City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

November 21, 2003

Martin Garcia, PE
ABQ Engineering
1631 Eubank NE, Ste C
Albuquerque, NM 87112

Re: Sawmill Industrial Subdivision Drainage Report
Engineer's Stamp dated 11-5-03 (J13/D80)

Dear Mr. Garcia,

Based upon the information provided in your submittal dated 11-6-03, the above referenced report cannot be approved for Preliminary Plat until the following comments are addressed.

- Please show existing edge-of-pavement grades at 15th St. to verify that Tract D can drain to the road.
- Please show all storm drains and inlets in the surrounding roads. My facility maps show a 15" pipe in Sawmill (but not where you have it shown) and a 12" pipe in Bellamah.
- Ponds should have a water surface elevation.
- Please submit the computer input, output and summary files as described in the report and stamp, sign and date the cover of the report.

If you have any questions, you can contact me at 924-3986.

Sincerely,

Bradley L. Bingham, PE
Sr. Engineer, Planning Dept.
Development and Building Services

C: file

ABQ Engineering, Inc.
Engineers ▪ Planners ▪ Construction Services

December 16, 2003

Mr. Brad Bingham
City of Albuquerque Development Services
600 2nd Street SW
Albuquerque, NM 87102

RE: Sawmill Industrial Park Revised Grading and Drainage Plan (J13/80)

Mr. Bingham,

Enclosed herewith is the revised grading and drainage plan for the Sawmill Industrial Subdivision. The plan has been modified to address the comments received from your office dated November 21, 2003.

If you have any questions or need additional information, please call me at 255-7802.

Sincerely,

Martin J. Garcia, PE
ABQ Engineering, Inc.
23088

6739 Academy Rd. NE, Suite 130 ▪ Albuquerque, New Mexico 87109 ▪ (505) 255-7802 ▪ Fax (505) 255-7902

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 19, 2004

Martin Garcia, PE
ABQ Engineering
1631 Eubank NE, Ste C
Albuquerque, NM 87112

Re: Sawmill Industrial Subdivision Drainage Report
Engineer's Stamp dated 12-16-03 (J13/D80)

Dear Mr. Garcia,

Based upon the information provided in your submittal dated 12-16-03, the above referenced report is approved for Preliminary Plat action by the DRB.

If you have any questions, you can contact me at 924-3986.

Sincerely,

Bradley L. Bingham, PE
Sr. Engineer, Planning Dept.
Development and Building Services

C: file

DRAINAGE REPORT

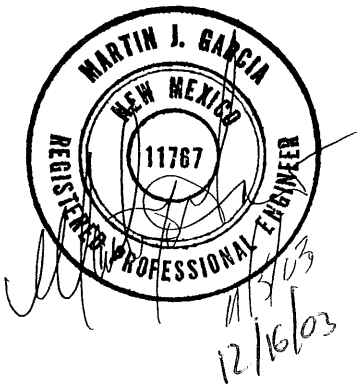
FOR

SAWMILL INDUSTRIAL SUBDIVISION

ZONE ATLAS PAGE H-13

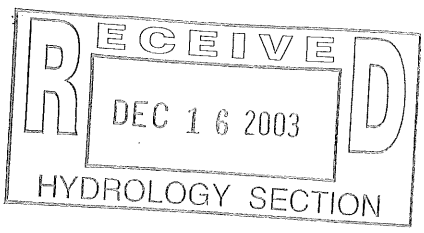
ALBUQUERQUE, NEW MEXICO

October 20, 2003



Prepared By:

ABQ Engineering, Inc.
1631 Eubank NE Suite C
Albuquerque, NM 87112
255-7802 Fax 255-7902



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DRAINAGE REPORT
for
SAWMILL INDUSTRIAL SUBDIVISION

I. INTRODUCTION

This report documents the methods used to determine and convey the storm water runoff from the Sawmill Industrial Subdivision. Sawmill Industrial Subdivision is the replat of Lot B-1-A-3-A, Duke City Lumber Company Addition. The proposed subdivision is located between Bellamah Avenue and Sawmill Road and contains approximately 11.06 acres. The Sawmill Industrial Subdivision will replat the existing parcel into five parcels. The subdivision is subject to the requirements of the Sawmill Sector Plan. The sector plan recommends correction to the drainage system but did not adopt methods for realization of the recommendation. Only Tract C, D, and E will have new development, therefore the existing grading on Tract A and Tract B will not be modified with this plan.

