City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

12 February, 1999

Ronald R. Bohannan
Tierra West, LLC
4421 McCleod Rd NE Suite D
Albuquerque, New Mexico 87109

RE: LAS GOLONDRINAS SUBDIVISION (F14/D34), AS-BUILT GRADING & DRAINAGE CERTIFICATION SUBMITTAL FOR RELEASE OF FINANCIAL GUARANTEES. ENGINEER'S CERTIFICATION DATED 2-2-99

Dear Mr. Bohannan:

Based upon the information provided in your 2/3/99 Grading Certification submittal, the subject project is approved for Financial Guarantee release.

If I can be of further assistance, please feel free to contact me at 924-3986.

Sincerely,

Scott Davis
PWD, Hydrology Division

c: Andrew Garcia
Terri Martin
file

FAX:

CITY OF
Albuquerque

June 12, 1998

Shahab Biazar, P.E.
Tierra West, LLC
4421 McLeod Rd. NE Suite D
Albuquerque, NM 87109

RE: Las Golandrinas Subdivision (F14/D34) for Preliminary Plat and Grading Permit, Engineer's Stamp dated 5/1/98.

Dear Mr. Shahab:

Based on the information provided on your 5/1/98 submittal, the above referenced project is approved for preliminary plat and grading permit. Conditions of approval are the execution of an Agreement and Covenant and a landscaping agreement for the drainage pond. The City grants a variance from the 100-year ten-day storm since the permanent improvements downstream are under construction and should be completed within one year.

If I can be of further assistance, please feel free to contact me at 924-3980.

Sincerely,

Fred J. Aguirre
City Hydrologist

cc: Andrew Garcia
File

- CERTIFICATION WILL INCLUDE SPILLWAY CALCULATION & ELEVATIONS TO PROTECT THE FUTURE HOMES FROM FLOODING
- ADVISED OF CONVERSION FROM "A" TO "D"
- CONFIRM ORIFICE ~~PLATE~~ PLATE CONSTRUCTION
- CONFIRM

Tierra West, LLC

February 2, 1999

Mr. John Murray, P.E.
Albuquerque Public Works Dept.
P.O. Box 1293
Albuquerque, New Mexico 87103

RE: Certification of Drainage and Release of Financial Guarantees
Las Golondrinas Subdivision
Zone Atlas/Drainage File: F14-D34

Dear John:

Enclosed please find one copy of the revised as-built Grading and Drainage Plan and information sheet for the Las Golondrinas Subdivision. Paving improvements for the site are complete and the outfall is in place and functional. The detention ponds are in place and landscaped. The required retaining walls are complete and backfilled. Installation of the underground utilities is also complete and all work completed is in substantial compliance with the approved plans. The curb area (which ponded) has been replaced and drains. As-built grading information was supplied by Aldrich Land Surveying. We are, therefore, requesting Certification of Drainage for the site, and Release of the Financial Guarantees.

Should you have any questions, please do not hesitate to contact our office.

Sincerely,

Ronald R. Bohannan, P. E.

Enclosure

cc: Jeff Dorwart

JN: 980011
RRB/rw

980011:H2o2

4421 McLeod Rd. NE, Suite D • Albuquerque, NM 87109 • (505) 883-7592
fax (505) 883-7034 • e-mail: twdms@aol

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

October 21, 1994

Ronald R. Bohannan, P.E.
Tierra West Dev Mgmt Ser
4600 Montgomery NE Suite #3
Albuquerque, N.M. 87109

RE: DRAINAGE REPORT FOR LAS GOLONDRINAS SUBD .(F-14/D34)
RECEIVED OCTOBER 4, 1994 FOR FINAL PLAT & R.GRADING PERMIT APPROVAL
ENGINEER'S STAMP DATED 9-16-94

Dear Mr. Bohannan:

Based on the information included in the submittal referenced above, City Hydrology approves this project for Final Plat & Rough Grading.

The "maintenance covenant" for Ponds 1 & 2 must be executed, processed and recorded before DRC will release the Work Order.

Engineer's Certification of grading & drainage per DPM checklist must be approved before the Financial Guaranty will be released.

If you have any questions about this project, You may contact me at 768-2727.

