

DS #:

5154

APN:

125-07-210.008

PROJECT:

Skye Canyon FSED

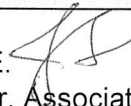
SUBMITTAL:

1st

SCANNED BY/DATE:

CHECKED BY/DATE:



CITY OF LAS VEGAS		DATE:
INTER-OFFICE MEMORANDUM		July 30, 2019
TO: Land Development Services Department of Building & Safety		FROM: Jennifer Shinn, P.E.  Flood Control, Engr. Associate Department of Public Works
SUBJECT:	Drainage Study for:	COPIES TO:
	Skye Canyon FSED	Nextstep Consulting Engineers
Cross Streets:	Skye Park Drive & Skye Canyon Park Drive	Sunrise Mountainview Hospital
File Number:	F:\Depot\DSMemos\DS5154A.doc	Bart Anderson, P.E., DevCo
Parcel Number:	125-07-210-008	
Zoning Action:	SDR-76807	
FEMA Flood Zone	YES NO X	
Proposed Storm Drain	YES X NO	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1 st Submittal	7/10/2019	7/30/2019	See Comments Below	\$400.00	3483899: \$400
			TOTAL FEES (LDDRS):	\$400.00	----

REMARKS:

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

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

1. A letter sealed and signed by a Nevada registered civil engineer must be included in every submittal certifying documents on the electronic CD matches 100% of the hardcopy submittal. The new submittal requirement is effective on May 1, 2019. If there are any questions regarding these new requirements, please contact Albert Sung in the City Flood Control Section at (702) 229-6541.
2. The finish floor does not meet the Regional Flood Control District minimum criteria of twice the Q100 depth of flow up to 18-inches above the water surface (CCRFGD Manual Section 304.4.E.1) or 6-inch minimum above the highest adjacent top of curb (CCRFGD Manual Section 1602 304.4.E.1). The following finish floor should be revised or alternate flood protection provided.

LOT	FF shown	Min FF
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Proposed Building	2808.50	2816.69
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As an alternate, each lot must be discussed in the drainage study, shown to be flood protected, and any necessary flood improvements must be shown on the plans.

3. Revise the Grading Plan to eliminate the low point at the northwest corner of the building.
4. Provide existing grades for the top of the existing walls. In addition, revise the cross section details to demonstrate the double walls do not create a "no mans land" where stormwater and debris can collect.

5. The Grading Plan calls out RCP pipe material at a slope of 6.63% while the FlowMaster analysis calls out a 12-inch PVC at 6.3%. Revise the hydraulic analysis to utilize an appropriate roughness coefficient for RCP and the correct slope.
6. Provide detail of the proposed trash enclosure.
7. Provide proposed grades for the top of wall along the eastern boundary of the subject site.
8. Revise the section details to accurately depict the grade differences at the proposed retaining walls.
9. Review and revise the walls grades for section K/C8.01 (Sheet C4.02). The TW of 10.36' appears excessively high and the TF of 4.33' is above the adjacent TC of 3.52'.
10. Revise Construction Note 16 to call out 8' valley gutter.
11. Callout 0" to 6" curb transitions.
12. Add a note on the plans "All onsite drainage facilities are privately owned and privately maintained by the property owner."
13. 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: 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/R60E/07
AREA G07



**LAS VEGAS
CITY COUNCIL**

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Mayor

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DEPARTMENT
ROBERT SUMMERFIELD
DIRECTOR

**DEVELOPMENT
SERVICES CENTER**

333 N. RANCHO DRIVE
LAS VEGAS, NV 89106
702.229.4830 | VOICE
711 | TTY



July 11, 2019

Mr. David Delzotto
Pemington Skye, LLC
5920 South Rainbow Boulevard, Suite #11
Las Vegas, Nevada 89118

**RE: SDR-76807 [PRJ-76085] – ADMINISTRATIVE SITE DEVELOPMENT
PLAN REVIEW
ADMINISTRATIVE CYCLE – JULY 2019**

Dear Mr. Delzotto:

Your request for a Minor Amendment of an approved Site Development Plan Review (SDR-63598) FOR A PROPOSED 10,800 SQUARE-FOOT COMMERCIAL BUILDING on 2.57 acres at 9700 W Skye Canyon Park Drive (APN 125-07-210-008), T-D (Traditional Development) Zone [GC (General Commercial) Skye Canyon Special Land Use Designation], Ward 6 (Fiore) [PRJ-76085], has been considered administratively by the Department of Planning staff.

The Department of Planning has administratively **APPROVED** your request subject to the following:

Planning

1. This approval shall be void two years from the date of final approval, unless exercised pursuant to the provisions of LVMC Title 19.16. An Extension of Time may be filed for consideration by the City of Las Vegas.
2. All development shall be in conformance with the site plan and landscape plan dated 06/13/19, except as amended by conditions herein.
3. All necessary building permits shall be obtained and final inspections shall be completed in compliance with Title 19 and all codes as required by the Department of Building and Safety.
4. These Conditions of Approval shall be affixed to the cover sheet of any plan set submitted for building permit.
5. A technical landscape plan, signed and sealed by a Registered Architect, Landscape Architect, Residential Designer or Civil Engineer, must be submitted prior to or at the same time application is made for a building permit. A permanent underground sprinkler system is required, and shall be permanently maintained in a satisfactory manner; the landscape plan shall include irrigation specifications. Installed landscaping shall not impede visibility of any traffic control device.

Mr. David Delzotto
Pemington Skye, LLC
SDR-76807 [PRJ-76085] – Page Two
July 11, 2019

6. A fully operational fire protection system, including fire apparatus roads, fire hydrants and water supply, shall be installed and shall be functioning prior to construction of any combustible structures.
7. All City Code requirements and design standards of all City Departments must be satisfied, except as modified herein.

Public Works

8. An update to the previously approved Drainage Plan and Technical Drainage Study must be submitted to and approved by the Department of Public Works prior to submittal of any construction drawings or the issuance of any building or grading permits, whichever may occur first. Provide and improve all drainageways recommended in the approved drainage study update.
9. Site development to comply with all applicable conditions of approval for Site Development Plan Review SDR-63598, The Skye Canyon Tentative Map (TMP-65803), The Skye Canyon II Tentative Map (TMP-58560) and all other applicable site-related actions.

This action by the Department of Planning staff on **July 11, 2019** is final unless a written appeal is filed with the Director of the Department of Planning within ten days of the date of this letter.

Sincerely,



Eric McCammond
Sr. Management Analyst
Case Planning Division

EM:clb

cc: Ms. Lucy Stewart
LAS Consulting
1930 Village Center Circle, Building 3-577
Las Vegas, Nevada 89134

**TECHNICAL DRAINAGE STUDY UPDATE
FOR
SKYE CANYON FSED**

JULY 2019

Prepared for:

**Mr. Jeremy Bradshaw
Sunrise Mountainview Hospital, Inc
One Park Plaza
Nashville, TN 37203
(702) 962-9000**

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE STUDY INFORMATION FORM

Name of Development: **Skye Canyon FSED** Date: **7/9/2019**
 Location of Development: a) Descriptive (Cross Streets) **NEC of Skye Park Drive and Skye Canyon Park Dr**
 b) Section **7** Township **19 South** Range **60 East**
 Name of Owner: **Sunrise Mountainview Hospital, Inc.** Assessors Parcel Number: **125-07-210-008**
 Telephone Number: **(702) 962-9000**
 Address: **One Park Plaza**
North Las Vegas, NV 89031
 Contact Person Name: **Christopher Zhang, P.E.** Telephone Number: **(702) 461-3228**
 Firm: **NextStep Consulting Engineers, LLC** Fax Number: **N/A**
 Address: **3651 Lindell Road, Suite D139** Email:
Las Vegas, NV 89031 **Czhang@NextStepConsultingEng.com**

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	X	Building Permit		

- Total Owned Land Area: At Site: **± 2.57 Ac** Being Developed: **± 2.57 Ac**
- Is a portion or all of the subject property located in a designated FEMA Flood Hazard Area? YES **NO**
- Is the property bordered or crossed by an existing or proposed Clark County Regional Flood Control District Master Planned Facility? YES **NO**
- Proposed type of development (Residential, Commercial, Etc.)? **Commercial**
- Approximate upstream land area which drains to the subject site? **0 Ac**
- Has the site drainage been evaluated in the past? **YES** NO
 If yes, please identify documentation:
Skye Canyon Village (DS4812)
- If known, please briefly identify the proposed discharge point(s) of runoff from the site:
Storm Drain system.
- Briefly describe your proposed schedule for the subject project: **ASAP**



Engineer's Seal

Submit this form as part of the required drainage study to the local entity which has jurisdiction over the subject property. This form may provide sufficient information to serve as the Conceptual Drainage Study.

* Review and concurrence of the Clark County Regional Flood Control District is Required.

Local Entity File No.

Revision	Date

REFERENCE: NSCE Project No. 4013

STANDARD FORM 1

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE SUBMITTAL CHECKLIST

Project Name: **Skye Canyon FSED**

Map ID:

Firm Name: **NextStep Consulting Engineers, LLC**

Engineer: **Christopher Zhang, P.E.**

Address: **3651 Lindell Road, Suite D139**

City: **Las Vegas**

State: **NV**

Zip: **89103**

Phone Number: **(702) 461-3228**

Fax Number: **N/A**

Property Owner: **Sunrise Mountainview Hospital, Inc**

Address: **One Park Plaza**

City: **Nashville**

State: **TN**

Zip: **37203**

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 (CCRFCDD) Hydrologic Criteria and Drainage Design Manual (HC&DDM).

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 REQUIREMENTS

Yes

No

X

Design Manual **Standard Form 1** with the engineer's seal and signature.

N/A

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

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

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, for Flood Control Facilities and Environmental areas with the site delineated. |
| N/A | Off-site drainage basin maps for existing, interim and future conditions showing the existing topography, basin boundaries, concentration points, and flows in cfs. |
| N/A | 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. |
| N/A | Vicinity Map with local and major cross streets identified and a north arrow. |

III. DRAINAGE PLAN

YES NO

- | | |
|---|---|
| X | Sheet size: 24" x 36" sealed by a registered engineer in the State of Nevada |
| X | Minimum scale: 1"=60' |
| X | Project Name. |
| X | Vicinity Map with local and major cross streets. |
| X | Revision box. |
| X | North arrow and bar scale. |
| X | Engineer's/consultants 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

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

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 finished floor elevations with top-of-curb elevations at upstream end of lot. |
| X | Proposed typical street sections. |
| X | Streets with offset 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. |
| N/A | Delineation of proposed on-site drainage basins indicating area and 10-year and 100-year storm peak flows at basin concentration points. |
| N/A | Concentration points and drainage flow direction with Q_{100} and V_{100} and D_{100} in streets. |
| N/A | 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. |
| N/A | 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. |
| N/A | 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 |
| N/A | Location and detail of existing, proposed, and future block wall openings. Minimum size is 16" x 48". Wrought iron gate is required for flows > 10 cfs. |
| N/A | Location and detail of flood walls illustrating depth of flow, proposed grouting height, etc. |

REFERENCE:

STANDARD FORM 2

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

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. |
| N/A | Alignment of all existing, proposed, or future Regional Facilities adjacent to the site. Facilities are not listed as Regional. |
| 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 |
| 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. N/A |
| 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 perimeters and interior streets. The minimum slope is 0.4 percent. |

IV. Hydrologic Analysis

- | | |
|-----|---|
| N/A | Appropriate soil information for existing and future conditions. |
| 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. |
| N/A | 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. |
| N/A | Use of correct precipitation values in and around the McCarran Airport rainfall area. |
| X | A discussion in the text of the hydrologic analysis justifying sub-basin boundaries and cutoffs, supporting assumptions, and calculations. |
| N/A | A summary table of stormwater flows showing basin area, Q ₁₀ and Q ₁₀₀ for both individual basins and combined basin flows, where applicable. |
| X | Copies of supporting technical information referenced from a previously approved study and a statement accepting these results. |
| X | On-site facilities must perpetuate flows through or around the site without significantly impacting adjacent owners in accordance with current Nevada Drainage Law. |

REFERENCE:

STANDARD FORM 2

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE SUBMITTAL CHECKLIST

V. HYDRAULIC ANALYSIS

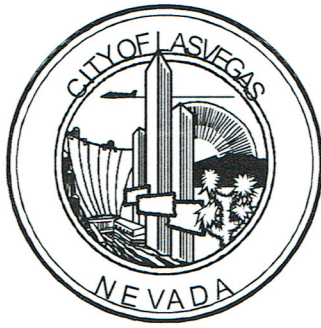
YES

NO

N/A	Flow split calculations and supporting documentation or reference for the method of flow split calculations used.
X	Normal depth street flow calculations and cross section diagrams for all interior and perimeter street. Provide “d x v” products for the Q_{100} and Q_{10} flows representing the worst case for interior and all perimeter streets. $Q_{100} d \times v \leq 8$. $Q_{10} d \times v \leq 6$ and 12 foot dry lane for rights-of-way ≥ 80 feet. Calculations must be labeled by street name as indicated on the Grading Plan.
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. N/A - 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 this report.
N/A	Provide a 50 percent clogging factor in the capacity calculations for drop inlets.
X	Hydraulic calculations for culverts and storm drains. D-load calculations must be provided for storm drain pipes in public right-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	
X		A notarized letter from the adjacent property owner(s) allowing off-site grading. (A copy of the letter must be received prior to final acceptance of the drainage study.)
	X	Copies of all conditions of approval for development related to this property. (e.g. zoning, use permit, tentative map, etc.) Verify compliance with conditions.
X		An electronic copy of the complete submittal is required to be submitted with one original hard copy of the study. Electronic documents should be on a universal computer-readable digital output device replicating your submittal. An Indexed Portable Document Format (PDF) or Print Ready CAD file formats with a minimum of 300dpi are the desired formats. If figures are in color, they must be scanned in color and saved as a separate file. 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.)

CITY OF LAS VEGAS MINIMUM DRAINAGE STUDY CRITERIA CHECKLIST

II. GRADING PLAN INFORMATION		
Yes	No	
N/A		Proposed on-site and off-site storm drains and other flood control facilities with plan and profile sheets for public storm drains showing the class of pipe, (Class III, IV, V, etc.), design hydraulic grade line, (HGL) and 100 year storm flow. A public drainage easement must be provided over on-site storm drains conveying off-site flows. An overflow path must be provided over all storm drains.
X		All existing and "to be constructed" walls with cross-sections showing wall type, (e.g. block wall, retaining wall, flood wall, etc.), with limits clearly defined, adjacent ground elevations. Wall heights must meet current ordinances and in no case exceed 14 feet above the adjacent property.
X		Street slopes for both interior and perimeter streets. Note: The minimum slope for a roadway is 0.4 percent, a minimum 18-inch storm drain must be provided where minimum slopes cannot be met.
X		Back of lot elevations and lot drainage pattern for all lots including common lots.
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.
X		Commercial and Common Lot Landscape areas are not allowed to drain over the sidewalk. The grading plans show flow lines with grades and sidewalk under drains for all landscape areas draining to the public ROW.

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

CITY OF LAS VEGAS MINIMUM DRAINAGE STUDY CRITERIA CHECKLIST

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.

NEXTSTEP CONSULTING ENGINEERS, LLC

3651 LINDELL ROAD, SUITE D139 | LAS VEGAS | NEVADA | 89103

A Full Civil Engineering Service Company

July 9, 2019

City of Las Vegas
Department of Public Works
333 N. Rancho Drive
Las Vegas, Nevada 89106

Attention: Mr. Albert Sung, P.E.
Flood Control Project Engineer

SUBJECT: TECHNICAL DRAINAGE STUDY UPDATE FOR SKYE CANYON FSED
NextStep Consulting Engineers, LLC Project No. 4013

Dear Mr. Sung:

We are submitting for your review a Technical Drainage Study Update for Skye Canyon FSED (Free Standing Emergency Department). This Update will address the latest changes to the previous Technical Drainage Study, DS4812, for Skye Canyon Village. A copy of the Drainage Study Approval Letter from City of Las Vegas Department of Public Works is included in Appendix A. This update will address the latest changes to the original grading plan in the Technical Drainage Study for Skye Canyon Village, DS4812.

We are currently in the process of obtaining entitlements (Site Development Review and etc.) for the propose development. We will provide copies of all conditions of approval once received.

According to the Clark County Regional Flood Control District 2018 Las Vegas Valley Flood Control Master Plan Update, the project is not adjacent to Regional Facilities. Please refer to Figure F-11 of the Clark County Regional Flood Control District 2018 Las Vegas Valley Flood Control Master Plan Update included in Appendix B.

According to the Federal Emergency Management Agency (FEMA) Community Panel 32003C1735E, the proposed site is located within Zone "X". Zone "X" is described as an are to be outside of the 500-year floodplain. Refer to Figure 1, included in Appendix B.

The proposed site is located within Pad M of the Skye Canyon Village as shown on Figure F1. Since approval of previous drainage study, the site plan has changed. The propose building location along with the parking layout have been modified. The propose building is now downstream of the previously approved location in the Skye Canyon Village study and therefore, in order to maintain the drainage pattern established in that study, the finish floor elevation on the propose building is lowered the previous established finish floor elevation in the approved Skye Canyon Village study. Figure 1 and a reduced copy of the grading plan taken from the Technical Drainage Study – Addendum 1 for Skye Canyon Village have been included in Appendix D for reference. All pertinent information has been highlighted.

Hydrologic Analysis

The proposed site is located within Pad M of the Skye Canyon Village and within basin SB34 as shown on Figure F1. The hydrologic analysis from the “Proposed Condition” in the previous approved study have been determined the worst case and is utilized for this update.

As established in the approved study, the 100-year flow of 9 cfs, generated from basin SB34, in the “Proposed Condition”, are routed through the parking lot and into a 3’x2’ catch basin and ultimately into the “North Storm Drain” system.

Figure F1 through F5 along with the “Proposed Condition” HEC-1 analysis taken from the Technical Drainage Study – Addendum 1 for Skye Canyon Village have been included in Appendix D. All pertinent information has been highlighted.

Flow Depth Analysis

The Flow Depth Analysis using FlowMaster computer software for the parking lot have been provided and included in Appendix C. The location of the hydraulic section for the parking lot are shown on Figure 2 included in Appendix C. The calculations are summarized in the following Table 1.

As shown on the referenced SHG EXHIBIT I taken from the Technical Drainage Study for the Skye Canyon Village, the propose Skye Canyon FSED site is adjacent to hydraulic sections SP2 and SP3 for Skye Park Drive; D1 and D2 for Street D (Parkland Skye Circle in this Update), respectively. The flow depth analysis for SP2, SP3, D1 and D2 taken from that referenced SHG EXHIBIT I have been included in Appendix D and is utilized for this update. All pertinent information has been highlighted. The calculations are summarized in the following Table 1.

Table 1
Flow Depth Analysis

Hydraulic Section	Street Width (ft)	Flow 100-year (cfs)	Slope (%)	Depth 100-year (ft)	Velocity 100-year (ft/s)	D x V 100-year
FM1	N/A	9	5.98	0.46	8.17	3.76
SP2	Full	25	1.9	0.46	4.0	1.9
SP3	Full	6.5	1.9	0.40	3.4	1.4
D1	Full	2	2.0	0.25	2.3	0.6
D2	Full	12	2.0	0.39	3.4	1.3

The flow values in the “Proposed Condition” from the Technical Drainage Study-Addendum 1 for Skye Canyon Village is utilized for the flow depth analysis in FM1 for the Parking Lot.

As shown on the above Table 1, the Depth/Velocity products (D x V) during the 100-year storm event are less than 6. Therefore, the 10-year and 100-year storm event Depth/Velocity products meet the CCRFCD Hydrologic and Drainage Manual criteria.

The propose finish floor elevation is more than twice depth of flow above the flow lines in the Parking Lot. Please refer to the grading plans included in the back pocket of this study.

The propose finish floor for the Skye Canyon FSED is lower than adjacent Skye Park Drive and Street D. A solid grouted CMU block wall is provided for flood protection. The solid grouted CMU block wall is set 17-feet from back of curb and at 2.0% slope with a 0.5-foot L-Curb, the finish grade at face of the solid grouted CMU block wall is 0.84-feet above adjacent flowline. Street D (Parkland Skye Circle in this Update) has a flow depth of 0.39-feet and a twice dept of flow of 0.78-feet above the adjacent flowline and it’s below the 0.84-feet, therefore, does not need to be solid grouted for flood protection. Sky Park Drive has a flow depth of 0.46-feet and a twice depth of flow of 0.92-feet and it’s above the 0.84-feet, therefore, one (1) course solid grouted CMU block wall is provided for flood protection. Please refer to the grading plans included in the back pocket of this study.

Drop Inlet and Storm Drain Lateral Analysis

The drop inlet analysis for the 3’x2’ drop inlet using the FlowMaster software have been provided and included in Appendix C. The propose finish floor elevation is more than

twice depth of flow above the top of grate of the 3'x2' drop inlet. Please refer to the grading plans included in the back pocket of this study.

A 12-inch PVC storm drain lateral is provided to connect the 3'x2' drop inlet to the propose manhole at the existing 24" RCP storm drain lateral that connects to the existing 60" RCP storm drain along the north property line of Skye Canyon Village. As shown on the FlowMaster analysis included in Appendix C, the 12-inch PVC storm drain have a full flow capacity of 11.62 cfs which is more than the required 9 cfs and therefore, the 12-inch PVC storm drain lateral is sufficient.

Storm Water Quality (LID Measure)

Per Section 1500 of the Clark County Regional Flood Control District Hydrologic Criteria and Drainage Design Manual (CCRFCD HC&DDM), this project is subject to Storm Water Quality requirements which require new parking lots equal or greater than 1 acre to provide Low Impact Development (LID) measures. The proposed measures for this project will include SNOOT Oil-Water-Debris Separator.

A shown on the Inlet Capacity Table taken from the Technical Drainage Study – Addendum 1 for Skye Canyon Village, a 2-year, 6-hour flow of 1.12 cfs was determined. Based on the max recommended flows from the reference materials in the Addendum 1 study, a BMP SNOOT Model 18F will be utilize.

The Inlet Capacity Table, BMP Design Discharge Calculation and the SNOOT Oil-Water-Debris Separator information taken from the Technical Drainage Study – Addendum 1 for Skye Canyon Village are included in Appendix D. All pertinent information has been highlighted

We look forward to your acceptance of this Technical Drainage Study Update for Skye Canyon FSED. If you have any questions or additional information is needed, please feel free to contact our office.

Respectfully,



Christopher Zhang, P.E.
Principal

NEXTSTEP CONSULTING ENGINEERS, LLC



TABLE OF APPENDICES

APPENDIX A (APPROVAL LETTER)

- Skye Canyon Village Drainage Study CLV Approval Letter

APPENDIX B (MPU MAP AND FIRM MAP)

- CCRFCD 2018 Las Vegas Valley Flood Control Master Plan Update F-11
- Figure 1

APPENDIX C (HYDRAULIC CALCULATIONS)

- Flow Depth Analysis
- Figure 2 – Hydraulic Section Location
- Drop Inlet Analysis
- 12-inch PVC Storm Drain Capacity Analysis

APPENDIX D (REFERENCE MATERIAL)

- Reference Material taken from Technical Drainage Study for Skye Canyon Village

APPENDIX A

(APPROVAL LETTER)

- Skye Canyon Village Drainage Study CLV Approval Letter

CITY OF LAS VEGAS		DATE:
INTER-OFFICE MEMORANDUM		November 4, 2016
TO: Land Development Services Department of Building & Safety		FROM: Albert Sung, P.E. <i>AS</i> Flood Control Project Engineer Department of Public Works
SUBJECT:	Drainage Study for:	COPIES TO:
	Skye Canyon Village	Anderson, Wahlen & Associates
Cross Streets:	NWC of Grand Canyon & Skye Canyon Park	MF Land, LLC
File Number:	F:\Depot\DSMemos\DS4812B.doc	Bart Anderson, P.E., DevCo
Parcel Number:	125-07-201-003	
Zoning Action:	MOD-62679; SUP-63594; SUP-63597; SDR-63598; VAR-63963 & GPA-64013	
FEMA Flood Zone	YES NO X	
Proposed Storm Drain	YES X NO	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1 st Submittal	7/06/2016	8/19/2016	Not Approved	\$400.00	450103: \$400
2 nd Submittal	10/24/2016	11/04/2016	See Comments Below	\$400.00	462830: \$400
TOTAL FEES (LDDRS):				\$800.00	----

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. Please note the Skye Canyon - Phase 3 Infrastructure must be approved prior to final approval of the Skye Canyon Village.
2. Please note that public drainage easements must be recorded by separate document prior to the final acceptance of the improvement plans unless they are to be recorded by parcel or final map.
3. Please note that all drainage improvements within Public Drainage Easements must be bonded and inspected.
4. Show and label existing offsite storm drain pipes proposed by others in the grading plan and plan & profile sheets.
5. Show HGL in the 72-inch RCP. It appears that the AutoCAD layer is turned off.

NOTE: Please be advised that all land surface area disturbances over 1 acre or any area adjacent to a water way must submit to the *Nevada Division of Environmental Protection* a "Notice of Intent" to discharge that certifies a stormwater pollution prevention plan has been developed and is maintained on site; for inclusion in the Stormwater General Permit No. NVR100000. A phased construction unit in a contiguous subdivision is considered under construction until all stripped or disturbed surface areas have been covered by paving, building construction or planting. For

more information, including forms and applications see <http://ndep.nv.gov/bwpc/storm01.htm> or call (775) 687-9429.

END OF REMARKS

OSK

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

APPENDIX B

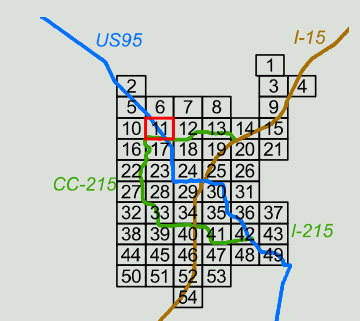
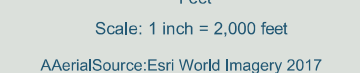
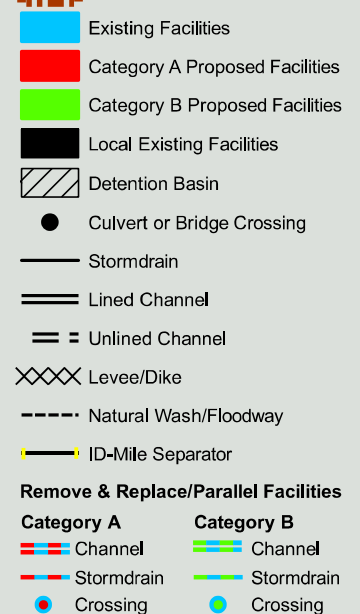
(MPU MAP AND FIRM MAP)

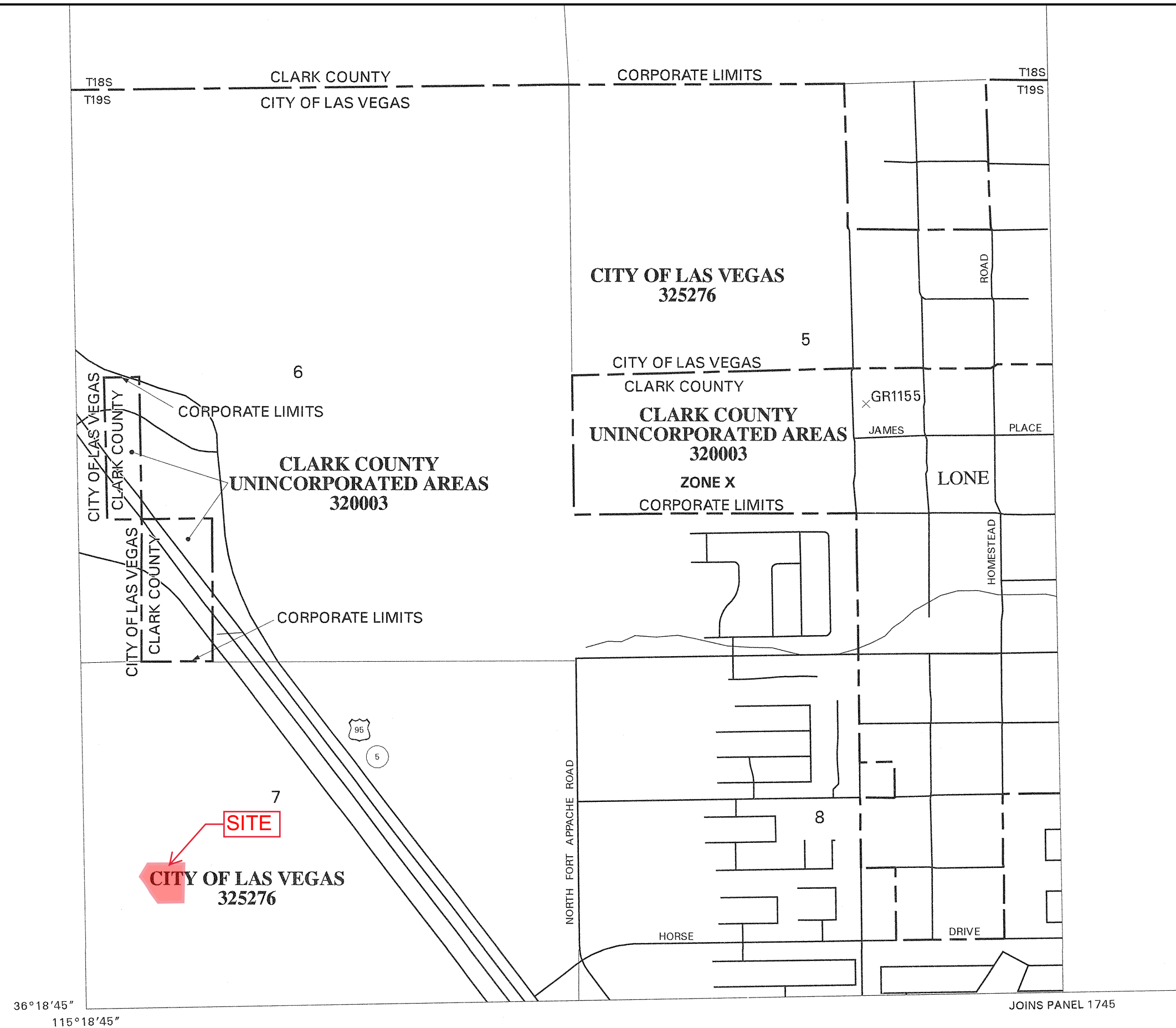
- CCRFCD 2018 Las Vegas Valley Flood Control Master Plan Update F-11
- Figure 1

ID / Mile	Status	Facility Description	Length (ft.)	Flow (cfs)	HEC-1 Node	HEC-1 Model	Tributary Area (sq.mi.)	Channel Slope (%) **
BCHU		BELTWAY CHANNEL - HUALAPAI						
	0000	E 12' X 5' RCAP	853	206	DBA3-C	WEST3	0.84	1.11
	0017	E 8' X 5' RCAP	1216	218	CBA3-C	WEST3	0.84	1.33
	0040	E 66" RCP	60	57	DNW26-C	WEST3	0.51	1.04
	0042	E 60" RCP	615	57	DNW26-C	WEST3	0.51	1.42
	0054	E 54" RCP	615	57	DNW26-C	WEST3	0.51	1.23
BRDB		BRENT DRAINAGE SYSTEM						
	0000	E 36" RCP WITH 18" ORIFICE PLATE	2170	36	BRDB	WEST3	2.37	0.40
	0031	E 45,080 CFS PMF SPILLWAY		45080	CBRDB	WEST3	2.37	
	0032	E 450 AC-FT SOUTH ENVIRONMENTAL ENHANCEMENT AREA		1685	CBRDB	WEST3	2.37	
	0033	E ENERGY DISSIPATOR	100	1052	CNW147W	WEST3	1.75	
	0043	E 20' X 7' RCBC	135	1052	CNW147W	WEST3	1.75	0.50
	0045	E CONC CHNL 12'W 7'D 2:1 SS	983	1052	CNW147W	WEST3	1.75	2.00
	0058	E 12' X 6' RCB	1888	951	CNW113-C	WEST3	1.47	1.81
	0107	P 8' X 6' RCB	2560	951	CNW113-C	WEST3	1.47	2.40
	0157	P 12' X 7' RCB	2580	621	CNW96-C	WEST3	0.84	0.25
CN95		CENTENNIAL PKWY CHANNEL WEST / U.S 95 BRANCH						
	0000	E 20' X 7' RCB	3335	2778	CNWBB3-C	WEST3	3.35	2.00
	0068	E 20' X 7' RCB	2300	2725	CNW103-C	WEST3	3.04	2.10
	0102	E CONC CHNL 20'W 9'D 0:1 SS	375	2548	2CNW89-C	WEST3	2.85	1.77
	0104	E 2: 12' X 10' RCB	300	2548	2CNW89-C	WEST3	2.85	1.10
	0167	E 16' X 8' RCB	3521	2548	2CNW89-C	WEST3	2.85	1.58
	0199	E 15' X 9' RCB	407	1467	2CNW72-C	WEST3	1.13	0.41
	0218	E 15' X 9' RCB	1227	1467	2CNW72-C	WEST3	1.13	0.82
	0257	E TRANSITION STRUCTURE	59	1467	2CNW72-C	WEST3	1.13	0.77
	0259	E 15' X 9' RCB	284	599	CNW74-C	WEST3	0.40	0.77
	0313	E 10' X 6' RCB	2680	599	CNW74-C	WEST3	0.40	2.50
	0318	E TRANSITION STRUCTURE	60	599	CNW74-C	WEST3	0.40	1.50
	0333	E 5' X 5' RCB	670	259	NW62-S	WEST3	0.16	1.50
CNFR		CENTENNIAL PKWY CHANNEL WEST / FARM ROAD						
	0000	P 8' X 6' RCB	8350	776	CNW89-C	WEST3	1.05	2.00
CNGT		CENTENNIAL PKWY CHANNEL WEST / GRAND TETON BRANCH						
	0000	E 10' X 5' RCB	2376	543	CNW71-E	WEST3	0.47	2.58
	0020	E 10' X 5' RCB	1570	543	CNW71-E	WEST3	0.47	3.50
	0043	E 8' X 6' RCB	2470	543	CNW71-E	WEST3	0.47	3.60
	0118	E 6' X 5' RCAP	5472	349	KYLEDET	KYLEDB	58.61	3.72
CNKC		CENTENNIAL PKWY CHANNEL WEST / KYLE CANYON BRANCH						
	0000	E 12' X 4' RCB	377	954	CNW72-C	WEST3	0.74	4.58
	0007	E 10' X 5' RCB	874	954	CNW72-C	WEST3	0.74	3.28
	0024	E 8' X 5' RCB	1385	954	CNW72-C	WEST3	0.74	2.40
	0050	E 72" RCP	2757	437	NW45-S	WEST3	0.31	3.60
CNWE		CENTENNIAL PKWY CHANNEL WEST						
	0195	E CONC CHNL 36'W 9'D 0:1 SS	1130	3771	CNW383-C	WEST3	5.64	0.60
	0200	E CONC CHNL 36'W 9'D 0:1 SS	1340	3523	CNW204-C	WEST3	5.14	1.00
	0226	E 2: 18' X 8.5' RCBC @ RIO VISTA	100	3523	CNW204-C	WEST3	5.14	0.51
	0241	E CONC CHNL 36'W 9.5'D 0:1 SS	405	3523	CNW204-C	WEST3	5.14	0.51
	0251	E CONC CHNL 36'W 9'D 0:1 SS	575	3234	CNW203-C	WEST3	4.64	0.51
	0271	E CONC CHNL 32'W 10'D 0:1 SS	229	3234	CNW203-C	WEST3	4.64	0.51
	0274	E 32' X 10' RCBC @ TENAYA	142	3234	CNW203-C	WEST3	4.64	0.51
	0277	E CONC CHNL 32'W 9'D 0:1 SS	579	3234	CNW203-C	WEST3	4.64	0.64
	0287	E CONC CHNL 32'W 8'D 0:1 SS	865	2992	CNW282-C	WEST3	3.83	1.59
	0301	E 2: 15' X 7' RCB	1738	2992	CNW282-C	WEST3	3.83	1.30
	0304	E 22' X 7' RCB	3410	2992	CNW282-C	WEST3	3.83	1.85
	0314	E 22' X 7' RCB	703	2822	CNWBD2-N	WEST3	3.45	1.94
EKBU		ELKHORN SPRINGS AND BUFFALO						
	0000	E 60" RCP	1046	255	NW134-C	WEST3	0.46	0.89
EKDB		ELKHORN SPRINGS DETENTION BASIN						
	0000	E GRASS CHNL 15'W 5.8'D 3.5:1 SS	2575	221	CNW150-C	WEST3	1.41	0.39
	0025	E 4' X 3' RCB	160	106	ELKBASIN	WEST3	0.84	0.50
	0026	E 48" RCP	1270	106	ELKBASIN	WEST3	0.84	1.23
	0049	E 60" RCP	1095	106	ELKBASIN	WEST3	0.84	0.13
	0070	E 48 AC-FT ELKHORN SPRINGS DETENTION BASIN		456	CNW133-C	WEST3	0.84	

ID / Mile	Status	Facility Description	Length (ft.)	Flow (cfs)	HEC-1 Node	HEC-1 Model	Tributary Area (sq.mi.)	Channel Slope (%) **
EKHU		ELKHORN AND HUALAPAI						
	0003	E 6' X 4' RCAP	980	393	CNW26-C	WEST3	0.51	3.61
	0020	E 6' X 5' RCAP	150	393	CNW26-C	WEST3	0.51	3.61
	0023	E 8' X 5' RCAP	1200	393	CNW26-C	WEST3	0.51	0.90
GOEC		GOWAN NORTH - EL CAPITAN BRANCH						
	0176	P 78" RCP	1320	190	CCPFR-C	GOW3A	0.46	1.15
GONO		GOWAN NORTH SYSTEM						
	0511	P 6' X 5' RCB	1320	326	CCPHW-C	GOW3A	0.60	1.14
LVMD		LAS VEGAS WASH - MIDDLE						
	2507	E 2: 13' X 9' RCB	2831	1808	CNW168-C	CWEST3	4.43	0.36
	2525	E 24' X 8' RCB	1140	1598	CNW159-C	CWEST3	3.92	0.40
	2550	E 24' X 8' RCB	1445	1312	CD161-C	CWEST3	3.42	0.40
	2574	E 24' X 8' RCB	1430	1312	CD161-C	CWEST3	3.42	0.41
	2599	E CONC CHNL 24'W 7'D 2:1 SS	1577	1268	CNW182-C	CWEST3	3.10	0.51
	2632	E 18' X 5' RCB	1443	695	CNW138-C	WEST3	1.16	0.47
	2661	E 18' X 5' RCB	3003	695	CNW138-C	WEST3	1.16	0.78
	2711	E 10' X 5' RCB	2440	560	CNW139-C	WEST3	0.93	2.00
	2737	E 8' X 5' RCB	265	560	CNW139-C	WEST3	0.93	2.25
	2763	E 6' X 5' RCB	1565	560	CNW139-C	WEST3	0.93	2.41
	2789	E 6' X 5' RCB	910	560	CNW139-C	WEST3	0.93	2.00
MOHU		MOCCASIN-HUALAPAI BRANCH						
	0000	P0 13' X 6' RCB	1476	924	2CNW33-C	LOWER3	2.08	1.80
	0026	P0 11' X 6' RCB	1654	560	CNW45-N	LOWER3	1.25	0.50
	0061	P0 9' X 6' RCB	779	560	CNW45-N	LOWER3	1.25	0.50
	0076	P0 60" RCP	1000	263	CNW45-C	LOWER3	1.03	3.00
	0095	P0 NATURAL WASH	865	263	CNW45-C	LOWER3	1.03	3.00
	0111	P0 6' X 5' RCBC @ EGAN CREB DR	164	263	CNW45-C	LOWER3	1.03	6.10
	0116	P0 NATURAL WASH	1900	263	CNW45-C	LOWER3	1.03	3.00
	0151	P0 54" RCP @ SHAUMBER	438	72	MOD81	LOWER3	0.86	2.00
MOIR		MOCCASIN - IRON MOUNTAIN BRANCH						
	0000	P0 60" RCP	1060	410	CNW33-C	LOWER3	0.83	4.50
	0020	P0 54" RCP	1161	71	MOD82	LOWER3	0.56	3.20
	0041	P0 42" RCP	1236	71	MOD82	LOWER3	0.56	5.00
	0065	P0 60" RCP	1099	71	MOD82	LOWER3	0.56	0.40
MOKC		MOCCASIN AND KYLE CANYON						
	0000	P0 9' X 6' RCB	6140	1072	CNW35-C	LOWER3	2.69	3.40
MOLC		MOCCASIN - LOG CABIN BRANCH						
	0000	P0 20' X 10' RCB	2206	2265	2CNW64	LOWER3	6.06	0.65
	0072	P0 12' X 8' RCB	4493	2265	2CNW64	LOWER3	6.06	2.66
	0149	E 13' X 8' RCB	520	1817	CNW62-N	LOWER3	4.88	2.00
	0157	P 13' X 8' RCB	288	1817	CNW62-N	LOWER3	4.88	1.40
	0162	P0 13' X 6' RCB	435	1817	CNW62-N	LOWER3	4.88	1.80
MSNV		MOUNTAIN SPA/MSTA RANCH						
	0000	E 6: 12' X 5' RCBC @ GRAND TETON	273	639	CNW163-C	CWEST3	1.69	0.40
	0005	E GRASS CHNL 100'W 4.5'D 10:1 SS	6325	259	CNW155-C	WEST3	4.46	0.40
	0125	E GRASS CHNL 100'W 4.5'D 10:1 SS	1300	66	CNW147E	WEST3	1.55	0.40
RACO		RACEL STREET COLLECTOR						
	0000	E 14' X 7' RCB BAFFLED ENERGY DISSIPATOR	87	424	CNW111S	WEST3	0.55	0.29
	0001	E 78" RCP	3245	424	CNW111S	WEST3	0.55	2.46
	0064	E 78" RCP	2650	347	DNW111S	WEST3	0.44	2.09
RCBC		RANCHO ROAD SYSTEM - BELTWAY CHANNEL						
	0000	E 6' X 5' RCB	1062	173	FADB	WEST3	1.54	1.04
	0002	E 54" RCP OUTLET WITH 41" ORIFICE	503	173	FADB	WEST3	1.54	2.38
	0003	E 2,341 CFS PMF SPILLWAY		2341	FADBIN	WEST3	1.54	
	0004	E 76 AC-FT FORT APACHE DETENTION BASIN		658	FADBIN	WEST3	1.54	
	0007	E ENERGY DISSIPATOR	100	658	FADBIN	WEST3	1.54	
	0009	E 12' X 6' RCBC @ FORT APACHE DETENTION BASIN	133	658	FADBIN	WEST3	1.54	1.79
	0012	E CONC CHNL 12'W 6-7'D 0:1 SS	1937	658	FADBIN	WEST3	1.54	3.15
	0048	E 12' X 6' RCBC @ GRAND CANYON	140	559	CDMNA1	WEST3	1.27	3.15
	0051	E CONC CHNL 12'W 6-8'D 0:1 SS	2660	559	CDMNA1	WEST3	1.27	3.44
	0096	E 1: 10' X 6' AND 1: 6' X 6' RCBC @ HUALAPAI WAY	190	559	CDMNA1	WEST3	1.27	1.93
	0100	E CONC CHNL 12'W 5.5'D 0:1 SS	2095	475	CDMNA1	WEST3	0.43	2.88

ID / Mile	Status	Facility Description	Length (ft.)	Flow (cfs)	HEC-1 Node	HEC-1 Model	Tributary Area (sq.mi.)	Channel Slope (%) **
RCBC		RANCHO ROAD SYSTEM - BELTWAY CHANNEL						
	0140	E CONC CHNL 10'W 5'D 0:1 SS	2155	475	CDMNA1	WEST3	0.43	1.65
RCHB		RANCHO ROAD SYSTEM - BELTWAY						
	0053	E 2: 12' X 8' RCBC @ SOUTH RAMP CONNECTOR	85	1465	CDW1C1-C	WEST3	3.55	1.40
	0054	E CONC CHNL 21'W 8'D 0:1 SS	432	1465	CDW1C1-C	WEST3	3.55	1.51
	0062	E TRANSITION STRUCTURE	130	1465	CDW1C1-C	WEST3	3.55	1.51
	0065	E 24' X 7' RCB	480	1465	CDW1C1-C	WEST3	3.55	0.30
	0074	E 24' X 6' RCB	50	1414	CNWB6-C	WEST3	3.41	0.30
	0075	E 20' X 6' RCBC @ BELTWAY	428	1414	CNWB6-C	WEST3	3.41	2.81
	0083	P 20' X 4' RCB	950	1414	CNWB6-C	WEST3	3.41	2.49
	0101	P CONC CHNL 20'W 5'D 0:1 SS	980	1414	CNWB6-C	WEST3	3.41	2.38
	0120	E 20' X 6' RCBC @ GRAND MONTECITO	120	1414	CNWB6-C	WEST3	3.41	1.00
	0122	P CONC CHNL 16-20'W 6'D 0:1 SS	350	1414	CNWB6-C	WEST3	3.41	1.84
	0130	P CONC CHNL 16'W 5.5'D 0:1 SS	1012	1414	CNWB6-C	WEST3	3.41	2.67

 Ultimate Development Boundary





MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

PANEL 1735 E

FIRM

FLOOD INSURANCE RATE MAP

CLARK COUNTY,
NEVADA AND
INCORPORATED AREAS

PANEL 1735 OF 4090

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS	320003	1735	E
LAS VEGAS, CITY OF	325276	1735	E

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



MAP NUMBER
32003C1735 E

MAP REVISED:
SEPTEMBER 27, 2002

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

FIGURE 1

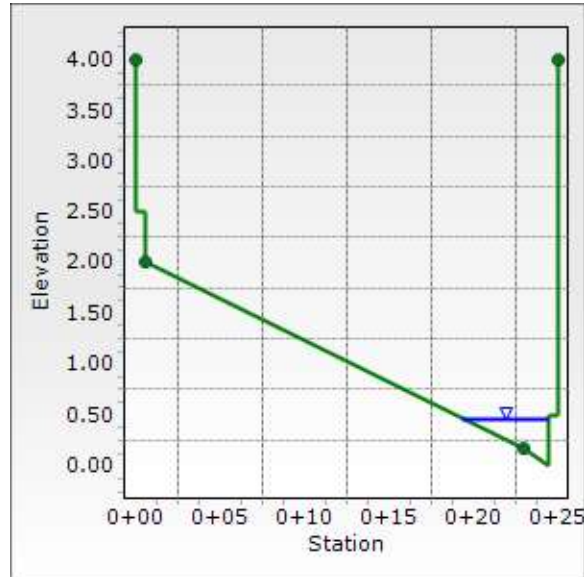
APPENDIX C

(HYDRAULIC CALCULATIONS)

- Flow Depth Analysis
- Figure 2 – Hydraulic Section Location
- Drop Inlet Analysis
- 12-inch PVC Storm Drain Capacity Analysis

FM1-Parking Lot (100-year Flow)

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth
Input Data	
Channel Slope	0.0598 ft/ft
Normal Depth	0.46 ft
Discharge	9.00 cfs



DxV (DV) CALCULATION:

$$DV = 0.46 \times 8.17$$

$$DV = 3.76 < 6$$

THEREFORE, DxV CRITERIA FOR BOTH 10-YEAR AND 100-YEAR STORM EVENTS ARE MET.