II. PROJECT DESCRIPTION

Lot B-1-A-3-A is the site of Duke City Lumber Company. There are two existing Warehouse Buildings and lumber storage buildings currently on site. There are no planned changes to those buildings with this plan. The remaining portion of the lot is paved and has concrete pads where storage sheds were built and later removed. The Sawmill Industrial Subdivision project will replat the existing lot into five lots of varying size. The intent is to leave the Warehouse Buildings and lumber storage in tact, but remove the concrete pads. The Warehouse Buildings will be contained within two of the proposed five lots (Tract A and B). Tract "C" will have a new 30,000 square foot building, Tract "D" will have a 1000-1500 Square foot residence constructed on it, and Tract "E" will have a 7,000 square foot building constructed on it. The subdivision is bounded by existing residential development on the West, existing industrial development on the East, Bellamah Avenue on the North, and Sawmill Road on the South. The property is Zoned SM-1 and is subject to the requirements of the Sawmill/Wells Park Sector Plan.

III. METHODOLOGY

The hydrology calculations follow the guidelines set forth in Section 22.2 of the Albuquerque Development Process Manual (DPM). The 100yr-24 hour storm was used to compute runoff quantities. All properties adjacent to this subdivision are fully developed and there is no off-site runoff entering this property. All calculations were done assuming no off-site flows. Street storm drain capacity was not computed because there is limited information on the size of contributing drainage basins into the existing storm drain systems. Sawmill Road has an existing 12" storm drain, Bellamah Avenue also has an existing 12" storm drain. Since the site plans for the proposed subdivision

have not been finalized, the approach taken with the grading plan and drainage report was to develop a conceptual layout and design to be followed at building permit phase.

The grading plan proposes to create a break point along the Southern lot line of Tracts A and B. The runoff generated North of the line would continue, as the existing conditions and grading of the property are not proposed to change. All runoff generated South of the line within Tract C will be contained in an on-site pond and control released to Sawmill Road at 50% of the flow rate (approx 8cfs). Tract B will be allowed free discharge (3.6 cfs), and Tract D will be allowed free discharge to 15th Street (.33cfs).

IV. DRAINAGE COMPUTATIONS

The proposed development is within Precipitation Zone 2. The Land Treatment Area for the proposed subdivision is as follows:

Type "D"	85%
Type "C"	0%
Type "B"	15%
Type "A"	0%

The drainage analysis for the entire site resulted in an undeveloped flow of 49.31 cfs and a developed flow of 47.96 cfs. Analysis for the individual lots were also conducted in order to determine the ponding needs for each lot. All ponding will be incorporated as parking lot ponding with a controlled release into the existing streets. Included in Appendix A are the drainage calculations conducted for each lot.

V. INFRASTRUCTURE

There will be a 6 inch storm drain line and catch basin installed as part of the improvements on Tract C. No other infrastructure is anticipated. Based on discussions with City Staff, there may be additional curb and gutter required adjacent to Tract A where there is existing parking along Bellamah Avenue as part of the Subdivision plan.

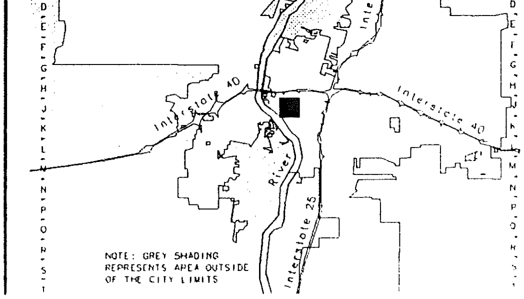
VI. SUMMARY AND CONCLUSION

The Storm drainage design and computations associated with this proposed subdivision have taken into consideration, the limitation to discharge runoff into existing facilities. The entire property is allowed free discharge under the existing conditions. This plan proposes to break the property drainage basin into two parts, and allow 50% controlled release from Tract C to Sawmill Road so that the storm drain system can accommodate the runoff more efficiently than is currently occurring. Installing a drop inlet in the center of the ponding area, and connecting a 6" storm drain into the existing system in Sawmill Road can accomplish the controlled release. The ponding required can be accomplished

by utilizing the parking areas. This will provide enough grade differential between the invert of the drop inlet and the existing storm drain to allow for adequate slope in the pipe. Upon building permit phase, further and more detailed analysis could be conducted to conclude how much runoff will be allowed from each lot based on actual building size and site conditions.

