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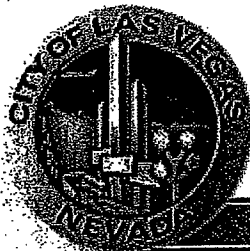
APN: 125-29-601-021

PROJECT: TROPICAL DURANGO PARK - PHASE II

SUBMITTAL: 1ST

SCANNED BY/DATE: _____

CHECKED BY/DATE: _____



CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM

DATE:

February 15, 2011

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:

Tropical Durango Park – Phase II

COPIES TO:

Stanley Consultants

Cross Streets:

NWC of Tropical Pkwy. & Durango Drive

Architectural Services, Patrick Batte
City of Las Vegas

File Number:

F:\Depot\DSMemos\DS4517A.doc

Bart Anderson, P.E., DevCo

Parcel Number:

125-29-601-021

CCPW

Zoning Action:

SDR-39771

FEMA Flood Zone

YES

NO

X

Proposed Storm Drain

YES

X

NO

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Transaction #
1 st Submittal	2/1/2011	2/15/2011	See Comments Below	\$400.00	161812: \$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.

- The site is adjacent to the jurisdiction of *Clark County* to the west and south. The engineer must coordinate with *Clark County Department of Public Works* (CCPW) and obtain their concurrence prior to the final acceptance of the study.
- Figure 2:** a) It appears that the "100-year" and the "10-year" Storm Event Summary annotation in the table are in the wrong order. Review and revise accordingly; b) The 100-year normal depth in Section W (B) in the existing condition is shown to be 1.74' which is hugely different from the other two sections. Correct in the next submittal.
- Grading Plan (C-2):** a) Extend the proposed 18" storm drain in *Tropical Parkway* to the centerline of *Bonita Vista Street*. Revise the grading plan and all pertinent plan & profiles accordingly; b) Identify the type and size of the proposed drop inlet on the grading plan; c) Consult with *Land Development Section* regarding the extent of the overpaving requirement in *Tropical Parkway*; d) Address what the straight line running from "87.0FG/HP" to "74.40FG" is? According to the contour lines, this line appears to be a flow line in the upper half but turns to a ridge line in the lower half. A culvert is required if this line indeed discharges at the sidewalk confluence. Address and resolve in the next submittal.

4. The *City of Las Vegas* does not allow Type A drop inlet anymore. Revise the call out for all drop inlets to Modified Type C or equivalent.
5. Add 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
ays

T/R/S: T19S/R60E/29
AREA G-29

TRANSACTION REPORT

P. 01

FEB-15-2011 TUE 03:43 PM

FOR: CITY OF LAS VEGAS

7023828551

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DATE	START	RECEIVER	TX TIME	PAGES	TYPE	NOTE	M#	DP
FEB-15	03:43 PM	3699793	23"	2	FAX TX	OK	644	

TOTAL : 23S PAGES: 2

4. The *City of Las Vegas* does not allow Type A drop inlet anymore. Revise the call out for all drop inlets to Modified Type C or equivalent.

5. Add 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
ays

T/R/S: T19S/R60E/29
AREA G-29

Post-It® Fax Note 7671		Date 2/15/11	# of pages 2
To Dan Bender		From Albert Sung	

TECHNICAL DRAINAGE STUDY UPDATE for

TROPICAL DURANGO PARK: PHASE II

Rec'd: 2/1/11
DS 4517

Date: January 2011

Prepared for:
City of Las Vegas

G-29
\$400

400 Stewart Avenue
Las Vegas, NV 89101

Phone: (702) 229-6276

SCI # 23248

Stanley Consultants, Inc.
5820 South Eastern Avenue, Suite 200
Las Vegas, Nevada 89119
Phone: (702) 369-9396



TECHNICAL DRAINAGE STUDY UPDATE
FOR
TROPICAL DURANGO PARK: PHASE II

January 2011

SCI Project # 23248

Prepared for:

City of Las Vegas
333 N. Rancho Drive
Las Vegas, NV 106

Prepared By:

Stanley Consultants, Inc.
5820 South Eastern Avenue, Suite 200
Las Vegas, Nevada 89119

HYDROLOGIC CRITERIA AND DRAINAGE MANUAL
DRAINAGE STUDY INFORMATION FORM

Name of Development: Tropical Durango Park, Phase II Date: January 2011
Location of Development: a) Descriptive (Cross Streets) North/South: Durango Drive
East/West: Tropical Parkway
b) Section: 29 Township: 19 South Range: 60 East
c) APN : 125-29-601-021

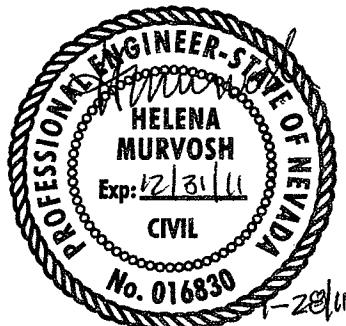
Name of Owner: USA - leased to City of Las Vegas, contact: Patrick Batte, AIA
Telephone No.: (702) 229-1046 Fax No.: (702) 464-5702 E-Mail Address: pbatte@LasVegasNevada.GOV
Address: 400 Stewart, LV NV

Contact Person-Name: Helena Murvosh, P.E. Telephone No.: (702)369-9396
* E-Mail Address: murvoshhelena@stanleygroup.com Fax No.: (702)369-9397
Firm: Stanley Consultants, Inc.
Address: 5820 South Eastern Avenue Suite 200, Las Vegas, Nevada 89119

Type of Land Development/Land Disturbance Process:

☐	Rezoning	☐	Subdivision Map	☐	Clearing and Grading Only
☐	Parcel Map	☐	Planned Unit Development	☐	Other (Please specify below)
☐	Large Parcel Map	☒	Building Permit		

1. Total Owned Land Area: At Site: 11.29 Being Developed/Disturbed: 8.32
2. Is a portion or all of the subject property located in a designated FEMA Flood Hazard Area? ☐ Yes** ☒ No
3. Is the property bordered or crossed by an existing or proposed Clark County Regional Flood Control District Master Planned Facility? ☐ Yes** ☒ No
4. Proposed type of development (Residential, Commercial, Etc.): Park
5. Approximate upstream land area which drains to the subject site: 2.66 sq. mi.
6. Has the site drainage been evaluated in the past? ☐ YES ☒ NO If yes, please identify documentation: _____
7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: Northern Portion to Durango Drive
Southern Portion to the intersection of Tropical Parkway and Durango Drive
8. 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.

***New Required Field**

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

Local Entity File No.	Revision	Date

REFERENCE:

STANDARD FORM 1

Technical Drainage Study Update for
Durango/Tropical Park: Phase II

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Appendix A *Miscellaneous*

Figure 1 – Location Map

Zoning/planning conditions

Drainage study approval letter from City of Las Vegas

Drainage study concurrence letter from Clark County

Appendix B *Hydrologic models*

Figure 6A, Existing Drainage Offsite Map, May 2009 Addendum

Figure UP-1, Interim-Ultimate Drainage Offsite, Nov. 2009 Update

Figure 10, Ultimate Drainage Offsite, Original Study

Figure 11, Ultimate Drainage Onsite, Original Study

Appendix C *Hydraulic calculations*

Figure 2 – Normal depth cross section locations

Normal depth calculations

Technical Drainage Study Update for Durango/Tropical Park: Phase II

1. Introduction

Tropical Durango Park is located within the City of Las Vegas, Nevada (City), just north and east of the County/City boundary (Figure 1). The park was originally proposed in three phases; the first and second phases are currently under construction and will be complete early 2011. A technical drainage study and subsequent update for phase 1 and 2 were approved by the City and concurrence was obtained from Clark County (as an addendum #5 to the original study).

Because Phases 1 and 2 are being constructed simultaneously, these improvements are now referred to as "Phase I", and the improvements described as Phase 3 in the previous study are now referred to as "Phase II". These Phase II improvements are addressed in this study: "Technical Drainage Study Update for Tropical Durango Park: Phase II".

A meeting between the City of Las Vegas, Clark County, and Stanley Consultants was held on January 7, 2011, to discuss Phase II of the park improvements and the stormdrain in Tropical Parkway. At this meeting, Stanley was asked to include normal depth calculations for Tropical Pkwy that show the halfstreet improvements of Tropical Pkwy do not negatively impact the existing homes located south of Tropical. These calculations are provided as part of this update; they show that the street improvements decrease the flow depth in Tropical.

In addition to the hydraulic calculations required for the Tropical Pkwy improvements, this study also provides material referenced from previous studies and the grading plan for the onsite improvements. The study was conducted in accordance with the criteria set forth by the Clark County Regional Flood Control District's (CCRFCD's) Hydrologic Criteria and Drainage Design Manual (HC&DDM).

2. Phase I (previously referred to as Phase 1 and 2) improvements

As previously discussed, the Phase I improvements are currently being constructed and will be complete prior to the start of construction for Phase II. Thus, these improvements are shown as existing on the grading plan and exhibits.

Please note that the restroom building was constructed in Phase I. Its finished floor elevation was established in the original study. None of the improvements proposed in Phase II impact the restroom.

3. Phase II improvements

Phase II improvements include the following:

- Tropical Pkwy ½ street improvements, including sidewalk, curb and gutter, stormdrain and utility relocation
- The north-south meandering sidewalk along Durango Dr.
- Onsite sidewalks along the east and south sides of the park
- Final grading and landscaping for the park
- Shade shelter on east side of park
- Landscaping for the south end of the median in Durango

Technical Drainage Study Update for Durango/Tropical Park: Phase II

No buildings requiring a finished floor elevation are proposed with Phase II. The Phase II improvements are essentially the same as those described in the original study. No changes are proposed that warrant changes to the hydrologic modeling.

4. CCRFCD Gowan North – El Capitan stormdrain branch

Currently, storm runoff generated west of El Capitan and upstream of the park is conveyed in existing roadways past the park site. Ultimately, these flows will be cut off by CCRFCD facility Gowan North – El Capitan stormdrain branch (specifically, GOEC 0176 and GOEC 0152) proposed in the 2008 Master Plan. This facility is listed in the 2011-2020 10-year program; however, it is not expected to be constructed in the near future.

5. Summary of previous hydrologic modeling

HEC-1 hydrologic models are referenced from the original study. They include existing, interim (for both phase I and II) and ultimate conditions. They also include an “interim-ultimate” condition, described below, that was requested by Clark County. Models were developed using the U.S. Army Corps of Engineers HEC-1 program. Please note that construction of Phase II decreases the storm flow rates for basin C-Park (10-year decreases from 2 to 1 cfs; 100 year from 7 to 6 cfs).

While the existing condition had the greatest amount of flow conveyed to the site (Figure 6A, Existing Drainage Offsite Map, May 2009 Addendum), subsequent construction of I215 upstream of the site and its associated stormdrain has decreased these flow rates. The worst case condition expected now occurs during the interim-ultimate condition, which is described as follows.

Interim-Ultimate condition, this model was prepared at the request of Clark County Development Services. It assumes that storm runoff from the basins west of I-215 is cut off by the construction (now complete) of the freeway and associated stormdrain; that the basins upstream of the park are developed but that the El Capitan stormdrain is not constructed; that Phase I improvements are constructed. In other words, the model includes the upstream developed basins west of El Capitan, but east and south of the beltway. The basins included in this model are shown in Figure UP-1, Interim-Ultimate Drainage Offsite, which is referenced from the November 2009 Update (referred to by Clark County review as an addendum) to the original study.

The flow rates affecting the site during the interim-ultimate condition decrease in the Ultimate condition, once the El Capitan stormdrain is constructed (Figure 10, Ultimate Drainage Offsite, and Figure 11, Ultimate Drainage Onsite, in the original study).

The storm runoff affecting the Phase II improvements are the flows conveyed to the intersection of Tropical Pkwy and Bonita Vista, concentration point CBVTR. Then conveyed east in Tropical Pkwy, flow split DBVTR, to concentration point CTR-E. The flow rates for the interim-ultimate (expected worst case) condition and the ultimate condition are summarized in Table 1.

Technical Drainage Study Update for Durango/Tropical Park: Phase II

Table 1 – Summary of Tropical Pkwy flow rates from approved hydrologic models ¹

Interim-Ultimate Condition: Figure UP-1, Interim-Ultimate Drainage Offsite, Nov. 2009 Update				
Basin/flow split	Area, sq mi	Q10, cfs	Q100 cfs	Note:
CBVTR	0.61	40	131	Includes basins west of park site, but south and east of I-215; assumes upstream basins are developed and Phase I of park is complete.
DBVTR	0.61	40	131	
CTR-E	0.62	40	133	
Ultimate Condition: Figure 10, Ultimate Drainage Offsite, and Figure 11, Ultimate Drainage Onsite, from the original study				
Basin/flow split	Area, sq mi	Q10, cfs	Q100 cfs	Note:
CBVTR	0.08	23	88	Assumes the El Capitan stormdrain is constructed and Phase I and II of the park are complete.
DBVTR	0.08	23	88	
CTR-E	0.11	24	94	

¹ Referenced flows are shown on basin maps in Appendix B.

6. Hydraulic Methods, Criteria, and Analysis

The primary concern for development of Phase II is assuring that the park improvements do not negatively impact the existing homes located south of Tropical Pkwy during the Interim-Ultimate condition. A secondary concern is showing that the roadway will satisfy CCRFCD depth times velocity and, in the ultimate condition, drylane criteria.

Normal depth calculations were, therefore, performed for Tropical Pkwy for the following: 1) the 100-year storm event for the interim-ultimate flow rate for both before and after construction of Tropical Pkwy halfstreet improvements; 2) 10-year interim-ultimate flow rate after construction of Tropical Pkwy; 3) ultimate conditions.

The calculations were performed using Bentley Inc. FlowMaster at the same locations where normal depth calculations were provided in the original study. In the original study, the cross-section designations were originally "A", "B", and "C" and later revised in the update to "V", "W", and "X", respectively, to distinguish them from plan cross sections. This update also uses designations "V", "W", and "X". Normal depth calculations are included in Appendix C. Locations of the FlowMaster cross sections are shown on Figure 2.

The calculations are summarized, Table 2, and a comparison of the different conditions is provided in Table 3. Referring to Table 3, Tropical Pkwy halfstreet improvements decrease the normal depth of storm flow in the roadway. As shown in Table 2, Tropical Pkwy will satisfy the 10-year depth times velocity during the 100-year condition. The 10-year normal depth calculation provided for Section V during the interim-ultimate condition shows that there is roughly 10-ft of drylane available on the north side of the road. In the Ultimate condition, 10-yr drylane criteria are met.

Although an 18-in RCP is proposed with Tropical, the inlet capture was neglected for the normal depth calculations. Additionally, because the stormdrain is supplied for minor events and nuisance flow only, backwater and inlet capture calculations were neither required nor performed.

Technical Drainage Study Update for
Durango/Tropical Park: Phase II

Table 2 – Normal Depth calculation summary

Normal Depth: 100-year storm event
summary

Interim-Ultimate flow rate; Existing Tropical Pkwy Section (cross sections referenced from pre-berm 100-yr calculation in Update/Addendum 5)								
Section	Location	Flow ref	Q100, cfs	Depth, ft	Min. elev., ft	WSE, ft	Velocity, ft/sec	DxV
V (A)	Tropical	DBVTR	131	0.75	81.98	82.73	5.50	4.1
W (B)	Tropical	DBVTR	131	1.74	75.50	77.24	5.64	9.8
X (C)	Tropical	CTR-E	133	0.58	74.47	75.05	6.24	3.6
Interim-Ultimate flow rate; Tropical Pkwy halfstreet complete (new cross section)								
Section	Location	Flow ref	Q100, cfs	Depth, ft	Min. elev., ft	WSE, ft	Velocity, ft/sec	DxV
V (A)	Tropical	DBVTR	131	0.96	81.56	82.52	5.50	5.3
W (B)	Tropical	DBVTR	131	0.85	76.29	77.14	4.88	4.1
X (C)	Tropical	CTR-E	133	0.88	73.35	74.23	6.09	5.4
Ultimate condition 100-year (new cross section; flow rate referenced from ultimate condition calculations of original study)								
Section	Location	Flow ref	Q100, cfs	Depth, ft	Min. elev., ft	WSE, ft	Velocity, ft/sec	DxV
V (A)	Tropical	DBVTR	88	0.71	81.56	82.27	5.54	3.9
W (B)	Tropical	DBVTR	88	0.67	76.29	76.96	4.80	3.2
X (C)	Tropical	CTR-E	94	0.67	73.35	74.02	5.39	3.6

Normal Depth: 10-year storm event
summary

Interim-Ultimate flow rate; Tropical Pkwy halfstreet complete (new cross section)								
Section	Location	Flow ref	Q10, cfs	Depth, ft	Min. elev., ft	WSE, ft	Velocity, ft/sec	DxV
V (A)	Tropical	DBVTR	40	0.68	81.56	82.24	4.86	3.3
Ultimate condition 10-year (new cross section; flow rate referenced from ultimate condition calculations of original study)								
Section	Location	Flow ref	Q10, cfs	Depth, ft	Min. elev., ft	WSE, ft	Velocity, ft/sec	DxV
V (A)	Tropical	DBVTR	23	0.50	81.56	82.06	4.21	2.1
W (B)	Tropical	DBVTR	23	0.47	76.29	76.74	3.61	1.7
X (C)	Tropical	CTR-E	24	0.46	73.35	73.81	4.04	1.9

Technical Drainage Study Update for
Durango/Tropical Park: Phase II

Table 3 – Comparison of water-surface elevations

Section	Interim- Ultimate; existing Tropical, ft	Interim- Ultimate; halfstreet in Tropical , ft	Decrease in WSE, ft	Ultimate, ft
V (A)	82.73	82.52	0.21	82.27
W (B)	77.24	77.14	0.10	76.96
X (C)	75.05	74.23	0.82	74.02

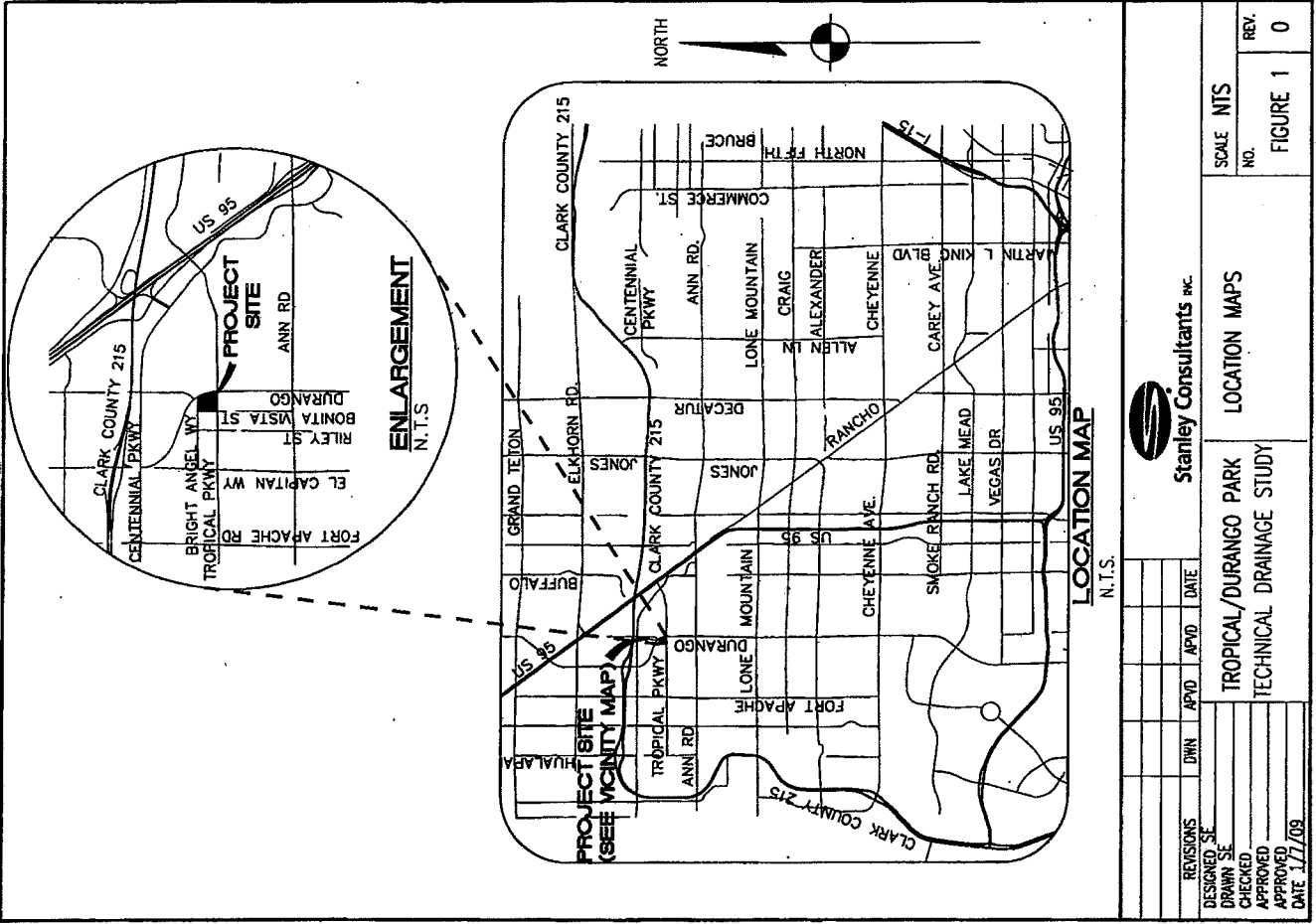
7. Conclusions

This update summarizes the improvements proposed with Phase II of the Tropical Durango Park. The onsite improvements are the same as those described in the original study (referred to as Phase 3 in the original study). The halfstreet improvements proposed for Tropical Pkwy decrease the water-surface elevation of storm flow conveyed east in Tropical Pkwy. Tropical Pkwy satisfies 10 and 100 year depth times velocity criteria. In the ultimate condition, Tropical Pkwy will satisfy Clark County Regional Flood Control District's drylane criteria. A stormdrain is provided for nuisance flow and minor storm events; hydraulic calculations for the stormdrain and inlets were neither required nor performed.

