE CONSTRUCTED WITH DB2
WEST SD	CHANNEL TO DB2	D6-2	EARTHEN TRAP CHNL	145'	1.40%	10 CFS	5' BOTTOM WIDTH. 3:1 SIDE SLOPES. 3' DEEP TO BE CONSTRUCTED WITH DB2

NOTES:

- REFER TO EXHIBIT M - ULTIMATE CONDITION US-95 HYDRAULICS SUMMARY MAP FOR DETAILED FLOW THRU EXISTING US-95 CULVERTS & RCB FACILITIES
- REFER TO EXHIBIT K - ULTIMATE CONDITION OFFSITE EAST FACILITIES MAP FOR EXTENSION OF FACILITIES REQUIRED IN MPU ALIGNMENT EAST OF SKYE CANYON.
- 5-FT TOPOGRAPHIC CONTOURS SHOWN ON EXHIBIT
- TRANSPARENT ID TAG INDICATES A FACILITY THAT HASN'T CHANGED PER UPDATE #5
- REFER TO MDS UP #5 FOR BASINS AND FACILITIES EAST OF US-95

LEGEND

- PROPOSED LOCAL FACILITIES
- EXISTING LOCAL FACILITIES
- FUTURE LOCAL FACILITIES
- PROP CCRFCD REGIONAL FACILITIES (BY DEVELOPER)
- PROP CCRFCD REGIONAL FACILITIES (BY DEVELOPER W/ CLV COST SHARING)
- FUTURE CCRFCD REGIONAL FACILITIES (BY OTHERS)
- EXISTING CCRFCD REGIONAL FACILITIES
- LCHU ID — MPU AMENDMENT FACILITY ALIGNMENT
- STREET SEGMENT ID
- X9 — FACILITY TAG/ID
- CULVERT TO BE PLUGGED

N

SCALE - 1"=600' (0, 600, 1200 FEET)

Westwood
5740 S. Arville Street
Suite 216
Las Vegas, NV 89118
Phone (702) 284-5300
Fax (702) 284-5399
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Westwood Professional Services, Inc.

NO.	DESCRIPTION	DATE	BY	APP'D	APP DATE

CITY OF LAS VEGAS

CENTURY COMMUNITIES

SKYE CANYON MASTER DRAINAGE STUDY

ULTIMATE CONDITIONS ONSITE DRAINAGE FACILITIES

DATE: DEC 2019
DRAFTER: AA
DESIGNER: AA
CHECKED: LKL
PROJECT NO.
CEN1908.000

EXHIBIT J
SHEET 1 OF 1

J:\cen1908-000_skye_canyon_mdp_update\drainage\concept\civil_study\civil\cen-908_ultimate_condition_onsite_drainage_facilities_map.dwg 12.5.2019 12:37 PM Jonathan Rocha

Referenced Hydrologic Data

Matrix Equiv	LAND USE	A	B	C	D
2	Open Space (fair)	49.0	69.0	79.0	84.0
4	Roadway	98.0	98.0	98.0	98.0
10	Commercial	89.0	92.0	94.0	95.0
12	Newly Graded	77.0	86.0	91.0	94.0
13	Desert Shrub (poor)	63.0	77.0	85.0	88.0
19	Residential (6,000 sf)	80.0	87.0	90.0	92.0
44	School	73.5	83.5	88.5	91.0
45	Improved Sheep Mountain Parkway	77.0	86.0	91.0	94.0

LV Soil Type	Soil Description	A	B	C	D
155	Cave gravelly fine sandy loam, 4 to 15 percent slopes	0%	0%	0%	100%
191	Dalian very cobbly fine sandy loam, 2 to 8 percent slopes	100%	0%	0%	0%
314	Weiser-Wechech association	80%	5%	0%	15%
400	Tencee very gravelly fine sandy loam, 2 to 8 percent slopes	0%	0%	0%	100%

Skye Canyon Update #6

CEN1908 UP6 GIS Curve Number.xlsx

BASIN ID	Soil Survey	LAND USE INDEX NUMBER	SOIL MAP UNIT NUMBER	SUB REGION CN	SUB REGION AREA (AC)	BASIN AREA (AC)	PERCENT OF BASIN	CUMULATIVE PERCENT	AREA WEIGHTED CN	CUMULATIVE CN	COMPOSITE CN
WARR2	LV	13	155	88	1.07	1.12	95.2%	95.2%	83.78	83.78	
WARR2	LV	13	400	88	0.05	1.12	4.8%	100.0%	4.22	88.00	88.0
WARR3	LV	13	155	88	1.27	3.29	38.7%	38.7%	34.09	34.09	
WARR3	LV	13	400	88	2.01	3.29	61.3%	100.0%	53.91	88.00	88.0
WGC1	LV	10	314	90	6.80	6.80	100.0%	100.0%	90.05	90.05	90.1
WGC2	LV	10	314	90	8.38	8.38	100.0%	100.0%	90.05	90.05	90.1
WGC3	LV	10	155	95	11.77	30.44	38.7%	38.7%	36.74	36.74	
WGC3	LV	10	400	95	18.67	30.44	61.3%	100.0%	58.26	95.00	95.0
WGED1A	LV	10	400	95	5.93	28.49	20.8%	20.8%	19.79	19.79	
WGED1A	LV	10	314	90	22.56	28.49	79.2%	100.0%	71.29	91.08	91.1
WGED1B	LV	10	400	95	11.08	11.89	93.2%	93.2%	88.51	88.51	
WGED1B	LV	10	314	90	0.81	11.89	6.8%	100.0%	6.15	94.66	94.7
WGRC2	LV	4	400	98	2.64	2.64	100.0%	100.0%	98.00	98.00	98.0
WIRN1	LV	4	155	98	0.12	0.58	20.6%	20.6%	20.14	20.14	
WIRN1	LV	4	400	98	0.46	0.58	79.4%	100.0%	77.86	98.00	98.0
WIRN2	LV	4	155	98	2.18	2.19	99.9%	99.9%	97.87	97.87	
WIRN2	LV	4	400	98	0.00	2.19	0.1%	100.0%	0.13	98.00	98.0
WIRN3	LV	4	155	98	0.96	1.28	74.9%	74.9%	73.45	73.45	
WIRN3	LV	4	400	98	0.32	1.28	25.1%	100.0%	24.55	98.00	98.0
WIRN4	LV	4	400	98	2.69	2.69	100.0%	100.0%	98.00	98.00	98.0
WL13A	LV	19	400	92	12.30	12.31	99.9%	99.9%	91.91	91.91	
WL13A	LV	19	400	92	0.00	12.31	0.0%	99.9%	0.00	91.91	
WL13A	LV	19	400	92	0.01	12.31	0.1%	100.0%	0.09	92.00	92.0
WL13B	LV	19	155	92	0.22	11.19	1.9%	1.9%	1.78	1.78	
WL13B	LV	19	400	92	10.96	11.19	98.0%	99.9%	90.14	91.91	
WL13B	LV	19	400	92	0.01	11.19	0.1%	100.0%	0.09	92.00	
WL13B	LV	19	400	92	0.00	11.19	0.0%	100.0%	0.00	92.00	92.0
WL14	LV	19	155	92	20.69	22.15	93.4%	93.4%	85.92	85.92	
WL14	LV	19	400	92	1.46	22.15	6.6%	100.0%	6.08	92.00	
WL14	LV	19	155	92	0.00	22.15	0.0%	100.0%	0.00	92.00	
WL14	LV	19	155	92	0.00	22.15	0.0%	100.0%	0.00	92.00	
WL14	LV	19	155	92	0.00	22.15	0.0%	100.0%	0.00	92.00	92.0
WL1A	LV	19	155	92	28.34	29.98	94.5%	94.5%	86.98	86.98	
WL1A	LV	19	400	92	1.64	29.98	5.5%	100.0%	5.02	92.00	92.0
WL1B	LV	19	155	92	36.23	36.23	100.0%	100.0%	92.00	92.00	92.0
WL2	LV	19	155	92	1.91	18.97	10.1%	10.1%	9.28	9.28	
WL2	LV	19	400	92	17.06	18.97	89.9%	100.0%	82.72	92.00	92.0
WL3	LV	19	155	92	0.05	23.23	0.2%	0.2%	0.18	0.18	
WL3	LV	19	400	92	23.18	23.23	99.8%	100.0%	91.82	92.00	92.0
WML1	LV	10	155	95	20.09	20.09	100.0%	100.0%	95.00	95.00	95.0
WML17	LV	10	155	95	11.94	18.29	65.3%	65.3%	61.99	61.99	
WML17	LV	10	400	95	6.36	18.29	34.7%	100.0%	33.01	95.00	95.0
WML18	LV	10	400	95	11.97	11.97	100.0%	100.0%	95.00	95.00	95.0
WML19	LV	10	400	95	5.30	5.30	100.0%	100.0%	95.00	95.00	95.0
WML2	LV	10	155	95	16.34	28.30	57.8%	57.8%	54.87	54.87	
WML2	LV	10	191	89	11.95	28.30	42.2%	100.0%	37.60	92.47	92.5
WML20	LV	10	400	95	18.67	18.67	100.0%	100.0%	95.00	95.00	95.0
WML21	LV	10	155	95	12.33	12.33	100.0%	100.0%	95.00	95.00	95.0
WML22	LV	10	155	95	4.54	4.54	100.0%	100.0%	95.00	95.00	95.0
WML3	LV	10	155	95	19.43	20.47	94.9%	94.9%	90.16	90.16	
WML3	LV	10	400	95	1.04	20.47	5.1%	100.0%	4.84	95.00	95.0
WML4	LV	10	155	95	6.53	22.99	28.4%	28.4%	26.98	26.98	
WML4	LV	10	400	95	16.47	22.99	71.6%	100.0%	68.04	95.00	95.0
WML5	LV	10	155	95	28.63	28.89	99.1%	99.1%	94.16	94.16	
WML5	LV	10	400	95	0.26	28.89	0.9%	100.0%	0.84	95.00	95.0
WML6	LV	10	155	95	24.15	24.15	100.0%	100.0%	95.00	95.00	
WML6	LV	10	400	95	0.00	24.15	0.0%	100.0%	0.00	95.00	95.0
WML7A	LV	10	155	95	8.05	8.05	100.0%	100.0%	94.98	94.98	
WML7A	LV	10	155	95	0.00	8.05	0.0%	100.0%	0.02	95.00	95.0
WML7B	LV	10	155	95	8.95	8.95	100.0%	100.0%	95.00	95.00	95.0
WMLA3	LV	10	400	95	12.08	12.08	100.0%	100.0%	95.00	95.00	95.0
WMLA4	LV	10	155	95	4.85	4.85	100.0%	100.0%	95.00	95.00	95.0
WOSO1	LV	4	314	98	2.09	2.09	100.0%	100.0%	98.00	98.00	98.0
WPF1A	LV	12	155	94	16.78	20.28	82.8%	82.8%	77.79	77.79	
WPF1A	LV	12	400	94	3.50	20.28	17.2%	100.0%	16.21	94.00	94.0
WPF1B	LV	12	155	94	17.44	17.44	100.0%	100.0%	94.00	94.00	94.0
WPF8	LV	12	155	94	2.00	5.64	35.4%	35.4%	33.27	33.27	
WPF8	LV	12	191	77	3.64	5.64	64.6%	100.0%	49.75	83.02	83.0
WPF9	LV	12	400	94	1.17	1.17	100.0%	100.0%	94.00	94.00	94.0
WPRK1	LV	2	400	84	1.90	1.90	100.0%	100.0%	84.00	84.00	84.0
WPRK11	LV	2	155	84	0.86	2.22	38.8%	38.8%	32.60	32.60	
WPRK11	LV	2	400	84	1.36	2.22	61.2%	100.0%	51.40	84.00	84.0
WPRK12	LV	2	155	84	0.14	0.83	16.6%	16.6%	13.97	13.97	
WPRK12	LV	2	400	84	0.69	0.83	83.4%	100.0%	70.03	84.00	84.0
WPRK13	LV	2	155	84	0.64	2.18	29.4%	29.4%	24.67	24.67	
WPRK13	LV	2	400	84	1.54	2.18	70.6%	100.0%	59.32	84.00	
WPRK13	LV	2	155	84	0.00	2.18	0.0%	100.0%	0.00	84.00	84.0
WPRK7	LV	2	155	84	0.39	2.97	13.1%	13.1%	10.96	10.96	
WPRK7	LV	2	400	84	2.58	2.97	86.9%	100.0%	73.03	84.00	
WPRK7	LV	2	400	84	0.00	2.97	0.0%	100.0%	0.00	84.00	84.0
WSCH1	LV	44	155	91	19.87	19.87	100.0%	100.0%	91.00	91.00	91.0
WSCH2	LV	44	155	91	11.98	11.98	100.0%	100.0%	91.00	91.00	91.0
WSCP4	LV	4	155	98	4.85	7.79	62.2%	62.2%	61.00	61.00	
WSCP4	LV	4	400	98	2.94	7.79	37.8%	100.0%	37.00	98.00	
WSCP4	LV	4	155	98	0.00	7.79	0.0%	100.0%	0.00	98.00	98.0
WSHA1	LV	4	155	98	1.51	2.37	63.7%	63.7%	62.47	62.47	
WSHA1	LV	4	400	98	0.86	2.37	36.3%	100.0%	35.53	98.00	98.0

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JUN  1998               *
*           VERSION 4.1                *
*                                      *
*  RUN DATE   02DEC19  TIME  11:08:04  *
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX         XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1 HEC-1 INPUT PAGE 1

```
LINE          ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

              *DIAGRAM
    1         ID    WESTWOOD
    2         ID    CENTURY COMMUNITIES
    3         ID    SKYE CANYON
    4         ID    MASTER DRAINAGE STUDY UPDATE #6
    5         ID    ULTIMATE DRAINAGE CONDITION
    6         ID
    7         ID    RETURN PERIOD ------- 100-YEAR
    8         ID    DISTRIBUTION -------- 6-HOUR SDN3
    9         ID    PROJECT NO. --------- CEN1908-000
   10         ID    FILENAME ------------ ULT3.H1
   11         ID    DATE ---------------- November 2019
   12         ID    MODELED BY ---------- AA
   13         ID
   14         ID       SIX HOUR DEPTH-AREA REDUCTION FACTORS
   15         ID       DRAINAGE AREA (MI^2)    DARF
   16         ID       0.0-0.49                1.00
   17         ID       0.5-0.99                0.98
   18         ID       1.0-1.99                0.97
   19         ID       2.0-3.99                0.93
   20         ID       4.0-5.99                0.91
   21         ID       6.0-7.99                0.90
   22         ID
   23         IT     5       0       0    2000
   24         IO     5       0       0
   25         IN     5       0       0
   26         JR   PREC    1.00    0.98    0.97    0.93    0.91    0.90
              *
   27         KK   WUS95
   28         KM   KYLE CANYON INTERCHANGE - WEST HALF
   29         BA   .0126
   30         PB    2.77
   31         PC      0   0.020   0.057   0.070   0.087   0.108   0.124   0.130   0.130   0.130
   32         PC  0.130   0.130   0.130   0.133   0.140   0.142   0.148   0.158   0.172   0.181
   33         PC  0.190   0.197   0.199   0.200   0.201   0.204   0.214   0.229   0.241   0.249
   34         PC  0.251   0.256   0.270   0.278   0.281   0.283   0.295   0.322   0.352   0.409
   35         PC  0.499   0.590   0.710   0.744   0.781   0.812   0.819   0.835   0.851   0.856
   36         PC  0.860   0.868   0.876   0.888   0.910   0.926   0.937   0.950   0.970   0.976
   37         PC  0.982   0.985   0.987   0.989   0.990   0.993   0.993   0.994   0.995   0.998
   38         PC  0.998   0.999   1.000
   39         LS      0    98.0
   40         UD  0.082
              *
   41         KK  DHD01B
   42         KM   FACILITY E-9
   43         KM   FLOW SPLIT AT VTN CULVERT 1
   44         KM   FLOW SPLITS TO BETWEEN NB AND SB ROADS OF US-95
   45         KM   REFERENCED FROM GCW MASTER DRAINAGE STUDY
   46         DT  DCHD1B
```

```
1046          KK   WML7B
1047          KM   WEST BASIN, WEST OF SKYE VILLAGE ROAD. UPDATED FOR UP6.
1048          BA   .0140
1049          PB    3.00
1050          LS       0    95.0
1051          UD   0.077
              *

1052          KK    WC26
1053          KM   W OF SKY CANYON PARK/SKYE VILLAGE INTERSECTION
1054          KM   COMBINE WC24, WSCP2, WWPRK6, WSCP3, WML7B
1055          HC       5
              *
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1056          KK   WSKV2
1057          KM   WEST BASIN, SKYE VILLAGE ROAD.  UPDATED PER UP6.
1058          BA   .0032
1059          PB    3.00
1060          LS       0    98.0
1061          UD   0.082
              *

1062          KK    WC27
1063          KM   S OF SPD2/SKYE CANYON VILLAGE INTERSECTION
1064          KM   COMBINE WC26, WSKV2
1065          HC       2
              *

1066          KK    WL1B
1067          KM   WEST BASIN, WEST OF SHEEP MT ROAD
1068          BA   .0566
1069          PB    3.00
1070          LS       0    92.0
1071          UD   0.109
              *

1072          KK   WSHP2
1073          KM   WEST BASIN, SHEEP MT ROAD.  UPDATED PER UP6.
1074          BA   .0146
1075          PB    3.00
1076          LS       0    94.0
1077          UD   0.148
              *

1078          KK    WC28
1079          KM   FAR S OF IRON MT/SHEEP MT INTERSECTION
1080          KM   COMBINE WL1B, WSHP3
1081          HC       2
              *

1082          KK   WMLA4
1083          KM   WEST BASIN, WEST OF SHAUMBER ROAD. UPDATED FOR UP6.
1084          BA   .0076
1085          PB    3.00
1086          LS       0    95.0
1087          UD   0.070
              *

1088          KK   WSCH2
1089          KM   WEST BASIN, WEST OF SHAUMBER ROAD. UPDATED PER UP6.
1090          BA   .0187
1091          PB    3.00
1092          LS       0    91.0
1093          UD   0.073
              *
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1094          KK  WSHA3B
1095          BA   .0026
1096          PB    3.00
1097          LS       0    98.0
1098          UD   0.089
              *

1099          KK    WC30
1100          HC       3
              *

1101          KK    WML1
1102          KM   WEST BASIN, WEST OF SHAUMBER ROAD. UPDATED FOR UP6.
1103          BA   .0314
1104          PB    3.00
```

```
1105          LS       0    95.0
1106          UD   0.108
              *

1107          KK   WSHA2
1108          KM   WEST BASIN, SHAUMBER ROAD.  UPDATED PER UP6.
1109          BA   .0024
1110          PB    3.00
1111          LS       0    98.0
1112          UD   0.061
              *

1113          KK    WC32
1114          HC       3
              *

1115          KK   WARR2
1116          KM   WEST BASIN, WEST OF SHAUMBER ROAD. UPDATED FOR UP6.
1117          BA   .0018
1118          PB    3.00
1119          LS       0    88.0
1120          UD   0.050
              *

1121          KK  WPRK11
1122          KM   WEST BASIN, WEST OF SHAUMBER ROAD. UPDATED FOR UP6.
1123          BA   .0035
1124          PB    3.00
1125          LS       0    84.0
1126          UD   0.067
              *

1127          KK    WC33
1128          HC       4
              *
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1129          KK  WPRK12
1130          KM   WEST BASIN, EAST OF SHAUMBER. UPDATED FOR UP6.
1131          BA   .0013
1132          PB    3.00
1133          LS       0    84.0
1134          UD   0.063
              *

1135          KK     WL2
1136          KM   WEST BASIN, WEST OF SKY VILLAGE ROAD. UPDATED FOR UP6.
1137          BA   .0296
1138          PB    3.00
1139          LS       0    92.0
1140          UD   0.105
              *

1141          KK    WML5
1142          KM   WEST BASIN, WEST OF SKY VILLAGE ROAD. UPDATED FOR UP6.
1143          BA   .0451
1144          PB    3.00
1145          LS       0    95.0
1146          UD   0.103
              *

1147          KK    WML6
1148          KM   WEST BASIN, WEST OF SKY VILLAGE ROAD. UPDATED FOR UP6.
1149          BA   .0377
1150          PB    3.00
1151          LS       0    95.0
1152          UD   0.113
              *

1153          KK   DUM34
1154          KM   DUMMY CREATED TO ADD 3 BASINS
1155          KM   COMBINE WPRK12, WL2, WML5
1156          HC       4
              *

1157          KK   WARR3
1158          KM   WEST BASIN, WEST OF SKY VILLAGE ROAD. UPDATED FOR UP6.
1159          BA   .0051
1160          PB    3.00
1161          LS       0    88.0
1162          UD   0.091
              *

1163          KK   WML7A
1164          KM   WEST BASIN, WEST OF SKY VILLAGE ROAD. UPDATED FOR UP6.
1165          BA   .0126
```

```
1166          PB    3.00
1167          LS       0    95.0
1168          UD   0.077
              *
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1169          KK  WPRK13
1170          KM   WEST BASIN, WEST OF SKY VILLAGE ROAD
1171          BA   .0034
1172          PB    3.00
1173          LS       0    84.0
1174          UD   0.070
              *

1175          KK    WC34
1176          KM   FAR N OF SKYE CANYON PARK/SKYE VILLAGE INTERSECTION
1177          KM   COMBINE WC33, WPRK12, WL2, WARR3, WML5, WML6, WML7A, WPRK13
1178          HC       5
              *

1179          KK    WC35
1180          KM   N OF SPD2/SKYE CANYON VILLAGE INTERSECTION
1181          KM   COMBINE WC27, WC34
1182          HC       2
              *

1183          KK  WSKV1B
1184          KM   WEST BASIN, SKYE VILLAGE ROAD.  UPDATED PER UP6.
1185          BA   .0054
1186          PB    3.00
1187          LS       0    98.0
1188          UD   0.123
              *

1189          KK     WL3
1190          KM   WEST BASIN, WEST OF SKY VILLAGE ROAD. UPDATED FOR UP6.
1191          BA   .0363
1192          PB    3.00
1193          LS       0    92.0
1194          UD   0.118
              *

1195          KK    WC37
1196          KM   S OF IRON MT/SKYE VILLAGE RD INTERSECTION
1197          KM   COMBINE WC35, WSKV1B, WL3
1198          HC       3
              *

1199          KK   WOFF7
1200          KM   DISCHARGES INTO DETENTION BASIN "DB2"
1201          BA   .0068
1202          LS       0    86.2
1203          UD   0.100
              *
```
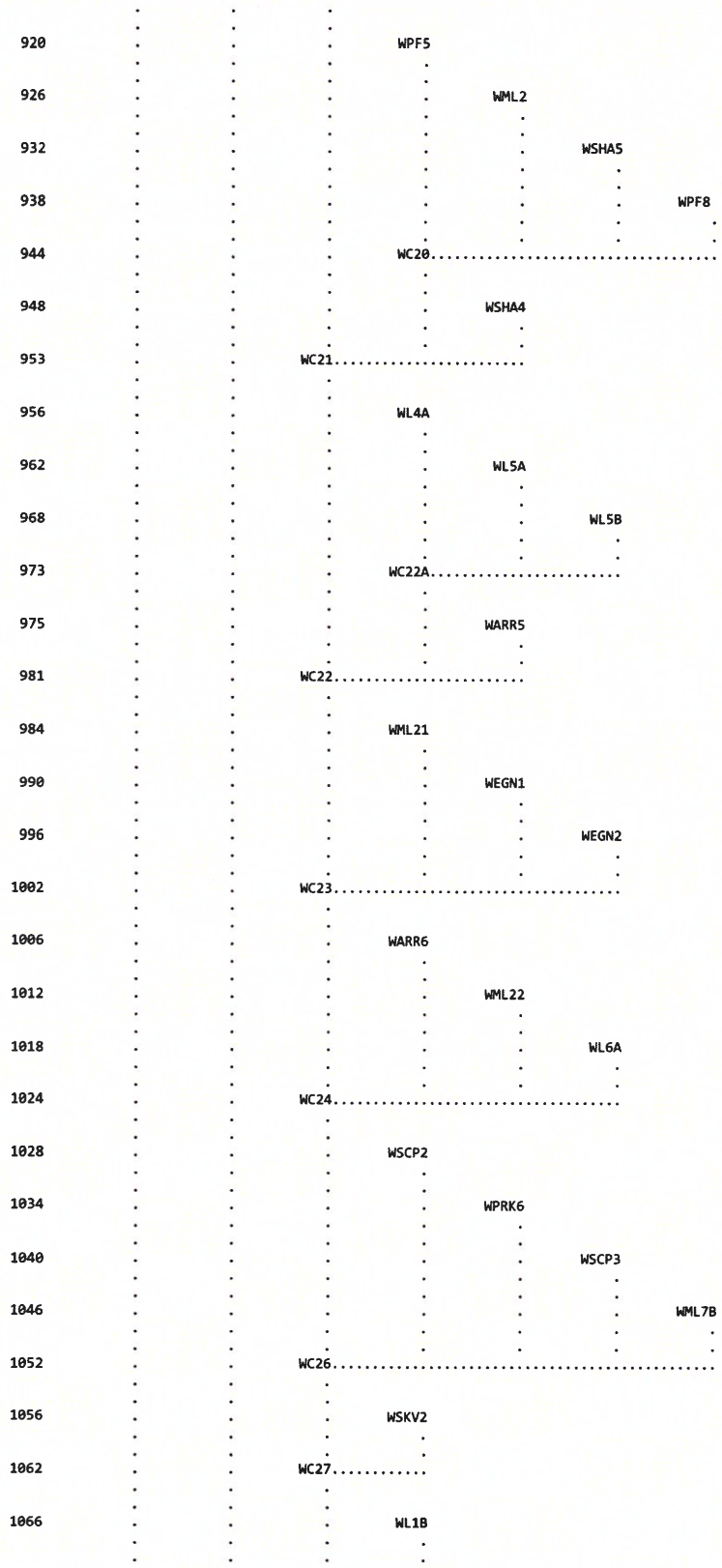



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1204          KK   WOFF8
1205          KM   DISCHARGES INTO DETENTION BASIN "DB2"
1206          BA   .1663
1207          LS       0    86.2
1208          UD   0.239
              *

1209          KK   CP2WO
1210          KM   COMBINE WOFF7, AND WOFF8
1211          HC       2
              *

1212          KK   WOFF9
1213          KM   DISCHARGES INTO DETENTION BASIN "DB2"
1214          BA   .1164
1215          LS       0    86.2
1216          UD   0.203
              *

1217          KK  WOFF10
1218          KM   DISCHARGES INTO DETENTION BASIN "DB2"
1219          BA   .2463
1220          LS       0    86.5
1221          UD   0.248
              *

