



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

1 February, 1999

James Topmiller
Bohannon-Huston Inc.
7500 Jefferson NE
Albuquerque, NM 87109

RE: ENGINEER CERTIFICATION FOR SUN HEALTH CARE PHASE III (D17/D3Y)
CERTIFICATION STATEMENT DATED 10-22-98

Dear Mr. Topmiller:

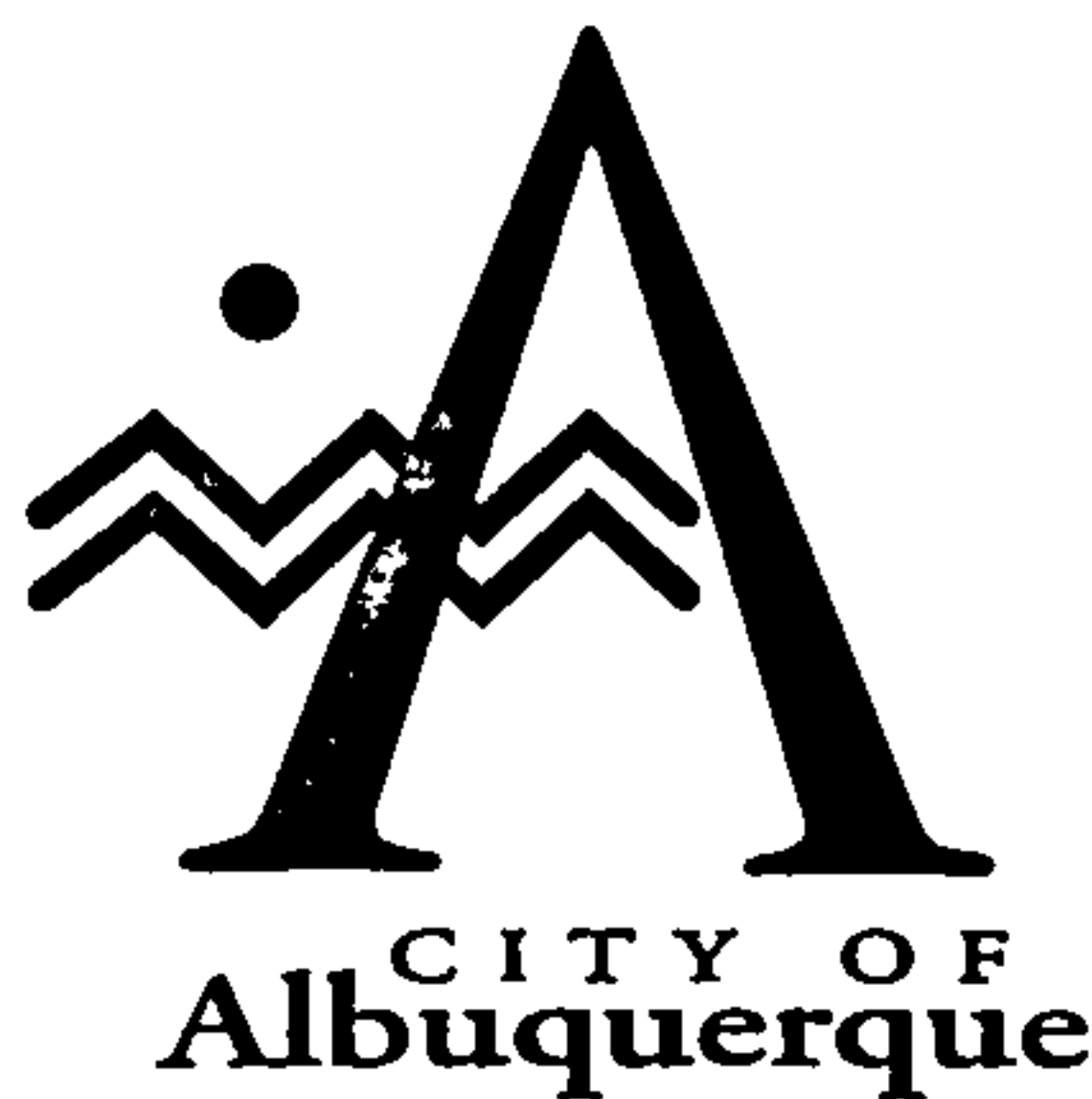
Based upon the information provided on our 1-6-99 resubmittal, Certificate of Occupancy approval is granted for the referenced project.

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

Sincerely,

Scott Davis
PWD, Hydrology Div.

c: Andrew Garcia
file



P.O. Box 1293 Albuquerque, NM 87103

September 10, 1996

Martin J. Chávez, Mayor

Pierce Runnels
Bohannon Huston, Inc.
7500 Jefferson NE
Albuquerque, NM 87109

RE: CONCEPTUAL G & D PLAN FOR SUN HEALTH CARE PHASE 3 (D-17/D3Y)
RECEIVED AUGUST 20, 1996 FOR SITE DEV PLAN FOR B.P.
ENGINEER'S STAMP DATED 8/16/96

Dear Mr. Runnels:

Based on the information included in the submittal referenced above, City Hydrology accepts the conceptual grading & drainage plan for site development plan for B.P. with the following comments:

Approval is good for one year. Any modification of the site development plan will require an update of the Conceptual grading & drainage plan. AMAFCA must approve & license any work within the North Pino Arroyo easement.

It appears that sheet 4 should be titled "Phase IIIA" and sheet 10 should be titled "Phase IIIB". Basin C on sheet 10 was certified by Jake Bordenave on 12/18/89, Pitney-Bowles Bldg (D-17/D3M). Sun Health Care Phase 2 has been transferred to Drainage File (D-17/D3Y).

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

Sincerely,

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

c: Andrew Garcia
Fred Aguirre, DRB 96-389
Kurt Browning, AMAFCA

Good for You, Albuquerque!



SUN HEALTHCARE PHASE 3
DRAINAGE REPORT


Prepared for:

Sun Healthcare Group Inc.
C/O Fanning-Bard Tatum Architects
6100 Indian School Road, NE
Suite 210
Albuquerque, NM 87110

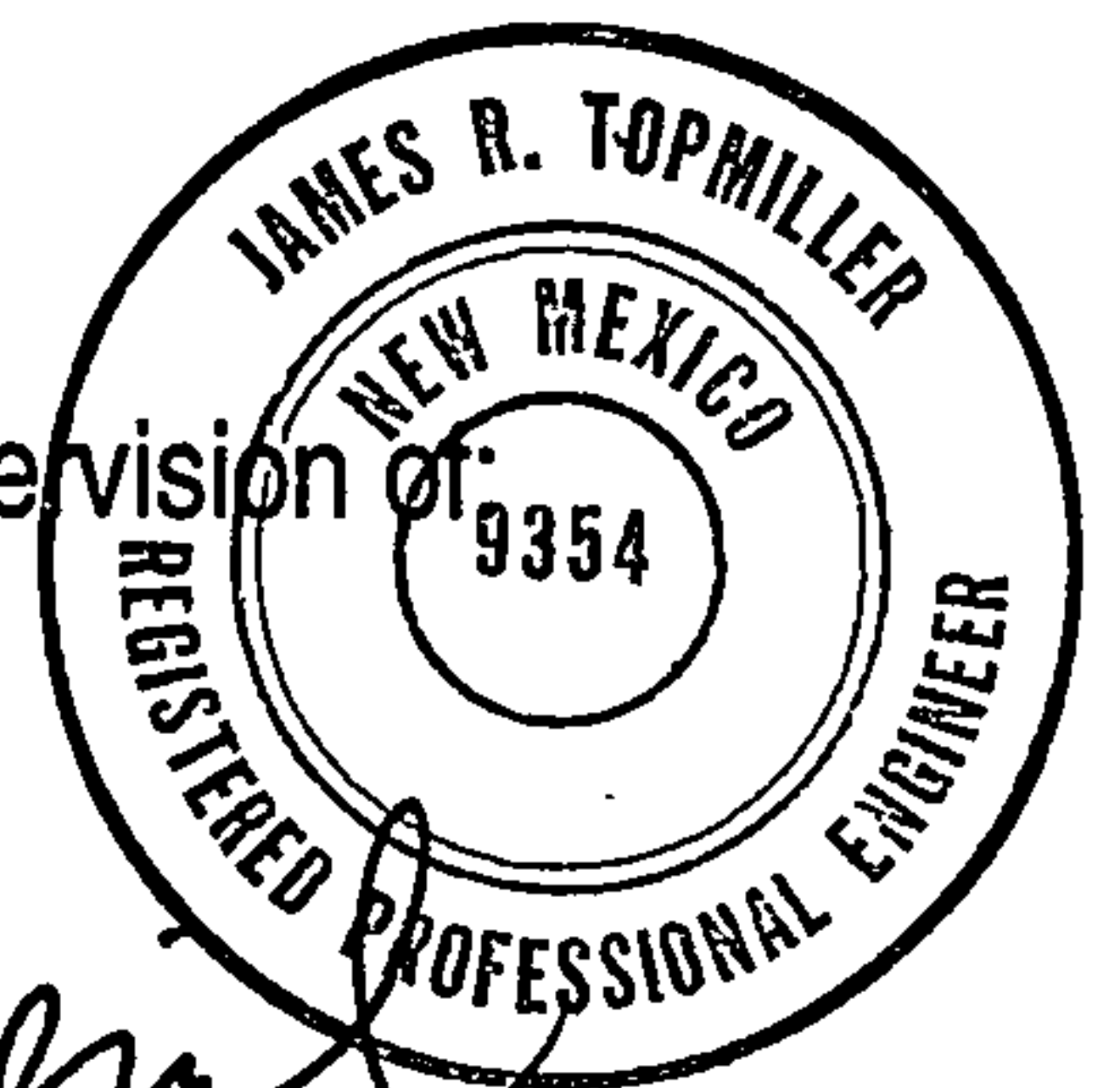
Prepared by


Bohannon Huston
Courtyard I
7500 Jefferson Street NE
Albuquerque, NM 87109-4355

Prepared by:


Pierce Runnels, E.I. 6/6/97
Date

Under the Supervision of




James R. Topmiller, P.E. 6/6/97
Date

I. PURPOSE

The purpose of this report is to provide a Drainage Management Plan for the proposed development of a new building and parking structure, called Phase 3, on Tract 3A-1A, Journal Center Business Park. This building and parking structure comprises the third phase of the Sun Healthcare Group Corporate Office Complex in Journal Center Business Park. A future larger building will be labeled as Phase 4. The first phase was development on Tract 4AA-3A-2 immediately south of this plan and across the AMAFCA Pino Arroyo Channel. The second phase consisted of development of two buildings on the western portion of Tract 3A-1A. The first and second phases are now complete and occupied.

This report, the Final Grading Plan for Phase 3 and the Revised Conceptual Grading/Drainage Plan for Phase 4 are submitted for Hydrology Division review for the purpose of obtaining site plan approval, rough grading approval, foundation approval and building permit approval for Phase 3 and site plan approval only for Phase 4. A future drainage report will be prepared specifically for Phase 4, to support the request for building permit approval for that phase.

II. EXISTING CONDITIONS

Please see the Existing Conditions Photographs in Appendix 1, and the Existing Conditions Basin Map in the Plates section of this report.

Tract 3A-1A was created under a Site Plan for Subdivision and Bulk Land Plat request to the Development Review Board. Following that subdivision, Sun Lane was constructed within the 60' private access easement and the two buildings comprising Phase II were constructed, along with the associated parking areas and landscaping. A storm drain line was extended across the Phase II parking area, and the outflow line from Tract 3A-1A-1 to the temporary asphalt drainage channel on Tract 3A-1C-1 was constructed. Runoff from Sun Lane reaches the asphalt channel through a rundown at the intersection near the west entrance to Tract 3A-1A-1. Sun Lane was recently dedicated to the City and renamed Sun Avenue.

An existing Master Plan for Tracts 3A-1A, 3A-1B and 3A-1C, Journal Center Business Park, has been reviewed and approved by City Hydrology Division and is located within their files (D17/D3B-1). All development on these tracts is to be governed by that Master Plan. The drainage report for Phase II, entitled Sun Healthcare Ph. 2 Office Building and Training Facility Final Grading/Drainage Plan is in Drainage File (D17/D3Y).

