DS #: 5654

APN: 124-12-310-001

PROJECT: Skye Canyon II Parcels 2.16 & 2.17 Update

SUBMITTAL: 1st

SCANNED BY/DATE:

CHECKED BY/DATE:

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM				DATE: November 20, 2018
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: **Skye Canyon II Parcels 2.16 & 2.17 – Update (Update to DS4842 & DS5000)**			**COPIES TO:** Slater Hanifan Group
Cross Streets:	NEC of Shaumber Rd and Eagle Canyon Ave			Pulte Homes
File Number:	F:\Depot\DSMemos\DS5054A.doc			Bart Anderson, P.E., DevCo
Parcel Number:	126-12-310-001			CCRFCD
Zoning Action:	TMP-72766, TMP-65809			
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	10/25/2018 & 11/19/2018	11/8/2018 & 11/20/2018	See Comment Below	$400.00	500489: $400
			TOTAL FEES (LDDRS):	**$400.00**	----

REMARKS:

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

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

1. Provide a detail for the proposed 24" RCP connecting into the back of the existing drop inlet.
2. The public sewer easement through Common Element "D" shall also be a designated as a public drainage easement to be privately maintained by the HOA.

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

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

END OF REMARKS
jks

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

Recvd 11/19/18

FMP-74466
TMP-72977

DS5054
N/C

OLY1721.000

November 9, 2018

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

SUBJECT: **Justification Letter for Proposed 2-foot Grade Difference from Existing Ground for Skye Canyon II Parcel 2.17 (APN 126-12-312-001)**

Ms. Hartman-Maynard,

The Slater Hanifan Group, respectfully submits this justification letter in support of proposed grades that are greater than 2-feet above and below the existing ground on the subject site. The site is located at the northeast corner of Shaumber Road and Eagle Canyon Avenue. The Assessor's Parcel Number is 126-12-312-001. The project site is approximately 18.1 net acres.

The project site is constrained on three sides by an existing roadway Eagle Canyon on the south, an existing subdivision to the east (also owed by Pulte) and by the exiting arroyo to the north. In addition to these restraints, Pulte has requested Parcels 2.16 and 2.17 combined utilizing the existing parcel entry in Parcel 2.16 off Eagle Canyon Avenue. To accomplish this, the grading for Parcel 2.17 must be an extension to the grading in Parcel 2.16. Perpetuating the grading to connect the parcels has resulted in grades that are more than 2-feet above and below the natural ground. To make the site grading work, we are asking approval for the grade difference.

Thank you for consideration. Please contact me at (702) 284-5300 if you have any questions.

Sincerely,

Slater Hanifan Group, Inc.

Rhonda Miller

Rhonda Miller
Assistant Project Manager

PLANS APPROVED
PLANNING
Dept. of Planning
City of Las Vegas, Nevada
2' GRADE DIFFERENCE ONLY
LHM NOV 13 2018

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.

TECHNICAL DRAINAGE STUDY
UPDATE
Skye Canyon II Parcels 2.16 and 2.17

City of Las Vegas, Nevada

Job No.: OLY1721.000
Date: October 2018

Prepared By:
Slater Hanifan Group a Westwood Team
5740 S. Arville Street, Suite 216
Las Vegas, Nevada 89118
Phone: 702-284-5300 ▪ Fax: 702-284-5399

Prepared For:
Pulte Homes of Nevada
7255 S Tenaya Way
Las Vegas, Nevada 89113
Phone: 702-804-7554

10/25/18

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

Assisted By: Cameron Bencini, P.E.

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE STUDY INFORMATION FORM

Name of Development: Skye Canyon II Parcels 2.16 and 2.17 Update Date: October 2018

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

East/West: Eagle Canyon Avenue

b) Section: 12 Township: 19 South Range: 59 East

c) APN: 126-12-310-001, 126-12-713-004 & -005, 126-12-311-001, -002, -003, -004, 005, -006, -007, -008, -009, 126-12-711-020, -021, -022, -023 -029, 126-12-795-001 and -061

Name of Owner/Developer: P N II Inc. / Pulte Homes of Nevada

Telephone No.: 702-804-7554 Fax No.: 702-914-4800 E-mail Address: Brenin.Anderson@pultegroup.com

Address: 7255 S Tenaya Way, Las Vegas, NV 89113

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

*E-mail Address: samadi@shg-inc.com Fax No.: 702-284-5399

Firm: Slater Hanifan Group

Address: 5740 S. Arville Street, Suite 216; Las Vegas, NV 89118

Type of Land Development/Land Disturbance Process:

☐	Rezoning	☒	Subdivision Map	☐	Clearing and grading Only
☐	Parcel Map	☒	Planned Unit Development	☐	Other (Please specify below)
☐	Large Parcel Map	☐	Building Permit	☐	Roadway & Storm Drain Infrastructure

1. Total Owned Land Area: At Site: 327.96 Acres Being Developed/Disturbed: 20.2 Acres +/-

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

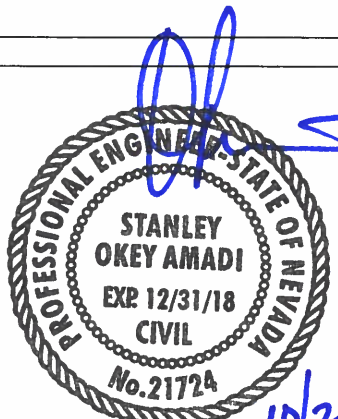
4. Proposed type of development (Residential, Commercial, Etc.): Single-Family Residential

5. Approximate upstream land area which drains to the subject site: 0 acre +/-

6. Has the site drainage been evaluated in the past? ☒ Yes** ☐ No If yes, please identify documentation: *Master Drainage Study for Skye Canyon* (SHG, DS4420), Technical Drainage Study (TDS) for Skye Canyon Parcel 2.16 (DS4842C), *TDS for Skye Canyon Phase 2 Infrastructure* (SHG, DS4739) *& TDS Updates 1 thru 4, TDS for Skye Canyon Parcel 2.17 (SHG, DS5000B)*

7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: Runoff drains to two separate local storm drain systems that discharges south into the Eagle Canyon Avenue and north into the existing Arroyo, respectively.

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



Engineer's Seal 10/25/18

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: ***SHG Job No. OLY1721.000***

STANDARD FORM 1

Updated 05/01/2008

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE SUBMITTAL CHECKLIST

Project Name: Skye Canyon II Parcels 2.16 and 2.17 Update	Map ID:
Firm Name: Slater Hanifan Group (SHG)	
Address: 5740 S. Arville St., Suite 216	
City: Las Vegas State: Nevada	Zip: 89118
Phone Number: 702-284-5300	Fax Number: 702-284-5399

Name of Owner/Developer: P N II Inc. / Pulte Homes		
Address: 7255 S Tenaya Way, Las Vegas, NV 89113		
City: Las Vegas	State: NV	Zip: 89113
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.

Reference:	**STANDARD FORM 2**

DRAINAGE SUBMITTAL CHECKLIST

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-12), for Flood Control Facilities and Environmental areas with the site delineated.
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.
X		Off-site drainage basin maps for existing, interim and future conditions showing the existing topography, basin boundaries, concentration points, and flows in cfs.

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.

REFERENCE:	**STANDARD FORM 2**

DRAINAGE SUBMITTAL CHECKLIST

III. DRAINAGE PLAN (Continued)

Yes	No	
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.
	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 is16"x48". 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.

REFERENCE:	**STANDARD FORM 2**

DRAINAGE SUBMITTAL CHECKLIST

III. DRAINAGE PLAN (Continued)

Yes	No	
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.
	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.

IV. HYDROLOGIC ANALYSIS

Yes	No	
X		Appropriate soil information and Soils Map for existing and future conditions with subbasins and property delineated.
	N/A	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 storm water flows showing basin area, Q_{10} and Q_{100} for both individual basins and combined basin flows, where acceptable.
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.

REFERENCE:	**STANDARD FORM 2**

DRAINAGE SUBMITTAL CHECKLIST

V. HYDRAULIC ANALYSIS

Yes	No	
X		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 ≤ 8. Q_{10} d x v ≤ 6 and 12 foot dry lane for rights-of-way ≥ 80 feet. Calculations must be labeled by street name as indicated on the Grading Plan.
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.)
	N/A	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, which ever 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.

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	
-	N/A	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.O.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.
-	N/A	Back of lot elevations and lot drainage pattern for all lots including common lots.
-	N/A	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.)
-	N/A	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.
-	N/A	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.
-	N/A	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.

LIST OF APPENDICIES

Appendix A	Revised Drainage Exhibits
Appendix B	Revised Hydrologic Data
Appendix C	Revised Hydraulic Computations
Appendix D	Revised Finished Floor Analysis
Appendix E	Reference Material *Technical Drainage Study for Skye Canyon II Parcel 2.16*, by SHG
Appendix F	Reference Material *Technical Drainage Study for Skye Canyon II Parcel 2.17*, by SHG
Appendix G	Reference Material from Skye Canyon II Phase 2 Infrastructure (DS4739J) *Technical Drainage Study for Skye Canyon II Phase 2 Infrastructure*, by SHG
Appendix H	CD of Electronic Files (PDF) and Improvement Plans

OLY1721.000

October 24, 2018

Albert Sung, P.E.
Flood Control Project Engineer
City of Las Vegas Department of Public Works
333 N. Rancho Drive
Las Vegas, Nevada 89106

Subject: Technical Drainage Study Update for Skye Canyon II Parcels 2.16 and 2.17

Dear Mr. Sung:

Submitted for your review is this *Technical Drainage Study Update for Skye Canyon II Parcels 2.16 and 2.17* (hereinafter referred to as the Update Study). The site had been previously analyzed and designed as addressed in the Technical Drainage Study for Skye Canyon II Parcel 2.16 (CLV DS4842) and the Technical Drainage Study for Skye Canyon Parcel 2.17 (CLV DS5000), both prepared by Slater Hanifan Group. The Parcel 2.16 and Parcel 2.17 studies were approved on March 8, 2017 and July 19, 2018, respectively. The approval letters have been included in Appendices E and F of this submittal.

Overview

The Parcel 2.17 project site was regraded to reduce the amount of imported fill material. Consequently, most of the computations within the Parcel 2.17 Study were reanalyzed and the drainage pattern of the parcel is revised to convey thru Parcel 2.16; hence, modifications to Parcel 2.16 project site were made. Refer to Exhibit E, included in Appendix A, for a detailed illustration of the revised developed condition drainage patterns. Revisions to Parcels 2.16 and 2.17 include;

- Regrading of all onsite roadways and pads within Parcel 2.17.
- Regrading of the tie-ins between Parcels 2.16 and 2.17.
- Discharging of onsite flows from Parcel 2.17 onto Parcel 2.16.
- Providing additional storm drain to Parcel 2.16.
- Connecting the proposed storm drain system to the existing drop inlet in Eagle Canyon Avenue.
- Redesign the northern Parcel 2.17 storm drain system.
- Revising all pad and finished floor elevations within Parcel 2.17.

This Update Study will address the revisions to the approved Parcels 2.16 and 2.17 Technical Drainage Studies (hereinafter referred to as the Approved Studies) as well as show conformance to the drainage patterns established by Approved Studies.

Hydrology

The onsite hydrology for Parcel 2.17 has been revised to reflect the proposed grading revision. The site is analyzed as two drainage basins identified as DON1 and DON2. DON1 comprises of the northern portion of the site that discharges into the existing arroyo adjacent to the northern boundary of the site. Basin DON2 conveys east into Parcel 2.16 and is captured by proposed inlets and storm drain to discharge into the existing Eagle Canyon Avenue storm drain

system. No changes in the hydrology of Parcel 2.16 is proposed; however, the drainage basin for the parcel has been prorated with this update study to determine peak flows utilized in the sizing of the proposed inlet and storm drain facilities. Please refer to the Developed Conditions Drainage Map (Exhibit E) provided in Appendix A for an illustration of the drainage patterns.

Street Flows and Hydraulic Sections

Onsite Roadways

The onsite roadway sections for Parcel 2.17 were revised. More specifically, Section O-1a, Section O-1b and Section O-1c were reanalyzed. Section O-1a and O-1b were reanalyzed as half streets and relocated east onto Parcel 2.16. These two sections were used to size proposed curb Inlets. Section O-1c remains in the same location; however, the street gradient has become shallower. Additionally, flow conveyed through this section has increased. With the flattened slope and increased flowrate, Section O-1c has become the critical section used to evaluate all finished floor elevations within Parcel 2.17. Note that the flow to Section R-1 has decreased and matches the Original Parcel 2.16 Study.

Offsite Roadways

Basin WL4b (which represents the portion of Parcel 2.17 analyzed in the Skye Canyon Master Study and the Skye Canyon Phase 2 Infrastructure Study) no longer discharges onto Eagle Canyon Avenue. As a result, the 100-year flow within the Eagle Canyon Avenue roadway has decreased by 27-cfs. Roadway section ECA2 and ECA2b were reanalyzed with the reduced flow to quantify new interception flow values of the inlets along Eagle Canyon Avenue.

Storm Drain Models

Northern System (SDN)

The revised grading of Parcel 2.17 has rerouted more runoff to the north. This flow increase, along with the flattened street slope at the inlet, has caused more flow to be intercepted by the proposed inlets. In addition, the inverts of the proposed storm drain have changed due to the proposed regrading of the site. As a result, this system has been reanalyzed.

Southern System (SDS)

In accordance with the Master Drainage Study, it's pertinent that portions of flow from Parcel 2.17 be captured by the Phase 2 infrastructure facilities. The revised grading of Parcel 2.17 has made it impossible for flows from the development to discharge onto Eagle Canyon Avenue as surface flows. As a result, the storm drain has been relocated east to Parcel 2.16 to intercept flows from both parcels and convey it directly into the Eagle Canyon Avenue mainline system (U-ECA). Note that the starting water-surface elevation used for this model was obtained through the Eagle Canyon Avenue storm drain reanalysis described below.

Eagle Canyon Avenue (U-ECA)

Runoff along Eagle Canyon Avenue has been reduced due to Basin WL4b no longer discharging onto the roadway as surface flow. Consequently, the Eagle Canyon Avenue storm drain (U-ECA) was analyzed. The revised model includes the new intercepted flowrates along with the proposed flow from Parcels 2.16 and 2.17.

Finished Floor Elevations

All pad and finished floor elevations within Parcel 2.17 were revaluated along with lots 24-27 and 33-36 of Parcel 2.16. All the other lots from Parcel 2.16 modified per the Approved Parcel 2.17 Study have reverted to the finished floor elevations designed per the Approved Parcel 2.16 Study. All other finished floor elevations from Parcel 2.16 Study were not reanalyzed due to the flow decrease to Section R-1 which matches the Approved Parcel 2.16 Study.

The proposed finished floor elevations satisfy the CCRFCD as well as the local City of Las Vegas policy and are elevated a minimum of 6-inches above the adjacent top of curb elevation measured at the high side of the lot. In addition, all the finished floors are adequately flood protected and elevated above twice the depth of flow in the adjacent street. The hydraulic evaluation of the proposed finished floors, utilizing the applicable flow depths established by this study, has been included in Appendix D.

Conclusions

1. This Update Study addresses changes to the Parcel 2.16 Study and the Parcel 2.17 Study warranted by the regrading of Parcel 2.17.
2. Parcel 2.17 no longer discharges onto Eagle Canyon Avenue but drains to Parcel 2.16. Storm drain is proposed within Parcel 2.16 to intercept the flow from Parcels 2.16 and 2.17.
3. Both storm drain systems proposed by Parcel 2.17 as well as the Eagle Canyon Avenue storm drain were reanalyzed. The southern Parcel 2.17 system was relocated onto Parcel 2.16 and discharges directly into the Eagle Canyon Avenue storm drain system. All systems meet CCRFCD requirements.
4. The proposed finished floors are adequately flood protected meeting the criteria against design flows and potential overflow conditions.
5. The grading plan, storm drain profile and detail sheets for this project have been included with this study. These plans support the drainage patterns and conclusions detailed in this study.

Please note that there are separate bonds and therefore separate plan sets for each street and infrastructure improvements since the last drainage study approval. The revised improvement plans have been provided in Appendix H. If you have any questions or require additional information, please do not hesitate to contact us at 702-284-5300.

Respectfully Submitted,

SLATER HANIFAN GROUP A WESTWOOD TEAM

Cameron Bencini, P.E.
Flood Control Division

pc: Mark Failla, P.E., CFM – SHG
Stanley Amadi, P.E. – SHG
Tracey Stratton – SHG

APPENDIX A

Revised Drainage Exhibits

j:\oly1721.000 skye canyon parcel 2.17\drainage\update study\figures\oly1721.000 ex d1 soils map.dwg 10/16/2018 4:11 PM Cameron Bencini

N

0 500 1000

SCALE – 1"=500' FEET

LEGEND

- BASIN BOUNDARY
- ID — BASIN ID
- SOIL TYPE BOUNDARY

SLATER HANIFAN GROUP
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PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

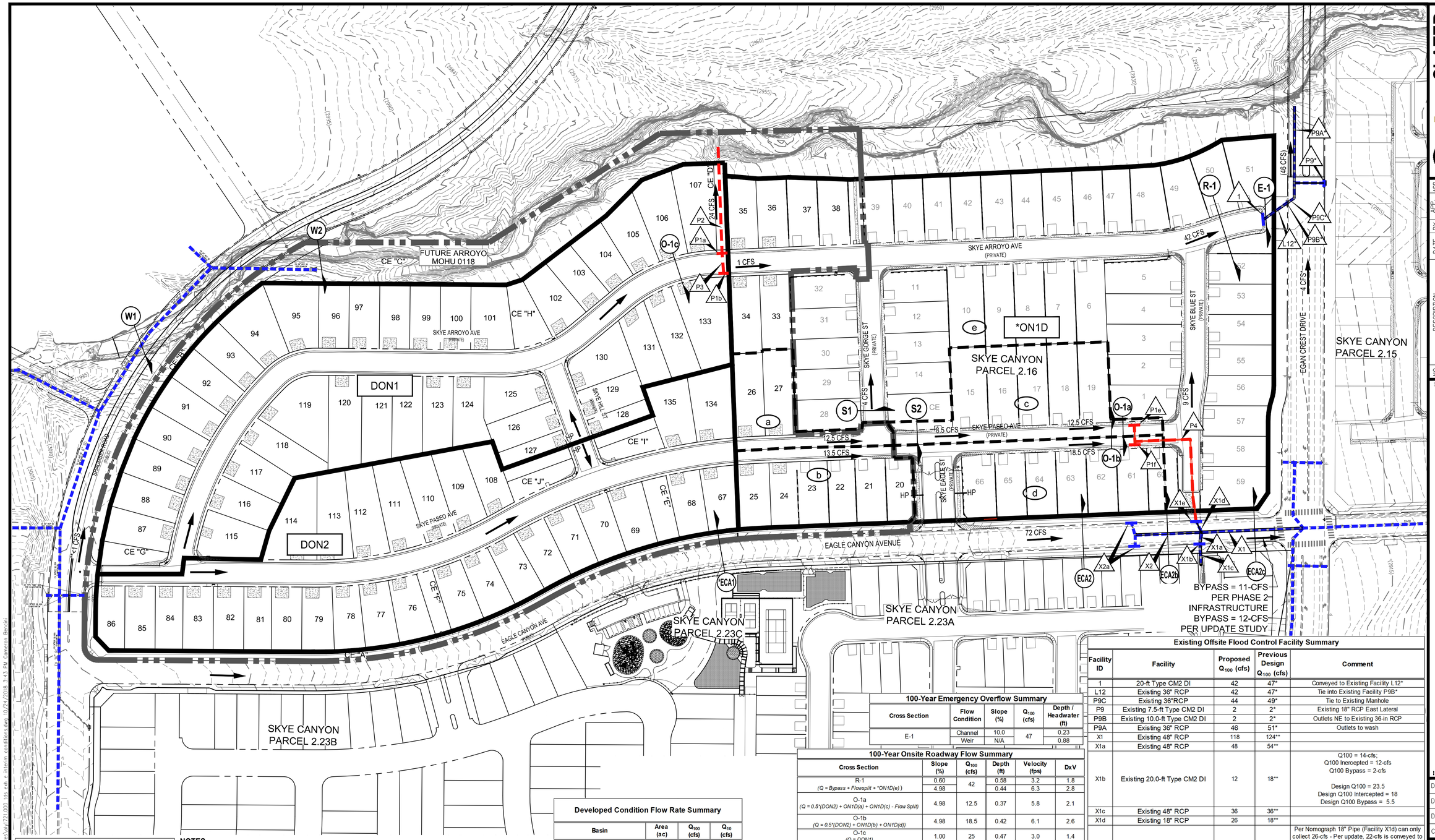
PULTE HOMES OF NEVADA

SKYE CANYON II PARCEL 2.17

SOILS MAP

DATE: OCTOBER 2018
DRAFTER: CWB
DESIGNER: CWB
CHECKED: SOA
PROJECT NO. OLY1721-000

EXHIBIT D
SHEET 1 OF 1



LEGEND

- BASIN BOUNDARY
- PRO-RATED SUBBASIN BOUNDARY
- ID — BASIN ID
- ID — PRO-RATED SUBBASIN ID
- FLOW DIRECTION
- ID — FLOWMASTER SECTION
- ID — FACILITY ID
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN

NOTES:

* REFERENCED FROM THE PARCEL 2.17 STUDY

** REFERENCED FROM THE PHASE 2 INFRASTRUCTURE

N

0 80 160

SCALE – 1"=80' FEET

Developed Condition Flow Rate Summary

Basin	Area (ac)	Q_{100} (cfs)	Q_{10} (cfs)
DON1	8.8	25	12
DON2	7.1	21	10
*ON1D	14.2	42	19

* Referenced from the Parcel 2.16

100-Year Offsite Roadway Flow Summary

Cross Section	Slope (%)	Q_{100} (cfs)	Depth (ft)	Velocity (fps)	DxV
ECA1*	4.90	33	0.46	6.1	2.8
ECA2	4.90	72	0.57	7.5	4.2
ECA2b	4.90	28	0.50	4.1	2.1
ECA2c (Design)	2.00	11	0.39	3.4	1.3
ECA2c (Proposed)	2.00	12	0.39	3.4	1.3

100-Yr Hydraulic Section Summary

Section ID	Section Description	Q_{100} (cfs)	Slope (%)	Water Surface Elevation (ft)	Depth (ft)	Velocity (fps)
Section W1 Q = REF	Existing Natural Wash	240	3.00	2984.19	1.69	7.09
Section W2 Q = REF	Existing Natural Wash	240	2.80	2971.63	1.63	7.74

Prorated Flow Summary

Developed Condition

Basin	Q_{100} (cfs)	Area (acres)	Unit Flow (cfs/acre)
*ON1D	42	14.2	3.0
Subbasin	**Q_{100} (cfs)**	**Area (acres)**	**Unit Flow (cfs/acre)**
*ON1D(a)	2	0.6	3.0
*ON1D(b)	3	1.0	3.0
*ON1D(c)	4	1.3	3.0
*ON1D(d)	5	1.5	3.0
*ON1D(e)	28	9.8	3.0
TOTAL	***42***	***14.2***	

Onsite Flood Control Facility Summary

Facility ID	Facility	Comment
P1a & P1b	(2) 20-ft Type CM2 DIs	Q_{100} = 25-cfs; Q_{100} Intercepted = 24-cfs Q_{100} Bypass = 1-cfs
P1e	20-ft Type CM2 DIs	Q_{100} = 15.5-cfs; Q_{100} Intercepted = 12-cfs Q_{100} Bypass = 3.5-cfs 18" RCP Laterals
P1f	15-ft Type CM2 DIs	Q_{100} = 15.5-cfs; Q_{100} Intercepted = 10-cfs Q_{100} Bypass = 5.5-cfs
P2	24" RCP	Q_{100} = 24-cfs
P3	18" RCP	Q_{100} = 12-cfs
P4	24" RCP	Q_{100} = 22-cfs

100-Year Emergency Overflow Summary

Cross Section	Flow Condition	Slope (%)	Q_{100} (cfs)	Depth / Headwater (ft)
E-1	Channel	10.0	47	0.23
	Weir	N/A		0.88

100-Year Onsite Roadway Flow Summary

Cross Section	Slope (%)	Q_{100} (cfs)	Depth (ft)	Velocity (fps)	DxV
R-1 *(Q = Bypass + Flowsplit + *ON1D(e))*	0.60	42	0.58	3.2	1.8
	4.98		0.44	6.3	2.8
O-1a *(Q = 0.5*(DON2) + ON1D(e) + ON1D(c) - Flow Split)*	4.98	12.5	0.37	5.8	2.1
O-1b *(Q = 0.5*(DON2) + ON1D(b) + ON1D(d))*	4.98	18.5	0.42	6.1	2.6
O-1c *(Q = DON1)*	1.00	25	0.47	3.0	1.4

Existing Offsite Flood Control Facility Summary

Facility ID	Facility	Proposed Q_{100} (cfs)	Previous Design Q_{100} (cfs)	Comment
1	20-ft Type CM2 DI	42	47*	Conveyed to Existing Facility L12*
L12	Existing 36" RCP	42	47*	Tie into Existing Facility P9B*
P9C	Existing 36"RCP	44	49*	Tie to Existing Manhole
P9	Existing 7.5-ft Type CM2 DI	2	2*	Existing 18" RCP East Lateral
P9B	Existing 10.0-ft Type CM2 DI	2	2*	Outlets NE to Existing 36-in RCP
P9A	Existing 36" RCP	46	51*	Outlets to wash
X1	Existing 48" RCP	118	124**	
X1a	Existing 48" RCP	48	54**	
X1b	Existing 20.0-ft Type CM2 DI	12	18**	Q100 = 14-cfs; Q100 Inercepted = 12-cfs Q100 Bypass = 2-cfs Design Q100 = 23.5 Design Q100 Intercepted = 18 Design Q100 Bypass = 5.5
X1c	Existing 48" RCP	36	36**	
X1d	Existing 18" RCP	26	18**	
X1e	Existing 20.0-ft Type CM2 DI	4	18**	Per Nomograph 18" Pipe (Facility X1d) can only collect 26-cfs - Per update, 22-cfs is conveyed to this Facility by Facility P1e and P1f Q100 = 14-cfs; Q100 Inercepted = 4-cfs Q100 Bypass = 10-cfs Design Q100 = 23.5 Design Q100 Intercepted = 18 Design Q100 Bypass = 5.5
X2	Existing 36" RCP	44	52**	
X2a	(2) Existing 20.0-ft Type CM2 DI	44	52**	Q100 = 72-cfs; Q100 Inercepted = 22-cfs Q100 Bypass = 28-cfs 18" RCP Laterals Design Q100 = 99-cfs Design Q100 Intercepted = 26-cfs Design Q100 Bypass = 73-cfs

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NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.
1					

PULTE HOMES OF NEVADA

SKYE CANYON II PARCELS 2.16 AND 2.17
DEVELOPED CONDITIONS DRAINAGE MAP

DATE: OCTOBER 2018
DRAFTER: CWB
DESIGNER: CWB
CHECKED: SOA
PROJECT NO.
OLY1721-000

EXHIBIT E
SHEET 1 OF 1

J:\oly1721.000 skye canyon parcel 2.17\drainage\update study\figures\oly1721.000 tds exh e interim conditions.dwg 10/24/2018 3:43 PM Cameron Benichi

APPENDIX B

Revised Hydrologic Data

Curve Number

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS

Soil Data & Curve Number Computation

Project Name: Skye Canyon II Parcel 2.17
Date: 10/15/2018
File Name: Angle Conversion Sheet.xlsx
By: CWB

Data:

Reference:
Exhibit D
NRCS Soil Data

Soil Type - Soil Survey Area & Version, Soil Description				A	B	C	D
LV	155	Las Vegas Valley 2014	Cave gravelly fine sandy loam, 4 to 15 percent slopes	0%	0%	0%	100%

Land Use	A	B	C	D
Residential (6,000 sf)	80	87	90	92

DEVELOPED CONDITION

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP PERCENTS				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
DON1	LV	155	100.0%	Residential (6,000 sf)	0%	0%	0%	100%	80	87	90	92	8.80	92.00
		TOTAL PERCENT	100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									8.80	**92.00**

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP PERCENTS				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
DON2	LV	155	100.0%	Residential (6,000 sf)	0%	0%	0%	100%	80	87	90	92	7.10	92.00
		TOTAL PERCENT	100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									7.10	**92.00**

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

Standard Form 4 Computations

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL
TIME OF CONCENTRATION

Project Name: Skye Canyon II Parcel 2.17 Update
Description:
File Name: Angle Conversion Sheet.xlsx
By: CWB
Date: 10/15/2018

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]
DEVELOPED CONDITION																	
DON1	D	92.0	0.824	8.80	0.0138	130	1.00	5.66	1230	2.81	3.39	5.13	4.83	10.49	1360	17.556	0.105
DON2	D	92.0	0.824	7.10	0.0111	130	1.00	5.08	1230	4.06	4.07	6.16	4.02	9.11	1360	17.556	0.091

[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

Developed Condition HEC-1 Analysis

```
1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              JUN   1998              *
 *            VERSION 4.1               *
 *                                      *
 *  RUN DATE   15OCT18  TIME  12:38:26  *
 *                                      *
 ****************************************
```


```
****************************************
*                                      *
*    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     SLATER HANIFAN GROUP
    2         ID     SKYE CANYON PARCEL 2.17 UPDATE
    3         ID     DEVELOPED CONDITION
    4         ID
    5         ID     RETURN PERIOD ------- 100-YR & 10-YR
    6         ID     DISTRIBUTION -------- 6-HOUR SDN3
    7         ID     PROJECT NO. --------- OLY1719.001
    8         ID     FILENAME ------------ DEV.H1
    9         ID     DATE ---------------- 10/2018
   10         ID     MODELED BY ---------- CWB
   11         ID
   12         ID        PRECIPITATION STORM EVENT RATIOS
   13         ID        STORM EVENT            RATIO
   14         ID        10-YR                  0.56
   15         ID        100-YR                    1
   16         ID
   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    DON1
   22         KM   DEVELOPED ONSITE BASIN
   23         BA  0.0138
   24         PB    3.00
   25         PC       0   0.020   0.057   0.070   0.087   0.108   0.124   0.130   0.130   0.130
   26         PC   0.130   0.130   0.130   0.133   0.140   0.142   0.148   0.158   0.172   0.181
   27         PC   0.190   0.197   0.199   0.200   0.201   0.204   0.214   0.229   0.241   0.249
   28         PC   0.251   0.256   0.270   0.278   0.281   0.283   0.295   0.322   0.352   0.409
   29         PC   0.499   0.590   0.710   0.744   0.781   0.812   0.819   0.835   0.851   0.856
   30         PC   0.860   0.868   0.876   0.888   0.910   0.926   0.937   0.950   0.970   0.976
   31         PC   0.982   0.985   0.987   0.989   0.990   0.993   0.993   0.994   0.995   0.998
   32         PC   0.998   0.999       1
   33         LS       0    92.0
   34         UD   0.105
              *

   35         KK    DON2
   36         KM   DEVELOPED ONSITE BASIN
   37         BA  0.0111
   38         PB    3.00
   39         LS       0    92.0
   40         UD   0.091
              *
   41         ZZ
```

1 SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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

    21        DON1
                .
                .
    35          .        DON2

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              JUN  1998               *
 *           VERSION 4.1                *
 *                                      *
 *  RUN DATE   15OCT18  TIME  12:38:26  *
 *                                      *
 ****************************************

                                        ****************************************
                                        *                                      *
                                        *    U.S. ARMY CORPS OF ENGINEERS      *
                                        *    HYDROLOGIC ENGINEERING CENTER     *
                                        *         609 SECOND STREET            *
                                        *       DAVIS, CALIFORNIA 95616        *
                                        *          (916) 756-1104              *
                                        *                                      *
                                        ****************************************

                          SLATER HANIFAN GROUP
                          SKYE CANYON PARCEL 2.17 UPDATE
                          DEVELOPED CONDITION

                          RETURN PERIOD ------- 100-YR & 10-YR
                          DISTRIBUTION -------- 6-HOUR SDN3
                          PROJECT NO. --------- OLY1719.001
                          FILENAME ------------ DEV.H1
                          DATE ---------------- 10/2018
                          MODELED BY ---------- CWB

                             PRECIPITATION STORM EVENT RATIOS
                             STORM EVENT            RATIO
                             10-YR                  0.56
                             100-YR                    1


   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


                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
+                  DON1       .01     1   FLOW             25.      12.
                                            TIME           3.50     3.50

 HYDROGRAPH AT
+                  DON2       .01     1   FLOW             21.      10.
```

TIME 3.50 3.50

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

APPENDIX C

Revised Hydraulic Computations

Street Flow Computations

Worksheet for Section O-1a - Facility P1e

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.98	%
Discharge	12.50	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+24.50	0.46
0+41.50	0.12
0+41.50	0.08
0+42.50	0.00
0+43.62	0.38
0+44.00	0.38
0+49.00	0.48

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+24.50, 0.46)	(0+41.50, 0.08)	0.016
(0+41.50, 0.08)	(0+49.00, 0.48)	0.013

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	0.37	ft
Elevation Range	0.00 to 0.48 ft	
Flow Area	2.14	ft²
Wetted Perimeter	14.86	ft
Hydraulic Radius	0.14	ft

Worksheet for Section O-1a - Facility P1e

Results

Top Width		14.75	ft
Normal Depth		0.37	ft
Critical Depth		0.51	ft
Critical Slope		0.00612	ft/ft
Velocity		5.84	ft/s
Velocity Head		0.53	ft
Specific Energy		0.90	ft
Froude Number		2.70	
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	0.51	ft
Channel Slope	4.98	%
Critical Slope	0.00612	ft/ft

Cross Section for Section O-1a - Facility P1e

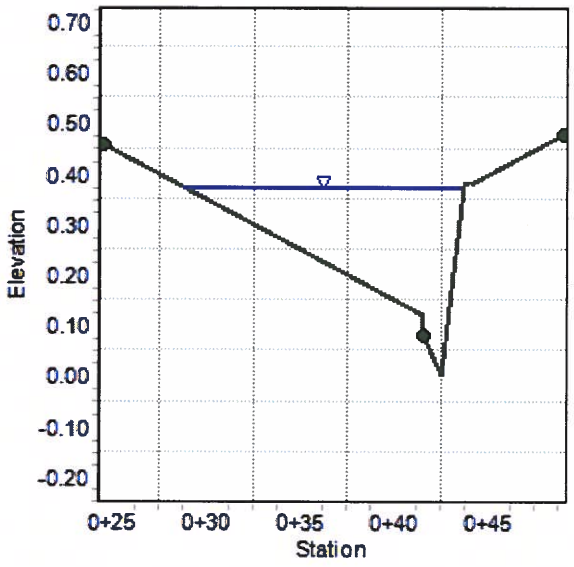
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.98	%
Normal Depth	0.37	ft
Discharge	12.50	ft³/s

Cross Section Image



Worksheet for Section O-1b - Facility P1f

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.98	%
Discharge	18.50	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+24.50	0.46
0+41.50	0.12
0+41.50	0.08
0+42.50	0.00
0+43.62	0.38
0+44.00	0.38
0+49.00	0.48

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+24.50, 0.46)	(0+41.50, 0.08)	0.016
(0+41.50, 0.08)	(0+49.00, 0.48)	0.013

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	0.42	ft
Elevation Range	0.00 to 0.48 ft	
Flow Area	3.02	ft²
Wetted Perimeter	20.01	ft
Hydraulic Radius	0.15	ft

Worksheet for Section O-1b - Facility P1f

Results

Top Width		19.90	ft
Normal Depth		0.42	ft
Critical Depth		0.57	ft
Critical Slope		0.00545	ft/ft
Velocity		6.12	ft/s
Velocity Head		0.58	ft
Specific Energy		1.01	ft
Froude Number		2.77	
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	0.57	ft
Channel Slope	4.98	%
Critical Slope	0.00545	ft/ft

Cross Section for Section O-1b - Facility P1f

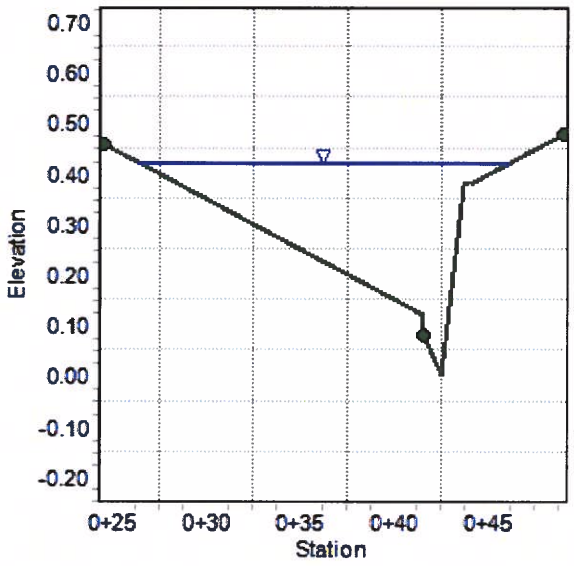
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.98	%
Normal Depth	0.42	ft
Discharge	18.50	ft³/s

Cross Section Image



Worksheet for Section O-1c - Facilities P1a & P1b

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	1.00	%
Discharge	25.00	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+24.50	0.46
0+41.50	0.12
0+41.50	0.08
0+42.50	0.00
0+43.62	0.38
0+44.00	0.38
0+49.00	0.48

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+41.50, 0.08)	0.016
(0+41.50, 0.08)	(0+49.00, 0.48)	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 O-1c - Facilities P1a & P1b

Results

Normal Depth		0.47	ft
Elevation Range	0.00 to 0.48 ft		
Flow Area		8.30	ft²
Wetted Perimeter		48.68	ft
Hydraulic Radius		0.17	ft
Top Width		48.46	ft
Normal Depth		0.47	ft
Critical Depth		0.51	ft
Critical Slope		0.00576	ft/ft
Velocity		3.01	ft/s
Velocity Head		0.14	ft
Specific Energy		0.62	ft
Froude Number		1.28	
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	0.47	ft
Critical Depth	0.51	ft
Channel Slope	1.00	%
Critical Slope	0.00576	ft/ft

Cross Section for Section O-1c - Facilities P1a & P1b

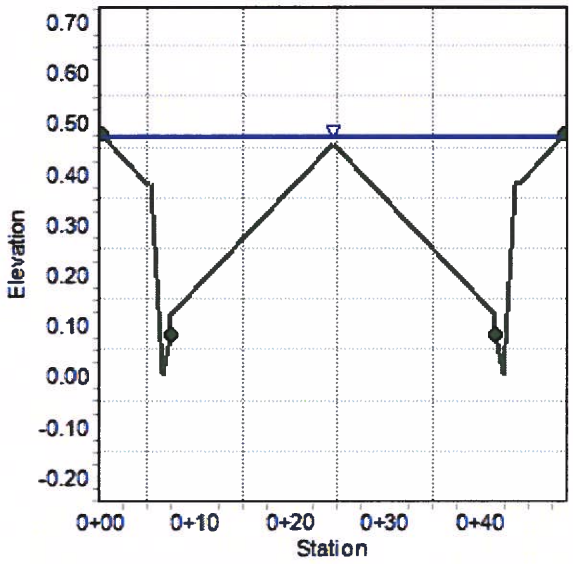
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	1.00	%
Normal Depth	0.47	ft
Discharge	25.00	ft³/s

Cross Section Image



Worksheet for Section ECA2 - Facilities X2a

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.90	%
Discharge	72.00	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+21.50	0.56
0+41.00	0.17
0+41.00	0.13
0+42.50	0.00
0+42.50	0.48
0+43.00	0.50

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.50)	(0+43.00, 0.50)	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	0.57	ft
Elevation Range	0.00 to 0.56 ft	

Worksheet for Section ECA2 - Facilities X2a

Results

Flow Area		9.66	ft²
Wetted Perimeter		44.20	ft
Hydraulic Radius		0.22	ft
Top Width		43.00	ft
Normal Depth		0.57	ft
Critical Depth		0.79	ft
Critical Slope		0.00514	ft/ft
Velocity		7.45	ft/s
Velocity Head		0.86	ft
Specific Energy		1.43	ft
Froude Number		2.77	
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	0.57	ft
Critical Depth	0.79	ft
Channel Slope	4.90	%
Critical Slope	0.00514	ft/ft

Cross Section for Section ECA2 - Facilities X2a

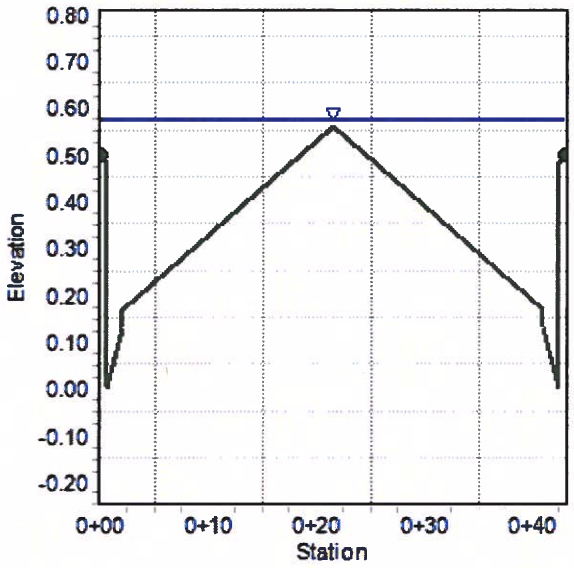
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.90	%
Normal Depth	0.57	ft
Discharge	72.00	ft³/s

Cross Section Image



Worksheet for Section ECA2b - Facilities X1b & X1e

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	2.00	%
Discharge	28.00	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+26.00	0.65
0+26.01	0.73
0+26.25	1.04
0+26.42	1.06
0+32.50	1.18
0+38.58	1.06
0+38.74	1.04
0+38.99	0.73
0+39.00	0.65
0+63.00	0.17
0+63.00	0.13
0+64.50	0.00
0+64.50	0.48
0+65.00	0.50

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.50)	(0+65.00, 0.50)	0.016

Worksheet for Section ECA2b - Facilities X1b & X1e

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		0.50	ft
Elevation Range	0.00 to 1.18 ft		
Flow Area		6.76	ft²
Wetted Perimeter		38.05	ft
Hydraulic Radius		0.18	ft
Top Width		36.99	ft
Normal Depth		0.50	ft
Critical Depth		0.59	ft
Critical Slope		0.00634	ft/ft
Velocity		4.14	ft/s
Velocity Head		0.27	ft
Specific Energy		0.77	ft
Froude Number		1.71	
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	0.50	ft
Critical Depth	0.59	ft
Channel Slope	2.00	%
Critical Slope	0.00634	ft/ft

Cross Section for Section ECA2b - Facilities X1b & X1e

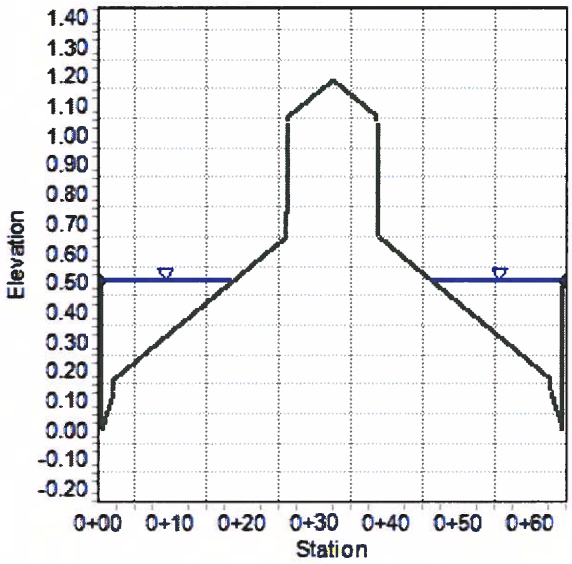
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	2.00	%
Normal Depth	0.50	ft
Discharge	28.00	ft³/s

Cross Section Image



Worksheet for Section ECA2c - Section Comparison - Proposed

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	2.00	%
Discharge	12.00	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+26.00	0.65
0+26.01	0.73
0+26.25	1.04
0+26.42	1.06
0+32.50	1.18
0+38.58	1.06
0+38.74	1.04
0+38.99	0.73
0+39.00	0.65
0+63.00	0.17
0+63.00	0.13
0+64.50	0.00
0+64.50	0.48
0+65.00	0.50

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.50)	(0+65.00, 0.50)	0.016

Worksheet for Section ECA2c - Section Comparison - Proposed

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		0.39	ft
Elevation Range	0.00 to 1.18 ft		
Flow Area		3.50	ft²
Wetted Perimeter		26.32	ft
Hydraulic Radius		0.13	ft
Top Width		25.43	ft
Normal Depth		0.39	ft
Critical Depth		0.45	ft
Critical Slope		0.00708	ft/ft
Velocity		3.42	ft/s
Velocity Head		0.18	ft
Specific Energy		0.58	ft
Froude Number		1.63	
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	0.39	ft
Critical Depth	0.45	ft
Channel Slope	2.00	%
Critical Slope	0.00708	ft/ft

Cross Section for Section ECA2c - Section Comparison - Proposed

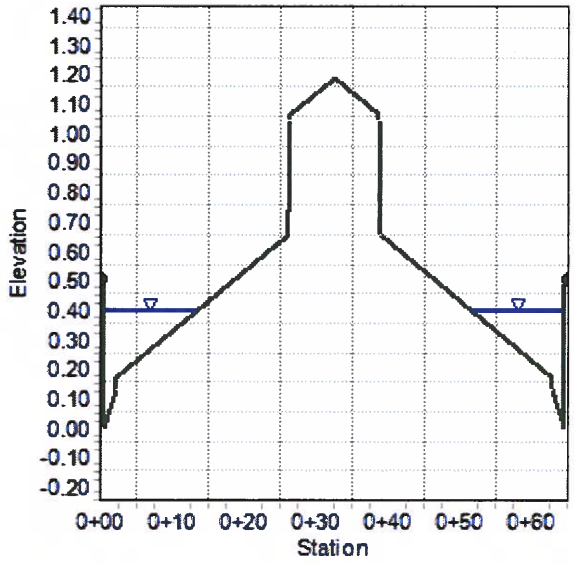
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	2.00	%
Normal Depth	0.39	ft
Discharge	12.00	ft³/s

Cross Section Image



Worksheet for Section ECA2c - Section Comparison - Design

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	2.00	%
Discharge	11.00	ft^3/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+26.00	0.65
0+26.01	0.73
0+26.25	1.04
0+26.42	1.06
0+32.50	1.18
0+38.58	1.06
0+38.74	1.04
0+38.99	0.73
0+39.00	0.65
0+63.00	0.17
0+63.00	0.13
0+64.50	0.00
0+64.50	0.48
0+65.00	0.50

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.50)	(0+65.00, 0.50)	0.016

Worksheet for Section ECA2c - Section Comparison - Design

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		0.39	ft
Elevation Range	0.00 to 1.18 ft		
Flow Area		3.28	ft²
Wetted Perimeter		25.38	ft
Hydraulic Radius		0.13	ft
Top Width		24.52	ft
Normal Depth		0.39	ft
Critical Depth		0.44	ft
Critical Slope		0.00717	ft/ft
Velocity		3.36	ft/s
Velocity Head		0.18	ft
Specific Energy		0.56	ft
Froude Number		1.62	
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	0.39	ft
Critical Depth	0.44	ft
Channel Slope	2.00	%
Critical Slope	0.00717	ft/ft

Cross Section for Section ECA2c - Section Comparison - Design

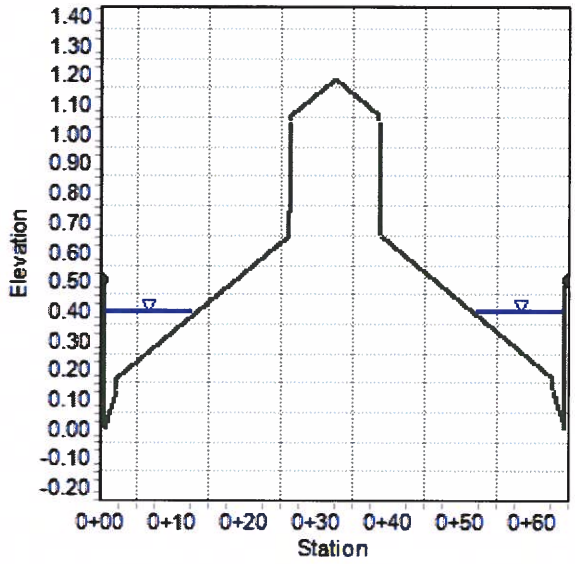
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	2.00	%
Normal Depth	0.39	ft
Discharge	11.00	ft³/s

Cross Section Image



Worksheet for Section R-1 (Min. Slope)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.60	%
Discharge	42.00	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+24.50	0.46
0+41.50	0.12
0+41.50	0.08
0+42.50	0.00
0+43.62	0.38
0+44.00	0.38
0+49.00	0.48

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+41.50, 0.08)	0.016
(0+41.50, 0.08)	(0+49.00, 0.48)	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 R-1 (Min. Slope)

Results

Normal Depth		0.58	ft
Elevation Range	0.00 to 0.48 ft		
Flow Area		13.26	ft²
Wetted Perimeter		49.41	ft
Hydraulic Radius		0.27	ft
Top Width		49.00	ft
Normal Depth		0.58	ft
Critical Depth		0.59	ft
Critical Slope		0.00514	ft/ft
Velocity		3.17	ft/s
Velocity Head		0.16	ft
Specific Energy		0.73	ft
Froude Number		1.07	
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	0.58	ft
Critical Depth	0.59	ft
Channel Slope	0.60	%
Critical Slope	0.00514	ft/ft

Cross Section for Section R-1 (Min. Slope)

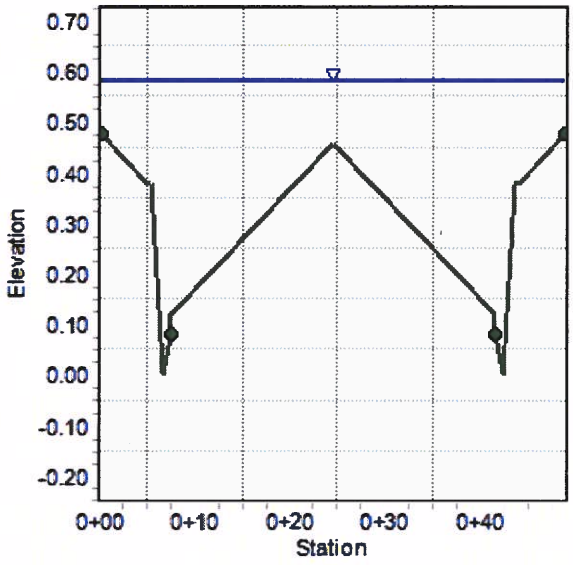
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.60	%
Normal Depth	0.58	ft
Discharge	42.00	ft³/s

Cross Section Image



Worksheet for Section R-1 (Max. Slope)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.98	%
Discharge	42.00	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+24.50	0.46
0+41.50	0.12
0+41.50	0.08
0+42.50	0.00
0+43.62	0.38
0+44.00	0.38
0+49.00	0.48

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+41.50, 0.08)	0.016
(0+41.50, 0.08)	(0+49.00, 0.48)	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 R-1 (Max. Slope)

Results

Normal Depth		0.44	ft
Elevation Range	0.00 to 0.48 ft		
Flow Area		6.71	ft²
Wetted Perimeter		43.25	ft
Hydraulic Radius		0.16	ft
Top Width		43.03	ft
Normal Depth		0.44	ft
Critical Depth		0.59	ft
Critical Slope		0.00524	ft/ft
Velocity		6.26	ft/s
Velocity Head		0.61	ft
Specific Energy		1.05	ft
Froude Number		2.79	
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	0.44	ft
Critical Depth	0.59	ft
Channel Slope	4.98	%
Critical Slope	0.00524	ft/ft

Cross Section for Section R-1 (Max. Slope)

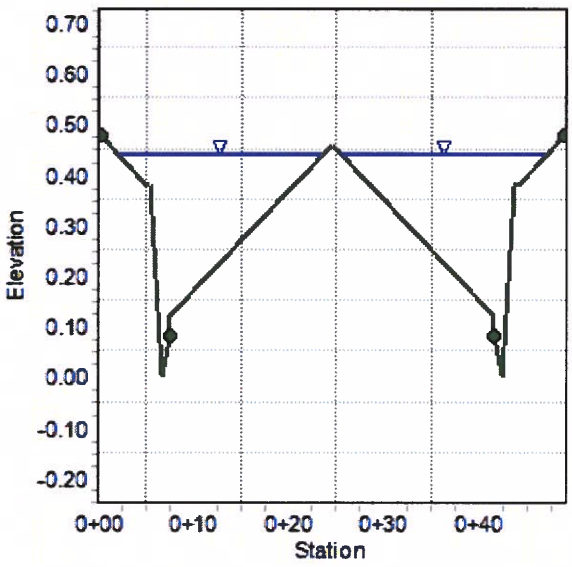
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.98	%
Normal Depth	0.44	ft
Discharge	42.00	ft³/s

Cross Section Image



Worksheet for Section S1 - Flow Split (Half Street)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.90	%
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+24.50	0.46

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+24.50, 0.46)	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	13.29	ft
Hydraulic Radius	0.13	ft

Worksheet for Section S1 - Flow Split (Half Street)

Results

Top Width		13.19	ft
Normal Depth		0.34	ft
Critical Depth		0.36	ft
Critical Slope		0.00692	ft/ft
Velocity		2.32	ft/s
Velocity Head		0.08	ft
Specific Energy		0.43	ft
Froude Number		1.13	
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	0.34	ft
Critical Depth	0.36	ft
Channel Slope	0.90	%
Critical Slope	0.00692	ft/ft

Cross Section for Section S1 - Flow Split (Half Street)

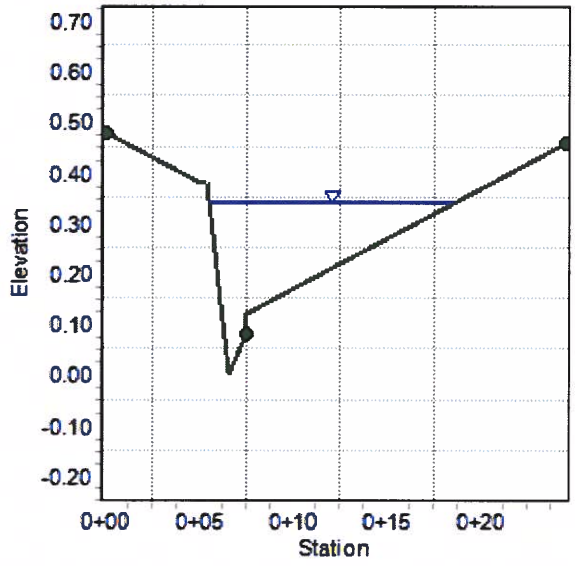
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.90	%
Normal Depth	0.34	ft
Discharge	4.00	ft³/s

Cross Section Image



Worksheet for Section S2 - Flow Split (Half Street)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.00	%
Discharge	8.50	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+24.50	0.46

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+24.50, 0.46)	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	1.74	ft²
Wetted Perimeter	13.33	ft
Hydraulic Radius	0.13	ft

Worksheet for Section S2 - Flow Split (Half Street)

Results

Top Width		13.23	ft
Normal Depth		0.34	ft
Critical Depth		0.46	ft
Critical Slope		0.00654	ft/ft
Velocity		4.89	ft/s
Velocity Head		0.37	ft
Specific Energy		0.72	ft
Froude Number		2.38	
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	0.34	ft
Critical Depth	0.46	ft
Channel Slope	4.00	%
Critical Slope	0.00654	ft/ft

Cross Section for Section S2 - Flow Split (Half Street)

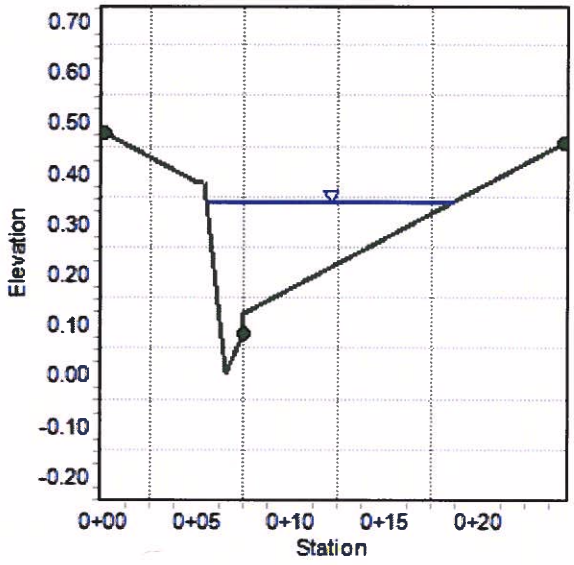
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	4.00	%
Normal Depth	0.34	ft
Discharge	8.50	ft³/s

Cross Section Image



Drop Inlet Computations

Curb Inlet Sizing Computation

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS

Project Name & Number:	**Skye Canyon II - Parcel 2.17 Update**
Date:	**10/16/2018**
By:	**CWB**

Notes:		
Facility ID:	X2a	
Drainage Condition:	Ultimate	
Inlet Type:	Type CM2 (Continuous Grade)	
Inlet Length:	20.-ft	
Number of Grates	7	
Input:	**Variable:**	**Input:**
Street Flow (cfs)	Q	36.0
Longitudinal Slope (ft/ft)	S_o	0.0490
Manning's Coefficient	n	0.016
Street Flow Velocity (fps)	V	7.45
Street Flow Depth (ft)	D	0.57
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	17.5
Length of Curb Opening (ft)	L_c	20.00
Clogging Factor - Grate (%)	CF_g	50%
Clogging Factor - Curb (%)	CF_c	50%
Effective Grate Length (ft)	L_{ge}	8.8
Effective Curb Opening Length (ft)	L_{ce}	10.00
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}^2+sy*L_{ge}^3 ; where	42.93
	p=0.30,q=4.85,r=1.31,sy=0.15 (for Vane Grate)	
[1] E - Grate Flow Ratio	Frontal Flow/Side Flow	0.19
[2] Q_w - Frontal Flow (cfs)	$Q_w = Q[1-(1-(W/T))^{2.67}]$	6.71
[1] Q_s - Side Flow (cfs)	Q_s = Q-Qw	29.3
T - Side Flow Spread (ft)	$(D-D_g)/S_x$	20.17
[1] R_s - Side Flow Factor	$1/(1+(0.15*V^{1.8})/(S_x*L_{ge}^{2.3}))$	0.35
[1] Q_{gi} - Intercepted Flow (cfs)	$(R_f*E+R_s*(1-E))*Q$	16.8
Output (Curb):	**Equation:**	**Output (Curb):**
[1] S_e - Equivalent Cross Slope (ft/ft)	S_x+S_g*E	0.041
Q_{sx} - Remaining Flow After Grate Interception (cfs)	$Q-Q_{gi}$	19.182
S_g - Gutter Cross Slope (ft/ft)	D_g/W	0.111
[1] L_t - Effective Interception Length (ft)	$0.60*Q_{sx}^{0.42}*S_o^{0.30}*(1/n*S_e)^{0.6}$	68.50
[1] Q_{ci} - Intercepted Flow (cfs)	$(1-(1-L_{ce}/L_t)^{1.8})*Q_{sx}$	4.7
	or Q_{sx} if L_t is less than L_{ce}	
Output (Combination):	**Equation:**	**Output (Combination):**
Total Intercepted Flow (cfs)	Intercepted (Grate) + Intercepted (Curb)	**22**
Bypass Flow (cfs)	Street Flow - Total Intercepted Flow	**14**

[1] Formula referenced from the CCRFCD Manual

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

Curb Inlet Sizing Computation

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS

Project Name & Number:	**Skye Canyon II - Parcel 2.17 Update**
Date:	**10/16/2018**
By:	**CWB**

	Notes:		
	Facility ID:	X1b	
	Drainage Condition:	Ultimate	
	Inlet Type:	Type CM2 (Continuous Grade)	
	Inlet Length:	20.-ft	
	Number of Grates	7	
	Input:	**Variable:**	**Input:**
	Street Flow (cfs)	Q	14.0
	Longitudinal Slope (ft/ft)	S_o	0.0200
	Manning's Coefficient	n	0.016
	Street Flow Velocity (fps)	V	4.14
	Street Flow Depth (ft)	D	0.50
	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	17.5
	Length of Curb Opening (ft)	L_c	20.00
	Clogging Factor - Grate (%)	CF_g	50%
	Clogging Factor - Curb (%)	CF_c	50%
	Effective Grate Length (ft)	L_{ge}	8.8
	Effective Curb Opening Length (ft)	L_{ce}	10.00
	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}^2+sy*L_{ge}^3 ; where	42.93
		p=0.30,q=4.85,r=1.31,sy=0.15 (for Vane Grate)	
[1]	E - Grate Flow Ratio	Frontal Flow/Side Flow	0.22
[2]	Q_w - Frontal Flow (cfs)	$Q_w = Q[1-(1-(W/T))^{2.67}]$	3.12
[1]	Q_s - Side Flow (cfs)	Q_s = Q-Qw	10.9
	T - Side Flow Spread (ft)	$(D-D_g)/S_x$	16.67
[1]	R_s - Side Flow Factor	$1/(1+(0.15*V^{1.8})/(S_x*L_{ge}^{2.3}))$	0.60
[1]	Q_{gi} - Intercepted Flow (cfs)	$(R_f*E+R_s*(1-E))*Q$	9.7
	Output (Curb):	**Equation:**	**Output (Curb):**
[1]	S_e - Equivalent Cross Slope (ft/ft)	S_x+S_g*E	0.045
	Q_{sx} - Remaining Flow After Grate Interception (cfs)	$Q-Q_{gi}$	4.324
	S_g - Gutter Cross Slope (ft/ft)	D_g/W	0.111
[1]	L_t - Effective Interception Length (ft)	$0.60*Q_{sx}^{0.42}*S_o^{0.30}*(1/n*S_e)^{0.6}$	26.47
[1]	Q_{ci} - Intercepted Flow (cfs)	$(1-(1-L_{ce}/L_t)^{1.8})*Q_{sx}$	2.5
		or Q_{sx} if L_t is less than L_{ce}	
	Output (Combination):	**Equation:**	**Output (Combination):**
	Total Intercepted Flow (cfs)	Intercepted (Grate) + Intercepted (Curb)	**12**
	Bypass Flow (cfs)	Street Flow - Total Intercepted Flow	**2**

[1] Formula referenced from the CCRFCD Manual

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

Curb Inlet Sizing Computation

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS

Project Name & Number:	**Skye Canyon II - Parcel 2.17 Update**	
Date:	**10/16/2018**	
By:	**CWB**	
Notes:		
Facility ID:	P1a & P1b	
Drainage Condition:	Developed	
Source of Flow:	Q100 = DON1	
Inlet Type:	Type CM2 (Continuous Grade)	
Inlet Length:	20.-ft	
Number of Grates	7	
Input:	**Variable:**	**Input:**
Street Flow (cfs)	Q	12.5
Longitudinal Slope (ft/ft)	S_o	0.0100
Manning's Coefficient	n	0.016
Street Flow Velocity (fps)	V	3.01
Street Flow Depth (ft)	D	0.47
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	17.5
Length of Curb Opening (ft)	L_c	20.00
Clogging Factor - Grate (%)	CF_g	50%
Clogging Factor - Curb (%)	CF_c	50%
Effective Grate Length (ft)	L_{ge}	8.8
Effective Curb Opening Length (ft)	L_{ce}	10.00
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}^2+sy*L_{ge}^3 ; where	42.93
	p=0.30,q=4.85,r=1.31,sy=0.15 (for Vane Grate)	
[1] E - Grate Flow Ratio	Frontal Flow/Side Flow	0.24
[2] Q_w - Frontal Flow (cfs)	$Q_w = Q[1-(1-(W/T))^{2.67}]$	3.03
[1] Q_s - Side Flow (cfs)	Q_s = Q-Qw	9.5
T - Side Flow Spread (ft)	$(D-D_g)/S_x$	15.17
[1] R_s - Side Flow Factor	$1/(1+(0.15*V^{1.8})/(S_x*L_{ge}^{2.3}))$	0.73
[1] Q_{gi} - Intercepted Flow (cfs)	$(R_f*E+R_s*(1-E))*Q$	9.9
Output (Curb):	**Equation:**	**Output (Curb):**
[1] S_e - Equivalent Cross Slope (ft/ft)	S_x+S_g*E	0.047
Q_{sx} - Remaining Flow After Grate Interception (cfs)	$Q-Q_{gi}$	2.564
S_g - Gutter Cross Slope (ft/ft)	D_g/W	0.111
[1] L_t - Effective Interception Length (ft)	$0.60*Q_{sx}^{0.42}*S_o^{0.30}*(1/n*S_e)^{0.6}$	16.76
[1] Q_{ci} - Intercepted Flow (cfs)	$(1-(1-L_{ce}/L_t)^{1.8})*Q_{sx}$	2.1
	or Q_{sx} if L_t is less than L_{ce}	
Output (Combination):	**Equation:**	**Output (Combination):**
Total Intercepted Flow (cfs)	Intercepted (Grate) + Intercepted (Curb)	**12.0**
Bypass Flow (cfs)	Street Flow - Total Intercepted Flow	**0.5**

[1] Formula referenced from the CCRFCD Manual

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

Curb Inlet Sizing Computation

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS

Project Name & Number:	**Skye Canyon II - Parcel 2.17 Update**
Date:	**10/23/2018**
By:	**CWB**

	Notes:		
	Facility ID:	P1e	
	Drainage Condition:	Ultimate	
	Source of Flow:	Q100 = 0.5*(DON2) + ON1D(a) + ON1D(c) - Flow Split	
	Inlet Type:	Type CM2 (Continuous Grade)	
	Inlet Length:	20.-ft	
	Number of Grates	7	
	Input:	**Variable:**	**Input:**
	Street Flow (cfs)	Q	12.5
	Longitudinal Slope (ft/ft)	S_o	0.0498
	Manning's Coefficient	n	0.016
	Street Flow Velocity (fps)	V	5.80
	Street Flow Depth (ft)	D	0.37
	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	17.5
	Length of Curb Opening (ft)	L_c	20.00
	Clogging Factor - Grate (%)	CF_g	50%
	Clogging Factor - Curb (%)	CF_c	50%
	Effective Grate Length (ft)	L_{ge}	8.8
	Effective Curb Opening Length (ft)	L_{ce}	10.00
	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}^2+sy*L_{ge}^3 ; where	42.93
		p=0.30,q=4.85,r=1.31,sy=0.15 (for Vane Grate)	
[1]	E - Grate Flow Ratio	Frontal Flow/Side Flow	0.35
[2]	Q_w - Frontal Flow (cfs)	$Q_w = Q[1-(1-(W/T))^{2.67}]$	4.34
[1]	Q_s - Side Flow (cfs)	Q_s = Q-Qw	8.2
	T - Side Flow Spread (ft)	$(D-D_g)/S_x$	10.17
[1]	R_s - Side Flow Factor	$1/(1+(0.15*V^{1.8})/(S_x*L_{ge}^{2.3}))$	0.45
[1]	Q_{gi} - Intercepted Flow (cfs)	$(R_f*E+R_s*(1-E))*Q$	8.0
	Output (Curb):	**Equation:**	**Output (Curb):**
[1]	S_e - Equivalent Cross Slope (ft/ft)	S_x+S_g*E	0.059
	Q_{sx} - Remaining Flow After Grate Interception (cfs)	$Q-Q_{gi}$	4.468
	S_g - Gutter Cross Slope (ft/ft)	D_g/W	0.111
[1]	L_t - Effective Interception Length (ft)	$0.60*Q_{sx}^{0.42}*S_o^{0.30}*(1/n*S_e)^{0.6}$	30.02
[1]	Q_{ci} - Intercepted Flow (cfs)	$(1-(1-L_{ce}/L_t)^{1.8})*Q_{sx}$	2.3
		or Q_{sx} if L_t is less than L_{ce}	
	Output (Combination):	**Equation:**	**Output (Combination):**
	Total Intercepted Flow (cfs)	Intercepted (Grate) + Intercepted (Curb)	**10.5**
	Bypass Flow (cfs)	Street Flow - Total Intercepted Flow	**2.0**

[1] Formula referenced from the CCRFCD Manual

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

Curb Inlet Sizing Computation

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS

Project Name & Number:	**Skye Canyon II - Parcel 2.17 Update**
Date:	**10/23/2018**
By:	**CWB**

	Notes:		
	Facility ID:	P1f	
	Drainage Condition:	Ultimate	
	Source of Flow:	Q100 = 0.5*(DON2) + ON1D(b) + ON1D(d))	
	Inlet Type:	Type CM2 (Continuous Grade)	
	Inlet Length:	15.-ft	
	Number of Grates	5	
	Input:	**Variable:**	**Input:**
	Street Flow (cfs)	Q	18.5
	Longitudinal Slope (ft/ft)	S_o	0.0498
	Manning's Coefficient	n	0.016
	Street Flow Velocity (fps)	V	6.10
	Street Flow Depth (ft)	D	0.42
	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	12.5
	Length of Curb Opening (ft)	L_c	15.00
	Clogging Factor - Grate (%)	CF_g	50%
	Clogging Factor - Curb (%)	CF_c	50%
	Effective Grate Length (ft)	L_{ge}	6.3
	Effective Curb Opening Length (ft)	L_{ce}	7.50
	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	16.06
		p=0.30,q=4.85,r=1.31,sy=0.15 (for Vane Grate)	
[1]	E - Grate Flow Ratio	Frontal Flow/Side Flow	0.29
[2]	Q_w - Frontal Flow (cfs)	$Q_w = Q[1-(1-(W/T))^{2.67}]$	5.29
[1]	Q_s - Side Flow (cfs)	Q_s = Q-Qw	13.2
	T - Side Flow Spread (ft)	$(D-D_g)/S_x$	12.67
[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)	$(R_f*E+R_s*(1-E))*Q$	8.7
	Output (Curb):	**Equation:**	**Output (Curb):**
[1]	S_e - Equivalent Cross Slope (ft/ft)	S_x+S_g*E	0.052
	Q_{sx} - Remaining Flow After Grate Interception (cfs)	$Q-Q_{gi}$	9.801
	S_g - Gutter Cross Slope (ft/ft)	D_g/W	0.111
[1]	L_t - Effective Interception Length (ft)	$0.60*Q_{sx}^{0.42}*S_o^{0.30}*(1/n*S_e)^{0.6}$	44.96
[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)	**11.5**
	Bypass Flow (cfs)	Street Flow - Total Intercepted Flow	**7.0**

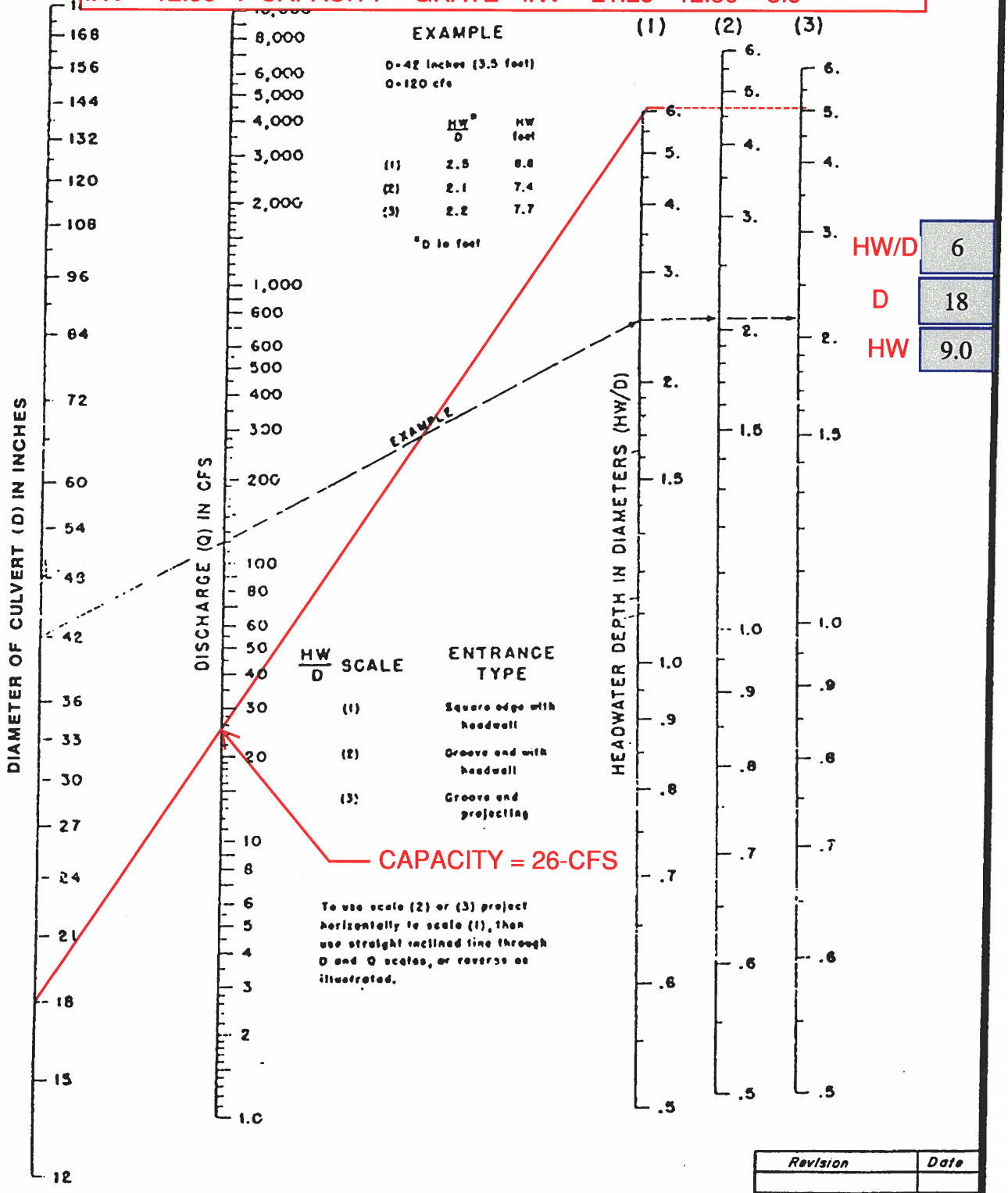
[1] Formula referenced from the CCRFCD Manual

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

Inlet Control Nomograph

NOMOGRAPH – INLET CONTROL RCP

FACILITY X1E CAPACITY; GRATE = Tc - 0.5' = 21.75 - 0.5' = 21.25
INV = 12.36 => CAPACITY = GRATE - INV = 21.25 - 12.36 = 8.9



Revision	Date

WRC ENGINEERING

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

FIGURE 1005

WSPGW Model – SDN

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS

Pipe Culvert Outlet Protection Computation

SDN STORM DRAIN SYSTEM

Project Name: Skye Canyon Parcel 2.17 Update
Project Number: OLY 1721-000
Date: 10/23/2018
By: CWB

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*
$L = (1/(2 \tan q))(A_t/Y_t-W)$ — Equation 764*
$A_t = Q/V$ — Equation 765*

Known Information:

$Q =$	24	Flow (cfs)
$D =$	2.0	Diameter of Pipe (ft)
$q =$	20	Expansion angle of the culvert flow (typ=20°)
$V =$	5	Allowable downstream velocity (typ=5 ft/s)
$Fr =$	0.9	Froude Number (0 if full)
$Y_n =$	1.1	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)

Riprap Erosion Protection Check (Figure 712):

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

$Q/D^{2.5} =$ ***4.24*** ← ***See Figure 712 for Recommended Riprap Type***
$Q/D^{1.5} = 8.49$
Y_t/D 0.51

Solve For:

$D_{50} = 0.59$	**Average Size Riprap (ft)**
$D_{50} = 7$	**Average Size Riprap (in)**

$A_t =$ 4.8	Req'd Area of flow at allowable velocity (ft2)
$Y_t =$ 0.80	Tailwater Depth (ft)
$D_a =$ 1.6	only used if Fr>=1
L = 5.5	**Length of Protection (ft)**
***L = 6.0**	***For: D<3.5-ft, L_{min}=3D. For: D>=3.5-ft, L_{min}>= 4D. $L_{max(required)}$=10D**

Notes:

Provide D_{50} = 8-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

SDN.WSW