1222          KK   WPF1A
```


920
WPF5
926
WML2
932
WSHA5
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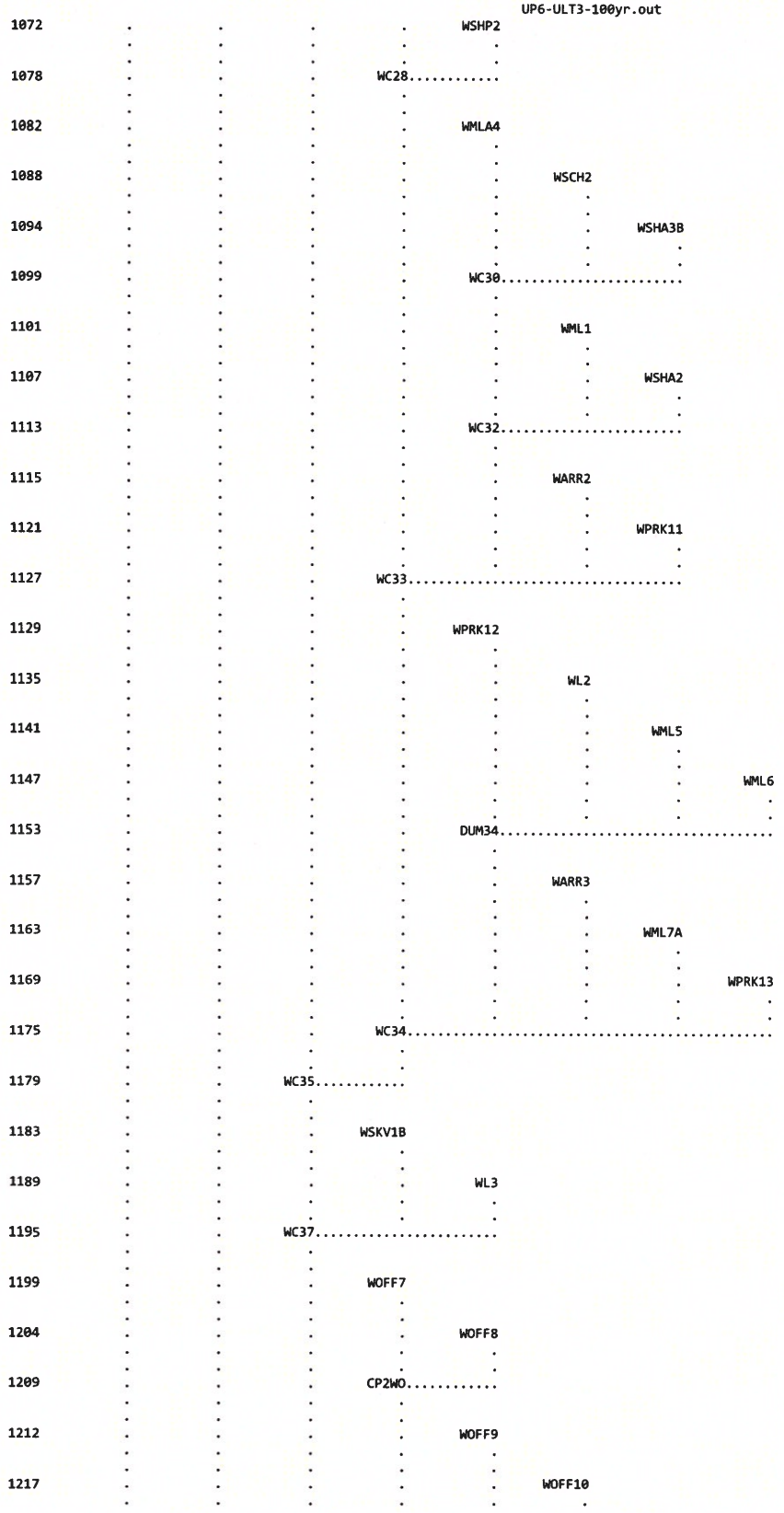
WC20
948
WSHA4
953
WC21
956
WL4A
962
WL5A
968
WL5B
973
WC22A
975
WARR5
981
WC22
984
WML21
990
WEGN1
996
WEGN2
1002
WC23
1006
WARR6
1012
WML22
1018
WL6A
1024
WC24
1028
WSCP2
1034
WPRK6
1040
WSCP3
1046
WML7B
1052
WC26
1056
WSKV2
1062
WC27
1066
WL1B

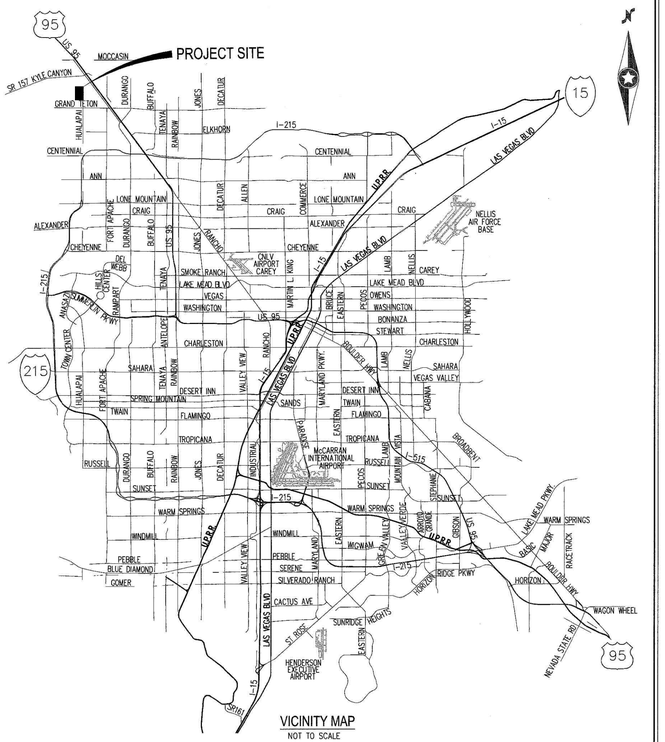

1072
WSHP2
1078
WC28
1082
WMLA4
1088
WSCH2
1094
WSHA3B
1099
WC30
1101
WML1
1107
WSHA2
1113
WC32
1115
WARR2
1121
WPRK11
1127
WC33
1129
WPRK12
1135
WL2
1141
WML5
1147
WML6
1153
DUM34
1157
WARR3
1163
WML7A
1169
WPRK13
1175
WC34
1179
WC35
1183
WSKV1B
1189
WL3
1195
WC37
1199
WOFF7
1204
WOFF8
1209
CP2WO
1212
WOFF9
1217
WOFF10

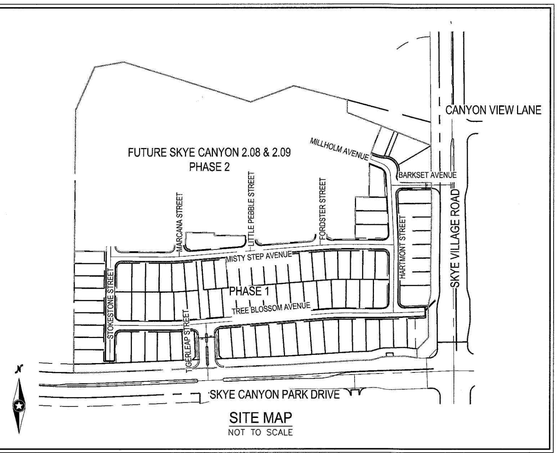
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WML22	.01	1	FLOW	16.	15.	15.	14.	14.	14.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WL6A	.01	1	FLOW	19.	18.	18.	17.	16.	16.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
4 COMBINED AT										
+	WC24	1.04	1	FLOW	336.	329.	326.	311.	304.	301.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WSCP2	.00	1	FLOW	11.	11.	11.	11.	10.	10.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WPRK6	.02	1	FLOW	28.	27.	27.	25.	24.	24.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT										
+	WSCP3	.01	1	FLOW	13.	13.	12.	12.	12.	12.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WML7B	.01	1	FLOW	31.	30.	30.	28.	28.	27.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
5 COMBINED AT										
+	WC26	1.09	1	FLOW	417.	408.	404.	385.	376.	372.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WSKV2	.00	1	FLOW	7.	7.	7.	7.	7.	7.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT										
+	WC27	1.09	1	FLOW	425.	415.	411.	392.	383.	378.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WL1B	.06	1	FLOW	103.	100.	99.	94.	91.	90.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WSHP2	.01	1	FLOW	27.	26.	26.	25.	24.	24.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT										
+	WC28	.07	1	FLOW	127.	124.	122.	116.	113.	112.
				TIME	3.50	3.50	3.50	3.50	3.58	3.58
HYDROGRAPH AT										
+	WMLA4	.01	1	FLOW	17.	17.	17.	16.	15.	15.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WSCH2	.02	1	FLOW	37.	36.	36.	34.	33.	33.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WSHA3B	.00	1	FLOW	6.	6.	6.	5.	5.	5.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT										
+	WC30	.03	1	FLOW	60.	59.	58.	55.	54.	53.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WML1	.03	1	FLOW	62.	61.	60.	57.	56.	55.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WSHA2	.00	1	FLOW	6.	6.	6.	5.	5.	5.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT										
+	WC32	.06	1	FLOW	128.	125.	124.	118.	115.	114.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WARR2	.00	1	FLOW	4.	3.	3.	3.	3.	3.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WPRK11	.00	1	FLOW	6.	5.	5.	5.	5.	5.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50

4 COMBINED AT										
+	WC33	.14	1	FLOW	264.	258.	255.	242.	236.	233.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WPRK12	.00	1	FLOW	2.	2.	2.	2.	2.	2.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WL2	.03	1	FLOW	54.	53.	52.	50.	48.	48.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WML5	.05	1	FLOW	91.	89.	88.	84.	82.	81.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WML6	.04	1	FLOW	73.	72.	71.	68.	66.	65.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
4 COMBINED AT										
+	DUM34	.11	1	FLOW	221.	216.	213.	203.	198.	195.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WARR3	.01	1	FLOW	9.	8.	8.	8.	8.	7.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WML7A	.01	1	FLOW	28.	27.	27.	26.	25.	25.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WPRK13	.00	1	FLOW	5.	5.	5.	5.	5.	5.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
5 COMBINED AT										
+	WC34	.27	1	FLOW	527.	514.	508.	483.	471.	465.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT										
+	WC35	1.36	1	FLOW	951.	930.	919.	875.	854.	843.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WSKV1B	.01	1	FLOW	11.	11.	11.	10.	10.	10.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT										
+	WL3	.04	1	FLOW	64.	63.	62.	59.	57.	57.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
3 COMBINED AT										
+	WC37	1.41	1	FLOW	1026.	1002.	990.	944.	920.	908.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WOFF7	.01	1	FLOW	10.	10.	10.	9.	9.	9.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WOFF8	.17	1	FLOW	198.	192.	189.	177.	171.	169.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67
2 COMBINED AT										
+	CP2WO	.17	1	FLOW	204.	198.	195.	183.	177.	174.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT										
+	WOFF9	.12	1	FLOW	144.	140.	138.	129.	125.	123.
				TIME	3.58	3.58	3.58	3.67	3.67	3.67
HYDROGRAPH AT										
+	WOFF10	.25	1	FLOW	292.	283.	279.	262.	253.	249.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT										
+	WPF1A	.03	1	FLOW	59.	58.	57.	54.	53.	52.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
4 COMBINED AT										
+	DB2	.57	1	FLOW	687.	667.	657.	617.	598.	588.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67
ROUTED TO										
+	RDB2	.57	1	FLOW	71.	70.	70.	68.	68.	68.
				TIME	5.25	5.25	5.25	5.25	5.25	5.25

APPENDIX H

Improvement Plans & Electronic Copy (CD)





CENTURY COMMUNITIES

IMPROVEMENT PLANS FOR

SKYE CANYON 2.08/ 2.09 PHASE 1

CITY OF LAS VEGAS, NEVADA
RESIDENTIAL SUBDIVISION
APN: 126-12-501-004

SHEET INDEX

SHEET #	DESCRIPTION	TITLE
1	C-1	COVER SHEET
2	C-2	STANDARD NOTES
3	C-3	QUANTITIES AND LEGEND
4	G-1	GRADING PLAN I
5	G-2	GRADING PLAN II
6	G-3	GRADING PLAN III
7	G-4	GRADING PLAN IV
8	G-5	GRADING PLAN V
9	G-6	GRADING PLAN VI
10	G-7	GRADING PLAN VII
11	G-8	GRADING PLAN VIII
12	G-9	GRADING PLAN IX
13	D-1	DETAIL SHEET I
14	D-2	DETAIL SHEET II
15	PP-1	PLAN AND PROFILE SD NORTH EAST
16	PP-2	PLAN AND PROFILE SD SOUTH EAST

APPROVALS

ACTING CITY ENGINEER–ROSA CORTEZ PE, #17505 DATE

APPROVAL OF THESE PLANS BY THE CITY ENGINEER IS LIMITED TO THOSE IMPROVEMENTS CONSTRUCTED IN THE DEDICATED OF RIGHT-OF-WAY, AND/OR DEDICATED EASEMENTS. THIS APPROVAL DOES NOT AUTHORIZE CONSTRUCTION OF ANY IMPROVEMENTS THAT DEVIATE FROM ADOPTED STANDARDS AND/OR SPECIFICATIONS EXCEPT THOSE SPECIALLY LISTED UNDER DEVIATIONS FORM STANDARDS. THE ENGINEER SHALL RESOLVE ANY DEVIATION OTHER THAN THOSE LISTED IN DEVIATIONS FROM STANDARDS IN FAVOR OF THE UNIFORM STANDARD DRAWINGS AND SPECIFICATIONS, CLARK COUNTY AREA, NEVADA.

LAS VEGAS FIRE AND RESCUE DATE

CITY OF LAS VEGAS – PLANNING DEPARTMENT DATE

THIS PLAN MEETS THE APPLICABLE STANDARDS OF THE PLANNING DEPARTMENT.

CENTRAL TELEPHONE CO. DBA CENTURYLINK DATE

THE AFFIXED CENTURYLINK APPROVAL DOES NOT ASSUME OR GUARANTEE LIABILITY FOR KNOWN OR UNKNOWN CONFLICTS WITH EXISTING OR PROPOSED IMPROVEMENTS. RESOLUTION OF ANY CONFLICT WILL BE ACCOMPLISHED PURSUANT TO LOCAL ORDINANCES, NEVADA REVISED STATUES AND / OR PUBLIC UTILITY COMMISSION RULES AND REGULATIONS.

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. ###### FIRST APPROVED DATE: _____
LVVWD APPROVED FIRE FLOW 1,500 GPM AT 20 PSI RESIDUAL
MAXIMUM AVAILABLE FIRE SPRINKLER FLOW 20 GPM
SHEETS: ADD FIELD

NV ENERGY DATE

NV ENERGY ACKNOWLEDGES THAT WE HAVE RECEIVED YOUR PLANS AND WILL PROVIDE SERVICE TO ALL ELECTRICAL NEEDS ASSOCIATED WITH THIS PROJECT. NV ENERGY RESERVES THE RIGHT TO ADDRESS ANY EXISTING OR FUTURE CONFLICTS ONCE THE FINAL DESIGN IS COMPLETED. THE NEW SERVICE AND THE RESOLUTION OF ANY CONFLICTS WILL BE ACCOMPLISHED PURSUANT TO THE NEVADA PUBLIC UTILITY COMMISSION'S RULES AND REGULATIONS.

SOUTHWEST GAS CORPORATION DATE

COX COMMUNICATIONS LAS VEGAS, INC. DATE

OWNER/DEVELOPER

CENTURY COMMUNITIES OF NEVADA, LLC
6345 SOUTH JONES BLVD.
LAS VEGAS, NV 89118
PH (702) 873-5338
CONTACT: RICK BARRON

ENGINEER

WESTWOOD PROFESSIONAL SERVICES, INC.
5740 S. ARVILLE STREET, SUITE 216
LAS VEGAS, NV 89118
PH: (702) 284-5300
FX: (702) 284-5399
CONTACT: TODD STEADHAM

LEGAL DESCRIPTION

A PORTION OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA

BENCHMARK

BENCHMARK NUMBER: USDA1934

U.S. DEPARTMENT OF AGRICULTURE BRASS DISC AT THE SOUTHWEST CORNER OF U.S. 95 AND KYLE CANYON ROAD.

ELEVATION = 2817.61 FEET, 858.81 METERS
N.A.V.D. 88 DATUM

PER THE CITY OF LAS VEGAS VERTICAL CONTROL WEBSITE

BASIS OF BEARINGS

SOUTH 00°34'18" EAST, BEING THE BEARING OF THE EAST LINE OF THE NORTHEAST QUARTER (NE1/4) OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST, M.DM., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF IN BOOK 157, PAGE 41 OF PLATS IN THE CLARK COUNTY RECORDER'S OFFICE, NEVADA.

FEMA FLOOD ZONE INFORMATION

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE "X" (AREA OUTSIDE THE 500 YEAR FLOODPLAIN), PER THE FEMA FIRM PANELS 32003C1750E DATED SEPTEMBER 27, 2002

PROJECT INFORMATION - OVERALL

ACREAGE (GROSS):	= 29.59± AC
DENSITY (LOTS/NET ACRE):	= 5.5 DU/NET AC
ZONING:	= T-D
TOTAL NO. OF RESIDENTIAL LOTS	= 164
TOTAL NO. OF COMMON ELEMENTS *	= 11
MINIMUM LOT SIZE	= 4,711 SF± (LOT 01)
MAXIMUM LOT SIZE	= 9,735 SF± (LOT 48)
PROVIDED OPEN SPACE	= 114,447 SF±

EARTHWORK SUMMARY (UNADJUSTED)

CUT	72,786 CY.
FILL	76,014 CY.
NET	3,228 CY. (FILL)

PROJECT INFORMATION - PHASE 1

ACREAGE (GROSS):	= 15.56± AC
DENSITY (LOTS/NET ACRE):	= 5.4 DU/NET AC
ZONING:	= T-D
TOTAL NO. OF RESIDENTIAL LOTS	= 84
TOTAL NO. OF COMMON ELEMENTS *	= 9
MINIMUM LOT SIZE	= 4,711 SF± (LOT 01)
MAXIMUM LOT SIZE	= 9,735 SF± (LOT 48)
PROVIDED OPEN SPACE	= 70,684 SF±

EARTHWORK SUMMARY (UNADJUSTED)

CUT	69,134CY.
FILL	65,322CY.
NET	3,813 CY. (CUT)

DEVIATIONS FROM STANDARDS

NONE

SWPPP NOTE

NOTE: ALL LAND SURFACE AREA DISTURBANCES OVER 1 ACRE REQUIRE A STORMWATER DISCHARGE PERMIT ISSUED BY THE NEVADA DIVISION OF ENVIRONMENTAL PROTECTION (NDEP). A PHASED CONSTRUCTION UNIT IN A CONTIGUOUS SUBDIVISION IS CONSIDERED UNDER CONSTRUCTION UNTIL ALL STRIPPED SURFACE AREAS HAVE BEEN COVERED BY PAVING, BUILDING CONSTRUCTION OR PLANTING. A STORMWATER DISCHARGE PERMIT APPLICATION AND ASSOCIATED INFORMATION MAY BE DOWNLOADED FROM THE WEB SITE: HTTP://WWW.STATE.NV.US/BWPC/STORM01.HTM PROJECTS THAT DISTURB MORE THAN ONE ACRE OF LAND MUST SUBMIT TO NDEP A "NOTICE OF INTENT" FOR INCLUSION UNDER STORMWATER PERMIT NO. NVR100000 ALONG WITH THE APPROPRIATE FILLING FEE.

GEOTECHNICAL ENGINEER

PREPARED BY: SOUTHWEST GEOTECHNICAL
ADDRESS: 5275 ARVILLE ST, SUITE #108, LAS VEGAS, NEVADA 89118
PHONE: (702) 323-6000
PROJECT No. 175337
DATED: 8/28/19

Westwood
Phone (702) 284-5300
Fax (702) 284-5399
5740 S. Arville Street
Suite 216
Las Vegas, NV 89118
westwoodps.com
Westwood Professional Services, Inc.

NO.	DESCRIPTION	DATE	BY	APP'D DATE	APP

CITY OF LAS VEGAS, NV

CENTURY COMMUNITIES

SKYE CANYON 2.08/ 2.09 PHASE 1
COVER SHEET

S:12
T:19S
R:59E

DATE: 02/03/2020
DRAFTER: HIR
DESIGNER: HIR
CHECKED: TJS

PROJECT NO.
OLY1905-000

PROFESSIONAL ENGINEER – STATE OF NEVADA
TODD J. STEADHAM
Exp. 06/30/2020
CIVIL
No. 15292
2/3/20

C-1
SHEET 1 OF 16

J:\oly1905-000 skye canyon parcel 2.08\dwg\Interov\phase 1\oly1905-000 cvr-1.dwg 2/3/2020 7:28 AM Lakelo Allord

STORMWATER RUNOFF MANAGEMENT

(REQUIRED FOR ALL SITES GREATER THAN 1 ACRE (43,560 SQ.FT.))

1. THE OWNER, SITE DEVELOPER, CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL EACH DAY REMOVE ALL SEDIMENT MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO, OR ACCUMULATE IN, THE PUBLIC RIGHTS OF WAYS OF CLARK COUNTY AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE DEVELOPMENT OR CONSTRUCTION PROJECT. SUCH MATERIALS SHALL BE PREVENTED FROM ENTERING THE STORM SEWER SYSTEM.
2. ADDITIONAL CONSTRUCTION SITE DISCHARGE BEST MANAGEMENT PRACTICES MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT MEET THE PERFORMANCE STANDARDS SPECIFIED IN TITLE 24.40 AND THE LAS VEGAS VALLEY CONSTRUCTION SITE BEST MANAGEMENT PRACTICES MANUAL.
3. TEMPORARY OR PERMANENT STABILIZATION PRACTICES WILL BE INSTALLED ON DISTURBED AREAS AS SOON AS PRACTICABLE AND NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. SOME EXCEPTIONS MAY APPLY; REFER TO NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.5.
4. AT A MINIMUM, THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL DISTURBED AREAS, AREAS USED FOR STORAGE OF MATERIALS AND EQUIPMENT THAT ARE EXPOSED TO PRECIPITATION, VEHICLE ENTRANCE AND EXIT LOCATIONS AND ALL BMPS WEEKLY, AND WITHIN 24 HOURS AFTER ANY ACTUAL RAIN EVENT OF 0.5 INCHES OR MORE. THE CONTRACTOR OR HIS AGENT SHALL MAINTAIN OR MODIFY THE STORMWATER POLLUTION PREVENTION PLAN AS NECESSARY. SOME EXCEPTIONS TO WEEKLY INSPECTIONS MAY APPLY, SUCH AS SUSPENSION OF LAND DISTURBANCE ACTIVITIES. REFER TO NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.12.
5. ACCUMULATED SEDIMENT IN BMPS SHALL BE REMOVED WITHIN SEVEN DAYS AFTER A STORMWATER RUNOFF EVENT OR PRIOR TO THE NEXT ANTICIPATED STORM EVENT, WHICHEVER IS EARLIER. SEDIMENT MUST BE REMOVED WHEN BMP DESIGN CAPACITY HAS BEEN REDUCED BY 50 PERCENT OR MORE.

LEGAL DESCRIPTION

A PORTION OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA

BENCHMARK

BENCHMARK NUMBER: USDA1934

U.S. DEPARTMENT OF AGRICULTURE BRASS DISC AT THE SOUTHWEST CORNER OF U.S. 95 AND KYLE CANYON ROAD.

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SOUTH 00°34'18" EAST, BEING THE BEARING OF THE EAST LINE OF THE NORTHEAST QUARTER (NE1/4) OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST, M.DM., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF IN BOOK 157, PAGE 41 OF PLATS IN THE CLARK COUNTY RECORDER'S OFFICE, NEVADA.

SOUTHERN NEVADA - SOUTHWEST GAS CORPORATION GENERAL NOTES

1. IN THE EVENT OF NATURAL GAS EMERGENCIES CALL 911 AND 1-877-860-6020
2. MINIMUM HORIZONTAL AND VERTICAL CLEARANCES BETWEEN NATURAL GAS FACILITIES AND ANY UNDERGROUND UTILITIES AND/OR STRUCTURES, INCLUDING BUT NOT LIMITED TO WATER, SEWER, STORM DRAIN, COMMUNICATIONS, AND ELECTRICAL SHALL BE AT LEAST 12-INCHES OR GREATER AS DICTATED BY LOCAL CODES AND STANDARDS.
   A) ANY DEVIATION FROM SPECIFIED MINIMUM CLEARANCES MUST BE APPROVED BY ALL AFFECTED UTILITIES AND/OR MUNICIPALITIES
3. FOR VALVE ADJUSTMENT CONTACT 702-668-6107 48 HOURS PRIOR TO CONSTRUCTION.
4. IN THE EVENT OF NATURAL GAS CONFLICT WITH PROPOSED UTILITIES AND STRUCTURES CONTACT 702-365-2099
5. SOUTHWEST GAS STANDBY CONTACT NUMBER (702)-400-1789

SOUTHWEST GAS APPROVAL

SOUTHWEST GAS CORPORATION _____ DATE _____

2.2 CITY OF LAS VEGAS SEWER NOTES

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE DESIGN AND CONSTRUCTION STANDARDS FOR WASTEWATER COLLECTION SYSTEMS AND THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS' CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA, NEVADA, AS AMENDED. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO BE AWARE OF THE CONTENTS OF THE ABOVE SPECIFICATIONS.
2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PERFORM CONSTRUCTION AS PER PLANS. ANY ADDITIONS, DELETIONS, OR CHANGES SHALL FIRST MEET WITH THE APPROVAL OF THE CITY ENGINEER.
3. CHISEL "S" OR "G" IN CURBS WHERE SEWER OR GAS LATERALS PASS UNDER THE CURB.
4. POLYVINYL (PVC) SEWER PIPE SHALL MEET ASTM D-3034 SDR 35 SPECIFICATIONS, INSTALLED WITH SAND BEDDING AND BACKFILL OF TYPE II AGGREGATE BASE.
5. ALL MANHOLES PAVED IN STREETS EIGHTY (80') FOOT R/W AND LARGER SHALL HAVE CONCRETE COLLARS. STREETS LESS THAN EIGHTY (80') FOOT R/W WILL REQUIRE RETROFIT IF PAVING DOES NOT CONFORM TO CITY STANDARDS AT THE MANHOLE.
6. TEE SADDLES SHALL BE USED TO CONNECT SEWER LATERALS TO EXISTING MAIN LINES UP TO TWELVE INCH (12") DIAMETER. CONNECTIONS TO FIFTEEN INCH (15") OR LARGER MAINS SHALL REQUIRE SPECIAL PROCEDURES, IN LINE "Y" 'S SHALL BE USED ON LINES TWELVE INCHES (12") OR ABOVE.
7. WATER MAINS SHALL BE PROTECTED IN ACCORDANCE WITH LVVWD STANDARDS WHENEVER A SEWER MAIN CROSSES OVER A WATER MAIN OR THE SEWER IS LESS THAN EIGHTEEN INCH (18") UNDER A WATER MAIN.
8. ALL CONTRACTORS INSTALLING SEWER MAINS THAT WILL BE UNDER THE JURISDICTION OF THE CITY OF LAS VEGAS MUST BE STATE OF NEVADA CLASS "A" CONTRACTORS.
9. THE CITY OF LAS VEGAS WILL NOT ACCEPT ANY SEWER MAINS WHICH HAVE A VERTICAL DEFLECTION OF MORE THAN ONE TENTH (0.1) OF A FOOT FROM THE APPROVED CONSTRUCTION PLANS AT ANY LOCATION. SEWER MAINS FOUND TO EXCEED THIS TOLERANCE WILL HAVE TO BE REPAIRED OR REMOVED OR REPLACED TO THE SATISFACTION OF THE CITY ENGINEER PRIOR TO ACCEPTANCE BY THE CITY OF LAS VEGAS.
10. INSTALLATION OF CURVED SEWER REQUIRES THE USE OF C-900 PIPE WHICH ALLOWS FOR PIPE DEFLECTION AT THE JOINTS.

LAS VEGAS VALLEY WATER DISTRICT (LVVWD) STANDARD NOTES

LVVWD PROJECT # ###### (REVISED 08/01/2017)

1. NO WORK SHALL BEGIN UNTIL THE WATER PLANS HAVE BEEN APPROVED FOR CONSTRUCTION BY THE LVVWD. FOLLOWING WATER PLAN APPROVAL, NOTICE SHALL BE GIVEN TO THE LVVWD COMMUNICATION SUPPORT CENTER (258-7171) TWO (2) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION. FOR FUTURE INSPECTIONS, NOTICE MUST BE GIVEN BY 2:00 P.M. THE BUSINESS DAY PRIOR TO THE REQUESTED LVVWD INSPECTION. WHEN REQUESTING INSPECTIONS, PLEASE REFER TO THE PROJECT # IDENTIFIED ABOVE.
2. ALL WORK SHALL CONFORM TO LVVWD STANDARD PLATES, DRAWINGS, AND SPECIFICATIONS, AND TO THE 2010 EDITION OF THE UNIFORM DESIGN AND CONSTRUCTION STANDARDS FOR POTABLE WATER SYSTEMS (UDACS). THE LATEST EDITION OF UDACS SHALL SUPERSEDE ANY CONFLICTS CONTAINED IN THE APPROVED DRAWINGS AND/OR SPECIFICATIONS.
3. ALL WORK, EXCEPT AS MODIFIED BY THESE PLANS OR BY NOTE 2 ABOVE, SHALL BE DONE IN ACCORDANCE WITH THE MOST RECENT DRAFT OR EDITION OF THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFFSITE IMPROVEMENT, CLARK COUNTY AREA.
4. A SINGLE PIPE MATERIAL SHALL BE USED THROUGHOUT THE PROJECT UNLESS OTHERWISE APPROVED BY THE LVVWD.
5. ALL SERVICE LATERALS TWO (2) INCHES IN DIAMETER AND SMALLER SHALL BE TYPE K COPPER TUBING WITH LVVWD APPROVED SERVICE SADDLES.
6. ALL WATER METER BOXES SHALL BE LOCATED OUTSIDE OF DRIVEWAY AREAS.
7. ALL VALVES SHALL BE LOCATED OUTSIDE OF DRIVEWAYS, VALLEY AND CURB GUTTERS.
8. ALL WATER AND STORM DRAIN OR SANITARY SEWER CROSSINGS SHALL CONFORM TO SECTION 2.22 OF THE 2010 EDITION OF THE UDACS.
9. ALL WATER FACILITIES AND APPURTENANCES SHALL BE DISINFECTED, PRESSURE TESTED, AND HAVE AN ACCEPTABLE PASSING HEALTH WATER SAMPLE OBTAINED, PRIOR TO OPERATION AND USE.
10. THE CONTRACTOR MUST OBTAIN ALL METERS TWO (2) INCHES AND SMALLER FROM LVVWD CENTRAL STORES. TELEPHONE 258-3152 OR 258-3802, TWO (2) WORKING DAYS PRIOR TO METER PICKUP.
11. ANY INTERRUPTION OF SERVICE MUST BE PERFORMED IN ACCORDANCE WITH UDACS SECTION 3.14.01, AND APPROVED BY THE LVVWD INSPECTION DIVISION PRIOR TO SHUTDOWN. PROPER WRITTEN NOTIFICATION MUST BE GIVEN TO ALL AFFECTED CUSTOMERS.
12. ALL WATER FACILITY CONSTRUCTION MATERIALS USED MUST BE AS LISTED ON THE LVVWD APPROVED PRODUCT'S LIST FOR NEW FACILITIES, LATEST REVISION, OR SPECIFICALLY APPROVED ON THESE PLANS BY SUBMITTING SHOP DRAWINGS.
13. TELEPHONE "CALL BEFORE YOU DIG" AT "811" OR 1-800-227-2600.
14. THE INSTALLATION OF LVVWD MUNICIPAL WATER FACILITIES WITHIN ALL STREETS IS ASSUMED TO BE IN COMPLIANCE WITH THE UNIFORM STANDARDS, INCLUDING THE PLACEMENT OF ASPHALT PAVING STREET SURFACES. ANY REPAIR WORK DONE BY THE LVVWD TO THE MUNICIPAL WATER FACILITIES WILL INCLUDE THE PLACEMENT OF AN APPROPRIATELY SIZED ASPHALT REPAIR PATCH ON THE STREET SURFACE.

    ANY DECORATIVE PAVING SURFACE WITHIN THE STREET IS THE RESPONSIBILITY OF THE OWNER'S ASSOCIATION, OR THE INDIVIDUAL PROPERTY OWNERS IF NO OWNER'S ASSOCIATION IS IN EXISTENCE, OR THE AGENCY HAVING JURISDICTION. DECORATIVE SURFACE MATERIALS PLACED WITHIN THE TEN FOOT EASEMENT ABUTTING A PUBLIC OR PRIVATE STREET, IF DISTURBED BY THE LVVWD DURING THE REPAIR OR OPERATION OF ITS FACILITIES, WILL BE REPLACED BY LVVWD WITH AN APPROPRIATELY SIZED PLAIN FINISH CONCRETE PATCH. THE LVVWD WILL NOT RESTORE, AND WILL NOT BE RESPONSIBLE FOR THE RESTORATION OF, ANY DECORATIVE PAVING SURFACE WITHIN THE STREET. THE LVVWD WILL NOT ATTEMPT TO MATCH COLOR OR FINISH OF ANY ADJACENT MATERIALS.

15. NO LEAD COMPLIANCE NOTE:
TO COMPLY WITH THE FEDERAL SAFE DRINKING WATER ACT, ALL WATER WORKS BRASS PRODUCTS PROPOSED TO BE RELOCATED, OR INSTALLED AS NEW MUST BE INSTALLED WITH THE LEAD FREE APPROVED PRODUCT. THE OLD LEADED PRODUCT MAY NOT BE REUSED.

GRADING NOTES

1. INDICATED GRADES OTHER THAN T.C., F.G. & GUTTER F.L. ARE ROUGH GRADES.
2. THE ROUGH GRADING PLANS SHALL BE ON THE JOB SITE AT ALL TIMES. THE ROUGH GRADING SHALL BE FINISHED IN CONFORMANCE WITH THE LINES AND GRADES SHOWN ON THE PLANS. THE GRADING QUANTITIES ARE BASED ON THE ELEVATION AND DETAILS SHOWN ON THE PLANS. ANY DEVIATIONS FROM THE PLANS WILL RESULT IN QUANTITY CHANGES.
3. CARE SHALL BE EXERCISED IN GRADING CORNER LOTS.
4. ROUGH PAD ELEVATIONS SHALL BE GRADED TO WITHIN 0.1' OF THE PAD ELEVATIONS SHOWN ON THE PLANS. WHEN GRADING IS COMPLETE PER THE PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE LOTS CAN BE INSPECTED. AT THAT TIME THE ENGINEER SHALL ALSO DECIDE IF ANY ADDITIONAL DITCHES OR BERMS ARE REQUIRED. THE CONTRACTOR IS REQUESTED NOT TO REMOVE ANY OF HIS ROUGH GRADING EQUIPMENT UNTIL HE RECEIVES GRADING APPROVAL FROM THE ENGINEER.
5. SOILS REPORT PREPARED BY SOUTHWEST GEOTECHNICAL, PROJECT NO. 175337, DATED 10/17/18.
6. EARTHWORK QUANTITIES (RAW):
   -CUT = 69,134 CUBIC YARDS.
   -FILL = 65,322 CUBIC YARDS

