

CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development & Building Services



May 29, 2008

Kevin Murtagh, P.E.
Bohannon Huston, Inc.
7500 Jefferson NE – Courtyard 1
Albuquerque, New Mexico 87109

RE: **THE TRAILS UNIT 4 (East of Unser Blvd. NW)** (C10 – D 001)
DRAINAGE MASTER PLAN (PE Stamped 04-24-08)

Dear Mr. Murtagh:

Based upon the information provided in your submittal received 04-24-08, the above referenced Drainage Master Plan (DMP) is approved.

P.O. Box 1293

A site specific Grading and Drainage Plan in compliance with this DMP must be submitted for each phase of Unit 4, including a detailed Grading and Drainage Plan for Tract 2. The proposed "Interim Retention Pond" for Tract 2, located on Tract 3, must be sized to include interim flows entering the pond from Tract 3.

Albuquerque

If I can be of further assistance, please feel free to contact me at 924-3981.

New Mexico 87103

Sincerely,

www.cabq.gov

Gregory R. Olson, P.E.
Hydrology Section

XC: Bradley Bingham, COA-PLN-Hydrology
File: C10-D 001 = Trails Unit 4

INTRODUCTION

The purpose of this drainage management plan is to identify storm runoff flows and drainage patterns in Unit 4 that can be implemented for future design and development. The Trails Unit 4 is a 35 acre site consisting of 6 tracts including 2 open space tracts. It is located on Albuquerque's West Mesa within the Volcanso Heights Sector Development Plan area (VHSDP). Unit 4 is bounded on the north by Paseo del Norte, on the west by Universe Boulevard, and on the south by Avenida de Jamblo, the Alameda Town land grant boundary. Tract 2 is a tract within Unit 4 and an interim developed condition drainage plan will be discussed later in this report. The present condition of the site is mainly undisturbed with the exception of two existing ponds along Universe Boulevard. The existing watershed boundary essentially splits the site near the Tract 2, Tract 3 boundary line.

Previously approved drainage management plans (DMPs) for the area include the Paseo del Norte Drainage Report - Golf Course Road to Kinnick Drive, By Wilson and Co. August 2004, the Boca Negra - Matiposa Arroyo Drainage Management Plan By Resource Technologies Inc. for AMA/CA April 2005, and the Drainage Report for La Cienfita subdivision, by Wilson and Co. November, 2003. These reports all indicate a future Paseo del Norte alignment that is the basin boundary for Boca Negra (BN) Basin 49. Although Paseo del Norte has recently been constructed with an alignment that differs from the original alignment, the original alignment is to be used as the basin boundary for (BN) Basin 49 in this report.

It has been determined in the aforementioned reports that all the developed flow from Unit 4 will drain to the Boca Negra Dam. The majority of the flow will be conveyed through a future storm drain system in the proposed alignment for Unser Boulevard, while a small portion will drain into the storm drain in Universe Boulevard. The alignment for Unser has not yet been established, however the DMPs all maintain a similar alignment while the VHSDP indicates a different alignment. This drainage concept will use the VHSDP roadway alignments to establish future drainage patterns and storm drain alignments and is subject to modification in the event roadway alignments are changed. Sheet 2 indicates how the DMP basin boundaries have changed and while basin BN50 has decreased in size and basin BN68 has increased in size, collectively their size and, subsequently, their runoff remains the same.

The Trails Unit 4 is located on the western portion of BN49, which is a 200 acre basin with developed land treatments determined to be 5% A, 19% B, 19% C, and 57% D per the Boca Negra DPM. Per the BNDMP Basin BN49 discharges 389 cfs, which is considered the allowable discharge for fully developed conditions, therefore the allowable discharge rate per acre has been determined to be approximately 1.99 cfs/acre. Although the newly approved VHSDP allows for various zoning within the site, overall land treatments for the 35 acres remain, on average, similar to the DMPs. The tracts within the site have impervious land treatments as follows: Tract 1 - 90%, Tract 2 - 70%, Tract 3 - 35%, Tract 4 - 0% in accordance with DP41 section 22.2 Table A-5. There are 2 offsite basins (Off A and Off B) that will contribute flows to the drainage concept and are assumed to have land treatments of 5% A, 19% B, 19% C, and 57% D per the BNDMP.

This drainage concept is based on previous reports and assumes no additional flow will be allowed into the Universe storm drain from Unit 4, with the exception of the pond areas along Universe. The proposed pond configurations are shown on the basin map, Sheet 1.

OVERALL BASIN SUMMARY

Basin Off A is 9.32 acres and produces a flow of 26 cfs, based on the BNDMP land treatments and is allowed to discharge 18.5 cfs to satisfy the Boca Negra DMP. This flow will drain into Oakridge Street, ultimately discharging into a future storm drain system within Street 2.

Basin Tract 1 is 4.28 acres and consists of 90% D, which produces a flow of 15 cfs and is allowed to discharge 8.51 cfs to satisfy the Boca Negra DMP. This flow will drain into Street 2, where it will be captured by a future storm drain system in the street and combine with the flow for Off A at AP 1 and is routed in the future storm drain to AP4. This future storm drain system will drain to the future Unser storm drain.

