



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 31, 1994

John M. MacKenzie, P.E.
D. Mark Goodwin & Assoc., PA
P.O. Box 90606
Albuquerque, N.M. 87199

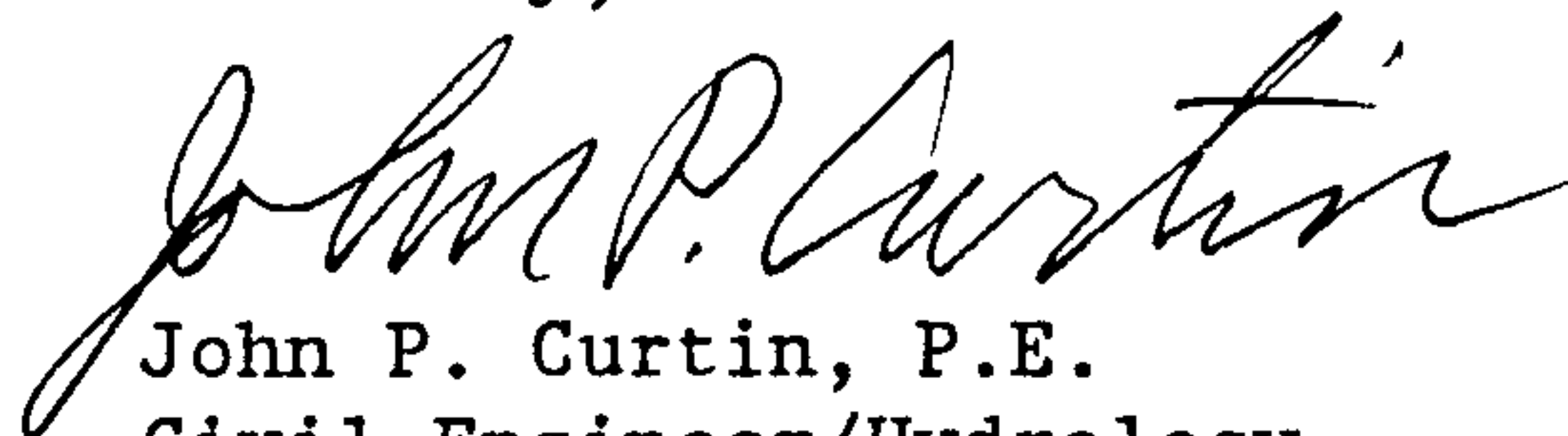
RE: ENGINEER'S CERTIFICATION FOR UNM BUSINESS PARK, TRACT 1 (N-157D6A)
RECEIVED JANUARY 31, 1994 FOR CERTIFICATE OF OCCUPANCY APPROVAL
STAMPED & DATED 1-27-94

Dear Mr. MacKenzie:

Based on the information included in the submittal referenced above, City Hydrology releases a Permanent Certificate of Occupancy for U.N.M. Press Warehouse on Spirit Drive SE.

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

Sincerely,


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

xc: INSPECTOR

WPHYD+3484;jpc

PUBLIC WORKS DEPARTMENT



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 20, 1994

John M. MacKenzie, P.E.
D. Mark Goodwin & Assoc., PA
P.O. Box 90606
Albuquerque, N.M. 87199

RE: ENGINEER'S CERTIFICATION FOR UNM BUSINESS PARK, TRACT 1 (N-157D6)2
RECEIVED JANUARY 12, 1994 FOR CERTIFICATE OF OCCUPANCY APPROVAL
STAMPED & DATED 1-10-94

Dear Mr. MacKenzie:

Based on the information included in the submittal referenced above, City Hydrology releases a Temporary Certificate of Occupancy.

The following comments must be addressed before a Permanent Certificate of Occupancy will be released:

1. The file for this project indicates that the approved Grading & Drainage Plan was dated 1-27-93 and that the Plan dated 9-24-93 was not reviewed. Therefore the as-built elevations need to be compared to the elevations shown on the Plan dated 1-27-93. The best way to do this is to put a line through the proposed elevations that have changed and indicate the as-built elevation next to the proposed. If the as-built elevation is exactly the same as the proposed it is sufficient to put a check mark by it.
2. The DPM checklist requires that the Engineer certify substantial compliance with the approved Plan not close compliance. If there have been changes, then the Engineer must explain why they were made.