Appendix A

Miscellaneous

- Figure 1 – Location Map
- Zoning/Planning Conditions
- Drainage Study Approval Letter from City Of Las Vegas
- Drainage Study Concurrence Letter from Clark County



© STANLEY CONSULTANTS



REVISIONS	DWN	APVD	DATE
DESIGNED SE			
DRAWN SE			
CHECKED			
APPROVED			
DATE 1/17/09			

TROPICAL/DURANGO PARK		LOCATION MAPS		SCALE N.T.S.	REV.
TECHNICAL DRAINAGE STUDY				NO.	FIGURE 1
					0

*City of Las Vegas***AGENDA MEMO**

PLANNING COMMISSION MEETING DATE: FEBRUARY 12, 2009
DEPARTMENT: PLANNING AND DEVELOPMENT
ITEM DESCRIPTION: SDR-32790 - APPLICANT/OWNER: CITY OF LAS VEGAS

**** CONDITIONS ****

STAFF RECOMMENDATION: **APPROVAL**, subject to:

Planning and Development

1. This approval shall be void two years from the date of final approval, unless a building permit has been issued for the principal building on the site. An Extension of Time may be filed for consideration by the City of Las Vegas.
2. All development on the subject portion of the site shall be in conformance with the submitted site plan and landscape plan date stamped 01/21/09 and building elevations date stamped 12/29/08.
3. This approval is for Phase I only. Any future development of the subject site will require a Site Development Plan Review.
4. Prior to issuance of building permits a revised site plan depicting the location of a screened trash enclosure or acceptable alternative, shall be required.
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. The technical landscape plan shall include 36-inch box, 3-inch caliper measurement at six inches above grade at time of installment, Rio Grand Ash trees and Washingtonia Robusta Hybrid Mexican Fan Palms within the amenity zone along the Durango Drive frontage in compliance with the Town Center Development Standards Manual requirements for Parkway Arterial streetscape amenity zones. All landscape and streetscape treatments along Durango Drive shall meet Town Center Development Standards Manual standards.
6. Pre-planting and post-planting landscape inspections are required to ensure the appropriate plant material, location, size of planters, and landscape plans are being utilized. The Planning and Development Department must be contacted to schedule an inspection prior to the start of the landscape installation and after the landscape installation is completed. A certificate of occupancy will not be issued or the final inspection will not be approved until the landscape inspections have been completed.

LEH

SDR-32790 - Conditions Page Two
February 12, 2009 - Planning Commission Meeting

7. Compliance with Town Center Development Standards Manual Special Pavement and Sidewalk Treatment requirements for the Durango Drive Town Center Parkway frontage shall be required prior to issuance of building permits.
8. Compliance with the Master Plan Transportation Trails element requirements for Multi-Use Transportation Trails, including landscaping and lighting requirements for proper tree placement and adequate lighting.
9. Reflective glazing at the pedestrian level is prohibited. Glazing above the pedestrian level shall be limited to a maximum reflectance rating of 22% (as defined by the National Institute of Standards and Technology).
10. All utility boxes exceeding 27 cubic feet in size shall meet the standards of LVMC Title 19.12.040.
11. Parking lot lighting standards shall be no more than 30 feet in height and shall utilize downward-directed lights with full cut-off luminaires. Lighting on the exterior of buildings shall be shielded and shall be downward-directed. Non-residential property lighting shall be directed away from residential property or screened, and shall not create fugitive lighting on adjacent properties.
12. All City Code requirements and design standards of all City Departments must be satisfied, except as modified herein.

Public Works

13. Dedicate, obtain dedications, or obtain Bureau of Land Management Right-of-Way Grants for Durango Drive, Bonita Vista Street and Tropical Parkway including those portions of roadway necessary for the construction of Uniform Standard Drawing #201.1 on Tropical Parkway prior to or at time of development of this site.
14. Dedications of rights-of-way and construction of off-site improvements for this site shall be per the phasing plan shown on the submitted Site Development Plan dated January 21, 2009 unless otherwise allowed by the City Engineer. Obtain dedications or easements prior to or at time of construction.
15. Coordinate with the Collection System Planning Section of the Department of Public Works to determine an appropriate location for public sewer connection to this site, prior to the issuance of any permits. Provide public sewer easements for all public sewers not located within existing public street right-of-way prior to the issuance of any permits. Improvement Drawings submitted to the City for review shall not be approved for construction until all required public sewer easements necessary to connect this site to the existing public sewer system have been granted to the City.

LEH

SDR-32790 - Conditions Page Three
February 12, 2009 - Planning Commission Meeting

16. A Drainage Plan and Technical Drainage Study must be submitted to and approved by the Department of Public Works prior to the issuance of any building or grading permits, submittal of any construction drawings or the submittal of a Map subdividing this site, whichever may occur first. Provide and improve all drainageways recommended in the approved drainage plan/study. The developer of this site shall be responsible to construct such neighborhood or local drainage facility improvements as are recommended by the City of Las Vegas Neighborhood Drainage Studies and approved Drainage Plan/Study concurrent with development of this site.

SDR-32790 - Staff Report Page One
February 12, 2009 - Planning Commission Meeting

**** STAFF REPORT ****

PROJECT DESCRIPTION

This is a request for a Site Development Plan Review for a public park on a portion of an undeveloped 8.2 acre site on the northwest corner of Tropical Parkway and Durango Drive. The applicant proposes to construct a city park in phases. The first phase of the project will include a 15 space parking lot, including one van accessible handicapped space, a shaded children's play area (tot-lot) and a shade ramada. Any future phases of the park will require corresponding Site Development Plan Review applications. The proposed Public Park facility is compatible with the surrounding area, will provide a beneficial amenity for are residents and is consistent with the goals the General Plan and Centennial Hills Sector Plan; therefore, staff recommends approval.

BACKGROUND INFORMATION

<i>Related Relevant City Actions by P&D, Fire, Bldg., etc.</i>	
02/09/98	The City Council approved a request to Annex [A-0027-98(A)] the subject site as part of a larger request for property generally located between Azure Way and Tropical Parkway and between El Capitan Way and Durango Drive, containing approximately 15 acres of land. The Planning Commission and staff recommended approval.
10/20/99	The City Council approved an Amendment to the Master Plan of Streets and Highways (MSH-0003-99) to establish the alignment of Durango Drive between Centennial Parkway and Tropical Parkway. This alignment created an S-Curve; the subject site is located west of this realignment at Tropical Parkway and Durango Drive. The Planning Commission and staff recommended approval.
08/21/02	The City Council approved a General Plan Amendment (GPA-0019-02) of the northeastern portion of the subject site from L (Low Density Residential) to PF-TC (Public Facilities) as part of a larger requests on a 45.87 acre parcel located on the west side of Durango Drive, south of Centennial Parkway and north of the S-Curve alignment. The Planning Commission and staff recommended approval.
08/21/02	The City Council approved a Rezoning (U-0043-02) request for a zone change from U (Undeveloped) zone [L (Low Density Residential) General Plan designation], U (Undeveloped) zone [ML (Medium Low Density Residential) General Plan designation] and U (Undeveloped) zone [ML (Medium Low Density Residential) General Plan designation] under Resolution of Intent to C-2 (General Commercial) zone, to TC (Town Center) zone, for lands located north of the proposed S-Curve alignment, west of Durango Drive and south of Centennial Parkway. The Planning Commission and staff recommended approval.

LEH

SDR-32790 - Staff Report Page Two
February 12, 2009 - Planning Commission Meeting

11/05/08	The City Council approved a General Plan Amendment (GPA-29582) Request to amend a portion of the Centennial Hills Sector Plan from L (Low Density Residential) to PF (Public Facilities). The Planning Commission and staff recommended approval.
11/05/08	The City Council approved a Rezoning (ZON-29584) of the subject site from U (Undeveloped) [L (Low Density Residential) General Plan designation] to C-V (Civic). The Planning Commission and Staff recommended approval.
<i>Related Building Permits/Business Licenses</i>	
There are no related building permits or licenses for the subject location.	
<i>Pre-Application Meeting</i>	
12/17/08	The requirements for an application for a Site Development Plan Review were discussed with the applicant.
<i>Neighborhood Meeting</i>	
A neighborhood meeting was not held, nor was one required.	
<i>Field Check</i>	
01/08/09	A field check was performed by staff at the subject property and found the parcel to be in an undeveloped state.

<i>Details of Application Request</i>	
<i>Site Area</i>	
Gross Acres	8.2

Surrounding Property	Existing Land Use	Planned Land Use	Existing Zoning
Subject Property	Undeveloped Land	PF (Public Facilities) T-C (Town Center)	C-V (Civic) T-C (Town Center) Zone [PF-TC (Public Facilities-Town Center) Special Land Use Designations]
North	Undeveloped Land	L (Low Density Residential)	U (Undeveloped) [L (Low Density Residential) General Plan designation]]
South	Single-Family Residences Undeveloped	RNP (Rural Neighborhood Preservation) Clark County	RL (Residential Low Density) Clark County
East	Undeveloped Land	T-C (Town Center)	T-C (Town Center) Zone [PF-TC (Public Facilities-Town Center) Special Land Use designations]

LEH

SDR-32790 - Staff Report Page Three
February 12, 2009 - Planning Commission Meeting

West	Single Family Residences	L (Low Density Residential)	RE (Rural Estates Residential) Clark County
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<i>Special Districts/Zones</i>	<i>Yes</i>	<i>No</i>	<i>Compliance</i>
Special Area Plan	X		Y
T-C Town Center District	X		Y*
<i>Special Districts/Zones</i>	<i>Yes</i>	<i>No</i>	<i>Compliance</i>
Special Purpose and Overlay Districts	X		Y
C-V (Civic)	X		Y
T-C Town Center District		X	Y
Trails (Multi-Use Transportation Trail)	X		N**
Rural Preservation Overlay District		X	N/A
Development Impact Notification Assessment		X	N/A
Project of Regional Significance		X	N/A

* A condition has been added requiring compliance with Town Center Development Standards Manual Parkway Arterial amenity zone landscaping requirements.

** A condition has been added requiring the applicant to provide trees spaced 20 feet on center and lighting every 150 feet, per the Master Plan Transportation Trails Element.

DEVELOPMENT STANDARDS

Pursuant to Title 19.06.020, "Minimum development standards for property in the C-V (Civic) District shall be established by the City Council in connection with the approval of a rezoning application or administratively in connection with the approval of a site development plan. The standards shall be designed to ensure compatibility of the development with existing and planned development in the surrounding area." The standards shall be designed to ensure compatibility of the development with existing and planned development in the surrounding area. The proposed interior landscaping, parking, setbacks, and maximum building heights for this project are acceptable, however the streetscape landscaping is deficient and conditions have been added to bring the proposed landscaping into compliance with the Town Center Development Standards Manual Parkway Arterial streetscape landscaping requirements. Any future development will require review for determination of appropriate development standards.

Pursuant to Title 19.10, the following parking standards apply:

Pursuant to Title 19.16, the following parking standards apply.							
Parking Requirement							
Use	Gross Floor Area or Number of Units	Title 19.04 Standard Parking			Provided Parking		Compliance
		Parking Ratio	Regular	Handicapped	Regular	Handicapped	
City Park	8.2 acres	Two spaces per gross acre	16	1	14	1	Y*
TOTAL			17		15		Y*

LEH

SDR-32790 - Staff Report Page Four
February 12, 2009 - Planning Commission Meeting

**Pursuant to Title 19.06.020(E), "Minimum development standards for property in the C-V (Civic) District shall be established by the City Council in connection with the approval of a rezoning application or administratively in connection with the approval of a site development plan. The standards shall be designed to ensure compatibility of the development with existing and planned development in the surrounding area." Any future development will require review for determination of appropriate development standards.*

Pursuant to Title 19.06.020, the following development standards shall apply:

<i>Standard</i>	<i>Provided</i>
Min. Lot Size	8.2 acres
Min. Lot Width	440 feet
Min. Setbacks	
• Front	245 feet
• Side	242 feet
• Corner	210 feet
• Rear	190 feet
Max. Building Height	25 Feet
Trash Enclosure	Not Indicated**

***A condition has been added to require that the location of the trash enclosure for the site be depicted. The trash enclosure shall be roofed and screened to comply with the requirements of Title 19.08.*

<i>Landscaping and Open Space Standards</i>	
<i>Standards</i>	<i>Provided (Phase I)</i>
Parking Area	6 Trees
Buffer:	
Min. Trees	7 Trees
TOTAL	13 Trees
Min. Zone Width	8 Feet
Wall Height	No perimeter screen walls are proposed

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February 12, 2009 - Planning Commission Meeting

Pursuant to Town Center Development Standards, the following streetscape standards apply:

<i>Streetscape Standards</i>	<i>Required</i>	<i>Provided</i>	<i>Compliance</i>
Town Center Parkway 120' (Durango Drive)	Street trees in the Amenity Zones shall be 35 feet on-center, alternating shade trees and two palm trees, five 5-gallon flowering shrubs will be provided per tree with decomposed granite, Mojave Gold.	Street trees in the Amenity Zones are 35 feet on-center, Palm Trees are provided however alternating shade trees are not provided and adequate flowering shrubs are provided with decomposed granite, Mojave Gold.	N*
	Within the median islands Mexican Fan Palms shall be provided 35 feet on-center, at least five 5-gallon flowering shrubs shall be planted per tree with Mojave Gold decomposed granite, provided as groundcover.	Mexican Fan Palms are 35 feet on-center, adequate flowering shrubs are provided with decomposed granite, Mojave Gold.	Y
	A 2'6" square grid scoring shall be designed on a light gray broomed concrete finish. As depicted in Figure 14 in the Town Center Development Standards Manual. An Accent Pattern, per Section E.1.H in the Town Center Development Standards Manual, shall be used at every intersection to emphasize the pedestrian crosswalk areas. It consists of red concrete pavers, on square foot in size, laid at a 45 degree angle.	Sidewalk patterns complying with Town Center Development Standards Manual have not been depicted.	N**

*A condition has been added requiring compliance with Town Center Development Standards Manual Parkway Arterial amenity zone landscaping requirements.

**A condition has been added requiring compliance with Town Center Development Standards Manual Special Pavement and Sidewalk Treatment requirements.

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February 12, 2009 - Planning Commission Meeting

Multi-Use Transportation Trail			
Multi-Use Transportation Trail	20-Foot wide trail with 5-foot wide transition strip, 10-foot wide transportation trail path, and 5-foot wide landscape buffer.	20-Foot wide trail with 5-foot wide transition strip, 10-foot wide transportation trail path, and 5-foot wide landscape buffer.	Y

ANALYSIS

The proposed development is the first phase of a proposed 8.2 acre Public Park, generally located on the northwest corner of Tropical Parkway and Durango Drive.

The property has a General Plan designation PF (Public Facilities). The Public Facilities category allows for public or semi-public uses, including public parks. The subject parcel is zoned C-V (Civic), which allows for public parks, recreational areas, schools, and public uses. The C-V (Civic) zoning on the subject site corresponds to the General Plan designation of PF (Public Facilities).

The development standards in Title 19.06.020(E) "Minimum development standards for property in the C-V (Civic) District shall be established by the City Council in connection with the approval of a rezoning application or administratively in connection with the approval of a site development plan. The standards shall be designed to ensure compatibility of the development with existing and planned development in the surrounding area." The setbacks and site coverage proposed by this development are consistent with this use and will not impact adjacent properties. The proposal will add an amenity to the area that will benefit the surrounding development; therefore, staff recommends approval.

- **Site Plan**

The single access point for the site is from Durango Drive. The applicant will develop the proposed 8.2 acre park site in two phases, with phase one encompassing a 15 space parking lot, including one van accessible handicapped space, a shaded children's play area (tot-lot) and a shade ramada. A trash enclosure is not depicted on the submitted site plans, a condition has been added requiring a revised plan to be submitted to the Department of Planning and Development prior to issuance of permits depicting the location of a trash enclosure meeting the minimum requirements of title 19.08, or an acceptable alternative. Additionally a condition has been added requiring compliance with Town Center Development Standards Manual Special Pavement and Sidewalk Treatment requirements for the Durango Drive Town Center Parkway frontage.