   A) THE ABOVE QUANTITIES DO NOT REFLECT LOSSES DUE TO SUBSIDENCE OR SHRINKAGE.
   B) THE ABOVE QUANTITIES DO REFLECT USING NATIVE MATERIAL IN LIEU OF TYPE I GRAVEL BASE MATERIAL FOR STREET SECTIONS.
   C) THE ABOVE QUANTITIES DO NOT REFLECT ANY EARTHWORK WHICH MAY BE REQUIRED BY THE ENGINEER TO CONSTRUCT ADDITIONAL PROTECTIVE DITCHES OR BERMS NOT SHOWN ON THESE DRAWINGS.

CITY OF LAS VEGAS FIRE AND RESCUE GENERAL NOTES

1. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE LAS VEGAS FIRE AND RESCUE ADOPTED FIRE CODE ORDINANCE # 6631 FOR HYDRANT SPECIFICATIONS AND HYDRANT INSTALLATION SPECIFICATIONS.
2. ONLY FIRE HYDRANTS THAT ARE ON THE LAS VEGAS VALLEY WATER DISTRICT'S – APPROVED PRODUCTS LIST ARE ALLOWED TO BE INSTALLED.
3. A PERMIT IS REQUIRED FROM LAS VEGAS FIRE AND RESCUE FOR THE INSTALLATION OF ON-SITE WATER LINES AND FIRE HYDRANTS. THE PERMIT AND CONTRACTORS MATERIAL TEST CERTIFICATE FOR UNDERGROUND PIPING FORM SHALL BE OBTAINED FROM THE FIRE PROTECTION ENGINEER BEFORE COMMENCEMENT OF WORK. IFC § 105.6.15
4. ON ANY RESIDENTIAL OR COMMERCIAL INSTALLATIONS, FIRE HYDRANTS SHALL BE INSTALLED AND FIRE APPARATUS ACCESS ROADS SHALL BE MAINTAINED BEFORE COMMENCEMENT OF ANY COMBUSTIBLE CONSTRUCTION. ALL FIRE HYDRANTS SHALL BE IN GOOD WORKING ORDER AND SHALL BE CAPABLE OF DELIVERING THE REQUIRED FIRE FLOW. IFC § 3310, § 3312
5. TO IDENTIFY THE FIRE HYDRANT LOCATIONS, THE CONTRACTOR SHALL PLACE A BLUE REFLECTIVE MARKER AT THE CENTER LINE OF THE STREET ADJACENT TO THE FIRE HYDRANTS. IFC § 507.5.7
6. ALL UNDERGROUND INSPECTIONS, PRESSURE AND FLUSH VERIFICATIONS OF ALL FIRE HYDRANTS AND FIRE LINES, SHALL BE CONDUCTED BEFORE COVERING THE LINES. CENTER LOADING IS ACCEPTABLE FOR THE HYDRO TESTS WITH PRIOR FIRE PREVENTION APPROVAL. IFC § 106.3
7. ALL ON-SITE UNDERGROUND WATER MAINS AND MATERIALS SHALL BE U.L. LISTED, A.W.W.A APPROVED AND SHALL BE RATED FOR THE APPROPRIATE WORKING PRESSURE. IFC § 507.2.1, NFPA 24
8. PAINTING OF CURBS, FIRE HYDRANTS, PADS, PROTECTION OF FIRE HYDRANTS FROM PHYSICAL DAMAGE, AND ALL OTHER FIRE WORK NECESSARY PER PLANS SHALL BE COMPLETED BEFORE APPROVAL BY LAS VEGAS FIRE AND RESCUE, FIRE PREVENTION DIVISION. IFC § 507
9. PRIVATE HYDRANTS SHALL BE PAINTED RED. IFC § 507.5.7.1
10. PRIOR TO THE FINAL OCCUPANCY, A FIRE FLOW TEST SHALL BE WITNESSED BY LAS VEGAS FIRE AND RESCUE, FIRE PREVENTION DIVISION TO VERIFY AVAILABILITY OF THE REQUIRED FIRE FLOW. IFC § 507
11. FIRE HYDRANT SPACING SHALL BE AS FOLLOWS: IFC § C102
    - RESIDENTIAL – 500 FT UNSPRINKLERED; 600 FT SPRINKLERED.
    - COMMERCIAL – 300 FT UNSPRINKLERED; 400 FT SPRINKLERED.
12. WHERE NEW WATER MAINS ARE EXTENDED ALONG STREETS ON NEW STREETS ARE INSTALLED WHERE FIRE HYDRANTS ARE NOT NEEDED FOR PROTECTION OF THE STRUCTURES, FIRE HYDRANTS SHALL BE INSTALLED AT A MAXIMUM OF 1000 FT SPACING, TO PROVIDE FOR TRANSPORTATION HAZARDS. WHERE STREETS ARE PROVIDED WITH MEDIAN DIVIDERS OR HAVE FOUR (4) OR MORE TRAFFIC LANES AND HAVE A TRAFFIC COUNT OF MORE THAN 30,000 PER DAY, HYDRANTS ARE REQUIRED ON EACH SIDE OF THE STREET SPACED AT 500 FT ON AN ALTERNATING BASIS. IFC § C102.8
13. NO FIRE HYDRANTS SHALL BE LOCATED WITHIN THE RADIUS OF A CUL-DE-SAC OR WITHIN 20 FT OF THE PERIMETER OF THE RADIUS OF THE CUL-DE-SAC.
14. NO FIRE HYDRANTS SHALL BE LOCATED WITHIN 6 FT OF ANY CURB RETURN, DRIVEWAY, POWER POLE, STREETLIGHT OR ANY OTHER OBSTRUCTION. IFC § C102.10
15. A MAXIMUM DISTANCE FROM A FIRE HYDRANT TO A ONE-TWO FAMILY DWELLING SHALL NOT EXCEED 300 FT, AS MEASURED BY AN APPROVED ROUTE. IFC § C102.4
16. THE MAXIMUM DISTANCE FROM A FIRE HYDRANT TO A FIRE DEPARTMENT CONNECTION (FDC) SHALL NOT EXCEED 100 FT, AS MEASURED BY AN APPROVED ROUTE. IFC § C102.7
17. THE MAXIMUM DISTANCE FROM A HYDRANT TO THE END OF A DEAD-END STREET SHALL NOT EXCEED 200 FT. IFC § C102.6
18. TWO (2) SOURCES OF SUPPLY ARE REQUIRED WHENEVER THERE IS A OR MORE FIRE HYDRANTS/SPRINKLER LEAD-INS ARE INSTALLED ON A SINGLE SYSTEM. FOR SYSTEMS REQUIRED TO HAVE TWO (2) SOURCES OF WATER SUPPLY, SECTIONAL CONTROL VALVES SHALL BE INSTALLED SO THAT NO MORE THAN 3 FIRE HYDRANTS AND/OR FIRE SPRINKLER LEAD-INS CAN BE OUT OF SERVICE DUE TO A SERVICE INTERRUPTION. IFC § C104
19. ALL FIRE APPARATUS ACCESS ROADS SHALL BE PAVED TO PROVIDE ALL-WEATHER DRIVING CAPABILITIES, AND SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF THE FIRE APPARATUS. IFC § 503.2.3
20. THE GRADIENT FOR THE FIRE APPARATUS ACCESS ROADS SHALL NOT EXCEED 12% ANGLES OF APPROACH AND ANGLES OF DEPARTURE SHALL NOT EXCEED 6% FOR 25 FT PRIOR TO OR AFTER THE GRADE CHANGE. ADJACENT TO THE STRUCTURES GRADIENT SHALL NOT EXCEED 6%. IFC § 503.2.7, § 503.2.8
21. THE TURNING RADIUS OF THE FIRE APPARATUS ACCESS ROADS SHALL BE NO LESS THAN 52 FT OUTSIDE AND 28 FT INSIDE TURNING RADIUS. IFC § 503.2.4
22. VERTICAL CLEARANCE OF ALL FIRE APPARATUS ACCESS ROADS SHALL NOT BE LESS THAN 13FT 6 INS. IFC § 503.2.1
23. FIRE DEPARTMENT ACCESS ROADS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF NOT LESS THAN 33 FT WITH PARKING ON BOTH SIDES MEASURED TO FACE OF CURB, NOT LESS THAN 28 FT WIDE WITH PARKING RESTRICTED TO ONE SIDE MEASURED TO FACE OF CURB. NOT LESS THAN 24 FT WIDE WITH NO PARKING ON EITHER SIDE MEASURED TO FACE OF CURB. FIRE LANES THROUGH PARKING LOTS SHALL BE NOT LESS THAN 24 FT. IFC § 503.2.1.1
24. A FIRE APPARATUS ACCESS ROAD SHALL BE REQUIRED WHEN ANY PORTION OF AN EXTERIOR WALL OF THE FIRST STORY IS LOCATED MORE THAN 150 FT FROM A FIRE DEPARTMENT VEHICLE ACCESS. IFC § 503.1.1
25. APPROVED SECONDARY FIRE APPARATUS ACCESS SHALL BE PROVIDED FOR 200 OR MORE DWELLING UNITS, ROAD(S) WITH DEAD- ENDS OR A SINGLE POINT OF ACCESS IN EXCESS OF 600 FT. CLV REGULATION AND MOU
26. ALL DEAD-END FIRE APPARATUS ROADS AND/OR FIRE LANES, PUBLIC OR PRIVATE, IN EXCESS OF 150 FT IN LENGTH SHALL BE PROVIDED WITH AN APPROVED TURN AROUND HAVING A MINIMUM DIAMETER OF 81 FT. CLV REGULATION
27. ALL FIRE APPARATUS ACCESS ROADS SHALL BE MARKED BY PLACING APPROVED SIGNS AT THE START OF THE DESIGNATED FIRE LANE. ONE SIGN AT THE END OF THE FIRE LANE AND WITH SIGNS AT INTERVALS OF 100 FT. ALONG THE DESIGNATED FIRE LANES. SIGNS TO BE PLACED ON BOTH SIDES OF AN ACCESS ROADWAY IF NEEDED TO PREVENT PARKING ON EITHER SIDE. SIGNS TO BE INSTALLED NO HIGHER THAN 10 FT OR LESS THAN 6 FT FROM THE ROADWAY LEVEL. THE CURB ALONG OR ON THE PAVEMENT OR CEMENT (IF NO CURB IS PROVIDED) SHALL BE PAINTED WITH A RED WEATHER RESISTANT PAINT IN ADDITION TO THE SIGNS. IFC § 503.3
28. ELECTRICALLY CONTROLLED ACCESS GATES SHALL BE PROVIDED WITH AN APPROVED EMERGENCY VEHICLE DETECTOR/RECEIVER SYSTEM. IFC § 503.6
29. WHERE STREETS ARE PROVIDED WITH MEDIAN DIVIDERS, OR HAVING FOUR OR MORE TRAVEL LANES AND A TRAFFIC COUNT OF MORE THAN 30,000 VEHICLES PER DAY, ALL HYDRANTS BEING UTILIZED TO DELIVER FIRE FLOW TO THE PROPOSED LOCATION SHALL BE LOCATED ON THE SAME SIDE OF THE STREET AS THE PROPOSED DEVELOPMENT. CLV REGULATION

2.5 CITY OF LAS VEGAS GRADING NOTES

1. IN THE EVENT THAT ANY UNFORESEEN CONDITIONS NOT COVERED BY THESE NOTES ARE ENCOUNTERED DURING GRADING OPERATIONS, THE OWNER/ENGINEER SHALL BE IMMEDIATELY NOTIFIED FOR DIRECTION.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM ALL NECESSARY CUTS AND FILLS WITHIN THE LIMITS OF THIS PROJECT AND THE RELATED OFF-SITE WORK, SO AS TO GENERATE THE DESIRED SUBGRADE, FINISH GRADES AND SLOPES SHOWN.
3. CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ALL EXCAVATION. ADEQUATE SHORING SHALL BE DESIGNED AND PROVIDED BY THE CONTRACTOR TO PREVENT UNDERMINING OF ANY ADJACENT FEATURES OR FACILITIES AND/OR CAVING OF THE EXCAVATION.
4. THE CONTRACTOR IS WARNED THAT AN EARTHWORK BALANCE WAS NOT NECESSARILY THE INTENT OF THIS PROJECT. ANY ADDITIONAL MATERIAL REQUIRED OR LEFTOVER MATERIAL FOLLOWING EARTHWORK OPERATIONS BECOMES THE RESPONSIBILITY OF THE CONTRACTOR.
5. THE GRADING CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH THE OWNER TO PROVIDE FOR THE REQUIREMENTS OF THE PROJECT STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND ASSOCIATED PERMIT.
6. CONTRACTOR SHALL GRADE TO THE LINES AND ELEVATIONS SHOWN ON THE PLANS WITHIN THE FOLLOWING HORIZONTAL AND VERTICAL TOLERANCES AND DEGREES OF COMPACTION, IN THE AREAS INDICATED:

	HORIZONTAL	VERTICAL COMPACTION	
A. PAVEMENT AREA SUBGRADE	0.1'+	+0.0' TO -0.1'	SEE SOILS REPORT
B. ENGINEERED FILL	0.5'+	+0.1' TO -0.1'	SEE SOILS REPORT

COMPACTION TESTING WILL BE PERFORMED BY THE OWNER OR HIS REPRESENTATIVE.

7. ALL CUT AND FILL SLOPES SHALL BE PROTECTED UNTIL EFFECTIVE EROSION CONTROL HAS BEEN ESTABLISHED.
8. THE USE OF POTABLE WATER WITHOUT A SPECIAL PERMIT FOR BUILDING OR CONSTRUCTION PURPOSES INCLUDING CONSOLIDATION OF BACKFILL OR DUST CONTROL IS PROHIBITED. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR CONSTRUCTION WATER.
9. THE CONTRACTOR SHALL MAINTAIN THE STREETS, SIDEWALKS AND ALL OTHER PUBLIC RIGHT-OF-WAY IN A CLEAN, SAFE AND USABLE CONDITION. ALL SPILLS OF SOIL, ROCK OR CONSTRUCTION DEBRIS SHALL BE PROMPTLY REMOVED FROM THE PUBLICLY OWNED PROPERTY DURING CONSTRUCTION AND UPON COMPLETION OF THE PROJECT. ALL ADJACENT PROPERTY, PRIVATE OR PUBLIC SHALL BE MAINTAINED IN A CLEAN, SAFE AND USABLE CONDITION.
10. IN THE EVENT THAT ANY TEMPORARY CONSTRUCTION ITEM IS REQUIRED THAT IS NOT SHOWN ON THESE DRAWINGS, THE OWNER AGREES TO PROVIDE AND INSTALL SUCH ITEM AT HIS OWN EXPENSE AND AT THE DIRECTION OF THE CITY ENGINEER. TEMPORARY CONSTRUCTION INCLUDES DITCHES, BERMS, ROAD SIGNS AND BARRICADES, ETC.

UTILITY LOCATION NOTE TO CONTRACTOR

EXISTING UTILITY LOCATIONS SHOWN HEREIN 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 LOCATIONS. CALL BEFORE YOU DIG: 1 (800) 227-2600; SOUTHWEST GAS CORPORATION: 702-400-1789 (STANDBY CONTACT NUMBER)

2.1 CITY OF LAS VEGAS GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE "UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA, LATEST ISSUE; THE "UNIFORM STANDARD DRAWINGS FOR PUBLIC WORKS CONSTRUCTION, CLARK COUNTY AREA NEVADA", LATEST REVISED EDITION; THE "SUMMERLIN IMPROVEMENT STANDARDS" FOR WORK IN THE SUMMERLIN AREA; AND OTHER APPLICABLE APPROVED STANDARDS ISSUED BY THE CONTROLLING AGENCY; THE UNIFORM BUILDING CODE; AND ALL LOCAL CITY CODES AND ORDINANCES APPLICABLE, EXCEPT AS NOTED ON THIS SHEET AS "DEVIATIONS FROM STANDARDS".
2. THE EXISTENCE AND LOCATION OF ANY OVERHEAD OR UNDERGROUND UTILITY LINES, PIPES, OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A RESEARCH OF THE AVAILABLE RECORDS. EXISTING UTILITIES AS SHOWN FROM CLV PLANS LIBRARY ARE APPROXIMATE AND FOR RECORD PURPOSES. EXISTING UTILITIES ARE LOCATED FROM PLANS ONLY FOR THE CONVENIENCE OF THE CONTRACTOR. EXISTING UTILITY SERVICE LATERALS MAY NOT BE SHOWN ON THE PLANS. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, LOCATE ALL UNDERGROUND AND OVERHEAD INTERFERENCES WHICH MAY AFFECT HIS OPERATION DURING CONSTRUCTION AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO SAME. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING NEAR OVERHEAD UTILITIES SO AS TO SAFELY PROTECT ALL PERSONNEL AND EQUIPMENT, AND SHALL BE RESPONSIBLE FOR ALL COST AND LIABILITY IN CONNECTION THEREWITH.
3. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING UTILITY LINES, STRUCTURES AND STREET IMPROVEMENTS WHICH ARE TO REMAIN IN PLACE, FROM DAMAGE, AND ALL SUCH IMPROVEMENTS OR STRUCTURES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED SATISFACTORY TO THE CITY ENGINEER AND OWNING UTILITY COMPANY AT THE EXPENSE OF THE CONTRACTOR.
4. ALL CONSTRUCTION SHALL BE AS SHOWN ON THESE PLANS, ANY REVISIONS SHALL HAVE THE PRIOR WRITTEN APPROVAL OF THE CITY ENGINEER.
5. TYPE V CEMENT SHALL BE USED IN ALL OFF-SITE CONCRETE WORK. CONCRETE TO BE 3000 P.S.I. MINIMUM @ 28 DAYS. MIX DESIGNS TO BE APPROVED BY THE CITY, PRIOR TO THE USE ON THE PROJECT.
6. PERMITS ARE REQUIRED FOR ANY WORK IN THE PUBLIC RIGHT-OF-WAY. THE CONTRACTOR SHALL SECURE ALL PERMITS AND INSPECTIONS REQUIRED FOR THIS CONSTRUCTION.
7. EXPANSION JOINTS REQUIRED, MAXIMUM EVERY 300'IN EXTRUDED-TYPE CURB.
8. AC PAVEMENT TO BE ONE-HALF INCH (½") ABOVE LIP OF ALL GUTTERS AFTER COMPACTION, EXCEPT AT SIDEWALK RAMPS AND CROSS GUTTERS.
9. CURB AND GUTTER FOUND TO BE UNACCEPTABLE TO THE CITY OF LAS VEGAS SHALL BE REMOVED AND REPLACED PER STANDARD DRAWING 216.
10. SIDEWALK RAMPS SHALL BE CONSTRUCTED IN EACH QUADRANT OF AN INTERSECTION PER STANDARD DRAWING 235. EXACT LOCATION OF RAMPS MAY BE ADJUSTED IN THE FIELD BY A CITY INSPECTOR.
11. CONTRACTOR SHALL PROVIDE ALL NECESSARY HORIZONTAL AND VERTICAL TRANSITIONS BETWEEN NEW CONSTRUCTION AND EXISTING SURFACES TO PROVIDE FOR PROPER DRAINAGE AND FOR INGRESS AND EGRESS TO NEW CONSTRUCTION. THE EXTENT OF THE TRANSITIONS TO BE AS SHOWN ON PLANS.
12. ALL GRADING WORK SHALL CONFORM TO THE SOILS REPORT AS PREPARED BY SOUTHWEST GEOTECHNICAL, REPORT #175337, 10/17/18 APPROVED BY THE CITY ENGINEER, AND AS SHOWN ON THESE PLANS.
13. EXACT LOCATION OF ALL SAWCUT LINES MAY BE ADJUSTED OR DET

ABBREVIATIONS

AC	ASPHALTIC CONCRETE OR ACRE	FL	FLOWLINE	PVI	POINT OF VERTICAL INTERSECTION
AGG	AGGREGATE BASE	FT	FEET OR FOOT	QTY	QUANTITY
APN	ASSESSORS PARCEL NUMBER	FUT	FUTURE	R	RADIUS
APPROX OR ~	APPROXIMATE	GRD	GRADE OR GROUND	RCA	REINFORCED CONCRETE ARCH
AVE	AVENUE	GB	GRADE BREAK OR GRADE CHANGE	RCB	REINFORCED CONCRETE BOX
@	AT	GV	GATE VALVE	RCP	REINFORCED CONCRETE PIPE
BC	BEGIN CURVE OR BACK OF CURB	HDPE	HIGH DENSITY POLYETHYLENE	RD	ROAD
BCR	BEGINNING OF CURB RETURN	HOA	HOME OWNERS ASSOCIATION	RDWY ESMT	ROADWAY EASEMENT
BHW	BOTTOM OF HEADWALL	HORZ	HORIZONTAL	REQD	REQUIRED
BLDG	BUILDING	HP	HIGH POINT	REV	REVISION
BLVD	BOULEVARD	HWL	HIGH WATER LEVEL	RG	ROUGH GRADE
BM	BENCHMARK	HDWL OR HW	HEADWALL	RT OR R	RIGHT
BVC	BEGIN VERTICAL CURVE	HYD	HYDRAULIC OR HYDRANT	R/W, ROW	RIGHT OF WAY
BWV	BACK WATER VALVE	ID	INSIDE DIAMETER	S	SLOPE
CC	CLARK COUNTY	IN	INCH	SCH	SCHEDULE
CCAUSD	CLARK COUNTY AREA UNIFORM STANDARD DRAWINGS	INT	INTERSECTION	SD	STORM DRAIN
CCPW	CLARK COUNTY PUBLIC WORKS	INV	INVERT ELEVATION	SDDI	STORM DRAIN DROP INLET
CCRFCD	CLARK COUNTY REGIONAL FLOOD DISTRICT	IP	IRON PIPE	SDMH	STORM DRAIN MANHOLE
CCWRD	CLARK COUNTY WATER RECLAMATION DISTRICT	IRRG	IRRIGATION	SEC	SECTION
CE	COMMON ELEMENT	LF	LINEAR FEET	SF	SQUARE FEET
CL,C/L,C	CENTERLINE	LMC	LANDSCAPE MAINTENANCE CORPORATION	SHT	SHEET
CLR	CLEAR OR CLEARANCE	LP	LOW POINT	SLTC	STREET LIGHT & TRAFFIC CONTROL ESMT
CLSM	CONTROLLED LOW STRENGTH MATERIAL	LT OR L	LEFT	SNWA	SOUTHERN NEVADA WATER AUTHORITY
CLV	CITY OF LAS VEGAS	LVVWD	LAS VEGAS VALLEY WATER DISTRICT	SPECS	SPECIFICATIONS
CML&C	CEMENT MORTAR LINED AND COATED	LWL	LOW WATER LEVEL	ST	STREET
CMU	CONCRETE MASONRY UNIT	MAX	MAXIMUM	SSMH	SANITARY SEWER MANHOLE
CNLV	CITY OF NORTH LAS VEGAS	MECH	MECHANICAL	STA	STATION
COH	CITY OF HENDERSON	MH	MANHOLE	STD	STANDARD
CONC	CONCRETE	MIN	MINIMUM	STL	STEEL
CT	COURT	MISC	MISCELLANEOUS	STLT	STREET LIGHT
CY OR CU YD	CUBIC YARD	MUE	MUNICIPAL UTILITY EASEMENT	SW	SIDEWALK
DCWCS	DESIGN AND CONSTRUCTION FOR WASTEWATER COLLECTION SYSTEMS	NDOT	NEVADA DEPARTMENT OF TRANSPORTATION	SWG	SOUTHWEST GAS
		NTS	NOT TO SCALE	SWR OR SS	SANITARY SEWER
DE	DRAINAGE EASEMENT	NUE	NONEXCLUSIVE UTILITY EASEMENT	SY	SQUARE YARD
DET	DETAIL	NVE	NV ENERGY	TAN	TANGENT
DI	DUCTILE IRON OR DRAIN INLET	OC	ON CENTER	TC	TOP OF CURB
DIA, ø	DIAMETER	OD	OUTSIDE DIAMETER OR OVERALL DIMENSION	TF	TOP OF FLOOR OR TOP OF FOOTING
DIP	DUCTILE IRON PIPE	OFF	OFFSET	TG	TOP OF GRATE
DR	DRIVE	ORIG	ORIGINAL	THRU	THROUGH
DWG(S)	DRAWING	PAE	PUBLIC OR PEDESTRIAN ACCESS EASEMENT	THW	TOP OF HEADWALL
DWY	DRIVEWAY	PB	PULL BOX	TP	TOP OF PIPE
EA	EACH	PC	POINT OF CURVE	TW	TOP OF WALL
ECR	END CURB RETURN	PCC	POINT OF COMPOUND CURVE	TRW	TOP OF RETAINING WALL
EG	EXISTING GROUND	PDE	PUBLIC DRAINAGE EASEMENT	TSW	TOP OF SCREEN WALL
ELEV	ELEVATION	℄ OR PL	PROPERTY LINE	TYP	TYPICAL
ESMT	EASEMENT	POB	POINT OF BEGINNING	UDACS	UNIFORM DESIGN AND CONSTRUCTION STANDARDS
EP	EDGE OF PAVEMENT	POC	POINT OF CURVATURE		
ERU	EQUIVALENT RESIDENTIAL UNIT	POE	POINT OF ENDING	UE	UTILITY EASEMENT
EVC	END VERTICAL CURVE	PRC	POINT OF REVERSE CURVATURE	VC	VERTICAL CURVE
EX OR EXIST	EXISTING	PRELIM	PRELIMINARY	VERT	VERTICAL
FC	FACE OF CURB	PROP	PROPOSED	VG	VALLEY GUTTER
FF	FINISHED FLOOR	PRV	PRESSURE REDUCING VALVE	WI	WROUGHT IRON
FG	FINISHED GRADE	PUE	PUBLIC UTILITY EASEMENT	WL	WATER LINE
FGH	FINISHED GRADE, HIGH SIDE	PT	POINT OF TANGENT OR POINT	WPZ	WATER PRESSURE ZONE
FGL	FINISHED GRADE, LOW SIDE	PVC	POLYVINYL CHLORIDE	WT	WEIGHT
FH	FIRE HYDRANT			WTR	WATER LINE

SPECIAL NOTE

IN THE EVENT THAT ANY TEMPORARY CONSTRUCTION ITEM IS REQUIRED WHICH IS NOT SHOWN ON THESE DRAWINGS, THE OWNER AGREES TO PROVIDE AND INSTALL SUCH ITEM AT HIS OWN EXPENSE AND AT THE DIRECTION OF THE CITY OF LAS VEGAS DEPT. OF PUBLIC WORKS. TEMPORARY CONSTRUCTION ITEMS INCLUDE: PAVEMENT TRANSITIONS, PROTECTIVE DITCHES AND BERMS, ROAD SIGNS AND BARRICADES, ETC.

NOTICE TO CONTRACTOR

-QUANTITIES SHOWN ARE ESTIMATES ONLY AND ARE INTENDED TO ILLUSTRATE SCOPE OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXACT QUANTITIES INVOLVED.

-EXISTING UTILITY LOCATIONS SHOWN HEREIN 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 LOCATIONS. CALL BEFORE YOU DIG: (800) 227-2600

LEGEND

EXISTING	PROPOSED	DESCRIPTION
(1900)	1900	5' CONTOUR
		1' CONTOUR
		STRIPING
		SEWER MANHOLE
		CURB AND GUTTER
EX 8" PVC SS	8" PVC SS	SANITARY SEWER PIPE AND FLOW ARROW
EX 8" PVC WTR	8" PVC WTR	WATER PIPE
		WATER GATE VALVE
		FIRE HYDRANT
		WATER BLOW-OFF
		WATER LATERAL W/ METER
		SANITARY SEWER LATERAL
		STREETLIGHT
		EDGE OF PAVEMENT
		TRAFFIC SIGN
PAD= XXX.X FF = XXX.X	PAD= XXX.X FF = XXX.X	PAD ELEVATION FINISHED FLOOR ELEVATION
(00.00) TC	00.00 TC	ELEVATION
		RETAINING WALL
		STORM DRAIN W/ MANHOLE

	EXISTING GAS GATE VALVE
@MH	EXISTING UNKNOWN MANHOLE
	EXISTING GAS, SIZE PER PLAN
	EXISTING POWER POLE
	EXISTING TRAFFIC SIGNAL
	EXISTING WALL
	WATER PIPE FITTING
POC	WATER POINT OF CONNECTION
POC	SEWER POINT OF CONNECTION
	DAYLIGHT LINE
	STREET CENTERLINE
	RIGHT-OF-WAY
	MATCHLINE
	BOUNDARY LINE
	PHASE LINE
	PROPERTY LINE
	FLOWLINE
	SAWCUT
FILL / CUT	CUT/FILL TRANSITION LINE
	SIDEWALK
	EX STRIPING TO BE OBLITERATED
	GRADE BREAK LINE
	REFLECTIVE RAISED PAVEMENT MARKERS
BWV	BACK WATER VALVE
	WROUGHT IRON FENCE
	PONY WALL
	DECORATIVE PERIMETER WALL
	DECORATIVE PERIMETER RETAINING WALL
	PROPOSED CURB AND GUTTER WITH RIGHT-OF-WAY AT BACK OF CURB
	EXISTING CURB AND GUTTER WITH RIGHT-OF-WAY AT BACK OF CURB
	FUTURE CURB AND GUTTER WITH RIGHT-OF-WAY AT BACK OF CURB

	PROPOSED SCARP AREA
	DRIVEWAY
	PROPOSED RIP RAP
	SIGHT VISIBILITY ZONE PER STD DWG NO. 201.2
	HANDICAP RAMP

QUANTITIES

			PRIVATE	PUBLIC
DRAINAGE				
1.	60" TYPE III STORM DRAIN MANHOLE	EA	–	1
2.	5.0' TYPE "CM2" DROP INLET	EA	–	–
3.	10.0' TYPE "CM2" DROP INLET	EA	–	–
4.	12.5' TYPE "CM2" DROP INLET	EA	–	2
5.	15.0' TYPE "CM2" DROP INLET	EA	–	1
6.	18" RCP STORM DRAIN	LF	–	–
7.	24" RCP STORM DRAIN	LF	–	49
8.	30" RCP STORM DRAIN	LF	–	189
9.	36" RCP STORM DRAIN	LF	–	–
10.	RIPRAP D50=6", THK=12"	SF	2,050	–
11.	SOLID GROUTED RIPRAP D50=12", THK=24"	SF	170	–
12.	8' WIDE CONCRETE VALLEY GUTTER W/10" TYPE I AGGREGATE BASE	SF	3,372	–
13.	SIDEWALK UNDER DRAIN	SF	–	–
SEWER SYSTEM				
1.	4" PVC SEWER LATERAL (PRIVATE)	LF	–	–
2.	8" PVC SEWER PIPE (PUBLIC)	LF	–	–
3.	STANDARD 48" SEWER MANHOLE (PUBLIC)	EA	–	–
4.	8" SEWER PIPE CAP	EA	–	–
5.	BACK WATER VALVE	EA	–	–
6.	8" C-900 WATER QUALITY SEWER PIPE (PUBLIC)	EA	–	–
7.				
WATER SYSTEM				
1.	FIRE HYDRANT ASSEMBLY W/6" GATE VALVE PER UDACS PLATE NO. 40	EA	–	–
2.	6" PVC WATER PIPE (CLASS 150)	LF	–	–
3.	8" PVC WATER PIPE (CLASS 150)	LF	–	–
4.	8" DIP WATER PIPE (CLASS 53)	LF	–	–
5.	8" GATE VALVE WITH VALVE BOX PER UDACS PLATE NO. 30 & 39	EA	–	–
6.	8" X 6" TEE PER UDACS PLATE NO. 31	EA	–	–
7.	8" X 8" TEE PER UDACS PLATE NO. 31	EA	–	–
8.	8" 5 DEGREE BEND WITH RESTRAINED JOINTS	EA	–	–
9.	8" 11.25 DEGREE BEND PER UDACS PLATE NO. 31	EA	–	–
10.	8" 22.5 DEGREE BEND PER UDACS PLATE NO. 31	EA	–	–
11.	8" 45 DEGREE BEND PER UDACS PLATE NO. 31	EA	–	–
12.	8" 90 DEGREE BEND PER UDACS PLATE NO. 31	EA	–	–
13.	CAP AND 2" BLOW-OFF ASSEMBLY W/CAP PER UDACS PLATE NO. 36	EA	–	–
14.	1" COPPER SERVICE W/ 3/4" METER PER UDACS PLATE NO. 2	EA	–	–
15.	1" COPPER SERVICE W/ 1" METER PER UDACS PLATE NO. 4	EA	–	–
16.	1" COPPER SERVICE W/ 3/4" METER & 1" RPPA PER UDACS PLATE NO. 4 & 8	EA	–	–
		EA	–	
STREET IMPROVEMENTS				
1.	2" A.C. PAVEMENT W/ 4" TYPE II OVER 6" TYPE I AGGREGATE BASE	SY	12,435	–
2.	STANDARD 8" TYPE "A" ISLAND CURB W/6" TYPE I AGGREGATE BASE	LF	217	–
3.	STANDARD 30" TYPE "ROLL" CURB & GUTTER W/6" TYPE I AGGREGATE BASE	LF	6,259	–
4.	5' WIDE CONCRETE SIDEWALK W/4" TYPE II AGGREGATE BASE	SF	14,412	–
5.	5' WIDE CONCRETE SIDEWALK W/5" TYPE II AGGREGATE BASE	SF	1,365	–
6.	8' WIDE CONCRETE SIDEWALK W/4" TYPE II AGGREGATE BASE	SF	–	9,750
7.				
TRAFFIC SIGNALS				
1.	30" STOP SIGN WITH POST (R1-1)	EA	–	–
2.	9" STREET NAME SIGN (D-3, BROWN W/ WHITE LETTERS)(6 POLES x 2 PER POLE=12)	EA	–	–
3.	BLUE COLORED REFLECTIVE RAISED PAVEMENT MARKER	EA	–	–
4.	CROSSWALK MARKINGS	LF	–	–
5.				
6.				
7.				
8.				
DRY UTILITIES				
1.	100W H.P.S. LUMINAIRE STREET LIGHT W/DECORATIVE POLE	EA	–	–
2.	1-1/4" PVC STREET LIGHT CONDUIT WITH (2) #4 AND (1) #8 CONDUCTORS	LF	–	–
3.	NO. 3-1/2 PULL BOX W/METAL COVER	EA	–	–
4.	150 AMP SERVICE PEDESTAL (IRR)	EA	–	–
5.	200 AMP SERVICE PEDESTAL (STLT)	EA	–	–
6.				

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES

PROJECT NO.____ ADD FILE ____ FIRST APPROVED DATE: _____

Westwood
5740 S. Arville Street
Suite 216
Las Vegas, NV 89118