The existing drainage basins are designated Basins B, B-1 and A. Basins B and B-1 are areas which were developed as a part of Phase II. Basin A is currently undeveloped and generates a runoff of 6.6 cfs, which enters the 24" storm drain via an existing inlet. Existing Basins A and B-1 comprise the total area of proposed Basins A1, A2, A3, A4, A5 and A6.

III. PROPOSED CONDITIONS

The proposed development consists of one new office building, surface parking areas, drives and outdoor use (plaza) areas as shown on the plan. Please reference the enclosed Grading/Drainage Plan (rear pocket) and the Drainage Basins Map.

In accordance with the Drainage Master Plan described in the Existing Conditions section above, the site will collect flows and discharge them in a southwesterly direction to existing drainage facilities (primarily a 42" RCP storm drain) located at the western-most corner of the site.

Phase 3 flows from Basins A1, A3, A4 and A5 totaling 14.2 cfs will be conveyed to the 42" RCP via an existing 24" storm drain installed with Phase II. The 24" storm drain has a capacity of 62 cfs. Phase 3 will also discharge approximately 1.0 cfs directly to Sun Avenue as street flow. This street flow is restricted to a maximum of 10.6 cfs by the Drainage Master Plan. With the 1.0 cfs discharged from developed Phase 3, the total street flow in Sun Avenue is 7.7 cfs. Basin A6 will continue to discharge directly to the North Pino Arroyo, with a runoff of 3.5 cfs.

Flows from the developed Phase 3 area of the site are collected by swales, storm drains and roof drainage (see plan). This area is broken down into Basins A1 through A5. The Proposed Conditions Basin Map at the rear of this report shows those basins, as well as the flow at various "analysis points" throughout the drainage basins

The Conceptual Grading/Drainage Plan for Phase 4 has been included in the pockets at the rear of the report and provides a preliminary drainage management plan for Phase 4.

IV. CONCLUSION

This report has given a comprehensive drainage management plan for the proposed development that complies with previously approved master plans. It is recommended that with this submittal, the following approvals be granted:

PHASE 3

1. Site Development Plan
2. Rough Grading
3. Foundation Permit
4. Building Permit

PHASE 4

1. Site Development Plan

Inlet Capacity Summary Table

Sun Healthcare Phase 3

Inlet Location	Min. Req'd Open Area (sf)	Available Head (ft)	Capacity (cfs)	Phase 3 Peak Q
@ AP1	2	0.5	7.04	2.09
@ AP3	2	0.5	7.04	1.2
@ AP4	2	0.5	7.04	4.22
@ AP6	3.9	1.5	23.77	6.72

Note: The inlet at AP6 is an existing single 'D' inlet



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

December 14, 2000

James R. Topmiller, P.E.
BOHANNAN HUSTON, INC.
7500 Jefferson NE
Albuquerque, NM 87109

**Re: Grading and Drainage Certification –Sun Healthcare Ph. 4 (D-17/D0637)
Engineer's Stamp dated 07/15/1998
Engineering Certification dated 12/12/2000**

Dear Mr. Topmiller:

Based upon the information provided in your submittal dated 12-14-2000, the above referenced site is approved for Certificate of Occupancy.

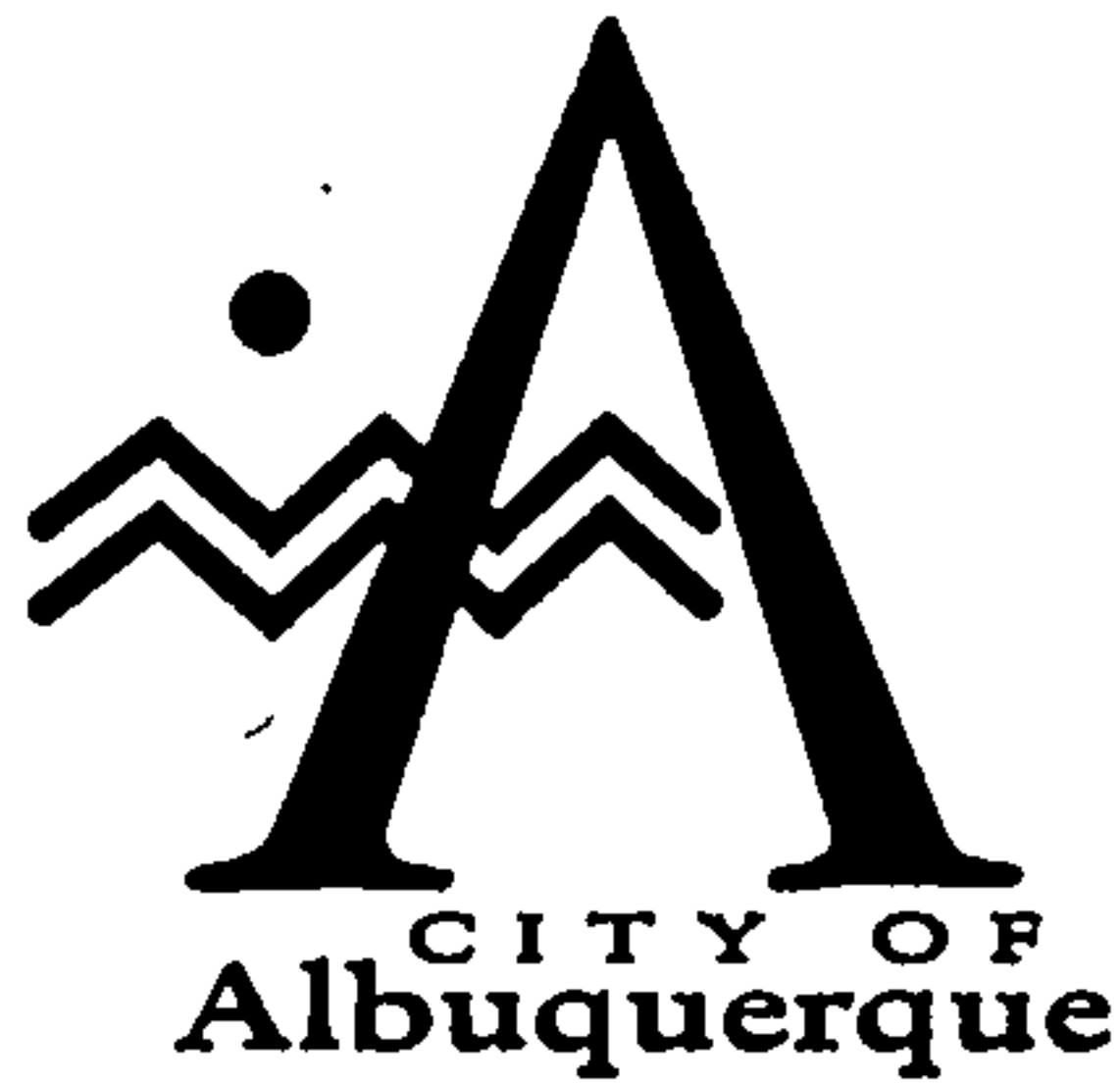
If I can be of further assistance, you can contact me at 924-3986.

Sincerely,

Bradley L. Bingham
Bradley L. Bingham, PE
Senior Civil Engineer, PWD

C: Teresa Martin
file

AG



August 11, 1998

James R. Topmiller, P.E.
Bohannon-Huston, Inc.
7500 Jefferson NE
Albuquerque, NM 87109

Attn: Bruce Stidworthy

**RE: SUN HEALTHCARE, PHASE 4 (D17-D3Y). GRADING PLAN FOR BUILDING PERMIT
APPROVAL. ENGINEER'S STAMP DATED JULY 15, 1998.**

Dear Mr. Topmiller:

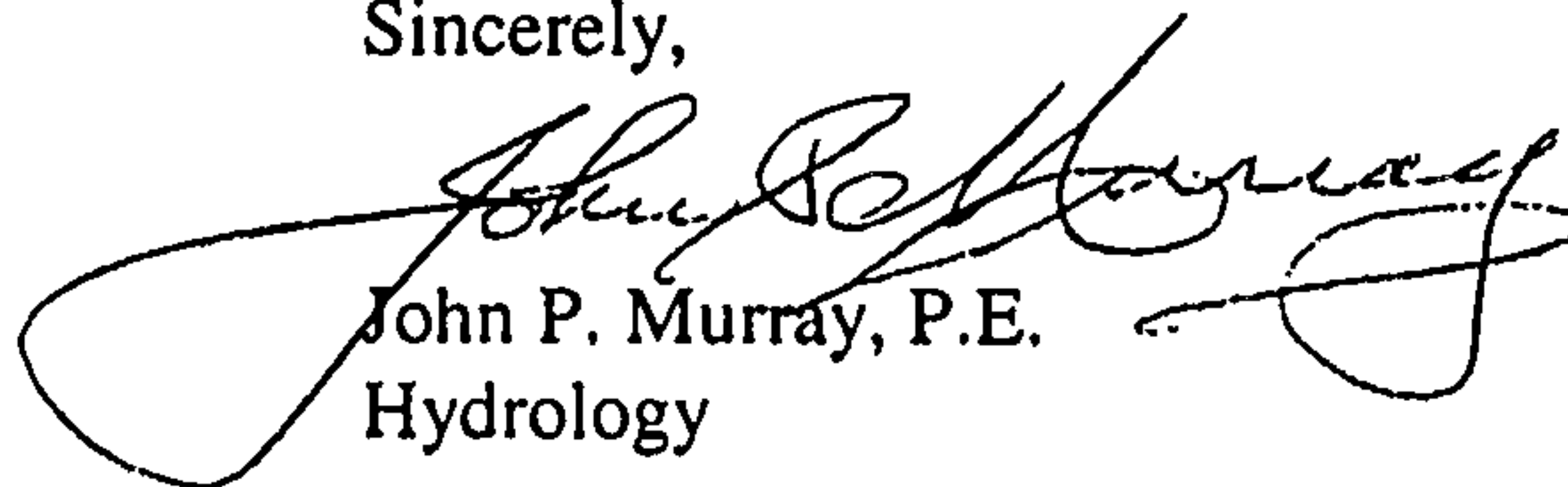
Based upon the information provided in your July 16, 1998 submittal, the above referenced project is approved for Building Permit. See also COA letter of June 8, 1998 regarding these Phase 4 structures.

Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Prior to Certificate of Occupancy approval, an Engineer's Certification per the DPM will be required.

If I can be of further assistance, please feel free to contact me at 924-3984.