LEH

SDR-32790 - Staff Report Page Seven
February 12, 2009 - Planning Commission Meeting

- **Multi-Use Transportation Trail**

An approximately 40-foot long section of Multi-Use Transportation Trail runs along the northern boundary of the subject site. An at grade crosswalk is being provided at Durango Drive on the northeast corner of the subject site. Per the Master Plan Transportation Trails Element, Multi-Use Transportation Trails are to be ten feet in width and shall be located between two irrigated landscaped corridors totaling ten feet in width, for an overall trail landscape area width of 20 feet. Variations to the location of the path within the trail may be necessary to allow for problems with drainage or physical features. The landscape corridors are to be planted with trees spaced 20 feet on center on one or both sides of the path and are to contain lighting with no less than one light for each 150 feet. While the submitted plans depict the required landscape corridors along each side of the trail trees are not placed 20 feet on center, nor is any lighting depicted. The requirements of the Master Plan Transportation Trails Element cannot be Waived unless the applicant submits a General Plan Amendment to amend the Master Plan Transportation Trails Element to allow for landscaping and lighting reductions. A condition has been added requiring the applicant to provide trees spaced 20 feet on center and lighting every 150 feet, per the Master Plan Transportation Trails Element.

- **Landscape Plan**

The landscape plan depicts a landscaped area that surrounds the proposed lot. That area will include 10, 24-inch box Texas Ash trees. The proposed plant material for the landscaped areas in phase one are Deer Grass, New Gold Lantana, Green Cassia, Green Cloud Texas Ranger and Red Yucca. The groundcover will consist of ¼ minus decomposed "Mojave Gold" granite in all planters and a 4 to 6 inch "Mojave Gold" color rock in the amenity zones and "Pink Coral" in the interior landscaped areas.

The Durango Drive is classified as a Parkway Arterial by the Town Center Development Standards Manual. Specific landscaping requirements for median islands are as follows: "All medians shall be landscaped using a mix of drought tolerant trees, plants and shrubs in the following manner: at least 20 percent of the landscaping shall consist of palm trees, at least ten percent of the landscaping shall consist of flowering trees; at least five 5-gallon shrubs shall be planted per tree; a combination of other plant materials shall be used to obtain at least 75 percent coverage within three years of normal growth after installation. Trees must be evenly distributed within the median. Trees may be grouped as long as the maximum distance between trees doesn't exceed 40 feet on-center. Median islands for the Parkways/Arterials shall not be less than four feet from the back of curb at the narrowest sections. The landscaping for the four-foot medians shall consist of a combination of decomposed granite, Mojave Gold, larger accent boulders, ground cover as desired and Mexican Fan Palms spaced 35-feet on center." Within the approximately 80-foot section of median island that is a portion of the proposed development, there are 27, 5-gallon Deer Grass plants, 3 Mexican Fan Palms placed 35-feet on center, groundcover is Mojave Gold ¼ inch rock and there are three decorative

SDR-32790 - Staff Report Page Eight
February 12, 2009 - Planning Commission Meeting

boulders placed at the north end of the median. The proposed median landscaping complies with the Town Center Development Standards Manual requirements.

Specific landscaping requirements for amenity zones are as follows "Within Parkway and Primary Arterial Amenity Zones trees shall be installed 35-feet on-center in an alternating pattern consisting of one shade tree and two palm trees with decomposed granite, Mojave Gold, to cover the ground plane. In addition, ground cover consisting of a minimum of one third, five 5-gallon planter material shall be planted to reach 75 percent coverage within three years." The proposed amenity zone landscaping consists of 4 Mexican Fan Palm trees, 10, 5-gallon Deer Grass shrubs and 13, 5-Gallon New Gold Lantana plants groundcover is Mojave Gold ¼ inch rock. The proposed amenity zone landscaping fails to comply with the Town Center Development Standards Manual requirements, as alternating placement of shade trees has not been provided and a condition has been added requiring compliance.

- **Parking**

The provided parking for the site consists of 15 spaces, including one van accessible handicapped space.

- **Elevations**

The site plan shows an oval shaped fabric shade structure that the applicant indicates will be 25 feet in height, located near the center of the overall site covering the tot-lot portion of the site, and a 10-foot high CMU block restroom with a sheet metal roof. Although the restroom is depicted within the phase one area of the site, the applicant states that it will be constructed during a future phase of the project and hence, will be part of a future Site Development Plan Review.

FINDINGS

The following findings must be made for an SDR:

1. **The proposed development is compatible with adjacent development and development in the area;**

The proposed development is compatible with the surrounding residential uses and will provide additional open space and recreational amenities for area residents.

2. **The proposed development is consistent with the General Plan, this Title, the Design Standards Manual, the Landscape, Wall and Buffer Standards, and other duly-adopted city plans, policies and standards;**

LEH

SDR-32790 - Staff Report Page Nine
February 12, 2009 - Planning Commission Meeting

The proposed development is consistent with the Centennial Hills Sector Plan of the Las Vegas 2020 Master Plan. The C-V (Civic) zone is consistent with the PF (Public Facilities) General Plan designation. Title 19.06.020(E) states that "Minimum development standards for property in the C-V (Civic) District shall be established by the City Council in connection with the approval of a rezoning application or administratively in connection with the approval of a site development plan. The standards shall be designed to ensure compatibility of the development with existing and planned development in the surrounding area." Staff finds that the proposed standards are compatible with the existing and planned development in the surrounding area.

3. Site access and circulation do not negatively impact adjacent roadways or neighborhood traffic;

Access to the property is provided by a single ingress and egress point from Durango Drive, a 120-foot wide Town Center Parkway Arterial, as designated by the Town Center Development Standards Manual. This roadway is more than adequate for the added traffic the proposed city park will generate.

4. Building and landscape materials are appropriate for the area and for the City;

The proposed building and landscape materials are appropriate for this area and for the City of Las Vegas. Conditions have been added requiring compliance with Town Center Development Standards Manual requirements for alternating shade tree placement within the landscaping amenity zones and Special Pavement and Sidewalk Treatment requirements for the Durango Drive Town Center Parkway frontage.

5. Building elevations, design characteristics and other architectural and aesthetic features are not unsightly, undesirable, or obnoxious in appearance; create an orderly and aesthetically pleasing environment; and are harmonious and compatible with development in the area;

The proposed children's play area and park is consistent with similar park developments in the City of Las Vegas; the materials and design are not undesirable or obnoxious, but instead create an orderly and efficient experience that is compatible with the surrounding area.

6. Appropriate measures are taken to secure and protect the public health, safety and general welfare.

The proposed development will be subject to the International Building Code, as well as maintained and secured by the City of Las Vegas, thus public health, safety and general welfare will not be compromised.

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February 12, 2009 - Planning Commission Meeting

NEIGHBORHOOD ASSOCIATIONS NOTIFIED 8

ASSEMBLY DISTRICT 13

SENATE DISTRICT 9

NOTICES MAILED 97

APPROVALS 1

PROTESTS 0

PLANNING & DEVELOPMENT



DEVELOPMENT SERVICES CENTER

731 S. Fourth Street
Las Vegas, NV 89101

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August 28, 2009

Mr. Patrick Batte
City of Las Vegas
400 Stewart Avenue
Las Vegas, Nevada 89101

RE: SDR-35160 - SITE DEVELOPMENT PLAN REVIEW

Dear Mr. Batte:

Your request for a Site Development Plan Review FOR A PROPOSED CITY PARK on a portion of 8.20 acres at the northwest corner of Tropical Parkway and Durango Drive (APN 125-29-601-021), C-V (Civic) Zone and T-C (Town Center) Zone [PF-TC (Public Facilities - Town Center) Special Land Use Designation], Ward 6 (Ross), was considered by the Planning Commission on August 27, 2009.

The Planning Commission voted to **APPROVE** your request, subject to the following:

Planning and Development

1. Conformance to the conditions for Site Development Plan Review (SDR-32790) if approved.
2. This approval shall be void two years from the date of final approval, unless a building permit has been issued for the principal building on the site. An Extension of Time may be filed for consideration by the City of Las Vegas.
3. All development shall be in conformance with the site plan, date stamped 07/09/09, except as amended by conditions herein.
4. 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.

Mayor
Oscar B. Goodman

City Council
Gary Reese
(Mayor Pro Tem)
Steve Wolfson
Lois Tarkanian
Steven D. Ross
Ricki Y. Barlow
Stavros S. Anthony
City Manager
Elizabeth N. Fretwell



07101-001-06-09

5. Pre-planting and post-planting landscape inspections are required to ensure the appropriate plant material, location, size of planters, and landscape plans are being utilized. The Planning and Development Department must be contacted to schedule an inspection prior to the start of the landscape installation and after the landscape installation is completed. A certificate of occupancy will not be issued or the final inspection will not be approved until the landscape inspections have been completed.
6. Reflective glazing at the pedestrian level is prohibited. Glazing above the pedestrian level shall be limited to a maximum reflectance rating of 22% (as defined by the National Institute of Standards and Technology).
7. All mechanical equipment, air conditioners and trash areas shall be fully screened in views from the abutting streets.
8. All utility boxes exceeding 27 cubic feet in size shall meet the standards of LVMC Title 19.12.040.
9. Parking lot lighting standards shall be no more than 30 feet in height and shall utilize downward-directed lights with full cut-off luminaries. Lighting on the exterior of buildings shall be shielded and shall be downward-directed. Non-residential property lighting shall be directed away from residential property or screened, and shall not create fugitive lighting on adjacent properties.
10. All City Code requirements and design standards of all City Departments must be satisfied, except as modified herein.

Public Works

11. No off-site improvements shall be required with this phase; all off-site improvements shall be constructed with future phases as determined by the City Engineer.
12. A Drainage Plan and Technical Drainage Study must be submitted to and approved by the Department of Public Works prior to the issuance of any building or grading permits, submittal of any construction drawings or the submittal of a Map subdividing this site, whichever may occur first. Provide and improve all drainageways recommended in the approved drainage plan/study. The developer of this site shall be responsible to construct such neighborhood or local drainage facility improvements as are recommended by the City of Las Vegas Neighborhood Drainage Studies and approved Drainage Plan/Study concurrent with development of this site.

Mr. Patrick Batte
SDR-35160 - Page Three
August 28, 2009

13. Site development to comply with all applicable conditions of approval for SDR-32790 and all other site-related actions.

This action by the Planning Commission on **August 27, 2009** is final unless a written appeal is filed with the City Clerk within ten days of the date of the Planning Commission's decision or there is a review action filed by the City Council within the same time period. The Notice of Final Action was filed with the Las Vegas City Clerk on *April 24, 2009*.

Sincerely,

A handwritten signature in black ink, appearing to be 'Steve Gebeke', with a long horizontal stroke extending to the right.

Steve Gebeke
Planning Supervisor
Case Planning Division

SG:clb

PLANNING & DEVELOPMENT



DEVELOPMENT SERVICES CENTER

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Las Vegas, NV 89101

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www.lasvegasnevada.gov

November 1, 2010

Mr. Patrick Batte
City of Las Vegas
Department of Public Works
400 Stewart Avenue
Las Vegas, Nevada 89101

**RE: SDR-39771 - MINOR REVIEW SITE DEVELOPMENT PLAN REVIEW
ADMINISTRATIVE CYCLE - NOVEMBER 2010**

Dear Batte:

Your request for a Minor Site Development Plan Review FOR A PROPOSED CITY PARK on a portion of 8.20 acres at the northwest corner of Tropical Parkway and Durango Drive (APN 125-29-601-021), C-V (Civic) Zone and T-C (Town Center) Zone [PF-TC (Public Facilities - Town Center) Special Land Use Designation], Ward 6 (Ross), has been considered administratively by the Planning and Development Department staff.

The Planning and Development Department staff has administratively **APPROVED** your request subject to the following:

Planning and Development

1. Conformance to the conditions for Site Development Plan Review (SDR-32790) if approved.
2. This approval shall be void two years from the date of final approval, unless a final inspection is approved. An Extension of Time may be filed for consideration by the City of Las Vegas.
3. All development shall be in conformance with the site plan, landscape plan, and building elevations, date stamped 10/01/2010, except as amended by conditions herein.
4. 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 Building and Safety Department.
5. These Conditions of Approval shall be affixed to the cover sheet of any plan set submitted for building permit.

Mayor
Oscar B. Goodman

City Council
Gary Reese
(Mayor Pro Tem)
Steve Wolfson
Lois Tarkanian
Steven D. Ross
Ricki Y. Barlow
Stavros S. Anthony
City Manager
Elizabeth N. Fretwell



6. 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.
7. All mechanical equipment and trash areas shall be fully screened in views from the abutting streets.
8. All utility boxes exceeding 27 cubic feet in size shall meet the standards of LVMC Title 19.12.040.
9. Any lighting on the exterior of buildings or structures shall be shielded and shall be downward-directed. Non-residential property lighting shall be directed away from residential property or screened, and shall not create fugitive lighting on adjacent properties.
10. 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.
11. All City Code requirements and design standards of all City Departments must be satisfied, except as modified herein.

Public Works

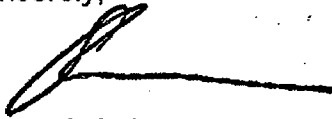
12. Construct half-street improvements and appropriate transition paving on Tropical Parkway per Current City Standards and all incomplete half-street improvements on Durango Drive in accordance with Town Center development standards adjacent to this site concurrent with on-site development activities.
13. 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 the issuance of any grading or building permits or submittal of any construction drawings, whichever may occur first. Provide and improve all drainageways as recommended in the approved drainage plan/study.

Mr. Patrick Batte
SDR-39771 - Page Three
November 1, 2010

14. Comply with all applicable previous conditions of approval for SDR-32790, SDR-35160 and all other site-related actions.

This action by the Planning and Development Department staff on November 1, 2010 is final unless a written appeal is filed with the Director of Planning and Development Department within ten days of the date of this letter.

Sincerely,



Steve Gebeke
Planning Supervisor
Case Planning Division

SG:clb

City of Las Vegas

AGENDA MEMO

ADMINISTRATIVE MINOR REVIEW DATE: NOVEMBER 2010
DEPARTMENT: PLANNING AND DEVELOPMENT
ITEM DESCRIPTION: APPLICANT/OWNER: CITY OF LAS VEGAS

**** STAFF RECOMMENDATION(S) ****

CASE NUMBER	RECOMMENDATION	REQUIRED FOR APPROVAL
SDR-39771	Staff recommends APPROVAL, subject to conditions:	

**** CONDITIONS ****

SDR-39771 CONDITIONS

Planning and Development

1. Conformance to the conditions for Site Development Plan Review (SDR-32790) if approved.
2. This approval shall be void two years from the date of final approval, unless a final inspection is approved. An Extension of Time may be filed for consideration by the City of Las Vegas.
3. All development shall be in conformance with the site plan, landscape plan, and building elevations, date stamped 10/01/2010, except as amended by conditions herein.
4. 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 Building and Safety Department.
5. These Conditions of Approval shall be affixed to the cover sheet of any plan set submitted for building permit.
6. 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.

MH

Conditions Page Two
November 2010 - Administrative Minor Review

7. All mechanical equipment and trash areas shall be fully screened in views from the abutting streets.
8. All utility boxes exceeding 27 cubic feet in size shall meet the standards of LVMC Title 19.12.040.
9. Any lighting on the exterior of buildings or structures shall be shielded and shall be downward-directed. Non-residential property lighting shall be directed away from residential property or screened, and shall not create fugitive lighting on adjacent properties.
10. 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.
11. All City Code requirements and design standards of all City Departments must be satisfied, except as modified herein.

Public Works

12. Construct half-street improvements and appropriate transition paving on Tropical Parkway per Current City Standards and all incomplete half-street improvements on Durango Drive in accordance with Town Center development standards adjacent to this site concurrent with on-site development activities.
13. 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 the issuance of any grading or building permits or submittal of any construction drawings, whichever may occur first. Provide and improve all drainageways as recommended in the approved drainage plan/study.
14. Comply with all applicable previous conditions of approval for SDR-32790, SDR-35160 and all other site-related actions.

Staff Report Page One
November 2010 - Administrative Minor Review

**** STAFF REPORT ****

PROJECT DESCRIPTION

This is a request for a Minor Site Development Plan Review for the third phase of a 8.2-acre Public Park on a portion of an undeveloped lot at the northwest corner of Tropical Parkway and Durango Drive. The park is approximately 24 percent constructed; this request covers the southwestern third of the proposal. The first and second phases of the project were approved under Site Development Reviews (SDR-32790 and SDR-35160), which included a 15-space parking lot, a shaded children's play area and a shade ramada. The scope of this review includes the remaining 3.2 acres (approximate) of the total 8.2 acres.

The final phase of the proposed Public Park is compatible with the surrounding area, will provide a beneficial amenity for area residents and is consistent with the goals of the General Plan and Centennial Hills Sector Plan; therefore, staff recommends approval.

ISSUES

- Phase I (SDR-35160): this portion of the Public Park is limited to the northern cul-de-sac with attached 15-space parking lot, the covered tot-lot, and the adjacent ramada and restrooms.
- Phase II (SDR-32790): this portion of the Public Park included an additional ramada and the landscaping for the northwestern half of the park. Also included with this review were the offsite improvements along Bonita Vista Street.
- Phase III (current application request – SDR-39771): this portion of the Public Park will include the median and streetscape improvements along Durango Drive to Town Center Standards and the half-street improvements along Tropical Parkway to City of Las Vegas Standards. Also included within the scope of this review is the remaining southeastern half of landscaping, which includes a sculptural display area and a 144 square-foot ramada on the east side of the property.

BACKGROUND INFORMATION

<i>Related Relevant City Actions by P&D, Fire, Bldg., etc</i>	
02/09/98	The City Council approved a request to Annex [A-0027-98(A)] the subject site as part of a larger request for property generally located between Azure Way and Tropical Parkway and between El Capitan Way and Durango Drive, containing approximately 15 acres of land. The Planning Commission and staff recommended approval.

MH

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November 2010 - Administrative Minor Review

10/20/99	The City Council approved an Amendment to the Master Plan of Streets and Highways (MSH-0003-99) to establish the alignment of Durango Drive between Centennial Parkway and Tropical Parkway. This alignment created an S-Curve; the subject site is located west of this realignment at Tropical Parkway and Durango Drive. The Planning Commission and staff recommended approval.
08/21/02	The City Council approved a General Plan Amendment (GPA-0019-02) of the northeastern portion of the subject site from L (Low Density Residential) to PF-TC (Public Facilities) as part of a larger request on a 45.87 acre parcel located on the west side of Durango Drive, south of Centennial Parkway and north of the S-Curve alignment. The Planning Commission and staff recommended approval.
11/05/2008	The City Council approved a request for a General Plan Amendment (GPA-29582) to amend a portion of the Centennial Hills Sector Plan from L (Low Density Residential) to PF (Public Facilities) and a request for a Rezoning (ZON-29584) from the U (Undeveloped) [L (Low Density Residential)] zoning district to the C-V (Civic) zoning district on a portion of a 8.2 acre site at the northwest corner of Tropical Parkway and Durango Drive. The Planning Commission and staff recommended approval.
02/12/09	The Planning Commission approved a request for a Site Development Plan Review (SDR-32790) for a proposed City Park on a portion of 8.2 acres on the northwest corner of Tropical Parkway and Durango Drive
08/27/09	The Planning Commission approved request for a Site Development Plan Review (SDR-35160) for Phase II of a proposed City Park on a portion of 8.20 acres at the northwest corner of Tropical Parkway and Durango Drive.

Most Recent Change of Ownership

09/05/02	A long-term lease agreement was recorded by the Bureau of Land Management with the City of Las Vegas, under the Recreation & Public Purposes Act.
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Related Building Permits/Business Licenses

08/24/10	Building Permit #153412 was issued for vehicle entry gates for a proposed City Park located at 6075 North Durango Drive.
08/24/10	Building Permit #153413 was issued for a monument entry sign for a proposed City Park located at 6075 North Durango Drive.
08/24/10	Building Permit #153414 was issued for a water play area for a proposed City Park located at 6075 North Durango Drive.
08/24/10	Building Permit #153415 was issued for restrooms for a proposed City Park located at 6075 North Durango Drive.