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

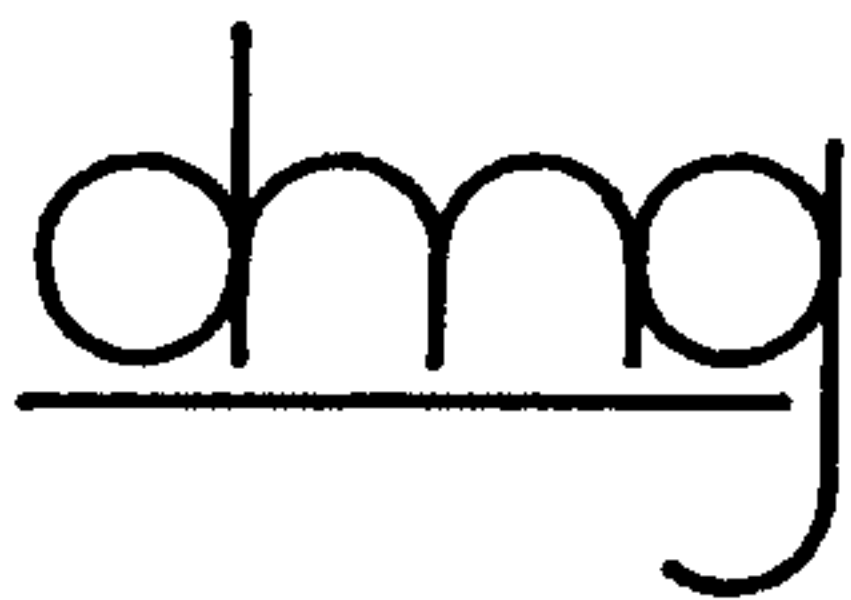
Sincerely,

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

xc: INSPECTOR

WPHYD+3484;jpc

PUBLIC WORKS DEPARTMENT



D. MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS & SURVEYORS

PROJECT UNM Press Bldg
SUBJECT Drainage
BY JMM DATE 1/7/94
CHECKED _____ DATE _____
SHEET 1 OF _____

Due to an error in the area calculations,
and a more accurate presentation of the
landscaping areas, the calculations have been revised.