FM1-Parking Lot (100-year Flow)

Project Description	
Friction Method	Manning
Solve For	Formula
	Normal Depth
Input Data	
Channel Slope	0.0598 ft/ft
Discharge	9.00 cfs

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	4.00
0+00.01	2.50
0+00.50	2.50
0+00.50	2.00
0+23.00	0.17
0+24.50	0.00
0+24.50	0.50
0+24.99	0.50
0+25.00	4.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 4.00)	(0+00.50, 2.00)	0.013
(0+00.50, 2.00)	(0+23.00, 0.17)	0.016
(0+23.00, 0.17)	(0+25.00, 4.00)	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	0.46 ft
Elevation Range	0.00 to 4.00 ft
Flow Area	1.10 ft ²
Wetted Perimeter	5.60 ft
Hydraulic Radius	0.20 ft
Top Width	5.12 ft
Normal Depth	0.46 ft
Critical Depth	0.70 ft
Critical Slope	0.0053 ft/ft
Velocity	8.17 ft/s

FM1-Parking Lot (100-year Flow)

Results

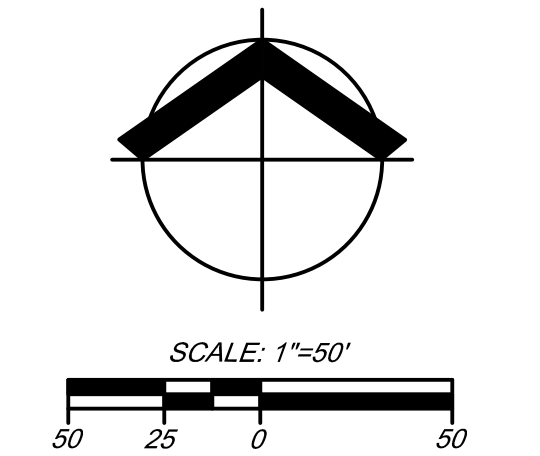
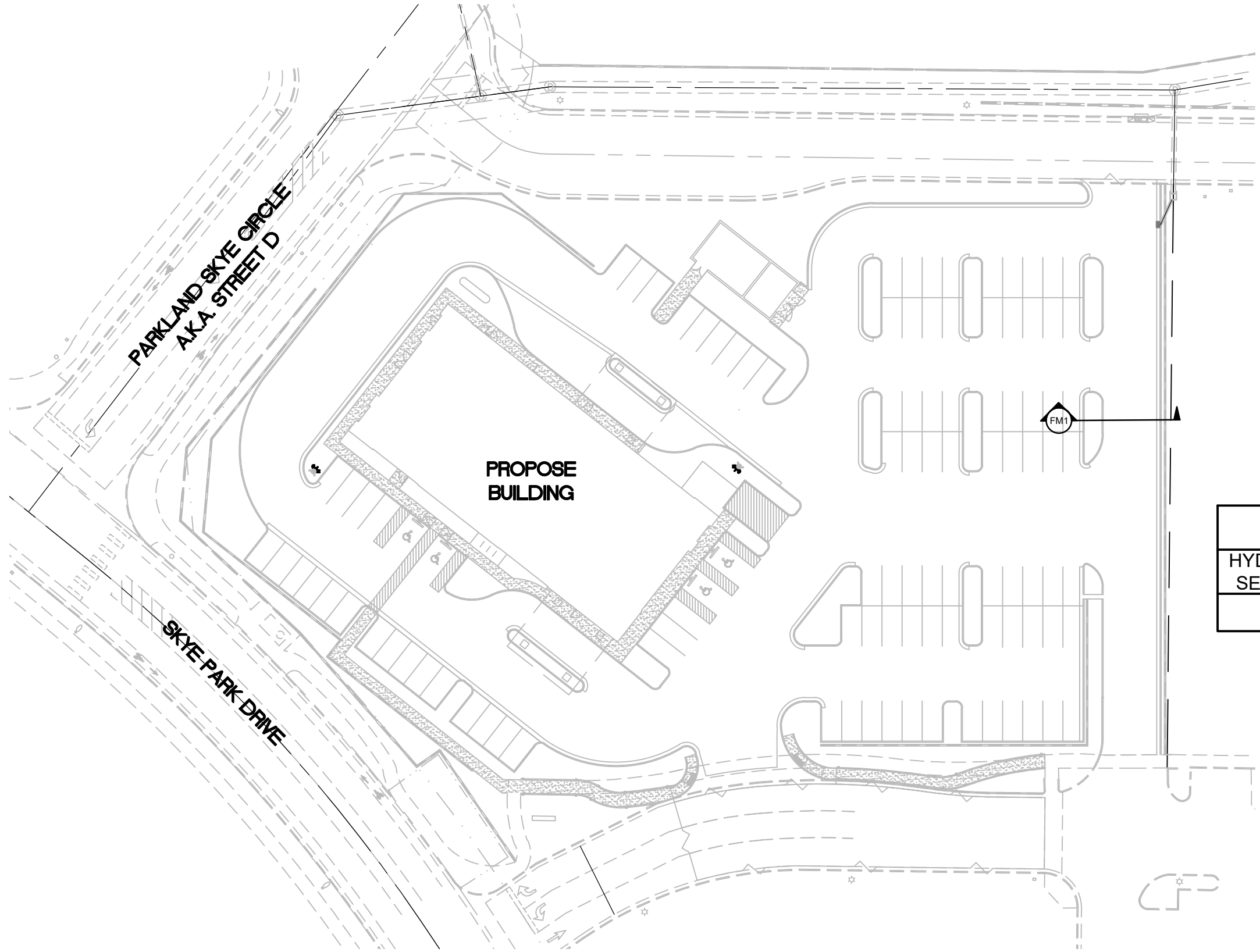
Velocity Head	1.04 ft
Specific Energy	1.50 ft
Froude Number	3.106
Flow Type	Supercritical

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	N/A
Profile Headloss	0.00 ft
Downstream Velocity	∞ ft/s
Upstream Velocity	∞ ft/s
Normal Depth	0.46 ft
Critical Depth	0.70 ft
Channel Slope	0.0598 ft/ft
Critical Slope	0.0053 ft/ft



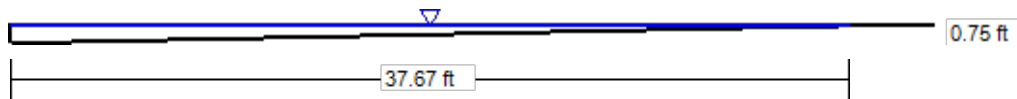
LEGEND

 HYDRAULIC CROSS SECTION

FLOW DEPTH ANALYSIS (100-YEAR STORM EVENT)					
HYDRULIC SECTION	SLOPE (%)	Q ₁₀₀ (cfs)	D ₁₀₀ (ft)	V ₁₀₀ (ft/s)	D x V
FM1	5.98	9	0.46	8.17	3.76

3'x2' Drop Inlet Analysis

Project Description	
Solve For	Spread
Input Data	
Discharge	9.00 cfs
Spread	37.67 ft
Gutter Width	3.00 ft
Gutter Cross Slope	0.0200 ft/ft
Road Cross Slope	0.0200 ft/ft
Grate Width	3.00 ft
Grate Length	2.00 ft
Local Depression	0.00 ft
Local Depression Width	0.00 ft
Grate Type	P-50 mm (P-1 -7/8")
Clogging	50.0 %



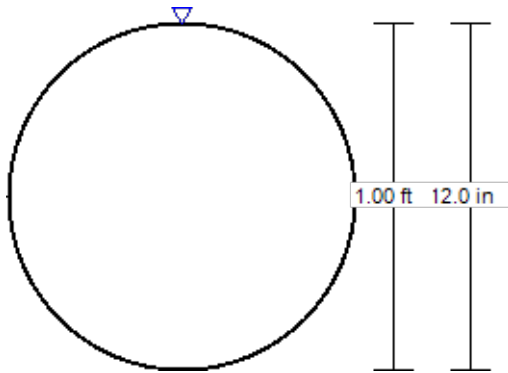
V: 1
H: 1

3'x2' Drop Inlet Analysis

Project Description	
Solve For	Spread
Input Data	
Discharge	9.00 cfs
Gutter Width	3.00 ft
Gutter Cross Slope	0.0200 ft/ft
Road Cross Slope	0.0200 ft/ft
Grate Width	3.00 ft
Grate Length	2.00 ft
Local Depression	0.00 ft
Local Depression Width	0.00 ft
Grate Type	P-50 mm (P-1 -7/8")
Clogging	50.0 %
Results	
Spread	37.67 ft
Depth	0.75 ft
Gutter Depression	0.00 ft
Total Depression	0.00 ft
Open Grate Area	2.70 ft ²
Active Grate Weir Length	5.00 ft

12-inch PVC Storm Drain Capacity Analysis

Project Description	
Friction Method	Manning
	Formula
Solve For	Discharge
Input Data	
Roughness Coefficient	0.010
Channel Slope	0.0630 ft/ft
Normal Depth	1.00 ft
Diameter	12.0 in
Discharge	11.62 cfs



V: 1
H: 1

12-inch PVC Storm Drain Capacity Analysis

Project Description	
Friction Method	Manning
Solve For	Formula Discharge
Input Data	
Roughness Coefficient	0.010
Channel Slope	0.0630 ft/ft
Normal Depth	1.00 ft
Diameter	12.0 in
Results	
Discharge	11.62 cfs
Flow Area	0.79 ft ²
Wetted Perimeter	3.14 ft
Hydraulic Radius	0.25 ft
Top Width	0.00 ft
Critical Depth	1.00 ft
Percent Full	100.0 %
Critical Slope	0.0600 ft/ft
Velocity	14.80 ft/s
Velocity Head	3.40 ft
Specific Energy	4.40 ft
Froude Number	(N/A)
Maximum Discharge	12.50 cfs
Discharge Full	11.62 cfs
Slope Full	0.0630 ft/ft
Flow Type	Undefined
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	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	100.0 %
Downstream Velocity	∞ ft/s
Upstream Velocity	∞ ft/s
Normal Depth	1.00 ft
Critical Depth	1.00 ft
Channel Slope	0.0630 ft/ft
Critical Slope	0.0600 ft/ft

APPENDIX D

(REFERENCE MATERIAL)

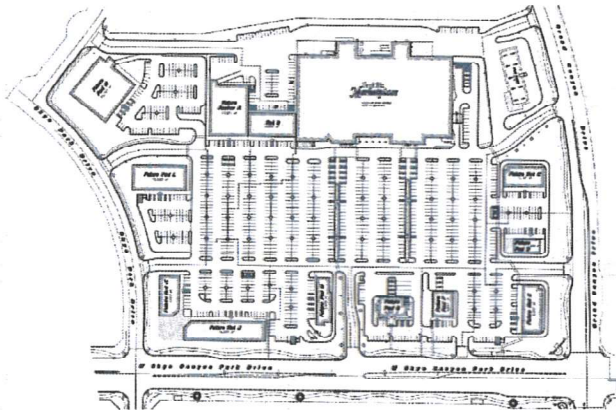
- Reference Material taken from Technical Drainage Study for Skye Canyon Village



ANDERSON WAHLEN & ASSOCIATES

Skye Canyon Village

Technical Drainage Study



Prepared For:

MF Land, LLC
c/o Olympia Companies
11411 Southern Highlands Parkway, Suite 300
Las Vegas, NV 89141
Phone: 702-220-6565
Fax: 702-220-6566

W Skye Canyon Park Drive & Grand
Canyon Drive
City of Las Vegas, Nevada

Prepared by:
Anderson, Wahlen & Associates, Inc.
2010 North Redwood Road
Salt Lake City, Utah 84116
Phone: (801) 521-8529
Fax: (801) 521-9551

Date: July 2016

CITY OF LAS VEGAS		DATE:
INTER-OFFICE MEMORANDUM		November 4, 2016
TO: Land Development Services Department of Building & Safety		FROM: Albert Sung, P.E. <i>AS</i> Flood Control Project Engineer Department of Public Works
SUBJECT:	Drainage Study for:	COPIES TO:
	Skye Canyon Village	Anderson, Wahlen & Associates
Cross Streets:	NWC of Grand Canyon & Skye Canyon Park	MF Land, LLC
File Number:	F:\Depot\DSMemos\DS4812B.doc	Bart Anderson, P.E., DevCo
Parcel Number:	125-07-201-003	
Zoning Action:	MOD-62679; SUP-63594; SUP-63597; SDR-63598; VAR-63963 & GPA-64013	
FEMA Flood Zone	YES NO X	
Proposed Storm Drain	YES X NO	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1 st Submittal	7/06/2016	8/19/2016	Not Approved	\$400.00	450103: \$400
2 nd Submittal	10/24/2016	11/04/2016	See Comments Below	\$400.00	462830: \$400
			TOTAL FEES (LDDRS):	\$800.00	----

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. Please note the Skye Canyon - Phase 3 Infrastructure must be approved prior to final approval of the Skye Canyon Village.
2. Please note that public drainage easements must be recorded by separate document prior to the final acceptance of the improvement plans unless they are to be recorded by parcel or final map.
3. Please note that all drainage improvements within Public Drainage Easements must be bonded and inspected.
4. Show and label existing offsite storm drain pipes proposed by others in the grading plan and plan & profile sheets.
5. Show HGL in the 72-inch RCP. It appears that the AutoCAD layer is turned off.

NOTE: Please be advised that all land surface area disturbances over 1 acre or any area adjacent to a water way must submit to the *Nevada Division of Environmental Protection* a "Notice of Intent" to discharge that certifies a stormwater pollution prevention plan has been developed and is maintained on site; for inclusion in the Stormwater General Permit No. NVR100000. A phased construction unit in a contiguous subdivision is considered under construction until all stripped or disturbed surface areas have been covered by paving, building construction or planting. For

more information, including forms and applications see <http://ndep.nv.gov/bwpc/storm01.htm> or call (775) 687-9429.

END OF REMARKS

OSK

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

APPENDIX D

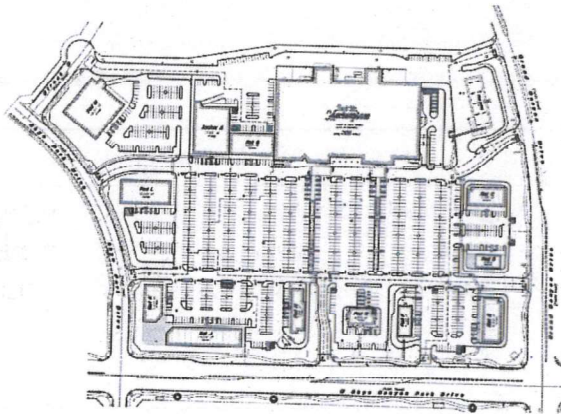
REFERENCE MATERIAL
TECHNICAL DRAINAGE STUDY FOR SKYE CANYON – PHASE 3
INFRASTRUCTURE, BY SHG



ANDERSON WAHLEN & ASSOCIATES

Skye Canyon Village

Technical Drainage Study – Addendum 1



W Skye Canyon Park Drive & Grand
Canyon Drive
City of Las Vegas, Nevada



Prepared For:

MF Land, LLC
c/o Olympia Companies
11411 Southern Highlands Parkway, Suite 300
Las Vegas, NV 89141
Phone: 702-220-6565
Fax: 702-220-6566

Prepared by:

Anderson, Wahlen & Associates, Inc.
2010 North Redwood Road
Salt Lake City, Utah 84116
Phone: (801) 521-8529
Fax: (801) 521-9551

Date: October 2016

CITY OF LAS VEGAS		DATE:
INTER-OFFICE MEMORANDUM		November 4, 2016
TO: Land Development Services Department of Building & Safety		FROM: Albert Sung, P.E. <i>AS</i> Flood Control Project Engineer Department of Public Works
SUBJECT:	Drainage Study for:	COPIES TO:
	Skye Canyon Village	Anderson, Wahlen & Associates
Cross Streets:	NWC of Grand Canyon & Skye Canyon Park	MF Land, LLC
File Number:	F:\Depot\DSMemos\DS4812B.doc	Bart Anderson, P.E., DevCo
Parcel Number:	125-07-201-003	
Zoning Action:	MOD-62679; SUP-63594; SUP-63597; SDR-63598; VAR-63963 & GPA-64013	
FEMA Flood Zone	YES NO X	
Proposed Storm Drain	YES X NO	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
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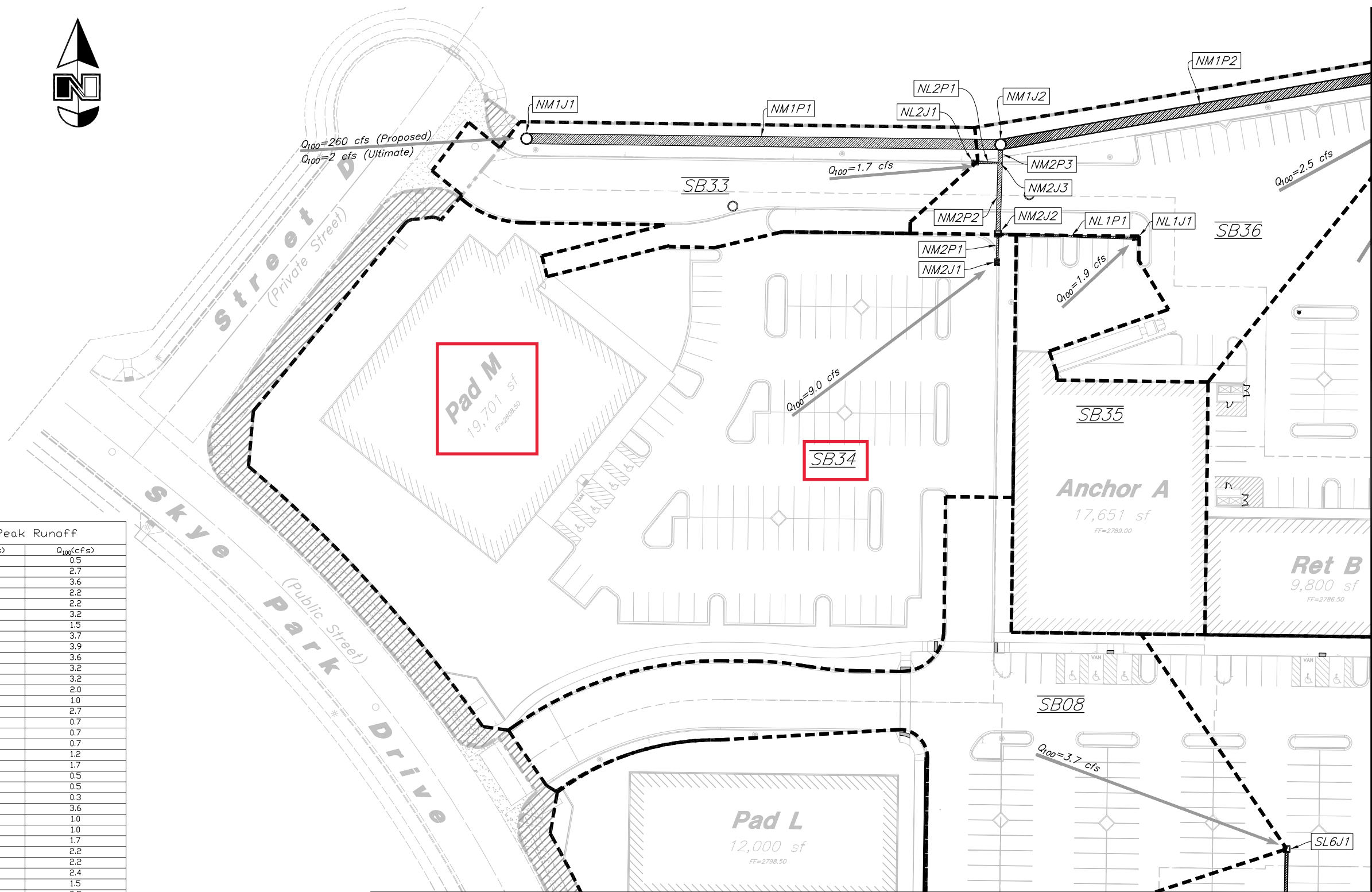
END OF REMARKS

OSK

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



Sub-Basin ID	Area (Acres)	Q ₁₀₀ (Cfs)
SB01	0.14	0.5
SB02	0.69	2.7
SB03	0.99	3.6
SB04	0.56	2.2
SB05	0.57	2.2
SB06	0.83	3.2
SB07	0.38	1.5
SB08	0.99	3.7
SB09	1.00	3.9
SB10	0.98	3.6
SB11	0.83	3.2
SB12	0.84	3.2
SB13	0.53	2.0
SB14	0.23	1.0
SB15	0.69	2.7
SB16	0.21	0.7
SB17	0.19	0.7
SB18	0.22	0.7
SB19	0.31	1.2
SB20	0.47	1.7
SB21	0.15	0.5
SB22	0.14	0.5
SB23	0.09	0.3
SB24	0.98	3.6
SB25	0.24	1.0
SB26	0.28	1.0
SB27	0.47	1.7
SB28	0.55	2.2
SB29	0.56	2.2
SB30	0.64	2.4
SB31	0.38	1.5
SB32	0.64	2.5
SB33	0.44	1.7
SB34	2.36	9.0
SB35	0.52	1.9
SB36	0.67	2.5
SB37	1.00	3.7
SB38	0.32	1.2
SB39	0.55	2.1
SB40	0.57	2.1
SB41	0.54	1.8
SB42	0.53	1.8
SB43	0.58	2.1
SB44	0.28	1.0
SB45	0.34	1.2
SB46	0.12	0.5
SB47	0.06	0.3
SB48	0.30	1.2
SB49	0.08	0.3
SB50	0.27	1.0

$$Q_{100,SB34} = 9 \text{ CFS}$$


Match Line See Sheet F4

Match Line See Sheet F2

Designed by: KR
Drafted by: JC
Client Name: Smith's Food & Drug
Drainage Basins Exhibit



ANDERSON WAHLEN & ASSOCIATES
2010 North Redwood Road, Salt Lake City, Utah 84116
801 521-8529 — AWAengineering.net

Onsite Drainage Basin & Storm Drain Network Exhibit

Skye Canyon Village

*West Skye Canyon Park Drive & Grand Canyon Drive
Las Vegas, Nevada*

Smith's
FOOD & DRUG STORES

1550 South Redwood Road
Salt Lake City, Utah 84104
Telephone (801) 974-1400

#367
Las Vegas, Nevada

24 Oct, 2016

SHEET NO.

F1

Match Line See Sheet F4

SB11, SB12, SB14, SB15, SB16, SB17, SB18, SB19, SB20, SB21, SB22, SB23, SB24, SB25, SB26, SB27, SB28, SB29

SL1J1, SL2J1, SL3J1, SL4J1, SL5J1, SL6J1, SL7J1, SL8J1, SL9J1, SL10J1, SL11J1, SL12J1, SL13J1, SL14J1, SL15J1, SL16J1, SL17J1, SL18J1, SL19J1, SL20J1, SL21J1, SL22J1, SL23J1, SL24J1

Q100=3.6 cfs, Q100=3.20 cfs, Q100=2.2 cfs, Q100=1.0 cfs, Q100=2.6 cfs, Q100=0.7 cfs, Q100=1.2 cfs, Q100=3.6 cfs, Q100=1.7 cfs, Q100=0.5 cfs, Q100=0.2 cfs

Pad A: 5,926 sf, FF=2780.75

Pad B: 4,800 sf, FF=2780.00

Pad C: 4,800 sf, FF=2780.00

Pad D: 3,200 sf, FF=2775.00

Pad E: 8,500 sf, FF=2780.50

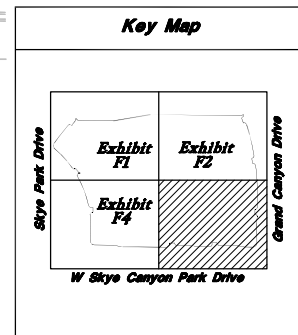
Pad F: 4,800 sf, FF=2780.00

Pad G: 4,800 sf, FF=2780.00

Pad H: 5,926 sf, FF=2780.75

W Skye Canyon Park Drive (Public Street)

Key Map



Smith's
FOOD & DRUG STORES
1550 South Redwood Road
Salt Lake City, Utah 84104
Telephone (801) 974-1400

#367
Las Vegas, Nevada

Onsite Drainage Basin & Storm Drain Network Exhibit

Skye Canyon Village

Las Vegas, Nevada



ANDERSON WATLEN & ASSOCIATES
2010 North Redwood Road, Salt Lake City, Utah 84116
801 521-8529 — AWAengineering.net

Designed by: KR
Drafted by: JC
Client Name: Smith's Food & Drug
Drainage Basins Exhibit

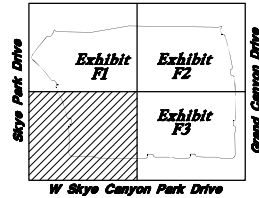
24 Oct, 2016

SHEET NO.

F3

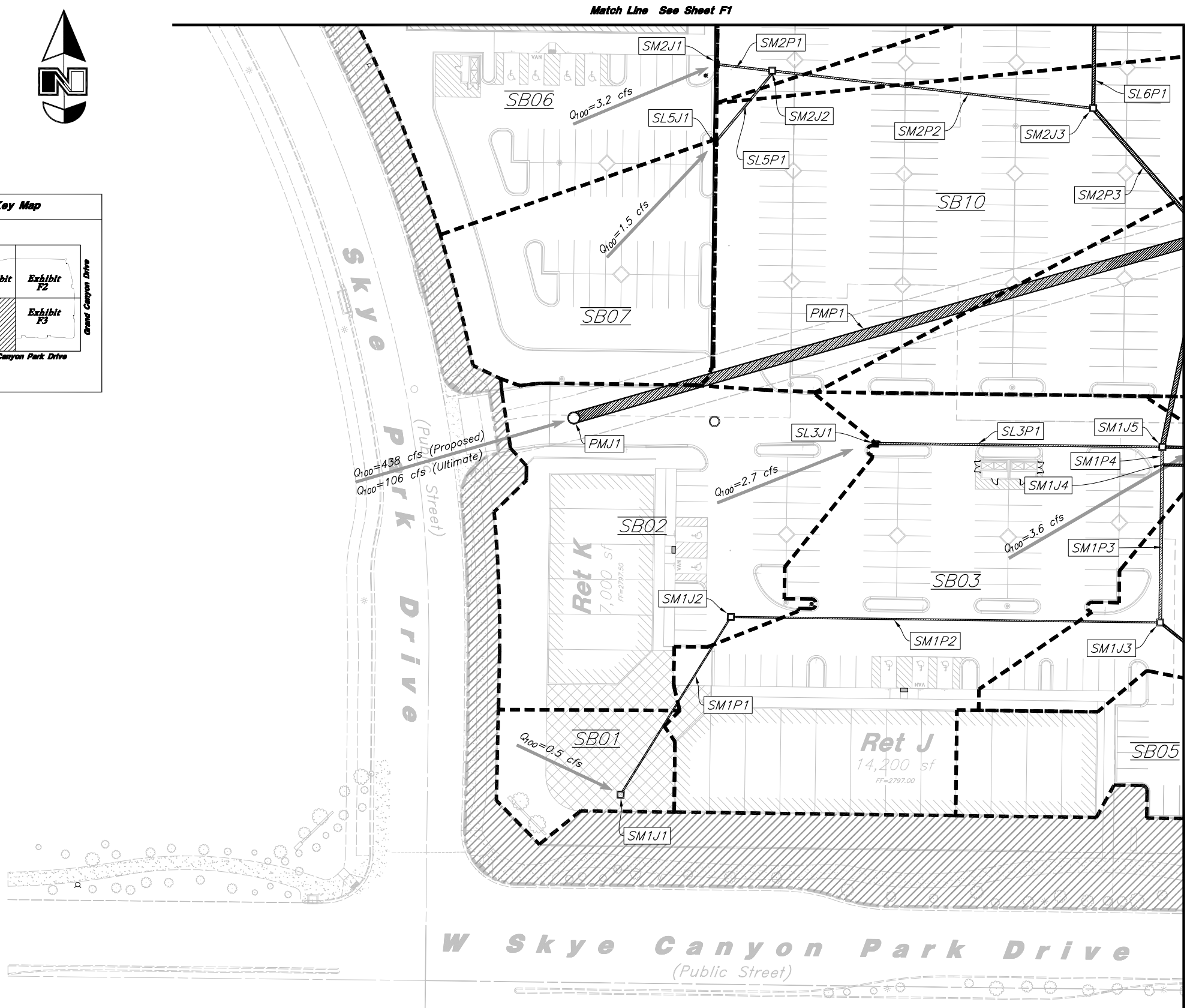


Key Map



Onsite Sub-Basins Peak Runoff

Sub-Basin ID	Area (Acres)	Q ₁₀₀ (cfs)
SB01	0.14	0.5
SB02	0.69	2.7
SB03	0.99	3.6
SB04	0.56	2.2
SB05	0.57	2.2
SB06	0.83	3.2
SB07	0.38	1.5
SB08	0.99	3.7
SB09	1.00	3.9
SB10	0.98	3.6
SB11	0.83	3.2
SB12	0.84	3.2
SB13	0.53	2.0
SB14	0.23	1.0
SB15	0.69	2.7
SB16	0.21	0.7
SB17	0.19	0.7
SB18	0.22	0.7
SB19	0.31	1.2
SB20	0.47	1.7
SB21	0.15	0.5
SB22	0.14	0.5
SB23	0.09	0.3
SB24	0.98	3.6
SB25	0.24	1.0
SB26	0.28	1.0
SB27	0.47	1.7
SB28	0.55	2.2
SB29	0.56	2.2
SB30	0.64	2.4
SB31	0.38	1.5
SB32	0.64	2.5
SB33	0.44	1.7
SB34	2.36	9.0
SB35	0.52	1.9
SB36	0.67	2.5
SB37	1.00	3.7
SB38	0.32	1.2
SB39	0.55	2.1
SB40	0.57	2.1
SB41	0.54	1.8
SB42	0.53	1.8
SB43	0.58	2.1
SB44	0.28	1.0
SB45	0.34	1.2
SB46	0.12	0.5
SB47	0.06	0.3
SB48	0.30	1.2
SB49	0.08	0.3
SB50	0.27	1.0



Smith's
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West Skye Canyon Park Drive & Grand Canyon Drive
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ANDERSON WAHLEN & ASSOCIATES
2010 North Redwood Road, Salt Lake City, Utah 84116
801-521-8529 - AWEngineering.net

Designed by: KR
Drafted by: JC
Client Name:
Smith's Food & Drug
Drainage Basins Exhibit

24 Oct, 2016

SHEET NO.

F4


```

*****
* FLOOD HYDROGRAPH PACKAGE (HEC-1)
* JUN 1998
* VERSION 4.1
* RUN DATE 19SEP16 TIME 12:50:35
*****

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

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X X XXXXXXX XXXXX X
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PROPOSED CONDITION

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1G, 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
1	ID	HEC-1 Analysis using SSA									
2	IT	5	2JUN16	0 0	3JUN16	0 0					
3	IO	0									
4	KK	SB01									
5	KO	3	0	0.0	0	22					
6	BA	0.0002									
7	BF	0.0000	0.0000	0.0000							
8	IN	5	2JUN16								
9	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810
10	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300
11	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300
12	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980
13	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080
14	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600
15	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240
16	PC	2.9240	2.9270	2.9300							
17	LS		95.000								
18	UD	0.0500									
19	KK	SB02									
20	KO	3	0	0.0	0	22					
21	BA	0.0011									
22	BF	0.0000	0.0000	0.0000							
23	IN	5	2JUN16								
24	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810
25	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300
26	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300
27	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980
28	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080
29	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600
30	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240
31	PC	2.9240	2.9270	2.9300							
32	LS		95.000								
33	UD	0.0500									
34	KK	SB03									
35	KO	3	0	0.0	0	22					
36	BA	0.0015									
37	BF	0.0000	0.0000	0.0000							
38	IN	5	2JUN16								
39	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810
40	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300
41	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300
42	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980
43	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080
44	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600
45	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240
46	PC	2.9240	2.9270	2.9300							
47	LS		95.000								
48	UD	0.0550									
49	KK	SB04									
50	KO	3	0	0.0	0	22					
51	BA	0.0009									
52	BF	0.0000	0.0000	0.0000							
53	IN	5	2JUN16								
54	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810
55	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300
56	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300
57	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980
58	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080
59	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600
60	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240
61	PC	2.9240	2.9270	2.9300							
62	LS		95.000								
63	UD	0.0500									
64	KK	SB05									
65	KO	3	0	0.0	0	22					
66	BA	0.0009									

SEE APPENDIX B,
EXHIBITS F1-F5
FOR ONSITE FLOW
ROUTING MAPS

LS CARD REVISED TO SHOW ONLY SITE-WIDE CN OF 95
FOR ALL SUB-BASINS

PB

PB (TYPICAL EACH SUB-BASIN)

NOTE THAT PC CARD
USES SDN3 TO STEP
RAINFALL TO PB VALUE
OF 2.93

264	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810
265	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300
266	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300
267	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980
268	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080
269	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600
270	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240
271	PC	2.9240	2.9270	2.9300							
272	LS		95.000								
273	UD	0.0500									
274	KK	SB19									
275	KO	3	0	0.0	0	22					
276	BA	0.0005									
277	BF	0.0000	0.0000	0.0000							
278	IN	5	2JUN16								
279	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810
280	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300
281	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300
282	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980
283	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080
284	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600
285	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240
286	PC	2.9240	2.9270	2.9300							
287	LS		95.000								
288	UD	0.0500									
289	KK	SB20									
290	KO	3	0	0.0	0	22					
291	BA	0.0007									
292	BF	0.0000	0.0000	0.0000							
293	IN	5	2JUN16								
294	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810
295	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300
296	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300
297	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980
298	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080
299	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600
300	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240
301	PC	2.9240	2.9270	2.9300							
302	LS		95.000								
303	UD	0.0500									
304	KK	SB21									
305	KO	3	0	0.0	0	22					
306	BA	0.0002									
307	BF	0.0000	0.0000	0.0000							
308	IN	5	2JUN16								
309	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810
310	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300
311	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300
312	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980
313	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080
314	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600
315	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240
316	PC	2.9240	2.9270	2.9300							
317	LS		95.000								
318	UD	0.0500									
319	KK	SB22									
320	KO	3	0	0.0	0	22					
321	BA	0.0002									
322	BF	0.0000	0.0000	0.0000							
323	IN	5	2JUN16								
324	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810
325	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300
326	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300
327	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980
328	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080
329	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600
330	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240
331	PC	2.9240	2.9270	2.9300							
332	LS		95.000								
333	UD	0.0500									
334	KK	SB23									
335	KO	3	0	0.0	0	22					
336	BA	0.0001									
337	BF	0.0000	0.0000	0.0000							
338	IN	5	2JUN16								
339	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810
340	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300
341	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300
342	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980
343	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080
344	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600
345	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240
346	PC	2.9240	2.9270	2.9300							
347	LS		95.000								
348	UD	0.0500									
349	KK	SB24									
350	KO	3	0	0.0	0	22					
351	BA	0.0015									
352	BF	0.0000	0.0000	0.0000							
353	IN	5	2JUN16								
354	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810
355	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300
356	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300
357	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980
358	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080
359	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600
360	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240
361	PC	2.9240	2.9270	2.9300							
362	LS		95.000								

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461	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300
462	PC	0.7350	0.7500	0.7810	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980
463	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080
464	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600
465	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240
466	PC	2.9240	2.9270	2.9300							
467	LS		95.000								
468	UD	0.0550									
469	KK	SB32									
470	KO		3	0	0.0	0	22				
471	BA	0.0010									
472	BF	0.0000	0.0000	0.0000							
473	IN	5	2JUN16								
474	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810
475	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300
476	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300
477	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980
478	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080
479	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600
480	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240
481	PC	2.9240	2.9270	2.9300							
482	LS		95.000								
483	UD	0.0500									
484	KK	SB33									
485	KO		3	0	0.0	0	22				
486	BA	0.0007									
487	BF	0.0000	0.0000	0.0000							
488	IN	5	2JUN16								
489	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810
490	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300
491	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300
492	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980
493	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080
494	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600
495	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240
496	PC	2.9240	2.9270	2.9300							
497	LS		95.000								
498	UD	0.0500									
499	KK	SB34									
500	KO		3	0	0.0	0	22				
501	BA	0.0037									
502	BF	0.0000	0.0000	0.0000							
503	IN	5	2JUN16								
504	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810
505	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300
506	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300
507	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980
508	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080
509	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600
510	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240
511	PC	2.9240	2.9270	2.9300							
512	LS		95.000								
513	UD	0.0530									
514	KK	SB35									
515	KO		3	0	0.0	0	22				
516	BA	0.0008									
517	BF	0.0000	0.0000	0.0000							
518	IN	5	2JUN16								
519	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810
520	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300
521	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300
522	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980
523	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080
524	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600
525	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240
526	PC	2.9240	2.9270	2.9300							
527	LS		95.000								
528	UD	0.0580									
529	KK	SB36									
530	KO		3	0	0.0	0	22				
531	BA	0.0010									
532	BF	0.0000	0.0000	0.0000							
533	IN	5	2JUN16								
534	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810
535	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300
536	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300
537	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980
538	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080
539	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600
540	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240
541	PC	2.9240	2.9270	2.9300							
542	LS		95.000								
543	UD	0.0500									
544	KK	SB37									
545	KO		3	0	0.0	0	22				
546	BA	0.0016									
547	BF	0.0000	0.0000	0.0000							
548	IN	5	2JUN16								
549	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810
550	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300
551	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300
552	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980
553	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080
554	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600
555	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240
556	PC	2.9240	2.9270	2.9300							
557	LS		95.000								
558	UD	0.0720									

559	KK	SB38																		
560	KO	3	0	C.O	0	22														
561	BA	0.0005																		
562	BF	0.0000	0.0000	0.0000																
563	IN	5	2JUN16																	
564	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810									
565	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300									
566	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300									
567	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980									
568	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080									
569	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600									
570	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240									
571	PC	2.9240	2.9270	2.9300																
572	LS		95.000																	
573	UD	0.0500																		
574	KK	SB39																		
575	KO	3	0	0.0	0	22														
576	BA	0.0009																		
577	BF	0.0000	0.0000	0.0000																
578	IN	5	2JUN16																	
579	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810									
580	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300									
581	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300									
582	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980									
583	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080									
584	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600									
585	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240									
586	PC	2.9240	2.9270	2.9300																
587	LS		95.000																	
588	UD	0.0680																		
589	KK	SB40																		
590	KO	3	0	0.0	0	22														
591	BA	0.0009																		
592	BF	0.0000	0.0000	0.0000																
593	IN	5	2JUN16																	
594	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810									
595	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300									
596	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300									
597	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980									
598	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080									
599	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600									
600	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240									
601	PC	2.9240	2.9270	2.9300																
602	LS		95.000																	
603	UD	0.0730																		
604	KK	SB41																		
605	KO	3	0	0.0	0	22														
606	BA	0.0008																		
607	BF	0.0000	0.0000	0.0000																
608	IN	5	2JUN16																	
609	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810									
610	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300									
611	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300									
612	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980									
613	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080									
614	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600									
615	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240									
616	PC	2.9240	2.9270	2.9300																
617	LS		95.000																	
618	UD	0.0730																		
619	KK	SB42																		
620	KO	3	0	0.0	0	22														
621	BA	0.0008																		
622	BF	0.0000	0.0000	0.0000																
623	IN	5	2JUN16																	
624	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810									
625	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300									
626	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300									
627	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980									
628	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080									
629	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600									
630	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240									
631	PC	2.9240	2.9270	2.9300																
632	LS		95.000																	
633	UD	0.0730																		
634	KK	SB43																		
635	KO	3	0	C.O	0	22														
636	BA	0.0009																		
637	BF	0.0000	0.0000	0.0000																
638	IN	5	2JUN16																	
639	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810									
640	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300									
641	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300									
642	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980									
643	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080									
644	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600									
645	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240									
646	PC	2.9240	2.9270	2.9300																
647	LS		95.000																	
648	UD	0.0660																		
649	KK	SB44																		
650	KO	3	0	0.0	0	22														
651	BA	0.0004																		
652	BF	0.0000	0.0																	

658	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080
659	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600
660	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240
661	PC	2.9240	2.9270	2.9300							
662	LS		95.000								
663	UD	0.0500									
664	KK	SB45									
665	KO	3	0	0.0	0	22					
666	BA	0.0005									
667	BF	0.0000	0.0000	0.0000							
668	IN	5	2JUN16								
669	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810
670	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300
671	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300
672	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980
673	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080
674	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600
675	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240
676	PC	2.9240	2.9270	2.9300							
677	LS		95.000								
678	UD	0.0500									
679	KK	SB46									
680	KO	3	0	0.0	0	22					
681	BA	0.0002									
682	BF	0.0000	0.0000	0.0000							
683	IN	5	2JUN16								
684	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810
685	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300
686	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300
687	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980
688	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080
689	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600
690	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240
691	PC	2.9240	2.9270	2.9300							
692	LS		95.000								
693	UD	0.0500									
694	KK	SB47									
695	KO	3	0	0.0	0	22					
696	BA	0.0001									
697	BF	0.0000	0.0000	0.0000							
698	IN	5	2JUN16								
699	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810
700	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300
701	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300
702	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980
703	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080
704	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600
705	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240
706	PC	2.9240	2.9270	2.9300							
707	LS		95.000								
708	UD	0.0500									
709	KK	SB48									
710	KO	3	0	0.0	0	22					
711	BA	0.0005									
712	BF	0.0000	0.0000	0.0000							
713	IN	5	2JUN16								
714	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810
715	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300
716	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300
717	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980
718	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080
719	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600
720	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240
721	PC	2.9240	2.9270	2.9300							
722	LS		95.000								
723	UD	0.0500									
724	KK	SB49									
725	KO	3	0	0.0	0	22					
726	BA	0.0001									
727	BF	0.0000	0.0000	0.0000							
728	IN	5	2JUN16								
729	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810
730	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300
731	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300
732	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980
733	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080
734	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600
735	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240
736	PC	2.9240	2.9270	2.9300							
737	LS		95.000								
738	UD	0.0500									
739	KK	SB50									
740	KO	3	0	0.0	0	22					
741	BA	0.0004									
742	BF	0.0000	0.0000	0.0000							
743	IN	5	2JUN16								
744	PC	0.0000	0.0590	0.1670	0.2050	0.2550	0.3160	0.3630	0.3810	0.3810	0.3810
745	PC	0.3810	0.3810	0.3810	0.3900	0.4100	0.4160	0.4340	0.4630	0.5040	0.5300
746	PC	0.5570	0.5770	0.5830	0.5860	0.5890	0.5980	0.6270	0.6710	0.7060	0.7300
747	PC	0.7350	0.7500	0.7910	0.8150	0.8230	0.8290	0.8640	0.9430	1.0310	1.1980
748	PC	1.4620	1.7290	2.0800	2.1800	2.2880	2.3790	2.4000	2.4470	2.4930	2.5080
749	PC	2.5200	2.5430	2.5670	2.6020	2.6660	2.7130	2.7450	2.7840	2.8420	2.8600
750	PC	2.8770	2.8860	2.8920	2.8980	2.9010	2.9090	2.9090	2.9120	2.9150	2.9240
751	PC	2.9240	2.9270	2.9300							
752	LS		95.000								
753	UD	0.0500									
754	KK	SB51									
755	KO	3	0	0.0	0	22					

Autodesk Storm and Sanitary Analysis

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855      PC 2.8770 2.8860 2.8920 2.8980 2.9010 2.9090 2.9090 2.9120 2.9150 2.9240
856      EC 2.9240 2.9270 2.9300
857      LS 95.000
858      UD 0.0500

859      KK SB58
860      KO 3 0 0.0 0 22
861      BA 0.0001
862      BF 0.0000 0.0000 0.0000
863      IN 5 2JUN16
864      PC 0.0000 0.0590 0.1670 0.2050 0.2550 0.3160 0.3630 0.3810 0.3810 0.3810
865      PC 0.3810 0.3810 0.3810 0.3900 0.4100 0.4160 0.4340 0.4630 0.5040 0.5300
866      PC 0.5570 0.5770 0.5830 0.5860 0.5890 0.5980 0.6270 0.6710 0.7060 0.7300
867      PC 0.7350 0.7500 0.7910 0.8150 0.8230 0.8290 0.8640 0.9430 1.0310 1.1980
868      PC 1.4620 1.7290 2.0800 2.1800 2.2880 2.3790 2.4000 2.4470 2.4930 2.5080
869      PC 2.5200 2.5430 2.5670 2.6020 2.6660 2.7130 2.7450 2.7840 2.8420 2.8600
870      PC 2.8770 2.8860 2.8920 2.8980 2.9010 2.9090 2.9090 2.9120 2.9150 2.9240
871      PC 2.9240 2.9270 2.9300
872      LS 95.000
873      UD 0.0500

874      KK SB59
875      KO 3 0 0.0 0 22
876      BA 0.0001
877      BF 0.0000 0.0000 0.0000
878      IN 5 2JUN16
879      PC 0.0000 0.0590 0.1670 0.2050 0.2550 0.3160 0.3630 0.3810 0.3810 0.3810
880      PC 0.3810 0.3810 0.3810 0.3900 0.4100 0.4160 0.4340 0.4630 0.5040 0.5300
881      PC 0.5570 0.5770 0.5830 0.5860 0.5890 0.5980 0.6270 0.6710 0.7060 0.7300
882      PC 0.7350 0.7500 0.7910 0.8150 0.8230 0.8290 0.8640 0.9430 1.0310 1.1980
883      PC 1.4620 1.7290 2.0800 2.1800 2.2880 2.3790 2.4000 2.4470 2.4930 2.5080
884      PC 2.5200 2.5430 2.5670 2.6020 2.6660 2.7130 2.7450 2.7840 2.8420 2.8600
885      PC 2.8770 2.8860 2.8920 2.8980 2.9010 2.9090 2.9090 2.9120 2.9150 2.9240
886      PC 2.9240 2.9270 2.9300
887      LS 95.000
888      UD 0.0500

889      KK SB60
890      KO 3 0 0.0 0 22
891      BA 0.0001
892      BF 0.0000 0.0000 0.0000
893      IN 5 2JUN16
894      PC 0.0000 0.0590 0.1670 0.2050 0.2550 0.3160 0.3630 0.3810 0.3810 0.3810
895      PC 0.3810 0.3810 0.3810 0.3900 0.4100 0.4160 0.4340 0.4630 0.5040 0.5300
896      PC 0.5570 0.5770 0.5830 0.5860 0.5890 0.5980 0.6270 0.6710 0.7060 0.7300
897      PC 0.7350 0.7500 0.7910 0.8150 0.8230 0.8290 0.8640 0.9430 1.0310 1.1980
898      PC 1.4620 1.7290 2.0800 2.1800 2.2880 2.3790 2.4000 2.4470 2.4930 2.5080
899      PC 2.5200 2.5430 2.5670 2.6020 2.6660 2.7130 2.7450 2.7840 2.8420 2.8600
900      PC 2.8770 2.8860 2.8920 2.8980 2.9010 2.9090 2.9090 2.9120 2.9150 2.9240
901      PC 2.9240 2.9270 2.9300

902      LS 95.000
903      UD 0.0500

904      KK SBNWash
905      KO 3 0 0.0 0 22
906      BA 0.0001
907      BF 260.00 0.0000 0.0000
908      IN 5 2JUN16
909      PC 0.0000 0.0590 0.1670 0.2050 0.2550 0.3160 0.3630 0.3810 0.3810 0.3810
910      PC 0.3810 0.3810 0.3810 0.3900 0.4100 0.4160 0.4340 0.4630 0.5040 0.5300
911      PC 0.5570 0.5770 0.5830 0.5860 0.5890 0.5980 0.6270 0.6710 0.7060 0.7300
912      PC 0.7350 0.7500 0.7910 0.8150 0.8230 0.8290 0.8640 0.9430 1.0310 1.1980
913      PC 1.4620 1.7290 2.0800 2.1800 2.2880 2.3790 2.4000 2.4470 2.4930 2.5080
914      PC 2.5200 2.5430 2.5670 2.6020 2.6660 2.7130 2.7450 2.7840 2.8420 2.8600
915      PC 2.8770 2.8860 2.8920 2.8980 2.9010 2.9090 2.9090 2.9120 2.9150 2.9240
916      PC 2.9240 2.9270 2.9300
917      LS 95.000
918      UD 0.0000

919      KK SBSWash
920      KO 3 0 0.0 0 22
921      BA 0.0001
922      BF 438.00 0.0000 0.0000
923      IN 5 2JUN16
924      PC 0.0000 0.0590 0.1670 0.2050 0.2550 0.3160 0.3630 0.3810 0.3810 0.3810
925      PC 0.3810 0.3810 0.3810 0.3900 0.4100 0.4160 0.4340 0.4630 0.5040 0.5300
926      PC 0.5570 0.5770 0.5830 0.5860 0.5890 0.5980 0.6270 0.6710 0.7060 0.7300
927      PC 0.7350 0.7500 0.7910 0.8150 0.8230 0.8290 0.8640 0.9430 1.0310 1.1980
928      PC 1.4620 1.7290 2.0800 2.1800 2.2880 2.3790 2.4000 2.4470 2.4930 2.5080
929      PC 2.5200 2.5430 2.5670 2.6020 2.6660 2.7130 2.7450 2.7840 2.8420 2.8600
930      PC 2.8770 2.8860 2.8920 2.8980 2.9010 2.9090 2.9090 2.9120 2.9150 2.9240
931      PC 2.9240 2.9270 2.9300
932      LS 95.000
933      UD 0.0000
934      ZZ

1*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* JUN 1998 *
* VERSION 4.1 *
* RUN DATE 19SEP16 TIME 12:50:35 *
*
*****
*
* U.S. ARMY CORPS OF ENGINEERS *
* HYDROLOGIC ENGINEERING CENTER *
* 609 SECOND STREET *
* DAVIS, CALIFORNIA 95616 *
* (916) 756-1104 *
*
*****