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10/01/10	Building Permit #172365 was issued for an accessory structure (ramada) within a proposed City Park located at 6075 North Durango Drive.
10/25/10	Building Permit #173434 was issued for an accessory structure (ramada) within a proposed City Park located at 6075 North Durango Drive.
04/13/10	Plan Check #36988 was issued for onsite improvements for City Park located at 6075 North Durango Drive.

<i>Pre-Application Meeting</i>	
09/07/10	The requirements for an application for a Minor Amendment to an approved Site Development Plan Review (SDR-32790) were discussed with the applicant. This is the final portion of the proposed park and includes the southeastern half of the property.

<i>Neighborhood Meeting</i>	
A neighborhood meeting is not required for this type of request nor was one held.	

<i>Field Check</i>	
10/15/10	A Field Check was performed by staff with the following observations: • The site has been graded and is currently under construction. • Landscape materials and backfill are stored on site. • There is currently construction-only access to the site.

<i>Details of Application Request</i>	
<i>Site Area</i>	
Gross Acres	11.25
Net Acres	8.2

Surrounding Property	Existing Land Use	Planned Land Use	Existing Zoning
Subject Property	Undeveloped Land	PF (Public Facilities)	C-V (Civic)
		PF-TC (Public Facilities-Town Center) Special Land Use Designation	T-C (Town Center) Zone
North	Undeveloped Land	L (Low Density Residential)	U (Undeveloped) [L (Low Density Residential) General Plan Designation]

MH

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South	Single-Family Residences	RNP (Rural Neighborhood Preservation) Clark County	RL (Residential Low Density) Clark County
East	Undeveloped Land	PF-TC (Public Facilities-Town Center) Special Land Use Designation	T-C (Town Center) Zone
West	Single Family Residences	L (Low Density Residential)	RE (Rural Estates Residential) Clark County

<i>Special Districts/Zones</i>	<i>Yes</i>	<i>No</i>	<i>Compliance</i>
Special Purpose and Overlay Districts			
C-V Civic District	X		Y
Trails		X	N/A
Rural Preservation Overlay District		X	N/A
Development Impact Notification Assessment		X	N/A
Project of Regional Significance		X	N/A

DEVELOPMENT STANDARDS

Pursuant to Title 19.06.020, the following development standards apply:

<i>Standard</i>	<i>Approved (SDR-32790)</i>	<i>Proposed (SDR-39771)</i>	<i>Compliance</i>
Min. Lot Size	8.2 acres	8.2 acres	Y
Min. Setbacks (12'x12' Ramada)			
• Front	70 Feet	70 Feet	Y
• Side	410 Feet	410 Feet	Y
• Corner	250 Feet	250 Feet	Y
• Rear	470 Feet	470 Feet	Y
Max. Building Height	25 Feet	11 Feet	Y

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Pursuant to Title 19.06.020, the following development standards shall apply:

<i>Landscaping and Open Space Standards</i>		
<i>Trees</i>	<i>SDR-32790 (approved)</i>	<i>SDR-39771 (proposed)</i>
Landscape Buffers:		
South	19 Trees	19 Trees
East	20 Trees	20 Trees
Subtotal	39 Trees	39 Trees
Internal Landscape	30 Trees	30 Trees
TOTAL	69 Trees*	69 Trees*

**This review is limited to the remaining southeastern portion of the approved park; all other landscaping has been approved under previous entitlements (SDR-32790 and SDR-35160).*

<i>Streetscape Standards Town Center Parkway and 20' Tree</i>	<i>Required</i>	<i>Proposed</i>	<i>Compliance with Street Section</i>
Amenity Zones	Street trees in the Amenity Zones shall be 35 feet on center, alternating shade trees and two palm trees, five 5-gallon flowering shrubs will be provided per tree with decomposed granite, Mojave Gold.	Street trees in the Amenity Zones shall be 35 feet on center, alternating shade trees and two palm trees, five 5-gallon flowering shrubs will be provided per tree with decomposed granite, Mojave Gold.	Y
Medians	15-foot wide median with Mexican Fan Palms spaced 35 feet on center with at least five 5-gallon flowering shrubs per tree with Mojave Gold decomposed granite groundcover.	The landscaping for the four-foot medians show a combination of Palms spaced at 35 feet on-center with the appropriate amount shrubs shown.	Y
Sidewalk and Pavement Standards	All sidewalk patterns shall conform to the Town Center Development Standards for Special Pavement and Sidewalk Treatment.	Although not detailed with drawings, the provided Landscape Plans specify conformance to the Town Center Development Standards.	Y

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<i>Streetscape Standards</i>	<i>Governing Document</i>	<i>Street Width (ft)</i>	<i>Compliance with Street Section</i>
Durango Drive: <i>Town Center Parkway 120'</i>	Town Center Development Standards	120	Y*
Tropical Parkway: <i>Secondary Collector</i>	Master Plan of Street and Highways	80	Y*

**Both Streetscapes were approved under Site Development Plan Review (SDR-35160).*

ANALYSIS

The subject site is located at the northwest corner of Tropical Parkway and Durango Drive. The single access point for the site is from Durango Drive. The applicant is developing the proposed 8.2 acre park site in multiple phases. Phase one was approved by Planning Commission under Site Development Plan Review (SDR-32790) on 02/12/09 and encompassed a 15 space parking lot, including one van accessible handicapped space, a shaded children's play area, a restroom facility and a shade ramada. Phase Two included offsite improvements along Bonita Vista Street, an additional small ramada, lighted walkways, 1.5 acres of open natural turf area and perimeter landscaping for the northwest half of the park. This review consists of the remaining landscaping for the southern and eastern perimeter of the park, an additional ramada, and the offsite halfstreet improvements along Durango Drive and Tropical Parkway. The proposed site plan remains consistent with the previously-approved Phase One (SDR-32970) and Two (SDR-35160) entitlements.

The shade structures depicted on the site were detailed during the original approval SDR-32970 and will be subject to review and approval by the Planning and Development Department at the time of building permit to ensure compatibility with the surrounding land uses.

This proposal for the remaining portion of the Public Park is compatible with the surrounding area, will provide a beneficial amenity for area residents and is consistent with the goals of the General Plan and Centennial Hills Sector Plan, and complies to the Town Center Development Standards; therefore, staff recommends approval.

FINDINGS (SDR-39771)

In order to approve a Site Development Plan application, per Title 19.18.050 the Planning Commission and/or City Council must affirm the following:

1. **The proposed development is compatible with adjacent development and development in the area;**

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The proposed Public Park is compatible with the surrounding area and will provide a much needed recreational amenity for area residents.

- 2. The proposed development is consistent with the General Plan, this Title, the Design Standards Manual, the Landscape, Wall and Buffer Standards, and other duly-adopted city plans, policies and standards;**

The proposed third phase of this park development is consistent with the goals of the General Plan and Centennial Hills Sector Plan and remains consistent with the original Site Development Plan approval (SDR-32970). Additionally, the provided plans demonstrate compliance with the Town Center Design Standards for the 120-foot wide Parkway.

- 3. Site access and circulation do not negatively impact adjacent roadways or neighborhood traffic;**

Access to the property is provided by a single ingress and egress point from Durango Drive, a 120-foot wide Town Center Parkway Arterial, as designated by the Town Center Development Standards Manual. This roadway is more than adequate for the added traffic the proposed city park will generate.

- 4. Building and landscape materials are appropriate for the area and for the City;**

The building materials and landscape materials are appropriate for a city park facility and are compatible with the Town Center Design Standards.

- 5. Building elevations, design characteristics and other architectural and aesthetic features are not unsightly, undesirable, or obnoxious in appearance; create an orderly and aesthetically pleasing environment; and are harmonious and compatible with development in the area;**

The proposed children's play area and park is consistent with similar park developments in the City of Las Vegas; the materials and design are not undesirable or obnoxious, but instead create an orderly and efficient experience that is compatible with the surrounding area.

- 6. Appropriate measures are taken to secure and protect the public health, safety and general welfare.**

The proposed development will be subject to the International Building Code, as well as maintained and secured by the City of Las Vegas; thus the public health, safety and general welfare will not be compromised.

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APPROVALS 0

PROTESTS 0

Appendix C

Hydraulic calculations

- Figure 2 – Normal depth cross section locations
- Normal Depth Calculations

Worksheet for Update-Sect V (A) Tropical - pre-berm

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.02170 ft/ft
Discharge 131.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
-0+40.0	82.85
-0+25.0	82.19
-0+15.0	82.39
0+01.0	82.46
0+13.0	82.17
0+17.0	82.29
0+22.0	81.98
0+26.5	83.00
0+30.0	84.00
0+32.0	84.31
0+49.5	84.00
0+51.0	84.00
0+53.0	85.00
0+54.5	85.00
0+56.5	84.57

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(-0+40.0, 82.85)	(-0+15.0, 82.39)	0.025
(-0+15.0, 82.39)	(0+17.0, 82.29)	0.016
(0+17.0, 82.29)	(0+56.5, 84.57)	0.025

Options

Current Roughness vweighted Pavlovskii's Method
Method

Worksheet for Update-Sect V (A) Tropical - pre-berm

Options

Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth		0.75	ft
Elevation Range	81.98 to 85.00	ft	
Flow Area		23.83	ft²
Wetted Perimeter		62.71	ft
Hydraulic Radius		0.38	ft
Top Width		62.60	ft
Normal Depth		0.75	ft
Critical Depth		0.89	ft
Critical Slope		0.00806	ft/ft
Velocity		5.50	ft/s
Velocity Head		0.47	ft
Specific Energy		1.22	ft
Froude Number		1.57	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.75	ft
Critical Depth	0.89	ft
Channel Slope	0.02170	ft/ft
Critical Slope	0.00806	ft/ft

Cross Section for Update-Sect V (A) Tropical - pre-berm

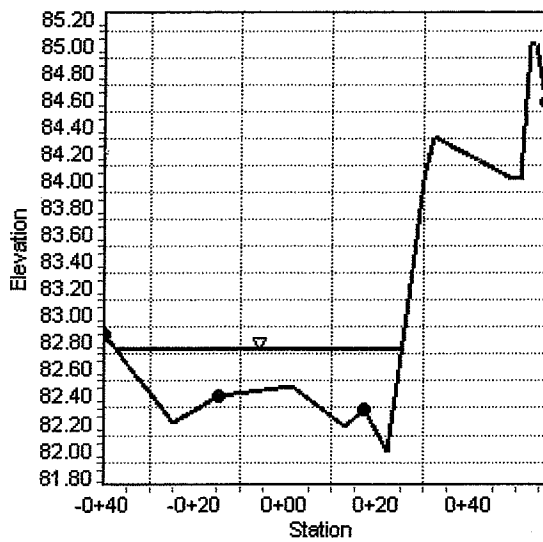
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.02170 ft/ft
Normal Depth 0.75 ft
Discharge 131.00 ft³/s

Cross Section Image



Worksheet for Update-Sect W (B) Tropical - pre-berm

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.02210 ft/ft
Discharge 131.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
-0+40.0	77.64
-0+25.0	76.71
-0+15.0	76.91
0+02.0	77.10
0+17.5	76.77
0+21.5	75.50
0+24.0	76.60
0+32.5	78.74
0+50.0	79.00
0+50.5	79.13
0+61.0	77.73
0+66.0	79.37

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(-0+40.0, 77.64)	(-0+15.0, 76.91)	0.025
(-0+15.0, 76.91)	(0+17.5, 76.77)	0.016
(0+17.5, 76.77)	(0+66.0, 79.37)	0.025

Options

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

Worksheet for Update-Sect W (B) Tropical - pre-berm

Results

Normal Depth	1.74	ft
Elevation Range	75.50 to 79.37	ft
Flow Area	23.21	ft²
Wetted Perimeter	60.52	ft
Hydraulic Radius	0.38	ft
Top Width	59.99	ft
Normal Depth	1.74	ft
Critical Depth	1.88	ft
Critical Slope	0.00786	ft/ft
Velocity	5.64	ft/s
Velocity Head	0.50	ft
Specific Energy	2.23	ft
Froude Number	1.60	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.74	ft
Critical Depth	1.88	ft
Channel Slope	0.02210	ft/ft
Critical Slope	0.00786	ft/ft

Cross Section for Update-Sect W (B) Tropical - pre-berm

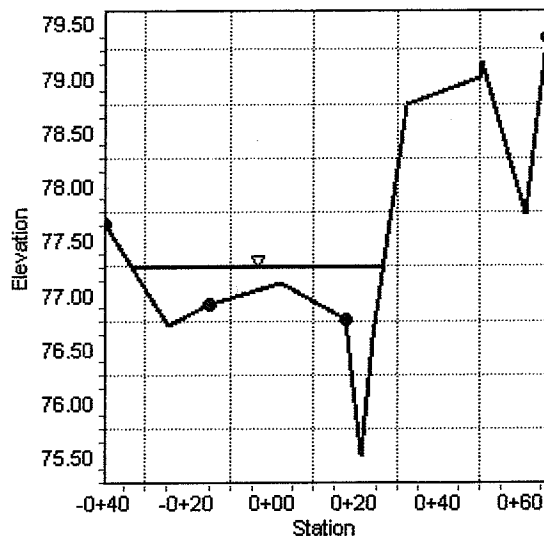
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.02210 ft/ft
Normal Depth 1.74 ft
Discharge 131.00 ft³/s

Cross Section Image



Worksheet for Update-Sec X (C) Tropical - pre-berm

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.02300 ft/ft
Discharge 133.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
-0+40.0	76.07
-0+17.0	74.56
0+02.0	74.75
0+20.0	74.47
0+31.5	75.00
0+35.0	75.00
0+35.0	76.04
0+48.0	76.04
0+48.0	75.00
0+50.0	75.00
0+63.0	76.74
0+69.0	76.91

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(-0+40.0, 76.07)	(-0+17.0, 74.56)	0.020
(-0+17.0, 74.56)	(0+20.0, 74.47)	0.016
(0+20.0, 74.47)	(0+69.0, 76.91)	0.020

Options

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

Worksheet for Update-Sec X (C) Tropical - pre-berm

Results

Normal Depth		0.58	ft
Elevation Range	74.47 to 76.91 ft		
Flow Area		21.32	ft²
Wetted Perimeter		62.04	ft
Hydraulic Radius		0.34	ft
Top Width		61.90	ft
Normal Depth		0.58	ft
Critical Depth		0.77	ft
Critical Slope		0.00582	ft/ft
Velocity		6.24	ft/s
Velocity Head		0.60	ft
Specific Energy		1.19	ft
Froude Number		1.87	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.58	ft
Critical Depth	0.77	ft
Channel Slope	0.02300	ft/ft
Critical Slope	0.00582	ft/ft

Cross Section for Update-Sec X (C) Tropical - pre-berm

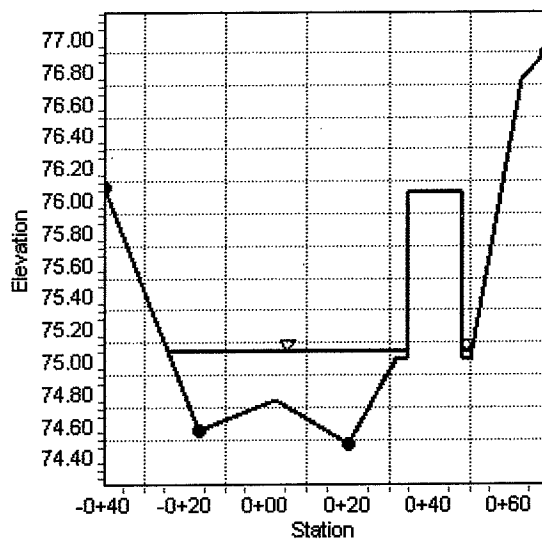
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.02300 ft/ft
Normal Depth 0.58 ft
Discharge 133.00 ft³/s

Cross Section Image



Worksheet for 10-yr Update Ph II - Section V (A) Tropical - Phase II

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.02170 ft/ft
Discharge 40.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
-0+40.0	82.85
-0+25.0	82.19
-0+15.0	82.39
0+01.0	82.46
0+36.5	81.73
0+36.5	81.69
0+38.0	81.56
0+38.0	82.06
0+38.5	82.06
0+43.5	82.16
0+43.5	84.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(-0+40.0, 82.85)	(-0+15.0, 82.39)	0.025
(-0+15.0, 82.39)	(0+36.5, 81.69)	0.016
(0+36.5, 81.69)	(0+43.5, 84.00)	0.013

Options

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

Worksheet for 10-yr Update Ph II - Section V (A) Tropical - Phase II

Results

Normal Depth		0.68	ft
Elevation Range	81.56 to 84.00 ft		
Flow Area		8.23	ft²
Wetted Perimeter		36.61	ft
Hydraulic Radius		0.22	ft
Top Width		35.97	ft
Normal Depth		0.68	ft
Critical Depth		0.81	ft
Critical Slope		0.00641	ft/ft
Velocity		4.86	ft/s
Velocity Head		0.37	ft
Specific Energy		1.05	ft
Froude Number		1.79	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.68	ft
Critical Depth	0.81	ft
Channel Slope	0.02170	ft/ft
Critical Slope	0.00641	ft/ft

Cross Section for 10-yr Update Ph II - Section V (A) Tropical - Phase II

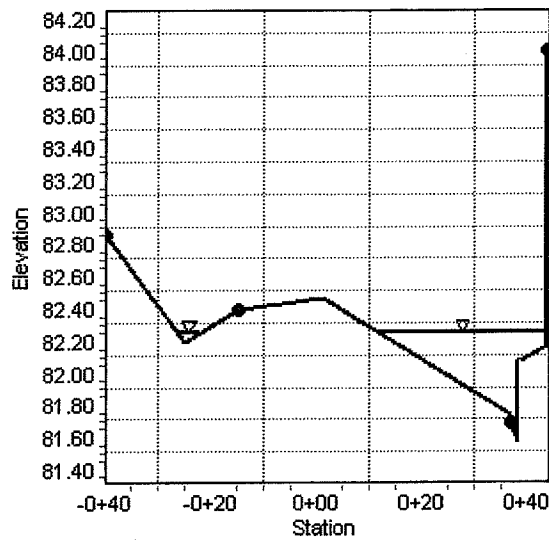
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02170	ft/ft
Normal Depth	0.68	ft
Discharge	40.00	ft ³ /s

Cross Section Image



Worksheet for Update Ph II - Section V (A) Tropical - Phase II

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.02170 ft/ft
Discharge 131.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
-0+40.0	82.85
-0+25.0	82.19
-0+15.0	82.39
0+01.0	82.46
0+36.5	81.73
0+36.5	81.69
0+38.0	81.56
0+38.0	82.06
0+38.5	82.06
0+43.5	82.16
0+43.5	84.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(-0+40.0, 82.85)	(-0+15.0, 82.39)	0.025
(-0+15.0, 82.39)	(0+36.5, 81.69)	0.016
(0+36.5, 81.69)	(0+43.5, 84.00)	0.013