$$P_{1440} = 2.75 \text{ in}$$

$$\text{Site Area} = 290' \times 230' = 1.53 \text{ Ac.}$$

$$P_{10 \text{ days}} = 10 - (24.9 / (2.75 \text{ in})^{14})$$

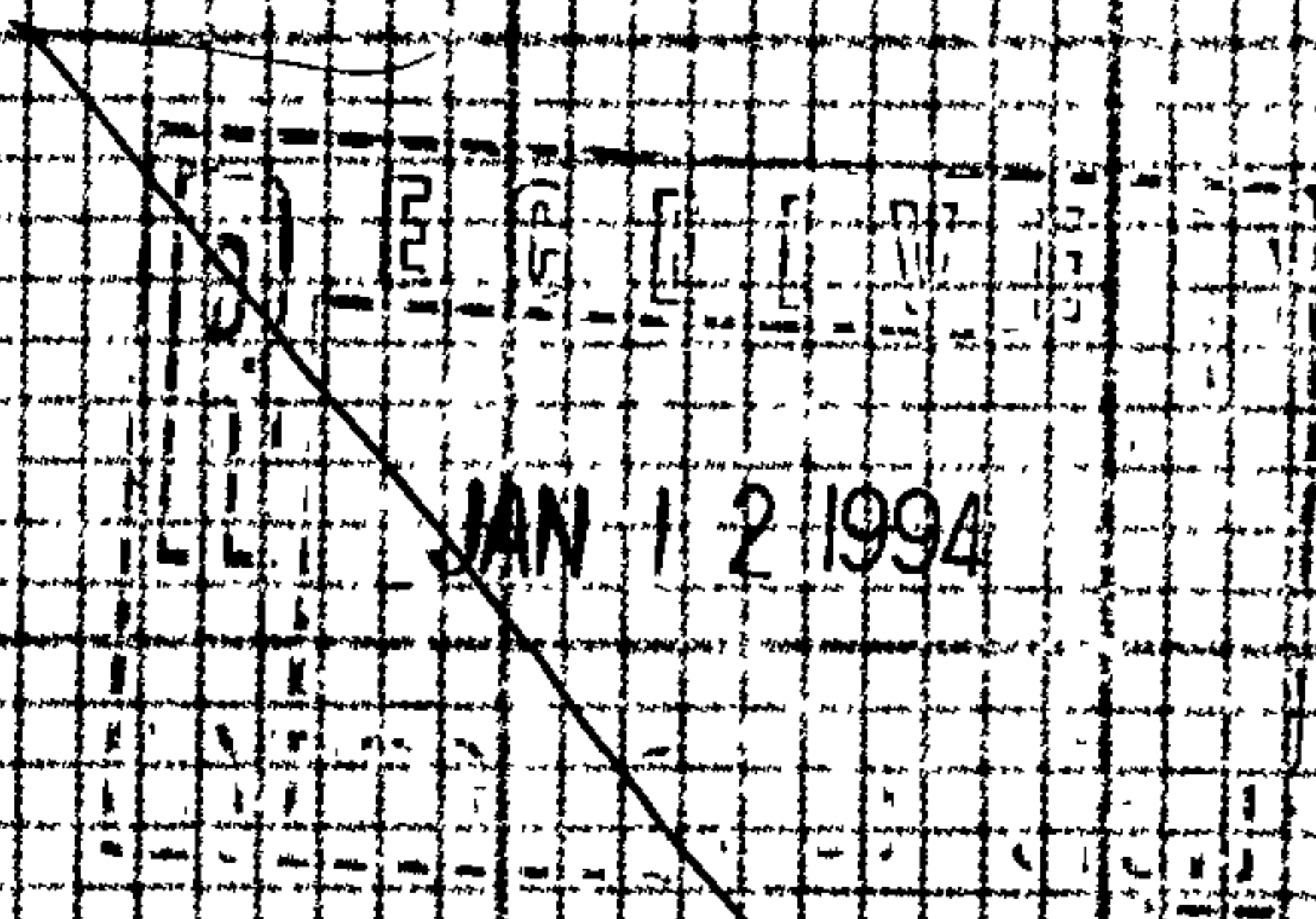
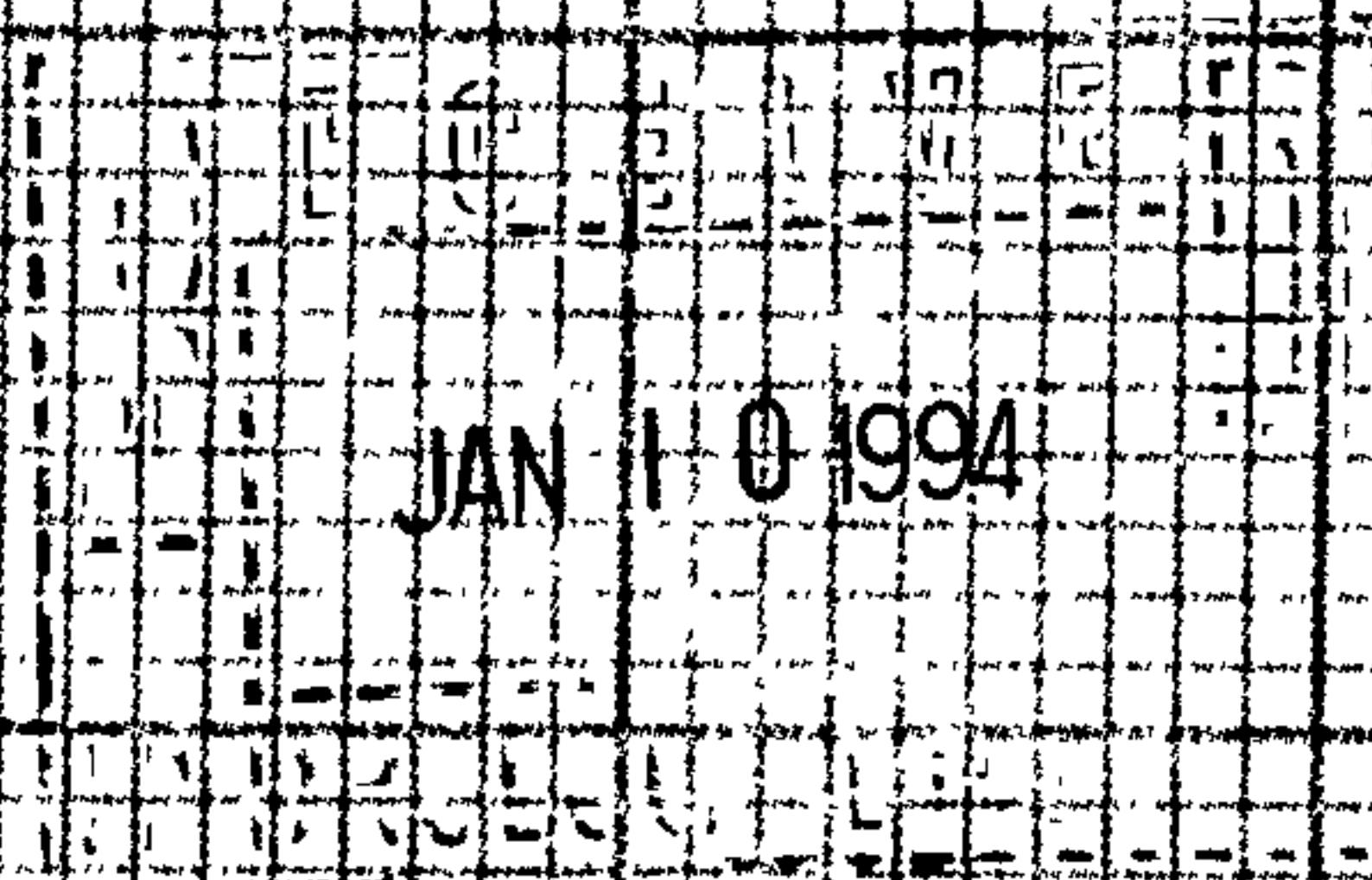
$$P_{10 \text{ days}} = 3.96$$