```
T1 Skye Canyon II Parcel 2.17
T2 North Storm Drain Mainline
T3 Discharges onto Eagle Canyon Avenue
SO   1000.0002944.560 24      .013             2946.560
R    1165.1602945.790 24      .013                                      0.0   1
JX   1170.1602946.290 18 18   .013   12.0           2946.010        90.0
R    1200.1602946.570 18      .013                                      0.0   1
SH   1200.1602946.570 18      .013                0.000
CD  18  4   1   0.000   1.500    0.000 0.000 0.000  0.000
CD  24  4   2   0.000   2.000    0.000 0.000 0.000  0.000
Q            12.000
```

FILE: SDN.WSW W S P G W - EDIT LISTING - Version 14.10 Date:10-15-2018 Time: 2:42:56

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	18	4	1		1.500														
CD	24	4	2		2.000														

W S P G W PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

Skye Canyon II Parcel 2.17

HEADING LINE NO 2 IS -

North Storm Drain Mainline

HEADING LINE NO 3 IS -

Discharges onto Eagle Canyon Avenue

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	2944.560	24	6.560

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1165.160	2945.790	24	.013	.000	.000	.000	1

ELEMENT NO 3 IS A JUNCTION * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1170.160	2946.290	18	18	0	.013	12.000	.000	2946.010	.000	90.000	.000

RADIUS	ANGLE
.000	.000

ELEMENT NO 4 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1200.160	2946.570	18	.013	.000	.000	.000	1

ELEMENT NO 5 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1200.160	2946.570	18	.000

Skye Canyon II Parcel 2.17
North Storm Drain Mainline
Discharges onto Eagle Canyon Avenue

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS) / SF Ave	Vel Head / HF	Energy Grd.El. / SE Dpth	Super Elev / Froude N	Critical Depth / Norm Dp	Flow Top Width	Height/Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2944.560	1.134	2945.694	24.00	6.53	.66	2946.36	.00	1.24	1.98	2.000	.000	.00	2 .0
105.814	.0074					.0074	.79	1.13	.85	1.13	.013	.00	.00	PIPE
1105.814	2945.348	1.134	2946.482	24.00	6.53	.66	2947.14	.00	1.24	1.98	2.000	.000	.00	2 .0
39.515	.0074					.0073	.29	1.13	.85	1.13	.013	.00	.00	PIPE
1145.329	2945.642	1.148	2946.790	24.00	6.43	.64	2947.43	.00	1.24	1.98	2.000	.000	.00	2 .0
17.057	.0074					.0067	.11	1.15	.83	1.13	.013	.00	.00	PIPE
1162.386	2945.769	1.194	2946.964	24.00	6.13	.58	2947.55	.00	1.24	1.96	2.000	.000	.00	2 .0
2.774	.0074					.0060	.02	1.19	.77	1.13	.013	.00	.00	PIPE
1165.160	2945.790	1.244	2947.034	24.00	5.84	.53	2947.56	.00	1.24	1.94	2.000	.000	.00	2 .0
JUNCT STR	.1000					.0085	.04	1.24	.71		.013	.00	.00	PIPE
1170.160	2946.290	1.380	2947.670	12.00	7.05	.77	2948.44	.00	1.31	.81	1.500	.000	.00	1 .0
26.231	.0093					.0117	.31	1.38	.86	1.50	.013	.00	.00	PIPE
1196.391	2946.535	1.500	2948.035	12.00	6.79	.72	2948.75	.00	1.31	.00	1.500	.000	.00	1 .0
3.769	.0093					.0126	.05	1.50	.00	1.50	.013	.00	.00	PIPE
1200.160	2946.570	1.519	2948.089	12.00	6.79	.72	2948.80	.00	1.31	.00	1.500	.000	.00	1 .0

Skye Canyon II Parcel 2.17

North Storm Drain Mainline

Discharges onto Eagle Canyon Avenue

1000.00 .I W C E H . R

1004.08 . .

1008.17 . .

1012.25 . .

1016.34 . .

1020.42 . .

1024.51 . .

1028.59 . .

1032.68 . .

1036.76 . .

1040.85 . .

```
1044.93   .                                                                .
1049.02   .                                                                .
1053.10   .                                                                .
1057.19   .                                                                .
1061.27   .                                                                .
1065.36   .                                                                .
1069.44   .                                                                .
1073.53   .                                                                .
1077.61   .                                                                .
1081.70   .                                                                .
1085.78   .                                                                .
1089.87   .                                                                .
1093.95   .                                                                .
1098.04   .                                                                .
1102.12   .                                                                .
1106.21   .          I              W C        E   H                        .   R
1110.29   .                                                                .
1114.38   .                                                                .
1118.46   .                                                                .
1122.55   .                                                                .
1126.63   .                                                                .
1130.72   .                                                                .
1134.80   .                                                                .
1138.89   .                                                                .
1142.97   .                                                                .
1147.06   .               I              W C        E   H                   .   R
1151.14   .                                                                .
1155.23   .                                                                .
1159.31   .                                                                .
```

```
1163.40   .                        I                      WC          E    H                    .   R

1167.48   .                        I                       W          E     H                   .   JX

1171.57   .                                 I                        C W  H            E       .   R

1175.65   .                                                                                      .

1179.74   .                                                                                      .

1183.82   .                                                                                      .

1187.91   .                                                                                      .

1191.99   .                                                                                      .

1196.08   .                                                                                      .

1200.16   .                                          I                        C   H             E .   R

          2944.560  2944.985  2945.409  2945.834  2946.258  2946.683  2947.107  2947.532  2947.957  2948.381  2948.805
```

N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

WSPGW Model – SDS

SDS.WSW

```
T1 Skye Canyon II Parcel 2.17 (Update)
T2 South Storm Drain Mainline
T3 Discharges into Eagle Canyon Avenue Storm Drain
SO   3004.0002911.310 18      .013                2914.070
R    3025.0002912.360 18      .013                                      6.0   1
JX   3025.0002912.360 18 18   .013    4.0           2946.010        90.0
R    3065.8002912.970 24      .013                                      6.0   1
R    3167.7602915.100 24      .013                                     15.0   1
R    3168.7602915.100 24      .013                                     15.0
R    3169.7602915.100 24      .013                                     15.0
R    3170.7602915.100 24      .013                                     15.0
R    3171.7602915.100 24      .013                                     15.0
R    3172.7602915.100 24      .013                                     15.0
R    3267.8402918.100 24      .013                                     15.0   1
R    3268.8402918.100 24      .013                                     15.0   1
R    3269.8402918.100 24      .013                                     15.0   1
JX   3269.8402918.100 18 18   .013   10.5           2918.100        90.0
R    3270.8402918.100 18      .013                                     15.0   1
R    3271.8402918.100 18      .013                                     15.0   1
R    3272.8402918.100 18      .013                                     15.0   1
R    3276.8402918.190 18      .013                                      0.0   1
SH   3276.8402918.190 18      .013               0.000
CD   1  3   0   0.000   5.000    7.500 0.000 0.000  0.000
CD  18  4   1   0.000   1.500    0.000 0.000 0.000  0.000
CD  24  4   1   0.000   2.000    0.000 0.000 0.000  0.000
CD  30  4   1   0.000   2.000    0.000 0.000 0.000  0.000
Q           11.500
```

FILE: SDS.WSW W S P G W - EDIT LISTING - Version 14.10 Date:10-23-2018 Time:10:16:39

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	5.000	7.500	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.000														

W S P G W PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -
Skye Canyon II Parcel 2.17 (Update)
HEADING LINE NO 2 IS -
South Storm Drain Mainline
HEADING LINE NO 3 IS -
Discharges into Eagle Canyon Avenue Storm Drain

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
	3004.000	2911.310	18	2914.070

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3025.000	2912.360	18	.013	.000	.000	6.000	1

ELEMENT NO 3 IS A JUNCTION * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	3025.000	2912.360	18	18	0	.013	4.000	.000	2946.010	.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
WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS

ELEMENT NO 4 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3065.800	2912.970	24	.013	.000	.000	6.000	1

ELEMENT NO 5 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3167.760	2915.100	24	.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
	3168.760	2915.100	24	.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
	3169.760	2915.100	24	.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
	3170.760	2915.100	24	.013	.000	.000	15.000	0

ELEMENT NO 9 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3171.760	2915.100	24	.013	.000	.000	15.000	0

ELEMENT NO 10 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3172.760	2915.100	24	.013	.000	.000	15.000	0

ELEMENT NO 11 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3267.840	2918.100	24	.013	.000	.000	15.000	1

W S P G W PAGE NO 3

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 12 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3268.840	2918.100	24	.013	.000	.000	15.000	1

ELEMENT NO 13 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3269.840	2918.100	24	.013	.000	.000	15.000	1

ELEMENT NO 14 IS A JUNCTION * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	3269.840	2918.100	18	18	0	.013	10.500	.000	2918.100	.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 15 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3270.840	2918.100	18	.013	.000	.000	15.000	1

ELEMENT NO 16 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3271.840	2918.100	18	.013	.000	.000	15.000	1

ELEMENT NO 17 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3272.840	2918.100	18	.013	.000	.000	15.000	1

ELEMENT NO 18 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3276.840	2918.190	18	.013	.000	.000	.000	1

ELEMENT NO 19 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	3276.840	2918.190	18	.000

Skye Canyon II Parcel 2.17 (Update)
South Storm Drain Mainline
Discharges into Eagle Canyon Avenue Storm Drain

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
3004.000	2911.310	2.760	2914.070	26.00	14.71	3.36	2917.43	.00	1.49	.00	1.500	.000	.00	1 .0
21.000	.0500					.0613	1.29	2.76	.00	1.50	.013	.00	.00	PIPE
3025.000	2912.360	3.231	2915.591	26.00	14.71	3.36	2918.95	.00	1.49	.00	1.500	.000	.00	1 .0
JUNCT STR	.0000					.0526	.00	3.23	.00		.013	.00	.00	PIPE
3025.000	2912.360	5.141	2917.501	22.00	7.00	.76	2918.26	.00	1.68	.00	2.000	.000	.00	1 .0
40.800	.0149					.0095	.39	5.14	.00	1.35	.013	.00	.00	PIPE
3065.800	2912.970	4.970	2917.940	22.00	7.00	.76	2918.70	.00	1.68	.00	2.000	.000	.00	1 .0
101.960	.0209					.0095	.96	4.97	.00	1.20	.013	.00	.00	PIPE
3167.760	2915.100	3.880	2918.980	22.00	7.00	.76	2919.74	.00	1.68	.00	2.000	.000	.00	1 .0
1.000	.0000					.0095	.01	3.88	.00	.00	.013	.00	.00	PIPE
3168.760	2915.100	3.927	2919.027	22.00	7.00	.76	2919.79	.00	1.68	.00	2.000	.000	.00	1 .0
1.000	.0000					.0095	.01	3.93	.00	.00	.013	.00	.00	PIPE
3169.760	2915.100	3.974	2919.074	22.00	7.00	.76	2919.84	.00	1.68	.00	2.000	.000	.00	1 .0
1.000	.0000					.0095	.01	3.97	.00	.00	.013	.00	.00	PIPE
3170.760	2915.100	4.021	2919.121	22.00	7.00	.76	2919.88	.00	1.68	.00	2.000	.000	.00	1 .0
1.000	.0000					.0095	.01	4.02	.00	.00	.013	.00	.00	PIPE
3171.760	2915.100	4.068	2919.168	22.00	7.00	.76	2919.93	.00	1.68	.00	2.000	.000	.00	1 .0
1.000	.0000					.0095	.01	4.07	.00	.00	.013	.00	.00	PIPE

Skye Canyon II Parcel 2.17 (Update)
South Storm Drain Mainline
Discharges into Eagle Canyon Avenue Storm Drain

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
3172.760	2915.100	4.115	2919.215	22.00	7.00	.76	2919.98	.00	1.68	.00	2.000	.000	.00	1 .0
95.080	.0316					.0095	.90	4.12	.00	1.06	.013	.00	.00	PIPE
3267.840	2918.100	2.090	2920.190	22.00	7.00	.76	2920.95	.00	1.68	.00	2.000	.000	.00	1 .0
1.000	.0000					.0095	.01	2.09	.00	.00	.013	.00	.00	PIPE
3268.840	2918.100	2.175	2920.275	22.00	7.00	.76	2921.04	.00	1.68	.00	2.000	.000	.00	1 .0
1.000	.0000					.0095	.01	2.18	.00	.00	.013	.00	.00	PIPE
3269.840	2918.100	2.261	2920.361	22.00	7.00	.76	2921.12	.00	1.68	.00	2.000	.000	.00	1 .0
JUNCT STR	.0000					.0107	.00	2.26	.00		.013	.00	.00	PIPE
3269.840	2918.100	3.263	2921.363	11.50	6.51	.66	2922.02	.00	1.29	.00	1.500	.000	.00	1 .0
1.000	.0000					.0120	.01	3.26	.00	.00	.013	.00	.00	PIPE
3270.840	2918.100	3.340	2921.440	11.50	6.51	.66	2922.10	.00	1.29	.00	1.500	.000	.00	1 .0
1.000	.0000					.0120	.01	3.34	.00	.00	.013	.00	.00	PIPE
3271.840	2918.100	3.418	2921.518	11.50	6.51	.66	2922.18	.00	1.29	.00	1.500	.000	.00	1 .0
1.000	.0000					.0120	.01	3.42	.00	.00	.013	.00	.00	PIPE

```
3272.840  2918.100    3.495  2921.595     11.50    6.51     .66  2922.25     .00    1.29      .00    1.500     .000   .00   1   .0
       -|-       -|-      -|-       -|-       -|-     -|-      -|-       -|-     -|-       -|-      -|-     -|-     -|-     -|-     |-
    4.000    .0225                                        .0120      .05     3.50     .00     .95     .013       .00   .00  PIPE
          |         |        |         |         |                |         |        |        |        |        |      |      |
3276.840  2918.190    3.486  2921.676     11.50    6.51     .66  2922.33     .00    1.29      .00    1.500     .000   .00   1   .0
       -|-       -|-      -|-       -|-       -|-     -|-      -|-       -|-     -|-       -|-      -|-     -|-     -|-     -|-     |-
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♠
♠

Skye Canyon II Parcel 2.17 (Update)

South Storm Drain Mainline

Discharges into Eagle Canyon Avenue Storm Drain

```
3004.00   .I          H          W                        E                                  .   R
3009.57   .                                                                                  .
3015.14   .                                                                                  .
3020.70   .                                                                                  .
3026.27   .       I          H            W                        E                      .   JX
3031.84   .       I            C  H                       W     E                          .   R
3037.41   .                                                                                  .
3042.98   .                                                                                  .
3048.55   .                                                                                  .
3054.11   .                                                                                  .
3059.68   .                                                                                  .
3065.25   .                                                                                  .
3070.82   .             I            C  H                       W     E                      .   R
3076.39   .                                                                                  .
3081.95   .                                                                                  .
3087.52   .                                                                                  .
3093.09   .                                                                                  .
3098.66   .                                                                                  .
3104.23   .                                                                                  .
3109.80   .                                                                                  .
3115.36   .                                                                                  .
3120.93   .                                                                                  .
3126.50   .                                                                                  .
```

```
3132.07   .                                                                .
3137.64   .                                                                .
3143.20   .                                                                .
3148.77   .                                                                .
3154.34   .                                                                .
3159.91   .                                                                .
3165.48   .                                                                .
3171.04   .                    I         C H          W    E               .  R
3176.61   .                    I         C H           W   E               .  R
3182.18   .                    I         C H           W    E              .  R
3187.75   .                    I         C H           W    E              .  R
3193.32   .                    I         C H           W     E             .  R
3198.89   .                    I         C H           W     E             .  R
3204.45   .                                                                .
3210.02   .                                                                .
3215.59   .                                                                .
3221.16   .                                                                .
3226.73   .                                                                .
3232.29   .                                                                .
3237.86   .                                                                .
3243.43   .                                                                .
3249.00   .                                                                .
3254.57   .                                                                .
3260.14   .                                                                .
3265.70   .                                                                .
3271.27   .                                   I         C HW     E         .  R
3276.84   .                                   I         C H W     E        .  R

        2911.310  2912.412  2913.515  2914.617  2915.719  2916.822  2917.924  2919.026  2920.128  2921.231  2922.334
```

N O T E S
1. GLOSSARY

I = INVERT ELEVATION
C = CRITICAL DEPTH
W = WATER SURFACE ELEVATION
S = SUPER-ELEVATION
H = HEIGHT OF CHANNEL
E = ENERGY GRADE LINE
X = CURVES CROSSING OVER
B = BRIDGE ENTRANCE OR EXIT
Y = WALL ENTRANCE OR EXIT

2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

WSPGW Model – SDS-L1

```
T1 Skye Canyon II Parcel 2.17 Update
T2 South Storm Drain Lateral 1
T3 Discharges into SDS System at STA 3269.84
SO   3269.8402918.100 18      .013                2921.360
R    3298.8402918.540 18      .013
SH   3298.8402918.540 18      .013                0.000
CD  18  4   1   0.000   1.500    0.000 0.000 0.000  0.000
Q           10.500
```

FILE: SDS-L1.WSW W S P G W - EDIT LISTING - Version 14.10 Date:10-23-2018 Time:10:33: 7

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	18	4	1		1.500														

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -
Skye Canyon II Parcel 2.17 Update
HEADING LINE NO 2 IS -
South Storm Drain Lateral 1
HEADING LINE NO 3 IS -
Discharges into SDS System at STA 3269.84

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
	3269.840	2918.100	18	2921.360

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3298.840	2918.540	18	.013	.000	.000	.000	0

ELEMENT NO 3 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	3298.840	2918.540	18	.000

Program Package Serial Number: 7189

WATER SURFACE PROFILE LISTING Date:10-23-2018 Time:10:33: 9

Skye Canyon II Parcel 2.17 Update
South Storm Drain Lateral 1
Discharges into SDS System at STA 3269.84

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
3269.840	2918.100	3.260	2921.360	10.50	5.94	.55	2921.91	.00	1.25	.00	1.500	.000	.00	1 .0
29.000	.0152					.0100	.29	3.26	.00	1.03	.013	.00	.00	PIPE
3298.840	2918.540	3.110	2921.650	10.50	5.94	.55	2922.20	.00	1.25	.00	1.500	.000	.00	1 .0