Options

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

Worksheet for Update Ph II - Section V (A) Tropical - Phase II

Results

Normal Depth	0.96	ft
Elevation Range	81.56 to 84.00 ft	
Flow Area	23.80	ft ²
Wetted Perimeter	76.94	ft
Hydraulic Radius	0.31	ft
Top Width	76.01	ft
Normal Depth	0.96	ft
Critical Depth	1.10	ft
Critical Slope	0.00646	ft/ft
Velocity	5.50	ft/s
Velocity Head	0.47	ft
Specific Energy	1.43	ft
Froude Number	1.73	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.96	ft
Critical Depth	1.10	ft
Channel Slope	0.02170	ft/ft
Critical Slope	0.00646	ft/ft

Cross Section for Update Ph II - Section V (A) Tropical - Phase II

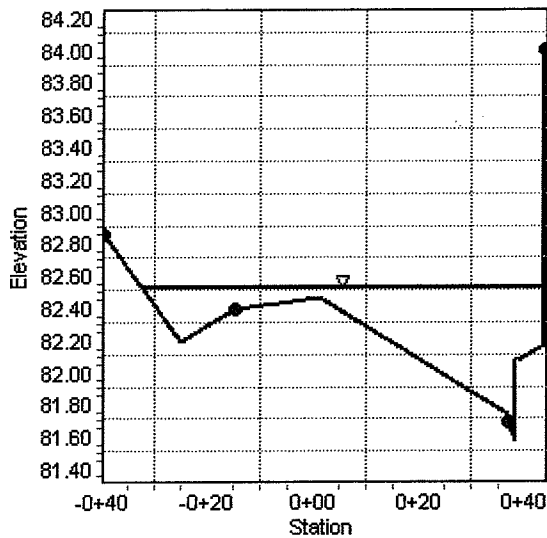
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.02170 ft/ft
Normal Depth 0.96 ft
Discharge 131.00 ft³/s

Cross Section Image



Worksheet for Update Ph II - Section W (B) Tropical - Phase II

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.01700 ft/ft
Discharge 131.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
-0+40.0	77.64
-0+25.0	76.71
-0+15.0	76.91
0+02.0	77.10
0+49.0	76.46
0+49.0	76.42
0+50.5	76.29
0+50.5	76.79
0+51.0	76.79
0+56.0	76.89
0+56.0	77.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(-0+40.0, 77.64)	(-0+15.0, 76.91)	0.025
(-0+15.0, 76.91)	(0+49.0, 76.42)	0.016
(0+49.0, 76.42)	(0+56.0, 77.00)	0.013

Options

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

Worksheet for Update Ph II - Section W (B) Tropical - Phase II

Results

Normal Depth		0.85	ft
Elevation Range	76.29 to 77.64		
Flow Area		26.83	ft ²
Wetted Perimeter		88.75	ft
Hydraulic Radius		0.30	ft
Top Width		87.93	ft
Normal Depth		0.85	ft
Critical Depth		0.96	ft
Critical Slope		0.00637	ft/ft
Velocity		4.88	ft/s
Velocity Head		0.37	ft
Specific Energy		1.22	ft
Froude Number		1.56	
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	0.00	ft
Profile Headloss	Infinity	ft/s
Downstream Velocity	Infinity	ft/s
Upstream Velocity	0.85	ft
Normal Depth	0.96	ft
Critical Depth	0.01700	ft/ft
Channel Slope	0.00637	ft/ft
Critical Slope		

Cross Section for Update Ph II - Section W (B) Tropical - Phase II

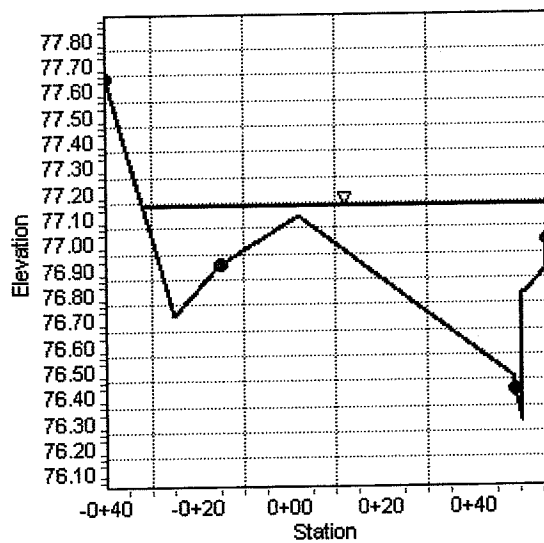
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope	0.01700	ft/ft
Normal Depth	0.85	ft
Discharge	131.00	ft ³ /s

Cross Section Image



Worksheet for Update Ph II - Section X (C) Tropical - Phase II

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.02180 ft/ft
Discharge 133.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
-0+40.0	76.07
-0+17.0	74.10
0+02.0	74.20
0+49.0	73.52
0+49.0	73.48
0+50.5	73.35
0+50.5	73.85
0+51.0	73.85
0+56.0	73.95
0+56.0	75.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(-0+40.0, 76.07)	(-0+17.0, 74.10)	0.020
(-0+17.0, 74.10)	(0+49.0, 73.52)	0.016
(0+49.0, 73.52)	(0+56.0, 75.00)	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 0.88 ft

Worksheet for Update Ph II - Section X (C) Tropical - Phase II

Results

Elevation Range	73.35 to 76.07 ft	
Flow Area	21.85	ft ²
Wetted Perimeter	75.32	ft
Hydraulic Radius	0.29	ft
Top Width	74.48	ft
Normal Depth	0.88	ft
Critical Depth	1.05	ft
Critical Slope	0.00482	ft/ft
Velocity	6.09	ft/s
Velocity Head	0.58	ft
Specific Energy	1.45	ft
Froude Number	1.98	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.88	ft
Critical Depth	1.05	ft
Channel Slope	0.02180	ft/ft
Critical Slope	0.00482	ft/ft

Cross Section for Update Ph II - Section X (C) Tropical - Phase II

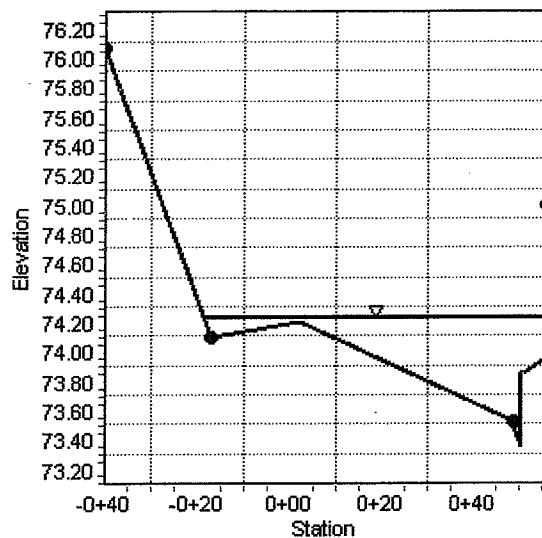
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope	0.02180	ft/ft
Normal Depth	0.88	ft
Discharge	133.00	ft ³ /s

Cross Section Image



Worksheet for Update Ph II - Section V (A) Tropical - Ultimate

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.02170 ft/ft
Discharge 23.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
-0+40.0	84.00
-0+40.0	82.23
-0+35.0	82.13
-0+34.5	82.13
-0+34.5	81.63
-0+33.0	81.76
-0+33.0	81.80
0+01.0	82.46
0+36.5	81.73
0+36.5	81.69
0+38.0	81.56
0+38.0	82.06
0+38.5	82.06
0+43.5	82.16
0+43.5	84.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(-0+40.0, 84.00)	(-0+33.0, 81.76)	0.013
(-0+33.0, 81.76)	(0+36.5, 81.69)	0.016
(0+36.5, 81.69)	(0+43.5, 84.00)	0.013

Options

Current Roughness Weighted Pavlovskii's Method
Method

Worksheet for Update Ph II - Section V (A) Tropical - Ultimate

Options

Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth		0.50	ft
Elevation Range	81.56 to 84.00 ft		
Flow Area		5.46	ft²
Wetted Perimeter		33.07	ft
Hydraulic Radius		0.17	ft
Top Width		32.05	ft
Normal Depth		0.50	ft
Critical Depth		0.59	ft
Critical Slope		0.00640	ft/ft
Velocity		4.21	ft/s
Velocity Head		0.28	ft
Specific Energy		0.77	ft
Froude Number		1.80	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.50	ft
Critical Depth	0.59	ft
Channel Slope	0.02170	ft/ft
Critical Slope	0.00640	ft/ft

Cross Section for Update Ph II - Section V (A) Tropical - Ultimate

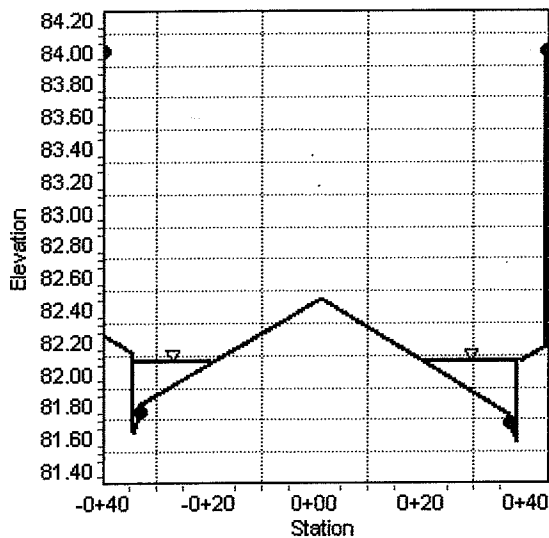
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope	0.02170	ft/ft
Normal Depth	0.50	ft
Discharge	23.00	ft ³ /s

Cross Section Image



Worksheet for Update Ph II - Section V (A) Tropical - Ultimate

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.02170 ft/ft
Discharge 88.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
-0+40.0	84.00
-0+40.0	82.23
-0+35.0	82.13
-0+34.5	82.13
-0+34.5	81.63
-0+33.0	81.76
-0+33.0	81.80
0+01.0	82.46
0+36.5	81.73
0+36.5	81.69
0+38.0	81.56
0+38.0	82.06
0+38.5	82.06
0+43.5	82.16
0+43.5	84.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(-0+40.0, 84.00)	(-0+33.0, 81.76)	0.013
(-0+33.0, 81.76)	(0+36.5, 81.69)	0.016
(0+36.5, 81.69)	(0+43.5, 84.00)	0.013

Options

Current Roughness Weighted Pavlovskii's Method
Method

Worksheet for Update Ph II - Section V (A) Tropical - Ultimate

Options

Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.71	ft
Elevation Range	81.56 to 84.00	ft
Flow Area	15.88	ft²
Wetted Perimeter	65.48	ft
Hydraulic Radius	0.24	ft
Top Width	64.23	ft
Normal Depth	0.71	ft
Critical Depth	0.86	ft
Critical Slope	0.00507	ft/ft
Velocity	5.54	ft/s
Velocity Head	0.48	ft
Specific Energy	1.18	ft
Froude Number	1.97	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.71	ft
Critical Depth	0.86	ft
Channel Slope	0.02170	ft/ft
Critical Slope	0.00507	ft/ft

Cross Section for Update Ph II - Section V (A) Tropical - Ultimate

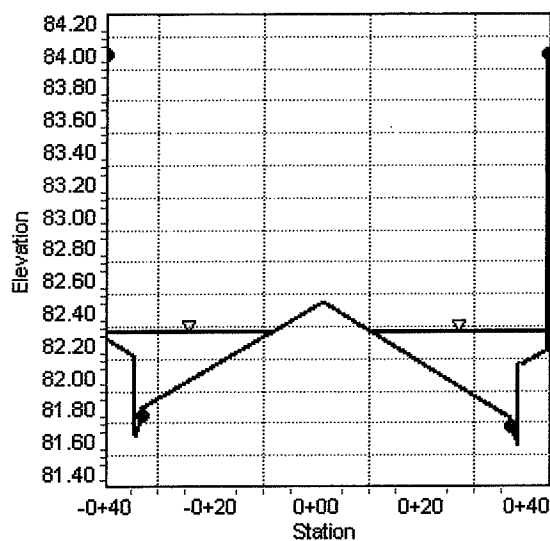
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.02170 ft/ft
Normal Depth 0.71 ft
Discharge 88.00 ft³/s

Cross Section Image



Worksheet for Update Ph II - Section W (B) Tropical - Ultimate

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.01700 ft/ft
Discharge 23.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
-0+40.0	77.00
-0+40.0	76.87
-0+35.0	76.77
-0+34.5	76.77
-0+34.5	76.27
-0+33.0	76.40
-0+33.0	76.44
0+02.0	77.10
0+49.0	76.46
0+49.0	76.42
0+50.5	76.29
0+50.5	76.79
0+51.0	76.79
0+56.0	76.89
0+56.0	77.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(-0+40.0, 77.00)	(-0+33.0, 76.40)	0.013
(-0+33.0, 76.40)	(0+49.0, 76.42)	0.016
(0+49.0, 76.42)	(0+56.0, 77.00)	0.013

Options

Current Roughness Weighted Pavlovskii's Method
Method

Worksheet for Update Ph II - Section W (B) Tropical - Ultimate

Options

Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.47	ft
Elevation Range	76.27 to 77.10	ft
Flow Area	6.37	ft²
Wetted Perimeter	40.22	ft
Hydraulic Radius	0.16	ft
Top Width	39.21	ft
Normal Depth	0.47	ft
Critical Depth	0.54	ft
Critical Slope	0.00653	ft/ft
Velocity	3.61	ft/s
Velocity Head	0.20	ft
Specific Energy	0.67	ft
Froude Number	1.58	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.47	ft
Critical Depth	0.54	ft
Channel Slope	0.01700	ft/ft
Critical Slope	0.00653	ft/ft

Cross Section for Update Ph II - Section W (B) Tropical - Ultimate

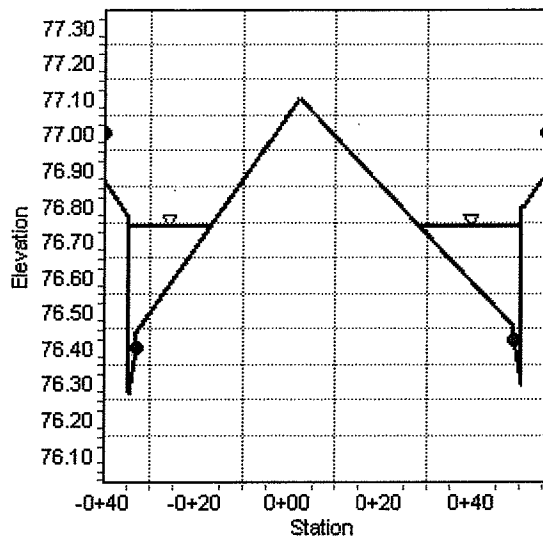
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.01700 ft/ft
Normal Depth 0.47 ft
Discharge 23.00 ft³/s

Cross Section Image



Worksheet for Update Ph II - Section W (B) Tropical - Ultimate

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.01700 ft/ft
Discharge 88.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
-0+40.0	77.00
-0+40.0	76.87
-0+35.0	76.77
-0+34.5	76.77
-0+34.5	76.27
-0+33.0	76.40
-0+33.0	76.44
0+02.0	77.10
0+49.0	76.46
0+49.0	76.42
0+50.5	76.29
0+50.5	76.79
0+51.0	76.79
0+56.0	76.89
0+56.0	77.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(-0+40.0, 77.00)	(-0+33.0, 76.40)	0.013
(-0+33.0, 76.40)	(0+49.0, 76.42)	0.016
(0+49.0, 76.42)	(0+56.0, 77.00)	0.013

Options

Current Roughness Weighted Pavlovskii's Method
Method

Worksheet for Update Ph II - Section W (B) Tropical - Ultimate

Options

Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.67	ft
Elevation Range	76.27 to 77.10	ft
Flow Area	18.34	ft²
Wetted Perimeter	77.34	ft
Hydraulic Radius	0.24	ft
Top Width	76.11	ft
Normal Depth	0.67	ft
Critical Depth	0.79	ft
Critical Slope	0.00527	ft/ft
Velocity	4.80	ft/s
Velocity Head	0.36	ft
Specific Energy	1.03	ft
Froude Number	1.72	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.67	ft
Critical Depth	0.79	ft
Channel Slope	0.01700	ft/ft
Critical Slope	0.00527	ft/ft

Cross Section for Update Ph II - Section W (B) Tropical - Ultimate

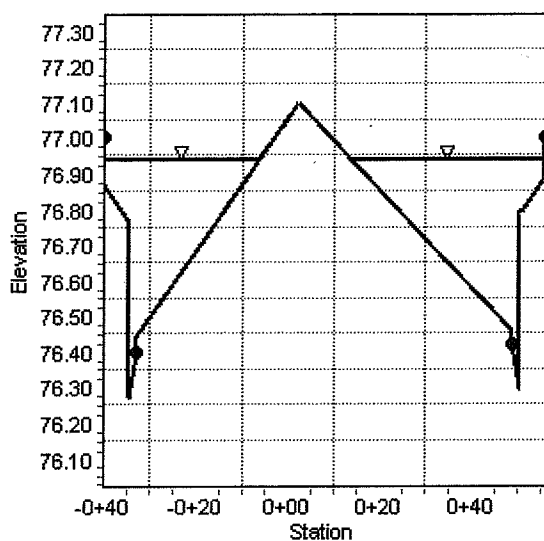
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.01700 ft/ft
Normal Depth 0.67 ft
Discharge 88.00 ft³/s

Cross Section Image



Worksheet for Update Ph II - Section X (C) Tropical - Ultimate

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.02180 ft/ft
Discharge 24.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
-0+40.0	75.00
-0+40.0	73.97
-0+35.0	73.87
-0+34.5	73.87
-0+34.5	73.37
-0+33.0	73.50
-0+33.0	73.54
0+02.0	74.20
0+49.0	73.52
0+49.0	73.48
0+50.5	73.35
0+50.5	73.85
0+51.0	73.85
0+56.0	73.95
0+56.0	75.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(-0+40.0, 75.00)	(-0+33.0, 73.50)	0.013
(-0+33.0, 73.50)	(0+49.0, 73.52)	0.016
(0+49.0, 73.52)	(0+56.0, 75.00)	0.013

Options

Current Roughness Weighted Pavlovskii's Method
Method

Worksheet for Update Ph II - Section X (C) Tropical - Ultimate

Options

Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.46	ft
Elevation Range	73.35 to 75.00	ft
Flow Area	5.94	ft ²
Wetted Perimeter	38.19	ft
Hydraulic Radius	0.16	ft
Top Width	37.19	ft
Normal Depth	0.46	ft
Critical Depth	0.55	ft
Critical Slope	0.00648	ft/ft
Velocity	4.04	ft/s
Velocity Head	0.25	ft
Specific Energy	0.71	ft
Froude Number	1.78	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.46	ft
Critical Depth	0.55	ft
Channel Slope	0.02180	ft/ft
Critical Slope	0.00648	ft/ft

Cross Section for Update Ph II - Section X (C) Tropical - Ultimate

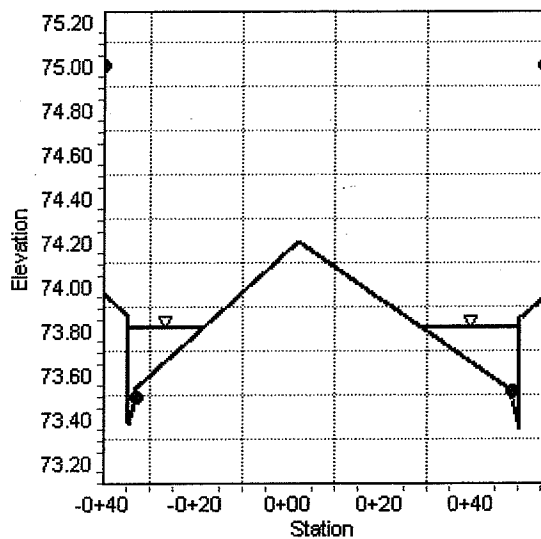
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope	0.02180	ft/ft
Normal Depth	0.46	ft
Discharge	24.00	ft ³ /s