No changes are recommended on Tracts A and B. If at some point in the future site changes occur in either of the lots, a new grading plan will be required. The plan should follow the drainage scheme for Tract C. A drop inlet could be installed in the pond and connected to the existing system in Bellamah with a controlled release. This would alleviate the existing conditions in the Bellamah storm drain system.

Included with this report are the computer program input, output, and summary for the 100yr-24hour storm, a copy of the Conceptual Grading Plan, and a copy of the zone atlas map.



GRAPHIC SCALE IN FEET

250 0 750 1000

Albuquerque Geographic Information System

PLANNING DEPARTMENT

Zone Atlas Page

J-13-Z

Map Amended through November 01, 2003

Bellamah Subdivision

Entire Site

Hydrology Calculations
Date: October 7, 2003
DPM - Section 22.2
Volume 2, January 1993

Precipitation Zone	***2***
100 Year Storm Depth, P (360)	***2.35***
100 year Storm Depth, P (10 day)	***3.95***

Treatment Area	A	B	C	D
Excess Precipitation Factors	***0.53***	***0.78***	***1.13***	***2.12***
Peak Discharge Factors	***1.56***	***2.28***	***3.14***	***4.7***

Land Treatment Area	Acres	Existing	Proposed
Type "D" (Roof)		***10.210***	***9.400***
Type "C" (Unpaved Roadway)		***0.000***	***0.000***
Type "B" (Irrigated Lawns)		***0.000***	***1.660***
Type "A" (Undeveloped)		***0.850***	***0.000***
Total (Acres)		11.060	11.060
Excess Precipitaion(in)		1.998	1.919
Volume (100), cf		80207.391	77038.764
Volume (100,10 day), cf		59299.68	54595.20
Volume (10),cf		53738.952	51615.972
Q (100), cfs		49.313	47.965
Q (10), cfs		33.040	32.136

Bellamah Subdivision

Tract A

Hydrology Calculations
Date: October 7, 2003
DPM - Section 22.2
Volume 2, January 1993

Precipitation Zone	***2***
100 Year Storm Depth, P (360)	***2.35***
100 year Storm Depth, P (10 day)	***3.95***

Treatment Area	A	B	C	D
Excess Precipitation Factors	***0.53***	***0.78***	***1.13***	***2.12***
Peak Discharge Factors	***1.56***	***2.28***	***3.14***	***4.7***

Land Treatment Area	Acres	Existing	Proposed
Type "D" (Roof)		***2.960***	***2.510***
Type "C" (Unpaved Roadway)		***0.000***	***0.000***
Type "B" (Irrigated Lawns)		***0.000***	***0.450***
Type "A" (Undeveloped)		***0.030***	***0.030***
Total (Acres)		2.990	2.990
Excess Precipitaion(in)		2.104	1.902
Volume (100), cf		22836.693	20647.803
Volume (100,10 day), cf		17191.68	14578.08
Volume (10),cf		15300.584	13834.028
Q (100), cfs		13.959	12.870
Q (10), cfs		9.352	8.623

Bellamah Subdivision

Tract B

Hydrology Calculations
Date: October 7, 2003
DPM - Section 22.2
Volume 2, January 1993

Precipitation Zone	***2***
100 Year Storm Depth, P (360)	***2.35***
100 year Storm Depth, P (10 day)	***3.95***

Treatment Area	A	B	C	D
Excess Precipitation Factors	***0.53***	***0.78***	***1.13***	***2.12***
Peak Discharge Factors	***1.56***	***2.28***	***3.14***	***4.7***