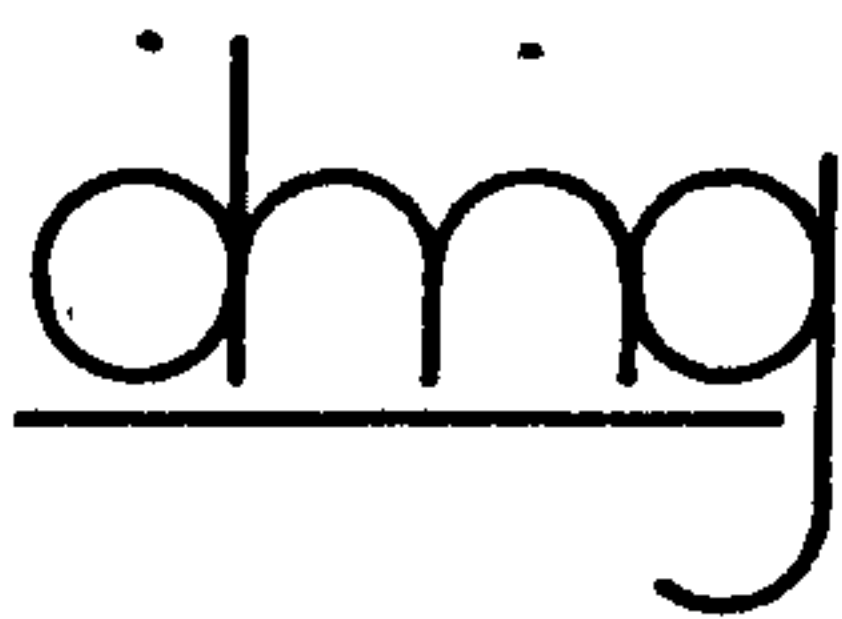
$$V_{360} = 0.2412 \text{ ac ft} \\ = 10,507 \text{ ft}^3$$

(see AR44MO output)

$$V_{10 \text{ day}} = V_{360} + A_d \left(\frac{P_{10 \text{ day}} - P_{360}}{12} \right) = 0.2412 + .83 / \left(\frac{3.96 - 2.75}{12} \right)$$