Cross Section Image



Worksheet for Update Ph II - Section X (C) Tropical - Ultimate

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.02180 ft/ft
Discharge 94.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
-0+40.0	75.00
-0+40.0	73.97
-0+35.0	73.87
-0+34.5	73.87
-0+34.5	73.37
-0+33.0	73.50
-0+33.0	73.54
0+02.0	74.20
0+49.0	73.52
0+49.0	73.48
0+50.5	73.35
0+50.5	73.85
0+51.0	73.85
0+56.0	73.95
0+56.0	75.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(-0+40.0, 75.00)	(-0+33.0, 73.50)	0.013
(-0+33.0, 73.50)	(0+49.0, 73.52)	0.016
(0+49.0, 73.52)	(0+56.0, 75.00)	0.013

Options

Current Roughness Weighted Pavlovskii's Method
Method

Worksheet for Update Ph II - Section X (C) Tropical - Ultimate

Options

Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth		0.67	ft
Elevation Range	73.35 to 75.00 ft		
Flow Area		17.44	ft ²
Wetted Perimeter		74.63	ft
Hydraulic Radius		0.23	ft
Top Width		73.42	ft
Normal Depth		0.67	ft
Critical Depth		0.81	ft
Critical Slope		0.00518	ft/ft
Velocity		5.39	ft/s
Velocity Head		0.45	ft
Specific Energy		1.12	ft
Froude Number		1.95	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.67	ft
Critical Depth	0.81	ft
Channel Slope	0.02180	ft/ft
Critical Slope	0.00518	ft/ft

Cross Section for Update Ph II - Section X (C) Tropical - Ultimate

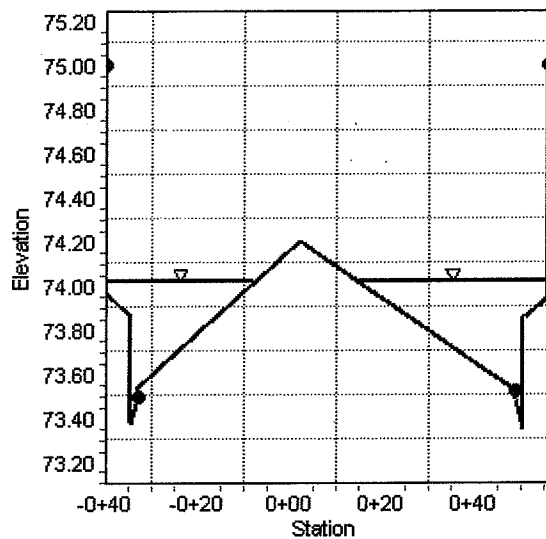
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope	0.02180	ft/ft
Normal Depth	0.67	ft
Discharge	94.00	ft³/s

Cross Section Image





LAND DEVELOPMENT TRANSFER MEMORANDUM

DATE: 1-26-10

TO: Robert Welch (Drainage Studies) Abert Sung

FROM: Patrick Batte

CC: , Billie Jo Berlin, File

RE: Review Fee Funds Transfer

PAID

FEB 02 2011

Development Service Center
161812
JC

Please pay the Land Development Fees for this project using the following information:

Project Name: Tropical Durango Park Phase II

Project Name from the Project Initiator Box #1.

Project Address: 6075 N. durango Drive

or Parcel Number(s): 125-29-601-021

Servicer Org Number: 406000.40531

SERVICER ORG. from the upper portion of Box #10 on the Project Initiator.

This is the org number of your project's funding source, for example, 40521 is the Park S fund org number. Do not use the OAS section org number 15341, nor your client such as Neighborhood Services' org number, nor the Requestor org number from the P.I., nor the Servicer org number from the lower half of Box #10. (If Finance leaves the upper portion of Box #10 empty and provides the only Servicer Org of the P.I. on the "All Costs Other than Internal Labor" line at the bottom of Box #10, use that number.) Do not use a number that ends in 0.

Account Number: 810205 Parks

From the City's chart of accounts: 810205 for new or rehab Parks, 810605 for new Building construction, 810705 for Building remodels or additions.

Work Authorization Number: WU8123

The W/A NO. from the upper portion of Box #10 on the Project Initiator. (If Finance leaves the upper portion of Box #10 empty and provides the only W/A NO. of the P.I. on the "All Costs Other than Internal Labor" line at the bottom of Box #10, use that number.)

Land Development Fees: \$400

From the Land Development Plan Checker, Flood Control Inter-Office Memo to Land Development, or as otherwise provided.

Service Requested: Flood Control Study Review

Authorizing Individual: Patrick Batte

OAS Project Manager's name.

Funding Department: Leisure Services

Public Works, Neighborhood Services, Detention & Enforcement, Fire, etc. If multiple departments, list the department that controls the fund this transfer is drawn from.

Occupying/Programming/Operating Department: Field Operations

Leisure Services, Detention & Enforcement, Fire, etc. If multiple departments, list primary only.

Thank you.

DEPARTMENT OF
PUBLIC WORKS

OAS

OFFICE OF
ARCHITECTURAL
SERVICES

400 STEWART AVENUE
LAS VEGAS, NEVADA 89101

TELEPHONE: (702) 229-6535

FAX: (702) 382-3232

TDD: (702) 386-9108

www.lasvegasnevada.gov

PLANNING & DEVELOPMENT



DEVELOPMENT SERVICES CENTER

731 S. Fourth Street
Las Vegas, NV 89101

Voice: 702-229-6301
Fax: 702-474-0352
TTY: 702-386-9108

www.lasvegasnevada.gov

November 1, 2010

Mr. Patrick Batte
City of Las Vegas
Department of Public Works
400 Stewart Avenue
Las Vegas, Nevada 89101

**RE: SDR-39771 - MINOR REVIEW SITE DEVELOPMENT PLAN REVIEW
ADMINISTRATIVE CYCLE - NOVEMBER 2010**

Dear Batte:

Your request for a Minor Site Development Plan Review FOR A PROPOSED CITY PARK on a portion of 8.20 acres at the northwest corner of Tropical Parkway and Durango Drive (APN 125-29-601-021), C-V (Civic) Zone and T-C (Town Center) Zone [PF-TC (Public Facilities - Town Center) Special Land Use Designation], Ward 6 (Ross), has been considered administratively by the Planning and Development Department staff.

The Planning and Development Department staff has administratively **APPROVED** your request subject to the following:

Planning and Development

1. Conformance to the conditions for Site Development Plan Review (SDR-32790) if approved.
2. This approval shall be void two years from the date of final approval, unless a final inspection is approved. An Extension of Time may be filed for consideration by the City of Las Vegas.
3. All development shall be in conformance with the site plan, landscape plan, and building elevations, date stamped 10/01/2010, except as amended by conditions herein.
4. 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 Building and Safety Department.
5. These Conditions of Approval shall be affixed to the cover sheet of any plan set submitted for building permit.

Mayor
Oscar B. Goodman

City Council
Gary Reese
(Mayor Pro Tem)
Steve Wolfson
Lois Tarkanian
Steven D. Ross
Ricki Y. Barlow
Stavros S. Anthony
City Manager
Elizabeth N. Freitwell



6. 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.
7. All mechanical equipment and trash areas shall be fully screened in views from the abutting streets.
8. All utility boxes exceeding 27 cubic feet in size shall meet the standards of LVMC Title 19.12.040.
9. Any lighting on the exterior of buildings or structures shall be shielded and shall be downward-directed. Non-residential property lighting shall be directed away from residential property or screened, and shall not create fugitive lighting on adjacent properties.
10. 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.
11. All City Code requirements and design standards of all City Departments must be satisfied, except as modified herein.

Public Works

12. Construct half-street improvements and appropriate transition paving on Tropical Parkway per Current City Standards and all incomplete half-street improvements on Durango Drive in accordance with Town Center development standards adjacent to this site concurrent with on-site development activities.
13. 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 the issuance of any grading or building permits or submittal of any construction drawings, whichever may occur first. Provide and improve all drainageways as recommended in the approved drainage plan/study.

Mr. Patrick Batte
SDR-39771 - Page Three
November 1, 2010

14. Comply with all applicable previous conditions of approval for SDR-32790, SDR-35160 and all other site-related actions.

This action by the Planning and Development Department staff on November 1, 2010 is final unless a written appeal is filed with the Director of Planning and Development Department within ten days of the date of this letter.

Sincerely,

A handwritten signature in black ink, appearing to read 'Steve Gebeke', with a long horizontal line extending to the right.

Steve Gebeke
Planning Supervisor
Case Planning Division

SG:clb

City of Las Vegas

AGENDA MEMO

ADMINISTRATIVE MINOR REVIEW DATE: NOVEMBER 2010

DEPARTMENT: PLANNING AND DEVELOPMENT

ITEM DESCRIPTION: APPLICANT/OWNER: CITY OF LAS VEGAS

**** STAFF RECOMMENDATION(S) ****

CASE NUMBER	RECOMMENDATION	REQUIRED FOR APPROVAL
SDR-39771	Staff recommends APPROVAL, subject to conditions:	

**** CONDITIONS ****

SDR-39771 CONDITIONS

Planning and Development

1. Conformance to the conditions for Site Development Plan Review (SDR-32790) if approved.
2. This approval shall be void two years from the date of final approval, unless a final inspection is approved. An Extension of Time may be filed for consideration by the City of Las Vegas.
3. All development shall be in conformance with the site plan, landscape plan, and building elevations, date stamped 10/01/2010, except as amended by conditions herein.
4. 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 Building and Safety Department.
5. These Conditions of Approval shall be affixed to the cover sheet of any plan set submitted for building permit.
6. 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.

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Conditions Page Two
November 2010 - Administrative Minor Review

7. All mechanical equipment and trash areas shall be fully screened in views from the abutting streets.
8. All utility boxes exceeding 27 cubic feet in size shall meet the standards of LVMC Title 19.12.040.
9. Any lighting on the exterior of buildings or structures shall be shielded and shall be downward-directed. Non-residential property lighting shall be directed away from residential property or screened, and shall not create fugitive lighting on adjacent properties.
10. 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.
11. All City Code requirements and design standards of all City Departments must be satisfied, except as modified herein.

Public Works

12. Construct half-street improvements and appropriate transition paving on Tropical Parkway per Current City Standards and all incomplete half-street improvements on Durango Drive in accordance with Town Center development standards adjacent to this site concurrent with on-site development activities.
13. 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 the issuance of any grading or building permits or submittal of any construction drawings, whichever may occur first. Provide and improve all drainageways as recommended in the approved drainage plan/study.
14. Comply with all applicable previous conditions of approval for SDR-32790, SDR-35160 and all other site-related actions.

Staff Report Page One
November 2010 - Administrative Minor Review

**** STAFF REPORT ****

PROJECT DESCRIPTION

This is a request for a Minor Site Development Plan Review for the third phase of a 8.2-acre Public Park on a portion of an undeveloped lot at the northwest corner of Tropical Parkway and Durango Drive. The park is approximately 24 percent constructed; this request covers the southwestern third of the proposal. The first and second phases of the project were approved under Site Development Reviews (SDR-32790 and SDR-35160), which included a 15-space parking lot, a shaded children's play area and a shade ramada. The scope of this review includes the remaining 3.2 acres (approximate) of the total 8.2 acres.

The final phase of the proposed Public Park is compatible with the surrounding area, will provide a beneficial amenity for area residents and is consistent with the goals of the General Plan and Centennial Hills Sector Plan; therefore, staff recommends approval.

ISSUES

- Phase I (SDR-35160): this portion of the Public Park is limited to the northern cul-de-sac with attached 15-space parking lot, the covered tot-lot, and the adjacent ramada and restrooms.
- Phase II (SDR-32790): this portion of the Public Park included an additional ramada and the landscaping for the northwestern half of the park. Also included with this review were the offsite improvements along Bonita Vista Street.
- Phase III (current application request – SDR-39771): this portion of the Public Park will include the median and streetscape improvements along Durango Drive to Town Center Standards and the half-street improvements along Tropical Parkway to City of Las Vegas Standards. Also included within the scope of this review is the remaining southeastern half of landscaping, which includes a sculptural display area and a 144 square-foot ramada on the east side of the property.

BACKGROUND INFORMATION

<i>Related Relevant City Actions by P&D, Fire, Bldg., etc</i>	
02/09/98	The City Council approved a request to Annex [A-0027-98(A)] the subject site as part of a larger request for property generally located between Azure Way and Tropical Parkway and between El Capitan Way and Durango Drive, containing approximately 15 acres of land. The Planning Commission and staff recommended approval.

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Staff Report Page Two
November 2010 - Administrative Minor Review

10/20/99	The City Council approved an Amendment to the Master Plan of Streets and Highways (MSH-0003-99) to establish the alignment of Durango Drive between Centennial Parkway and Tropical Parkway. This alignment created an S-Curve; the subject site is located west of this realignment at Tropical Parkway and Durango Drive. The Planning Commission and staff recommended approval.
08/21/02	The City Council approved a General Plan Amendment (GPA-0019-02) of the northeastern portion of the subject site from L (Low Density Residential) to PF-TC (Public Facilities) as part of a larger request on a 45.87 acre parcel located on the west side of Durango Drive, south of Centennial Parkway and north of the S-Curve alignment. The Planning Commission and staff recommended approval.
11/05/2008	The City Council approved a request for a General Plan Amendment (GPA-29582) to amend a portion of the Centennial Hills Sector Plan from L (Low Density Residential) to PF (Public Facilities) and a request for a Rezoning (ZON-29584) from the U (Undeveloped) [L (Low Density Residential)] zoning district to the C-V (Civic) zoning district on a portion of a 8.2 acre site at the northwest corner of Tropical Parkway and Durango Drive. The Planning Commission and staff recommended approval.
02/12/09	The Planning Commission approved a request for a Site Development Plan Review (SDR-32790) for a proposed City Park on a portion of 8.2 acres on the northwest corner of Tropical Parkway and Durango Drive
08/27/09	The Planning Commission approved request for a Site Development Plan Review (SDR-35160) for Phase II of a proposed City Park on a portion of 8.20 acres at the northwest corner of Tropical Parkway and Durango Drive.

Most Recent Change of Ownership

09/05/02	A long-term lease agreement was recorded by the Bureau of Land Management with the City of Las Vegas, under the Recreation & Public Purposes Act.
----------	---

Related Building Permits/Business Licenses

08/24/10	Building Permit #153412 was issued for vehicle entry gates for a proposed City Park located at 6075 North Durango Drive.
08/24/10	Building Permit #153413 was issued for a monument entry sign for a proposed City Park located at 6075 North Durango Drive.
08/24/10	Building Permit #153414 was issued for a water play area for a proposed City Park located at 6075 North Durango Drive.
08/24/10	Building Permit #153415 was issued for restrooms for a proposed City Park located at 6075 North Durango Drive.

Staff Report Page Three

November 2010 - Administrative Minor Review

10/01/10	Building Permit #172365 was issued for an accessory structure (ramada) within a proposed City Park located at 6075 North Durango Drive.
10/25/10	Building Permit #173434 was issued for an accessory structure (ramada) within a proposed City Park located at 6075 North Durango Drive.
04/13/10	Plan Check #36988 was issued for onsite improvements for City Park located at 6075 North Durango Drive.

<i>Pre-Application Meeting</i>	
09/07/10	The requirements for an application for a Minor Amendment to an approved Site Development Plan Review (SDR-32790) were discussed with the applicant. This is the final portion of the proposed park and includes the southeastern half of the property.

<i>Neighborhood Meeting</i>	
A neighborhood meeting is not required for this type of request nor was one held.	

<i>Field Check</i>	
10/15/10	A Field Check was performed by staff with the following observations: • The site has been graded and is currently under construction. • Landscape materials and backfill are stored on site. • There is currently construction-only access to the site.

<i>Details of Application Request</i>	
<i>Site Area</i>	
Gross Acres	11.25
Net Acres	8.2

Surrounding Property	Existing Land Use	Planned Land Use	Existing Zoning
Subject Property	Undeveloped Land	PF (Public Facilities)	C-V (Civic)
		PF-TC (Public Facilities-Town Center) Special Land Use Designation	T-C (Town Center) Zone
North	Undeveloped Land	L (Low Density Residential)	U (Undeveloped) [L (Low Density Residential) General Plan Designation]

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Staff Report Page Four
November 2010 - Administrative Minor Review

South	Single-Family Residences	RNP (Rural Neighborhood Preservation) Clark County	RL (Residential Low Density) Clark County
East	Undeveloped Land	PF-TC (Public Facilities-Town Center) Special Land Use Designation	T-C (Town Center) Zone
West	Single Family Residences	L (Low Density Residential)	RE (Rural Estates Residential) Clark County

<i>Special Districts/Zones</i>	<i>Yes</i>	<i>No</i>	<i>Compliance</i>
Special Purpose and Overlay Districts			
C-V Civic District	X		Y
Trails		X	N/A
Rural Preservation Overlay District		X	N/A
Development Impact Notification Assessment		X	N/A
Project of Regional Significance		X	N/A

DEVELOPMENT STANDARDS

Pursuant to Title 19.06.020, the following development standards apply:

<i>Standard</i>	<i>Approved (SDR-32790)</i>	<i>Proposed (SDR-39771)</i>	<i>Compliance</i>
Min. Lot Size	8.2 acres	8.2 acres	Y
Min. Setbacks (12'x12' Ramada)			
• Front	70 Feet	70 Feet	Y
• Side	410 Feet	410 Feet	Y
• Corner	250 Feet	250 Feet	Y
• Rear	470 Feet	470 Feet	Y
Max. Building Height	25 Feet	11 Feet	Y

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November 2010 - Administrative Minor Review

Pursuant to Title 19.06.020, the following development standards shall apply:

<i>Landscaping and Open Space Standards</i>		
<i>Trees</i>	<i>SDR-32790 (approved)</i>	<i>SDR-39771 (proposed)</i>
Landscape Buffers:		
South	19 Trees	19 Trees
East	20 Trees	20 Trees
Subtotal	39 Trees	39 Trees
Internal Landscape	30 Trees	30 Trees
TOTAL	69 Trees*	69 Trees*

**This review is limited to the remaining southeastern portion of the approved park; all other landscaping has been approved under previous entitlements (SDR-32790 and SDR-35160).*

<i>Streetscape Standards: Town Center Parkway minimum 20 feet</i>	<i>Required</i>	<i>Provided</i>	<i>Compliance with Street Standard</i>
Amenity Zones	Street trees in the Amenity Zones shall be 35 feet on center, alternating shade trees and two palm trees, five 5-gallon flowering shrubs will be provided per tree with decomposed granite, Mojave Gold.	Street trees in the Amenity Zones shall be 35 feet on center, alternating shade trees and two palm trees, five 5-gallon flowering shrubs will be provided per tree with decomposed granite, Mojave Gold.	Y
Medians	15-foot wide median with Mexican Fan Palms spaced 35 feet on center with at least five 5-gallon flowering shrubs per tree with Mojave Gold decomposed granite groundcover.	The landscaping for the four-foot medians show a combination of Palms spaced at 35 feet on-center with the appropriate amount shrubs shown.	Y
Sidewalk and Pavement Standards	All sidewalk patterns shall conform to the Town Center Development Standards for Special Pavement and Sidewalk Treatment.	Although not detailed with drawings, the provided Landscape Plans specify conformance to the Town Center Development Standards.	Y

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November 2010 - Administrative Minor Review

<i>Streetscape Standards</i>	<i>Governing Document</i>	<i>Street Width (feet)</i>	<i>Compliance with Street Section</i>
Durango Drive: <i>Town Center Parkway 120'</i>	Town Center Development Standards	120	Y*
Tropical Parkway: <i>Secondary Collector</i>	Master Plan of Street and Highways	80	Y*

**Both Streetscapes were approved under Site Development Plan Review (SDR-35160).*

ANALYSIS

The subject site is located at the northwest corner of Tropical Parkway and Durango Drive. The single access point for the site is from Durango Drive. The applicant is developing the proposed 8.2 acre park site in multiple phases. Phase one was approved by Planning Commission under Site Development Plan Review (SDR-32790) on 02/12/09 and encompassed a 15 space parking lot, including one van accessible handicapped space, a shaded children's play area, a restroom facility and a shade ramada. Phase Two included offsite improvements along Bonita Vista Street, an additional small ramada, lighted walkways, 1.5 acres of open natural turf area and perimeter landscaping for the northwest half of the park. This review consists of the remaining landscaping for the southern and eastern perimeter of the park, an additional ramada, and the offsite halfstreet improvements along Durango Drive and Tropical Parkway. The proposed site plan remains consistent with the previously-approved Phase One (SDR-32970) and Two (SDR-35160) entitlements.