Phone (702) 284-5300
Fax (702) 284-5399
westwoodps.com
Westwood Professional Services, Inc.

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS, NV

CENTURY COMMUNITIES

SKYE CANYON 2.08/ 2.09 PHASE 1
QUANTITIES AND LEGEND

S 12
T 19 S
R 59 E

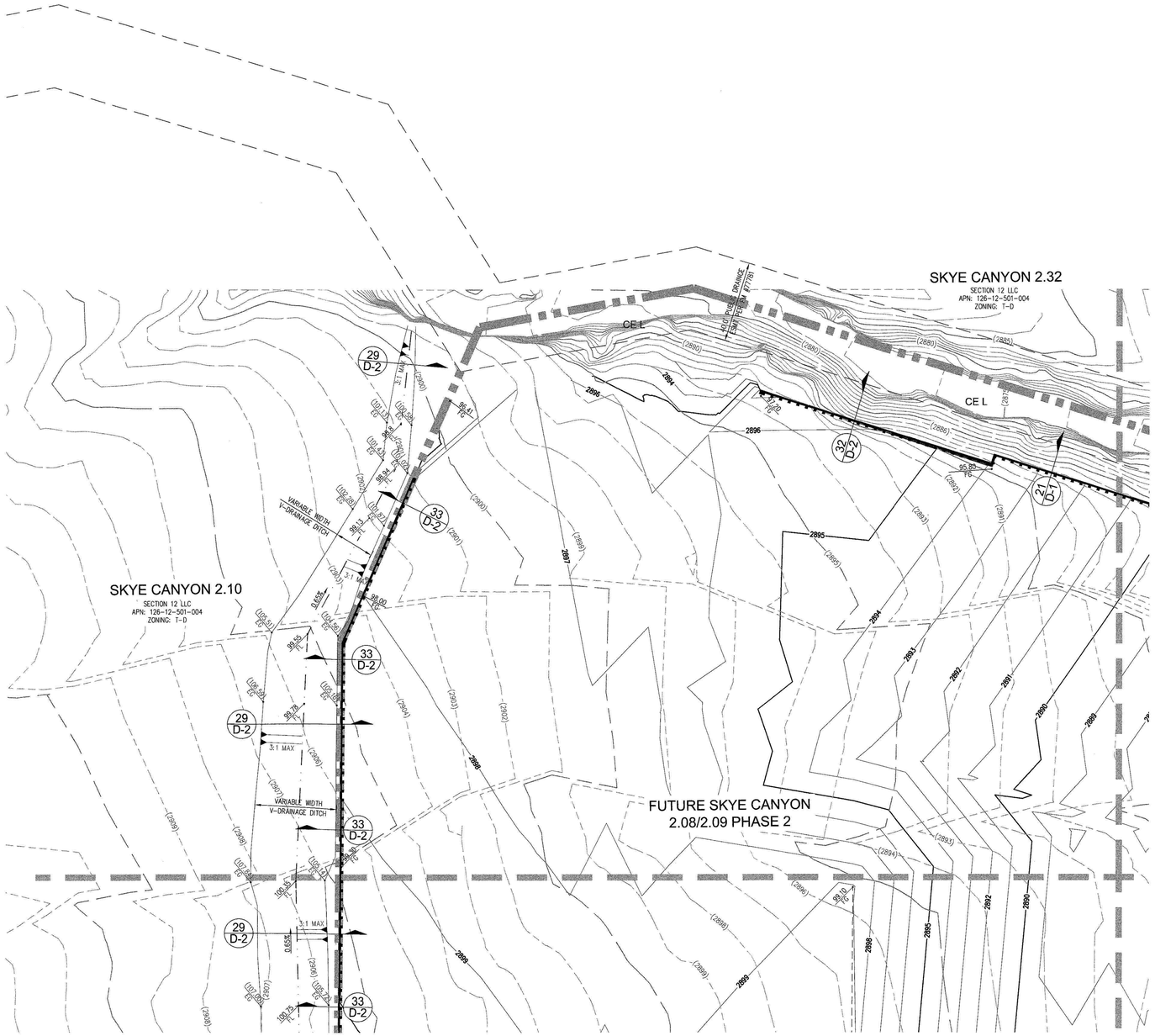
DATE: 02/03/2020
DRAFTER: HIR
DESIGNER: HIR
CHECKED: TJS

PROJECT NO.
OLY1905-000

PROFESSIONAL ENGINEER STATE OF NEVADA
TODD J. STEADHAM
Exp. 06/30/2020
CIVIL
No. 15292
2/3/20

C-3
SHEET 3 OF 16

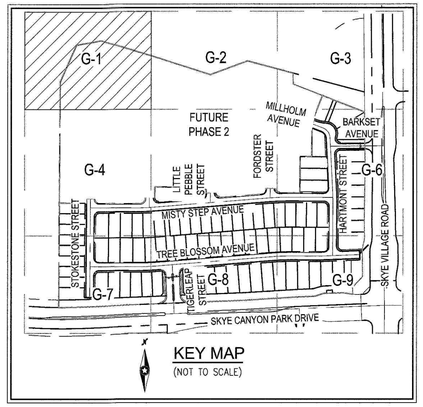
z:\oly1905-000 skye canyon parcel 2.08\dwg\morov\phase 1\oly1905-000 cvr-1.dwg 2/3/2020 7:26 AM LaKelo Abod



SEE SHEET G-2 FOR CONTINUATION

0 30 60
SCALE - 1"=30' FEET

CALL SOUTHWEST GAS AT 702-651-2111 FOR STANDBY WHEN EXCAVATING OVER OR NEAR HIGH PRESSURE GAS LINES



KEY MAP
(NOT TO SCALE)

SOILS REPORT

SOILS REPORT BY SOUTHWEST GEOTECHNICAL
PROJECT NO. 175337 DATED 10/17/18

UPDATED SOILS REPORT BY SOUTHWEST GEOTECHNICAL
PROJECT NO. 175337 DATED 8/28/19

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EXPORTED MATERIAL TO BE DISPOSED OF AT AN APPROVED LICENSED DISPOSAL FACILITY OR AT A SITE WITH AN APPROVED AND ACTIVE GRADING PERMIT.

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GRADING NOTES

1. CONSTRUCT 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
2. CONSTRUCT 30" MODIFIED ROLL CURB AND GUTTER PER CCAUSD NO. 217.1
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15. REMOVE EXISTING STORM DRAIN END SECTION
16. REMOVE 43 LF EXISTING STORM DRAIN PIPE
17. REMOVE EXISTING RIP-RAP
18. REMOVE EXISTING 12' TYPE II MAINTENANCE ACCESS PATH
19. REMOVE EXISTING 12' CONCRETE ACCESS ROAD
20. REMOVE EXISTING CONCRETE PAD WITH 3' CUTOFF WALL
21. LANDSCAPING TO BE DESIGNED AND MAINTAINED BY MASTER DEVELOPER HOA
22. INSTALL 6' HIGH TUBULAR STEEL FENCE PER CCAUSD NO. 425.S1 AND DETAIL 37 ON SHEET D-2
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24. INSTALL SOLID GROUTED RIP RAP W/ 6" TYPE II GRANULAR BEDDING WITH FILTER FABRIC D50=12", T=24"

LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDELINES

(REQUIRED FOR ALL SITES GREATER THAN 1 ACRE (43,560 SQ.FT.))

1. THE OWNER, SITE DEVELOPER, CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL EACH DAY REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO, OR ACCUMULATED IN, THE PUBLIC RIGHTS OF WAY OF CLARK COUNTY AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE DEVELOPMENT OR CONSTRUCTION PROJECT. SUCH MATERIALS SHALL BE PREVENTED FROM ENTERING THE STORM SEWER SYSTEM.
2. ADDITIONAL CONSTRUCTION SITE DISCHARGE BEST MANAGEMENT PRACTICES MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT MEET THE PERFORMANCE STANDARDS SPECIFIED IN CLARK COUNTY TITLE 24.40 AND IN THE LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDANCE MANUAL.
3. TEMPORARY OR PERMANENT STABILIZATION PRACTICES WILL BE INSTALLED ON DISTURBED AREAS AS SOON AS PRACTICABLE AND NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. SOME EXCEPTIONS MAY APPLY; REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.5.
4. AT A MINIMUM, THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL DISTURBED AREAS, AREAS USED FOR STORAGE OF MATERIALS AND EQUIPMENT THAT ARE EXPOSED TO PRECIPITATION, VEHICLE ENTRANCE AND EXIT LOCATIONS, AND ALL BMPS WEEKLY, AND WITHIN 24 HOURS AFTER A RAIN EVENT OF 0.5 INCHES OR MORE. THE CONTRACTOR OR HIS AGENT SHALL UPDATE OR MODIFY THE STORMWATER POLLUTION PREVENTION PLAN AS NECESSARY. SOME EXCEPTIONS TO WEEKLY INSPECTIONS MAY APPLY, SUCH AS SUSPENSION OF LAND DISTURBANCE ACTIVITIES. REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.12.
5. ACCUMULATED SEDIMENT IN BMPS SHALL BE REMOVED WITHIN SEVEN DAYS AFTER A STORMWATER RUNOFF EVENT OR PRIOR TO THE NEXT ANTICIPATED STORM EVENT, WHICHEVER IS EARLIER. SEDIMENT MUST BE REMOVED WHEN BMP DESIGN CAPACITY HAS BEEN REDUCED BY 50 PERCENT OR MORE.

DRAINAGE		PRIVATE	PUBLIC
1. RIPRAP W/ FILTER FABRIC D50=6", THK=12"	SF	2,050	–
2. 8' WIDE CONCRETE VALLEY GUTTER W/10" TYPE II AGGREGATE BASE	SF	3,372	–
3. 24" CLASS III RCP STORM DRAIN	LF	–	49
4. 30" CLASS III RCP STORM DRAIN	LF	–	189
5. 12.5' TYPE CM2 DROP INLET	EA	–	2
6. 15.0' TYPE CM2 DROP INLET	EA	–	1
7. 60" TYPE III STORM DRAIN MANHOLE	EA	–	1
8. GROUTED RIPRAP W/ FILTER FABRIC D50=12", THK=24"	SF	170	–

FLOOD CERTIFICATION

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

TODD J. STEADHAM, P.E. 15292 DATE

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EASEMENT NOTE

COMMON ELEMENT M (CE M) IS A PUBLIC DRAINAGE EASEMENT TO BE PRIVATELY MAINTAINED

FAST Call before you UnderGround 1-702-432-5300 FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T.)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY. CALL BEFORE YOU DIG OVERHEAD 1-702-227-2929

Call before you Dig
AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY.
Call 811 OR 1-800-227-2600

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CENTURY COMMUNITIES

CITY OF LAS VEGAS, NV

SKYE CANYON 2.08/ 2.09 PHASE 1
GRADING PLAN I

S 12
T 19
R 59 E

DATE: 02/03/2020
DRAFTER: HIR
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CHECKED: TJS
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OLY1905-000

PROFESSIONAL ENGINEER STATE OF NEVADA
TODD J. STEADHAM
Exp. 08/30/2020
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No. 15292
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G-1
SHEET 4 OF 16

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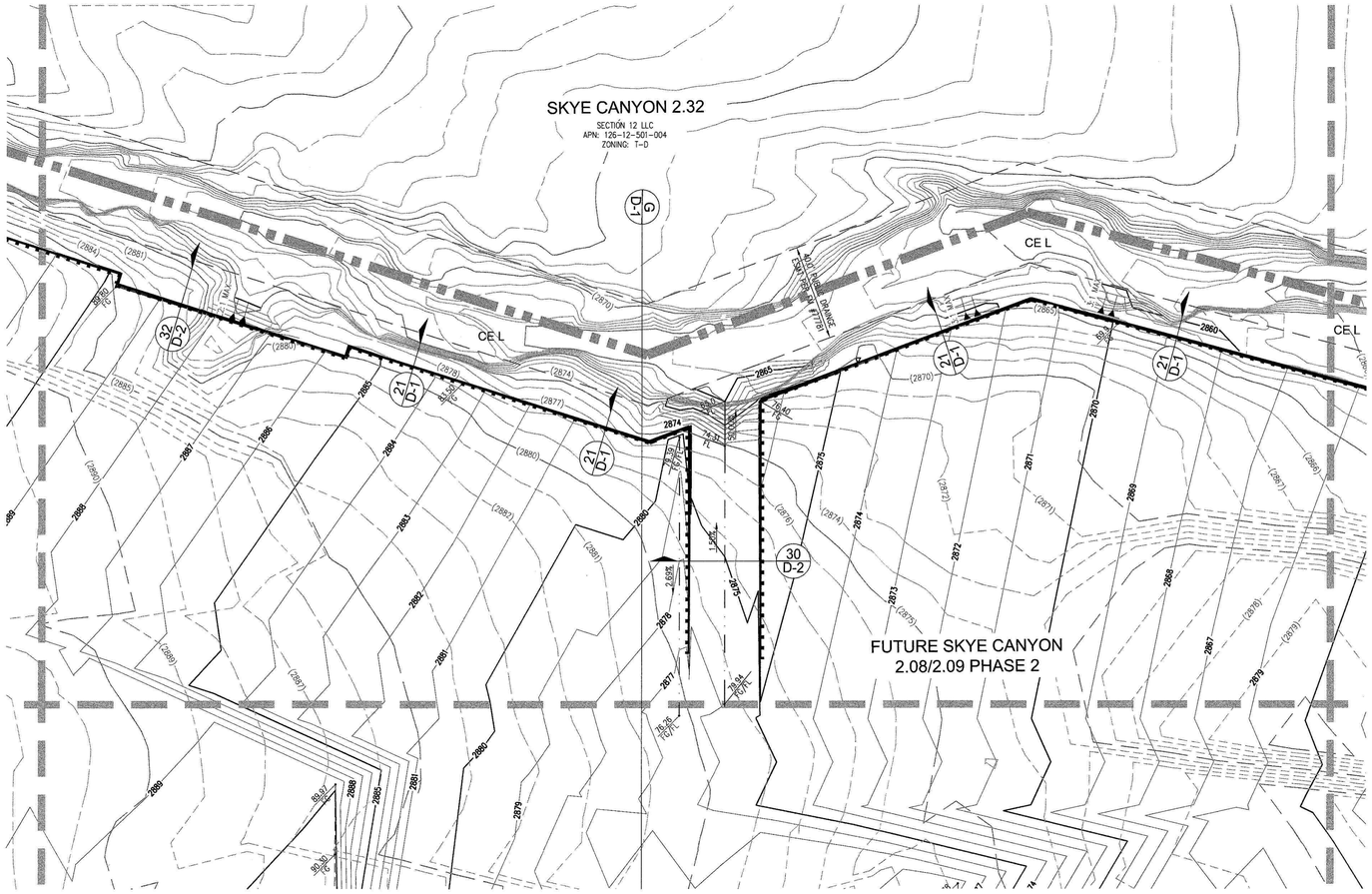

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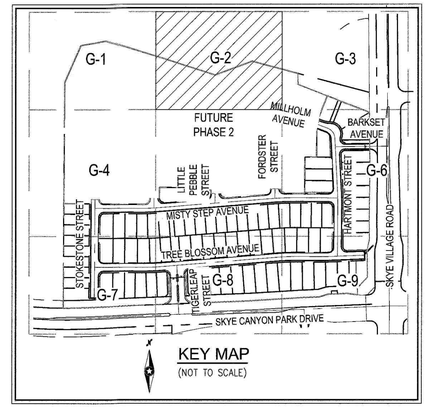

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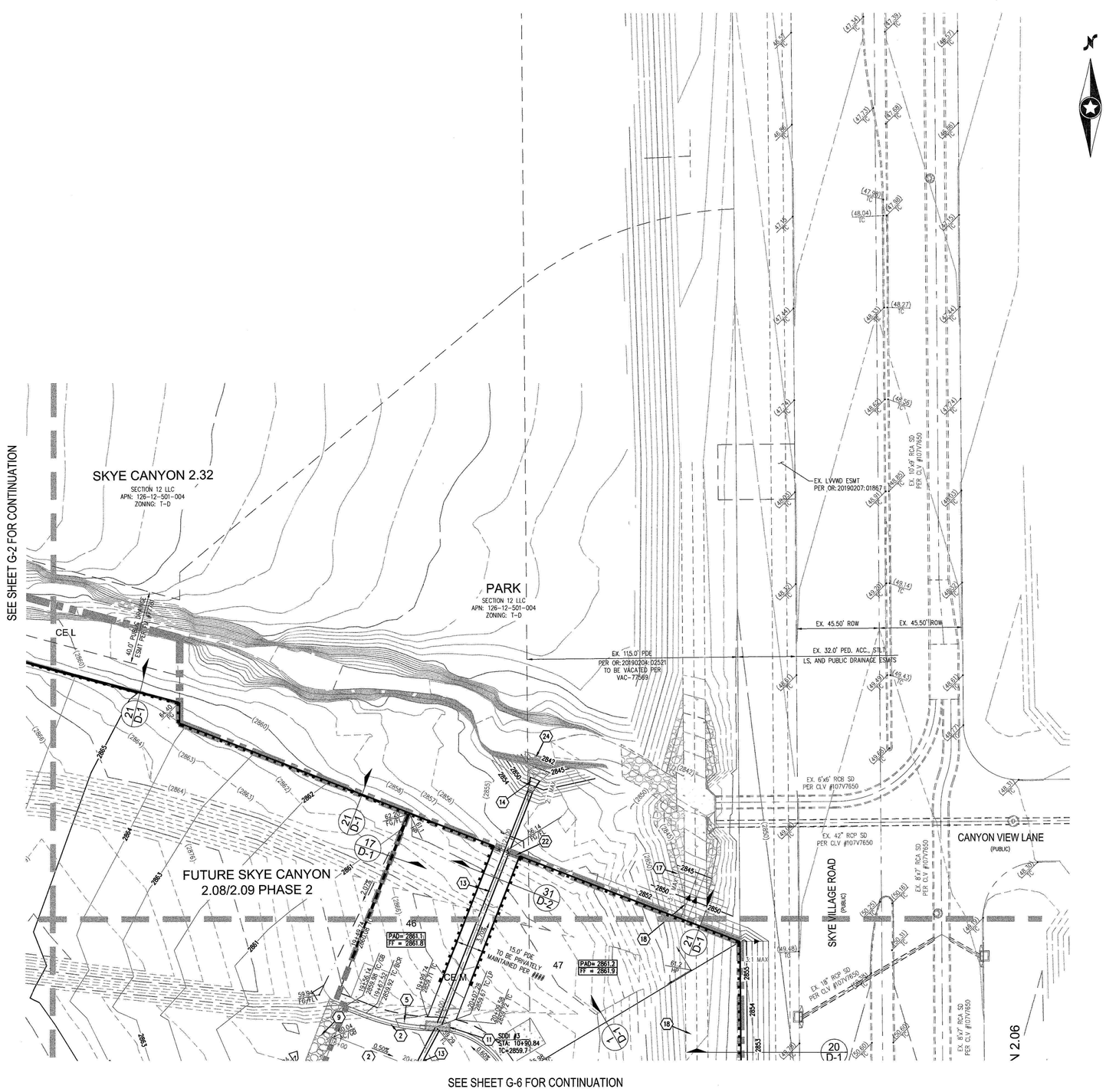
I:\ccer1905-000 skye canyon parcel 2.08\dwg\improv\phase 1\ccer1905-000 grd-1.dwg 2/3/2020 7:29 AM Lokelo Abod



SCALE – 1"=30' (0, 30, 60 FEET)

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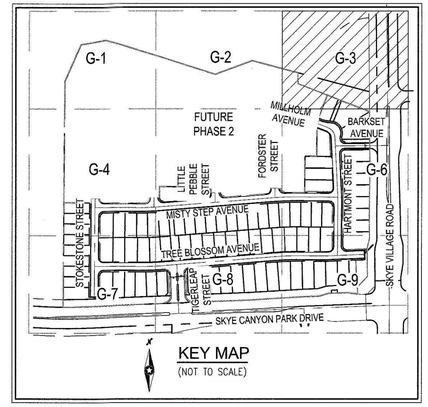

KEY MAP
(NOT TO SCALE)

SOILS REPORT

SOILS REPORT BY SOUTHWEST GEOTECHNICAL
PROJECT NO. 175337 DATED 10/17/18

UPDATED SOILS REPORT BY SOUTHWEST GEOTECHNICAL
PROJECT NO. 175337 DATED 8/28/19

EARTHWORKS

EARTHWORK QUANTITIES (RAW):
CUT= 69,134 CU YDS
FILL= 65,322 CU YDS

EXPORTED MATERIAL TO BE DISPOSED OF AT AN APPROVED LICENSED DISPOSAL FACILITY OR AT A SITE WITH AN APPROVED AND ACTIVE GRADING PERMIT.

DISCLAIMER NOTE

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2) FOR ROADWAY WIDENING AND HALF STREET IMPROVEMENTS THE CONTRACTOR SHALL VERIFY CROSS SLOPES FROM EXISTING PAVEMENT SAWCUT LINE TO PROPOSED EDGE OF PAVEMENT OR PROJECTED LIP OF CURB PRIOR TO SUBGRADE PREPARATION AND CONSTRUCTION OF PROPOSED CURB LINE. IF MINIMUM OR MAXIMUM CROSS SLOPES DO NOT MEET AGENCY STANDARDS THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

GRADING NOTES

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2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AND REPORT ALL DISCREPANCIES TO THE ENGINEER.
3. ALL IMPROVEMENTS TO BE PROTECTED FROM EROSION BY SWPPP.
4. MAXIMUM/MINIMUM SLOPES AND MINIMUM STREET SECTIONS NOT TO EXCEED THAT SHOWN ON GEOTECH REPORT.
5. SEE DETAIL SHEET FOR STREET SECTIONS AND DETAILS.
6. ALL PUBLIC AND PRIVATE DRAINAGE IMPROVEMENTS TO BE BONDED FOR AND INSPECTED.
7. CONSTRUCTION OF BLOCK WALLS REQUIRES A SEPARATE BUILDING PERMIT AND APPROVAL BY THE CITY OF LAS VEGAS BUILDING DEPARTMENT.
8. CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF EXISTING UTILITY STRUCTURES AND FACILITIES AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. CONTRACTOR TO PROTECT IN PLACE DURING CONSTRUCTION. ENGINEER/OWNER SHALL BE NOTIFIED OF PRIOR DAMAGE TO EXISTING FACILITIES PRIOR TO CONSTRUCTION. CONTRACTOR WILL BE RESPONSIBLE FOR REPAIR/REPLEPING FACILITIES IF ENGINEER/OWNER IS NOT NOTIFIED OF EXISTING DAMAGE PRIOR TO CONSTRUCTION COMMENCING.
9. 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 EXIST) WITHIN THE SIGHT VISIBILITY ZONES.

GRADING NOTES

1. CONSTRUCT 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
2. CONSTRUCT 30" MODIFIED ROLL CURB AND GUTTER PER CCAUSD NO. 217.1
3. CONSTRUCT 10' TRANSITION FROM ROLLED CURB TO "L" TYPE CURB PER DETAIL 38 SHEET D-2
4. CONSTRUCT 8' WIDE CROSS GUTTER PER CCAUSD NO. 228
5. CONSTRUCT 5' WIDE CONCRETE SIDEWALK (5" THICK WITH 5" TYPE II AGGREGATE BASE) PER CCAUSD NO. 234
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7. CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES PER CCAUSD NO. 235, CASE I
8. CONSTRUCT "A" TYPE CURB PER CCAUSD NO. 219
9. INSTALL RIP RAP W/ 6" TYPE II GRANULAR BEDDING WITH FILTER FABRIC D50=6", T=12"
10. INSTALL 60" TYPE III STORM DRAIN MANHOLE PER CCAUSD 406
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13. INSTALL 24" CLASS III RCP STORM DRAIN
14. INSTALL RCP SD END SECTION PER DETAIL 39 ON SHEET D-2 (NDOT STD DWG. R-2.31)
15. REMOVE EXISTING STORM DRAIN END SECTION
16. REMOVE 43 LF EXISTING STORM DRAIN PIPE
17. REMOVE EXISTING RIP-RAP
18. REMOVE EXISTING 12' TYPE II MAINTENANCE ACCESS PATH
19. REMOVE EXISTING 12' CONCRETE ACCESS ROAD
20. REMOVE EXISTING CONCRETE PAD WITH 3' CUTOFF WALL
21. LANDSCAPING TO BE DESIGNED AND MAINTAINED BY MASTER DEVELOPER HOA
22. INSTALL 6' HIGH TUBULAR STEEL FENCE PER CCAUSD NO. 425.51 AND DETAIL 37 ON SHEET D-2
23. CONSTRUCT 8' WIDE CONCRETE SIDEWALK (4" THICK WITH 5" TYPE II AGGREGATE BASE) PER CCAUSD NO. 234
24. INSTALL SOLID GROUTED RIP RAP W/ 6" TYPE II GRANULAR BEDDING WITH FILTER FABRIC D50=12", T=24"

LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDELINES

(REQUIRED FOR ALL SITES GREATER THAN 1 ACRE (43,560 SQ.FT.))

1. THE OWNER, SITE DEVELOPER, CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL EACH DAY REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO, OR ACCUMULATED IN, THE PUBLIC RIGHTS OF WAY OF CLARK COUNTY AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE DEVELOPMENT OR CONSTRUCTION PROJECT. SUCH MATERIALS SHALL BE PREVENTED FROM ENTERING THE STORM SEWER SYSTEM.
2. ADDITIONAL CONSTRUCTION SITE DISCHARGE BEST MANAGEMENT PRACTICES MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT MEET THE PERFORMANCE STANDARDS SPECIFIED IN CLARK COUNTY TITLE 24.40 AND IN THE LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDANCE MANUAL.
3. TEMPORARY OR PERMANENT STABILIZATION PRACTICES WILL BE INSTALLED ON DISTURBED AREAS AS SOON AS PRACTICABLE AND NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. SOME EXCEPTIONS MAY APPLY; REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.5.
4. AT A MINIMUM, THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL DISTURBED AREAS, AREAS USED FOR STORAGE OF MATERIALS AND EQUIPMENT THAT ARE EXPOSED TO PRECIPITATION, VEHICLE ENTRANCE AND EXIT LOCATIONS, AND ALL BMPS WEEKLY, AND WITHIN 24 HOURS AFTER A RAIN EVENT OF 0.5 INCHES OR MORE. THE CONTRACTOR OR HIS AGENT SHALL UPDATE OR MODIFY THE STORMWATER POLLUTION PREVENTION PLAN AS NECESSARY. SOME EXCEPTIONS TO WEEKLY INSPECTIONS MAY APPLY, SUCH AS SUSPENSION OF LAND DISTURBANCE ACTIVITIES. REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.12.
5. ACCUMULATED SEDIMENT IN BMPS SHALL BE REMOVED WITHIN SEVEN DAYS AFTER A STORMWATER RUNOFF EVENT OR PRIOR TO THE NEXT ANTICIPATED STORM EVENT, WHICHEVER IS EARLIER. SEDIMENT MUST BE REMOVED WHEN BMP DESIGN CAPACITY HAS BEEN REDUCED BY 50 PERCENT OR MORE.

DRAINAGE		PRIVATE	PUBLIC
1. RIPRAP W/ FILTER FABRIC D50=6", THK=12"	SF	2,050	–
2. 8' WIDE CONCRETE VALLEY GUTTER W/10" TYPE II AGGREGATE BASE	SF	3,372	–
3. 24" CLASS III RCP STORM DRAIN	LF	–	49
4. 30" CLASS III RCP STORM DRAIN	LF	–	189
5. 12.5' TYPE CM2 DROP INLET	EA	–	2
6. 15.0' TYPE CM2 DROP INLET	EA	–	1
7. 60" TYPE III STORM DRAIN MANHOLE	EA	–	1
8. GROUTED RIPRAP W/ FILTER FABRIC D50=12", THK=24"	SF	170	–

FLOOD CERTIFICATION

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

TODD J. STEADHAM, P.E. 15292 DATE

SURVEY NOTE

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ELEVATION NOTE

ADD 2800 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 2801.00) AND 101.0 REPRESENTS 2901.00)

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COMMON ELEMENT M (CE M) IS A PUBLIC DRAINAGE EASEMENT TO BE PRIVATELY MAINTAINED

FAST
Call before you UnderGround
1-702-432-5300
FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

Call before you Dig
AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY.
Call 811
OR
1-800-227-2600

Westwood
Phone (702) 284-5300
Fax (702) 284-5399
5740 S. Arville Street
Suite 216
Las Vegas, NV 89118
westwoodps.com
Westwood Professional Services, Inc.

NO.	DESCRIPTION	DATE	BY	APP.	APP. DATE

CITY OF LAS VEGAS, NV

CENTURY COMMUNITIES

SKYE CANYON 2.08/ 2.09 PHASE 1
GRADING PLAN III

S 12
T 19 S
R 59 E

DATE: 02/03/2020
DRAFTER: HIR
DESIGNER: HIR
CHECKED: TJS
PROJECT NO.
OLY1905-000

PROFESSIONAL ENGINEER – STATE OF NEVADA
TODD J. STEADHAM
Exp. 06/30/2020
CIVIL
No. 15292

G-3
SHEET 6 OF 16

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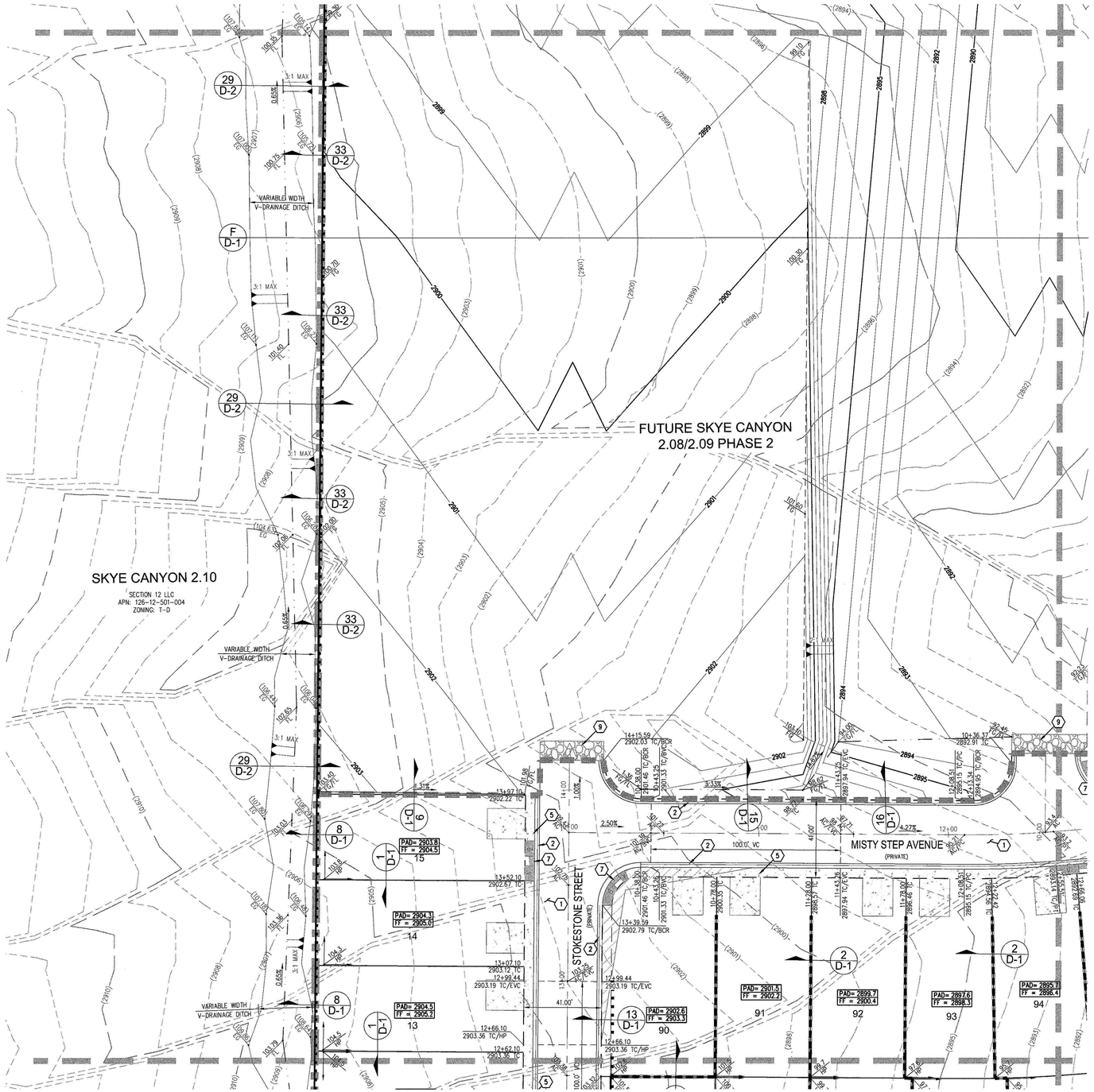
SEE SHEET G-1 FOR CONTINUATION



SEE SHEET G-7 FOR CONTINUATION

SEE SHEET G-5 FOR CONTINUATION

0 30 60
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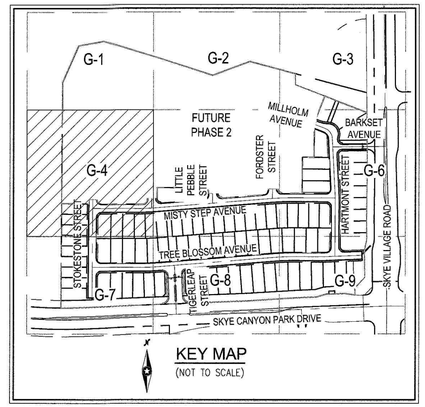

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PROJECT NO. 175337 DATED 10/17/18

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6. 15.0' TYPE CM2 DROP INLET	EA	–	1
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Call 811
OR
1-800-227-2600

Westwood
5740 S. Arville Street
Suite 215
Las Vegas, NV 89118
Phone (702) 284-5300
Fax (702) 284-5399
westwoods.com
Westwood Professional Services, Inc.

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS, NV

CENTURY COMMUNITIES

SKYE CANYON 2.08/ 2.09 PHASE 1
GRADING PLAN IV

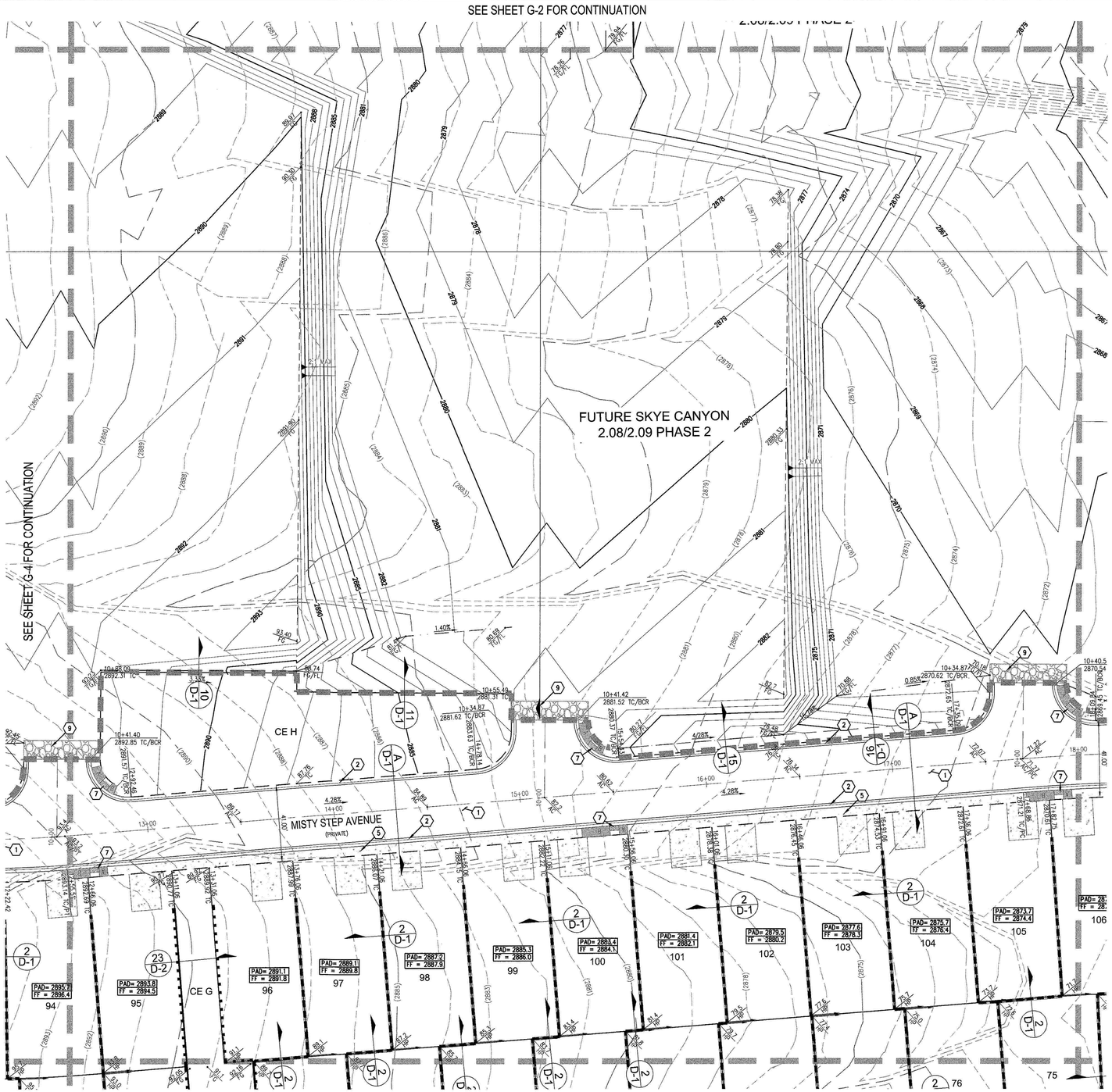
S12
T19 S
R59 E

DATE: 02/03/2020
DRAFTER: HIR
DESIGNER: HIR
CHECKED: TJS
PROJECT NO.
OLY1905-000

PROFESSIONAL ENGINEER STATE OF NEVADA
TODD J. STEADHAM
Exp. 06/30/2020
CIVIL
No. 15292
3/3/20

G-4
SHEET 7 OF 16

F:\ceni1905-000 skye canyon parcel 2.08\cesi\mnov\sphase 1\ceni1905-000 grdc-1.dwg 2/3/2020 7:30 AM Loleto Abad



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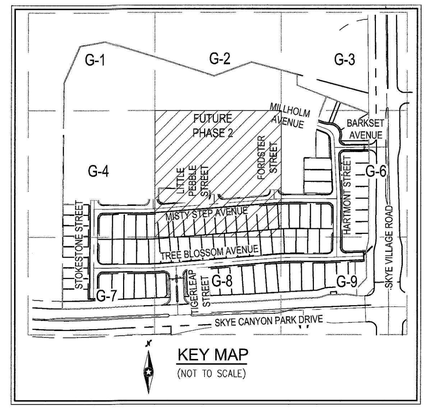

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PROJECT NO. 175337 DATED 10/17/18

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GRADING NOTES

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2. CONSTRUCT 30" MODIFIED ROLL CURB AND GUTTER PER CCAUSD NO. 217.1
3. CONSTRUCT 10' TRANSITION FROM ROLLED CURB TO "L" TYPE CURB PER DETAIL 38 SHEET D-2
4. CONSTRUCT 8' WIDE CROSS GUTTER PER CCAUSD NO. 228
5. CONSTRUCT 5' WIDE CONCRETE SIDEWALK (5" THICK WITH 5" TYPE II AGGREGATE BASE) PER CCAUSD NO. 234
6. CONSTRUCT 5' WIDE CONCRETE SIDEWALK (4" THICK WITH 5" TYPE II AGGREGATE BASE) PER CCAUSD NO. 234
7. CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES PER CCAUSD NO. 235, CASE 1
8. CONSTRUCT "A" TYPE CURB PER CCAUSD NO. 219
9. INSTALL RIP RAP W/ 6" TYPE II GRANULAR BEDDING WITH FILTER FABRIC D50=6", T=12"
10. INSTALL 60" TYPE III STORM DRAIN MANHOLE PER CCAUSD 406
11. INSTALL 12.5' TYPE "CM2" DROP INLET PER CCAUSD NO. 412.1 AND STORM DRAIN WATER QUALITY MANAGEMENT STAMP PER CCAUSD NO. 421
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17. REMOVE EXISTING RIP-RAP
18. REMOVE EXISTING 12' TYPE II MAINTENANCE ACCESS PATH
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22. INSTALL 6' HIGH TUBULAR STEEL FENCE PER CCAUSD NO. 425.51 AND DETAIL 37 ON SHEET D-2
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24. INSTALL SOLID GROUTED RIP RAP W/ 6" TYPE II GRANULAR BEDDING WITH FILTER FABRIC D50=12", T=24"

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2. ADDITIONAL CONSTRUCTION SITE DISCHARGE BEST MANAGEMENT PRACTICES MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT MEET THE PERFORMANCE STANDARDS SPECIFIED IN CLARK COUNTY TITLE 24.40 AND IN THE LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDANCE MANUAL.
3. TEMPORARY OR PERMANENT STABILIZATION PRACTICES WILL BE INSTALLED ON DISTURBED AREAS AS SOON AS PRACTICABLE AND NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. SOME EXCEPTIONS MAY APPLY; REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.5.
4. AT A MINIMUM, THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL DISTURBED AREAS, AREAS USED FOR STORAGE OF MATERIALS AND EQUIPMENT THAT ARE EXPOSED TO PRECIPITATION, VEHICLE ENTRANCE AND EXIT LOCATIONS, AND ALL BMPS WEEKLY, AND WITHIN 24 HOURS AFTER A RAIN EVENT OF 0.5 INCHES OR MORE. THE CONTRACTOR OR HIS AGENT SHALL UPDATE OR MODIFY THE STORMWATER POLLUTION PREVENTION PLAN AS NECESSARY. SOME EXCEPTIONS TO WEEKLY INSPECTIONS MAY APPLY, SUCH AS SUSPENSION OF LAND DISTURBANCE ACTIVITIES. REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.12.
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DRAINAGE		PRIVATE	PUBLIC
1. RIPRAP W/ FILTER FABRIC D50=6", THK=12"	SF	2,050	–
2. 8' WIDE CONCRETE VALLEY GUTTER W/10" TYPE II AGGREGATE BASE	SF	3,372	–
3. 24" CLASS III RCP STORM DRAIN	LF	–	49
4. 30" CLASS III RCP STORM DRAIN	LF	–	189
5. 12.5' TYPE CM2 DROP INLET	EA	–	2
6. 15.0' TYPE CM2 DROP INLET	EA	–	1
7. 60" TYPE III STORM DRAIN MANHOLE	EA	–	1
8. GROUTED RIPRAP W/ FILTER FABRIC D50=12", THK=24"	SF	170	–

FLOOD CERTIFICATION

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TODD J. STEADHAM, P.E. 15292 DATE

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Westwood
Phone (702) 284-5300
Fax (702) 284-5399
5740 S. Arville Street
Suite 216
Las Vegas, NV 89118
westwoodps.com
Westwood Professional Services, Inc.

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS, NV

CENTURY COMMUNITIES

SKYE CANYON 2.08/ 2.09 PHASE 1
GRADING PLAN V

S 12
T 19 S
R 59 E

DATE: 02/03/2020
DRAFTER: HIR
DESIGNER: HIR
CHECKED: TJS
PROJECT NO.
OLY1905-000

PROFESSIONAL ENGINEER – STATE OF NEVADA – TODD J. STEADHAM – Exp. 06/30/2020 – CIVIL – No. 15292

2/3/20

G-5
SHEET 8 OF 16

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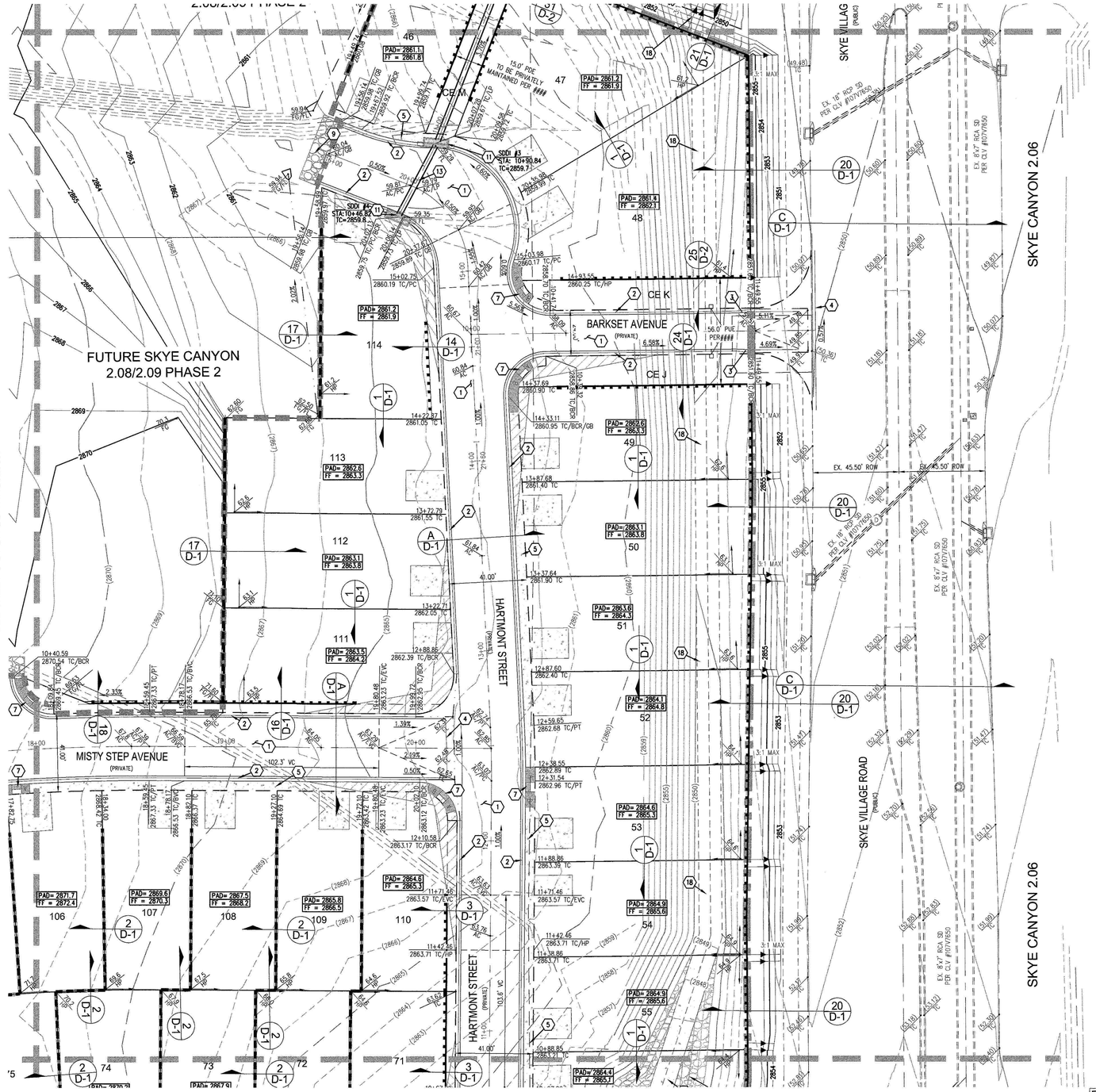
SEE SHEET G-3 FOR CONTINUATION
SEE SHEET G-5 FOR CONTINUATION
SEE SHEET G-9 FOR CONTINUATION
FUTURE SKYE CANYON 2.08/2.09 PHASE 2
SKYE CANYON 2.06
SKYE VILLAG (PUBLIC)
SKYE VILLAGE ROAD (PUBLIC)
BARKSET AVENUE (PRIVATE)
MISTY STEP AVENUE (PRIVATE)
HARTMONT STREET (PRIVATE)
15.0' PDE TO BE PRIVATELY MAINTAINED PER ####
56.0' PUE PER ####
EX. 45.50' ROW
EX. 18" RCP SD PER CLV #10077650
EX. 8'x7' RCA SD PER CLV #10077650
EX. 8'x7' RCA SD PER CLV #10078155
SDDI #3 STA: 10+50.84 TC=2859.7
SDDI #4 STA:10+46.83 TC=2859.8
PAD= 2861.1 FF = 2861.8
PAD= 2861.2 FF = 2861.9
PAD= 2861.9 FF = 2862.7
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PAD= 2878.9 FF = 2879.6
PAD= 2880.1 FF = 2880.8
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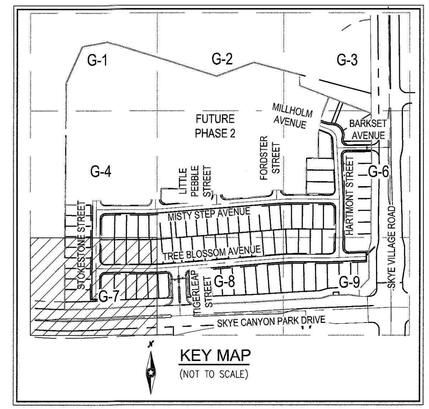
SCALE – 1"=30' FEET

CALL SOUTHWEST GAS AT 702-651-2111 FOR STANDBY WHEN EXCAVATING OVER OR NEAR HIGH PRESSURE GAS LINES



KEY MAP
(NOT TO SCALE)

SOILS REPORT

SOILS REPORT BY SOUTHWEST GEOTECHNICAL
PROJECT NO. 175337 DATED 10/17/18

UPDATED SOILS REPORT BY SOUTHWEST GEOTECHNICAL
PROJECT NO. 175337 DATED 8/28/19

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DRAINAGE		PRIVATE	PUBLIC
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2. 8' WIDE CONCRETE VALLEY GUTTER W/10" TYPE II AGGREGATE BASE	SF	3,372	–
3. 24" CLASS III RCP STORM DRAIN	LF	–	49
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5. 12.5' TYPE CM2 DROP INLET	EA	–	2
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NO.	DESCRIPTION	DATE	BY	APP.	APP. DATE

CITY OF LAS VEGAS, NV

CENTURY COMMUNITIES

SKYE CANYON 2.08/ 2.09 PHASE 1
GRADING PLAN VII

S:12 T:19 R:59 E

DATE: 02/03/2020
DRAFTER: HIR
DESIGNER: HIR
CHECKED: TJS
PROJECT NO. OLY1905-000

PROFESSIONAL ENGINEER – STATE OF NEVADA – TODD J. STEADHAM – Exp. 06/30/2020 – CIVIL – No. 15292 – 2/3/20

G-7
SHEET 10 OF 16

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SCALE – 1"=30' FEET

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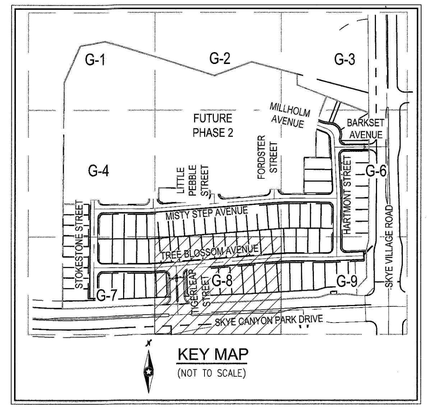

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PROJECT NO. 175337 DATED 10/17/18

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6. ALL PUBLIC AND PRIVATE DRAINAGE IMPROVEMENTS TO BE BONDED FOR AND INSPECTED.
7. CONSTRUCTION OF BLOCK WALLS REQUIRES A SEPARATE BUILDING PERMIT AND APPROVAL BY THE CITY OF LAS VEGAS BUILDING DEPARTMENT.
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9. 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 EXIST) WITHIN THE SIGHT VISIBILITY ZONES.

LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDELINES

(REQUIRED FOR ALL SITES GREATER THAN 1 ACRE (43,560 SQ.FT.))

1. THE OWNER, SITE DEVELOPER, CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL EACH DAY REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO, OR ACCUMULATED IN, THE PUBLIC RIGHTS OF WAY OF CLARK COUNTY AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE DEVELOPMENT OR CONSTRUCTION PROJECT. SUCH MATERIALS SHALL BE PREVENTED FROM ENTERING THE STORM SEWER SYSTEM.
2. ADDITIONAL CONSTRUCTION SITE DISCHARGE BEST MANAGEMENT PRACTICES MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT MEET THE PERFORMANCE STANDARDS SPECIFIED IN CLARK COUNTY TITLE 24.40 AND IN THE LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDANCE MANUAL.
