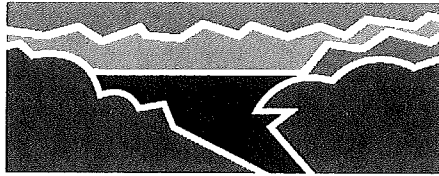


REGIONAL FLOOD CONTROL DISTRICT



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

BOARD OF DIRECTORS

Lawrence L. Brown, III
Chairman
Clark County

Robert L. Eliason
Vice-Chairman
City of North Las Vegas

Chris Giunchigliani
Clark County

Kraig Hafen
City of Mesquite

Debra March
City of Henderson

Steven D. Ross
City of Las Vegas

Dr. Lois Tarkanian
City of Las Vegas

Mayor Roger Tobler
City of Boulder City

May 7, 2012

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

DISTRICT CONCURRENCE: KYLE CANYON
(DS #4420D) (RFCD No. 12-8054)

Dear Mr. Kwon:

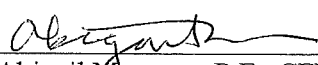
Clark County Regional Flood Control District (District) reviewed Technical Drainage Study dated June 22, 2010, Addendum No. 1 dated September 17, 2010, Addendum No. 2 dated October 18, 2011, and Addendum No. 3 dated February 13, 2012 for above-mentioned project as submitted by SLATER HANIFAN GROUP. In addition, District is in receipt of the Conditional Letter of Acceptance from City of Las Vegas dated March 1, 2012.

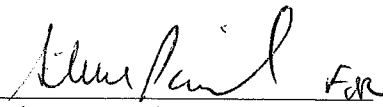
District concurs with acceptance of this Technical Drainage Study by City of Las Vegas.

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

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and/or restudies of Flood Insurance Studies are performed, information submitted by SLATER HANIFAN GROUP may be superseded.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

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

BY: 
Abigail Mayrena, P.E., CFM
Senior Engineer


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

AM:ART:sa

c: Stephen Jones, P.E., Slater Hanifan Group

P:\Letters and Memos\Local Drainage\Land Development & Drainage\2012\L-12-8054.doc

CITY OF LAS VEGAS			DATE:
INTER-OFFICE MEMORANDUM			May 24, 2012
TO: Land Development Services Department of Public Works			FROM: Oh Sang Kwon, P.E. Flood Control Section Department of Public Works
SUBJECT:		Drainage Study for:	COPIES TO:
		Kyle Canyon Master Drainage Study	Slater Hanifan Group
Cross Streets:	Fort Apache Road & Moccasin Road		Wachovia Bank / Carwin Advisors
File Number:	F:\Depot\DSMemos\DS4420E.doc		Bart Anderson, P.E., DevCo
Parcel Number:	125-06-001-001		Randy Fultz
Zoning Action:			CCPW, CCRFCD
FEMA Flood Zone	YES	NO X	NDOT; NV Energy
Proposed Storm Drain	YES X	NO	PB America, Inc.

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Transaction #
1 st Submittal	6/22/2010	7/13/2010	Not Approved	\$1,000.00	147216: \$1000
2 nd Submittal	9/17/2010	10/4/2010	Not Approved	\$400.00	153788: \$400
3 rd Submittal	10/15/2011	11/14/2011	Not Approved	\$400.00	153788: \$400
4 th Submittal	2/13/2012	3/1/2012	Conditional Approval	\$400.00	274196: \$400
CCRFCD	5/23/2012	5/24/2012	Concurrence Recv'd	N/C	N/C
TOTAL FEES (LDDRS):				\$2,200.00	----

REMARKS:

Update to original Kyle Canyon Master Drainage Study (DS4091). Site layout has been changed.