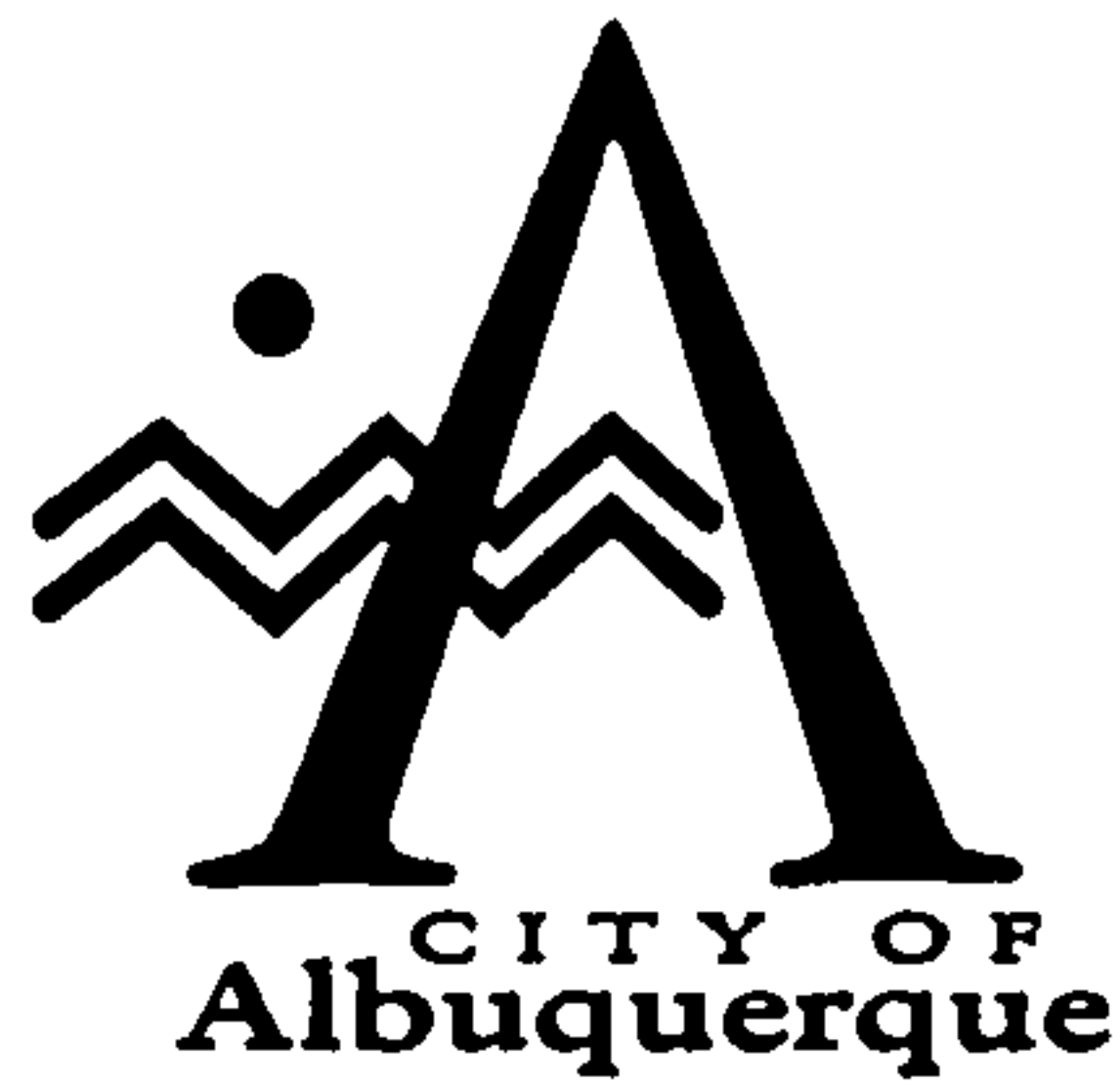
Sincerely,


John P. Murray, P.E.
Hydrology

c: ✓ Andrew Garcia
File

Good for You, Albuquerque!





June 8, 1998

James R. Topmiller, P.E.
Bohannon-Huston, Inc.
7500 Jefferson NE
Albuquerque, NM 87109

RE: SUN HEALTHCARE, PHASE 4 (D17-D3Y). DRAINAGE REPORT FOR ROUGH GRADING AND BUILDING PERMIT APPROVALS. ENGINEER'S STAMP DATED MAY 7, 1998.

Dear Mr. Topmiller:

Based upon the information provided in your May 7, 1998 submittal, the above referenced project is approved for Rough Grading and Building Permits.

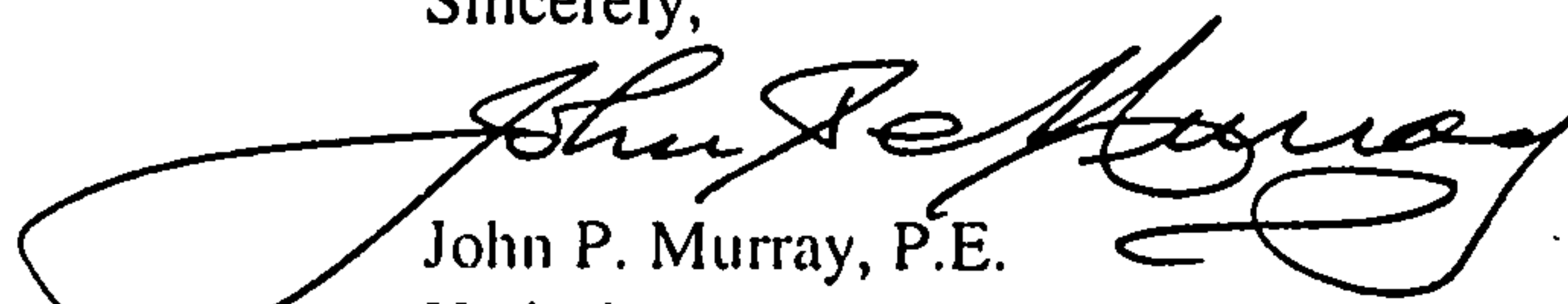
Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Prior to Certificate of Occupancy approval, an Engineer's Certification will be required.

There is a typo in Pipe Flow Capacity Table, Appendix 2 - last entry in last column (Confirmed with Mr. Stidworthy).

If I can be of further assistance, please feel free to contact me at 924-3984.

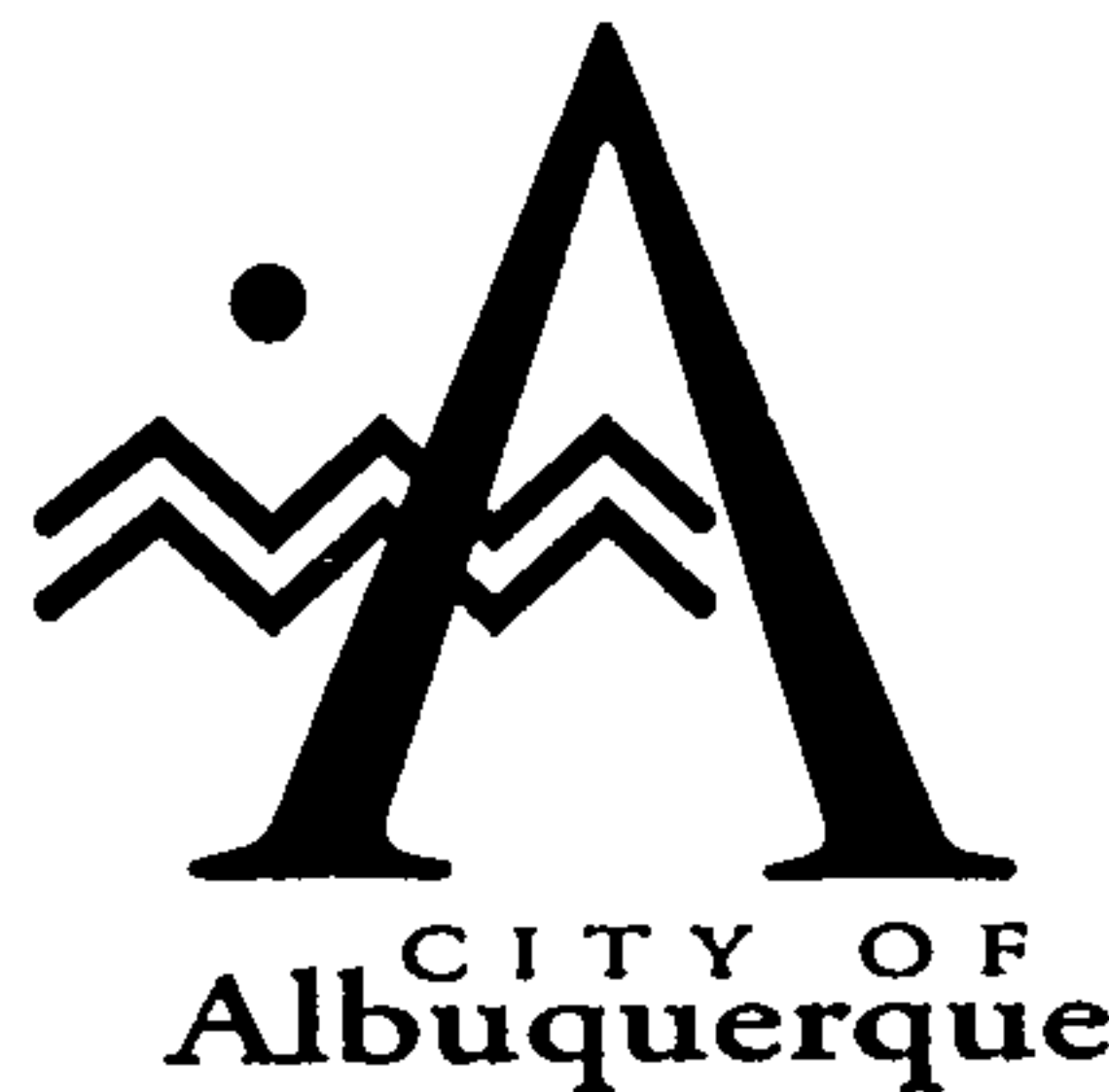
Sincerely,


John P. Murray, P.E.
Hydrology

c: ☒ Andrew Garcia
☒ File

Good for You, Albuquerque!





Public Works Department

June 27, 1997

Martin J. Chávez, Mayor

Robert E. Gurulé, Director

Bruce Sitdworthy
Bohannon-Huston, Inc
7500 Jefferson NE
Albuquerque, NM 87109

**RE: SUN HEALTH CARE PHASE IIIB (D17-D3Y). DRAINAGE REPORT FOR
BUILDING PERMIT APPROVAL. ENGINEER'S STAMP DATED 6-25-97.**

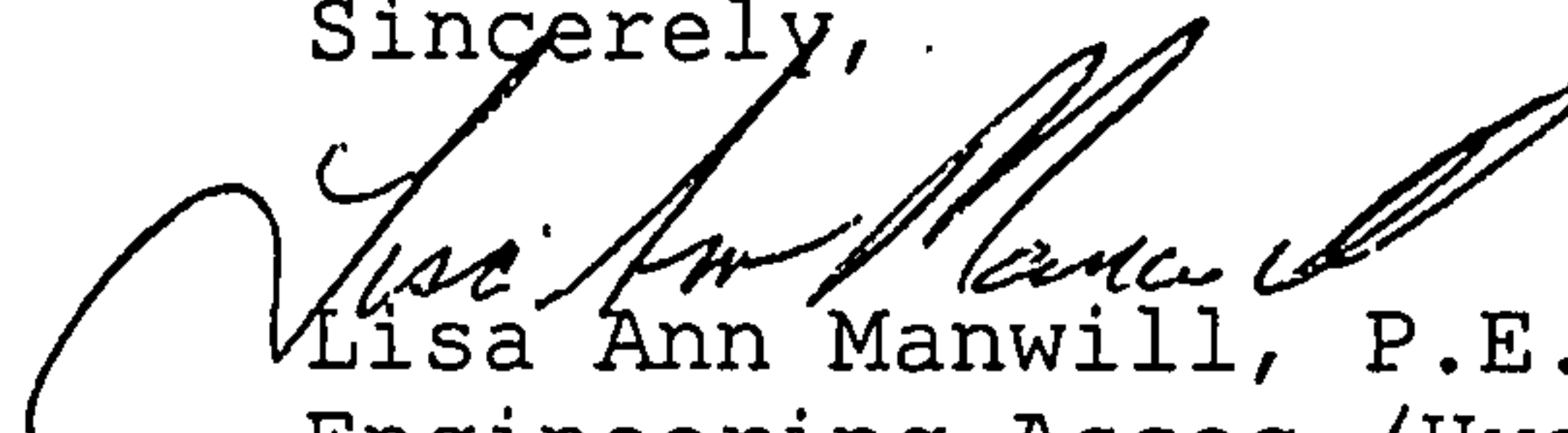
Dear Mr. Stidworthy:

Based on the information provided on your June 25, 1997 submittal, the above referenced project is approved for Building Permit. Any construction performed in the City right-of-way will require a Work Order Permit.

Prior to Certificate of Occupancy, an Engineer's Certification will be required.

If I can be of further assistance, please feel free to contact me at 768-3622.

Sincerely,


Lisa Ann Manwill, P.E.
Engineering Assoc./Hyd...

c: Andrew Garcia
File

Good for You, Albuquerque!