```

HEC-1 Analysis using SSA

```

3 IO      OUTPUT CONTROL VARIABLES
          IPRINT 0 PRINT CONTROL
          TPLOT 0 PLOT CONTROL
          QSCAL 0. HYDROGRAPH PLOT SCALE

IT        HYDROGRAPH TIME DATA
          NMIN 5 MINUTES IN COMPUTATION INTERVAL
          IDATE 2JUN16 STARTING DATE

```

```

      ITIME      0000  STARTING TIME
      NQ        200  NUMBER OF HYDROGRAPH ORDINATES
      NDDATE    3JUN16  ENDING DATE
      NDTIME    0000  ENDING TIME
      ICENT     19    CENTURY MARK

      COMPUTATION INTERVAL      .08 HOURS
      TOTAL TIME BASE      24.00 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

*****

      *****
      *
      4 KK  *   SB01  *
      *
      *****

      5 KO      OUTPUT CONTROL VARIABLES
              IPRNT      3  PRINT CONTROL
              IPLOT      0  PLOT CONTROL
              QSCAL      0.  HYDROGRAPH PLOT SCALE
              IPNCH      0  PUNCH COMPUTED HYDROGRAPH
              IOUT       22  SAVE HYDROGRAPH ON THIS UNIT
              ISAV1      1  FIRST ORDINATE PUNCHED OR SAVED
              ISAV2     289  LAST ORDINATE PUNCHED OR SAVED
              TIMINT     .083  TIME INTERVAL IN HOURS

      8 IN      TIME DATA FOR INPUT TIME SERIES
              JXMIN      5  TIME INTERVAL IN MINUTES
              JXDATE     2JUN16  STARTING DATE
              JXTIME      0  STARTING TIME

      SUBBASIN RUNOFF DATA

      6 BA      SUBBASIN CHARACTERISTICS
              TAREA      .00  SUBBASIN AREA

      7 BF      BASE FLOW CHARACTERISTICS
              STRFQ      .00  INITIAL FLOW
              QRCEN      .00  BEGIN BASE FLOW RECESION
              RTIOR      1.00000  RECESION CONSTANT

      PRECIPITATION DATA

      9 PB      STORM      2.93  BASIN TOTAL PRECIPITATION

      9 PI      INCREMENTAL PRECIPITATION PATTERN
              .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
              .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
              .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
              .01      .04      .02      .01      .01      .04      .08      .09      .17      .26
              .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
              .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
              .01      .01      .01      .00      .01      .00      .00      .00      .01      .00
              .00      .00

      17 LS     SCS LOSS RATE
              STRFL      .11  INITIAL ABSTRACTION
              CRVNR      95.00  CURVE NUMBER
              RTIMP      85.00  PERCENT IMPERVIGUS AREA

      18 UD     SCS DIMENSIONLESS UNITGRAPH
              TLAG       .05  LAG

      ***

              UNIT HYDROGRAPH
              5 END-OF-PERIOD ORDINATES
              1.      0.      0.      0.      0.

      ***      *****      *** *** HYDROGRAPH AT

              STATION      SB01

      TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

      PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
      + (CFS)      (HR)      6-HR      24-HR      72-HR      24.00-HR
      + 0.      3.50      (CFS)      0.      0.      0.      0.
              (INCHES)  2.844      2.847      2.847      2.847
              (AC-FT)   0.      0.      0.      0.

              CUMULATIVE AREA = .00 SQ MI

*****

      *****
      *
      19 KK  *   SB02  *
      *
      *****

      20 KO      OUTPUT CONTROL VARIABLES
              IPRNT      3  PRINT CONTROL

```


.02	.01	.00	.00	.01	.03	.04	.03	.02	.00
.01	.04	.02	.01	.01	.04	.08	.09	.17	.26
.27	.35	.10	.11	.09	.02	.05	.05	.01	.01
.02	.02	.04	.06	.05	.03	.04	.06	.02	.02
.01	.01	.01	.00	.01	.00	.00	.00	.01	.00
.00	.00								

47 LS SCS LOSS RATE
STRFL .11 INITIAL ABSTRACTION
CRVNR 95.00 CURVE NUMBER
RIIMP 85.00 PERCENT IMPERVIOUS AREA

48 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .05 LAG

UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES
0.

7. 3. 1. 0.

*** ***** *** *** HYDROGRAPH AT

STATION SB03

TOTAL RAINFALL = 2.93, TOTAL LOSS = .09, TOTAL EXCESS = 2.85

PEAK FLOW	TIME	6-HR	24-HR	72-HR	24.00-HR
(CFS)	(HR)	(CFS)			
+	4.	3.50	0.	0.	0.
		(INCHES)	2.844	2.847	2.847
		(AC-FT)	0.	0.	0.

CUMULATIVE AREA = .00 SQ MI

*** **

49 KK SB04

50 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLCT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE
IPNCH	0	PUNCH COMPUTED HYDROGRAPH
IOUT	22	SAVE HYDROGRAPH ON THIS UNIT
ISAV1	1	FIRST ORDINATE PUNCHED OR SAVED
ISAV2	289	LAST ORDINATE PUNCHED OR SAVED
TIMINT	.083	TIME INTERVAL IN HOURS

53 IN TIME DATA FOR INPUT TIME SERIES

JXMIN	5	TIME INTERVAL IN MINUTES
JXDATE	2JUN16	STARTING DATE
JXTIME	0	STARTING TIME

SUBBASIN RUNOFF DATA

51 BA SUBBASIN CHARACTERISTICS

TAREA	.00	SUBBASIN AREA
-------	-----	---------------

52 BF BASE FLOW CHARACTERISTICS

STRFQ	.00	INITIAL FLOW
QRCRN	.00	BEGIN BASE FLOW RECESSION
RTIOR	1.00000	RECESSION CONSTANT

PRECIPITATION DATA

54 PB STORM 2.93 BASIN TOTAL PRECIPITATION

54 PI INCREMENTAL PRECIPITATION PATTERN

.06	.11	.04	.05	.06	.05	.02	.00	.00	.00
.00	.00	.01	.02	.01	.02	.03	.04	.03	.03
.02	.01	.00	.00	.01	.03	.04	.03	.02	.00
.01	.04	.02	.01	.01	.04	.08	.09	.17	.26
.27	.35	.10	.11	.09	.02	.05	.05	.01	.01
.02	.02	.04	.06	.05	.03	.04	.06	.02	.02
.01	.01	.01	.00	.01	.00	.00	.00	.01	.00
.00	.00								

62 LS SCS LOSS RATE
STRFL .11 INITIAL ABSTRACTION
CRVNR 95.00 CURVE NUMBER
RIIMP 85.00 PERCENT IMPERVIOUS AREA

63 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .05 LAG

UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES
0.

5. 2. 0. 0.

*** ***** *** *** HYDROGRAPH AT

STATION SB04

TOTAL RAINFALL = 2.93, TOTAL LOSS = .09, TOTAL EXCESS = 2.85

PEAK FLOW	TIME	6-HR	24-HR	72-HR	24.00-HR
(CFS)	(HR)	(CFS)			


```

+      2.      3.50      0.      0.      0.      0.
      (INCHES)  2.844      2.847      2.847      2.847
      (AC-FT)   0.      0.      0.      0.
      CUMULATIVE AREA = .00 SQ MI

```

*** **

```

*****
*      *
64 KK  * SB05 *
*      *
*****

```

```

65 KO      OUTPUT CONTROL VARIABLES
          IPRT  3  PRINT CONTROL
          IPLOT 0  PLOT CONTROL
          QSCAL 0.  HYDROGRAPH PLOT SCALE
          IPNCH 0  PUNCH COMPUTED HYDROGRAPH
          IOUT  22  SAVE HYDROGRAPH ON THIS UNIT
          ISAV1  1  FIRST ORDINATE PUNCHED OR SAVED
          ISAV2 289 LAST ORDINATE PUNCHED OR SAVED
          TIMINT .083 TIME INTERVAL IN HOURS

```

```

68 IN      TIME DATA FOR INPUT TIME SERIES
          JXMIN  5  TIME INTERVAL IN MINUTES
          JKDATE 2JUN16 STARTING DATE
          JKTIME  0  STARTING TIME

```

SUBBASIN RUNOFF DATA

```

66 BA      SUBBASIN CHARACTERISTICS
          TARFA .00 SUBBASIN AREA

67 BF      BASE FLOW CHARACTERISTICS
          STRTQ .00 INITIAL FLOW
          QBCSN .00 BEGIN BASE FLOW RECESSON
          RTIOR 1.00000 RECESSON CONSTANT

```

PRECIPITATION DATA

```

69 PB      STORM      2.93 BASIN TOTAL PRECIPITATION

```

```

69 PI      INCREMENTAL PRECIPITATION PATTERN
          .06 .11 .04 .05 .05 .05 .02 .00 .00 .00
          .00 .00 .01 .02 .01 .02 .03 .04 .03 .03
          .02 .01 .00 .00 .01 .03 .04 .03 .02 .00
          .01 .04 .02 .01 .01 .04 .08 .09 .17 .25
          .27 .35 .10 .11 .09 .02 .05 .05 .01 .01
          .02 .02 .04 .06 .05 .03 .04 .06 .02 .02
          .01 .01 .01 .00 .01 .00 .00 .00 .01 .00
          .00 .00

```

```

77 LS      SCS LOSS RATE
          STRTL .11 INITIAL ABSTRACTION
          CRVNR 95.00 CURVE NUMBER
          RTIMP 85.00 PERCENT IMPERVIOUS AREA

```

```

78 UD      SCS DIMENSIONLESS UNITGRAPH
          TLAG .05 LAG

```

```

          UNIT HYDROGRAPH
          5 END-OF-PERIOD ORDINATES
          0.

```

```

          5.      2.      0.      0.
          ***      *****      *** *** HYDROGRAPH AT

```

```

          STATION      SB05

```

```

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

```

```

PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
+      (CFS)      (HR)      6-HR      24-HR      72-HR      24.00-HR
+      2.      3.50      (CFS)      0.      0.      0.      0.
          (INCHES)  2.844      2.847      2.847      2.847
          (AC-FT)   0.      0.      0.      0.
          CUMULATIVE AREA = .00 SQ MI

```

*** **

```

*****
*      *
79 KK  * SB06 *
*      *
*****

```

```

80 KO      OUTPUT CONTROL VARIABLES
          IPRT  3  PRINT CONTROL
          IPLOT 0  PLOT CONTROL
          QSCAL 0.  HYDROGRAPH PLOT SCALE
          IPNCH 0  PUNCH COMPUTED HYDROGRAPH
          IOUT  22  SAVE HYDROGRAPH ON THIS UNIT
          ISAV1  1  FIRST ORDINATE PUNCHED OR SAVED
          ISAV2 289 LAST ORDINATE PUNCHED OR SAVED
          TIMINT .083 TIME INTERVAL IN HOURS

```

```

83 IN      TIME DATA FOR INPUT TIME SERIES
          JXMIN  5  TIME INTERVAL IN MINUTES

```

```

      JXDATE      2JUN16  STARTING DATE
      JXTIME      0      STARTING TIME

SUBBASIN RUNOFF DATA

81 BA      SUBBASIN CHARACTERISTICS
      TAREA      .00  SUBBASIN AREA

82 BF      BASE FLOW CHARACTERISTICS
      STRIQ      .00  INITIAL FLOW
      QRCEN      .00  BEGIN BASE FLOW RECESSION
      RTICR      1.00000  RECESSION CONSTANT

PRECIPITATION DATA

84 PB      STORM      2.93  BASIN TOTAL PRECIPITATION

84 PI      INCREMENTAL PRECIPITATION PATTERN
      .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
      .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
      .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
      .01      .04      .02      .01      .01      .04      .08      .09      .17      .26
      .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
      .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
      .01      .01      .01      .00      .01      .00      .00      .00      .01      .03
      .00      .00

92 LS      SCS LOSS RATE
      STRTL      .11  INITIAL ABSTRACTION
      CRVNR      95.00  CURVE NUMBER
      RTIMP      85.00  PERCENT IMPERVIOUS AREA

93 UD      SCS DIMENSIONLESS UNITGRAPH
      TLAG      .05  LAG

```

```

      ***
      UNIT HYDROGRAPH
      5 END-OF-PERIOD ORDINATES
      0.
      7.      3.      1.      0.
      ***
      *** HYDROGRAPH AT
      STATION      SB06
TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85
PEAK FLOW      TIME      6-HR      24-HR      72-HR      24.00-HR
+ (CFS)      (HR)
+ 3.      3.50      (CFS)
      (INCHES)      2.844      2.847      2.847      2.847
      (AC-FT)      0.      0.      0.      0.
      CUMULATIVE AREA = .00 SQ MI

```

*** **

```

*****
*      *
94 KK      *      SB07      *
*      *
*****

95 KO      OUTPUT CONTROL VARIABLES
      IPRNT      3  PRINT CONTROL
      IPLOT      0  PLOT CONTROL
      QSCAL      0.  HYDROGRAPH PLOT SCALE
      IPNCH      0  PUNCH COMPUTED HYDROGRAPH
      IOUT      22  SAVE HYDROGRAPH ON THIS UNIT
      ISAV1      1  FIRST ORDINATE PUNCHED OR SAVED
      ISAV2      289  LAST ORDINATE PUNCHED OR SAVED
      TIMINT      .003  TIME INTERVAL IN HOURS

```

```

98 IN      TIME DATA FOR INPUT TIME SERIES
      JXMIN      5  TIME INTERVAL IN MINUTES
      JXDATE      2JUN16  STARTING DATE
      JXTIME      0  STARTING TIME

```

```

SUBBASIN RUNOFF DATA

96 BA      SUBBASIN CHARACTERISTICS
      TAREA      .00  SUBBASIN AREA

97 BF      BASE FLOW CHARACTERISTICS
      STRIQ      .00  INITIAL FLOW
      QRCEN      .00  BEGIN BASE FLOW RECESSION
      RTICR      1.00000  RECESSION CONSTANT

```

```

PRECIPITATION DATA

99 PB      STORM      2.93  BASIN TOTAL PRECIPITATION

99 PI      INCREMENTAL PRECIPITATION PATTERN
      .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
      .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
      .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
      .01      .04      .02      .01      .01      .04      .08      .09      .17      .26
      .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
      .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
      .01      .01      .01      .00      .01      .00      .00      .00      .01      .00
      .00      .00

107 LS      SCS LOSS RATE
      STRTL      .11  INITIAL ABSTRACTION
      CRVNR      95.00  CURVE NUMBER
      RTIMP      85.00  PERCENT IMPERVIOUS AREA

```



```

RTIOR      1.00000 RECESION CONSTANT

PRECIPITATION DATA

144 PB      STORM      2.93 BASIN TOTAL PRECIPITATION

144 PI      INCREMENTAL PRECIPITATION PATTERN
             .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
             .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
             .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
             .01      .04      .02      .01      .01      .04      .08      .09      .17      .26
             .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
             .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
             .01      .01      .01      .00      .01      .00      .00      .00      .01      .00
             .00      .00

152 LS      SCS LOSS RATE
             STRCL      .11 INITIAL ABSTRACTION
             CRVNR      95.00 CURVE NUMBER
             RTIMP      85.00 PERCENT IMPERVIOUS AREA

153 UD      SCS DIMENSIONLESS UNITGRAPH
             TLAG      .06 LAG

```

```

***
UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES
0.
7.      3.      1.      0.
*** *** HYDROGRAPH AT
STATION      SB10
TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85
PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
+ (CFS)      (HR)      6-HR      24-HR      72-HR      24.00-HR
+ 4.      3.50      (CFS)      0.      0.      0.      0.
             (INCHES)      2.844      2.847      2.847      2.847
             (AC-FT)      0.      0.      0.      0.
CUMULATIVE AREA = .00 SQ MI

```

*** **

```

*****
*      *
154 KK      *      SB11      *
*      *
*****

155 KO      OUTPUT CONTROL VARIABLES
             IPRNT      3 PRINT CONTROL
             IPLOT      0 PLOT CONTROL
             QSCAL      0. HYDROGRAPH PLOT SCALE
             IPNCH      0 PUNCH COMPUTED HYDROGRAPH
             ICUT      22 SAVE HYDROGRAPH ON THIS UNIT
             ISAV1      1 FIRST ORDINATE PUNCHED OR SAVED
             ISAV2      289 LAST ORDINATE PUNCHED OR SAVED
             TIMINT      .083 TIME INTERVAL IN HOURS

158 IN      TIME DATA FOR INPUT TIME SERIES
             JXMIN      5 TIME INTERVAL IN MINUTES
             JXDATE      2JUN16 STARTING DATE
             JXTIME      0 STARTING TIME

```

```

SUBBASIN RUNOFF DATA

156 BA      SUBBASIN CHARACTERISTICS
             TAREA      .00 SUBBASIN AREA

157 BF      BASE FLOW CHARACTERISTICS
             STRIQ      .00 INITIAL FLOW
             QRCNS      .00 BEGIN BASE FLOW RECESION
             RTIOR      1.00000 RECESION CONSTANT

```

```

PRECIPITATION DATA

159 PB      STORM      2.93 BASIN TOTAL PRECIPITATION

159 PI      INCREMENTAL PRECIPITATION PATTERN
             .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
             .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
             .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
             .01      .04      .02      .01      .01      .04      .08      .09      .17      .26
             .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
             .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
             .01      .01      .01      .00      .01      .00      .00      .00      .01      .00
             .00      .00

167 LS      SCS LOSS RATE
             STRCL      .11 INITIAL ABSTRACTION
             CRVNR      95.00 CURVE NUMBER
             RTIMP      85.00 PERCENT IMPERVIOUS AREA

169 UD      SCS DIMENSIONLESS UNITGRAPH
             TLAG      .05 LAG

```

```

***
UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES
0.
6.      3.      1.      0.
***

```



```

HYDROGRAPH AT STATION SB11

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
+ (CFS)        (HR)      6-HR      24-HR      72-HR      24.00-HR
+ 3.           3.50      (CFS)
                        (INCHES) 2.844    2.847    2.847    2.847
                        (AC-FT)  0.        0.        0.        0.

CUMULATIVE AREA = .00 SQ MI

***

*****
*
* SB12
*
*****

170 KO      OUTPUT CONTROL VARIABLES
            IPRINT      3 PRINT CONTROL
            IPLOT       0 PLOT CONTROL
            QSCAL       0. HYDROGRAPH PLOT SCALE
            IFNCH       0 PUNCH COMPUTED HYDROGRAPH
            IOUT        22 SAVE HYDROGRAPH ON THIS UNIT
            ISAV1       1 FIRST ORDINATE PUNCHED OR SAVED
            ISAV2      289 LAST ORDINATE PUNCHED OR SAVED
            TIMINT      .063 TIME INTERVAL IN HOURS

173 IN      TIME DATA FOR INPUT TIME SERIES
            JXMIN       5 TIME INTERVAL IN MINUTES
            JXDATE     2JUN16 STARTING DATE
            JXTIME      0 STARTING TIME

SUBBASIN RUNOFF DATA

171 BA      SUBBASIN CHARACTERISTICS
            TAREA       .00 SUBBASIN AREA

172 BF      BASE FLOW CHARACTERISTICS
            STRIC       .00 INITIAL FLOW
            QRCN       .00 BEGIN BASE FLOW RECESSON
            RTIOR      1.00000 RECESSON CONSTANT

PRECIPITATION DATA

174 PB      STORM      2.93 BASIN TOTAL PRECIPITATION

174 PI      INCREMENTAL PRECIPITATION PATTERN
            .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
            .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
            .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
            .01      .04      .02      .01      .01      .04      .08      .09      .17      .26
            .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
            .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
            .01      .01      .01      .00      .01      .00      .00      .00      .01      .00
            .00      .00

182 LS      SCS LOSS RATE
            STRTL       .11 INITIAL ABSTRACTION
            CRVNR      95.00 CURVE NUMBER
            RTIMP      85.00 PERCENT IMPERVIOUS AREA

183 UD      SCS DIMENSIONLESS UNITGRAPH
            TLAG       .05 LAG

***

UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES
0.

6.      3.      1.      0.

***      *****      *** *** HYDROGRAPH AT

STATION      SB12

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
+ (CFS)        (HR)      6-HR      24-HR      72-HR      24.00-HR
+ 3.           3.50      (CFS)
                        (INCHES) 2.844    2.847    2.847    2.847
                        (AC-FT)  0.        0.        0.        0.

CUMULATIVE AREA = .00 SQ MI

***

*****
*
* SB13
*
*****

185 KO      OUTPUT CONTROL VARIABLES
            IPRINT      3 PRINT CONTROL
            IPLOT       0 PLOT CONTROL
            QSCAL       0. HYDROGRAPH PLOT SCALE

```


		.27	.35	.10	.11	.09	.02	.05	.05	.01	.01
		.02	.02	.04	.06	.05	.03	.04	.06	.02	.02
		.01	.01	.01	.00	.01	.00	.00	.00	.01	.00
		.00	.00								

212 LS SCS LOSS RATE
 STRTL .11 INITIAL ABSTRACTION
 CRVNR 95.00 CURVE NUMBER
 RTIMP 85.00 PERCENT IMPERVIOUS AREA

213 UD SCS DIMENSIONLESS UNITGRAPH
 TLAG .05 LAG

UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES
0.

	2.	1.	0.	0.
--	----	----	----	----

*** ***** *** *** HYDROGRAPH AT

STATION SB14

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW	
			6-HR	24-HR 72-HR 24.00-HR
+ (CFS)	(HR)	(CFS)		
+ 1.	3.50	0.	0.	0.
		(INCHES)	2.844	2.847
		(AC-FT)	0.	0.

CUMULATIVE AREA = .00 SQ MI

*** ***

* *
214 KK * SB15 *
* *

215 KO OUTPUT CONTROL VARIABLES
 IPRNT 3 PRINT CONTROL
 IPLOT 0 PLOT CONTROL
 QSCAL 0. HYDROGRAPH PLOT SCALE
 IPUNCH 0 PUNCH COMPUTED HYDROGRAPH
 ICOUT 22 SAVE HYDROGRAPH ON THIS UNIT
 ISAV1 1 FIRST ORDINATE PUNCHED OR SAVED
 ISAV2 289 LAST ORDINATE PUNCHED OR SAVED
 TIMINT .083 TIME INTERVAL IN HOURS

218 IN TIME DATA FOR INPUT TIME SERIES
 JXMIN 5 TIME INTERVAL IN MINUTES
 JXDATE 2JUN16 STARTING DATE
 JXTIME 0 STARTING TIME

SUBBASIN RUNOFF DATA

216 BA SUBBASIN CHARACTERISTICS
 TAREA .00 SUBBASIN AREA

217 BF BASE FLOW CHARACTERISTICS
 STRTQ .00 INITIAL FLOW
 QBCSN .00 BEGIN BASE FLOW RECESSON
 RTIOR 1.00000 RECESSON CONSTANT

PRECIPITATION DATA

219 PB STORM 2.93 BASIN TOTAL PRECIPITATION

219 PI INCREMENTAL PRECIPITATION PATTERN

.06	.11	.04	.05	.05	.02	.00	.00	.00
.00	.00	.01	.02	.01	.02	.03	.04	.03
.02	.01	.00	.00	.01	.03	.04	.03	.02
.01	.04	.02	.01	.01	.04	.08	.09	.17
.27	.35	.10	.11	.09	.02	.05	.05	.01
.02	.02	.04	.06	.05	.03	.04	.06	.02
.01	.01	.01	.00	.01	.00	.00	.00	.01
.00	.00							.00

227 LS SCS LOSS RATE
 STRTL .11 INITIAL ABSTRACTION
 CRVNR 95.00 CURVE NUMBER
 RTIMP 85.00 PERCENT IMPERVIOUS AREA

228 UD SCS DIMENSIONLESS UNITGRAPH
 TLAG .06 LAG

UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES
0.

	5.	3.	1.	0.
--	----	----	----	----

*** ***** *** *** HYDROGRAPH AT

STATION SB15

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW	
			6-HR	24-HR 72-HR 24.00-HR
+ (CFS)	(HR)	(CFS)		
+ 3.	3.50	0.	0.	0.
		(INCHES)	2.844	2.847

(AC-FT) 0. 0. 0. 0.
CUMULATIVE AREA = .00 SQ MI

*** **

* *
229 KK * SB16 *
* *

230 KO OUTPUT CONTROL VARIABLES
IPRNT 3 PRINT CONTROL
IPLOT 0 PLOT CONTROL
QSCAL 0. HYDROGRAPH PLOT SCALE
IPNCH 0 PUNCH COMPUTED HYDROGRAPH
IOUT 22 SAVE HYDROGRAPH ON THIS UNIT
ISAV1 1 FIRST ORDINATE PUNCHED OR SAVED
ISAV2 289 LAST ORDINATE PUNCHED OR SAVED
TIMINT .083 TIME INTERVAL IN HOURS

233 IN TIME DATA FOR INPUT TIME SERIES
JXMIN 5 TIME INTERVAL IN MINUTES
JKDATE 2JUN16 STARTING DATE
JXTIME 0 STARTING TIME

SUBBASIN RUNOFF DATA

231 BA SUBBASIN CHARACTERISTICS
TAREA .00 SUBBASIN AREA

232 BF BASE FLOW CHARACTERISTICS
STRTO .00 INITIAL FLOW
QRCSN .00 BEGIN BASE FLOW RECESSION
RTIOR 1.00000 RECESSION CONSTANT

PRECIPITATION DATA

234 PB STORM 2.93 BASIN TOTAL PRECIPITATION

234 PI INCREMENTAL PRECIPITATION PATTERN
.06 .11 .04 .05 .06 .05 .02 .00 .00 .00
.00 .00 .01 .02 .01 .02 .03 .04 .03 .03
.02 .01 .00 .00 .01 .03 .04 .03 .02 .00
.01 .04 .02 .01 .01 .04 .08 .09 .17 .26
.27 .35 .10 .11 .09 .02 .05 .05 .01 .01
.02 .02 .04 .06 .05 .03 .04 .06 .02 .02
.01 .01 .01 .00 .01 .00 .00 .00 .01 .00
.00 .00

242 LS SCS LOSS RATE
STRTL .11 INITIAL ABSTRACTION
CRVNR 95.00 CURVE NUMBER
RTIMP 85.00 PERCENT IMPERVIOUS AREA

243 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .05 LAG

UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES
0.

2. 1. 0. 0.

*** ***** *** ** HYDROGRAPH AT

STATION SB16

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW	TIME	6-HR	24-HR	72-HR	24.00-HR
(CFS)	(HR)	(CFS)			
+	1.	3.50	0.	0.	0.
+			2.844	2.847	2.847
			(INCHES)	0.	0.
			(AC-FT)	0.	0.

CUMULATIVE AREA = .00 SQ MI

*** **

* *
244 KK * SB17 *
* *

245 KO OUTPUT CONTROL VARIABLES
IPRNT 3 PRINT CONTROL
IPLOT 0 PLOT CONTROL
QSCAL 0. HYDROGRAPH PLOT SCALE
IPNCH 0 PUNCH COMPUTED HYDROGRAPH
IOUT 22 SAVE HYDROGRAPH ON THIS UNIT
ISAV1 1 FIRST ORDINATE PUNCHED OR SAVED
ISAV2 289 LAST ORDINATE PUNCHED OR SAVED
TIMINT .083 TIME INTERVAL IN HOURS

248 IN TIME DATA FOR INPUT TIME SERIES
JXMIN 5 TIME INTERVAL IN MINUTES
JKDATE 2JUN16 STARTING DATE
JXTIME 0 STARTING TIME

```

SUBBASIN RUNOFF DATA

246 BA      SUBBASIN CHARACTERISTICS
            TAREA      .00  SUBBASIN AREA

247 BF      BASE FLOW CHARACTERISTICS
            STRIQ      .00  INITIAL FLOW
            QRCEN      .00  BEGIN BASE FLOW RECESSION
            RTIOR      1.00000 RECESSION CONSTANT

PRECIPITATION DATA

249 PB      STORM      2.93  BASIN TOTAL PRECIPITATION

249 PI      INCREMENTAL PRECIPITATION PATTERN
            .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
            .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
            .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
            .01      .04      .02      .01      .01      .04      .08      .09      .17      .26
            .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
            .02      .02      .04      .05      .03      .03      .04      .06      .02      .02
            .01      .01      .01      .00      .01      .00      .00      .00      .01      .00
            .00      .00

257 LS      SCS LOSS RATE
            STRFL      .11  INITIAL ABSTRACTION
            CKNR      95.00  CURVE NUMBER
            RTIMP      85.00  PERCENT IMPERVIOUS AREA

258 UD      SCS DIMENSIONLESS UNITGRAPH
            TLAG      .05  LAG

***

UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES
9.

2.      1.      0.      0.

***      *****      *** *** HYDROGRAPH AT

STATION      SB17

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
+ (CFS)      (HR)      6-HR      24-HR      72-HR      24.00-HR
+ 1.      3.50      (CFS)      0.      0.      0.      0.
            (INCHES) 2.844      2.847      2.847      2.847
            (AC-FT) 0.      0.      0.      0.

CUMULATIVE AREA = .00 SQ MI

*** **

*****
* *
259 KK      * SB18 *
* *
*****

260 KO      OUTPUT CONTROL VARIABLES
            IPRNT      3  PRINT CONTROL
            IPLOT      0  PLOT CONTROL
            QSCAL      0.  HYDROGRAPH PLOT SCALE
            IPNCH      0  PUNCH COMPUTED HYDROGRAPH
            IOUT      22  SAVE HYDROGRAPH ON THIS UNIT
            ISAV1      1  FIRST ORDINATE PUNCHED OR SAVED
            ISAV2      239 LAST ORDINATE PUNCHED OR SAVED
            TIMINT      .083 TIME INTERVAL IN HOURS

263 IN      TIME DATA FOR INPUT TIME SERIES
            JYMIN      5  TIME INTERVAL IN MINUTES
            JXDATE      2JUN16 STARTING DATE
            JXTIME      0  STARTING TIME

SUBBASIN RUNOFF DATA

261 BA      SUBBASIN CHARACTERISTICS
            TAREA      .00  SUBBASIN AREA

262 BF      BASE FLOW CHARACTERISTICS
            STRIQ      .00  INITIAL FLOW
            QRCEN      .00  BEGIN BASE FLOW RECESSION
            RTIOR      1.00000 RECESSION CONSTANT

PRECIPITATION DATA

264 PB      STORM      2.93  BASIN TOTAL PRECIPITATION

264 PI      INCREMENTAL PRECIPITATION PATTERN
            .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
            .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
            .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
            .01      .04      .02      .01      .01      .04      .08      .09      .17      .26
            .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
            .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
            .01      .01      .01      .00      .01      .00      .00      .00      .01      .00
            .00      .00

272 LS      SCS LOSS RATE
            STRFL      .11  INITIAL ABSTRACTION
            CKNR      95.00  CURVE NUMBER
            RTIMP      85.00  PERCENT IMPERVIOUS AREA

273 UD      SCS DIMENSIONLESS UNITGRAPH

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      TLAG      .05  LAG

      ***
                                UNIT HYDROGRAPH
                                5 END-OF-PERIOD ORDINATES
                                0.
      2.      1.      0.      0.
      ***      *****      *** *** HYDROGRAPH AT

      STATION      SB18
TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85
PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
+ (CFS)      (HR)      6-HR      24-HR      72-HR      24.00-HR
+      1.      3.50      0.      0.      0.      0.
      (INCHES)      2.844      2.847      2.847      2.847
      (AC-FT)      0.      0.      0.      0.
      CUMULATIVE AREA = .00 SQ MI

      *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

      *****
      *      *
274 KK      *      SB19      *
      *      *
      *****

275 KO      OUTPUT CONTROL VARIABLES
      IPRNT      3      PRINT CONTROL
      IPLOT      0      PLOT CONTROL
      QSCAL      0.      HYDROGRAPH PLOT SCALE
      TPUNCH      0      PUNCH COMPUTED HYDROGRAPH
      TOUT      22      SAVE HYDROGRAPH ON THIS UNIT
      ISAV1      1      FIRST ORDINATE PUNCHED OR SAVED
      ISAV2      289      LAST ORDINATE PUNCHED OR SAVED
      TIMINT      .083      TIME INTERVAL IN HOURS

278 IN      TIME DATA FOR INPUT TIME SERIES
      JXMTN      5      TIME INTERVAL IN MINUTES
      JXDATE      2JUN16      STARTING DATE
      JXTIME      0      STARTING TIME

      SUBBASIN RUNOFF DATA

276 BA      SUBBASIN CHARACTERISTICS
      TAREA      .00      SUBBASIN AREA

277 BF      BASE FLOW CHARACTERISTICS
      STRTQ      .00      INITIAL FLOW
      QRCSN      .00      BEGIN BASE FLOW RECESSON
      RTLOR      1.00000      RECESSON CONSTANT

      PRECIPITATION DATA

279 DB      STORM      2.93      BASIN TOTAL PRECIPITATION

279 PI      INCREMENTAL PRECIPITATION PATTERN
      .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
      .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
      .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
      .01      .04      .02      .01      .01      .04      .08      .09      .17      .26
      .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
      .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
      .01      .01      .01      .00      .01      .00      .00      .00      .01      .00
      .00      .00

287 LS      SCS LOSS RATE
      STRFL      .11      INITIAL ABSTRACTION
      CRVNR      95.00      CURVE NUMBER
      RTIMP      85.00      PERCENT IMPERVIOUS AREA

288 UD      SCS DIMENSIONLESS UNITGRAPH
      TLAG      .05  LAG

      ***
                                UNIT HYDROGRAPH
                                5 END-OF-PERIOD ORDINATES
                                0.
      3.      1.      0.      0.
      ***      *****      *** *** HYDROGRAPH AT

      STATION      SB19
TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85
PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
+ (CFS)      (HR)      6-HR      24-HR      72-HR      24.00-HR
+      1.      3.50      0.      0.      0.      0.
      (INCHES)      2.844      2.847      2.847      2.847
      (AC-FT)      0.      0.      0.      0.
      CUMULATIVE AREA = .00 SQ MI

      *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

      *****

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```

289 KK      *      *
          *  SB20  *
          *      *
          *****

290 KO      OUTPUT CONTROL VARIABLES
          IPRNT      3  PRINT CONTROL
          IPLOT      0  PLOT CONTROL
          QSCAL      0.  HYDROGRAPH PLOT SCALE
          IPNCH      0  PUNCH COMPUTED HYDROGRAPH
          IOUT      22  SAVE HYDROGRAPH ON THIS UNIT
          ISAV1      1  FIRST ORDINATE PUNCHED OR SAVED
          ISAV2      289 LAST ORDINATE PUNCHED OR SAVED
          TIMINT      .083 TIME INTERVAL IN HOURS

293 IN      TIME DATA FOR INPUT TIME SERIES
          JXMIN      5  TIME INTERVAL IN MINUTES
          JXDATE      2JUN16 STARTING DATE
          JXTIME      0  STARTING TIME

          SUBBASIN RUNOFF DATA

291 BA      SUBBASIN CHARACTERISTICS
          TAREA      .00  SUBBASIN AREA

292 BF      BASE FLOW CHARACTERISTICS
          STRTQ      .00  INITIAL FLOW
          QRCN      .00  BEGIN BASE FLOW RECESSION
          RTIOR      1.00000 RECESSION CONSTANT

          PRECIPITATION DATA

294 PB      STORM      2.93  BASIN TOTAL PRECIPITATION

294 PI      INCREMENTAL PRECIPITATION PATTERN
          .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
          .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
          .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
          .01      .04      .02      .01      .01      .04      .08      .09      .17      .26
          .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
          .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
          .01      .01      .01      .00      .01      .00      .00      .00      .01      .00
          .00      .00

302 LS      SCS LOSS RATE
          STRTL      .11  INITIAL ABSTRACTION
          CRVNR      95.00 CURVE NUMBER
          RTIMP      85.00 PERCENT IMPERVIOUS AREA

303 UD      SCS DIMENSIONLESS UNITGRAPH
          TLAG      .05  LAG