** WARNING NO. 22 ** - NO PLOT GENERATED, BAD DATA OR NOT ENOUGH POINTS, 3 OR LESS

WSPGW Model – U-ECA

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T1 SKYE CANYON INFRASTRUCTURE - PHASE 2 (UPDATE NO.4)
T2 BY OLYMPIA COMPANIES
T3 EAGLE CANYON - TRUNK STORM DRAIN
SO   0613.0002823.350 72                          2829.26
R    0900.0002830.520 72      .013                                                1
JX   0900.0002830.520 72 48   .013   88.5           2832.52         45.00
R    0950.0002831.580 72      .013                                                1
WE   0950.0002831.580 72      .013
TS   1000.0002835.610 66      .013                                                1
WX   1000.0002835.610 66      .013
R    1093.0002837.130 66      .013                                                1
JX   1093.0002838.130 54 42 42.013   54.5     37.5  2839.1302839.13  45.0 45.00
R    1389.5002839.630 54      .013                                                1
JX   1394.5002840.130 48 18 18.013    5.0      5.0  2842.6302842.63  45.0 45.00
R    1632.0002854.480 48      .013                                      5.    1
R    1762.0002862.620 48      .013                                      5.    1
R    1883.0002868.570 48      .013                                      5.    1
R    1992.0002873.940 48      .013                                      5.    1
JX   1992.0002873.940 48 18 24.013    4.0     16.0  2876.4402875.94  75.0 75.00
R    2072.0002877.870 48      .013                                      5.    1
R    2167.0002882.510 48      .013                                      5.    1
R    2262.0002885.160 48      .013                                      5.    1
JX   2262.0002885.160 48 36   .013   56.0           2886.16          38.00
R    2422.0002888.800 48      .013                                                1
JX   2422.0002888.800 48 18   .013    3.0           2891.30          45.00
R    2820.0002903.130 48      .013                                                1
JX   2820.0002903.130 48 42   .013   86.0           2903.63          45.00
R    3004.0002908.810 48      .013                                60.    1
JX   3004.0002908.810 48 36 18.013   44.0     26.0  2909.8102911.31  60.0 45.00
R    3024.0002910.720 48      .013                                                1
JX   3024.0002910.720 48 48   .013   12.0           2912.12          90.00
R    3060.0002912.430 48      .013                                                1
SH   3060.0002912.430 48      .013
CD  18  4   1   0.000   1.500    0.000 0.000 0.000  0.000
CD  24  4   1   0.000   2.000    0.000 0.000 0.000  0.000
CD  30  4   1   0.000   2.000    0.000 0.000 0.000  0.000
CD  36  4   1   0.000   3.000    0.000 0.000 0.000  0.000
CD  42  4   1   0.000   3.500    0.000 0.000 0.000  0.000
CD  48  4   1   0.000   4.000    0.000 0.000 0.000  0.000
CD  54  4   1   0.000   4.500    0.000 0.000 0.000  0.000
CD  60  4   1   0.000   5.000    0.000 0.000 0.000  0.000
CD  66  4   1   0.000   5.500    0.000 0.000 0.000  0.000
CD  72  4   1   0.000   6.000    0.000 0.000 0.000  0.000
CD  78  4   1   0.000   6.500    0.000 0.000 0.000  0.000
Q            36.0
```

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	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.000														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	66	4	1		5.500														
CD	72	4	1		6.000														
CD	78	4	1		6.500														

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -
SKYE CANYON INFRASTRUCTURE - PHASE 2 (UPDATE NO.4)
HEADING LINE NO 2 IS -
BY OLYMPIA COMPANIES
HEADING LINE NO 3 IS -
EAGLE CANYON - TRUNK STORM DRAIN

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	613.000	2823.350	72	2829.260

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	900.000	2830.520	72	.013	.000	.000	.000	1

ELEMENT NO 3 IS A JUNCTION * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	900.000	2830.520	72	48	0	.013	88.500	.000	2832.520	.000	45.000	.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 4 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	950.000	2831.580	72	.013	.000	.000	.000	1

ELEMENT NO 5 IS A WALL ENTRANCE *

U/S DATA	STATION	INVERT	SECT	FP
	950.000	2831.580	72	.013

ELEMENT NO 6 IS A TRANSITION * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE
	1000.000	2835.610	66	.013	.000	.000

ELEMENT NO 7 IS A WALL EXIT *

U/S DATA	STATION	INVERT	SECT
	1000.000	2835.610	66

ELEMENT NO 8 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1093.000	2837.130	66	.013	.000	.000	.000	1

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
	1093.000	2838.130	54	42	42	.013	54.500	37.500	2839.130	2839.130	45.000	45.000

RADIUS	ANGLE
.000	.000

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 10 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1389.500	2839.630	54	.013	.000	.000	.000	1

ELEMENT NO 11 IS A JUNCTION * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1394.500	2840.130	48	18	18	.013	5.000	5.000	2842.630	2842.630	45.000	45.000

RADIUS	ANGLE
.000	.000

ELEMENT NO 12 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1632.000	2854.480	48	.013	.000	.000	5.000	1

ELEMENT NO 13 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1762.000	2862.620	48	.013	.000	.000	5.000	1

ELEMENT NO 14 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1883.000	2868.570	48	.013	.000	.000	5.000	1

ELEMENT NO 15 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1992.000	2873.940	48	.013	.000	.000	5.000	1

ELEMENT NO 16 IS A JUNCTION * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1992.000	2873.940	48	18	24	.013	4.000	16.000	2876.440	2875.940	75.000	75.000

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 17 IS A REACH * * *

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                  U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                             2072.000 2877.870   48              .013                           .000     .000     5.000     1
 ELEMENT NO  18 IS A REACH            *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                             2167.000 2882.510   48              .013                           .000     .000     5.000     1
                                          W S P G W                                                                 PAGE NO   4
                        WATER SURFACE PROFILE - ELEMENT CARD LISTING
 ELEMENT NO  19 IS A REACH            *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                             2262.000 2885.160   48              .013                           .000     .000     5.000     1
 ELEMENT NO  20 IS A JUNCTION         *         *     *     *               *                    *                *
                  U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3        Q4     INVERT-3 INVERT-4  PHI 3  PHI 4
                             2262.000 2885.160   48    36     0   .013    56.000      .000  2886.160      .000  38.000     .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  21 IS A REACH            *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                             2422.000 2888.800   48              .013                           .000     .000      .000     1
 ELEMENT NO  22 IS A JUNCTION         *         *     *     *               *                    *                *
                  U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3        Q4     INVERT-3 INVERT-4  PHI 3  PHI 4
                             2422.000 2888.800   48    18     0   .013     3.000      .000  2891.300      .000  45.000     .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  23 IS A REACH            *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                             2820.000 2903.130   48              .013                           .000     .000      .000     1
 ELEMENT NO  24 IS A JUNCTION         *         *     *     *               *                    *                *
                  U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3        Q4     INVERT-3 INVERT-4  PHI 3  PHI 4
                             2820.000 2903.130   48    42     0   .013    86.000      .000  2903.630      .000  45.000     .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  25 IS A REACH            *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                             3004.000 2908.810   48              .013                           .000     .000    60.000     1
                                          W S P G W                                                                 PAGE NO   5
                        WATER SURFACE PROFILE - ELEMENT CARD LISTING
 ELEMENT NO  26 IS A JUNCTION         *         *     *     *               *                    *                *
                  U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3        Q4     INVERT-3 INVERT-4  PHI 3  PHI 4
                             3004.000 2908.810   48    36    18   .013    44.000    26.000  2909.810  2911.310  60.000   45.000
                                                                                          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  27 IS A REACH            *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                             3024.000 2910.720   48              .013                           .000     .000      .000     1
 ELEMENT NO  28 IS A JUNCTION         *         *     *     *               *                    *                *
                  U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3        Q4     INVERT-3 INVERT-4  PHI 3  PHI 4
                             3024.000 2910.720   48    48     0   .013    12.000      .000  2912.120      .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  29 IS A REACH            *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                             3060.000 2912.430   48              .013                           .000     .000      .000     1
 ELEMENT NO  30 IS A SYSTEM HEADWORKS                 *                    *
                  U/S DATA   STATION    INVERT  SECT                                   W S ELEV
                             3060.000 2912.430   48                                        .000
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Program Package Serial Number: 7189

WATER SURFACE PROFILE LISTING Date:10-15-2018 Time:10:33:58

SKYE CANYON INFRASTRUCTURE - PHASE 2 (UPDATE NO.4)
BY OLYMPIA COMPANIES
EAGLE CANYON - TRUNK STORM DRAIN

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
613.000	2823.350	3.833	2827.183	473.50	24.83	9.57	2836.76	.00	5.60	5.76	6.000	.000	.00	1 .0
145.621	.0250					.0222	3.24	3.83	2.41	3.72	.013	.00	.00	PIPE
758.621	2826.988	3.920	2830.908	473.50	24.19	9.09	2840.00	.00	5.60	5.71	6.000	.000	.00	1 .0
141.379	.0250					.0203	2.87	3.92	2.30	3.72	.013	.00	.00	PIPE
900.000	2830.520	4.089	2834.610	473.50	23.07	8.26	2842.87	.00	5.60	5.59	6.000	.000	.00	1 .0
JUNCT STR	.0000					.0216	.00	4.09	2.12		.013	.00	.00	PIPE
900.000	2830.520	3.302	2833.822	385.00	24.14	9.05	2842.87	.00	5.26	5.97	6.000	.000	.00	1 .0
50.000	.0212					.0244	1.22	3.30	2.60	3.43	.013	.00	.00	PIPE
950.000	2831.580	3.276	2834.856	385.00	24.38	9.23	2844.09	.00	5.26	5.97	6.000	.000	.00	0 .0
TRANS STR	.0806					.0189	.95	3.28	2.64		.013	.00	.00	PIPE
1000.000	2835.610	4.496	2840.106	385.00	18.52	5.32	2845.43	.00	5.15	4.25	5.500	.000	.00	0 .0
WALL EXIT														
1000.000	2835.610	4.495	2840.105	385.00	18.52	5.33	2845.43	.00	5.15	4.25	5.500	.000	.00	1 .0
19.177	.0163					.0131	.25	4.49	1.48	4.07	.013	.00	.00	PIPE
1019.177	2835.924	4.550	2840.474	385.00	18.32	5.21	2845.68	.00	5.15	4.16	5.500	.000	.00	1 .0
53.828	.0163					.0124	.67	4.55	1.44	4.07	.013	.00	.00	PIPE
1073.005	2836.803	4.813	2841.616	385.00	17.46	4.74	2846.35	.00	5.15	3.64	5.500	.000	.00	1 .0
19.995	.0163					.0116	.23	4.81	1.25	4.07	.013	.00	.00	PIPE

Program Package Serial Number: 7189

WATER SURFACE PROFILE LISTING Date:10-15-2018 Time:10:33:58

SKYE CANYON INFRASTRUCTURE - PHASE 2 (UPDATE NO.4)
BY OLYMPIA COMPANIES
EAGLE CANYON - TRUNK STORM DRAIN

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
1093.000	2837.130	5.150	2842.280	385.00	16.65	4.30	2846.58	.00	5.15	2.69	5.500	.000	.00	1 .0
JUNCT STR	.0000					.0168	.00	5.15	1.00		.013	.00	.00	PIPE
1093.000	2838.130	5.249	2843.379	293.00	18.42	5.27	2848.65	.00	4.38	.00	4.500	.000	.00	1 .0
296.500	.0051					.0222	6.58	5.25	.00	4.50	.013	.00	.00	PIPE
1389.500	2839.630	10.595	2850.225	293.00	18.42	5.27	2855.50	.00	4.38	.00	4.500	.000	.00	1 .0
JUNCT STR	.1000							10.60	.00		.013	.00	.00	PIPE
1394.500	2840.130	2.742	2842.872	283.00	30.83	14.75	2857.63	.00	3.96	3.71	4.000	.000	.00	1 .0
237.500	.0604					.0556	13.20	2.74	3.46	2.71	.013	.00	.00	PIPE
1632.000	2854.480	2.857	2857.337	283.00	29.47	13.49	2870.82	.00	3.96	3.61	4.000	.000	.00	1 .0
70.812	.0626					.0504	3.57	2.86	3.19	2.68	.013	.00	.00	PIPE
1702.812	2858.914	2.959	2861.873	283.00	28.40	12.52	2874.39	.00	3.96	3.51	4.000	.000	.00	1 .0
59.188	.0626					.0458	2.71	2.96	2.97	2.68	.013	.00	.00	PIPE
1762.000	2862.620	3.101	2865.721	283.00	27.07	11.38	2877.10	.00	3.96	3.34	4.000	.000	.00	1 .0
17.484	.0492					.0431	.75	3.10	2.70	2.93	.013	.00	.00	PIPE

1779.484	2863.480	3.118	2866.598	283.00	26.93	11.26	2877.86	.00	3.96	3.32	4.000	.000	.00	1	.0
103.516	.0492					.0408	4.23	3.12	2.67	2.93	.013	.00	.00	PIPE	
1883.000	2868.570	3.278	2871.848	283.00	25.67	10.24	2882.08	.00	3.96	3.08	4.000	.000	.00	1	.0
10.786	.0493					.0386	.42	3.28	2.39	2.93	.013	.00	.00	PIPE	

Program Package Serial Number: 7189

WATER SURFACE PROFILE LISTING Date:10-15-2018 Time:10:33:58

SKYE CANYON INFRASTRUCTURE - PHASE 2 (UPDATE NO.4)
BY OLYMPIA COMPANIES
EAGLE CANYON - TRUNK STORM DRAIN

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
1893.786	2869.101	3.303	2872.404	283.00	25.50	10.10	2882.50	.00	3.96	3.03	4.000	.000	.00	1	.0
58.327	.0493					.0368	2.15	3.30	2.35	2.93	.013	.00	.00	PIPE	
1952.113	2871.975	3.493	2875.467	283.00	24.31	9.18	2884.65	.00	3.96	2.66	4.000	.000	.00	1	.0
39.887	.0493					.0344	1.37	3.49	2.05	2.93	.013	.00	.00	PIPE	
1992.000	2873.940	3.734	2877.674	283.00	23.18	8.34	2886.02	.00	3.96	1.99	4.000	.000	.00	1	.0
JUNCT STR	.0000					.0365	.00	3.73	1.65		.013	.00	.00	PIPE	
1992.000	2873.940	3.025	2876.965	263.00	25.79	10.33	2887.30	.00	3.95	3.43	4.000	.000	.00	1	.0
17.883	.0491					.0391	.70	3.03	2.64	2.77	.013	.00	.00	PIPE	
2009.883	2874.818	3.056	2877.874	263.00	25.53	10.12	2887.99	.00	3.95	3.40	4.000	.000	.00	1	.0
62.117	.0491					.0368	2.28	3.06	2.58	2.77	.013	.00	.00	PIPE	
2072.000	2877.870	3.209	2881.079	263.00	24.34	9.20	2890.28	.00	3.95	3.19	4.000	.000	.00	1	.0
5.738	.0488					.0347	.20	3.21	2.33	2.78	.013	.00	.00	PIPE	
2077.738	2878.150	3.227	2881.377	263.00	24.21	9.10	2890.48	.00	3.95	3.16	4.000	.000	.00	1	.0
41.167	.0488					.0330	1.36	3.23	2.30	2.78	.013	.00	.00	PIPE	
2118.905	2880.161	3.403	2883.564	263.00	23.08	8.27	2891.84	.00	3.95	2.85	4.000	.000	.00	1	.0
29.371	.0488					.0305	.89	3.40	2.03	2.78	.013	.00	.00	PIPE	
2148.277	2881.595	3.616	2885.211	263.00	22.01	7.52	2892.73	.00	3.95	2.36	4.000	.000	.00	1	.0
18.723	.0488					.0300	.56	3.62	1.72	2.78	.013	.00	.00	PIPE	

Program Package Serial Number: 7189

WATER SURFACE PROFILE LISTING Date:10-15-2018 Time:10:33:58

SKYE CANYON INFRASTRUCTURE - PHASE 2 (UPDATE NO.4)
BY OLYMPIA COMPANIES
EAGLE CANYON - TRUNK STORM DRAIN

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
2167.000	2882.510	3.947	2886.457	263.00	20.98	6.84	2893.29	.00	3.95	.91	4.000	.000	.00	1	.0
5.181	.0279					.0313	.16	3.95	1.00	4.00	.013	.00	.00	PIPE	
2172.181	2882.655	4.000	2886.655	263.00	20.93	6.80	2893.46	.00	3.95	.00	4.000	.000	.00	1	.0
89.819	.0279					.0328	2.95	4.00	.00	4.00	.013	.00	.00	PIPE	
2262.000	2885.160	4.827	2889.987	263.00	20.93	6.80	2896.79	.00	3.95	.00	4.000	.000	.00	1	.0
JUNCT STR	.0000					.0271	.00	4.83	.00		.013	.00	.00	PIPE	
2262.000	2885.160	9.139	2894.299	207.00	16.47	4.21	2898.51	.00	3.86	.00	4.000	.000	.00	1	.0
160.000	.0228					.0208	3.32	9.14	.00	3.13	.013	.00	.00	PIPE	
2422.000	2888.800	9.033	2897.833	207.00	16.47	4.21	2902.05	.00	3.86	.00	4.000	.000	.00	1	.0
JUNCT STR	.0000					.0205	.00	9.03	.00		.013	.00	.00	PIPE	
2422.000	2888.800	9.266	2898.066	204.00	16.23	4.09	2902.16	.00	3.86	.00	4.000	.000	.00	1	.0

238.750	.0360					.0202	4.82	9.27	.00	2.58	.013	.00	.00	PIPE					
2660.750	2897.396	5.607	2903.003	204.00	16.23	4.09	2907.10	.00	3.86	.00	4.000	.000	.00	1	.0				
HYDRAULIC JUMP																			
2660.750	2897.396	2.822	2900.218	204.00	21.53	7.20	2907.41	.00	3.86	3.65	4.000	.000	.00	1	.0				
43.878	.0360					.0272	1.19	2.82	2.35	2.58	.013	.00	.00	PIPE					
2704.628	2898.976	2.909	2901.885	204.00	20.84	6.74	2908.63	.00	3.86	3.56	4.000	.000	.00	1	.0				
42.414	.0360					.0248	1.05	2.91	2.22	2.58	.013	.00	.00	PIPE					

Program Package Serial Number: 7189

WATER SURFACE PROFILE LISTING Date:10-15-2018 Time:10:33:58

SKYE CANYON INFRASTRUCTURE - PHASE 2 (UPDATE NO.4)
BY OLYMPIA COMPANIES
EAGLE CANYON - TRUNK STORM DRAIN

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
2747.042	2900.503	3.046	2903.548	204.00	19.87	6.13	2909.68	.00	3.86	3.41	4.000	.000	.00	1	.0
29.604	.0360					.0223	.66	3.05	2.02	2.58	.013	.00	.00	PIPE	
2776.646	2901.569	3.197	2904.766	204.00	18.95	5.57	2910.34	.00	3.86	3.20	4.000	.000	.00	1	.0
21.229	.0360					.0202	.43	3.20	1.82	2.58	.013	.00	.00	PIPE	
2797.875	2902.333	3.368	2905.702	204.00	18.06	5.07	2910.77	.00	3.86	2.92	4.000	.000	.00	1	.0
14.740	.0360					.0186	.27	3.37	1.62	2.58	.013	.00	.00	PIPE	
2812.615	2902.864	3.572	2906.436	204.00	17.22	4.61	2911.04	.00	3.86	2.47	4.000	.000	.00	1	.0
7.385	.0360					.0178	.13	3.57	1.39	2.58	.013	.00	.00	PIPE	
2820.000	2903.130	3.857	2906.987	204.00	16.42	4.19	2911.17	.00	3.86	1.49	4.000	.000	.00	1	.0
JUNCT STR	.0000					.0122	.00	3.86	1.00		.013	.00	.00	PIPE	
2820.000	2903.130	8.078	2911.208	118.00	9.39	1.37	2912.58	.00	3.27	.00	4.000	.000	.00	1	.0
183.101	.0309					.0067	1.23	8.08	.00	1.92	.013	.00	.00	PIPE	
3003.101	2908.782	4.000	2912.782	118.00	9.39	1.37	2914.15	.00	3.27	.00	4.000	.000	.00	1	.0
.899	.0309					.0065	.01	4.00	.00	1.92	.013	.00	.00	PIPE	
3004.000	2908.810	3.975	2912.785	118.00	9.40	1.37	2914.16	.00	3.27	.63	4.000	.000	.00	1	.0
JUNCT STR	.0000					.0037	.00	3.98	.37		.013	.00	.00	PIPE	
3004.000	2908.810	5.256	2914.066	48.00	3.82	.23	2914.29	.00	2.08	.00	4.000	.000	.00	1	.0
13.390	.0955					.0011	.01	5.26	.00	.89	.013	.00	.00	PIPE	

Program Package Serial Number: 7189

WATER SURFACE PROFILE LISTING Date:10-15-2018 Time:10:33:58

SKYE CANYON INFRASTRUCTURE - PHASE 2 (UPDATE NO.4)
BY OLYMPIA COMPANIES
EAGLE CANYON - TRUNK STORM DRAIN

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
3017.390	2910.089	4.000	2914.089	48.00	3.82	.23	2914.32	.00	2.08	.00	4.000	.000	.00	1	.0
3.675	.0955					.0010	.00	4.00	.00	.89	.013	.00	.00	PIPE	
3021.065	2910.440	3.629	2914.069	48.00	4.01	.25	2914.32	.00	2.08	2.32	4.000	.000	.00	1	.0
2.015	.0955					.0010	.00	3.63	.31	.89	.013	.00	.00	PIPE	
3023.080	2910.632	3.414	2914.046	48.00	4.20	.27	2914.32	.00	2.08	2.83	4.000	.000	.00	1	.0
.920	.0955					.0011	.00	3.41	.37	.89	.013	.00	.00	PIPE	
3024.000	2910.720	3.312	2914.032	48.00	4.31	.29	2914.32	.00	2.08	3.02	4.000	.000	.00	1	.0

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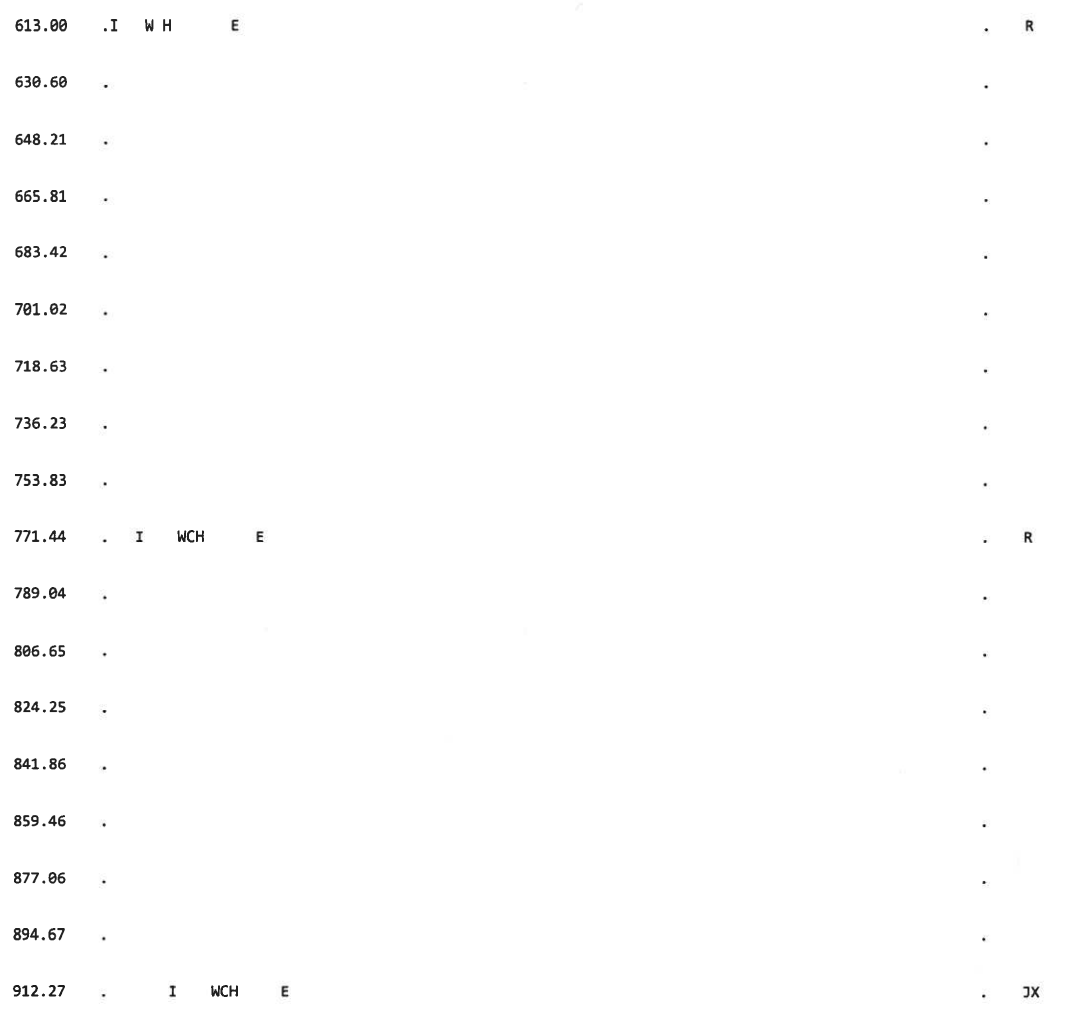
3058.140	2912.342	1.546	2913.888	36.00	8.03	1.00	2914.89	.00	1.79	3.90	4.000	.000	.00	1	.0
.842	.0475					.0059	.00	1.55	1.32	.92	.013	.00	.00	PIPE	
3058.982	2912.382	1.602	2913.984	36.00	7.66	.91	2914.89	.00	1.79	3.92	4.000	.000	.00	1	.0
.577	.0475					.0052	.00	1.60	1.23	.92	.013	.00	.00	PIPE	
3059.559	2912.409	1.660	2914.070	36.00	7.30	.83	2914.90	.00	1.79	3.94	4.000	.000	.00	1	.0
.331	.0475					.0045	.00	1.66	1.15	.92	.013	.00	.00	PIPE	
3059.890	2912.425	1.721	2914.146	36.00	6.96	.75	2914.90	.00	1.79	3.96	4.000	.000	.00	1	.0
.110	.0475					.0040	.00	1.72	1.07	.92	.013	.00	.00	PIPE	
3060.000	2912.430	1.786	2914.216	36.00	6.63	.68	2914.90	.00	1.79	3.98	4.000	.000	.00	1	.0

SKYE CANYON INFRASTRUCTURE - PHASE 2 (UPDATE NO.4)

BY OLYMPIA COMPANIES

EAGLE CANYON - TRUNK STORM DRAIN



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 947.48   .                                                                .
 965.09   .       I   W CH      E                                         .   TX
 982.69   .                                                                .
1000.29   .            IYYYYWH   E                                         .   WX
1017.90   .            I    WH   E                                         .   R
1035.50   .            I    WH   E                                         .   R
1053.11   .                                                                .
1070.71   .                                                                .
1088.32   .             I    WH   E                                        .   R
1105.92   .             I     H   E                                        .   JX
1123.53   .              I    HW     E                                     .   R
1141.13   .                                                                .
1158.73   .                                                                .
1176.34   .                                                                .
1193.94   .                                                                .
1211.55   .                                                                .
1229.15   .                                                                .
1246.76   .                                                                .
1264.36   .                                                                .
1281.96   .                                                                .
1299.57   .                                                                .
1317.17   .                                                                .
1334.78   .                                                                .
1352.38   .                                                                .
1369.99   .                                                                .
1387.59   .                                                                .
1405.19   .               I    H     W     E                               .   JX
1422.80   .                I W H            E                             .   R
1440.40   .                                                                .
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1458.01   .                                                                .
1475.61   .                                                                .
1493.22   .                                                                .
1510.82   .                                                                .
1528.42   .                                                                .
1546.03   .                                                                .
1563.63   .                                                                .
1581.24   .                                                                .
1598.84   .                                                                .
1616.45   .                                                                .
1634.05   .                      I  WH           E                         .   R
1651.65   .                                                                .
1669.26   .                                                                .
1686.86   .                                                                .
1704.47   .                         I  WH          E                       .   R
1722.07   .                                                                .
1739.68   .                                                                .
1757.28   .                                                                .
1774.88   .                            I  WH         E                     .   R
1792.49   .                            I  WH         E                     .   R
1810.09   .                                                                .
1827.70   .                                                                .
1845.30   .                                                                .
1862.91   .                                                                .
1880.51   .                                                                .
1898.12   .                               I   H         E                  .   R
1915.72   .                               I  WH         E                  .   R
1933.32   .                                                                .
1950.93   .                                                                .
1968.53   .                                  I  WH       E                 .   R
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1986.14   .                                                    .
2003.74   .                      I   H        E                .   JX
2021.35   .                      I  WH         E               .   R
2038.95   .                      I  WH         E               .   R
2056.55   .                                                    .
2074.16   .                         I   H        E            .   R
2091.76   .                         I   WH       E            .   R
2109.37   .                                                    .
2126.97   .                            I  WH      E            .   R
2144.58   .                                                    .
2162.18   .                            I   H      E            .   R
2179.78   .                             I   H      E           .   R
2197.39   .                             I   CH     E           .   R
2214.99   .                                                    .
2232.60   .                                                    .
2250.20   .                                                    .
2267.81   .                                 I   HW     E       .   JX
2285.41   .                                 I   H    W   E     .   R
2303.01   .                                                    .
2320.62   .                                                    .
2338.22   .                                                    .
2355.83   .                                                    .
2373.43   .                                                    .
2391.04   .                                                    .
2408.64   .                                                    .
2426.24   .                                     I   H    W   E .   JX
2443.85   .                                     I   H    W   E .   R
2461.45   .                                                    .
2479.06   .                                                    .
2496.66   .                                                    .
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2514.27   .                                                    .
2531.87   .                                                    .
2549.47   .                                                    .
2567.08   .                                                    .
2584.68   .                                                    .
2602.29   .                                                    .
2619.89   .                                                    .
2637.50   .                                                    .
2655.10   .                                                    .
2672.71   .                                  I  H W  E         .  R
2690.31   .                                  I WH    E         .  R
2707.91   .                                    I WH    E       .  R
2725.52   .                                                    .
2743.12   .                                                    .
2760.73   .                                      I  WH   E     .  R
2778.33   .                                        I WH  E     .  R
2795.94   .                                                    .
2813.54   .                                        I  WH E     .  R
2831.14   .                                         I  H  E    .  R
2848.75   .                                         I  WH E    .  JX
2866.35   .                                         I  CH  WE  .  R
2883.96   .                                                    .
2901.56   .                                                    .
2919.17   .                                                    .
2936.77   .                                                    .
2954.37   .                                                    .
2971.98   .                                                    .
2989.58   .                                                    .
3007.19   .                                             I  CHE .  R
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   3024.79    .                                                                    I   CHE   .    JX

   3042.40    .                                                                    I  C HW   .    R

   3060.00    .                                                                      I C H   .    R

            2823.350  2832.658  2841.966  2851.274  2860.582  2869.889  2879.197  2888.505  2897.813  2907.121  2916.430
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N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

APPENDIX D

Revised Finished Floor Analysis

REEVALUATED SKYE CANYON - PARCEL 2.16
FINISHED 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
24	R-1	2954.41	2954.03	0.59	2955.21	2954.91	2956.3	OK	OK	
25	R-1	2956.84	2956.46	0.59	2957.64	2957.34	2958.7	OK	OK	
26	R-1	2956.75	2956.37	0.59	2957.55	2957.25	2958.6	OK	OK	
27	R-1	2954.59	2954.21	0.59	2955.39	2955.09	2956.5	OK	OK	
33	R-1	2950.16	2949.78	0.59	2950.96	2950.66	2952.1	OK	OK	
34	R-1	2950.97	2950.59	0.59	2951.77	2951.47	2952.9	OK	OK	
35	R-1	2950.97	2950.59	0.59	2951.77	2951.47	2952.9	OK	OK	
36	R-1	2950.13	2949.75	0.59	2950.93	2950.63	2952.0	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.

SKYE CANYON II PARCEL 2.17 UPDATE
FINISHED 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	O-1c	2959.58	2959.20	0.47	2960.14	2960.08	2961.5	OK	OK	
68	O-1c	2962.10	2961.72	0.47	2962.66	2962.60	2964.0	OK	OK	
69	O-1c	2966.68	2966.30	0.47	2967.24	2967.18	2968.6	OK	OK	
70	O-1c	2969.20	2968.82	0.47	2969.76	2969.70	2971.1	OK	OK	
71	O-1c	2972.06	2971.68	0.47	2972.62	2972.56	2974.0	OK	OK	
72	O-1c	2975.13	2974.75	0.47	2975.69	2975.63	2977.0	OK	OK	
73	O-1c	2977.71	2977.33	0.47	2978.27	2978.21	2979.6	OK	OK	
74	O-1c	2980.24	2979.86	0.47	2980.80	2980.74	2982.1	OK	OK	
75	O-1c	2982.74	2982.36	0.47	2983.30	2983.24	2984.6	OK	OK	
76	O-1c	2986.32	2985.94	0.47	2986.88	2986.82	2988.2	OK	OK	
77	O-1c	2988.64	2988.26	0.47	2989.20	2989.14	2990.5	OK	OK	
78	O-1c	2990.76	2990.38	0.47	2991.32	2991.26	2992.6	OK	OK	
79	O-1c	2993.14	2992.76	0.47	2993.70	2993.64	2995.0	OK	OK	
80	O-1c	2995.62	2995.24	0.47	2996.18	2996.12	2997.5	OK	OK	
81	O-1c	2997.87	2997.49	0.47	2998.43	2998.37	2999.8	OK	OK	
82	O-1c	3000.34	2999.96	0.47	3000.90	3000.84	3002.2	OK	OK	
83	O-1c	3002.82	3002.44	0.47	3003.38	3003.32	3004.7	OK	OK	
84	O-1c	3005.05	3004.67	0.47	3005.61	3005.55	3006.9	OK	OK	
85	O-1c	3007.25	3006.87	0.47	3007.81	3007.75	3009.1	OK	OK	
86	O-1c	3007.25	3006.87	0.47	3007.81	3007.75	3010.8	OK	OK	
87	O-1c	3002.93	3002.55	0.47	3003.49	3003.43	3004.8	OK	OK	
88	O-1c	3000.52	3000.14	0.47	3001.08	3001.02	3002.4	OK	OK	
89	O-1c	2998.83	2998.45	0.47	2999.39	2999.33	3000.7	OK	OK	
90	O-1c	2997.14	2996.76	0.47	2997.70	2997.64	2999.0	OK	OK	
91	O-1c	2995.45	2995.07	0.47	2996.01	2995.95	2997.3	OK	OK	
92	O-1c	2993.74	2993.36	0.47	2994.30	2994.24	2995.6	OK	OK	
93	O-1c	2992.04	2991.66	0.47	2992.60	2992.54	2993.9	OK	OK	
94	O-1c	2989.93	2989.55	0.47	2990.49	2990.43	2991.8	OK	OK	
95	O-1c	2987.78	2987.40	0.47	2988.34	2988.28	2989.7	OK	OK	
96	O-1c	2985.57	2985.19	0.47	2986.13	2986.07	2987.5	OK	OK	
97	O-1c	2982.82	2982.44	0.47	2983.38	2983.32	2984.7	OK	OK	
98	O-1c	2980.07	2979.69	0.47	2980.63	2980.57	2982.0	OK	OK	
99	O-1c	2977.32	2976.94	0.47	2977.88	2977.82	2979.2	OK	OK	

SKYE CANYON II PARCEL 2.17 UPDATE FINISHED 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	O-1c	2974.57	2974.19	0.47	2975.13	2975.07	2976.5	OK	OK	
101	O-1c	2971.82	2971.44	0.47	2972.38	2972.32	2973.7	OK	OK	
102	O-1c	2963.59	2963.21	0.47	2964.15	2964.09	2965.5	OK	OK	
103	O-1c	2959.57	2959.19	0.47	2960.13	2960.07	2961.5	OK	OK	
104	O-1c	2956.83	2956.45	0.47	2957.39	2957.33	2958.7	OK	OK	
105	O-1c	2954.65	2954.27	0.47	2955.21	2955.15	2956.5	OK	OK	
106	O-1c	2953.01	2952.63	0.47	2953.57	2953.51	2954.9	OK	OK	
107	O-1c	2951.85	2951.47	0.47	2952.41	2952.35	2953.7	OK	OK	
108	O-1c	2976.45	2976.07	0.47	2977.01	2976.95	2978.4	OK	OK	
109	O-1c	2979.67	2979.29	0.47	2980.23	2980.17	2981.6	OK	OK	
110	O-1c	2982.56	2982.18	0.47	2983.12	2983.06	2984.5	OK	OK	
111	O-1c	2985.69	2985.31	0.47	2986.25	2986.19	2987.6	OK	OK	
112	O-1c	2988.83	2988.45	0.47	2989.39	2989.33	2990.7	OK	OK	
113	O-1c	2991.94	2991.56	0.47	2992.50	2992.44	2993.8	OK	OK	
114	O-1c	2994.42	2994.04	0.47	2994.98	2994.92	2996.4	OK	OK	
115	O-1c	3001.49	3001.11	0.47	3002.05	3001.99	3002.8	OK	OK	
116	O-1c	2999.16	2998.78	0.47	2999.72	2999.66	3001.1	OK	OK	
117	O-1c	2996.90	2996.52	0.47	2997.46	2997.40	2998.8	OK	OK	
118	O-1c	2994.64	2994.26	0.47	2995.20	2995.14	2996.5	OK	OK	
119	O-1c	2992.04	2991.66	0.47	2992.60	2992.54	2994.7	OK	OK	
120	O-1c	2984.60	2984.22	0.47	2985.16	2985.10	2986.5	OK	OK	
121	O-1c	2981.60	2981.22	0.47	2982.16	2982.10	2983.5	OK	OK	
122	O-1c	2978.85	2978.47	0.47	2979.41	2979.35	2980.8	OK	OK	
123	O-1c	2976.10	2975.72	0.47	2976.66	2976.60	2978.0	OK	OK	
124	O-1c	2973.35	2972.97	0.47	2973.91	2973.85	2975.3	OK	OK	
125	O-1c	2966.64	2966.26	0.47	2967.20	2967.14	2968.5	OK	OK	
126	O-1c	2966.77	2966.39	0.47	2967.33	2967.27	2969.0	OK	OK	
127	O-1c	2968.25	2967.87	0.47	2968.81	2968.75	2970.1	OK	OK	
128	O-1c	2967.69	2967.31	0.47	2968.25	2968.19	2969.7	OK	OK	
129	O-1c	2966.77	2966.39	0.47	2967.33	2967.27	2969.0	OK	OK	
130	O-1c	2966.64	2966.26	0.47	2967.20	2967.14	2968.5	OK	OK	
131	O-1c	2957.22	2956.84	0.47	2957.78	2957.72	2959.8	OK	OK	
132	O-1c	2954.80	2954.42	0.47	2955.36	2955.30	2956.8	OK	OK	

SKYE CANYON II PARCEL 2.17 UPDATE
FINISHED 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	O-1c	2952.79	2952.41	0.47	2953.35	2953.29	2954.7	OK	OK	
134	O-1c	2959.44	2959.06	0.47	2960.00	2959.94	2961.3	OK	OK	