P.O. Box 1293, Albuquerque, New Mexico 87103



**DRAINAGE REPORT FOR
SUN HEALTHCARE
PHASE 4**

MAY 4, 1998

Prepared for:

**Sun Healthcare Group Inc.
c/o Fanning-Bard Tatum Architects
6100 Indian School Road NE
Suite 201
Albuquerque, NM 87110**

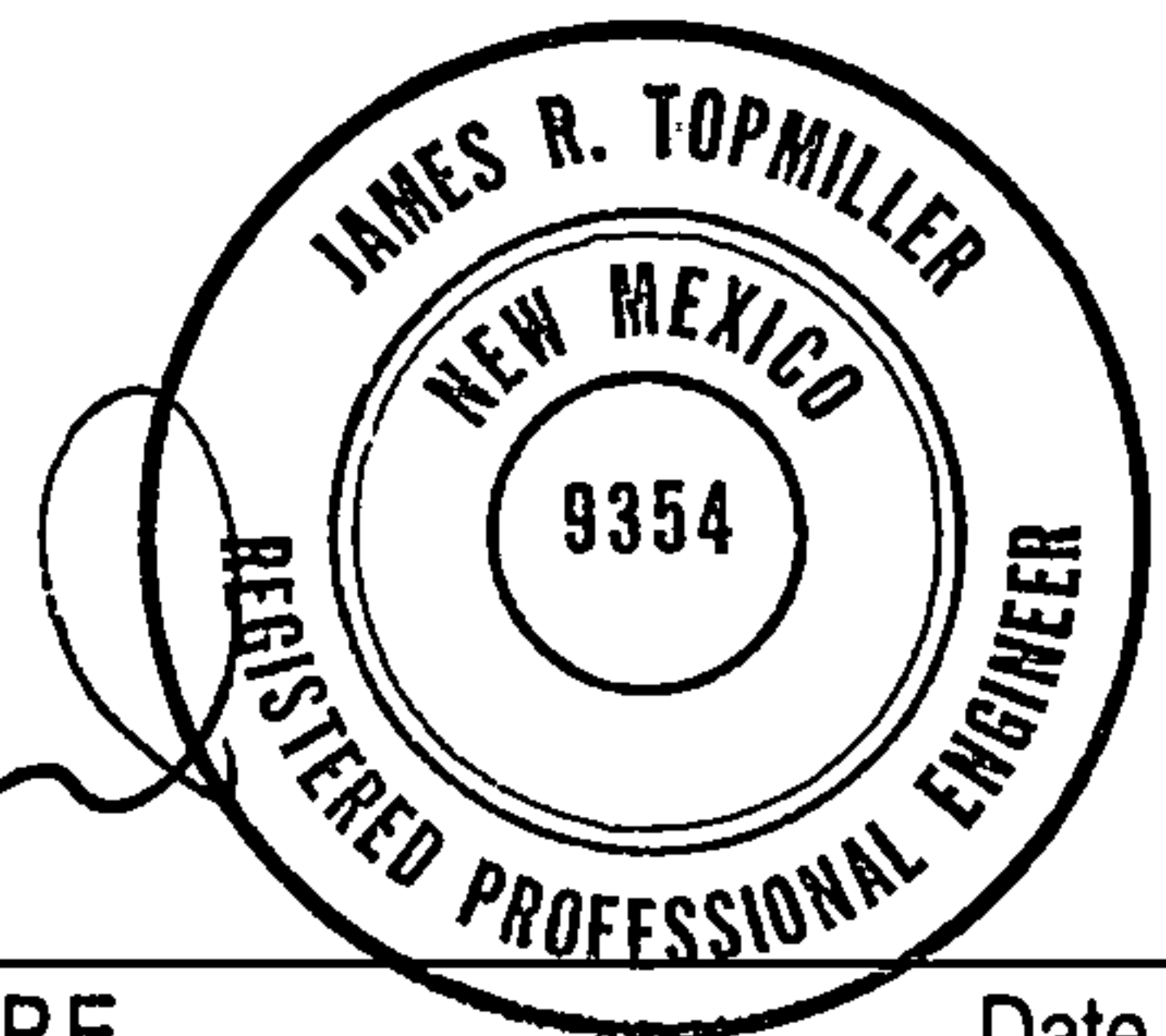
Prepared by:

**Bohannon Huston
7500 Jefferson NE
Courtyard I
Albuquerque, NM 87109**

PREPARED BY:

Bruce Stidworthy 5/4/98
Bruce Stidworthy, E.I. Date

James R. Topmiller
James R. Topmiller, P.E.
5/4/98



I. INTRODUCTION

The purpose of this report is to provide a Drainage Management Plan for the proposed development of a new office building and parking structure, called Phase 4, on Tract 3A-1A-2 and Tract 4AA-3B, Journal Center Business Park. This building and parking structure comprise the fourth phase of the Sun Healthcare Group Corporate Office Complex in Journal Center Business Park. The first phase was a development on Tract 4AA-3A-2B immediately south of the proposed Phase 4 parking structure. The second phase consisted of development of two buildings on Tract 3A-1A-1. The first and second phases are now complete and occupied. The third phase is under construction and consists of an office building and a parking structure on the north side of Tract 3A-1A-2.

II. PURPOSE

This report and the final grading plan for Phase 4 are submitted for Hydrology Division review for the purpose of obtaining rough grading and building permit approval for Phase 4. No variances are requested with this submittal.

III. METHODOLOGIES AND REFERENCES

This report is prepared in accordance with DPM criteria , specifically the procedure outlined in DPM Section 22.2.A was used. No AHYMO analysis was done for this site.

IV. SUMMARY OF RELATED PLATTING/SITE DEVELOPMENT PLAN ACTIONS

Tracts 3A-1A-1 and 3A-1A-2 (see the plat, enclosed in the Exhibit section of this report) were previously created under a Site Plan for Subdivision and Bulk Land Plat request to the Development Review Board. Following that subdivision, Sun Lane was constructed within the 60' private access easement and the two buildings comprising Phase II were constructed, along with the associated parking areas and landscaping. A storm drain line was extended across the Phase

II parking area, and the outflow line from Tract 3A-1A-1 was constructed. Sun Lane has since been dedicated to the City and renamed Sun Avenue.

There is currently no action for this site before the EPC, DRB or DRC. Furthermore, no future action nor building phases are planned.

V. SITE LOCATION AND CHARACTERISTICS

This site is located on the I-25 West Frontage Road, between San Francisco NE and Masthead NE. The North Pino Arroyo bisects the site.

VI. EXISTING CONDITIONS

Please see the Existing Conditions Basin Map in the Exhibits section of this report.

An existing Master Plan for Tracts 3A-1A, 3A-1B and 3A-1C, Journal Center Business Park, has been reviewed and approved by City Hydrology Division and is located in Drainage File D17/D3B-1. All development on these tracts is to be governed by that Master Plan. The drainage report for Phase III, entitled Sun Healthcare Phase 3 Drainage Report is located in Drainage File D17/D3Y.

The existing drainage basins for Phase 4 are labeled A1, A2, A3, A4, A5 and A6 on the proposed conditions basin map of the Phase III Drainage Report (included as Plate 2 in the Exhibits section of this report).

VII. PROPOSED CONDITIONS

The proposed development consists of one new 6-story office building, a 3-level parking structure, driveways and surface parking areas as shown on the plan. Please reference the enclosed Grading/Drainage Plan (rear pocket) and the Drainage Basins Map.

In accordance with the Drainage Master Plan described in the Existing Conditions section above, the site will collect flows and discharge them in a westerly direction to existing drainage facilities. Proposed basins A1, A3, A4, A5, A6 and A7 (total of Q_{100} of 20.9 cfs) are collected by onsite drainage facilities, and discharge to an existing 24" storm drain installed with Phase II (see keyed Note 4 on the enclosed grading plan). Per the approved Phase III Drainage Report, the 24" storm drain has a capacity of 32 cfs. Basin A2 will discharge 1.76 cfs directly to Sun Avenue as street flow. This street flow is restricted to a maximum of 10.6 cfs by the Drainage Master Plan. With the 1.76 cfs discharged from developed Phase 4, the total street flow in Sun Avenue is 8.46 cfs (less than the maximum 10.6 cfs allowed). Basin C, on the south side of the existing arroyo, will discharge 4.97 cfs to the North Pino Arroyo (concrete channel) via a new 12" storm drain.

Flows from the developed Phase 4 area of the site are collected by swales, storm drains and roof drainage (see plan). The capacity of the proposed drainage facilities is analyzed in Appendix 2 of this report. This area is broken down into Basins A1 through A6 and Basin C. The Proposed Conditions Basin Map at the rear of this report shows those basins, as well as the flow at various "analysis points" throughout the drainage basins

VIII. CONCLUSION

This report has given a comprehensive drainage management plan for the proposed development that complies with previously approved master plans. It is recommended that with this submittal rough grading and building permit approvals be granted.

Pipe flow Capacity Table (non-pressure, full pipe)

Pipe Reach	Slope	Pipe Size	Mannings n	Capacity	Phase 4 Peak Flow
AP1 to AP2	1.01%	12	0.013	3.59	1.88
AP2 to AP3	1.75%	12	0.013	4.73	4.16
AP3 to AP4	1.67%	18	0.013	13.61	4.16
AP5 to AP6	2.00%	12	0.013	5.05	4.97
SD Pipe under S. dr. at the pk strt.	1.00%	8	0.013	1.21	0.89
SD pipe under N. dr. at the pk strt.	1.54%	12	0.013	4.43	4.05
Roof Drain Collector line**	5.00%	8	0.013	2.71	<u>4.05</u>

** this line runs from the roof drain just north of the main entrance on the west side of the building,

to the existing drain line from the Phase 3 Parking structure

97364\cdp\hyd\pipe flow.xls

*Pipe flow capacity calcs
are based on Manning's eqn.*

Analysis Points (AP#)
Sun Healthcare Phase 4



AP #	Total Q	Description
1	1.88	Total surface flow entering inlet
2	2.28	Total surface flow entering inlet
3	4.16	Flow passing through the manhole
4	20.9	Total flow out of new manhole
5	0.92	Flow from surface into inlet
6	4.97	Total flow from Basin C entering channel

97364\cdp\hyd\Analysis Point.xls

Inlet Capacity Table for Sun Healthcare Phase 4

Note inlet capacity is calculated based on orifice flow

Inlet Location	Min. Req'd	Available	Inlet	Phase 4
	Open Area (ft^2)	Head (ft)	Capacity	Peak Q, cfs
At AP 1	1.0	1.0	4.81	1.88
At AP 2	1.0	1.0	4.81	2.28
At AP 5	1.0	0.5	3.40	0.92

97363\cdp\hyd\Inlet Capacity.xls

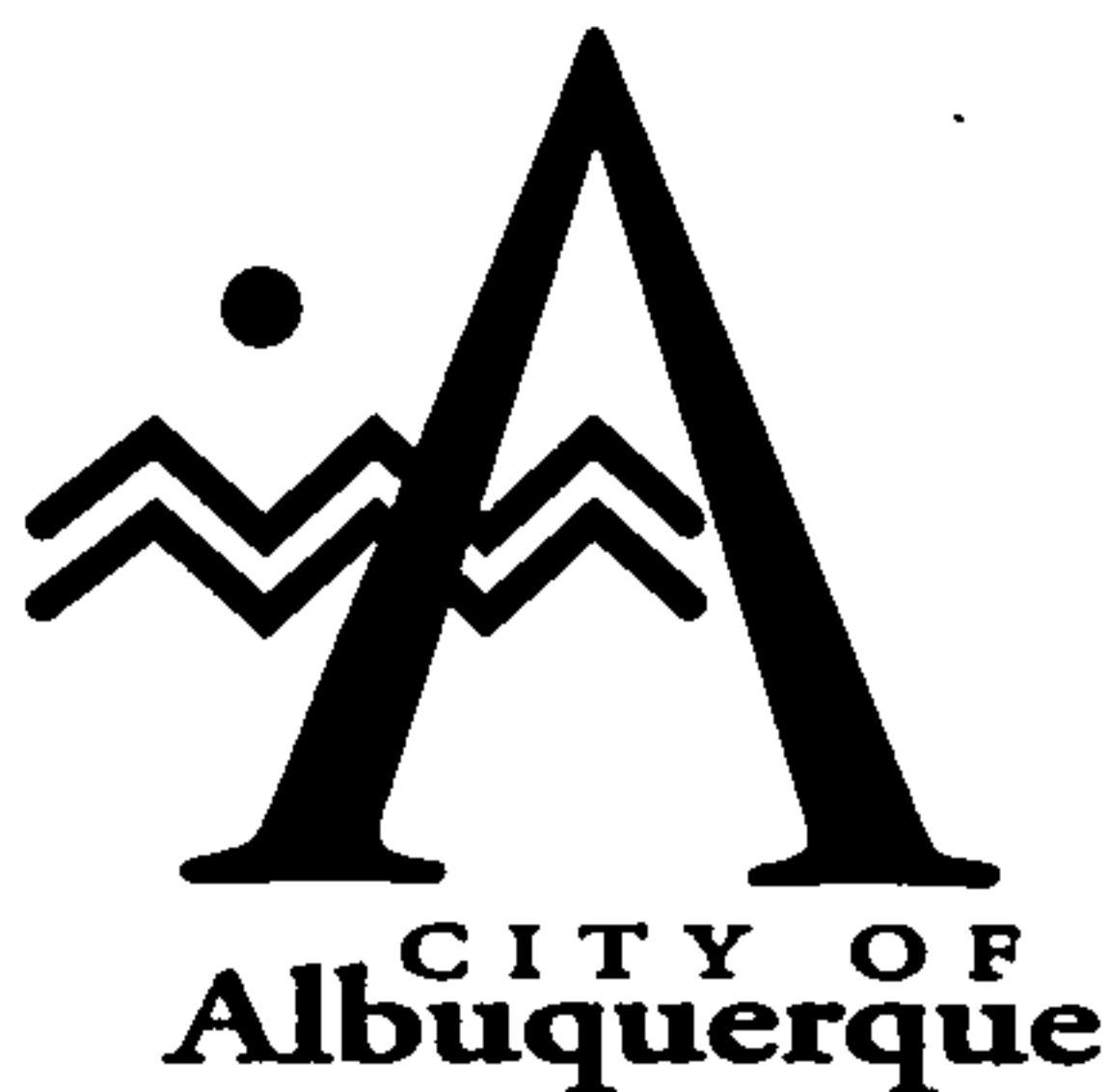
Sun HealthCare Phase 4, Office Building and Parking Structure