3. TEMPORARY OR PERMANENT STABILIZATION PRACTICES WILL BE INSTALLED ON DISTURBED AREAS AS SOON AS PRACTICABLE AND NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. SOME EXCEPTIONS MAY APPLY; REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.5.
4. AT A MINIMUM, THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL DISTURBED AREAS, AREAS USED FOR STORAGE OF MATERIALS AND EQUIPMENT THAT ARE EXPOSED TO PRECIPITATION, VEHICLE ENTRANCE AND EXIT LOCATIONS, AND ALL BMPS WEEKLY, AND WITHIN 24 HOURS AFTER A RAIN EVENT OF 0.5 INCHES OR MORE. THE CONTRACTOR OR HIS AGENT SHALL UPDATE OR MODIFY THE STORMWATER POLLUTION PREVENTION PLAN AS NECESSARY. SOME EXCEPTIONS TO WEEKLY INSPECTIONS MAY APPLY, SUCH AS SUSPENSION OF LAND DISTURBANCE ACTIVITIES. REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.12.
5. ACCUMULATED SEDIMENT IN BMPS SHALL BE REMOVED WITHIN SEVEN DAYS AFTER A STORMWATER RUNOFF EVENT OR PRIOR TO THE NEXT ANTICIPATED STORM EVENT, WHICHEVER IS EARLIER. SEDIMENT MUST BE REMOVED WHEN BMP DESIGN CAPACITY HAS BEEN REDUCED BY 50 PERCENT OR MORE.

FLOOD ZONE

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE X (UNSHADED) AS DEPICTED ON FLOOD INSURANCE RATE MAP (FIRM) PANEL 32003C1750E, DATED SEPTEMBER 27, 2002. A ZONE X (UNSHADED) IS DESCRIBED AS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN.

PRIVATE STREET NOTE

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

EASEMENT NOTE

COMMON ELEMENT M (CE M) IS A PUBLIC DRAINAGE EASEMENT TO BE PRIVATELY MAINTAINED

GRADING NOTES

1. CONSTRUCT 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
2. CONSTRUCT 30" MODIFIED ROLL CURB AND GUTTER PER CCAUSD NO. 217.1
3. CONSTRUCT 10' TRANSITION FROM ROLLED CURB TO "L" TYPE CURB PER DETAIL 38 SHEET D-2
4. CONSTRUCT 8' WIDE CROSS GUTTER PER CCAUSD NO. 228
5. CONSTRUCT 5' WIDE CONCRETE SIDEWALK (5" THICK WITH 5" TYPE II AGGREGATE BASE) PER CCAUSD NO. 234
6. CONSTRUCT 5' WIDE CONCRETE SIDEWALK (4" THICK WITH 5" TYPE II AGGREGATE BASE) PER CCAUSD NO. 234
7. CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES PER CCAUSD NO. 235, CASE I
8. CONSTRUCT "A" TYPE CURB PER CCAUSD NO. 219
9. INSTALL RIP RAP W/ 6" TYPE II GRANULAR BEDDING WITH FILTER FABRIC D50=6", T=12"
10. INSTALL 60" TYPE III STORM DRAIN MANHOLE PER CCAUSD 406
11. INSTALL 12.5' TYPE "CM2" DROP INLET PER CCAUSD NO. 412.1 AND STORM DRAIN WATER QUALITY MANAGEMENT STAMP PER CCAUSD NO. 421
12. INSTALL 15.0' TYPE "CM2" DROP INLET PER CCAUSD NO. 412.1 AND STORM DRAIN WATER QUALITY MANAGEMENT STAMP PER CCAUSD NO. 421
13. INSTALL 24" CLASS III RCP STORM DRAIN
14. INSTALL RCP SD END SECTION PER DETAIL 39 ON SHEET D-2 (NDOT STD DWG. R-2.31)
15. REMOVE EXISTING STORM DRAIN END SECTION
16. REMOVE 43 LF EXISTING STORM DRAIN PIPE
17. REMOVE EXISTING RIP-RAP
18. REMOVE EXISTING 12' TYPE II MAINTENANCE ACCESS PATH
19. REMOVE EXISTING 12' CONCRETE ACCESS ROAD
20. REMOVE EXISTING CONCRETE PAD WITH 3' CUTOFF WALL
21. LANDSCAPING TO BE DESIGNED AND MAINTAINED BY MASTER DEVELOPER HOA
22. INSTALL 6' HIGH TUBULAR STEEL FENCE PER CCAUSD NO. 425.51 AND DETAIL 37 ON SHEET D-2
23. CONSTRUCT 8' WIDE CONCRETE SIDEWALK (4" THICK WITH 5" TYPE II AGGREGATE BASE) PER CCAUSD NO. 234
24. INSTALL SOLID GROUTED RIP RAP W/ 6" TYPE II GRANULAR BEDDING WITH FILTER FABRIC D50=12", T=24"

DRAINAGE		PRIVATE	PUBLIC
1. RIPRAP W/ FILTER FABRIC D50=6", THK=12"	SF	2,050	–
2. 8' WIDE CONCRETE VALLEY GUTTER W/10" TYPE II AGGREGATE BASE	SF	3,372	–
3. 24" CLASS III RCP STORM DRAIN	LF	–	49
4. 30" CLASS III RCP STORM DRAIN	LF	–	189
5. 12.5' TYPE CM2 DROP INLET	EA	–	2
6. 15.0' TYPE CM2 DROP INLET	EA	–	1
7. 60" TYPE III STORM DRAIN MANHOLE	EA	–	1
8. GROUTED RIPRAP W/ FILTER FABRIC D50=12", THK=24"	SF	170	–

FLOOD CERTIFICATION

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

TODD J. STEADHAM, P.E. 15292 DATE

SURVEY NOTE

OWNER RESPONSIBLE TO PROVIDE SURVEY MONUMENTATION AS SHOWN AND TO REPLACE ALL SURVEY MONUMENTATION DAMAGED, DISTURBED, DESTROYED, OR OBSCURED DURING CONSTRUCTION.

ELEVATION NOTE

ADD 2800 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 2801.00) AND 101.0 REPRESENTS 2901.00)

FAST
Call before you UnderGround
1-702-432-5300
FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T.)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DIG OVERHEAD
1-702-227-2929

Call before you Dig
AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY.
Call 811
OR
1-800-227-2600

Westwood
Phone (702) 284-5300
Fax (702) 284-5399
5740 S. Arville Street
Suite 216
Las Vegas, NV 89118
westwoodps.com
Westwood Professional Services, Inc.

NO.	DESCRIPTION	DATE	BY	APP'D DATE	APP

CITY OF LAS VEGAS, NV

CENTURY COMMUNITIES

SKYE CANYON 2.08/ 2.09 PHASE 1
GRADING PLAN VIII

S-12
T-19 S
R 59 E

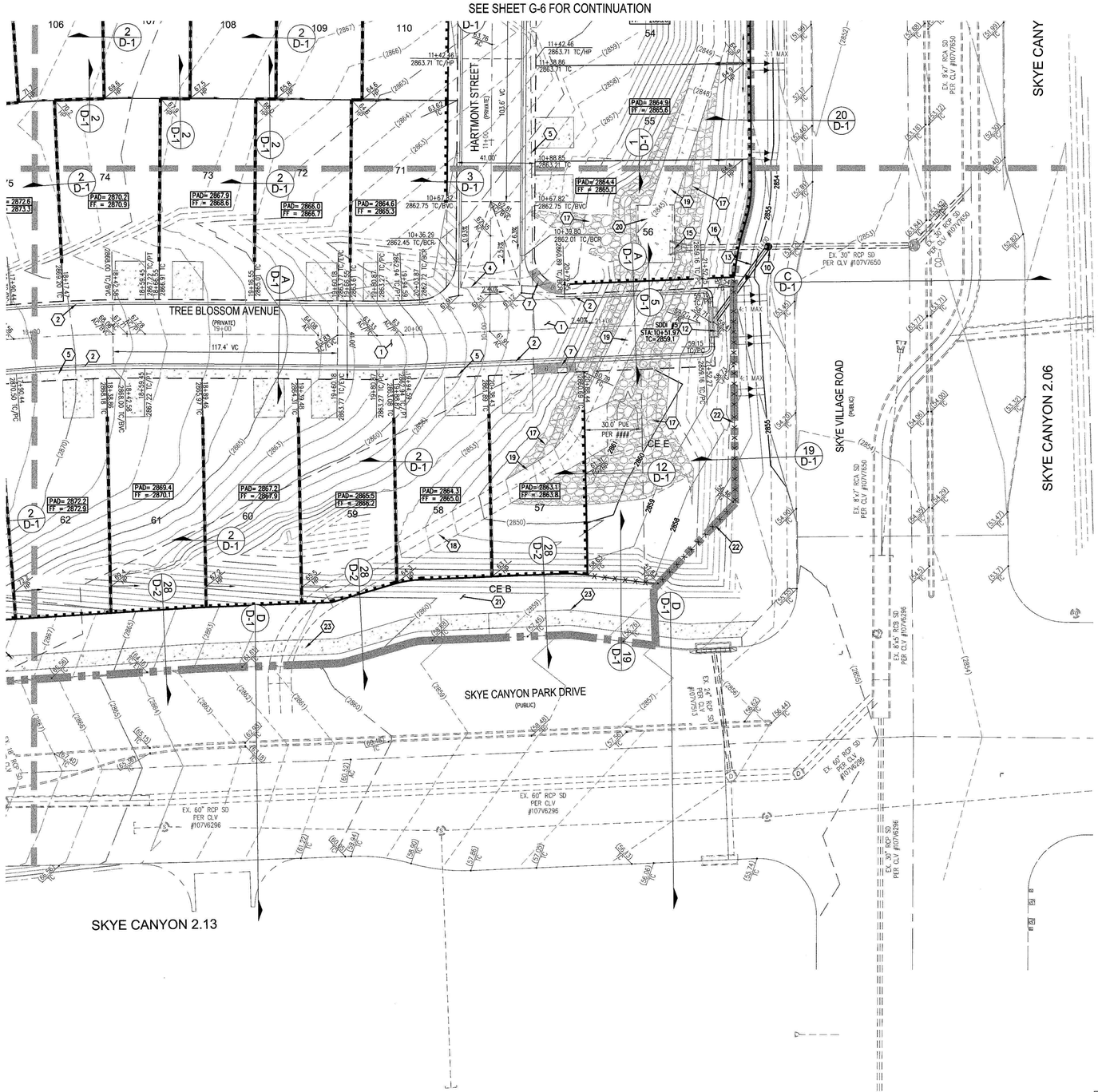
DATE: 02/03/2020
DRAFTER: HIR
DESIGNER: HIR
CHECKED: TJS

PROJECT NO.
OLY1905-000

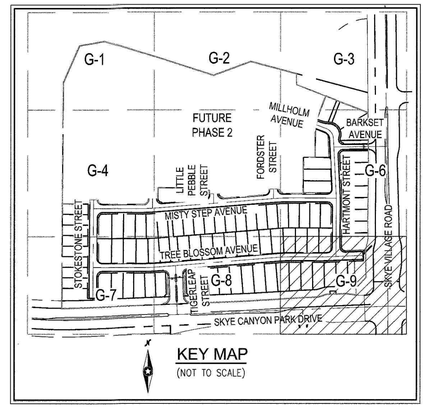
PROFESSIONAL ENGINEER STATE OF NEVADA TODD J. STEADHAM Exp. 06/30/2020 CIVIL No. 15292 — 2/3/20

G-8
SHEET 11 OF 16

J:\com1905-000 skye canyon parcel 2.08\dwg\engrav\xhorse 1\com1905-000 grd-1.dwg 2/3/2020 7:31 AM Loreta Abad



CALL SOUTHWEST GAS AT 702-651-2111 FOR STANDBY WHEN EXCAVATING OVER OR NEAR HIGH PRESSURE GAS LINES



KEY MAP
(NOT TO SCALE)

SOILS REPORT

SOILS REPORT BY SOUTHWEST GEOTECHNICAL
PROJECT NO. 175337 DATED 10/17/18

UPDATED SOILS REPORT BY SOUTHWEST GEOTECHNICAL
PROJECT NO. 175337 DATED 8/28/19

EARTHWORKS

EARTHWORK QUANTITIES (RAW):
CUT= 69,134 CU YDS
FILL= 65,322 CU YDS

EXPORTED MATERIAL TO BE DISPOSED OF AT AN APPROVED LICENSED DISPOSAL FACILITY OR AT A SITE WITH AN APPROVED AND ACTIVE GRADING PERMIT.

DISCLAIMER NOTE

1) EXISTING 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 IN THEIR PROPER LOCATION.

2) FOR ROADWAY WIDENING AND HALF STREET IMPROVEMENTS THE CONTRACTOR SHALL VERIFY CROSS SLOPES FROM EXISTING PAVEMENT SAWCUT LINE TO PROPOSED EDGE OF PAVEMENT OR PROJECTED LIP OF CURB PRIOR TO SUBGRADE PREPARATION AND CONSTRUCTION OF PROPOSED CURB LINE. IF MINIMUM OR MAXIMUM CROSS SLOPES DO NOT MEET AGENCY STANDARDS THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

GRADING NOTES

1. FINAL GRADES ADJACENT TO STRUCTURES SHALL BE IN CONFORMANCE WITH IBC 2018, SECTION 2304.11.2.2
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AND REPORT ALL DISCREPANCIES TO THE ENGINEER.
3. ALL IMPROVEMENTS TO BE PROTECTED FROM EROSION BY SWPPP.
4. MAXIMUM/MINIMUM SLOPES AND MINIMUM STREET SECTIONS NOT TO EXCEED THAT SHOWN ON GEOTECH REPORT.
5. SEE DETAIL SHEET FOR STREET SECTIONS AND DETAILS.
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DRAINAGE

		PRIVATE	PUBLIC
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2. 8' WIDE CONCRETE VALLEY GUTTER W/10" TYPE II AGGREGATE BASE	SF	3,372	–
3. 24" CLASS III RCP STORM DRAIN	LF	–	49
4. 30" CLASS III RCP STORM DRAIN	LF	–	189
5. 12.5' TYPE CM2 DROP INLET	EA	–	2
6. 15.0' TYPE CM2 DROP INLET	EA	–	1
7. 60" TYPE III STORM DRAIN MANHOLE	EA	–	1
8. GROUTED RIPRAP W/ FILTER FABRIC D50=12", THK=24"	SF	170	–

FLOOD CERTIFICATION

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TODD J. STEADHAM, P.E. 15292 DATE

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ELEVATION NOTE

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CALL BEFORE YOU DO OVERHEAD
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Call before you Dig
AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY.
Call 811
OR
1-800-227-2600

Westwood
Phone (702) 284-5300
Fax (702) 284-5399
5740 S. Arville Street
Suite 216
Las Vegas, NV 89118
westwoodps.com
Westwood Professional Services, Inc.

NO.	DESCRIPTION	DATE	BY	APP DATE	APP

CITY OF LAS VEGAS, NV

CENTURY COMMUNITIES

SKYE CANYON 2.08/ 2.09 PHASE 1
GRADING PLAN IX

S:12 T:19 S R:59 E

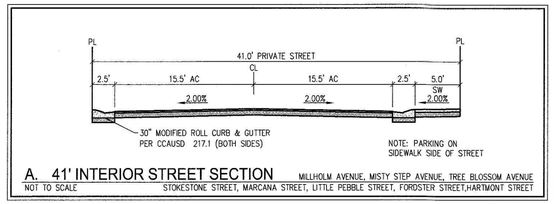
DATE: 02/03/2020
DRAFTER: HIR
DESIGNER: HIR
CHECKED: TJS

PROJECT NO.
OLY1905-000

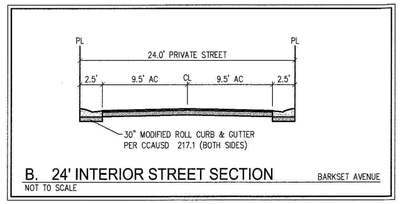
PROFESSIONAL ENGINEER – STATE OF NEVADA
TODD J. STEADHAM
Exp. 06/30/2020
CIVIL
No. 15292
3/3/20

G-9
SHEET 12 OF 16

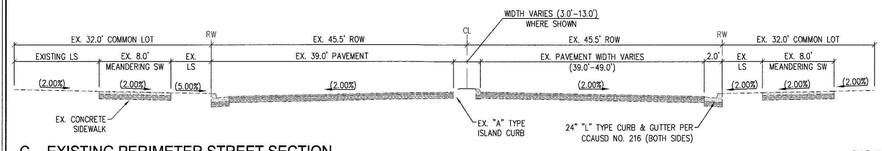
E:\ces1905-000 skye canyon parcel 2.08\dwg\mgrov\shose 1\ces1905-000 grd-1.dwg 2/3/2020 7:31 AM Lokelo Abod



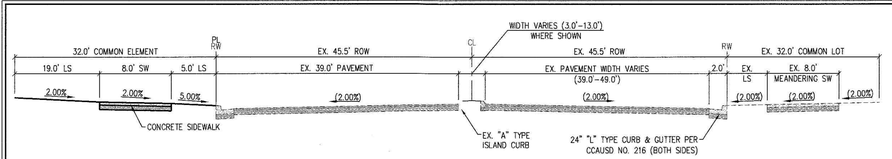
A. 41' INTERIOR STREET SECTION — MILLHOLM AVENUE, MISTY STEP AVENUE, TREE BLOSSOM AVENUE
NOT TO SCALE — STOKESTONE STREET, MARCANA STREET, LITTLE PEBBLE STREET, FORDSTER STREET,HARTMONT STREET



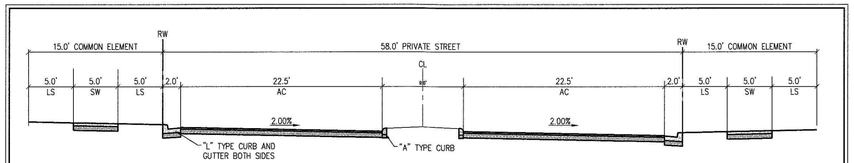
B. 24' INTERIOR STREET SECTION — BARKSET AVENUE
NOT TO SCALE



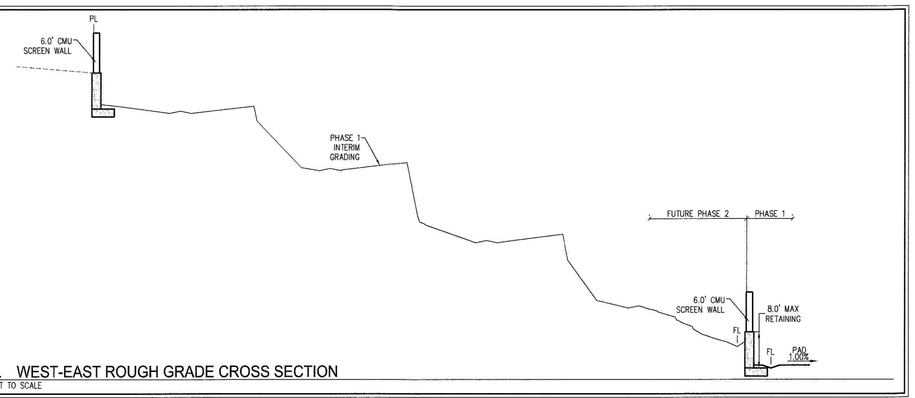
C. EXISTING PERIMETER STREET SECTION — SKYE VILLAGE ROAD
NOT TO SCALE



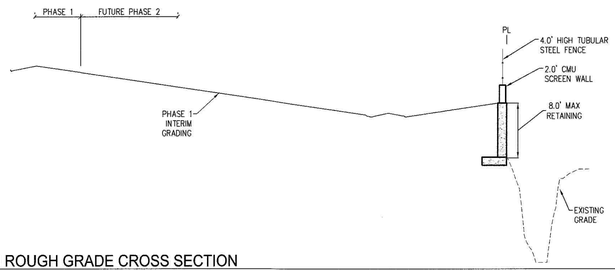
D. EXISTING PERIMETER STREET SECTION — SKYE CANYON PARK DRIVE
NOT TO SCALE



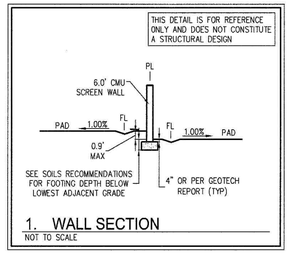
E. ENTRY STREET SECTION — TIGERLEAP STREET
NOT TO SCALE



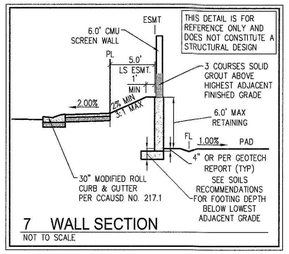
F. WEST-EAST ROUGH GRADE CROSS SECTION
NOT TO SCALE



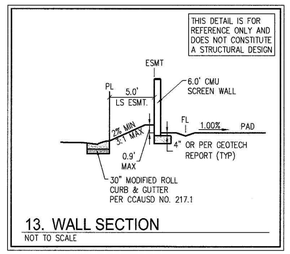
G. NORTH-SOUTH ROUGH GRADE CROSS SECTION
NOT TO SCALE



1. WALL SECTION
NOT TO SCALE



7 WALL SECTION
NOT TO SCALE



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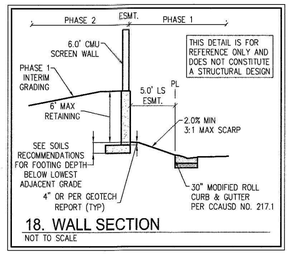

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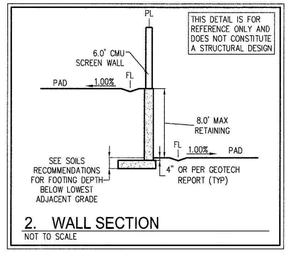

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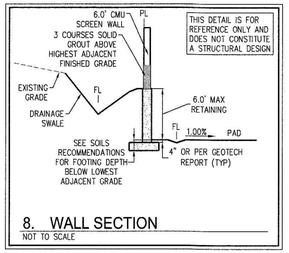

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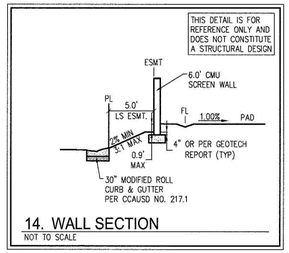

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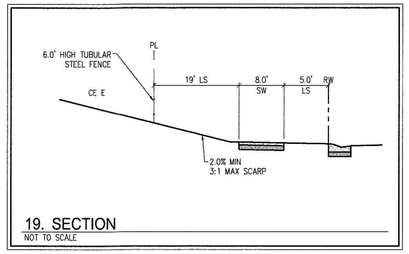

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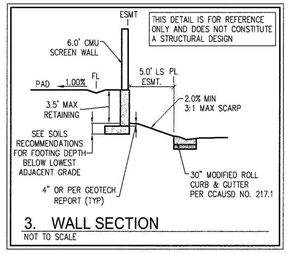

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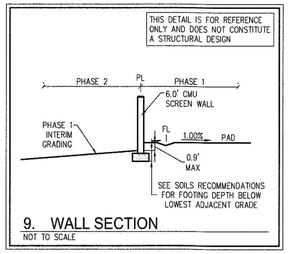

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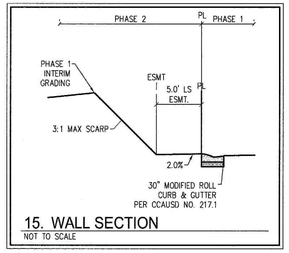

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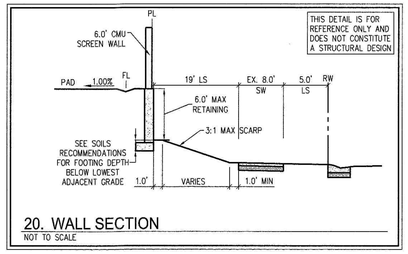

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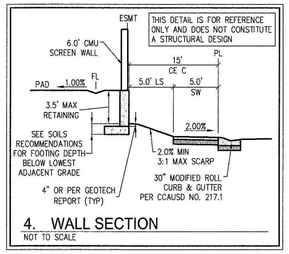

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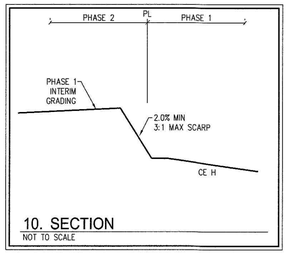

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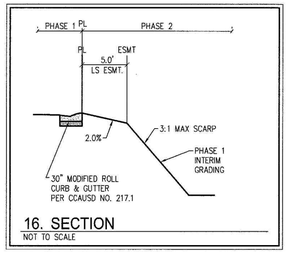

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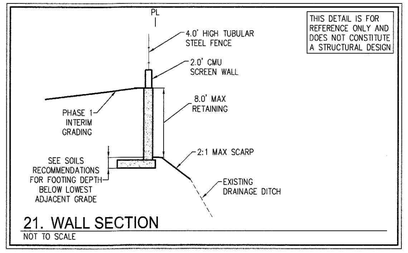

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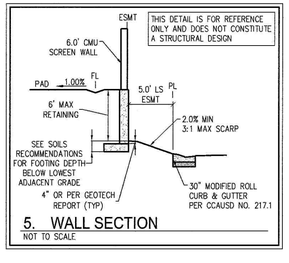

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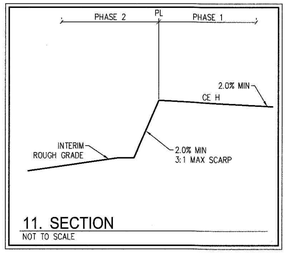

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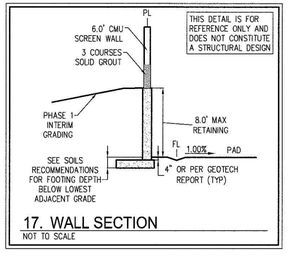

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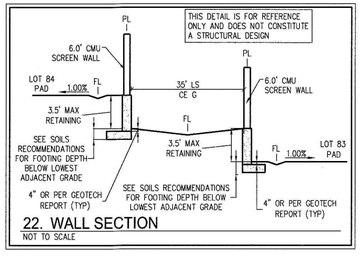

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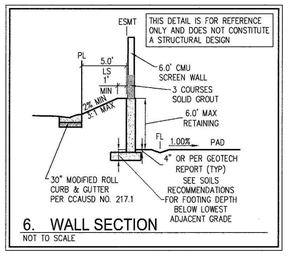

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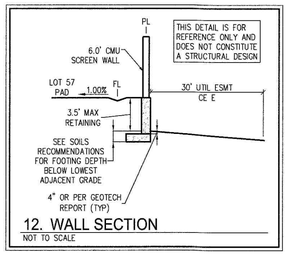


12. WALL SECTION
NOT TO SCALE

WALL FOOTING NOTES:

1. PROVIDE MINIMUM 4" COVER FROM TOP OF FOOTING TO LOWEST ADJACENT FINISHED GRADE OR PER GEOTECH REPORT RECOMMENDATION.
2. SEE GEOTECH REPORT RECOMMENDATIONS FOR THE FOOTING DEPTH FROM THE LOWEST ADJACENT GRADE TO BOTTOM OF FOOTING

Westwood
Phone (702) 284-5300
Fax (702) 284-5399
5740 S. Arville Street
Suite 216
Las Vegas, NV 89118
westwoodps.com
Westwood Professional Services, Inc.

NO.	DESCRIPTION	DATE	BY	APP.	APP. DATE

CITY OF LAS VEGAS, NV

CENTURY COMMUNITIES

SKYE CANYON 2.08/ 2.09 PHASE 1
DETAIL SHEET I

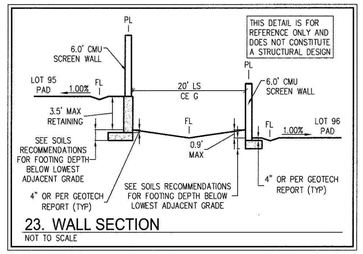
S:12
T:19 S
R:59 E

DATE: 02/03/2020
DRAFTER: HIR
DESIGNER: HIR
CHECKED: TJS
PROJECT NO.
OLY1905-000

PROFESSIONAL ENGINEER STATE OF NEVADA
TODD J. STEADHAM
Exp. 06/30/2020
CIVIL
No. 15291
4/15/20

D-1
SHEET 13 OF 16

I:\oly1905-000 skye canyon parcel 2.08\dwg\engrcv\shcvs 1\oly1905-000 dtl-1.dwg 2/3/2020 7:31 AM Lakelin Abad



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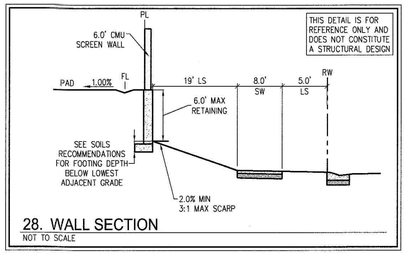

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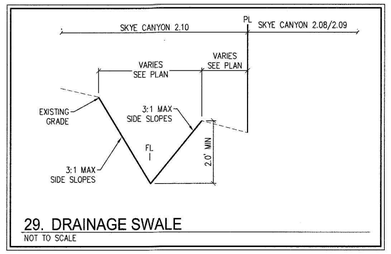

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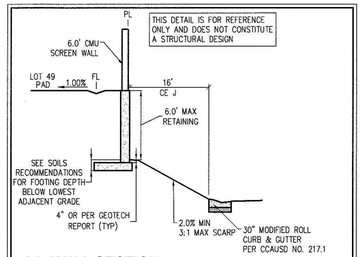
NOT TO SCALE



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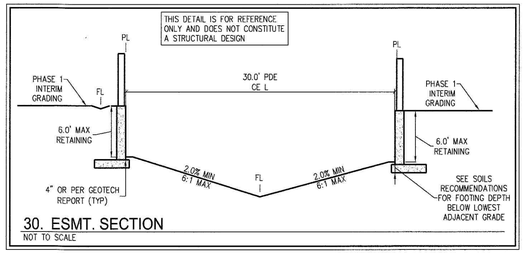

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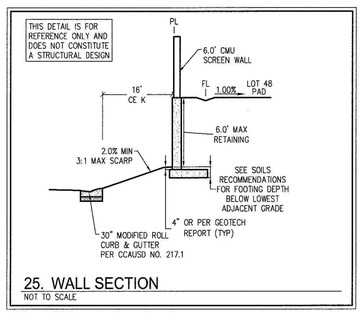
NOT TO SCALE



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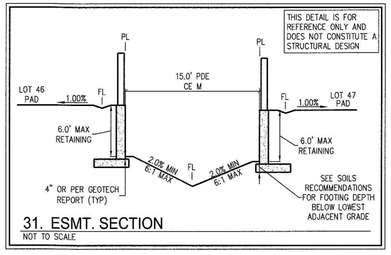

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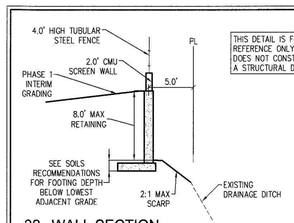
NOT TO SCALE

26. WALL SECTION
NOT TO SCALE

27. WALL SECTION
NOT TO SCALE



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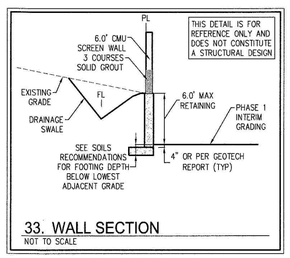

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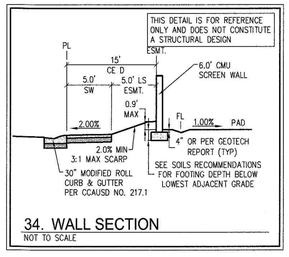

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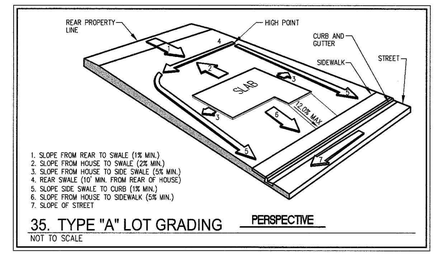
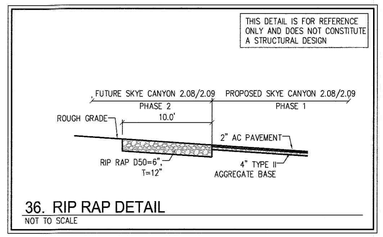
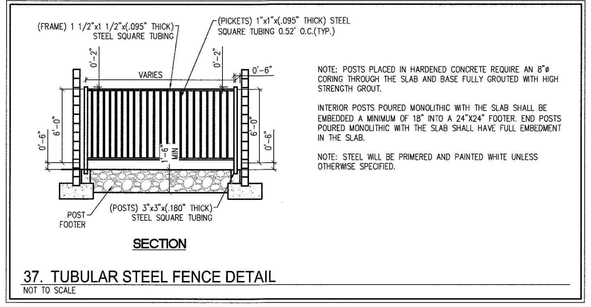


PERSPECTIVE

35. TYPE "A" LOT GRADING
NOT TO SCALE



36. RIP RAP DETAIL
NOT TO SCALE



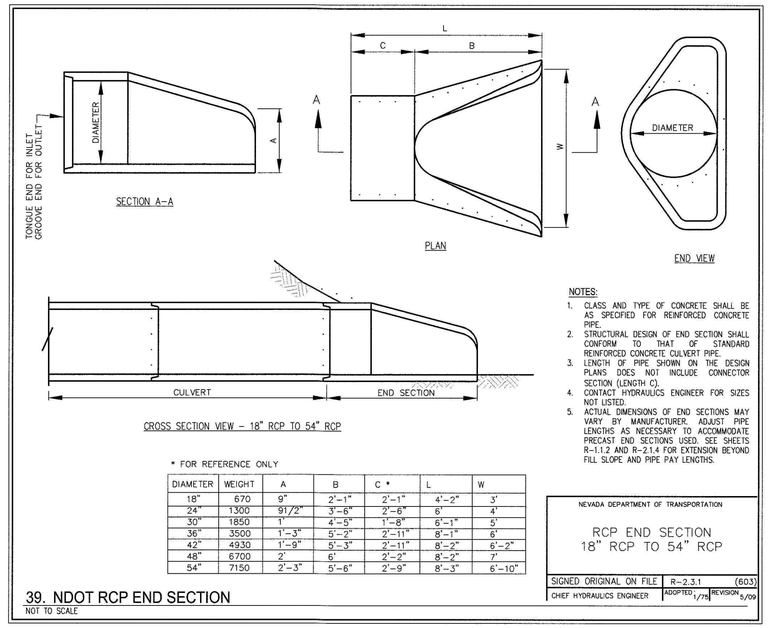
SECTION

NOTE: POSTS PLACED IN HARDENED CONCRETE REQUIRE AN 8"ø CORING THROUGH THE SLAB AND BASE FULLY GROUTED WITH HIGH STRENGTH GROUT.

INTERIOR POSTS POURED MONOLITHIC WITH THE SLAB SHALL BE EMBEDDED A MINIMUM OF 18" INTO A 24"X24" FOOTER. END POSTS POURED MONOLITHIC WITH THE SLAB SHALL HAVE FULL EMBEDMENT IN THE SLAB.

NOTE: STEEL WILL BE PRIMERED AND PAINTED WHITE UNLESS OTHERWISE SPECIFIED.

37. TUBULAR STEEL FENCE DETAIL
NOT TO SCALE



CROSS SECTION VIEW – 18" RCP TO 54" RCP

* FOR REFERENCE ONLY

DIAMETER	WEIGHT	A	B	C *	L	W
18"	670	9"	2'-1"	2'-1"	4'-2"	3'
24"	1300	91/2"	3'-6"	2'-6"	6'	4'
30"	1850	1'	4'-5"	1'-8"	6'-1"	5'
36"	3500	1'-3"	5'-2"	2'-11"	8'-1"	6'
42"	4930	1'-9"	5'-3"	2'-11"	8'-2"	6'-2"
48"	6700	2'	6'	2'-2"	8'-2"	7'
54"	7150	2'-3"	5'-6"	2'-9"	8'-3"	6'-10"

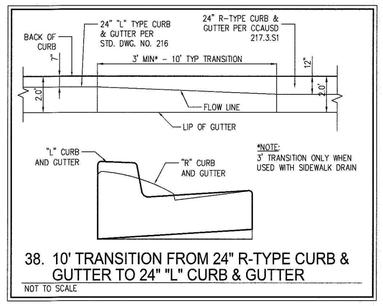
NOTES:
1. CLASS AND TYPE OF CONCRETE SHALL BE AS SPECIFIED FOR REINFORCED CONCRETE PIPE.
2. STRUCTURAL DESIGN OF END SECTION SHALL CONFORM TO THAT OF STANDARD REINFORCED CONCRETE CULVERT PIPE.
3. LENGTH OF PIPE SHOWN ON THE DESIGN PLANS DOES NOT INCLUDE CONNECTOR SECTION (LENGTH C).
4. CONTACT HYDRAULICS ENGINEER FOR SIZES NOT LISTED.
5. ACTUAL DIMENSIONS OF END SECTIONS MAY VARY BY MANUFACTURER. ADJUST PIPE LENGTHS AS NECESSARY TO ACCOMMODATE PRECAST END SECTIONS USED. SEE SHEETS R-1.1.2 AND R-2.1.4 FOR EXTENSION BEYOND FILL SLOPE AND PIPE PAY LENGTHS.

NEVADA DEPARTMENT OF TRANSPORTATION

RCP END SECTION
18" RCP TO 54" RCP

SIGNED ORIGINAL ON FILE	R-2.3.1	(603)
CHIEF HYDRAULICS ENGINEER	ADOPTED 1/75	REVISION 5/09

39. NDOT RCP END SECTION
NOT TO SCALE



*NOTE:
3' TRANSITION ONLY WHEN USED WITH SIDEWALK DRAIN

38. 10' TRANSITION FROM 24" R-TYPE CURB & GUTTER TO 24" "L" CURB & GUTTER
NOT TO SCALE

WALL FOOTING NOTES:
1. PROVIDE MINIMUM 4" COVER FROM TOP OF FOOTING TO LOWEST ADJACENT FINISHED GRADE OR PER GEOTECH REPORT RECOMMENDATION
2. SEE GEOTECH REPORT RECOMMENDATIONS FOR THE FOOTING DEPTH FROM THE LOWEST ADJACENT GRADE TO BOTTOM OF FOOTING

Westwood
Phone (702) 284-5300
Fax (702) 284-5399
5740 S. Arville Street
Suite 216
Las Vegas, NV 89118
westwoodps.com
Westwood Professional Services, Inc.

NO.	DESCRIPTION	DATE	BY	APP.	APP. DATE

CITY OF LAS VEGAS, NV

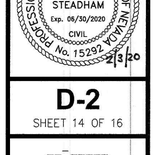
CENTURY COMMUNITIES

SKYE CANYON 2.08/ 2.09 PHASE 1

DETAIL SHEET II

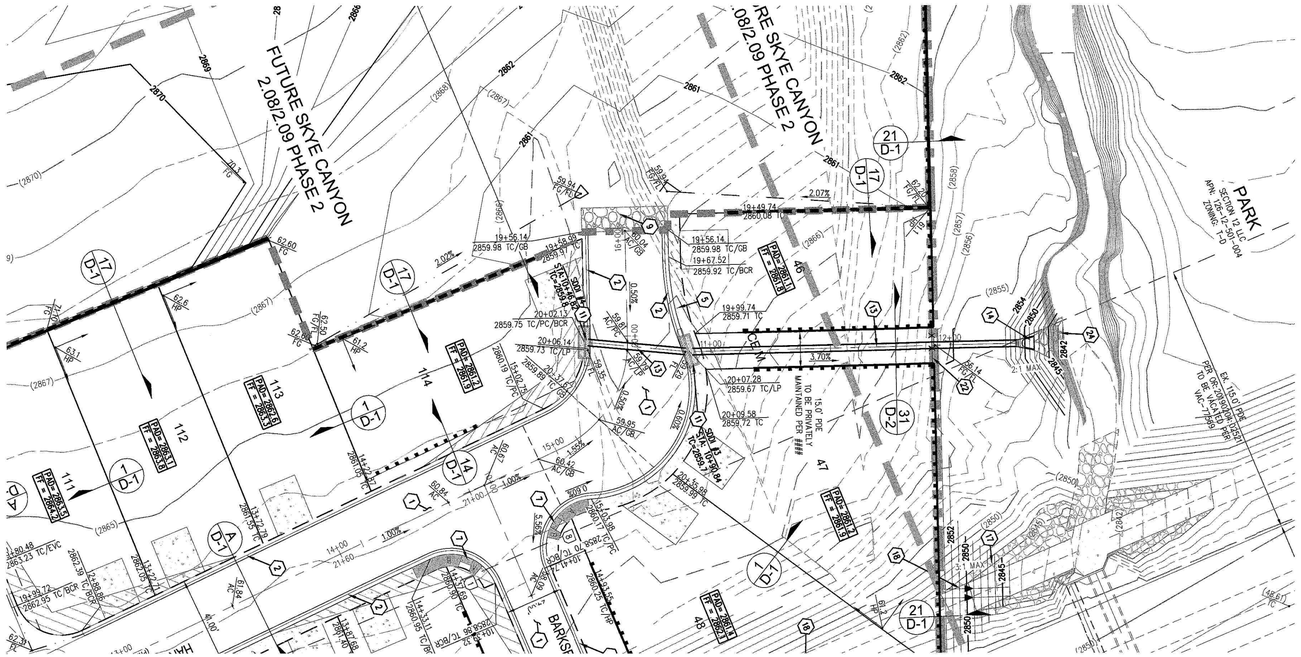
S 12
T 19 S
R 59 E

DATE: 02/03/2020
DRAFTER: HIR
DESIGNER: HIR
CHECKED: TJS
PROJECT NO.
OLY1905-000

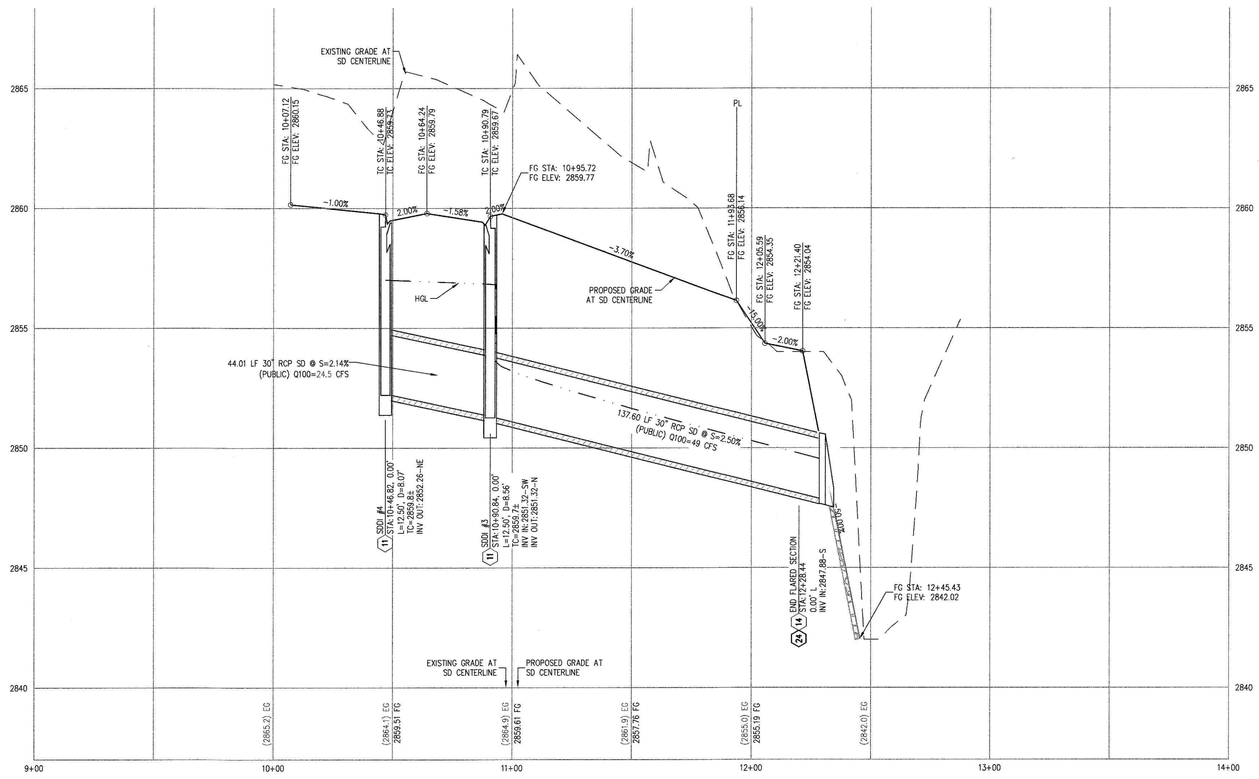


D-2
SHEET 14 OF 16

J:\Ccen1905-000 skye canyon parcel 2.08\dwg\mprov\sphase 1\ccen1905-000 dtl-1.dwg 2/3/2020 7:32 AM Lokelo Abad



SD NORTH EAST - PLAN VIEW
PUBLIC



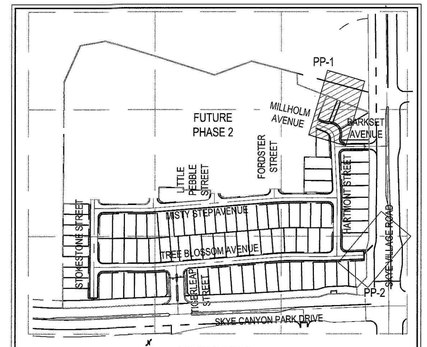
SD NORTH EAST - PROFILE VIEW
HORIZ: 1" = 30'
VERT: 1" = 3'

SCALE – 1"=30' (0, 30, 60 FEET)

CALL SOUTHWEST GAS AT 702-651-2111 FOR STANDBY WHEN EXCAVATING OVER OR NEAR HIGH PRESSURE GAS LINES

SIDEWALK RAMP TABLE

RAMP NUMBER	GRADE (%) "B" TO "A"	"A" (FT) MIN.	"B" (FT) MIN.
1	-6 TO -5.01	4.5	21.5
2	-5 TO -4.01	4.5	15.0
3	-4 TO -3.01	4.5	12.0
4	-3 TO -2.01	4.5	9.5
5	-2 TO 2	8.0	8.0
6	2.01 TO 3	9.5	4.5
7	3.01 TO 4	12.0	4.5
8	4.01 TO 5	15.0	4.5
9	5.01 TO 6	21.5	4.5



KEY MAP
(NOT TO SCALE)

DISCLAIMER NOTE

1) EXISTING 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 IN THEIR PROPER LOCATION.

2) FOR ROADWAY WIDENING AND HALF STREET IMPROVEMENTS THE CONTRACTOR SHALL VERIFY CROSS SLOPES FROM EXISTING PAVEMENT SAWCUT LINE TO PROPOSED EDGE OF PAVEMENT OR PROJECTED LIP OF CURB PRIOR TO SUBGRADE PREPARATION AND CONSTRUCTION OF PROPOSED CURB LINE. IF MINIMUM OR MAXIMUM CROSS SLOPES DO NOT MEET AGENCY STANDARDS THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

GRADING NOTES

1. FINAL GRADES ADJACENT TO STRUCTURES SHALL BE IN CONFORMANCE WITH IBC 2018, SECTION 2304.11.2.2
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AND REPORT ALL DISCREPANCIES TO THE ENGINEER.
3. ALL IMPROVEMENTS TO BE PROTECTED FROM EROSION BY SWPPP.
4. MAXIMUM/MINIMUM SLOPES AND MINIMUM STREET SECTIONS NOT TO EXCEED THAT SHOWN ON GEOTECH REPORT.
5. SEE DETAIL SHEET FOR STREET SECTIONS AND DETAILS.
6. ALL PUBLIC AND PRIVATE DRAINAGE IMPROVEMENTS TO BE BONDED FOR AND INSPECTED.
7. CONSTRUCTION OF BLOCK WALLS REQUIRES A SEPARATE BUILDING PERMIT AND APPROVAL BY THE CITY OF LAS VEGAS BUILDING DEPARTMENT.
8. CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF EXISTING UTILITY STRUCTURES AND FACILITIES AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. CONTRACTOR TO PROTECT IN PLACE DURING CONSTRUCTION. ENGINEER/OWNER SHALL BE NOTIFIED OF PRIOR DAMAGE TO EXISTING FACILITIES PRIOR TO CONSTRUCTION. CONTRACTOR WILL BE RESPONSIBLE FOR REPAIR/REPLEPING FACILITIES IF ENGINEER/OWNER IS NOT NOTIFIED OF EXISTING DAMAGE PRIOR TO CONSTRUCTION COMMENCING.
9. 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 EXIST) WITHIN THE SIGHT VISIBILITY ZONES.

GRADING NOTES

1. CONSTRUCT 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
2. CONSTRUCT 30" MODIFIED ROLL CURB AND GUTTER PER CCAUSD NO. 217.1
3. CONSTRUCT 10' TRANSITION FROM ROLLED CURB TO "L" TYPE CURB PER DETAIL 38 SHEET D-2
4. CONSTRUCT 8' WIDE CROSS GUTTER PER CCAUSD NO. 228
5. CONSTRUCT 5' WIDE CONCRETE SIDEWALK (5" THICK WITH 5" TYPE II AGGREGATE BASE) PER CCAUSD NO. 234
6. CONSTRUCT 5' WIDE CONCRETE SIDEWALK (4" THICK WITH 5" TYPE II AGGREGATE BASE) PER CCAUSD NO. 234
7. CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES PER CCAUSD NO. 235, CASE I
8. CONSTRUCT "A" TYPE CURB PER CCAUSD NO. 219
9. INSTALL RIP RAP W/ 6" TYPE II GRANULAR BEDDING WITH FILTER FABRIC D50=6", T=12"
10. INSTALL 60" TYPE III STORM DRAIN MANHOLE PER CCAUSD 406
11. INSTALL 12.5' TYPE "CM2" DROP INLET PER CCAUSD NO. 412.1 AND STORM DRAIN WATER QUALITY MANAGEMENT STAMP PER CCAUSD NO. 421
12. INSTALL 15.0' TYPE "CM2" DROP INLET PER CCAUSD NO. 412.1 AND STORM DRAIN WATER QUALITY MANAGEMENT STAMP PER CCAUSD NO. 421
13. INSTALL 24" CLASS III RCP STORM DRAIN
14. INSTALL RCP SD END SECTION PER DETAIL 39 ON SHEET D-2 (NDOT STD DWG. R-2.31)
15. REMOVE EXISTING STORM DRAIN END SECTION
16. REMOVE 43 LF EXISTING STORM DRAIN PIPE
17. REMOVE EXISTING RIP-RAP
18. REMOVE EXISTING 12' TYPE II MAINTENANCE ACCESS PATH
19. REMOVE EXISTING 12' CONCRETE ACCESS ROAD
20. REMOVE EXISTING CONCRETE PAD WITH 3' CUTOFF WALL
21. LANDSCAPING TO BE DESIGNED AND MAINTAINED BY MASTER DEVELOPER HOA
22. INSTALL 6' HIGH TUBULAR STEEL FENCE PER CCAUSD NO. 425.51 AND DETAIL 37 ON SHEET D-2
23. CONSTRUCT 8' WIDE CONCRETE SIDEWALK (4" THICK WITH 5" TYPE II AGGREGATE BASE) PER CCAUSD NO. 234
24. INSTALL SOLID GROUTED RIP RAP W/ 6" TYPE II GRANULAR BEDDING WITH FILTER FABRIC D50=12", T=24"

SURVEY NOTE

OWNER RESPONSIBLE TO PROVIDE SURVEY MONUMENTATION AS SHOWN AND TO REPLACE ALL SURVEY MONUMENTATION DAMAGED, DISTURBED, DESTROYED, OR OBSCURED DURING CONSTRUCTION.

FLOOD ZONE

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE X (UNSHADED) AS DEPICTED ON FLOOD INSURANCE RATE MAP (FIRM) PANEL 32003C1750E, DATED SEPTEMBER 27, 2002. A ZONE X (UNSHADED) IS DESCRIBED AS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN.

ELEVATION NOTE

ADD 2800 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 2801.00) AND 101.0 REPRESENTS 2901.00)

FAST
Call before you UnderGround
1-702-432-5300
FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T.)

AVOID HITTING OVERHEAD POWER LINES, IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

Call before you Dig
AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY.
Call 811
OR
1-800-227-2600

Westwood
Phone (702) 284-5300
Fax (702) 284-5399
5740 S. Arville Street
Suite 216
Las Vegas, NV 89118
westwoodps.com
Westwood Professional Services, Inc.

NO.	DESCRIPTION	DATE	BY	APP'D	APP DATE

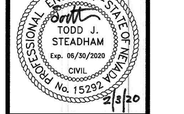
CITY OF LAS VEGAS, NV

CENTURY COMMUNITIES

SKYE CANYON 2.08/ 2.09 PHASE 1
PLAN AND PROFILE SD NORTH EAST

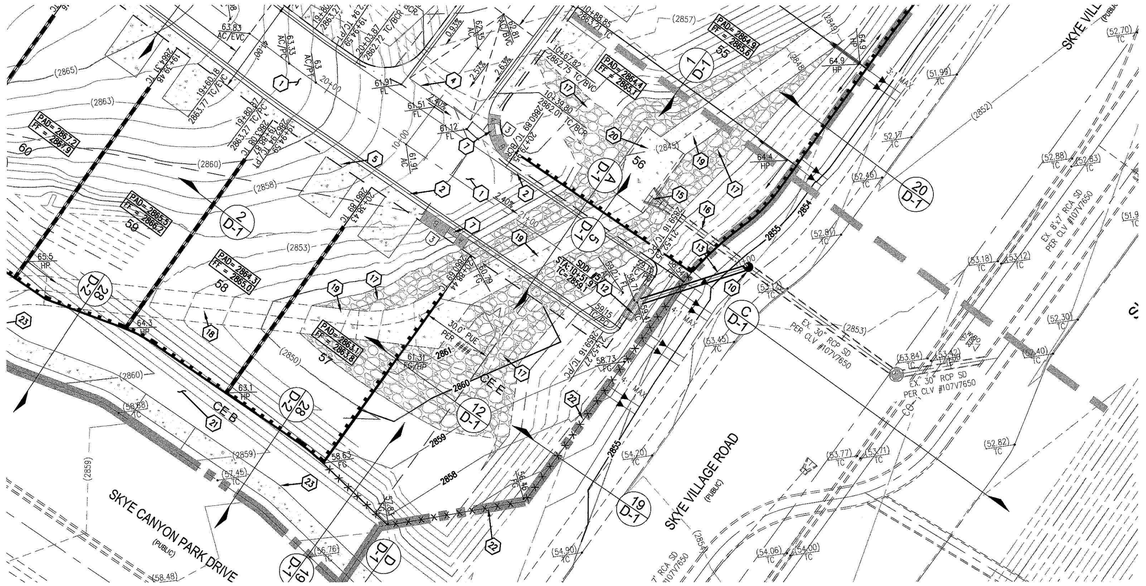
S-12
T-19 S
R-59 E

DATE: 02/03/2020
DRAFTER: HIR
DESIGNER: HIR
CHECKED: TJS
PROJECT NO.
OLY1905-000



PP-1
SHEET 15 OF 16

J:\ces1905-000 skye canyon parcel 2.08\dwg\mono\Vistas 1\ces1905-000 pp-1.dwg 2/3/2020 7:33 AM Lakela Abot


SKYE CANYON PARK DRIVE
(PUBLIC)
SKYE VILLAGE ROAD
(PUBLIC)
SKYE VILL
(PUBLIC)
CE A
CE B
CE E
CE F
PAD = 2863.5
TF = 2866.5
PAD = 2863.5
TF = 2866.5
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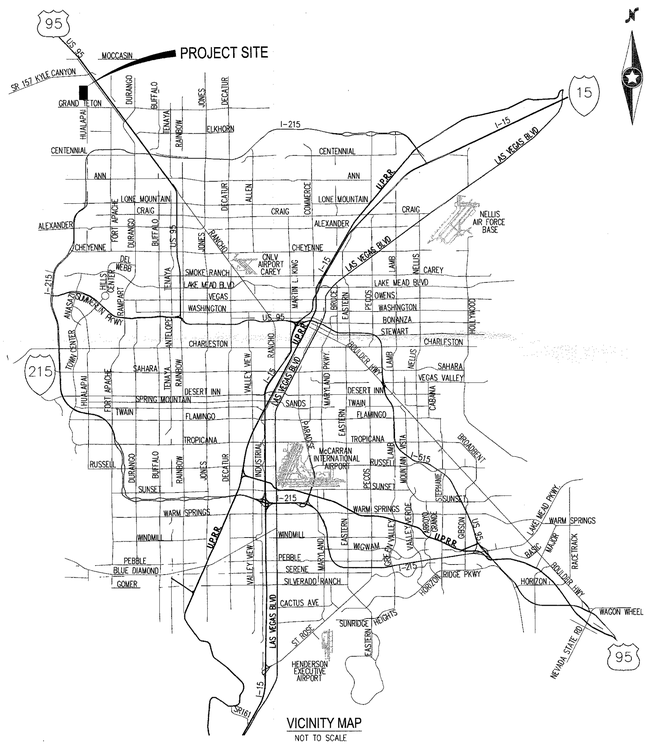