135	O-1c	2961.75	2961.37	0.47	2962.31	2962.25	2963.7	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.

Adjacent/Perimeter Street Check										
Lot Number	Street	High TC[1]	High FL[2]	Section	Flow Depth[3]	Min FF[4]	Design FF	T/C+6" Chech	Check	Solid Grout
24	Eagle Canyon Avenue	2957.52	2957.02	ECA1	0.46	2957.94	2956.3	CHECK	CHECK	Yes
25	Eagle Canyon Avenue	2959.97	2959.47	ECA1	0.46	2960.39	2958.7	CHECK	CHECK	Yes
67	Eagle Canyon Avenue	2962.42	2961.92	ECA1	0.46	2962.84	2961.5	CHECK	CHECK	Yes
68	Eagle Canyon Avenue	2964.87	2964.37	ECA1	0.46	2965.29	2964.0	CHECK	CHECK	Yes
69	Eagle Canyon Avenue	2969.77	2969.27	ECA1	0.46	2970.19	2968.6	CHECK	CHECK	Yes
70	Eagle Canyon Avenue	2972.22	2971.72	ECA1	0.46	2972.64	2971.1	CHECK	CHECK	Yes
71	Eagle Canyon Avenue	2974.67	2974.17	ECA1	0.46	2975.09	2974.0	CHECK	CHECK	Yes
72	Eagle Canyon Avenue	2977.12	2976.62	ECA1	0.46	2977.54	2977.0	CHECK	CHECK	Yes
73	Eagle Canyon Avenue	2982.02	2981.52	ECA1	0.46	2982.44	2979.6	CHECK	CHECK	Yes
74	Eagle Canyon Avenue	2984.47	2983.97	ECA1	0.46	2984.89	2982.1	CHECK	CHECK	Yes
75	Eagle Canyon Avenue	2986.44	2985.94	ECA1	0.46	2986.86	2984.6	CHECK	CHECK	Yes
76	Eagle Canyon Avenue	2991.49	2990.99	ECA1	0.46	2991.91	2988.2	CHECK	CHECK	Yes
77	Eagle Canyon Avenue	2996.71	2996.21	ECA1	0.46	2997.13	2990.5	CHECK	CHECK	Yes
78	Eagle Canyon Avenue	2999.15	2998.65	ECA1	0.46	2999.57	2992.6	CHECK	CHECK	Yes
79	Eagle Canyon Avenue	3001.61	3001.11	ECA1	0.46	3002.03	2995.0	CHECK	CHECK	Yes
80	Eagle Canyon Avenue	3003.83	3003.33	ECA1	0.46	3004.25	2997.5	CHECK	CHECK	Yes
81	Eagle Canyon Avenue	3005.60	3005.10	ECA1	0.46	3006.02	2999.8	CHECK	CHECK	Yes
82	Eagle Canyon Avenue	3006.90	3006.40	ECA1	0.46	3007.32	3002.2	CHECK	CHECK	Yes
83	Eagle Canyon Avenue	3007.74	3007.24	ECA1	0.46	3008.16	3004.7	CHECK	CHECK	Yes
84	Eagle Canyon Avenue	3008.36	3007.86	ECA1	0.46	3008.78	3006.9	CHECK	CHECK	Yes
85	Eagle Canyon Avenue	3008.98	3008.48	ECA1	0.46	3009.40	3009.1	CHECK	CHECK	Yes
86	Eagle Canyon Avenue	3009.68	3009.18	ECA1	0.46	3010.10	3010.8	OK	OK	No
115	Skye Paseo Ave	3001.15	3000.77	O-1c	0.47	3001.71	3002.8	OK	OK	No
125	Skye Arroyo Ave	2970.56	2970.18	O-1c	0.47	2971.12	2968.5	CHECK	CHECK	Yes
127	Skye Paseo Ave	2973.74	2973.36	O-1c	0.47	2974.30	2970.1	CHECK	CHECK	Yes
128	Skye Paseo Ave	2965.70	2965.32	O-1c	0.47	2966.26	2969.7	OK	OK	No
130	Skye Arroyo Ave	2963.04	2962.66	O-1c	0.47	2963.60	2968.5	OK	OK	No

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

2: 0.5-ft (Perimeter Streets) or 0.38' (Onsite Roadways) 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.

APPENDIX E

Materials from Approved Study

Technical Drainage Study for Skye Canyon II Parcel 2.16, by SHG

(DS4842C)

Approval Letter

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM				DATE: March 8, 2017
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 Parcel 2.16**			**COPIES TO:** Slater Hanifan Group
Cross Streets:	NWC of Egan Crest Dr. & Eagle Canyon Av.			Section 12, LLC / Ninety Five Mangt.
File Number:	F:\Depot\DSMemos\DS4842C.doc			Bart Anderson, P.E., DevCo
Parcel Number:	126-12-000-001			CCRFCD
Zoning Action:	TMP-65809			
FEMA Flood Zone	YES	NO	X	
Proposed Storm Drain	YES	NO	X	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1st Submittal	11/3/2016	11/29/2016	Not Approved	$400.00	464250: $400
2nd Submittal	12/20/2016	1/5/2017	Conditional Approval	$400.00	469488: $400
Revised	1/23/2017	1/23/2017	Conditional Approval	N/C	N/C
CCRFCD	2/22/2017	3/8/2017	Concurrence Recv'd	N/C	N/C
			TOTAL FEES (LDDRS):	**$800.00**	**----**

REMARKS:

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

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

All Onsite ***Skye Canyon Phase 2 Developments*** such as **Parcel 2.xx series** are allowed to proceed with the following conditions:

1. Per the response to previous Comment #1, the developer/engineer has elected to construct the ultimate ***Detention Basin 1*** for adequate flood protection of the ***Phase 2 Developments***.
2. No ***Certificate of Occupancy*** on the houses will be issued until after the detention basin has been accepted for Substantial Completion by the City.
3. The *Developer* provides a bond for the detention basin now, showing good faith that the *Developer*'s intentions are to get started with the final detention basin as soon as permitting allows.

The following are comments pertaining to the subject site specific drainage study and grading plans:

4. All roadways and flood control facilities as proposed and approved in ***Skye Canyon Phase 2 Infrastructures*** must be substantially constructed prior to the issuance of building permits for the subject development.

5. 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.
6. 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.
7. Private streets must be public drainage easements. Provide a note on the grading plans: "Note: All private streets are P.U.E., Public Sewer Easements and Public Drainage Easements to be privately maintained by HOA".
8. Add a note in all pertinent sheets for the construction of all storm drain drop inlets per a newly adopted USDCCA Drawing No. 421 (*Stormwater Quality Management Stamp and Sign Detail*).

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

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

END OF REMARKS

ays

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

REGIONAL FLOOD CONTROL DISTRICT

Steven C. Parrish, P.E.
General Manager/Chief Engineer

BOARD OF DIRECTORS

Lawrence L. Brown, III
Chairman
Clark County

Debra March
Vice-Chairman
City of Henderson

Chris Giunchigliani
Clark County

Mayor Carolyn Goodman
City of Las Vegas

Mayor John J. Lee
City of North Las Vegas

Mayor Allan Litman
City of Mesquite

Dr. Lois Tarkanian
City of Las Vegas

Mayor Rodney Woodbury
City of Boulder City

February 21, 2017

Mr. Oh Sang Kwon, P.E.
City of Las Vegas Department of Public Works
333 North Rancho Drive
Las Vegas, NV 89106

DISTRICT CONCURRENCE: SKYE CANYON PARCEL 2.16 (DS4842B) (RFCD No. 17-9784)

Dear Mr. Kwon:

Clark County Regional Flood Control District (District) reviewed Technical Drainage Study dated November 2, 2016, and Addendum No. 1 dated December 20, 2016 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 January 5, 2017.

District concurs with acceptance of this Technical Drainage Study by City of Las Vegas Department of Public Works.

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

Abigail Mayrena, P.E., CFM
Principal Civil Engineer

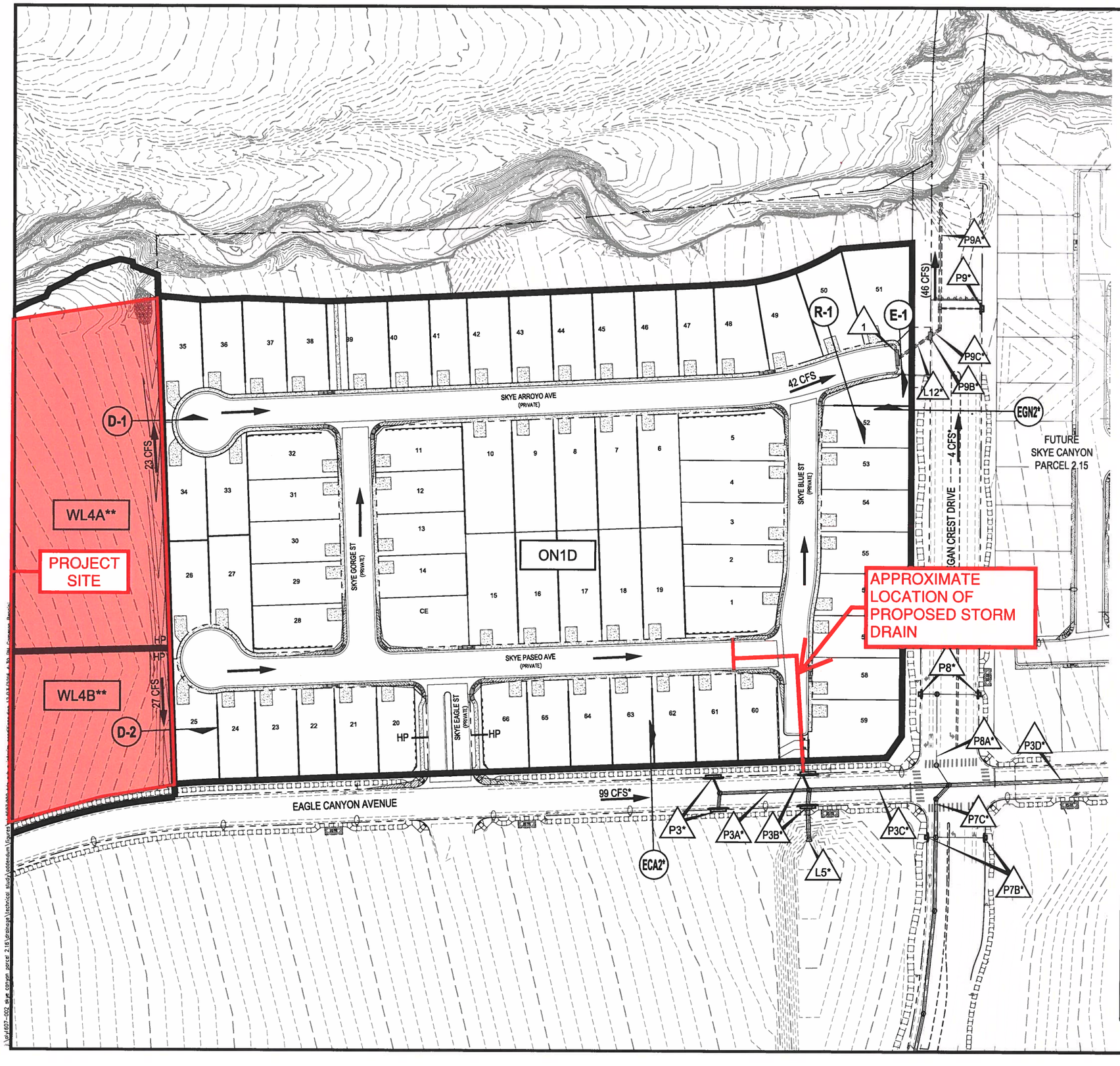
AM:jb

c: Stanley Okey Amadi, P.E., Slater Hanifan Group

P:\Letters and Memos\Local Drainage\Land Development & Drainage\2017\L-17-9784.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

Drainage Exhibits



Developed Condition Flow Rate Summary

Basin	Area (ac)	Q_{100} (cfs)	Q_{10} (cfs)
WL4A**	8.0	23	10
WL4B**	8.9	27	12
ON1D	14.2	42	19

100-Year Open Channel Flow Summary
Developed Condition

Cross Section	Slope (%)	Q_{100} (cfs)	Depth (ft)	Velocity (fps)	DxV
ECA2*	4.90	99	0.62	8.5	5.3
EGN2*	0.50	4	0.35	1.6	0.5
R-1 (Q = ON1D)	0.60	42	0.55	3.5	1.9
	4.98		0.42	7.1	3.0
D-1 (Q = WL4A)	1.00	23	0.69	3.6	2.5
	2.00		0.58	4.6	2.7
D-2 (Q = WL4B)	0.75	27	0.80	3.3	2.6
	1.00		0.74	3.7	2.7

Egan Crest Drive Flood Control Facility Summary

Facility ID	Facility	Proposed Q_{100} (cfs)	Previous Design Q_{100} (cfs)	Comment
1	20-ft Type CM2 DI	42	N/A	Conveyed to Existing Facility L12*
L12	Existing 36" RCP	42	67*	Tie into Existing Facility P9B*
P9C*	Existing 36"RCP	44	69*	Tie to Existing Manhole
P9*	Existing 7.5-ft Type CM2 DI	2	2*	Existing 18" RCP East Latera
P9B*	Exsting 10.0-ft Type CM2 DI	2	2*	Outlets NE to Existing 36-in RCP
P9A*	Existing 36" RCP	46	71*	Outlets to wash

Eagle Canyon Drive Flood Control Facility Summary

Facility ID	Facility	Comment
P3	(2) Existing 20-ft Type CM2 DIs	18" RCP North, 36" RCP South Lateral
P3A	Existing 36" RCP	18" RCP North, 48" RCP South Lateral
P3B	(2) Existing 20-ft Type CM2 DIs	
P3C	Existing 48" RCP	
P3D	Existing 48" RCP	
P7B	(2) Existing 5-ft Type CM2 DIs	18" RCP laterals (West Inlet Provided as Nuisance
P7C	Existing 42" RCP	
P8	(2) Existing 5-ft Type CM2 Nuisance DIs	18" RCP laterals
P8A	Existing 18" RCP	
L5	Existing 48" RCP	

NOTES:

** REFERENCED PER THE MASTER DRAINAGE STUDY (DS4420N)
* REFERENCED PER PHASE 2 INFRASTRUCTURE (DS4739E)

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.
1					

NINETY-FIVE MANAGEMENT, LLC.

SKYE CANYON - PARCEL 2.16

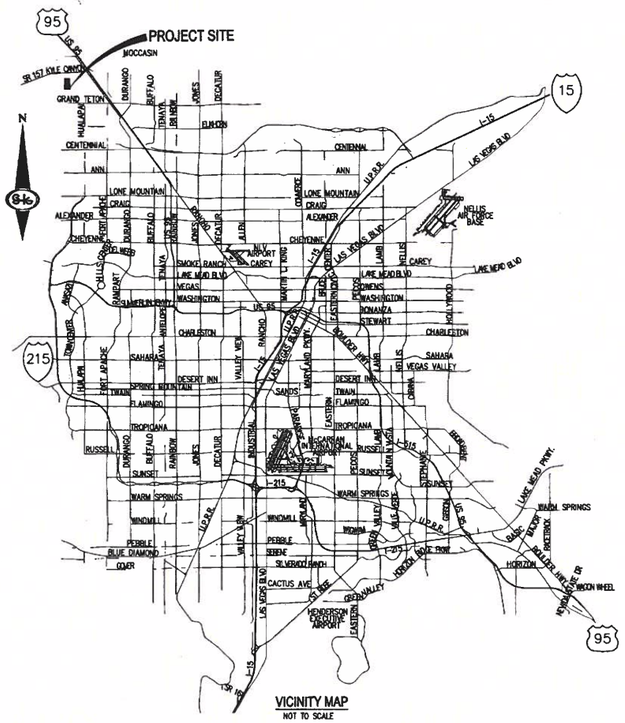
DEVELOPED CONDITION DRAINAGE MAP

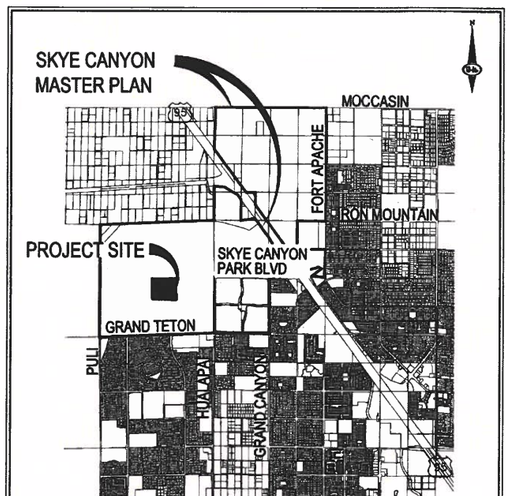
DATE: DEC. 2016
DRAFTER: CWB
DESIGNER: CWB
CHECKED: SOA
PROJECT NO.
OLY1607.002

EXHIBIT E
SHEET 1 OF 1
####

J:\oly1607-002 skye canyon parcel 2.16\drainage\technical study\addendum\figures\ 12/21/2016 1:33 PM Cameron Benoit

Improvement Plans





IMPROVEMENT PLANS FOR SKYE CANYON PARCEL 2.16

CITY OF LAS VEGAS, NEVADA
RESIDENTIAL SUBDIVISION
A PORTION OF APN: 126-12-000-001

SHEET INDEX

NO	Sheet Description	Sheet Title
1	C-1	COVER SHEET
2	C-2	GENERAL NOTES
3	C-3	GENERAL NOTES AND QUANTITIES
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	D-1	STREET SECTIONS AND GRADING DETAILS I
9	D-2	GRADING DETAILS II
10	P-1	PLAN AND PROFILE – SKYE ARROYO ST 15+00 TO 20+50

APPROVALS

CITY ENGINEER–ALLEN 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.

LAS VEGAS FIRE AND RESCUE DATE

CHRIS KNIGHT, DIRECTOR DATE
BUILDING AND SAFETY

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 MANAGER
PROJECT NO._____ DATE:_____
SHEETS:

APPROVAL BY THE FIRE DEPARTMENT HAVING JURISDICTION IS REQUIRED PRIOR TO OBTAINING FINAL APPROVAL FROM LAS VEGAS VALLEY WATER DISTRICT.

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 DATE

OWNER/DEVELOPER
K.A.G. LLC / NINETY-FIVE MANAGEMENT LLC
11411 SOUTHERN HIGHLANDS #300
LAS VEGAS, NV 89141
PH: 702-220-6565
FX: 702-220-6566
CONTACT: BOBBY WILLIAMSON

ENGINEER
SLATER HANIFAN GROUP, INC.
5740 S. ARVILLE STREET, SUITE 218
LAS VEGAS, NV 89118
PH: (702) 284-5300
FX: (702) 284-5399
CONTACT: TIM MULROONEY

LEGAL DESCRIPTION

BEING A PORTION OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST M.D.M., CLARK COUNTY, NEVADA.

BENCHMARK

PROJECT DATUM:
BM 71,900 ZWHS CITY OF LAS VEGAS RIVET AND ROUND PLATE IN CONCRETE CYLINDER, SOUTHEAST CORNER OF HUALAPAI WAY AND IRON MOUNTAIN ROAD.

ELEV: 2840.13 FEET (865.67 METERS) (NAVD 1988)

BASIS OF BEARINGS

SOUTH 00°34'18" EAST, BEING THE BEARING OF THE EAST LINE OF THE NORTHEAST QUARTER (NE ¼) OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST, M.D.M., AS PER FILE 151, PAGE 14 OF SURVEYS, ON FILE IN THE COUNTY RECORDER'S OFFICE.

FLOOD ZONE

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE X (UNSHADED) AS DEPICTED ON FLOOD INSURANCE RATE MAP (FIRM) PANEL 32003C1750 E, DATED SEPTEMBER 27, 2002. A ZONE X (UNSHADED) IS DESCRIBED AS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN.

PROJECT INFORMATION

ACREAGE (GROSS):	= 17.09 AC
ACREAGE (NET):	= 15.83 AC
DENSITY (LOTS/NET ACRE):	= 4.14 DU/NET AC
ZONING:	= T-D
TOTAL NO. OF RESIDENTIAL LOTS	= 66
TOTAL NO. OF COMMON ELEMENTS	= 7
MINIMUM LOT SIZE	= 5,799 SF±
MAXIMUM LOT SIZE	= 9,734 SF±
PROVIDED OPEN SPACE	= 143,310 SF±

EARTHWORK SUMMARY (UNADJUSTED)

CUT	57,464 CY.
FILL	23,880 CY.
NET	33,584 CY. CUT

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/SHPC/STORMOI.HTM PROJECTS THAT DISTURB MORE THEN 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: GEOTEK RESIDENTIAL, LLC
ADDRESS: 6835 S. ESCONDIDO ST. SUITE B LAS VEGAS, NEVADA 89119
PHONE: 702-897-1424
PROJECT No. 12208-LVR
DATED: 02/09/2015 UPDATED 03/30/2016

EAST
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

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS
5740 S. ARVILLE STREET #218, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS
NINETY FIVE MANAGEMENT, LLC
SKYE CANYON PARCEL 2.16
COVER SHEET
T19 R59 S12

DATE: 10/28/16
DRAFTER: HN
DESIGNER: HN
CHECKED: TMM
PROJECT NO.
OLY1607-002

TIMOTHY M. MULROONEY, Exp. 12/31/2017, CIVIL, No. 22938, STATE OF NEVADA, PROFESSIONAL ENGINEER
12/29/16

C-1
SHEET 1 OF 10

H#_____
CLV#_____

\olf1607-002 skye canyon parcel 2.16\Xrefs\Xrefs\olf1607-002 cvr.dwg 12/29/2016 9:16 AM Hung Nguyen

SECTION 12 LLC
APN:126-12-000-001
ZONING CLASSIFICATION: T-D (T-D)
DOC#20131107000003068

PROJECT SITE

MATCHLINE - SEE SHEET G-1

MATCHLINE - SEE SHEET G-2

MATCHLINE - SEE SHEET G-4

MATCHLINE - SEE SHEET G-1

MATCHLINE - SEE SHEET G-3

SKYE GORGE ST (PRIVATE)

SKYE EAGLE ST (PRIVATE)

SKYE PASEO AVE (PRIVATE)

EAGLE CANYON AVE (PUBLIC)

EAGLE ANYON AVE PER SKYE CANYON PHASE 2 LAS VEGAS PLAN #64089

CE "A"

CE "B"

CE "C"

SECTION 12 LLC
APN:126-12-000-001
ZONING CLASSIFICATION: T-D (T-D)
DOC#20131107000003068

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 2900 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 2901.00)

SOILS REPORT

SOILS REPORT BY GEOTEK RESIDENTIAL, LLC
6835 S. ESCONDIDO ST. SUITE B LAS VEGAS, NEVADA 89119
PROJECT NO. 12208-LVR DATED 02/09/2015

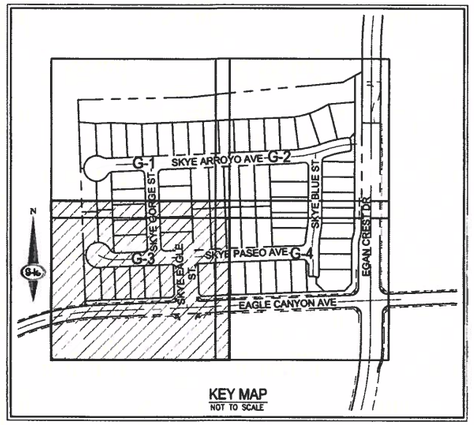
UPDATED SOILS REPORT BY GEOTEK RESIDENTIAL, LLC

PROJECT NO. 12208-LVR DATED 03/30/2016

EARTHWORKS

EARTHWORK QUANTITIES (RAW):
CUT= 57,464 CU YDS
FILL= 23,880 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.



KEY MAP
NOT TO SCALE

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

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

1. FINAL GRADES ADJACENT TO STRUCTURES SHALL BE IN CONFORMANCE WITH IBC 2012, SECTION 2304.11.2.2.
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AND REPORT ALL DISCREPANCIES TO THE ENGINEER.
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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. INSTALL 30" ROLL CURB PER CCAUSD NO 217.S1 OVER 6" TYPE II AGGREGATE BASE
2. INSTALL 5' WIDE CONCRETE SIDEWALK (5" THICK OVER 6" TYPE 2 AGGREGATE BASE) PER CCAUSD #234
3. INSTALL 8-FT CROSS GUTTER PER DETAIL 22 ON SHEET D-2
4. INSTALL 4" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
5. CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES OR EQUIVALENT CCAUSD NO. 235, CASE I & 230.1
6. CONSTRUCT 10' TRANSITION FROM "L" CURB TO ROLL CURB PER DETAIL 23 ON SHEET D-2
7. INSTALL 20 LF TYPE "CM2" DROP INLET PER CCAUSD #412.1 AND #421
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9. INSTALL "L" TYPE CURB AND GUTTER PER CCAUSD #216
10. EX 10 LF TYPE "CM2" DROP INLET PER CCAUSD #412.1 AND #421. PLANS PER SKYE CANYON PHASE 2 #63875
11. REMOVE EXISTING 36" STORM DRAIN END SECTION PER SKYE CANYON PHASE 2 #63875
12. EX 60" TYPE III STORM DRAIN MANHOLE PER CCAUSD #406 RIM=2914.81, INV IN: 2907.71, INV OUT:2907.71
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16. INSTALL 24" SIDEWALK DRAIN PER STD DWG 236
17. INSTALL WROUGHT IRON FENCE PER DETAIL ON SHEET D-2
18. INSTALL WROUGHT IRON GATES PER DETAIL ON SHEET D-2
19. INSTALL ACCESS GATES, DESIGN BY OTHERS

SEE SHEET C-3 FOR ABBREVIATIONS AND QUANTITIES

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.

LEGAL DESCRIPTION

BEING A PORTION OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST M.D.M., CLARK COUNTY, NEVADA.

BENCHMARK

BM 7LV90 2NWS CITY OF LAS VEGAS RIVET AND ROUND PLATE IN CONCRETE CYLINDER, SOUTHEAST CORNER OF HUALAPAI WAY AND IRON MOUNTAIN ROAD.

ELEV: 2840.13 FEET
ELEW: (865.67 METERS) (NAVD 1988)

BASIS OF BEARINGS

SOUTH 00°34'18" EAST, BEING THE BEARING OF THE EAST LINE OF THE NORTHEAST QUARTER (NE ¼) OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST, M.D.M., AS PER FILE 151, PAGE 14 OF SURVEYS, ON FILE IN THE COUNTY RECORDER'S OFFICE.

FLOOD ZONE

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE X (UNSHADED) AS DEPICTED ON FLOOD INSURANCE RATE MAP (FIRM) PANEL 32003C1750 E, DATED SEPTEMBER 27, 2002. A ZONE X (UNSHADED) IS DESCRIBED AS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN.

FLOOD CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY ON FILE AT CITY OF LAS VEGAS DS 484 FOR THE SUBJECT PROJECT.

TIMOTHY M. MULROONEY, P.E. 22938 — DATE 12/2/16

NOTE

ALL PRIVATE STREETS ARE P.U.E., PUBLIC SEWER EASEMENTS AND PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED BY THE HOA

FAST
Call before you UnderGround
1-702-432-5300
FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T.)

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SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 254-5300 FAX (702) 254-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

NINETY FIVE MANAGEMENT, LLC

SKYE CANYON PARCEL 2.16
GRADING PLAN III

12 19 59

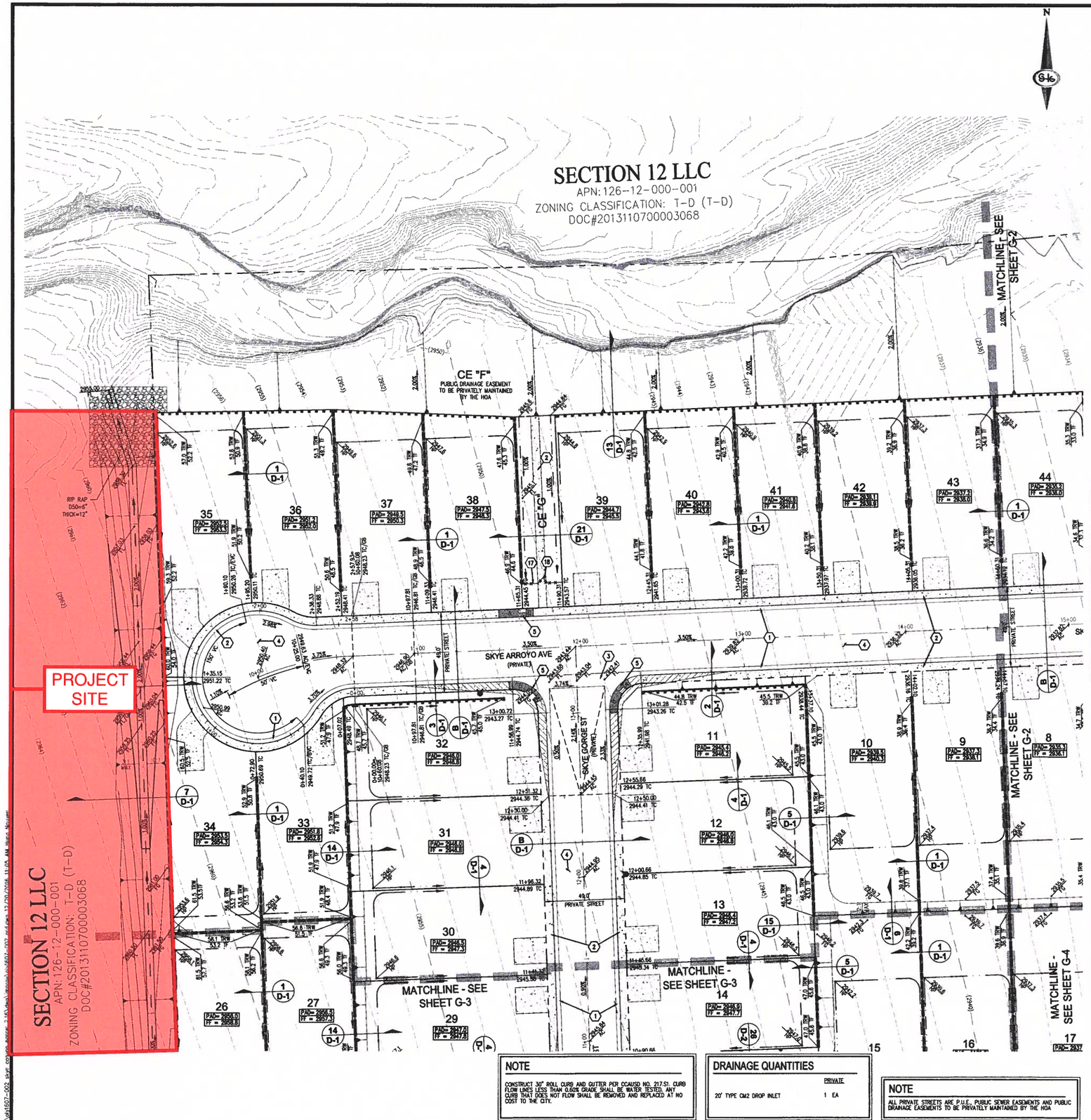
DATE: 10/28/16
DRAFTER: HN
DESIGNER: HN
CHECKED: TMM
PROJECT NO.
OLY1607-002

PROFESSIONAL ENGINEER STATE OF NEVADA TIMOTHY M. MULROONEY Exp. 12/31/2017 CIVIL No. 22938 12/2/16

G-3
SHEET 6 OF 10

H#_____
CLV#_____

\\ol\1607-002 skye canyon parcel 2.16\dwg\import\ol1607-002_grd.dwg 12/20/2016 11:15 AM Hung Nguyen



SURVEY NOTE

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ADD 2900 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 2901.00)

SOILS REPORT

SOILS REPORT BY GEOTEK RESIDENTIAL, LLC 6835 S. ESCONDIDO ST., SUITE B LAS VEGAS, NEVADA 89119
PROJECT NO. 12208-LVR DATED 02/09/2015

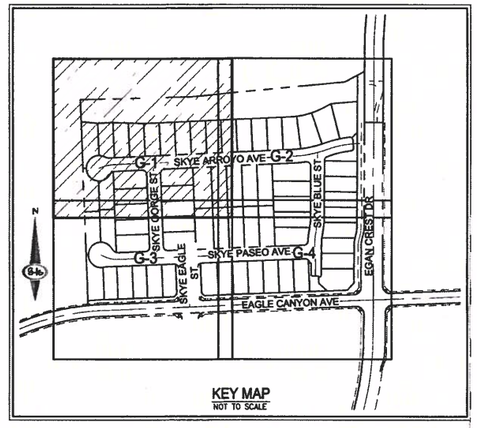
UPDATED SOILS REPORT BY GEOTEK RESIDENTIAL, LLC

PROJECT NO. 12208-LVR DATED 03/30/2016

EARTHWORKS

EARTHWORK QUANTITIES (RAW):
CUT= 57,464 CU YDS
FILL= 23,880 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.



KEY MAP
NOT TO SCALE

CALL SOUTHWEST GAS AT 702-651-2111 FOR STANDBY WHEN EXCAVATING OVER OR NEAR HIGH PRESSURE GAS LINES

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2. INSTALL 5' WIDE CONCRETE SIDEWALK (5" THICK OVER 6" TYPE 2 AGGREGATE BASE) PER CCAUSD #234
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15. INSTALL 8-FT CROSS GUTTER PER STD DWG 228
16. INSTALL 24" SIDEWALK DRAIN PER STD DWG 236
17. INSTALL WROUGHT IRON FENCE PER DETAIL ON SHEET D-2
18. INSTALL WROUGHT IRON GATES PER DETAIL ON SHEET D-2
19. INSTALL ACCESS GATES, DESIGN BY OTHERS

SEE SHEET C-3 FOR ABBREVIATIONS AND QUANTITIES

LEGAL DESCRIPTION

BEING A PORTION OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST M.D.M., CLARK COUNTY, NEVADA.

BENCHMARK

BM 71,950 2NWS CITY OF LAS VEGAS RIVET AND ROUND PLATE IN CONCRETE CYLINDER, SOUTHEAST CORNER OF HUALAPAI WAY AND IRON MOUNTAIN ROAD.

ELEV: 2840.13 FEET
ELEV#: (865.67 METERS) (NAVD 1988)

BASIS OF BEARINGS

SOUTH 00°34'18" EAST, BEING THE BEARING OF THE EAST LINE OF THE NORTHEAST QUARTER (NE ¼) OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST, M.D.M., AS PER FILE 151, PAGE 14 OF SURVEYS, ON FILE IN THE COUNTY RECORDER'S OFFICE.

FLOOD CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY ON FILE AT CITY OF LAS VEGAS DS 4847 FOR THE SUBJECT PROJECT.

TIMOTHY M. MULROONEY, P.E. 22938 — DATE 12/6/16

NOTE

CONSTRUCT 30" ROLL CURB AND GUTTER PER CCAUSD NO. 217.S1. CURB FLOW LINES LESS THAN 0.60% GRADE SHALL BE WATER TESTED. ANY CURB THAT DOES NOT FLOW SHALL BE REMOVED AND REPLACED AT NO COST TO THE CITY.

DRAINAGE QUANTITIES

	PRIVATE
20' TYPE CM2 DROP INLET	1 EA

NOTE

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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

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS
5740 S. ARVILLE STREET #214, LAS VEGAS, NV 89118
PHONE (702) 254-5300 FAX (702) 254-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

NINETY FIVE MANAGEMENT, LLC

SKYE CANYON PARCEL 2.16

GRADING PLAN I

09-12-59

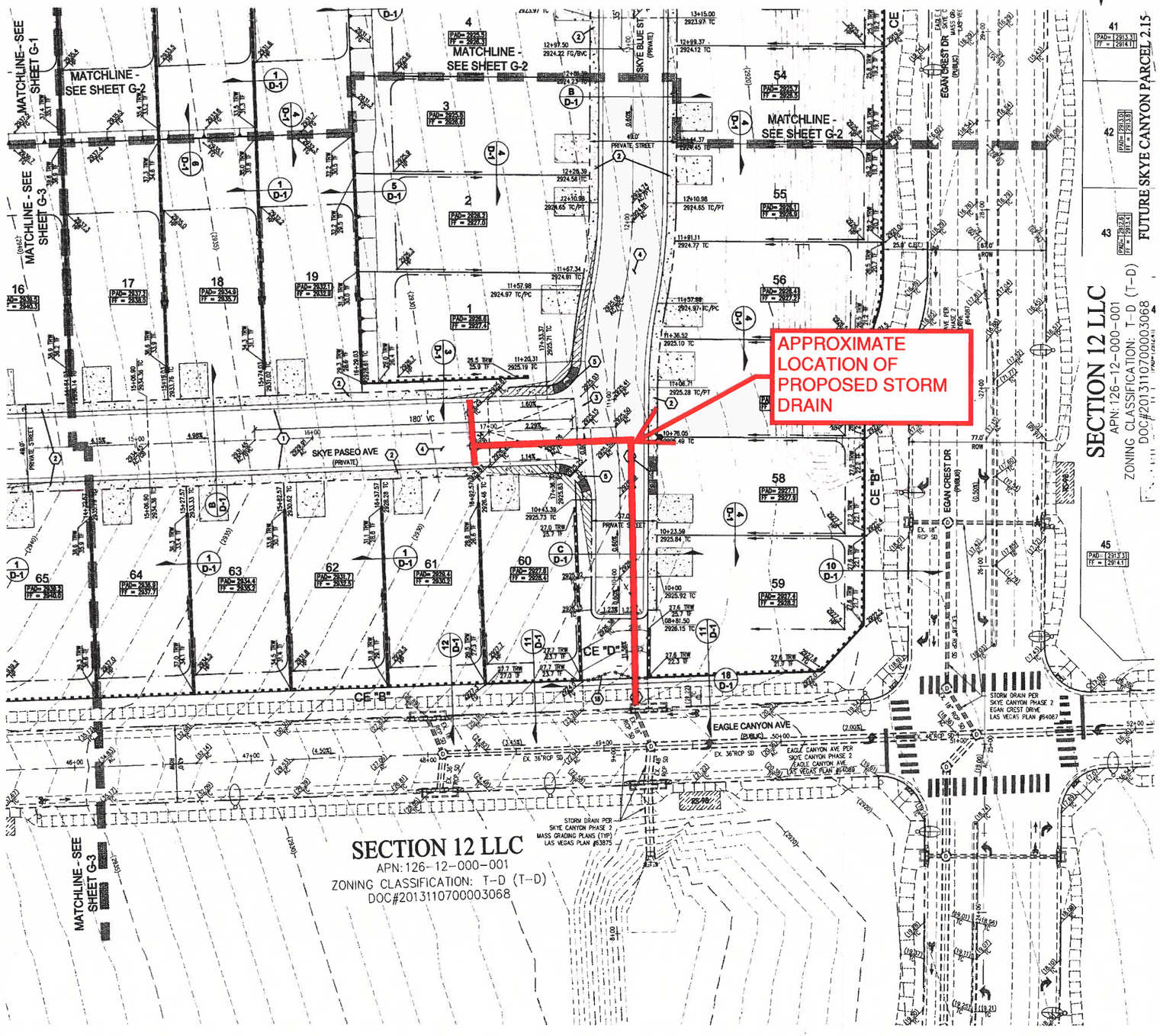
DATE: 10/28/16
DRAFTER: HN
DESIGNER: HN
CHECKED: TMM

PROJECT NO.
OLY1607-002

PROFESSIONAL ENGINEER — STATE OF NEVADA — TIMOTHY M. MULROONEY — Exp. 12/31/2017 — CIVIL — No. 22938 — 12/6/16

G-1
SHEET 4 OF 10

H#_____
CLV#_____-_____



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 2900 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 2901.00)

SOILS REPORT

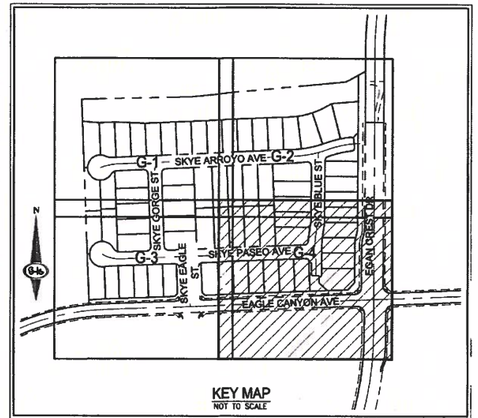
SOILS REPORT BY GEOTEK RESIDENTIAL, LLC 8435 S. ESCONDIDO ST. SUITE B LAS VEGAS, NEVADA 89119
PROJECT NO. 12208-LVR DATED 02/09/2015

UPDATED SOILS REPORT BY GEOTEK RESIDENTIAL, LLC
PROJECT NO. 12208-LVR DATED 03/30/2016

EARTHWORKS

EARTHWORK QUANTITIES (RAW):
CUT= 57,464 CU YDS
FILL= 23,880 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.



SCALE – 1"=30' FEET (0, 30, 60)

CALL SOUTHWEST GAS AT 702-651-2111 FOR STANDBY WHEN EXCAVATING OVER OR NEAR HIGH PRESSURE GAS LINES

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 UP 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 2012, 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 AND SAFETY 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. INSTALL 30" ROLL CURB PER CCAUSD NO. 217.S1 OVER 6" TYPE II AGGREGATE BASE
2. INSTALL 5' WIDE CONCRETE SIDEWALK (5" THICK OVER 6" TYPE 2 AGGREGATE BASE) PER CCAUSD #234
3. INSTALL 8-FT CROSS GUTTER PER DETAIL 22 ON SHEET D-2
4. INSTALL 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
5. CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES OR EQUIVALENT CCAUSD NO. 235, CASE 1 & 2.S1.1
6. CONSTRUCT 10' TRANSITION FROM "L" CURB TO ROLL CURB PER DETAIL 23 ON SHEET D-2
7. INSTALL 20 LF TYPE "CM2" DROP INLET PER CCAUSD #412.1 AND #421
8. INSTALL "A" TYPE ISLAND CURB PER CCAUSD #219
9. INSTALL "L" TYPE CURB AND GUTTER PER CCAUSD #216
10. EX 10 LF TYPE "CM2" DROP INLET PER CCAUSD #412.1 AND #421 PLANS PER SKYE CANYON PHASE 2 #63875
11. REMOVE EXISTING 36" STORM DRAIN END SECTION PER SKYE CANYON PHASE 2 #63875
12. EX 60" TYPE B STORM DRAIN MANHOLE PER CCAUSD #406 RIM=2914.81, INV IN=2907.71, INV OUT=2907.71
13. INSTALL CLASS III RCP SD PIPE SIZE PER PLAN – SEE SHEET P-4 AND P-8 FOR PROFILES
14. INSTALL "L" TYPE ISLAND CURB PER CCAUSD #219
15. INSTALL 8-FT CROSS GUTTER PER STD DWG 228
16. INSTALL 24" SIDEWALK DRAIN PER STD DWG 236
17. INSTALL WROUGHT IRON FENCE PER DETAIL ON SHEET D-2
18. INSTALL WROUGHT IRON GATES PER DETAIL ON SHEET D-2
19. INSTALL ACCESS GATES, DESIGN BY OTHERS

SEE SHEET C-3 FOR ABBREVIATIONS AND QUANTITIES

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 ENTRANCES 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.

LEGAL DESCRIPTION

BEING A PORTION OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST M.D.M., CLARK COUNTY, NEVADA.

BENCHMARK

BM 7LV90 7NWS CITY OF LAS VEGAS RIVET AND ROUND PLATE IN CONCRETE CYLINDER SOUTHEAST CORNER OF HUALAPAI WAY AND IRON MOUNTAIN ROAD.

ELEV: 2840.13 FEET
ELEV: (865.67 METERS) (NAVD 1988)

BASIS OF BEARINGS

SOUTH 00°34'18" EAST, BEING THE BEARING OF THE EAST LINE OF THE NORTHEAST QUARTER (NE ¼) OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST, M.D.M., AS PER FILE 157, PAGE 14 OF SURVEYS, ON FILE IN THE COUNTY RECORDER'S OFFICE.

FLOOD ZONE

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE X (UNSHADED) AS DEPICTED ON FLOOD INSURANCE RATE MAP (FIRM) PANEL 32003C1750 E, DATED SEPTEMBER 27, 2002. A ZONE X (UNSHADED) IS DESCRIBED AS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN.

FLOOD CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY ON FILE AT CITY OF LAS VEGAS DS #842 FOR THE SUBJECT PROJECT.

TIMOTHY M. MULROONEY, P.E. 22938 — DATE 12/6/16

NOTE

ALL PRIVATE STREETS ARE P.U.E., PUBLIC SEWER EASEMENTS AND PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED BY THE HOA

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

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 234-5300 FAX (702) 234-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

NINETY FIVE MANAGEMENT, LLC

SKYE CANYON PARCEL 2.16
GRADING PLAN IV

S-12 T-19 R-59

DATE: 10/28/16
DRAFTER: HN
DESIGNER: HN
CHECKED: TMM
PROJECT NO. OLY1607-002

TIMOTHY M. MULROONEY — Exp. 12/31/2017 — CIVIL — No. 22938 — STATE OF NEVADA — PROFESSIONAL ENGINEER — 12/6/16

G-4
SHEET 7 OF 10

H#_____
CLV#_____

J:\olr1607-002 dwg\ sky canyon parcel 2.16\Civil\Improv\olr1607-002 grd.dwg 12/20/2016 11:05 AM Hoang Nguyen

APPENDIX F

Materials from Approved Study

Technical Drainage Study for Skye Canyon II Parcel 2.17, by SHG

(DS5000B)

Approval Letter

CITY OF LAS VEGAS **INTER-OFFICE MEMORANDUM**				**DATE:** **July 19, 2018**
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: **Skye Canyon II Parcel 2.17**			**COPIES TO:** Slater-Hanifan Group, Inc.
Cross Streets:	NEC of Eagle Canyon Ave & Shaumber Rd			Ninety-Five Management, LLC
File Number:	F:\Depot\DSMemos\DS5000B.doc			Bart Anderson, P.E., DevCo
Parcel Number:	126-12-310-001			CCRFCD
Zoning Action:	TMP-72766			
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	6/6/2018	6/20/2018	See Comments Below	$400.00	496555: $400
2nd Submittal	07/05/2018	07/18/2018		$400.00	497158: $400
			TOTAL FEES (LDDRS):	**$800.00**	**----**

REMARKS:

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

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

1. **This drainage study is acceptable in concept**; however, *City of Las Vegas* will not formally accept the study until the *Clark County Regional Flood Control District* (CCRFCD) has issued a letter of concurrence. The engineer should contact the CCRFCD to confirm that they have begun their review.
2. Prior to and concurrent with the recordation of a Final Map for this site, a Petition of Vacation, such as VAC-70311, shall be recorded to eliminate the City of Las Vegas Public Sewer, Utility and Drainage Easements within Skye Canyon Parcel 2.16 in conflict with this proposed site. If VAC-70311 is not approved, then the Tentative Map TMP-72766 shall be null and void and a new Tentative map shall be submitted for review.
3. The grading plan indicates offsite grading of Lots 20-27 and 33-38. Secure a notarized letter of permission from the property owner allowing the grading. This letter is required prior to final acceptance of the drainage study.

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/12
AREA F-12

REGIONAL FLOOD CONTROL DISTRICT

Steven C. Parrish, P.E.
General Manager/Chief Engineer

BOARD OF DIRECTORS

Lawrence L. Brown, III
Chairman
Clark County

Mayor Debra March
Vice-Chairman
City of Henderson

David Ballweg
City of Mesquite

Chris Giunchigliani
Clark County

Mayor Carolyn Goodman
City of Las Vegas

Mayor John J. Lee
City of North Las Vegas

Dr. Lois Tarkanian
City of Las Vegas

Mayor Rodney Woodbury
City of Boulder City

August 9, 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: **SKYE CANYON II PARCEL 2.17 (DS5000B) (RFCD No. 18-10100)**

Dear Mr. Kwon:

Clark County Regional Flood Control District (District) reviewed Technical Drainage Study dated June 6, 2018, and Addendum No. 1 dated July 5, 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 July 19, 2018.

District concurs with acceptance of this Technical Drainage Study by City of Las Vegas Department of Public Works.

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

CCW:dd

c: Stanley Okey Amadi, P.E., Slater Hanifan Group

P:\Letters and Memos\Local Drainage\Land Development & Drainage\2018\L-18-10100.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

Drainage Exhibits

STORM DRAIN HAS CHANGED

NEW STORM DRAIN LOCATION

STORM DRAIN HAS BEEN REMOVED

FUTURE ARROYO MOHU 0118

SKYE ARROYO AVE (PRIVATE)

SKYE BLUE ST (PRIVATE)

SKYE GORGE ST (PRIVATE)

SKYE PASEO AVE (PRIVATE)

SKYE EAGLE ST (PRIVATE)

EAGLE CANYON AVENUE

EGAN CREST DRIVE

SKYE CANYON PARCEL 2.16

SKYE CANYON PARCEL 2.15

SKYE CANYON PARCEL 2.23C

SKYE CANYON PARCEL 2.23A

SKYE CANYON PARCEL 2.23B

DON1

DON2

*ON1D

0.88 AC

20 CFS

2 CFS

3 CFS

47 CFS

4 CFS

*41 CFS

(51 CFS)

LEGEND

- BASIN BOUNDARY
- PRO-RATED SUBBASIN BOUNDARY
- ID — BASIN ID
- ID — PRO-RATED SUBBASIN ID
- FLOW DIRECTION
- ID — FLOWMASTER SECTION
- ID — FACILITY ID
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN

SCALE: 1" = 80' (0, 80, 160 FEET)

NOTES:

* REFERENCED FROM THE PARCEL 2.16 STUDY

** REFERENCED FROM THE PHASE 2 INFRASTRUCTURE

*** REFERENCED FROM THE PHASE 3B / 3C STUDY

100-Year Easement Summary Table

Cross Section	Slope (%)	Q_{100} (cfs)	Depth (ft)	Velocity (fps)	DxV
E-2 (Q = DON2(a))	2.00	22	0.42	7.7	3.2

Developed Condition Flow Rate Summary

Basin	Area (ac)	Q_{100} (cfs)	Q_{10} (cfs)
DON1	7.6	22	10
DON2	8.3	25	12
*ON1D	14.2	42	19

* Referenced from the Parcel 2.16

Prorated Flow Summary

Developed Condition

Basin	Q_{100} (cfs)	Area (acres)	Unit Flow (cfs/acre)
DON2	25	8.3	3.0
Subbasin	**Q_{100} (cfs)**	**Area (acres)**	**Unit Flow (cfs/acre)**
DON2(a)	22	7.4	3.0
DON2(b)	3	0.9	3.0
TOTAL	***25***	***8.3***	

100-Year Emergency Overflow Summary

Cross Section	Flow Condition	Slope (%)	Q_{100} (cfs)	Depth / Headwater (ft)
E-1	Channel	10.0	47	0.23
	Weir	N/A		0.88

Eagle Canyon Drive Flood Control Facility Summary

Facility ID	Facility	Comment
P1a & P1b	(2) 20-ft Type CM2 DIs	Q_{100} = 22-cfs; Q_{100} Intercepted = 20-cfs Q_{100} Bypass = 2-cfs
P1c & P1d	(2) 17.5-ft Type CM2 DIs	Q_{100} = 12-cfs; Q_{100} Intercepted = 12-cfs Q_{100} Bypass = 0-cfs
P1e & P1f	(2) 7.5-ft Type CM2 DIs	Q_{100} = 22-cfs; Q_{100} Intercepted = 10-cfs Q_{100} Bypass = 12-cfs 18" RCP Laterals with 5-cfs each
P2	24" RCP	Q_{100} = 20-cfs
P3	18" RCP	Q_{100} = 10-cfs
P4	24" RCP	Q_{100} = 22-cfs
P5	24" RCP	Q_{100} = 16-cfs
P6	18" RCP	Q_{100} = 6-cfs
P7	18" RCP	Q_{100} = 10-cfs

100-Yr Hydraulic Section Summary

Section ID	Section Description	Q_{100} (cfs)	Slope (%)	Water Surface Elevation (ft)	Depth (ft)	Velocity (fps)
Section W1 Q = REF	Existing Natural Wash	240	3.00	2984.19	1.69	7.09
Section W2 Q = REF	Existing Natural Wash	240	2.80	2971.63	1.63	7.74

100-Year Offsite Roadway Flow Summary

Cross Section	Slope (%)	Q_{100} (cfs)	Depth (ft)	Velocity (fps)	DxV
ECA1*	4.90	33	0.46	6.1	2.8

100-Year Onsite Roadway Flow Summary

Cross Section	Slope (%)	Q_{100} (cfs)	Depth (ft)	Velocity (fps)	DxV
R-1 (Q = ON1D + DON2(b) + Bypass)	0.60	47	0.59	3.3	1.9
O-1c (Q = DON1)	4.98	23	0.45	6.4	2.9
	2.00		0.42	3.9	1.6
	7.25		0.34	6.6	2.2
O-1a (Q = DON2(a))	2.00	22	0.42	3.9	1.6
O-1b (Q = Bypass)	4.00	12	0.31	4.5	1.4

Egan Crest Drive Flood Control Facility Summary

Facility ID	Facility	Proposed Q_{100} (cfs)	Previous Design Q_{100} (cfs)	Comment
1	20-ft Type CM2 DI	47	42	Conveyed to Existing Facility L12*
L12*	Existing 36" RCP	47	42	Tie into Existing Facility P9B*
P9C*	Existing 36"RCP	49	44	Tie to Existing Manhole
P9*	Existing 7.5-ft Type CM2 DI	2	2	Existing 18" RCP East Lateral
P9B*	Existing 10.0-ft Type CM2 DI	2	2	Outlets NE to Existing 36-in RCP
P9A*	Existing 36" RCP	51	46	Outlets to wash

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 II PARCEL 2.17

DEVELOPED CONDITIONS DRAINAGE MAP

DATE: JUNE 2018

DRAFTER: CWB

DESIGNER: CWB

CHECKED: SOA

PROJECT NO. OLY1721-000

EXHIBIT E

SHEET 1 OF 1

J:\oly\1721.000 skye canyon parcel 2.17\drainage\technical study\figures\oly1721.000 tds exh e interim conditions.dwg 7/2/2018 10:04 AM Jonathon Rocha

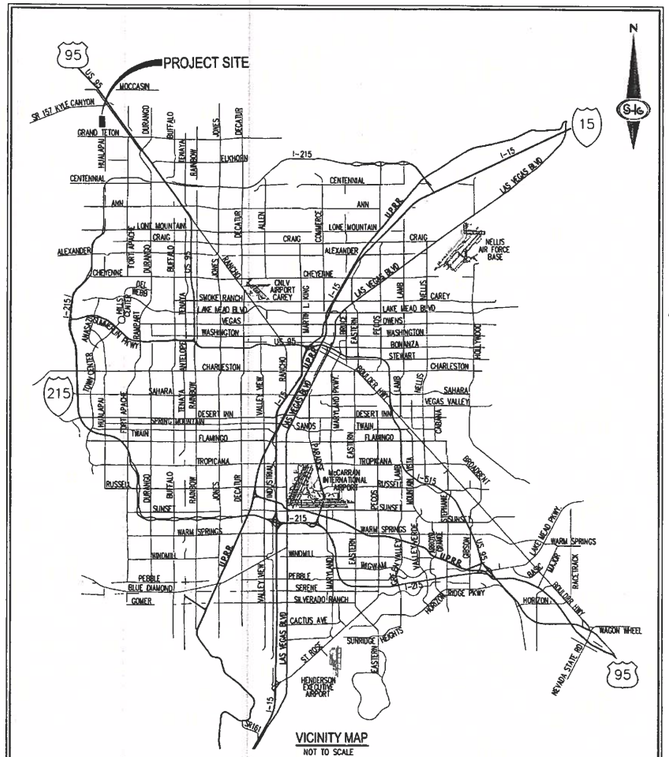
Improvement Plans

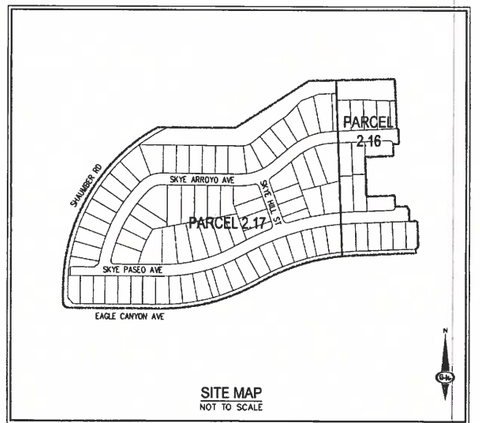
APPROVED PLANS - FOR REFERENCE

IMPROVEMENT PLANS
FOR
SKYE CANYON II PARCEL 2.17

A SINGLE FAMILY RESIDENTIAL SUBDIVISION OF THE SKYE CANYON MASTER-PLANNED COMMUNITY WITHIN THE CITY OF LAS VEGAS, NEVADA

APN: 126-12-310-001, 126-12-501-001, 126-12-311-001, -002, -003, -004, 005, -006, -007, -008, ,-009, 126-12-711-020, -021, -022, -023, AND -029





SHEET LIST TABLE		
NO.	SHEET	TITLE
1	C-1	COVER SHEET
2	C-2	GENERAL NOTES
3	C-3	GENERAL NOTES AND QUANTITIES
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	D-1	STREET SECTIONS AND DETAILS
12	D-2	GRADING SECTIONS AND DETAILS - I
13	D-3	GRADING SECTIONS AND DETAILS - II
14	PP-1	PLAN AND PROFILE - I
15	PP-2	PLAN AND PROFILE - II
16	PP-3	PLAN AND PROFILE - III
17	PP-4	PLAN AND PROFILE - IV
18	PP-5	PLAN AND PROFILE - V
19	PP-6	PLAN AND PROFILE - VI
20	PP-7	PLAN AND PROFILE - VII
21	PP-8	PLAN AND PROFILE - VIII
22	PP-9	PLAN AND PROFILE - IX
23	PP-10	PLAN AND PROFILE - X

APPROVALS

CITY ENGINEER-ALLEN 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.

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 _____ GPM AT 20 PSI RESIDUAL
MAXIMUM AVAILABLE FIRE SPRINKLER FLOW _____ GPM
SHEETS:

APPROVAL BY THE FIRE DEPARTMENT HAVING JURISDICTION IS REQUIRED PRIOR TO OBTAINING FINAL APPROVAL FROM LAS VEGAS VALLEY WATER DISTRICT.

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	ENGINEER
K A G DEVELOPMENT WEST, LLC OLYMPIA COMPANIES 11411 SOUTHERN HIGHLANDS #300 LAS VEGAS, NV 89141 PH: 702-220-6565	NINETY FIVE MANAGEMENT, LLC 11411 SOUTHERN HIGHLANDS #300 LAS VEGAS, NV 89141 PH: 702-220-6565	SLATER HANIFAN GROUP, INC 5740 S ARVILLE STREET, SUITE 216 LAS VEGAS, NV 89118 PH: (702) 284-5300 FX: (702) 284-5399 CONTACT: JERRY J. SLATER

LEGAL DESCRIPTION

BEING A PORTION OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST M.D.M., CLARK COUNTY, NEVADA.

BENCHMARK

BM 7LV90 7NWS CITY OF LAS VEGAS RIVET AND ROUND PLATE IN CONCRETE CYLINDER, SOUTHEAST CORNER OF HUALAPAI WAY AND IRON MOUNTAIN ROAD.

ELEV. 2840.13 FEET (865.67 METERS) (NAVD 1988)

BASIS OF BEARINGS

SOUTH 00°34'18" EAST, BEING THE BEARING OF THE EAST LINE OF THE NORTHEAST QUARTER (NE 1/4) OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST M.D.M., AS PER FILE 151, PAGE 14, OF SURVEYS ON FILE IN THE COUNTY RECORDER'S OFFICE.

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

ACREAGE (GROSS):	= 20.2± AC
ACREAGE (NET):	= 17.9± AC
DENSITY (LOTS/NET ACRE):	= 4.4± DU/NET AC
ZONING:	= T-D (R-1 STANDARDS)
TOTAL NO. OF RESIDENTIAL LOTS	= 79
TOTAL NO. OF COMMON ELEMENTS *	= 10
MINIMUM LOT SIZE	= 5850 SF±
MAXIMUM LOT SIZE	= 13337 SF±
PROVIDED OPEN SPACE	= 33216 SF±

EARTHWORK SUMMARY (UNADJUSTED)

CUT	----- CY.
FILL	----- CY.
NET	----- CY.

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/BHPC/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: GEOTEK RESIDENTIAL, LLC
ADDRESS: 6835 S. ESCONDIDO ST. #A LAS VEGAS, NV 89119
PHONE: 702-897-1424
PROJECT No. 02/09/2015
DATED: 02/09/2015

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DIG 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

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.

CITY OF LAS VEGAS, NV

NINETY-FIVE MANAGEMENT, LLC

SKYE CANYON II - PARCEL 2.17

COVER SHEET

S:12 T:19 R:59E

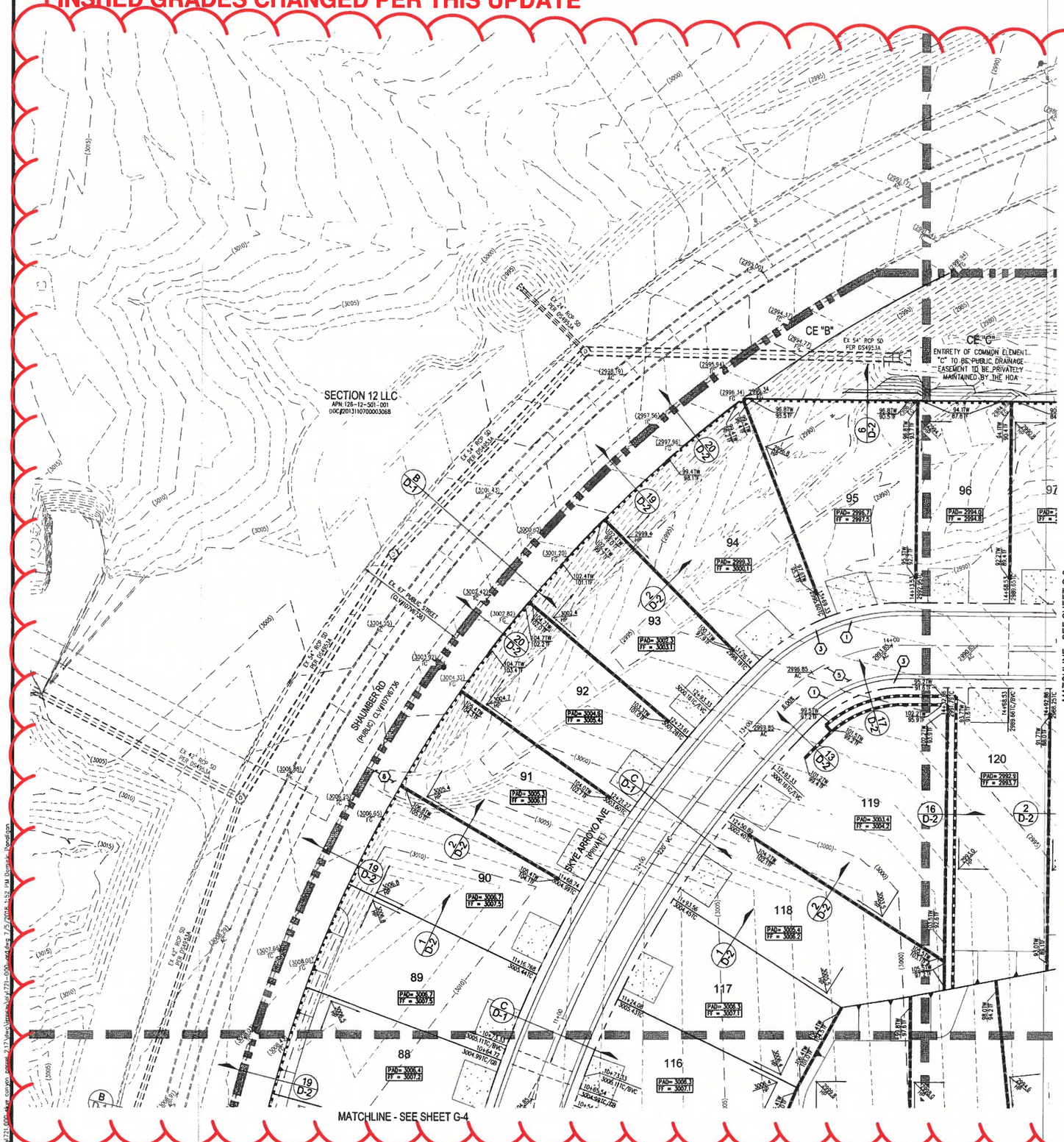
DATE: 7/5/18
DRAFTER: DNP
DESIGNER: DNP
CHECKED: STS
PROJECT NO.
OLY1721-000

PROFESSIONAL ENGINEER - STATE OF NEVADA - JERRY J. SLATER - Exp.06/30/2020 - CIVIL - No. 14161

C-1
SHEET 1 OF 23

J:\oly1721-000 skye canyon parcel 2.17\dwg\Kenova\oly1721-000-cvr.dwg 7/5/2018 1:51 PM Dominic Pandigan

FINSHED GRADES CHANGED PER THIS UPDATE



CALL SOUTHWEST GAS AT 702-651-2111 FOR STANDBY WHEN EXCAVATING OVER OR NEAR HIGH PRESSURE GAS LINES

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 1801.00)

