

DS #:

4549

APN:

138-29-401-011

PROJECT:

Summerlin Resort Hotel & Casino - Garage Expansion

SUBMITTAL:

1st

SCANNED BY/DATE:

CHECKED BY/DATE:



# CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM

DATE:

February 14, 2012

TO:

Land Development Services  
Department of Public Works

FROM:

Albert Sung, P.E.  
Flood Control Project Engineer  
Department of Public Works

SUBJECT:

Drainage Study for:

Summerlin Resort Hotel & Casino – Garage Expansion

COPIES TO:

Martin & Martin Civil Engineers

Cross Streets:

SWC of Summerlin Parkway & Rampart Blvd

Hotspur Resorts Nevada LTD

File Number:

F:\Depot\DSMemos\DS4549A.doc

Bart Anderson, P.E., DevCo

Parcel Number:

138-29-401-011

CCRFCD

Zoning Action:

SUP-44163; CRG-xxxxx & SDR-xxxxx

FEMA Flood Zone

YES

NO

X

Proposed Storm Drain

YES

NO

X

| HISTORY                   | DATE RECEIVED | DATE REVIEWED | COMMENTS           | REVIEW FEES | FEES PAID<br>Payment Trn # |
|---------------------------|---------------|---------------|--------------------|-------------|----------------------------|
| 1 <sup>st</sup> Submittal | 2/7/2012      | 2/14/2012     | See Comments Below | \$400.00    | 273803: \$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:         |
|   | must be resubmitted or supplemented including the following:                                   |
| X | is conditionally approved subject to Clark County Regional Flood Control District concurrence. |

1. Provide a copy of the zoning/planning conditions associated with this site improvement (SUP-44163; CRG-xxxxx & SDR-xxxxx) with the next submittal to verify compliance with conditions. Flood Control will not issue conditional approval of the drainage study without the associated zoning/planning conditions (issued by the City Council). Any associated conditions of approval that revise the site drainage parameters will require that the drainage study be revised and resubmitted.
2. The site is adjacent to or crosses an existing or proposed Clark County Regional Flood Control District (CCRFCD) master planned facility. Therefore, CCRFCD concurrence is required prior to final approval of the drainage study.
3. Provide a note stated as follows on all grading plans: "ALL ONSITE STORM DRAINS AND THE ASSOCIATED FACILITIES ARE PRIVATELY OWNED AND TO BE PRIVATELY MAINTAINED".

In an effort to increase administrative efficiency, the City of Las Vegas Public Works Department requires all soil reports, drainage studies and traffic impact analysis submittals to be accompanied by an electronic copy of the submittal. Electronic documents must be submitted with one original hard copy of the study. Electronic documents should be on a universal computer-readable digital output replicating your submittal to be used for archival or display purposes. This may be more than one file if necessary. An Indexed Portable Document Format (PDF) or Print Ready CAD file formats with a minimum of 300dpi are the desired formats, but provided it is a high quality digitized replication of the submittal, other formats may be acceptable. If figures are in color, they must be scanned in color and saved as a separate file. The new submittal requirement is effective on July 1, 2011. If there are any questions regarding these new requirements, please contact Albert Sung in the Flood Section at (702) 229-2001 or Rick Schroder in Traffic Engineering at (702) 229-6327.

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

**END OF REMARKS**

ays

T/R/S: T20S/R60E/29

AREA L-29



Rec'd: 3/7/12  
DS 4549  
L-29  
N/C

Gale Wm. Fraser, II, P.E.  
General Manager/Chief  
Engineer

**BOARD OF DIRECTORS**

Lawrence L. Brown, III  
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Clark County

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City of Las Vegas

Mayor Roger Tobler  
City of Boulder City

February 23, 2012

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

**DISTRICT CONCURRENCE: UPDATE TO SUMMERLIN HOTEL & CASINO-  
GARAGE EXPANSION  
(DS #4549A) (RFCD No. 12-8048)**

Dear Mr. Kwon:

Clark County Regional Flood Control District (District) reviewed Technical Drainage Study dated February 6, 2012 for above-mentioned project as submitted by MARTIN & MARTIN CIVIL ENGINEERS. In addition, District is in receipt of the Conditional Letter of Acceptance from City of Las Vegas dated February 14, 2012.

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

District's review of this project was limited to issues of Regional Flood Control Significance as defined in *Uniform Regulations for the Control of Drainage*.

Please be aware that as additional information becomes available and/or restudies of Flood Insurance Studies are performed, information submitted by MARTIN & MARTIN CIVIL ENGINEERS may be superseded. Compliance with regulatory elements and design standards specified in *Uniform Regulations for the Control of Drainage* does not imply a guarantee that properties will be free from flooding or flood damage. The District, its officials, or employees assume no liability for information, data, or conclusions presented by consulting engineers. We, therefore, make no warranties, either expressed or implied, in conducting this review.

GALE WM. FRASER, II, P.E.  
General Manager/Chief Engineer

BY:

Abigail Mayrena, P.E., CFM  
Senior Engineer

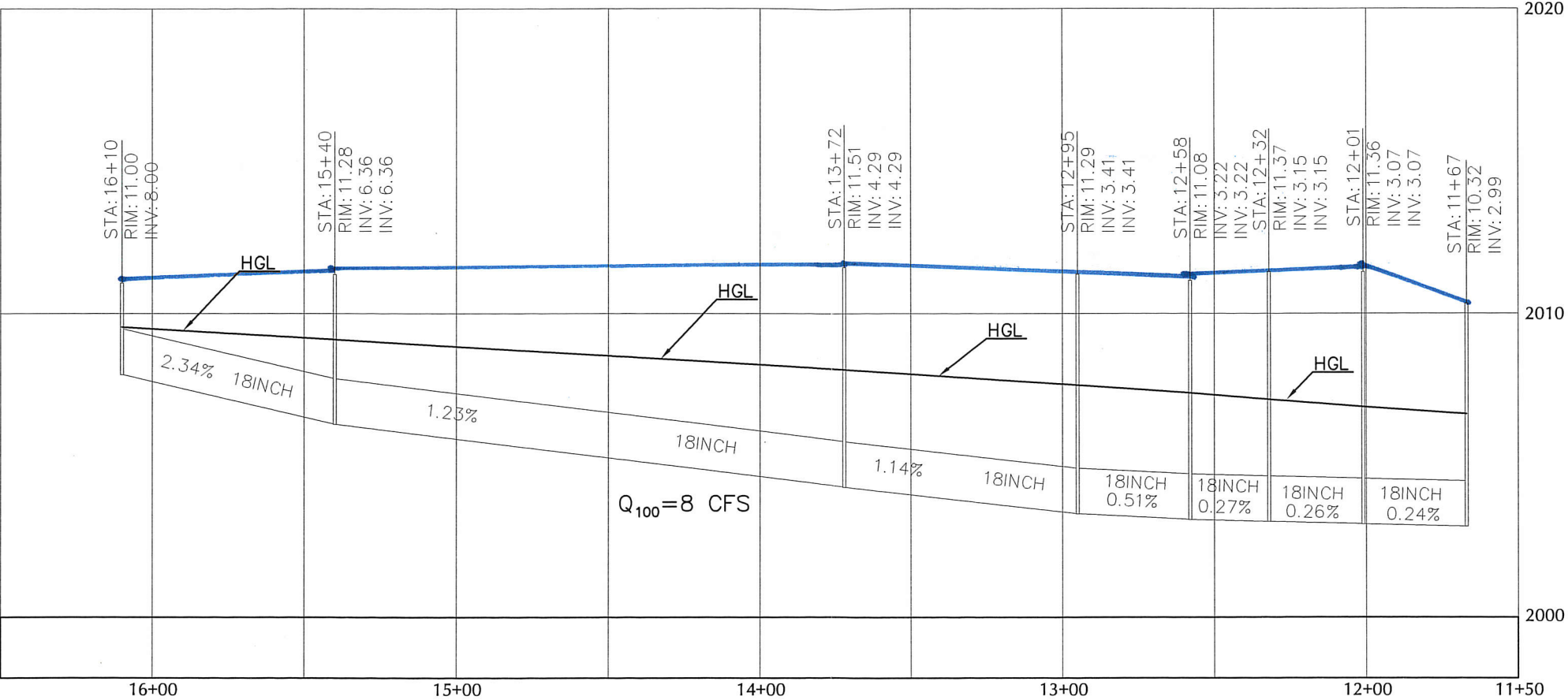
  
Andrew R. Trelease, P.E., CFM  
Principal Civil Engineer

AM:ART:sa

c: Kenneth J. Welden, P.E., Martin & Martin Civil Engineers

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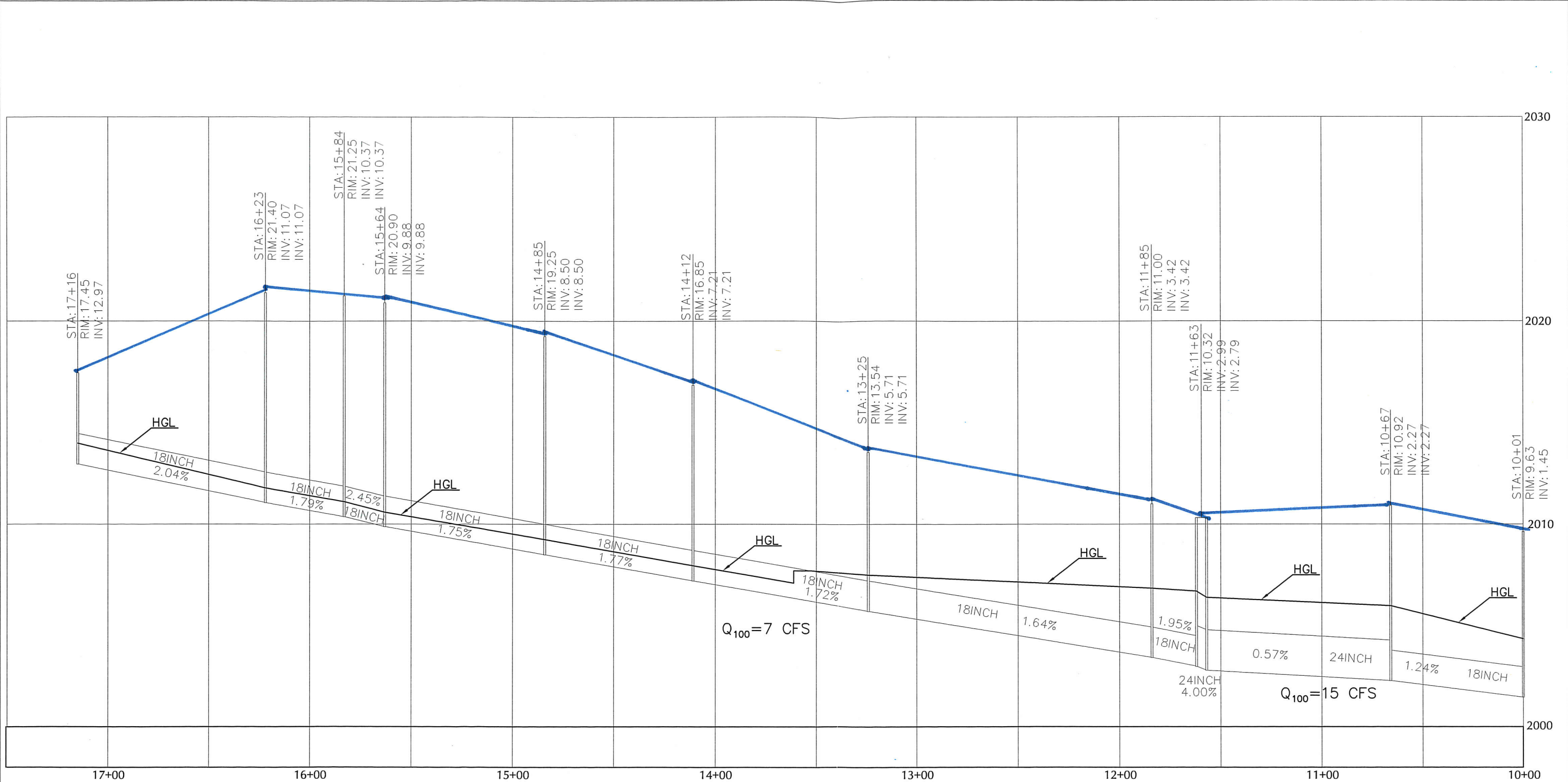




|            |                 |
|------------|-----------------|
| DATE       | 2/07/12         |
| JOB NUMBER | 4034            |
| DESIGN BY  | R. ROBINSON     |
| DRAWN BY   | J. MARTINEZ     |
| CHECKED BY | K. WELDEN, P.E. |