Proposed Conditions Basin Data Table

This table is based on the DPM Section 22.2, Zone 2 Rainfall

BASIN	Area (SQ. FT)	Area (AC.)	Land Treatment Percentages				Q(100)	Q(100)	Q(10)	Q(10)
			A	B	C	D	(cfs/ac.)	(CFS)	(cfs/ac.)	(CFS)
A1		1.33	0.0%	49.0%	25.0%	26.0%	3.12	4.16	1.71	2.27
A2		0.42	0.0%	21.0%	0.0%	79.0%	4.19	1.76	2.68	1.13
A3		1.01	0.0%	45.0%	23.0%	32.0%	3.25	3.28	1.83	1.84
A4		0.77	0.0%	0.0%	0.0%	100.0%	4.70	3.62	3.14	2.42
A5		0.30	0.0%	21.0%	0.0%	79.0%	4.19	1.26	2.68	0.80
A6		1.78	0.0%	12.0%	0.0%	88.0%	4.41	7.85	2.88	5.12
A7		0.16	0.0%	0.0%	0.0%	100.0%	4.70	0.75	3.14	0.50
C		1.34	0.0%	28.0%	20.0%	52.0%	3.71	4.97	2.24	3.00

97364\CDPA04\HYD\BASINS.XLS



December 9, 1996

Martin J. Chávez, Mayor

Pierce Runnels
Bohannon-Huston, Inc
7500 Jefferson NE
Albuquerque, NM 87109

**RE: SUN HEALTH CARE PHASE IIIB (D17-D3Y). DRAINAGE REPORT FOR
BUILDING PERMIT APPROVAL. ENGINEER'S STAMP DATED 12-2-96.**

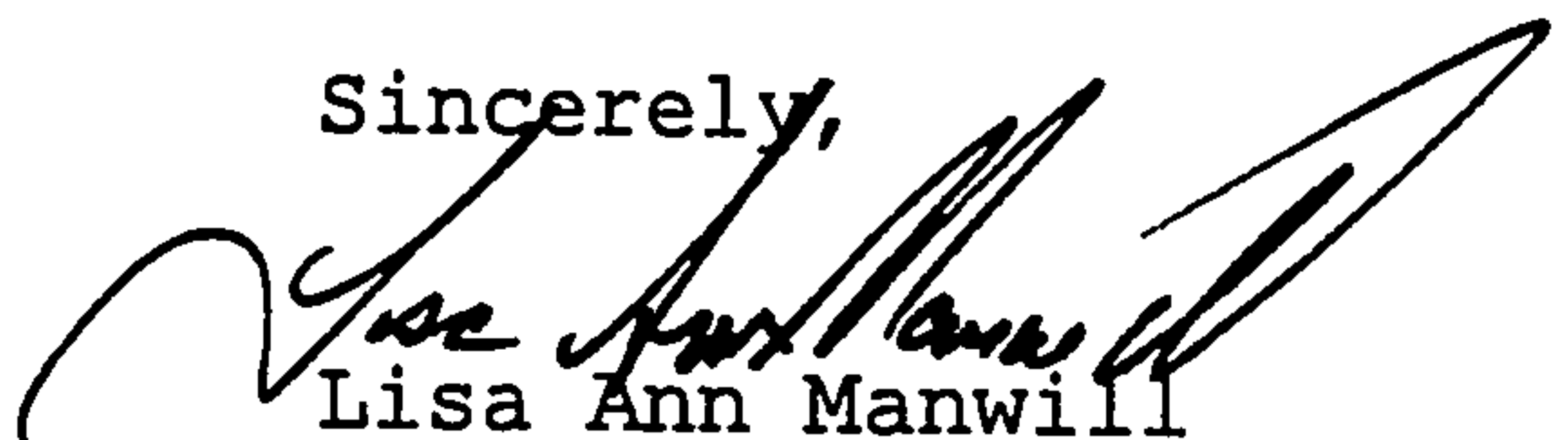
Dear Mr. Runnels:

Based on the information provided on your December 3, 1996
submittal, the above referenced project is approved for Building
Permit. Any construction performed in the City right-of-way will
require a Work Order Permit.

Prior to Certificate of Occupancy, an Engineer's Certification will
be required.

If I can be of further assistance, please feel free to contact me at
768-3622.

Sincerely,



Lisa Ann Manwill
Engineering Assoc./Hyd.

c: Andrew Garcia
File

Good for You, Albuquerque!



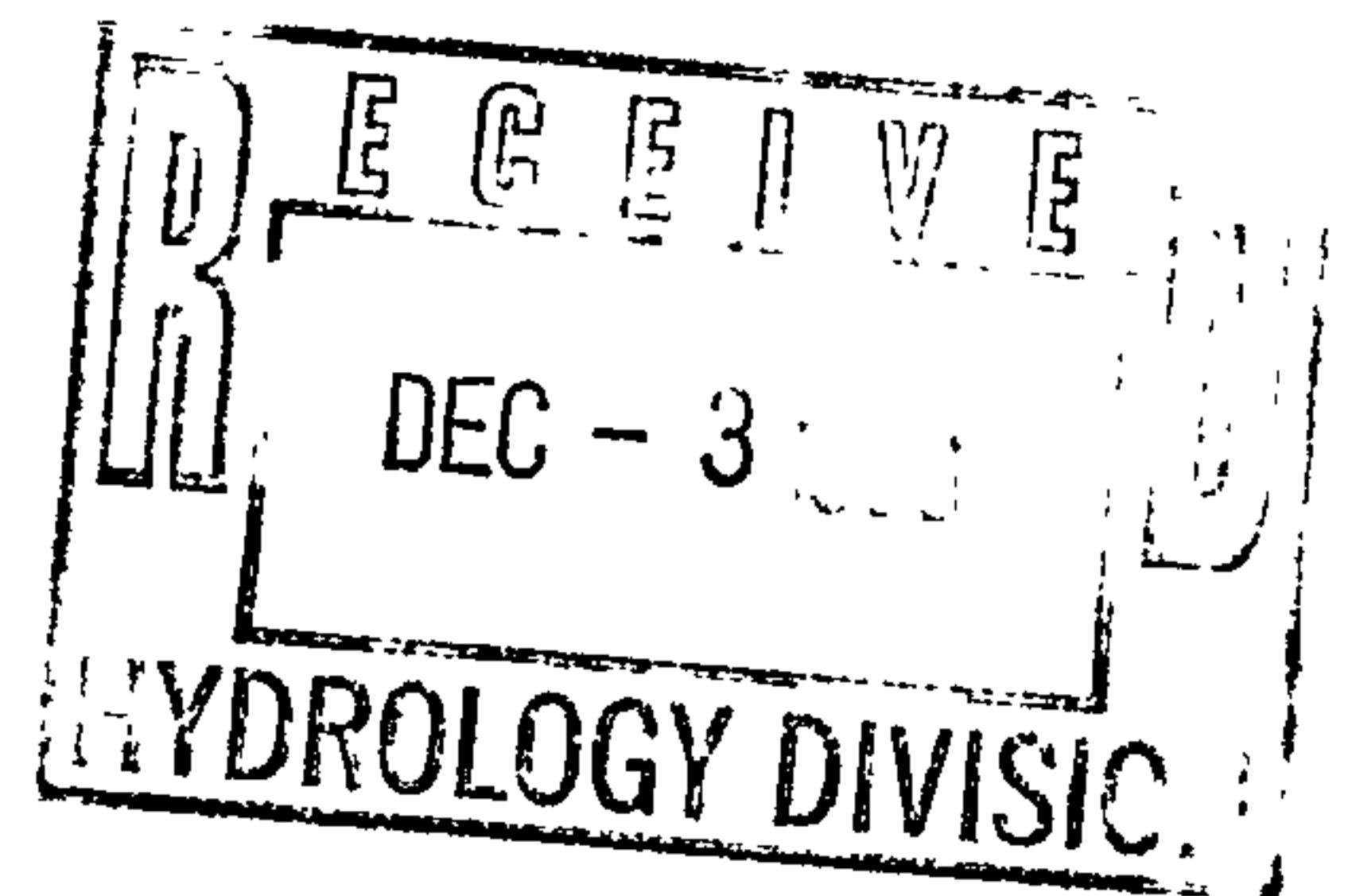
SUN HEALTHCARE PHASE IIIB DRAINAGE REPORT

Prepared for:

Sun Healthcare Group Inc.
C/O Fanning-Bard-Tatum Architects
6100 Indian School Road, NE Suite 210
Albuquerque, NM 87110

Prepared by

Bohannon-Huston Inc.
Courtyard I
7500 Jefferson Street NE
Albuquerque, NM 87109-4355



Prepared by:

Bruce Stidworthy 12/3/96
Bruce Stidworthy, E.I. Date

Under the Supervision of

James R. Topmiller 12/3/96
James R. Topmiller, P.E. Date



1. PURPOSE

The purpose of this report is to provide a Drainage Management Plan for the proposed development of a new building and parking, called Phase IIIB, on Tract 3A-1A, Journal Center Business Park. This building comprises part of the third phase of the Sun Healthcare Group Corporate Office Complex in Journal Center Business Park. A future larger building will be labeled as Phase IIIA. The first phase was development on Tract 4AA-3A-2 immediately south of this plan and across the AMAFCA Pino Arroyo Channel. The second phase consisted of development of two buildings on the western portion of Tract 3A-1A. The first and second phases are now complete and occupied.

This report and the Final Grading Plan are submitted for Hydrology Division review for the purpose of obtaining rough grading approval, foundation approval and building permit approval.

2. EXISTING CONDITIONS

Please see the Existing Conditions Photographs in Appendix 1, and the Existing Conditions Basin Map in the Plates section of this report.

Tract 3A-1A was created under a Site Plan for Subdivision and Bulk Land Plat request to the Development Review Board. Following that subdivision, Sun Lane was constructed within the 60' private access easement and the two buildings comprising Phase II were constructed, along with the associated parking areas and landscaping. A storm drain line was extended across the Phase II parking area, and the outflow line from Tract 3A-1A-1 to the temporary asphalt drainage channel on Tract 3A-1C-1 was constructed. Runoff from Sun Lane reaches the asphalt channel through a rundown at the intersection near the west entrance to Tract 3A-1A-1. Sun Lane was recently dedicated to the City and renamed Sun Avenue.

An existing Master Plan for Tracts 3A-1A, 3A-1B and 3A-1C, Journal Center Business Park, has been reviewed and approved by City Hydrology Division and is

located within their files (D17/D3B-1). All development on these tracts is to be governed by that Master Plan. The drainage report for Phase II, entitled Sun Healthcare Ph. 2 Office Building and Training Facility Final Grading/Drainage Plan is in Drainage File (D17/D3Y).