SOILS REPORT

SOILS REPORT BY GEOTEK RESIDENTIAL, LLC
PROJECT NO. 12208-LVR DATED 02/09/2015

EARTHWORKS

EARTHWORK QUANTITIES (RAW):
CUT= ##### CU YDS
FILL= ##### CU YDS

EXPORT OF 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 GUTTER 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 2012, SECTION 1804.11.2.2.
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.

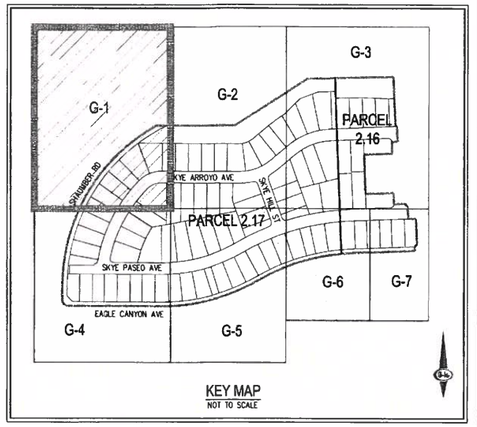
LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDELINES

(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 30 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), AREA OUTSIDE THE 0.2% ANNUAL CHANCE (500 YEAR) FLOODPLAIN, PER THE FEMA FIRM PANELS 32003C1750E DATED SEPTEMBER 27, 2002.



KEY MAP
NOT TO SCALE

GRADING NOTES

1. CONSTRUCT 30" ROLL CURB AND GUTTER PER CCAUSD NO. 217.S1. CURB FLOW LINES LESS THAN 0.50% GRADE SHALL BE WATER TESTED. ANY CURB THAT DOES NOT FLOW SHALL BE REMOVED AND REPLACED AT NO COST TO THE CITY
2. INSTALL WROUGHT IRON FENCE (PEDESTRIAN ACCESS GATE WHERE SHOWN ON PLANS PER DETAIL 32 ON SHEET D-3
3. INSTALL 5' WIDE CONCRETE SIDEWALK (5" THICK OVER 6" TYPE II AGGREGATE BASE) PER CCAUSD #234
4. INSTALL 8-FT CROSS GUTTER PER DETAIL 33 ON SHEET D-3
5. INSTALL 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
6. CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES OR EQUIVALENT CCAUSD NO. 235, CASE 1 & 235.1
7. INSTALL 24' WIDE GATE PER CCAUSD DWG NO. 425.S1
8. PERIMETER LANDSCAPE TO BE CONSTRUCTED BY MASTER DEVELOPER
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18. 9" RAP D50=6" THICKNESS=12" WITH 6" FINE AGGREGATE BASE (PER SPEC 706.03.03) COMPACTED TO 90% OVER FILTER FABRIC PER DETAIL 36 ON SHEET D-3

DRAINAGE EASEMENT NOTE

ALL PRIVATE STREETS, DRAINAGE EASEMENTS AND COMMON LOTS ARE PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED BY THE HOA

BONDABLE DRAINAGE QUANTITIES (PRIVATE)

6' WIDE CONCRETE VALLEY GUTTER W/10" TYPE I AGGREGATE BASE	SF	1931
24" RCP CLASS II STORM DRAIN	F	308
7.5' TYPE "CM2" DROP INLET	EA	2
17.5' TYPE "CM2" DROP INLET	EA	2
20.0' TYPE "CM2" DROP INLET	EA	2
48" TYPE I STORM DRAIN MANHOLE	EA	3
18" RCP CLASS III STORM DRAIN	LF	257
CONCRETE FLUME	SF	88
SIDEWALK UNDER DRAIN	EA	3
CULVERT HEADWALL PER N-DOT DETAIL R-2.5.1	EA	2

FLOOD CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY DS5000 ON FILE AT CITY OF LAS VEGAS FOR THE SUBJECT PROJECT.

JERRY SLATER, P.E. 14167 DATE

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
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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.

CITY OF LAS VEGAS, NV

NINETY-FIVE MANAGEMENT, LLC

SKYE CANYON II - PARCEL 2.17

GRADING PLAN - I

S 18 T 19 S R 59 E

DATE: 7/5/18
DRAFTER: DNP
DESIGNER: DNP
CHECKED: STS

PROJECT NO.
OLY1721-000

PROFESSIONAL ENGINEER - STATE OF NEVADA - JERRY SLATER - No. 14167 - CIVIL - Exp. 12/31/2020 - 7-5-18

G-1
SHEET 4 OF 23

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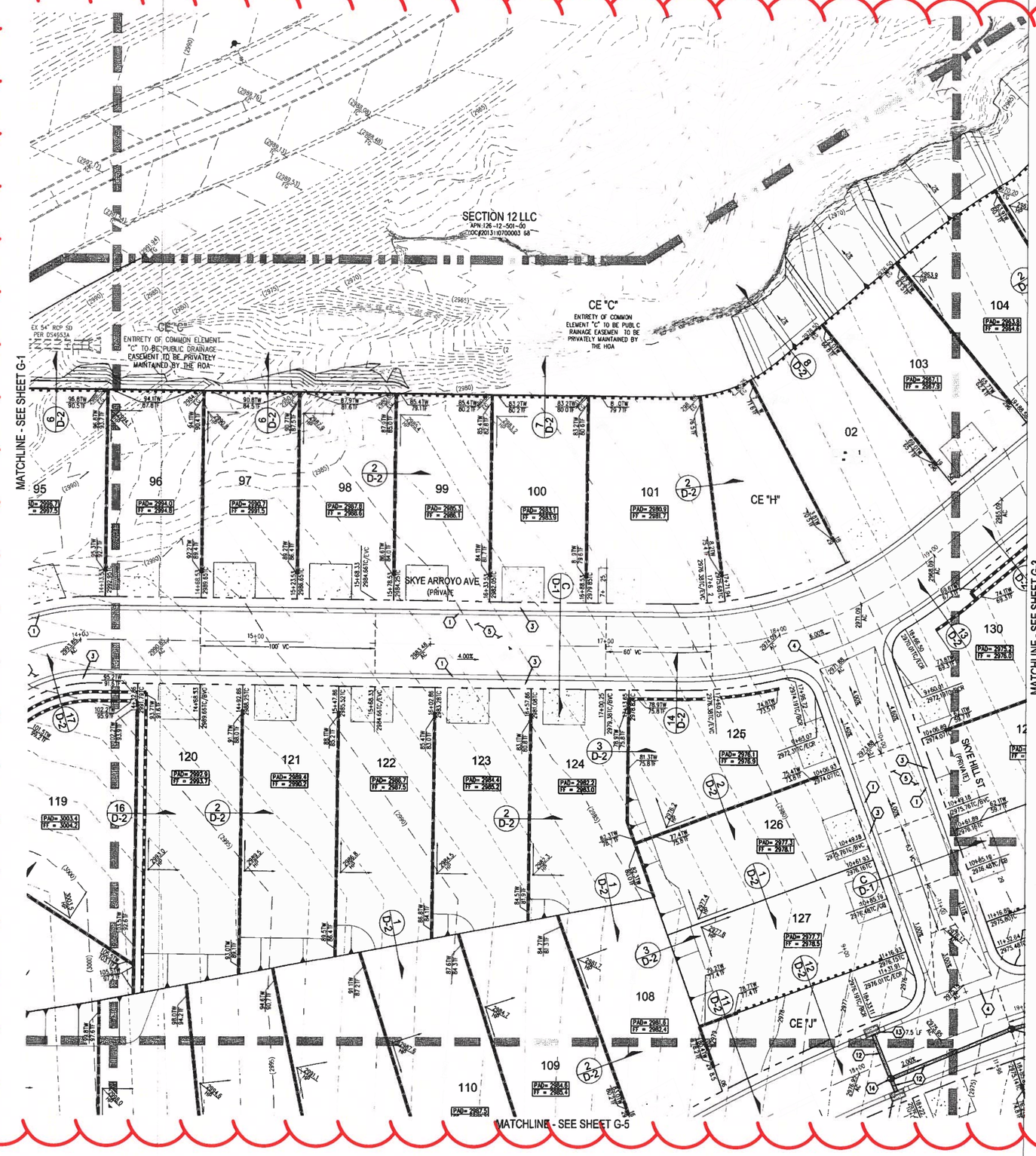
FINSHED GRADES CHANGED PER THIS UPDATE



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SOILS REPORT

SOILS REPORT BY GEOTEK RESIDENTIAL, LLC
PROJECT NO. 12208-LVR DATED 02/09/2015

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EARTHWORK QUANTITIES (RAW):
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FILL= [illegible] CU YDS

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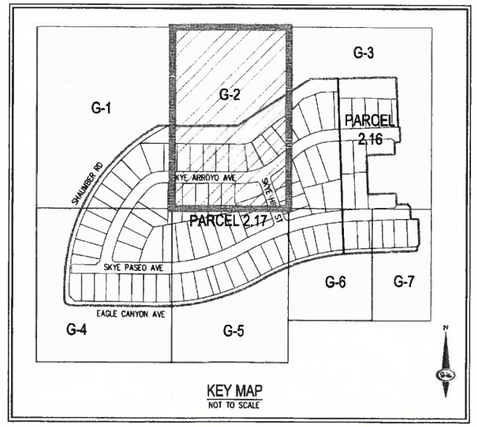

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CULVERT HEADWALL PER N-DOT DETAIL R-2.5.1	EA	2

FLOOD ZONE

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE 'X' (UNSHADED), AREA OUTSIDE THE 0.2% ANNUAL CHANCE (500 YEAR) FLOODPLAIN, PER THE FEMA FIRM PANELS 32003C1750E DATED SEPTEMBER 27, 2002.

FLOOD CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY DSS002 ON FILE AT CITY OF LAS VEGAS FOR THE SUBJECT PROJECT.

JERRY SLATER, P.E. 14167 DATE

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

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS
5748 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS, NV

NINETY-FIVE MANAGEMENT, LLC

SKYE CANYON II - PARCEL 2.17

GRADING PLAN - II

91-R 92 E
91-R 93 E

DATE: 7/5/18
DRAFTER: DNP
DESIGNER: DNP
CHECKED: STS

PROJECT NO.
OLY1721-000

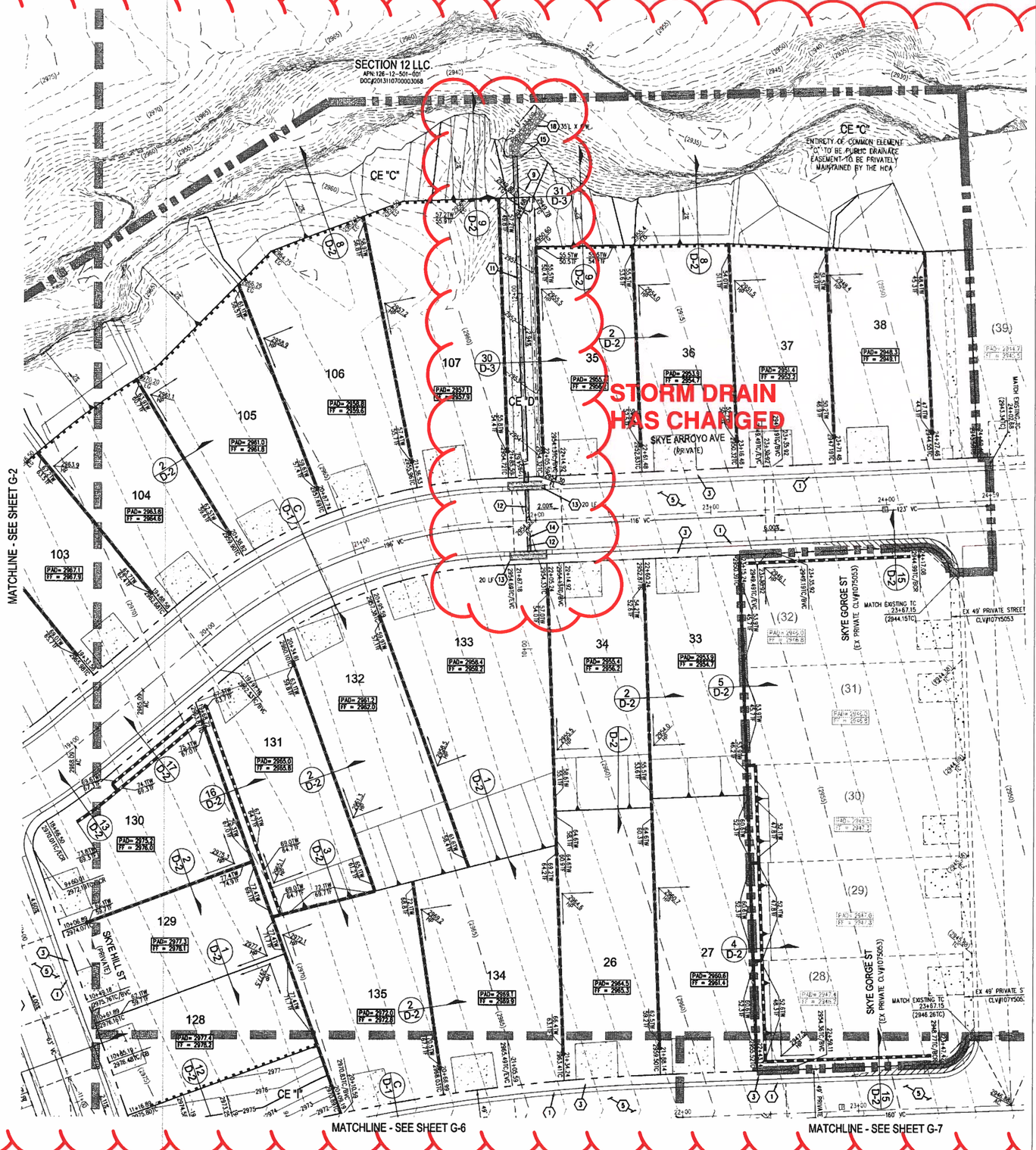
PROFESSIONAL ENGINEER - STATE OF NEVADA - No. 14167 - JERRY SLATER - Exp 06/30/2020 - CIVIL

7-5-18

G-2
SHEET 5 OF 23

J:\oly1721-000 skye canyon parcel 2.17\dwg\mmcv\oly1721-000-grd.dwg 7/5/2018 1:59 PM Dominic Pendigon

FINSHED GRADES CHANGED PER THIS UPDATE



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SCALE - 1"=30' (0 / 30 / 60 FEET)

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ELEVATION NOTE

ADD 2900 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 0.00 REPRESENTS 1801.00)

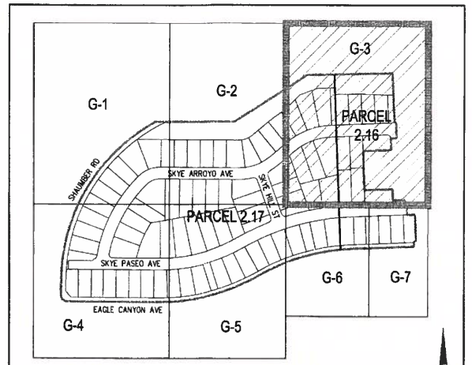
SOILS REPORT

SOILS REPORT BY GEOTEK RESIDENTIAL, LLC
PROJECT NO. 12208-LVR DATED 02/09/2015

EARTHWORKS

EARTHWORK QUANTITIES (RAW):
CUT= ##### CU YDS
FILL= ##### 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.



KEY MAP
NOT TO SCALE

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

1. FINAL GRADES ADJACENT TO STRUCTURES SHALL BE IN CONFORMANCE WITH IBC 2012, SECTION 2304.11.2.2.
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AND REPORT ALL DISCREPANCIES TO THE ENGINEER.
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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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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.

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GRADING NOTES

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2. INSTALL WROUGHT IRON FENCE (PEDESTRIAN ACCESS GATE WHERE SHOWN ON PLANS PER DETAIL 32 ON SHEET D-3
3. INSTALL 5' WIDE CONCRETE SIDEWALK (5" TH CK OVER 6" TYPE II AGGREGATE BASE) PER CCAUSD #234.
4. INSTALL 8-FT CROSS GUTTER PER DETAIL 33 ON SHEET D-3
5. INSTALL 2" ASPHALT PAVEMENT OVER 4" TYPE AGGREGATE BASE
6. CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES OR EQUIVALENT CCAUSD NO. 235, CASE I & 235.1
7. INSTALL 24' WIDE GATE PER CCAUSED DWG NO. 425.S1
8. PERIMETER LANDSCAPE TO BE CONSTRUCTED BY MASTER DEVELOPER
9. INSTALL 20' WIDE GATE PER CCAUSED DWG NO. 425.S1
10. INSTALL 48" TYPE I SDMH PER CCAUSD #403
11. INSTALL 24" CLASS III RCP STORM DRAIN
12. INSTALL 18" CLASS III RCP STORM DRAIN
13. INSTALL TYPE "CM2" DROP INLET PER CCA SD #412.1 AND #421 (SIZE PER PLANS)
14. INSTALL 48" TYPE I SDMH PER CCAUSD #403
15. INSTALL CULVER HEADWALL PER N- T DETAIL R 2.5.1
16. ALL CONCRETE FLUME PER DETAIL 34 AND 35 ON SHEET D 3
17. ALL SIDEWALK DRAIN PER CCAUSD #236
18. RAP D50=6" THICKNESS=12" WITH 6" FINE AGGREGATE BASE (PER SPEC 03.03) COMPACTED TO 90% OVER FILTER FABRIC PER DETAIL 36 ON SHEET

DRAINAGE EASEMENT NOTE

ALL PRIVATE STREETS, DRAINAGE EASEMENTS AND COMMON LOTS ARE PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED BY THE HOA

BONDABLE DRAINAGE QUANTITIES (PRIVATE)

8' WIDE CONCRETE VALLEY GUTTER W/10" TYPE I AGGREGATE BASE	SF	1931
24" RCP CLASS III STORM DRAIN	LF	308
7.5' TYPE "CM2" DROP INLET	EA	2
17.5' TYPE "CM2" DROP INLET	EA	2
20.0 TYPE "CM2" DROP INLET	EA	2
48" TYPE I STORM DRAIN MANHOLE	EA	3
18" RCP CLASS III STORM DRAIN	LF	257
CONCRETE FLUME	SF	88
SIDEWALK UNDER DRAIN	EA	3
CULVERT HEADWALL PER N-DOT DETAIL R-2.5.1	EA	2

FLOOD CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY DS5000 ON FILE A CITY OF LAS VEGAS FOR THE SUBJECT PROJECT.

JERRY SLATER, P.E. 14167 DATE

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Call before you Dig AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY Call 811 OR 1-800-227-2600

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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

CITY OF LAS VEGAS, NV

NINETY-FIVE MANAGEMENT, LLC

SKYE CANYON II - PARCEL 2.17

GRADING PLAN - III

S 12
R 59 E

DATE: 7/5/18
DRAFTER: DNP
DESIGNER: DNP
CHECKED: STS

PROJECT NO.
OLY1721-000

PROFESSIONAL ENGINEER - STATE OF NEVADA - JERRY SLATER - Exp 06/30/2020 - CIVIL - No. 14167 - 7-5-18

G-3
SHEET 6 OF 23

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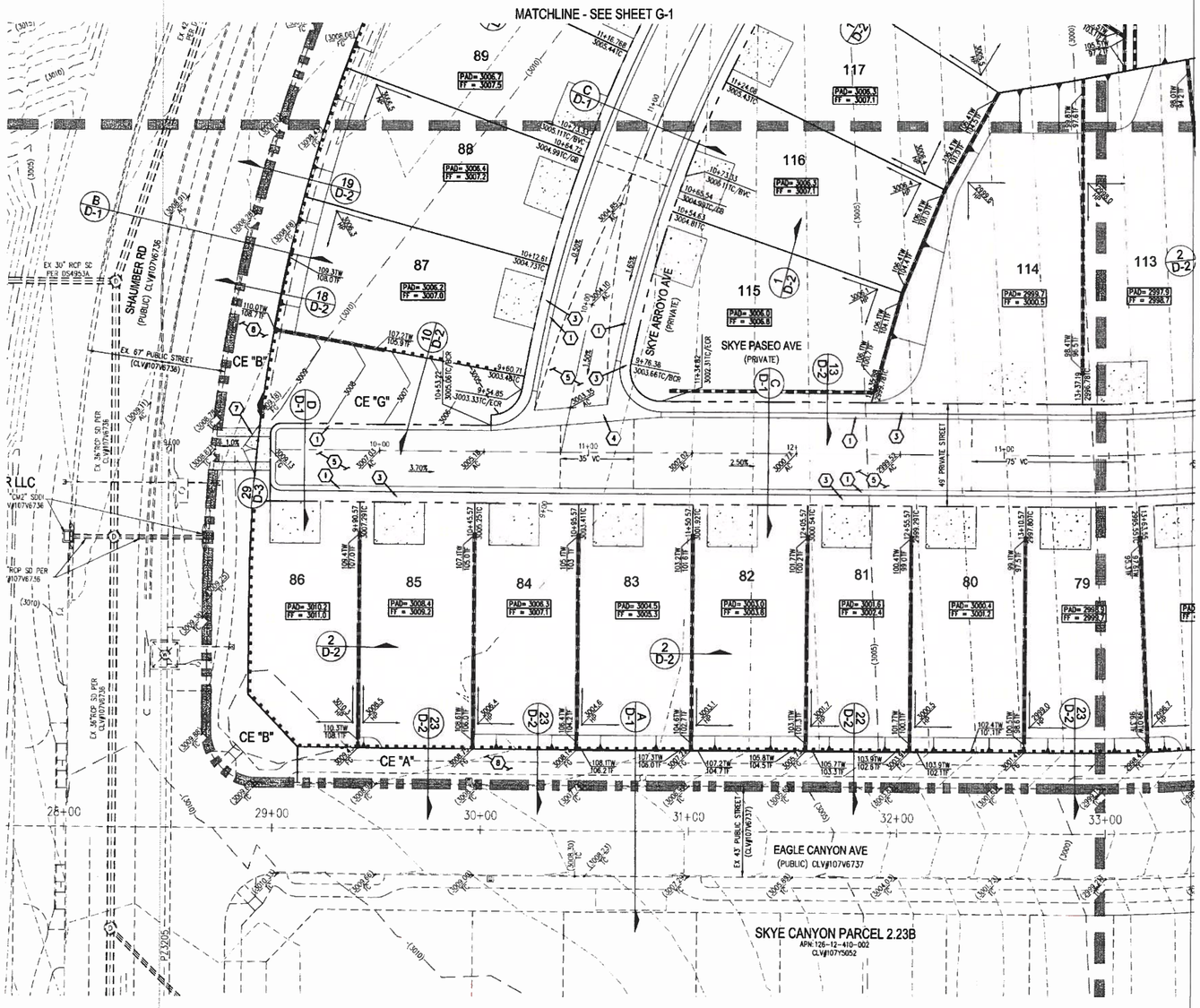
FINSHED GRADES CHANGED PER THIS UPDATE



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SCALE - 1"=30'

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SURVEY NOTE

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ELEVATION NOTE

ADD 2900 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 1861.00)

SOILS REPORT

SOILS REPORT BY GEOTEK RESIDENTIAL, LLC
PROJECT NO. 12206-LVR DATED 02/09/2015

EARTHWORKS

EARTHWORK QUANTITIES (RAW):
CUT= [illegible] CU YDS
FILL= [illegible] CU YDS

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GRADING NOTES

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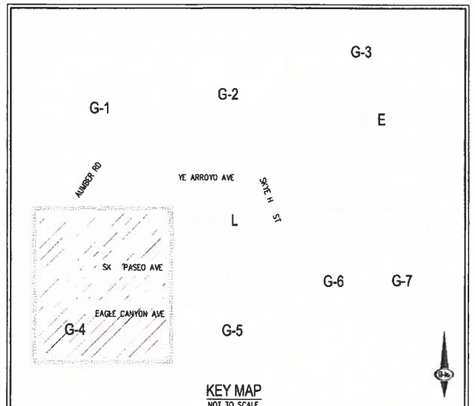

KEY MAP
NOT TO SCALE

GRADING NOTES

1. CONSTRUCT 30" ROLL CURB AND GUTTER PER CCAUSD NO. 217.S1. CURB FLOW LINES LESS THAN 0.60% GRADE SHALL BE WATER TESTED. ANY CURB THAT DOES NOT FLOW SHALL BE REMOVED AND REPLACED AT NO COST TO THE CITY
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7. INSTALL 24' WIDE GATE PER CCAUSD DWG NO. 425.S1
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9. INSTALL 20' WIDE GATE PER CCAUSD DWG NO. 425.S1
10. INSTALL 48" TYPE I SDMH PER CCAUSD #403
11. INSTALL 24" CLASS III RCP STORM DRAIN
12. INSTALL 18" CLASS III RCP STORM DRAIN
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18. RIP RAP D50=6" THICKNESS=12" WITH 6" FINE AGGREGATE BASE (PER SPEC 706.03.03) COMPACTED TO 90% OVER FILTER FABRIC PER DETAIL 36 ON SHEET D-3

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BONDABLE DRAINAGE QUANTITIES (PRIVATE)

6" WIDE CONCRETE VALLEY GUTTER W/10" TYPE I AGGREGATE BASE	SF	1931
24" RCP CLASS III STORM DRAIN	LF	306
7.5' TYPE "CM2" DROP INLET	EA	2
17.5' TYPE "CM2" DROP INLET	EA	2
20.0' TYPE "CM2" DROP INLET	EA	2
48" TYPE I STORM DRAIN MANHOLE	EA	3
18" RCP CLASS III STORM DRAIN	LF	257
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JERRY SLATER, P.E. 14167 DATE

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PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS, NV

NINETY-FIVE MANAGEMENT, LLC

SKYE CANYON II - PARCEL 2.17

GRADING PLAN - IV

S 12
T 19 S
R 59 E

DATE: 7/5/18
DRAFTER: DNP
DESIGNER: DNP
CHECKED: STS
PROJECT NO. OLY1721-000

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

G-4
SHEET 7 OF 23

J:\oly\1721-000 skye canyon parcel 2.17\dwg\Master\Vol1\1721-000-grd.dwg 7/5/2018 1:52 PM Dominic Pendygrn

FINSHED GRADES CHANGED PER THIS UPDATE

SCALE - 1"=30' (0, 30, 60 FEET)

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SOILS REPORT

SOILS REPORT BY GEOTEK RESIDENTIAL, LLC
PROJECT NO. 12208-LVR DATED 02/09/2015

EARTHWORKS

EARTHWORK QUANTITIES (RAW):
CUT= ##,### CU YDS
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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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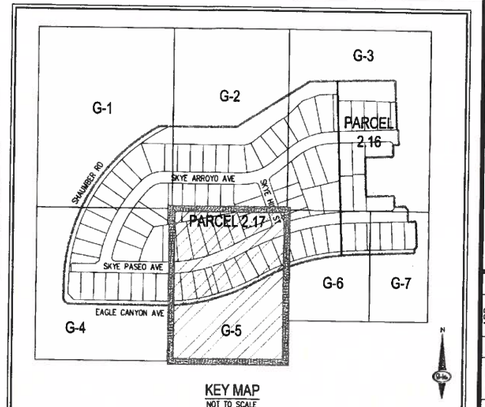
THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE "X" (UNSHADED), AREA OUTSIDE THE 0.2% ANNUAL CHANCE (500 YEAR) FLOODPLAIN, PER THE FEMA FIRM PANELS 32003C1750E DATED SEPTEMBER 27, 2002.



GRADING NOTES

1. CONSTRUCT 30" ROLL CURB AND GUTTER PER CCAUSD NO. 217.S1. CURB FLOW LINES LESS THAN 0.50% GRADE SHALL BE WATER TESTED. ANY CURB THAT DOES NOT FLOW SHALL BE REMOVED AND REPLACED AT NO COST TO THE CITY.
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DRAINAGE EASEMENT NOTE

ALL PRIVATE STREETS, DRAINAGE EASEMENTS AND COMMON LOTS ARE PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED BY THE HOA

BONDABLE DRAINAGE QUANTITIES (PRIVATE)

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17.5' TYPE "CM2" DROP INLET	EA	2
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CULVERT HEADWALL PER N-DOT DETAIL R-2.5.1	EA	2

FLOOD CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY DS5000 ON FILE AT CITY OF LAS VEGAS FOR THE SUBJECT PROJECT.

JERRY SLATER, P.E. 14167 DATE

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

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.

CITY OF LAS VEGAS, NV

NINETY-FIVE MANAGEMENT, LLC

SKYE CANYON II - PARCEL 2.17
GRADING PLAN - V

S12 T19S R59E

DATE: 7/5/18
DRAFTER: DNP
DESIGNER: DNP
CHECKED: STS

PROJECT NO.
OLY1721-000

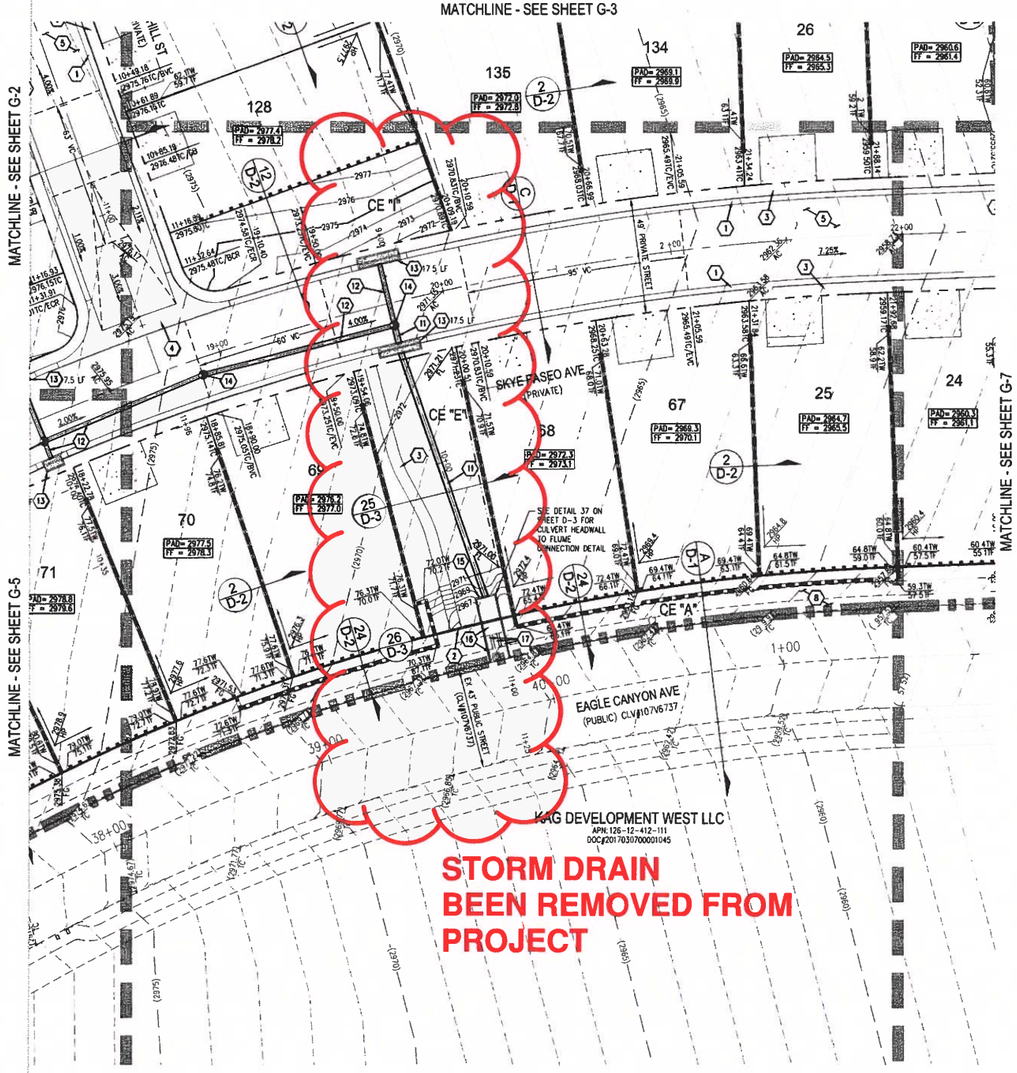
PROFESSIONAL ENGINEER - STATE OF NEVADA - JERRY SLATER - Cert. 06/30/2020 - CIVIL - No. 14167

7-5-18

G-5
SHEET 8 OF 23

N:\oly1721-000 skye canyon parcel 2.17\dwg\Mmaron\oly1721-000-grd.dwg 7/5/2018 1:52 PM Dominic Pomilion

FINSHED GRADES CHANGED PER THIS UPDATE



N

SCALE - 1"=30' (0, 30, 60 FEET)

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ELEVATION NOTE

ADD 2900 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 1801.00)

SOILS REPORT

SOILS REPORT BY GEOTEK RESIDENTIAL, LLC
PROJECT NO. 4208-LVR DATED 02/09/2015

EARTHWORKS

EARTHWORK QUANTITIES (RAW):
CUT= ##### CU YDS
FILL= ##### 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.

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GRADING NOTES

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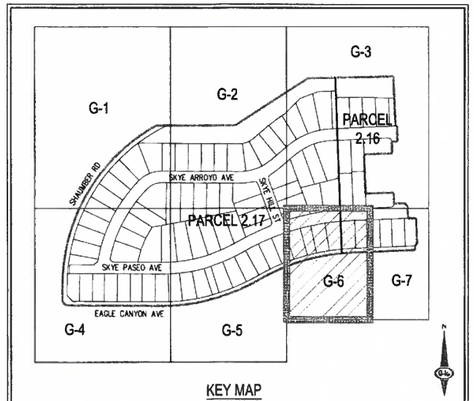

KEY MAP
NOT TO SCALE

GRADING NOTES

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JERRY SLATER, P.E. 14167 DATE

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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.	APP. DATE

CITY OF LAS VEGAS, NV

NINETY-FIVE MANAGEMENT, LLC

SKYE CANYON II - PARCEL 2.17

GRADING PLAN - VI

S:12 T:20 R:59E

DATE: 7/5/18
DRAFTER: DNP
DESIGNER: DNP
CHECKED: STS
PROJECT NO. OLY1721-000

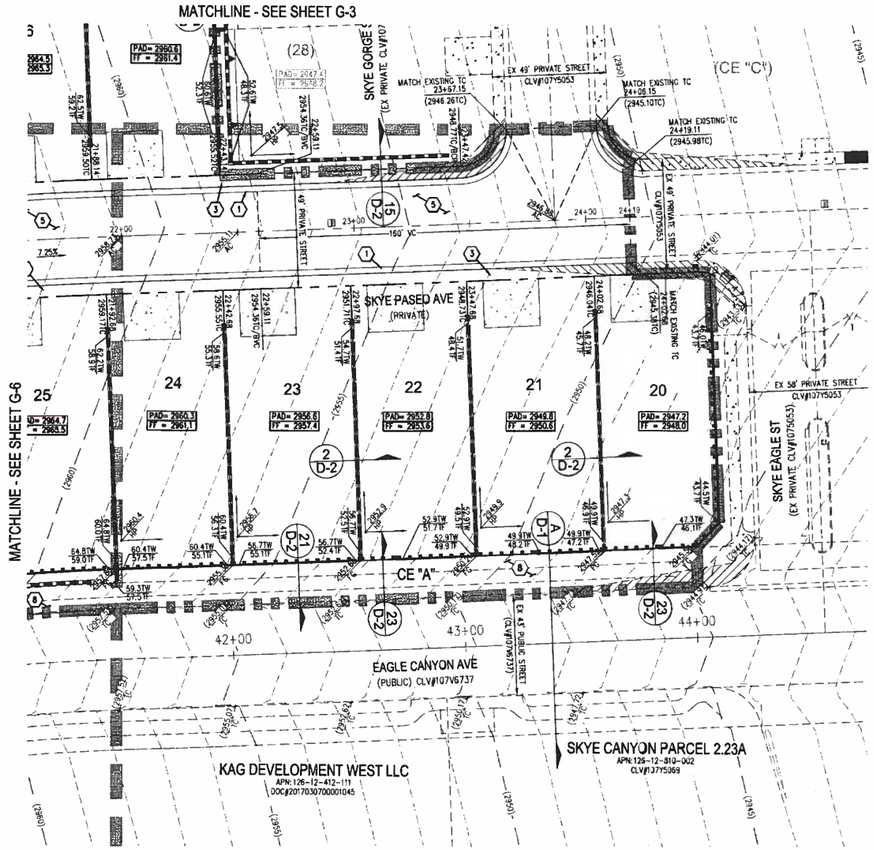
PROFESSIONAL ENGINEER - STATE OF NEVADA - JERRY SLATER - Exp. 06/30/2020 - CIVIL - No. 14167

7-5-18

G-6
SHEET 9 OF 23

J:\olv\1721.000 skye canyon parcel 2.17\dwg\karpacs\olv1721-000-grd.dwg 7/5/2018 1:53 PM Dominic Pandolfo

FINSHED GRADES CHANGED PER THIS UPDATE



0 30 60
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SOILS REPORT

SOILS REPORT BY GEOTEK RESIDENTIAL, LLC
PROJECT NO. 12208-LVR DATED 02/09/2015

EARTHWORKS

EARTHWORK QUANTITIES (RAW):
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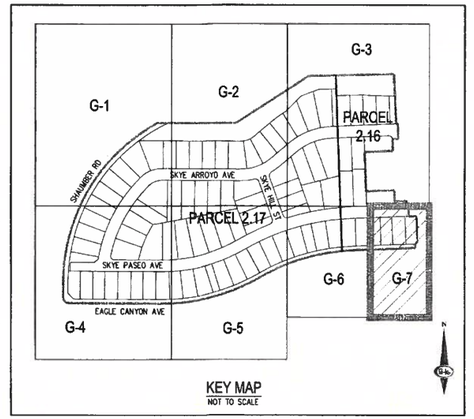

KEY MAP
NOT TO SCALE

GRADING NOTES

1. CONSTRUCT 30" ROLL CURB AND GUTTER PER CCAUSD NO. 217.S1. CURB FLOW LINES LESS THAN 0.80% GRADE SHALL BE WATER TESTED. ANY CURB THAT DOES NOT FLOW SHALL BE REMOVED AND REPLACED AT NO COST TO THE CITY
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6. CONSTRUCT SIDEWALK RAMPS USING ARMOR TI E TRUNCATED DOMES OR EQUIVALENT CCAUSD NO. 235, CASE I & 235.1
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DRAINAGE EASEMENT NOTE

ALL PRIVATE STREETS, DRAINAGE EASEMENTS AND COMMON LOTS ARE PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED BY THE HOA

BONDABLE DRAINAGE QUANTITIES (PRIVATE)

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48" TYPE I STORM DRAIN MANHOLE	EA	3
18" RCP CLASS III STORM DRAIN	LF	257
CONCRETE FLUME	SF	88
SIDEWALK UNDER DRAIN	EA	3
CULVERT HEADWALL PER N-DOT DETAIL R-2.5.1	EA	2

FLOOD CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY DS5000 ON FILE AT CITY OF LAS VEGAS FOR THE SUBJECT PROJECT.

JERRY SLATER, P.E. 14167 DATE

FAST
Call before you UnderGround
1-702-432-5300
FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F A S T

AVOID ITTING 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

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'D DATE	APP'D

CITY OF LAS VEGAS, NV

NINETY-FIVE MANAGEMENT, LLC

SKYE CANYON II - PARCEL 2.17
GRADING PLAN - VII

S 12
R 59 E

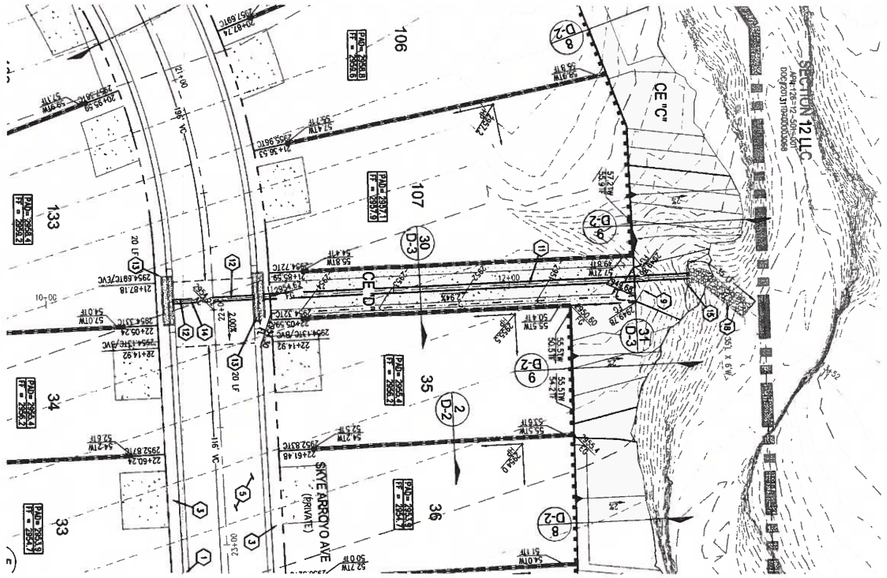
DATE: 7/5/18
DRAFTER: DNP
DESIGNER: DNP
CHECKED: STS

PROJECT NO.
OLY1721-000

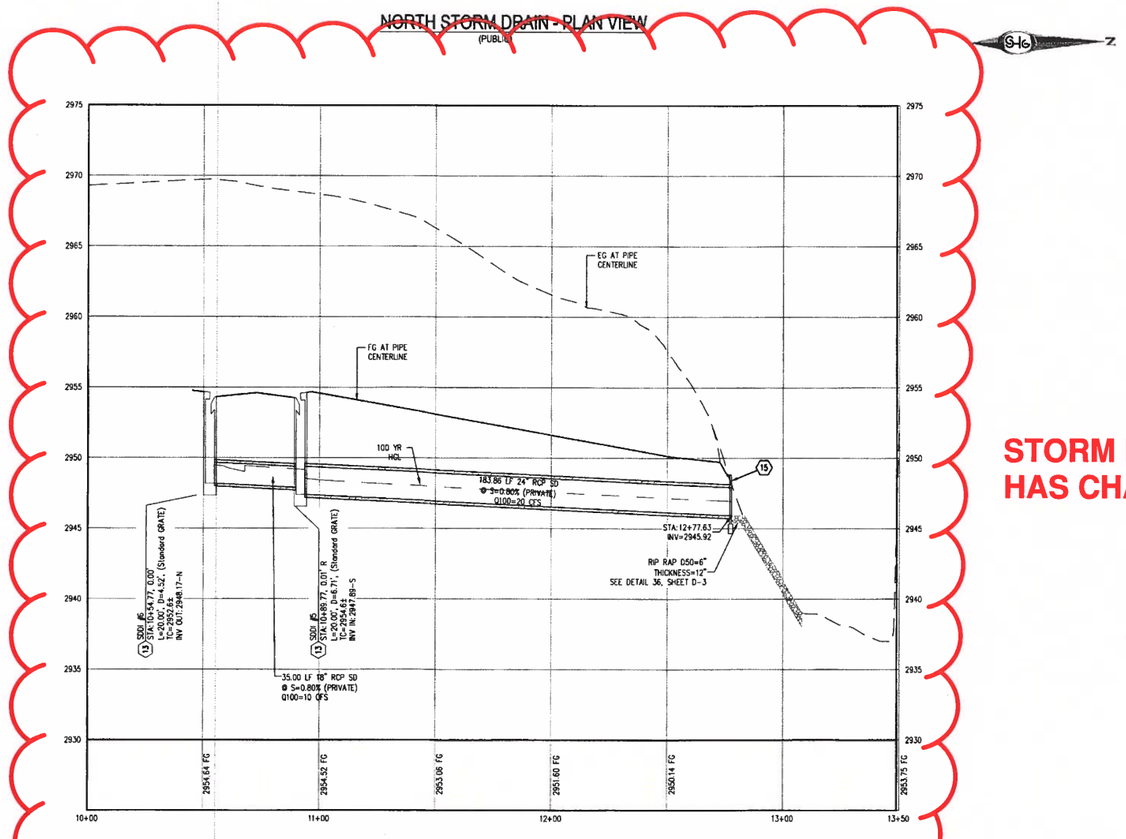
PROFESSIONAL ENGINEER - STATE OF NEVADA
JERRY A. SLATER
Exp. 06/30/2020
CIVIL
No. 14167
7-5-18

G-7
SHEET 10 OF 23

k:\oly1721-000 skye canyon parcel 2.17\dwg\mmcx\oly1721-000-grd.dwg 7/5/2018 1:53 PM Dominic Pangilinan



NORTH STORM DRAIN - PLAN VIEW
(PUBLIC)



NORTH STORM DRAIN - PROFILE VIEW
HORIZ: 1" = 30'
VERT: 1" = 5'

STORM DRAIN HAS CHANGED

SCALE - 1"=30' FEET (0, 30, 60)

CALL SOUTHWEST GAS AT 702-651-2111 FOR STANDBY WHEN EXCAVATING OVER OR NEAR HIGH PRESSURE GAS LINES

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 2900 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 1801.00)

SOILS REPORT

SOILS REPORT BY GEOTEK RESIDENTIAL, LLC
PROJECT NO. 12208-LVR DATED 02/09/2015

EARTHWORKS

EARTHWORK QUANTITIES (RAW):
CUT= ##,### CU YDS
FILL= ##,### 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 2012, 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/REPLIEVING 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.

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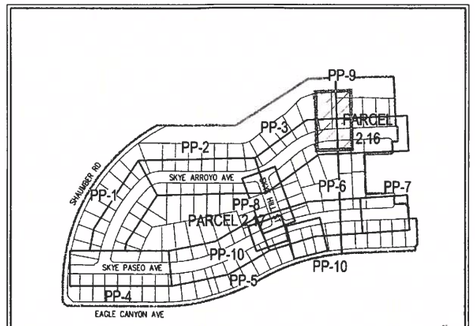

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JERRY SLATER, P.E. 14167 DATE

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

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.

CITY OF LAS VEGAS, NV

NINETY-FIVE MANAGEMENT, LLC

SKYE CANYON II - PARCEL 2.17

PLAN AND PROFILE - IX

S-12 T-21S R-59E

DATE: ----
DRAFTER: DNP
DESIGNER: DNP
CHECKED: STS
PROJECT NO. OLY1721-000

PROFESSIONAL ENGINEER - STATE OF NEVADA - JERRY SLATER - Exp: 06/30/2020 - CIVIL - No. 14167 - 7.5.18

PP-9
SHEET 22 OF 23

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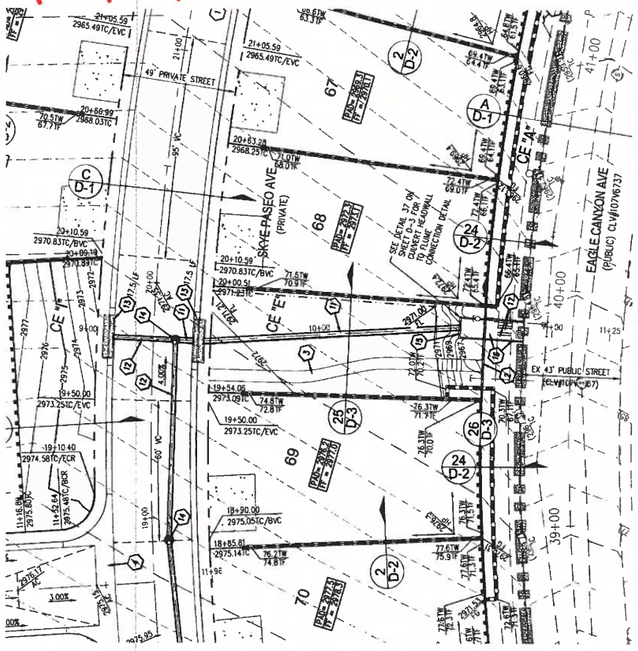
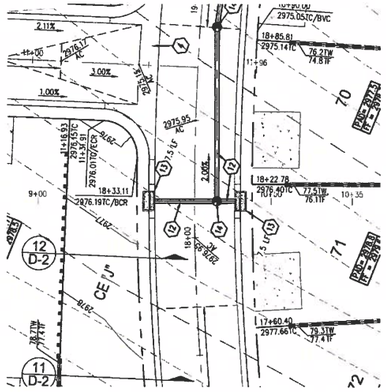


SOUTH STORM DRAIN - PLAN VIEW
(PUBLIC)



APPENDIX G

Reference Material

Technical Drainage Study for Skye Canyon – Phase 2 Infrastructure, by SHG

(DS4739J)

Approval Letters

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM				DATE: October 19, 2017
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 2 Infrastructure Update #5**			**COPIES TO:** Slater Hanifan Group, Inc.
Cross Streets:	NWC of Grand Teton Blvd. & Hualapai Way			Section 12, LLC / Ninety Five Mgmt.
File Number:	F:\Depot\DSMemos\DS4739J.doc			Bart Anderson, P.E., DevCo
Parcel Number:	Portion of 126-12-000-001			CCRFCD
Zoning Action:	TMP-58560			
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 & Supplemental	6/18/2015, 8/4/2015	8/26/2015	Not Approved	$400.00	402578: $400
2nd Submittal	10/19/2015	11/02/2015	Not Approved	$400.00	419048: $400
3rd Submittal	11/19/2015 & Supplemental	1/7/2016	Conditional Approval	$400.00	423549: $400
4th Submittal	4/4/2016	4/13/2016	Conditional Approval	$100.00	438958: $100
5th Submittal & CCRFCD	5/12/2016 & 5/16/2016	6/8/2016 & 6/21/2016	Conditional Approval	$100.00	443735: $100
6th Submittal	12/15/2016 & 1/17/2017	1/19/2017	Conditional Approval	$100.00	469104: $100
7th Submittal	6/19/2017	7/10/2017	Not Approved	$100.00	488195: $100
8th Submittal	8/2/2017	8/17/2017	Approved	$400.00	489157: $400
9th Submittal	9/28/2017	10/19/2017	See Comments Below	$100.00	490355: $100
			TOTAL FEES (LDDRS):	**$2,100.00**	----

REMARKS:

9th Submittal: Update #5 for minor revision of storm drain connection at the intersection of Grand Teton Boulevard and Egan Crest Drive.

7th & 8th Submittals: Update #4 & Addendum for minor relocations of drop inlets and the discharge stub of Parcel 2.27

6th Submittal: Update #3 Revise storm drain system capture and collection points based upon Parcel development.

5th Submittal: Update #2 and CCRFCD concurrence received. Revised Memo on 6/21/2016, Approved "At Risk".

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 **approved "At Risk"** subject to the final approval of the Revised Master Drainage Study.

The following conditions are repeated until they are complete:

A Flood Control Master Plan Amendment (MPA) shall be updated to reflect the latest Master Plan for the Skye Canyon Development and approved by the City prior to submitting residential development plans outside of the shadow of protection from Detention Basin #1 and outside of the limits of the Phase 2 pods.

Detention Basin #1 and the Phase 2 Infrastructure are required to be substantially complete prior to the final inspection of the first Unit in Phase 2. No Certificate of Occupancy on the houses will be issued until after the detention basin has been accepted for Substantial Completion by the City.

1. Note that the ***Skye Canyon Master Drainage Study*** has not been approved in the current stage. The subject *Skye Canyon Infrastructure Phase 2* drainage study is approved **"At Risk"** until the final approval of the Master Drainage Study. Any changes required by the Master Drainage Study to the Phase 2 area shall require a drainage study update to the ***Phase 2 Infrastructure Study*** and any required facility changes to the Phase 2 Infrastructure shall be provided at the developers' cost.
2. The ***Skye Canyon Phase 2 Development*** is based on the sole protection of a planned ***Skye Canyon Detention Basin #1*** from major storm flood events. The Detention Basin #1 drainage study has been approved.
3. Building Permits for onsite developments within Phase 2 will be issued subject to the construction and substantial completion of the ***Skye Canyon Detention Basin #1.*** The notice of Substantial Completion from the City of Las Vegas, Department of Public Works is required for the release of Occupancy Permits for any development within Phase 2.
4. The site is adjacent to or crosses an existing or proposed *Clark County Regional Flood Control District* (CCRFCD) master planned facility. CCRFCD concurrence has been provided for the Phase 2 Infrastructure.
5. The impacts to existing downstream neighborhoods of the long term discharge from the detention basin(s) and the Phase 2 developments without the associated regional outfall facilities is a major concern of both the City and the Clark County Regional Flood Control District. Flood Control understands that these interim impacts are addressed with Skye Canyon Detention Basin #1. The proposed interim impact solution was included as a part of the Skye Canyon Detention Basin #1 improvements until the overall Skye Canyon MPU facilities are completed.
6. The drainage study for Phase 2 Infrastructure assumes that the project will be constructed in one phase. It was noted within this Addendum response that the developer desires to phase the construction of the improvements. If improvement plans are submitted to break the Phase 2 Infrastructure into separate phases, a drainage study update will be required for each phase addressing the interim condition.
7. The development of Parcel 2.23B, identified as Parcel WML9 on Exhibit E2, drains through the future park and onto Eagle Canyon (WC10A) near Station 41+00 on Sheet C-03. The roadway plans shall incorporate the proposed drainage facilities as the 60 cfs will impact the 17-foot sidewalk & amenity zone. Provide concrete low flow channel connection through the17-foot sidewalk & amenity zone.

8. The provided Phase 2 Infrastructure plans only show the proposed drainage facilities. The complete improvement plans will require additional review for impacts with other needed infrastructure; i.e. sanitary sewer, water, gas, etc. Any changes to the proposed storm drain system shall require a drainage study update.

9. The Storm Drain Plans have been revised to accommodate the proposed cross fall street sections and include added nuisance inlets at low points within the intersections.

10. The plans show preliminary mass grading with collection facilities within the parcels to intercept the flows prior to entering the infrastructure roadway improvements. It was noted that the inlet collection system needs to incorporate stormwater quality (SWQ) features and Best Management Practices (BMP's) at these interim collection points. This information will be provided and shown on the SWPPP, a copy of which shall be provided to Flood Control prior to permits. Additionally, the mass grading plan (Sheet GR-03) shows sheet flow from Basin ON2-IB discharging directly onto Hualapai Way without any interim collection. Revise to incorporate interim collection.

11. All drainage facilities proposed in this ***Phase 2 Infrastructure Study*** are considered interim facilities and must be maintained by the Master Developer until the facilities are dedicated to and formally accepted by the *City of Las Vegas.*

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

13. The provided WSPG Model shows that the storm drain in *Eagle Canyon Avenue* exceeds the maximum allowed velocity (25 fps) per the *CCRFCD Hydrologic & Hydraulic Design Manual.* A *Special Construction Note* has been added to the plan & profile sheets that call out the special construction requirement and the required special inspection for the additional sacrificial concrete.

14. Structural plans for the storm drain improvements must be submitted for review. 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 technical drainage study.

15. The project proposes to build temporary drainage berms/swales over the *Phase 2* site. Prior to final plan 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 facility 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. Technical drainage studies are required for each of the future PODs. Final approval for the infrastructure study must be obtained prior to final approval of the impacted POD drainage studies.

17. A note on the Grading Plans has been provided that "*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 the vegetation.*"

18. A numbering system for the manholes and inlets has been provided. It was noted in the response that the project may be divided into additional phases.

19. Show the size of all the proposed riprap areas. The rip-rap pads are shown on the GR-Sheets and some of the SD-Sheets include the pad size. Add the pad size to the grading plans and revise all pertinent plans and callouts accordingly.

20. Revise the pipe penetration detail to include a concrete collar with dowelled rebar connections. The detail has not been provided at this time and was noted that it will be a part of the Structural Details.

21. Provide details for the transition structure modifications to accommodate the 66"-RCP connection and the removal of the existing facilities to allow construction of the proposed improvements. The detail has not been provided at this time and was noted that it will be a part of the Structural Details.

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

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

END OF REMARKS
AYS/PBJ

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

REGIONAL FLOOD CONTROL DISTRICT

Steven C. Parrish, P.E.
General Manager/Chief Engineer

BOARD OF DIRECTORS

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City of Boulder City

October 10, 2018

Mr. Douglas Bergstrom, P.E.
City of Henderson Public Works
240 Water Street P.O. Box 95050
Henderson, NV 89009

DISTRICT CONCURRENCE: **PLANNING AREA 7, PHASE 2C- UNIT 2 (PHYD 2018000890) (RFCD No. 18-11136)**

Dear Mr. Bergstrom:

Clark County Regional Flood Control District (District) reviewed Technical Drainage Study dated May 24, 2018 and Addendum No. 1 dated August 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 Henderson Public Works dated September 13, 2018.

District concurs with acceptance of this Technical Drainage Study by City of Henderson Public Works.

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

CCW:cr

c: Stanley Okey Amadi, P.E., Slater Hanifan Group

P:\Letters and Memos\Local Drainage\Land Development & Drainage\2018\L-18-11136.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

Street Flow & Curb Inlet Computations

Section - ECA2 (Ultimate Condition)
Worksheet for Irregular Channel

Project Description	
Worksheet	Section - ECA2 (Ultimate Condition)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Channel Slope	4.90	%
Discharge	99.00	cfs

BASIN WL4B (27CFS) NO LONGER DISCHARGES ONTO EAGLE CANYON AVENUE - FLOW IN ROAD HAS REDUCED TO 72CFS

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	0.016	
Water Surface Elevation	0.62	ft
Elevation Range	0.00 to 0.56	
Flow Area	11.7	ft²
Wetted Perimeter	44.30	ft
Top Width	43.00	ft
Actual Depth	0.62	ft
Critical Elevation	0.90	ft
Critical Slope	0.48	%
Velocity	8.46	ft/s
Velocity Head	1.11	ft
Specific Energy	1.73	ft
Froude Number	2.86	
Flow Type	Supercritical	

Calculation Messages:
Water elevation exceeds lowest end station by 0.11904769 ft.

Roughness Segments		
Start Station	End Station	Mannings Coefficient
0+00.00	0+43.00	0.016

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+21.50	0.56
0+41.00	0.17
0+41.00	0.13
0+42.50	0.00
0+42.50	0.48
0+43.00	0.50

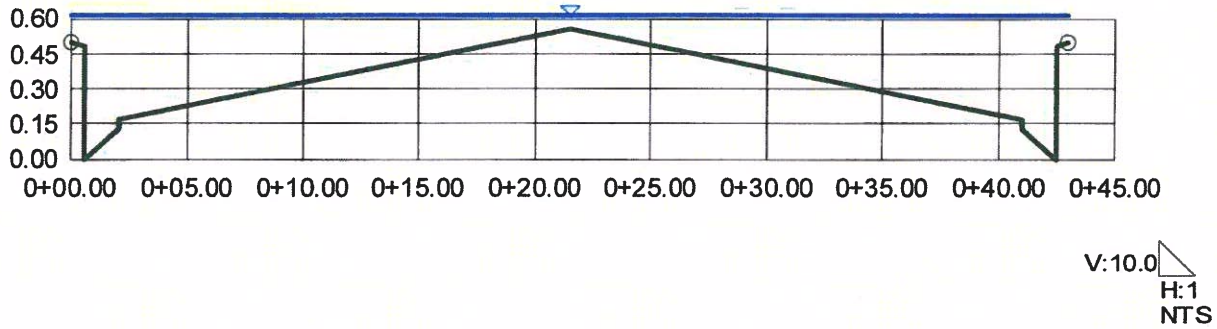
Section - ECA2 (Ultimate Condition)
Worksheet for Irregular Channel

Notes: Q=99 cfs being WL4B + WEGL1 + WPRK5 + WML9

Section - ECA2 (Ultimate Condition)
Cross Section for Irregular Channel

Project Description	
Worksheet	Section - ECA2 (Ultimate Condition)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data	
Mannings Coefficient	0.016
Channel Slope	4.90 %
Water Surface Elevation	0.62 ft
Elevation Range	0.00 to 0.56
Discharge	99.00 cfs



Section - ECA2b (Ultimate Condition)
Worksheet for Irregular Channel

Project Description	
Worksheet	Section - ECA2b (Ultimate Condition)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Channel Slope	2.00	%
Discharge	47.00	cfs

FLOW IN ROAD HAS REDUCED TO 28ECFS - NOTE THE NORTH INLET CAN ONLY COLLECT 4-CFS DUE TO THE NOMOGRAPH LIMITATIONS

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	0.016	
Water Surface Elevation	0.58	ft
Elevation Range	0.00 to 1.18	
Flow Area	9.9	ft²
Wetted Perimeter	45.99	ft
Top Width	44.77	ft
Actual Depth	0.58	ft
Critical Elevation	0.69	ft
Critical Slope	0.58	%
Velocity	4.73	ft/s
Velocity Head	0.35	ft
Specific Energy	0.93	ft
Froude Number	1.77	
Flow Type	Supercritical	

Calculation Messages:
Flow is divided.
Water elevation exceeds lowest end station by 0.77716433e-1 ft.

Roughness Segments		
Start Station	End Station	Mannings Coefficient
0+00.00	0+65.00	0.016

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+26.00	0.65
0+26.01	0.73
0+26.25	1.04
0+26.42	1.06
0+32.50	1.18

Section - ECA2b (Ultimate Condition)
Worksheet for Irregular Channel

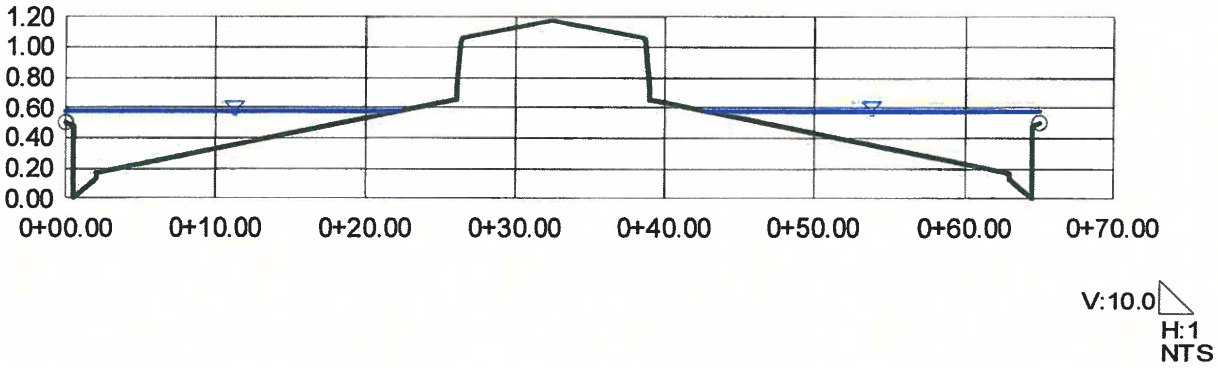
Natural Channel Points	
Station (ft)	Elevation (ft)
0+38.58	1.06
0+38.74	1.04
0+38.99	0.73
0+39.00	0.65
0+63.00	0.17
0+63.00	0.13
0+64.50	0.00
0+64.50	0.48
0+65.00	0.50

Notes: Q = ECA2 Bypass

Section - ECA2b (Ultimate Condition)
Cross Section for Irregular Channel

Project Description	
Worksheet	Section - ECA2b (Ultimate Condition)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.016	
Channel Slope	2.00	%
Water Surface Elevation	0.58	ft
Elevation Range	0.00 to 1.18	
Discharge	47.00	cfs



Project:	**Skye Canyon Infrastructure - Phase 2 Update No.3**	
Title:	**Type CM2 Drop Inlet (Continuous Grade)**	
Subtitle:	**20-ft Drop Inlet at Section ECA2**	
By:	**ETM**	
Date:	**12/7/2016**	
Input:	**Variable:**	**Input:**
Street Flow (cfs)	Q	49.5
Longitudinal Slope (ft/ft)	S_o	0.0490
Manning's Coefficient	n	0.016
Street Flow Velocity (fps)	V	8.46
Street Flow Depth (ft)	D	0.62
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	17.5
Length of Curb Opening (ft)	L_c	20.0
Clogging Factor - Grate (%)	CF_g	50%
Clogging Factor - Curb (%)	CF_c	50%
Effective Grate Length (ft)	L_{ge}	8.8
Effective Curb Opening Length (ft)	L_{ce}	10.00
Output (Grade):	**Equation:**	**Output (Grade):**
[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 p=0.30,q=4.85,r=1.31,sy=0.15 (for Vane Grate)	42.93
[1] E - Grate Flow Ratio	Frontal Flow/Side Flow	0.17
[2] Q_w - Frontal Flow (cfs)	$Q_w = Q[1-(1-(W/T))^{2.67}]$	8.27
[1] Q_s - Side Flow (cfs)	Q_s = Q-Qw	41.2
T - Side Flow Spread (ft)	$(D-D_g)/S_x$	22.67
[1] R_s - Side Flow Factor	$1/(1+(0.15*V^{1.8})/(S_x*L_{ge}^{2.3}))$	0.30
[1] Q_{gi} - Intercepted Flow (cfs)	$(R_f*E+R_s*(1-E))*Q$	20.4
Output (Curb):	**Equation:**	**Output (Curb):**
[1] S_e - Equivalent Cross Slope (ft/ft)	S_x+S_g*E	0.039
Q_{sx} - Remaining Flow After Grate Interception (cfs)	$Q-Q_{gi}$	29.054
S_g - Gutter Cross Slope (ft/ft)	D_g/W	0.111
[1] L_t - Effective Interception Length (ft)	$0.60*Q_{sx}^{0.42}*S_o^{0.30}*(1/n*S_e)^{0.6}$	84.25
[1] Q_{ci} - Intercepted Flow (cfs)	$(1-(1-L_{ce}/L_t)^{1.8})*Q_{sx}$	5.9
	or Q_{sx} if L_t is less than L_{ce}	
Output (Combination):		**Output (Combination):**
Total Intercepted Flow (cfs)	Intercepted (Grate) + Intercepted (Curb)	**26**

REDUCED TO 36-CFS PER INLET →

[1] Formula referenced from the CCRFCD Manual

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

Project:	**Skye Canyon Infrastructure - Phase 2 Update No.3**	
Title:	**Type CM2 Drop Inlet (Continuous Grade)**	
Subtitle:	**20-ft Drop Inlet at Section ECA2b**	
By:	**ETM**	
Date:	**12/7/2016**	

	Input:	**Variable:**	**Input:**
	Street Flow (cfs)	Q	23.5
	Longitudinal Slope (ft/ft)	S_o	0.0200
	Manning's Coefficient	n	0.016
	Street Flow Velocity (fps)	V	4.73
	Street Flow Depth (ft)	D	0.58
	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	17.5
	Length of Curb Opening (ft)	L_c	20.0
	Clogging Factor - Grate (%)	CF_g	50%
	Clogging Factor - Curb (%)	CF_c	50%
	Effective Grate Length (ft)	L_{ge}	8.8
	Effective Curb Opening Length (ft)	L_{ce}	10.00

REDUCED TO 14-CFS PER INLET →

	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 p=0.30,q=4.85,r=1.31,sy=0.15 (for Vane Grate)	42.93
[1]	E - Grate Flow Ratio	Frontal Flow/Side Flow	0.18
[2]	Q_w - Frontal Flow (cfs)	$Q_w = Q[1-(1-(W/T))^{2.67}]$	4.28
[1]	Q_s - Side Flow (cfs)	Q_s = Q-Qw	19.2
	T - Side Flow Spread (ft)	$(D-D_g)/S_x$	20.67
[1]	R_s - Side Flow Factor	$1/(1+(0.15*V^{1.8})/(S_x*L_{ge}^{2.3}))$	0.54
[1]	Q_{gi} - Intercepted Flow (cfs)	$(R_f*E+R_s*(1-E))*Q$	14.7

	Output (Curb):	**Equation:**	**Output (Curb):**
[1]	S_e - Equivalent Cross Slope (ft/ft)	S_x+S_g*E	0.040
	Q_{sx} - Remaining Flow After Grate Interception (cfs)	$Q-Q_{gi}$	8.761
	S_g - Gutter Cross Slope (ft/ft)	D_g/W	0.111
[1]	L_t - Effective Interception Length (ft)	$0.60*Q_{sx}^{0.42}*S_o^{0.30}*(1/n*S_e)^{0.6}$	37.93
[1]	Q_{ci} - Intercepted Flow (cfs)	$(1-(1-L_{ce}/L_t)^{1.8})*Q_{sx}$	3.7
		or Q_{sx} if L_t is less than L_{ce}	

Output (Combination):		**Output (Combination):**
Total Intercepted Flow (cfs)	Intercepted (Grate) + Intercepted (Curb)	**18**

5.5cfs Bypass Per Inlet -> 11cfs Total Bypass

[1] Formula referenced from the CCRFCD Manual

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

WSPGW Model

REANALYZED STORM DRAIN SYSTEM