STORM DRAIN PROFILES

RAMPART CASINO  
ONSITE IMPROVEMENTS  
APN: 138-29-401-011



|                                                                                                                                                 |            |                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------|
| <b>MARTIN &amp; ASSOCIATES</b><br>CIVIL ENGINEERS<br>2355 RED ROCK ST #103<br>LAS VEGAS, NV 89146<br>PHONE (702) 248-8000<br>FAX (702) 248-8070 | DATE       | 2/07/12         |
|                                                                                                                                                 | JOB NUMBER | 4034            |
|                                                                                                                                                 | DESIGN BY  | R. ROBINSON     |
|                                                                                                                                                 | DRAWN BY   | J. MARTINEZ     |
| CHECKED BY                                                                                                                                      |            | K. WELDEN, P.E. |
| STORM DRAIN PROFILES                                                                                                                            |            |                 |
| RAMPART CASINO<br>ONSITE IMPROVEMENTS<br>APN: 138-29-401-011                                                                                    |            |                 |
| SHEET NUMBER<br><b>EXA</b><br>SHEET 1 OF 2                                                                                                      |            |                 |



# **TECHNICAL DRAINAGE STUDY**

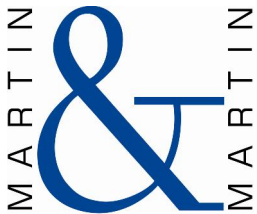
## **Update for Summerlin Resort Hotel and Casino Garage Expansion**

**February 2012**

**MARTIN & MARTIN PROJECT NO. 4034**

**Prepared for:**

**Hotspur Resorts Nevada LTD.  
221 N Rampart Blvd.  
Las Vegas, NV 89144  
(604) 925-2700**



**Civil Engineers**

2355 Red Rock Street, Suite 103

Las Vegas, Nevada 89146

Phone (702) 248-8000

Fax (702) 248-8070

[www.mmcivil.com](http://www.mmcivil.com)



## **TABLE OF CONTENTS**

### **STANDARD FORM 1**

### **UPDATE LETTER**

### **APPENDICES**

#### **APPENDIX A (MAPS AND HYDRAULICS)**

- FIRM Map
- CCRFCD 2008 MPU Fig F-25
- Storm Drain Calculation (WSPG models 1 and 2)

#### **APPENDIX B (REFERENCE MATERIAL)**

- Approval Letter for DS# 2080
- DS# 2080 Developed Onsite Drainage Basin Map – Fig 1
- DS# 2080 HEC-1
- DS# 2080 StormCAD
- Approval Letter for DS# 3914
- DS# 3914 Storm Sewer Hydraulic Calculations

#### **APPENDIX C (IMPROVEMENT PLANS)**

- Grading Plans



# HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

## DRAINAGE STUDY INFORMATION FORM

Name of Development: **Update to Summerlin Hotel & Casino - Garage Expansion** Date: **2/6/2012**

Location of Development: a) Descriptive (Cross Streets) **Northwest corner of Rampart Blvd & Canyon Run**

b) Section **29** Township **20 South** Range **60 East**  
 Name of Owner: **Hotspur Resorts Nevada LTD** Assessors Parcel Number: **138-29-401-011**

Telephone Number: **(604) 925-2700**

Address: **221 N Rampart Blvd**  
**Las Vegas, NV 89144**

Contact Person Name: **Kenneth J. Welden, P.E.**

Telephone Number: **(702) 248-8000**

Firm: **Martin & Martin Civil Engineers**

Fax Number: **(702) 248-8070**

Address: **2355 Red Rock Street, Suite 103**  
**Las Vegas, NV 89146**

Email: **kwelden@mmcivil.com**

Type of Land Development/Land Disturbance Process:

|                          |                  |                                     |                          |                          |                              |
|--------------------------|------------------|-------------------------------------|--------------------------|--------------------------|------------------------------|
| <input type="checkbox"/> | Rezoning         | <input type="checkbox"/>            | Subdivision Map          | <input type="checkbox"/> | Clearing and Grading Only    |
| <input type="checkbox"/> | Parcel Map       | <input type="checkbox"/>            | Planned Unit Development | <input type="checkbox"/> | Other (Please specify below) |
| <input type="checkbox"/> | Large Parcel Map | <input checked="" type="checkbox"/> | Building Permit          | <input type="checkbox"/> |                              |

- Total Owned Land Area: **At Site: ± 39.99 Ac** Being Developed: **± 1.60 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? **N/A**
- Has the site drainage been evaluated in the past? **YES** NO  
 If yes, please identify documentation:  
**Technical Drainage Study DS# 2080, 3914, 4283**
- If known, please briefly identify the proposed discharge point(s) of runoff from the site:
- 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: **M&M Project No. 4034**

STANDARD FORM 1

February 6, 2012

Albert Sung  
City of Las Vegas Flood Control  
333 N Rancho Drive  
Las Vegas, Nevada 89106



**RE: Technical Drainage Study Update for Summerlin Resort Hotel and Casino – Garage Expansion  
(APN 139-29-401-011)  
Martin & Martin Project No. 4034**

Mr. Sung,

Hotspur Resorts Nevada, LTD. has retained Martin & Martin Civil Engineers to provide a Technical Drainage Study Update for Summerlin Resort Hotel and Casino expansion and proposed parking garage. The project site is within APN 139-29-401-011 and located in the City of Las Vegas, Nevada on the south west corner of Summerlin Parkway and Rampart Boulevard. This letter, Standard Form 1, the current proposed Grading Plan and drainage calculations are to serve as an update to the approved Technical Drainage Study for Summerlin Resort Hotel and Casino prepared by Martin & Martin (DS# 2080), which analyzed the completely developed or “ultimate” condition of the Summerlin Resort Hotel and Casino.

The purpose of this study is to show that the changes to the storm drain system alignment does not have any significant impacts to the system. The previously approved Technical Drainage Study for Summerlin Resort Hotel and Casino prepared by Martin & Martin (DS# 2080) established all peak flow rates entering the storm drain system and is not changed from the approved study. The previously approved basin map from DS# 2080 (Developed Onsite Drainage Basin Map – Figure 1) has been provided with the basins that contribute to the storm drain system highlighted in red, see appendix B. It should be noted that only a portion of basin HOTEL4 discharge to the storm drain system, see the diversion in the approved HEC-1 analysis from DS# 2080, in appendix B. Furthermore, the peak flow rates are also referenced from the DS# 2080 HEC-1. The realignment of western most storm drain was evaluated using WSPG model 1 located in appendix A of this report. This section of the storm drain collects flows from the combination point PIPE5 which combines flows from TOWER2, ROOF3 and flows being diverted by DIV2 from basin HOTEL4 (PIPE5 4cfs plus DIV2 3cfs equals 7cfs). Peak flow rates and “schematic diagram of stream network” are referenced from the DS# 2080 HEC-1, please see appendix B. The other portion of the storm drain system being realigned was evaluated using WSPG model 2, see appendix A. This section of the storm drain conveys flows from basin HOTEL5 which has a peak discharge of 8cfs. Both the flows used for WSPG models 1 and 2 are the original design flows for the system which can be verified by the referenced StormCAD calculations from DS# 2080 in appendix B. The storm drain system downstream of this project was modified as part of DS# 3914. Therefore, the outlet HGL for the proposed alignment was taken from this study at manhole number 21. See Storm Sewer Hydraulic Calculations in appendix B for outlet HGL.



The results of this study indicate that if construction is in accordance with the recommendations of this study, the proposed improvements will not significantly impact surrounding or downstream properties.

We hope all your concerns have been addressed. If you have any comments or questions, please feel free to contact us at any time.

Sincerely,



Kenneth J. Welden, P.E.  
Principal  
**Martin & Martin Civil Engineers**



Richard Robinson, E.I.  
Sr. Hydrologist  
**Martin & Martin Civil Engineers**

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# **TABLE OF APPENDICES**

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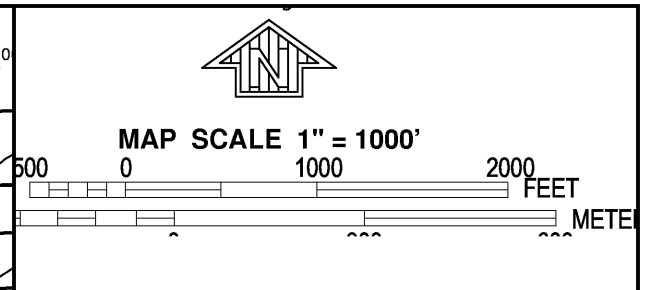
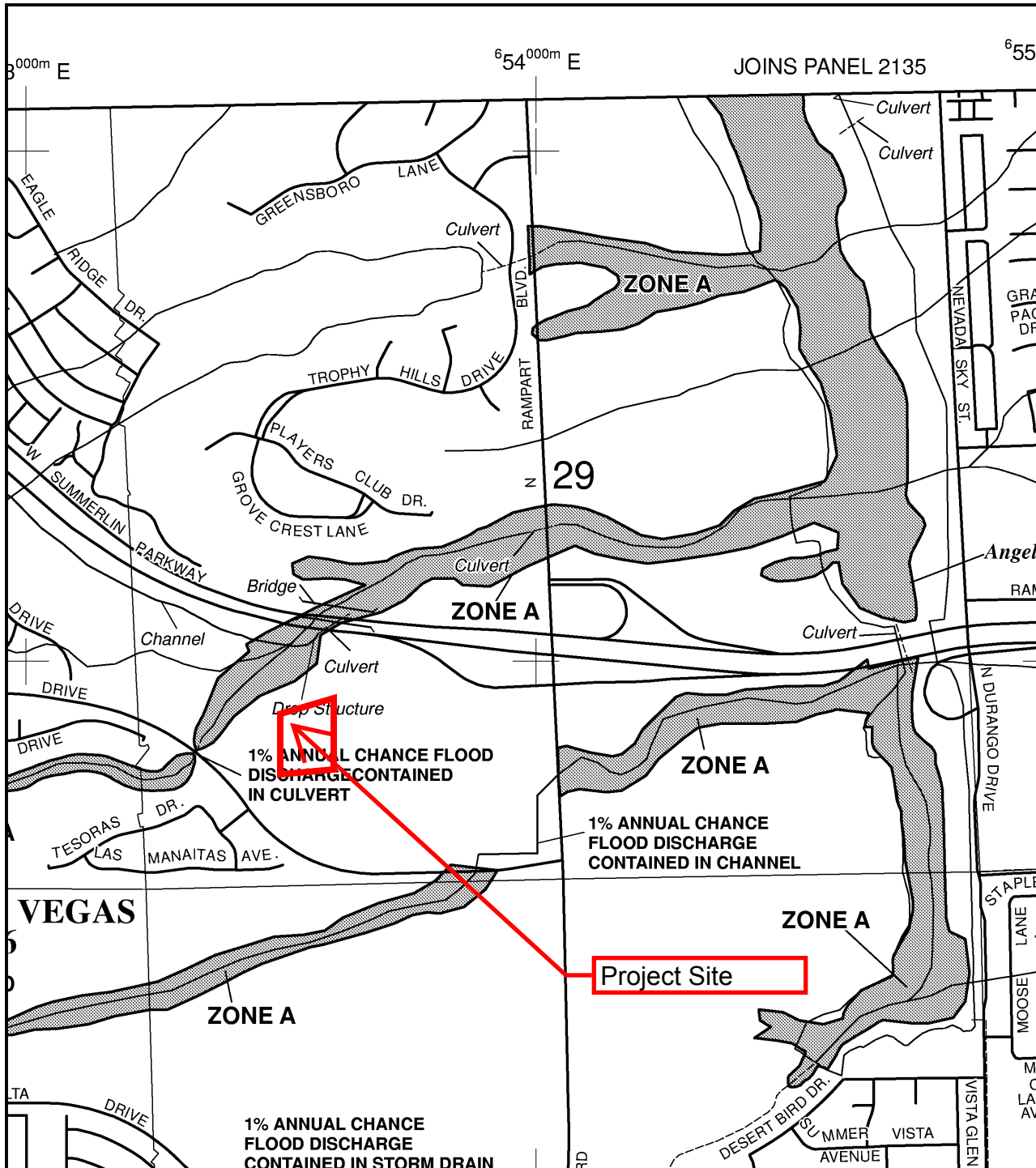
## **APPENDIX C (IMPROVEMENT PLANS)**

- Grading Plans

# **APPENDIX A**

## **(MAPS AND HYDRAULICS)**

- FIRM Map
- CCRFCD 2008 MPU Fig F-25
- Storm Drain Calculation



NFIP

PANEL 2145F

# **FIRM** **FLOOD INSURANCE RATE MAP** **CLARK COUNTY,** **NEVADA** **AND INCORPORATED AREAS**

**PANEL 2145 OF 4090**

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

## CONTAINS:

| COMMUNITY          | NUMBER | PANEL | SUFFIX |
|--------------------|--------|-------|--------|
| CLARK COUNTY       | 320003 | 2145  | F      |
| LAS VEGAS, CITY OF | 325276 | 2145  | F      |