Basin Tract 2 is 10.75 acres and consists of 70% D, which produces 35 cfs and is allowed to discharge 21.35 cfs to satisfy the Boca Negra DMP. This flow will drain to a future storm drain system in Street 1 and drain to the Unser storm drain.

Basin Tract 3 is 10.10 acres and consists of 95% D, which produces 27 cfs and is allowed to discharge 20.06 cfs to satisfy the Boca Negra DMP. This flow will continue south toward the future Woodmont Avenue where it will be captured by a future storm drain in the street, combine with the upstream flows at AP2 and drain to the future Unser storm drain.

Basin Off B is 16.33 acres and produces a flow of 49 cfs, and is allowed to discharge 32.43 cfs to satisfy the Boca Negra DMP. This flow will drain into Avenida de Jamblo and Street 1, where it will be captured by a future storm drain system within the two streets, combine with Basins Tract 2 and Tract 3 at AP3 and drain to the future Unser storm drain.

Basin BN49A is 141.82 acres and produces a flow of 279 cfs based on the BNDMP land treatments and is allowed to free discharge since the discharge rate is approximately equal to the allowable 2 cfs/acre. The developed flow from this basin will combine with all of the upstream flows at AP4 and discharge into a future storm drain located in Unser Boulevard, which will ultimately discharge into the Boca Negra Dam to the south.

Three basins contained in the BN49 basin drain to the Universe storm drain and do not contribute to the Unser storm drain, they are described as follows. The storm drain system in Universe Boulevard ultimately discharges into the Boca Negra Dam.

Basin Open Space 1 is 1.86 acres and produces a flow of 4 cfs. This basin encircles an existing pond, which is to be enlarged for future development.

Basin Open Space 2 is 1.98 acres and produces a flow of 4 cfs. This basin is the perimeter of a future pond that is to be built for future developed conditions.

Basin Tract 4 is 3.89 acres and produces a flow of 9 cfs. This basin contains an existing pond which is to be enlarged for future developed conditions and will encumber the entire basin.

DRAINAGE SUMMARY

As previously mentioned, according to the Boca Negra Matiposa Arroyo Drainage Management Plan, a peak flowrate of 389 cfs from basin BN49 is allowed to discharge, which is equivalent to 1.99 cfs/acre. For this report the fully developed flow produced from basin BN49, including Unit 4 and both offsite basins, has been computed to be 416 cfs due to revised land treatments. Basin Open Space 1, Basin Open Space 2, and Basin Tract 4, account for 17 cfs combined.

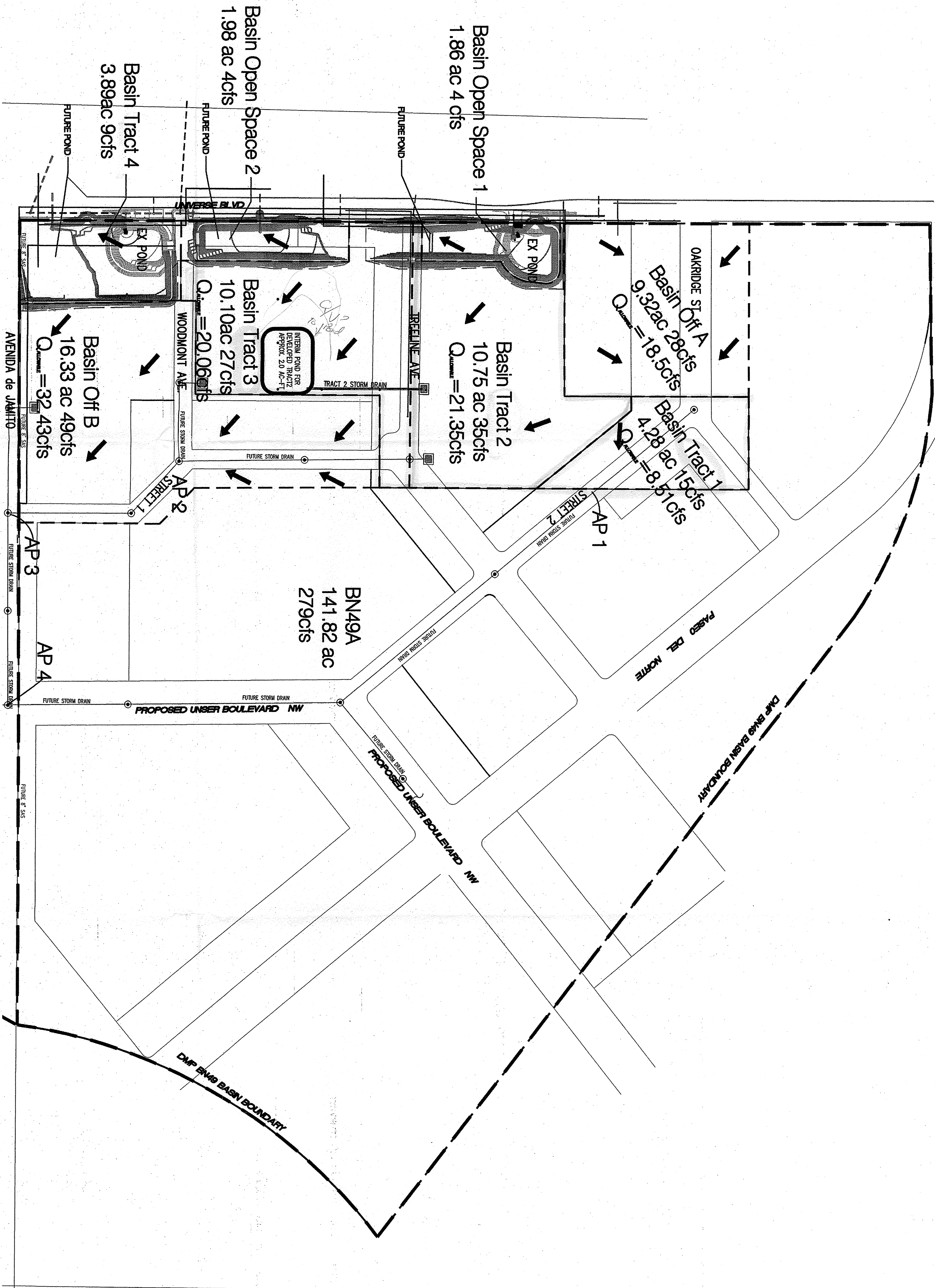
These flows will be conveyed through the storm drain system in Universe Boulevard, which ultimately discharges into the Boca Negra Dam. The remaining flow of 398 cfs produced from the remaining tracts in Unit 4, the offsite basins, and basin BN49A, will have to be detained onsite, to meet the total allowed flowrate of 2 cfs/acre per the BNDMP. The developed flow will be collected by a storm drain system which follows the alignment of Unser Boulevard and ultimately discharges into the Boca Negra Dam.