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

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

- Please note that the traffic study must be approved prior to final approval of the Master Drainage Study. If the street layout does not match the Master Drainage study, an update to the Master Drainage Study must be submitted to address the changes.
- The Kyle Canyon Master Drainage Study is proposing to revise the hydrology and facilities identified in the *Clark County Regional Flood Control District's (CCRFCD) 2008 Las Vegas Valley Flood Control Master Plan Update*. A Master Plan Amendment (MPA) must be submitted to the City of Las Vegas for approval. The City of Las Vegas will coordinate the MPA submittal to CCRFCD for approval. The Master Developer will be responsible for preparing all submittals needed for CCRFCD

along with any and all presentations. The MPU must be approved by CCRFCD prior to the final approval of the Master Drainage Study.

3. Per a meeting held in August 18, 2011 between the developer and the *City of Las Vegas*, it was agreed that NV Energy's approval of any proposed drainage facilities within their access easements (such as the proposed detention basins) must be obtained prior to the final approval of the Master Drainage Study. Please provide documentation for such approval or acknowledgment.
4. Please note that any future technical drainage study submittals that differ from the Master Drainage Study (ie. Changes in pods, infrastructure, flows etc.) will require an update to the Master Drainage Study and this update must be approved by the *City of Las Vegas Flood Control Section* prior to final approval of technical drainage study.
5. The proposed detention basins will require coordination with the State of Nevada, Division of Water Resources Dam Safety and will require the State's approval prior to permitting.
6. Please obtain necessary 404 permits from Army Corps of Engineers and provide a copy of the permit to Flood Control prior to issuance of the grading permit. The contact information for Army Corps of Engineers is listed below:

Patricia L. McQueary
Chief, USACE S. George Regulatory Office
US Army Corps of Engineers
321 North Mall Drive
Suite L-101
St. George, UT 84790

(435) 986-3979 (Office)
(435) 986-3981 (FAX)
Patricia.L.McQueary@usace.army.mil

7. Please note that the proposed 100-year flood protection facilities identified on Exhibit F must be constructed by the Master Developer as a part of the master planned infrastructure. Technical drainage studies are required for each phase of the master planned infrastructure improvements. The technical drainage studies for the infrastructure improvements may be submitted with conditional approval of this Master Drainage Study. However, final approval for the Master Drainage Study must be obtained prior to conditional approval of the infrastructure drainage studies.
8. Technical drainage studies are required for each of the POD's. The technical drainage studies for the POD's may not be submitted until the conditional approval of the pertinent infrastructure drainage study is obtained. Final approval for the infrastructure drainage study must be obtained prior to conditional approval of the impacted POD drainage studies.
9. Building permits for the homes within the individual POD's will not be issued until construction of the street and flood control infrastructure around the POD is substantially complete or interim protection is provided per the approved technical drainage study.
10. The site is adjacent to Clark County jurisdictional boundaries. The engineer must coordinate the Master Drainage Study with *Clark County Public Works Department* (CCPW) and incorporate any concerns for boundary conditions. CCPW concurrence is required prior to final acceptance of the Master Drainage Study.
11. The project proposed to construct facilities and/or increase flows within *Nevada Department of Transportation* (NDOT) right-of-way. Therefore, NDOT concurrence is required prior to final approval of the Master Drainage Study.
12. The project proposed to discharge flows onto and proposed facilities within U.S. Bureau of Land Management (BLM) property. Therefore, BLM concurrence is required prior to final approval of the Master Drainage Study.

13. The proposed berm/levee along Moccasin Road will require approval from *Federal Emergency Management Agency* (FEMA) in the future. The proposed berm/levee must be designed to meet the minimum requirements set by FEMA and CCRFCD by a future technical drainage study.
14. The design of debris basins at all major culvert entrances to limit the amount of sediment and debris entering the storm drain facilities will be required in a future infrastructure study.
15. Please note that all detention basins must be designed per CCRFCD criteria including a low flow facility around the detention basin. Also, include new water quality feature per Storm Water Management Plan.
16. Please note that all proposed interim facilities must be maintained by the master developer.
17. Provide a legal description of the proposed detention basins prior to recordation of the parent final map.
18. Coordinate the proposed drainage facilities with *Sheep Mountain Parkway* project. Please contact Greg McDermott at 702-229-2143 to coordinate the proposed drainage facilities.