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**  
**32003C2145F**

**MAP REVISED**  
**NOVEMBER 16, 2011**

**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](http://www.msc.fema.gov)





2008  
LAS VEGAS VALLEY  
FLOOD CONTROL  
MASTER PLAN UPDATE

FIGURE F-25  
FLOOD CONTROL FACILITIES

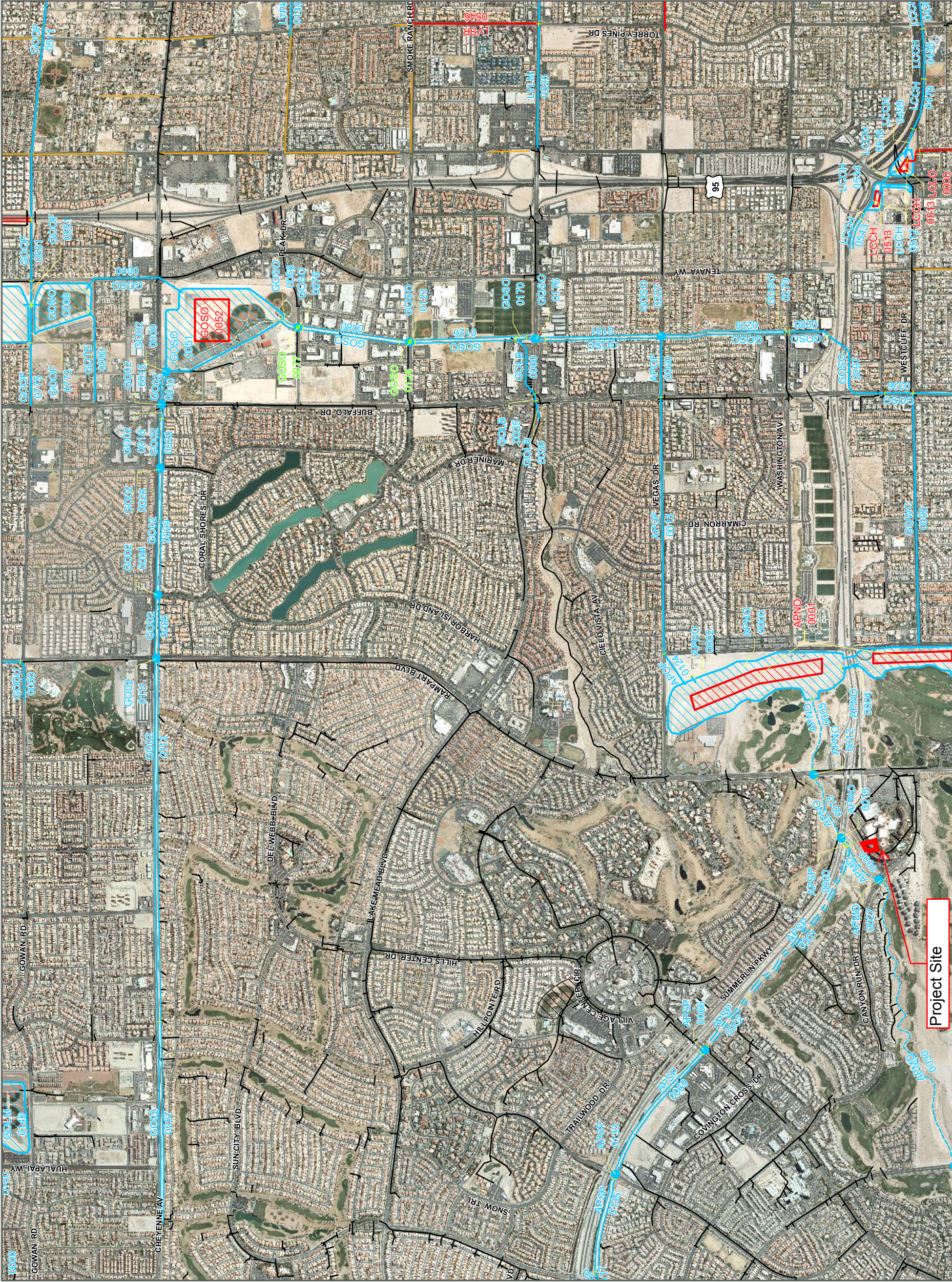
LEGEND

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



Scale: 1 inch = 2,000 feet  
Refer to Figure G-2 for Aerial Source(s)

|      |    |    |      |    |    |
|------|----|----|------|----|----|
| US95 |    |    | I-15 |    |    |
| 1    | 2  | 3  | 4    | 5  | 6  |
| 7    | 8  | 9  | 10   | 11 | 12 |
| 13   | 14 | 15 | 16   | 17 | 18 |
| 19   | 20 | 21 | 22   | 23 | 24 |
| 25   | 26 | 27 | 28   | 29 | 30 |
| 31   | 32 | 33 | 34   | 35 | 36 |
| 37   | 38 | 39 | 40   | 41 | 42 |
| 43   | 44 | 45 | 46   | 47 | 48 |
| 49   | 50 | 51 | 52   | 53 | 54 |
| 55   | 56 | 57 | 58   | 59 | 60 |



Project Site



|    |                                   |        |   |   |       |       |      |        |           |         |        |
|----|-----------------------------------|--------|---|---|-------|-------|------|--------|-----------|---------|--------|
| T1 | WSPG 1                            |        |   |   |       |       |      |        | 4034wspg1 |         | 0      |
| T2 | SUMMERLIN RESORT HOTEL AND CASINO |        |   |   |       |       |      |        |           |         |        |
| T3 | MARTIN & MARTIN 4034              |        |   |   |       |       |      |        |           |         |        |
| SO | 1001.000                          | 01.450 | 1 |   |       |       |      | 04.340 |           |         |        |
| R  | 1067.000                          | 02.270 | 1 |   | .013  |       |      |        | .000      | 63.000  | 1      |
| R  | 1158.000                          | 02.790 | 2 |   | .013  |       |      |        | .000      | .000    | 1      |
| JX | 1163.000                          | 02.990 | 2 | 1 | .013  | 8.000 |      | 02.990 | -43.0     |         | 73.000 |
| R  | 1185.000                          | 03.420 | 1 |   | .013  |       |      |        | .000      | -44.000 | 1      |
| R  | 1325.000                          | 05.710 | 1 |   | .013  |       |      |        | .000      | -30.000 | 1      |
| R  | 1412.000                          | 07.210 | 1 |   | .013  |       |      |        | .000      | -90.000 | 1      |
| R  | 1485.000                          | 08.500 | 1 |   | .013  |       |      |        | .000      | 32.000  | 1      |
| R  | 1564.000                          | 09.880 | 1 |   | .013  |       |      |        | .000      | 57.000  | 1      |
| R  | 1584.000                          | 10.370 | 1 |   | .013  |       |      |        | .000      | -57.000 | 1      |
| R  | 1623.000                          | 11.070 | 1 |   | .013  |       |      |        | .000      | 30.000  | 1      |
| R  | 1716.000                          | 12.970 | 1 |   | .013  |       |      |        | .000      | .000    | 1      |
| SH | 1716.000                          | 12.970 | 1 |   |       |       |      | 12.970 |           |         |        |
| CD | 1                                 | 4      | 1 |   | .000  | 1.500 | .000 | .000   | .000      | .00     |        |
| CD | 2                                 | 4      | 1 |   | .000  | 2.000 | .000 | .000   | .000      | .00     |        |
| Q  |                                   |        |   |   | 7.000 | .0    |      |        |           |         |        |

FILE: 4034wspg1.WSW

4034wspg1  
W S P G W - CIVILDESIGN Version 14.06  
Program Package Serial Number: 1595  
WATER SURFACE PROFILE LISTING

PAGE 1

Date: 2- 6-2012 Time:10:46: 7

WSPG 1  
SUMMERLIN RESORT HOTEL AND CASINO  
MARTIN & MARTIN 4034

| Station        | Invert Elev | Depth (FT) | Water Elev | Q (CFS) | Vel (FPS) | Vel Head | Energy Grd.El. | Super Elev | Critical Depth | Flow Top width | Height/Dia.-FT | Base Wt or I.D. | ZL  | No with Prs/Pip |
|----------------|-------------|------------|------------|---------|-----------|----------|----------------|------------|----------------|----------------|----------------|-----------------|-----|-----------------|
| L/Elem         | Ch Slope    |            |            |         |           | SF Ave   | HF             | SE Dpth    | Froude N       | Norm Dp        | "N"            | X-Fall          | ZR  | Type Ch         |
| 1001.000       | 1.450       | 2.890      | 4.340      | 15.00   | 8.49      | 1.12     | 5.46           | .00        | 1.41           | .00            | 1.500          | .000            | .00 | 1 .0            |
| 66.000         | .0124       |            |            |         |           | .0204    | 1.35           | 2.89       | .00            | 1.50           | .013           | .00             | .00 | PIPE            |
| 1067.000       | 2.270       | 3.704      | 5.974      | 15.00   | 4.77      | .35      | 6.33           | .00        | 1.40           | .00            | 2.000          | .000            | .00 | 1 .0            |
| 91.000         | .0057       |            |            |         |           | .0044    | .40            | 3.70       | .00            | 1.45           | .013           | .00             | .00 | PIPE            |
| 1158.000       | 2.790       | 3.602      | 6.392      | 15.00   | 4.77      | .35      | 6.75           | .00        | 1.40           | .00            | 2.000          | .000            | .00 | 1 .0            |
| JUNCT STR      | .0400       |            |            |         |           | .0027    | .01            | .00        | .00            |                | .013           | .00             | .00 | PIPE            |
| 1163.000       | 2.990       | 3.707      | 6.697      | 7.00    | 3.96      | .24      | 6.94           | .00        | 1.02           | .00            | 1.500          | .000            | .00 | 1 .0            |
| 22.000         | .0195       |            |            |         |           | .0044    | .10            | 3.71       | .00            | .73            | .013           | .00             | .00 | PIPE            |
| 1185.000       | 3.420       | 3.423      | 6.843      | 7.00    | 3.96      | .24      | 7.09           | .00        | 1.02           | .00            | 1.500          | .000            | .00 | 1 .0            |
| 140.000        | .0164       |            |            |         |           | .0044    | .62            | 3.42       | .00            | .77            | .013           | .00             | .00 | PIPE            |
| 1325.000       | 5.710       | 1.791      | 7.501      | 7.00    | 3.96      | .24      | 7.74           | .00        | 1.02           | .00            | 1.500          | .000            | .00 | 1 .0            |
| 28.682         | .0172       |            |            |         |           | .0044    | .13            | 1.79       | .00            | .76            | .013           | .00             | .00 | PIPE            |
| 1353.682       | 6.205       | 1.500      | 7.705      | 7.00    | 3.96      | .24      | 7.95           | .00        | 1.02           | .00            | 1.500          | .000            | .00 | 1 .0            |
| 8.478          | .0172       |            |            |         |           | .0041    | .03            | 1.50       | .00            | .76            | .013           | .00             | .00 | PIPE            |
| 1362.160       | 6.351       | 1.361      | 7.712      | 7.00    | 4.15      | .27      | 7.98           | .00        | 1.02           | .87            | 1.500          | .000            | .00 | 1 .0            |
| HYDRAULIC JUMP |             |            |            |         |           |          |                |            |                |                |                |                 |     |                 |
| 1362.160       | 6.351       | .751       | 7.102      | 7.00    | 7.91      | .97      | 8.07           | .00        | 1.02           | 1.50           | 1.500          | .000            | .00 | 1 .0            |
| 49.840         | .0172       |            |            |         |           | .0177    | .88            | .75        | 1.81           | .76            | .013           | .00             | .00 | PIPE            |

FILE: 4034wspg1.WSW

W S P G W - CIVILDESIGN Version 14.06  
Program Package Serial Number: 1595  
WATER SURFACE PROFILE LISTING