$$V_{10 \text{ day}} = 0.3249 \text{ ac ft} = 14152 \text{ ft}^3$$





D. MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS & SURVEYORS

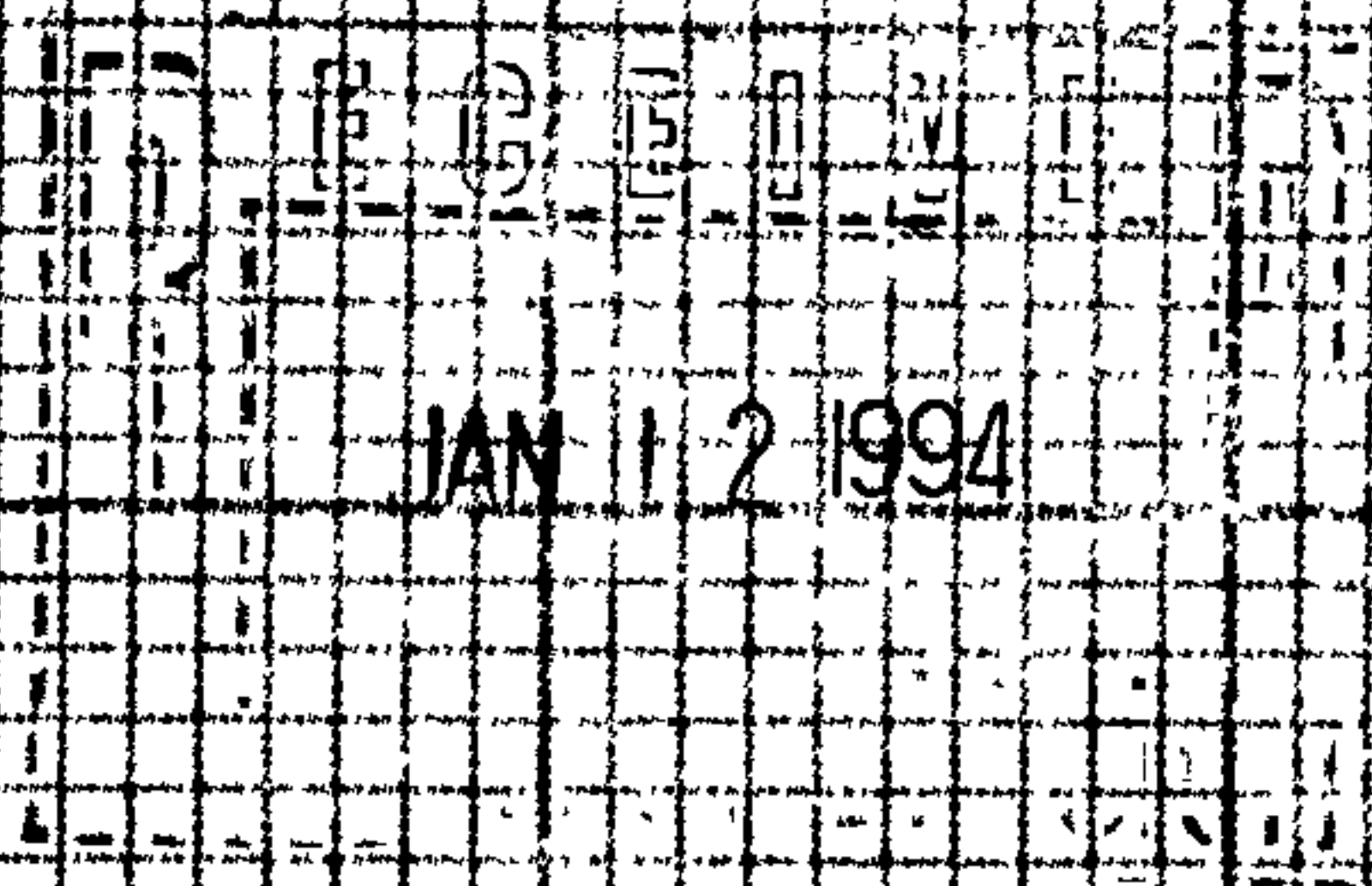
PROJ VNM Press Bldg
SUBJECT Drainage
BY JMM DATE 1/7/94
CHECKED _____ DATE _____
SHEET 2 OF _____

Retention Pond Capacity

Elev. (MSL)	Area (sq. ft.)	Depth (ft.)	Avg Area (ft ²)	Volume (ft ³)
5300.	5500			
		1.0	6253	6253
5301	7006			
		1.0	7795	7795
5302	8584			
		0.1	8625	862
5302.1	8665			

Volume Provided $\Rightarrow$ 14910 ft³

OK



AHYMO PROGRAM (AHYMO) - AMAFCA VERSION OF HYMO - M4 1, 1992
 RUN DATE (MON/DA, YR) = 01/06/1994
 START TIME (HR:MIN:SEC) = 12:47:09 USER NO. = Z_GOODWN.S92
 INPUT FILE = unmpress