The existing drainage basins are designated Basins B, B-1 and A. Basins B and B-1 are areas which were developed as a part of Phase II. Basin A is currently undeveloped and generates a runoff of 6.6 cfs, which enters the 24" storm drain via an existing inlet. Existing Basins A and B-1 comprise the total area of proposed Basins A1, A2, A3, A4, A5 and A6.

3. PROPOSED CONDITIONS

The proposed development consists of one new office building, surface parking areas, drives and outdoor use (plaza) areas as shown on the plan. Please reference the enclosed Grading/Drainage Plan (rear pocket) and the Drainage Basins Map.

In accordance with the Drainage Master Plan described in the Existing Conditions section above, the site will collect flows and discharge them in a southwesterly direction to existing drainage facilities (primarily a 42" RCP storm drain) located at the western-most corner of the site. Phase IIIB flows (Basins A1 through A6) totaling 18.5 cfs will be conveyed to the 42" RCP via an existing 24" storm drain installed with Phase II. The 24" storm drain has a capacity of 32 cfs. Phase IIIB will also discharge approximately 3.2 cfs directly to Sun Avenue as street flow. This street flow is restricted to a maximum of 10.6 cfs by the Drainage Master Plan. With the 3.2 cfs discharged from developed Phase IIIB, the total street flow in Sun Avenue is 9.9 cfs.

Flows from the developed Phase IIIB area of the site are collected by swales, storm drains and paved parking areas (see plan). This area is broken down into Basins A1 through A5. The Proposed Conditions Basin Map at the rear of this report shows those basins, as well as the flow at various "analysis points" throughout the drainage basins.

4. CONCLUSION

This report has given a comprehensive drainage management plan for the proposed development that complies with previously approved master plans. It is recommended that with this submittal, the following approvals be granted:

1. Rough Grading
2. Foundation Permit
3. Building Permit

Put one!

Inlet Capacity Summary Table *Sun Healthcare Phase IIIB*

Inlet Location	Min. Req'd Open Area	Available Head (ft)	Capacity (cfs)	Phase IIIB Peak Q
@ AP 1	2sf	0.5	5.3	1.80
@ AP 2	2sf	0.5	5.3	2.10
@ AP 4	3.9	0.5	8.2	6.80
@ AP 7	Exist inlet*	0.6	10.5	7.50
@ AP 8	1sf	0.5	3.4	0.40

* This inlet is an existing type 'D' inlet
flows from three sides - all other inlets can accept
flows from all four sides

Min. Req'd Open Area (for orifice calc in sq. ft.): 2.00
 Assumed Length of Weir (feet): 5.60
 Weir Coefficient: 2.68
 Weir and open area numbers assume half of a type 'D' inlet -
 Contractor is required to submit drawings of inlet for
 approval by engineer.

Head (ft)	Head (in)	Weir Q (cfs)	Orifice Q (cfs)	Control Q (cfs)
0.05	0.6	0.17	2.15	0.17
0.1	1.2	0.47	3.05	0.47
0.15	1.8	0.87	3.73	0.87
0.2	2.4	1.34	4.31	1.34
0.25	3	1.88	4.81	1.88
0.3	3.6	2.47	5.27	2.47
0.35	4.2	3.11	5.70	3.11
0.4	4.8	3.80	6.09	3.80
0.45	5.4	4.53	6.46	4.53
0.5	6	5.31	6.81	<u>5.31</u>
0.55	6.6	6.12	7.14	6.12
0.6	7.2	6.98	7.46	6.98
0.65	7.8	7.86	7.76	7.76
0.7	8.4	8.79	8.06	8.06
0.75	9	9.75	8.34	8.34
0.8	9.6	10.74	8.61	8.61
0.85	10.2	11.76	8.88	8.88
0.9	10.8	12.81	9.14	9.14
0.95	11.4	13.90	9.39	9.39
1	12	15.01	9.63	9.63
1.05	12.6	16.15	9.87	9.87
1.1	13.2	17.31	10.10	10.10
1.15	13.8	18.51	10.33	10.33
1.2	14.4	19.73	10.55	10.55
4	48	120.06	19.26	19.26
5	60	167.80	21.53	21.53

Min. Req'd Open Area (for orifice calc in sq. ft.): 1.00

Assumed Length of Weir (feet): 4.20

Weir Coefficient: 2.68

Weir and open area numbers assume one-fourth of a type 'D' inlet -
Contractor is required to submit drawings of inlet for
approval by engineer.

Head (ft)	Head (in)	Weir Q (cfs)	Orifice Q (cfs)	Control Q (cfs)
0.05	0.6	0.13	1.08	0.13
0.1	1.2	0.36	1.52	0.36
0.15	1.8	0.65	1.86	0.65
0.2	2.4	1.01	2.15	1.01
0.25	3	1.41	2.41	1.41
0.3	3.6	1.85	2.64	1.85
0.35	4.2	2.33	2.85	2.33
0.4	4.8	2.85	3.05	2.85
0.45	5.4	3.40	3.23	3.23
0.5	6	3.98	3.40	<u>3.40</u>
0.55	6.6	4.59	3.57	3.57
0.6	7.2	5.23	3.73	3.73
0.65	7.8	5.90	3.88	3.88
0.7	8.4	6.59	4.03	4.03
0.75	9	7.31	4.17	4.17
0.8	9.6	8.05	4.31	4.31
0.85	10.2	8.82	4.44	4.44
0.9	10.8	9.61	4.57	4.57
0.95	11.4	10.42	4.69	4.69
1	12	11.25	4.81	4.81
1.05	12.6	12.10	4.93	4.93
1.1	13.2	12.98	5.05	5.05
1.15	13.8	13.87	5.16	5.16
1.2	14.4	14.79	5.27	5.27
4	48	90.00	9.63	9.63
5	60	125.78	10.77	10.77



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

December 28, 1995

**James Topmiller, P.E.
Bohannon Huston, Inc.
7500 Jefferson NE
Albuquerque, N.M. 87109**

**RE: ENGINEER'S CERTIFICATION FOR SUN HEALTH CARE 2 (D-17/D3B1)
RECEIVED DECEMBER 14, 1995 FOR CERTIFICATE OF OCCUPANCY
ENGINEER'S STAMP DATED 12/13/95**

Dear Mr. Topmiller:

Based on the information included in the submittal referenced above, City Hydrology accepts the Engineer's Certification for Certificate of Occupancy. Contact Vicki Chavez at Code Administration to obtain the Certificate of Occupancy for 5120 Sun Lane NE.

If I can be of further assistance, You may contact me at 768-2727.

Sincerely,

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

c: Andrew Garcia



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

April 28, 1995

**James Topmiller, P.E.
Bohannon Huston, Inc.
7500 Jefferson NE
Albuquerque, N.M. 87109**

**RE: GRADING & DRAINAGE PLAN FOR SUN HEALTH CARE 2 (D-17/D3B1)
RECEIVED APRIL 24, 1995 FOR BUILDING PERMIT
ENGINEER'S STAMP DATED 3-7-95**

Dear Mr. Topmiller:

Based on the information included in the submittal referenced above, City Hydrology accepts the Grading & Drainage Plan for Building Permit.

Include a copy of the Grading & Drainage Plan, dated 3-7-95, in each set of construction documents that will be submitted to Code Administration for the Building Permit.

Engineer's Certification of grading & drainage per DPM checklist must be accepted by City Hydrology before any Certificate of Occupancy is released.

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

Sincerely,

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

**c: Andrew Garcia
Kurt Browning, AMAFCA**

Parcel C21-126
ZAP D17
PC date _____

ENCROACHMENT PERMIT AGREEMENT
IMPROVEMENTS WITHIN CHANNEL R/W
JOURNAL CENTER

WHEREAS, the ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY (AMAFCA) possesses a drainage channel right of way within the Journal Center as the same right of way was dedicated to AMAFCA by the Replat of the Journal Center as the same has been filed for public record in Bernalillo County, New Mexico on the 30th day of June, 1983 in Volume C21 Folio 126 under Document Number 83043105; and,

WHEREAS, prior to said dedication, the owner of said Journal Center constructed a concrete lined channel for the purpose of controlling storm water from both offsite areas east of Interstate 25 and for the control of storm water from lots within said Center; and,

WHEREAS, Sun Health Care (OWNER), owns Tracts 3A-2A and Tract 4A-1 that are located on either side of said channel, and desires to construct a pedestrian bridge (IMPROVEMENTS) across said Channel at station number 51+91; and,

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged:

AMAFCA hereby grants to the OWNER, its successors and assigns, a permit to encroach upon the AMAFCA right of way and to construct, operate and maintain the IMPROVEMENTS shown on attached Exhibit "A", subject to the following terms and conditions:

1. OWNER shall obtain AMAFCA's written approval for the following:
 - a. All pertinent plans for installation and any subsequent changes of the IMPROVEMENTS, must be approved by AMAFCA prior to construction; and
 - b. The commencement date of work within the AMAFCA right of way; and
 - c. Future repair, modification, removal, or other activities affecting the completed IMPROVEMENTS.
2. OWNER shall provide AMAFCA with one set of "As Built" plans within thirty (30) days of completion of work on AMAFCA property.

3. AMAFCA shall have the authority to cause the installation of any of the IMPROVEMENTS to be stopped and/or removed from the right of way area if the construction does not comply with approved plans or if the IMPROVEMENTS are not maintained and the present flowline, capacity, or permeability of the present flood way has been altered or changed in such manner that prohibits or changes the continued free and unrestricted flow of storm water with related debris.
4. All construction, operation, maintenance, repair, relocation and removal of the IMPROVEMENTS shall be accomplished at OWNER's sole expense and in such a manner as shown on the plans approved by AMAFCA. The OWNER will be responsible for obtaining all additional municipal permits as may be required.
5. OWNER shall save and hold harmless AMAFCA from all claims and judgments for damages and injury to property and persons directly arising from the construction, operation, maintenance, relocation, and removal of the IMPROVEMENTS and related equipment, shall defend against any such claims, and shall reimburse AMAFCA all reasonable costs and expenses incurred by AMAFCA by the installation, operation or maintenance or removal of the facilities, should such activities be required to prevent damage to AMAFCA or others. Determination whether damage has occurred shall be by AMAFCA, which determination shall be reasonable.
6. The OWNER shall maintain the IMPROVEMENTS as shown on the approved plans in good operating order and shall immediately repair any damages as may occur. In the event that any of the IMPROVEMENTS become ineffective or endangers the flood control function of the channel, AMAFCA shall notify the OWNER thereof, and OWNER shall promptly commence to correct such condition and to restore the flood control function of the channel. In the event that OWNER fails to undertake or complete such repairs, AMAFCA shall be permitted to modify or remove the IMPROVEMENTS constructed on AMAFCA's right of way, provided that AMAFCA gives OWNER thirty (30) days written notice of such modification or removal.
7. OWNER shall provide AMAFCA proof of liability insurance in the amount of \$100,000/100,000. Said proof of insurance, which shall become part of this permit, must show AMAFCA as an additional named insured and be kept current by OWNER.
8. Should OWNER fail to properly and timely maintain or repair any IMPROVEMENTS, after timely notice from AMAFCA, AMAFCA reserves the right to terminate this permit and all rights and privileges herein granted. AMAFCA will provide the OWNER with thirty (30) days notice of such intent to terminate. Should AMAFCA need to terminate this permit for any other reason, AMAFCA will provide OWNER with at least six (6) months notice of such intent.
9. If any AMAFCA action defined in Paragraphs 6 or 8 is deemed unreasonable, the OWNER shall have the right to appeal to the AMAFCA Board of Directors.

10. Wheel loads of equipment operating in the Channel are limited to a maximum of 12,000 pounds per wheel.
11. This permit shall be in full force and effect for 30 years from the date of signature from AMAFCA, must be renewed upon expiration, and the burden of timely renewal shall be on the OWNER.
12. This Agreement shall be construed according to the laws of the State of New Mexico.

The provisions hereof shall inure to the benefit of and bind the heirs, executors, administrators, successors, and assigns of the parties hereto.

ALBUQUERQUE METROPOLITAN ARROYO
FLOOD CONTROL AUTHORITY

By: 
Larry A. Blair,
Executive Engineer

4/25/95
Date

LAND OWNER(S)

By: 
owner's Agent.