Date: 2- 6-2012 Time:10:46: 7

WSPG 1  
SUMMERLIN RESORT HOTEL AND CASINO  
MARTIN & MARTIN 4034

| Station  | Invert Elev | Depth (FT) | Water Elev | Q (CFS) | Vel (FPS) | Vel Head | Energy Grd.El. | Super Elev | Critical Depth | Flow Top width | Height/Dia.-FT | Base Wt or I.D. | ZL  | No with Prs/Pip |
|----------|-------------|------------|------------|---------|-----------|----------|----------------|------------|----------------|----------------|----------------|-----------------|-----|-----------------|
| L/Elem   | Ch Slope    |            |            |         |           | SF Ave   | HF             | SE Dpth    | Froude N       | Norm Dp        | "N"            | X-Fall          | ZR  | Type Ch         |
| 1412.000 | 7.210       | .751       | 7.961      | 7.00    | 7.91      | .97      | 8.93           | .00        | 1.02           | 1.50           | 1.500          | .000            | .00 | 1 .0            |
| 15.324   | .0177       |            |            |         |           | .0177    | .27            | .75        | 1.81           | .75            | .013           | .00             | .00 | PIPE            |
| 1427.324 | 7.481       | .751       | 8.232      | 7.00    | 7.91      | .97      | 9.20           | .00        | 1.02           | 1.50           | 1.500          | .000            | .00 | 1 .0            |
| 57.676   | .0177       |            |            |         |           | .0176    | 1.02           | .75        | 1.81           | .75            | .013           | .00             | .00 | PIPE            |
| 1485.000 | 8.500       | .753       | 9.253      | 7.00    | 7.89      | .97      | 10.22          | .00        | 1.02           | 1.50           | 1.500          | .000            | .00 | 1 .0            |
| 51.263   | .0175       |            |            |         |           | .0182    | .93            | .75        | 1.81           | .75            | .013           | .00             | .00 | PIPE            |
| 1536.263 | 9.395       | .737       | 10.132     | 7.00    | 8.11      | 1.02     | 11.15          | .00        | 1.02           | 1.50           | 1.500          | .000            | .00 | 1 .0            |
| 27.737   | .0175       |            |            |         |           | .0202    | .56            | .74        | 1.88           | .75            | .013           | .00             | .00 | PIPE            |
| 1564.000 | 9.880       | .710       | 10.590     | 7.00    | 8.50      | 1.12     | 11.71          | .00        | 1.02           | 1.50           | 1.500          | .000            | .00 | 1 .0            |
| 4.954    | .0245       |            |            |         |           | .0212    | .10            | .71        | 2.02           | .68            | .013           | .00             | .00 | PIPE            |
| 1568.954 | 10.001      | .715       | 10.716     | 7.00    | 8.42      | 1.10     | 11.82          | .00        | 1.02           | 1.50           | 1.500          | .000            | .00 | 1 .0            |
| 15.046   | .0245       |            |            |         |           | .0197    | .30            | .72        | 1.99           | .68            | .013           | .00             | .00 | PIPE            |
| 1584.000 | 10.370      | .742       | 11.112     | 7.00    | 8.03      | 1.00     | 12.11          | .00        | 1.02           | 1.50           | 1.500          | .000            | .00 | 1 .0            |
| 39.000   | .0179       |            |            |         |           | .0193    | .75            | .74        | 1.86           | .75            | .013           | .00             | .00 | PIPE            |
| 1623.000 | 11.070      | .722       | 11.792     | 7.00    | 8.32      | 1.08     | 12.87          | .00        | 1.02           | 1.50           | 1.500          | .000            | .00 | 1 .0            |
| 49.959   | .0204       |            |            |         |           | .0192    | .96            | .72        | 1.96           | .72            | .013           | .00             | .00 | PIPE            |
| 1672.958 | 12.091      | .746       | 12.836     | 7.00    | 7.98      | .99      | 13.83          | .00        | 1.02           | 1.50           | 1.500          | .000            | .00 | 1 .0            |
| 18.132   | .0204       |            |            |         |           | .0170    | .31            | .75        | 1.84           | .72            | .013           | .00             | .00 | PIPE            |

FILE: 4034wspg1.WSW

W S P G W - CIVILDESIGN Version 14.06  
Program Package Serial Number: 1595  
WATER SURFACE PROFILE LISTING

Date: 2- 6-2012 Time:10:46: 7

WSPG 1  
SUMMERLIN RESORT HOTEL AND CASINO  
MARTIN & MARTIN 4034

| Station | Invert Elev | Depth (FT) | Water Elev | Q (CFS) | Vel (FPS) | Vel Head | Energy Grd.El. | Super Elev | Critical Depth | Flow Top width | Height/Dia.-FT | Base Wt or I.D. | ZL | No with Prs/Pip |
|---------|-------------|------------|------------|---------|-----------|----------|----------------|------------|----------------|----------------|----------------|-----------------|----|-----------------|
| L/Elem  | Ch Slope    |            |            |         |           | SF Ave   | HF             | SE Dpth    | Froude N       | Norm Dp        | "N"            | X-Fall          | ZR | Type Ch         |

| 4034wspg1 |          |       |        |      |      |        |       |         |          |         |       |        |     |      |    |
|-----------|----------|-------|--------|------|------|--------|-------|---------|----------|---------|-------|--------|-----|------|----|
| L/Elem    | Ch Slope |       |        |      |      | SF Ave | HF    | SE Dpth | Froude N | Norm Dp | "N"   | X-Fall | ZR  | Type | Ch |
| 1691.090  | 12.461   | .774  | 13.235 | 7.00 | 7.61 | .90    | 14.13 | .00     | 1.02     | 1.50    | 1.500 | .000   | .00 | 1    | .0 |
| 9.563     | .0204    |       |        |      |      | .0150  | .14   | .77     | 1.71     | .72     | .013  | .00    | .00 | PIPE |    |
| 1700.654  | 12.656   | .804  | 13.461 | 7.00 | 7.26 | .82    | 14.28 | .00     | 1.02     | 1.50    | 1.500 | .000   | .00 | 1    | .0 |
| 5.962     | .0204    |       |        |      |      | .0132  | .08   | .80     | 1.59     | .72     | .013  | .00    | .00 | PIPE |    |
| 1706.615  | 12.778   | .836  | 13.614 | 7.00 | 6.92 | .74    | 14.36 | .00     | 1.02     | 1.49    | 1.500 | .000   | .00 | 1    | .0 |
| 3.935     | .0204    |       |        |      |      | .0117  | .05   | .84     | 1.48     | .72     | .013  | .00    | .00 | PIPE |    |
| 1710.550  | 12.859   | .869  | 13.727 | 7.00 | 6.60 | .68    | 14.40 | .00     | 1.02     | 1.48    | 1.500 | .000   | .00 | 1    | .0 |
| 2.599     | .0204    |       |        |      |      | .0103  | .03   | .87     | 1.37     | .72     | .013  | .00    | .00 | PIPE |    |
| 1713.149  | 12.912   | .904  | 13.816 | 7.00 | 6.29 | .61    | 14.43 | .00     | 1.02     | 1.47    | 1.500 | .000   | .00 | 1    | .0 |
| 1.653     | .0204    |       |        |      |      | .0092  | .02   | .90     | 1.27     | .72     | .013  | .00    | .00 | PIPE |    |
| 1714.802  | 12.946   | .941  | 13.887 | 7.00 | 6.00 | .56    | 14.45 | .00     | 1.02     | 1.45    | 1.500 | .000   | .00 | 1    | .0 |
| .907      | .0204    |       |        |      |      | .0081  | .01   | .94     | 1.18     | .72     | .013  | .00    | .00 | PIPE |    |
| 1715.709  | 12.964   | .981  | 13.945 | 7.00 | 5.72 | .51    | 14.45 | .00     | 1.02     | 1.43    | 1.500 | .000   | .00 | 1    | .0 |
| .291      | .0204    |       |        |      |      | .0072  | .00   | .98     | 1.09     | .72     | .013  | .00    | .00 | PIPE |    |
| 1716.000  | 12.970   | 1.024 | 13.994 | 7.00 | 5.45 | .46    | 14.45 | .00     | 1.02     | 1.40    | 1.500 | .000   | .00 | 1    | .0 |

|    |                                   |        |    |      |       |      |      |        |           |           |
|----|-----------------------------------|--------|----|------|-------|------|------|--------|-----------|-----------|
| T1 | WSPG 2                            |        |    |      |       |      |      |        | 4034wspg2 | 0         |
| T2 | SUMMERLIN RESORT HOTEL AND CASINO |        |    |      |       |      |      |        |           |           |
| T3 | MARTIN & MARTIN 4034              |        |    |      |       |      |      |        |           |           |
| SO | 1167.000                          | 02.990 | 1  |      |       |      |      | 06.697 |           |           |
| R  | 1201.000                          | 03.070 | 1  | .013 |       |      |      |        | .000      | 24.000 1  |
| R  | 1232.000                          | 03.150 | 1  | .013 |       |      |      |        | .000      | -44.000 1 |
| R  | 1258.000                          | 03.220 | 1  | .013 |       |      |      |        | .000      | -48.000 1 |
| R  | 1295.000                          | 03.410 | 1  | .013 |       |      |      |        | .000      | 18.000 1  |
| R  | 1372.000                          | 04.290 | 1  | .013 |       |      |      |        | .000      | -51.000 1 |
| R  | 1540.000                          | 06.360 | 1  | .013 |       |      |      |        | .000      | -1.000 1  |
| R  | 1610.000                          | 08.000 | 1  | .013 |       |      |      |        | .000      | .000 1    |
| SH | 1610.000                          | 08.000 | 1  |      |       |      |      | 8.000  |           |           |
| CD | 1                                 | 4      | 1  | .000 | 1.500 | .000 | .000 | .000   | .00       |           |
| Q  |                                   | 8.000  | .0 |      |       |      |      |        |           |           |



WSPG 2  
SUMMERLIN RESORT HOTEL AND CASINO  
MARTIN & MARTIN 4034

| Station  | Invert Elev | Depth (FT) | Water Elev | Q (CFS) | Vel (FPS) | Vel Head | Energy Grd.El. | Super Elev | Critical Depth | Flow Top width | Height/Dia.-FT | Base wt or I.D. | ZL  | No wth Prs/Pip |
|----------|-------------|------------|------------|---------|-----------|----------|----------------|------------|----------------|----------------|----------------|-----------------|-----|----------------|
| L/Elem   | Ch Slope    |            |            |         |           | SF Ave   | HF             | SE Dpth    | Froude N       | Norm Dp        | "N"            | X-Fall          | ZR  | Type Ch        |
| 1167.000 | 2.990       | 3.707      | 6.697      | 8.00    | 4.53      | .32      | 7.02           | .00        | 1.10           | .00            | 1.500          | .000            | .00 | 1 .0           |
| 34.000   | .0024       |            |            |         |           | .0058    | .20            | 3.71       | .00            | 1.50           | .013           | .00             | .00 | PIPE           |
| 1201.000 | 3.070       | 3.865      | 6.935      | 8.00    | 4.53      | .32      | 7.25           | .00        | 1.10           | .00            | 1.500          | .000            | .00 | 1 .0           |
| 31.000   | .0026       |            |            |         |           | .0058    | .18            | 3.87       | .00            | 1.50           | .013           | .00             | .00 | PIPE           |
| 1232.000 | 3.150       | 4.027      | 7.177      | 8.00    | 4.53      | .32      | 7.50           | .00        | 1.10           | .00            | 1.500          | .000            | .00 | 1 .0           |
| 26.000   | .0027       |            |            |         |           | .0058    | .15            | 4.03       | .00            | 1.50           | .013           | .00             | .00 | PIPE           |
| 1258.000 | 3.220       | 4.174      | 7.394      | 8.00    | 4.53      | .32      | 7.71           | .00        | 1.10           | .00            | 1.500          | .000            | .00 | 1 .0           |
| 37.000   | .0051       |            |            |         |           | .0058    | .21            | 4.17       | .00            | 1.34           | .013           | .00             | .00 | PIPE           |
| 1295.000 | 3.410       | 4.234      | 7.644      | 8.00    | 4.53      | .32      | 7.96           | .00        | 1.10           | .00            | 1.500          | .000            | .00 | 1 .0           |
| 77.000   | .0114       |            |            |         |           | .0058    | .45            | 4.23       | .00            | .94            | .013           | .00             | .00 | PIPE           |
| 1372.000 | 4.290       | 3.870      | 8.160      | 8.00    | 4.53      | .32      | 8.48           | .00        | 1.10           | .00            | 1.500          | .000            | .00 | 1 .0           |
| 168.000  | .0123       |            |            |         |           | .0058    | .97            | 3.87       | .00            | .91            | .013           | .00             | .00 | PIPE           |
| 1540.000 | 6.360       | 2.791      | 9.151      | 8.00    | 4.53      | .32      | 9.47           | .00        | 1.10           | .00            | 1.500          | .000            | .00 | 1 .0           |
| 70.000   | .0234       |            |            |         |           | .0058    | .41            | 2.79       | .00            | .75            | .013           | .00             | .00 | PIPE           |
| 1610.000 | 8.000       | 1.573      | 9.573      | 8.00    | 4.53      | .32      | 9.89           | .00        | 1.10           | .00            | 1.500          | .000            | .00 | 1 .0           |

# **APPENDIX B**

## **(REFERENCE MATERIAL)**

- Approval Letter for DS# 2080
- DS# 2080 Developed Onsite Drainage Basin Map – Fig 1
- DS# 2080 HEC-1
- DS# 2080 StormCAD
- Approval Letter for DS# 3914
- DS# 3914 Storm Sewer Hydraulic Calculations

|                                                            |          |                                                              |
|------------------------------------------------------------|----------|--------------------------------------------------------------|
| <b>CITY OF LAS VEGAS</b>                                   |          | <b>DATE:</b>                                                 |
| <b>INTER-OFFICE MEMORANDUM</b>                             |          | April 21, 1998                                               |
| Land Development Services                                  |          | <b>FROM:</b>                                                 |
| Department of Public Works                                 |          | Dennis W. Stransky, P.E.<br>Flood Control Project<br>Manager |
| <b>SUBJECT:</b> Drainage Study for:                        |          | <b>COPIES TO:</b>                                            |
| "Summerlin Resort Hotel and Casino"                        |          | Martin & Martin, Inc.                                        |
| <b>FILE NO.</b> \\khan\flood\Depot\DSMEMOS\DS2080G.ZNA.doc |          | Seven Circle Resorts                                         |
| <b>FEMA Flood Zone</b>                                     | YES X No | Cheri Edleman, P.E. DEVCO                                    |
| <b>Proposed Storm Drain</b>                                | YES X No | CCRFC                                                        |

| HISTORY       | DATE RECEIVED | DATE REVIEWED | COMMENTS           | REVIEW FEES     |
|---------------|---------------|---------------|--------------------|-----------------|
| 1st Submittal | 06/24/97      | 07/02/97      | Not Accepted       | \$250.00        |
| 2nd Submittal | 07/21/97      | 07/31/97      | Accepted           | \$250.00        |
| CCRFC         | 08/22/97      | 08/25/97      | Accepted           | \$00.00         |
| 3rd Submittal | 11/26/97      | 12/2/97       | Not Accepted       | \$100.00        |
| 4th Submittal | 2/12/98       | 2/25/98       | Accepted           | \$100.00        |
| 5th Submittal | 04/15/98      | 04/21/98      | See Comments Below | \$100.00        |
|               |               |               | <b>TOTAL FEES:</b> | <b>\$800.00</b> |