Sincerely,

John P. Curtin

John P. Curtin, P.E.
Civil Engineer/Hydrology

c: Fred Aguirre
Andrew Garcia
Billy Goolsby

WPHYD/8640/jpc

DRAINAGE REPORT
FOR

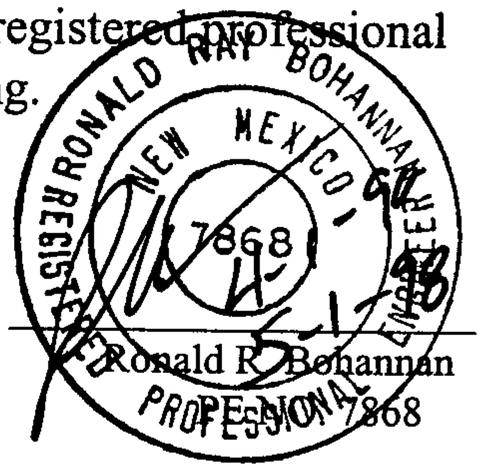
Las Golandrinas Subdivision

Prepared by:

Tierra West, LLC
4421 McLeod Rd., NE, Suite D
Albuquerque, New Mexico 87109

April, 1998

I certify that this report was prepared under my supervision, and I am a registered professional engineer in the state of New Mexico in good standing.



Ronald R. Bohannan
NM PE 7868

Job No 980011

Location

Las Golondrinas Subdivision consist of Lots 12A, 13A-1, 15A-1 of the North Fourth Street Homesites Addition and is located on the south side of Montano Road, east of Guadalupe Trail, NW which contains approximately 5.46 acres. See attached Zone Atlas page number F-14 for exact location. The owners are proposing to develop a 30 lot subdivision.

Purpose

The purpose of this drainage report is to present a grading and drainage solution for a 30 lot single family subdivision. We are requesting rough grading approval, preliminary, and final plat approval.

Existing Drainage Conditions

The site is bordered on 3 sides by existing residential and a wall which effectively eliminates any off-site flows entering the site, and it contains all the internal flows. The site is a typical North Valley development that is very flat with little, if any, movement of storm water. This site, at existing conditions, creates a 100-year storm runoff of 12.44 cfs that flows somewhat west and north.