The shade structures depicted on the site were detailed during the original approval SDR-32970 and will be subject to review and approval by the Planning and Development Department at the time of building permit to ensure compatibility with the surrounding land uses.

This proposal for the remaining portion of the Public Park is compatible with the surrounding area, will provide a beneficial amenity for area residents and is consistent with the goals of the General Plan and Centennial Hills Sector Plan, and complies to the Town Center Development Standards; therefore, staff recommends approval.

FINDINGS (SDR-39771)

In order to approve a Site Development Plan application, per Title 19.18.050 the Planning Commission and/or City Council must affirm the following:

- 1. The proposed development is compatible with adjacent development and development in the area;**

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Staff Report Page Seven
November 2010 - Administrative Minor Review

The proposed Public Park is compatible with the surrounding area and will provide a much needed recreational amenity for area residents.

- 2. The proposed development is consistent with the General Plan, this Title, the Design Standards Manual, the Landscape, Wall and Buffer Standards, and other duly-adopted city plans, policies and standards;**

The proposed third phase of this park development is consistent with the goals of the General Plan and Centennial Hills Sector Plan and remains consistent with the original Site Development Plan approval (SDR-32970). Additionally, the provided plans demonstrate compliance with the Town Center Design Standards for the 120-foot wide Parkway.

- 3. Site access and circulation do not negatively impact adjacent roadways or neighborhood traffic;**

Access to the property is provided by a single ingress and egress point from Durango Drive, a 120-foot wide Town Center Parkway Arterial, as designated by the Town Center Development Standards Manual. This roadway is more than adequate for the added traffic the proposed city park will generate.

- 4. Building and landscape materials are appropriate for the area and for the City;**

The building materials and landscape materials are appropriate for a city park facility and are compatible with the Town Center Design Standards.

- 5. Building elevations, design characteristics and other architectural and aesthetic features are not unsightly, undesirable, or obnoxious in appearance; create an orderly and aesthetically pleasing environment; and are harmonious and compatible with development in the area;**

The proposed children's play area and park is consistent with similar park developments in the City of Las Vegas; the materials and design are not undesirable or obnoxious, but instead create an orderly and efficient experience that is compatible with the surrounding area.

- 6. Appropriate measures are taken to secure and protect the public health, safety and general welfare.**

The proposed development will be subject to the International Building Code, as well as maintained and secured by the City of Las Vegas; thus the public health, safety and general welfare will not be compromised.

Staff Report Page Eight
November 2010 - Administrative Minor Review

APPROVALS 0

PROTESTS 0

**** Duplicate Receipt ****

City of Las Vegas
Development Services Center
731 South Fourth Street
Las Vegas, NV 89101

02/01/2011 15:05 Trn 161812
Cashier 890381

PRJ Permit # DS4517 \$400.00

Subtotal \$400.00

Tax \$0.00

Total \$400.00

Received MISC \$400.00
CITY 040531810205

Change \$0.00

For questions related to this receipt call

702-229-6200

MH

RECEIVED

FEB 03 2010

CITY OF LAS VEGAS		DATE: February 3, 2010
INTER-OFFICE MEMORANDUM		CONSULTANTS:
TO: Land Development Services Department of Public Works		FROM: Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT:	COPIES TO:	
Drainage Study for:	Stanley Consultants, Inc.	
Tropical / Durango Park – Update for Phases 1 & 2	Architectural Services, Patrick Batte City of Las Vegas	
Cross Streets:	NWC of Tropical Parkway & Durango Drive	Bart Anderson, P.E., DevCo
File Number:	F:\Depot\DSMemos\DS4349D.doc	CCDDS
Parcel Number:	125-29-801-021	
Zoning Action:	ZON-29584; SDR-32790 & SDR-35160	
FEMA Flood Zone	YES	NO ☒
Proposed Storm Drain	YES	NO ☒

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Transaction #
1 st Submittal	1/7/2009	1/22/2009	Not Approved	\$400.00	112579: \$400
2 nd Submittal & Supplement	2/23/2009, 3/13/2009 & 3/18/2009	3/16/2009	Conditional Approval	\$400.00	115811: \$400
3 rd Submittal & Supplement	12/9/2009 & 12/18/2009	12/22/2009	Conditional Approval	\$100.00	134843: \$100
4 th Submittal & Supplement	1/29/2010 & 2/3/2010	2/3/2010	See Comments Below	\$100.00	137818: \$100
TOTAL FEES (LDDRS):				\$1,000.00	---

REMARKS:

4th Submittal: Update #2 & Supplement to remove portion of berm in the adjacent parcel to the north

3rd Submittal: Update to include street improvements of Bonita Vista Street and to address CCDDS comments

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:
	is conditionally approved subject to Clark County Regional Flood Control District concurrence.
	is conditionally approved subject to Clark County Department of Development Services concurrence.

The following comments are repeated until they are complete:

1. A drainage update study will be required upon Phase 3 improvements to address Tropical Parkway street improvements.

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
ays

T/R/S: T19S/R60E/29
AREA G-29

Post-It® Fax Note	7671	Date	2/3/10	# of pages	2
To	Helena Murvosh	From	Albert S. Smith		
Co./Dept.	Stanley	Co.	CLW		
Phone #		Phone #	229-2001		
Fax #	369-9793	Fax #			



Department of Development Services

500 S Grand Central Pky 1st Fl • Box 551799 • Las Vegas NV 89155-1799

(702) 455-4600 • Fax (702) 388-2550

Ronald L. Lynn, Director/Building Official

#22367

Dean Friedli
Assistant Director
Administrative Division

Greg Franklin
Assistant Director
Building Division

Robert Thompson
Assistant Director
Civil Engineering Division

RECEIVED

Concurrence Letter

JAN 26 2010

Date: January 20, 2010
Firm: Stanley Consultants
Engineer: Dennis R. Brown, P.E.
Address: 5820 S. Eastern Avenue, Suite 140, Las Vegas, NV 89119
Phone: (702) 369-9396
Fax: (702) 369-9397
E-mail: browndennis@stanleygroup.com

STANLEY CONSULTANTS

Subject: Technical Drainage Study for
Tropical Durango Park Phase 1 & 2
Location: NWC of Tropical Parkway and Durango Drive
APN: 125-29-601-021
Sec, Township, Range: S29, T19S, R60E
Flood Zone & Panel: Zone X, 1745E, Dated September 27, 2002
Application Tracking #: 09-6162



HTE09-6162CDD

Submittals	Date Received	Date Returned	Reviewer	Miscellaneous
Technical	03/20/2009	03/30/2009	PTS	
Addendum #1	03/20/2009	03/30/2009	PTS	
Addendum #2	05/22/2009	05/25/2009	KL	
Addendum #3	05/29/2009	06/04/2009	KL	
Addendum #4	06/16/2009	06/19/2009	KL	
Addendum #5	01/19/2010	01/20/2010	WG	

The above-referenced project is located within the **City of Las Vegas** adjacent to Clark County unincorporated areas. The drainage study was last submitted to the County for concurrence on January 19, 2010. In addition, the County has received the City of Las Vegas acceptance letter dated December 22, 2009 for the Technical Drainage Study.

The County concurs with the acceptance of this Drainage Study by the City of Las Vegas. Please note that the County's review of this development is limited to drainage issues significant to Clark County unincorporated areas.

BOARD OF COUNTY COMMISSIONERS

RORY REID, Chairman • CHIP MAXFIELD, Vice-Chairman
SUSAN BRAGER • TOM COLLINS • CHRIS GIUNCHIGLIANI • LAWRENCE WEEKLY • BRUCE L. WOODBURY
VIRGINIA VALENTINE, P.E., County Manager

Tropical Durango Park Phase 1 & 2
January 20, 2010
Page 2 of 2

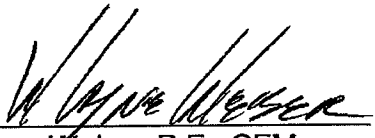
09-6162

A Technical Drainage Study Update will be required for the future development of Tropical Parkway to address potential storm drain upsizing and to mitigate the rise in storm water impacting the existing homes to the south. It is noted that the existing homes have FF elevations below the depth of flow in Tropical Parkway and it is expected to be worse when full street improvements are constructed.

Please provide offsite plan submittal for review to Clark County for work and patch in County ROW (Bonita Vista Street, Sheet C-2).

The County's review is solely based on the information submitted by the Engineer of Record. The County's review is strictly limited to compliance with minimum County Codes and Standards. The Engineer of Record is responsible for researching and addressing situations that may require designs above and beyond the minimum codes for issues of public safety and impacts to upstream, downstream and adjacent properties. The County assumes no liability for information data, designs or conclusions of the Engineer of Record.

By

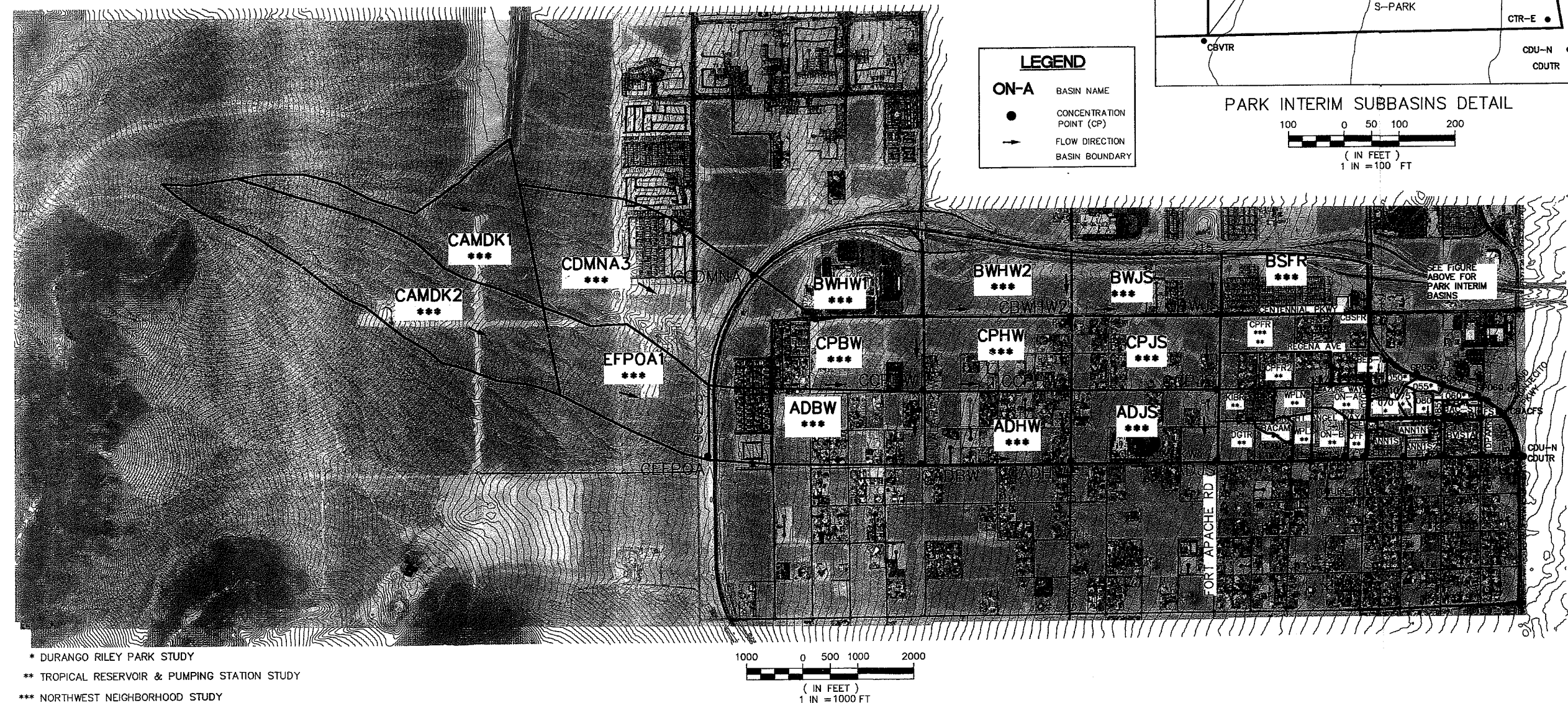
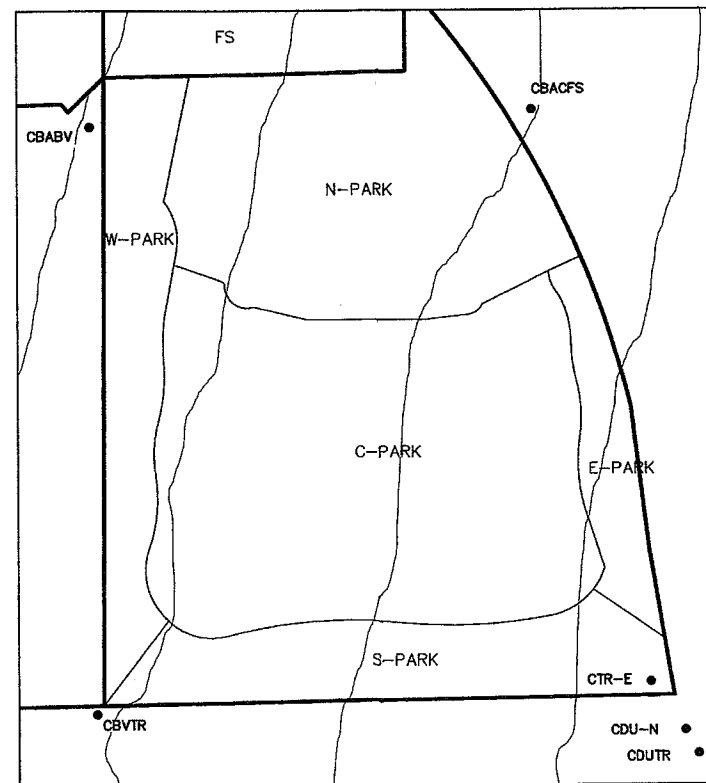

W. Layne Weber, P.E., CFM
Principal Engineer
Department of Development Services
Civil Engineering Division

cc: Albert Sung, P.E., City of Las Vegas

Appendix B

Referenced hydrologic models

- Figure 6a, Existing Drainage Offsite Map, May 2009 Addendum
- Figure Up-1, Interim-Ultimate Drainage Offsite, Nov. 2009 Update
- Figure 10, Ultimate Drainage Offsite, Original Study
- Figure 11, Ultimate Drainage Onsite, Original Study

[illegible][illegible][illegible]

SCALE (H) 1"=300'
SCALE (V) N/A
DRAWN BY SE
CHECKED BY RM
DATE 01/07/09

3820 S. Eastern Avenue, Suite 200
Las Vegas, Nevada 89119
(702) 369-9396 Fax (702) 369-9793
www.stanleygroup.com



Stanley Consultants INC.

CITY OF LAS VEGAS DEVELOPMENT OF PUBLIC WORKS
TROPICAL DURANGO PARK

**EXISTING DRAINAGE
OFFSITE**

CITY OF LAS VEGAS

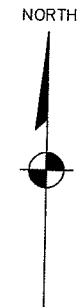
SHEET

FIG 6 A

OF 1 SHEETS

Basin/ Concentration Point/ Diversion	Area (Sq. Mi.)	OPERATION	DARF100	DARF10	10yr	100yr
BWHW1	0.14	HYDROGRAPH AT	1	0.57	45	140
DCPBW	0.14	DIVERSION TO	1	0.57	<1	
BWHW2	0.14	HYDROGRAPH AT	1	0.57	44	140
BWJWS	0.13	HYDROGRAPH AT	1	0.57	24	94
CBWHW2	0.27	2 COMBINED AT	1	0.57	67	230
DCPHW	0.27	DIVERSION TO	1	0.57	<1	
BWHW2	0.27	HYDROGRAPH AT	1	0.57	67	226
BWJS	0.11	HYDROGRAPH AT	1	0.57	22	79
CBWJS	0.38	2 COMBINED AT	1	0.57	84	306
DCPJS	0.38	DIVERSION TO	1	0.57	<1	
DCBWS	0.38	HYDROGRAPH AT	1	0.57	84	306
BSFR	0.1	HYDROGRAPH AT	1	0.57	37	106
CBFSR	0.48	2 COMBINED AT	1	0.57	105	379
D2B6C6	0.48	DIVERSION TO	1	0.57	105	378
D2BFR	0.48	HYDROGRAPH AT	1	0.57	<1	
CPBW	0.2	HYDROGRAPH AT	1	0.57	49	167
DCPBW	0	HYDROGRAPH AT	1	0.57	<1	
CPBW	0.2	2 COMBINED AT	1	0.57	49	167
CPHW	0.13	HYDROGRAPH AT	1	0.57	23	90
DCPHW	0	HYDROGRAPH AT	1	0.57	<1	
CCPHW	0.33	3 COMBINED AT	1	0.57	69	251
DADHW	0.33	DIVERSION TO	1	0.57	24	86
DCCPHW	0.33	HYDROGRAPH AT	1	0.57	45	162
CPJS	0.13	HYDROGRAPH AT	1	0.57	19	76
DCPJS	0	HYDROGRAPH AT	1	0.57	<1	
CPJS	0.46	3 COMBINED AT	1	0.57	60	234
DADJS	0.46	DIVERSION TO	1	0.57	21	80
DCCPJS	0.46	HYDROGRAPH AT	1	0.57	39	154
CPFR2	0.05	HYDROGRAPH AT	1	0.57	9	39
CKAZ	0.51	2 COMBINED AT	0.98	0.56	35	156
CPFR	0.08	HYDROGRAPH AT	1	0.57	11	48
CCPFR	1.06	3 COMBINED AT	0.97	0.55	37	188
ON-A	0.02	HYDROGRAPH AT	1	0.57	14	29
CP010	0	HYDROGRAPH AT	1	0.57	1	2
BE3-N	1.08	3 COMBINED AT	0.97	0.55	38	195
CP050	0	HYDROGRAPH AT	1	0.57	1	5
55	0.1	3 COMBINED AT	0.97	0.55	39	198
CP055	0	HYDROGRAPH AT	1	0.57	4	8
60	1.1	2 COMBINED AT	0.97	0.55	39	199
CP060	0	HYDROGRAPH AT	1	0.57	4	9
BAC-N	1.11	2 COMBINED AT	0.97	0.55	39	201
FS	0	HYDROGRAPH AT	1	0.57	2	3
N-PARK	0	HYDROGRAPH AT	1	0.57	2	4
CBACFS	1.11	4 COMBINED AT	0.97	0.55	40	203
E-PARK	0	HYDROGRAPH AT	1	0.57	<1	
CDU-N	1.11	2 COMBINED AT	0.97	0.55	39	202
70	0.01	HYDROGRAPH AT	1	0.57	5	13
75	0	HYDROGRAPH AT	1	0.57	3	8