#### REMARKS:

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

|   |                                                                       |
|---|-----------------------------------------------------------------------|
| X | is acceptable in concept subject to conformance to all CLV standards. |
|   | must be resubmitted or supplemented including the following:          |
|   | must have Clark County Regional Flood Control District concurrence    |

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

PLANS SENT TO LAND DEVELOPMENT yes (initial)

END OF REMARKS

dws

T/R/S: 20S/60E/29

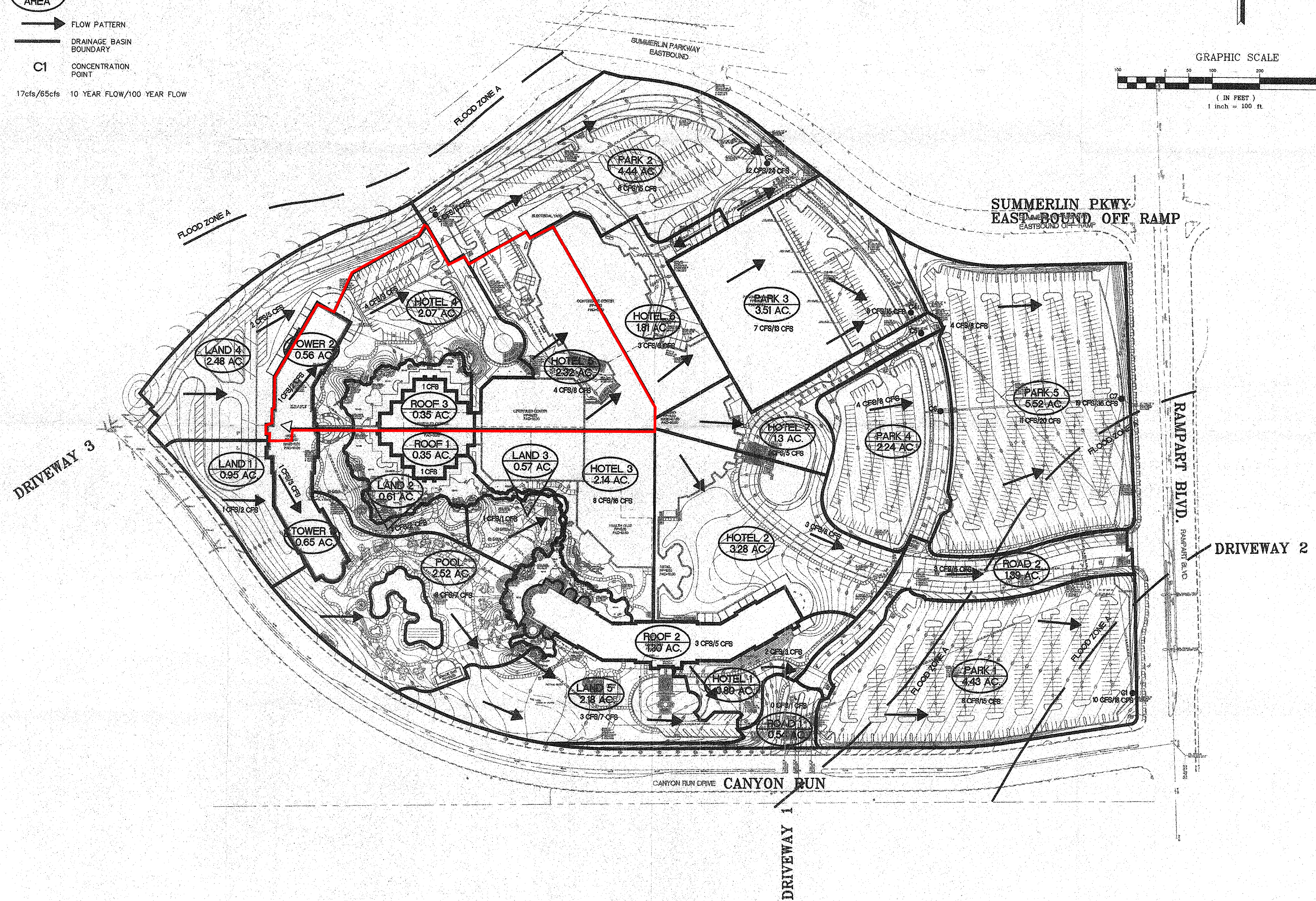
AREA L-29

PLAN SENT TO LAND DEVELOPMENT yes (initial)



# LEGEND

- BASIN AREA
- FLOW PATTERN
- DRAINAGE BASIN BOUNDARY
- C1 CONCENTRATION POINT
- 17cfs/65cfs 10 YEAR FLOW/100 YEAR FLOW



MARTIN & MARTIN  
CIVIL ENGINEERS  
1909 SOUTH JONES BLVD.  
SUITE B  
LAS VEGAS, NEVADA 89102  
PHONE (702) 248-8000

## DEVELOPED ONSITE DRAINAGE BASIN MAP SUMMERLIN RESORT HOTEL & CASINO

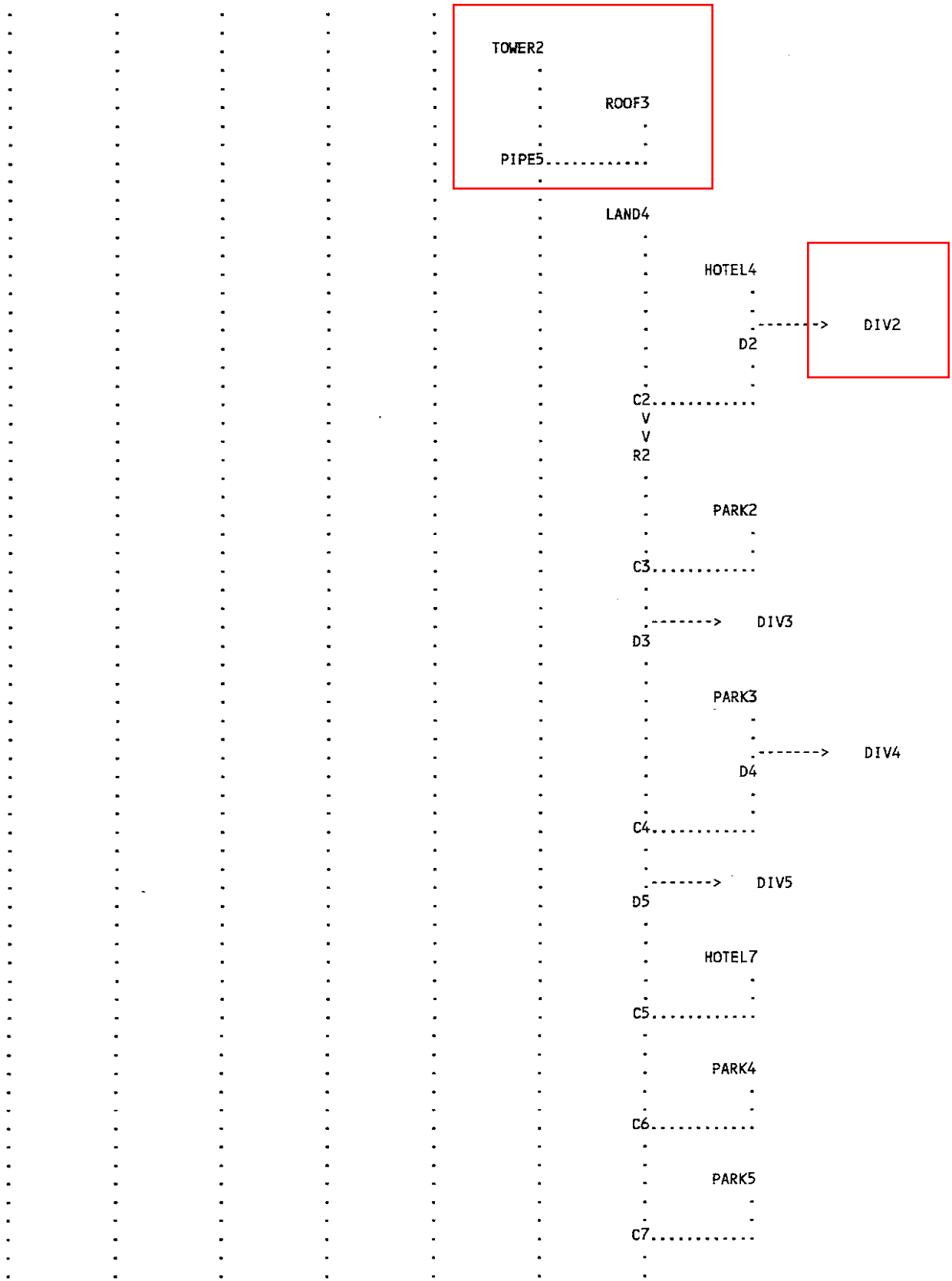
| date                        | name |
|-----------------------------|------|
| 10-15-97                    |      |
| job number 1570.01.02       |      |
| design by D. SWALLOW        |      |
| drawn by V. WINFORD         |      |
| checked by D. MALPASS, P.E. |      |

sheet number

FIGURE 1



115  
119  
123  
126  
130  
136  
134  
139  
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149  
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188  
192



195

. . . . .  
. . . . .  
. . . . .

HOTEL5

199

HOTEL6

\*\*\*> RUNOFF ALSO COMPUTED AT THIS LOCATION



```

*****
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* SEPTEMBER 1990 *
* VERSION 4.0 *
* RUN DATE 02/03/1998 TIME 17:05:33 *
*****

```

```

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

```

MARTIN & MARTIN, INC.  
SUMMERLIN RESORT HOTEL & CASINO  
LAS VEGAS, NEVADA

INPUT FILE : SUMMRLN5.DAT  
OUTPUT FILE: SUMMRLN5.OUT

```

*****
* DRAINAGE BASINS AREA = 48.5 ACRES *
* DEPTH-DURATION-FREQUENCY VALUE = 3.0 IN *
* DEPTH-AREA REDUCTION VALUE = 1.00 *
* STORM DISTRIBUTION #3 *
* ABSTRACTION METHOD: SCS CN *
* HYDROLOGIC METHOD: SCS UH *
* RATIO 1 = 10-YEAR EVENT *
* RATIO 2 = 100-YEAR EVENT *
* DATE: 02/03/98 *
* DEVELOPED CONDITION - ONSITE *
*****

```

# OUTPUT CONTROL VARIABLES

```

IPRNT      5  PRINT CONTROL
IPLOT      0  PLOT CONTROL
QSCAL      0.  HYDROGRAPH PLOT SCALE

```

# HYDROGRAPH TIME DATA

```

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

```

```

COMPUTATION INTERVAL .08 HOURS
TOTAL TIME BASE      24.92 HOURS

```

# ENGLISH UNITS

```

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

```

# MULTI-PLAN OPTION

```

NPLAN      1  NUMBER OF PLANS

```

# MULTI-RATIO OPTION

```

RATIOS OF PRECIPITATION
.56      1.00

```

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

| OPERATION     | STATION | AREA | PLAN | RATIOS APPLIED TO PRECIPITATION |                 |
|---------------|---------|------|------|---------------------------------|-----------------|
|               |         |      |      | RATIO 1<br>.56                  | RATIO 2<br>1.00 |
| HYDROGRAPH AT | LAND1   | .00  | 1    | FLOW<br>TIME                    | 1.<br>3.58      |
| ROUTED TO     | R1      | .00  | 1    | FLOW<br>TIME                    | 2.<br>3.58      |
| HYDROGRAPH AT | TOWER1  | .00  | 1    | FLOW<br>TIME                    | 1.<br>3.50      |
| COMBINED AT   | PIPE1   | .00  | 1    | FLOW<br>TIME                    | 3.<br>3.50      |
| HYDROGRAPH AT | ROOF1   | .00  | 1    | FLOW<br>TIME                    | 1.<br>3.50      |
| HYDROGRAPH AT | LAND2   | .00  | 1    | FLOW<br>TIME                    | 1.<br>3.50      |
| COMBINED AT   | PIPE2   | .00  | 1    | FLOW<br>TIME                    | 2.<br>3.50      |
| HYDROGRAPH AT | HOTEL3  | .01  | 1    | FLOW<br>TIME                    | 8.<br>3.50      |
| HYDROGRAPH AT | LAND3   | .00  | .1   | FLOW<br>TIME                    | 1.<br>3.50      |
| HYDROGRAPH AT | POOL    | .00  | 1    | FLOW<br>TIME                    | 3.<br>3.50      |
| COMBINED AT   | PIPE3   | .02  | 1    | FLOW<br>TIME                    | 7.<br>3.50      |
| HYDROGRAPH AT | LAND5   | .00  | 1    | FLOW<br>TIME                    | 15.<br>3.50     |
| HYDROGRAPH AT | ROOF2   | .00  | 1    | FLOW<br>TIME                    | 32.<br>3.50     |
| COMBINED AT   | PIPE4   | .02  | 1    | FLOW<br>TIME                    | 3.<br>3.50      |
| HYDROGRAPH AT | ROAD1   | .00  | 1    | FLOW                            | 5.<br>1.        |