```

```

          UNIT HYDROGRAPH
          5 END-OF-PERIOD ORDINATES
          0.

          4.      1.      0.      0.

          ***      *****      *** *** HYDROGRAPH AT

          STATION      SB20

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
+ (CFS)      (HR)      6-HR      24-HR      72-HR      24.00-HR
+      2.      3.50      (CFS)      0.      0.      0.      0.
          (INCHES)      2.844      2.847      2.847      2.847
          (AC-FT)      0.      0.      0.      0.

          CUMULATIVE AREA = .00 SQ MI

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*** **

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          *****
          *      *
304 KK      *  SB21  *
          *      *
          *****

305 KO      OUTPUT CONTROL VARIABLES
          IPRNT      3  PRINT CONTROL
          IPLOT      0  PLOT CONTROL
          QSCAL      0.  HYDROGRAPH PLOT SCALE
          IPNCH      0  PUNCH COMPUTED HYDROGRAPH
          IOUT      22  SAVE HYDROGRAPH ON THIS UNIT
          ISAV1      1  FIRST ORDINATE PUNCHED OR SAVED
          ISAV2      289 LAST ORDINATE PUNCHED OR SAVED
          TIMINT      .083 TIME INTERVAL IN HOURS

308 IN      TIME DATA FOR INPUT TIME SERIES
          JXMIN      5  TIME INTERVAL IN MINUTES
          JXDATE      2JUN16 STARTING DATE
          JXTIME      0  STARTING TIME

          SUBBASIN RUNOFF DATA

306 BA      SUBBASIN CHARACTERISTICS
          TAREA      .00  SUBBASIN AREA

307 BF      BASE FLOW CHARACTERISTICS
          STRTQ      .00  INITIAL FLOW
          QRCN      .00  BEGIN BASE FLOW RECESSION
          RTIOR      1.00000 RECESSION CONSTANT

```

Autodesk Storm and Sanitary Analysis

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TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
+ (CFS)        (HR)      6-HR      24-HR      72-HR      24.00-HR
+ 0.           3.50      (CFS)
                        (INCHES)  2.844    2.847    2.847    2.847
                        (AC-FT)   0.        0.        0.        0.
CUMULATIVE AREA = .00 SQ MI

***

*****
*                               *
* SB23                          *
*                               *
*****

335 KO      OUTPUT CONTROL VARIABLES
            IPRNT      3 PRINT CONTROL
            IPLOT      0 PLOT CONTROL
            QSCAL      0 HYDROGRAPH PLOT SCALE
            IPNCH      0 PUNCH COMPUTED HYDROGRAPH
            IOUT       22 SAVE HYDROGRAPH ON THIS UNIT
            ISAV1      1 FIRST ORDINATE PUNCHED OR SAVED
            ISAV2     289 LAST ORDINATE PUNCHED OR SAVED
            TIMINT     .083 TIME INTERVAL IN HOURS

338 IN      TIME DATA FOR INPUT TIME SERIES
            JKMIN      5 TIME INTERVAL IN MINUTES
            JXDATE     2JUN16 STARTING DATE
            JXTIME     0 STARTING TIME

SUBBASIN RUNOFF DATA

336 BA      SUBBASIN CHARACTERISTICS
            TAREA      .00 SUBBASIN AREA

337 BF      BASE FLOW CHARACTERISTICS
            STRTQ       .00 INITIAL FLOW
            QRCN       .00 BEGIN BASE FLOW REPRESSION
            RTOR       1.00000 REPRESSION CONSTANT

PRECIPITATION DATA

339 PB      STORM      2.93 BASIN TOTAL PRECIPITATION

339 PI      INCREMENTAL PRECIPITATION PATTERN
            .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
            .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
            .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
            .01      .04      .02      .01      .01      .04      .08      .09      .17      .26
            .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
            .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
            .01      .01      .01      .00      .01      .00      .00      .00      .01      .00
            .00      .00

347 LS      SCS LOSS RATE
            STRFL      .11 INITIAL ABSTRACTION
            CRVNR      95.00 CURVE NUMBER
            RTIME      65.00 PERCENT IMPERVIOUS AREA

348 UD      SCS DIMENSIONLESS UNITGRAPH
            TLAG       .05 LAG

***

UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES
1. 0. 0. 0. 0.
*** ** HYDROGRAPH AT
STATION SB23
TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
+ (CFS)        (HR)      6-HR      24-HR      72-HR      24.00-HR
+ 0.           3.50      (CFS)
                        (INCHES)  2.844    2.847    2.847    2.847
                        (AC-FT)   0.        0.        0.        0.
CUMULATIVE AREA = .00 SQ MI

***

*****
*                               *
* SB24                          *
*                               *
*****

350 KO      OUTPUT CONTROL VARIABLES
            IPRNT      3 PRINT CONTROL
            IPLOT      0 PLOT CONTROL
            QSCAL      0 HYDROGRAPH PLOT SCALE
            IPNCH      0 PUNCH COMPUTED HYDROGRAPH
            IOUT       22 SAVE HYDROGRAPH ON THIS UNIT

```



```

      .01      .01      .01      .00      .01      .00      .00      .00      .01      .00
      .00      .00
377 LS      SCS LOSS RATE
            STRFL      .11 INITIAL ABSTRACTION
            CRVNR      95.00 CURVE NUMBER
            RTIMP      85.00 PERCENT IMPERVIOUS AREA
378 UD      SCS DIMENSIONLESS UNITGRAPH
            TLAG      .05 LAG

***
UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES
0.

2.      1.      0.      0.
***      *****      *** *** HYDROGRAPH AT
            STATION      SB25
TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85
PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
+ (CFS)      (HR)      6-HR      24-HR      72-HR      24.00-HR
+      1.      3.50      (CFS)      0.      0.      0.      0.
            (INCHES)      2.844      2.847      2.847      2.847
            (AC-FT)      0.      0.      0.      0.
            CUMULATIVE AREA = .00 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
*****
*      *
379 KK      *      SB26      *
*      *
*****

380 KO      OUTPUT CONTROL VARIABLES
            IPRNT      3 PRINT CONTROL
            IPLOT      0 PLOT CONTROL
            QSCAL      0 HYDROGRAPH PLOT SCALE
            IPNCH      0 PUNCH COMPUTED HYDROGRAPH
            IOUT      22 SAVE HYDROGRAPH ON THIS UNIT
            ISAV1      1 FIRST ORDINATE PUNCHED OR SAVED
            ISAV2      289 LAST ORDINATE PUNCHED OR SAVED
            TIMINT      .063 TIME INTERVAL IN HOURS

383 IN      TIME DATA FOR INPUT TIME SERIES
            JXMIN      5 TIME INTERVAL IN MINUTES
            JXDATE      2JUN16 STARTING DATE
            JXTIME      0 STARTING TIME

SUBBASIN RUNOFF DATA

381 BA      SUBBASIN CHARACTERISTICS
            TAREA      .00 SUBBASIN AREA

382 BF      BASE FLOW CHARACTERISTICS
            STRTQ      .00 INITIAL FLOW
            QRCEN      .00 BEGIN BASE FLOW RECESSION
            RTIOR      1.00000 RECESSION CONSTANT

PRECIPITATION DATA

384 PB      STORM      2.93 BASIN TOTAL PRECIPITATION

384 PI      INCREMENTAL PRECIPITATION PATTERN
            .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
            .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
            .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
            .01      .04      .02      .01      .01      .04      .08      .09      .17      .26
            .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
            .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
            .01      .01      .01      .00      .01      .00      .00      .00      .01      .00
            .00      .00

392 LS      SCS LOSS RATE
            STRFL      .11 INITIAL ABSTRACTION
            CRVNR      95.00 CURVE NUMBER
            RTIMP      85.00 PERCENT IMPERVIOUS AREA
393 UD      SCS DIMENSIONLESS UNITGRAPH
            TLAG      .05 LAG

***
UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES
0.

2.      1.      0.      0.
***      *****      *** *** HYDROGRAPH AT
            STATION      SB26
TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85
PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
+ (CFS)      (HR)      6-HR      24-HR      72-HR      24.00-HR
+      1.      3.50      (CFS)      0.      0.      0.      0.
            (INCHES)      2.844      2.847      2.847      2.847
            (AC-FT)      0.      0.      0.      0.

```


CUMULATIVE AREA = .00 SQ MI

*** **

```
*****
*
394 KK      SB27  *
*
*****

395 KO      OUTPUT CONTROL VARIABLES
              IPRNT      3  PRINT CONTROL
              IPLOT      0  PLOT CONTROL
              QSCAL      0.  HYDROGRAPH PLOT SCALE
              IPNCH      0  PUNCH COMPUTED HYDROGRAPH
              IOUT       22  SAVE HYDROGRAPH ON THIS UNIT
              ISAV1      1  FIRST ORDINATE PUNCHED OR SAVED
              ISAV2     289  LAST ORDINATE PUNCHED OR SAVED
              TIMINT     .083 TIME INTERVAL IN HOURS

398 IN      TIME DATA FOR INPUT TIME SERIES
              JXMIN      5  TIME INTERVAL IN MINUTES
              JXDATE     2JUN16 STARTING DATE
              JXTIME      0  STARTING TIME

SUBBASIN RUNOFF DATA

396 BA      SUBBASIN CHARACTERISTICS
              TAREA      .00 SUBBASIN AREA

397 BF      BASE FLOW CHARACTERISTICS
              STRTQ      .00 INITIAL FLOW
              QRCEN      .00 BEGIN BASE FLOW RECESSION
              RTIOR      1.00000 RECESION CONSTANT

PRECIPITATION DATA

399 PB      STORM      2.93 BASIN TOTAL PRECIPITATION

399 PI      INCREMENTAL PRECIPITATION PATTERN
              .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
              .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
              .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
              .01      .04      .02      .01      .01      .04      .08      .09      .17      .26
              .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
              .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
              .01      .01      .01      .00      .01      .00      .00      .00      .01      .00
              .00      .00

407 LS      SCS LOSS RATE
              STPTL      .11 INITIAL ABSTRACTION
              CRVNR      95.00 CURVE NUMBER
              RTIMP      85.00 PERCENT IMPERVIOUS AREA

408 UD      SCS DIMENSIONLESS UNITGRAPH
              TLAG      .05 LAG

***

UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES
0.

4.      1.      0.      0.

***      *****      *** *** HYDROGRAPH AT

STATION      SB27

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
+ (CFS)      (HR)      6-HR      24-HR      72-HR      24.00-HR
+ 2.      3.50      (CFS)
              (INCHES) 2.844      2.847      2.847      2.847
              (AC-FT) 0.      0.      0.      0.

CUMULATIVE AREA = .00 SQ MI
```

*** **

```
*****
*
409 KK      SB28  *
*
*****

410 KO      OUTPUT CONTROL VARIABLES
              IPRNT      3  PRINT CONTROL
              IPLOT      0  PLOT CONTROL
              QSCAL      0.  HYDROGRAPH PLOT SCALE
              IPNCH      0  PUNCH COMPUTED HYDROGRAPH
              IOUT       22  SAVE HYDROGRAPH ON THIS UNIT
              ISAV1      1  FIRST ORDINATE PUNCHED OR SAVED
              ISAV2     289  LAST ORDINATE PUNCHED OR SAVED
              TIMINT     .083 TIME INTERVAL IN HOURS

413 IN      TIME DATA FOR INPUT TIME SERIES
              JXMIN      5  TIME INTERVAL IN MINUTES
              JXDATE     2JUN16 STARTING DATE
              JXTIME      0  STARTING TIME

SUBBASIN RUNOFF DATA
```

411 RA SUBBASIN CHARACTERISTICS
TAREA .00 SUBBASIN AREA

412 BF BASE FLOW CHARACTERISTICS
STRTQ .00 INITIAL FLOW
QRCNS .00 BEGIN BASE FLOW RECESSION
RTIOR 1.00000 RECESSION CONSTANT

PRECIPITATION DATA

414 PB STORM 2.93 BASIN TOTAL PRECIPITATION

414 PI INCREMENTAL PRECIPITATION PATTERN

.06	.11	.04	.05	.06	.05	.02	.00	.00	.00
.00	.00	.01	.02	.01	.02	.03	.04	.03	.03
.02	.01	.00	.00	.01	.03	.04	.03	.02	.00
.01	.04	.02	.01	.01	.04	.08	.09	.17	.26
.27	.35	.10	.11	.09	.02	.05	.05	.01	.01
.02	.02	.04	.06	.05	.03	.04	.06	.02	.02
.01	.01	.01	.00	.01	.00	.90	.00	.01	.00
.00	.00								

422 LS SCS LOSS RATE
STRTL .11 INITIAL ABSTRACTION
CRVNR 95.00 CURVE NUMBER
RTIMP 85.00 PERCENT IMPERVIOUS AREA

423 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .05 LAG

UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES
0.

5. 2. 0. 0.

*** ***** *** *** HYDROGRAPH AT

STATION SB28

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW	TIME	6-HR	24-HR	72-HR	24.00-HR
(CFS)	(HR)	(CFS)			
+	2.	3.50	0.	0.	0.
		(INCHES)	2.844	2.847	2.847
+		(AC-FT)	0.	0.	0.

CUMULATIVE AREA = .00 SQ MI

*** **

* *
424 KK * SB29 *
* *

425 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE
IPNCH	0	PUNCH COMPUTED HYDROGRAPH
IOUT	22	SAVE HYDROGRAPH ON THIS UNIT
ISAV1	1	FIRST ORDINATE PUNCHED OR SAVED
ISAV2	289	LAST ORDINATE PUNCHED OR SAVED
TIMEINT	.083	TIME INTERVAL IN HOURS

428 IN TIME DATA FOR INPUT TIME SERIES

JYMIN	5	TIME INTERVAL IN MINUTES
JXDATE	2JUN16	STARTING DATE
JXTIME	0	STARTING TIME

SUBBASIN RUNOFF DATA

426 BA SUBBASIN CHARACTERISTICS
TAREA .00 SUBBASIN AREA

427 BF BASE FLOW CHARACTERISTICS
STRTQ .00 INITIAL FLOW
QRCNS .00 BEGIN BASE FLOW RECESSION
RTIOR 1.00000 RECESSION CONSTANT

PRECIPITATION DATA

429 PB STORM 2.93 BASIN TOTAL PRECIPITATION

429 PI INCREMENTAL PRECIPITATION PATTERN

.06	.11	.04	.05	.06	.05	.02	.00	.00	.00
.00	.00	.01	.02	.01	.02	.03	.04	.03	.03
.02	.01	.00	.00	.01	.03	.04	.03	.02	.00
.01	.04	.02	.01	.01	.04	.08	.09	.17	.26
.27	.35	.10	.11	.09	.02	.05	.05	.01	.01
.02	.02	.04	.06	.05	.03	.04	.06	.02	.02
.01	.01	.01	.00	.01	.00	.00	.00	.01	.00
.00	.00								

437 LS SCS LOSS RATE
STRTL .11 INITIAL ABSTRACTION
CRVNR 95.00 CURVE NUMBER
RTIMP 85.00 PERCENT IMPERVIOUS AREA

438 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .05 LAG

```

***
UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES
0.
4. 2. 0. 0.
***
*** HYDROGRAPH AT
STATION SE29
TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85
PEAK FLOW TIME MAXIMUM AVERAGE FLOW
+ (CFS) (HR) 6-HR 24-HR 72-HR 24.00-HR
+ 2. 3.50 (CFS) 0. 0. 0. 0.
(INCHES) 2.844 2.847 2.847 2.847
(AC-FT) 0. 0. 0. 0.
CUMULATIVE AREA = .00 SQ MI
***
*****
439 KK * SB30 *
*****
440 KO OUTPUT CONTROL VARIABLES
IPRNT 3 PRINT CONTROL
IPLOT 0 PLOT CONTROL
QSCAL 0. HYDROGRAPH PLOT SCALE
IPNCH 0 PUNCH COMPUTED HYDROGRAPH
ICUT 22 SAVE HYDROGRAPH ON THIS UNIT
ISAV1 1 FIRST ORDINATE PUNCHED OR SAVED
ISAV2 289 LAST ORDINATE PUNCHED OR SAVED
TIMINT .083 TIME INTERVAL IN HOURS
443 IN TIME DATA FOR INPUT TIME SERIES
JXMIN 5 TIME INTERVAL IN MINUTES
JXDATE 2JUN16 STARTING DATE
JXTIME 0 STARTING TIME
SUBBASIN RUNOFF DATA
441 BA SUBBASIN CHARACTERISTICS
TAREA .00 SUBBASIN AREA
442 BF BASE FLOW CHARACTERISTICS
STRDQ .00 INITIAL FLOW
QSCSN .00 BEGIN BASE FLOW RECESSION
RTTOR 1.00000 RECESSION CONSTANT
PRECIPITATION DATA
444 PB STORM 2.93 BASIN TOTAL PRECIPITATION
444 PI INCREMENTAL PRECIPITATION PATTERN
.06 .11 .04 .05 .06 .05 .02 .00 .00 .00
.00 .00 .01 .02 .01 .02 .03 .04 .03 .03
.02 .01 .00 .00 .01 .03 .04 .03 .02 .00
.01 .04 .02 .01 .01 .04 .08 .09 .17 .26
.27 .35 .10 .11 .09 .02 .05 .05 .01 .01
.02 .02 .04 .06 .05 .03 .04 .06 .02 .02
.01 .01 .01 .00 .01 .00 .00 .00 .01 .00
.00 .00
452 LS SCS LOSS RATE
STRIL .11 INITIAL ABSTRACTION
CRVNR 95.00 CURVE NUMBER
RTIMP 85.00 PERCENT IMPERVIOUS AREA
453 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .05 LAG
***
UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES
0.
5. 2. 1. 0.
***
*** HYDROGRAPH AT
STATION SB30
TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85
PEAK FLOW TIME MAXIMUM AVERAGE FLOW
+ (CFS) (HR) 6-HR 24-HR 72-HR 24.00-HR
+ 2. 3.50 (CFS) 0. 0. 0. 0.
(INCHES) 2.844 2.847 2.847 2.847
(AC-FT) 0. 0. 0. 0.
CUMULATIVE AREA = .00 SQ MI
***
*****
454 KK * SB31 *
*****

```

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*
*****
455 KO      OUTPUT CONTROL VARIABLES
            IPRNT      3  PRINT CONTROL
            IPLOT      0  PLOT CONTROL
            QSCAL      0.  HYDROGRAPH PLOT SCALE
            IPNCH      0  PUNCH COMPUTED HYDROGRAPH
            ICUT       22  SAVE HYDROGRAPH ON THIS UNIT
            ISAV1      1  FIRST ORDINATE PUNCHED OR SAVED
            ISAV2     289  LAST ORDINATE PUNCHED OR SAVED
            TIMINT     .083 TIME INTERVAL IN HOURS

458 IN      TIME DATA FOR INPUT TIME SERIES
            JKMIN      5  TIME INTERVAL IN MINUTES
            JXDATE     2JUN16 STARTING DATE
            JXTIME      0  STARTING TIME

SUBBASIN RUNOFF DATA

456 BA      SUBBASIN CHARACTERISTICS
            TAREA      .00 SUBBASIN AREA

457 BF      BASE FLOW CHARACTERISTICS
            STRTQ      .00 INITIAL FLOW
            QRC5W      .00 BEGIN BASE FLOW RECESSON
            RTIOR      1.00000 RECESSON CONSTANT

PRECIPITATION DATA

459 PB      STORM      2.93 BASIN TOTAL PRECIPITATION

459 PI      INCREMENTAL PRECIPITATION PATTERN
            .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
            .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
            .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
            .01      .04      .02      .01      .01      .04      .08      .09      .17      .26
            .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
            .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
            .01      .01      .01      .00      .01      .00      .00      .00      .01      .00
            .00      .00

467 LS      SCS LOSS RATE
            STPTL      .11 INITIAL ABSTRACTION
            CRVNR      95.00 CURVE NUMBER
            RTIMP      85.00 PERCENT IMPERVIOUS AREA

468 UD      SCS DIMENSIONLESS UNITGRAPH
            TLAG      .05 LAG

***
UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES
3.      1.      0.      0.      0.

***      *****      *** *** HYDROGRAPH AT

STATION      SB31

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
+ (CFS)      (HR)      6-HR      24-HR      72-HR      24.00-HR
+ 1.      3.50      (CFS)      0.      0.      0.      0.
      (INCHES) 2.844      2.847      2.847      2.847
      (AC-FT) 0.      0.      0.      0.

CUMULATIVE AREA = .00 SQ MI

*** **
*****
469 KK      * SB32 *
            *
            *****

470 KO      OUTPUT CONTROL VARIABLES
            IPRNT      3  PRINT CONTROL
            IPLOT      0  PLOT CONTROL
            QSCAL      0.  HYDROGRAPH PLOT SCALE
            IPNCH      0  PUNCH COMPUTED HYDROGRAPH
            ICUT       22  SAVE HYDROGRAPH ON THIS UNIT
            ISAV1      1  FIRST ORDINATE PUNCHED OR SAVED
            ISAV2     289  LAST ORDINATE PUNCHED OR SAVED
            TIMINT     .083 TIME INTERVAL IN HOURS

473 IN      TIME DATA FOR INPUT TIME SERIES
            JKMIN      5  TIME INTERVAL IN MINUTES
            JXDATE     2JUN16 STARTING DATE
            JXTIME      0  STARTING TIME

SUBBASIN RUNOFF DATA

471 BA      SUBBASIN CHARACTERISTICS
            TAREA      .00 SUBBASIN AREA

472 BF      BASE FLOW CHARACTERISTICS
            STRTQ      .00 INITIAL FLOW
            QRC5W      .00 BEGIN BASE FLOW RECESSON
            RTIOR      1.00000 RECESSON CONSTANT

PRECIPITATION DATA

```

Autodesk Storm and Sanitary Analysis

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
(CFS)	(HR)	6-HR	24-HR	72-HR	24.00-HR
2.	3.50	0.	0.	0.	0.
		(INCHES)	2.844	2.847	2.847
		(AC-FT)	0.	0.	0.

CUMULATIVE AREA = .00 SQ MI

*** **

 * SB34 *
 *

500 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE
IPNCH	0	PUNCH COMPUTED HYDROGRAPH
IOUT	22	SAVE HYDROGRAPH ON THIS UNIT
ISAV1	1	FIRST ORDINATE PUNCHED OR SAVED
ISAV2	289	LAST ORDINATE PUNCHED OR SAVED
TIMINT	.083	TIME INTERVAL IN HOURS

503 IN TIME DATA FOR INPUT TIME SERIES

JXMIN	5	TIME INTERVAL IN MINUTES
JXDATE	2JUN16	STARTING DATE
JXTIME	0	STARTING TIME

SUBBASIN RUNOFF DATA

501 BA SUBBASIN CHARACTERISTICS

TAREA	.00	SUBBASIN AREA
-------	-----	---------------

502 BF BASE FLOW CHARACTERISTICS

STRTQ	.00	INITIAL FLOW
QRCEN	.00	BEGIN BASE FLOW RECESSION
RTIOR	1.00000	RECESSION CONSTANT

PRECIPITATION DATA

504 PB STORM 2.93 BASIN TOTAL PRECIPITATION

504 PI INCREMENTAL PRECIPITATION PATTERN

.06	.11	.04	.05	.06	.05	.02	.00	.00	.00
.00	.00	.01	.02	.01	.02	.03	.04	.03	.03
.02	.01	.00	.00	.01	.03	.04	.03	.02	.09
.01	.04	.02	.01	.01	.04	.08	.09	.17	.26
.27	.35	.10	.11	.09	.02	.05	.05	.01	.01
.02	.02	.04	.06	.05	.03	.04	.06	.02	.02
.01	.01	.01	.00	.01	.00	.00	.00	.01	.00
.00	.00								

512 LS SCS LOSS RATE

STRTL	.11	INITIAL ABSTRACTION
CRVNR	95.00	CURVE NUMBER
RTIMP	85.00	PERCENT IMPERVIOUS AREA

513 UD SCS DIMENSIONLESS UNITGRAPH

TIAG	.05	LAG
------	-----	-----

UNIT HYDROGRAPH
 5 END-OF-PERIOD ORDINATES
 0.

*** ***** *** ** HYDROGRAPH AT

STATION SB34

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
(CFS)	(HR)	6-HR	24-HR	72-HR	24.00-HR
9.	3.50	1.	0.	0.	0.
		(INCHES)	2.844	2.847	2.847
		(AC-FT)	1.	1.	1.

CUMULATIVE AREA = .00 SQ MI

*** **

 * SB35 *
 *

515 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE
IPNCH	0	PUNCH COMPUTED HYDROGRAPH
IOUT	22	SAVE HYDROGRAPH ON THIS UNIT
ISAV1	1	FIRST ORDINATE PUNCHED OR SAVED
ISAV2	289	LAST ORDINATE PUNCHED OR SAVED


```

TIMINT      .083  TIME INTERVAL IN HOURS

518 IN      TIME DATA FOR INPUT TIME SERIES
            JXMIN      5  TIME INTERVAL IN MINUTES
            JXDATE     2JUN16  STARTING DATE
            JXTIME      0  STARTING TIME

SUBBASIN RUNOFF DATA

516 BA      SUBBASIN CHARACTERISTICS
            TAREA      .00  SUBBASIN AREA

517 BF      BASE FLOW CHARACTERISTICS
            STRTQ      .00  INITIAL FLOW
            QRCSN      .00  BEGIN BASE FLOW RECESSION
            RTIOR      1.00000  RECESSION CONSTANT

PRECIPITATION DATA

519 PB      STORM      2.93  BASIN TOTAL PRECIPITATION

519 PI      INCREMENTAL PRECIPITATION PATTERN
            .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
            .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
            .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
            .01      .04      .02      .01      .01      .04      .08      .09      .17      .25
            .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
            .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
            .01      .01      .01      .00      .01      .00      .00      .00      .01      .00
            .00      .00

527 LS      SCS LOSS RATE
            STRTL      .11  INITIAL ABSTRACTION
            CRVNR      95.00  CURVE NUMBER
            RTIMP      85.00  PERCENT IMPERVIOUS AREA

528 UD      SCS DIMENSIONLESS UNITGRAPH
            TIAG      .06  IAG

```

```

***
UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES
0.
4.      2.      0.      0.
***      *****      *** *** HYDROGRAPH AT
STATION      SB35
TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85
PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
+ (CFS)      (HR)      6-HR      24-HR      72-HR      24.00-HR
+ 2.      3.50      (CFS)      0.      0.      0.      0.
      (INCHES)      2.844      2.847      2.847      2.847
      (AC-FT)      0.      0.      0.      0.
CUMULATIVE AREA = .00 SQ MI

```

*** **

```

*****
*      *
529 KK      *      SB36      *
*      *
*****

530 KO      OUTPUT CONTROL VARIABLES
            IPRINT      3  PRINT CONTROL
            IPLOT      0  PLOT CONTROL
            QSCAL      0.  HYDROGRAPH PLOT SCALE
            IPNCH      0  PUNCH COMPUTED HYDROGRAPH
            IOUT      22  SAVE HYDROGRAPH ON THIS UNIT
            ISAV1      1  FIRST ORIGINATE PUNCHED OR SAVED
            ISAV2      289  LAST ORIGINATE PUNCHED OR SAVED
            TIMINT      .083  TIME INTERVAL IN HOURS

```

```

533 IN      TIME DATA FOR INPUT TIME SERIES
            JXMIN      5  TIME INTERVAL IN MINUTES
            JXDATE     2JUN16  STARTING DATE
            JXTIME      0  STARTING TIME

SUBBASIN RUNOFF DATA

531 BA      SUBBASIN CHARACTERISTICS
            TAREA      .00  SUBBASIN AREA

532 BF      BASE FLOW CHARACTERISTICS
            STRTQ      .00  INITIAL FLOW
            QRCSN      .00  BEGIN BASE FLOW RECESSION
            RTIOR      1.00000  RECESSION CONSTANT

PRECIPITATION DATA

534 PB      STORM      2.93  BASIN TOTAL PRECIPITATION

534 PI      INCREMENTAL PRECIPITATION PATTERN
            .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
            .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
            .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
            .01      .04      .02      .01      .01      .04      .08      .09      .17      .26
            .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
            .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
            .01      .01      .01      .00      .01      .00      .00      .00      .01      .00
            .00      .00

```

542 LS SCS LOSS RATE
 STRTL .11 INITIAL ABSTRACTION
 CRVNR 95.00 CURVE NUMBER
 RTIMP 85.00 PERCENT IMPERVIOUS AREA

543 UD SCS DIMENSIONLESS UNITGRAPH
 TLAG .05 LAG

UNIT HYDROGRAPH
 5 END-OF-PERIOD ORDINATES
 0.

5. 2. 0. 0.

*** ***** *** *** HYDROGRAPH AT

STATION SB36

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW	TIME	6-HR	24-HR	72-HR	24.00-HR
(CFS)	(HR)	(CFS)			
+	2. 3.50	0.	0.	0.	0.
		(INCHES)	2.844	2.847	2.847
		(AC-FT)	0.	0.	0.
		CUMULATIVE AREA =	.00	SQ MI	

*** **

544 KK *****
 * *
 * SB37 *
 * *

545 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE
IPNCH	0	PUNCH COMPUTED HYDROGRAPH
IOUT	22	SAVE HYDROGRAPH ON THIS UNIT
ISAV1	1	FIRST ORDINATE PUNCHED OR SAVED
ISAV2	289	LAST ORDINATE PUNCHED OR SAVED
TIMEINT	.083	TIME INTERVAL IN HOURS

548 IN TIME DATA FOR INPUT TIME SERIES

JXMIN	5	TIME INTERVAL IN MINUTES
JXDATE	2JUN16	STARTING DATE
JXTIME	0	STARTING TIME

SUBBASIN RUNOFF DATA

546 BA SUBBASIN CHARACTERISTICS

TAREA	.00	SUBBASIN AREA
-------	-----	---------------

547 BF BASE FLOW CHARACTERISTICS

STRTQ	.00	INITIAL FLOW
CRCSN	.00	BEGIN BASE FLOW RECESSON
RTICR	1.00000	RECESSON CONSTANT

PRECIPITATION DATA

549 PB STORM 2.93 BASIN TOTAL PRECIPITATION

549 PI INCREMENTAL PRECIPITATION PATTERN

.06	.11	.04	.05	.06	.05	.02	.00	.00	.00
.00	.00	.01	.02	.01	.02	.03	.04	.03	.03
.02	.01	.00	.00	.01	.03	.04	.03	.02	.00
.01	.04	.02	.01	.01	.04	.08	.09	.17	.26
.27	.35	.10	.11	.09	.02	.05	.05	.01	.01
.02	.02	.04	.06	.05	.03	.04	.06	.02	.02
.01	.01	.01	.00	.01	.00	.00	.00	.01	.00
.00	.00								

557 LS SCS LOSS RATE
 STRTL .11 INITIAL ABSTRACTION
 CRVNR 95.00 CURVE NUMBER
 RTIMP 85.00 PERCENT IMPERVIOUS AREA

558 UD SCS DIMENSIONLESS UNITGRAPH
 TLAG .07 LAG

UNIT HYDROGRAPH
 6 END-OF-PERIOD ORDINATES
 0.

6. 5. 1. 0.

*** ***** *** *** HYDROGRAPH AT

STATION SB37

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW	TIME	6-HR	24-HR	72-HR	24.00-HR
(CFS)	(HR)	(CFS)			
+	4. 3.50	0.	0.	0.	0.
		(INCHES)	2.843	2.847	2.847
		(AC-FT)	0.	0.	0.
		CUMULATIVE AREA =	.00	SQ MI	

*** **

* *
559 KK * SB38 *
* *

560 KO OUTPUT CONTROL VARIABLES
IPRNT 3 PRINT CONTROL
IPLOT 0 PLOT CONTROL
QSCAL 0. HYDROGRAPH PLOT SCALE
IPNCH 0 PUNCH COMPUTED HYDROGRAPH
IOUT 22 SAVE HYDROGRAPH ON THIS UNIT
ISAV1 1 FIRST ORDINATE PUNCHED OR SAVED
ISAV2 289 LAST ORDINATE PUNCHED OR SAVED
TIMINT .083 TIME INTERVAL IN HOURS

563 IN TIME DATA FOR INPUT TIME SERIES
JXMIN 5 TIME INTERVAL IN MINUTES
JXDATE 2JUN16 STARTING DATE
JXTIME 0 STARTING TIME

SUBBASIN RUNOFF DATA

561 BA SUBBASIN CHARACTERISTICS
TAREA .00 SUBBASIN AREA

562 BF BASE FLOW CHARACTERISTICS
STRFQ .00 INITIAL FLOW
QRCSN .00 BEGIN BASE FLOW RECESSION
RTICR 1.00000 RECESSION CONSTANT

PRECIPITATION DATA

564 PB STORM 2.93 BASIN TOTAL PRECIPITATION

564 PI INCREMENTAL PRECIPITATION PATTERN
.06 .11 .04 .05 .06 .05 .02 .00 .00 .00
.00 .00 .01 .02 .01 .02 .03 .04 .03 .03
.02 .01 .00 .00 .01 .03 .04 .03 .02 .00
.01 .04 .02 .01 .01 .04 .08 .09 .17 .26
.27 .35 .10 .11 .09 .02 .05 .05 .01 .01
.02 .02 .04 .06 .05 .03 .04 .06 .02 .02
.01 .01 .01 .00 .01 .00 .00 .00 .01 .00
.00 .00

572 LS SCS LOSS RATE
STRFL .11 INITIAL ABSTRACTION
CRVNER 95.00 CURVE NUMBER
RTIMP 85.00 PERCENT IMPERVIOUS AREA

573 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .05 LAG

UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES
0.

3. 1. 0. 0.

*** ***** *** *** HYDROGRAPH AT

STATION SB38

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
(CFS)	(HR)	6-HR	24-HR	72-HR	24.00-HR
1.	3.50	0.	0.	0.	0.
(INCHES)		2.844	2.847	2.847	2.847
(AC-FT)		0.	0.	0.	0.

CUMULATIVE AREA - .00 SQ MI

*** **

* *
574 KK * SB39 *
* *

575 KO OUTPUT CONTROL VARIABLES
IPRNT 3 PRINT CONTROL
IPLOT 0 PLOT CONTROL
QSCAL 0. HYDROGRAPH PLOT SCALE
IPNCH 0 PUNCH COMPUTED HYDROGRAPH
IOUT 22 SAVE HYDROGRAPH ON THIS UNIT
ISAV1 1 FIRST ORDINATE PUNCHED OR SAVED
ISAV2 289 LAST ORDINATE PUNCHED OR SAVED
TIMINT .083 TIME INTERVAL IN HOURS

578 IN TIME DATA FOR INPUT TIME SERIES
JXMIN 5 TIME INTERVAL IN MINUTES
JXDATE 2JUN16 STARTING DATE
JXTIME 0 STARTING TIME

SUBBASIN RUNOFF DATA

576 BA SUBBASIN CHARACTERISTICS

577 BF TAREA .00 SUBBASIN AREA

BASE FLOW CHARACTERISTICS

STRTQ .00 INITIAL FLOW

QRCN .00 BEGIN BASE FLOW RECESSON

RTIOR 1.00000 RECESSON CONSTANT

PRECIPITATION DATA

579 PB STORM 2.93 BASIN TOTAL PRECIPITATION

579 PI INCREMENTAL PRECIPITATION PATTERN

.06	.11	.04	.05	.06	.05	.02	.00	.00	.00
.00	.00	.01	.02	.01	.02	.03	.04	.03	.03
.02	.01	.00	.00	.01	.03	.04	.03	.02	.00
.01	.04	.02	.01	.01	.04	.08	.09	.17	.26
.27	.35	.10	.11	.09	.02	.05	.05	.01	.01
.02	.02	.04	.06	.05	.03	.04	.06	.02	.02
.01	.01	.01	.00	.01	.00	.00	.00	.01	.00
.00	.00								

587 LS SCS LOSS RATE

STREL .11 INITIAL ABSTRACTION

CRVNR 95.00 CURVE NUMBER

RTIMP 85.00 PERCENT IMPERVIOUS AREA

588 UD SCS DIMENSIONLESS UNITGRAPH

TLAG .07 LAG

UNIT HYDROGRAPH

6 END-OF-PERIOD ORDINATES

3.	3.	1.	0.	0.	0.
0.	0.				

*** *** HYDROGRAPH AT

STATION SB39

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW	TIME	6-HR	24-HR	72-HR	24.00-HR
(CFS)	(HR)	(CFS)			
2.	3.50	0.	0.	0.	0.
		(INCHES)	2.843	2.847	2.847
		(AC-FT)	0.	0.	0.