```
0
T1 SKYE CANYON INFRASTRUCTURE - PHASE 2 (UPDATE NO.3)
T2 BY OLYMPIA COMPANIES
T3 EAGLE CANYON - TRUNK STORM DRAIN
SO   0613.002823.35 72                          2829.26
R    0900.002830.52 72       .013                                    1
JX   0900.002830.52 72 48    .013    97.5         2832.52        45.00
R    0950.002831.58 72       .013                                    1
WE   0950.002831.58 72       .013
TS   1000.002835.61 66       .013                                    1
WX   1000.002835.61 66       .013
R    1093.002837.13 66       .013                                    1
JX   1093.002838.13 54 42 42.013    44.0     37.02839.132839.13 45.00 45.00
R    1389.502839.63 54       .013                                    1
JX   1394.502840.13 48 18 18.013     5.0      5.02842.632842.63 45.00 45.00
R    1632.002854.48 48       .013                                 5.    1
R    1762.002862.62 48       .013                                 5.    1
R    1883.002868.57 48       .013                                 5.    1
R    1992.002873.94 48       .013                                 5.    1
JX   1992.002873.94 48 18 24.013     5.0     21.02876.442875.94 75.00 75.00
R    2072.002877.87 48       .013                                 5.    1
R    2167.002882.51 48       .013                                 5.    1
R    2262.002885.16 48       .013                                 5.    1
R    2422.002888.80 48       .013                                       1
JX   2422.002888.80 48 30 18.013    43.0      3.02890.302891.30 45.00 45.00
R    2820.002903.13 48       .013                                    1
JX   2820.002903.13 48 42    .013    86.0         2903.63        45.00
R    3004.002908.81 48       .013                                 60.   1
JX   3004.002908.81 48 36 18.013    52.0     18.02909.812911.31 60.00 45.00
R    3024.002910.72 48       .013                                    1
JX   3024.002910.72 48 48    .013    18.0         2912.12        90.00
R    3060.002912.43 48       .013                                    1
SH   3060.002912.43 48
CD  18  4              1.5
CD  24  4              2.
CD  30  4              2.5
CD  36  4              3.
CD  42  4              3.5
CD  48  4              4.
CD  54  4              4.5
CD  60  4              5.
CD  66  4              5.5
CD  72  4              6.
CD  78  4              6.5
```

FLOWRATES CHANGED

0
Q
↔ 38.0

DATE: 12/ 7/2016
TIME: 14:15

F0515P

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING PAGE 1

CARD CODE	SECT NO	CHN TYPE	NO OF PIERS	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	18	4			1.50														
CD	24	4			2.00														
CD	30	4			2.50														
CD	36	4			3.00														
CD	42	4			3.50														
CD	48	4			4.00														
CD	54	4			4.50														
CD	60	4			5.00														
CD	66	4			5.50														
CD	72	4			6.00														
CD	78	4			6.50														

F 0 5 1 5 P PAGE NO 3

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 2 (UPDATE NO.3)

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

EAGLE CANYON - TRUNK STORM DRAIN

F 0 5 1 5 P 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
	613.00	2823.35	72	2829.26

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	900.00	2830.52	72	0.013	0.00	0.00	0.00	1

ELEMENT NO 3 IS A JUNCTION * * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	900.00	2830.52	72	48	0	0.013	97.5	0.0	2832.52	0.00	45.00	0.00

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 4 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	950.00	2831.58	72	0.013	0.00	0.00	0.00	1

ELEMENT NO 5 IS A WALL ENTRANCE *

U/S DATA	STATION	INVERT	SECT	FP
	950.00	2831.58	72	0.013

ELEMENT NO 6 IS A TRANSITION * * *

U/S DATA	STATION	INVERT	SECT	N
	1000.00	2835.61	66	0.013

ELEMENT NO 7 IS A WALL EXIT *

U/S DATA	STATION	INVERT	SECT
	1000.00	2835.61	66

ELEMENT NO 8 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1093.00	2837.13	66	0.013	0.00	0.00	0.00	1

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
	1093.00	2838.13	54	42	42	0.013	44.0	37.0	2839.13	2839.13	45.00	45.00

ELEMENT NO 10 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1389.50	2839.63	54	0.013	0.00	0.00	0.00	1

ELEMENT NO 11 IS A JUNCTION * * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1394.50	2840.13	48	18	18	0.013	5.0	5.0	2842.63	2842.63	45.00	45.00

F 0 5 1 5 P

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 12 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1632.00	2854.48	48	0.013	0.00	0.00	5.00	1

ELEMENT NO 13 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1762.00	2862.62	48	0.013	0.00	0.00	5.00	1

ELEMENT NO 14 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1883.00	2868.57	48	0.013	0.00	0.00	5.00	1

ELEMENT NO 15 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1992.00	2873.94	48	0.013	0.00	0.00	5.00	1

ELEMENT NO 16 IS A JUNCTION * * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1992.00	2873.94	48	18	24	0.013	5.0	21.0	2876.44	2875.94	75.00	75.00

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 17 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	2072.00	2877.87	48	0.013	0.00	0.00	5.00	1

ELEMENT NO 18 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	2167.00	2882.51	48	0.013	0.00	0.00	5.00	1

ELEMENT NO 19 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	2262.00	2885.16	48	0.013	0.00	0.00	5.00	1

ELEMENT NO 20 IS A REACH

	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
U/S DATA	2422.00	2888.80	48	0.013	0.00	0.00	0.00	1

ELEMENT NO 21 IS A JUNCTION

	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
U/S DATA	2422.00	2888.80	48	30	18	0.013	43.0	3.0	2890.30	2891.30	45.00	45.00

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 ♀

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 22 IS A REACH

	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
U/S DATA	2820.00	2903.13	48	0.013	0.00	0.00	0.00	1

ELEMENT NO 23 IS A JUNCTION

	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
U/S DATA	2820.00	2903.13	48	42	0	0.013	86.0	0.0	2903.63	0.00	45.00	0.00

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 24 IS A REACH

	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
U/S DATA	3004.00	2908.81	48	0.013	0.00	0.00	60.00	1

ELEMENT NO 25 IS A JUNCTION

	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
U/S DATA	3004.00	2908.81	48	36	18	0.013	52.0	18.0	2909.81	2911.31	60.00	45.00

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 26 IS A REACH

	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
U/S DATA	3024.00	2910.72	48	0.013	0.00	0.00	0.00	1

ELEMENT NO 27 IS A JUNCTION

	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
U/S DATA	3024.00	2910.72	48	48	0	0.013	18.0	0.0	2912.12	0.00	90.00	0.00

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 28 IS A REACH

	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
U/S DATA	3060.00	2912.43	48	0.013	0.00	0.00	0.00	1

ELEMENT NO 29 IS A SYSTEM HEADWORKS

	STATION	INVERT	SECT	W S ELEV
U/S DATA	3060.00	2912.43	48	0.00

NO EDIT ERRORS ENCOUNTERED-COMPUTATION IS NOW BEGINNING
** WARNING NO. 2 ** - WATER SURFACE ELEVATION GIVEN IS LESS THAN OR EQUALS INVERT ELEVATION IN HDWKDS, W.S.ELEV = INV + DC ♀
LICENSEE: SLATER HANIFAN GROUP F0515P PAGE 1

WATER SURFACE PROFILE LISTING
SKYE CANYON INFRASTRUCTURE - PHASE 2 (UPDATE NO.3)
BY OLYMPIA COMPANIES
EAGLE CANYON - TRUNK STORM DRAIN

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD.EL.	SUPER ELEV	CRITICAL DEPTH	HGT/ DIA	BASE/ ID NO.	ZL	NO PIER	AVBPR

L/ELEM	SO					SF AVE	HF			NORM DEPTH			ZR		
613.00	2823.35	3.839	2827.189	472.5	24.73	9.499	2836.688	0.00	5.602		6.00	0.00	0.00	0	0.00
167.58	0.02498					.021801	3.65			3.720			0.00		
780.58	2827.54	3.960	2831.497	472.5	23.87	8.845	2840.342	0.00	5.602		6.00	0.00	0.00	0	0.00
119.42	0.02498					.019688	2.35			3.720			0.00		
900.00	2830.52	4.132	2834.652	472.5	22.76	8.041	2842.693	0.00	5.602		6.00	0.00	0.00	0	0.00
JUNCT STR	0.00000					.021264	0.00						0.00		
900.00	2830.52	3.251	2833.771	375.0	23.97	8.924	2842.695	0.00	5.210		6.00	0.00	0.00	0	0.00
50.00	0.02120					.024310	1.22			3.378			0.00		
950.00	2831.58	3.225	2834.805	375.0	24.22	9.105	2843.910	0.00	5.210		6.00	0.00	0.00	0	0.00
TRANS STR	0.08060					.018784	0.94						0.00		
1000.00	2835.61	4.420	2840.030	375.0	18.32	5.214	2845.244	0.00	5.118		5.50	0.00	0.00	0	0.00
WALL	EXIT												0.00		
1000.00	2835.61	4.419	2840.029	375.0	18.33	5.216	2845.245	0.00	5.118		5.50	0.00	0.00	0	0.00
33.70	0.01634					.012649	0.43			3.980			0.00		
1033.70	2836.16	4.531	2840.692	375.0	17.91	4.980	2845.672	0.00	5.118		5.50	0.00	0.00	0	0.00
43.42	0.01634					.011858	0.51			3.980			0.00		
1077.12	2836.87	4.789	2841.659	375.0	17.08	4.528	2846.187	0.00	5.118		5.50	0.00	0.00	0	0.00
15.88	0.01634					.011072	0.18			3.980			0.00		
1093.00	2837.13	5.118	2842.248	375.0	16.28	4.115	2846.363	0.00	5.118		5.50	0.00	0.00	0	0.00
JUNCT STR	0.00000					.016569	0.00						0.00		
1093.00	2838.13	4.799	2842.929	294.0	18.49	5.306	2848.235	0.00	4.378		4.50	0.00	0.00	0	0.00
296.50	0.00506					.022352	6.63			4.500			0.00		

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD.EL.	SUPER ELEV	CRITICAL DEPTH		HGT/ DIA	BASE/ ID NO.	ZL	NO PIER	AVBPR
L/ELEM	SO					SF AVE	HF			NORM DEPTH			ZR		
1389.50	2839.63	10.192	2849.822	294.0	18.49	5.306	2855.128	0.00	4.378		4.50	0.00	0.00	0	0.00
JUNCT STR	0.10000												0.00		

1394.50	2840.13	2.750	2842.880	284.0	30.83	14.759	2857.639	0.00	3.961		4.00	0.00	0.00	0	0.00
237.50	0.06042					.055399	13.16			2.717			0.00		
1632.00	2854.48	2.870	2857.350	284.0	29.43	13.446	2870.796	0.00	3.961		4.00	0.00	0.00	0	0.00
73.15	0.06262					.050010	3.66			2.681			0.00		
1705.15	2859.06	2.981	2862.041	284.0	28.27	12.412	2874.453	0.00	3.961		4.00	0.00	0.00	0	0.00
56.85	0.06262					.045308	2.58			2.681			0.00		
1762.00	2862.62	3.126	2865.746	284.0	26.96	11.284	2877.030	0.00	3.961		4.00	0.00	0.00	0	0.00
28.74	0.04917					.042458	1.22			2.943			0.00		
1790.74	2864.03	3.158	2867.191	284.0	26.68	11.057	2878.248	0.00	3.961		4.00	0.00	0.00	0	0.00
92.26	0.04917					.040079	3.70			2.943			0.00		
1883.00	2868.57	3.324	2871.894	284.0	25.44	10.052	2881.946	0.00	3.961		4.00	0.00	0.00	0	0.00
28.72	0.04927					.037431	1.08			2.941			0.00		
1911.72	2869.99	3.407	2873.392	284.0	24.90	9.629	2883.021	0.00	3.961		4.00	0.00	0.00	0	0.00
48.03	0.04927					.035477	1.70			2.941			0.00		
1959.75	2872.35	3.620	2875.971	284.0	23.74	8.754	2884.725	0.00	3.961		4.00	0.00	0.00	0	0.00
32.25	0.04927					.035146	1.13			2.941			0.00		
1992.00	2873.94	3.961	2877.901	284.0	22.64	7.957	2885.858	0.00	3.961		4.00	0.00	0.00	0	0.00
JUNCT STR	0.00000					.034149	0.00						0.00		
1992.00	2873.94	6.662	2880.602	258.0	20.53	6.546	2887.148	0.00	3.943		4.00	0.00	0.00	0	0.00
80.00	0.04913					.032260	2.58			2.732			0.00		

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD.EL.	SUPER ELEV	CRITICAL DEPTH		HGT/ DIA	BASE/ ID NO.	ZL	NO PIER	AVBPR
L/ELEM	SO					SF AVE	HF			NORM DEPTH			ZR		
2072.00	2877.87	5.748	2883.618	258.0	20.53	6.546	2890.164	0.00	3.943		4.00	0.00	0.00	0	0.00
95.00	0.04884					.032260	3.06			2.737			0.00		
2167.00	2882.51	4.608	2887.118	258.0	20.53	6.546	2893.664	0.00	3.943		4.00	0.00	0.00	0	0.00
95.00	0.02789					.032260	3.06			4.000			0.00		
2262.00	2885.16	5.458	2890.618	258.0	20.53	6.546	2897.164	0.00	3.943		4.00	0.00	0.00	0	0.00

160.00	0.02275					.032260	5.16			4.000			0.00		
2422.00	2888.80	7.307	2896.107	258.0	20.53	6.546	2902.653	0.00	3.943		4.00	0.00	0.00	0	0.00
JUNCT STR	0.00000					.027021	0.00						0.00		
2422.00	2888.80	10.891	2899.691	212.0	16.87	4.420	2904.111	0.00	3.877		4.00	0.00	0.00	0	0.00
398.00	0.03601					.021782	8.67			2.651			0.00		
2820.00	2903.13	5.452	2908.582	212.0	16.87	4.420	2913.002	0.00	3.877		4.00	0.00	0.00	0	0.00
JUNCT STR	0.00000					.014738	0.00						0.00		
2820.00	2903.13	9.825	2912.955	126.0	10.03	1.561	2914.516	0.00	3.368		4.00	0.00	0.00	0	0.00
184.00	0.03087					.007694	1.42			1.998			0.00		
3004.00	2908.81	5.948	2914.758	126.0	10.03	1.561	2916.319	0.00	3.368		4.00	0.00	0.00	0	0.00
JUNCT STR	0.00000					.004607	0.00						0.00		
3004.00	2908.81	7.660	2916.470	56.0	4.46	0.308	2916.778	0.00	2.251		4.00	0.00	0.00	0	0.00
20.00	0.09550					.001520	0.03			0.960			0.00		
3024.00	2910.72	5.796	2916.516	56.0	4.46	0.308	2916.824	0.00	2.251		4.00	0.00	0.00	0	0.00
JUNCT STR	0.00000					.001110	0.00						0.00		
3024.00	2910.72	6.129	2916.849	38.0	3.02	0.142	2916.991	0.00	1.838		4.00	0.00	0.00	0	0.00
36.00	0.04750					.000700	0.03			0.940			0.00		

LICENSEE: SLATER HANIFAN GROUP F0515P PAGE 4

WATER SURFACE PROFILE LISTING

SKYE CANYON INFRASTRUCTURE - PHASE 2 (UPDATE NO.3)
BY OLYMPIA COMPANIES
EAGLE CANYON - TRUNK STORM DRAIN

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD.EL.	SUPER ELEV	CRITICAL DEPTH		HGT/ DIA	BASE/ ID NO.	ZL	NO PIER	AVBPR
L/ELEM	SO					SF AVE	HF			NORM DEPTH			ZR		
3060.00	2912.43	4.451	2916.881	38.0	3.02	0.142	2917.023	0.00	1.838		4.00	0.00	0.00	0	0.00

SKYE CANYON INFRASTRUCTURE - PHASE 2 (UPDATE NO.3)
BY OLYMPIA COMPANIES
EAGLE CANYON - TRUNK STORM DRAIN

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613.00    .I   WCH       E                                                    .
649.52    .                                                                  .    R
686.04    .                                                                  .
722.57    .                                                                  .
759.09    .                                                                  .
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832.13    .                                                                  .    R
                                                                             .
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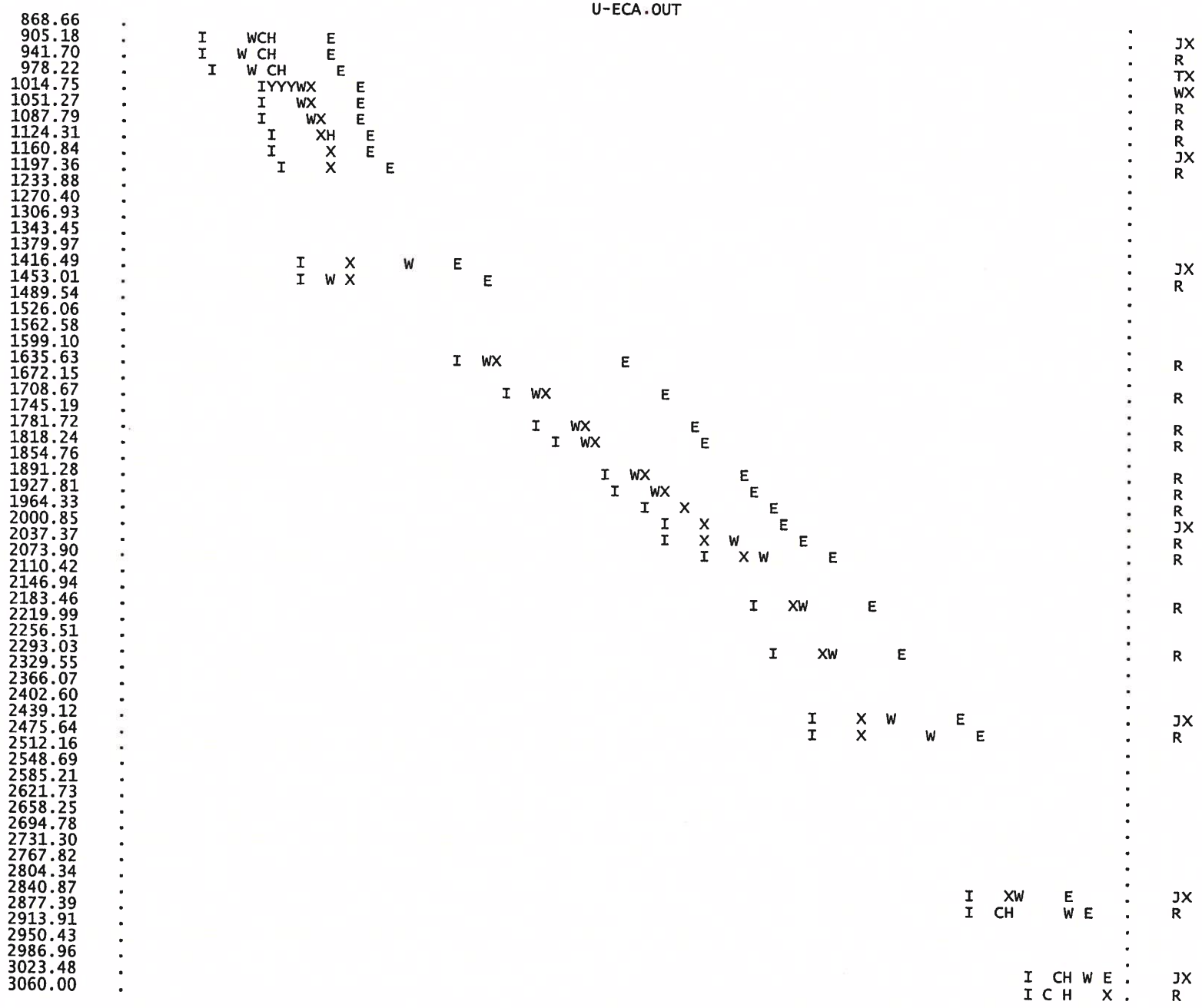
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WX
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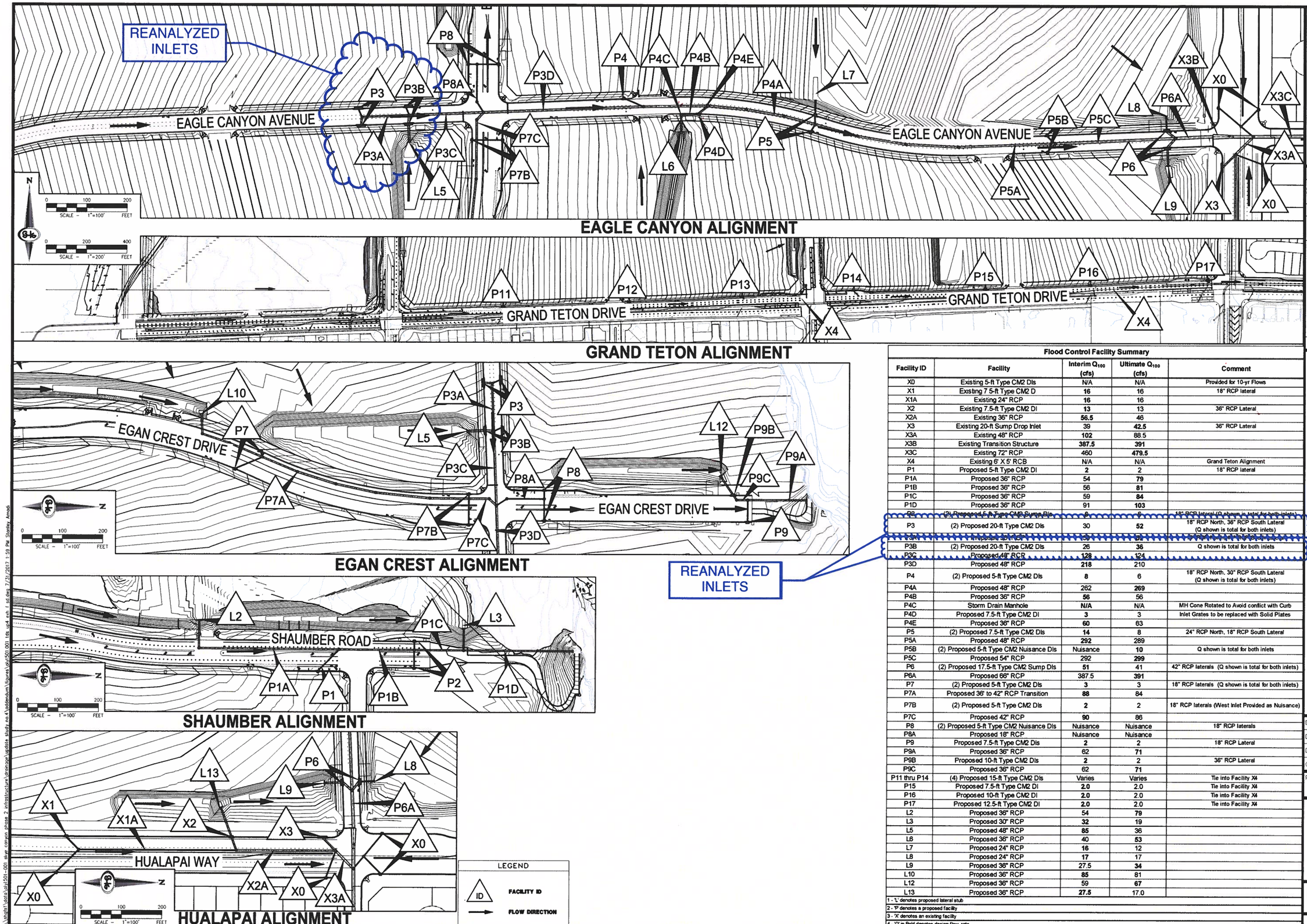
2823.35	2832.72	2842.08	2851.45	2860.82	2870.19	2879.55	2888.92	2898.29	2907.65	2917.02

N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY‡

Drainage Exhibits



Flood Control Facility Summary

Facility ID	Facility	Interim Q_{100} (cfs)	Ultimate Q_{100} (cfs)	Comment
X0	Existing 5-ft Type CM2 DIs	N/A	N/A	Provided for 10-yr Flows
X1	Existing 7.5-ft Type CM2 D	16	16	18" RCP lateral
X1A	Existing 24" RCP	16	16	
X2	Existing 7.5-ft Type CM2 DI	13	13	36" RCP Lateral
X2A	Existing 36" RCP	56.5	46	
X3	Existing 20-ft Sump Drop Inlet	39	42.5	36" RCP Lateral
X3A	Existing 48" RCP	102	88.5	
X3B	Existing Transition Structure	387.5	391	
X3C	Existing 72" RCP	460	479.5	
X4	Existing 6' X 5' RCB	N/A	N/A	Grand Teton Alignment
P1	Proposed 5-ft Type CM2 DI	2	2	18" RCP lateral
P1A	Proposed 36" RCP	54	79	
P1B	Proposed 36" RCP	56	81	
P1C	Proposed 36" RCP	59	84	
P1D	Proposed 36" RCP	91	103	
P2	(2) Proposed 5-ft Type CM2 Sump DIs	6	6	18" RCP lateral (Q shown is total for both inlets)
P3	(2) Proposed 20-ft Type CM2 DIs	30	52	18" RCP North, 36" RCP South Lateral (Q shown is total for both inlets)
P3A	Proposed 36" RCP	30	52	Q shown is total for both inlets
P3B	(2) Proposed 20-ft Type CM2 DIs	26	36	Q shown is total for both inlets
P3C	Proposed 48" RCP	128	124	
P3D	Proposed 48" RCP	218	210	
P4	(2) Proposed 5-ft Type CM2 DIs	8	6	18" RCP North, 30" RCP South Lateral (Q shown is total for both inlets)
P4A	Proposed 48" RCP	262	269	
P4B	Proposed 36" RCP	56	56	
P4C	Storm Drain Manhole	N/A	N/A	MH Cone Rotated to Avoid conflict with Curb
P4D	Proposed 7.5-ft Type CM2 DI	3	3	Inlet Grates to be replaced with Solid Plates
P4E	Proposed 36" RCP	60	63	
P5	(2) Proposed 7.5-ft Type CM2 DIs	14	8	24" RCP North, 18" RCP South Lateral
P5A	Proposed 48" RCP	292	289	
P5B	(2) Proposed 5-ft Type CM2 Nuisance DIs	Nuisance	10	Q shown is total for both inlets
P5C	Proposed 54" RCP	292	299	
P6	(2) Proposed 17.5-ft Type CM2 Sump DIs	51	41	42" RCP laterals (Q shown is total for both inlets)
P6A	Proposed 66" RCP	387.5	391	
P7	(2) Proposed 5-ft Type CM2 DIs	3	3	18" RCP laterals (Q shown is total for both inlets)
P7A	Proposed 36" to 42" RCP Transition	88	84	
P7B	(2) Proposed 5-ft Type CM2 DIs	2	2	18" RCP laterals (West Inlet Provided as Nuisance)
P7C	Proposed 42" RCP	90	86	
P8	(2) Proposed 5-ft Type CM2 Nuisance DIs	Nuisance	Nuisance	18" RCP laterals
P8A	Proposed 18" RCP	Nuisance	Nuisance	
P9	Proposed 7.5-ft Type CM2 DIs	2	2	18" RCP Lateral
P9A	Proposed 36" RCP	62	71	
P9B	Proposed 10-ft Type CM2 DIs	2	2	36" RCP Lateral
P9C	Proposed 36" RCP	62	71	
P11 thru P14	(4) Proposed 15-ft Type CM2 DIs	Varies	Varies	Tie into Facility X4
P15	Proposed 7.5-ft Type CM2 DI	2.0	2.0	Tie into Facility X4
P16	Proposed 10-ft Type CM2 DI	2.0	2.0	Tie into Facility X4
P17	Proposed 12.5-ft Type CM2 DI	2.0	2.0	Tie into Facility X4
L2	Proposed 36" RCP	54	79	
L3	Proposed 30" RCP	32	19	
L5	Proposed 48" RCP	85	36	
L6	Proposed 36" RCP	40	53	
L7	Proposed 24" RCP	16	12	
L8	Proposed 24" RCP	17	17	
L9	Proposed 36" RCP	27.5	34	
L10	Proposed 36" RCP	85	81	
L12	Proposed 36" RCP	59	67	
L13	Proposed 36" RCP	27.5	17.0	

1 - 'L' denotes proposed lateral stub
2 - 'P' denotes a proposed facility
3 - 'X' denotes an existing facility
4 - 'Q' in Bold denotes design flow rate

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 2 INFRASTRUCTURE UPDATE NO.4
STORM DRAIN SCHEMATIC MAP

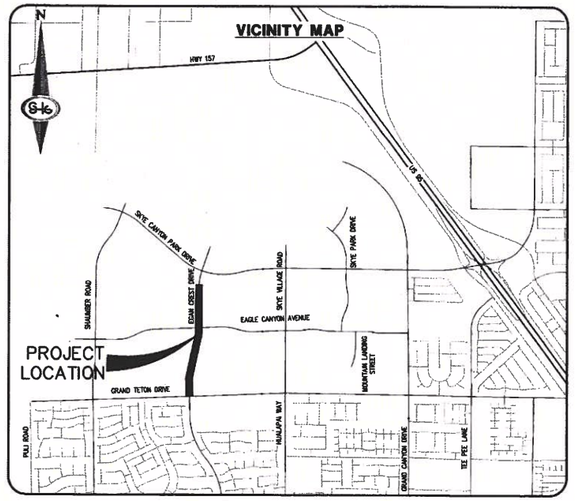
DATE: JUNE 2017
DRAFTER: ETM
DESIGNER: ETM
CHECKED: SOA

PROJECT NO.
OLY1501.001

EXHIBIT F
SHEET 1 OF 1

\\Vegas\Data\Oly\501-001 sky canyon phase 2 infrastructure\drainage\update study no 4\addendum\figures\Oly1501001 fds sht4 exh 1 rpt.dwg 7/31/2017 1:59 PM Stanley Arnold

Improvement Plans



IMPROVEMENT PLANS
FOR
SKYE CANYON PHASE 2
EGAN CREST DRIVE

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

SOUTH 00°22'12" WEST, BEING THE BEARING OF THE WEST LINE OF THE NORTHWEST QUARTER (NW1/4) OF SECTION 6, TOWNSHIP 19 SOUTH, RANGE 60 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF IN FILE 151, PAGE 14 OF SURVEYS IN THE CLARK COUNTY RECORDER'S OFFICE, NEVADA.

OWNER

SECTION 12 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

SURVEY MONUMENTS PLACED FOR PUBLIC STREETS IN THIS PLAN SET SHALL BE PER BOOK XXX PAGE XX OF SUBDIVISION PLATS

APPROVALS

CITY ENGINEER–DAVID BOWER PE, PTOE #16736 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. XXXXXX DATE:
SHEETS: G–01, G–02, G–03, C–01 THRU C–04, SD–01 THRU SD–05, AND UT–01 THRU UT–06

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 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	HC–1	HORIZONTAL CONTROL PLAN
5	HC–2	HORIZONTAL CONTROL PLAN
6	HC–3	HORIZONTAL CONTROL PLAN
7	HC–4	HORIZONTAL CONTROL PLAN
8	HC–5	HORIZONTAL CONTROL PLAN
9	TY–01	ROADWAY SECTIONS
10	C–01	CONSTRUCTION PLAN – "ECD" 8+00.00 TO "ECD" 15+50.00
11	C–02	CONSTRUCTION PLAN – "ECD" 15+50.00 TO "ECD" 21+00.00
12	C–03	CONSTRUCTION PLAN – "ECD" 21+00.00 TO "ECD" 28+50.00
13	C–04	CONSTRUCTION PLAN – "ECD" 28+50.00 TO "ECD" 35+00.00
14	C–05	CONSTRUCTION DETAILS
15	SD–01	STORM DRAIN PLAN AND PROFILE – "ECD" 8+00.00 TO "ECD" 15+50.00
16	SD–02	STORM DRAIN PLAN AND PROFILE – "ECD" 15+50.00 TO "ECD" 21+00.00
17	SD–03	STORM DRAIN PLAN AND PROFILE – "ECD" 21+00.00 TO "ECD" 28+50.00
18	SD–04	STORM DRAIN PLAN AND PROFILE – "ECD" 28+50.00 TO "ECD" 34+00.00
19	SD–05	STORM DRAIN LATERAL PROFILES
20	UT–01	UTILITY PLAN – "ECD" 8+00.00 TO "ECD" 15+50.00
21	UT–02	UTILITY PLAN – "ECD" 15+50.00 TO "ECD" 21+00.00
22	UT–03	UTILITY PLAN – "ECD" 21+00.00 TO "ECD" 28+50.00
23	UT–04	UTILITY PLAN – "ECD" 28+50.00 TO "ECD" 34+00.00
24	UT–05	UTILITY LATERAL PROFILES
25	UT–06	UTILITY DETAILS
26	LL–01	LIGHTING PLAN – "ECD" 8+00.00 TO "ECD" 21+00.00
27	LL–02	LIGHTING PLAN – "ECD" 21+00.00 TO "ECD" 34+00.00
28	ST–01	SIGNING AND STRIPING PLAN – "ECD" 8+00.00 TO "ECD" 21+00.00
29	ST–02	SIGNING AND STRIPING PLAN – "ECD" 21+00.00 TO "ECD" 34+00.00

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

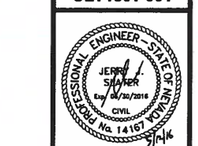
NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

NINETY-FIVE MANAGEMENT LLC

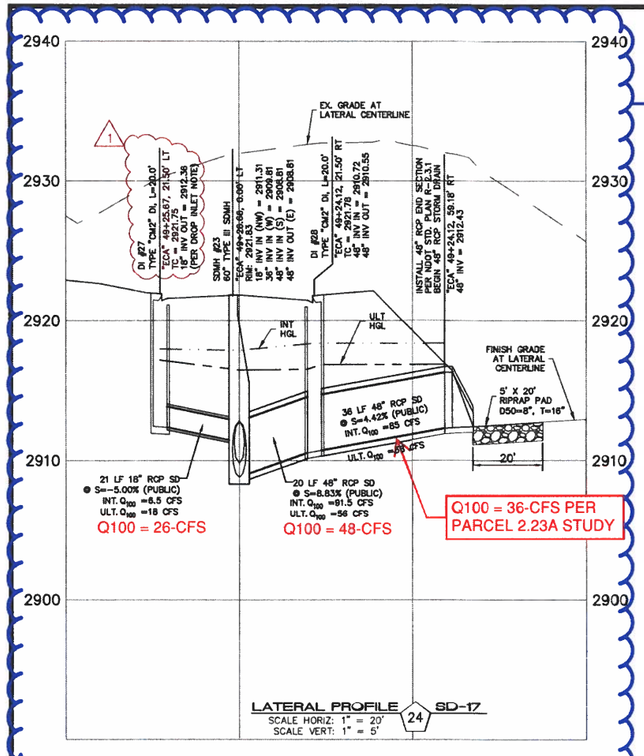
SKYE CANYON PHASE 2
EGAN CREST DRIVE
COVER SHEET

DATE: 4/5/16
DRAFTER: DAM
DESIGNER: DAM
CHECKED: JSR

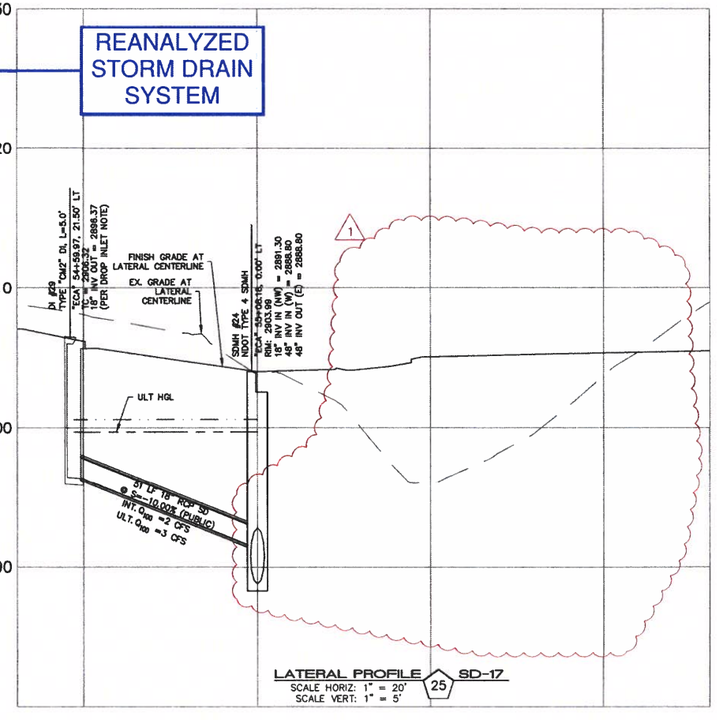
PROJECT NO.
OLY1501-001

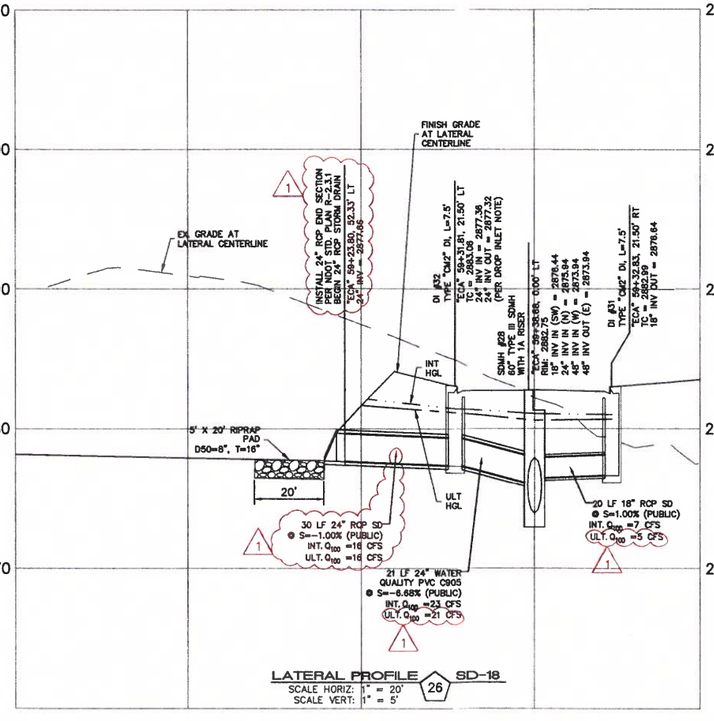


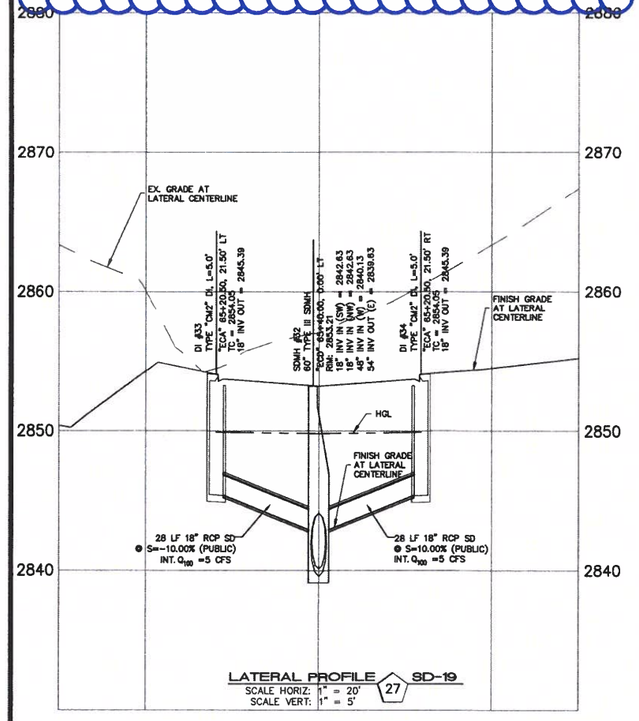
G-01
SHEET 1 OF 29

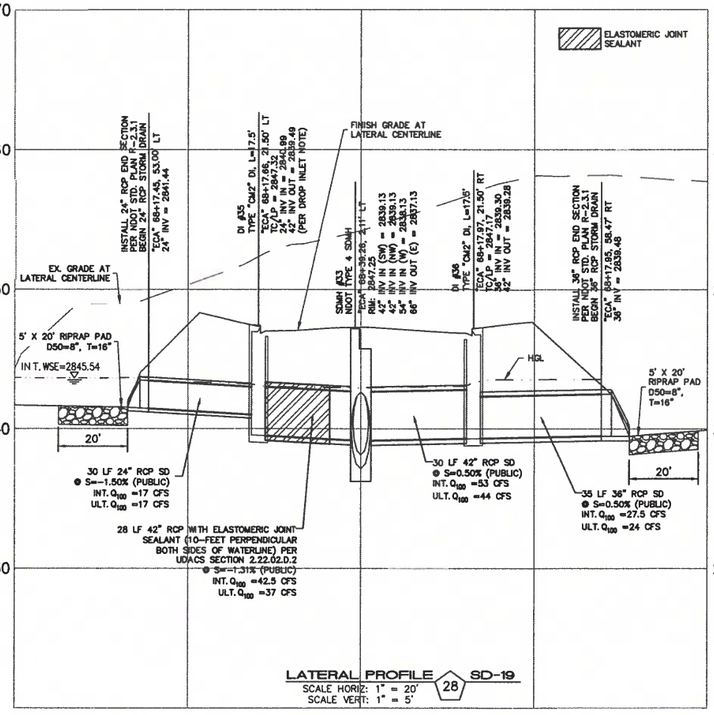


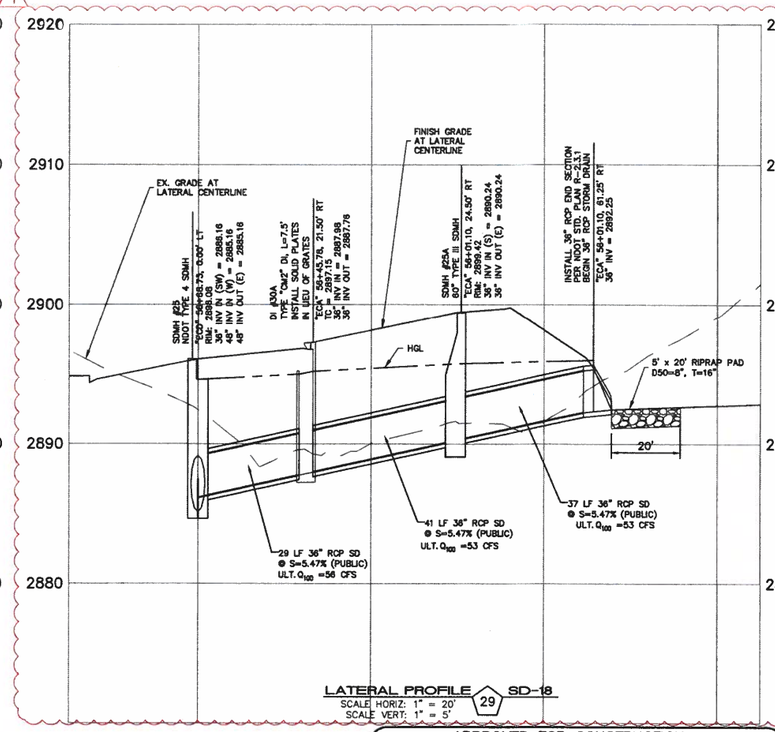
REANALYZED STORM DRAIN SYSTEM











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).

APPROVED FOR CONSTRUCTION

LVVWD WILL HAVE TO BE PRESENT AND VIEW INSTALLATION OF STORM DRAIN THAT WILL BE INSTALLED THAT MAY AFFECT THE WATER MAINS

LVVWD ENGINEERING SERVICES MANAGER — DATE

PROJECT NO. 124568 — 1ST APP'D 10/10/16

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
1	REVISED STORM DRAIN	8/2/17	JJS		

NINETY-FIVE MANAGEMENT LLC

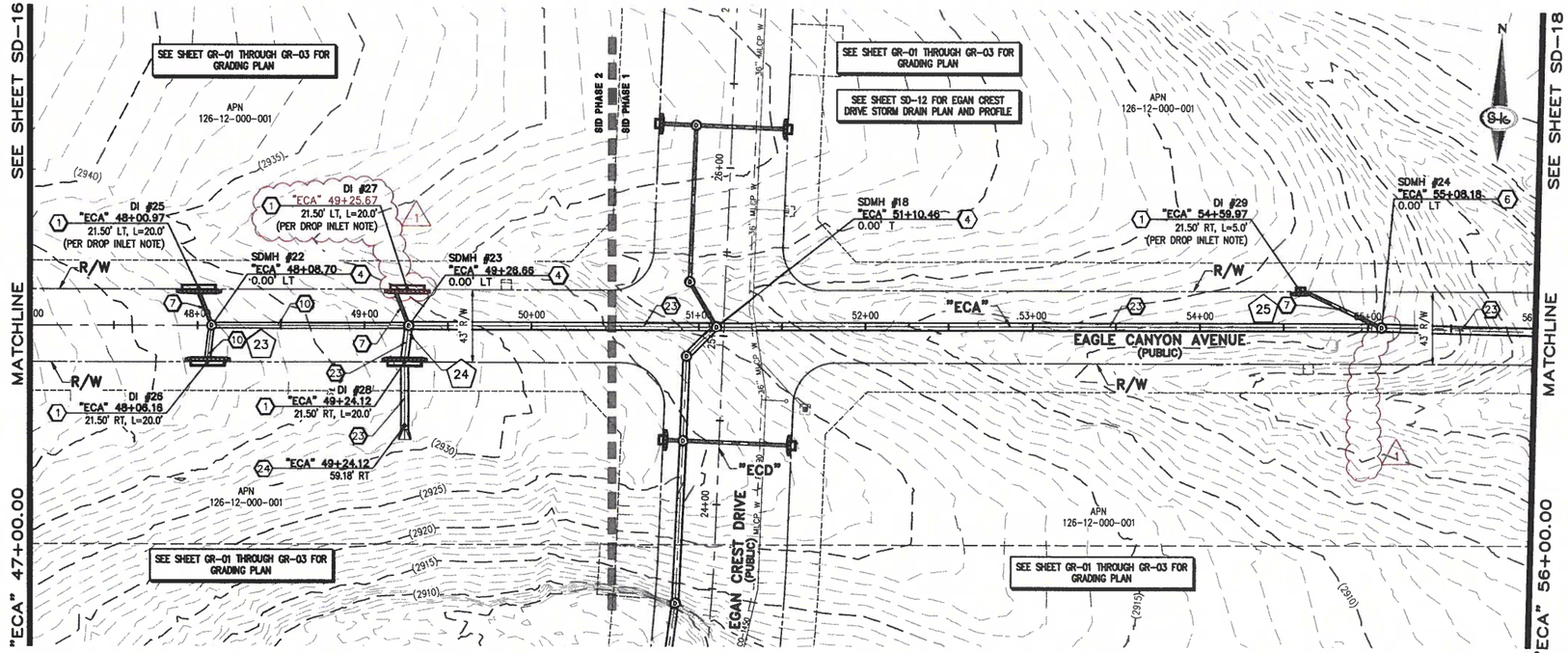
SKYE CANYON II PHASE 2 MASS GRADING

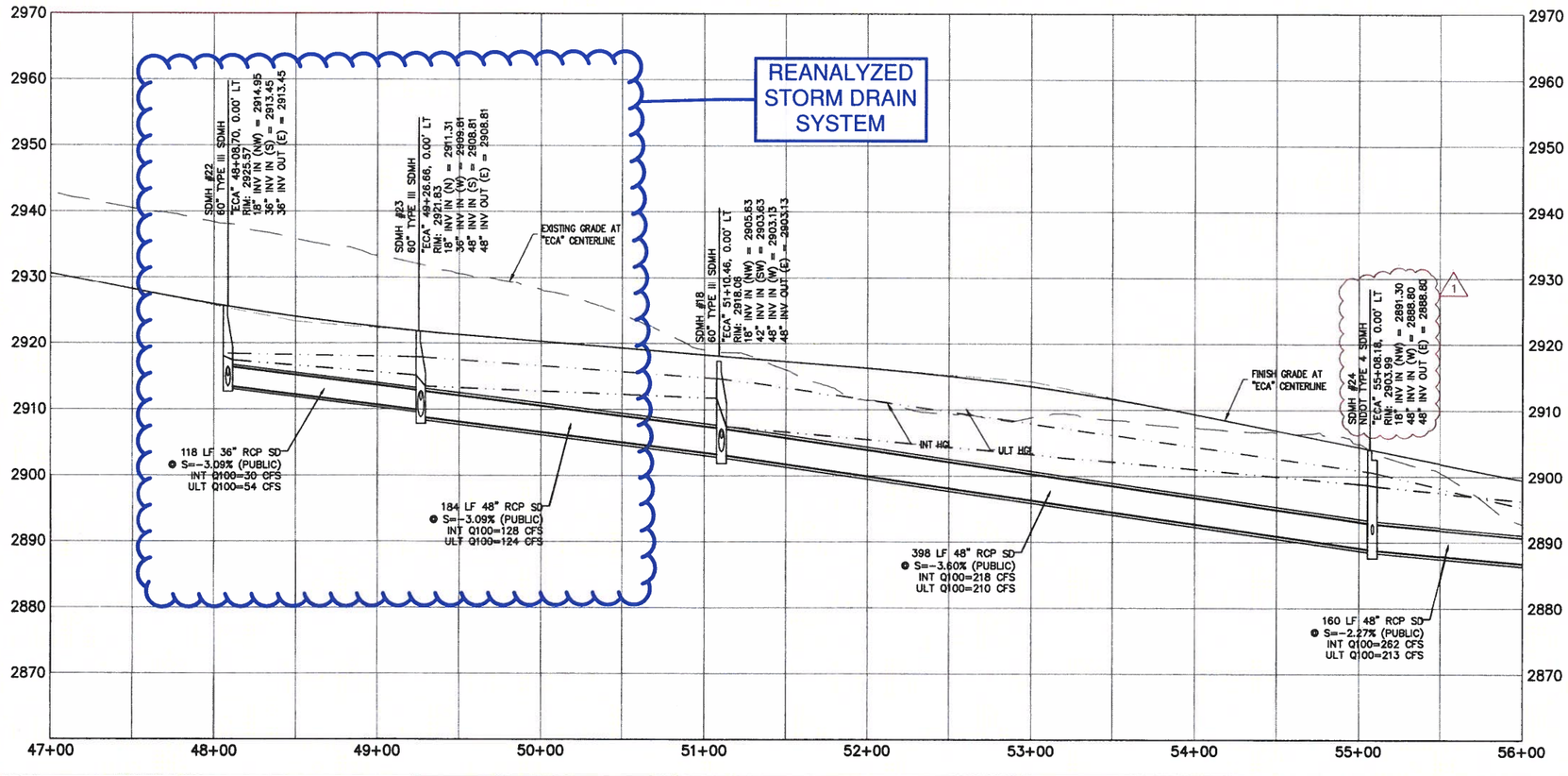
STORM DRAIN LATERAL PROFILES

DATE: 8/3/16
DRAFTER: JAS
DESIGNER: DAM
CHECKED: JSR
PROJECT NO. OLY1501-001

PROFESSIONAL ENGINEER — STATE OF NEVADA — JERRY J. SLATER — Exp. 06/30/2018 — CIVIL — No. 14167

SD-24
SHEET 27 OF 32





STORM DRAIN NOTES

1. CONSTRUCT TYPE "CM2" DROP INLET (USDCCA STD. DWG. NO. 412.1)
2. REMOVE EXISTING LATERAL STUB AND CONSTRUCT RCB PLUG (SEE DETAIL 5, DRAWING SD-25)
3. CONSTRUCT 60" TYPE I MANHOLE (USDCCA STD. DWG. NO. 403.1)
4. CONSTRUCT 60" TYPE III MANHOLE (USDCCA STD. DWG. NO. 406.1)
5. CONSTRUCT 60" TYPE III MANHOLE WITH TYPE IA RISER (USDCCA STD. DWG. NO. 404.1 AND 406.1)
6. CONSTRUCT NDOT TYPE 4 MANHOLE (NDOT STD. PLAN R-4.3.2)
7. INSTALL 18" RCP OR WATER QUALITY C905 AS SHOWN ON PROFILES (USDCCA STD. DWG. NO. 503.2)
8. INSTALL 24" RCP OR WATER QUALITY C905 AS SHOWN ON PROFILES (USDCCA STD. DWG. NO. 503.2)
9. INSTALL 30" RCP (USDCCA STD. DWG. NO. 503.2)
10. INSTALL 36" RCP (USDCCA STD. DWG. NO. 503.2)
11. INSTALL 42" RCP (USDCCA STD. DWG NO. 503.2)
12. INSTALL 54" RCP (USDCCA STD. DWG. NO. 503.2)
13. INSTALL 60" RCP (USDCCA STD. DWG. NO. 503.2)
14. INSTALL 66" RCP (USDCCA STD. DWG. NO. 503.2)
15. INSTALL 18" RCP END SECTION (NDOT STD. PLAN R-2.3.1)
16. INSTALL 24" RCP END SECTION (NDOT STD. PLAN R-2.3.1)
17. INSTALL 30" RCP END SECTION (NDOT STD. PLAN R-2.3.1)
18. INSTALL 36" RCP END SECTION (NDOT STD. PLAN R-2.3.1)
19. INSTALL 42" RCP END SECTION (NDOT STD. PLAN R-2.3.1)
20. PIPE PENETRATION (SEE DETAIL 4, DRAWING SD-25)
21. CONSTRUCT CONCRETE COLLAR (SEE DETAIL 2, DRAWING SD-25)
22. CONSTRUCT BRICK AND MORTAR PLUG (SEE DETAIL 1, DRAWING SD-25)
23. INSTALL 48" RCP (USDCCA STD. DWG NO. 503.2)
24. INSTALL 48" RCP END SECTION (NDOT STD. PLAN R-2.3.1)
25. INSTALL DRIVEWAY (USDCCA STD. DWG NO. 224)
26. CONSTRUCT TYPE "CM" DROP INLET (USDCCA STD. DWG. NO. 422)

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.

APPROVED FOR CONSTRUCTION

LVVWD WILL HAVE TO BE PRESENT AND VIEW INSTALLATION OF STORM DRAIN THAT WILL BE INSTALLED THAT MAY AFFECT THE WATER MAINS

LVVWD ENGINEERING SERVICES MANAGER — DATE
PROJECT NO. 124568 — 1ST APP'D 10/10/16

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

(1) STORM DRAIN LATERAL # (SEE SHEETS SD-20 THRU SD-24)

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY DS-4739A ON FILE AT THE CITY OF LAS VEGAS FOR THE SUBJECT PROJECT

JERRY SLATER, P.E. 14167 — DATE 9.1.17

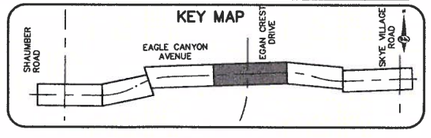
FLOOD ZONE

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.

KEY MAP



SCALE 40 0 40 80 FEET

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

FAST Call before you dig Underground. 1-702-432-5300

Call before you Dig Avoid digging underground utility lines. It's simple. Call 811 or 1-800-227-2600

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PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP.	APP. DATE
1	REVISED STORM DRAIN	8/2/17	JJS		

NINETY-FIVE MANAGEMENT LLC

SKYE CANYON II PHASE 2 MASS GRADING
EAGLE CANYON AVENUE PLAN AND PROFILE
"ECA" 47+00.00 TO "ECA" 56+00.00

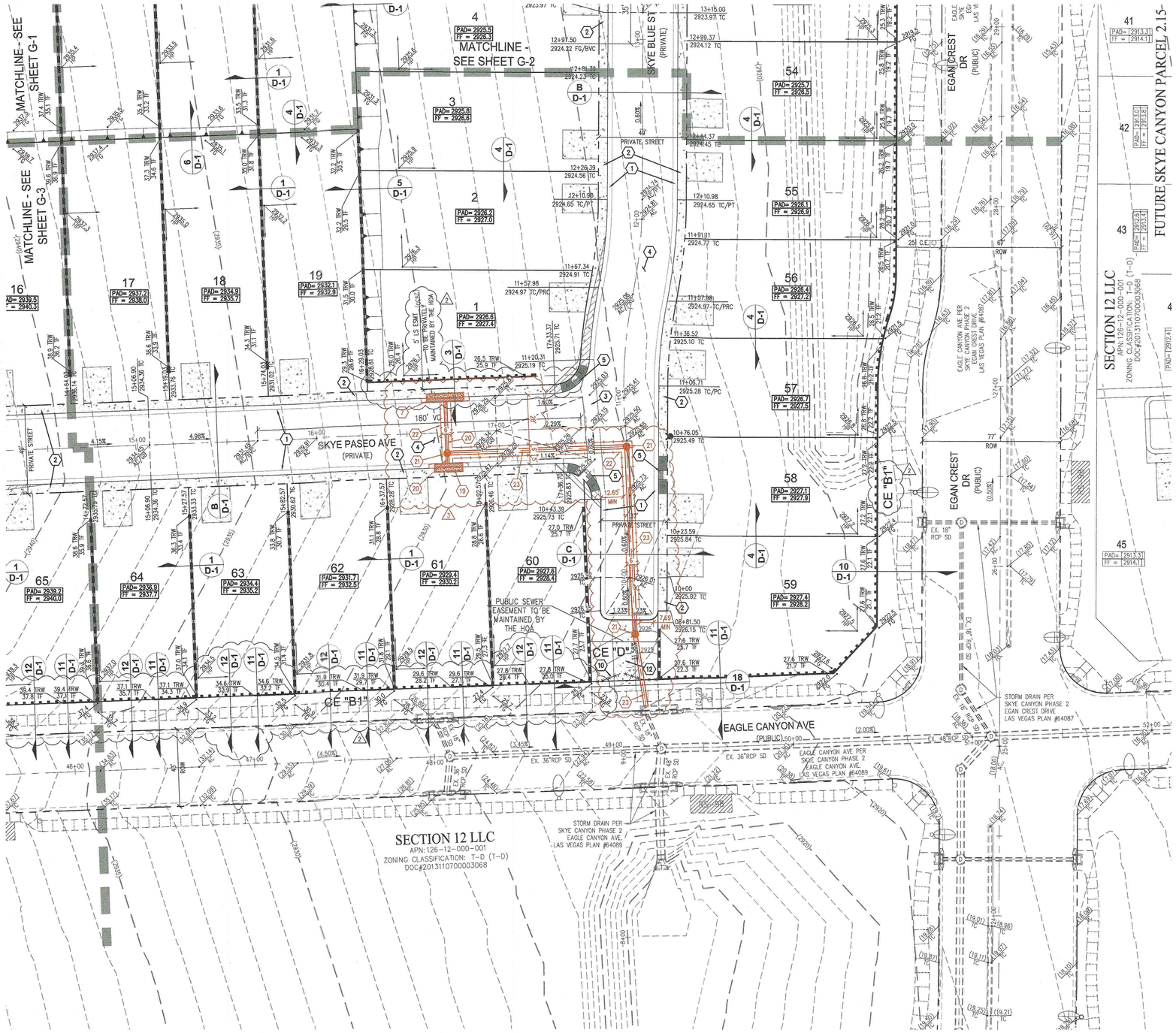
DATE: 8/3/16
DRAFTER: JAS
DESIGNER: DAM
CHECKED: JSR
PROJECT NO.
OLY1501-001

PROFESSIONAL ENGINEER - STATE OF NEVADA - JERRY M. SLATER - Exp. 06/30/2018 - CIVIL - No. 14167 - 9.1.17

SD-17
SHEET 20 OF 32

APPENDIX H

CD of Electronic Files and Improvement Plans


MATCHLINE - SEE SHEET G-1
MATCHLINE - SEE SHEET G-3
MATCHLINE - SEE SHEET G-2
SKYE BLUE ST (PRIVATE)
SKYE PASEO AVE (PRIVATE)
EGAN CREST DR (PUBLIC)
EAGLE CANYON AVE (PUBLIC)
PRIVATE STREET
FUTURE SKYE CANYON PARCEL 2.15-
SECTION 12 LLC
APN:126-12-000-001
ZONING CLASSIFICATION: T-D (T-D)
DOC#20131070000303068
EAGLE CANYON AVE PER SKYE CANYON PHASE 2 EGAN CREST DRIVE LAS VEGAS PLAN #64087
EAGLE CANYON AVE PER SKYE CANYON PHASE 2 EAGLE CANYON AVE. LAS VEGAS PLAN #64089
STORM DRAIN PER SKYE CANYON PHASE 2 EGAN CREST DRIVE LAS VEGAS PLAN #64087
STORM DRAIN PER SKYE CANYON PHASE 2 EAGLE CANYON AVE. LAS VEGAS PLAN #64089
PUBLIC SEWER EASEMENT TO BE MAINTAINED BY THE HOA
5' LS ESMT TO BE PRIVATE MAINTAINED BY THE HOA
CE "B1"
CE "B"
CE "B1*"
CE "D"
EX. 18" RCP SD
EX. 36"RCP SD
EX. 48"RCP SD
PAD= 2923.5 FF = 2928.3
PAD= 2928.8 FF = 2928.6
PAD= 2926.2 FF = 2927.0
PAD= 2926.6 FF = 2927.4
PAD= 2927.2 FF = 2936.0
PAD= 2934.9 FF = 2935.7
PAD= 2937.1 FF = 2937.9
PAD= 2939.5 FF = 2940.3
PAD= 2939.2 FF = 2940.0
PAD= 2936.9 FF = 2937.7
PAD= 2934.4 FF = 2935.2
PAD= 2931.7 FF = 2932.5
PAD= 2929.4 FF = 2930.2
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PAD= 2926.7 FF = 2927.5
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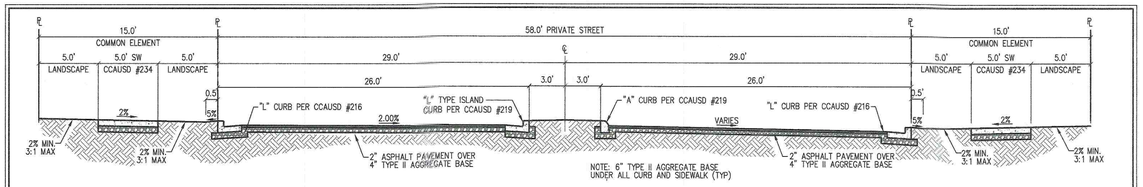
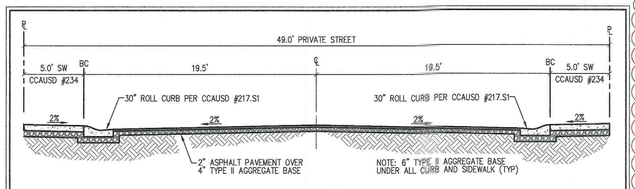
PAD= 2923.3 FF = 2924.1
PAD= 2913.3 FF = 2914.1
PAD= 2913.3 FF = 2914.1
PAD= 2913.3 FF = 2914.1
PAD= 2913.3 FF = 2914.1
PAD= 2917.2 FF = 2917.4
PAD= 2913.3 FF = 2913.5
PAD= 2913.3 FF = 2913.5
PAD= 2913.3 FF = 2913.5
PAD= 2913.3 FF = 2914.1
180' VC
77' ROW
60' ROW
46' PRIVATE STREET
4.15%
4.98%
1.14%
1.29%
1.60%
12.65' MIN
7.69' MIN
0.60%
0.66%
(4.50%)
(3.45%)
(2.00%)
(2.50%)
(2.50%)
(2.50



A. 58' INTERIOR STREET SECTION (PRIVATE)
NOT TO SCALE



B. 49' INTERIOR STREET SECTION (PRIVATE)
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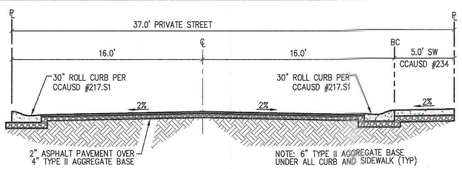

C. 37' INTERIOR STREET SECTION (PRIVATE)
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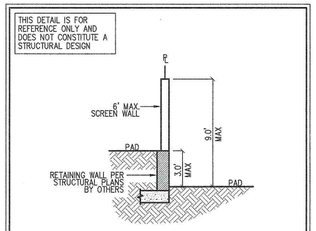
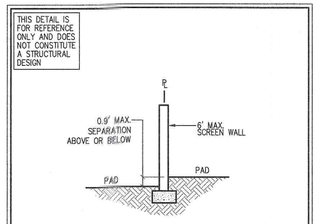
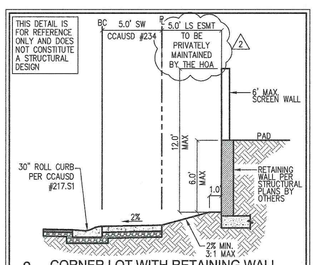


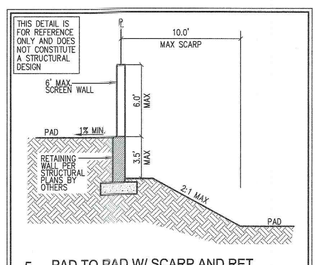
1. PAD TO PAD WITH RETAINING WALL
NOT TO SCALE ON-SITE



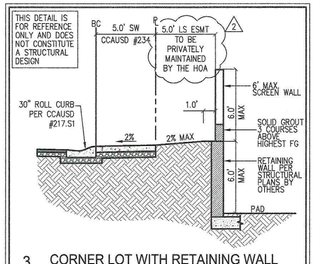
4. PAD TO PAD W/O RETAINING WALL
NOT TO SCALE ON-SITE



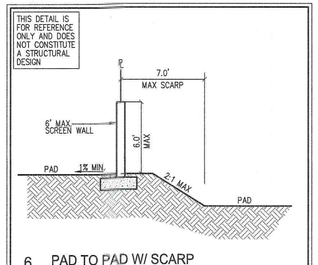
2. CORNER LOT WITH RETAINING WALL
NOT TO SCALE ON-SITE



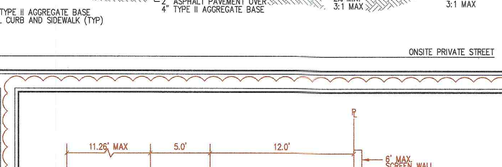
5. PAD TO PAD W/ SCARP AND RET.
NOT TO SCALE ON-SITE



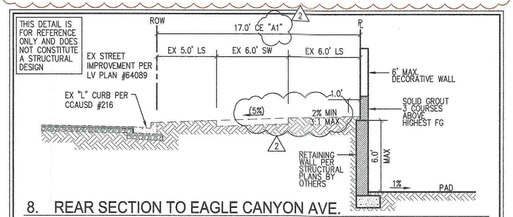
3. CORNER LOT WITH RETAINING WALL
NOT TO SCALE ON-SITE



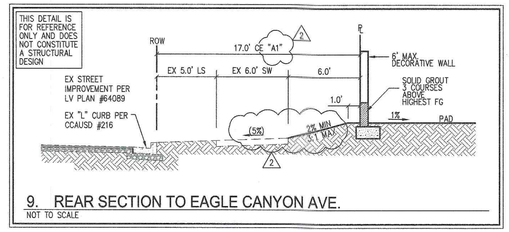
6. PAD TO PAD W/ SCARP
NOT TO SCALE ON-SITE



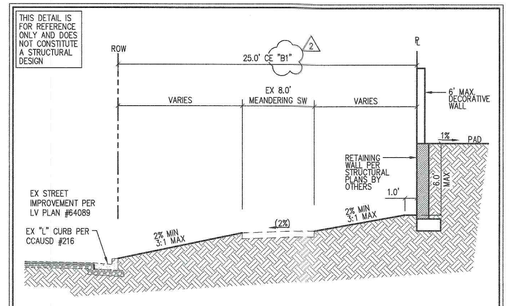
7. WEST PERIMETER SECTION
NOT TO SCALE



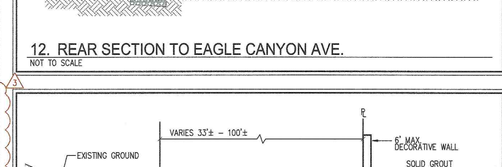