NOTE:

In an effort to increase administrative efficiency, the City of Las Vegas Public Works Department requires all soil reports, drainage studies and traffic impact analysis submittals to be accompanied by an electronic copy of the submittal. Electronic documents must be submitted with one original hard copy of the study. Electronic documents should be on a universal computer-readable digital output replicating your submittal to be used for archival or display purposes. This may be more than one file if necessary. An Indexed Portable Document Format (PDF) or Print Ready CAD file formats with a minimum of 300dpi are the desired formats, but provided it is a high quality digitized replication of the submittal, other formats may be acceptable. If figures are in color, they must be scanned in color and saved as a separate file. The new submittal requirement is effective on July 1, 2011. If there are any questions regarding these new requirements, please contact Oh Sang Kwon in the Flood Section at (702) 229-2177 or Rick Schroder in Traffic Engineering at (702) 229-6327.

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

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

END OF REMARKS

osk

T/R/S: T19S/R60E/6 & 7
AREA G-6, 7, & F-12



Department of Public Works

500 S Grand Central Pky • Box 554000 • Las Vegas NV 89155-4000
(702) 455-6000 • Fax (702) 455-6040

Denis Cederburg, P.E., Director • E-Mail: dlc@ClarkCountyNV.gov



Concurrence Letter

Date: July 19, 2012
Firm: SHG
Engineer: Steve Jones, P.E.
Address: 5740 S. Arville Street, Suite 216, Las Vegas, NV 89118
Phone: (702) 284-5300
Fax: (702) 284-5399
E-mail: sjones@shg-inc.com

Subject: Conceptual Drainage Study for Kyle Canyon Conceptual Master Study
Location: NWC of Grand Teton Drive and Grand Canyon Drive
APN: 126-12-000-001; et al.
Sec, Township, Range: S12, S06, S07, T19S, R59E, R60E
Flood Zone & Panel: Zone X, 1750, 1745, 1735, Dated November 16, 2011
Application Tracking #: 12-25985



Submittals	Date Received	Date Returned	Reviewer	Miscellaneous
Concurrence	07/02/2012	07/19/2012	WG	
Addendum #1	07/02/2012	07/19/2012	WG	
Addendum #2	07/02/2012	07/19/2012	WG	
Addendum #3	07/02/2012	07/19/2012	WG	
Supplement	07/02/2012	07/19/2012	WG	

The above-referenced project is located within the **City of Las Vegas** adjacent to Clark County unincorporated areas. The drainage study was submitted to the County for concurrence on July 2, 2012. In addition, the County has received the City of Las Vegas acceptance letter dated May 24, 2012 for the Conceptual 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.

Additional Conditions:

1. This Conceptual Drainage Study establishes existing hydrologic conditions impacting the site by defining onsite and offsite flows.
2. This approval does not allow any construction activity including grading, placement of fill or excavation of any kind.
3. An approved Technical Drainage Study is required prior to any construction activity. In addition the Technical Drainage Study must address any required drainage easements, establish FF elevations and provide hydraulic calculations for all required drainage facilities.
4. Future Technical Drainage Studies for the detention basin and drainage facilities will need to analyze possible upstream flow split from erosion and scour of alluvial fan. Note, possible upsizing of the detention basin and drainage facilities may be needed if additional flow from alluvial fan is shown.