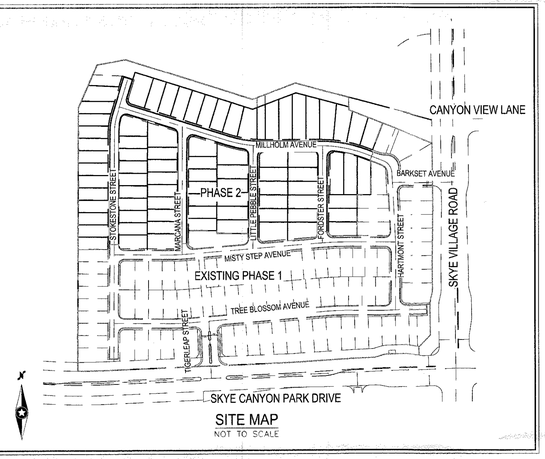
TF = 2866.5
PAD = 2863.5
TF = 2866.5
PAD = 2863.5
TF = 2866.5
EX. 30" RCP SD PER CLV #10717650
EX. 24" RCP SD PER CLV #10717650
EX. 60" RCP SD PER CLV #10717650
7 RCA SD #10717650
EX. 30" RCP SD PER CLV #10717650
EX. 24" RCP SD PER CLV





CENTURY COMMUNITIES

IMPROVEMENT PLANS FOR

SKYE CANYON 2.08 /2.09 PHASE 2

CITY OF LAS VEGAS, NEVADA
RESIDENTIAL SUBDIVISION
APN:126-12-501-004

SHEET INDEX		
SHEET #	DESCRIPTION	TITLE
1	C-1	COVER SHEET
2	C-2	STANDARD NOTES
3	C-3	QUANTITIES AND LEGEND
4	G-1	GRADING PLAN I
5	G-2	GRADING PLAN II
6	G-3	GRADING PLAN III
7	G-4	GRADING PLAN IV
8	G-5	GRADING PLAN V
9	G-6	GRADING PLAN VI
10	D-1	DETAIL SHEET I
11	D-2	DETAIL SHEET II
12	PP-1	PLAN AND PROFILE SD NORTH

APPROVALS

ACTING CITY ENGINEER-ROSA CORTEZ PE, #17505 DATE

APPROVAL OF THESE PLANS BY THE CITY ENGINEER IS LIMITED TO THOSE IMPROVEMENTS CONSTRUCTED IN THE DEDICATED OF RIGHT-OF-WAY, AND/OR DEDICATED EASEMENTS. THIS APPROVAL DOES NOT AUTHORIZE CONSTRUCTION OF ANY IMPROVEMENTS THAT DEVIATE FROM ADOPTED STANDARDS AND/OR SPECIFICATIONS EXCEPT THOSE SPECIALLY LISTED UNDER DEVIATIONS FORM STANDARDS. THE ENGINEER SHALL RESOLVE ANY DEVIATION OTHER THAN THOSE LISTED IN DEVIATIONS FROM STANDARDS IN FAVOR OF THE UNIFORM STANDARD DRAWINGS AND SPECIFICATIONS, CLARK COUNTY AREA, NEVADA.

LAS VEGAS FIRE AND RESCUE DATE

CITY OF LAS VEGAS - DATE
PLANNING DEPARTMENT

THIS PLAN MEETS THE APPLICABLE STANDARDS OF THE PLANNING DEPARTMENT.

CENTRAL TELEPHONE CO. DBA CENTURYLINK DATE

THE AFFIXED CENTURYLINK APPROVAL DOES NOT ASSUME OR GUARANTEE LIABILITY FOR KNOWN OR UNKNOWN CONFLICTS WITH EXISTING OR PROPOSED IMPROVEMENTS. RESOLUTION OF ANY CONFLICT WILL BE ACCOMPLISHED PURSUANT TO LOCAL ORDINANCES, NEVADA REVISED STATUES AND / OR PUBLIC UTILITY COMMISSION RULES AND REGULATIONS.

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. ##### FIRST APPROVED DATE:
LVVWD APPROVED FIRE FLOW 1,500 GPM AT 20 PSI RESIDUAL
MAXIMUM AVAILABLE FIRE SPRINKLER FLOW 20 GPM
SHEETS: ADD FIELD

NV ENERGY DATE

NV ENERGY ACKNOWLEDGES THAT WE HAVE RECEIVED YOUR PLANS AND WILL PROVIDE SERVICE TO ALL ELECTRICAL NEEDS ASSOCIATED WITH THIS PROJECT. NV ENERGY RESERVES THE RIGHT TO ADDRESS ANY EXISTING OR FUTURE CONFLICTS ONCE THE FINAL DESIGN IS COMPLETED. THE NEW SERVICE AND THE RESOLUTION OF ANY CONFLICTS WILL BE ACCOMPLISHED PURSUANT TO THE NEVADA PUBLIC UTILITY COMMISSION'S RULES AND REGULATIONS.

SOUTHWEST GAS CORPORATION DATE

COX COMMUNICATIONS LAS VEGAS, INC. DATE

Westwood
5740 S. Arville Street
Suite 216
Las Vegas, NV 89118
Phone (702) 284-5300
Fax (702) 284-5399
westwoodps.com
Westwood Professional Services, Inc.

NO.	DESCRIPTION	DATE	BY	APP	APP DATE

CITY OF LAS VEGAS, NV

CENTURY COMMUNITIES

SKYE CANYON 2.08 /2.09 PHASE 2
COVER SHEET

S 12
T 19
R 59 E

DATE: 02/03/2020
DRAFTER: HIR
DESIGNER: HIR
CHECKED: TJS
PROJECT NO.
CEN1905-000

PROFESSIONAL ENGINEER – STATE OF NEVADA
TODD J. STEADHAM
Exp. 06/30/2020
CIVIL
No. 15292
2/3/20

C-1
SHEET 1 OF 12

OWNER/DEVELOPER

CENTURY COMMUNITIES OF NEVADA, LLC
6345 SOUTH JONES BLVD.
LAS VEGAS, NV 89118
PH: (702) 873-5338
CONTACT: RICK BARRON

ENGINEER

WESTWOOD PROFESSIONAL SERVICES, INC.
5740 S. ARVILLE STREET, SUITE 216
LAS VEGAS, NV 89118
PH: (702) 284-5300
FX: (702) 284-5399
CONTACT: TODD STEADHAM

LEGAL DESCRIPTION

A PORTION OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST, M.D.M, CITY OF LAS VEGAS, CLARK COUNTY, NEVADA

BENCHMARK

BENCHMARK NUMBER: USDA1934

U.S. DEPARTMENT OF AGRICULTURE BRASS DISC AT THE SOUTHWEST CORNER OF U.S. 95 AND KYLE CANYON ROAD.

ELEVATION = 2817.61 FEET, 858.81 METERS
N.A.V.D. 88 DATUM

PER THE CITY OF LAS VEGAS VERTICAL CONTROL WEBSITE

BASIS OF BEARINGS

SOUTH 00°34'18" EAST, BEING THE BEARING OF THE EAST LINE OF THE NORTHEAST QUARTER (NE1/4) OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST, M.DM., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF IN BOOK 157, PAGE 41 OF PLATS IN THE CLARK COUNTY RECORDER'S OFFICE, NEVADA.

FEMA FLOOD ZONE INFORMATION

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE 'X' (AREA OUTSIDE THE 500 YEAR FLOODPLAIN), PER THE FEMA FIRM PANELS 32003C1750E DATED SEPTEMBER 27, 2002

PROJECT INFORMATION - OVERALL

ACREAGE (GROSS):	= 29.59± AC
DENSITY (LOTS/NET ACRE):	= 5.5 DU/NET AC
ZONING:	= T-D
TOTAL NO. OF RESIDENTIAL LOTS	= 164
TOTAL NO. OF COMMON ELEMENTS *	= 11
MINIMUM LOT SIZE	= 4,711 SF± (LOT 01)
MAXIMUM LOT SIZE	= 9,735 SF± (LOT 48)
PROVIDED OPEN SPACE	= 114,447 SF±

EARTHWORK SUMMARY (UNADJUSTED)

CUT	72,786 CY.
FILL	76,014 CY.
NET	3,228 CY. (FILL)

PROJECT INFORMATION - PHASE 2

ACREAGE (GROSS):	= 14.02 AC
DENSITY (LOTS/NET ACRE):	= 5.7 DU/NET AC
ZONING:	= T-D
TOTAL NO. OF RESIDENTIAL LOTS	= 80
TOTAL NO. OF COMMON ELEMENTS *	= 1
MINIMUM LOT SIZE	= 4,725 SF± (LOT 140)
MAXIMUM LOT SIZE	= 8,428 SF± (LOT 117)
PROVIDED OPEN SPACE	= 43,763 SF±

EARTHWORK SUMMARY (UNADJUSTED)

CUT	13,803 CY.
FILL	16,150 CY.
NET	2,347 CY. (FILL)

DEVIATIONS FROM STANDARDS

NONE

SWPPP NOTE

NOTE: ALL LAND SURFACE AREA DISTURBANCES OVER 1 ACRE REQUIRE A STORMWATER DISCHARGE PERMIT ISSUED BY THE NEVADA DIVISION OF ENVIRONMENTAL PROTECTION (NDEP). A PHASED CONSTRUCTION UNIT IN A CONTIGUOUS SUBDIVISION IS CONSIDERED UNDER CONSTRUCTION UNTIL ALL STRIPPED SURFACE AREAS HAVE BEEN COVERED BY PAVING, BUILDING CONSTRUCTION OR PLANTING. A STORMWATER DISCHARGE PERMIT APPLICATION AND ASSOCIATED INFORMATION MAY BE DOWNLOADED FROM THE WEB SITE: HTTP://WWW.STATE.NV.US/BWPC/STORMCH.HTM PROJECTS THAT DISTURB MORE THAN ONE ACRE OF LAND MUST SUBMIT TO NDEP A "NOTICE OF INTENT" FOR INCLUSION UNDER STORMWATER PERMIT NO. NVR100000 ALONG WITH THE APPROPRIATE FILLING FEE.

GEOTECHNICAL ENGINEER

PREPARED BY: SOUTHWEST GEOTECHNICAL
ADDRESS: 5275 ARVILLE ST, SUITE #108, LAS VEGAS, NEVADA 89118
PHONE: (702) 323-6000
PROJECT No. 175337
DATED: 8/28/19

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

FAST
Call before you
UnderGround
1-702-432-5300
FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T.)

Call before you Dig
AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY.
Call 811
OR
1-800-227-2600

J:\cen1905-000 skye canyon parcel 4\08\dwg\improv\phase 2\cen1905-000 cvr-2.dwg 2/3/2020 7:35 AM todds Atodd

STORMWATER RUNOFF MANAGEMENT

(REQUIRED FOR ALL SITES GREATER THAN 1 ACRE (43,560 SQ.FT.))

1. THE OWNER, SITE DEVELOPER, CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL EACH DAY REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO, OR ACCUMULATE IN, THE PUBLIC RIGHTS OF WAYS OF CLARK COUNTY AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE DEVELOPMENT OR CONSTRUCTION PROJECT. SUCH MATERIALS SHALL BE PREVENTED FROM ENTERING THE STORM SEWER SYSTEM.
2. ADDITIONAL CONSTRUCTION SITE DISCHARGE BEST MANAGEMENT PRACTICES MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT MEET THE PERFORMANCE STANDARDS SPECIFIED IN TITLE 24.40 AND THE LAS VEGAS VALLEY CONSTRUCTION SITE BEST MANAGEMENT PRACTICES MANUAL.
3. TEMPORARY OR PERMANENT STABILIZATION PRACTICES WILL BE INSTALLED ON DISTURBED AREAS AS SOON AS PRACTICABLE AND NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. SOME EXCEPTIONS MAY APPLY; REFER TO NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.5.
4. AT A MINIMUM, THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL DISTURBED AREAS, AREAS USED FOR STORAGE OF MATERIALS AND EQUIPMENT THAT ARE EXPOSED TO PRECIPITATION, VEHICLE ENTRANCE AND EXIT LOCATIONS AND ALL BMPS WEEKLY, AND WITHIN 24 HOURS AFTER ANY ACTUAL RAIN EVENT OF 0.5 INCHES OR MORE. THE CONTRACTOR OR HIS AGENT SHALL UPDATE OR MODIFY THE STORMWATER POLLUTION PREVENTION PLAN AS NECESSARY. SOME EXCEPTIONS TO WEEKLY INSPECTIONS MAY APPLY, SUCH AS SUSPENSION OF LAND DISTURBANCE ACTIVITIES. REFER TO NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.12.
5. ACCUMULATED SEDIMENT IN BMPS SHALL BE REMOVED WITHIN SEVEN DAYS AFTER A STORMWATER RUNOFF EVENT OR PRIOR TO THE NEXT ANTICIPATED STORM EVENT, WHICHEVER IS EARLIER. SEDIMENT MUST BE REMOVED WHEN BMP DESIGN CAPACITY HAS BEEN REDUCED BY 50 PERCENT OR MORE.

LEGAL DESCRIPTION

A PORTION OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST,
M.D.M, CITY OF LAS VEGAS, CLARK COUNTY, NEVADA

BENCHMARK

BENCHMARK NUMBER: USDA1934

U.S. DEPARTMENT OF AGRICULTURE BRASS DISC AT THE SOUTHWEST
CORNER OF U.S. 95 AND KYLE CANYON ROAD.

ELEVATION = 2817.61 FEET, 858.81 METERS
N.A.V.D. 88 DATUM

PER THE CITY OF LAS VEGAS VERTICAL CONTROL WEBSITE

BASIS OF BEARINGS

SOUTH 00°34'18" EAST, BEING THE BEARING OF THE EAST LINE OF THE NORTHEAST QUARTER (NE1/4) OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF IN BOOK 157, PAGE 41 OF PLATS IN THE CLARK COUNTY RECORDER'S OFFICE, NEVADA.

SOUTHERN NEVADA - SOUTHWEST GAS CORPORATION GENERAL NOTES

1. IN THE EVENT OF NATURAL GAS EMERGENCIES CALL 911 AND 1-877-860-6020
2. MINIMUM HORIZONTAL AND VERTICAL CLEARANCES BETWEEN NATURAL GAS FACILITIES AND ANY UNDERGROUND UTILITIES AND/OR STRUCTURES, INCLUDING BUT NOT LIMITED TO WATER, SEWER, STORM DRAIN, COMMUNICATIONS, AND ELECTRICAL SHALL BE AT LEAST 12-INCHES OR GREATER AS DICTATED BY LOCAL CODES AND STANDARDS.
   A) ANY DEVIATION FROM SPECIFIED MINIMUM CLEARANCES MUST BE APPROVED BY ALL AFFECTED UTILITIES AND/OR MUNICIPALITIES
3. FOR VALVE ADJUSTMENT CONTACT 702-668-6107 48 HOURS PRIOR TO CONSTRUCTION.
4. IN THE EVENT OF NATURAL GAS CONFLICT WITH PROPOSED UTILITIES AND STRUCTURES CONTACT 702-365-2099
5. SOUTHWEST GAS STANDBY CONTACT NUMBER (702)-400-1789

SOUTHWEST GAS APPROVAL

SOUTHWEST GAS CORPORATION _____ DATE _____

2.2 CITY OF LAS VEGAS SEWER NOTES

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE DESIGN AND CONSTRUCTION STANDARDS FOR WASTEWATER COLLECTION SYSTEMS AND THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS' CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA, NEVADA, AS AMENDED. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO BE AWARE OF THE CONTENTS OF THE ABOVE SPECIFICATIONS.
2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PERFORM CONSTRUCTION AS PER PLANS. ANY ADDITIONS, DELETIONS, OR CHANGES SHALL FIRST MEET WITH THE APPROVAL OF THE CITY ENGINEER.
3. CHISEL "S" OR "C" IN CURBS WHERE SEWER OR GAS LATERALS PASS UNDER THE CURB.
4. POLYVINYL (PVC) SEWER PIPE SHALL MEET ASTM D-3034 SDR 35 SPECIFICATIONS, INSTALLED WITH SAND BEDDING AND BACKFILL OF TYPE II AGGREGATE BASE.
5. ALL MANHOLES PAVED IN STREETS EIGHTY (80') FOOT R/W AND LARGER SHALL HAVE CONCRETE COLLARS. STREETS LESS THAN EIGHTY (80') FOOT R/W WILL REQUIRE RETROFIT IF PAVING DOES NOT CONFORM TO CITY STANDARDS AT THE MANHOLE.
6. TEE SADDLES SHALL BE USED TO CONNECT SEWER LATERALS TO EXISTING MAIN LINES UP TO TWELVE INCH (12") DIAMETER. CONNECTIONS TO FIFTEEN INCH (15") OR LARGER MAINS SHALL REQUIRE SPECIAL PROCEDURES. IN LINE "Y" 'S SHALL BE USED ON LINES TWELVE INCHES (12") OR ABOVE.
7. WATER MAINS SHALL BE PROTECTED IN ACCORDANCE WITH LVVWD STANDARDS WHENEVER A SEWER MAIN CROSSES OVER A WATER MAIN OR THE SEWER IS LESS THAN EIGHTEEN INCH (18") UNDER A WATER MAIN.
8. ALL CONTRACTORS INSTALLING SEWER MAINS THAT WILL BE UNDER THE JURISDICTION OF THE CITY OF LAS VEGAS MUST BE STATE OF NEVADA CLASS "A" CONTRACTORS.
9. THE CITY OF LAS VEGAS WILL NOT ACCEPT ANY SEWER MAINS WHICH HAVE A VERTICAL DEFLECTION OF MORE THAN ONE TENTH (0.1') OF A FOOT FROM THE APPROVED CONSTRUCTION PLANS AT ANY LOCATION. SEWER MAINS FOUND TO EXCEED THIS TOLERANCE WILL HAVE TO BE REPAIRED OR REMOVED OR REPLACED TO THE SATISFACTION OF THE CITY ENGINEER PRIOR TO ACCEPTANCE BY THE CITY OF LAS VEGAS.
10. INSTALLATION OF CURVED SEWER REQUIRES THE USE OF C-900 PIPE WHICH ALLOWS FOR PIPE DEFLECTION AT THE JOINTS.

LAS VEGAS VALLEY WATER DISTRICT (LVVWD) STANDARD NOTES

LVVWD PROJECT # ###### (REVISED 08/01/2017)

1. NO WORK SHALL BEGIN UNTIL THE WATER PLANS HAVE BEEN APPROVED FOR CONSTRUCTION BY THE LVVWD. FOLLOWING WATER PLAN APPROVAL, NOTICE SHALL BE GIVEN TO THE LVVWD COMMUNICATION SUPPORT CENTER (258-7171) TWO (2) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION. FOR FUTURE INSPECTIONS, NOTICE MUST BE GIVEN BY 2:00 P.M. THE BUSINESS DAY PRIOR TO THE REQUESTED LVVWD INSPECTION. WHEN REQUESTING INSPECTIONS, PLEASE REFER TO THE PROJECT # IDENTIFIED ABOVE.
2. ALL WORK SHALL CONFORM TO LVVWD STANDARD PLATES, DRAWINGS, AND SPECIFICATIONS, AND TO THE 2010 EDITION OF THE UNIFORM DESIGN AND CONSTRUCTION STANDARDS FOR POTABLE WATER SYSTEMS (UDACS). THE LATEST EDITION OF UDACS SHALL SUPERSEDE ANY CONFLICTS CONTAINED IN THE APPROVED DRAWINGS AND/OR SPECIFICATIONS.
3. ALL WORK, EXCEPT AS MODIFIED BY THESE PLANS OR BY NOTE 2 ABOVE, SHALL BE DONE IN ACCORDANCE WITH THE MOST RECENT DRAFT OR EDITION OF THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFFSITE IMPROVEMENT, CLARK COUNTY AREA.
4. A SINGLE PIPE MATERIAL SHALL BE USED THROUGHOUT THE PROJECT UNLESS OTHERWISE APPROVED BY THE LVVWD.
5. ALL SERVICE LATERALS TWO (2) INCHES IN DIAMETER AND SMALLER SHALL BE TYPE K COPPER TUBING WITH LVVWD APPROVED SERVICE SADDLES.
6. ALL WATER METER BOXES SHALL BE LOCATED OUTSIDE OF DRIVEWAY AREAS.
7. ALL VALVES SHALL BE LOCATED OUTSIDE OF DRIVEWAYS, VALLEY AND CURB GUTTERS.
8. ALL WATER AND STORM DRAIN OR SANITARY SEWER CROSSINGS SHALL CONFORM TO SECTION 2.22 OF THE 2010 EDITION OF THE UDACS.
9. ALL WATER FACILITIES AND APPURTENANCES SHALL BE DISINFECTED, PRESSURE TESTED, AND HAVE AN ACCEPTABLE PASSING HEALTH WATER SAMPLE OBTAINED, PRIOR TO OPERATION AND USE.
10. THE CONTRACTOR MUST OBTAIN ALL METERS TWO (2) INCHES AND SMALLER FROM LVVWD CENTRAL STORES. TELEPHONE 258-3152 OR 258-3802. TWO (2) WORKING DAYS PRIOR TO METER PICKUP.
11. ANY INTERRUPTION OF SERVICE MUST BE PERFORMED IN ACCORDANCE WITH UDACS SECTION 3.14.01, AND APPROVED BY THE LVVWD INSPECTION DIVISION PRIOR TO SHUTDOWN. PROPER WRITTEN NOTIFICATION MUST BE GIVEN TO ALL AFFECTED CUSTOMERS.
12. ALL WATER FACILITY CONSTRUCTION MATERIALS USED MUST BE AS LISTED ON THE LVVWD APPROVED PRODUCT'S LIST FOR NEW FACILITIES, LATEST REVISION, OR SPECIFICALLY APPROVED ON THESE PLANS BY SUBMITTING SHOP DRAWINGS.
13. TELEPHONE "CALL BEFORE YOU DIG" AT "811" OR 1-800-227-2600.
14. THE INSTALLATION OF LVVWD MUNICIPAL WATER FACILITIES WITHIN ALL STREETS IS ASSUMED TO BE IN COMPLIANCE WITH THE UNIFORM STANDARDS, INCLUDING THE PLACEMENT OF ASPHALT PAVING STREET SURFACES. ANY REPAIR WORK DONE BY THE LVVWD TO THE MUNICIPAL WATER FACILITIES WILL INCLUDE THE PLACEMENT OF AN APPROPRIATELY SIZED ASPHALT REPAIR PATCH ON THE STREET SURFACE.

    ANY DECORATIVE PAVING SURFACE WITHIN THE STREET IS THE RESPONSIBILITY OF THE OWNER'S ASSOCIATION, OR THE INDIVIDUAL PROPERTY OWNERS IF NO OWNER'S ASSOCIATION IS IN EXISTENCE, OR THE AGENCY HAVING JURISDICTION. DECORATIVE SURFACE MATERIALS PLACED WITHIN THE TEN FOOT EASEMENT ABUTTING A PUBLIC OR PRIVATE STREET, IF DISTURBED BY THE LVVWD DURING THE REPAIR OR OPERATION OF ITS FACILITIES, WILL BE REPLACED BY LVVWD WITH AN APPROPRIATELY SIZED PLAIN FINISH CONCRETE PATCH. THE LVVWD WILL NOT RESTORE, AND WILL NOT BE RESPONSIBLE FOR THE RESTORATION OF, ANY DECORATIVE PAVING SURFACE WITHIN THE STREET. THE LVVWD WILL NOT ATTEMPT TO MATCH COLOR OR FINISH OF ANY ADJACENT MATERIALS.

IS NO LEAD COMPLIANCE NOTE
TO COMPLY WITH THE FEDERAL SAFE DRINKING WATER ACT, ALL WATER WORKS BRASS PRODUCTS PROPOSED TO BE RELOCATED, OR INSTALLED AS NEW MUST BE INSTALLED WITH THE LEAD FREE APPROVED PRODUCT. THE OLD LEADED PRODUCT MAY NOT BE REUSED.

GRADING NOTES

1. INDICATED GRADES OTHER THAN T.C., F.G. & GUTTER F.L. ARE ROUGH GRADES.
2. THE ROUGH GRADING PLANS SHALL BE ON THE JOB SITE AT ALL TIMES. THE ROUGH GRADING SHALL BE FINISHED IN CONFORMANCE WITH THE LINES AND GRADES SHOWN ON THE PLANS. THE GRADING QUANTITIES ARE BASED ON THE ELEVATION AND DETAILS SHOWN ON THE PLANS. ANY DEVIATIONS FROM THE PLANS WILL RESULT IN QUANTITY CHANGES.
3. CARE SHALL BE EXERCISED IN GRADING CORNER LOTS.
4. ROUGH PAD ELEVATIONS SHALL BE GRADED TO WITHIN 0.1' OF THE PAD ELEVATIONS SHOWN ON THE PLANS. WHEN GRADING IS COMPLETE PER THE PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE LOTS CAN BE INSPECTED. AT THAT TIME THE ENGINEER SHALL ALSO DECIDE IF ANY ADDITIONAL DITCHES OR BERMS ARE REQUIRED. THE CONTRACTOR IS REQUESTED NOT TO REMOVE ANY OF HIS ROUGH GRADING EQUIPMENT UNTIL HE RECEIVES GRADING APPROVAL FROM THE ENGINEER.
5. SOILS REPORT PREPARED BY SOUTHWEST GEOTECHNICAL, PROJECT NO. 175337, DATED 10/17/18.
6. EARTHWORK QUANTITIES (RAW):
   -CUT = 13,803 CUBIC YARDS.
   -FILL = 16,150 CUBIC YARDS
   A) THE ABOVE QUANTITIES DO NOT REFLECT LOSSES DUE TO SUBSIDENCE OR SHRINKAGE.
   B) THE ABOVE QUANTITIES DO REFLECT USING NATIVE MATERIAL IN LIEU OF TYPE I GRAVEL BASE MATERIAL FOR STREET SECTIONS.
   C) THE ABOVE QUANTITIES DO NOT REFLECT ANY EARTHWORK WHICH MAY BE REQUIRED BY THE ENGINEER TO CONSTRUCT ADDITIONAL PROTECTIVE DITCHES OR BERMS NOT SHOWN ON THESE DRAWINGS.

CITY OF LAS VEGAS FIRE AND RESCUE GENERAL NOTES

1. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE LAS VEGAS FIRE AND RESCUE ADOPTED FIRE CODE ORDINANCE # 6631 FOR HYDRANT SPECIFICATIONS AND HYDRANT INSTALLATION SPECIFICATIONS.
2. ONLY FIRE HYDRANTS THAT ARE ON THE LAS VEGAS VALLEY WATER DISTRICT'S - APPROVED PRODUCTS LIST ARE ALLOWED TO BE INSTALLED.
3. A PERMIT IS REQUIRED FROM LAS VEGAS FIRE AND RESCUE FOR THE INSTALLATION OF ON-SITE WATER LINES AND FIRE HYDRANTS. THE PERMIT AND CONTRACTORS MATERIAL TEST CERTIFICATE FOR UNDERGROUND PIPING FORM SHALL BE OBTAINED FROM THE FIRE PROTECTION ENGINEER BEFORE COMMENCEMENT OF WORK. IFC § 105.6.15
4. ON ANY RESIDENTIAL OR COMMERCIAL INSTALLATIONS, FIRE HYDRANTS SHALL BE INSTALLED AND FIRE APPARATUS ACCESS ROADS SHALL BE MAINTAINED BEFORE COMMENCEMENT OF ANY COMBUSTIBLE CONSTRUCTION. ALL FIRE HYDRANTS SHALL BE IN GOOD WORKING ORDER AND SHALL BE CAPABLE OF DELIVERING THE REQUIRED FIRE FLOW. IFC § 3310, § 3312
5. TO IDENTIFY THE FIRE HYDRANT LOCATIONS, THE CONTRACTOR SHALL PLACE A BLUE REFLECTIVE MARKER AT THE CENTER LINE OF THE STREET ADJACENT TO THE FIRE HYDRANTS. IFC § 507.5.7.3
6. ALL UNDERGROUND INSPECTIONS, PRESSURE AND FLUSH VERIFICATIONS OF ALL FIRE HYDRANTS AND FIRE LINES, SHALL BE CONDUCTED BEFORE COVERING THE LINES. CENTER LOADING IS ACCEPTABLE FOR THE HYDRO TESTS WITH PRIOR FIRE PREVENTION APPROVAL. IFC § 106.3
7. ALL ON-SITE UNDERGROUND WATER MAINS AND MATERIALS SHALL BE U.L. LISTED, A.W.W.A APPROVED AND SHALL BE RATED FOR THE APPROPRIATE WORKING PRESSURE. IFC § 507.2.1, NFPA 24
8. PAINTING OF CURBS, FIRE HYDRANTS, PADS, PROTECTION OF FIRE HYDRANTS FROM PHYSICAL DAMAGE, AND ALL OTHER WORK NECESSARY PER PLANS SHALL BE COMPLETED BEFORE APPROVAL BY LAS VEGAS FIRE AND RESCUE, FIRE PREVENTION DIVISION. IFC § 507
9. PRIVATE HYDRANTS SHALL BE PAINTED RED. IFC § 507.5.7.1
10. PRIOR TO THE FINAL OCCUPANCY, A FIRE FLOW TEST SHALL BE WITNESSED BY LAS VEGAS FIRE AND RESCUE, FIRE PREVENTION DIVISION TO VERIFY AVAILABILITY OF THE REQUIRED FIRE FLOW. IFC § 507
11. FIRE HYDRANT SPACING SHALL BE AS FOLLOWS: IFC § C102
    - RESIDENTIAL - 500 FT UNSPRINKLERED; 600 FT SPRINKLERED.
    - COMMERCIAL - 300 FT UNSPRINKLERED; 400 FT SPRINKLERED.
12. WHERE THE WATER MAINS ARE EXTENDED ALONG STREETS OR NEW STREETS ARE INSTALLED WHERE FIRE HYDRANTS ARE NOT NEEDED FOR PROTECTION OF THE STRUCTURES, FIRE HYDRANTS SHALL BE INSTALLED AT A MAXIMUM OF 1000 FT SPACING, TO PROVIDE FOR TRANSPORTATION HAZARDS. WHERE STREETS ARE PROVIDED WITH MEDIAN DIVIDERS OR HAVE FOUR (4) OR MORE TRAFFIC LANES AND HAVE A TRAFFIC COUNT OF MORE THAN 30,000 PER DAY, HYDRANTS ARE REQUIRED ON EACH SIDE OF THE STREET SPACED AT 500 FT ON AN ALTERNATING BASIS. IFC § C102.8
13. NO FIRE HYDRANTS SHALL BE LOCATED WITHIN THE RADIUS OF A CUL-DE-SAC OR WITHIN 20 FT OF THE PERIMETER OF THE RADIUS OF THE CUL-DE-SAC.
14. NO FIRE HYDRANTS SHALL BE LOCATED WITHIN 6 FT OF ANY CURB RETURN, DRIVEWAY, POWER POLE, STREETLIGHT OR ANY OTHER OBSTRUCTION. IFC § C102.10
15. A MAXIMUM DISTANCE FROM A FIRE HYDRANT TO A ONE-TWO FAMILY DWELLING SHALL NOT EXCEED 300 FT, AS MEASURED BY AN APPROVED ROUTE. IFC § C102.4
16. THE MAXIMUM DISTANCE FROM A FIRE HYDRANT TO A FIRE DEPARTMENT CONNECTION (FDC) SHALL NOT EXCEED 100 FT, AS MEASURED BY AN APPROVED ROUTE. IFC § C102.7
17. THE MAXIMUM DISTANCE FROM A HYDRANT TO THE END OF A DEAD-END STREET SHALL NOT EXCEED 200 FT. IFC § C102.6
18. TWO (2) SOURCES OF SUPPLY ARE REQUIRED WHENEVER THERE IS 4 OR MORE FIRE HYDRANTS/SPRINKLER LEAD-INS ARE INSTALLED ON A SINGLE SYSTEM. FOR SYSTEMS REQUIRED TO HAVE TWO (2) SOURCES OF WATER SUPPLY, SECTIONAL CONTROL VALVES SHALL BE INSTALLED SO THAT NO MORE THAN 2 FIRE HYDRANTS AND/OR FIRE SPRINKLER LEAD-INS CAN BE OUT OF SERVICE DUE TO A SERVICE INTERRUPTION. FOR SYSTEMS PERMITTED TO HAVE ONE SOURCE OF WATER SUPPLY, SECTIONAL CONTROL VALVES SHALL BE INSTALLED SO THAT NO MORE THAN 3 FIRE HYDRANTS AND/OR FIRE SPRINKLER LEAD-INS CAN BE OUT OF SERVICE DUE TO A SERVICE INTERRUPTION. IFC § C104
19. ALL FIRE APPARATUS ACCESS ROADS SHALL BE PAVED TO PROVIDE ALL-WEATHER DRIVING CAPABILITIES, AND SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF THE FIRE APPARATUS. IFC § 503.2.3
20. THE GRADIENT FOR THE FIRE APPARATUS ACCESS ROADS SHALL NOT EXCEED 12% ANGLES OF APPROACH AND ANGLES OF DEPARTURE SHALL NOT EXCEED 6% FOR 25 FT PRIOR TO OR AFTER THE GRADE CHANGE. ADJACENT TO THE STRUCTURES GRADIENT SHALL NOT EXCEED 6%. IFC § 503.2.7, § 503.2.8