CUMULATIVE AREA = .00 SQ MI

*** **

589 KK * SB40 *

590 KO OUTPUT CONTROL VARIABLES

TPRNT	3	PRINT CONTROL
TPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE
TPNCH	0	PUNCH COMPUTED HYDROGRAPH
ICCT	22	SAVE HYDROGRAPH ON THIS UNIT
ISAV1	1	FIRST ORDINATE PUNCHED OR SAVED
ISAV2	289	LAST ORDINATE PUNCHED OR SAVED
TIMINT	.083	TIME INTERVAL IN HOURS

593 IN TIME DATA FOR INPUT TIME SERIES

JXMIN	5	TIME INTERVAL IN MINUTES
JXDATE	2JUN16	STARTING DATE
JXTIME	0	STARTING TIME

SUBBASIN RUNOFF DATA

591 BA SUBBASIN CHARACTERISTICS

TAREA .00 SUBBASIN AREA

592 BF BASE FLOW CHARACTERISTICS

STRTQ .00 INITIAL FLOW

QRCN .00 BEGIN BASE FLOW RECESSON

RTIOR 1.00000 RECESSON CONSTANT

PRECIPITATION DATA

594 PB STORM 2.93 BASIN TOTAL PRECIPITATION

594 PI INCREMENTAL PRECIPITATION PATTERN

.06	.11	.04	.05	.06	.05	.02	.00	.00	.00
.00	.00	.01	.02	.01	.02	.03	.04	.03	.03
.02	.01	.00	.00	.01	.03	.04	.03	.02	.00
.01	.04	.02	.01	.01	.04	.08	.09	.17	.26
.27	.35	.10	.11	.09	.02	.05	.05	.01	.01
.02	.02	.04	.06	.05	.03	.04	.06	.02	.02
.01	.01	.01	.00	.01	.00	.00	.00	.01	.00
.00	.00								

602 LS SCS LOSS RATE

STREL .11 INITIAL ABSTRACTION

CRVNR 95.00 CURVE NUMBER

RTIMP 85.00 PERCENT IMPERVIOUS AREA

603 UD SCS DIMENSIONLESS UNITGRAPH

TLAG .07 LAG

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620 KO      OUTPUT CONTROL VARIABLES
            IPRINT      3  PRINT CONTROL
            IPLOT       0  PLOT CONTROL
            QSCAL       0.  HYDROGRAPH PLOT SCALE
            IPNCH       0  PUNCH COMPUTED HYDROGRAPH
            IOUT        22  SAVE HYDROGRAPH ON THIS UNIT
            ISAV1       1  FIRST ORDINATE PUNCHED OR SAVED
            ISAV2      289  LAST ORDINATE PUNCHED OR SAVED
            TIMINT      .083  TIME INTERVAL IN HOURS

623 IN      TIME DATA FOR INPUT TIME SERIES
            JXMIN       5  TIME INTERVAL IN MINUTES
            JXDATE      2JUN16  STARTING DATE
            JXTIME      0  STARTING TIME

SUBBASIN RUNOFF DATA

621 BA      SUBBASIN CHARACTERISTICS
            TAREA       .00  SUBBASIN AREA

622 BF      BASE FLOW CHARACTERISTICS
            STRTQ       .00  INITIAL FLOW
            QRCN       .00  BEGIN BASE FLOW RECESSION
            RTOR       1.00000  RECESSION CONSTANT

PRECIPITATION DATA

624 PB      STORM      2.93  BASIN TOTAL PRECIPITATION

624 PI      INCREMENTAL PRECIPITATION PATTERN
            .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
            .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
            .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
            .01      .04      .02      .01      .01      .04      .08      .09      .17      .26
            .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
            .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
            .01      .01      .01      .00      .01      .00      .00      .03      .01      .00
            .00      .00

632 LS      SCS LOSS RATE
            STRTL      .11  INITIAL ABSTRACTION
            CRVNR      95.00  CURVE NUMBER
            RTIMP      85.00  PERCENT IMPERVIOUS AREA

633 UD      SCS DIMENSIONLESS UNITGRAPH
            TLAG       .07  LAG

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***
UNIT HYDROGRAPH
6 END-OF-PERIOD ORDINATES
0.      0.
3.      2.      1.      0.
***      *****      *** *** HYDROGRAPH AT
STATION      SB42
TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85
PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
+ (CFS)      (HR)      6-HR      24-HR      72-HR      24.00-HR
+ 2.      3.50      (CFS)
      (INCHES)      2.843      2.847      2.847      2.847
      (AC-FT)      0.      0.      0.      0.
CUMULATIVE AREA = .00 SQ MI

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*** **

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*****
*      *
634 KK      *      SB43      *
*      *
*****

635 KO      OUTPUT CONTROL VARIABLES
            IPRINT      3  PRINT CONTROL
            IPLOT       0  PLOT CONTROL
            QSCAL       0.  HYDROGRAPH PLOT SCALE
            IPNCH       0  PUNCH COMPUTED HYDROGRAPH
            IOUT        22  SAVE HYDROGRAPH ON THIS UNIT
            ISAV1       1  FIRST ORDINATE PUNCHED OR SAVED
            ISAV2      289  LAST ORDINATE PUNCHED OR SAVED
            TIMINT      .083  TIME INTERVAL IN HOURS

```

```

638 IN      TIME DATA FOR INPUT TIME SERIES
            JXMIN       5  TIME INTERVAL IN MINUTES
            JXDATE      2JUN16  STARTING DATE
            JXTIME      0  STARTING TIME

SUBBASIN RUNOFF DATA

636 BA      SUBBASIN CHARACTERISTICS
            TAREA       .00  SUBBASIN AREA

637 BF      BASE FLOW CHARACTERISTICS
            STRTQ       .00  INITIAL FLOW
            QRCN       .00  BEGIN BASE FLOW RECESSION
            RTOR       1.00000  RECESSION CONSTANT

PRECIPITATION DATA

639 PB      STORM      2.93  BASIN TOTAL PRECIPITATION

```

639 PI INCREMENTAL PRECIPITATION PATTERN

.06	.11	.04	.05	.06	.05	.02	.00	.00	.00
.00	.00	.01	.02	.01	.02	.03	.04	.03	.03
.02	.01	.00	.00	.01	.03	.04	.03	.02	.00
.01	.04	.02	.01	.01	.04	.08	.09	.17	.26
.27	.35	.10	.11	.09	.02	.05	.05	.01	.01
.02	.02	.04	.06	.05	.03	.04	.06	.02	.02
.01	.01	.01	.00	.01	.00	.00	.00	.01	.00
.00	.00								

647 IS SCS LOSS RATE

STRTL	.11	INITIAL ABSTRACTION
CRVNR	95.00	CURVE NUMBER
RTIMP	85.00	PERCENT IMPERVIOUS AREA

648 UD SCS DIMENSIONLESS UNITGRAPH

TLAG	.07	LAG
------	-----	-----

UNIT HYDROGRAPH
6 END-OF-PERIOD ORDINATES

4.	2.	1.	0.	0.	0.
----	----	----	----	----	----

*** ** HYDROGRAPH AT

STATION SB43

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW	TIME	6-HR	24-HR	72-HR	24.00-HR
(CFS)	(HR)				
+	2.	3.50			
		(CFS)			
		0.	0.	0.	0.
		(INCHES)	2.844	2.847	2.847
		(AC-FT)	0.	0.	0.
		CUMULATIVE AREA =	.00	SQ MI	

*** ** ** ** **

649 KK *****
* SB44 *

650 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE
IPNCH	0	PUNCH COMPUTED HYDROGRAPH
IOUT	22	SAVE HYDROGRAPH ON THIS UNIT
ISAV1	1	FIRST ORDINATE PUNCHED OR SAVED
ISAV2	289	LAST ORDINATE PUNCHED OR SAVED
TIMEINT	.003	TIME INTERVAL IN HOURS

653 IN TIME DATA FOR INPUT TIME SERIES

JXMIN	5	TIME INTERVAL IN MINUTES
JXDATE	2JUN16	STARTING DATE
JXTIME	0	STARTING TIME

SUBBASIN RUNOFF DATA

651 BA SUBBASIN CHARACTERISTICS

TAREA	.00	SUBBASIN AREA
-------	-----	---------------

652 BF BASE FLOW CHARACTERISTICS

STRTQ	.00	INITIAL FLOW
QRCSN	.00	BEGIN BASE FLOW RECESSON
RTIOR	1.00000	RECESSON CONSTANT

PRECIPITATION DATA

654 PB STORM 2.93 BASIN TOTAL PRECIPITATION

654 PI INCREMENTAL PRECIPITATION PATTERN

.06	.11	.04	.05	.06	.05	.02	.00	.00	.00
.00	.00	.01	.02	.01	.02	.03	.04	.03	.03
.02	.01	.00	.00	.01	.03	.04	.03	.02	.00
.01	.04	.02	.01	.01	.04	.08	.09	.17	.26
.27	.35	.10	.11	.09	.02	.05	.05	.01	.01
.02	.02	.04	.06	.05	.03	.04	.06	.02	.02
.01	.01	.01	.00	.01	.00	.00	.00	.01	.00
.00	.00								

662 IS SCS LOSS RATE

STRTL	.11	INITIAL ABSTRACTION
CRVNR	95.00	CURVE NUMBER
RTIMP	85.00	PERCENT IMPERVIOUS AREA

663 UD SCS DIMENSIONLESS UNITGRAPH

TLAG	.05	LAG
------	-----	-----

UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES

2.	1.	0.	0.	0.
----	----	----	----	----

*** ** HYDROGRAPH AT

STATION SB44

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW
-----------	------	----------------------

	(CFS)	(HR)	(CFS)	6-HR	24-HR	72-HR	24.00-HR
+	1.	3.50		0.	0.	0.	0.
			(INCHES)	2.844	2.847	2.847	2.847
			(AC-FT)	0.	0.	0.	0.

CUMULATIVE AREA = .00 SQ MI

*** **

*
664 KK * SB45 *
*

665 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE
IPNCH	0	PUNCH COMPUTED HYDROGRAPH
IOUT	22	SAVE HYDROGRAPH ON THIS UNIT
ISAV1	1	FIRST ORDINATE PUNCHED OR SAVED
ISAV2	289	LAST ORDINATE PUNCHED OR SAVED
TIMINT	.083	TIME INTERVAL IN HOURS

668 IN TIME DATA FOR INPUT TIME SERIES

JXMIN	5	TIME INTERVAL IN MINUTES
JXDATE	2JUN16	STARTING DATE
JXTIME	0	STARTING TIME

SUBBASIN RUNOFF DATA

666 BA SUBBASIN CHARACTERISTICS

TAREA	.00	SUBBASIN AREA
-------	-----	---------------

667 BF BASE FLOW CHARACTERISTICS

STRFQ	.00	INITIAL FLOW
QRCEN	.00	BEGIN BASE FLOW RECESSON
RTIOR	1.00000	RECESSON CONSTANT

PRECIPITATION DATA

669 PB STORM 2.93 BASIN TOTAL PRECIPITATION

669 PI INCREMENTAL PRECIPITATION PATTERN

.06	.11	.04	.05	.06	.05	.02	.00	.00	.00
.00	.00	.01	.02	.01	.02	.03	.04	.03	.03
.02	.01	.00	.00	.01	.03	.04	.03	.02	.00
.01	.04	.02	.01	.01	.04	.08	.09	.17	.26
.27	.35	.10	.11	.09	.02	.05	.05	.01	.01
.02	.02	.04	.06	.05	.03	.04	.06	.02	.02
.01	.01	.01	.00	.01	.00	.00	.00	.01	.00
.00	.00								

677 LS SCS LOSS RATE

STRTL	.11	INITIAL ABSTRACTION
CRVNR	95.00	CURVE NUMBER
RTIMP	85.00	PERCENT IMPERVIOUS AREA

678 UD SCS DIMENSIONLESS UNITGRAPH

TLAG	.05	LAG
------	-----	-----

UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES

3.	1.	0.	0.
0.			

*** ** HYDROGRAPH AT

STATION SB45

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW	TIME	6-HR	24-HR	72-HR	24.00-HR
+	(CFS)				
	(HR)				
		(CFS)			
+	1.	3.50	0.	0.	0.
		(INCHES)	2.844	2.847	2.847
		(AC-FT)	0.	0.	0.

CUMULATIVE AREA = .00 SQ MI

*** **

*
679 KK * SB46 *
*

680 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE
IPNCH	0	PUNCH COMPUTED HYDROGRAPH
IOUT	22	SAVE HYDROGRAPH ON THIS UNIT
ISAV1	1	FIRST ORDINATE PUNCHED OR SAVED
ISAV2	289	LAST ORDINATE PUNCHED OR SAVED
TIMINT	.083	TIME INTERVAL IN HOURS


```

      STRTL      .11  INITIAL ABSTRACTION
      CRVNR      95.00 CURVE NUMBER
      RTIMP      85.00 PERCENT IMPERVIOUS AREA

708 UD      SCS DIMENSIONLESS UNITGRAPH
            TLAG      .05  LAG

                                     ***

                                     UNIT HYDROGRAPH
                                     5 END-OF-PERIOD ORDINATES
                                     0.

      1.      0.      0.      0.

***      *****      *** *** HYDROGRAPH AT

            STATION      SB47

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW      TIME      6-HR      24-HR      72-HR      24.00-HR
+ (CFS)      (HR)      (CFS)
+ 0.      3.50      0.      0.      0.      0.
      (INCHES)      2.844      2.847      2.847      2.847
      (AC-FT)      0.      0.      0.      0.
      CUMULATIVE AREA = .00 SQ MI

*** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** *
*
*****
709 KK      *      SB48      *
*      *****

710 KO      OUTPUT CONTROL VARIABLES
            IPRNT      3  PRINT CONTROL
            IPLOT      0  PLOT CONTROL
            QSCAL      0.  HYDROGRAPH PLOT SCALE
            IPNCH      0  PUNCH COMPUTED HYDROGRAPH
            ICUT      22  SAVE HYDROGRAPH ON THIS UNIT
            ISAV1      1  FIRST ORDINATE PUNCHED OR SAVED
            ISAV2      299 LAST ORDINATE PUNCHED OR SAVED
            TIMINT      .083 TIME INTERVAL IN HOURS

713 IN      TIME DATA FOR INPUT TIME SERIES
            JXMIN      5  TIME INTERVAL IN MINUTES
            JXDATE      2JUN16 STARTING DATE
            JXTIME      0  STARTING TIME

SUBBASIN RUNOFF DATA

711 BA      SUBBASIN CHARACTERISTICS
            TAREA      .00  SUBBASIN AREA

712 BF      BASE FLOW CHARACTERISTICS
            STRTQ      .00  INITIAL FLOW
            QHCSN      .00  BEGIN BASE FLOW RECESSION
            RTIOR      1.00000 RECESSION CONSTANT

PRECIPITATION DATA

714 PB      STORM      2.93  BASIN TOTAL PRECIPITATION

714 PI      INCREMENTAL PRECIPITATION PATTERN
            .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
            .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
            .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
            .01      .04      .02      .01      .01      .04      .08      .09      .17      .26
            .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
            .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
            .01      .01      .01      .00      .01      .00      .00      .00      .01      .03
            .00      .00

722 LS      SCS LOSS RATE
            STRTL      .11  INITIAL ABSTRACTION
            CRVNR      95.00 CURVE NUMBER
            RTIMP      85.00 PERCENT IMPERVIOUS AREA

723 UD      SCS DIMENSIONLESS UNITGRAPH
            TLAG      .05  LAG

                                     ***

                                     UNIT HYDROGRAPH
                                     5 END-OF-PERIOD ORDINATES
                                     0.

      3.      1.      0.      0.

***      *****      *** *** HYDROGRAPH AT

            STATION      SB48

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW      TIME      6-HR      24-HR      72-HR      24.00-HR
+ (CFS)      (HR)      (CFS)
+ 1.      3.50      0.      0.      0.      0.
      (INCHES)      2.844      2.847      2.847      2.847
      (AC-FT)      0.      0.      0.      0.
      CUMULATIVE AREA = .00 SQ MI

```

*** **

*
724 KK * SB49 *
*

725 KO OUTPUT CONTROL VARIABLES
IPRNT 3 PRINT CONTROL
IPLOT 0 PLOT CONTROL
QSCAL 0. HYDROGRAPH PLOT SCALE
IPNCH 0 PUNCH COMPUTED HYDROGRAPH
IOUT 22 SAVE HYDROGRAPH ON THIS UNIT
ISAV1 1 FIRST ORDINATE PUNCHED OR SAVED
ISAV2 289 LAST ORDINATE PUNCHED OR SAVED
TIMINT .083 TIME INTERVAL IN HOURS

728 IN TIME DATA FOR INPUT TIME SERIES
JXMIN 5 TIME INTERVAL IN MINUTES
JXDATE 2JUN16 STARTING DATE
JXTIME 0 STARTING TIME

SUBBASIN RUNOFF DATA

726 BA SUBBASIN CHARACTERISTICS
TAREA .00 SUBBASIN AREA

727 BF BASE FLOW CHARACTERISTICS
STRTQ .00 INITIAL FLOW
QRCSN .00 BEGIN BASE FLOW RECESSION
RTIOR 1.00000 RECESSION CONSTANT

PRECIPITATION DATA

729 PB STORM 2.93 BASIN TOTAL PRECIPITATION

729 PI INCREMENTAL PRECIPITATION PATTERN
.06 .11 .04 .05 .06 .05 .02 .00 .00 .00
.00 .00 .01 .02 .01 .02 .03 .04 .03 .03
.02 .01 .00 .00 .01 .03 .04 .03 .02 .00
.01 .04 .02 .01 .01 .04 .08 .09 .17 .26
.27 .35 .10 .11 .09 .02 .05 .05 .01 .01
.02 .02 .04 .06 .05 .03 .04 .06 .02 .02
.01 .01 .01 .00 .01 .00 .00 .00 .01 .00
.00 .00

737 LS SCS LOSS RATE
STRTL .11 INITIAL ABSTRACTION
CRVNR 95.00 CURVE NUMBER
RTIMP 85.00 PERCENT IMPERVIOUS AREA

738 UD SCS DIMENSIONLESS UNITGRAPH
FLAG .05 LAG

UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES
0.

1. 0. 0. 0.

*** ***** *** *** HYDROGRAPH AT

STATION SB49

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
(CFS)	(HR)	6-HR	24-HR	72-HR	24.00-HR
+	0.	3.50	0.	0.	0.
+	0.	3.50	0.	0.	0.
		(INCHES)	2.844	2.847	2.847
		(AC-FT)	0.	0.	0.
CUMULATIVE AREA =		.00 SQ MI			

*** **

*
739 KK * SB50 *
*

740 KO OUTPUT CONTROL VARIABLES
IPRNT 3 PRINT CONTROL
IPLOT 0 PLOT CONTROL
QSCAL 0. HYDROGRAPH PLOT SCALE
IPNCH 0 PUNCH COMPUTED HYDROGRAPH
IOUT 22 SAVE HYDROGRAPH ON THIS UNIT
ISAV1 1 FIRST ORDINATE PUNCHED OR SAVED
ISAV2 289 LAST ORDINATE PUNCHED OR SAVED
TIMINT .083 TIME INTERVAL IN HOURS

743 IN TIME DATA FOR INPUT TIME SERIES
JXMIN 5 TIME INTERVAL IN MINUTES
JXDATE 2JUN16 STARTING DATE
JXTIME 0 STARTING TIME

SUBBASIN RUNOFF DATA

741 BA SUBBASIN CHARACTERISTICS
TAREA .00 SUBBASIN AREA

```

742 BF      BASE FLOW CHARACTERISTICS
           STRTQ      .00  INITIAL FLOW
           QRCN      .00  BEGIN BASE FLOW RECESSIO
           RTICR     1.00000 RECESSIO CONSTANT

PRECIPITATION DATA

744 PB      STORM      2.93  BASIN TOTAL PRECIPITATION

744 PI      INCREMENTAL PRECIPITATION PATTERN
           .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
           .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
           .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
           .01      .04      .02      .01      .01      .04      .08      .09      .17      .26
           .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
           .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
           .01      .01      .01      .00      .01      .00      .00      .00      .01      .00
           .00      .00

752 LS      SCS LOSS RATE
           STRTL      .11  INITIAL ABSTRACTION
           CRVNR      95.00 CURVE NUMBER
           RTIMP      85.00 PERCENT IMPERVIOUS AREA

753 UD      SCS DIMENSIONLESS UNITGRAPH
           TLAG       .05  LAG

***

UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES
2.      1.      0.      0.      0.
***      *****      *** *** HYDROGRAPH AT

STATION      SB50

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
+ (CFS)      (HR)      6-HR      24-HR      72-HR      24.00-HR
+      1.      3.50      (CFS)      0.      0.      0.      0.
           (INCHES)      2.844      2.847      2.847      2.847
           (AC-FT)      0.      0.      0.      0.

CUMULATIVE AREA = .00 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

*****
*      *
754 KK      *      SB51      *
*      *
*****

755 KO      OUTPUT CONTROL VARIABLES
           IPRNT      3  PRINT CONTROL
           IFLCT      0  PLOT CONTROL
           QSCAL      0.  HYDROGRAPH PLOT SCALE
           IPUNCH      0  PUNCH COMPUTED HYDROGRAPH
           IOUT      22  SAVE HYDROGRAPH ON THIS UNIT
           ISAV1      1  FIRST ORDINATE PUNCHED OR SAVED
           ISAV2      289 LAST ORDINATE PUNCHED OR SAVED
           TIMINT      .083 TIME INTERVAL IN HOURS

758 IN      TIME DATA FOR INPUT TIME SERIES
           JXMIN      5  TIME INTERVAL IN MINUTES
           JXDATE      2JUN16 STARTING DATE
           JXTIME      0  STARTING TIME

SUBBASIN RUNOFF DATA

756 BA      SUBBASIN CHARACTERISTICS
           TAREA      .00  SUBBASIN AREA

757 BF      BASE FLOW CHARACTERISTICS
           STRTQ      .00  INITIAL FLOW
           QRCN      .00  BEGIN BASE FLOW RECESSIO
           RTICR     1.00000 RECESSIO CONSTANT

PRECIPITATION DATA

759 PB      STORM      2.93  BASIN TOTAL PRECIPITATION

759 PI      INCREMENTAL PRECIPITATION PATTERN
           .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
           .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
           .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
           .01      .04      .02      .01      .01      .04      .08      .09      .17      .26
           .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
           .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
           .01      .01      .01      .00      .01      .00      .00      .00      .01      .00
           .00      .00

767 LS      SCS LOSS RATE
           STRTL      .11  INITIAL ABSTRACTION
           CRVNR      95.00 CURVE NUMBER
           RTIMP      85.00 PERCENT IMPERVIOUS AREA

768 UD      SCS DIMENSIONLESS UNITGRAPH
           TLAG       .05  LAG

***

UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES

```

```

1.      0.      0.      0.      0.
***      *****      *** *** HYDROGRAPH AT
                STATION      SB51
TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85
PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
+ (CFS)      (HR)      6-HR      24-HR      72-HR      24.00-HR
+      0.      3.50      (CFS)      0.      0.      0.      0.
      (INCHES)      2.844      2.847      2.847      2.847
      (AC-FT)      0.      0.      0.      0.
      CUMULATIVE AREA = .00 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
*****
769 KK      *      *
      *      SB52      *
      *      *
*****

770 KO      OUTPUT CONTROL VARIABLES
            IPRNT      3      PRINT CONTROL
            IPLOT      0      PLOT CONTROL
            QSCAL      0.      HYDROGRAPH PLOT SCALE
            IPNCH      0      PUNCH COMPUTED HYDROGRAPH
            IOUT      22      SAVE HYDROGRAPH ON THIS UNIT
            ISAV1      1      FIRST ORDINATE PUNCHED OR SAVED
            ISAV2      289      LAST ORDINATE PUNCHED OR SAVED
            TIMINT      .083      TIME INTERVAL IN HOURS

773 IN      TIME DATA FOR INPUT TIME SERIES
            JXMIN      5      TIME INTERVAL IN MINUTES
            JXDATE      2JUN16      STARTING DATE
            JXTIME      0      STARTING TIME

SUBBASIN RUNOFF DATA

771 BA      SUBBASIN CHARACTERISTICS
            TAREA      .00      SUBBASIN AREA

772 BF      BASE FLOW CHARACTERISTICS
            STRFO      .00      INITIAL FLOW
            QRCSN      .00      BEGIN BASE FLOW RECESSION
            RTIOR      1.00000      RECESSION CONSTANT

PRECIPITATION DATA

774 PB      STORM      2.93      BASIN TOTAL PRECIPITATION

774 PT      INCREMENTAL PRECIPITATION PATTERN
            .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
            .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
            .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
            .01      .04      .02      .04      .04      .04      .08      .08      .17      .26
            .27      .35      .10      .11      .09      .02      .05      .01      .01      .01
            .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
            .01      .01      .01      .00      .01      .00      .00      .00      .01      .00
            .00      .00

782 LS      SCS LOSS RATE
            STRPL      .11      INITIAL ABSTRACTION
            CRVNR      95.00      CURVE NUMBER
            RTIMP      85.00      PERCENT IMPERVIOUS AREA

783 UD      SCS DIMENSIONLESS UNITGRAPH
            TLAG      .05      LAG

***
UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES
1.      0.      0.      0.      0.
***      *****      *** *** HYDROGRAPH AT
                STATION      SB52
TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85
PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
+ (CFS)      (HR)      6-HR      24-HR      72-HR      24.00-HR
+      0.      3.50      (CFS)      0.      0.      0.      0.
      (INCHES)      2.844      2.847      2.847      2.847
      (AC-FT)      0.      0.      0.      0.
      CUMULATIVE AREA = .00 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
*****
784 KK      *      *
      *      SB53      *
      *      *
*****

785 KO      OUTPUT CONTROL VARIABLES

```

```

      IPRNT      3  PRINT CONTROL
      IPLOT      0  PLOT CONTROL
      QSCAL      0.  HYDROGRAPH PLOT SCALE
      IPNCH      0  PUNCH COMPUTED HYDROGRAPH
      IOUT       22  SAVE HYDROGRAPH ON THIS UNIT
      ISAV1      1  FIRST ORDINATE PUNCHED OR SAVED
      ISAV2     289  LAST ORDINATE PUNCHED OR SAVED
      TIMINT     .083 TIME INTERVAL IN HOURS

788 IN      TIME DATA FOR INPUT TIME SERIES
            JMIN      5  TIME INTERVAL IN MINUTES
            JXDATE    2JUN16  STARTING DATE
            JXTIME    0  STARTING TIME

      SUBBASIN RUNOFF DATA

786 BA      SUBBASIN CHARACTERISTICS
            TAREA     .00  SUBBASIN AREA

787 BF      BASE FLOW CHARACTERISTICS
            STRTQ     .00  INITIAL FLOW
            QRCSEN    .00  BEGIN BASE FLOW RECESSON
            RTICR     1.00000  RECESSON CONSTANT

      PRECIPITATION DATA

789 FB      STORM      2.93  BASIN TOTAL PRECIPITATION

789 FI      INCREMENTAL PRECIPITATION PATTERN
            .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
            .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
            .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
            .01      .04      .02      .01      .01      .04      .08      .08      .17      .26
            .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
            .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
            .01      .01      .01      .00      .01      .00      .00      .00      .01      .00
            .00      .00

797 LS      SCS LOSS RATE
            STRTL     .11  INITIAL ABSTRACTION
            CRVNR     95.00  CURVE NUMBER
            RTIMP     85.00  PERCENT IMPERVIOUS AREA

798 UD      SCS DIMENSIONLESS UNITGRAPH
            TLAG      .05  LAG

            ***
            UNIT HYDROGRAPH
            5 END-OF-PERIOD ORDINATES
            0.

            1.      0.      0.      0.

            ***      *****      ***      *** HYDROGRAPH AT

            STATION      SB53

      TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

      PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
      + (CFS)      (HR)      6-HR      24-HR      72-HR      24.00-HR
      + 0.      3.50      (CFS)
            (INCHES)      2.844      2.847      2.847      2.847
            (AC-FT)      0.      0.      0.      0.

      CUMULATIVE AREA = .00 SQ MI

      *** **
      *****
      *
      * SB54 *
      *
      *****

800 KO      OUTPUT CONTROL VARIABLES
            IPRNT      3  PRINT CONTROL
            IPLOT      0  PLOT CONTROL
            QSCAL      0.  HYDROGRAPH PLOT SCALE
            IPNCH      0  PUNCH COMPUTED HYDROGRAPH
            IOUT       22  SAVE HYDROGRAPH ON THIS UNIT
            ISAV1      1  FIRST ORDINATE PUNCHED OR SAVED
            ISAV2     289  LAST ORDINATE PUNCHED OR SAVED
            TIMINT     .083 TIME INTERVAL IN HOURS

803 IN      TIME DATA FOR INPUT TIME SERIES
            JMIN      5  TIME INTERVAL IN MINUTES
            JXDATE    2JUN16  STARTING DATE
            JXTIME    0  STARTING TIME

      SUBBASIN RUNOFF DATA

801 BA      SUBBASIN CHARACTERISTICS
            TAREA     .00  SUBBASIN AREA

802 BF      BASE FLOW CHARACTERISTICS
            STRTQ     .00  INITIAL FLOW
            QRCSEN    .00  BEGIN BASE FLOW RECESSON
            RTICR     1.00000  RECESSON CONSTANT

      PRECIPITATION DATA

804 FB      STORM      2.93  BASIN TOTAL PRECIPITATION

804 FI      INCREMENTAL PRECIPITATION PATTERN
            .06      .11      .04      .05      .06      .05      .02      .00      .00      .00

```


.00	.00	.01	.02	.01	.02	.03	.04	.03	.03
.02	.01	.00	.00	.01	.03	.04	.03	.02	.00
.01	.04	.02	.01	.01	.04	.08	.09	.17	.26
.27	.35	.10	.11	.09	.02	.05	.05	.01	.01
.02	.02	.04	.06	.05	.03	.04	.06	.02	.02
.01	.01	.01	.00	.01	.00	.00	.00	.01	.00
.00	.00								

812 LS SCS LOSS RATE
 STRCL .11 INITIAL ABSTRACTION
 CRVNR 95.00 CURVE NUMBER
 RTIMP 85.00 PERCENT IMPERVIOUS AREA

813 UD SCS DIMENSIONLESS UNITGRAPH
 TLAG .05 LAG

UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES

1.	0.	0.	0.	0.
----	----	----	----	----

*** ***** *** *** HYDROGRAPH AT

STATION SB54

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW	TIME	6-HR	24-HR	72-HR	24.00-HR
+	(CFS)				
+	0.	3.50			
	(CFS)	0.	0.	0.	0.
	(INCHES)	2.044	2.047	2.047	2.047
	(AC-FT)	0.	0.	0.	0.

CUMULATIVE AREA = .00 SQ MI

*** **

814 KK *****
 * *
 * SB55 *
 * *

815 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE
IPNCH	0	PUNCH COMPUTED HYDROGRAPH
IOUT	22	SAVE HYDROGRAPH ON THIS UNIT
ISAV1	1	FIRST ORDINATE PUNCHED OR SAVED
ISAV2	289	LAST ORDINATE PUNCHED OR SAVED
TIMINT	.003	TIME INTERVAL IN HOURS

818 IN TIME DATA FOR INPUT TIME SERIES

JXMIN	5	TIME INTERVAL IN MINUTES
JXDATE	2JUN16	STARTING DATE
JXTIME	0	STARTING TIME

SUBBASIN RUNOFF DATA

816 BA SUBBASIN CHARACTERISTICS

TAREA	.00	SUBBASIN AREA
-------	-----	---------------

817 BF BASE FLOW CHARACTERISTICS

STRTO	.00	INITIAL FLOW
QRCSN	.00	BEGIN BASE FLOW RECESSION
RTIOR	1.00000	RECESSION CONSTANT

PRECIPITATION DATA

819 PB STORM 2.93 BASIN TOTAL PRECIPITATION

819 PI INCREMENTAL PRECIPITATION PATTERN

.06	.11	.04	.05	.06	.05	.02	.00	.00	.00
.00	.00	.01	.02	.01	.02	.03	.04	.03	.03
.02	.01	.00	.00	.01	.03	.04	.03	.02	.00
.01	.04	.02	.01	.01	.04	.08	.09	.17	.26
.27	.35	.10	.11	.09	.02	.05	.05	.01	.01
.02	.02	.04	.06	.05	.03	.04	.06	.02	.02
.01	.01	.01	.00	.01	.00	.00	.00	.01	.00
.00	.00								

827 LS SCS LOSS RATE
 STRCL .11 INITIAL ABSTRACTION
 CRVNR 95.00 CURVE NUMBER
 RTIMP 85.00 PERCENT IMPERVIOUS AREA

828 UD SCS DIMENSIONLESS UNITGRAPH
 TLAG .05 LAG

UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES

1.	0.	0.	0.	0.
----	----	----	----	----

*** ***** *** *** HYDROGRAPH AT

STATION SB55

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW	TIME	6-HR	24-HR	72-HR	24.00-HR
+	(CFS)				
+	0.	3.50			
	(CFS)	0.	0.	0.	0.
	(INCHES)	2.044	2.047	2.047	2.047
	(AC-FT)	0.	0.	0.	0.

CUMULATIVE AREA = .00 SQ MI

```

      (CFS)
+      0.      3.50      0.      0.      0.      0.
      (INCHES) 2.844      2.847      2.847      2.847
      (AC-FT)   0.      0.      0.      0.
      CUMULATIVE AREA = .00 SQ MI

```

*** **

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*****
*      *
829 KK * SB56 *
*      *
*****

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```

830 KO      OUTPUT CONTROL VARIABLES
            IPRNT      3      PRINT CONTROL
            IPLOT      0      PLOT CONTROL
            QSCAL      0.     HYDROGRAPH PLOT SCALE
            IPNCH      0      PUNCH COMPUTED HYDROGRAPH
            IOUTP      22     SAVE HYDROGRAPH ON THIS UNIT
            ISAV1      1      FIRST ORDINATE PUNCHED OR SAVED
            ISAV2      289    LAST ORDINATE PUNCHED OR SAVED
            TIMINT      .093   TIME INTERVAL IN HOURS

```

```

833 IN      TIME DATA FOR INPUT TIME SERIES
            JXMIN      5      TIME INTERVAL IN MINUTES
            JXDATE      2JUN16 STARTING DATE
            JXTIME      0      STARTING TIME

```

SUBBASIN RUNOFF DATA

```

831 BA      SUBBASIN CHARACTERISTICS
            TAREA      .00     SUBBASIN AREA

```

```

832 BF      BASE FLOW CHARACTERISTICS
            STRTQ      .00     INITIAL FLOW
            QRCSN      .00     BEGIN BASE FLOW RECESSION
            RTICR      1.00000 RECESSION CONSTANT

```

PRECIPITATION DATA

```

834 PB      STORM      2.93   BASIN TOTAL PRECIPITATION

```

```

834 PI      INCREMENTAL PRECIPITATION PATTERN
            .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
            .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
            .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
            .01      .04      .02      .01      .01      .04      .08      .09      .17      .26
            .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
            .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
            .01      .01      .01      .00      .01      .00      .00      .00      .01      .00
            .00      .00

```

```

842 LS      SCS LOSS RATE
            STRTL      .11     INITIAL ABSTRACTION
            CRVNR      95.00   CURVE NUMBER
            RTIME      85.00   PERCENT IMPERVIOUS AREA

```

```

843 UD      SCS DIMENSIONLESS UNITGRAPH
            FLAG      .05     LAG

```

```

                                UNIT HYDROGRAPH
                                5 END-OF-PERIOD ORDINATES
      1.      0.      0.      0.      0.

```

*** ***** *** *** HYDROGRAPH AT

STATION SB56

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

```

PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
+ (CFS) (HR)      6-HR      24-HR      72-HR      24.00-HR
+      0.      3.50      (CFS)      0.      0.      0.      0.
      (INCHES) 2.844      2.847      2.847      2.847
      (AC-FT)   0.      0.      0.      0.
      CUMULATIVE AREA = .00 SQ MI

```

*** **

```

*****
*      *
844 KK * SB57 *
*      *
*****

```

```

845 KO      OUTPUT CONTROL VARIABLES
            IPRNT      3      PRINT CONTROL
            IPLOT      0      PLOT CONTROL
            QSCAL      0.     HYDROGRAPH PLOT SCALE
            IPNCH      0      PUNCH COMPUTED HYDROGRAPH
            IOUTP      22     SAVE HYDROGRAPH ON THIS UNIT
            ISAV1      1      FIRST ORDINATE PUNCHED OR SAVED
            ISAV2      289    LAST ORDINATE PUNCHED OR SAVED
            TIMINT      .093   TIME INTERVAL IN HOURS

```

```

846 IN      TIME DATA FOR INPUT TIME SERIES

```

```

      JXMIN      5  TIME INTERVAL IN MINUTES
      JXDATE    2JUN16  STARTING DATE
      JXTIME      0  STARTING TIME

SUBBASIN RUNOFF DATA

846 BA      SUBBASIN CHARACTERISTICS
            TAREA      .00  SUBBASIN AREA

847 BF      BASE FLOW CHARACTERISTICS
            STRIQ      .00  INITIAL FLOW
            QRCRN      .00  BEGIN BASE FLOW RECESSION
            RTIOR      1.00000  RECESSION CONSTANT

PRECIPITATION DATA

849 PB      STORM      2.93  BASIN TOTAL PRECIPITATION

849 PI      INCREMENTAL PRECIPITATION PATTERN
            .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
            .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
            .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
            .01      .04      .02      .01      .01      .04      .08      .09      .17      .26
            .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
            .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
            .01      .01      .01      .00      .01      .00      .00      .06      .01      .00
            .00      .00

857 LS      SCS LOSS RATE
            STRTL      .11  INITIAL ABSTRACTION
            CRVNR      95.00  CURVE NUMBER
            RTIMP      85.00  PERCENT IMPERVIOUS AREA

858 UD      SCS DIMENSIONLESS UNITGRAPH
            TLAG      .05  LAG

***

UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES
1.      0.      0.      0.      0.

***      *****      *** *** HYDROGRAPH AT

STATION      SB57

TOTAL RAINFALL =      2.93, TOTAL LOSS =      .08, TOTAL EXCESS =      2.85

PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
+ (CFS)      (HR)      6-HR      24-HR      72-HR      24.00-HR
+      0.      3.50      (CFS)      0.      0.      0.      0.
      (INCHES)      2.844      2.847      2.847      2.847
      (AC-FT)      0.      0.      0.      0.

CUMULATIVE AREA =      .00 SQ MI

*** **
*****
*      *
859 KK      *      SB58      *
*      *
*****

860 KO      OUTPUT CONTROL VARIABLES
            IPRNT      3  PRINT CONTROL
            IPLOT      0  PLOT CONTROL
            QSCAL      0.  HYDROGRAPH PLOT SCALE
            IPNCH      0  PUNCH COMPUTED HYDROGRAPH
            ICUT      22  SAVE HYDROGRAPH ON THIS UNIT
            ISAV1      1  FIRST ORDINATE PUNCHED OR SAVED
            ISAV2      289  LAST ORDINATE PUNCHED OR SAVED
            TMINIT      .083  TIME INTERVAL IN HOURS

863 IN      TIME DATA FOR INPUT TIME SERIES
            JXMIN      5  TIME INTERVAL IN MINUTES
            JXDATE    2JUN16  STARTING DATE
            JXTIME      0  STARTING TIME

SUBBASIN RUNOFF DATA

861 BA      SUBBASIN CHARACTERISTICS
            TAREA      .00  SUBBASIN AREA

862 BF      BASE FLOW CHARACTERISTICS
            STRIQ      .00  INITIAL FLOW
            QRCRN      .00  BEGIN BASE FLOW RECESSION
            RTIOR      1.00000  RECESSION CONSTANT

PRECIPITATION DATA

864 PB      STORM      2.93  BASIN TOTAL PRECIPITATION

864 PI      INCREMENTAL PRECIPITATION PATTERN
            .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
            .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
            .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
            .01      .04      .02      .01      .01      .04      .08      .09      .17      .26
            .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
            .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
            .01      .01      .01      .00      .01      .00      .00      .00      .01      .00
            .00      .00

872 LS      SCS LOSS RATE
            STRTL      .11  INITIAL ABSTRACTION
            CRVNR      95.00  CURVE NUMBER

```

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RTIMP      85.00 PERCENT IMPERVIOUS AREA
873 UD      SCS DIMENSIONLESS UNITGRAPH
              TLAG      .05 LAG

***

UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES
0.

1.      0.      0.      0.
***      *****      *** *** HYDROGRAPH AT

STATION      SB58

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
+ (CFS)      (HR)      6-HR      24-HR      72-HR      24.00-HR
+      0.      3.50      (CFS)      0.      0.      0.      0.
              (INCHES) 2.844      2.847      2.847      2.847
              (AC-FT) 0.      0.      0.      0.
CUMULATIVE AREA = .00 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

*****
*
874 KK      * SB59 *
*
*****

875 KO      OUTPUT CONTROL VARIABLES
              TPRINT      3 PRINT CONTROL
              TPILOT      0 PLOT CONTROL
              QSCAL      0. HYDROGRAPH PLOT SCALE
              TPUNCH      0 PUNCH COMPUTED HYDROGRAPH
              IOUT      22 SAVE HYDROGRAPH ON THIS UNIT
              ISAV1      1 FIRST ORDINATE PUNCHED OR SAVED
              ISAV2      289 LAST ORDINATE PUNCHED OR SAVED
              TIMINT      .083 TIME INTERVAL IN HOURS

876 IN      TIME DATA FOR INPUT TIME SERIES
              JKMIN      5 TIME INTERVAL IN MINUTES
              JXDATE      2JUN16 STARTING DATE
              JXTIME      0 STARTING TIME

SUBBASIN RUNOFF DATA

876 BA      SUBBASIN CHARACTERISTICS
              TAREA      .00 SUBBASIN AREA

877 BF      BASE FLOW CHARACTERISTICS
              STRTQ      .00 INITIAL FLOW
              QRCN      .00 BEGIN BASE FLOW RECESSTION
              RTIOR      1.00000 RECESSTION CONSTANT

PRECIPITATION DATA

879 PB      STORM      2.93 BASIN TOTAL PRECIPITATION

879 PI      INCREMENTAL PRECIPITATION PATTERN
              .06      .11      .04      .05      .06      .05      .02      .00      .00      .00
              .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
              .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
              .01      .04      .02      .01      .01      .04      .08      .09      .17      .26
              .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
              .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
              .01      .01      .01      .00      .01      .00      .00      .00      .01      .00
              .00

887 LS      SCS LOSS RATE
              STRFL      .11 INITIAL ABSTRACTION
              CRVNR      95.00 CURVE NUMBER
              RTIMP      85.00 PERCENT IMPERVIOUS AREA

888 UD      SCS DIMENSIONLESS UNITGRAPH
              TLAG      .05 LAG

***

UNIT HYDROGRAPH
5 END-OF-PERIOD ORDINATES
0.

1.      0.      0.      0.
***      *****      *** *** HYDROGRAPH AT

STATION      SB59

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
+ (CFS)      (HR)      6-HR      24-HR      72-HR      24.00-HR
+      0.      3.50      (CFS)      0.      0.      0.      0.
              (INCHES) 2.844      2.847      2.847      2.847
              (AC-FT) 0.      0.      0.      0.
CUMULATIVE AREA = .00 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

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```

*****
*      *
889 KK  * SB60 *
*      *
*****

890 KO      OUTPUT CONTROL VARIABLES
          IPRNT      3  PRINT CONTROL
          IPLOT      0  PLOT CONTROL
          QSCAL      0.  HYDROGRAPH PLOT SCALE
          IPNCH      0  PUNCH COMPUTED HYDROGRAPH
          IOUT       22  SAVE HYDROGRAPH ON THIS UNIT
          ISAV1       1  FIRST ORDINATE PUNCHED OR SAVED
          ISAV2      289  LAST ORDINATE PUNCHED OR SAVED
          TIMINT      .083  TIME INTERVAL IN HOURS

893 IN      TIME DATA FOR INPUT TIME SERIES
          JXMIN       5  TIME INTERVAL IN MINUTES
          JXDATE      2JUN16  STARTING DATE
          JXTIME       0  STARTING TIME

      SUBBASIN RUNOFF DATA

891 BA      SUBBASIN CHARACTERISTICS
          TAREA       .00  SUBBASIN AREA

892 BF      BASE FLOW CHARACTERISTICS
          STRTQ       .00  INITIAL FLOW
          QRCN       .00  BEGIN BASE FLOW RECESSION
          RTIOR      1.00000  RECESSION CONSTANT

      PRECIPITATION DATA

894 PB      STORM      2.93  BASIN TOTAL PRECIPITATION

894 PI      INCREMENTAL PRECIPITATION PATTERN
          .05      .11      .04      .05      .06      .05      .02      .00      .00      .00
          .00      .00      .01      .02      .01      .02      .03      .04      .03      .03
          .02      .01      .00      .00      .01      .03      .04      .03      .02      .00
          .01      .04      .02      .01      .01      .04      .08      .09      .17      .26
          .27      .35      .10      .11      .09      .02      .05      .05      .01      .01
          .02      .02      .04      .06      .05      .03      .04      .06      .02      .02
          .01      .01      .01      .00      .01      .00      .00      .00      .01      .00
          .00      .00

902 LS      SCS LOSS RATE
          STRTL       .11  INITIAL ABSTRACTION
          CRVNR      95.00  CURVE NUMBER
          RTIMP      85.00  PERCENT IMPERVIOUS AREA

903 UD      SCS DIMENSIONLESS UNITGRAPH
          TLAG       .05  LAG

          ***

          UNIT HYDROGRAPH
          5 END-OF-PERIOD ORDINATES
          0.