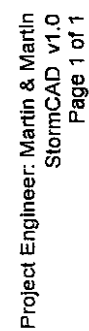
|               |        |     |   |      | TIME | 3.50 | 3.50 |
|---------------|--------|-----|---|------|------|------|------|
| HYDROGRAPH AT | HOTEL1 | .00 | 1 | FLOW | 2.   | 3.   |      |
|               |        |     |   | TIME | 3.50 | 3.50 |      |
| HYDROGRAPH AT | PARK1  | .01 | 1 | FLOW | 8.   | 15.  |      |
|               |        |     |   | TIME | 3.50 | 3.50 |      |
| 2 COMBINED AT | C1     | .01 | 1 | FLOW | 10.  | 18.  |      |
|               |        |     |   | TIME | 3.50 | 3.50 |      |
| HYDROGRAPH AT | HOTEL2 | .01 | 1 | FLOW | 3.   | 8.   |      |
|               |        |     |   | TIME | 3.50 | 3.50 |      |
| DIVERSION TO  | DIV1   | .01 | 1 | FLOW | 3.   | 8.   |      |
|               |        |     |   | TIME | 3.50 | 3.50 |      |
| HYDROGRAPH AT | D1     | .01 | 1 | FLOW | 0.   | 0.   |      |
|               |        |     |   | TIME | .08  | .08  |      |
| HYDROGRAPH AT | ROAD2  | .00 | 1 | FLOW | 3.   | 6.   |      |
|               |        |     |   | TIME | 3.50 | 3.50 |      |
| HYDROGRAPH AT | TOWER2 | .00 | 1 | FLOW | 1.   | 2.   |      |
|               |        |     |   | TIME | 3.50 | 3.50 |      |
| HYDROGRAPH AT | ROOF3  | .00 | 1 | FLOW | 1.   | 1.   |      |
|               |        |     |   | TIME | 3.50 | 3.50 |      |
| 2 COMBINED AT | PIPE5  | .00 | 1 | FLOW | 2.   | 4.   |      |
|               |        |     |   | TIME | 3.50 | 3.50 |      |
| HYDROGRAPH AT | LAND4  | .00 | 1 | FLOW | 2.   | 5.   |      |
|               |        |     |   | TIME | 3.58 | 3.58 |      |
| HYDROGRAPH AT | HOTEL4 | .01 | 1 | FLOW | 4.   | 9.   |      |
|               |        |     |   | TIME | 3.50 | 3.50 |      |
| DIVERSION TO  | DIV2   | .01 | 1 | FLOW | 1.   | 3.   |      |
|               |        |     |   | TIME | 3.50 | 3.50 |      |
| HYDROGRAPH AT | D2     | .01 | 1 | FLOW | 3.   | 6.   |      |
|               |        |     |   | TIME | 3.50 | 3.50 |      |
| 2 COMBINED AT | C2     | .01 | 1 | FLOW | 5.   | 11.  |      |
|               |        |     |   | TIME | 3.58 | 3.58 |      |
| ROUTED TO     | R2     | .01 | 1 | FLOW | 5.   | 10.  |      |
|               |        |     |   | TIME | 3.58 | 3.58 |      |
| HYDROGRAPH AT | PARK2  | .01 | 1 | FLOW | 7.   | 14.  |      |
|               |        |     |   | TIME | 3.50 | 3.50 |      |



|               |        |     |   |              |             |             |
|---------------|--------|-----|---|--------------|-------------|-------------|
| 2 COMBINED AT | C3     | .01 | 1 | FLOW<br>TIME | 11.<br>3.50 | 23.<br>3.50 |
| VERSION TO    | DIV3   | .01 | 1 | FLOW<br>TIME | 5.<br>3.50  | 10.<br>3.50 |
| HYDROGRAPH AT | D3     | .01 | 1 | FLOW<br>TIME | 6.<br>3.50  | 13.<br>3.50 |
| HYDROGRAPH AT | PARK3  | .01 | 1 | FLOW<br>TIME | 7.<br>3.50  | 13.<br>3.50 |
| DIVERSION TO  | DIV4   | .01 | 1 | FLOW<br>TIME | 7.<br>3.50  | 10.<br>3.50 |
| HYDROGRAPH AT | D4     | .01 | 1 | FLOW<br>TIME | 0.<br>.08   | 2.<br>3.50  |
| 2 COMBINED AT | C4     | .02 | 1 | FLOW<br>TIME | 6.<br>3.50  | 15.<br>3.50 |
| DIVERSION TO  | DIV5   | .02 | 1 | FLOW<br>TIME | 4.<br>3.50  | 11.<br>3.50 |
| HYDROGRAPH AT | D5     | .02 | 1 | FLOW<br>TIME | 2.<br>3.50  | 4.<br>3.50  |
| HYDROGRAPH AT | HOTEL7 | .00 | 1 | FLOW<br>TIME | 2.<br>3.50  | 5.<br>3.50  |
| COMBINED AT   | C5     | .02 | 1 | FLOW<br>TIME | 4.<br>3.50  | 9.<br>3.50  |
| HYDROGRAPH AT | PARK4  | .00 | 1 | FLOW<br>TIME | 4.<br>3.50  | 8.<br>3.50  |
| 2 COMBINED AT | C6     | .03 | 1 | FLOW<br>TIME | 8.<br>3.50  | 16.<br>3.50 |
| HYDROGRAPH AT | PARK5  | .01 | 1 | FLOW<br>TIME | 11.<br>3.50 | 20.<br>3.50 |
| 2 COMBINED AT | C7     | .03 | 1 | FLOW<br>TIME | 19.<br>3.50 | 36.<br>3.50 |
| HYDROGRAPH AT | HOTEL5 | .00 | 1 | FLOW<br>TIME | 4.<br>3.50  | 8.<br>3.50  |
| HYDROGRAPH AT | HOTEL6 | .00 | 1 | FLOW<br>TIME | 4.<br>3.50  | 8.<br>3.50  |

# Combined Pipe/Node Report

| Pipe | Upstream Node | Downstream Node | Length (ft) | Capacity (cfs) | Discharge (cfs) | Constructed Slope (ft/ft) | Average Velocity (ft/s) | Section Size | Section Shape | Roughness | Upstream Invert Elevation (ft) | Downstream Invert Elevation (ft) | Upstream Ground Elevation (ft) | Downstream Ground Elevation (ft) | Upstream HGL (ft) | Downstream HGL (ft) |
|------|---------------|-----------------|-------------|----------------|-----------------|---------------------------|-------------------------|--------------|---------------|-----------|--------------------------------|----------------------------------|--------------------------------|----------------------------------|-------------------|---------------------|
| P38  | I21           | J20             | 13.00       | 5.04           | 1.00            | 0.020000                  | 1.27                    | 12 inch      | Circular      | 0.013     | 2,690.82                       | 2,690.72                         | 2,700.00                       | 2,700.00                         | 2,693.70          | 2,693.69            |
| P43  | I23           | J23             | 200.00      | 14.85          | 7.00            | 0.020000                  | 5.44                    | 18 inch      | Circular      | 0.013     | 2,711.36                       | 2,707.36                         | 2,725.00                       | 2,719.00                         | 2,712.38          | 2,708.38            |
| P42  | J23           | J21             | 305.00      | 14.85          | 7.00            | 0.020000                  | 4.70                    | 18 inch      | Circular      | 0.013     | 2,707.36                       | 2,701.26                         | 2,719.00                       | 2,710.61                         | 2,708.38          | 2,704.91            |
| P41  | I22           | J22             | 100.00      | 10.50          | 8.00            | 0.010000                  | 4.53                    | 18 inch      | Circular      | 0.013     | 2,705.21                       | 2,704.21                         | 2,710.50                       | 2,713.00                         | 2,706.71          | 2,706.13            |
| P40  | J22           | J21             | 210.00      | 12.02          | 8.00            | 0.013095                  | 4.53                    | 18 inch      | Circular      | 0.013     | 2,704.01                       | 2,701.26                         | 2,713.00                       | 2,710.61                         | 2,706.13          | 2,704.91            |
| P39  | J21           | J20             | 550.00      | 14.85          | 15.00           | 0.019455                  | 8.49                    | 18 inch      | Circular      | 0.013     | 2,701.06                       | 2,690.36                         | 2,710.61                       | 2,700.00                         | 2,704.91          | 2,693.69            |
| P37  | J20           | J19             | 20.00       | 14.85          | 16.00           | 0.020000                  | 9.05                    | 18 inch      | Circular      | 0.013     | 2,690.06                       | 2,689.66                         | 2,700.00                       | 2,699.97                         | 2,693.69          | 2,693.23            |
| P36  | J19           | J18             | 105.00      | 14.85          | 16.00           | 0.020000                  | 9.05                    | 18 inch      | Circular      | 0.013     | 2,689.46                       | 2,687.36                         | 2,699.97                       | 2,699.00                         | 2,693.23          | 2,690.79            |
| P34  | I19           | J18             | 25.00       | 23.49          | 1.60            | 0.050000                  | 0.91                    | 18 inch      | Circular      | 0.013     | 2,688.61                       | 2,687.36                         | 2,698.81                       | 2,699.00                         | 2,690.80          | 2,690.79            |
| P35  | I20           | J18             | 10.00       | 23.49          | 7.60            | 0.050000                  | 4.30                    | 18 inch      | Circular      | 0.013     | 2,687.86                       | 2,687.36                         | 2,698.81                       | 2,699.00                         | 2,690.84          | 2,690.79            |
| P33  | J18           | J16             | 95.00       | 31.99          | 25.20           | 0.020000                  | 8.02                    | 24 inch      | Circular      | 0.013     | 2,687.36                       | 2,685.48                         | 2,699.00                       | 2,698.05                         | 2,690.79          | 2,689.61            |
| P32  | I18           | J17             | 210.00      | 7.21           | 8.00            | 0.004714                  | 4.53                    | 18 inch      | Circular      | 0.013     | 2,690.00                       | 2,689.01                         | 2,693.50                       | 2,699.20                         | 2,692.77          | 2,691.56            |
| P31  | J17           | J16             | 335.00      | 10.50          | 8.00            | 0.010000                  | 4.53                    | 18 inch      | Circular      | 0.013     | 2,688.81                       | 2,685.46                         | 2,699.20                       | 2,698.05                         | 2,691.56          | 2,689.61            |
| P30  | J16           | J15             | 35.00       | 31.53          | 33.20           | 0.019429                  | 10.57                   | 24 inch      | Circular      | 0.013     | 2,685.26                       | 2,684.58                         | 2,698.05                       | 2,697.50                         | 2,689.61          | 2,688.86            |
| P29  | I17           | J15             | 22.00       | 7.89           | 1.00            | 0.049091                  | 1.27                    | 12 inch      | Circular      | 0.013     | 2,686.66                       | 2,685.58                         | 2,697.50                       | 2,697.50                         | 2,688.86          | 2,688.86            |
| P28  | J15           | J14             | 400.00      | 29.54          | 34.20           | 0.017050                  | 10.97                   | 24 inch      | Circular      | 0.013     | 2,684.58                       | 2,677.76                         | 2,697.50                       | 2,689.28                         | 2,688.86          | 2,679.67            |
| P27  | I16           | J15             | 18.00       | 23.49          | 10.40           | 0.050000                  | 6.34                    | 18 inch      | Circular      | 0.013     | 2,679.41                       | 2,678.51                         | 2,693.34                       | 2,689.16                         | 2,690.65          | 2,679.92            |
| P26  | I15           | J14             | 25.00       | 50.58          | 15.30           | 0.050000                  | 5.67                    | 24 inch      | Circular      | 0.013     | 2,678.51                       | 2,677.26                         | 2,689.16                       | 2,689.28                         | 2,679.43          | 2,679.41            |
| P25  | I14           | J14             | 10.00       | 23.49          | 4.90            | 0.050000                  | 2.77                    | 18 inch      | Circular      | 0.013     | 2,677.76                       | 2,677.26                         | 2,689.05                       | 2,689.28                         | 2,679.43          | 2,668.12            |
| P24  | J14           | J13             | 543.00      | 58.00          | 54.40           | 0.020000                  | 12.40                   | 30 inch      | Circular      | 0.013     | 2,677.06                       | 2,666.20                         | 2,689.28                       | 2,677.68                         | 2,679.41          | 2,668.08            |
| P23  | I13           | J13             | 210.00      | 41.01          | 37.60           | 0.010000                  | 9.06                    | 30 inch      | Circular      | 0.013     | 2,668.30                       | 2,666.20                         | 2,672.59                       | 2,677.68                         | 2,670.37          | 2,668.08            |
| P22  | J13           | J2              | 160.00      | 126.96         | 92.00           | 0.007813                  | 7.32                    | 48 inch      | Circular      | 0.013     | 2,661.00                       | 2,659.75                         | 2,677.68                       | 2,672.00                         | 2,665.29          | 2,664.64            |
| P-53 | I-30          | J6              | 70.00       | 5.04           | 1.00            | 0.020000                  | 2.42                    | 12 inch      | Circular      | 0.013     | 2,688.70                       | 2,687.30                         | 2,696.43                       | 2,696.36                         | 2,689.12          | 2,688.02            |
| P9   | I5            | J6              | 60.00       | 24.07          | 1.30            | 0.052500                  | 2.34                    | 18 inch      | Circular      | 0.013     | 2,690.45                       | 2,687.30                         | 2,697.83                       | 2,696.36                         | 2,690.88          | 2,688.02            |
| P10  | I6            | J6              | 45.00       | 23.49          | 1.30            | 0.050000                  | 2.34                    | 18 inch      | Circular      | 0.013     | 2,689.55                       | 2,687.30                         | 2,696.83                       | 2,696.36                         | 2,689.98          | 2,688.02            |
| P8   | J6            | J5              | 250.00      | 23.49          | 3.60            | 0.050000                  | 3.66                    | 18 inch      | Circular      | 0.013     | 2,687.10                       | 2,674.60                         | 2,696.36                       | 2,686.00                         | 2,687.82          | 2,675.55            |
| P7   | I4            | J5              | 50.00       | 23.49          | 2.40            | 0.050000                  | 2.90                    | 18 inch      | Circular      | 0.013     | 2,677.10                       | 2,674.60                         | 2,686.00                       | 2,686.00                         | 2,677.69          | 2,675.55            |
| P6   | J5            | J4              | 150.00      | 23.49          | 6.00            | 0.050000                  | 8.11                    | 18 inch      | Circular      | 0.013     | 2,674.60                       | 2,667.10                         | 2,686.00                       | 2,678.74                         | 2,675.55          | 2,667.62            |
| P5   | I3            | J4              | 63.00       | 23.49          | 2.40            | 0.050000                  | 2.93                    | 18 inch      | Circular      | 0.013     | 2,670.25                       | 2,667.10                         | 2,678.26                       | 2,678.74                         | 2,670.84          | 2,668.02            |
| P4   | J4            | J3              | 48.00       | 22.74          | 8.40            | 0.046375                  | 5.34                    | 18 inch      | Circular      | 0.013     | 2,666.90                       | 2,664.65                         | 2,678.74                       | 2,681.36                         | 2,686.02          | 2,667.61            |
| P44  | I25           | J10             | 140.00      | 31.99          | 5.00            | 0.020000                  | 2.59                    | 24 inch      | Circular      | 0.013     | 2,703.05                       | 2,700.25                         | 2,711.00                       | 2,710.84                         | 2,703.96          | 2,704.04            |
| P21  | I12           | I11             | 125.00      | 10.50          | 1.00            | 0.010000                  | 1.79                    | 18 inch      | Circular      | 0.013     | 2,713.60                       | 2,712.35                         | 2,721.50                       | 2,724.09                         | 2,713.97          | 2,713.53            |
| P20  | I11           | I24             | 300.00      | 10.50          | 2.00            | 0.010000                  | 1.15                    | 18 inch      | Circular      | 0.013     | 2,712.15                       | 2,709.15                         | 2,724.09                       | 2,717.10                         | 2,713.53          | 2,713.43            |
| P19  | I10           | I24             | 250.00      | 22.62          | 17.00           | 0.010000                  | 5.41                    | 24 inch      | Circular      | 0.013     | 2,711.65                       | 2,709.15                         | 2,714.90                       | 2,717.10                         | 2,714.84          | 2,713.43            |
| P18  | I24           | J11             | 150.00      | 22.62          | 31.00           | 0.010000                  | 9.87                    | 24 inch      | Circular      | 0.013     | 2,708.95                       | 2,707.45                         | 2,717.10                       | 2,715.05                         | 2,713.43          | 2,710.61            |
| P17  | J11           | J10             | 350.00      | 31.99          | 31.00           | 0.020000                  | 9.87                    | 24 inch      | Circular      | 0.013     | 2,707.25                       | 2,700.25                         | 2,715.05                       | 2,710.84                         | 2,710.61          | 2,704.04            |
| P16  | J10           | J9              | 250.00      | 39.18          | 36.00           | 0.030000                  | 11.46                   | 24 inch      | Circular      | 0.013     | 2,700.05                       | 2,692.55                         | 2,710.84                       | 2,706.00                         | 2,704.04          | 2,697.70            |
| P15  | I8            | J9              | 22.00       | 14.85          | 7.00            | 0.020000                  | 3.96                    | 18 inch      | Circular      | 0.013     | 2,692.99                       | 2,692.55                         | 2,706.47                       | 2,706.00                         | 2,697.80          | 2,697.70            |