8. REAR SECTION TO EAGLE CANYON AVE.
NOT TO SCALE



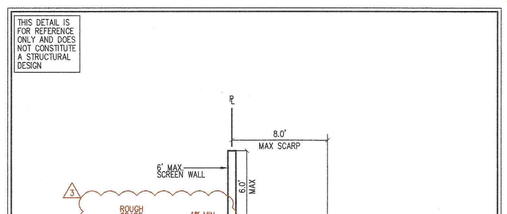
9. REAR SECTION TO EAGLE CANYON AVE.
NOT TO SCALE



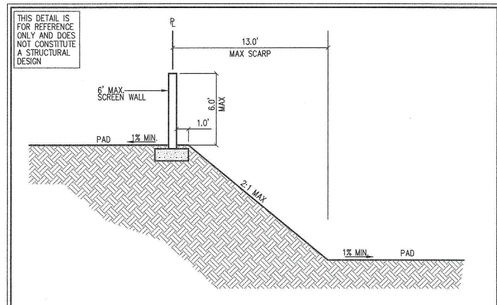
10. REAR SECTION TO EGAN CREST DR.
NOT TO SCALE



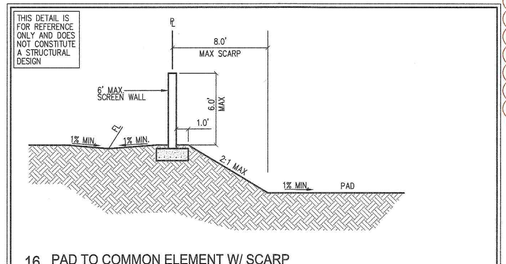
13. REAR SECTION TO THE ARROYO
NOT TO SCALE



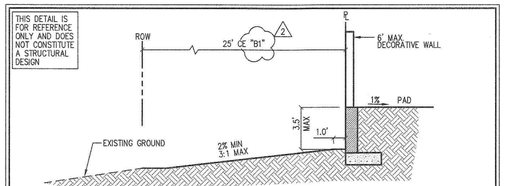
14. PAD TO PAD W/ SCARP AND RET.
NOT TO SCALE ON-SITE



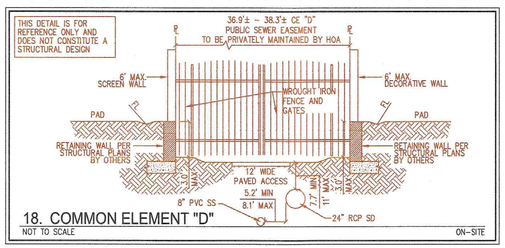
15. PAD TO PAD W/ SCARP
NOT TO SCALE ON-SITE



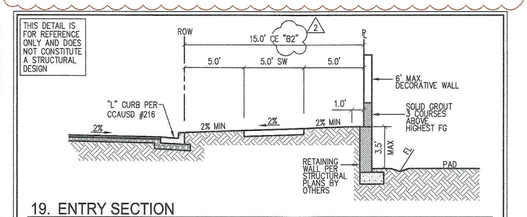
16. PAD TO COMMON ELEMENT W/ SCARP
NOT TO SCALE ON-SITE



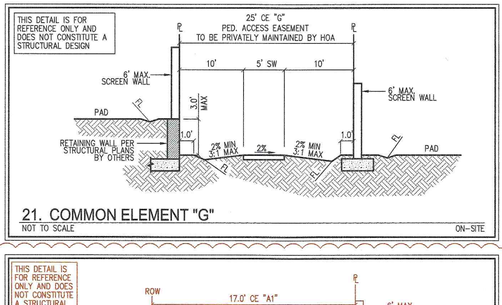
17. SIDE SECTION TO EGAN CREST DRIVE
NOT TO SCALE



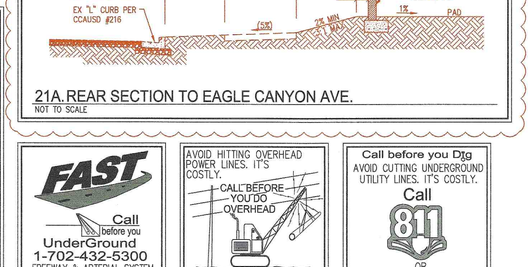
18. COMMON ELEMENT "D"
NOT TO SCALE ON-SITE



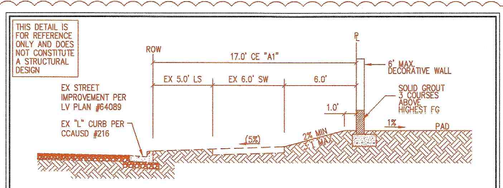
19. ENTRY SECTION
NOT TO SCALE



21. COMMON ELEMENT "G"
NOT TO SCALE ON-SITE



20. ENTRY SECTION
NOT TO SCALE



21A. REAR SECTION TO EAGLE CANYON AVE.
NOT TO SCALE

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

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.
2	REVISE DETAILS 7, 14, AND 18 AND ADD DETAIL 21A	10/18/18	DNP		
1	ADD LS ESMT AT CORNER LOTS, SPLIT C.E.	3/15/18	BCS		
	C.E. "A"&"B" AT ENTRANCE, & REVISE FRONTAGE GRADING				

CITY OF LAS VEGAS

PulteGroup

SKYE CANYON PARCEL 2.16
STREET SECTIONS AND GRADING DETAILS I

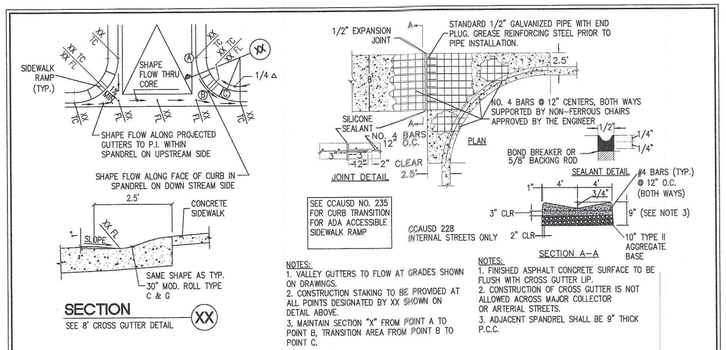
S12 T19 R59

DATE: 09/19/2017
DRAFTER: ES
DESIGNER: HN
CHECKED: MK
PROJECT NO.
OLY1607-002

D-1
SHEET 8 OF 27

H#68613
CLV#107Y5053

X:\oly1607-002_skye canyon_parcel 2.16\dwg\Improv\oly1607-002_dtl.dwg 10/24/2018 11:07 AM Dominic Ponsiglion

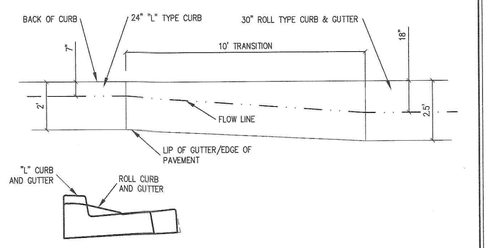


NOTES:
1. VALLEY GUTTERS TO FLOW AT GRADES SHOWN ON DRAWINGS.
2. CONSTRUCTION STAKING TO BE PROVIDED AT ALL POINTS DESIGNATED BY XX SHOWN ON DETAIL ABOVE.
3. MAINTAIN SECTION "X" FROM POINT A TO POINT B, TRANSITION AREA FROM POINT B TO POINT C.

NOTES:
1. FINISHED ASPHALT CONCRETE SURFACE TO BE FLUSH WITH CROSS GUTTER LIP.
2. CONSTRUCTION OF CROSS GUTTER IS NOT ALLOWED ACROSS MAJOR COLLECTOR OR ARTERIAL STREETS.
3. ADJACENT SPANDREL SHALL BE 9" THICK P.C.C.

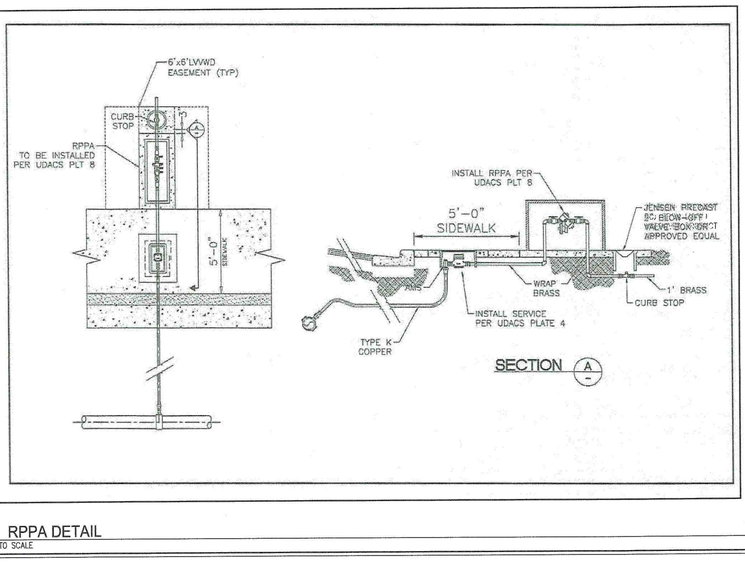
22. 8' WIDE MODIFIED CROSS GUTTER

NOT TO SCALE



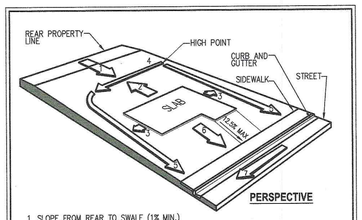
23. 10' L CURB TO ROLL CURB TRANSITION

NOT TO SCALE



29. RPPA DETAIL

NOT TO SCALE

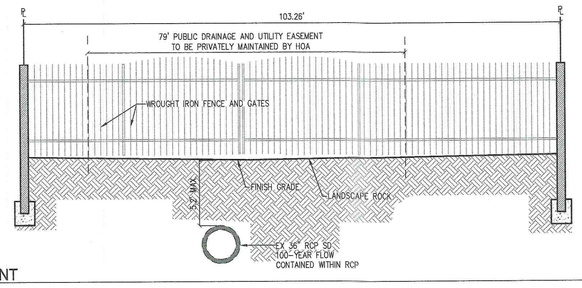


1. SLOPE FROM REAR TO SWALE (1% MIN.)
2. SLOPE FROM HOUSE TO SWALE (2% MIN.)
3. SLOPE FROM HOUSE TO SIDE SWALE (5% MIN.)
4. REAR SWALE (10' MIN. FROM REAR OF HOUSE)
5. SLOPE SIDE SWALE TO CURB (1% MIN.)
6. SLOPE FROM HOUSE TO SIDEWALK (5% MIN.)
7. SLOPE OF STREET

24. TYPE "A" LOT GRADING (TYP.)

NOT TO SCALE

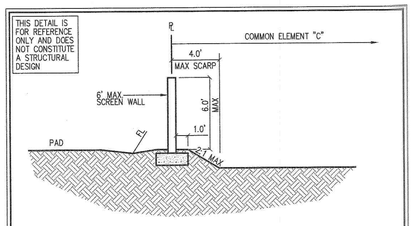
THIS DETAIL IS FOR REFERENCE ONLY AND DOES NOT CONSTITUTE A STRUCTURAL DESIGN



25. DRAINAGE EASEMENT

NOT TO SCALE — ON-SITE

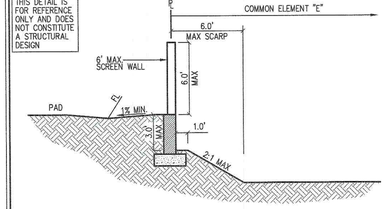
THIS DETAIL IS FOR REFERENCE ONLY AND DOES NOT CONSTITUTE A STRUCTURAL DESIGN



26. PAD TO COMMON ELEMENT W/ SCARP

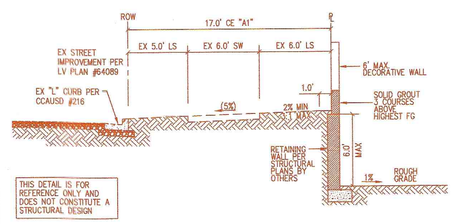
NOT TO SCALE — ON-SITE

THIS DETAIL IS FOR REFERENCE ONLY AND DOES NOT CONSTITUTE A STRUCTURAL DESIGN



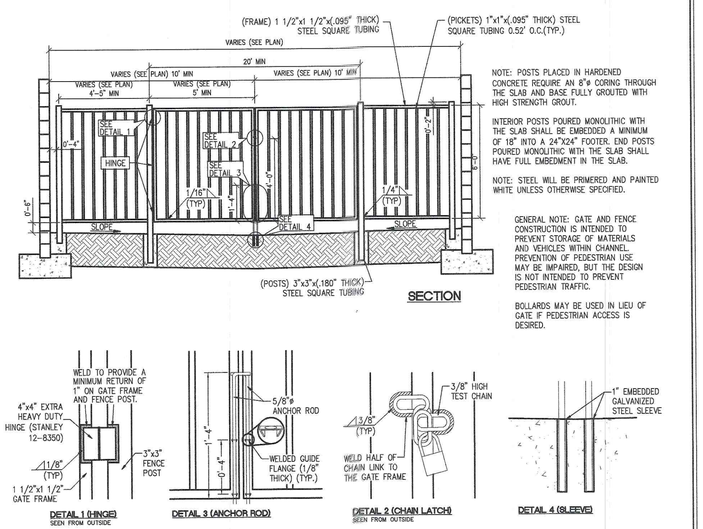
27. PAD TO COMMON ELEMENT W/ SCARP

NOT TO SCALE — ON-SITE



28. REAR SECTION TO EAGLE CANYON AVE.

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.

GENERAL NOTE: GATE AND FENCE CONSTRUCTION IS INTENDED TO PREVENT STORAGE OF MATERIALS AND VEHICLES WITHIN CHANNEL. PREVENTION OF PEDESTRIAN USE MAY BE IMPAIRED, BUT THE DESIGN IS NOT INTENDED TO PREVENT PEDESTRIAN TRAFFIC.

BOLLARDS MAY BE USED IN LIEU OF GATE IF PEDESTRIAN ACCESS IS DESIRED.

30. MODIFIED WROUGHT IRON GATE DETAIL

NOT TO SCALE — (CLV STD DWG 425.S1)

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES MANAGER

DATE _____ PROJECT NO. 125245

LVVWD APPROVED FIRE FLOW 1,500 GPM AT 20 PSI RESIDUAL

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.
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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.	APP. DATE
3	REVISE DETAIL 28	10/16/18	DMP		

CITY OF LAS VEGAS

PulteGroup

SKYE CANYON PARCEL 2.16
GRADING DETAILS II

S 12
T 19
R 59

DATE: 09/19/2017
DRAFTER: ES
DESIGNER: HN
CHECKED: MK

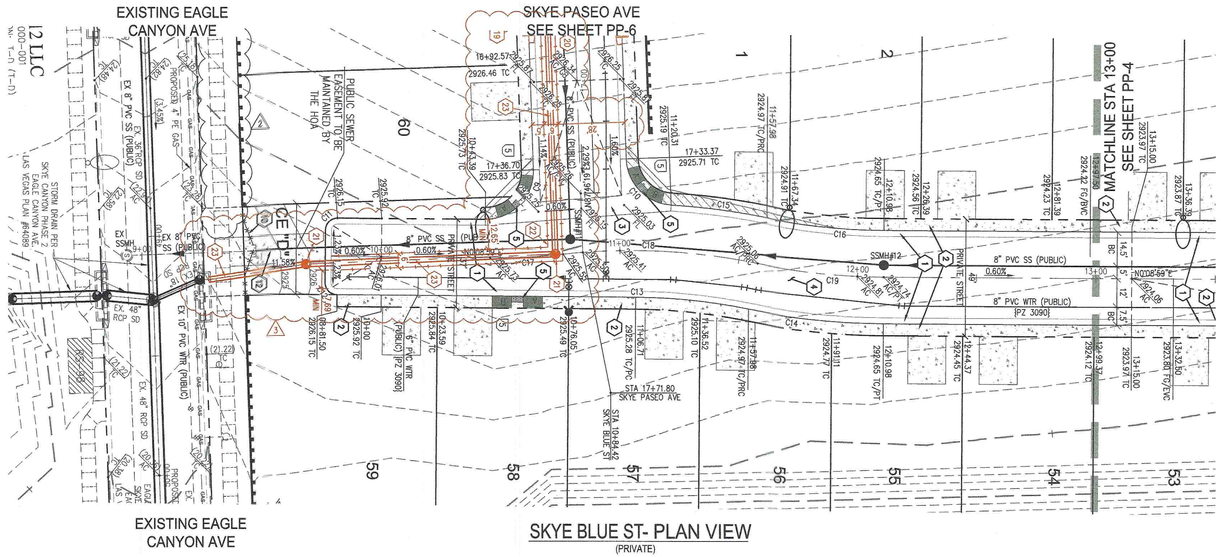
PROJECT NO.
OLY1607-002

PROFESSIONAL ENGINEER STATE OF NEVADA
TIMOTHY M. MULROONEY
Exp. 12/31/2019
CIVIL
No. 22938
10/24/18

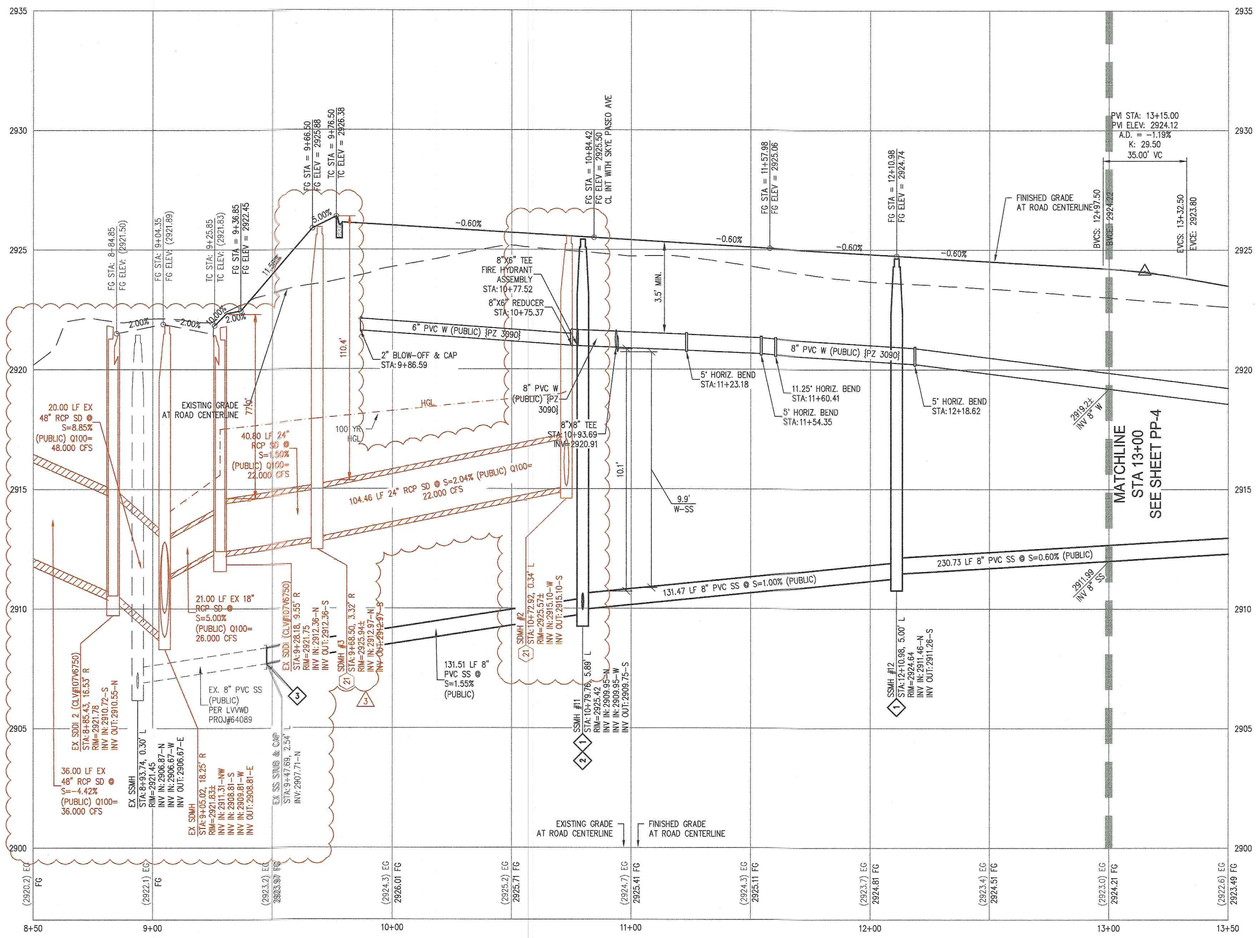
D-2
SHEET 9 OF 27

H#68613
CLV#107Y5053

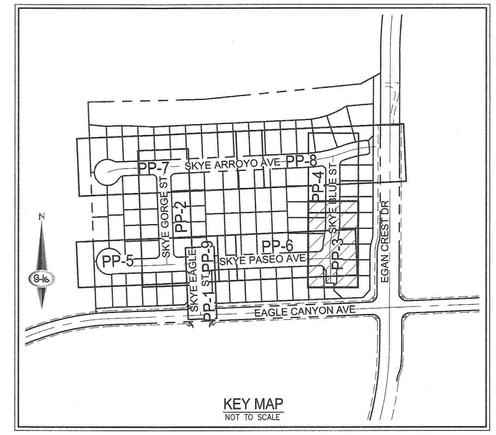
J:\oly\1607-002 skye canyon parcel 2.16\dwg\mpreva\oly1607-002 d1.dwg 10/24/2018 11:07 AM Dominic Prandilon



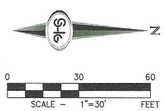
SKYE BLUE ST- PLAN VIEW
(PRIVATE)



SKYE BLUE ST- PROFILE VIEW
HORIZ: 1" = 30'
VERT: 1" = 3'



KEY MAP
NOT TO SCALE



CALL SOUTHWEST GAS AT 702-651-2111 FOR STANDBY WHEN EXCAVATING OVER OR NEAR HIGH PRESSURE GAS LINES

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.

SEWER CONNECTION NOTE

ONE OR MORE SEGMENTS OF THE DOWNSTREAM SEWER SYSTEM THAT WILL SERVE THIS PROJECT HAS NOT BEEN COMPLETED AND/OR ACCEPTED FOR MAINTENANCE BY THE CITY OF LAS VEGAS. ANY WORK DONE ON THIS PROJECT PRIOR TO THE COMPLETION AND/OR ACCEPTANCE OF THE DOWNSTREAM SEWER SYSTEM(S) SHALL BE DONE AT THE DEVELOPER'S OWN RISK. THE CITY OF LAS VEGAS RESERVES THE RIGHT TO PREVENT THE PHYSICAL CONNECTION OF THIS PROJECT INTO THE DOWNSTREAM SEWER SYSTEM UNTIL ALL SEGMENTS HAVE BEEN COMPLETED AND ACCEPTED FOR MAINTENANCE, OR UNTIL SUCH TIME AS THEY ARE DEEMED AVAILABLE FOR SERVICE.

RAMP TRANSITION LENGTHS FOR 1:12 SIDE SLOPES

CASE NO.	GRADE % "B" TO "A"	"A" MIN.	"B" 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'

SIDEWALK RAMPS USING AMOR TILE TRUNCATED DOMES OR EQUIVALENT PER CCAUSD NO. 235, CASE I

WATER NOTES

MAINTAIN MINIMUM TWENTY-FOUR (24") INCH COVER PER UDACS SEC. 2.08.04. GRADING MUST BE COMPLETED PRIOR TO WATERLINE INSTALLATION

SEWER NOTES

1. INSTALL 48" DIAMETER SANITARY SEWER MANHOLE WITH PRECAST BASE PER DCSWCS SD-1A, SD-1B, SINGLE LID (24")
2. MANHOLE SHALL BE CORROSION PROTECTED WITH AGENCY APPROVED FACTORY INSTALLED PVC LINER OR FIELD APPLIED COATING PER DCSWCS SECTION 3.16.8 (A AND B)
3. FIELD VERIFY AND CONNECT TO EXISTING STUB

WATER PRESSURE ZONE

WATER PRESSURE ZONE 3090

CURVE TABLE - CENTERLINE

CURVE	LENGTH	RADIUS	DELTA	TANGENT
C17	30.56'	266.50'	6°34'11"	15.30'
C18	81.83'	266.50'	17°35'34"	41.24'
C19	53.00'	275.50'	11°01'24"	26.58'

CURVE TABLE - BACK OF CURB

CURVE	LENGTH	RADIUS	DELTA	TANGENT
C9	32.25'	20.00'	92°22'40"	20.85'
C10	29.57'	20.00'	84°41'54"	18.23'
C11	7.85'	5.00'	90°00'00"	5.00'
C12	7.85'	5.00'	90°00'00"	5.00'
C13	47.52'	247.00'	11°01'24"	23.83'
C14	56.76'	295.00'	11°01'24"	28.47'
C15	40.43'	286.00'	8°05'58"	20.25'
C16	49.25'	256.00'	11°01'24"	24.70'

GRADING NOTES

1. INSTALL 30" ROLL CURB PER CCAUSD NO. 217.S1 OVER 6" TYPE II AGGREGATE BASE
2. INSTALL 5" WIDE CONCRETE SIDEWALK (5" THICK OVER 6" TYPE 2 AGGREGATE BASE) PER CCAUSD #234
3. INSTALL 8-FT MODIFIED CROSS GUTTER PER DETAIL 22 ON SHEET D-2
4. INSTALL 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
5. CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES OR EQUIVALENT CCAUSD NO. 235, CASE I & 235.1
6. CONSTRUCT 10' TRANSITION FROM "L" CURB TO ROLL CURB PER DETAIL 23 ON SHEET D-2
7. INSTALL 20 LF TYPE "CMZ" DROP INLET PER CCAUSD #412.1 AND #421. SEE DROP INLET NOTE ON SHEET U-2
8. INSTALL "A" TYPE ISLAND CURB PER CCAUSD #219
9. INSTALL "L" TYPE CURB AND GUTTER PER CCAUSD #216
10. INSTALL WROUGHT IRON FENCE W/ACCESS GATES, DESIGN BY OTHERS
11. REMOVE EXISTING 36" STORM DRAIN END SECTION PER SKYE CANYON PHASE 2 #63875
12. INSTALL 12' WIDE PAVED ACCESS PATH
13. INSTALL CLASS III RCP SD PIPE SIZE PER PLAN - SEE SHEET PP-4 AND PP-8 FOR PROFILES
14. INSTALL "L" TYPE ISLAND CURB PER CCAUSD #219
15. INSTALL 8-FT CROSS GUTTER PER STD DWG 228
16. INSTALL 24" SIDEWALK DRAIN PER STD DWG 236
17. INSTALL WROUGHT IRON FENCE PER DETAIL 30 ON SHEET D-2
18. INSTALL WROUGHT IRON GATES PER DETAIL 30 ON SHEET D-2
19. INSTALL 15 LF TYPE "CMZ" DROP INLET PER CCAUSD #412.1 AND #421. SEE DROP INLET NOTE ON SHEET U-2
20. INSTALL 18" CLASS III RCP STORM DRAIN
21. INSTALL 48" TYPE I SDMH PER CCAUSD #403
22. SAWCUT EXISTING AC PAVEMENT AND REPLACE TO MATCH EXISTING PAVEMENT SECTION
23. INSTALL 24" CLASS III RCP STORM DRAIN

SEE SHEET C-3 FOR ABBREVIATIONS AND QUANTITIES

LEGAL DESCRIPTION

LYING WITHIN THE SOUTH HALF (S1/2) OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA.

BENCHMARK

BM 7LV90 7NWS CITY OF LAS VEGAS RIVET AND ROUND PLATE IN CONCRETE CYLINDER, SOUTHEAST CORNER OF HUALAPAI WAY AND IRON MOUNTAIN ROAD.

ELEV: 2840.13 FEET
ELEW: (865.67 METERS) (NAVD 1988)

BASIS OF BEARINGS

NORTH 00°08'59" EAST, BEING THE BEARING OF THE EAST LINE OF THE SOUTHEAST QUARTER (SE 1/4) OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP THEREOF IN BOOK 147, PAGE 71 OF PLATS IN THE CLARK COUNTY RECORDER'S OFFICE, NEVADA.

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES MANAGER

DATE _____ PROJECT No. 125245

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

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.
1	ADD STORM DRAIN AND GRADING NOTES.	10/23/18	DNP		
2	ADD LS ESMT AT CORNER LOTS, SPLIT C.E.	3/13/18	BKS		
	C.E. "A" & "B" AT ENTRANCE, & REVISE FRONTAGE GRADING				

CITY OF LAS VEGAS

PulteGroup

SKYE CANYON PARCEL 2.16
PLAN AND PROFILE - SKYE BLUE ST 8+50 TO 13+00

S12 T 19 R 59

DATE: 09/19/2017
DRAFTER: ES
DESIGNER: HN
CHECKED: MK

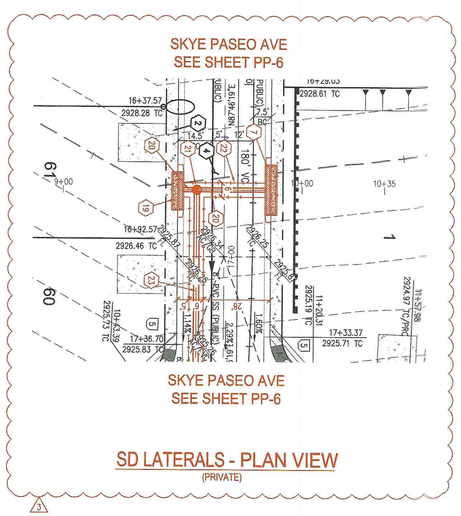
PROJECT NO.
OLY1607-002

PROFESSIONAL ENGINEER — STATE OF NEVADA — TIMOTHY M. MULROONEY — Exp. 12/31/2019 — CIVIL — No. 22938 — 10/24/18

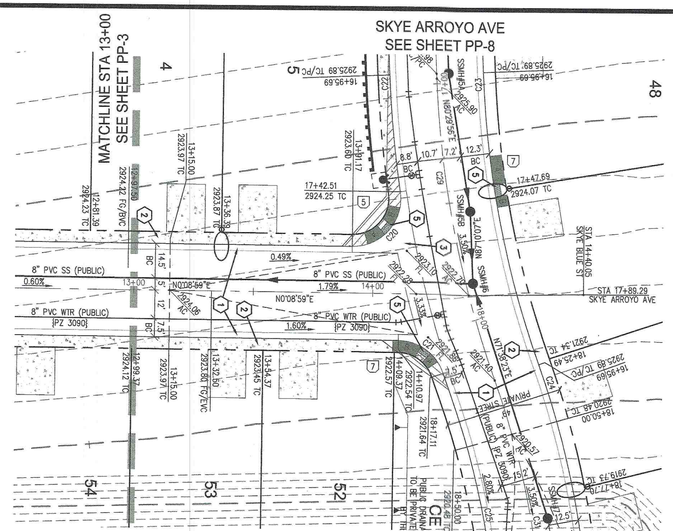
PP-3
SHEET 12 OF 27

H#68613
CLV#107Y5053

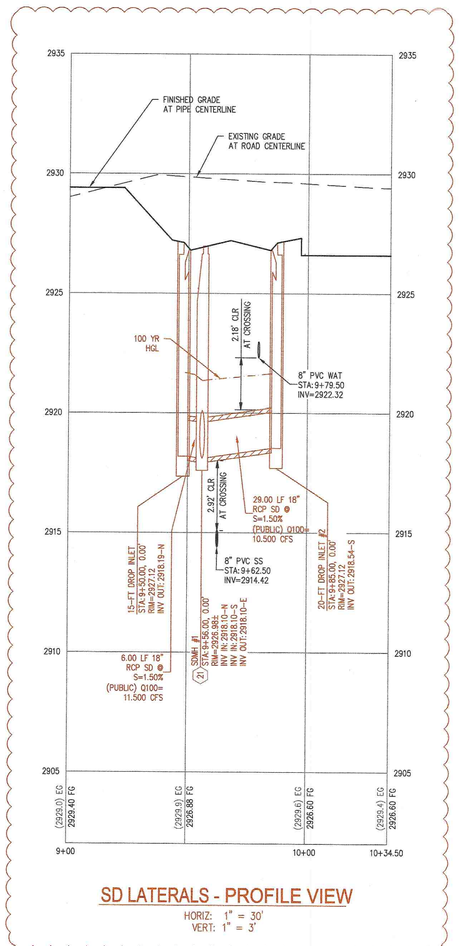
J:\oly1607-002 skye canyon parcel 2.16\dwg\mproa\oly1607-002 prp.dwg 10/24/2018 11:09 AM Dominic Pandigan



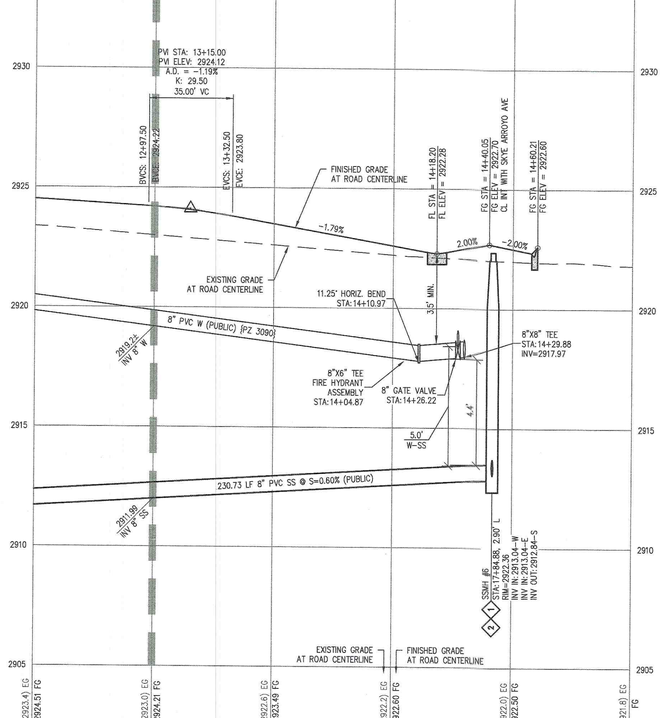
SD LATERALS - PLAN VIEW
(PRIVATE)



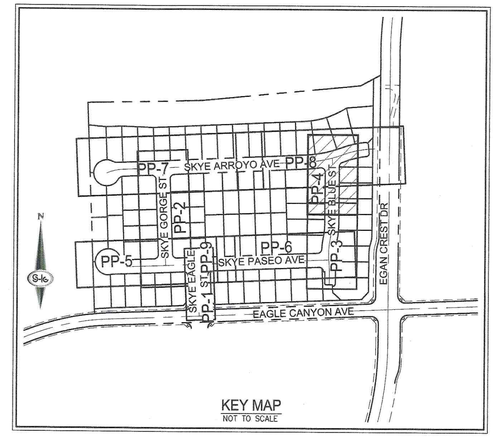
SKYE BLUE ST- PLAN VIEW
(PRIVATE)



SD LATERALS - PROFILE VIEW
HORIZ: 1" = 30'
VERT: 1" = 3'



SKYE BLUE ST - 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

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.

SEWER CONNECTION NOTE

ONE OR MORE SEGMENTS OF THE DOWNSTREAM SEWER SYSTEM THAT WILL SERVE THIS PROJECT HAS NOT BEEN COMPLETED AND/OR ACCEPTED FOR MAINTENANCE BY THE CITY OF LAS VEGAS. ANY WORK DONE ON THIS PROJECT PRIOR TO THE COMPLETION AND/OR ACCEPTANCE OF THE DOWNSTREAM SEWER SYSTEM(S) SHALL BE DONE AT THE DEVELOPER'S OWN RISK. THE CITY OF LAS VEGAS RESERVES THE RIGHT TO PREVENT THE PHYSICAL CONNECTION OF THIS PROJECT INTO THE DOWNSTREAM SEWER SYSTEM UNTIL ALL SEGMENTS HAVE BEEN COMPLETED AND ACCEPTED FOR MAINTENANCE, OR UNTIL SUCH TIME AS THEY ARE DEEMED AVAILABLE FOR SERVICE.

RAMP TRANSITION LENGTHS FOR 1:12 SIDE SLOPES

CASE NO.	GRADE % "B" TO "A"	"A" MIN.	"B" 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'

SIDEWALK RAMPS USING AMOR TILE TRUNCATED DOMES OR EQUIVALENT PER CCAUSD NO. 235, CASE I

WATER NOTES

MAINTAIN MINIMUM TWENTY-FOUR (24") INCH COVER PER UDACS SEC. 2.08.04. GRADING MUST BE COMPLETED PRIOR TO WATERLINE INSTALLATION

SEWER NOTES

1. INSTALL 48" DIAMETER SANITARY SEWER MANHOLE WITH PRECAST BASE PER DCSWCS SD-1A, SD-1B, SINGLE LID (24")
2. MANHOLE SHALL BE CORROSION PROTECTED WITH AGENCY APPROVED FACTORY INSTALLED PVC LINER OR FIELD APPLIED COATING PER DCSWCS SECTION 3.16.8 (A AND B)
3. FIELD VERIFY AND CONNECT TO EXISTING STUB

WATER PRESSURE ZONE

WATER PRESSURE ZONE 3090

CURVE TABLE - BACK OF CURB

CURVE	LENGTH	RADIUS	DELTA	TANGENT
C20	34.57'	20.00'	99°02'06"	23.43'
C21	24.75'	20.00'	70°53'43"	14.24'
C22	48.97'	444.00'	6°19'10"	24.51'
C23	124.72'	405.00'	17°38'41"	62.86'
C24	90.00'	369.50'	13°57'20"	45.22'
C25	79.72'	330.50'	13°49'11"	40.05'

CURVE TABLE - CENTERLINE

CURVE	LENGTH	RADIUS	DELTA	TANGENT
C29	130.73'	424.50'	17°38'41"	65.89'
C30	130.73'	424.50'	17°38'41"	65.89'
C31	92.35'	350.00'	15°07'06"	46.45'

GRADING NOTES

1. INSTALL 30" ROLL CURB PER CCAUSD NO. 217.S1 OVER 6" TYPE II AGGREGATE BASE
2. INSTALL 5' WIDE CONCRETE SIDEWALK (5" THICK OVER 6" TYPE 2 AGGREGATE BASE) PER CCAUSD #234
3. INSTALL 8-FT MODIFIED CROSS GUTTER PER DETAIL 22 ON SHEET D-2
4. INSTALL 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
5. CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES OR EQUIVALENT CCAUSD NO. 235, CASE I & 235.1
6. CONSTRUCT 10' TRANSITION FROM "L" CURB TO ROLL CURB PER DETAIL 23 ON SHEET D-2
7. INSTALL 20 LF TYPE "CM2" DROP INLET PER CCAUSD #412.1 AND #421. SEE DROP INLET NOTE ON SHEET D-2
8. INSTALL "A" TYPE ISLAND CURB PER CCAUSD #219
9. INSTALL "L" TYPE CURB AND GUTTER PER CCAUSD #216
10. INSTALL WROUGHT IRON FENCE W/ACCESS GATES, DESIGN BY OTHERS
11. REMOVE EXISTING 36" STORM DRAIN END SECTION PER SKYE CANYON PHASE 2 #63675
12. INSTALL 12' WIDE PAVED ACCESS PATH
13. INSTALL CLASS III RCP SD PIPE SIZE PER PLAN – SEE SHEET PP-4 AND PP-8 FOR PROFILES
14. INSTALL "L" TYPE ISLAND CURB PER CCAUSD #219
15. INSTALL 8-FT CROSS GUTTER PER STD DWG 228
16. INSTALL 24" SIDEWALK DRAIN PER STD DWG 236
17. INSTALL WROUGHT IRON FENCE PER DETAIL 30 ON SHEET D-2
18. INSTALL WROUGHT IRON GATES PER DETAIL 30 ON SHEET D-2
19. INSTALL 15 LF TYPE "CM2" DROP INLET PER CCAUSD #412.1 AND #421. SEE DROP INLET NOTE ON SHEET D-2
20. INSTALL 18" CLASS III RCP STORM DRAIN
21. INSTALL 48" TYPE I SDMH PER CCAUSD #403
22. SAWCUT EXISTING AC PAVEMENT AND REPLACE TO MATCH EXISTING PAVEMENT SECTION
23. INSTALL 24" CLASS III RCP STORM DRAIN

SEE SHEET C-3 FOR ABBREVIATIONS AND QUANTITIES

LEGAL DESCRIPTION

LYING WITHIN THE SOUTH HALF (S1/2) OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA.

BENCHMARK

BM 7LVS0 7NWS CITY OF LAS VEGAS RIVET AND ROUND PLATE IN CONCRETE CYLINDER, SOUTHEAST CORNER OF HUALAPAI WAY AND IRON MOUNTAIN ROAD.

ELEV: 2840.13 FEET
ELEW: (865.67 METERS) (NAVD 1988)

BASIS OF BEARINGS

NORTH 00°08'59" EAST, BEING THE BEARING OF THE EAST LINE OF THE SOUTHEAST QUARTER (SE ¼) OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP THEREOF IN BOOK 147, PAGE 71 OF PLATS IN THE CLARK COUNTY RECORDER'S OFFICE, NEVADA.

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES MANAGER

DATE _____ PROJECT No. 125245

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

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.
3	ADD STORM DRAIN AND GRADING NOTES.	10/23/18	DMP		

CITY OF LAS VEGAS

PulteGroup

SKYE CANYON PARCEL 2.16

PLAN AND PROFILE - SKYE BLUE ST 13+00 TO 15+00

S12 T19 R59

DATE: 09/19/2017
DRAFTER: ES
DESIGNER: HN
CHECKED: MK

PROJECT NO.
OLY1607-002

PROFESSIONAL ENGINEER STATE OF NEVADA
TIMOTHY M. MULROONEY
Exp. 12/31/2019
CIVIL
No. 22938
10/24/18

PP-4
SHEET 13 OF 27

H#68613
CLV#10775053

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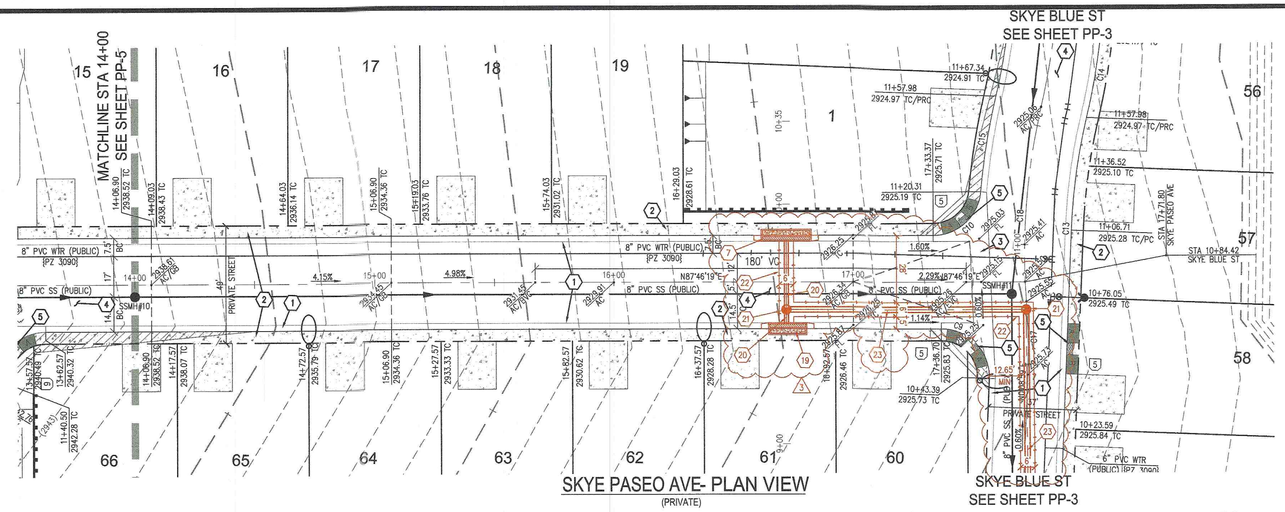

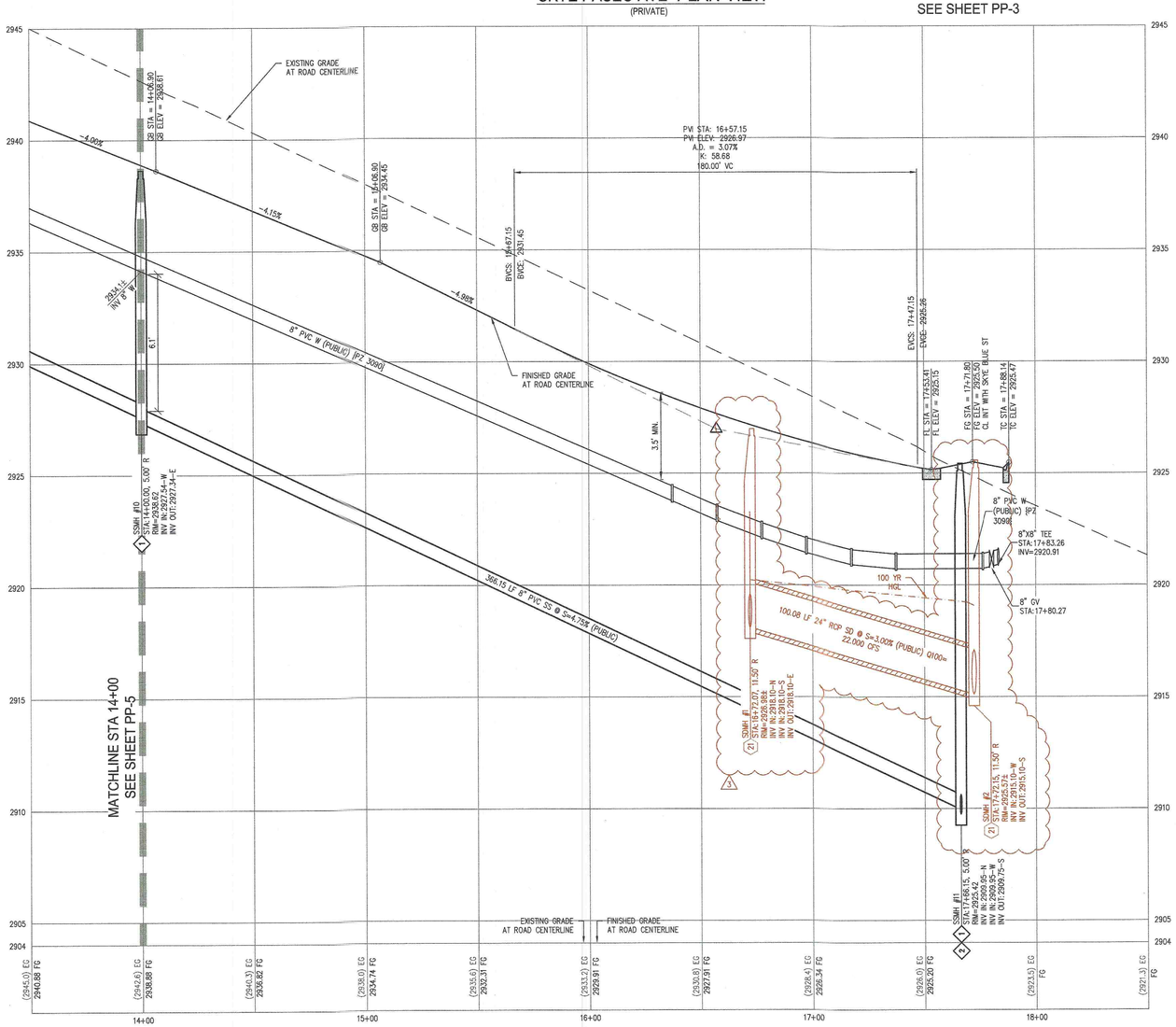

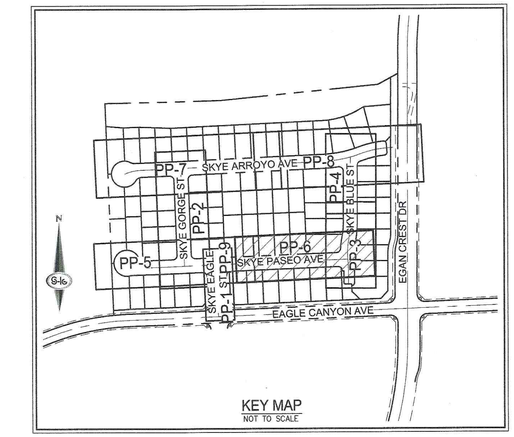

SCALE — 1"=30' (0 30 60 FEET)

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RAMP TRANSITION LENGTHS FOR 1:12 SIDE SLOPES

CASE NO.	GRADE "B" TO "A"	"A" MIN.	"B" MIN.
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SIDEWALK RAMPS USING AMOR TILE TRUNCATED DOMES OR EQUIVALENT PER CCAUSD NO. 235, CASE I

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WATER PRESSURE ZONE

WATER PRESSURE ZONE 3090

CURVE TABLE - BACK OF CURB

CURVE	LENGTH	RADIUS	DELTA	TANGENT
C9	32.25'	20.00'	92°22'40"	20.85'
C10	29.57'	20.00'	84°41'54"	18.23'
C13	47.52'	247.00'	11°01'24"	23.83'
C14	56.76'	295.00'	11°01'24"	28.47'
C15	40.43'	286.00'	8°05'58"	20.25'

CURVE TABLE - CENTERLINE

CURVE	LENGTH	RADIUS	DELTA	TANGENT
C17	30.56'	266.50'	6°34'11"	15.30'
C18	81.83'	266.50'	17°35'34"	41.24'

GRADING NOTES

1. INSTALL 30" ROLL CURB PER CCAUSD NO. 217.S1 OVER 6" TYPE II AGGREGATE BASE
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3

SEE SHEET C-3 FOR ABBREVIATIONS AND QUANTITIES

LEGAL DESCRIPTION

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BM 7LV90 7NWS CITY OF LAS VEGAS RIVET AND ROUND PLATE IN CONCRETE CYLINDER, SOUTHEAST CORNER OF HUALAPAI WAY AND IRON MOUNTAIN ROAD.

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APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES MANAGER

DATE _____ PROJECT No. 125245

FAST
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1-702-432-5300
FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T.)

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5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP'D	APP DATE
1	ADD STORM DRAIN AND GRADING NOTES	10/23/18	DMP		

CITY OF LAS VEGAS

PulteGroup

SKYE CANYON PARCEL 2.16
PLAN AND PROFILE - SKYE PASEO AVE 14+00 TO 18+50

S 12
T 19
R 59

DATE: 09/19/2017
DRAFTER: ES
DESIGNER: HN
CHECKED: MK
PROJECT NO.
OLY1607-002

PROFESSIONAL ENGINEER STATE OF NEVADA
TIMOTHY M. MULROONEY
Exp. 12/31/2019
CIVIL
No. 22938
10/24/18

PP-6
SHEET 15 OF 27

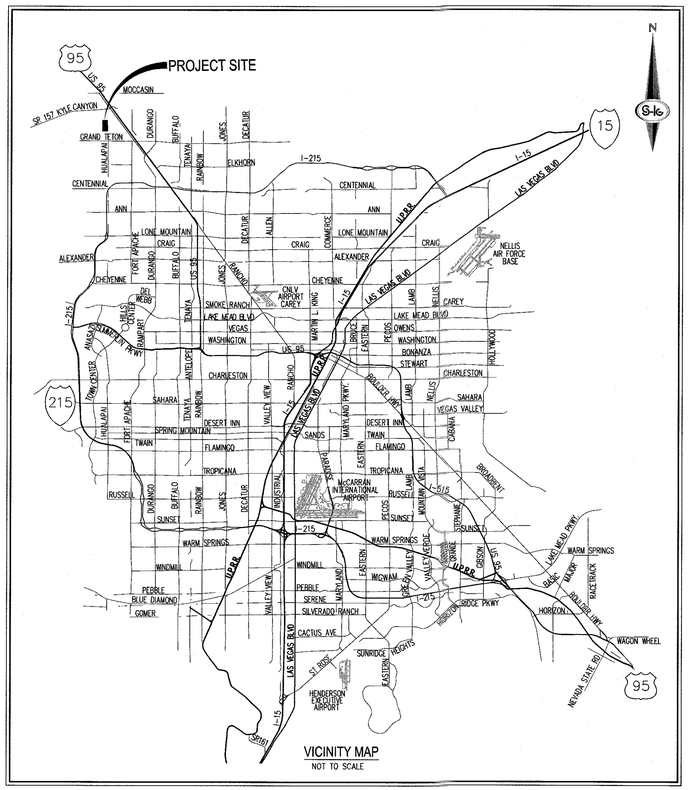
H#68613
CLV#107Y5053

J:\Oly\1607-002 sky\e canyon parcel 2.16\dwg\xmsr\Oly1607-002 xmp.dwg 10/24/2018 11:56 AM Dominic Pendigan

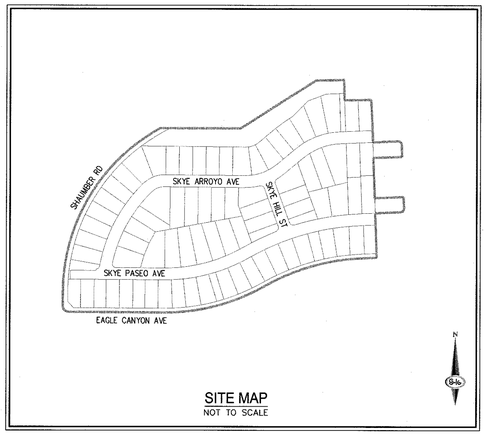
IMPROVEMENT PLANS
FOR
SKYE CANYON II PARCEL 2.17

A SINGLE FAMILY RESIDENTIAL SUBDIVISION OF THE SKYE CANYON MASTER-PLANNED COMMUNITY WITHIN THE CITY OF LAS VEGAS, NEVADA

APN: 126-12-312-001, 126-12-713-004, 126-12-713-005, 126-12-311-001, -002, -003, -004, -005, -006, -007, AND -008



SHEET LIST TABLE		
NO.	SHEET	TITLE
1	C-1	COVER SHEET
2	C-2	GENERAL NOTES
3	C-3	GENERAL NOTES AND QUANTITIES
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	D-1	STREET SECTIONS AND DETAILS
12	D-2	GRADING SECTIONS AND DETAILS – I
13	D-3	GRADING SECTIONS AND DETAILS – II
14	PP-1	PLAN AND PROFILE – I
15	PP-2	PLAN AND PROFILE – II
16	PP-3	PLAN AND PROFILE – III
17	PP-4	PLAN AND PROFILE – IV
18	PP-5	PLAN AND PROFILE – V
19	PP-6	PLAN AND PROFILE – VI
20	PP-7	PLAN AND PROFILE – VII
21	PP-8	PLAN AND PROFILE – VIII
22	PP-9	PLAN AND PROFILE – IX
23	PP-10	PLAN AND PROFILE – X
24	MU-1	MASTER UTILITY
25	U-1	UTILITY PLAN – I
26	U-2	UTILITY PLAN – II
27	U-3	UTILITY PLAN – III
28	U-4	UTILITY PLAN – IV
29	U-5	UTILITY PLAN – V
30	U-6	UTILITY PLAN – VI
31	T-1	TRAFFIC PLAN I
32	T-2	TRAFFIC PLAN II
33	T-3	TRAFFIC PLAN III
34	T-4	TRAFFIC PLAN IV
35	T-5	TRAFFIC PLAN V
36	T-6	TRAFFIC PLAN VI



APPROVALS

CITY ENGINEER–ALLEN 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.

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: TOTAL 1,500 GPM/ONSITE 20 GPM

SHEETS: C-1 THROUGH C-3, D-3 PP-1 THROUGH PP-10, MU-1, U-1 THROUGH U-6

APPROVAL BY THE FIRE DEPARTMENT HAVING JURISDICTION IS REQUIRED PRIOR TO OBTAINING FINAL APPROVAL FROM LAS VEGAS VALLEY WATER DISTRICT.

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

PULTE HOMES OF NEVADA "PN II INC."
7255 S. TENAYA WAY #200
LAS VEGAS, NV 89113
PH: 702-914-4800
FX: 702-914-4800
CONTACT: BRENIN ANDERSON

ENGINEER

SLATER HANIFAN GROUP, INC.
5740 S. ARVILLE STREET, SUITE 216
LAS VEGAS, NV 89118
PH: (702) 284-5300
FX: (702) 284-5399
CONTACT: JERRY J. SLATER

LEGAL DESCRIPTION

BEING A PORTION OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST M.D.M., CLARK COUNTY, NEVADA.

BENCHMARK

BM 7LV90 7NWS CITY OF LAS VEGAS RIVET AND ROUND PLATE IN CONCRETE CYLINDER, SOUTHEAST CORNER OF HUALAPAI WAY AND IRON MOUNTAIN ROAD.

ELEV: 2840.13 FEET (865.67 METERS) (NAVD 1988)

BASIS OF BEARINGS

SOUTH 00°34'18" EAST, BEING THE BEARING OF THE EAST LINE OF THE NORTHEAST QUARTER (NE ¼) OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST M.D.M., AS PER FILE 151, PAGE 14, OF SURVEYS ON FILE IN THE COUNTY RECORDER'S OFFICE.

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

ACREAGE (GROSS):	= 20.2± AC
ACREAGE (NET):	= 17.9± AC
DENSITY (LOTS/NET ACRE):	= 4.4± DU/NET AC
ZONING:	= T-D (R-1 STANDARDS)
TOTAL NO. OF RESIDENTIAL LOTS	= 79
TOTAL NO. OF COMMON ELEMENTS *	= 10
MINIMUM LOT SIZE	= 5850 SF±
MAXIMUM LOT SIZE	= 13337 SF±
PROVIDED OPEN SPACE	= 33216 SF±

EARTHWORK SUMMARY (UNADJUSTED)

CUT	62,276 CY.
FILL	36,725 CY.
NET	25,551 CY.

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: GEOTEK RESIDENTIAL, LLC
ADDRESS: 6835 S. ESCONDIDO ST. #A LAS VEGAS, NV 89119
PHONE: 702-897-1424
PROJECT No. 13934-LVR
DATED: 01/11/2018

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.

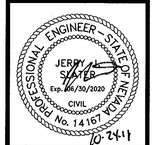
CITY OF LAS VEGAS, NV

PulteGroup

SKYE CANYON II - PARCEL 2.17
COVER SHEET

S 12
T 19 S
R 59 E

DATE: 10/24/18
DRAFTER: DNP
DESIGNER: DNP
CHECKED: STS
PROJECT NO.
OLY1721-000



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C-1
SHEET 1 OF 34

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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

BEING A PORTION OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST M.D.M., CLARK COUNTY, NEVADA.

BENCHMARK

BM 7LV90 7NWS CITY OF LAS VEGAS RIVET AND ROUND PLATE IN CONCRETE CYLINDER, SOUTHEAST CORNER OF HUALAPAI WAY AND IRON MOUNTAIN ROAD.

ELEV: 2840.13 FEET (865.67 METERS) (NAVD 1988)

BASIS OF BEARINGS

SOUTH 00°34'18" EAST, BEING THE BEARING OF THE EAST LINE OF THE NORTHEAST QUARTER (NE ¼) OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST M.D.M., AS PER FILE 151, PAGE 74, OF SURVEYS ON FILE IN THE COUNTY RECORDER'S OFFICE.

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 DECODE 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 GEOTEK RESIDENTIAL, LLC, PROJECT NO. 1393.4-LVR, DATED 01/11/2018.
6. EARTHWORK QUANTITIES (RAW):
   -CUT = 62,275 CUBIC YARDS.
   -FILL = 36,725 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 # 6325, 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 ALL 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 105.7.12]
4. ON ANT 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 105.3]
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 PHYSICIAL 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 PANTED 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 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 1,000 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 FEET 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 C102.12]
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 ARE 4 OR MORE FIRE HYDRANTS/SPRINKLER LEAD-INS ARE INSTALLED ON A SINGLE SYSTEM. SECTIONAL CONTROL VALVES SHALL BE INSTALLED SO THAT NO MORE THAN 2 FIRE HYDRANTS CAN BE OUT OF SERVICE DUE TO A BREAK IN A WATER MAIN. [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 FEET 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 FEET OUTSIDE AND 28 FEET INSIDE TURNING RADIUS. [IFC 503.2.4]
22. VERTICAL CLEARANCE OF ALL FIRE APPARATUS ACCESS ROADS SHALL NOT BE LESS THAN 13 FT 6 INS. [IFC 503.2.1]
23. FIRE DEPARTMENT ACCESS ROADS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF NOT LESS THAN 40 FT FLOW LINE TO FLOW LINE WITH PARALLEL PARKING PERMITTED ON BOTH SIDES. NOT LESS THAN 32 FT WIDE, FLOW LINE TO FLOW LINE, WHERE PARKING IS PERMITTED ONLY ON ONE SIDE OF THE FIRE APPARATUS ACCESS ROAD. NOT LESS THAN 24 FT WIDE, FLOW LINE TO FLOW LINE, WHERE NO PARKING IS PERMITTED ON EITHER SIDE. 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. THE DISTANCE COULD BE INCREASED TO 250 FT IF THE BUILDING IS SPRINKLERED. [IFC 503.1.1]
25. APPROVED SECONDARY FIRE APPARATUS ACCESS SHALL BE PROVIDED FOR 100 OR MORE DWELLING UNITS, ROAD(S) WITH DEAD-ENDS OR WITH A SINGLE POINT OF ACCESS IN EXCESS OF 600 FT. COMMERCIAL AND INDUSTRIAL DEVELOPMENTS WHERE BUILDINGS EXCEED 2 STORIES OR 30 FEET IN HEIGHT, OR EXCEEDING 62,000 SQUARE FEET IN AREA. [IFC 503.1.2]
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. [IFC 503.2.5]
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 FEET 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. SAID SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE IFC 503.6 AND IFC APPENDIX M.

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 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 PLANS.
12. ALL GRADING WORK SHALL CONFORM TO THE SOILS REPORT AS PREPARED BY ANGLE ENGINEERING REPORT #57024-1, MARCH 9, 2018 APPROVED BY THE CITY ENGINEER, AND AS SHOWN ON THESE PLANS.
13. EXACT LOCATION OF ALL SAWCUT LINES MAY BE ADJUSTED OR DETERMINED IN THE FIELD BY A CITY OF LAS VEGAS ENGINEER IF LOCATION ON PLANS IS NOT CLEARLY SHOWN, OR EXISTING PAVEMENT CONDITION REQUIRES RELOCATIONS.
14. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT EXISTING PERMANENT SURVEY MONUMENTS. ANY MONUMENTS DISTURBED SHALL BE REPLACED AND ADJUSTED PER AVAILABLE RECORDS IN ACCORDANCE WITH N.R.S. STATUTE NO. 625.380 & CITY OF LAS VEGAS TITLE 18, APPENDIX D.
15. UTILITY COMPANY METER BOXES, MANHOLE LIDS, VALVE COVERS, ETC., SHALL BE LOCATED OUT OF DRIVEWAYS, DRIVEWAY APRONS, FLOWLINES, AND CROSS GUTTERS UNLESS WRITTEN APPROVAL IS GRANTED BY THE UTILITY COMPANY AND THE CITY ENGINEER.

WALL NOTES:

16. ALL WALLS, NEW OR EXISTING, ARE ONLY SHOWN ON CIVIL PLANS FOR THE PURPOSE OF REVIEWING GRADING RELATIONSHIPS; FLOOD CONTROL AND SIGHT DISTANCE AT INTERSECTIONS. NEW WALLS REQUIRE A SEPARATE PERMIT AND INSPECTION BY THE BUILDING DEPARTMENT.
17. ASPHALT MIX DESIGN MUST BE SUBMITTED A

ABBREVIATIONS

AC	ASPHALTIC CONCRETE OR ACRE	FH	FIRE HYDRANT	PVC	POLYVINYL CHLORIDE
AGG	AGGREGATE BASE	FL	FLOWLINE	PVI	POINT OF VERTICAL INTERSECTION
APN	ASSESSORS PARCEL NUMBER	FT	FEET OR FOOT	QTY	QUANTITY
APPROX OR ~	APPROXIMATE	FUT	FUTURE	R	RADIUS
AVE	AVENUE	GRD	GRADE OR GROUND	RCA	REINFORCED CONCRETE ARCH
@	AT	GB	GRADE BREAK OR GRADE CHANGE	RCB	REINFORCED CONCRETE BOX
BC	BEGIN CURVE OR BACK OF CURB	GV	GATE VALVE	RCP	REINFORCED CONCRETE PIPE
BCR	BEGINNING OF CURB RETURN	HDPE	HIGH DENSITY POLYETHYLENE	RD	ROAD
BHW	BOTTOM OF HEADWALL	HOA	HOME OWNERS ASSOCIATION	RDWY ESMT	ROADWAY EASEMENT
BLDG	BUILDING	HORZ	HORIZONTAL	REQD	REQUIRED
BLVD	BOULEVARD	HP	HIGH POINT	REV	REVISION
BM	BENCHMARK	HWL	HIGH WATER LEVEL	RG	ROUGH GRADE
BVC	BEGIN VERTICAL CURVE	HDWL OR HW	HEADWALL	RT OR R	RIGHT
BWV	BACK WATER VALVE	HYD	HYDRAULIC OR HYDRANT	R/W, ROW	RIGHT OF WAY
CC	CLARK COUNTY	ID	INSIDE DIAMETER	S	SLOPE
CCAUSD	CLARK COUNTY AREA UNIFORM STANDARD DRAWINGS	IN	INCH	SCH	SCHEDULE
CCPW	CLARK COUNTY PUBLIC WORKS	INT	INTERSECTION	SD	STORM DRAIN
CCRFCD	CLARK COUNTY REGIONAL FLOOD DISTRICT	INV	INVERT ELEVATION	SDDI	STORM DRAIN DROP INLET
CCWRD	CLARK COUNTY WATER RECLAMATION DISTRICT	IP	IRON PIPE	SDMH	STORM DRAIN MANHOLE
CE	COMMON ELEMENT	IRRG	IRRIGATION	SEC	SECTION
CL,C/L,C	CENTERLINE	LF	LINEAR FEET	SF	SQUARE FEET
CLR	CLEAR OR CLEARANCE	LP	LOW POINT	SHT	SHEET
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 OR STREET LIGHT
CT	COURT	MISC	MISCELLANEOUS	SW	SIDEWALK
CY OR CU YD	CUBIC YARD	MUE	MUNICIPAL UTILITY EASEMENT	SWG	SOUTHWEST GAS
DCWCS	DESIGN AND CONSTRUCTION FOR WASTEWATER COLLECTION SYSTEMS	NDOT	NEVADA DEPARTMENT OF TRANSPORTATION	SWR OR SS	SANITARY SEWER
		NPC	NEVADA POWER COMPANY	SY	SQUARE YARD
DET	DETAIL	NTS	NOT TO SCALE	TAN	TANGENT
DI	DUCTILE IRON OR DRAIN INLET	NUE	NONEXCLUSIVE UTILITY EASEMENT	TC	TOP OF CURB
DIA, ø	DIAMETER	OC	ON CENTER	TF	TOP OF FLOOR OR TOP OF FOOTING
DIP	DUCTILE IRON PIPE	OD	OUTSIDE DIAMETER OR OVERALL DIMENSION	TG	TOP OF GRATE
DR	DRIVE	OFF	OFFSET	THRU	THROUGH