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
Clark County Public Works
Development Review

cc: Carwin Advisors
Andrew Trelease, P.E., RFCD
Albert Sung, P.E., City of Las Vegas

CITY OF LAS VEGAS		DATE:
INTER-OFFICE MEMORANDUM		September 19, 2012
TO: Land Development Services Department of Public Works		FROM: Oh Sang Kwon, P.E. Flood Control Section Department of Public Works
SUBJECT:	Drainage Study for:	COPIES TO:
Kyle Canyon Master Drainage Study		Slater Hanifan Group
Cross Streets:	Fort Apache Road & Moccasin Road	Wachovia Bank / Carwin Advisors
File Number:	F:\Depot\DSMemos\DS4420F.doc	Bart Anderson, P.E., DevCo
Parcel Number:	125-06-001-001	Randy Fultz
Zoning Action:		CCPW, CCRFCD
FEMA Flood Zone	YES NO X	NDOT; NV Energy
Proposed Storm Drain	YES X NO	PB America, Inc.

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Transaction #
1 st Submittal	6/22/2010	7/13/2010	Not Approved	\$1,000.00	147216: \$1000
2 nd Submittal	9/17/2010	10/4/2010	Not Approved	\$400.00	153788: \$400
3 rd Submittal	10/15/2011	11/14/2011	Not Approved	\$400.00	153788: \$400
4 th Submittal	2/13/2012	3/1/2012	Conditional Approval	\$400.00	274196: \$400
CCRFC	5/23/2012	5/24/2012	Concurrence Recv'd	N/C	N/C
5 th Submittal NDOT Comments	9/10/2012	9/19/2012	See Comments Below	N/C	N/C
TOTAL FEES (LDDRS):				\$2,200.00	----

REMARKS:**5th Submittal: Responses to NDOT Comments****Update to original Kyle Canyon Master Drainage Study (DS4091). Site layout has been changed.**

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

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

The following comments are repeated until they are complete:

- Please note that the traffic study must be approved prior to final approval of the Master Drainage Study. If the street layout does not match the Master Drainage study, an update to the Master Drainage Study must be submitted to address the changes.

2. The Kyle Canyon Master Drainage Study is proposing to revise the hydrology and facilities identified in the *Clark County Regional Flood Control District's (CCRFCD) 2008 Las Vegas Valley Flood Control Master Plan Update*. A Master Plan Amendment (MPA) must be submitted to the City of Las Vegas for approval. The City of Las Vegas will coordinate the MPA submittal to CCRFCD for approval. The Master Developer will be responsible for preparing all submittals needed for CCRFCD along with any and all presentations. The MPU must be approved by CCRFCD prior to the final approval of the Master Drainage Study.
3. Per a meeting held in August 18, 2011 between the developer and the *City of Las Vegas*, it was agreed that NV Energy's approval of any proposed drainage facilities within their access easements (such as the proposed detention basins) must be obtained prior to the final approval of the Master Drainage Study. Please provide documentation for such approval or acknowledgment.
4. Please note that any future technical drainage study submittals that differ from the Master Drainage Study (ie. Changes in pods, infrastructure, flows etc.) will require an update to the Master Drainage Study and this update must be approved by the *City of Las Vegas Flood Control Section* prior to final approval of technical drainage study.
5. The proposed detention basins will require coordination with the State of Nevada, Division of Water Resources Dam Safety and will require the State's approval prior to permitting.
6. Please obtain necessary 404 permits from Army Corps of Engineers and provide a copy of the permit to Flood Control prior to issuance of the grading permit. The contact information for Army Corps of Engineers is listed below:

Patricia L. McQueary
Chief, USACE S. George Regulatory Office
US Army Corps of Engineers
321 North Mall Drive
Suite L-101
St. George, UT 84790