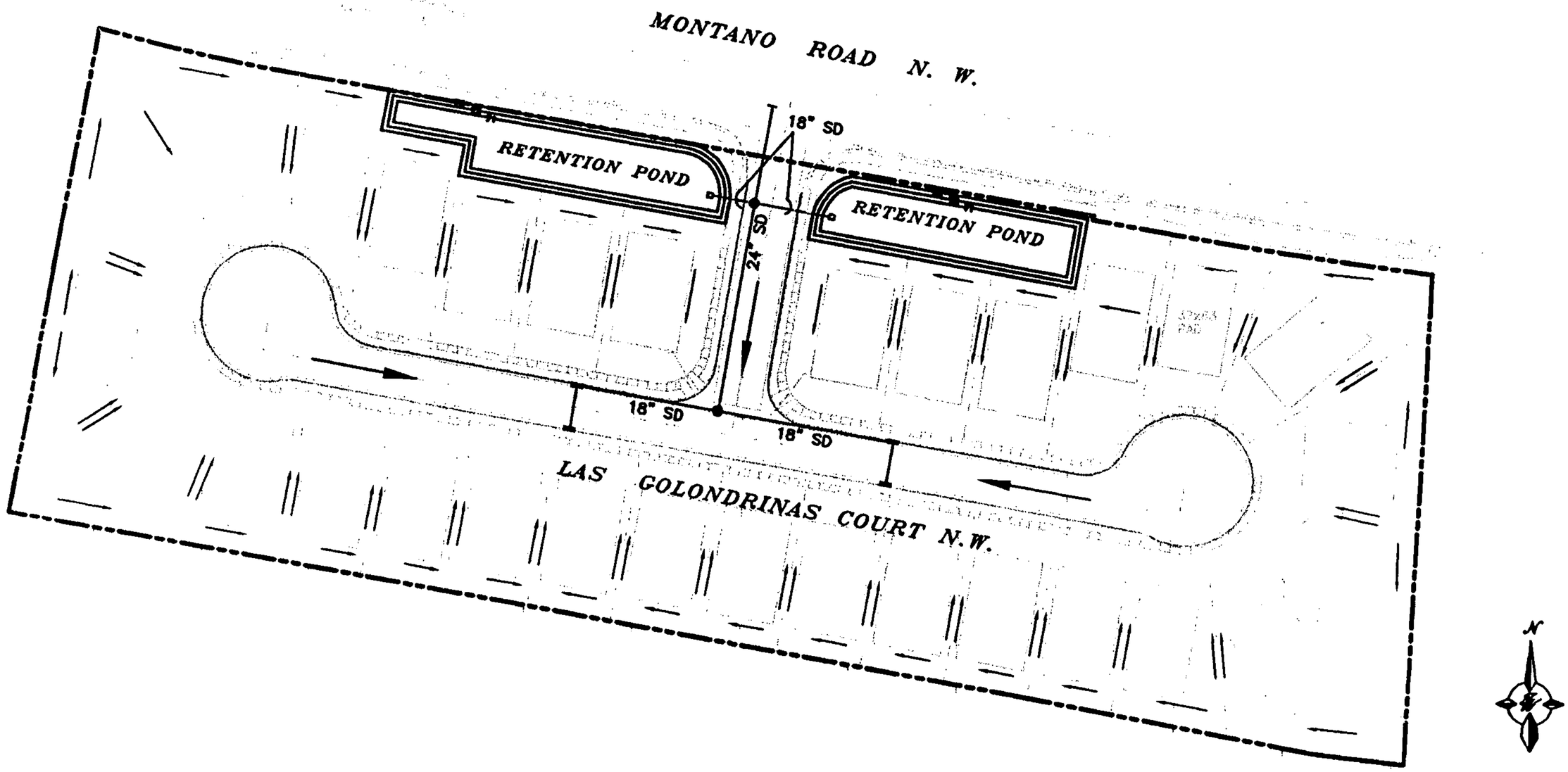
Flood Plain and Soil Condition

The site is located on FEMA Map No. 350002, panel 15, as shown on the attached excerpt. The map shows that the site falls within the 500-year flood pain, but outside of any 100-year flood plain.

The site contains one soil type Gila Loam (Gb) as indicated on the Soil Map (sheet # 20) from the Soil Conservation Service Survey of Bernalillo County. The Gila Loam consists of deep, well drained soils that formed in recent alluvium on the flood plains along Rio Grande and Rio Puerco. This level of soil is in the irrigated Rio Grande Valley. The runoff in this soil is slow, and the hazard of water erosion is slight. This soil is used for irrigated alfalfa, row crops, and pasture. It is also used for wildlife habitat and community development. See attached soil map for site location.

Proposed Conditions and On-Site Drainage Management Plan

This site was designed and submitted to City Hydrology under drainage number F14/D34. Since that submittal the site layout has been modified increasing the number of lots from 22 to 30 and will be developed as a higher density. The project will be designed to pond the runoff in a retention pond based on the 100-year, 6-hour storm volume (0.748 ac-ft) until



PROPOSED DRAINAGE ROUTING

such time that the storm sewer pipe in Montano Road is operational. The storm sewer has been installed, but is waiting on a storm sewer lift station to convey the water to the Rio Grande. The lift station is under construction and will take approximately one year to construct. Once the lift station is in place the pond will be discharged at a confined discharged rate of 0.50 cfs per acres (a total allowable discharge of 2.77 cfs). We have designed to discharge the pond at a total discharge rate of 0.50 cfs. We are also proposing to use the difference of 2.27 cfs allowable discharge in Villa Canela Subdivision. The site drains towards the center of the tract at a flow rate of 21.29 cfs. From there runoff is intercepted and then drained to two proposed retention ponds on both sides of the entrance road via a 18" and 24" storm sewer pipes. Both ponds act as one pond and they are designed for a volume of 0.7516 ac-ft which is higher than the 100-year, 6-hour storm volume (0.748 ac-ft). The outlet of the pipe to the Montano Road storm sewer will be sealed, and after the lift station is in place the pond will be discharge through a 2-13/16" orifice opening. See Proposed Drainage Routing plan for the drainage pattern, the storm sewer location, and the retention pond location.

Emergency Conditions

In the case of an emergency the runoff will overflow the pond into the Montano Road and back into the subdivision. The water block at the entrance is lower than the pads and therefore, the runoff will drain out of the entrance without flooding any of the buildings. The water backs up into the subdivision within the street and then discharges out of the entrance.