DWG(S)	DRAWING	ORIG	ORIGINAL	THW	TOP OF HEADWALL
DWY	DRIVEWAY	PAE	PUBLIC OR PEDESTRIAN ACCESS EASEMENT	TP	TOP OF PIPE
EA	EACH	PB	PULL BOX	TW	TOP OF WALL
ECR	END CURB RETURN	PC	POINT OF CURVE	TRW	TOP OF RETAINING WALL
EG	EXISTING GROUND	PCC	POINT OF COMPOUND CURVE	TSW	TOP OF SCREEN WALL
EL	ELEVATION	PDE	PUBLIC DRAINAGE EASEMENT	TYP	TYPICAL
ESMT	EASEMENT	℄ OR PL	PROPERTY LINE	UDACS	UNIFORM DESIGN AND CONSTRUCTION STANDARDS
EP	EDGE OF PAVEMENT	POB	POINT OF BEGINNING		
ERU	EQUIVALENT RESIDENTIAL UNIT	POC	POINT OF CURVATURE	VC	VERTICAL CURVE
EVC	END VERTICAL CURVE	POE	POINT OF ENDING	VERT	VERTICAL
EX OR EXIST	EXISTING	PRC	POINT OF REVERSE CURVATURE	VG	VALLEY GUTTER
FC	FACE OF CURB	PRELIM	PRELIMINARY	WI	WROUGHT IRON
FF	FINISHED FLOOR	PROP	PROPOSED	WL	WATER LINE
FG	FINISHED GRADE	PRV	PRESSURE REDUCING VALVE	WPZ	WATER PRESSURE ZONE
FGH	FINISHED GRADE, HIGH SIDE	PUE	PUBLIC UTILITY EASEMENT	WT	WEIGHT
FGL	FINISHED GRADE, LOW SIDE	PT	POINT OF TANGENT OR POINT	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 CLARK COUNTY 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
GAS	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
CUT / FILL	CUT/FILL TRANSITION LINE
	SIDEWALK
	EX STRIPING TO BE OBLITERATED
	GRADE BREAK LINE
ID	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.	48" TYPE I STORM DRAIN MANHOLE	EA	–	–
2.	7.5' TYPE "CM2" DROP INLET	EA	–	–
3.	10.0' TYPE "CM2" DROP INLET	EA	–	–
4.	17.5' TYPE "CM2" DROP INLET	EA	–	–
5.	20.0' TYPE "CM2" DROP INLET	EA	2	–
6.	18" RCP CLASS III STORM DRAIN	LF	–	–
7.	24" RCP CLASS III STORM DRAIN	LF	165	–
8.	18" C905 PVC STORM DRAIN	LF	35	–
9.	CONCRETE FLUME	SF	–	–
10.	RIPRAP D50=8", THK=16"	SF	65	–
11.	8' WIDE CONCRETE VALLEY GUTTER W/10" TYPE I AGGREGATE BASE	SF	1223	–
12.	SIDEWALK DRAIN PER CCAUSD #236	EA	–	–
13.	CULVERT HEADWALL PER N-DOT DETAIL R-2.5.1	EA	1	–
SEWER SYSTEM				
1.	4" PVC SEWER LATERAL (PRIVATE)	LF	1798	–
2.	8" PVC SEWER PIPE (PUBLIC)	LF	–	2190
3.	STANDARD 48" SEWER MANHOLE (PUBLIC)	EA	–	20
4.	8" SEWER PIPE CAP	EA	–	–
5.	BACK WATER VALVE	EA	30	–
6.	8" C-900 WATER QUALITY SEWER PIPE (PUBLIC)	EA	–	669
7.				
WATER SYSTEM				
1.	FIRE HYDRANT ASSEMBLY W/6" GATE VALVE PER UDACS PLATE NO. 40	EA	–	6
2.	6" PVC WATER PIPE (CLASS 150)	LF	–	98
3.	8" PVC WATER PIPE (CLASS 150)	LF	–	3361
4.	8" DIP WATER PIPE (CLASS 53)	LF	–	–
5.	8" GATE VALVE WITH VALVE BOX PER UDACS PLATE NO. 30 & 39	EA	–	9
6.	8" X 6" TEE PER UDACS PLATE NO. 31	EA	–	6
7.	8" X 8" TEE PER UDACS PLATE NO. 31	EA	–	2
8.	8" 5 DEGREE BEND WITH RESTRAINED JOINTS	EA	–	9
9.	8" 11.25 DEGREE BEND PER UDACS PLATE NO. 31	EA	–	8
10.	8" 22.5 DEGREE BEND PER UDACS PLATE NO. 31	EA	–	3
11.	8" 45 DEGREE BEND PER UDACS PLATE NO. 31	EA	–	6
12.	8" 90 DEGREE BEND PER UDACS PLATE NO. 31	EA	–	1
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	–	69
16.	1" COPPER SERVICE W/ 3/4" METER & 1" RPPA PER UDACS PLATE NO. 4 & 8	EA	–	1
STREET IMPROVEMENTS				
1.	2" A.C. PAVEMENT W/ 4" TYPE II OVER 6" TYPE I AGGREGATE BASE	SY	12012	–
2.	STANDARD 18" TYPE "L" ISLAND CURB & GUTTER W/6" TYPE I AGGREGATE BASE	LF	–	–
3.	STANDARD 8" TYPE "A" ISLAND CURB W/6" TYPE I AGGREGATE BASE	LF	–	–
4.	STANDARD 30" TYPE "ROLL" CURB & GUTTER W/6" TYPE I AGGREGATE BASE	LF	6223	–
5.	5' WIDE CONCRETE SIDEWALK W/4" TYPE II AGGREGATE BASE	SF	30182	–
6.				–
7.				
TRAFFIC SIGNALS				
1.	30" STOP SIGN WITH POST (R1-1)	EA	5	–
2.	9" STREET NAME SIGN (D-3, BROWN W/ WHITE LETTERS)(6 POLES x 2 PER POLE=12)	EA	10	–
3.	BLUE COLORED REFLECTIVE RAISED PAVEMENT MARKER	EA	6	–
4.	CROSSWALK MARKINGS	LF	–	–
5.				
6.				
7.				
8.				
DRY UTILITIES				
1.	100W H.P.S. LUMINAIRE STREET LIGHT W/DECORATIVE POLE	EA	18	–
2.	1-1/4" PVC STREET LIGHT CONDUIT WITH (2) #4 AND (1) #8 CONDUCTORS	LF	2988	–
3.	NO. 3-1/2 PULL BOX W/METAL COVER	EA	3	–
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._____ FIRST APPROVED DATE:_____
LVVWD APPROVED FIRE FLOW 1,500 GPM AT 20 PSI RESIDUAL

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.

CITY OF LAS VEGAS, NV

PulteGroup

SKYE CANYON II - PARCEL 2.17
GENERAL NOTES AND QUANTITIES

S-12
T-19
R-59 E

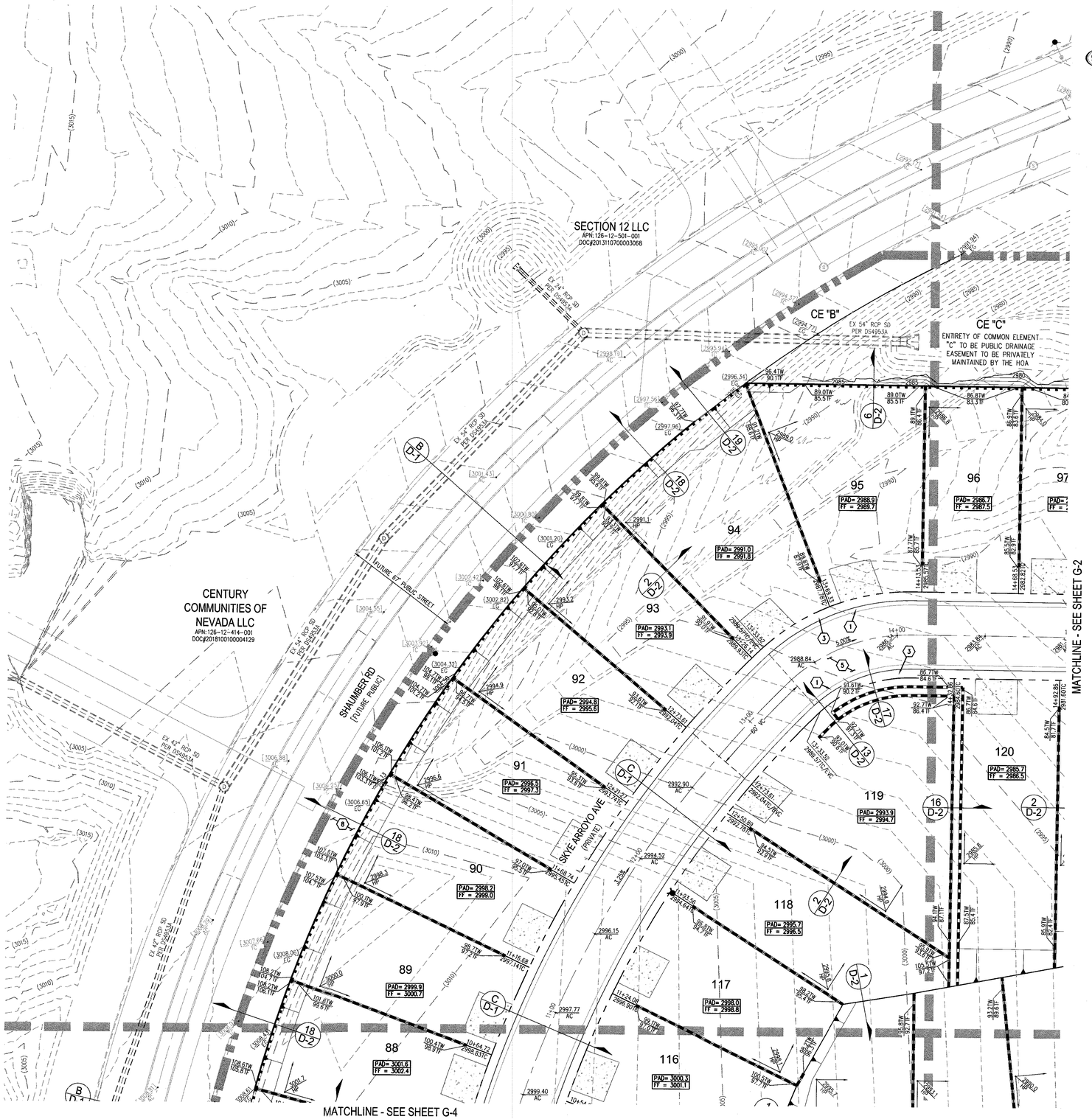
DATE: 10/24/18
DRAFTER: DNP
DESIGNER: DNP
CHECKED: STS

PROJECT NO.
OLY1721-000

PROFESSIONAL ENGINEER STATE OF NEVADA
JERRY J. SLATER
Exp. 12/31/2020
CIVIL
No. 14167
10-24-18

C-3
SHEET 3 OF 34

J:\Civil\1721.000 skye canyon parcel 2.17\dwg\Improv\civil\1721-003-cvr.dwg, 10/24/2018 11:52 AM, Dominic Pandiscio



N

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

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 2900 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 1801.00)

SOILS REPORT

SOILS REPORT BY GEOTEK RESIDENTIAL, LLC
PROJECT NO. 13934-LVR DATED 01/11/2018

EARTHWORKS

EARTHWORK QUANTITIES (RAW):
CUT= 52,276 CU YDS
FILL= 36,725 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 2012, 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.
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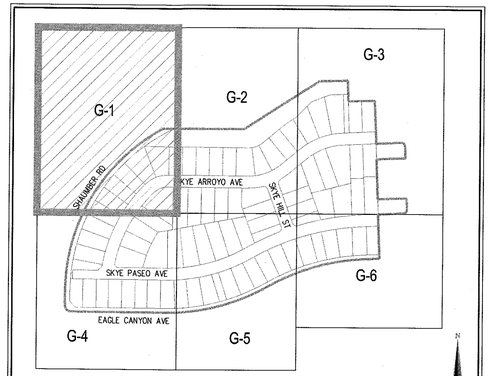

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NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS, NV

PulteGroup

SKYE CANYON II - PARCEL 2.17
GRADING PLAN - I

S 12
T 19
R 59 E

DATE: 10/24/18
DRAFTER: DNP
DESIGNER: DNP
CHECKED: STS

PROJECT NO.
OLY1721-000

PROFESSIONAL ENGINEER - STATE OF NEVADA - JERRY J. SLATER - Expir. 06/30/2020 - CIVIL - No. 14167 - 10-24-18

G-1
SHEET 4 OF 34

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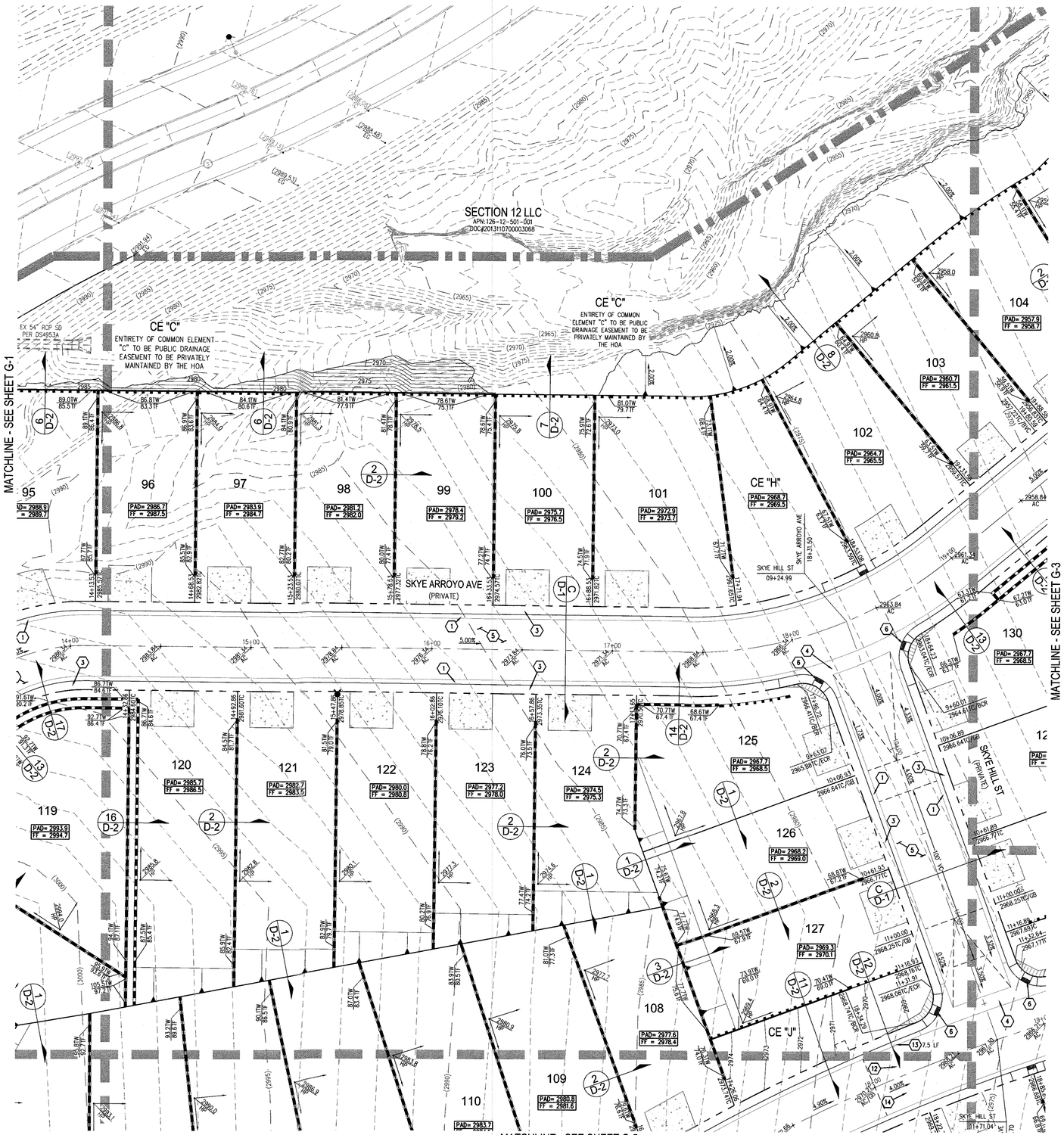

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PROJECT NO. 13934-LVR DATED 01/11/2018

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FILL= 36,725 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.

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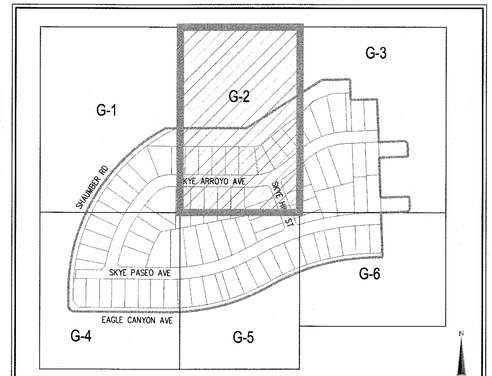

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NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS, NV

PulteGroup

SKYE CANYON II - PARCEL 2.17
GRADING PLAN - II

S 12
T 19
R 59

DATE: 10/24/18
DRAFTER: DNP
DESIGNER: DNP
CHECKED: STS
PROJECT NO.
OLY1721-000

PROFESSIONAL ENGINEER - STATE OF NEVADA
JERRY J. SLATER
Exp. 06/30/2020
CIVIL
No. 14167
10-24-18

G-2
SHEET 5 OF 34

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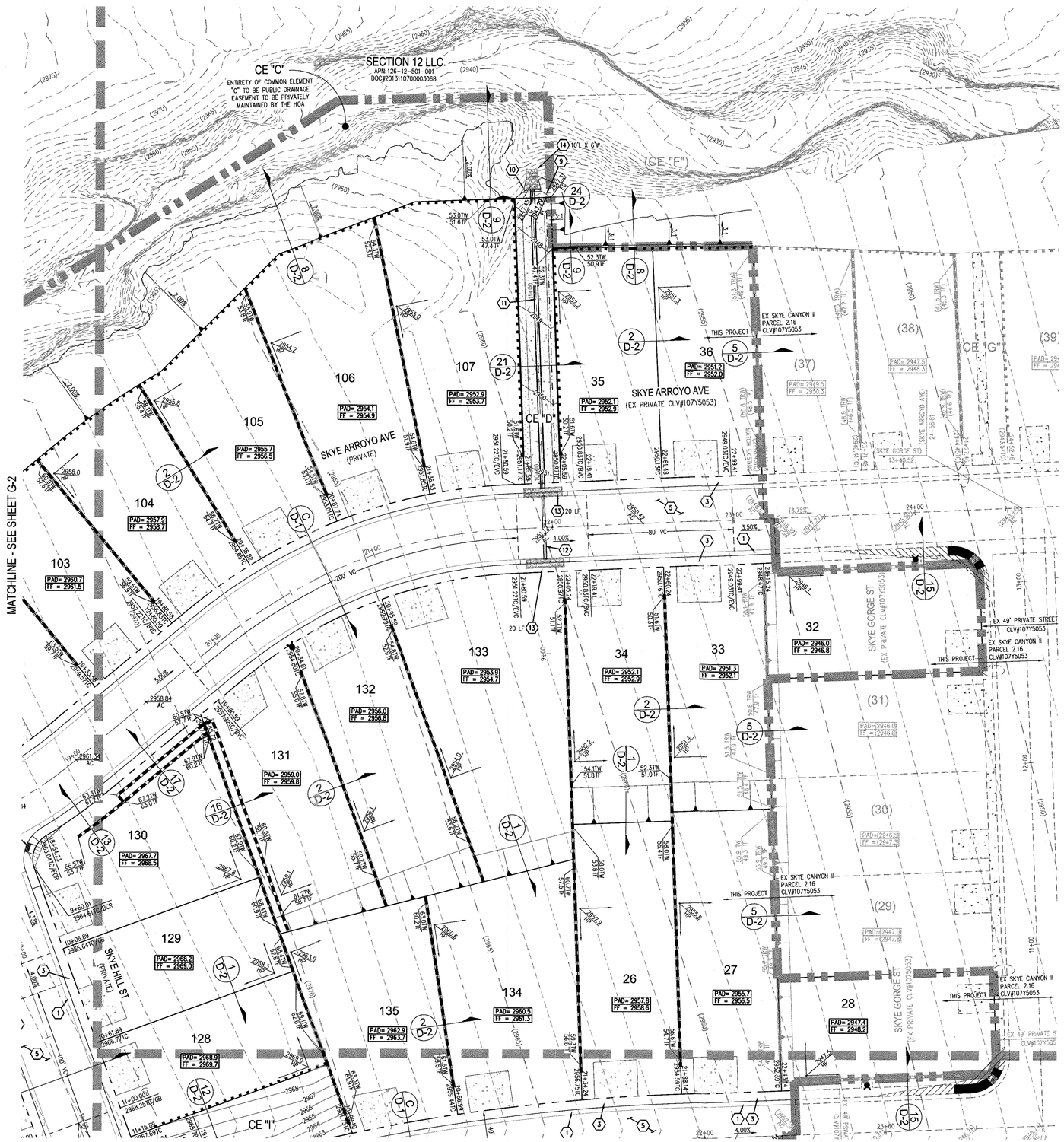

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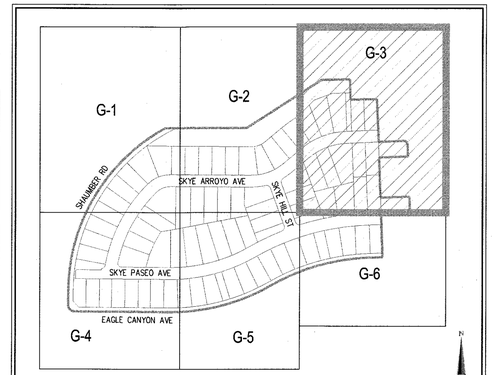

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AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

Call before you Dig
AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY.
Call 811
OR
1-800-227-2600

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.

CITY OF LAS VEGAS, NV

PulteGroup

SKYE CANYON II - PARCEL 2.17
GRADING PLAN - III

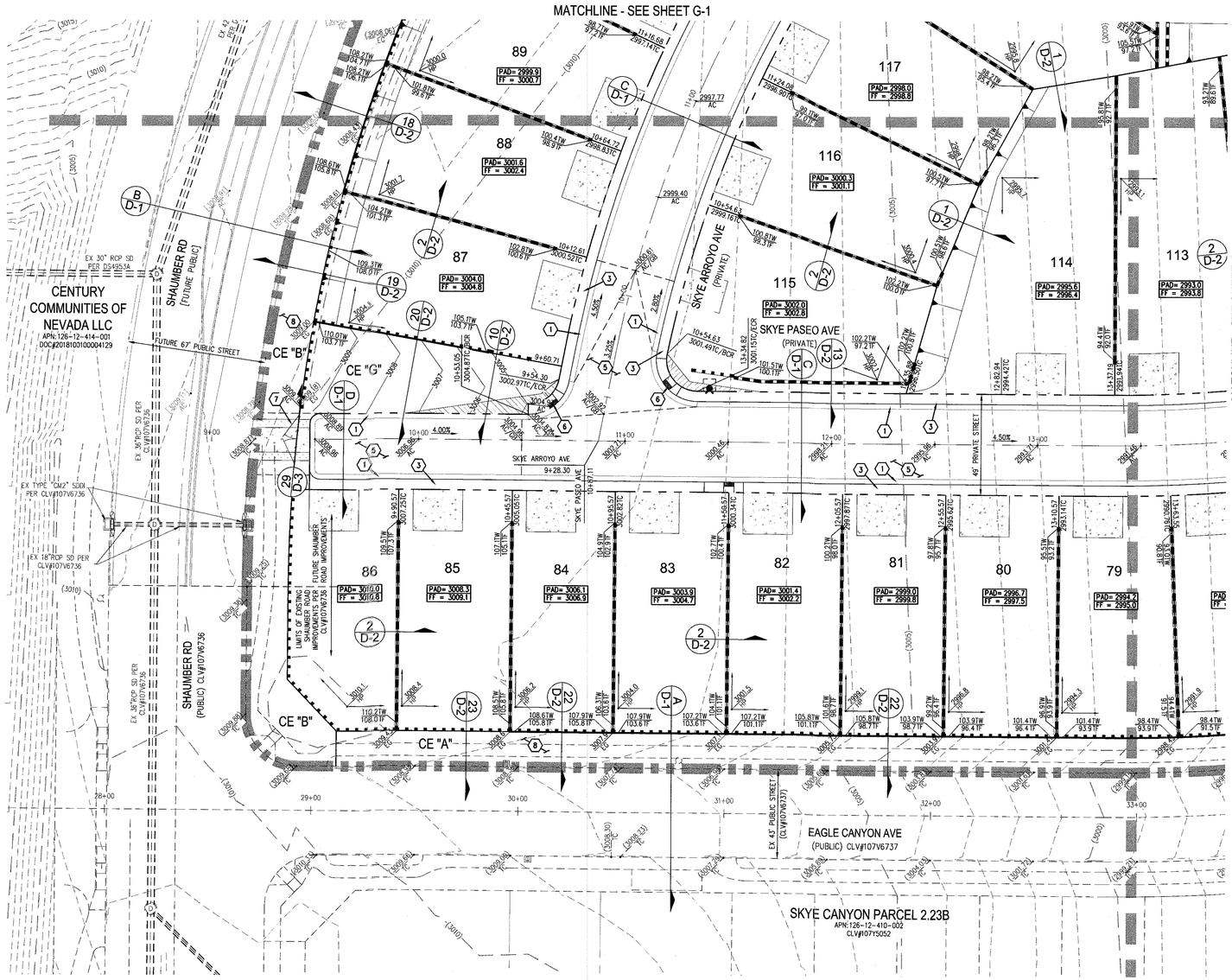
S-12
T-19S
R-59E

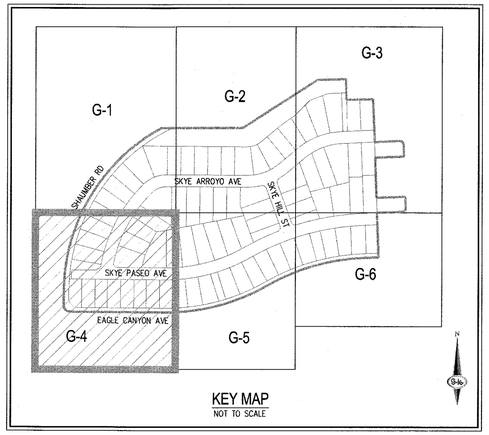
DATE:	10/24/18
DRAFTER:	DNP
DESIGNER:	DNP
CHECKED:	STS
PROJECT NO.	OLY1721-000

JERRY SLATER — EXP. 06/30/2020 — CIVIL — STATE OF NEVADA — PROFESSIONAL ENGINEER — No. 14167

G-3
SHEET 6 OF 34

J:\Oly\1721-000\ skye canyon parcel 2.17\dwg\improv\oly1721-000-grd.dwg 10/24/2018 11:52 AM Dominic Pangilinan





CALL SOUTHWEST GAS AT 702-651-2111 FOR STANDBY WHEN EXCAVATING OVER OR NEAR HIGH PRESSURE GAS LINES

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 2900 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 1801.00)

SOILS REPORT

SOILS REPORT BY GEOTEK RESIDENTIAL, LLC
PROJECT NO. 1.3934-LVR DATED 01/11/2018

EARTHWORKS

EARTHWORK QUANTITIES (RAW):
CUT= 62,276 CU YDS
FILL= 36,725 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 2012, 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/REPLEIING 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 30" ROLL CURB AND GUTTER PER CCAUSD NO. 217.S1. CURB FLOW LINES LESS THAN 0.60% GRADE SHALL BE WATER TESTED. ANY CURB THAT DOES NOT FLOW SHALL BE REMOVED AND REPLACED AT NO COST TO THE CITY
2. INSTALL WROUGHT IRON FENCE (PEDESTRIAN ACCESS GATE WHERE SHOWN ON PLANS PER DETAIL 30 ON SHEET D-3
3. INSTALL 5' WIDE CONCRETE SIDEWALK (5" THICK OVER 6" TYPE II AGGREGATE BASE) PER CCAUSD #234
4. INSTALL 8-FT CROSS GUTTER PER DETAIL 31 ON SHEET D-3
5. INSTALL 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
6. CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES OR EQUIVALENT CCAUSD NO. 235, CASE I & 235.1
7. INSTALL 24' WIDE GATE PER CCAUSED DWG NO. 425.S1
8. PERIMETER LANDSCAPE TO BE CONSTRUCTED BY MASTER DEVELOPER
9. INSTALL 20' WIDE GATE PER CCAUSED DWG NO. 425.S1
10. INSTALL CULVERT HEADWALL PER N-DOT DETAIL R-2.5.1
11. INSTALL 24" CLASS III RCP STORM DRAIN
12. INSTALL 18" C905 PVC STORM DRAIN
13. INSTALL TYPE "CM2" DROP INLET PER CCAUSD #412.1 AND #421 (SIZE PER PLANS)
14. RIP RAP D50=8" THICKNESS=16" WITH 6" FINE AGGREGATE BASE (PER SPEC 706.03.03) COMPACTED TO 90% OVER FILTER FABRIC PER DETAIL 4 ON SHEET D-2

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 EASEMENT NOTE

ALL PRIVATE STREETS, DRAINAGE EASEMENTS AND COMMON LOTS ARE PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED BY THE HOA

BONDABLE DRAINAGE QUANTITIES (PRIVATE)

8' WIDE CONCRETE VALLEY GUTTER W/10" TYPE I AGGREGATE BASE	SF	1223
24" RCP CLASS III STORM DRAIN	LF	308
20.0' TYPE "CM2" DROP INLET	EA	2
CULVERT HEADWALL PER N-DOT DETAIL R-2.5.1	EA	1
18" C905 PVC STORM DRAIN	LF	62
RIPRAP D50=8", THK=16"	SF	65

FLOOD ZONE

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE 'X' (UNSHADED), AREA OUTSIDE THE 0.2% ANNUAL CHANCE (500 YEAR) FLOODPLAIN, PER THE FEMA FIRM PANELS 32003C1750E DATED SEPTEMBER 27, 2002.

FLOOD CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY DS5000 ON FILE AT CITY OF LAS VEGAS FOR THE SUBJECT PROJECT.

JERRY SLATER, P.E. 14167 DATE

FAST
Call before you UnderGround
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FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T.)

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5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS, NV

PulteGroup

SKYE CANYON II - PARCEL 2.17
GRADING PLAN - IV

S12 T19 S R59 E

DATE: 10/24/18
DRAFTER: DNP
DESIGNER: DNP
CHECKED: STS
PROJECT NO. OLY1721-000

PROFESSIONAL ENGINEER STATE OF NEVADA JERRY J. SLATER EXP. 06/30/2020 CIVIL No. 14167

10/24/18

G-4
SHEET 7 OF 34

J:\oly1721.000 skye canyon parcel 2.17\dwg\Improv\oly1721-000-grd.dwg 10/24/2018 11:53 AM Dominic Pandijan

N

SCALE - 1"=30' (0 30 60 FEET)

S-16

CALL SOUTHWEST GAS AT 702-651-2111 FOR STANDBY WHEN EXCAVATING OVER OR NEAR HIGH PRESSURE GAS LINES

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SOILS REPORT

SOILS REPORT BY GEOTEK RESIDENTIAL, LLC
PROJECT NO. 13934-LVR DATED 01/11/2018

EARTHWORKS

EARTHWORK QUANTITIES (RAW):
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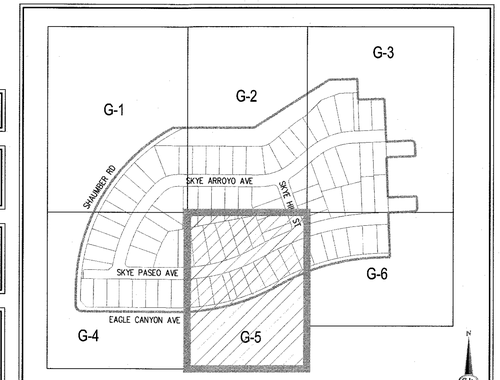

KEY MAP
NOT TO SCALE

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5. INSTALL 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
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7. INSTALL 24' WIDE GATE PER CCAUSED DWG NO. 425.S1
8. PERIMETER LANDSCAPE TO BE CONSTRUCTED BY MASTER DEVELOPER
9. INSTALL 20' WIDE GATE PER CCAUSED DWG NO. 425.S1
10. INSTALL CULVERT HEADWALL PER N-DOT DETAIL R-2.5.1
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12. INSTALL 18" C905 PVC STORM DRAIN
13. INSTALL TYPE "CM2" DROP INLET PER CCAUSD #412.1 AND #421 (SIZE PER PLANS)
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DRAINAGE EASEMENT NOTE

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BONDABLE DRAINAGE QUANTITIES (PRIVATE)

8' WIDE CONCRETE VALLEY GUTTER W/10" TYPE I AGGREGATE BASE	SF	1223
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FLOOD CERTIFICATION

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JERRY SLATER, P.E. 14167 DATE

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

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.

CITY OF LAS VEGAS, NV

PulteGroup

SKYE CANYON II - PARCEL 2.17
GRADING PLAN - V

S 12
R 59 E

DATE: 10/24/18
DRAFTER: DNP
DESIGNER: DNP
CHECKED: STS

PROJECT NO.
OLY1721-000

PROFESSIONAL ENGINEER - STATE OF NEVADA - JERRY SLATER - Exp. 06/30/2020 - CIVIL - No. 14167 - 10-24-18

G-5
SHEET 8 OF 34

J:\oly\1721-000 skye canyon parcel 2.17\dwg\improv\oly1721-000-grad.dwg 10/24/2018 11:53 AM Dominic Ponsiglan

MATCHLINE - SEE SHEET G-3
MATCHLINE - SEE SHEET G-2
MATCHLINE - SEE SHEET G-5
SKYE PASEO AVE
(PRIVATE)
SKYE PASEO AVE
(EX PRIVATE CLV#10750S3)
EAGLE CANYON AVE
(PUBLIC) CLV#107V6737
SKYE HILL ST
CE "I"
CE "E"
CE "A"
CE "A1"
SKYE GORGE ST
(EX PRIVATE CLV#107
EX SKYE CANYON II
PARCEL 2.16
CLV#10750S3
THIS PROJECT
EX 49' PRIVATE STREET
CLV#10750S3
EX 43' PUBLIC STREET
(CLV#107V6737)
KAG DEVELOPMENT WEST LLC
APN:126-12-412-111
DOC#20170307000001045
SKYE CANYON
PARCEL 2.23A
APN:126-12-810-002
CLV#10715069
128
135
134
26
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24
(23)
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(21)
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FF = 2969.7
PAD= 2962.9
FF = 2963.7
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FF = 2956.3
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FF = 2954.0
PAD= 2967.8
FF = 2968.6
PAD= 2970.7
FF = 2971.1
PAD= 2973.2
FF = 2974.0
PAD= 2953.5
FF = 2954.3
PAD= 2951.3
FF = 2952.1
PAD= 2949.3
FF = 2950.1
L1=61.89
2966.71TC
L1=90.00
2968.25TC/GB
L1=18.98
2967.93TC
L1=32.64
2967.17TC/INGR
L1=16.93
2968.16TC
L1=31.91
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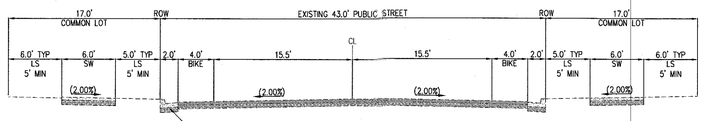
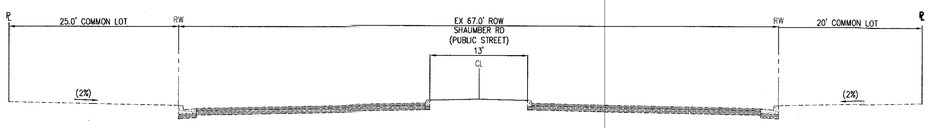


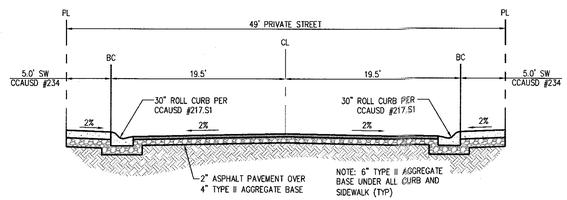
A. EXISTING STREET SECTION (PUBLIC) — EAGLE CANYON AVE

NOT TO SCALE



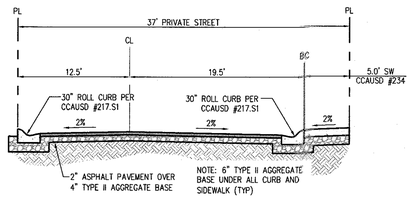
B. EXISTING STREET SECTION (PUBLIC) — SHAUMBER RD

NOT TO SCALE



C. 49' INTERIOR STREET SECTION (PRIVATE)

NOT TO SCALE



D. 37' INTERIOR STREET SECTION (PRIVATE)

NOT TO SCALE

R-2.8

QUANTITIES SHOWN BELOW ARE FOR ONE HEADWALL.

RCP/ HDPE SIZE DIA.	LENGTH OF REINFORCING BARS																	
	SINGLE RCP/HDPE					SINGLE OR DOUBLE RCP/HDPE							DOUBLE RCP/HDPE					
	0°-45°	0°	15°	30°	45°	0°	15°	30°			45°		0°-45°	0°	15°	30°	45°	
	NO. 4	NO. 5	NO. 5	NO. 5	NO. 5	NO. 4	NO. 4	NO. 4			NO. 4		NO. 4	NO. 5	NO. 5	NO. 5	NO. 5	
	K	N	N	N	N	M	M	M1	M	M1	M	M1	K	N	N	N	N	
12"	6'-2" -9"	2'-4" -9"	2'-5" -2"	2'-5" -4"	2'-5" -7"	2'-1" -7"	1'-11" -5"	1'-12" -1"	1'-11" -4"	1'-12" -2"	1'-11" -1"	1'-12" -5"	7'-2" -9"	2'-7"	2'-7" -6"	2'-7" -11"	2'-8" -9"	
15"	6'-3" -1"	2'-6"	2'-6" -6"	2'-6" -8"	2'-7"	2'-2" -1"	1'-12" -11"	1'-12" -8"	1'-11" -10"	1'-12" -9"	1'-11" -7"	1'-12"	7'-3" -1"	2'-8" -6"	2'-8" -2"	2'-9" -7"	2'-10" -7"	
18"	6'-3" -4"	2'-7"	2'-7" -8"	2'-7" -10"	2'-8" -2"	2'-2" -5"	2'-2" -3"	2'-3" -1"	2'-2" -2"	2'-3" -2"	2'-1" -11"	2'-3" -5"	7'-3" -4"	2'-9" -9"	2'-10" -6"	2'-11"	2'-12" -1"	
21"	6'-3" -8"	2'-8"	2'-8" -9"	2'-8" -11"	2'-9" -5"	2'-2" -9"	2'-2" -7"	2'-3" -6"	2'-2" -6"	2'-3" -7"	2'-2" -3"	2'-3" -10"	7'-3" -8"	2'-11" -2"	2'-12"	2'-12" -7"	2'-13" -10"	
24"	6'-3" -11"	2'-9"	2'-9" -10"	2'-10" -1"	2'-10" -7"	2'-3" -2"	2'-3"	2'-4"	2'-2" -11"	2'-4" -1"	2'-2" -8"	2'-4" -4"	7'-3" -11"	3'-0" -7"	2'-13" -7"	2'-13" -7"	2'-14" -2"	2'-15" -8"
27"	6'-4" -2"	2'-10"	2'-10" -11"	2'-11" -2"	2'-11" -9"	2'-3" -6"	2'-3" -4"	2'-4" -4"	2'-3" -3"	2'-4" -5"	2'-3"	2'-4" -8"	9'-4" -2"	3'-0" -1"	2'-14" -1"	2'-15" -1"	2'-15" -10"	2'-17" -6"
30"	6'-4" -6"	2'-11" -3"	2'-12" -3"	2'-12" -7"	2'-13" -2"	2'-4"	2'-3" -10"	2'-5"	2'-3" -9"	2'-5" -1"	2'-3" -6"	2'-5" -4"	9'-4" -6"	3'-0" -5"	2'-15" -9"	2'-16" -11"	2'-17" -9"	2'-19" -7"
33"	6'-4" -10"	2'-12" -3"	2'-13" -4"	2'-13" -8"	2'-14" -4"	2'-4" -3"	2'-4" -1"	2'-5" -3"	2'-4" -1"	2'-5" -4"	2'-3" -9"	2'-5" -7"	9'-4" -10"	3'-0" -3"	2'-16" -6"	2'-18" -6"	2'-19" -5"	2'-21" -5"
36"	10'-6" -1"	2'-13" -3"	2'-14" -5"	2'-14" -9"	2'-15" -7"	2'-4" -8"	2'-4" -6"	2'-5" -9"	2'-4" -9"	2'-5" -10"	2'-4" -2"	2'-6" -1"	11'-2" -1"	3'-0" -8"	2'-17" -8"	2'-20"	2'-21"	2'-23" -2"

QUANTITIES SHOWN BELOW ARE FOR TWO HEADWALLS.

RCP/ HDPE SIZE DIA.	RCP/ HDPE AREA SQ. FT.	SINGLE RCP/HDPE						DOUBLE RCP/HDPE						X	Y	L	h
		0° SKEW		15° SKEW		30° SKEW		0° SKEW		15° SKEW		30° SKEW					
		CONC CU YD	STEEL LB	CONC CU YD	STEEL LB	CONC CU YD	STEEL LB	CONC CU YD	STEEL LB	CONC CU YD	STEEL LB	CONC CU YD	STEEL LB				
12"	0.79	1.00	46	1.09	49	1.10	49	1.14	50	1.41	59	1.53	62	1.58	64	1.73	67	10"	1'-2"	4'	3'
15"	1.23	1.32	55	1.45	58	1.47	59	1.52	60	1.80	70	1.93	73	2.01	75	2.18	79	10¼"	1'-2¼"	5'	3'-3½"
18"	1.77	1.62	69	1.77	73	1.80	74	1.85	75	2.15	85	2.31	89	2.40	91	2.60	96	10½"	1'-2½"	5'-9"	3'-7"
21"	2.41	1.95	77	2.13	82	2.16	83	2.23	85	2.59	95	2.79	101	2.90	103	3.13	108	10¾"	1'-2¾"	6'-6"	3'-10½"
24"	3.14	2.27	96	2.48	102	2.52	103	2.60	105	3.01	116	3.24	122	3.37	125	3.64	131	11"	1'-3"	7'-3"	4'-2"
27"	3.98	2.62	105	2.86	111	2.90	112	2.99	114	3.48	128	3.75	134	3.89	137	4.21	144	11"	1'-3"	8'	4'-5"
30"	4.91	3.08	117	3.37	123	3.41	124	3.44	127	4.07	141	4.38	148	4.55	152	4.90	159	11½"	1'-3½"	9'	4'-9"
33"	5.94	3.50	125	3.82	132	3.87	134	3.98	137	4.62	153	4.98	160	5.17	164	5.56	172	11¾"	1'-3¾"	9'-9"	5'-1½"
36"	7.07	3.93	161	4.29	169	4.34	171	4.47	174	5.19	190	5.59	200	5.80	204	6.24	213	1'	1'-4"	10'-6"	5'-4"

NOTES:

1. Concrete shall be class A or AA.
2. Reinforcing steel shall be deformed bars with maximum spacing of 18 inches set 2 ½ inches clear of surface of concrete except as noted. Bar ends shall be kept 1½ inches clear of surface of concrete. Reinforcing bars may be cut and bent in field.
3. Footings shown are of minimum depth and shall be extended if soil is unsuitable or liable to scour.
4. Culvert pipes to be set on a skew shall be mitered when headwalls are constructed. When headwalls are not constructed the pipes shall not be mitered except in overflow section.
5. For estimating headwall quantities on skewed culverts:
   0° to 10° - use quantities for 0° skew.
   11° to 25° = use quantities for 15° skew.
   26° to 40° - use quantities for 30° skew.
   41° to 55° - use quantities for 45° skew.
   over 55° = calculate quantities required.
   Culverts should be installed on 5° increments where it is feasible.
6. Dimensions X, Y, L, and h to remain constant regardless of minor variations in wall thickness due to class or type of pipe used.
7. See sheet R-2.9.1 for details if connecting to HDPE pipe.

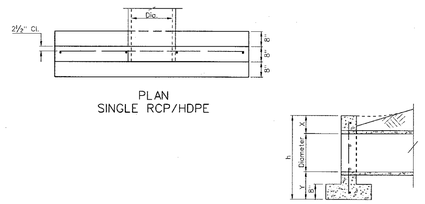
SHEET 2 OF 2

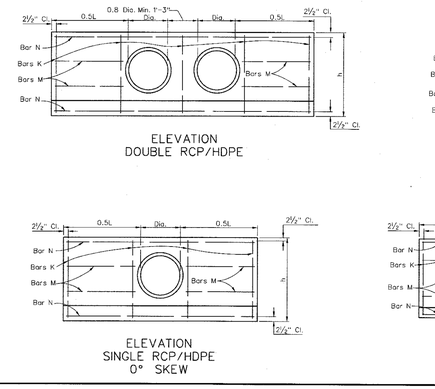
STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

CULVERT HEADWALLS
12" TO 36" RCP/HDPE

R-2.5.1.1	(502)	Signed Original On File
ADOPTED 8/69	REVISED 5/09	CHIEF HYDRAULICS ENGR.

R-2.7





SHEET 1 OF 2

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

CULVERT HEADWALLS
12" TO 36" RCP/HDPE

R-2.5.1	(502)	Signed Original On File
ADOPTED 8/69	REVISED 5/09	CHIEF HYDRAULICS ENGR.

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.

CITY OF LAS VEGAS, NV

PulteGroup

SKYE CANYON II - PARCEL 2.17
STREET SECTIONS AND DETAILS

S12 T19S R59E

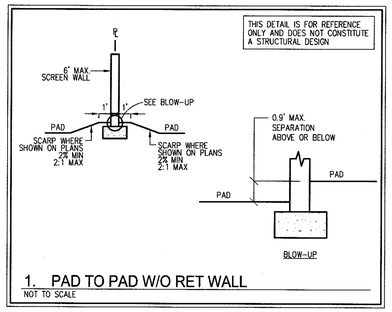
DATE: 10/24/18
DRAFTER: DNP
DESIGNER: DNP
CHECKED: STS

PROJECT NO.
OLY1721-000

PROFESSIONAL ENGINEER - STATE OF NEVADA
JERRY N. SLATER
Exp. 06/30/2020
CIVIL
NO. 14167
10-24-18

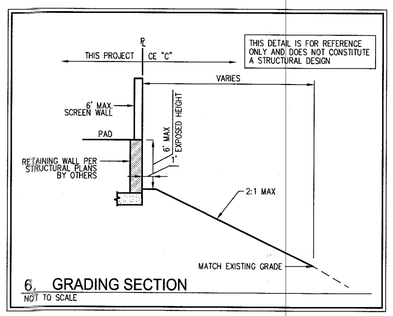
D-1
SHEET 10 OF 34

J:\OLY1721-000 skye canyon parcel 2.17\Data\Engrcv\Oly1721-000-dtl.dwg 10/24/2018 11:53 AM Dominic Pronsolino



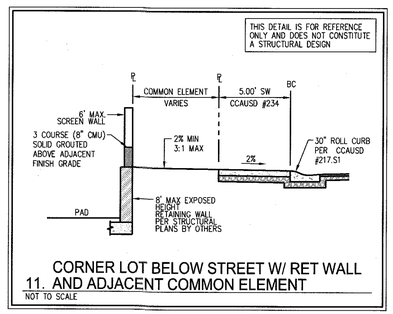
1. PAD TO PAD W/O RET WALL

NOT TO SCALE



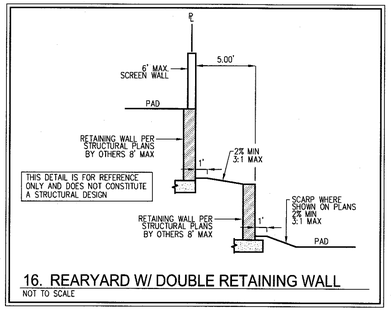
6. GRADING SECTION

NOT TO SCALE



CORNER LOT BELOW STREET W/ RET WALL
11. AND ADJACENT COMMON ELEMENT

NOT TO SCALE



16. REARYARD W/ DOUBLE RETAINING WALL

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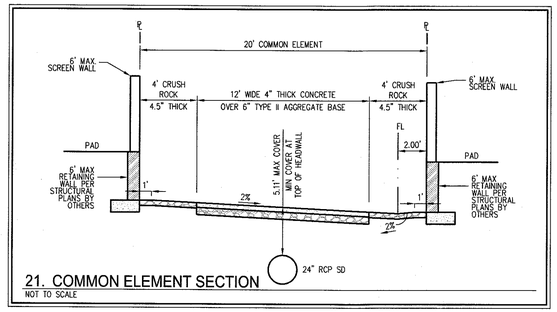
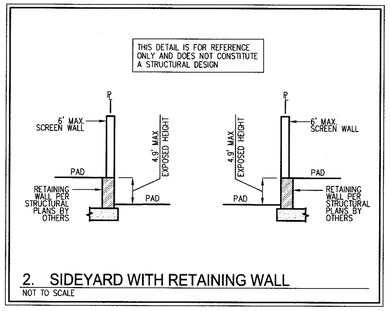


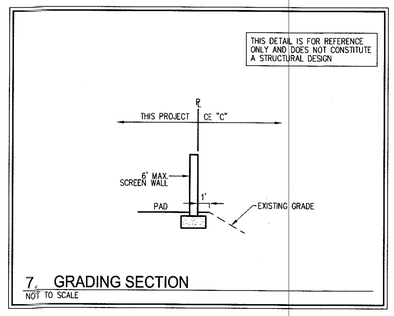
21. COMMON ELEMENT SECTION

NOT TO SCALE



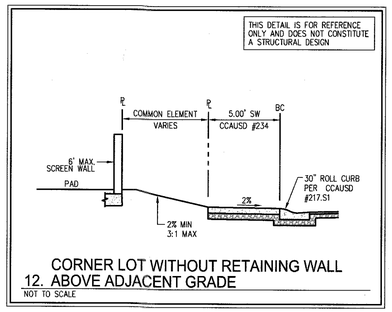
2. SIDEYARD WITH RETAINING WALL

NOT TO SCALE



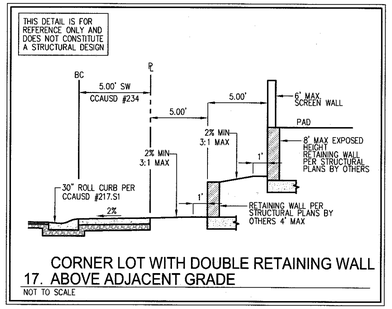
7. GRADING SECTION

NOT TO SCALE



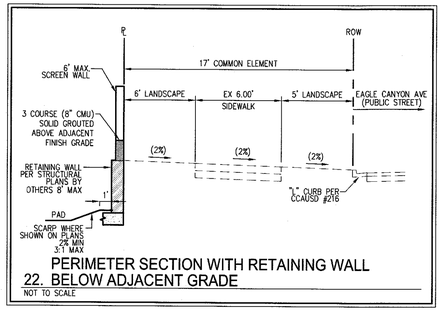
CORNER LOT WITHOUT RETAINING WALL
12. ABOVE ADJACENT GRADE

NOT TO SCALE



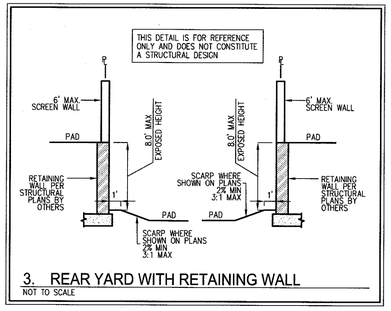
CORNER LOT WITH DOUBLE RETAINING WALL
17. ABOVE ADJACENT GRADE

NOT TO SCALE



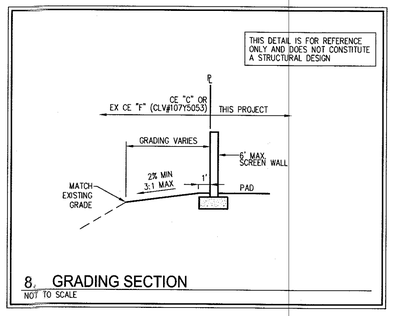
PERIMETER SECTION WITH RETAINING WALL
22. BELOW ADJACENT GRADE

NOT TO SCALE



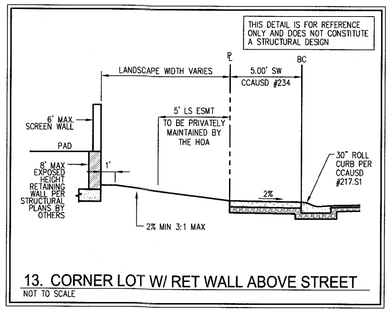
3. REAR YARD WITH RETAINING WALL

NOT TO SCALE



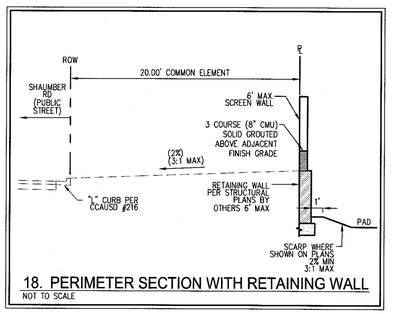
8. GRADING SECTION

NOT TO SCALE



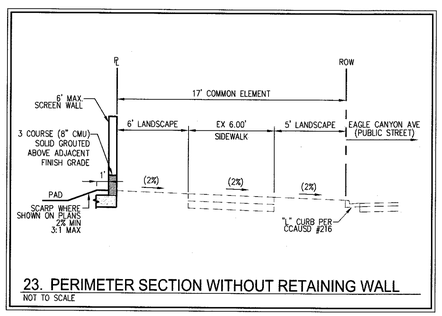
CORNER LOT W/ RET WALL ABOVE STREET
13. WITH RETAINING WALL

NOT TO SCALE



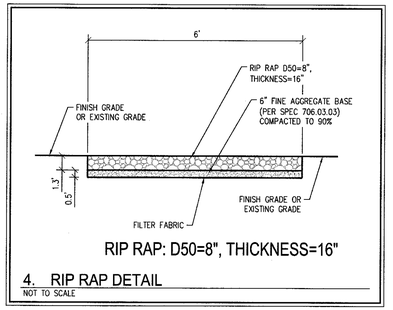
18. PERIMETER SECTION WITH RETAINING WALL

NOT TO SCALE



23. PERIMETER SECTION WITHOUT RETAINING WALL

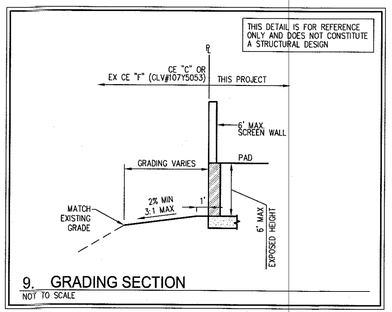
NOT TO SCALE



RIP RAP: D50=8", THICKNESS=16"

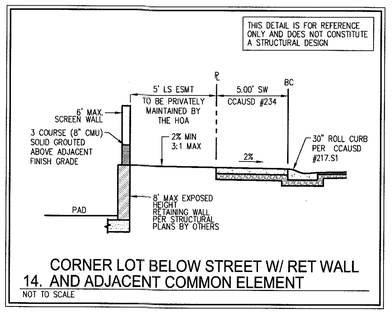
4. RIP RAP DETAIL

NOT TO SCALE



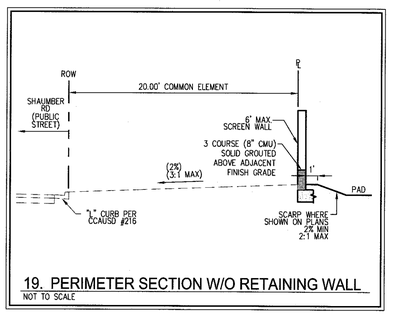
9. GRADING SECTION

NOT TO SCALE



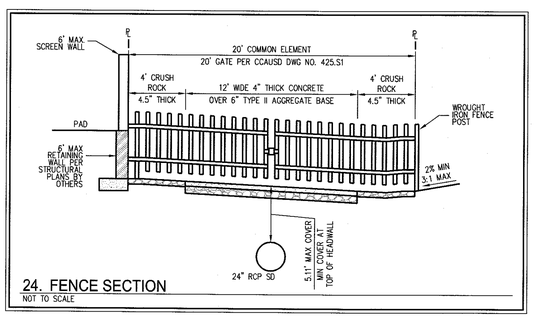
CORNER LOT BELOW STREET W/ RET WALL
14. AND ADJACENT COMMON ELEMENT

NOT TO SCALE



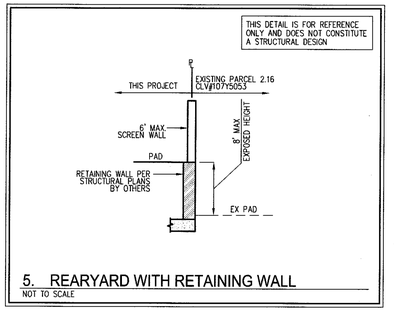
19. PERIMETER SECTION W/O RETAINING WALL

NOT TO SCALE



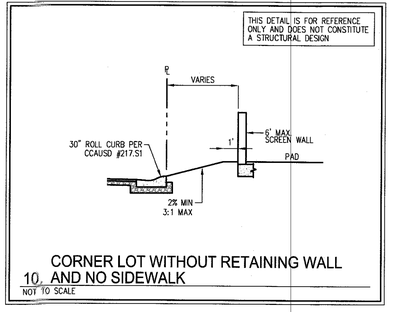
24. FENCE SECTION

NOT TO SCALE



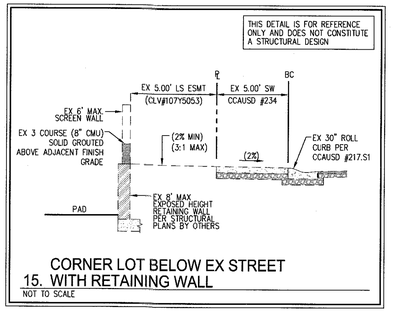
5. REARYARD WITH RETAINING WALL

NOT TO SCALE



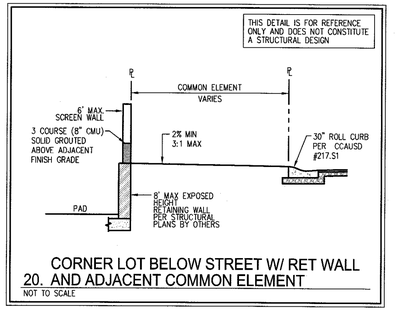
CORNER LOT WITHOUT RETAINING WALL
10. AND NO SIDEWALK

NOT TO SCALE



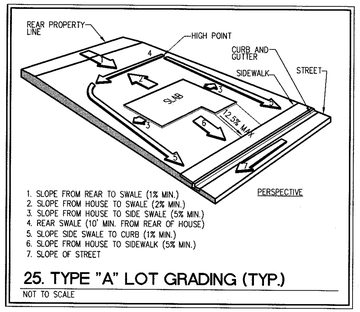
CORNER LOT BELOW EX STREET
15. WITH RETAINING WALL

NOT TO SCALE



CORNER LOT BELOW STREET W/ RET WALL
20. AND ADJACENT COMMON ELEMENT

NOT TO SCALE



1. SLOPE FROM REAR TO SWALE (1% MIN.)
2. SLOPE FROM HOUSE TO SWALE (2% MIN.)
3. SLOPE FROM HOUSE TO SIDE SWALE (5% MIN.)
4. REAR SWALE (10' MIN. FROM REAR OF HOUSE)
5. SLOPE SIDE SWALE TO CURB (1% MIN.)
6. SLOPE FROM HOUSE TO SIDEWALK (5% MIN.)
7. SLOPE OF STREET

25. TYPE "A" LOT GRADING (TYP.)

NOT TO SCALE

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.

CITY OF LAS VEGAS, NV

PulteGroup

SKYE CANYON II - PARCEL 2.17
GRADING SECTIONS AND DETAILS - I

S:12 T:19 S R:59 E

DATE: 10/24/18
DRAFTER: DNP
DESIGNER: DNP
CHECKED: STS

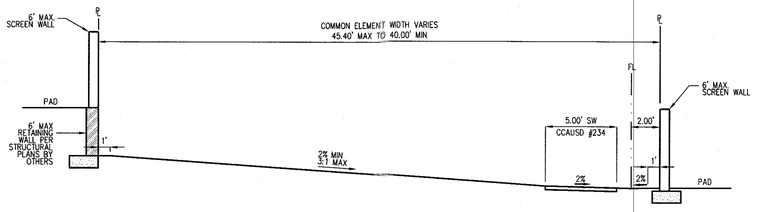
PROJECT NO.
OLY1721-000

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

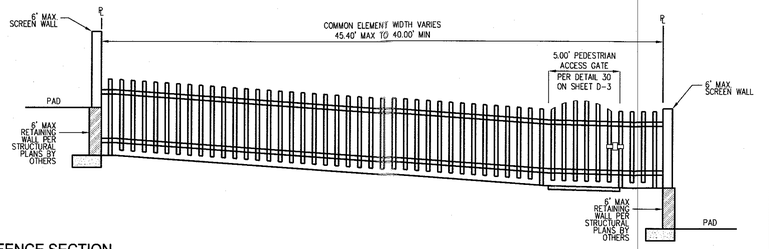
10/24/18

D-2
SHEET 11 OF 34

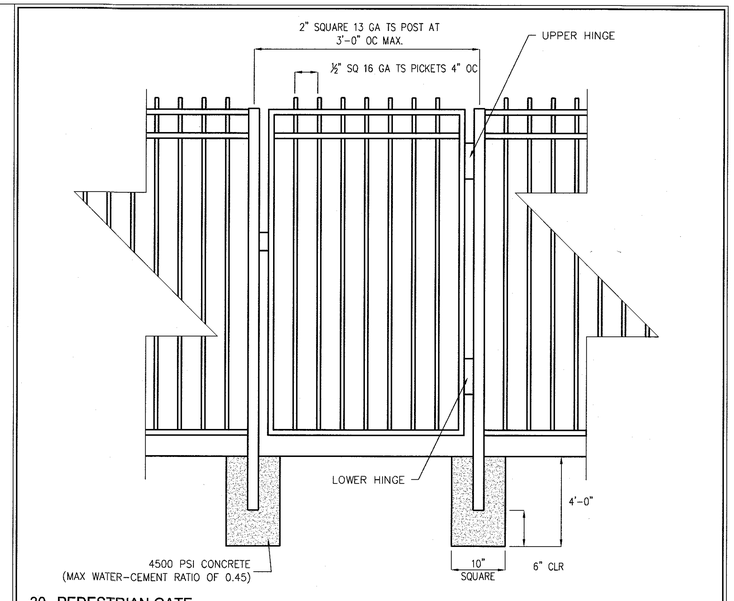
J:\OLY1721.000 skye canyon parcel 2.17\dwg\Improv\OLY1721-000-di12.dwg 10/24/2018 11:53 AM Dominic Pandigan



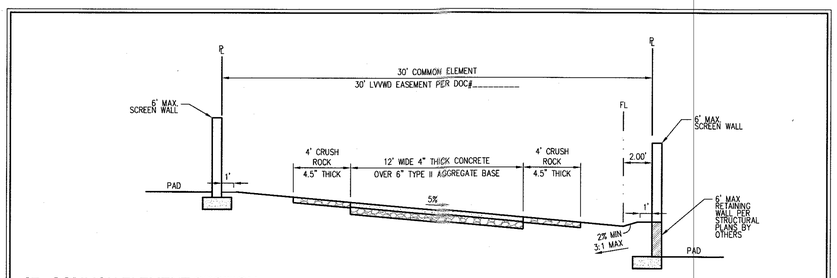
25. COMMON ELEMENT SECTION
NOT TO SCALE



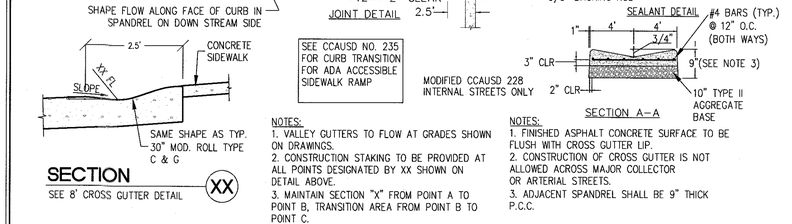
26. FENCE SECTION
NOT TO SCALE



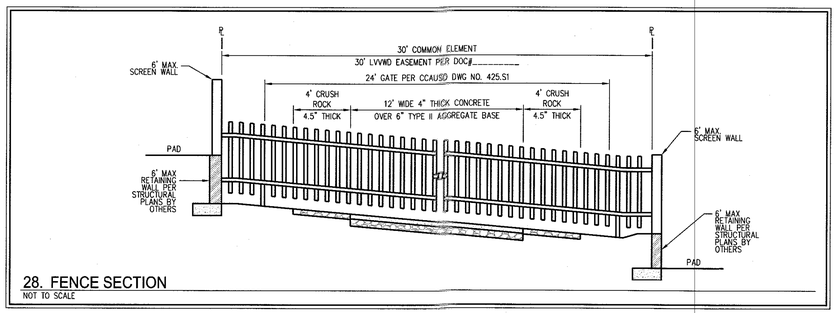
30. PEDESTRIAN GATE
NOT TO SCALE



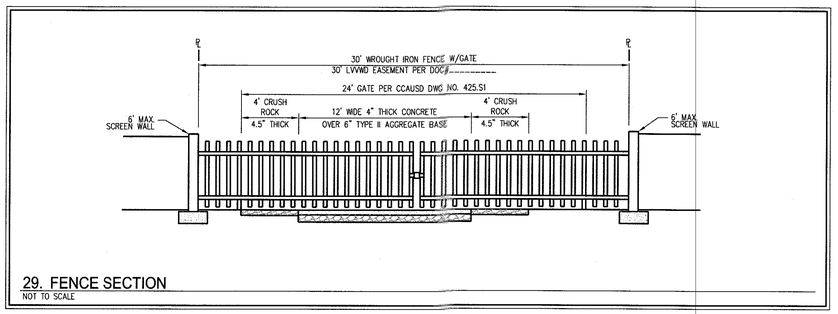
27. COMMON ELEMENT SECTION
NOT TO SCALE



31. MODIFIED 8' WIDE CROSS GUTTER
NOT TO SCALE



28. FENCE SECTION
NOT TO SCALE



29. FENCE SECTION
NOT TO SCALE

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT No. 135294 FIRST APPROVED DATE:

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.

CITY OF LAS VEGAS, NV

PulteGroup

SKYE CANYON II - PARCEL 2.17
GRADING SECTIONS AND DETAILS - II

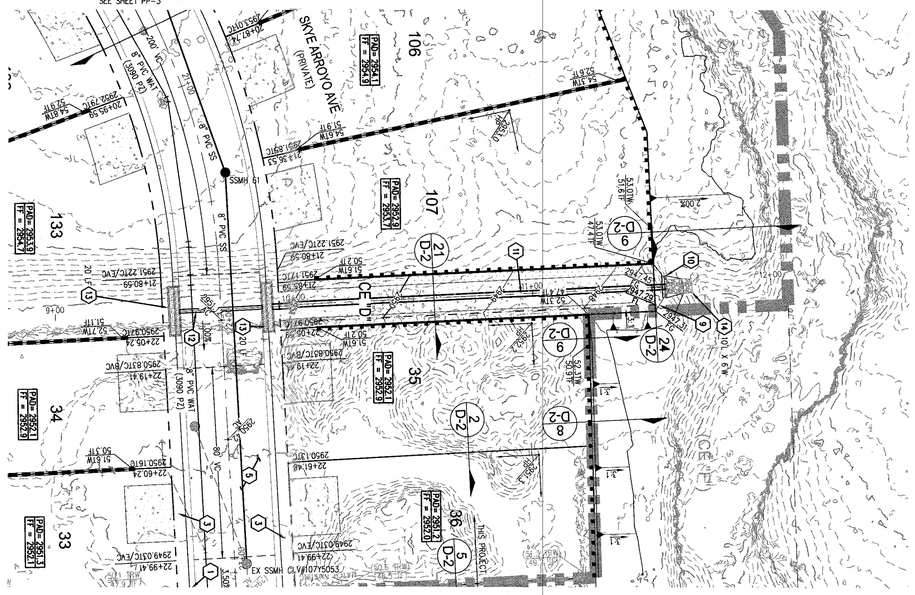
S 12
R 59 E

DATE: 10/24/18
DRAFTER: DNP
DESIGNER: DNP
CHECKED: STS
PROJECT NO.
OLY1721-000

PROFESSIONAL ENGINEER - STATE OF NEVADA
JERRY J. SLATER
No. 14167
Exp. 06/30/2020
CIVIL
10-24-18

D-3
SHEET 12 OF 34

J:\Oly\1721-000 skye canyon parcel 2.17\dwg\engrprov\oly1721-000-dtl2.dwg 10/24/2018 11:54 AM Dominic Pangilinan



NORTH STORM DRAIN - PLAN VIEW

(PUBLIC)

NORTH STORM DRAIN - PROFILE VIEW

HORIZ: 1" = 30'
VERT: 1" = 5'

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

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 2900 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 1801.00)

SOILS REPORT

SOILS REPORT BY GEOTEK RESIDENTIAL, LLC
PROJECT NO. 13934-LVR DATED 01/11/2018

EARTHWORKS

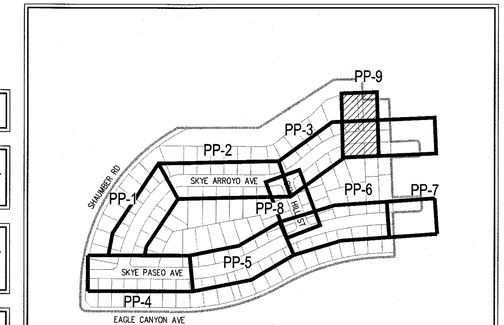
EARTHWORK QUANTITIES (RAW):
CUT= 62,276 CU YDS
FILL= 36,725 CU YDS

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.



KEY MAP
NOT TO SCALE

GRADING NOTES

1. CONSTRUCT 30" ROLL CURB AND GUTTER PER CCAUSD NO. 217.S1. CURB FLOW LINES LESS THAN 0.60% GRADE SHALL BE WATER TESTED. ANY CURB THAT DOES NOT FLOW SHALL BE REMOVED AND REPLACED AT NO COST TO THE CITY
2. INSTALL WROUGHT IRON FENCE (PEDESTRIAN ACCESS GATE WHERE SHOWN ON PLANS PER DETAIL 30 ON SHEET D-3
3. INSTALL 5' WIDE CONCRETE SIDEWALK (5" THICK OVER 6" TYPE II AGGREGATE BASE) PER CCAUSD #234
4. INSTALL 8-FT CROSS GUTTER PER DETAIL 31 ON SHEET D-3
5. INSTALL 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
6. CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES OR EQUIVALENT CCAUSD NO. 235, CASE 1 & 235.1
7. INSTALL 24' WIDE GATE PER CCAUSED DWG NO. 425.S1
8. PERIMETER LANDSCAPE TO BE CONSTRUCTED BY MASTER DEVELOPER
9. INSTALL 20' WIDE GATE PER CCAUSED DWG NO. 425.S1
10. INSTALL CULVERT HEADWALL PER N-DOT DETAIL R-2.5.1
11. INSTALL 24" CLASS III RCP STORM DRAIN
12. INSTALL 18" C905 PVC STORM DRAIN
13. INSTALL TYPE "CM2" DROP INLET PER CCAUSD #412.1 AND #421 (SIZE PER PLANS)
14. RIP RAP D50=8" THICKNESS=16" WITH 6" FINE AGGREGATE BASE (PER SPEC 706.03.03) COMPACTED TO 90% OVER FILTER FABRIC PER DETAIL 4 ON SHEET D-2

BENCHMARK

BM 7LV90 7NWS CITY OF LAS VEGAS RIVET AND ROUND PLATE IN CONCRETE CYLINDER, SOUTHEAST CORNER OF HUALAPAI WAY AND IRON MOUNTAIN ROAD.

ELEV: 2840.13 FEET (865.67 METERS) (NAVD 1988)

BASIS OF BEARINGS

SOUTH 00°34'18" EAST, BEING THE BEARING OF THE EAST LINE OF THE NORTHEAST QUARTER (NE ¼) OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST M.D.M., AS PER FILE 151, PAGE 14, OF SURVEYS ON FILE IN THE COUNTY RECORDER'S OFFICE.

LEGAL DESCRIPTION

BEING A PORTION OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST M.D.M., CLARK COUNTY, NEVADA.

EASEMENT NOTE

ALL PRIVATE STREETS ARE P.U.E., PUBLIC SEWER EASEMENTS AND PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED BY THE HOA.

SEWER CONNECTION NOTE

ONE OR MORE SEGMENTS OF THE DOWNSTREAM SEWER SYSTEM THAT WILL SERVE THIS PROJECT HAS NOT BEEN COMPLETED AND/OR ACCEPTED FOR MAINTENANCE BY THE CITY OF LAS VEGAS. ANY WORK DONE ON THIS PROJECT PRIOR TO THE COMPLETION AND/OR ACCEPTANCE OF THE DOWNSTREAM SEWER SYSTEMS(S) SHALL BE DONE AT THE DEVELOPER'S OWN RISK. THE CITY OF LAS VEGAS RESERVES THE RIGHT TO PREVENT THE PHYSICAL CONNECTION OF THIS PROJECT INTO THE DOWNSTREAM SEWER SYSTEM UNTIL ALL SEGMENTS HAVE BEEN COMPLETED AND ACCEPTED FOR MAINTENANCE, OR UNTIL SUCH TIME AS THEY ARE DEEMED AVAILABLE FOR SERVICE.

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

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

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.

CITY OF LAS VEGAS, NV

PulteGroup

SKYE CANYON II - PARCEL 2.17
PLAN AND PROFILE - IX

S 12 T 19 R 59 E

DATE: 10/24/18
DRAFTER: DNP
DESIGNER: DNP
CHECKED: STS

PROJECT NO.
OLY1721-000

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

PP-9
SHEET 21 OF 34

J:\OLY1721-000 skye canyon parcel 2.17\dwg\improv\oly1721-000-pnp.dwg 10/24/2018 11:55 AM Dominic Pandigan