|                                                                                                                        |                                       |                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------|
| <b>CITY OF LAS VEGAS</b>                                                                                               |                                       | <b>DATE:</b><br>Apr 15, 2008<br><del>March 17, 2006</del>                                         |
| <b>INTER-OFFICE MEMORANDUM</b>                                                                                         |                                       |                                                                                                   |
| <b>TO:</b><br>Land Development Services<br>Department of Public Works                                                  |                                       | <b>FROM:</b><br>Albert Sung, P.E.<br>Flood Control Project Engineer<br>Department of Public Works |
| <b>SUBJECT:</b><br>Technical Drainage Study for:<br><b>Hotspur Resorts Nevada – Update #1<br/>to PMP-6436 (DS3914)</b> |                                       | <b>COPIES TO:</b><br>Poggemeyer Design Group, Inc.                                                |
| <b>Cross Streets:</b>                                                                                                  | Rampart Boulevard & Summerlin Parkway | Hotspur Resorts Nevada                                                                            |
| <b>File Number:</b>                                                                                                    | F:\Depot\DSMEMOS\DS4293A.doc          | Bart Anderson, P.E., DevCo                                                                        |
| <b>Parcel Number:</b>                                                                                                  | 138-29-401-002                        | CCRFC                                                                                             |
| <b>Zoning Action:</b>                                                                                                  | PMP-6436                              |                                                                                                   |
| <b>FEMA Flood Zone</b>                                                                                                 | YES NO X                              |                                                                                                   |
| <b>Proposed Storm Drain</b>                                                                                            | YES X NO                              |                                                                                                   |

| HISTORY                   | DATE RECEIVED | DATE REVIEWED | COMMENTS             | REVIEW FEES | FEES PAID Trm. No. |
|---------------------------|---------------|---------------|----------------------|-------------|--------------------|
| 1 <sup>st</sup> Submittal | 10/21/2005    | 11/07/2005    | Not Approved         | \$400.00    | 32040: \$400       |
| 2 <sup>nd</sup> Submittal | 12/20/2005    | 1/06/2006     | Conditional Approval | \$400.00    | 35552: \$400       |
| CCRFC                     | 2/23/2006     | 3/6/2006      | Concurrence          | N/C         | N/C                |
| Supplement                | 3/16/2006     | 3/17/2006     | Approved             | N/C         | N/C                |
| 3 <sup>rd</sup> Submittal | 3/31/2008     | 4/15/2008     | See Comments Below   | \$400.00    | 91503: \$400       |
| TOTAL FEES (LDDRS):       |               |               |                      | \$1,200.00  | ----               |

**REMARKS:** This Conceptual Drainage Study is for large lot Parcel Map development.

**3<sup>rd</sup> Submittal: Update #1 to Conceptual Study of PMP-6436 for Re-validation and Extension of Time Only**

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. |

The following comments are repeated until they are complete:

- This drainage study is for the approval of the Parcel Map (PMP 6436). Any future development will require that a site specific Technical Drainage Study be approved prior to any further development.*
- The proposed storm drain system is conceptual in nature and is being used to establish the necessary Public Drainage Easements to be Privately Maintained for the parcel map. Future development will require a complete storm drain system design that addresses the revised grading and system connections from the existing storm drain. The existing storm drain system at the southeast corner of the property and the facilities within both Canyon Run Drive and Rampart Boulevard must be shown and the referenced City of Las Vegas Plan Number must be provided. The use of drop manholes and extreme connection angles will be reviewed with the future development plans. The overflow path for the existing drainage sumps must be addressed with future site development.*

3. *The existing 40-foot drainage easement shown within future Parcel #2 is discussed in the drainage study as having a reduced in width in the future. Any reduction in the drainage easement width requires the filing of a Vacation request to vacate a portion of easement. Contact the Planning Department for the application and process requirements.*

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

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

**END OF REMARKS**  
CLD/PBJ/ays

T/R/S: T20S/R60E/29  
AREA L-29

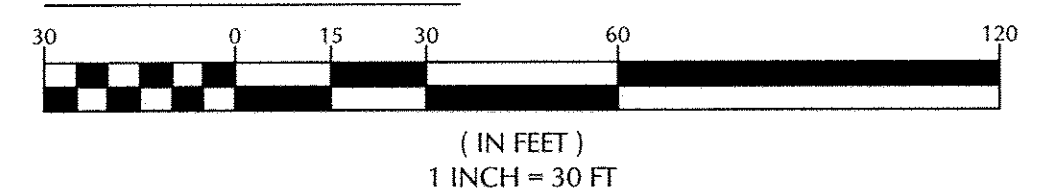




# **APPENDIX C**

## **(IMPROVEMENT PLANS)**

- Grading Plans



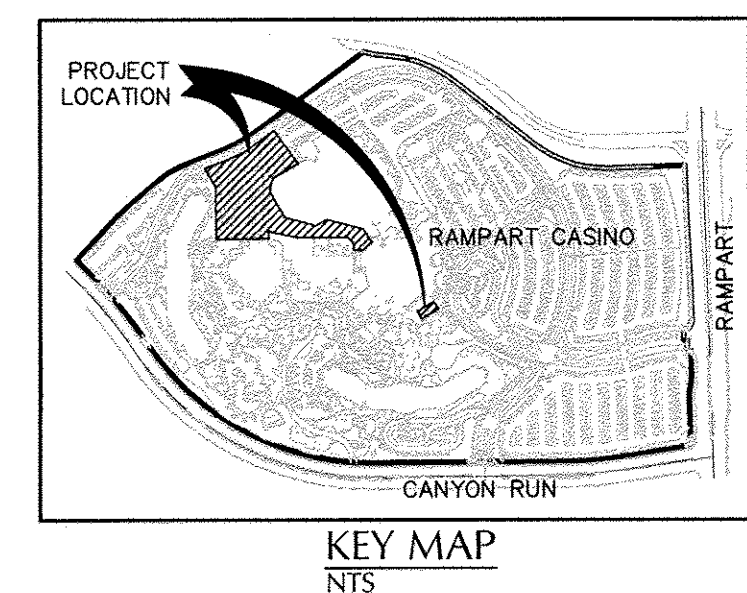
NORTH 01°53'54" WEST, BEING EAST LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 29, TOWNSHIP 20 SOUTH, RANGE 60 EAST, M.D.M., CLARK COUNTY, NEVADA AS SHOWN IN FILE 115 OF PARCEL MAPS, PAGE 34 IN THE OFFICE OF THE CLARK COUNTY, NEVADA RECORDER.

CITY OF LAS VEGAS VERTICAL CONTROL  
BENCHMARK No. 1LV0029SWW6

A RIVET AND PLATE IN TOP OF CURB ON THE NORTH SIDE OF CANYON RUN 1/2 MILE WEST OF RAMPART BLVD. AT WASH WEST OF REGENT LAS VEGAS.

ELEVATION = 830.05849 METERS  
2723.28 US SURVEY FEET  
NORTH AMERICAN VERTICAL DATUM OF 1988

| NO.  | ITEM                                                     | CCAUSD – CLARK COUNTY AREA UNIFORM STANDARD DRAWING |
|------|----------------------------------------------------------|-----------------------------------------------------|
| (1)  | CONSTRUCT 'L' TYPE CURB AND GUTTER PER USDCCA NO. 216.   |                                                     |
| (2)  | CONSTRUCT 'A' TYPE CURB PER DETAIL 'D' SHEET C8.01.      |                                                     |
| (3)  | CONSTRUCT SIDEWALK PER CCAUSD NO. 234.                   |                                                     |
| (4)  | CONSTRUCT SIDEWALK RAMP PER USDCCA NO. 235, CASE I.      |                                                     |
| (5)  | CONSTRUCT 8" CROSS GUTTER PER USDCCA NO. 228.            |                                                     |
| (6)  | CONSTRUCT 2" MIN. AC OVER 6" TYPE II AB (CAR).           |                                                     |
| (7)  | INSTALL 48" TYPE I MANHOLE PER USDCCA NO. 403.           |                                                     |
| (8)  | INSTALL 60" TYPE I MANHOLE PER USDCCA NO. 403.           |                                                     |
| (9)  | CONCRETE SIDEWALK. SEE LANDSCAPE PLANS FOR COLOR/FINISH. |                                                     |
| (10) | LANDSCAPE AREA. SEE LANDSCAPE PLANS FOR INFORMATION.     |                                                     |
| (11) | CONCRETE STAIRS. SEE LANDSCAPE PLANS FOR INFORMATION.    |                                                     |
| (12) | INSTALL 24"x24" JENSEN PRECAST DROP INLET.               |                                                     |



APN: 138-29-410-001HOTSPUR  
SUMMERLIN COUNCIL

APN: 138-29-401-011  
HOTSPUR RESORTS NEVADA LTD

EX. RAMPART CASINO

EX. RAMPART CASINO

EX. RAMPART CASINO

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

CONTRACTOR SHALL PROVIDE EROSION CONTROL IN ALL LANDSCAPE AREAS WHERE ROOF DRAINS DISCHARGE TO GRADE UNLESS OTHERWISE NOTED HEREON.