          ***      *****      ***      *** HYDROGRAPH AT

          STATION      SB60

TOTAL RAINFALL = 2.93, TOTAL LOSS = .06, TOTAL EXCESS = 2.85

PEAK FLOW      TIME      MAXIMUM AVERAGE FLOW
+ (CFS)      (HR)      6-HR      24-HR      72-HR      24.00-HR
+ 0.      3.50      0.      0.      0.      0.
      (INCHES) 2.844      2.847      2.847      2.847
      (AC-FT) 0.      0.      0.      0.
      CUMULATIVE AREA = .00 SQ MI

*****
*      *
904 KK  * SBNWash *
*      *
*****

905 KO      OUTPUT CONTROL VARIABLES
          IPRNT      3  PRINT CONTROL
          IPLOT      0  PLOT CONTROL
          QSCAL      0.  HYDROGRAPH PLOT SCALE
          IPNCH      0  PUNCH COMPUTED HYDROGRAPH
          IOUT       22  SAVE HYDROGRAPH ON THIS UNIT
          ISAV1       1  FIRST ORDINATE PUNCHED OR SAVED
          ISAV2      289  LAST ORDINATE PUNCHED OR SAVED
          TIMINT      .083  TIME INTERVAL IN HOURS

908 IN      TIME DATA FOR INPUT TIME SERIES
          JXMIN       5  TIME INTERVAL IN MINUTES
          JXDATE      2JUN16  STARTING DATE
          JXTIME       0  STARTING TIME