By: _____

ACKNOWLEDGMENT FOR PUBLIC AGENCY

STATE OF NEW MEXICO)
) SS.
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me this 24 day of April, 1995 by Larry A. Blair, Executive Engineer of the Albuquerque Metropolitan Arroyo Flood Control Authority, a political subdivision of the State of New Mexico.

My Commission Expires:

24 May 1996



Notary Public

ACKNOWLEDGMENT FOR NATURAL PERSONS

STATE OF NEW MEXICO)
) SS.
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me this 20 day of

April

, 1995

by (name)

Don Ashcraft

(title)

Owner/Agent

of (Company)

Sun Healthcare

a

(state of corporation))

New Mexico

on behalf of said corporation.

My Commission Expires:

12/6/97



Notary Public



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

February 17, 1995

James Topmiller, P.E.
Bohannon Huston, Inc.
7500 Jefferson NE
Albuquerque, N.M. 87109

RE: CON. GRADING & DRAINAGE PLAN FOR SUN HEALTH CARE 2 (D-17/D3B1)
RECEIVED FEBRUARY 2, 1995 FOR GRADING, FOUNDATION & BLDG PERMIT
ENGINEER'S STAMP DATED 1-29-95

Dear Mr. Topmiller:

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

The following comments must be addressed before Building Permit approval:

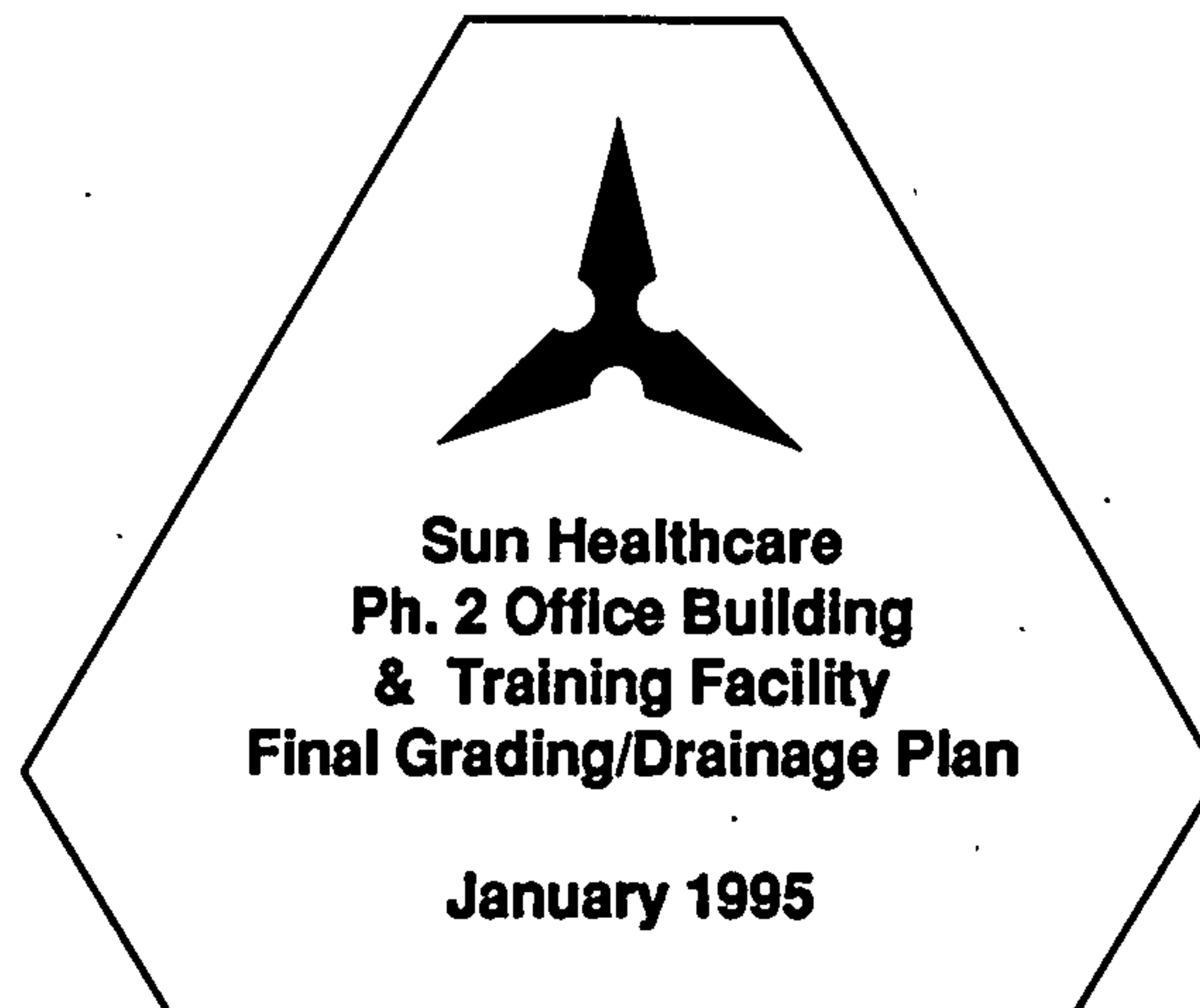
1. Indicate roof drain location on the Drainage Plan. This will determine the boundary between basin B & B-1.
2. Indicate height of curbs. Curb height is assumed to be 6". The 53.03 TC elevation across from inlet 1 appears to be lower than the 54.4 grate elevation. Work Order plans for Sun Lane do not include the west entrance to the site.
3. Obtain a License from AMAFCA before doing any work within the North Pino Arroyo right of way. Since the bridge is part of this project, AMAFCA must approve the bridge before City Hydrology can approve this project for Building Permit.

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

Sincerely,

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

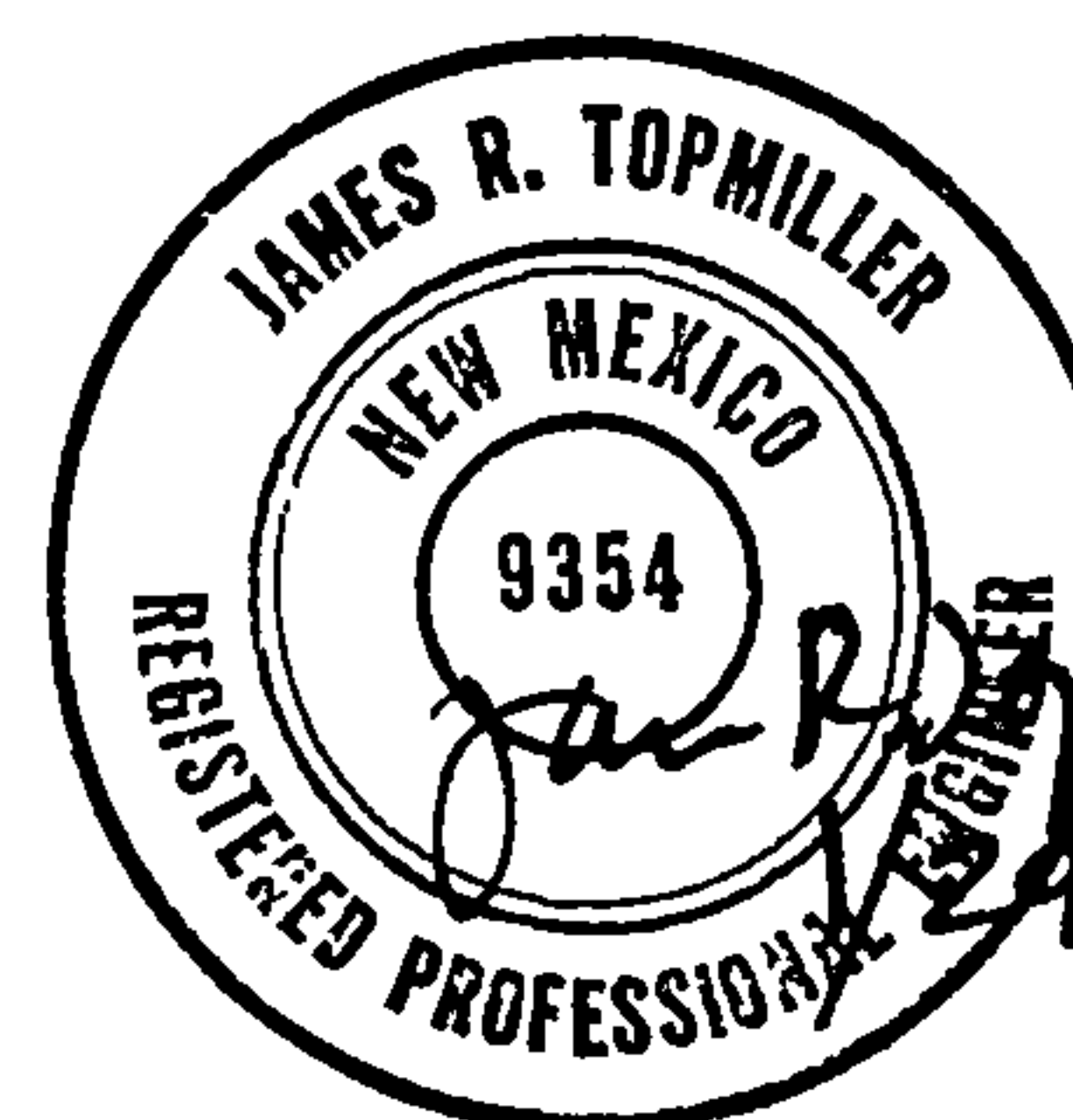
c: Andrew Garcia
Kurt Browning, AMAFCA



SUN HEALTHCARE PH. 2 OFFICE BUILDING & TRAINING FACILITY

Prepared for:

Sun Healthcare Group Inc.
C/O Fanning-Bard-Tatum Architects
6100 Indian School Road, NE Suite 210
Albuquerque, NM 87110



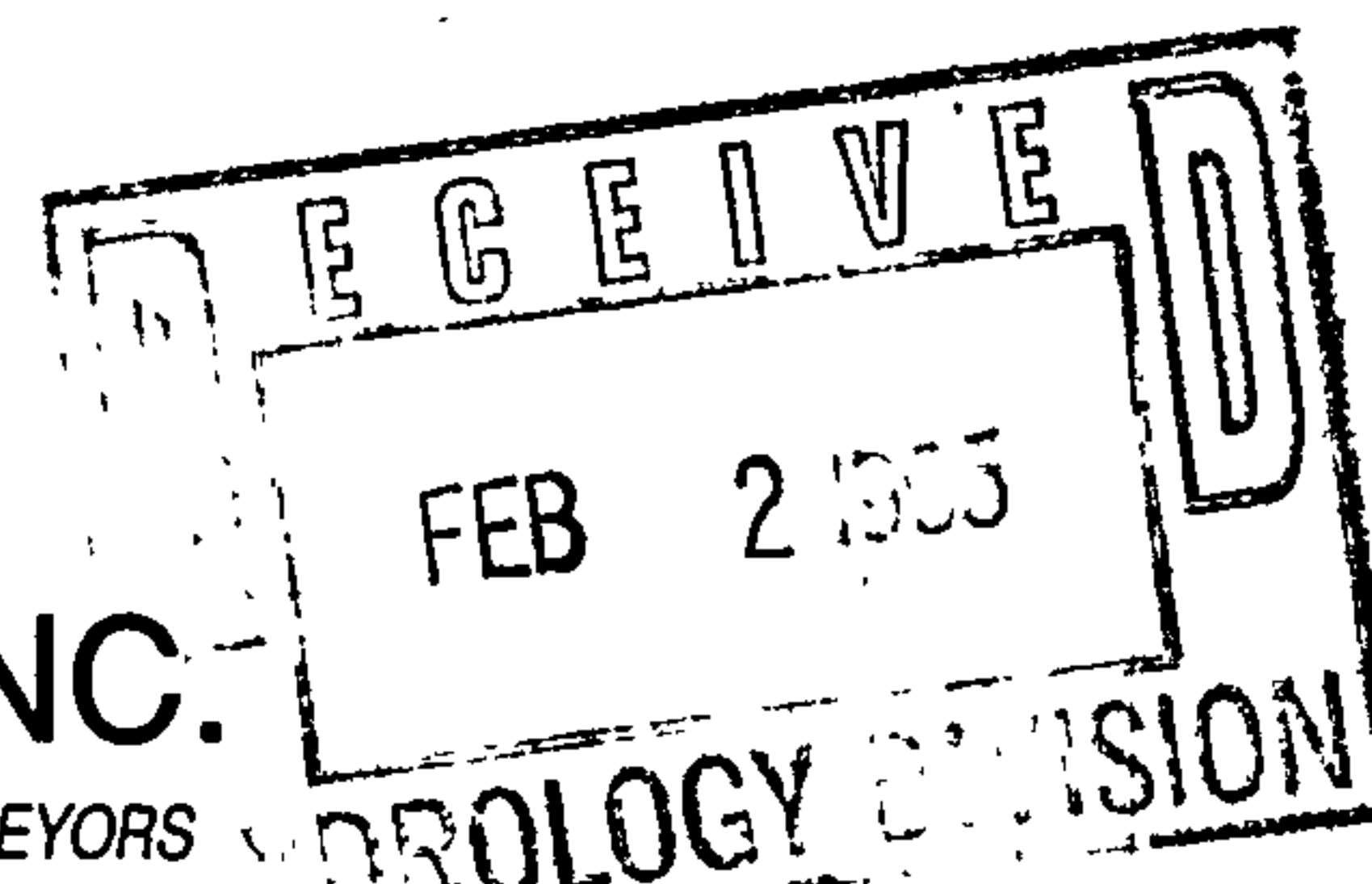
Job No. 94297.42

Prepared by:



BOHANNAN-HUSTON INC.