(435) 986-3979 (Office)
(435) 986-3981 (FAX)
Patricia.L.McQueary@usace.army.mil

7. Please note that the proposed 100-year flood protection facilities identified on Exhibit F must be constructed by the Master Developer as a part of the master planned infrastructure. Technical drainage studies are required for each phase of the master planned infrastructure improvements. The technical drainage studies for the infrastructure improvements may be submitted with conditional approval of this Master Drainage Study. However, final approval for the Master Drainage Study must be obtained prior to conditional approval of the infrastructure drainage studies.
8. Technical drainage studies are required for each of the POD's. The technical drainage studies for the POD's may not be submitted until the conditional approval of the pertinent infrastructure drainage study is obtained. Final approval for the infrastructure drainage study must be obtained prior to conditional approval of the impacted POD drainage studies.
9. Building permits for the homes within the individual POD's will not be issued until construction of the street and flood control infrastructure around the POD is substantially complete or interim protection is provided per the approved technical drainage study.
10. The site is adjacent to Clark County jurisdictional boundaries. The engineer must coordinate the Master Drainage Study with *Clark County Public Works Department (CCPW)* and incorporate any concerns for boundary conditions. CCPW concurrence is required prior to final acceptance of the Master Drainage Study.

11. The project proposed to construct facilities and/or increase flows within *Nevada Department of Transportation* (NDOT) right-of-way. Therefore, NDOT concurrence is required prior to final approval of the Master Drainage Study.
12. The project proposed to discharge flows onto and proposed facilities within U.S. Bureau of Land Management (BLM) property. Therefore, BLM concurrence is required prior to final approval of the Master Drainage Study.
13. The proposed berm/levee along Moccasin Road will require approval from *Federal Emergency Management Agency* (FEMA) in the future. The proposed berm/levee must be designed to meet the minimum requirements set by FEMA and CCRFCD by a future technical drainage study.
14. The design of debris basins at all major culvert entrances to limit the amount of sediment and debris entering the storm drain facilities will be required in a future infrastructure study.
15. Please note that all detention basins must be designed per CCRFCD criteria including a low flow facility around the detention basin. Also, include new water quality feature per Storm Water Management Plan.
16. Please note that all proposed interim facilities must be maintained by the master developer.
17. Provide a legal description of the proposed detention basins prior to recordation of the parent final map.
18. Coordinate the proposed drainage facilities with *Sheep Mountain Parkway* project. Please contact Greg McDermott, P.E., at 702-229-2143 to coordinate the proposed drainage facilities.

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

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

In an effort to increase administrative efficiency, the City of Las Vegas Public Works Department requires all soil reports, drainage studies and traffic impact analysis submittals to be accompanied by an electronic copy of the submittal. Electronic documents must be submitted with one original hard copy of the study. Electronic documents should be on a universal computer-readable digital output replicating your submittal to be used for archival or display purposes. This may be more than one file if necessary. An Indexed Portable Document Format (PDF) or Print Ready CAD file formats with a minimum of 300dpi are the desired formats, but provided it is a high quality digitized replication of the submittal, other formats may be acceptable. If figures are in color, they must be scanned in color and saved as a separate file. The new submittal requirement is effective on **July 1, 2011**. If there are any questions regarding these new requirements, please contact Oh Sang Kwon in the Flood Section at (702) 229-2177 or Rick Schroder in Traffic Engineering at (702) 229-6327.

END OF REMARKS

osk

T/R/S: T19S/R60E/6 & 7
AREA G-6, 7, & F-12



BRIAN SANDOVAL, *Governor*

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

P.O. BOX 170
LAS VEGAS, NV 89125
November 2, 2012

SUSAN MARTINOVICH, P.E., *Director*

Slater Hanifan Group
Stephen M. Jones, P.E.
5740 S. Arville St. #216
Las Vegas, NV 89118

Dear Mr. Jones:

Reference is made to your request for comments on the Master Drainage Study for Kyle Canyon prepared by Slater Hanifan Group, prepared for Carwin Advisors dated June 25, 2012. The Technical Drainage Study has been approved without comment by the NDOT review committee.

If you have any questions, please feel free to call me at 671-6610,

Cordially,

A handwritten signature in black ink, appearing to read "Rudy Lucero".

Rudye Lucero
Permit Coordinator