      SUBBASIN RUNOFF DATA

906 BA      SUBBASIN CHARACTERISTICS
          TAREA       .00  SUBBASIN AREA

907 BF      BASE FLOW CHARACTERISTICS
          STRTQ      260.00  INITIAL FLOW

```


*** ***** *** *** HYDROGRAPH AT

STATION SBSWash

TOTAL RAINFALL = 2.93, TOTAL LOSS = .08, TOTAL EXCESS = 2.85

PEAK FLOW	TIME	6-HR	24-HR	72-HR	24.00-HR
(CFS)	(HR)				
106.	3.50	106.	106.	106.	106.
(INCHES)		9859.224	39424.360	39424.360	39424.360
(AC-FT)		53.	210.	210.	210.
CUMULATIVE AREA =		.00 SQ MI			

1

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD			BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
				6-HOUR	24-HOUR	72-HOUR			
HYDROGRAPH AT	SB01	(0.5)	0.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB02	(2.7)	3.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB03	(3.6)	4.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB04	(2.2)	2.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB05	(2.2)	2.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB06	(3.2)	3.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB07	(1.5)	1.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB08	(3.7)	4.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB09	(3.9)	4.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB10	(3.6)	4.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB11	(3.2)	3.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB12	(3.2)	3.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB13	(2.0)	2.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB14	(1.0)	1.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB15	(2.7)	3.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB16	(0.7)	1.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB17	(0.7)	1.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB18	(0.7)	1.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB19	(1.2)	1.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB20	(1.7)	2.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB21	(0.5)	0.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB22	(0.5)	0.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB23	(0.3)	0.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB24	(3.6)	4.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB25	(1.0)	1.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB26	(1.0)	1.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB27	(1.7)	2.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB28	(2.2)	2.	3.50	0.	0.	0.	.00	
HYDROGRAPH AT	SB29	(2.2)	2.	3.50	0.	0.	0.	.00	

NOTE: PEAK FLOWS ARE PROVIDED TO ONE DECIMAL PLACE IN ORDER TO MATCH THE Q₁₀₀ VALUES SHOWN ON THE SUB-BASIN DRAINAGE EXHIBITS (HEC-1 OUTPUT ROUNDS TO NEAREST WHOLE NUMBER)

+		SB30	(2.4)	2.	3.50	0.	0.	0.	.00
	HYDROGRAPH AT	SB31	(1.5)	1.	3.50	0.	0.	0.	.00
+		SB32	(2.5)	2.	3.50	0.	0.	0.	.00
	HYDROGRAPH AT	SB33	(1.7)	2.	3.50	0.	0.	0.	.00
+		SB34	(9.0)	9.	3.50	1.	0.	0.	.00
	HYDROGRAPH AT	SB35	(1.9)	2.	3.50	0.	0.	0.	.00
+		SB36	(2.5)	2.	3.50	0.	0.	0.	.00
	HYDROGRAPH AT	SB37	(3.7)	4.	3.50	0.	0.	0.	.00
+		SB38	(1.2)	1.	3.50	0.	0.	0.	.00
	HYDROGRAPH AT	SB39	(2.1)	2.	3.50	0.	0.	0.	.00
+		SB40	(2.1)	2.	3.50	0.	0.	0.	.00
	HYDROGRAPH AT	SB41	(1.8)	2.	3.50	0.	0.	0.	.00
+		SB42	(1.8)	2.	3.50	0.	0.	0.	.00
	HYDROGRAPH AT	SB43	(2.1)	2.	3.50	0.	0.	0.	.00
+		SB44	(1.0)	1.	3.50	0.	0.	0.	.00
	HYDROGRAPH AT	SB45	(1.2)	1.	3.50	0.	0.	0.	.00
+		SB46	(0.5)	0.	3.50	0.	0.	0.	.00
	HYDROGRAPH AT	SB47	(0.3)	0.	3.50	0.	0.	0.	.00
+		SB48	(1.2)	1.	3.50	0.	0.	0.	.00
	HYDROGRAPH AT	SB49	(0.3)	0.	3.50	0.	0.	0.	.00
+		SB50	(1.0)	1.	3.50	0.	0.	0.	.00
	HYDROGRAPH AT	SB51	(0.3)	0.	3.50	0.	0.	0.	.00
+		SB52	(0.3)	0.	3.50	0.	0.	0.	.00
	HYDROGRAPH AT	SB53	(0.3)	0.	3.50	0.	0.	0.	.00
+		SB54	(0.3)	0.	3.50	0.	0.	0.	.00
	HYDROGRAPH AT	SB55	(0.3)	0.	3.50	0.	0.	0.	.00
+		SB56	(0.3)	0.	3.50	0.	0.	0.	.00
	HYDROGRAPH AT	SB57	(0.3)	0.	3.50	0.	0.	0.	.00
+		SB58	(0.3)	0.	3.50	0.	0.	0.	.00
	HYDROGRAPH AT	SB59	(0.3)	0.	3.50	0.	0.	0.	.00
+		SB60	(0.3)	0.	3.50	0.	0.	0.	.00
	HYDROGRAPH AT	SBNWash	(2.0)	2.	3.50	2.	2.	2.	.00
+		SBWSwash	(106.0)	106.	3.50	106.	106.	106.	.00

Q_{100,SB34} = 9 CFS

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

Q₂-YEAR = 1.12 CFS

Reference Appendix E
inlet capacity + catch
basin capacity calculations

		Inlet Capacity Table		Project Name: Skye Canyon Village Description: Inlet Capacity Table File Name: 2015-10-24 Inlet Capacity Table		
Company: Anderson Wahlan & Associates By: James Copeland Date: October 24, 2015						
Name of Inlet	Reference Exhibit	Type of Inlet	Drainage Area (ac)	2-Yr, 6-Hr Flow to Inlet (cfs)	100-Yr, 6-Hr Flow to Inlet (cfs)	Capacity of Inlet (cfs)
NM2J1	F1	3'x2' Inlet Box	2.36	1.12	9.0	4.97
NL1J1	F1	3'x2' Inlet Box	0.52	0.25	1.9	4.97
NL2J1	F1	3'x2' Inlet Box	0.44	0.21	1.7	4.97
SL6J1	F1	3'x3' Catch Basin	0.99	0.47	3.7	4.77
NM3J1	F2	3'x2' Inlet Box	0.67	0.32	2.5	4.97
NL3J1	F2	3'x2' Inlet Box	1.00	0.47	3.7	4.97
NM4J1	F2	3'x2' Inlet Box	0.32	0.15	1.2	4.97
FCL3J1	F2	3'x2' Inlet Box	0.38	0.13	1.0	4.97
FCL5J1	F2	3'x2' Inlet Box	0.77	0.13	1.0	4.97
FCL4J1	F2	3'x2' Inlet Box	0.08	0.04	0.2	4.97
FCL2J1	F2	3'x2' Inlet Box	0.06	0.03	0.2	4.97
FCL1J1	F2	3'x3' Catch Basin	0.12	0.06	0.5	4.77
FCM1J1	F2	3'x3' Catch Basin	0.34	0.16	1.2	4.77
FCM2J1	F2	3'x2' Inlet Box	0.30	0.14	1.2	4.97
SL25J1	F2	3'x2' Inlet Box	0.38	0.18	1.5	4.97
SL26J1	F2	3'x2' Inlet Box	0.64	0.30	2.5	4.97
SL1J1	F2	3'x2' Inlet Box	1.00	0.47	3.9	4.97
SL9J1	F2	3'x3' Catch Basin	0.84	0.40	3.2	4.77
SL10J1	F2	3'x3' Catch Basin	0.53	0.25	2.0	4.77
SL7J1	F3	3'x2' Inlet Box	0.98	0.46	3.6	4.97
SM3J1	F3	3'x2' Inlet Box	0.83	0.39	3.2	4.97
SL24J1	F3	3'x2' Inlet Box	0.64	0.30	2.4	4.97
SM6J1	F3	3'x2' Inlet Box	0.55	0.26	2.2	4.97
SL22J1	F3	3'x2' Inlet Box	0.56	0.27	2.2	4.97
SL23J1	F3	3'x2' Inlet Box	0.47	0.22	1.7	4.97
SL21J1	F3	3'x2' Inlet Box	0.28	0.13	1.0	4.97
SL20J1	F3	3'x2' Inlet Box	0.24	0.11	1.0	4.97
SL19J1	F3	3'x2' Inlet Box	0.09	0.04	0.2	4.97
SM5J1	F3	3'x2' Inlet Box	0.14	0.07	0.5	4.97
SL18J1	F3	3'x3' Catch Basin	0.98	0.46	3.6	4.77
SL17J1	F3	3'x2' Inlet Box	0.47	0.22	1.7	4.97
SL16J1	F3	3'x2' Inlet Box	0.15	0.07	0.5	4.97
SL15J1	F3	3'x2' Inlet Box	0.31	0.15	1.2	4.97
SL14J1	F3	3'x2' Inlet Box	0.22	0.10	0.7	4.97
SL13J1	F3	3'x2' Inlet Box	0.69	0.33	2.6	4.97
SL12J1	F3	3'x2' Inlet Box	0.19	0.09	0.7	4.97
SL11J1	F3	3'x2' Inlet Box	0.23	0.11	1.0	4.97
SM4J1	F3	3'x2' Inlet Box	0.21	0.10	0.7	4.97
SL1J1	F3	3'x2' Inlet Box	0.57	0.27	2.2	4.97
SL2J1	F3	3'x2' Inlet Box	0.56	0.27	2.2	4.97
SL4J1	F3	3'x2' Inlet Box	0.99	0.47	3.6	4.97
SM1J1	F4	3'x3' Catch Basin	0.14	0.07	0.5	4.77
SL3J1	F4	3'x2' Inlet Box	0.69	0.33	2.7	4.97
SL5J1	F4	3'x2' Inlet Box	0.38	0.18	1.5	4.97
SM2J1	F4	3'x2' Inlet Box	0.83	0.39	3.2	4.97

See next page
for BMP design
discharge calculation



ANDERSON WAHLEN & ASSOCIATES

Project Name SKYE CANYON VILLAGE

Date 10/24/2016

BMP DESIGN DISCHARGE CALCULATION

D_2 SITE / D_2 McCARRAN AREA = 1.0
PERCENT IMPERVIOUS AREA = 85
MAXIMUM SUB-BASIN AREA = 1.00 ACRES

Reference Section
1502.3 for equations
used to calculate
BMP design peak
discharge

$$D_{85} = 1.0 \times 0.32 = 0.32''$$

$$Q_p/A (90\%) = 1.5042(0.32) + 0.0066 = 0.4879$$

$$Q_p/A = 0.4879 \cdot (0.0059(85) + 0.4688) = 0.473$$

$$Q_p = 0.473 \times 1.0 \text{ acres} \approx \underline{\underline{0.47 \text{ cfs}}}$$

0.47 is the maximum 2-year, 6-hour discharge
any onsite oil/water separator (snout) would
be required to treat, given a 1.0-acre maximum
drainage area.

Best Management Products, Inc.

SNOUT Oil-Water-Debris Separator

K-factor Worksheet. Outlet pipe partially full. $H = K V_o^2 / (2g)$

where H=Head loss in manhole with SNOUT (ft). K=K factor from table.

V_o =Outlet pipe velocity (fps). $g=32.174 \text{ ft/s}^2$

MAX RECOMMENDED FLOWS- Call 800-504-8008 for more guidance

BMP SNOUT Model	Max. Pipe I.D. (in.)*	INPUTS		RESULTS	
		Max Flow (cfs)	Design Velocity (fps)	Head Loss w/ SNOUT (ft.)	K factor
12F	10	0.55	5	0.43	1.10
12R	10	0.6	5	0.43	1.11
18F	15	2.9	5	0.51	1.31
18R	15	3.4	5	0.51	1.32
24F	18	7	6	0.93	1.67
24R	18	8.25	6	0.93	1.66
30F	24	11	8	0.94	0.95
30R	24	13	8	0.90	0.90
36FTB	30	19	9	1.36	1.08
42RTB60	30	26	10	1.43	0.92
48F	36	36	10	1.54	0.99
52RTB72	42	42	10	1.62	1.04
72FTBB	60	90	10	1.90	1.22
72RTB96	66	95	10	2.35	1.51
96FTB	60	110	10	0.90	0.58
96FTBB	72	120	10	1.07	0.69

**BMP SNOUT
MODEL 18F**

*SNOUT must fit over pipe O.D. to ensure proper installation. Pipes with heavy wall thickness (e.g. RCP) may require a larger SNOUT size to fit over the pipe even though pipe I.D. could be accommodated by a smaller SNOUT

USER NOTE: To increase flow capacity or to minimize losses, choose a larger SNOUT model as needed.

BMP, Inc.	
Phone:	(800) 504-8008
Fax:	(410) 687-6757
Website:	www.bmpinc.com
Email:	tjm@bmpinc.com

The SNOUT®

+ Bio-Skirt®

+ TrashScreen™

+ SAFL Baffle™

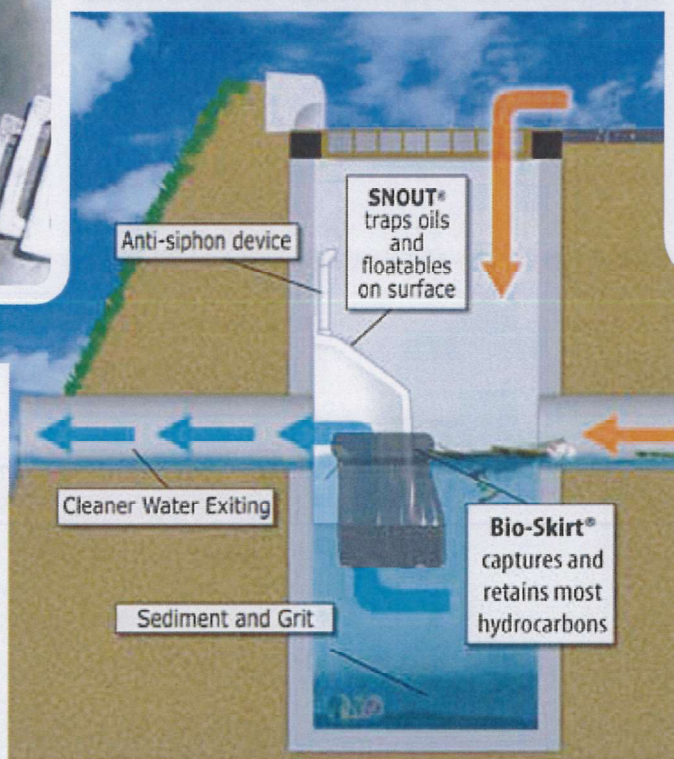
Stormwater Solutions

*for Water Quality Improvement
and Low Impact Design*



+ SAFL Baffle™ for T.S.S.

+ TrashScreen for
Full Trash Capture



- Engineer Trusted
- Contractor Friendly
- Easy to Install & Maintain
- All Sizes in Stock
- Fits all inlet shapes
- Sizes for up to 72" ID pipes
- Pollution Removal Capability for any sumped structure!

+ Bio-Skirt®
for Oil and Grease



BMP makes stormwater quality affordable!

Make the most of your stormwater dollars with the SNOUT® system. More than 65,000 SNOUTs have been installed in North America since 1999. We have stormwater quality experts on staff to help you design with the SNOUT, Bio-Skirt, Stainless Steel TrashScreen and SAFL Baffle.

Whether it is for highway or municipal drainage, government facilities, harbor use, educational or healthcare institutions, LID, or commercial and industrial development-- we have the experience. **Now get verified T.S.S. reductions with the SAFL Baffle.** Visit bmpinc.com or call 800-504-8008.

US Patents 6126817, 7951294, 7857966, 8512556

Canada Patent 2285146, 2688012, 2690156 Others Pending

The SAFL Baffle is a patented and trademarked product of Upstream Technologies, Inc.



PRODUCTS FOR A BETTER ENVIRONMENT

Download drawings, specs and see pricing at:
www.bmpinc.com

BMP

Best Management Products, Inc.
53 Mt. Archer Rd. Lyme, CT 06371
800-504-8008 or 888-434-0277
fax 877-434-3197
www.bmpinc.com

13 November 2007

Mr. T.J. Mullen
Best Management Products, Inc.
53 Mount Archer Road
Lyme, Connecticut 06371

Dear Mr. Mullen:

As part of the 2002 – 2003 watershed project for Lake Peekskill, SNOUT stormwater retrofits were installed in the Town of Putnam Valley. These retrofits were chosen since large, structural Best Management Practices (BMPs) would be difficult to install these residential areas. On 9 May 2003, the Putnam Valley Department of Public Works installed two SNOUT devices into two previously identified catch basins. The SNOUTs were monitored four times during 2003; 18 September, 25 September, 12 December, and 29 December. Stormwater samples were collected entering and exiting the SNOUT retrofitted catch basins and were analyzed for total phosphorus (TP) and total suspended solids (TSS). In order to estimate the pollutant loads entering and exiting the devices, rainfall data (Northeast Regional Climate Center: <http://climod.nrcc.cornell.edu/>), measured pollutant concentrations, and the immediate drainage area were used. Specifically, the following equation was used to estimate the pollutant load entering and exiting the SNOUT devices:

$$L = R * A * C$$

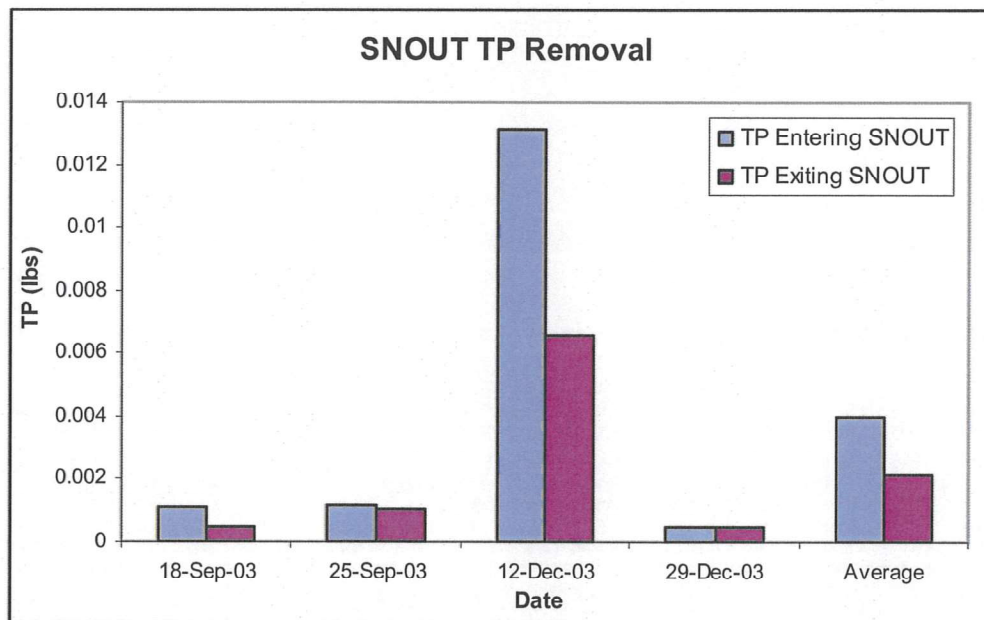
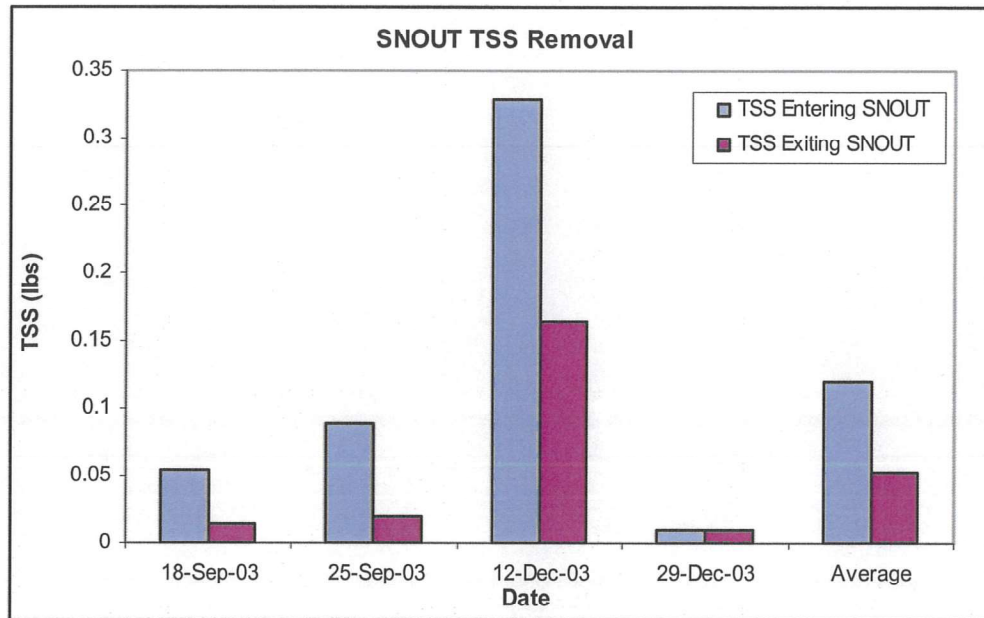
Where L = Pollutant load (lbs)
R = Rainfall during sampling event (meters)
A = Drainage area (m²)
C = pollutant concentration (mg/ L)

It should be noted that rainfall data during the 29 December 2003 sampling event was not available through the Cornell Climod database; thus, Princeton Hydro estimated the amount of rainfall to be 0.1 inches. In addition, the area of land draining into the SNOUT devices were estimated to be 880 m², using ArcGIS and the limited existing topographic data. The SNOUT devices removed both TSS and TP from stormwater entering the SNOUT devices from the surrounding drainage area. On average the SNOUTs reduced TSS by 56% and TP by 46%. Please refer to the figures at the end of this document for additional removal data. Please note that these are rough estimates since the exact drainage area and amount of rainfall were approximated.

Based on these data, the SNOUT-modified catch basins demonstrated the potential to remove the TSS and TP pollutant loads originating from surface runoff. If you have any questions or comments, please contact us at (610) 524 – 4220.

Sincerely,

Mary Lambert
GIS Specialist/ Scientist



PRIVATE ENGINEER'S NOTICE TO CONTRACTORS

The Contractor agrees that he shall assume sole and complete responsibility for job site conditions during the course of construction of this project, including safety of all persons and property; that this requirement shall apply continuously and not be limited to normal working hours; and that the contractor shall defend, indemnify, and hold the owner and the engineer harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting for liability arising from the sole negligence of the owner or the engineer.

Survey Note

Wallace Morris Kline Surveying is the licensed Surveyor responsible for providing surveying services for this project. Anderson Wahlen & Associates has relied upon Wallace Morris Kline Surveying for professional services in preparing this drawing. Anderson Wahlen & Associates makes no claims to the accuracy of the information provided by Wallace Morris Kline Surveying.

Survey Control Note:

The contractor or surveyor shall be responsible for following the National Society of Professional Surveyors (NSPS) model standards for any surveying or construction layout to be completed using Anderson Wahlen and Associates ALTA Surveys or Anderson Wahlen and Associates construction improvement plans. Prior to proceeding with construction staking, the surveyor shall be responsible for verifying horizontal control from the survey monuments and for verifying any additional control points shown on an ALTA survey, improvement plan, or an electronic data provided by Anderson Wahlen and Associates. The surveyor shall also use the benchmarks as shown on the plan, and verify them against no less than three existing hard improvement elevations included on these plans or an electronic data provided by Anderson Wahlen and Associates. If any discrepancies are encountered, the surveyor shall immediately notify the engineer and resolve the discrepancies before proceeding with any construction staking.

Abbreviations

BOL	Bollard	PP	Power Pole
BRW	Finish Grade - Bottom of Retaining Wall	PVC	Polyvinyl Chloride
CATV	Cable Television Box	RCP	Reinforced Concrete Pipe
CB	Catch Basin	RD	Roof Drain
CMP	Corrugated Metal Pipe	SB	Signal Box
COB	Cleanout Box	SD	Storm Drain
COTG	Cleanout to Grade	SDMH	Storm Drain Manhole
EA	Edge of Asphalt	SMH	Sanitary Sewer Manhole
EB	Electrical Box	SP	Signal Pole
ECAB	Electrical Cabinet	SS	Sanitary Sewer
EMH	Electrical Manhole	SVZ	Sight Visibility Zone
FH	Fire Hydrant	SW	Secondary Water
FL	Flowline	TA	Top of Asphalt
G	Ground	TB	Telephone Box
GB	Grade Break	TBC	Top Back of Curb
GM	Gas Meter	TG	Top of Grate
HB	Hose Bib	TMH	Telephone Manhole
I	Irrigation Line	TP	Top of Concrete
ICB	Irrigation Control Box	TRW	Finish Grade
LP	Lip of Gutter	TW	Top of Retaining Wall
LP	Light Pole	WL	Waterline
MH	Manhole	WP	Working Point
Mon	Monument	WV	Water Valve
PM	Power Meter		

Legend

Proposed Curb & Gutter	Existing Improvements
Proposed Open Face C & G	Existing Asphalt
Proposed Asphalt	Existing Concrete
Proposed Concrete	Existing Inlet Box
Proposed Truncated Domes	Existing Catch Basin
Proposed Inlet Box	Existing Manhole
Proposed Catch Basin	Existing Fire Hydrant
Proposed Manhole	Existing Water Valve
Proposed Transformer	Existing Overhead Power Line
Proposed Water Box	Existing Water
Proposed Water Meter	Existing Secondary Water
Proposed Combo Box	Existing Sewer
Proposed Fire Hydrant	Existing Storm Drain
Proposed Water Valve	Existing Gas
Proposed Water Line	Existing Power
Proposed Sanitary Sewer	Existing Telephone
Proposed Storm Drain	Existing Fence
Proposed Conduit Line	Flowline
Proposed Power Line	Centerline
Proposed Gas Line	Existing Contour
Proposed Secondary Water Line	Existing Spot
Proposed Roof Drain	Existing Light Pole
Proposed Fence	Existing Street Light
Ridge line	Existing Building
Grade Break	Existing Telephone Box
Proposed Contour	Existing Power Meter
Direction of Drainage	Existing Electrical Box
Proposed Spot	Existing Electrical Cabinet
ADA Accessible Route	Existing Gas Meter
Property Line	Existing Water Meter
Sawcut Line	Existing Irrig. Control Box
Proposed Light Pole	Existing Bollard
Proposed Street Light	Existing Hose Bib
Proposed Building	Working Point
Existing Power Pole	Existing Deciduous Tree
Existing Power Pole w/ Guy	Existing Coniferous Tree
Existing Utility Marker	
Existing Post	

Detail Number

Sheet Number

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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 EDITION; THE "UNIFORM STANDARD DRAWINGS FOR PUBLIC WORKS CONSTRUCTION, CLARK COUNTY AREA, NEVADA," LATEST REVISION; 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 CIVIL PLANS LIBRARY ARE APPROXIMATE AND FOR RECORD PURPOSES. EXISTING UTILITIES ARE LOCATED ON PLANS ONLY FOR THE CONVENIENCE OF THE CONTRACTOR. EXISTING UTILITY SERVICE LATERALS MAY NOT BE SHOWN ON THE PLANS. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, LOCATE ALL UNDERGROUND AND OVERHEAD INTERFERENCE 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 OR 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 DESIGN 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 (1/2") ABOVE UP 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 THE WRIGIT ENGINEERS GEOTECHNICAL REPORT FOR SKYE CANYON VILLAGE NORTHWEST CORNER OF SKYE CANYON PARK DRIVE AND GRAND CANYON DRIVE, LAS VEGAS, NEVADA, MAY 20, 2016, PROJECT NUMBER 180165, 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.E.S. STATUTE NO. 625-230 & 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 REVEALING GRADING RELATIONS: FLOOD CONTROL, AND SIGHT DISTANCE AT INTERSECTIONS. NEW WALLS REQUIRE A SEPARATE PERMIT AND INSPECTION BY THE BUILDING DEPARTMENT.
18. CONTRACTOR SHALL ADJUST ALL NEW AND EXISTING INLETS, VALVE BOXES, MANHOLE RIMS, AND SEWER CLEANOUTS, ETC., TO FINISH GRADE AS APPLICABLE WHETHER OR NOT THEY ARE SHOWN ON THE PLANS.
19. MATERIALS, HANDLING AND PLACEMENT OF PORTLAND CEMENT CONCRETE SHALL BE IN ACCORDANCE WITH APPLICABLE SECTIONS OF DOT OR THE CLARK COUNTY AREA SPECIFICATIONS (AS APPLICABLE) AND THE PLANS AND DETAILS SHOWN HEREON.
20. WHEN INSTALLING UNDERGROUND FACILITIES THAT REQUIRE UNDERGROUND LOCATING DEVICES SUCH AS MARKER BALLS, LOCATING FIBER, ETC., THE CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION TO OPERATING INSPECTORS CERTIFYING THAT ALL DEVICES HAVE BEEN PLACED AND VERIFIED TO BE IN GOOD WORKING CONDITION PRIOR TO THE CONSTRUCTION OF ANY ROAD BASE.
21. SANITARY SEWER AND STORM DRAIN FACILITIES SHOWN ON THESE PLANS SHALL BE USED TO MEET THE REQUIREMENTS OF NRS 455 AND SHALL SHOW AT A MINIMUM THE HORIZONTAL AND VERTICAL (INVERT) LOCATION OF PUBLIC SEWER MANHOLES, STORM DRAIN MANHOLES, STORM DRAIN LATERALS AT THE CONNECTION TO THE STORM DRAIN MAIN AND AT THE CONNECTION TO A DROP INLET, AND THE CONNECTION OF SEWER SERVICE LATERALS TO THE SEWER MAIN AND WHERE THE SEWER SERVICE LATERALS EXIT THE PUBLIC RIGHT-OF-WAY. ANY DEVIATIONS FROM THE INFORMATION SHOWN SHALL BE NOTED AND SUBMITTED AS A REVISION TO THE PLANS AND APPROVED PRIOR TO ACCEPTANCE OF FACILITY VIDEO INSPECTION.
22. CCTV VIDEO INSPECTION IS REQUIRED FOR ALL SEWER AND STORM DRAINS, THE CCTV VIDEO INSPECTIONS NEED TO BE PERFORMED PER THE DESIGN AND CONSTRUCTION STANDARDS FOR WASTEWATER COLLECTION SYSTEMS LATEST EDITION.
23. A SEPARATE BORING PERMIT IS REQUIRED FOR ALL BORING ACTIVITIES.

REVISED FEBRUARY 03, 2015

UTILITY NOTES

NE ENERGY, CENTRAL TELEPHONE CO, DBA CENTURY LINK TELEPHONE, AND SOUTHWEST GAS SHOWN FOR INFORMATIONAL PURPOSES ONLY. REFERENCE NV ENERGY, CENTRAL TELEPHONE CO, DBA CENTURY LINK TELEPHONE, AND SOUTHWEST GAS DRAWINGS FOR CONSTRUCTION DETAILS. CONTRACTOR TO COORDINATE WITH UTILITIES FOR REMOVAL AND INSTALLATION OF FACILITIES.

ALL EXISTING UTILITY LOCATIONS SHOW HEREON ARE APPROXIMATE ONLY. IT SHALL BE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN IN THEIR PROPER LOCATION, THE DEPTH BELOW GRADE OF THE VARIOUS UTILITIES DEFINED ON THE PLANS VARIES THROUGHOUT THE PROJECT AREA, THE CONTRACTOR SHALL EXERCISE EXTREME CARE WHERE EXCAVATING AND GRADING THE SUB-GRADE IN THE VICINITY OF UTILITIES TO AVOID DAMAGE TO THE LATTER.

ALL EXISTING UTILITIES SHALL BE PROTECTED IN PLACE UNLESS OTHERWISE NOTED.

DEVIATION FROM STANDARDS

NONE

CITY OF LAS VEGAS FIRE DEPARTMENT NOTES

1. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE CITY OF LAS VEGAS FIRE DEPARTMENTS FIRE ORDINANCE # 5667, "HYDRANT SPECIFICATIONS", AND "HYDRANT INSTALLATION SPECIFICATION".
2. AUTHORIZED FIRE HYDRANTS FOR THIS PROJECT ARE:
- A. KENNEDY - GUARDIAN MODELS K81A AND K81D
 - B. MUELLER - SUPER CENTURION 250, MODEL A-423
 - C. CLOW - MEDALLION MODEL H-2546/LVD
 - D. TROY VALVE - PATRIOT MODEL P78100N, NEVADA HYDRANT
 - E. US PIPE - METROFLOW M403
3. ON ANY RESIDENTIAL OR COMMERCIAL INSTALLATIONS, FIRE HYDRANTS SHALL BE INSTALLED AND FIRE APPARATUS ACCESS ROADS SHALL BE MAINTAINED BEFORE COMMENCEMENT OF ANY COMBUSTIBLE CONSTRUCTION. ALL FIRE HYDRANTS SHALL BE IN GOOD WORKING ORDER AND SHALL BE CAPABLE OF DELIVERING THE REQUIRED FIRE FLOW.
4. TO IDENTIFY THE FIRE HYDRANT LOCATIONS, CONTRACTOR SHALL PLACE A BLUE REFLECTIVE MARKER AT THE CENTER LINE OF THE STREET ADJACENT TO THE FIRE HYDRANTS AS REQUIRED BY ORDINANCE #5667.
5. ALL UNDERGROUND INSPECTIONS, PRESSURE AND FLUSH VERIFICATIONS OF ALL FIRE HYDRANTS AND FIRE LINES, SHALL BE CONDUCTED BEFORE COVERING THE LINES, CALL THE CITY OF LAS VEGAS INSPECTION HOT LINE AT 228-2071 TO REQUEST AN INSPECTION BY THE CITY OF LAS VEGAS FIRE DEPARTMENT.
6. PAINTING OF THE CURBS AND FIRE HYDRANTS AND ALL OTHER WORK NECESSARY AS REQUIRED BY ORDINANCE #5667, FOR THE PROTECTION OF FIRE HYDRANTS FROM PHYSICAL DAMAGE, SHALL BE COMPLETED BEFORE APPROVAL BY THE CITY OF LAS VEGAS FIRE DEPARTMENT.
7. A PERMIT IS REQUIRED FROM THE CITY OF LAS VEGAS FIRE DEPARTMENT FOR THE ON-SITE WATER LINES AND FIRE HYDRANTS, THE PERMIT AND CONTRACTORS MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM SHALL BE OBTAINED FROM THE FIRE PROTECTION ENGINEER BEFORE COMMENCEMENT OF WORK.
8. PRIVATE HYDRANTS SHALL BE PAINTED RED.
9. PRIOR TO THE FINAL OCCUPANCY, A FLOW TEST MUST BE WITNESSED BY THE CITY OF LAS VEGAS FIRE DEPARTMENT TO VERIFY AVAILABILITY OF THE REQUIRED FIRE FLOW.
10. ALL ON-SITE UNDERGROUND WATER MAINS AND MATERIALS SHALL BE UL LISTED, AWWA APPROVED AND SHALL BE RATED FOR THE APPROPRIATE WORKING PRESSURE.
11. FIRE HYDRANTS SPACING SHALL BE:
- 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 SPACING OF 1,000 FEET. PRIOR TO THE CONSTRUCTION OF HAZARDS, WHERE STREETS ARE PROVIDED WITH MEDIAN DIVIDERS OR HAVE FOUR 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.
13. NO FIRE HYDRANTS SHALL BE LOCATED WITHIN THE RADIUS OF A CUL-DE-SAC OR WITHIN 20 FT OF THE PERIMETER OF THE RADIUS OF THE CUL-DE-SAC.
14. NO FIRE HYDRANTS SHALL BE LOCATED WITHIN 6 FT OF ANY CURB RETURN, DRIVEWAY, POWER POLE, STREETLIGHT OR ANY OTHER OBSTRUCTION.
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.
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.
17. THE MAXIMUM DISTANCE FROM A HYDRANT TO THE END OF A DEAD-END STREET SHALL NOT EXCEED 200 FT.
20. TWO SOURCES OF SUPPLY ARE REQUIRED WHENEVER THERE IS 4 OR MORE FIRE HYDRANTS 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.
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.
20. THE GRADIENT FOR THE FIRE APPARATUS ACCESS ROADS SHALL NOT EXCEED 12%, ANGLES OF APPROACH AND ANGLES OF DEPARTURE SHALL NOT EXCEED 8% FOR 25 FT PRIOR TO OR AFTER THE GRADE CHANGE, ADJACENT TO THE STRUCTURES GRADIENT SHALL NOT EXCEED 6%.
21. THE TURNING RADIUS OF THE FIRE APPARATUS ACCESS ROADS SHALL BE NO LESS THAN 52 FEET OUTSIDE AND 28 FEET INSIDE TURNING RADIUS.
22. VERTICAL CLEARANCE OF ALL FIRE APPARATUS ACCESS ROADS SHALL BE NOT LESS THAN 13 FEET 6 INCHES.
23. FIRE DEPARTMENT ACCESS ROADS IN ALL RESIDENTIAL DEVELOPMENTS (EXCEPT APARTMENT BUILDINGS) SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF NOT LESS THAN 36 FEET FLOW LINE TO FLOW LINE (THIS WIDTH MAY BE REDUCED TO 24 FEET IF ALL BUILDINGS FRONTING THE STREET ARE SPRINKLERED FOR MAIN RESIDENTIAL STREETS, WITH PARKING PERMITTED ON BOTH SIDES OF THE STREET, PRIVATE DRIVE ABLES, DRIVEWAYS, ETC., SHALL BE ALLOWED TO BE REDUCED TO A MINIMUM WIDTH OF 24 FEET WIDE FLOW LINE TO THE FLOW LINE WHEN SERVING NO MORE THAN 6 RESIDENTS, AND WHEN ON STREET PARKING IS DISALLOWED.
24. ALL FIRE APPARATUS ACCESS ROADS IN COMMERCIAL DEVELOPMENTS AND APARTMENT COMPLEXES SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF NOT LESS THAN 24 FEET FLOW LINE TO THE FLOW LINE, PROVIDED NO PARKING IS ALLOWED ON EITHER SIDE; 30 FEET FLOW LINE TO THE FLOW LINE, IF PARALLEL PARKING IS ALLOWED ON ONE SIDE ONLY; AND 40 FEET FLOW LINE TO THE FLOW LINE, IF PARALLEL PARKING IS ALLOWED ON BOTH SIDES. THESE WIDTHS MAY BE REDUCED BY 4 FEET IF ALL BUILDINGS ARE SPRINKLERED.
25. A FIRE DEPARTMENT ACCESS ROAD SHALL EXTEND TO WITHIN 50 FEET OF A SINGLE EXTERIOR DOOR PROVIDING ACCESS TO THE INTERIOR OF THE BUILDING.
26. 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. THIS DISTANCE COULD BE INCREASED TO 250 FT IF THE BUILDING IS SPRINKLERED.
27. 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, AND FOR ALL COMMERCIAL, INDUSTRIAL, AND MULTI-FAMILY RESIDENTIAL DEVELOPMENTS.
28. ALL DEAD-END FIRE APPARATUS ACCESS ROADS AND FIRE LINES, PUBLIC OR PRIVATE, IN EXCESS OF 150 FEET IN LENGTH SHALL BE PROVIDED WITH AN APPROVED TURN AROUND HAVING A MINIMUM DIAMETER OF 81 FEET.
29. 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 A CURB IS NOT PROVIDED SHALL BE PAINTED WITH A RED WEATHER RESISTANT PAINT IN ADDITION TO THE SIGNS.
30. ELECTRICALLY CONTROLLED ACCESS GATES SHALL BE PROVIDED WITH AN APPROVED EMERGENCY VEHICLE DETECTOR/RECEIVER SYSTEM, SAID SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF LAS VEGAS GUIDELINES FOR AUTOMATIC EMERGENCY VEHICLE ACCESS GATES.

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 SR 35 SPECIFICATIONS, INSTALLED WITH SAND BEDDING AND BACKFILL OF TYPE I AGGREGATE BASE.
5. ALL MANHOLES PAVED IN STREETS EIGHTY (80) FOOT RW AND LARGER SHALL HAVE CONCRETE COLLARS, STREETS LESS THAN EIGHTY (80) FOOT RW 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 LVWD 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.

REVISED APRIL 15, 2010

LVVWD STANDARD NOTES

- LVVWD PROJECT # XXXXX
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 CROSSEINGS SHALL CONFORM TO SECTION 2.22 OF THE 2010 EDITION OF THE UDACS.
9. ALL WATER FACILITIES SHALL BE FILLED, DISINFECTED, PRESSURE TESTED, FLUSHED, FILLED AND AN ACCEPTABLE WATER SAMPLE OBTAINED, PRIOR TO CONNECTION TO THE LVVWD DISTRIBUTION SYSTEM.
10. THE CONTRACTOR MUST OBTAIN ALL METERS TWO (2) INCHES AND SMALLER FROM LVVWD CENTRAL STORES, TELEPHONE 258-3152 OR 258-3882, TWO (2) WORKING DAYS PRIOR TO METER PICKUP.
11. ANY INTERRUPTION OF SERVICE MUST BE PERFORMED IN ACCORDANCE WITH UDACS SECTION 3.1.4.01, AND APPROVED BY THE LVVWD INSPECTION DIVISION PRIOR TO SHUTDOW. PRIOR WRITTEN NOTIFICATION MUST BE GIVEN TO ALL AFFECTED CUSTOMERS.
12. ALL WATER FACILITY CONSTRUCTION MATERIALS USED MUST BE AS LISTED ON THE LVVWD PRE-APPROVED MATERIALS AND MANUFACTURERS LISTING FOR NEW FACILITIES. LATEST REVISION, OR SPECIFICALLY APPROVED ON THESE PLANS.
13. TELEPHONE CALL BEFORE YOU DIG AT 811 OR 1-800-227-8800
14. THE INSTALLATION OF LAS VEGAS VALLEY WATER DISTRICT (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 UTILITIES 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 OWNERS ASSOCIATION, OR THE INDIVIDUAL PROPERTY OWNERS IF NO OWNERS ASSOCIATION IS IN EXISTENCE, OR THE AGENCY HAVING JURISDICTION. DECORATIVE SURFACE MATERIALS PLACED WITHIN THE TEN FOOT EASEMENT ADJUTING 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.

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES MANAGER

DATE: PROJECT# 124997

RTC NOTES

1. THE CONTRACTOR SHALL NOT BE ALLOWED TO CLOSE MORE THAN ONE CONSECUTIVE BUS STOP ON THE SAME SIDE OF THE STREET, TEMPORARY CLOSURES SHALL BE PWD (PERSONS WITH DISABILITY) ACCESSIBLE BEFORE ANY BUS STOP CAN BE CLOSED, THE CONTRACTOR SHALL NOTIFY CALL SCARBOROUGH AT (702) 676-1808 OR ENIC TRASDAHL AT (702) 676-1833, AT LEAST SEVEN WORKING DAYS IN ADVANCE.
2. THE CONTRACTOR SHALL SUBMIT A BUS STOP CLOSURES SCHEDULE WITH THE TRAFFIC CONTROL PLAN, THE BUS STOP CLOSURE SCHEDULE SHALL IDENTIFY SPECIFIC DURATION AND TIMES OF THE DAY FOR ALL PROPOSED BUS STOP CLOSURES, BUS STOP CLOSURES ARE NOT TO EXCEED TWO CONSECUTIVE STOPS AT ONE TIME, OR MORE THAN 1,000 FEET AT A TIME, PERSONS WITH DISABILITIES SHALL HAVE ACCESS TO BUS STOPS, THE CONTRACTOR SHALL PROVIDE A 100 FOOT LONG BY 10 FEET WIDE GRAVELED TURN OUT AT TEMPORARY BUS STOPS.

REVISED FEBRUARY 14, 2013

CITY OF LAS VEGAS STREETLIGHT NOTES

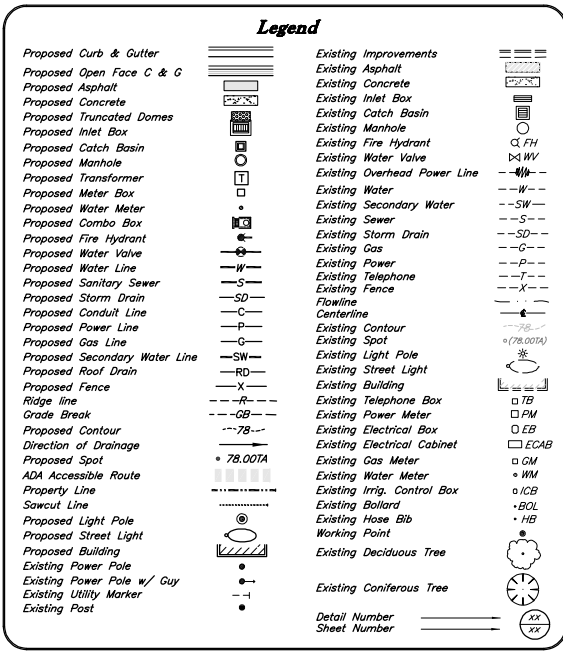
1. ALL STREET LIGHTING INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE STREET LIGHTING PLANS, THE "UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA, NEVADA," LATEST REVISION, AND THE "UNIFORM STANDARD DRAWINGS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA, NEVADA," LATEST REVISION, AND ANY ADOPTED SPECIAL AREA STANDARDS.
2. NO DEVIATION OF STREET LIGHT, PULL BOX, CONDUITS (ETC.) LOCATIONS SHALL BE PERMITTED WITHOUT WRITTEN APPROVAL OF TRAFFIC ENGINEERING AND THE CITY ENGINEER.
3. ALL EXISTING STREET LIGHTING SHALL REMAIN OPERATIONAL DURING CONSTRUCTION.
4. ALL STREET LIGHTING CONDUITS STUB SHALL HAVE AT LEAST ONE GREEN #8 THW WIRE INSTALLED, AS TRACER WIRE, WHEN "EMPTY" CONDUIT IS COMPLETELY INSTALLED FROM PB TO PB, IT SHALL HAVE MINIMUM OF 2 #4 AND 1 #8 THW WIRE WITH THE ENDS TAPED OR "SAFE OFF" PRIOR TO FINAL INSPECTION.
5. ANY STRUCTURE SUCH AS BLOCK WALLS, CHAIN LINK FENCES, RETAINING WALLS, ETC., SHALL LEAVE A MINIMUM CLEARANCE IN ACCORDANCE WITH THE USD NO. 302A.
6. AS-BUILT DRAWINGS SHALL BE SUPPLIED TO THE TEF0 PRIOR TO ANY PRE-FINAL INSPECTION, THE AS-BUILT DRAWING NEEDS TO BE STAMPED AS-BUILT AND SIGNED BY THE PREPARER.
7. SERVICE POINT SHALL BE COORDINATED WITH NV ENERGY COMPANY, AND WHEREVER POSSIBLE, BE LOCATED NEAR THE CENTER OF THE CIRCUIT, SERVICE POINTS SHALL BE SHOWN ON THE CIVIL PLANS.
8. IT SHALL BE ASSUMED THAT IN THE ABSENCE OF AN EXISTING WORKABLE CIRCUIT TO ATTACH TO, ALL INSTALLATIONS SHALL REQUIRE A NEW SERVICE FOR OPERATION OF THE CIRCUIT.
9. WHEREVER THERE IS AN OVERHEAD UTILITY THAT MAY CONFLICT WITH THE INSTALLATION OF STREET LIGHTING CIRCUITS AND/OR POLES, THESE CONFLICTS MUST BE RESOLVED BETWEEN THE DEVELOPER AND THE UTILITIES INVOLVED, AT NO EXPENSE TO THE CITY OF LAS VEGAS, BEFORE STREETLIGHT BASES ARE INSTALLED.
10. THE CONTRACTOR SHALL FURNISH COMPLETE SERVICE TO TRANSFORMERS AND CONTROL SYSTEMS IF REQUIRED ON PLANS.
11. THE DEVELOPER/OWNER WILL BE REQUIRED TO SUPPLY POWER TO ALL NEW PUBLIC STREET LIGHTS INSTALLED UNDER THIS DESIGN PRIOR TO BOND RELEASE OR PROJECT COMPLETION, THE DEVELOPER/OWNER WILL BE RESPONSIBLE FOR ALL ITEMS ASSOCIATED WITH THE INSTALLATION, CONSTRUCTION, ERECTION, MAINTENANCE AND OPERATIONAL COST OF SAID STREET LIGHTS PRIOR TO PROJECT COMPLETION, REFER TO THE PLAN FOR ANY NEW SERVICE REQUIREMENTS, THE TRANSFER OF OWNERSHIP FROM THE DEVELOPER/OWNER TO THE CITY OF LAS VEGAS FOR ALL NEW PUBLIC STREET LIGHTS AND/OR SERVICES INSTALLED UNDER THIS PLAN DESIGN WILL BE IN CONJUNCTION WITH THIS PROJECT COMPLETION, COORDINATE ALL MAINTENANCE AND OPERATIONAL TRANSFERS WITH THE CITY OF LAS VEGAS TRAFFIC ENGINEERING DEPARTMENT (TEF0) AT (702) 228-6331.

REVISED 04/15/10

CITY OF LAS VEGAS TRAFFIC NOTES

1. ALL CONSTRUCTION SIGNING, BARRICADING, AND TRAFFIC DELINEATION SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST EDITION.
2. THE STREET SIGN CONTRACTOR SHALL OBTAIN STREET NAMES AND BLOCK NUMBERING FROM THE PLANNING DEPARTMENT PRIOR TO CONSTRUCTION.
3. BEFORE ANY WORK IS STARTED IN THE RIGHT-OF-WAY, THE CONTRACTOR SHALL INSTALL ALL ADVANCE WARNING SIGNS FOR THE CONSTRUCTION ZONE, THE CONTRACTOR SHALL INSTALL TEMPORARY STOP SIGNS AT ALL NEW STREET ENCROACHMENTS INTO EXISTING CITY STREETS WHERE WARRANTED IMMEDIATELY AFTER FIRST GRADING WORK IS ACCOMPLISHED, AND SHALL MAINTAIN SAID SIGNS UNTIL PERMANENT SIGNS ARE INSTALLED.
4. WHEN A DESIGNATED "SAFE ROUTE TO SCHOOL" IS ENCLOSED UPON BY A CONSTRUCTION WORK ZONE AND PUBLIC WORKS STAFF IDENTIFIES A NEED FOR STUDENTS TO BE ASSISTED IN THE SAFE CROSSING THROUGH THAT WORK ZONE, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE A QUALIFIED "CROSSING GUARD", THE GUARD SHALL BE PRESENT FOR THE FULL DURATION OF TIME THAT CHILDREN ARE LIKELY TO BE PRESENT.
5. IF THE IMPROVEMENTS NECESSITATE THE OBLITERATION, TEMPORARY OBSTRUCTION, TEMPORARY REMOVAL OR RELOCATION OF ANY EXISTING TRAFFIC PAVEMENT MARKING, SUCH PAVEMENT MARKING SHALL BE RESTORED OR REPLACED WITH LINE MATERIALS TO THE SATISFACTION OF THE CITY TRAFFIC ENGINEER.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL PERMANENT SIGNS SHOWN ON THE PLANS, ALL NEW TRAFFIC SIGNS SHALL BE FABRICATED WITH DIAMOND GRADE MP CLASS 6 REFLECTIVE SHEETING OR APPROVED EQUAL. ALL NEW TRAFFIC SIGNS, EXCEPT STREETNAME AND SCHOOL SPEED LIMIT SIGNS, SHALL HAVE 3M SERIES 1160 OR APPROVED EQUIVALENT ANTI-GRAFFITI PROTECTIVE OVERLAY FILM; SCHOOL ZONE SIGNS SHALL HAVE 3M SERIES 1150 ANTI-GRAFFITI PROTECTIVE OVERLAY FILM. STREET NAME SIGNS SHALL CONFORM IN THEIR ENTIRETY TO CURRENT CITY STANDARDS, ALL OTHER SIGNS SHALL BE STANDARD SIZE UNLESS OTHERWISE SPECIFIED ON THE PLANS, ALL SIGN POSTS SHALL BE INSTALLED IN ACCORDANCE WITH THE CURRENT CITY STANDARDS.
7. WHEN A PROPOSED STREET LIGHT STANDARD IS LOCATED WITHIN FIVE (5) FEET OF ANY PROPOSED SIGN SHOWN ON THE PLANS TO BE MOUNTED ON A SIGNPOST, THE SIGN SHALL BE MOUNTED ON THE STREET LIGHT STANDARD AND THE SIGNPOST SHALL BE ELIMINATED.
8. ALL PERMANENT TRAFFIC CONTROL DEVICES CALLED FOR HEREON SHALL BE IN PLACE AND IN FINAL POSITION PRIOR TO ALLOWING ANY PUBLIC TRAFFIC ONTO THE PORTIONS OF THE ROAD(S) BEING IMPROVED HERE UNDER, REGARDLESS OF THE STATUS OF COMPLETION OF PAVING OR OTHER OFF-SITE IMPROVEMENTS CALLED FOR BY THESE PLANS.
9. STREET SIGNS AND STOP SIGNS SHALL BE INSTALLED PER CITY STANDARD SPECIFICATIONS FOR PLACEMENT OF STREET NAME SIGNS, THE CONTRACTOR SHALL PROVIDE ALL NECESSARY TRAFFIC CONTROL DEVICES AND FLAGGERS TO INSURE THE SAFETY OF THE PUBLIC IN OR AROUND THE WORK AREA, THE CONTRACTOR SHALL HAVE A CERTIFIED ATSSA TRAFFIC CONTROL TECHNICIAN OR MUSA WORK ZONE SAFETY SPECIALIST SET UP, MAINTAIN AND/OR REMOVE ALL TRAFFIC CONTROL DEVICES IN THE CITY OF LAS VEGAS RIGHT OF WAY.
10. WORK IN PUBLIC STREETS, ONCE BEGUN, SHALL BE EXPEDITED TO COMPLETION SO AS TO PROVIDE MINIMUM INCONVENIENCE TO ADJACENT PROPERTY OWNERS AND TO THE TRAVELING PUBLIC.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING CITIZENS AREA TRANSIT (CAT), IF THE CONSTRUCTION INTERRUPTS OR RELOCATES A BUS STOP OR HAS AN ADVERSE EFFECT ON BUS SERVICE ON THAT STREET TO ARRANGE FOR TEMPORARY RELOCATION OF STOP.
13. GUARDS SHALL BE OBTAINED BY CONTACTING THE METROPOLITAN POLICE DEPARTMENT SPECIAL EVENTS UNIT (PHONE # 828-3442) WHO WILL PROVIDE OFFICERS PROPERLY TRAINED IN TRAFFIC CONTROL, FEES FOR THE USE OF THESE OFFICERS SHALL BE SET BY METRO AND WILL BE PAID BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR ALL ARRANGEMENTS WITH METRO.
14. ANY WORK WITHIN 300' OF A SIGNALIZED INTERSECTION WILL BE NIGHT WORK, UNLESS OTHERWISE DIRECTED BY THE CITY OF LAS VEGAS TRAFFIC ENGINEER.
15. THE CONTRACTOR SHALL CONTACT THE TRAFFIC ENGINEERING DIVISION (TRANSPORTATION SECTION) THROUGH THE OFFSITE INSPECTOR PRIOR TO INITIATING PAVING TO RECEIVE DIRECTION FOR ANY PERMANENT OR TEMPORARY MODIFICATIONS TO THE APPROVED DRAWINGS REGARDING FINAL PAVEMENT TRANSITIONS, MARKINGS AND SIGNING THAT ARE REQUIRED TO MATCH ADJACENT ROADWAY SEGMENTS, THE CONTRACTOR SHALL PROVIDE A DRAWING FOR APPROVAL BY THE TRAFFIC ENGINEERING DIVISION IDENTIFYING ANY ADJUSTMENTS TO THE FINAL PAVEMENT MARKINGS AND SIGNAGE, WHICH MAY INCLUDE OMITTING, ADDING OR MODIFYING PAVEMENT MARKINGS AND TRAFFIC CONTROL SIGNS SUCH THAT ADEQUATE TRANSITIONS AND LANE TERMINATIONS BETWEEN ADJACENT ROADWAY SEGMENTS ARE CONSTRUCTED.

REVISED 04/15/10



Abbreviations

BOL	Ballard	PP	Power Pole
BRW	Finish Grade - Bottom of Retaining Wall	PVC	Polyvinyl Chloride
CATV	Cable Television Box	RCP	Reinforced Concrete Pipe
CB	Catch Basin	RD	Road Drain
CMP	Corrugated Metal Pipe	SB	Signal Box
COB	Cleanout Box	SD	Storm Drain
COTG	Cleanout to Grade	SDMH	Storm Drain Manhole
EA	Edge of Asphalt	SMH	Sanitary Sewer Manhole