Calculations

City of Albuquerque, Development Process Manuel, Section 22.2, Hydrology Section, revised January, 1993, was used for runoff calculations. See section II of this report for Summary Table for runoff results. See also Sections IV and V of this report for AHYMO input and output files for runoff and ponding calculations.

Infrastructure List

All the work within the right-of-way will be shown on the infrastructure list (see section VI for infrastructure list). An existing 24" RCP stub was extended into the site during the Montano Road construction. We will tie to these existing stubs for the water line, sanitary sewer, and storm sewer. The list will include the 24" RCP storm drain pipe and drop inlets in the roadway. The pond will also be called out as a separate item.

RUNOFF DRAINAGE DATA

The site is @ Zone 2

LAND TREATMENT

Proposed
B = 20.00 %
C = 20.00 %
D = 60.00 %

Existing
B = 100 %

DEPTH (INCHES) @ 100-YEAR STORM

P_{60} = 2.01 inches

P_{360} = 2.35 inches

P_{1440} = 2.75 inches

DEPTH (INCHES) @ 10-YEAR STORM

P_{60} = 2.01 x 0.667
= 1.34 inches

P_{360} = 1.57

P_{1440} = 1.83

See the summary output from AHYMO calculations.

Also see the following summary tables.

RUNOFF SUMMARY TABLE

DRAINAGE BASIN			
BASIN	AREA (SF)	AREA (AC)	AREA (MI^2)
1	237782.79	5.4587	0.008529

BASINS RUNOFF CALCULATION RESULTS UNDER PROPOSED CONDITIONS

BASIN	Q-100 CFS	Q-10 CFS
1	21.29	12.97

BASINS RUNOFF CALCULATION RESULTS UNDER EXISTING CONDITIONS

BASIN	Q-100 CFS	Q-10 CFS
1	12.44	5.10

PONDING CALCULATIONS

Volume =12.57 * (water depth), (from bottom of the MH)

Ab - Bottom Of The Pond Surface Area (Top of the inlet)
At - Top Of The Pond Surface Area
D - Water Depth (From bottom of the pond)
Dt - Total Pond Depth
C - Change In Surface Area / Water Depth

Volume = Ab * D + 0.5 * C * D^2

C = (At - Ab) / Dt

Ab =	7,227.21	SF	
At =	14,599.61	SF	
Dt =	3.00	FT	(Ponding depth from the bottom of the detention pond)
Dia =	2.8125	IN	
Radius =	1.40625	IN	
C =	2457.47	FT / LF-DEPTH	

H (FT)	D (FT)	VOLUME (AC-FT)	Q (CFS)	FULL ELEV.
0.00	0.00	0.00000	0.00	4968.33
1.33	1.33	0.00039	0.23	4969.67
2.67	2.67	0.00077	0.33	4971.00
3.17	0.50	0.09092	0.36	4971.50
3.67	1.00	0.19518	0.39	4972.00
4.17	1.50	0.31354	0.42	4972.50
4.67	2.00	0.44601	0.44	4973.00
5.17	2.50	0.59258	0.47	4973.50
5.67	3.00	0.75325	0.49	4974.00

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - Jan RUN DATE (MON/DAY/YR) =03/24/1998

INPUT FILE = 9811ex USER NO.= R_BOHANN.I01

HYDROGRAPH COMMAND	IDENTIFICATION	FROM ID	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION
START										TIME= 0
RAINFALL TYPE=1										RAIN6= 2.35
COMPUTE NM HYD		101	-	0.0085	12.44	0.354	0.77821	1.533	2.279	PER IMP= 0
START										TIME= 0
RAINFALL TYPE=1										RAIN6= 1.57
COMPUTE NM HYD		111	-	0.0085	5.1	0.127	0.27828	1.533	0.935	PER IMP= 0
FINISH										

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =04/30/1998

INPUT FILE = 9811pd USER NO.= R_BOHANN.I01

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION	
START										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	2.350
COMPUTE NM HYD	101.00	-	1	.00853	21.29	.748	1.64388	1.500	3.899	PER IMP=	60.00
ROUTE RESERVOIR	501.10	1	2	.00853	.48	.662	1.45573	2.600	.088	AC-FT=	.659
FINISH											