ENGINEERS ARCHITECTS PHOTOGRAMMETRISTS SURVEYORS



COURTYARD I, 2500 JEFFERSON NE ALBUQUERQUE, NM 87109 TEL (505) 823-1000 - FAX (505) 821-0892

FINAL DRAINAGE MANAGEMENT PLAN

TRACT 3A-1A, JOURNAL CENTER BUSINESS PARK

PURPOSE

The purpose of this report is to provide a Drainage Management Plan for the proposed development of two new buildings on Tract 3A-1A, Journal Center Business Park. These buildings comprise the second phase of the Sun Healthcare Group Corporate Office Complex in Journal Center Business Park. The first phase was development on Tract 4AA-3A-2 immediately south of this plan and across the AMAFCA Pino Arroyo Channel. The first phase is now complete and occupied.

This final plan is submitted for Hydrology Division review for the purpose of obtaining rough grading approval, foundation approval and building permit approval.

EXISTING CONDITIONS

Tract 3A-1A, an 8.8 acre site, was recently created under a Site Plan for Subdivision and Bulk Land Plat request to the Development Review Board. The tract is currently vacant land. Additionally, at the time of this plan submittal, the proposed Sun Lane has not yet been installed and is proposed to begin construction no earlier than March 1995.

An existing Master Plan for Tracts 3A-1A, 3A-1B and 3A-1C, Journal Center Business Park has been reviewed and approved by City Hydrology Division and is located within their files (D17/D3B-1). All future development, including that proposed by this submittal, would be governed by this plan.

From the Master Plan, and calculations enclosed, the existing condition flowrate from the site is 13.7 cfs (100-yr., 6-hr. storm event).

PROPOSED DEVELOPED CONDITIONS

Please reference the enclosed Grading/Drainage Plan (rear pockets) and the Drainage Basins Map (^{rear pockets}~~next page~~). The proposed development consists of two new buildings, parking areas and outdoor use (plaza) areas as shown on the plan. No replatting is now proposed for this site (this concept has changed since the original conceptual plan submittal). Not all of Tract 3A-1A is proposed for development at this time. The eastern most portion of the tract is proposed for later development under a Phase III development scenario that is still in the developmental stages. This land will remain vacant, but will be rough graded to provide fill dirt needed for the current Phase II Development.

In accordance with the Drainage Master Plan described in the Existing Conditions Section above, this development will collect flows and discharge them in a southwesterly direction to existing drainage facilities (a 42" RCP storm drain) located at the western most corner of the property. These existing facilities are not as yet constructed, but are proposed to be constructed with the Sun Lane roadway construction. Both the proposed roadway and this Phase II building development are proposed for essentially simultaneous construction.

Flows from the developed Phase II area of the site are collected by swales, storm drains and paved parking areas (see plan). This area is described as Basin B and generates 17 cfs. in the 100-yr., 6-hr. storm event. Discharge is to the proposed inlet on the southwest corner of the property (capacity = 21 cfs.). Basin B-1 (3 cfs.) drains to an inlet with a capacity of 11 cfs. Basin A is the undeveloped (future Phase III) basin of Tract 3A-1A. It generates 6.6 cfs. and discharges it to the inlet and sediment basin at the edge of the parking area. The capacity of the inlet is 11 cfs.

The proposed 24" storm drain collects only 9.6 cfs. under Phase II, but has a capacity of 32 cfs. This extra capacity is provided to allow for additional flows from the future Phase III development.

Certificates of Occupancy approval must show that both the roadway (Sun Lane) and downstream drainage improvements have been constructed. Both of these infrastructure systems are being constructed with public work order projects (see plan sheets in rear pockets of this report).

CONCLUSION

With this submittal, we request the following approvals:

1. Rough Grading
2. Foundation Permit
3. Building Permit

EXISTING CONDITIONS

Site generates....

Area = 8.8 acres, 1.56 cfs/ac. (from DPM)
land Treatment "A"

$$Q_{100} = 8.8 \text{ ac.} (1.56 \text{ cfs/ac.})$$
$$= 13.7 \text{ cfs}$$



BOHANNAN-HUSTON INC.

PROJECT NAME

SHC/ Ph. II

SHEET

1A

OF

PROJECT NO.

BY

Jan T

DATE

1/29/95

SUBJECT

CH'D

DATE

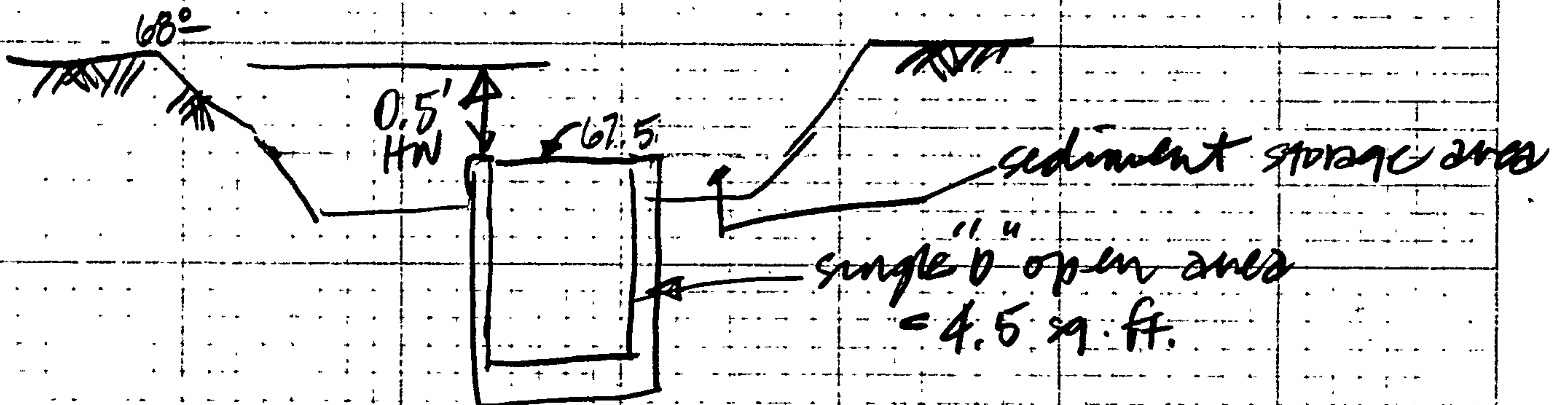
DEVELOPED CONDITIONS calculations

BASIN A ^{undeveloped area} drains to single "D" inlet @ sediment pond

A. $4.2 \text{ acres} (1.56 \text{ cfs}) = 6.6 \text{ cfs}$

$4.2 (.85(4.7) + .15(2.28)) = 18.2 \text{ cfs} - 10.6 = 7.6 \text{ cfs}$

B. check capacity of single "D" inlet.



by orifice equation, $Q = CA\sqrt{2gh}$

$Q = 0.6(4.5)\sqrt{2(32.2)0.5}$

$Q = 15.3 \text{ cfs}$

allow for 30%
clogging

$Q = \frac{15.3}{1.3} = 11.8 \text{ cfs} >> 6.6 \text{ cfs}$
OK



BOHANNAN-HUSTON INC.

PROJECT NAME

SHE / Phase II

SHEET

OF

PROJECT NO.

BY

Jamez T

DATE

1/29/95

SUBJECT

CH'D

DATE

BASIN B

developed
Phase II

- drains to
inlet @ south-
west corner

A. assume 85% impervious, land treatment "D"
" 15% Land treatment B (landscaped)
area = 4.0 ac.

$$Q_{100} = 4.0 (0.85) 4.7 + 4.0 (0.15) 2.28$$

cfs/ac cfs/ac

$$Q_{100} = 17 \text{ cfs}$$

B. check inlet capacity @ west/south
entrance road

$$\text{Open Area "D" } = 4.5 \text{ ft}^2$$

$$H_w = 0.8'$$

using orifice equation...

$$Q = CA \sqrt{2gh} = 0.6 (4.5) \sqrt{2 (64.4) 0.8}$$

$$Q = 27 \text{ cfs}$$

allow for 30% clogging

$$Q = \frac{27}{1.3} = 21 \text{ cfs} > 17 \text{ cfs} \quad \text{OK}$$

* spillway is road/entrance out to
Sun lane



BOHANNAN-HUSTON INC.

PROJECT NAME _____

SHEET

2

OF

PROJECT NO. _____

BY

Jones

DATE

1/29/95

SUBJECT _____

CH'D

DATE

BASIN B-1 (revised per City comment)

A. assume 0.85 land treatment "D"
" 0.15 " " "B"

Area = ~~0.6~~ acres 0.73 acres

$$Q_{100} = 0.85(\overset{0.73}{\cancel{0.6}})4.6 + 0.15(\overset{0.73}{\cancel{0.6}})2.28$$

$$Q_{100} = \cancel{2} \text{ cfs } 3.1 \text{ cfs}$$

B. capacity of single "D" inlet in
Basin B-1, allowable HW = 0.5'

(from Basin A analysis)

$$\text{capacity of inlet} = 11.8 \text{ cfs} > \overset{3.1}{\cancel{2}} \text{ cfs}, \text{ OK}$$

C. capacity of 24" pipe thru site.....

$$24" \text{ pipe @ } 2\% = 32 \text{ cfs} > \overset{9.7}{\cancel{9.6}} \text{ cfs}, \text{ OK}$$

(by Manning's flow)

$$\begin{aligned} \text{Total } Q &= 6.6 + \overset{3.1}{\cancel{3}} \\ &= \cancel{9.6} \text{ cfs} \\ &= 9.7 \text{ cfs}, \text{ OK} \end{aligned}$$

REG
APR 24 1995

HYDROLOGY DEPT.

BOHANNAN-HUSTON INC.

PROJECT NAME

SHC / Phase II

SHEET

3

OF

PROJECT NO.

BY

Jan T

DATE

1/29/95

SUBJECT

CH'D

DATE

4/19/95

BASIN B-1

A. assume 0.85 land treatment "D"
" 0.15 " " "B"

Area = 0.6 acres

$$Q_{100} = 0.85(0.6) \overset{4.7}{4.6} + 0.15(0.6)2.28$$

$$Q_{100} = \overset{2.6 \text{ cfs}}{3} \text{ cfs}$$

B. capacity of single "D" inlet in
Basin B-1, allowable HW = 0.5

(from Basin A analysis)

capacity of inlet = 11.8 cfs > 3 cfs, OK

C. capacity of 24" pipe thru site.....

24" pipe @ 2% = 32 cfs $\overset{21.2 \text{ cfs}}{\gg} 9.6 \text{ cfs}$, OK
(by Manning's flow)

$$\text{Total } Q = 6.6 + 3 = 9.6 \text{ cfs}$$

$$18.2 + 3 = 21.2 \text{ cfs}$$



BOHANNAN-HUSTON INC.

PROJECT NAME

SHC / Phas II

SHEET

3

OF

PROJECT NO.

BY

Jan T

DATE

1/29/95

SUBJECT

CH'D

DATE