TRACT 2 INTERIM DRAINAGE CONSIDERATIONS

Tract 2 is high density (20 DUs/ac) and development is slated to occur prior to the construction of the Unser storm drain and adjacent roadways. Therefore, an interim pond will be constructed at a low point on Tract 3 to retain the 35 cfs that is produced. The northern half of Tractline Ave will be constructed as part of the development and extend to the east tract boundary. The pond, shown on Sheet 1, is sized for 2.0 ac-ft. A storm drain at the south end of Tract 2 will convey runoff from Tract 2 to the pond. As development progresses in the area the Unser storm drain will be required and constructed as the retention pond will be omitted. Tract 2 will require a site specific drainage management plan prior to development and in accordance to The Trails Unit 4 Drainage Management Plan.

CONCLUSION

The goal of this drainage management plan has been to identify storm runoff flows and drainage patterns in and around Unit 4 that can be utilized for future development and design. This plan uses the VHSDP layout and represents the hydrological considerations for development of Unit 4 and Tract 2. Site specific drainage reports will be warranted as development progresses.



AHWMO SUMMARY FILE

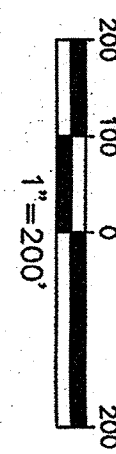
NO.	DESCRIPTION	AREA (AC)	PERCENT IMPERVIOUS	PEAK FLOW (CFS)	DISCHARGE (CFS)	RETENTION (CFS)	STORAGE (CFS)	TIME TO PEAK (MIN)	TIME TO DISCHARGE (MIN)	TIME TO STORAGE (MIN)	TIME TO RETENTION (MIN)
1	Basin Open Space 1	1.86	4	4	4	0	0	10	10	0	0
2	Basin Open Space 2	1.98	4	4	4	0	0	10	10	0	0
3	Basin Tract 4	3.89	9	9	9	0	0	10	10	0	0
4	Basin Off A	9.32	26	26	18.5	7.5	0	10	10	0	0
5	Basin Tract 1	4.28	15	15	8.51	6.49	0	10	10	0	0
6	Basin Tract 2	10.75	35	35	21.35	13.65	0	10	10	0	0
7	Basin Tract 3	10.10	27	27	20.06	6.94	0	10	10	0	0
8	Basin Off B	16.33	49	49	32.43	16.57	0	10	10	0	0
9	BN49A	141.82	279	279	279	0	0	10	10	0	0
10	Total	171.15	100	416	398	48	0	10	10	0	0

DRAINAGE MANAGEMENT PLAN

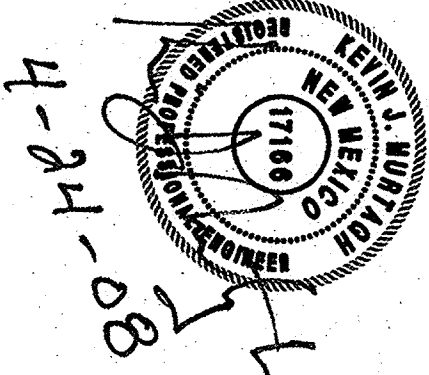
THE TRAILS UNIT 4

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Prepared by:
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11/1/07



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HYDROLOG

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SHEET 1 OF 2