Basin/ Concentration Point/ Diversion	Area (Sq. Mi.)	OPERATION	DARF100	DARF10	10yr	100yr
CP075	80	0.01 2 COMBINED AT	1	0.57	9	21
CP080	30	0.01 HYDROGRAPH AT	1	0.57	6	12
ANN1N1	85	0.02 2 COMBINED AT	1	0.57	14	32
CP085		0 HYDROGRAPH AT	1	0.57	2	4
BAC-ST		0.01 HYDROGRAPH AT	1	0.57	2	4
CBABV		0.03 4 COMBINED AT	1	0.57	6	17
DADJS		0.01 HYDROGRAPH AT	1	0.57	23	56
KIBR		0.04 2 COMBINED AT	1	0.57	7	15
BACAM		0 HYDROGRAPH AT	1	0.57	28	68
CCAMP		0.02 HYDROGRAPH AT	1	0.57	21	80
ADBW		0.02 2 COMBINED AT	1	0.57	5	20
ADHW		0.02 2 COMBINED AT	1	0.57	21	83
CADHW		0.01 HYDROGRAPH AT	1	0.57	1	6
DADHW		0.03 2 COMBINED AT	1	0.57	21	85
DADHW		0.18 HYDROGRAPH AT	1	0.57	32	126
DADHW		0.12 HYDROGRAPH AT	1	0.57	19	80
DADHW		0.3 2 COMBINED AT	1	0.57	47	199
DADHW		0 HYDROGRAPH AT	1	0.57	24	89
DADHW		0.3 2 COMBINED AT	1	0.57	54	278
DADHW		0.3 DIVERSION TO	1	0.57	22	97
DADHW		0.3 HYDROGRAPH AT	1	0.57	41	182
ADJS		0.12 HYDROGRAPH AT	1	0.57	18	77
CADJS		0.42 2 COMBINED AT	1	0.57	52	247
DGTR		0.03 HYDROGRAPH AT	1	0.57	5	20
CTRCA		0.48 3 COMBINED AT	1	0.57	72	330
WPLN		0.01 HYDROGRAPH AT	1	0.57	3	12
WPLS		0.01 HYDROGRAPH AT	1	0.57	2	8
OWPLS		0.5 3 COMBINED AT	0.98	0.56	68	322
CTROP		0.02 HYDROGRAPH AT	1	0.57	13	32
OFF		0.52 2 COMBINED AT	0.98	0.56	68	328
ELCAP		0.01 HYDROGRAPH AT	1	0.57	1	7
CECTR		0.53 3 COMBINED AT	0.98	0.56	68	329
DTREC		0.53 DIVERSION TO	0.98	0.56	11	44
DECTR		0.53 HYDROGRAPH AT	0.98	0.56	57	286
ANN1S1		0.01 HYDROGRAPH AT	1	0.57	6	16
CJTR		0.54 2 COMBINED AT	0.98	0.56	58	289
DTJTR		0.54 DIVERSION TO	0.98	0.56	33	112
DJTR		0.54 HYDROGRAPH AT	0.98	0.56	25	177
ANN1S2		0.01 HYDROGRAPH AT	1	0.57	5	15
CRTR		0.55 2 COMBINED AT	0.98	0.56	25	179
DTRR		0.55 DIVERSION TO	0.98	0.56	<1	
DRTR		0.55 HYDROGRAPH AT	0.98	0.56	24	114
BVISTA		0.02 HYDROGRAPH AT	1	0.57	5	17
W-PARK		0 HYDROGRAPH AT	1	0.57	<1	
CBVTR		0.61 4 COMBINED AT	0.98	0.56	40	131
DTRBV		0.61 DIVERSION TO	0.98	0.56	<1	
DEVR		0.61 HYDROGRAPH AT	0.98	0.56	40	131
S-PARK		0 HYDROGRAPH AT	1	0.57	1	3
C-PARK		0.01 HYDROGRAPH AT	1	0.57	2	7
CTR-E		0.62 3 COMBINED AT	0.98	0.56	40	133
CDUTR		1.73 2 COMBINED AT	0.97	0.55	74	332
DANNIA		1.73 DIVERSION TO	0.97	0.55	29	125
DANNIA		1.73 HYDROGRAPH AT	0.97	0.55	45	207



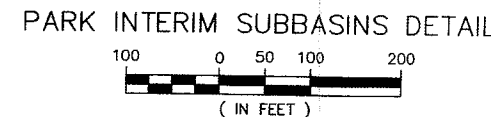
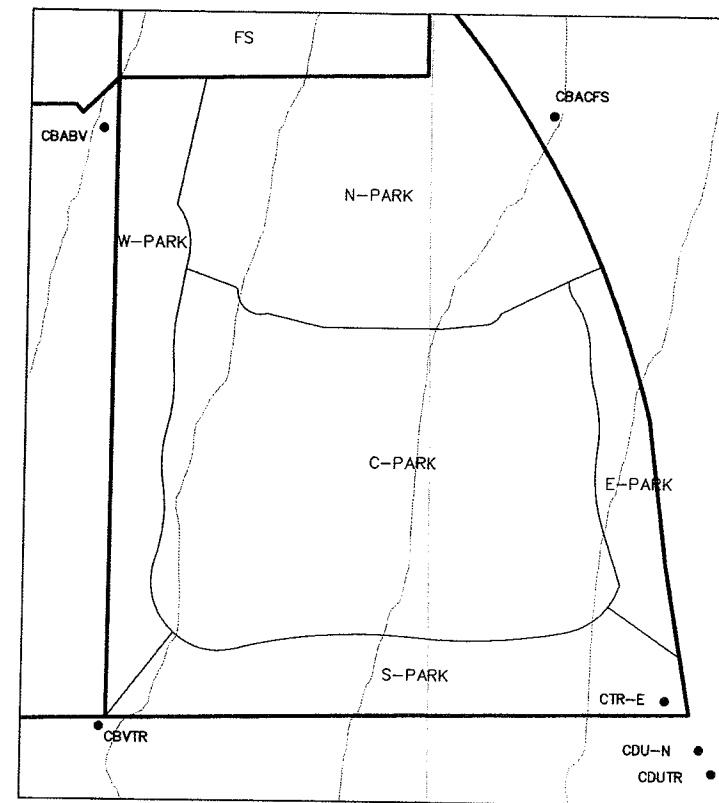
LEGEND

ON-A BASIN NAME

● CONCENTRATION POINT (CP)

→ FLOW DIRECTION

— BASIN BOUNDARY



SCALE (H) 1"=600'
SCALE (V) N/A
DRAWN BY HM
CHECKED BY DB
DATE 09/11/09

5920 S. Eastern Avenue, Suite 200
Las Vegas, Nevada 89119
(702) 369-9396 Fax (702) 369-9793
www.stanleygroup.com

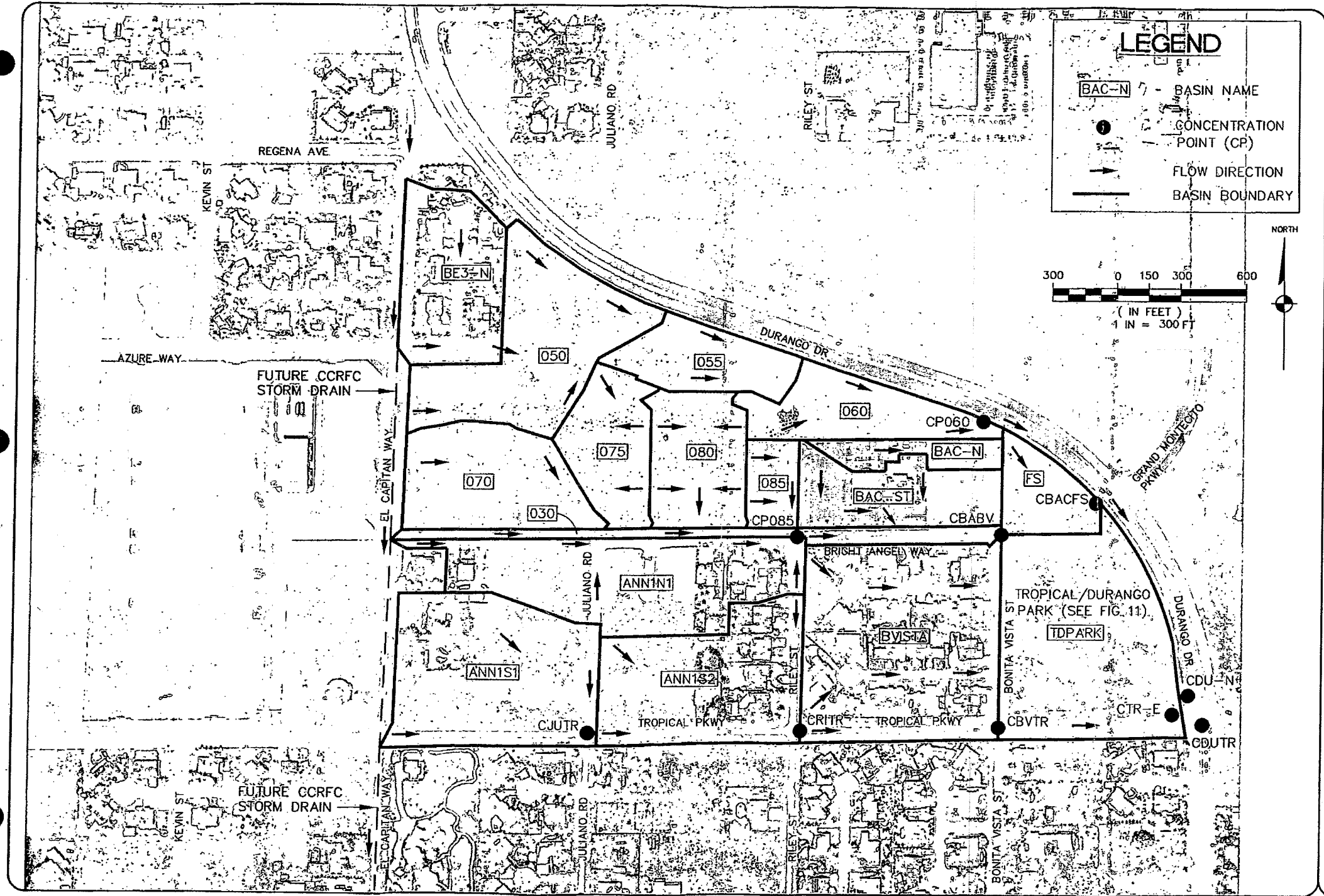
Stanley Consultants inc.

CITY OF LAS VEGAS DEVELOPMENT OF PUBLIC WORKS
TROPICAL DURANGO PARK
INTERIM-ULTIMATE DRAINAGE OFFSITE

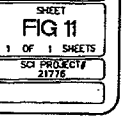
NEVADA

CITY OF LAS VEGAS

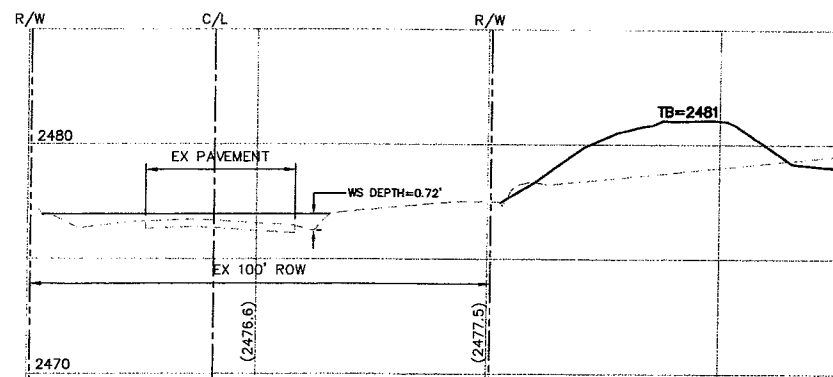
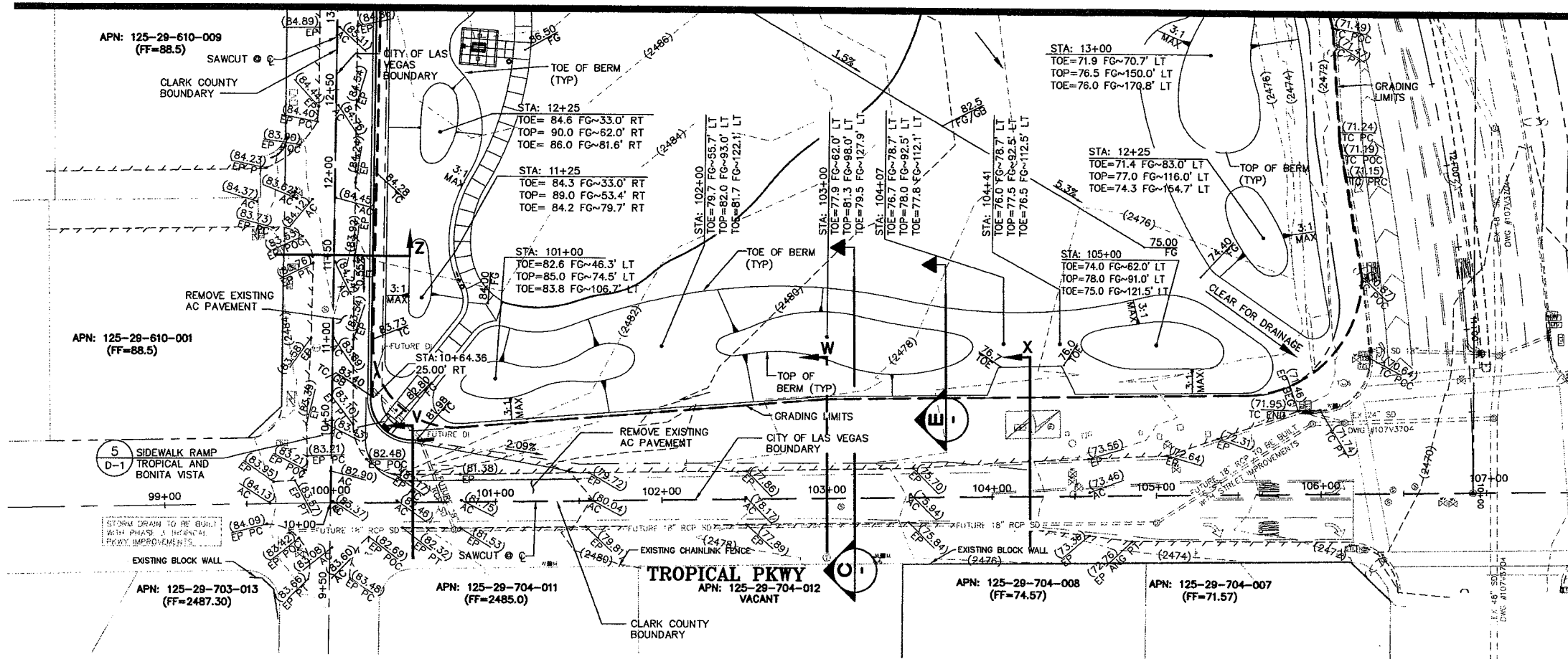
SHEET
FIG UP-1
1 OF 1 SHEETS
SCI PROJECT #
PROJECT #



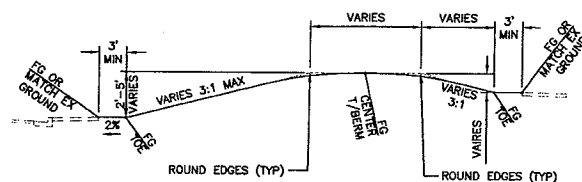
SHEET FIG 10 1 OF 1 SHEETS PROJECT #	CITY OF LAS VEGAS TROPICAL DURANGO PARK ULTIMATE DRAINAGE OFFSITE			NEVADA CITY OF LAS VEGAS
	SCALE (H) 1"=300' SCALE (V) N/A DRAWN BY SE CHECKED BY RM DATE 01/07/09			
	3020 S. Eastern Avenue, Suite 200 Las Vegas, Nevada 89119 (702) 369-2000 Fax (702) 369-9793 www.stanleyinc.com			
	Stanley Consultants inc.			



MATCHLINE SEE BOTTOM OF DRAWING C-2

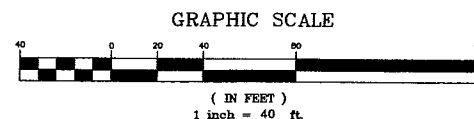


TROPICAL SECTION
SCALE: HORIZ: 1" = 20', VERT 1" = 4'



TYPICAL BERM SECTION
SCALE: NTS

GRADING PLAN
SCALE: 1" = 40'

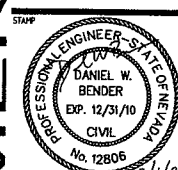


BASIS OF BEARING

THE WEST LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF SECTION 28, TOWNSHIP 19 SOUTH, RANGE 60 EAST, M.D.M., CLARK COUNTY, NEVADA, BEARS N 00°27'17" W, AS SHOWN ON A RECORD OF SURVEY RECORDED IN FILE 101 AT PAGE 47, CLARK COUNTY, NEVADA, RECORDS.

BENCHMARK

CLV BM 5LV90 29E4: RIVET & PLATE IN TOP OF CURB, NW CORNER OF DURANGO AND TROPICAL PARKWAY, ELEV. 2470.76' (NAVD88)



OWNER: CITY OF LAS VEGAS
DEPARTMENT OF PUBLIC WORKS

400 EAST STEWART AVENUE
LAS VEGAS, NEVADA 89101
PHONE: (702) 329-6535
FAX: (702) 384-4848
TDD: (702) 386-9308

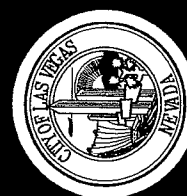
DRAWN	DOO
FILE	
DATE	2008
SCALE	N/A
SHEET NO	09.15341.03
CLV DWG NO	650.103
HANSEN NO	XXX
SHEET NO	C-3



DEPARTMENT OF PUBLIC WORKS

CITY OF LAS VEGAS
TROPICAL DURANGO PARK PHASE 1 AND 2
NORTHWEST CORNER OF TROPICAL AND DURANGO

GRADING PLAN



STANLEY CONSULTANTS INC.
5520 SOUTH EASTERN AVENUE, SUITE 140
LAS VEGAS, NEVADA 89119
(702) 389-9396
FAX: (702) 389-9793