21. THE TURNING RADIUS OF THE FIRE APPARATUS ACCESS ROADS SHALL BE NO LESS THAN 52 FT OUTSIDE AND 28 FT INSIDE TURNING RADIUS. IFC § 503.2.4
22. VERTICAL CLEARANCE OF ALL FIRE APPARATUS ACCESS ROADS SHALL NOT BE LESS THAN 13FT 6 INS. IFC § 503.2.1
23. FIRE DEPARTMENT ACCESS ROADS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF NOT LESS THAN 33 FT WITH PARKING ON BOTH SIDES MEASURED TO FACE OF CURB. NOT LESS THAN 28 FT WIDE WITH PARKING RESTRICTED TO ONE SIDE MEASURED TO FACE OF CURB. NOT LESS THAN 24 FT WIDE WITH NO PARKING ON EITHER SIDE MEASURED TO FACE OF CURB. FIRE LANES THROUGH PARKING LOTS SHALL BE NOT LESS THAN 24 FT. IFC § 503.2.1.1
24. A FIRE APPARATUS ACCESS ROAD SHALL BE REQUIRED WHEN ANY PORTION OF AN EXTERIOR WALL OF THE FIRST STORY IS LOCATED MORE THAN 150 FT FROM A FIRE DEPARTMENT VEHICLE ACCESS. IFC § 503.1.1
25. APPROVED SECONDARY FIRE APPARATUS ACCESS SHALL BE PROVIDED FOR 200 OR MORE DWELLING UNITS. ROAD(S) WITH DEAD- ENDS OR A SINGLE POINT OF ACCESS IN EXCESS OF 600 FT. CLV REGULATION AND MOU
26. ALL DEAD-END FIRE APPARATUS ROADS AND/OR FIRE LANES, PUBLIC OR PRIVATE, IN EXCESS OF 150 FT IN LENGTH SHALL BE PROVIDED WITH AN APPROVED TURN AROUND HAVING A MINIMUM DIAMETER OF 81 FT. CLV REGULATION
27. ALL FIRE APPARATUS ACCESS ROADS SHALL BE MARKED BY PLACING APPROVED SIGNS AT THE START OF THE DESIGNATED FIRE LANE, ONE SIGN AT THE END OF THE FIRE LANE AND WITH SIGNS AT INTERVALS OF 100 FT ALONG THE DESIGNATED FIRE LANES. SIGNS TO BE PLACED ON BOTH SIDES OF AN ACCESS ROADWAY IF NEEDED TO PREVENT PARKING ON EITHER SIDE. SIGNS TO BE INSTALLED NO HIGHER THAN 10 FT OR LESS THAN 6 FT FROM THE ROADWAY LEVEL. THE CURB ALONG OR ON THE PAVEMENT OR CEMENT (IF NO CURB IS PROVIDED) SHALL BE PAINTED WITH A RED WEATHER RESISTANT PAINT IN ADDITION TO THE SIGNS. IFC § 503.3
28. ELECTRICALLY CONTROLLED ACCESS GATES SHALL BE PROVIDED WITH AN APPROVED EMERGENCY VEHICLE DETECTOR/RECEIVER SYSTEM. FC § 503.6
29. WHERE STREETS ARE PROVIDED WITH MEDIAN DIVIDERS, OR HAVING FOUR OR MORE TRAVEL LANES AND A TRAFFIC COUNT OF MORE THAN 30,000 VEHICLES PER DAY, ALL HYDRANTS BEING UTILIZED TO DELIVER FIRE FLOW TO THE PROPOSED LOCATION SHALL BE LOCATED ON THE SAME SIDE OF THE STREET AS THE PROPOSED DEVELOPMENT. CLV REGULATION

2.5 CITY OF LAS VEGAS GRADING NOTES

1. IN THE EVENT THAT ANY UNFORESEEN CONDITIONS NOT COVERED BY THESE NOTES ARE ENCOUNTERED DURING GRADING OPERATIONS, THE OWNER/ENGINEER SHALL BE IMMEDIATELY NOTIFIED FOR DIRECTION.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM ALL NECESSARY CUTS AND FILLS WITHIN THE LIMITS OF THIS PROJECT AND THE RELATED OFF-SITE WORK, SO AS TO GENERATE THE DESIRED SUBGRADE, FINISH GRADES AND SLOPES SHOWN.
3. CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ALL EXCAVATION. ADEQUATE SHORING SHALL BE DESIGNED AND PROVIDED BY THE CONTRACTOR TO PREVENT UNDERMINING OF ANY ADJACENT FEATURES OR FACILITIES AND/OR CAVING OF THE EXCAVATION.
4. THE CONTRACTOR IS WARNED THAT AN EARTHWORK BALANCE WAS NOT NECESSARILY THE INTENT OF THIS PROJECT. ANY ADDITIONAL MATERIAL REQUIRED OR LEFTOVER MATERIAL FOLLOWING EARTHWORK OPERATIONS BECOMES THE RESPONSIBILITY OF THE CONTRACTOR.
5. THE GRADING CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH THE OWNER TO PROVIDE FOR THE REQUIREMENTS OF THE PROJECT STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND ASSOCIATED PERMIT.
6. CONTRACTOR SHALL GRADE TO THE LINES AND ELEVATIONS SHOWN ON THE PLANS WITHIN THE FOLLOWING HORIZONTAL AND VERTICAL TOLERANCES AND DEGREES OF COMPACTION, IN THE AREAS INDICATED:

	HORIZONTAL	VERTICAL COMPACTION	
A. PAVEMENT AREA SUBGRADE	0.1'+	+0.0' TO -0.1'	SEE SOILS REPORT
B. ENGINEERED FILL	0.5'+	+0.1' TO -0.1'	SEE SOILS REPORT

COMPACTION TESTING WILL BE PERFORMED BY THE OWNER OR HIS REPRESENTATIVE.

7. ALL CUT AND FILL SLOPES SHALL BE PROTECTED UNTIL EFFECTIVE EROSION CONTROL HAS BEEN ESTABLISHED.
8. THE USE OF POTABLE WATER WITHOUT A SPECIAL PERMIT FOR BUILDING OR CONSTRUCTION PURPOSES INCLUDING CONSOLIDATION OF BACKFILL OR DUST CONTROL IS PROHIBITED. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR CONSTRUCTION WATER.
9. THE CONTRACTOR SHALL MAINTAIN THE STREETS, SIDEWALKS AND ALL OTHER PUBLIC RIGHT-OF-WAY IN A CLEAN, SAFE AND USABLE CONDITION. ALL SPILLS OF SOIL, ROCK OR CONSTRUCTION DEBRIS SHALL BE PROMPTLY REMOVED FROM THE PUBLICLY OWNED PROPERTY DURING CONSTRUCTION AND UPON COMPLETION OF THE PROJECT. ALL ADJACENT PROPERTY, PRIVATE OR PUBLIC SHALL BE MAINTAINED IN A CLEAN, SAFE AND USABLE CONDITION.
10. IN THE EVENT THAT ANY TEMPORARY CONSTRUCTION ITEM IS REQUIRED THAT IS NOT SHOWN ON THESE DRAWINGS, THE OWNER AGREES TO PROVIDE AND INSTALL SUCH ITEM AT HIS OWN EXPENSE AND AT THE DIRECTION OF THE CITY ENGINEER. TEMPORARY CONSTRUCTION INCLUDES DITCHES, BERMS, ROAD SIGNS AND BARRICADES, ETC.

UTILITY LOCATION NOTE TO CONTRACTOR

EXISTING UTILITY LOCATIONS SHOWN HEREIN 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 LOCATIONS. CALL BEFORE YOU DIG: 1 (800) 227-2600; SOUTHWEST GAS CORPORATION: 702-400-1789 (STANDBY CONTACT NUMBER)

2.1 CITY OF LAS VEGAS GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE "UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA NEVADA", LATEST ISSUE; THE "UNIFORM STANDARD DRAWINGS FOR PUBLIC WORKS CONSTRUCTION, CLARK COUNTY AREA NEVADA", LATEST REVISED EDITION; THE "SUMMERLIN IMPROVEMENT STANDARDS" FOR WORK IN THE SUMMERLIN AREA; AND OTHER APPLICABLE APPROVED STANDARDS ISSUED BY THE CONTROLLING AGENCY; THE UNIFORM BUILDING CODE; AND ALL LOCAL CITY CODES AND ORDINANCES APPLICABLE, EXCEPT AS NOTED ON THIS SHEET AS "DEVIATIONS FROM STANDARDS".
2. THE EXISTENCE AND LOCATION OF ANY OVERHEAD OR UNDERGROUND UTILITY LINES, PIPES, OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A RESEARCH OF THE AVAILABLE RECORDS. EXISTING UTILITIES AS SHOWN FROM CLV PLANS LIBRARY ARE APPROXIMATE AND FOR RECORD PURPOSES. EXISTING UTILITIES ARE LOCATED ON PLANS ONLY FOR THE CONVENIENCE OF THE CONTRACTOR. EXISTING UTILITY SERVICE LATERALS MAY NOT BE SHOWN ON THE PLANS. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, LOCATE ALL UNDERGROUND AND OVERHEAD INTERFERENCE'S WHICH MAY AFFECT HIS OPERATION DURING CONSTRUCTION AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO SAME. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING NEAR OVERHEAD UTILITIES SO AS TO SAFELY PROTECT ALL PERSONNEL AND EQUIPMENT, AND SHALL BE RESPONSIBLE FOR ALL COST AND LIABILITY IN CONNECTION THEREWITH.
3. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING UTILITY LINES, STRUCTURES AND STREET IMPROVEMENTS WHICH ARE TO REMAIN IN PLACE. FROM DAMAGE, AND ALL SUCH IMPROVEMENTS OR STRUCTURES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED SATISFACTORY TO THE CITY ENGINEER AND OWNING UTILITY COMPANY AT THE EXPENSE OF THE CONTRACTOR.
4. ALL CONSTRUCTION SHALL BE AS SHOWN ON THESE PLANS, ANY REVISIONS SHALL HAVE THE PRIOR WRITTEN APPROVAL OF THE CITY ENGINEER.
5. TYPE V CEMENT SHALL BE USED IN ALL OFF-SITE CONCRETE WORK. CONCRETE TO BE 3000 P.S.I. MINIMUM @ 28 DAYS. MIX DESIGNS TO BE APPROVED BY THE CITY, PRIOR TO THE USE ON THE PROJECT.
6. PERMITS ARE REQUIRED FOR ANY WORK IN THE PUBLIC RIGHT-OF-WAY. THE CONTRACTOR SHALL SECURE ALL PERMITS AND INSPECTIONS REQUIRED FOR THIS CONSTRUCTION.
7. EXPANSION JOINTS REQUIRED, MAXIMUM EVERY 300' IN EXTRUDED-TYPE CURB.
8. AC PAVEMENT TO BE ONE-HALF INCH (½") ABOVE LIP OF ALL GUTTERS AFTER COMPACTION, EXCEPT AT SIDEWALK RAMPS AND CROSS GUTTERS.
9. CURB AND GUTTER FOUND TO BE UNACCEPTABLE TO THE CITY OF LAS VEGAS SHALL BE REMOVED AND REPLACED PER STANDARD DRAWING 216.
10. SIDEWALK RAMPS SHALL BE CONSTRUCTED IN EACH QUADRANT OF AN INTERSECTION PER STANDARD DRAWING 235. EXACT LOCATION OF RAMPS MAY BE ADJUSTED IN THE FIELD BY A CITY INSPECTOR.
11. CONTRACTOR SHALL PROVIDE ALL NECESSARY HORIZONTAL AND VERTICAL TRANSITIONS BETWEEN NEW CONSTRUCTION AND EXISTING SURFACES TO PROVIDE FOR PROPER DRAINAGE AND FOR INGRESS AND EGRESS TO NEW CONSTRUCTION. THE EXTENT OF THE TRANSITIONS TO BE AS SHOWN ON PLAN

ABBREVIATIONS

AC	ASPHALTIC CONCRETE OR ACRE
AGG	AGGREGATE BASE
APN	ASSESSORS PARCEL NUMBER
APPROX OR ~	APPROXIMATE
AVE	AVENUE
@	AT
BC	BEGIN CURVE OR BACK OF CURB
BCR	BEGINNING OF CURB RETURN
BHW	BOTTOM OF HEADWALL
BLDG	BUILDING
BLVD	BOULEVARD
BM	BENCHMARK
BVC	BEGIN VERTICAL CURVE
BWV	BACK WATER VALVE
CC	CLARK COUNTY
CCAUSD	CLARK COUNTY AREA UNIFORM STANDARD DRAWINGS
CCPW	CLARK COUNTY PUBLIC WORKS
CCRFCD	CLARK COUNTY REGIONAL FLOOD DISTRICT
CCWRD	CLARK COUNTY WATER RECLAMATION DISTRICT
CE	COMMON ELEMENT
CL,C/L,C	CENTERLINE
CLR	CLEAR OR CLEARANCE
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CLV	CITY OF LAS VEGAS
CML&C	CEMENT MORTAR LINED AND COATED
CMU	CONCRETE MASONRY UNIT
CNLV	CITY OF NORTH LAS VEGAS
COH	CITY OF HENDERSON
CONC	CONCRETE
CT	COURT
CY OR CU YD	CUBIC YARD
DCWCS	DESIGN AND CONSTRUCTION FOR WASTEWATER COLLECTION SYSTEMS
DE	DRAINAGE EASEMENT
DET	DETAIL
DI	DUCTILE IRON OR DRAIN INLET
DIA, ø	DIAMETER
DIP	DUCTILE IRON PIPE
DR	DRIVE
DWG(S)	DRAWING
DWY	DRIVEWAY
EA	EACH
ECR	END CURB RETURN
EG	EXISTING GROUND
ELEV	ELEVATION
ESMT	EASEMENT
EP	EDGE OF PAVEMENT
ERU	EQUIVALENT RESIDENTIAL UNIT
EVC	END VERTICAL CURVE
EX OR EXIST	EXISTING
FC	FACE OF CURB
FF	FINISHED FLOOR
FG	FINISHED GRADE
FGH	FINISHED GRADE, HIGH SIDE
FGL	FINISHED GRADE, LOW SIDE
FH	FIRE HYDRANT
FL	FLOWLINE
FT	FEET OR FOOT
FUT	FUTURE
GRD	GRADE OR GROUND
GB	GRADE BREAK OR GRADE CHANGE
GV	GATE VALVE
HDPE	HIGH DENSITY POLYETHYLENE
HOA	HOME OWNERS ASSOCIATION
HORZ	HORIZONTAL
HP	HIGH POINT
HWL	HIGH WATER LEVEL
HDWL OR HW	HEADWALL
HYD	HYDRAULIC OR HYDRANT
ID	INSIDE DIAMETER
IN	INCH
INT	INTERSECTION
INV	INVERT ELEVATION
IP	IRON PIPE
IRRG	IRRIGATION
LF	LINEAR FEET
LMC	LANDSCAPE MAINTENANCE CORPORATION
LP	LOW POINT
LT OR L	LEFT
LVWD	LAS VEGAS VALLEY WATER DISTRICT
LWL	LOW WATER LEVEL
MAX	MAXIMUM
MECH	MECHANICAL
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MUE	MUNICIPAL UTILITY EASEMENT
NDOT	NEVADA DEPARTMENT OF TRANSPORTATION
NTS	NOT TO SCALE
NUE	NONEXCLUSIVE UTILITY EASEMENT
NVE	NV ENERGY
OC	ON CENTER
OD	OUTSIDE DIAMETER OR OVERALL DIMENSION
OFF	OFFSET
ORIG	ORIGINAL
PAE	PUBLIC OR PEDESTRIAN ACCESS EASEMENT
PB	PULL BOX
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PDE	PUBLIC DRAINAGE EASEMENT
℄ OR PL	PROPERTY LINE
POB	POINT OF BEGINNING
POC	POINT OF CURVATURE
POE	POINT OF ENDING
PRC	POINT OF REVERSE CURVATURE
PRELIM	PRELIMINARY
PROP	PROPOSED
PRV	PRESSURE REDUCING VALVE
PUE	PUBLIC UTILITY EASEMENT
PT	POINT OF TANGENT OR POINT
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
QTY	QUANTITY
R	RADIUS
RCA	REINFORCED CONCRETE ARCH
RCB	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY ESMT	ROADWAY EASEMENT
REQD	REQUIRED
REV	REVISION
RG	ROUGH GRADE
RT OR R	RIGHT
RW, ROW	RIGHT OF WAY
S	SLOPE
SCH	SCHEDULE
SD	STORM DRAIN
SDDI	STORM DRAIN DROP INLET
SDMH	STORM DRAIN MANHOLE
SEC	SECTION
SF	SQUARE FEET
SHT	SHEET
SLTC	STREET LIGHT & TRAFFIC CONTROL ESMT
SNWA	SOUTHERN NEVADA WATER AUTHORITY
SPECS	SPECIFICATIONS
ST	STREET
SSMH	SANITARY SEWER MANHOLE
STA	STATION
STD	STANDARD
STL	STEEL
STLT	STREET LIGHT
SW	SIDEWALK
SWG	SOUTHWEST GAS
SWR OR SS	SANITARY SEWER
SY	SQUARE YARD
TAN	TANGENT
TC	TOP OF CURB
TF	TOP OF FLOOR OR TOP OF FOOTING
TG	TOP OF GRATE
THRU	THROUGH
THW	TOP OF HEADWALL
TP	TOP OF PIPE
TW	TOP OF WALL
TRW	TOP OF RETAINING WALL
TSW	TOP OF SCREEN WALL
TYP	TYPICAL
UDACS	UNIFORM DESIGN AND CONSTRUCTION STANDARDS
UE	UTILITY EASEMENT
VC	VERTICAL CURVE
VERT	VERTICAL
VG	VALLEY GUTTER
WI	WROUGHT IRON
WL	WATER LINE
WPZ	WATER PRESSURE ZONE
WT	WEIGHT
WTR	WATER LINE

SPECIAL NOTE

IN THE EVENT THAT ANY TEMPORARY CONSTRUCTION ITEM IS REQUIRED WHICH IS NOT SHOWN ON THESE DRAWINGS, THE OWNER AGREES TO PROVIDE AND INSTALL SUCH ITEM AT HIS OWN EXPENSE AND AT THE DIRECTION OF THE CITY OF LAS VEGAS DEPT. OF PUBLIC WORKS. TEMPORARY CONSTRUCTION ITEMS INCLUDE: PAVEMENT TRANSITIONS, PROTECTIVE DITCHES AND BERMS, ROAD SIGNS AND BARRICADES, ETC.

NOTICE TO CONTRACTOR

--QUANTITIES SHOWN ARE ESTIMATES ONLY AND ARE INTENDED TO ILLUSTRATE SCOPE OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXACT QUANTITIES INVOLVED.

--EXISTING UTILITY LOCATIONS SHOWN HEREIN 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 LOCATIONS. CALL BEFORE YOU DIG: (800) 227-2600

LEGEND

EXISTING	PROPOSED	DESCRIPTION
(1900)	1900	5' CONTOUR
		1' CONTOUR
		STRIPING
		SEWER MANHOLE
		CURB AND GUTTER
EX 8" PVC SS	8" PVC SS	SANITARY SEWER PIPE AND FLOW ARROW
EX 8" PVC WTR	8" PVC WTR	WATER PIPE
		WATER GATE VALVE
		FIRE HYDRANT
		WATER BLOW-OFF
		WATER LATERAL W/ METER
		SANITARY SEWER LATERAL
		STREETLIGHT
		EDGE OF PAVEMENT
		TRAFFIC SIGN
PAD= XXX.X FF = XXX.X	PAD= XXX.X FF = XXX.X	PAD ELEVATION FINISHED FLOOR ELEVATION
(00.00) TC	00.00 TC	ELEVATION
		RETAINING WALL
		STORM DRAIN W/ MANHOLE

	EXISTING GAS GATE VALVE
	EXISTING UNKNOWN MANHOLE
	EXISTING GAS, SIZE PER PLAN
	EXISTING POWER POLE
	EXISTING TRAFFIC SIGNAL
	EXISTING WALL
	WATER PIPE FITTING
POC	WATER POINT OF CONNECTION
POC	SEWER POINT OF CONNECTION
	DAYLIGHT LINE
	STREET CENTERLINE
	RIGHT-OF-WAY
	MATCHLINE
	BOUNDARY LINE
	PHASE LINE
	PROPERTY LINE
	FLOWLINE
	SAWCUT
FILL / CUT	CUT/FILL TRANSITION LINE
	SIDEWALK
	EX STRIPING TO BE OBLITERATED
	GRADE BREAK LINE
	REFLECTIVE RAISED PAVEMENT MARKERS
BWV	BACK WATER VALVE
	WROUGHT IRON FENCE
	PONY WALL
	DECORATIVE PERIMETER WALL
	DECORATIVE PERIMETER RETAINING WALL
	PROPOSED CURB AND GUTTER WITH RIGHT-OF-WAY AT BACK OF CURB
	EXISTING CURB AND GUTTER WITH RIGHT-OF-WAY AT BACK OF CURB
	FUTURE CURB AND GUTTER WITH RIGHT-OF-WAY AT BACK OF CURB
	PROPOSED SCARP AREA
	DRIVEWAY
	PROPOSED RIP RAP
	SIGHT VISIBILITY ZONE PER STD DWG NO. 201.2
	HANDICAP RAMP

QUANTITIES

			PRIVATE	PUBLIC
DRAINAGE				
1.	60" TYPE III STORM DRAIN MANHOLE	EA	–	–
2.	5.0' TYPE "CM2" DROP INLET	EA	–	–
3.	10.0' TYPE "CM2" DROP INLET	EA	–	–
4.	12.5' TYPE "CM2" DROP INLET	EA	–	1
5.	15.0' TYPE "CM2" DROP INLET	EA	–	1
6.	18" RCP STORM DRAIN	LF	–	–
7.	24" RCP STORM DRAIN	LF	–	167
8.	30" RCP STORM DRAIN	LF	–	–
9.	36" RCP STORM DRAIN	LF	–	–
10.	GROUTED RIPRAP D50=8", THK=16"	SF	150	–
11.	8' WIDE CONCRETE VALLEY GUTTER W/10" TYPE I AGGREGATE BASE	SF	1,948	–
12.	SIDEWALK UNDER DRAIN	SF	–	–
13.	GROUTED RIPRAP D50=6", THK=12"	SF	546	–
SEWER SYSTEM				
1.	4" PVC SEWER LATERAL (PRIVATE)	LF	–	–
2.	8" PVC SEWER PIPE (PUBLIC)	LF	–	–
3.	STANDARD 48" SEWER MANHOLE (PUBLIC)	EA	–	–
4.	8" SEWER PIPE CAP	EA	–	–
5.	BACK WATER VALVE	EA	–	–
6.	8" C-900 WATER QUALITY SEWER PIPE (PUBLIC)	EA	–	–
7.				
WATER SYSTEM				
1.	FIRE HYDRANT ASSEMBLY W/6" GATE VALVE PER UDACS PLATE NO. 40	EA	–	–
2.	6" PVC WATER PIPE (CLASS 150)	LF	–	–
3.	8" PVC WATER PIPE (CLASS 150)	LF	–	–
4.	8" DIP WATER PIPE (CLASS 53)	LF	–	–
5.	8" GATE VALVE WITH VALVE BOX PER UDACS PLATE NO. 30 & 39	EA	–	–
6.	8" X 6" TEE PER UDACS PLATE NO. 31	EA	–	–
7.	8" X 8" TEE PER UDACS PLATE NO. 31	EA	–	–
8.	8" 5 DEGREE BEND WITH RESTRAINED JOINTS	EA	–	–
9.	8" 11.25 DEGREE BEND PER UDACS PLATE NO. 31	EA	–	–
10.	8" 22.5 DEGREE BEND PER UDACS PLATE NO. 31	EA	–	–
11.	8" 45 DEGREE BEND PER UDACS PLATE NO. 31	EA	–	–
12.	8" 90 DEGREE BEND PER UDACS PLATE NO. 31	EA	–	–
13.	CAP AND 2" BLOW-OFF ASSEMBLY W/CAP PER UDACS PLATE NO. 36	EA	–	–
14.	1" COPPER SERVICE W/ 3/4" METER PER UDACS PLATE NO. 2	EA	–	–
15.	1" COPPER SERVICE W/ 1" METER PER UDACS PLATE NO. 4	EA	–	–
16.	1" COPPER SERVICE W/ 3/4" METER & 1" RPPA PER UDACS PLATE NO. 4 & 8	EA	–	–
		EA	–	
STREET IMPROVEMENTS				
1.	2" A.C. PAVEMENT W/ 4" TYPE II OVER 6" TYPE I AGGREGATE BASE	SY	8,831	–
2.	STANDARD 8" TYPE "A" ISLAND CURB W/6" TYPE I AGGREGATE BASE	LF	–	–
3.	STANDARD 30" TYPE "ROLL" CURB & GUTTER W/6" TYPE I AGGREGATE BASE	LF	4,793	–
4.	5' WIDE CONCRETE SIDEWALK W/4" TYPE II AGGREGATE BASE	SF	11,119	–
5.				
6.				
7.				
TRAFFIC SIGNALS				
1.	30" STOP SIGN WITH POST (R1-1)	EA	–	–
2.	9" STREET NAME SIGN (D-3, BROWN W/ WHITE LETTERS)(6 POLES x 2 PER POLE=12)	EA	–	–
3.	BLUE COLORED REFLECTIVE RAISED PAVEMENT MARKER	EA	–	–
4.	CROSSWALK MARKINGS	LF	–	–
5.				
6.				
7.				
8.				
DRY UTILITIES				
1.	100W H.P.S. LUMINAIRE STREET LIGHT W/DECORATIVE POLE	EA	–	–
2.	1-1/4" PVC STREET LIGHT CONDUIT WITH (2) #4 AND (1) #8 CONDUCTORS	LF	–	–
3.	NO. 3-1/2 PULL BOX W/METAL COVER	EA	–	–
4.	150 AMP SERVICE PEDESTAL (IRR)	EA	–	–
5.	200 AMP SERVICE PEDESTAL (STLT)	EA	–	–
6.				

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES

PROJECT NO. ADD FIELD FIRST APPROVED DATE:

Westwood
5740 S. Arville Street
Suite 216
Las Vegas, NV 89118
Phone (702) 284-5300
Fax (702) 284-5399
westwoodps.com
Westwood Professional Services, Inc.

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS, NV

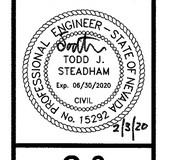
CENTURY COMMUNITIES

SKYE CANYON 2.08 /2.09 PHASE 2
QUANTITIES AND LEGEND

S:13 R:59E

DATE: 02/03/2020
DRAFTER: HIR
DESIGNER: HIR
CHECKED: TJS

PROJECT NO.
CEN1905-000



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SHEET 3 OF 12

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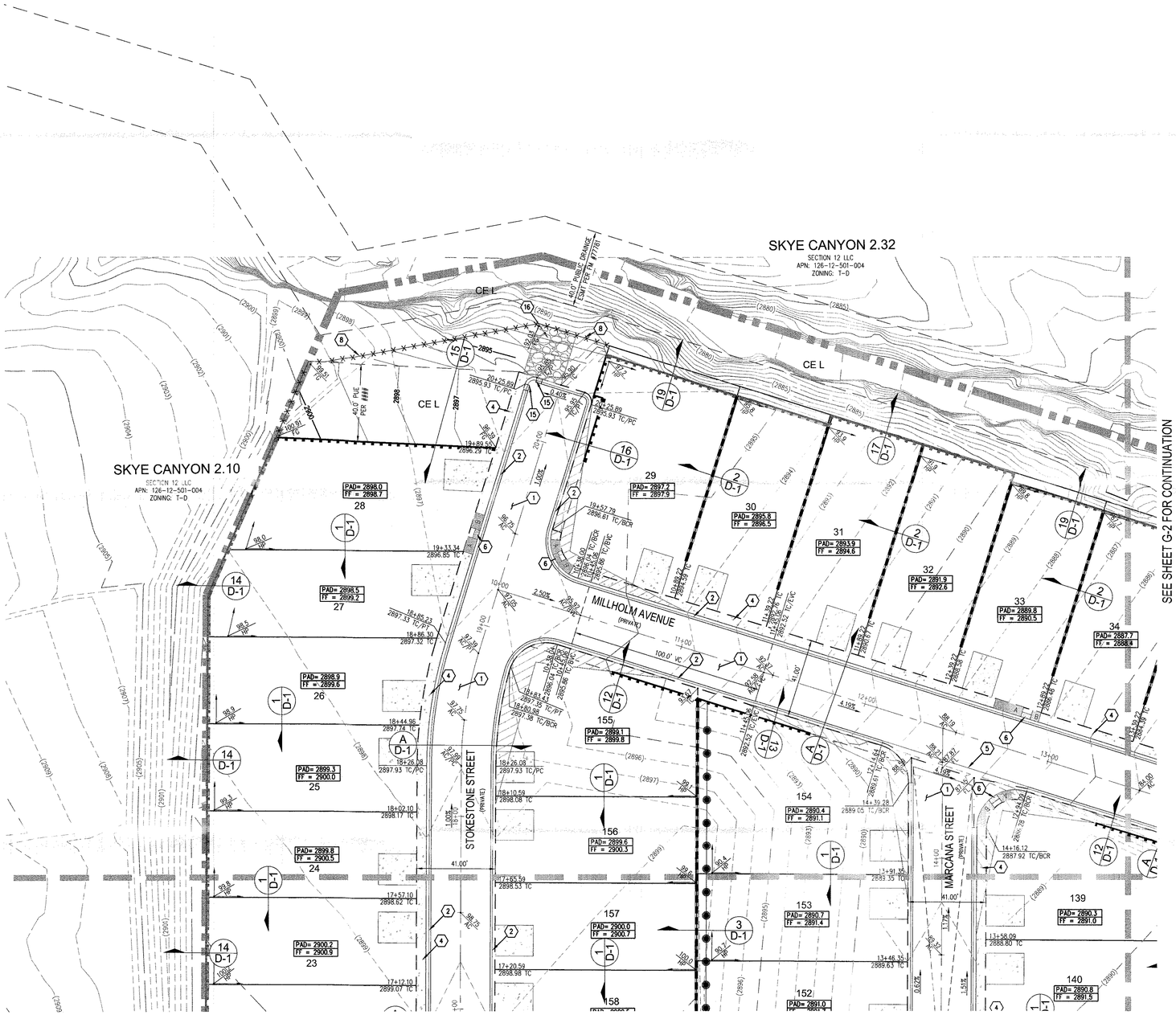

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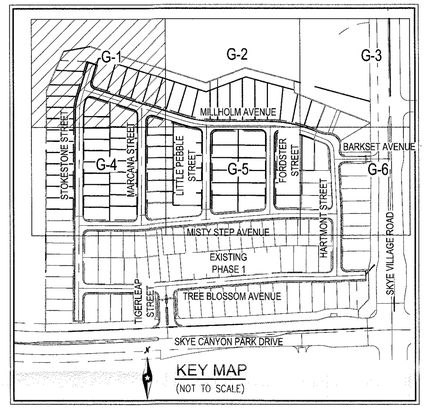
SCALE -- 1"=30' FEET

CALL SOUTHWEST GAS AT 702-651-2111 FOR STANDBY WHEN EXCAVATING OVER OR NEAR HIGH PRESSURE GAS LINES



KEY MAP
(NOT TO SCALE)

SOILS REPORT

SOILS REPORT BY SOUTHWEST GEOTECHNICAL

PROJECT NO. 175337 DATED 10/17/18

UPDATED SOILS REPORT BY SOUTHWEST GEOTECHNICAL

PROJECT NO. 175337 DATED 8/28/19

EARTHWORKS

EARTHWORK QUANTITIES (RAW):
CUT= 13,803 CU YDS
FILL= 16,150 CU YDS

EXPORTED MATERIAL TO BE DISPOSED OF AT AN APPROVED LICENSED DISPOSAL FACILITY OR AT A SITE WITH AN APPROVED AND ACTIVE GRADING PERMIT.

DISCLAIMER NOTE

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2) FOR ROADWAY WIDENING AND HALF STREET IMPROVEMENTS THE CONTRACTOR SHALL VERIFY CROSS SLOPES FROM EXISTING PAVEMENT SAWCUT LINE TO PROPOSED EDGE OF PAVEMENT OR PROJECTED LIP OF CURB PRIOR TO SUBGRADE PREPARATION AND CONSTRUCTION OF PROPOSED CURB LINE. IF MINIMUM OR MAXIMUM CROSS SLOPES DO NOT MEET AGENCY STANDARDS THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

GRADING NOTES

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3. ALL IMPROVEMENTS TO BE PROTECTED FROM EROSION BY SWPPP.
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9. 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 EXIST) WITHIN THE SIGHT VISIBILITY ZONES.

GRADING NOTES

1. CONSTRUCT 2" AC PAVEMENT WITH 4" TYPE II AGGREGATE BASE
2. CONSTRUCT 30" MODIFIED ROLL CURB AND GUTTER PER CCAUSD NO. 217.1
3. REMOVE AND DISPOSE OF EXISTING RIP-RAP
4. CONSTRUCT 5' WIDE CONCRETE SIDEWALK (5" THICK WITH 5" TYPE II AGGREGATE BASE) PER CCAUSD NO. 234
5. CONSTRUCT 8' WIDE CROSS GUTTER PER CCAUSD NO. 228
6. CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES PER CCAUSD NO. 235, CASE I
7. CONNECT TO EXISTING SIDEWALK AND MATCH EXISTING GRADE
8. INSTALL 6' HIGH TUBULAR STEEL FENCE PER CCAUSD NO. 425.S1 AND DETAIL 22 ON SHEET D-2
9. INSTALL 12.5' TYPE "CM2" DROP INLET PER CCAUSD NO. 412.1 AND STORM DRAIN WATER QUALITY MANAGEMENT STAMP PER CCAUSD NO. 421
10. INSTALL 15.0' TYPE "CM2" DROP INLET PER CCAUSD NO. 412.1 AND STORM DRAIN WATER QUALITY MANAGEMENT STAMP PER CCAUSD NO. 421
11. INSTALL 24" CLASS III RCP STORM DRAIN
12. INSTALL RCP SD END SECTION PER DETAIL 23 ON SHEET D-2 (NDOT STD DWG. R-2.31)
13. INSTALL GROUTED RIP RAP W/ 6" TYPE II GRANULAR BEDDING WITH FILTER FABRIC D50=8", T=16"
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19. EXISTING RCP SD END SECTION PER ####
20. EXISTING 12.5' TYPE "CM2" DROP INLET PER ####

LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDELINES

(REQUIRED FOR ALL SITES GREATER THAN 1 ACRE (43,560 SQ.FT.))

1. THE OWNER, SITE DEVELOPER, CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL EACH DAY REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO, OR ACCUMULATED IN, THE PUBLIC RIGHTS OF WAY OF CLARK COUNTY AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE DEVELOPMENT OR CONSTRUCTION PROJECT. SUCH MATERIALS SHALL BE PREVENTED FROM ENTERING THE STORM SEWER SYSTEM.
2. ADDITIONAL CONSTRUCTION SITE DISCHARGE BEST MANAGEMENT PRACTICES MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT MEET THE PERFORMANCE STANDARDS SPECIFIED IN CLARK COUNTY TITLE 24.40 AND IN THE LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDANCE MANUAL.
3. TEMPORARY OR PERMANENT STABILIZATION PRACTICES WILL BE INSTALLED ON DISTURBED AREAS AS SOON AS PRACTICABLE AND NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. SOME EXCEPTIONS MAY APPLY; REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.5.
4. AT A MINIMUM, THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL DISTURBED AREAS, AREAS USED FOR STORAGE OF MATERIALS AND EQUIPMENT THAT ARE EXPOSED TO PRECIPITATION, VEHICLE ENTRANCE AND EXIT LOCATIONS, AND ALL BMPS WEEKLY, AND WITHIN 24 HOURS AFTER A RAIN EVENT OF 0.5 INCHES OR MORE. THE CONTRACTOR OR HIS AGENT SHALL UPDATE OR MODIFY THE STORMWATER POLLUTION PREVENTION PLAN AS NECESSARY. SOME EXCEPTIONS TO WEEKLY INSPECTIONS MAY APPLY, SUCH AS SUSPENSION OF LAND DISTURBANCE ACTIVITIES. REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.12.
5. ACCUMULATED SEDIMENT IN BMPS SHALL BE REMOVED WITHIN SEVEN DAYS AFTER A STORMWATER RUNOFF EVENT OR PRIOR TO THE NEXT ANTICIPATED STORM EVENT, WHICHEVER IS EARLIER. SEDIMENT MUST BE REMOVED WHEN BMP DESIGN CAPACITY HAS BEEN REDUCED BY 50 PERCENT OR MORE.

DRAINAGE		PRIVATE	PUBLIC
1. 8" WIDE CONCRETE VALLEY GUTTER W/10" TYPE II AGGREGATE BASE	SF	1,948	–