EB	Electrical Box	SP	Signal Pole
ECAB	Electrical Cabinet	SS	Sanitary Sewer
EMH	Electrical Manhole	SVZ	Sight Visibility Zone
FI	Fire Hydrant	SW	Secondary Water
FL	Flowline	TA	Top of Asphalt
G	Ground	TB	Telephone Box
GB	Grade Break	TBC	Top Back of Curb
GM	Gas Meter	TG	Top of Grade
HB	Hose Bib	TMH	Telephone Manhole
I	Irrigation Line	TP	Top of Concrete
ICB	Irrigation Control Box	TRW	Finish Grade - Top of Retaining Wall
Lip	Lip of Gutter	TW	Top of Walk
LP	Light Pole	WL	Waterline
MH	Manhole	WP	Working Point
Mon	Monument	WV	Water Valve
PM	Power Meter		

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 ON 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:
- | | | | |
|---------------------------|-----------------|---------------|-----------------------------|
| A. PAVEMENT AREA SUBGRADE | HORIZONTAL 0.1" | VERTICAL 0.1" | COMPACTION SEE SOILS REPORT |
| B. ENGINEERED FILL | 0.2" | 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 SPLLS 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 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.

REVISED APRIL 15, 2010

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

NAD 83 DATUM

Per the City of Las Vegas Benchmark Book - 2008 Adjustment (Update 05/24/2010)

Basis of Bearings

North 89°16'30" West, Being the Bearing of the South Line of the Southeast Quarter (SE 1/4) of the Northwest Quarter (NW 1/4) of Section 7, Township 19 South, Range 60 East, M.D.M., City of Las Vegas, Clark County, Nevada, as Shown by Map Thereof in Book 147, Page 71 of Plats in the Clark County Recorder's Office, Nevada.

Avoid cutting underground utility lines. Call before you dig.

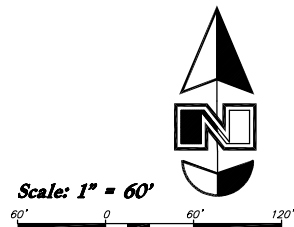
Call before you dig.

8"11"

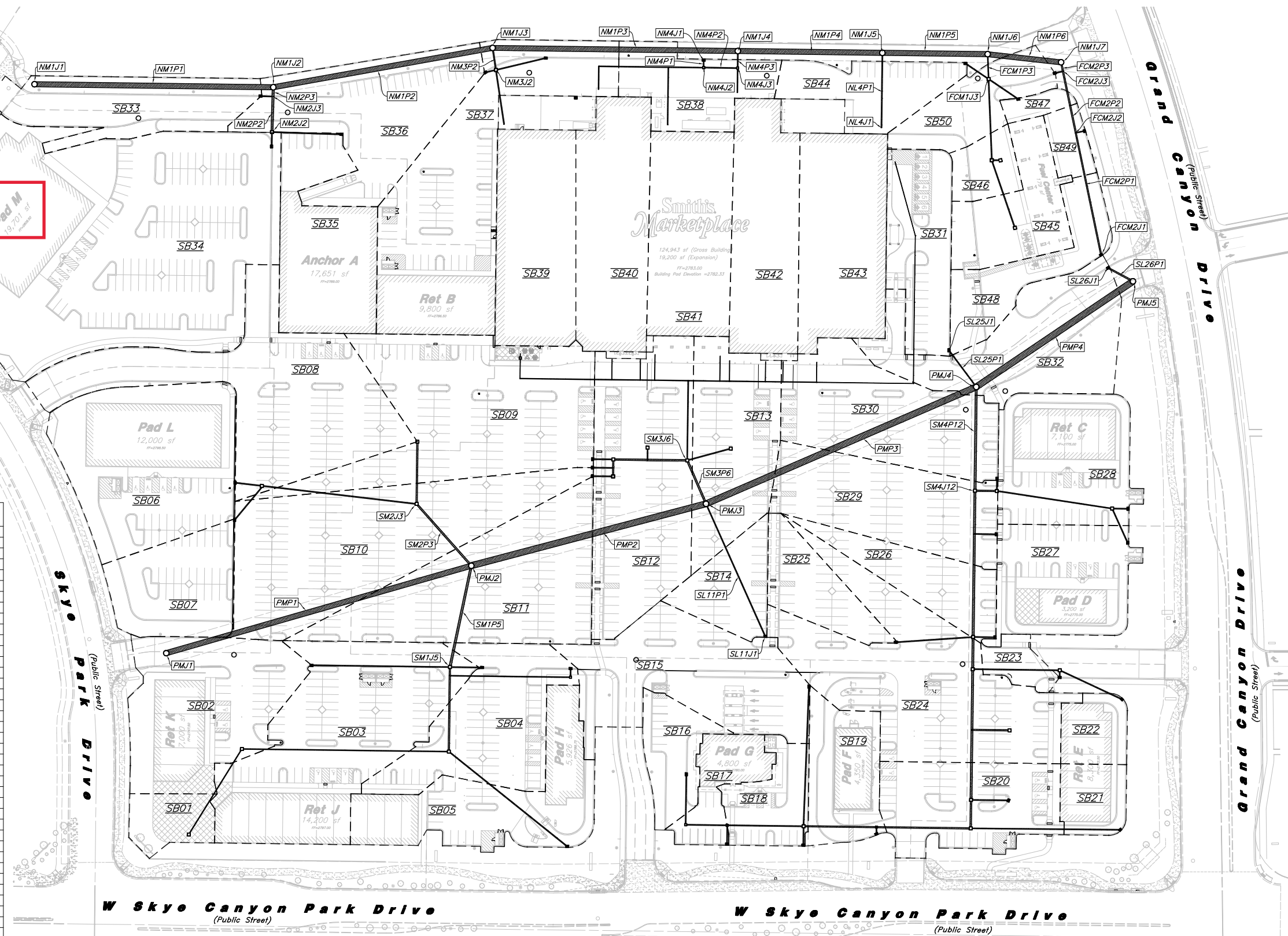
or

1-800-227-2600

NEVADA POWER ENVIRONMENTAL AND SAFETY DEPARTMENT



Onsite Sub-Basins Peak Runoff		
Sub-Basin ID	Area (Acres)	Q ₁₀₀ (cfs)
SB01	0.14	0.5
SB02	0.69	2.7
SB03	0.99	3.6
SB04	0.56	2.2
SB05	0.57	2.2
SB06	0.83	3.2
SB07	0.38	1.5
SB08	0.99	3.7
SB09	1.00	3.9
SB10	0.98	3.6
SB11	0.83	3.2
SB12	0.84	3.2
SB13	0.53	2.0
SB14	0.23	1.0
SB15	0.69	2.7
SB16	0.21	0.7
SB17	0.19	0.7
SB18	0.22	0.7
SB19	0.31	1.2
SB20	0.47	1.7
SB21	0.15	0.5
SB22	0.14	0.5
SB23	0.09	0.3
SB24	0.98	3.6
SB25	0.24	1.0
SB26	0.28	1.0
SB27	0.47	1.7
SB28	0.55	2.2
SB29	0.56	2.2
SB30	0.64	2.4
SB31	0.38	1.5
SB32	0.64	2.5
SB33	0.44	1.7
SB34	2.36	9.0
SB35	0.52	1.9
SB36	0.67	2.5
SB37	1.00	3.7
SB38	0.32	1.2
SB39	0.55	2.1
SB40	0.57	2.1
SB41	0.54	1.8
SB42	0.53	1.8
SB43	0.58	2.1
SB44	0.28	1.0
SB45	0.34	1.2
SB46	0.12	0.5
SB47	0.06	0.3
SB48	0.30	1.2
SB49	0.08	0.3
SB50	0.27	1.0

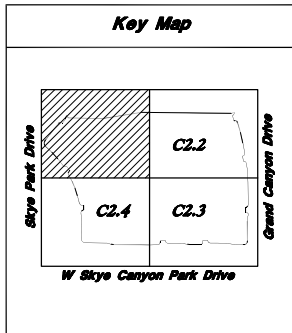


Smith's
FOOD & DRUG STORES
1550 South Redwood Road
Salt Lake City, Utah 84104
Telephone (801) 974-1400
#367
Las Vegas, Nevada

ANDERSON WAHLEN & ASSOCIATES
2010 North Redwood Road, Salt Lake City, Utah 84116
801 521-8529 - awhengineering.net

Overall Drainage Network Map
Skye Canyon Village
West Skye Canyon Park Drive & Grand Canyon Drive
Las Vegas, Nevada

24 Oct, 2016
SHEET NO.
F5



Scale: 1" = 30'

Public Quantities Estimate		
Description	Unit	Total Quantity
NDOT Type 4 Mix	EA	12
60" RCP	LF	1128
Specialty Protected 60" RCP (w/ Sacrificial Concrete)	LF	461
72" RCP	LF	347
Specialty Protected 72" RCP (w/ Sacrificial Concrete)	LF	509

Curb and Gutter Construction Notes:

- Open face gutter shall be constructed where drainage is directed away from curb.
- Open face gutter locations are indicated by shading and notes on the grading plan.
- It is the responsibility of the surveyor to adjust top of asphalt grades to top of curb grades at the time of construction staking.
- Refer to the typical details for a standard and open face curb and gutter for dimensions.
- Transitions from open face to standard curb and gutter are to be smooth. Hand form these areas if necessary.

General Grading Notes:

- All grading shall be in accordance with the project geotechnical study.
- Cut slopes shall be no steeper than 3 horizontal to 1 vertical.
- Fill slopes shall be no steeper than 3 horizontal to 1 vertical.
- Fills shall be compacted per the recommendations of the geotechnical report prepared for the project and shall be certified by a Geotechnical Engineer.
- Areas to receive fill shall be properly prepared and approved by a Geotechnical Engineer prior to placing fill.
- Fills shall be benched into competent material as per specifications and geotechnical report.
- All trench backfill shall be tested and certified by a Geotechnical Engineer.
- A Geotechnical Engineer shall perform periodic inspections and submit a complete report and map upon completion of the rough grading.
- The final compaction report and certification from a Geotechnical Engineer shall contain the type of field testing performed. Each test shall be identified with the method of obtaining the in-place density, whether sand cone or drive ring and shall be so noted for each test. Sufficient maximum density determinations shall be performed to verify the accuracy of the maximum density curves used by the field technician.

- Dust shall be controlled by watering.
- The location and protection of all utilities is the responsibility of the permittee.
- Approved protective measures and temporary drainage provisions must be used to protect adjoining properties during the grading process.
- All public roadways must be cleared daily of all dirt, mud and debris deposited on them as a result of the grading operation. Cleaning is to be done to the satisfaction of the City Engineer.
- The site shall be cleared and grubbed of all vegetation and deleterious matter prior to grading.
- The contractor shall provide shoring in accordance with OSHA requirements for trench walls.
- Aggregate base shall be compacted per the geotechnical report prepared for the project.

- The recommendations in the following Geotechnical Engineering Report by Wright Engineers are included in the requirements of grading and site preparation. The Report is titled "Geotechnical Report Sky Canyon Village, Northwest Corner of Sky Canyon Park Drive and Grand Canyon Drive, Las Vegas, Nevada."

Project No.: 160165
Dated: May 20, 2016

- As part of the construction documents, owner has provided contractor with a topographic survey performed by manual or aerial means. Such survey was prepared for project design purposes and is provided to the contractor as a courtesy. It is expressly understood that such survey may not accurately reflect existing topographic conditions.

- If Contractor observes evidence of hazardous materials or contaminated soils he shall immediately contact the project engineer to provide notification and obtain direction before proceeding with disturbance of soil materials or contaminated soil.

- Contractor will be responsible to phase the construction development so that storm water improvements and storm water facilities including detention or retention improvement facilities are constructed and functional prior to an offsite storm water release and take necessary construction precautions so that no offsite flooding will occur.

- Importing fill material from an off-site location without prior written approval from the Kroger Project Manager is strictly prohibited. Identification of off-site borrow locations and material must be coordinated and documented with the SWPPP. A Kroger approved testing firm must verify the suitability of all off-site material. This includes an analysis to ensure that no environmental contamination is present. If any material is brought on site without prior written approval of the Kroger Project Manager, the contractor will bear all costs associated with removing the material, testing for contamination, and is provided to the clean-up operation, disposed in an approved landfill, and certifying that the Kroger site is environmentally clean.

If requested the Kroger Project Manager or Kroger's consultants must be granted unfettered access to any and all borrow sites.

- The Kroger approved testing agency and project surveyor must certify the building pad using the "Pad Certification Form", included in the project specification, prior to the commencement of building foundations.

Compacted building pad(s) must extend a minimum of ten (10) feet beyond the building footprint, including canopies and other structural appendages, until the perimeter foundations and walls are constructed and backfilled. The extended portion of the building pad subgrade must then be removed/graded to meet the final grade and material requirements around the buildings' perimeter.

- Property owner is responsible to maintain best management practices such as, but not limited to, the removal of accumulated sediment and debris, proper care of vegetation, and removing sediments from the drop inlets.

Site Construction Notes

- Const. 18" Curb & Gutter (Typ.)
- Const. Standard Asphalt Paving
- Const. Conc. Sidewalk (Typ.)
- Const. Thickened Edge Sidewalk (Typ.)
- Const. CMU Retaining Wall
- Const. Standard Conc. Paving
- Const. 6" x 6" Diamond Planter (Typ.)
- Const. Heavy Duty Asphalt Paving
- Const. Heavy Duty Conc. Paving
- Const. Brick Paved Driveway
- Const. CMU Screen Wall
- Const. Curb Wall Flush w/ Paving in Front of 8" Curb Wall Planter
- Const. 6" Curb Wall
- Const. CMU Flood/Retaining Wall
- Const. 3' Waterway
- Public Drainage Easement to be Privately Maintained
- Special Construction Note: Specified RCP Storm Drain Lines to Have Additional Sacrificial Concrete (See Detail)

Horizontal Control for Public Storm Drain		
Storm Drain Structure	Northing	Easting
#1	822363.33	736804.92
#2	822466.37	737164.61
#3	822346.86	737139.35
#4	822539.30	737100.05
#5	822539.39	737441.28
#6	822383.16	737511.13
#7	822590.63	737419.10
#8	822677.27	737759.85
#9	822554.83	737758.30
#10	822720.50	737727.68
#11	822801.62	737944.57
#12	822817.68	737915.28

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 (Update 05/24/2010)

Basis of Bearings

North 89°16'30" West, Being the Bearing of the South Line of the Southeast Quarter (SE1/4) of the Northwest Quarter (NW1/4) of Section 7, Township 19 South, Range 60 East, M.D.M., City of Las Vegas, Clark County, Nevada, as Shown by Map Thereof in Book 147, Page 71 of Plots in the Clark County Recorder's Office, Nevada.

Legend

Proposed Curb & Gutter
Proposed Asphalt
Proposed Concrete
Proposed Truncated Domes
Proposed Inlet Box
Proposed Catch Basin
Proposed Manhole
Proposed Fire Hydrant
Proposed Water Valve
Proposed Water Line
Proposed Sanitary Sewer
Proposed Storm Drain
Proposed Conduit Line
Proposed Power Line
Proposed Gas Line
Proposed Secondary Water Line
Proposed Roof Drain
Ridge line

Existing Improvements
Existing Asphalt
Existing Concrete
Centerline
Existing Contour
Existing Spot
Existing Light Pole
Existing Street Light
Property Line
Sawcut Line
Proposed Light Pole
Existing Spot
Proposed Street Light
Proposed Building
Detail Number
Sheet Number
Proposed Contour
Direction of Drainage
Proposed Spot

Call before you OVERHEAD
1-702-227-2929
NEVADA POWER ENVIRONMENT AND SAFETY SERVICES DEPARTMENT

Call before you Dig
"811"
or
1-800-227-2600
UNDERGROUND SERVICE ALERT (USA)

Drainage Compliance Note:
I certify that the grading plan is in conformance with the approved drainage study on file with the City of Las Vegas for this project.

David Anderson #020872

Date

Accessible Note:
Contractor must maintain a running slope on Accessible routes no steeper than 5.0% (1:20). The cross slope for Accessible routes must be no steeper than 2.0% (1:50). All Accessible routes must have a minimum clear width of 36". If Grades on plans do not meet this requirement notify Consultant immediately.
The Client, Contractor and Subcontractor should immediately notify the Consultant of any conditions of the project that they believe do not comply with the current state of the ICC/ANSI A117.1-Latest Edition and/or FHAA.

Smith's
FOOD & DRUG STORES

1550 South Redwood Road
Salt Lake City, Utah 84104
Telephone (801) 974-1400

#367
Las Vegas, Nevada

Grading & Drainage Plan

Skye Canyon Village

West Skye Canyon Park Drive & Grand Canyon Drive
Las Vegas, Nevada

ANDERSON WAHLEN & ASSOCIATES
2010 North Redwood Road, Salt Lake City, Utah 84116
801.521.8523 - awhengineering.net

Designed by: KR
Drafted by: JC
Client Name: Smith's Food & Drug

SMC367GR

24 Oct, 2016

SHEET NO. 09 OF 36

C2.1

DWG No. HANSEN No. 66211

SHEET INDEX

1.	C1.01	COVER AND APPROVAL SHEET
2.	C1.02	GENERAL NOTES
3.	C3.01	HORIZONTAL CONTROL, FIRE ACCESS, SIGNAL & STRIPING PLAN
4.	C3.02	LINE AND CURVE TABLES
5.	C4.01	GRADING PLAN
6.	C4.02	GRADING PLAN 2
7.	C4.03	GRADING PLAN 3
8.	C5.00	OVERALL UTILITY PLAN
9.	C5.01	UTILITY PLAN 1
10.	C5.02	UTILITY PLAN 2
11.	C5.03	UTILITY PLAN 3
12.	C8.01	DETAIL SHEET 1
13.	C8.02	DETAIL SHEET 2

LEGAL DESCRIPTION

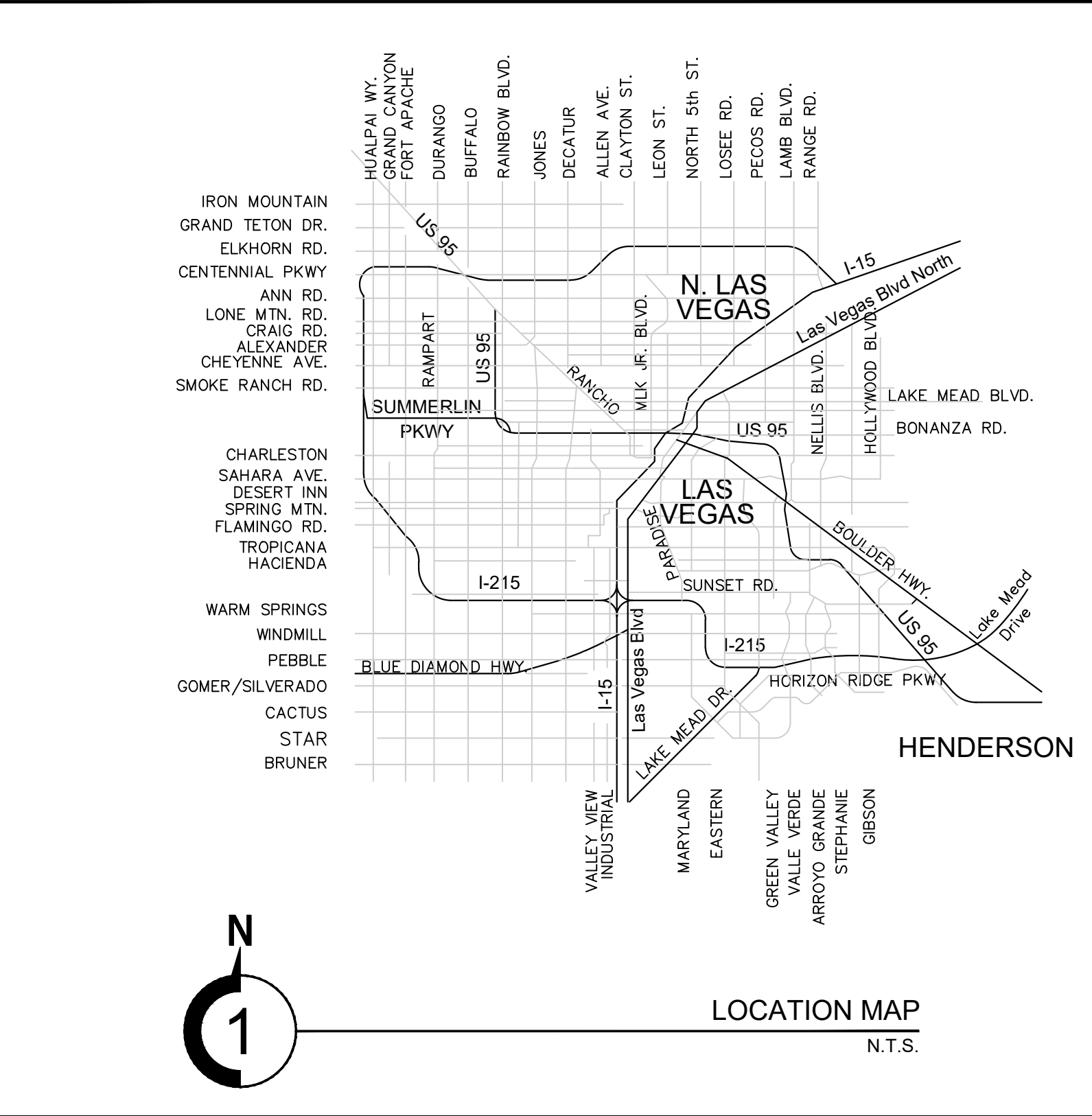
PARCEL I:

A PORTION OF LOT 1 AS SHOWN IN BOOK 153, PAGE 17 OF PLATS ON FILE AT THE CLARK COUNTY, NEVADA RECORDER'S OFFICE, LYING WITHIN THE NORTHWEST QUARTER (NW 1/4) OF SECTION 7, TOWNSHIP 19 SOUTH, RANGE 60 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, DESCRIBED AS FOLLOWS:

COMMENCING AT THE MOST NORTHWEST CORNER OF SAID LOT 1, SAID POINT BEING THE BEGINNING OF A NON-TANGENT CURVE, CONCAVE TO THE NORTHWEST, HAVING A RADIUS OF 1021.50 FEET, FROM WHICH BEGINNING THE RADIUS BEARS NORTH 55°18'31" WEST; THENCE ALONG THE NORTHWESTERLY LINE OF SAID LOT 1, SOUTHWESTERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 02°19'50", AN ARC LENGTH OF 41.55 FEET TO A POINT TO WHICH A RADIAL LINE BEARS, SOUTH 52°58'41" EAST; SAID POINT BEING THE POINT OF BEGINNING; THENCE DEPARTING SAID NORTHWESTERLY LINE, SOUTH 51°03'36" EAST, 35.97 FEET TO THE BEGINNING OF A CURVE, CONCAVE TO THE NORTHEAST, HAVING A RADIUS OF 40.00 FEET; THENCE SOUTHEASTERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 38°12'54", AN ARC LENGTH OF 26.68 FEET; THENCE SOUTH 89°16'30" EAST, 254.63 FEET; THENCE SOUTH 00°43'30" WEST, 301.57 FEET; THENCE NORTH 89°16'30" WEST, 135.15 FEET TO THE BEGINNING OF A CURVE, CONCAVE TO THE SOUTHEAST, HAVING A RADIUS OF 187.75 FEET; THENCE SOUTHWESTERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 32°51'46", AN ARC LENGTH OF 107.69 FEET; THENCE SOUTH 57°51'44" WEST, 42.58 FEET TO A POINT ON THE NORTHEASTERLY RIGHT-OF-WAY OF SKYE PARK DRIVE, SAID POINT BEING THE BEGINNING OF A NON-TANGENT CURVE, CONCAVE TO THE SOUTHWEST, HAVING A RADIUS OF 772.50 FEET, FROM WHICH BEGINNING THE RADIUS BEARS SOUTH 57°51'44" WEST; THENCE ALONG SAID NORTHEASTERLY RIGHT-OF-WAY, NORTHWESTERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 02°38'09", AN ARC LENGTH OF 35.54 FEET TO THE BEGINNING OF A NON-TANGENT CURVE, CONCAVE TO THE NORTH, HAVING A RADIUS OF 15.00 FEET, FROM WHICH BEGINNING THE RADIUS BEARS NORTH 55°13'35" EAST; THENCE DEPARTING SAID NORTHEASTERLY RIGHT-OF-WAY AND EASTERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 89°53'25", AN ARC LENGTH OF 23.53 FEET; THENCE NORTH 55°20'10" EAST, 12.61 FEET; THENCE NORTH 34°08'17" WEST, 66.41 FEET; THENCE SOUTH 55°03'27" WEST, 12.09 FEET TO THE BEGINNING OF A NON-TANGENT CURVE, CONCAVE TO THE SOUTHWEST, HAVING A RADIUS OF 790.40 FEET, FROM WHICH BEGINNING THE RADIUS BEARS SOUTH 51°30'06" WEST; THENCE NORTHWESTERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 11°03'51", AN ARC LENGTH OF 152.63 FEET TO A POINT TO WHICH A RADIAL LINE BEARS, NORTH 40°26'15" EAST; THENCE NORTH 05°10'43" EAST, 31.86 FEET; THENCE NORTH 38°56'24" EAST, 170.49 FEET TO THE BEGINNING OF A NON-TANGENT CURVE, CONCAVE TO THE SOUTH, HAVING A RADIUS OF 25.00 FEET, FROM WHICH BEGINNING THE RADIUS BEARS SOUTH 02°01'28" WEST; THENCE WESTERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 13°15'47", AN ARC LENGTH OF 5.79 FEET TO THE BEGINNING OF A REVERSE CURVE, CONCAVE TO THE NORTH, HAVING A RADIUS OF 48.00 FEET, THROUGH WHICH A RADIAL LINE BEARS NORTH 11°14'19" WEST; THENCE WESTERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 08°45'07", AN ARC LENGTH OF 7.33 FEET TO THE BEGINNING OF A REVERSE CURVE, CONCAVE TO THE SOUTHEAST, HAVING A RADIUS OF 25.00 FEET, THROUGH WHICH A RADIAL LINE BEARS SOUTH 02°29'12" EAST; THENCE SOUTHWESTERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 48°34'23", AN ARC LENGTH OF 21.19 FEET TO A POINT TO WHICH A RADIAL LINE BEARS SOUTH 51°03'36" EAST, AN ARC LENGTH OF 21.19 FEET TO A POINT TO WHICH A RADIAL LINE BEARS SOUTH 51°03'36" EAST, SAID POINT BEING ON SAID NORTHWESTERLY LINE OF LOT 1; THENCE ALONG SAID NORTHWESTERLY LINE THE FOLLOWING TWO (2) COURSES: 1) NORTH 38°56'24" EAST, 18.80 FEET TO THE BEGINNING OF A CURVE, CONCAVE TO THE NORTHWEST, HAVING A RADIUS OF 1,021.50 FEET; 2) NORTHEASTERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 01°55'05", AN ARC LENGTH OF 34.20 FEET TO THE POINT OF BEGINNING.

PARCEL II:

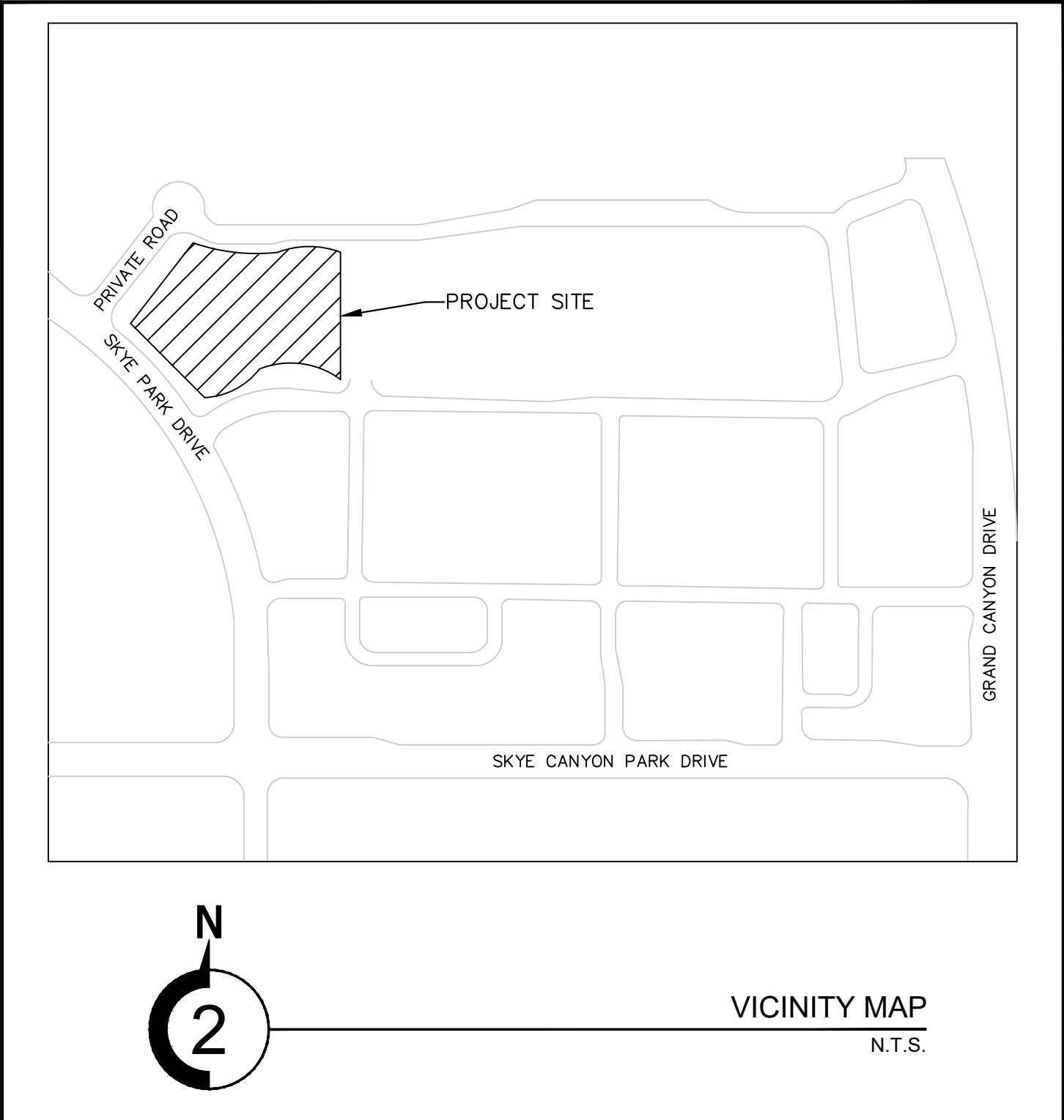
A NON-EXCLUSIVE EASEMENT FOR INGRESS, EGRESS AND PARKING AS SET FORTH IN THAT CERTAIN COVENANTS, CONDITIONS, RESTRICTIONS AND EASEMENTS AGREEMENT FOR SKYE CANYON MARKETPLACE RECORDED MARCH 17, 2017 IN BOOK 20170317 AS INSTRUMENT NO. 02809 OF OFFICIAL RECORDS.



IMPROVEMENT PLANS FOR SKYE CANYON FSED APN:125-07-210-008 ACREAGE: ±2.57 ACRES

OWNER/DEVELOPER

SUNRISE MOUNTAINVIEW HOSPITAL, INC.
3100 N TENAYA
LAS VEGAS, NV 89128
CONTACT: JEREMY BRADSHAW
PHONE: 702-962-9000



REV#	REV. DESCRIPTION	SHEET(S)	APPD BY	DATE

BASIS OF BEARING

NORTH 89°16'30" WEST
BEING THE SOUTH LINE OF THE SOUTHEAST QUARTER (SE 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF SECTION 7, TOWNSHIP 19 SOUTH, RANGE 60 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, SHOWN AS THE CENTERLINE OF SKY CANYON PARK DRIVE IN BOOK 153 OF PLATS, PAGE 17, CLARK COUNTY, NEVADA OFFICIAL RECORDS.

BENCHMARK

CITY OF LAS VEGAS BENCHMARK 6LV907C4
RIVET & PLATE IN TOP OF CURB AT SE COR. OF HORSE DR. & GRAND CANYON DR.
ELEVATION = 841.201 METERS = 2759.84 U.S. SURVEY FEET NAVD 88

APPROVALS

APPROVAL OF THESE PLANS IS LIMITED TO THOSE IMPROVEMENT CONSTRUCTED IN THE DEDICATED RIGHT-OF-WAY AND/OR DEDICATED EASEMENTS. THIS APPROVAL DOES NOT AUTHORIZE THE CONSTRUCTION OF ANY IMPROVEMENTS THAT DEVIATE FROM ADOPTED STANDARDS AND/OR SPECIFICATIONS EXCEPT THOSE SPECIFICALLY LISTED UNDER "DEVIATIONS FROM STANDARD." 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.

ALLEN PAVELKA, PE #9029
CITY ENGINEER

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES

Project No. _____ First Approved Date: _____
LVVWD Approved Fire Flow: Total 1,500 GPM/Onsite 1,500 GPM

LVVWD APPROVAL IS VALID FOR ONE (1) YEAR FROM SIGNATURE DATE. IF CONSTRUCTION IS NOT STARTED, PLANS MUST BE RESUBMITTED FOR REVIEW AND APPROVAL

LAS VEGAS FIRE & RESCUE

DATE

CITY OF LAS VEGAS PLANNING DEPARTMENT

THIS PLAN CONFORMS TO THE APPLICABLE STANDARDS OF THE PLANNING DEPARTMENT.

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.

NV ENERGY

DATE

"THE AFFIXED CENTURYLINK CORPORATION 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 STATUTES AND/OR PUBLIC UTILITY COMMISSION RULES AND REGULATIONS."

CENTRAL TELEPHONE CO. D/B/A CENTURY LINK

DATE

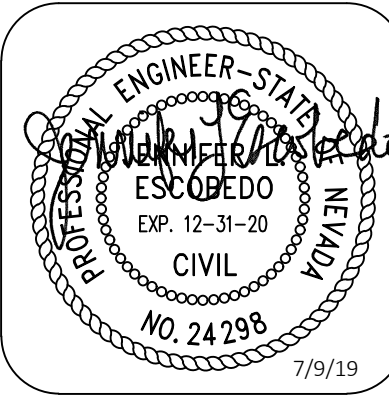
COX COMMUNICATIONS, LAS VEGAS, INC.

DATE

SOUTHWEST GAS CORPORATION

DATE

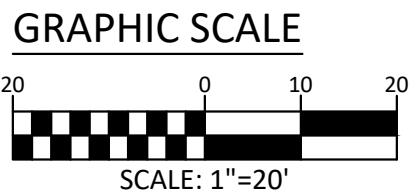
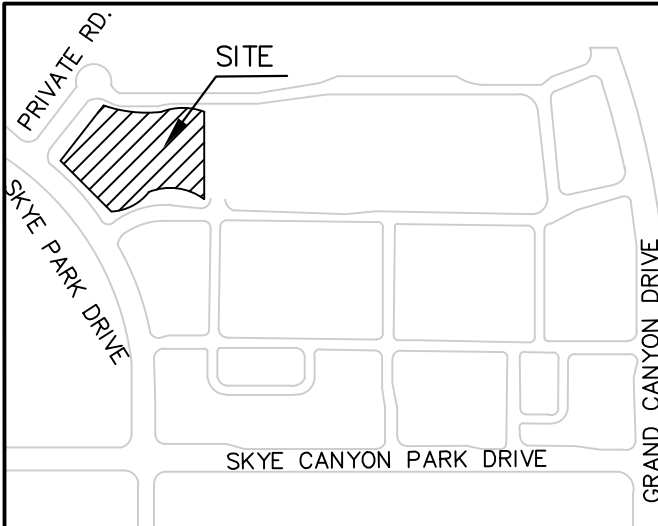
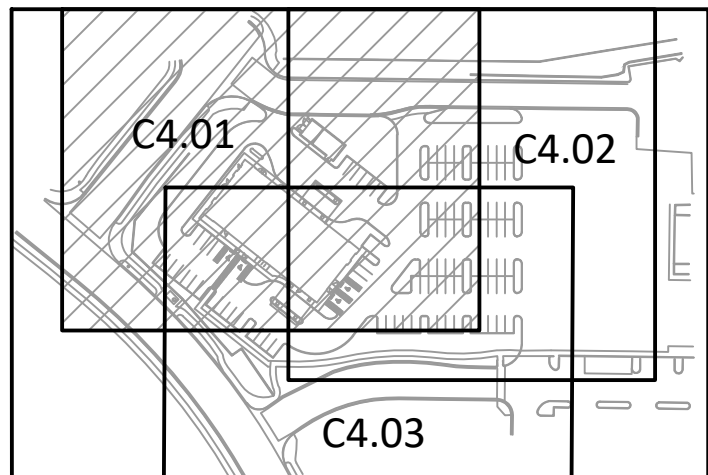
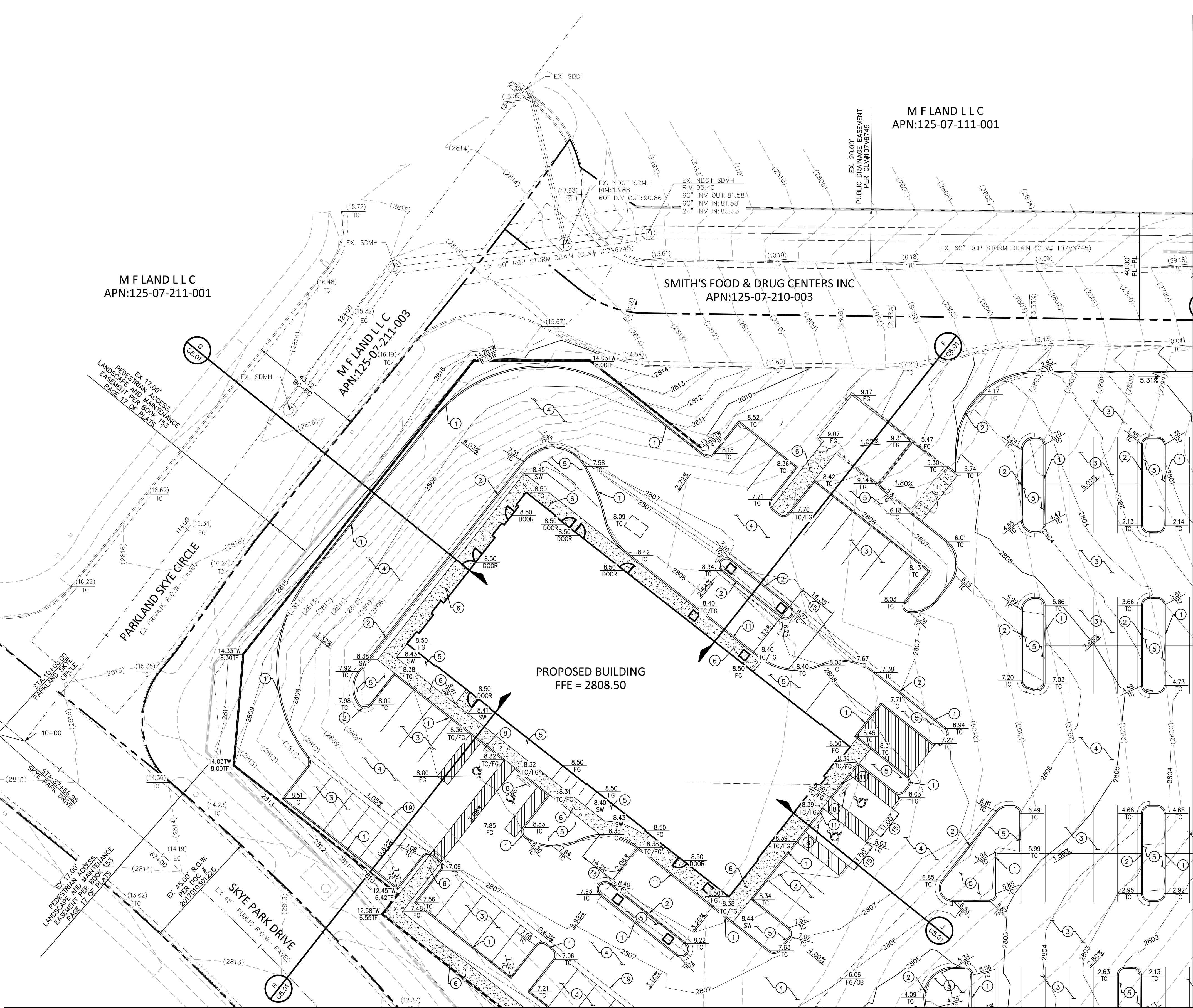
COLLINS ENGINEERS
3130 S. DURANGO DR., SUITE 404
LAS VEGAS, NV 89117
PHONE: (702) 248-8000
FAX: (702) 248-8070
www.collinsengr.com



IMPROVEMENT PLANS FOR SKYE CANYON FSED APN:125-07-210-008 COVER AND APPROVAL SHEET

NORTHEAST CORNER OF SKYE PARK DRIVE AND PARKLAND SKYE CIRCLE
LAS VEGAS, NEVADA

DESCRIPTION		DESIGN BY	DATE	NO.
LAS VEGAS FIRE & RESCUE		J.S.H.	05/21/19	11712
CITY OF LAS VEGAS PLANNING DEPARTMENT		A.L.R.W.	N.T.S.	
NV ENERGY		J.E.		
CENTRAL TELEPHONE CO. D/B/A CENTURY LINK				
COX COMMUNICATIONS, LAS VEGAS, INC.				
SOUTHWEST GAS CORPORATION				



BASIS OF BEARING

NORTH 89°18'30" WEST BEING THE SOUTH LINE OF THE SOUTHEAST QUARTER (SE 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF SECTION 7, TOWNSHIP 19 SOUTH, RANGE 60 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, SHOWN AS THE CENTERLINE OF SKY CANYON PARK DRIVE IN BOOK 153 OF PLATS, PAGE 17, CLARK COUNTY, NEVADA OFFICIAL RECORDS.

BENCHMARK

CITY OF LAS VEGAS BENCHMARK 6LV907C4
RIVET & PLATE IN TOP OF CURB AT SE COR. OF HORSE DR. & GRAND CANYON DR.
ELEVATION = 841.201 METERS
2759.84 U.S. SURVEY FEET (NAVD 88)

CONSTRUCTION NOTES

NO.	ITEM	USDOCA: UNIFORM STANDARD DRAWINGS CLARK COUNTY AREA.
1	CONSTRUCT "A" TYPE CURB PER DETAIL A/C8.01.	
2	CONSTRUCT "L" TYPE CURB PER USDOCA DWG. No. 216.	
3	CONSTRUCT 3" AC PAVEMENT OVER 4" TYPE II AGGREGATE BASE. (PARKING STALLS)	
4	CONSTRUCT 4" AC PAVEMENT OVER 5" TYPE II AGGREGATE BASE. (DRIVE AISLE/FIRE ACCESS LANE)	
5	LANDSCAPE AREA PER LANDSCAPE PLANS.	
6	CONSTRUCT CONCRETE SIDEWALK PER USDOCA DWG. No. 234.	
7	PROPOSED CURB OPENING (SIZE PER PLANS) PER DETAIL C/C8.01.	
8	INSTALL CONCRETE BUMPER BLOCK PER USDOCA DWG No. 238.	
9	CONSTRUCT 6.0' MAX SOLID GROUTED RETAINING WALL, 1 COURSE ABOVE FINISH GRADE.	
10	MATCH EXISTING ASPHALT PAVEMENT SECTION.	
11	CONSTRUCT "O" TALL TYPE "A" CURB PER DETAIL B/C8.01.	
12	SAWCUT AND MATCH EXISTING GRADE.	
13	CONSTRUCT STORM DRAIN PIPE (SIZE/TYP PER PLAN) PER USDOCA DWG. No. 504.	
14	CONSTRUCT 3'X2' INLET BOX W/ SUMP & SNOUT PER DETAIL B&C/C8.02.	
15	CONSTRUCT "O" FACE TO 6" TYPE "A" CURB TRANSITION PER DETAIL E/C8.01.	
16	CONSTRUCT NEW DRIVEWAY PER USDOCA DWG. No. 225 & 8" VALLEY GUTTER PER USDOCA DWG. No. 228.	
17	INSTALL HANDRAIL PER ARCHITECTURAL PLANS.	
18	CONSTRUCT SIDEWALK ADA RAMP PER USDOCA DWG. No. 235 CASE 1.	
19	CONSTRUCT 2' VALLEY GUTTER PER DETAIL D/C8.01.	
20	INSTALL 3'X3' CATCH BASIN W/ SOLID GRATE PER DETAIL A/C8.02.	

GENERAL NOTE:

IT IS THE CONTRACTOR'S RESPONSIBILITY TO FILE A NOTICE OF INTENT/REQUEST TO BE INCLUDED IN THE STORM WATER GENERAL PERMIT, AND SUBMIT THE ASSOCIATED STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AS REQUIRED BY FEDERAL, AND MONITORED BY THE NEVADA DIVISION OF ENVIRONMENTAL PROTECTION.

GRADING LABEL NOTE:

GRADING LABELS ARE TRUNCATED FOR LEGIBILITY. ADD 2800 TO LABELS FOR ACTUAL ELEVATION.

NOTE TO CONTRACTOR:

CONTRACTOR TO VERIFY EXISTING GRADES AND NOTIFY ENGINEER OF ANY DEVIATIONS PRIOR TO CONSTRUCTION.

FLOOD ZONE NOTE:

THE PROJECT SITE LIES WITHIN NON-SHADED FLOOD ZONE "X", PER FEMA FIRM PANEL 32003C1735 E REVISED SEPTEMBER 27, 2002. PER FEMA NON-SHADED FLOOD ZONE "X" IS AN AREA OUTSIDE THE 100-YEAR FLOODPLAIN.

EARTHWORK CALCULATION

CUT: 1831 CYDS NET FILL: 4865 CYDS
FILL: 6696 CYDS

* ALL EXCESS EARTHWORK MATERIAL SHALL BE PROPERLY EXPORTED BY GENERAL CONTRACTOR OR GENERAL CONTRACTOR SUB. IF MATERIAL IS TO BE LOCATED AT A SITE WITHIN CLARK COUNTY, THE DESIGNATION SITE WILL REQUIRE AN APPROVED GRADING PERMIT PRIOR TO PLACEMENT OF EXPORT MATERIAL. NO ILLEGAL DUMPING.

ALL GRADING WORK SHALL BE IN STRICT ACCORDANCE WITH THE SOILS REPORT FOR THE SITE ENTITLED "GEOTECHNICAL EVALUATION - HCA SKYE CANYON EMERGENCY ROOMS, 9830 WEST SKYE CANYON PARK DRIVE, CLARK COUNTY, NEVADA".

PROJECT NO.: 20184516E2, DATED: APRIL 19, 2019
PREPARED BY: GEOTECHNICAL & ENVIRONMENTAL SERVICES, INC.
7150 PLACID STREET
LAS VEGAS, NEVADA 89119
PHONE NO.: 702-365-1001

ALL WORK SHALL BE PERFORMED UNDER THE DIRECTION OF A REGISTERED PROFESSIONAL SOILS ENGINEER.

I CERTIFY THAT THIS GRADING PLAN CONFORMS TO THE APPROVED DRAINAGE STUDY DS # XXXX FOR THIS SITE ON FILE WITH THE CITY OF LAS VEGAS.

JENNIFER L ESCOBEDO, P.E. 24298

DATE

CALL BEFORE YOU DIG
AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY.

CALL BEFORE YOU DO UNDERGROUND WORK
AVOID HITTING UNDERGROUND POWER LINES. IT'S COSTLY.

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

CALL 811
1-800-227-2600

CALL 1-702-432-5300
FURNISH AND MAINTAIN SYSTEM OF INFORMATION

1-702-227-2929

COLLINS ENGINEERS ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS AND ELEVATIONS. THE UTILITIES SHOWN ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO FIELD VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION. IF A CONFLICT EXISTS BETWEEN WHAT IS SHOWN ON THESE DRAWINGS AND WHAT EXISTS IN THE FIELD, THE CONTRACTOR IS TO NOTIFY THE ARCHITECT OR ENGINEER IMMEDIATELY.

LEGEND

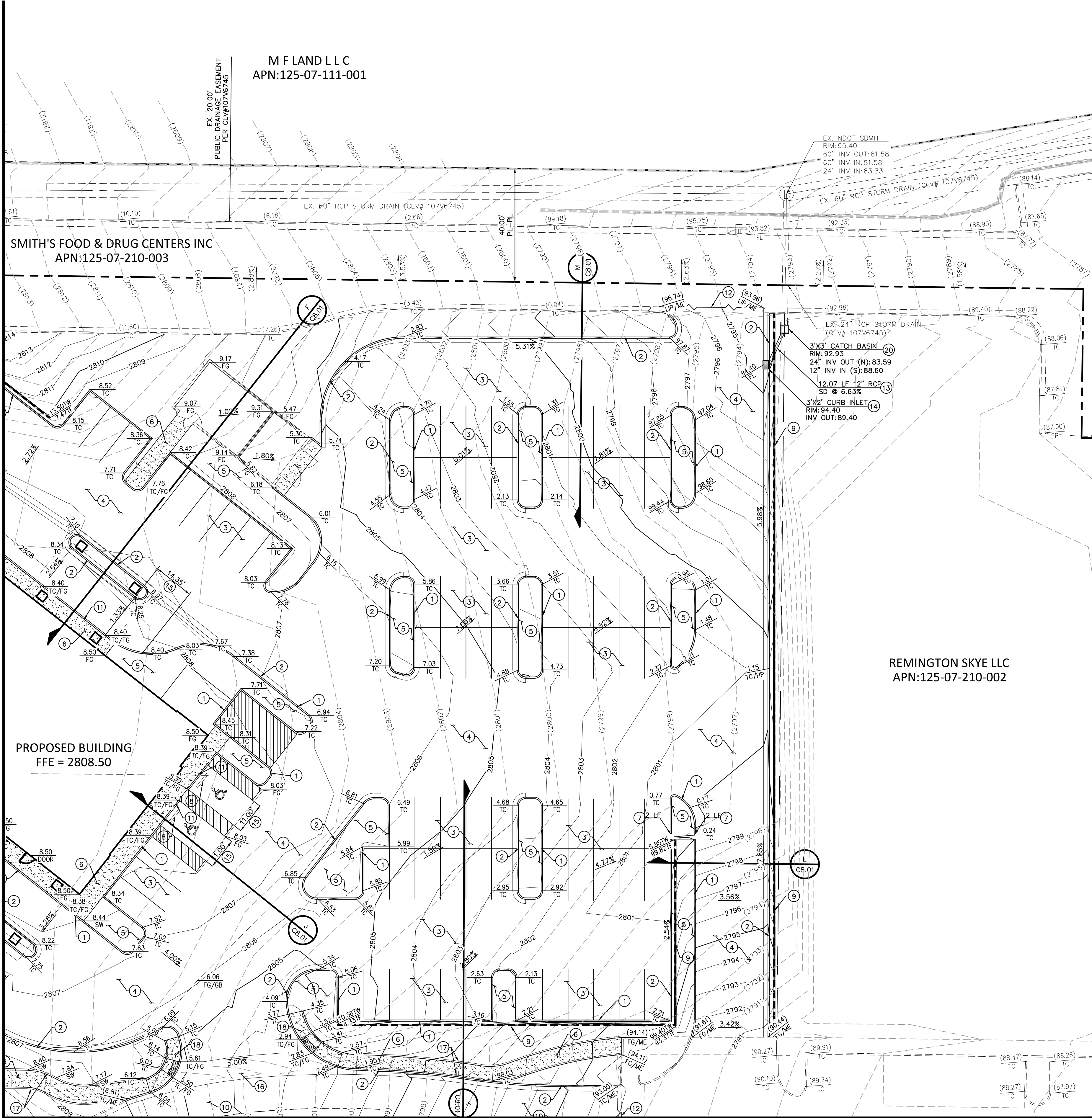
EXISTING PROPOSED

0.00% SLOPE
0.00% ELEVATION TAG
XX STORM MANHOLE
① DROP INLET
--00-- CONTOUR
RETAINING WALL
SCREEN WALL

AC PAVEMENT
6" TYPE "A" CURB
24" TYPE "L" CURB & GUTTER
30" ROLL CURB

PL-RIGHT-OF-WAY
PL-ADJACENT CENTERLINE
EASEMENT LINE
FLOW LINE
SAWCUT LINE

FOR CONTINUATION SEE SHEET C4.01



REMINGTON SKYE LLC
APN:125-07-210-002

FOR CONTINUATION SEE SHEET C4.03

CALL BEFORE YOU DIG
AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY.

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AVOID HITTING UNDERGROUND POWER LINES. IT'S COSTLY.

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1-800-227-2600

CALL 1-702-432-5300
FACILITY AND MATERIAL SYSTEMS INFORMATION

1-702-227-2929

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EXISTING
(0.00%)
XX

PROPOSED
0.00%
XX

EXISTING
(0.00%)
XX

PROPOSED
0.00%
XX

AC PAVEMENT

6" TYPE "A" CURB

24" TYPE "L" CURB & GUTTER

30" ROLL CURB

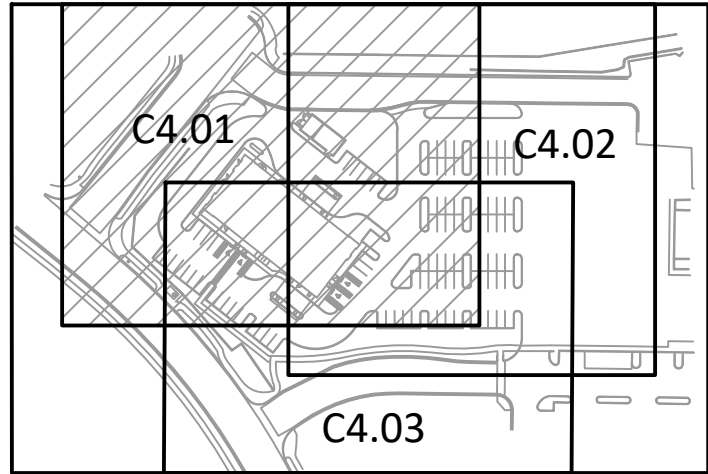
PL-RIGHT-OF-WAY

PL-ADJACENT CENTERLINE

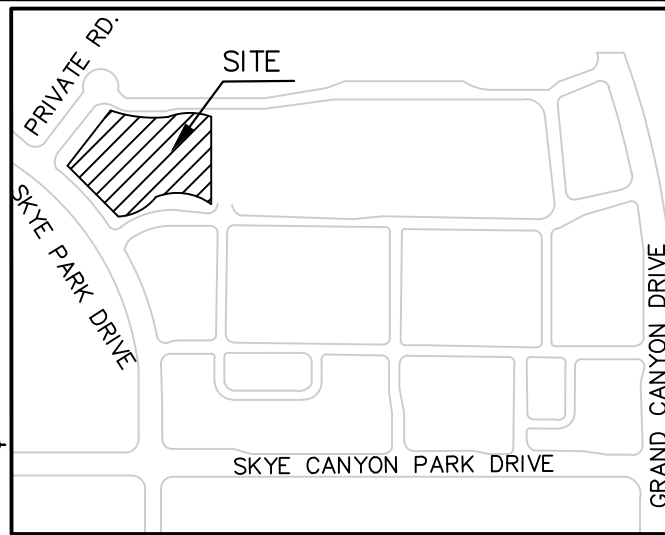
EASEMENT LINE

FLOW LINE

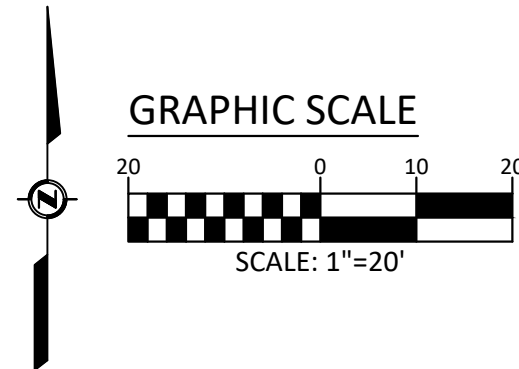
SAWCUT LINE



KEY MAP
NTS



VICINITY MAP
NTS



BASIS OF BEARING

NORTH 89°16'30" WEST BEING THE SOUTH LINE OF THE SOUTHEAST QUARTER (SE 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF SECTION 7, TOWNSHIP 19 SOUTH, RANGE 60 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, SHOWN AS THE CENTERLINE OF SKY CANYON PARK DRIVE IN BOOK 153 OF PLATS, PAGE 17, CLARK COUNTY, NEVADA OFFICIAL RECORDS.

BENCHMARK

CITY OF LAS VEGAS BENCHMARK 6LV907C4
RIVET & PLATE IN TOP OF CURB AT SE COR. OF HORSE DR. & GRAND CANYON DR.
ELEVATION = 841.201 METERS
2759.84 U.S. SURVEY FEET (NAVD 88)

CONSTRUCTION NOTES

NO.	ITEM	USDCCA: UNIFORM STANDARD DRAWINGS CLARK COUNTY AREA.
1	CONSTRUCT "A" TYPE CURB PER DETAIL A/C8.01.	
2	CONSTRUCT "L" TYPE CURB PER USDCCA DWG. No. 216.	
3	CONSTRUCT 3" AC PAVEMENT OVER 4" TYPE II AGGREGATE BASE. (PARKING STALLS)	
4	CONSTRUCT 4" AC PAVEMENT OVER 5" TYPE II AGGREGATE BASE. (DRIVE AISLE/FIRE ACCESS LANE).	
5	LANDSCAPE AREA PER LANDSCAPE PLANS.	
6	CONSTRUCT CONCRETE SIDEWALK PER USDCCA DWG. No. 234.	
7	PROPOSED CURB OPENING (SIZE PER PLANS) PER DETAIL C/C8.01.	
8	INSTALL CONCRETE BUMPER BLOCK PER USDCCA DWG No. 238.	
9	CONSTRUCT 6.0' MAX SOLID GROUTED RETAINING WALL, 1 COURSE ABOVE FINISH GRADE.	
10	MATCH EXISTING ASPHALT PAVEMENT SECTION.	
11	CONSTRUCT "O" TALL TYPE "A" CURB PER DETAIL B/C8.01.	
12	SAWCUT AND MATCH EXISTING GRADE.	
13	CONSTRUCT STORM DRAIN PIPE (SIZE/TYPE PER PLAN) PER USDCCA DWG. No. 504.	
14	CONSTRUCT 3'X2' INLET BOX W/ SUMP & SNOUT PER DETAIL B&C/C8.02.	
15	CONSTRUCT "O" FACE TO 6" TYPE "A" CURB TRANSITION PER DETAIL E/C8.01.	
16	CONSTRUCT NEW DRIVEWAY PER USDCCA DWG. No. 225 & 8" VALLEY GUTTER PER USDCCA DWG. No. 228.	
17	INSTALL HANDRAIL PER ARCHITECTURAL PLANS.	
18	CONSTRUCT SIDEWALK ADA RAMP PER USDCCA DWG. No. 235 CASE 1.	
19	CONSTRUCT 2' VALLEY GUTTER PER DETAIL D/C8.01.	
20	INSTALL 3'X3' CATCH BASIN W/ SOLID GRATE PER DETAIL A/C8.02.	

GENERAL NOTE:

IT IS THE CONTRACTOR'S RESPONSIBILITY TO FILE A NOTICE OF INTENT/REQUEST TO BE INCLUDED IN THE STORM WATER GENERAL PERMIT, AND SUBMIT THE ASSOCIATED STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AS REQUIRED BY FEDERAL, AND MONITORED BY THE NEVADA DIVISION OF ENVIRONMENTAL PROTECTION.

GRADING LABEL NOTE:

GRADING LABELS ARE TRUNCATED FOR LEGIBILITY. ADD 2800 TO LABELS FOR ACTUAL ELEVATION.

NOTE TO CONTRACTOR:

CONTRACTOR TO VERIFY EXISTING GRADES AND NOTIFY ENGINEER OF ANY DEVIATIONS PRIOR TO CONSTRUCTION.

FLOOD ZONE NOTE:

THE PROJECT SITE LIES WITHIN NON-SHADED FLOOD ZONE "X", PER FEMA FIRM PANEL 32003C1735 E REVISED SEPTEMBER 27, 2002. PER FEMA NON-SHADED FLOOD ZONE "X" IS AN AREA OUTSIDE THE 100-YEAR FLOODPLAIN.

EARTHWORK CALCULATION

CUT: 1831 CYDS NET FILL: 4865 CYDS
FILL: 6696 CYDS

* ALL EXCESS EARTHWORK MATERIAL SHALL BE PROPERLY EXPORTED BY GENERAL CONTRACTOR OR GENERAL CONTRACTOR SUB. IF MATERIAL IS TO BE LOCATED AT A SITE WITHIN CLARK COUNTY, THE DESIGNATION SITE WILL REQUIRE AN APPROVED GRADING PERMIT PRIOR TO PLACEMENT OF EXPORT MATERIAL. NO ILLEGAL DUMPING.

ALL GRADING WORK SHALL BE IN STRICT ACCORDANCE WITH THE SOILS REPORT FOR THE SITE ENTITLED "GEOTECHNICAL EVALUATION - HCA SKYE CANYON EMERGENCY ROOMS, 9830 WEST SKYE CANYON PARK DRIVE, CLARK COUNTY, NEVADA".

PROJECT NO.: 20184516E2, DATED: APRIL 19, 2019
PREPARED BY: GEOTECHNICAL & ENVIRONMENTAL SERVICES, INC.
7150 PLACID STREET
LAS VEGAS, NEVADA 89119
PHONE NO.: 702-365-1001

ALL WORK SHALL BE PERFORMED UNDER THE DIRECTION OF A REGISTERED PROFESSIONAL SOILS ENGINEER.

I CERTIFY THAT THIS GRADING PLAN CONFORMS TO THE APPROVED DRAINAGE STUDY DS # XXXX FOR THIS SITE ON FILE WITH THE CITY OF LAS VEGAS.

JENNIFER L ESCOBEDO, P.E. 24298

DATE

IMPROVEMENT PLANS FOR SKYE CANYON FSED APN:125-07-210-008 GRADING PLAN 2

NORTHEAST CORNER OF SKYE PARK DRIVE AND PARKLAND SKYE CIRCLE
LAS VEGAS, NEVADA

DESCRIPTION

DESIGN BY

DATE

NO.

CEI PROJECT: 11712

DESIGN BY: J.S.H

DRAWN BY: A.L.R.W

CHECKED BY: J.E.

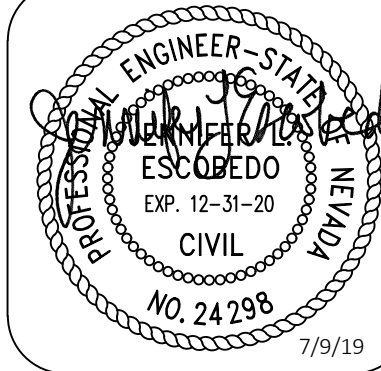
DATE:
05/21/19

SCALE:
1"=20'

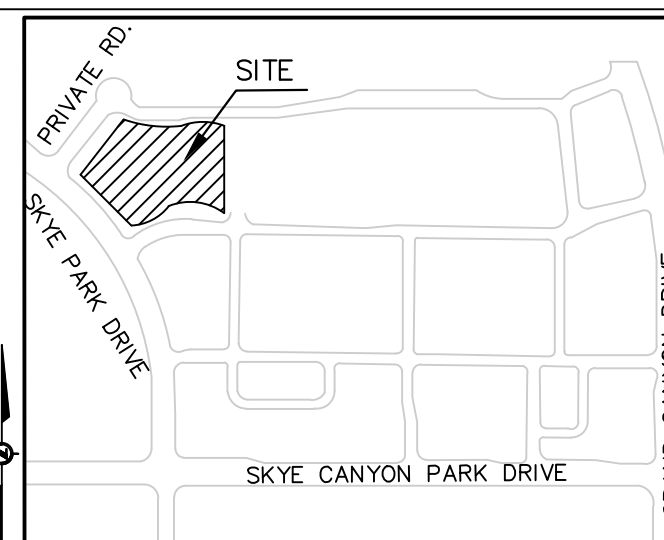
SHEET NUMBER
C4.02

SHEET 6 OF 13

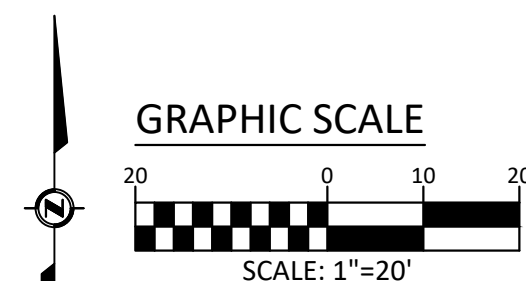
COLLINS ENGINEERS
3130 S. DURANGO DR., SUITE 404
LAS VEGAS, NV 89117
PHONE: (702) 248-8000
FAX: (702) 248-8070
www.collinsengr.com



FOR CONTINUATION SEE SHEET C4.02



KEY MAP

VICINITY MAP
NTS

NORTH 89°16'30" WEST BEING THE SOUTH LINE OF THE SOUTHEAST QUARTER (SE 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF SECTION 7, TOWNSHIP 19 SOUTH, RANGE 60 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, SHOWN AS THE CENTERLINE OF SKY CANYON PARK DRIVE IN BOOK 153 OF PLATS, PAGE 17, CLARK COUNTY, NEVADA OFFICIAL RECORDS.

CITY OF LAS VEGAS BENCHMARK 6LV907C4
RIVET & PLATE IN TOP OF CURB AT SE COR. OF HORSE DR. &
GRAND CANYON DR

ELEVATION = 841.201 METERS
2759.84 U.S. SURVEY FEET (NAVD 88)

NO.	ITEM	USDCCA: UNIFORM STANDARD DRAWINGS CLARK COUNTY AREA.
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⑪	CONSTRUCT "O" TALL TYPE "A" CURB PER DETAIL B/C8.01.
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⑮	CONSTRUCT "O" FACE TO 6" TYPE "A" CURB TRANSITION PER DETAIL E/C8.01.
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⑰	INSTALL HANDRAIL PER ARCHITECTURAL PLANS.
⑱	CONSTRUCT SIDEWALK ADA RAMP PER USDCCA DWG. NO. 235 CASE I.
⑲	CONSTRUCT 2' VALLEY GUTTER PER DETAIL D/C8.01.
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PROJECT NO.: 20184516E2, DATED: APRIL 19, 2019
PREPARED BY: GEOTECHNICAL & ENVIRONMENTAL SERVICES, INC.
7150 PLACID STREET
LAS VEGAS, NEVADA 89119
PHONE NO.: 702-365-1001

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JENNIFER L ESCOBEDO, P.E. 24298

DATE _____

CALL BEFORE YOU DIG AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY. Call 811 OR 1-800-227-2600	AVOID HITTING UNDERGROUND TRAFFIC SIGNAL AND STREET LIGHT SYSTEMS. IT'S COSTLY. CALL BEFORE YOU DO UNDERGROUND WORK CALL 1-702-432-5300 (FREE SERVICE CALLS FOR ALL CITY OF LAS VEGAS)	AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY. CALL BEFORE YOU DO OVERHEAD WORK 1-702-227-2929
---	---	---

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LEGEND

EXISTING	PROPOSED	EXISTING	PROPOSED
(0.00%)	0.00% → SLOPE		AC PAVEMENT
(0.00%) XX	XX → ELEVATION TAG		6" TYPE "A" CURB
	⊙ STORM MANHOLE		24" TYPE "1" CURB & GUTTER
	⊙ DROP INLET		30" ROLL CURB
	--- CONTOUR		

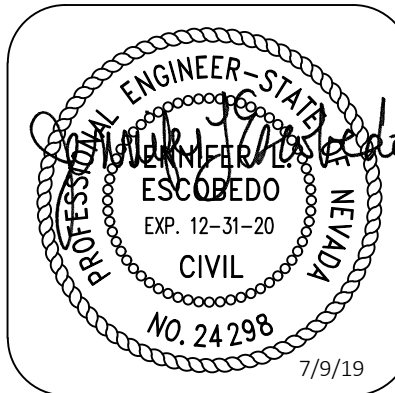
--- PL-RIGHT-OF-WAY
 --- PL-ADJACENT
 --- CENTERLINE
 --- EASEMENT LINE
 --- FLOW LINE
 --- SAWCUT LINE

**IMPROVEMENT PLANS FOR
SKYE CANYON FSED
APN:125-07-210-008
GRADING PLAN 3**

NORTHEAST CORNER OF SKYE PARK DRIVE AND PARKLAND SKYE CIRCLE
LAS VEGAS, NEVADA

**COLLINS
ENGINEERS^{INC.}**

3130 S. DURANGO DR., SUITE 404
LAS VEGAS, NV 89117
PHONE: (702) 248-8000
FAX: (702) 248-8070
www.collinsengr.com



7/9/19



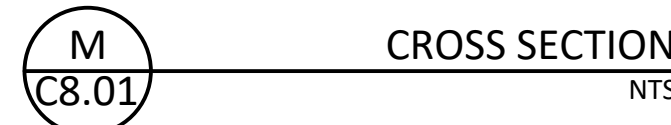
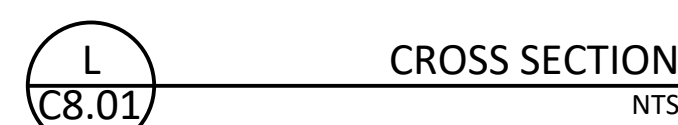
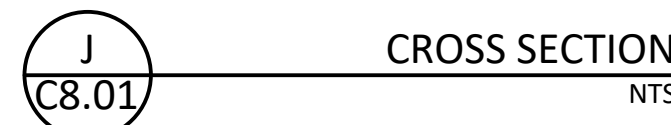
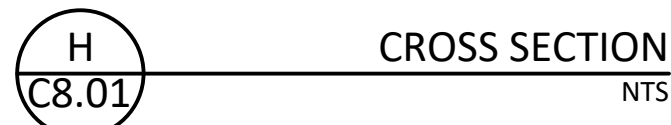
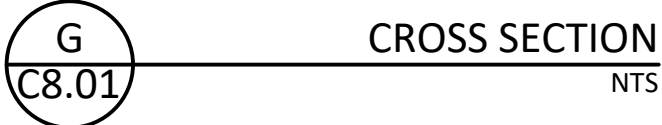
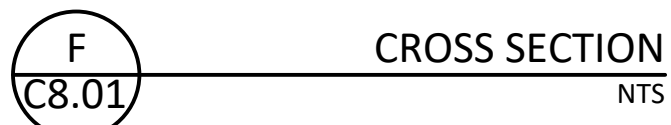
TYPE 'A' CURB (ONSITE)

B 0" TALL TYPE 'A' CURB
C8.01 NTS

C CURB OPENING
C8.01 NTS


 2' CONCRETE VALLEY GUTTER
 NTS

E CURB TRANSITION
C8.01 NTS



NORTHEAST CORNER OF SKYE PARK DRIVE AND PARKLAND SKYE CIRCLE
LAS VEGAS, NEVADA

DESCRIPTION	DESIGN	DATE	NO.			
	BY					
CEI PROJECT:	11712					
DESIGN BY:	J.S.H					
DRAWN BY:	A.L.R.W					
CHECKED BY:	J.E.					
DATE: 05/21/19						
SCALE: N.T.S.						
SHEET NUMBER C8.01 SHEET 12 OF 13						

FRAME AND GRATE ASSEMBLY AVAILABLE IN TRAFFIC OR PEDESTRIAN MODELS

LOOSE FRAME PAVING NOTCH 4" (TRAFFIC) 1 1/2" (PEDESTRIAN)

INSIDE A HEIGHT OF BOX

OUTSIDE B HEIGHT OF BOX

31" ROUND THIN WALL KNOCKOUT. SLEDGE OUT AS REQUIRED. (TYP. 4 PLACES)

OPTIONAL EXTENSION C HEIGHT

36"x36" DROP INLET

DROP INLET			
MODEL NO.	A	B	*WEIGHT
DI363636	36"	42"	3748 LBS.
DI363648	48"	54"	4752 LBS.

*BOX ONLY

EXTENSION		
MODEL NO.	C	WEIGHT
RS363606	6"	525 LBS.
RS363612	12"	1050 LBS.

BOX DESIGN LOAD:
H-20 TRAFFIC

FOR COMPLETE DESIGN,
AND PRODUCT INFORMATION,
CONTACT JENSEN PRECAST.

6/7/03
DI3636.dwg
© 1995 Jensen Precast

JENSEN
PRECAST

TOP VIEW-BOX WITH CAST IRON REMOVED

SECTION 24"x36" DROP INLET

FRONT VIEW

SIDE VIEW

3/6/01

CURB BOX (HOOD) ADJUSTABLE FROM 6" TO 9"

EXTENSION WITH CAST IRON HOOD, FRAME, AND GRATE SHOWN

*SEE DROP INLET TABLE ON FRONT

JENSEN
PRECAST

CONFIGURATION DETAIL

SNOUT OIL-WATER-DEBRIS SEPARATOR

FRONT VIEW

SIDE VIEW

TYPICAL INSTALLATION

SEE NOTE*

*NOTE: SUMP DEPTH OF 36" MIN. FOR UP TO 12" ID PIPE. OUTLET: FOR PIPES 10" ID AND ABOVE SUMP DEPTH OF 2.5 TO 3 TIMES PIPE ID RECOMMENDED (E.G. 5' DEEP FOR 24" PIPE)

INSTALLATION DETAIL

DETAIL A

DETAIL B

INSTALLATION NOTE:

POSITION HOOD SUCH THAT BOTTOM FLANGE IS A DISTANCE OF 1/2 OUTLET PIPE DIAMETER (MIN.) BELOW THE PIPE INVERT. MINIMUM DISTANCE FOR PIPES < 12" I.D. IS 6".

HOOD SPECIFICATION FOR CATCH BASINS AND WATER QUALITY STRUCTURES

DESCRIPTION	DATE	SCALE
OIL-DEBRIS HOOD SPECIFICATION AND INSTALLATION (TYPICAL)	09/08/15	NONE
DRAWING NUMBER SP-SN		

NOTES:

1. ALL HOODS AND TRAPS FOR CATCH BASINS AND WATER QUALITY STRUCTURES SHALL BE AS MANUFACTURED BY: BEST MANAGEMENT PRODUCTS, INC. 55 MT. ARCHER RD. LYME, CT 06371 (860) 434-0277, (860) 434-3195 FAX. TOLL FREE: (800) 504-8008 OR (888) 434-0277 WEB SITE: www.bmpinc.com OR PRE-APPROVED EQUAL.

2. ALL HOODS SHALL BE CONSTRUCTED OF A GLASS REINFORCED RESIN COMPOSITE WITH ISO GEL COAT EXTERIOR FINISH WITH A MINIMUM 0.125" LAMINATE THICKNESS.

3. ALL HOODS SHALL BE EQUIPPED WITH A WATERTIGHT ACCESS PORT, A MOUNTING FLANGE, AND AN ANTI-SIPHON VENT PIPE AND ELBOW AS DRAWN. (SEE CONFIGURATION DETAIL.)

4. THE SIZE AND POSITION OF THE HOOD SHALL BE DETERMINED BY OUTLET PIPE SIZE AS PER MANUFACTURER'S RECOMMENDATION (SNOUT SIZE ALWAYS LARGER THAN PIPE SIZE).

5. THE BOTTOM OF THE HOOD SHALL EXTEND DOWNWARD A MINIMUM DISTANCE EQUAL TO 1/2 THE OUTLET PIPE DIAMETER WITH A MINIMUM DISTANCE OF 6" FOR PIPES < 12" I.D.

6. THE ANTI-SIPHON VENT SHALL EXTEND ABOVE HOOD BY MINIMUM OF 3" AND A MAXIMUM OF 12" ACCORDING TO STRUCTURE CONFIGURATION.

7. THE SURFACE OF THE STRUCTURE WHERE THE HOOD IS MOUNTED SHALL BE FINISHED SMOOTH AND FREE OF LOOSE MATERIAL AND PIPE SHALL BE FINISHED FLUSH TO WALL.

8. ALL STRUCTURE JOINTS SHALL BE WATERTIGHT.

9. THE HOOD SHALL BE SECURELY ATTACHED TO STRUCTURE WALL WITH 3/8" STAINLESS STEEL BOLTS AND OIL-RESISTANT GASKET AS SUPPLIED BY MANUFACTURER. (SEE INSTALLATION DETAIL.)

10. INSTALLATION INSTRUCTIONS SHALL BE FURNISHED WITH MANUFACTURER SUPPLIED INSTALLATION KIT. INSTALLATION KIT SHALL INCLUDE:
A. INSTALLATION INSTRUCTIONS
B. PVC ANTI-SIPHON VENT PIPE AND ADAPTER
C. OIL-RESISTANT CRUSHED CELL FOAM GASKET WITH PSA BACKING
D. 3/8" STAINLESS STEEL BOLTS
E. ANCHOR SHIELDS

US Patent # 6126817, 7951294, 7857966, 8512556
Canada Patent # 2285146, 2690156, 2690158 others pending

A

JENSEN PRECAST 3'x3' CATCH BASIN

NTS

C8.02

B

JENSEN PRECAST 3'x2' CURB INLET

NTS

C8.02

C

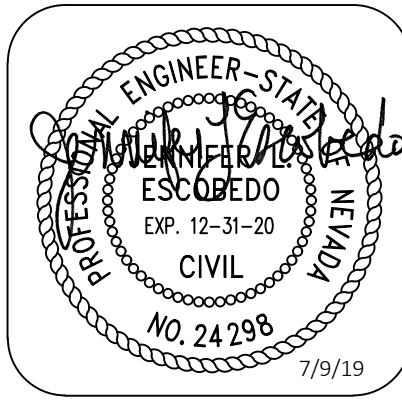
SNOUT OIL-WATER DEBRIS SEPARATOR

NTS

C8.02

COLLINS
ENGINEERS

3130 S. DURANGO DR., SUITE 404
LAS VEGAS, NV 89117
PHONE: (702) 248-8000
FAX: (702) 248-8070
www.collinsengr.com



IMPROVEMENT PLANS FOR

SKYE CANYON FSED

APN:125-07-210-008

DETAIL SHEET 2

NORTHEAST CORNER OF SKYE PARK DRIVE AND PARKLAND SKYE CIRCLE
LAS VEGAS, NEVADA

NO.	DATE	DESIGN BY	DESCRIPTION

CEI PROJECT: 11712

DESIGN BY: J.S.H

DRAWN BY: A.L.R.W

CHECKED BY: J.E.

DATE: 05/21/19

SCALE: N.T.S.

SHEET NUMBER C8.02

SHEET 13 OF 13