Land Treatment Area	Acres	Existing	Proposed
Type "D" (Roof)		***2.650***	***2.190***
Type "C" (Unpaved Roadway)		***0.000***	***0.000***
Type "B" (Irrigated Lawns)		***0.000***	***0.460***
Type "A" (Undeveloped)		***0.440***	***0.440***
Total (Acres)		3.090	3.090
Excess Precipitaion(in)		1.894	1.694
Volume (100), cf		21239.856	19002.324
Volume (100,10 day), cf		15391.20	12719.52
Volume (10),cf		14230.704	12731.557
Q (100), cfs		13.141	12.028
Q (10), cfs		8.805	8.059

Bellamah Subdivision

Tract C

Hydrology Calculations
Date: October 7, 2003
DPM - Section 22.2
Volume 2, January 1993

Precipitation Zone	***2***
100 Year Storm Depth, P (360)	***2.35***
100 year Storm Depth, P (10 day)	***3.95***

Treatment Area	A	B	C	D
Excess Precipitation Factors	***0.53***	***0.78***	***1.13***	***2.12***
Peak Discharge Factors	***1.56***	***2.28***	***3.14***	***4.7***

Land Treatment Area	Acres	Existing	Proposed
Type "D" (Roof)		***3.640***	***3.040***
Type "C" (Unpaved Roadway)		***0.000***	***0.000***
Type "B" (Irrigated Lawns)		***0.000***	***0.600***
Type "A" (Undeveloped)		***0.380***	***0.380***
Total (Acres)		4.020	4.020
Excess Precipitaion(in)		1.970	1.770
Volume (100), cf		28743.066	25824.546
Volume (100,10 day), cf		21141.12	17656.32
Volume (10),cf		19257.854	17302.446
Q (100), cfs		17.701	16.249
Q (10), cfs		11.860	10.887

Bellamah Subdivision

Tract D

Hydrology Calculations
Date: October 7, 2003
DPM - Section 22.2
Volume 2, January 1993

Precipitation Zone	***2***
100 Year Storm Depth, P (360)	***2.35***
100 year Storm Depth, P (10 day)	***3.95***

Treatment Area	A	B	C	D
Excess Precipitation Factors	***0.53***	***0.78***	***1.13***	***2.12***
Peak Discharge Factors	***1.56***	***2.28***	***3.14***	***4.7***

Land Treatment Area	Acres	Existing	Proposed
Type "D" (Roof)		***0.050***	***0.030***
Type "C" (Unpaved Roadway)		***0.000***	***0.000***
Type "B" (Irrigated Lawns)		***0.000***	***0.020***
Type "A" (Undeveloped)		***0.090***	***0.090***
Total (Acres)		0.140	0.140
Excess Precipitaion(in)		1.098	0.906
Volume (100), cf		557.931	460.647
Volume (100,10 day), cf		290.40	174.24
Volume (10),cf		373.814	308.633
Q (100), cfs		0.375	0.327
Q (10), cfs		0.252	0.219

Bellamah Subdivision

Tract E

Hydrology Calculations
Date: October 7, 2003
DPM - Section 22.2
Volume 2, January 1993

Precipitation Zone	***2***
100 Year Storm Depth, P (360)	***2.35***
100 year Storm Depth, P (10 day)	***3.95***

Treatment Area	A	B	C	D
Excess Precipitation Factors	***0.53***	***0.78***	***1.13***	***2.12***
Peak Discharge Factors	***1.56***	***2.28***	***3.14***	***4.7***

Land Treatment Area	Acres	Existing	Proposed
Type "D" (Roof)		***0.820***	***0.700***
Type "C" (Unpaved Roadway)		***0.000***	***0.000***
Type "B" (Irrigated Lawns)		***0.000***	***0.120***
Type "A" (Undeveloped)		***0.000***	***0.000***
Total (Acres)		0.820	0.820
Excess Precipitaion(in)		2.120	1.924
Volume (100), cf		6310.392	5726.688
Volume (100,10 day), cf		4762.56	4065.60
Volume (10),cf		4227.963	3836.881
Q (100), cfs		3.854	3.564
Q (10), cfs		2.582	2.388