THE PROJECT SITE LIES WITHIN  
ZONE X AS PER FEMA FIRM PANEL  
32003C2145E DATED SEPTEMBER 27,  
2002. REVISED TO REFLECT LOMR  
DATED NOVEMBER 16, 2011.

**AVOID HITTING UNDERGROUND  
TRAFFIC SIGNAL AND STREET  
LIGHT SYSTEMS. IT'S COSTLY.**



**CALL BEFORE  
YOU DO  
UNDERGROUND  
WORK**

**CALL 1-702-432-5300**

URGENT AND ANNUAL SYSTEMS OF TRANSPORTATION

**AVOID HITTING OVERHEAD  
POWER LINES. IT'S COSTLY.**

**CALL BEFORE  
YOU DO  
OVERHEAD  
WORK**



**CALL 1-702-227-2929**

AVOID CUTTING UNDERGROUND  
UTILITY LINES. IT'S COSTLY.  
CALL

**811**

OR  
1-800-227-2600

MARTIN & MARTIN 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                                                                                                        |
|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
|  |  SLOPE                     |
|  |  GRADING/<br>ELEVATION TAG |
|  |  STORM MANHOLE             |
|  |  DRAIN INLET               |
|  |  CONTOUR                   |
|  |  SCREEN/<br>RETAINING WALL |

| EXISTING                                                                              | PROPOSED                                                                              |                 |
|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-----------------|
|  |  | POWER LINE/POLY |
|  |  | TELEPHONE LINE  |
|  |  | METER/PULL BOX  |
|  |  | UTILITY POLE    |
|  |  | STREET LIGHT    |
|  |  | AREA LIGHT      |

| EXISTING                                                                              | PROPOSED                                                                              |                            |
|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------|
|  |  | FIRE HYDRANT               |
|  |  | FIRE DEPARTMENT CONNECTION |
|  |  | WATER VALVE                |
|  |  | REDUCER                    |
|  |  | SEWER MANHOLE              |
|  |  | CLEANOUT                   |
|  |  | GAS VALVE                  |

| EXISTING | PROPOSED |                     |
|----------|----------|---------------------|
| _____    | _____    | PL-RIGHT-OF-WAY     |
| _____    | _____    | PL-ADJACENT         |
| _____    | _____    | CENTERLINE          |
| _____    | _____    | EASEMENT LINE       |
| _____    | _____    | FLOW LINE           |
| --W--    | --W--    | WATER LINE          |
| --G--    | --G--    | GAS LINE            |
| --SD--   | --SD--   | STORM DRAIN         |
| --SS--   | --SS--   | SANITARY SEWER LINE |

| EXISTING                                                                              | PROPOSED                                                                              |             |
|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------|
|  |  | AC PAVEMENT |
|  |  | 6" TYPE     |
|  |  | 24" TYPE    |
|  |  | 30" ROLL-UP |
|  |  | CONCRETE    |

| EXISTING             | PROPOSED |                  |
|----------------------|----------|------------------|
|                      |          | SIGN W/POLE      |
|                      |          | CHAIN LINK FENCE |
|                      |          | WIRE FENCE       |
|                      |          | GUARDRAIL        |
| FF=(0.00)            | FF=0.00  | FINISH FLOOR     |
| <b>MISCELLANEOUS</b> |          |                  |
|                      |          | SAWCUT LINE      |

---

H#

**RAMPART CASINO**  
**ONSITE IMPROVEMENTS**  
**APN: 138-29-401-011**  
**GRADING PLAN**

**MARTIN & MARTIN**  
CIVIL ENGINEERS  
2355 RED ROCK STREET, #103  
LAS VEGAS, NV 89146  
PHONE (702) 248-8000  
FAX (702) 248-8070

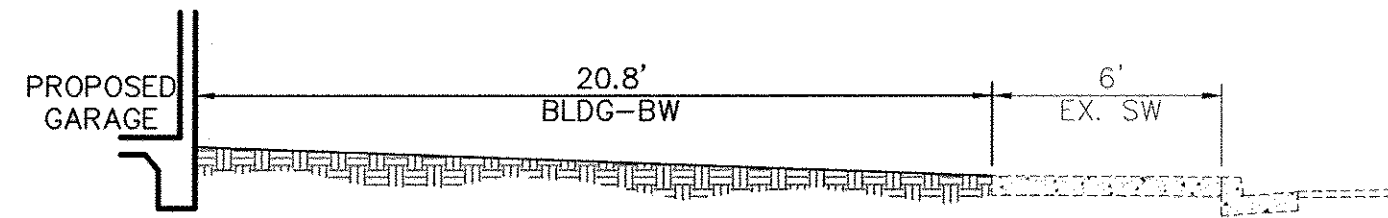
SHEET NUMBER

C4.01

SHEET X OF X

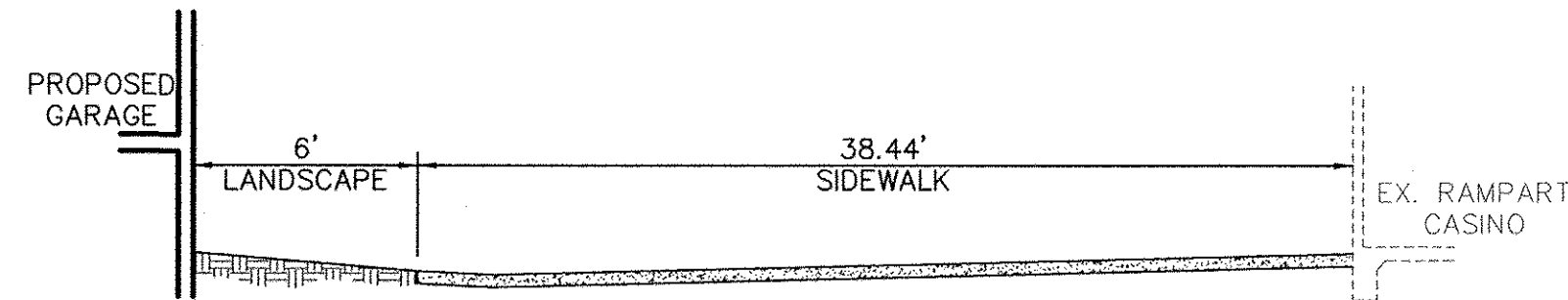
DWG #





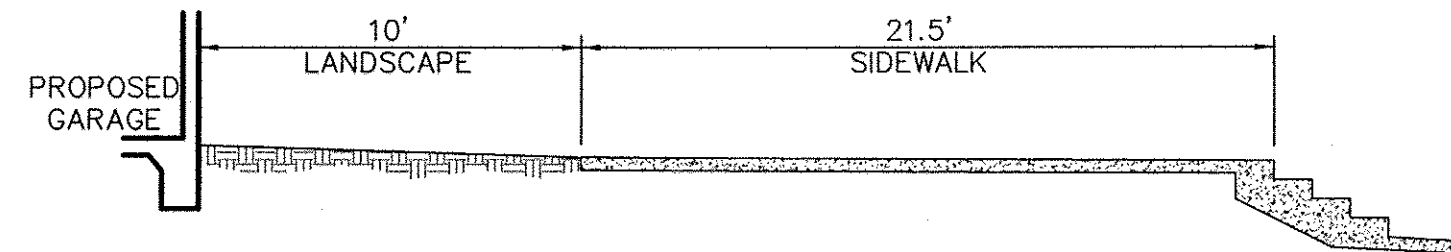
CROSS SECTION  
NTS

A  
C8.01



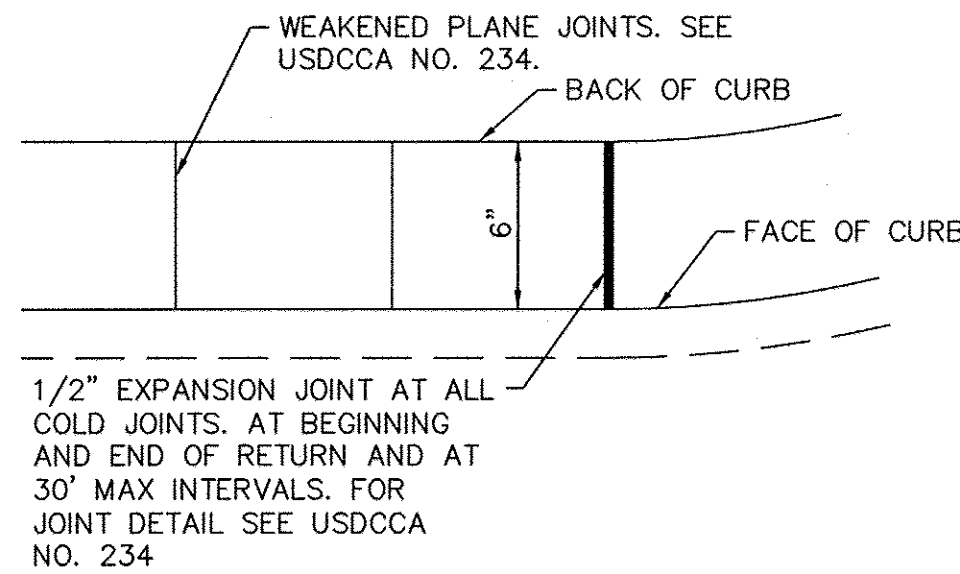
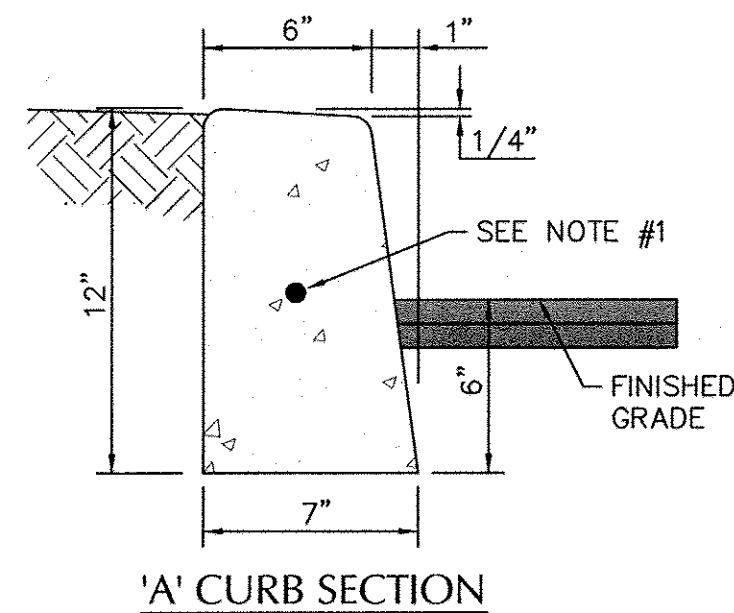
CROSS SECTION  
NTS

B  
C8.01



CROSS SECTION  
NTS

C  
C8.01

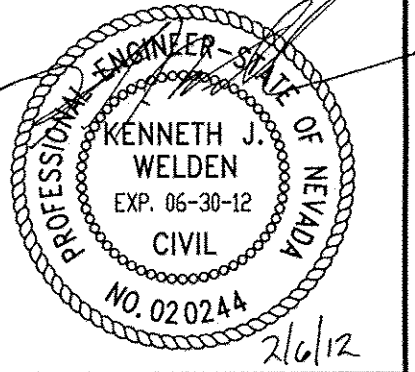


TYPICAL PLAN

- NOTES:
1. CONTINUOUS #4 REBAR IN RADIUS OF CURB ONLY

TYPE 'A' CURB  
NTS

D  
C8.01



|            |                 |
|------------|-----------------|
| DATE       | 01/23/12        |
| JOB NUMBER | 4034            |
| DESIGN BY  | R. COBBEL       |
| DRAWN BY   | R. COBBEL       |
| CHECKED BY | K. WELDEN, P.E. |

RAMPART CASINO  
ONSITE IMPROVEMENTS  
APN: 138-29-401-011  
DETAIL SHEET

MARTIN & MARTIN  
CIVIL ENGINEERS  
2355 RED ROCK STREET, #103  
LAS VEGAS, NV 89146  
PHONE (702) 248-8000  
FAX (702) 248-8070

SHEET NUMBER  
C8.01  
SHEET X OF X  
CLV DWG #

H#