2. 12.5' TYPE CM2 DROP INLET	EA	–	1
3. 15.0' TYPE CM2 DROP INLET	EA	–	1
4. 24" RCP CLASS III STORM DRAIN	LF	–	167
5. GROUTED RIPRAP W/ FILTER FABRIC D50=12", THK=24"	SF	150	–
6. RIPRAP W/ FILTER FABRIC D50=6", THK=12"	SF	546	–

FLOOD CERTIFICATION

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

TODD J. STEADHAM, P.E. 15292 DATE

SURVEY NOTE

OWNER RESPONSIBLE TO PROVIDE SURVEY MONUMENTATION AS SHOWN AND TO REPLACE ALL SURVEY MONUMENTATION DAMAGED, DISTURBED, DESTROYED, OR OBSCURED DURING CONSTRUCTION.

FLOOD ZONE

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE X (UNSHADED) AS DEPICTED ON FLOOD INSURANCE RATE MAP (FIRM) PANEL 32003C1750E, DATED SEPTEMBER 27, 2002. A ZONE X (UNSHADED) IS DESCRIBED AS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN.

ELEVATION NOTE

ADD 2800 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 2801.00) AND 101.0 REPRESENTS 2901.00)

PRIVATE STREET NOTE

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

EASEMENT NOTE

COMMON ELEMENT L (CE L) IS A PUBLIC DRAINAGE EASEMENT TO BE PRIVATELY MAINTAINED

FAST Call before you UnderGround 1-702-432-5300 FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY. CALL BEFORE YOU DO OVERHEAD 1-702-227-2929

Call before you Dig AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY. Call 811 OR 1-800-227-2600

Westwood
5740 S. Arville Street
Suite 216
Las Vegas, NV 89118
Phone (702) 284-5300
Fax (702) 284-5399
westwoodps.com
Westwood Professional Services, Inc.

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS, NV

CENTURY COMMUNITIES

SKYE CANYON 2.08 /2.09 PHASE 2
GRADING PLAN I

S-12
T-19 S
R-59 E

DATE: 02/03/2020
DRAFTER: HIR
DESIGNER: HIR
CHECKED: TJS
PROJECT NO.
CEN1905-000

PROFESSIONAL ENGINEER STATE OF NEVADA TODD J. STEADHAM Exp. 06/30/2020 CIVIL No. 15292

2/3/20

G-1
SHEET 4 OF 12

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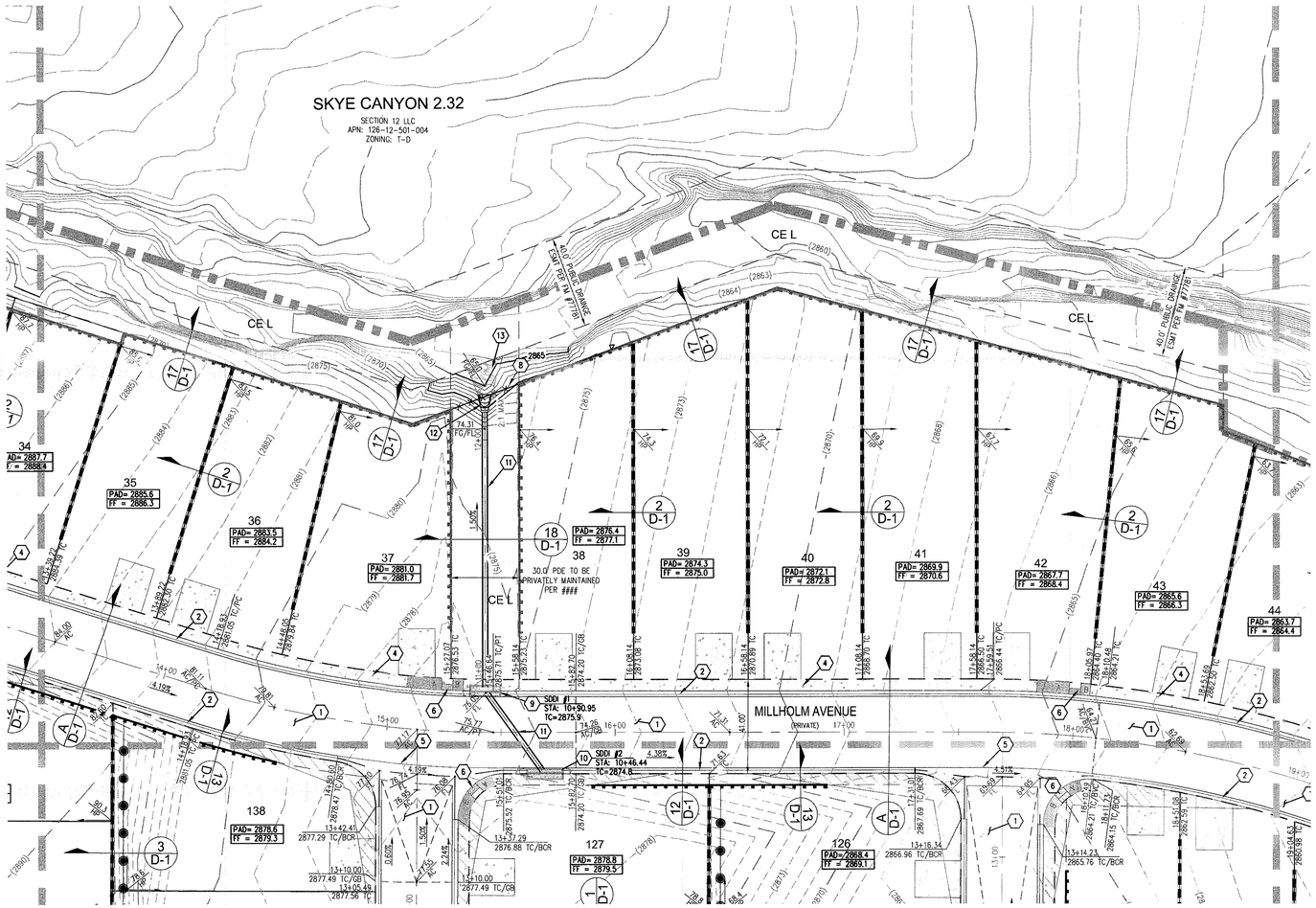

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SCALE – 1"=30' FEET

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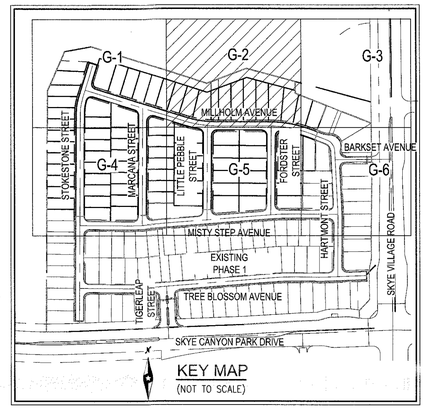

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PROJECT NO. 175337 DATED 10/17/18

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DRAINAGE		PRIVATE	PUBLIC
1. 8' WIDE CONCRETE VALLEY GUTTER W/10" TYPE II AGGREGATE BASE	SF	1,948	–
2. 12.5' TYPE CM2 DROP INLET	EA	–	1
3. 15.0' TYPE CM2 DROP INLET	EA	–	1
4. 24" RCP CLASS III STORM DRAIN	LF	–	167
5. GROUTED RIPRAP W/ FILTER FABRIC D50=12", THK=24"	SF	150	–
6. RIPRAP W/ FILTER FABRIC D50=6", THK=12"	SF	546	–

FLOOD CERTIFICATION

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

TODD J. STEADHAM, P.E. 15292 DATE

FLOOD ZONE

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE X (UNSHADED) AS DEPICTED ON FLOOD INSURANCE RATE MAP (FIRM) PANEL 32003C7506E DATED SEPTEMBER 27, 2002. A ZONE X (UNSHADED) IS DESCRIBED AS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN.

SURVEY NOTE

OWNER RESPONSIBLE TO PROVIDE SURVEY MONUMENTATION AS SHOWN AND TO REPLACE ALL SURVEY MONUMENTATION DAMAGED, DISTURBED, DESTROYED, OR OBSCURED DURING CONSTRUCTION.

ELEVATION NOTE

ADD 2800 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 2801.00) AND 101.0 REPRESENTS 2901.00)

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CALL BEFORE YOU DO OVERHEAD
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Las Vegas, NV 89118
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Fax (702) 284-5399
westwoodps.com
Westwood Professional Services, Inc.

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS, NV

CENTURY COMMUNITIES

SKYE CANYON 2.08 /2.09 PHASE 2
GRADING PLAN II

S-12
T-19
R-59 E

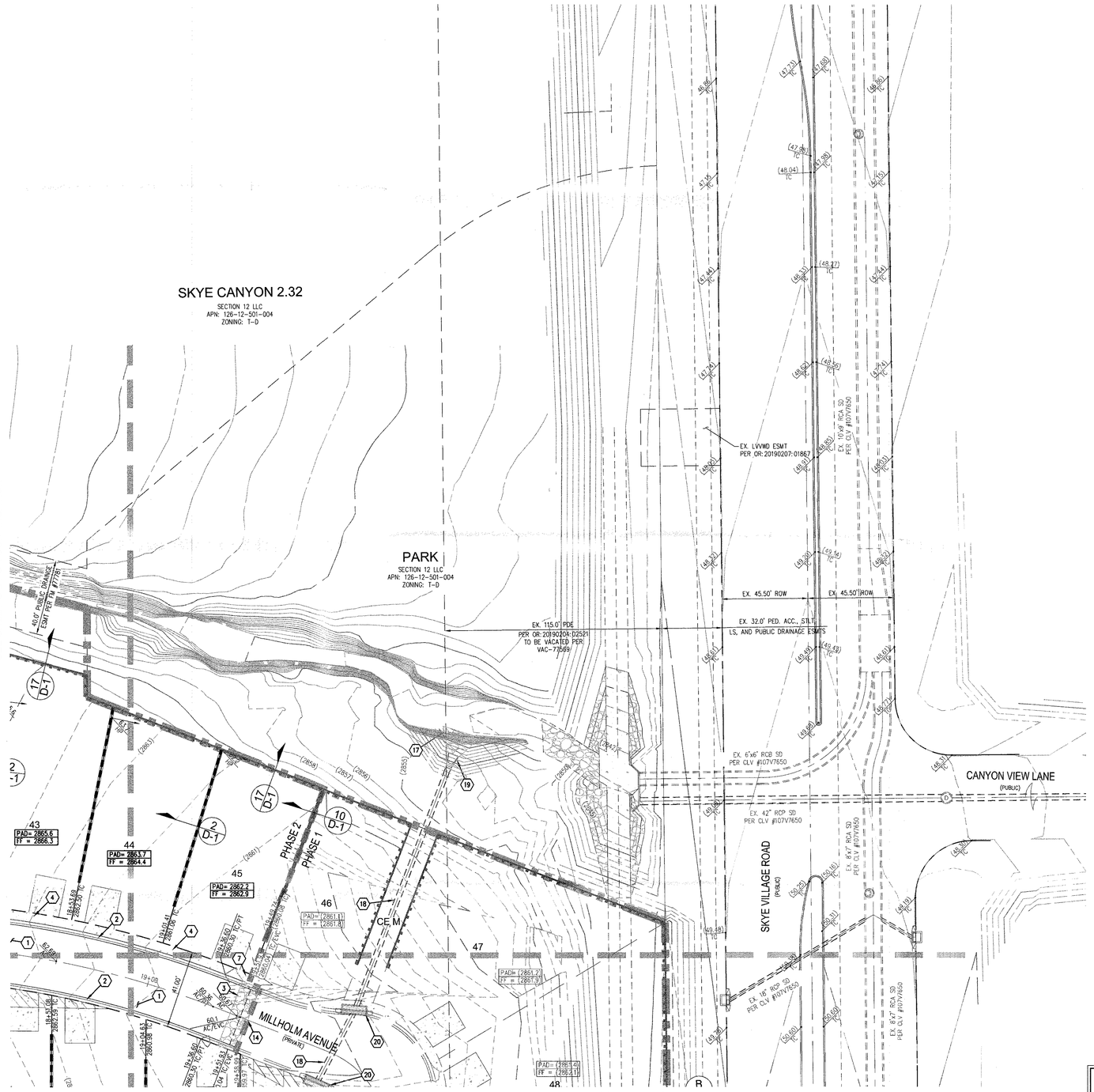
DATE: 02/03/2020
DRAFTER: HIR
DESIGNER: HIR
CHECKED: TJS

PROJECT NO.
CEN1905-000

PROFESSIONAL ENGINEER STATE OF NEVADA
TODD J. STEADHAM
Exp. 06/30/2020
CIVIL
No. 15292
2/3/20

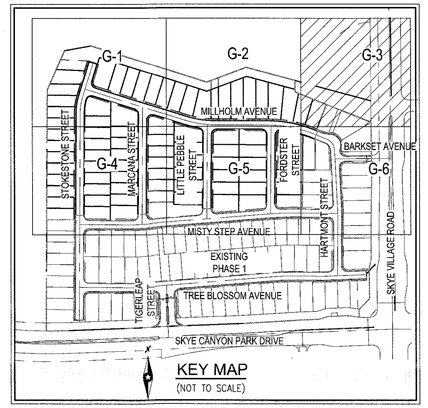
G-2
SHEET 5 OF 12

x:\cen1905-000 sky canyon parcel 2.08\land\improv\phase 2\cen1905-000 grd 2-2.dwg 2/3/2020 7:37 AM todds ltbcs



SCALE -- 1"=30' (0, 30, 60 FEET)

CALL SOUTHWEST GAS AT 702-651-2111 FOR STANDBY WHEN EXCAVATING OVER OR NEAR HIGH PRESSURE GAS LINES



KEY MAP
(NOT TO SCALE)

SOILS REPORT

SOILS REPORT BY SOUTHWEST GEOTECHNICAL

PROJECT NO. 175337 DATED 10/17/18

UPDATED SOILS REPORT BY SOUTHWEST GEOTECHNICAL

PROJECT NO. 175337 DATED 8/28/19

EARTHWORKS

EARTHWORK QUANTITIES (RAW):
CUT= 13,803 CU YDS
FILL= 16,150 CU YDS

EXPORTED MATERIAL TO BE DISPOSED OF AT AN APPROVED LICENSED DISPOSAL FACILITY OR AT A SITE WITH AN APPROVED AND ACTIVE GRADING PERMIT.

DISCLAIMER NOTE

1) EXISTING 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 IN THEIR PROPER LOCATION.

2) FOR ROADWAY WIDENING AND HALF STREET IMPROVEMENTS THE CONTRACTOR SHALL VERIFY CROSS SLOPES FROM EXISTING PAVEMENT SAWCUT LINE TO PROPOSED EDGE OF PAVEMENT OR PROJECTED LIP OF CURB PRIOR TO SUBGRADE PREPARATION AND CONSTRUCTION OF PROPOSED CURB LINE. IF MINIMUM OR MAXIMUM CROSS SLOPES DO NOT MEET AGENCY STANDARDS THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

GRADING NOTES

1. FINAL GRADES ADJACENT TO STRUCTURES SHALL BE IN CONFORMANCE WITH IBC 2018, SECTION 2304.11.2.2
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AND REPORT ALL DISCREPANCIES TO THE ENGINEER.
3. ALL IMPROVEMENTS TO BE PROTECTED FROM EROSION BY SWPPP.
4. MAXIMUM/MINIMUM SLOPES AND MINIMUM STREET SECTIONS NOT TO EXCEED THAT SHOWN ON GEOTECH REPORT.
5. SEE DETAIL SHEET FOR STREET SECTIONS AND DETAILS.
6. ALL PUBLIC AND PRIVATE DRAINAGE IMPROVEMENTS TO BE BONDED FOR AND INSPECTED.
7. CONSTRUCTION OF BLOCK WALLS REQUIRES A SEPARATE BUILDING PERMIT AND APPROVAL BY THE CITY OF LAS VEGAS BUILDING DEPARTMENT.
8. CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF EXISTING UTILITY STRUCTURES AND FACILITIES AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. CONTRACTOR TO PROTECT IN PLACE DURING CONSTRUCTION. ENGINEER/OWNER SHALL BE NOTIFIED OF PRIOR DAMAGE TO EXISTING FACILITIES PRIOR TO CONSTRUCTION. CONTRACTOR WILL BE RESPONSIBLE FOR REPAIR/REPLEPING FACILITIES IF ENGINEER/OWNER IS NOT NOTIFIED OF EXISTING DAMAGE PRIOR TO CONSTRUCTION COMMENCING.
9. 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 EXIST) WITHIN THE SIGHT VISIBILITY ZONES.

LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDELINES

(REQUIRED FOR ALL SITES GREATER THAN 1 ACRE (43,560 SQ.FT.))

1. THE OWNER, SITE DEVELOPER, CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL EACH DAY REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO, OR ACCUMULATED IN, THE PUBLIC RIGHTS OF WAY OF CLARK COUNTY AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE DEVELOPMENT OR CONSTRUCTION PROJECT. SUCH MATERIALS SHALL BE PREVENTED FROM ENTERING THE STORM SEWER SYSTEM.
2. ADDITIONAL CONSTRUCTION SITE DISCHARGE BEST MANAGEMENT PRACTICES MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT MEET THE PERFORMANCE STANDARDS SPECIFIED IN CLARK COUNTY TITLE 24.40 AND IN THE LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDANCE MANUAL.
3. TEMPORARY OR PERMANENT STABILIZATION PRACTICES WILL BE INSTALLED ON DISTURBED AREAS AS SOON AS PRACTICABLE AND NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. SOME EXCEPTIONS MAY APPLY; REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.5.
4. AT A MINIMUM, THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL DISTURBED AREAS, AREAS USED FOR STORAGE OF MATERIALS AND EQUIPMENT THAT ARE EXPOSED TO PRECIPITATION, VEHICLE ENTRANCE AND EXIT LOCATIONS, AND ALL BMPS WEEKLY, AND WITHIN 24 HOURS AFTER A RAIN EVENT OF 0.5 INCHES OR MORE. THE CONTRACTOR OR HIS AGENT SHALL UPDATE OR MODIFY THE STORMWATER POLLUTION PREVENTION PLAN AS NECESSARY. SOME EXCEPTIONS TO WEEKLY INSPECTIONS MAY APPLY; SUCH AS SUSPENSION OF LAND DISTURBANCE ACTIVITIES. REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.12.
5. ACCUMULATED SEDIMENT IN BMPS SHALL BE REMOVED WITHIN SEVEN DAYS AFTER A STORMWATER RUNOFF EVENT OR PRIOR TO THE NEXT ANTICIPATED STORM EVENT, WHICHEVER IS EARLIER. SEDIMENT MUST BE REMOVED WHEN BMP DESIGN CAPACITY HAS BEEN REDUCED BY 50 PERCENT OR MORE.

FLOOD ZONE

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GRADING NOTES

1. CONSTRUCT 2" AC PAVEMENT WITH 4" TYPE II AGGREGATE BASE
2. CONSTRUCT 30" MODIFIED ROLL CURB AND GUTTER PER CCAUSD NO. 217.1
3. REMOVE AND DISPOSE OF EXISTING RIP-RAP
4. CONSTRUCT 5' WIDE CONCRETE SIDEWALK (5" THICK WITH 5" TYPE II AGGREGATE BASE) PER CCAUSD NO. 234
5. CONSTRUCT 8' WIDE CROSS GUTTER PER CCAUSD NO. 228
6. CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES PER CCAUSD NO. 235, CASE I
7. CONNECT TO EXISTING SIDEWALK AND MATCH EXISTING GRADE
8. INSTALL 6' HIGH TUBULAR STEEL FENCE PER CCAUSD NO. 425.51 AND DETAIL 22 ON SHEET D-2
9. INSTALL 12.5' TYPE "CM2" DROP INLET PER CCAUSD NO. 412.1 AND STORM DRAIN WATER QUALITY MANAGEMENT STAMP PER CCAUSD NO. 421
10. INSTALL 15.0' TYPE "CM2" DROP INLET PER CCAUSD NO. 412.1 AND STORM DRAIN WATER QUALITY MANAGEMENT STAMP PER CCAUSD NO. 421
11. INSTALL 24" CLASS III RCP STORM DRAIN
12. INSTALL RCP SD END SECTION PER DETAIL 23 ON SHEET D-2 (NDOT STD DWG. R-2.31)
13. INSTALL GROUTED RIP RAP W/ 6" TYPE II GRANULAR BEDDING WITH FILTER FABRIC D50=8", T=16"
14. CONNECT TO EXISTING PAVEMENT AND MATCH EXISTING GRADE
15. INSTALL DEPRESSED CURB PER DETAIL 21 ON SHEET D-2
16. INSTALL RIP RAP W/ 6" TYPE II GRANULAR BEDDING WITH FILTER FABRIC D50=8", T=12"
17. EXISTING GROUTED RIP RAP W/ 6" TYPE II GRANULAR BEDDING WITH FILTER FABRIC D50=8", T=16"
18. EXISTING 30" RCP CLASS III STORM DRAIN PER ####
19. EXISTING RCP SD END SECTION PER ####
20. EXISTING 12.5' TYPE "CM2" DROP INLET PER ####

DRAINAGE		PRIVATE	PUBLIC
1. 8" WIDE CONCRETE VALLEY GUTTER W/10" TYPE II AGGREGATE BASE	SF	1,948	–
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TODD J. STEADHAM, P.E. 15292 DATE

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NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS, NV

CENTURY COMMUNITIES

SKYE CANYON 2.08 /2.09 PHASE 2
GRADING PLAN III

S:19 S
R:59 E

DATE: 02/03/2020
DRAFTER: HIR
DESIGNER: HIR
CHECKED: TJS
PROJECT NO.
CEN1905-000

PROFESSIONAL ENGINEER — STATE OF NEVADA — TODD J. STEADHAM — Exp. 06/30/2020 — CIVIL — No. 15292 — 3/3/20

G-3
SHEET 6 OF 12

J:\cen1905-000 skye canyon parcel 2.08\dwg\mgrav\phase 2\cen1905-000 grd-2.dwg 2/3/2020 7:37 AM mgrav Xref

Call before you Dig AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY. Call 811 OR 1-800-227-2600

0 30 60
SCALE – 1"=30' FEET

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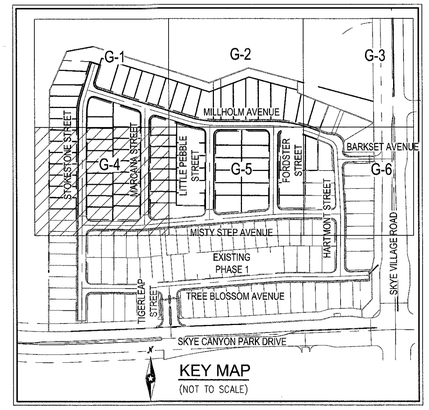

KEY MAP
(NOT TO SCALE)

SOILS REPORT

SOILS REPORT BY SOUTHWEST GEOTECHNICAL

PROJECT NO. 175337 DATED 10/17/18

UPDATED SOILS REPORT BY SOUTHWEST GEOTECHNICAL

PROJECT NO. 175337 DATED 8/28/19

EARTHWORKS

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7. CONNECT TO EXISTING SIDEWALK AND MATCH EXISTING GRADE
8. INSTALL 6' HIGH TUBULAR STEEL FENCE PER CCAUSD NO. 425.S1 AND DETAIL 22 ON SHEET D-2
9. INSTALL 12.5' TYPE "CM2" DROP INLET PER CCAUSD NO. 412.1 AND STORM DRAIN WATER QUALITY MANAGEMENT STAMP PER CCAUSD NO. 421
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TODD J. STEADHAM, P.E. 15292 DATE

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NO.	DESCRIPTION	DATE	BY	APP.	APP. DATE

CITY OF LAS VEGAS, NV

CENTURY COMMUNITIES

SKYE CANYON 2.08 /2.09 PHASE 2
GRADING PLAN IV

S:12 s
R:59 E

DATE: 02/03/2020
DRAFTER: HIR
DESIGNER: HIR
CHECKED: TJS
PROJECT NO.
CEN1905-000

PROFESSIONAL ENGINEER – STATE OF NEVADA – TODD J. STEADHAM – Exp. 05/30/2020 – CIVIL – No. 15292 – 2/3/20

G-4
SHEET 7 OF 12

J:\ven1905-000 skye canyon parcel 2.08\vla\finance\phase 2\ven1905-000 grd-2.dwg 2/3/2020 7:37 AM vdela Abad

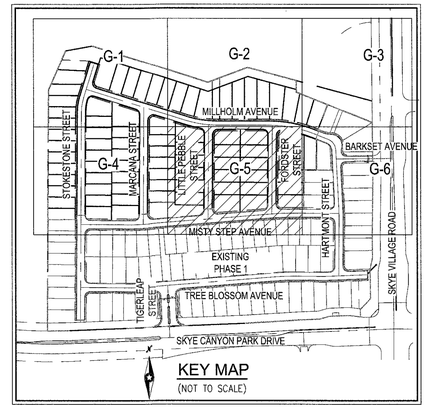
SEE SHEET G-2 FOR CONTINUATION

SEE SHEET G-4 FOR CONTINUATION

SEE SHEET G-6 FOR CONTINUATION

0 30 60
SCALE – 1"=30' FEET

CALL SOUTHWEST GAS AT 702-651-2111 FOR STANDBY WHEN EXCAVATING OVER OR NEAR HIGH PRESSURE GAS LINES



KEY MAP
(NOT TO SCALE)

SOILS REPORT

SOILS REPORT BY SOUTHWEST GEOTECHNICAL

PROJECT NO. 175337 DATED 10/17/18

UPDATED SOILS REPORT BY SOUTHWEST GEOTECHNICAL

PROJECT NO. 175337 DATED 8/28/19

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FILL= 16,150 CU YDS

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2) FOR ROADWAY WIDENING AND HALF STREET IMPROVEMENTS THE CONTRACTOR SHALL VERIFY CROSS SLOPES FROM EXISTING PAVEMENT SAWCUT LINE TO PROPOSED EDGE OF PAVEMENT OR PROJECTED LIP OF CURB PRIOR TO SUBGRADE PREPARATION AND CONSTRUCTION OF PROPOSED CURB LINE. IF MINIMUM OR MAXIMUM CROSS SLOPES DO NOT MEET AGENCY STANDARDS THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

GRADING NOTES

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4. MAXIMUM/MINIMUM SLOPES AND MINIMUM STREET SECTIONS NOT TO EXCEED THAT SHOWN ON GEOTECH REPORT.
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9. 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 EXIST) WITHIN THE SIGHT VISIBILITY ZONES.

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18. EXISTING 30" RCP CLASS III STORM DRAIN PER ####
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LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDELINES

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2. ADDITIONAL CONSTRUCTION SITE DISCHARGE BEST MANAGEMENT PRACTICES MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT MEET THE PERFORMANCE STANDARDS SPECIFIED IN CLARK COUNTY TITLE 24.40 AND IN THE LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDANCE MANUAL.
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4. 24" RCP CLASS III STORM DRAIN	LF	–	167
5. GROUTED RIPRAP W/ FILTER FABRIC D50=12", THK=24"	SF	150	–
6. RIPRAP W/ FILTER FABRIC D50=6", THK=12"	SF	546	–

FLOOD CERTIFICATION

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

TODD J. STEADHAM, P.E. 15292 DATE

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THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE X (UNSHADED) AS DEPICTED ON FLOOD INSURANCE RATE MAP (FIRM) PANEL 32003C1750E, DATED SEPTEMBER 27, 2002. A ZONE X (UNSHADED) IS DESCRIBED AS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN.

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FAST Call before you UnderGround 1-702-432-5300 FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T.)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY. CALL BEFORE YOU DO OVERHEAD 1-702-227-2929

Call before you Dig AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY. Call 811 OR 1-800-227-2600

Westwood
Phone (702) 284-5300
Fax (702) 284-5399
5740 S. Arville Street
Suite 216
Las Vegas, NV 89118
westwoods.com
Westwood Professional Services, Inc.

NO.	DESCRIPTION	DATE	BY	APP'D	APP'D DATE

CITY OF LAS VEGAS, NV

CENTURY COMMUNITIES

SKYE CANYON 2.08 /2.09 PHASE 2
GRADING PLAN V

S-15
R-59E

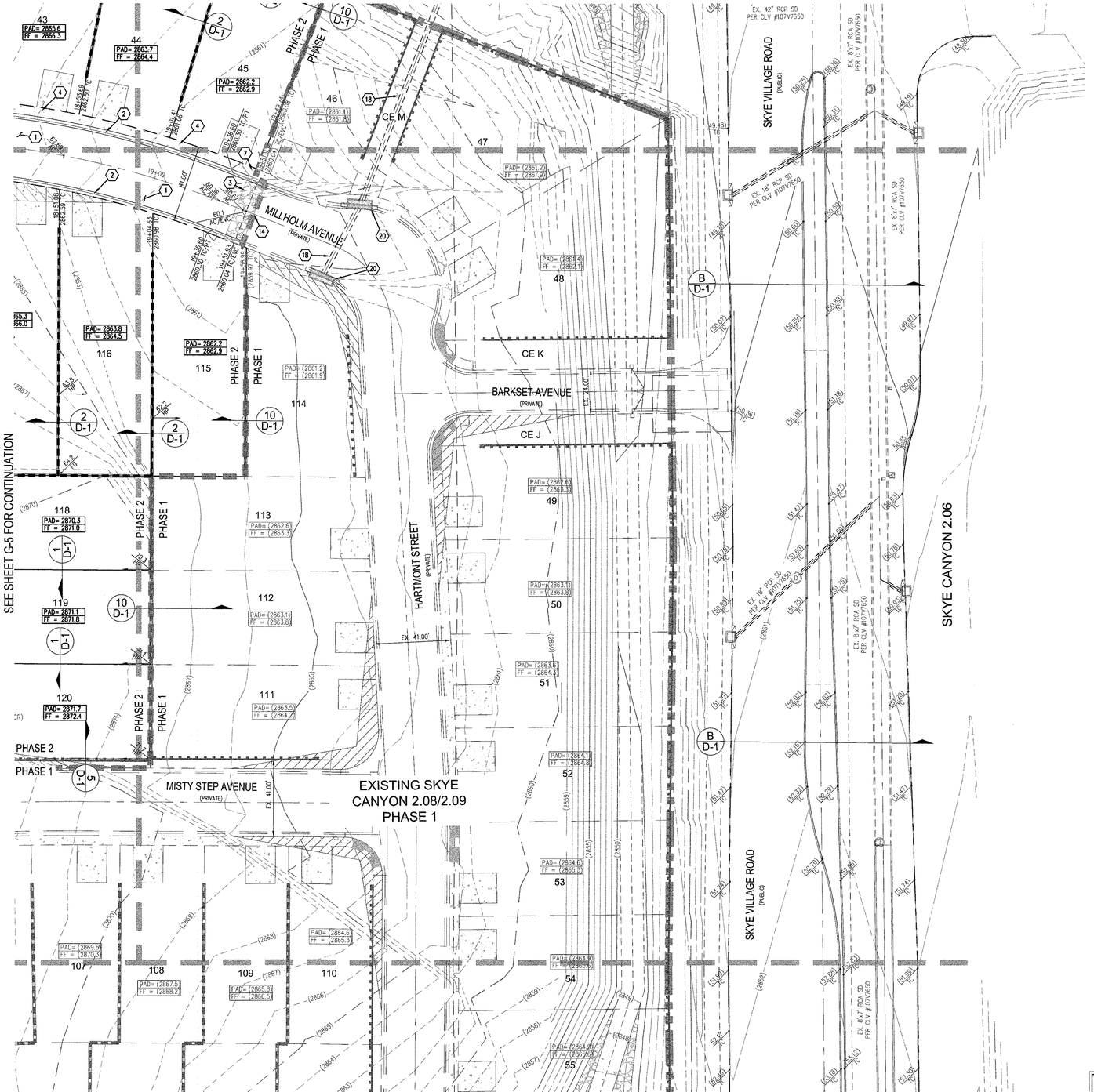
DATE: 02/03/2020
DRAFTER: HIR
DESIGNER: HIR
CHECKED: TJS

PROJECT NO.
CEN1905-000

PROFESSIONAL ENGINEER – STATE OF NEVADA – TODD J. STEADHAM – Exp. 06/30/2020 – CIVIL – No. 15292

G-5
SHEET 8 OF 12

J:\ven1905-000 skye canyon parcel 2.08\dwg\mrandpurpose 2\ven1905-000 grd-2.dwg 2/3/2020 7:37 AM Valerie Abad



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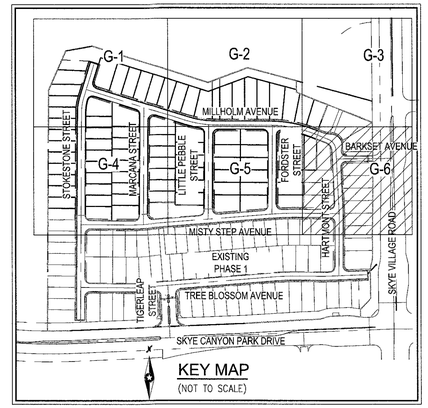

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OR
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Westwood
5740 S. Arville Street
Suite 216
Las Vegas, NV 89118
Phone (702) 284-5300
Fax (702) 284-5399
westwoodps.com
Westwood Professional Services, Inc.

NO.	DESCRIPTION	DATE	BY	APP	APP DATE

CITY OF LAS VEGAS, NV

CENTURY COMMUNITIES

SKYE CANYON 2.08 /2.09 PHASE 2
GRADING PLAN VI

S 12 T 19 S R 59 E

DATE: 02/03/2020
DRAFTER: HIR
DESIGNER: HIR
CHECKED: TJS
PROJECT NO.
CEN1905-000

PROFESSIONAL ENGINEER – STATE OF NEVADA – TODD J. STEADHAM – Exp. 06/30/2020 – CIVIL – No. 15292

G-6
SHEET 9 OF 12

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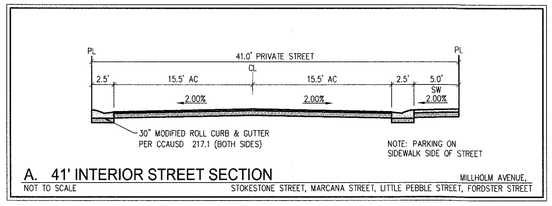
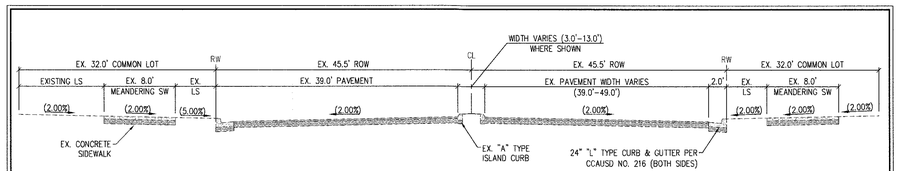


A. 41' INTERIOR STREET SECTION

NOT TO SCALE

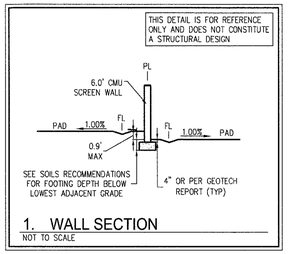
MILLHOLM AVENUE, STOKESTONE STREET, MARCANA STREET, LITTLE PEBBLE STREET, FORDSTER STREET



B. EXISTING PERIMETER STREET SECTION

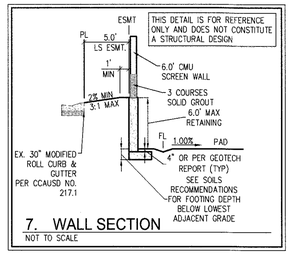
NOT TO SCALE

SKYE VILLAGE ROAD



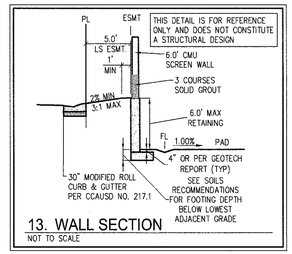
1. WALL SECTION

NOT TO SCALE



7. WALL SECTION

NOT TO SCALE



13. WALL SECTION

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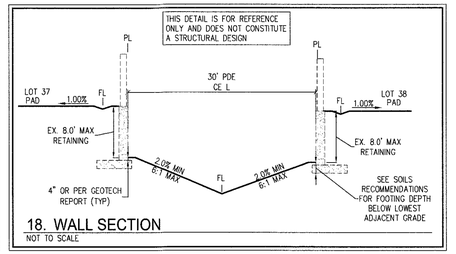

18. WALL SECTION

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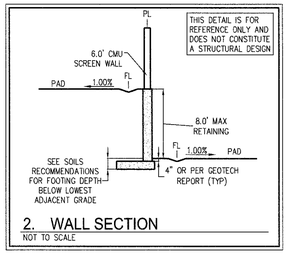
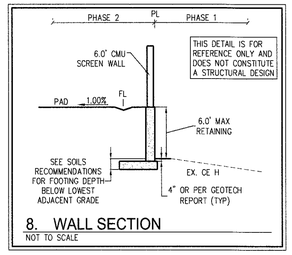


2. WALL SECTION

NOT TO SCALE



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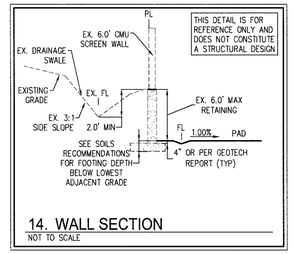

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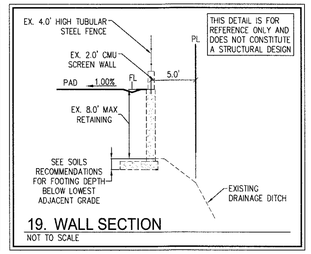

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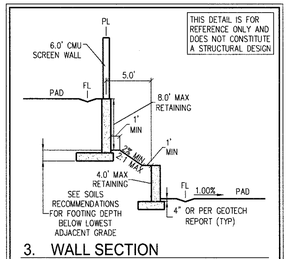

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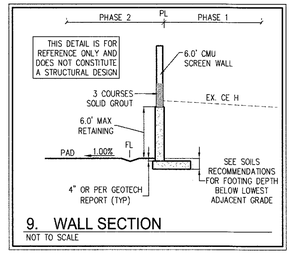

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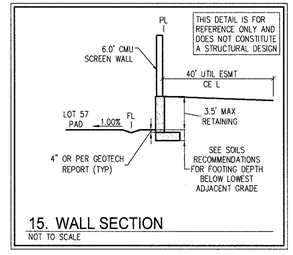

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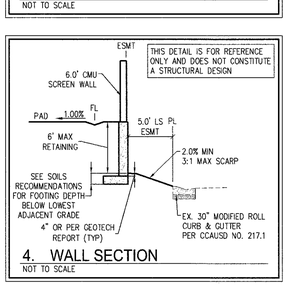

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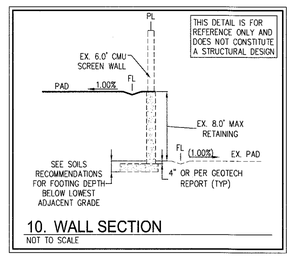

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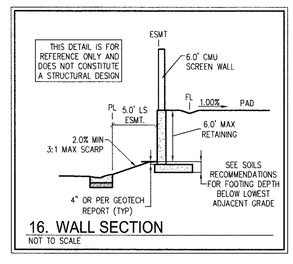

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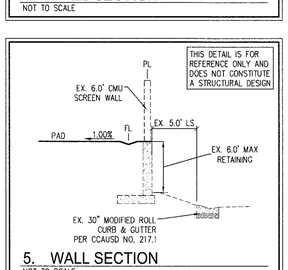

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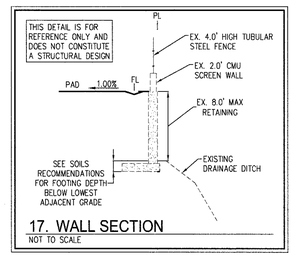

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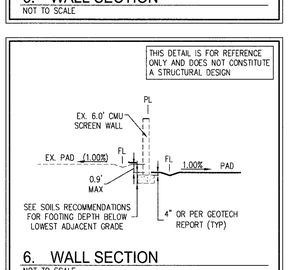


12. WALL SECTION

NOT TO SCALE

6. WALL SECTION

NOT TO SCALE

5. WALL SECTION

NOT TO SCALE

WALL FOOTING NOTES:

1. PROVIDE MINIMUM 4" COVER FROM TOP OF FOOTING TO LOWEST ADJACENT FINISHED GRADE OR PER GEOTECH REPORT RECOMMENDATION
2. SEE GEOTECH REPORT RECOMMENDATIONS FOR THE FOOTING DEPTH FROM THE LOWEST ADJACENT GRADE TO BOTTOM OF FOOTING

Westwood
5740 S. Arville Street
Suite 216
Las Vegas, NV 89118
Phone (702) 284-5300
Fax (702) 284-5399
westwoodps.com
Westwood Professional Services, Inc.

NO.	DESCRIPTION	DATE	BY	APP.	APP. DATE

CITY OF LAS VEGAS, NV

CENTURY COMMUNITIES

SKYE CANYON 2.08 /2.09 PHASE 2

DETAIL SHEET I

S:12 T:19 R:59E

DATE: 02/03/2020

DRAFTER: HIR

DESIGNER: HIR

CHECKED: TJS

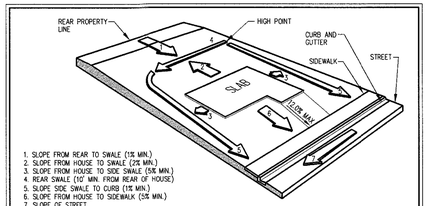
PROJECT NO.
CEN1905-000

PROFESSIONAL ENGINEER - STATE OF NEVADA
TODD J. STEADHAM
Exp. 06/30/2020
CIVIL
No. 15292
2/3/20

D-1

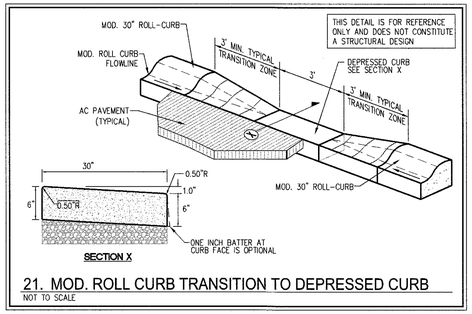
SHEET 10 OF 12

J:\cen1905-000 skye canyon parcel 2.08\cad\mmrw\prints 2\cen1905-000 dtl-2.dwg 2/3/2020 7:38 AM Loreto Abad



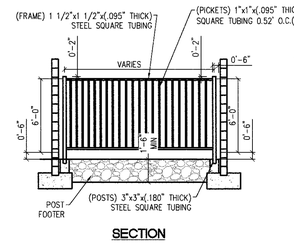
20. TYPE "A" LOT GRADING PERSPECTIVE

NOT TO SCALE



21. MOD. ROLL CURB TRANSITION TO DEPRESSED CURB

NOT TO SCALE



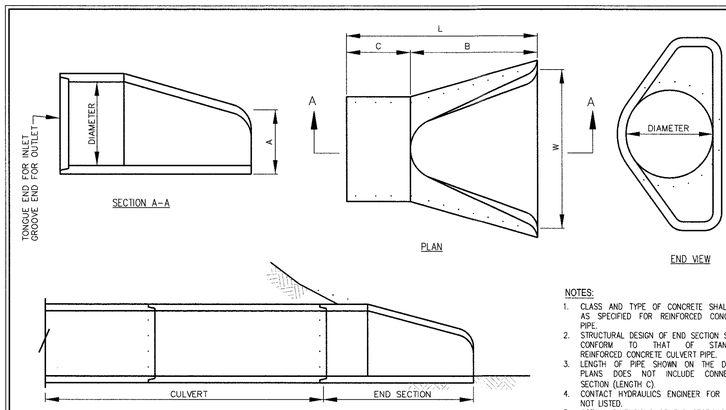
NOTE: POSTS PLACED IN HARDENED CONCRETE REQUIRE AN 8"ø CORING THROUGH THE SLAB AND BASE FULLY GROUTED WITH HIGH STRENGTH GROUT.

INTERIOR POSTS POURED MONOLITHIC WITH THE SLAB SHALL BE EMBEDDED A MINIMUM OF 18" INTO A 24"X24" FOOTER. END POSTS POURED MONOLITHIC WITH THE SLAB SHALL HAVE FULL EMBEDMENT IN THE SLAB.

NOTE: STEEL WILL BE PRIMERED AND PAINTED WHITE UNLESS OTHERWISE SPECIFIED.

22. TUBULAR STEEL FENCE DETAIL

NOT TO SCALE



NOTES:

1. CLASS AND TYPE OF CONCRETE SHALL BE AS SPECIFIED FOR REINFORCED CONCRETE PIPE.
2. STRUCTURAL DESIGN OF END SECTION SHALL CONFORM TO THAT OF STANDARD REINFORCED CONCRETE CULVERT PIPE.
3. LENGTH OF PIPE SHOWN ON THE DESIGN PLANS DOES NOT INCLUDE CONNECTOR SECTION (LENGTH C).
4. CONTACT HYDRAULICS ENGINEER FOR SIZES NOT LISTED.
5. ACTUAL DIMENSIONS OF END SECTIONS MAY VARY BY MANUFACTURER. ADJUST PIPE LENGTHS AS NECESSARY TO ACCOMMODATE PRECAST END SECTIONS USED. SEE SHEETS R-1.1.2 AND R-2.1.4 FOR EXTENSION BEYOND FILL SLOPE AND PIPE PAY LENGTHS.

* FOR REFERENCE ONLY

DIAMETER	WEIGHT	A	B	C *	L	W
18"	670	9"	2'-1"	2'-1"	4'-2"	3'
24"	1300	91/2"	3'-5"	2'-6"	6'	4'
30"	1850	1'	4'-5"	1'-8"	6'-1"	5'
36"	3500	1'-3"	5'-2"	2'-11"	8'-1"	6'
42"	4930	1'-9"	5'-3"	2'-11"	8'-2"	6'-2"
48"	6700	2'	6'	2'-2"	8'-2"	7'
54"	7150	2'-3"	5'-6"	2'-9"	8'-3"	6'-10"

NEVADA DEPARTMENT OF TRANSPORTATION

RCP END SECTION
18" RCP TO 54" RCP

SIGNED ORIGINAL ON FILE	R-2.3.1	(603)
CHIEF HYDRAULICS ENGINEER	ADOPTED 1/75	REVISION 5/09

23. NDOT RCP END SECTION

NOT TO SCALE

Westwood
5740 S. Arville Street
Suite 216
Las Vegas, NV 89118
Phone (702) 284-5300
Fax (702) 284-5399
westwoodps.com
Westwood Professional Services, Inc.

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS, NV

CENTURY COMMUNITIES

SKYE CANYON 2.08 /2.09 PHASE 2

DETAIL SHEET II

S 12
T 19
R 59 E

DATE: 02/03/2020

DRAFTER: HIR

DESIGNER: HIR

CHECKED: TJS

PROJECT NO.
CEN1905-000

D-2
SHEET 11 OF 12

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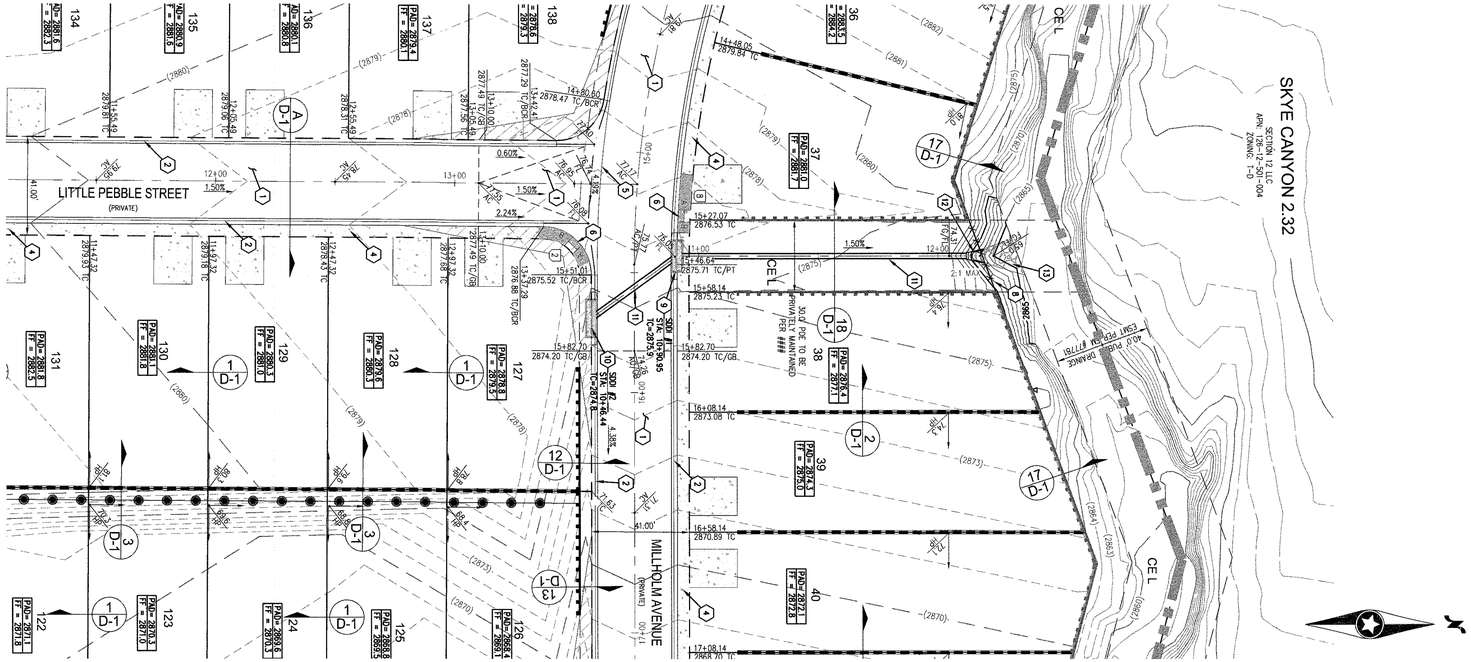
LITTLE PEBBLE STREET
(PRIVATE)
MILLHOLM AVENUE
(PRIVATE)
SKYE CANYON 2.32
SECTION 12, LLC.
APN: 126-12-201-004
ZONING: CD
CEL
CEL
CEL
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FF = 2890.3
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FF = 2890.6
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