shf 3

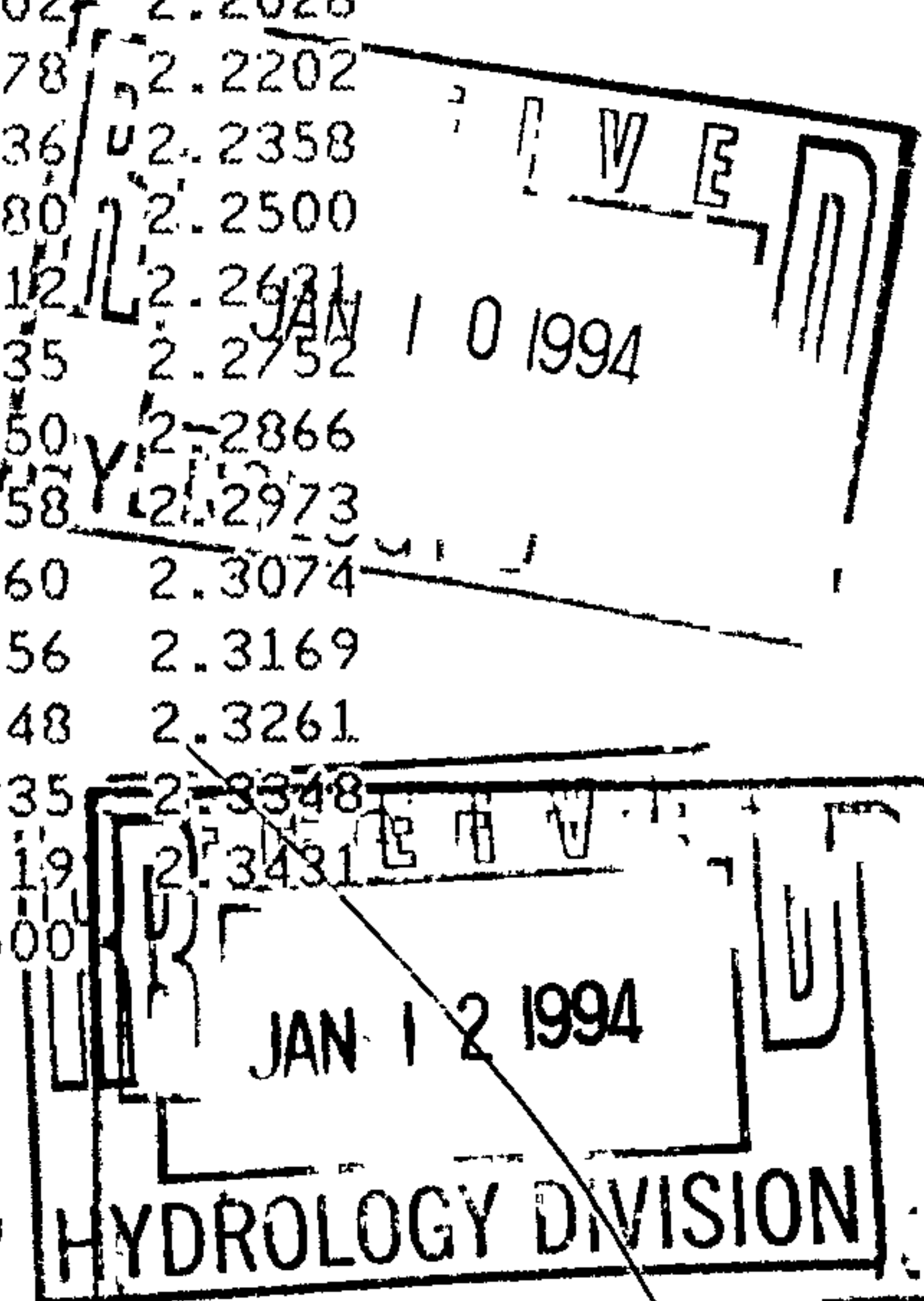
START TIME=0.0
 ***** Hydrograph For The UNM Press Building - Developed Conditions
 RAINFALL TYPE=1 RAIN QUARTER=0.0 IN
 RAIN ONE=2.01 IN RAIN SIX=2.35 IN
 RAIN DAY=2.75 IN DT=0.03333 HR

COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 H

R.

DT = .033330 HOURS			END TIME = 5.999400 HOURS			
.0000	.0016	.0033	.0049	.0066	.0084	.0102
.0120	.0139	.0158	.0178	.0199	.0219	.0241
.0263	.0286	.0309	.0333	.0358	.0384	.0411
.0439	.0467	.0497	.0529	.0561	.0596	.0631
.0669	.0709	.0751	.0807	.0866	.0930	.1066
.1371	.1840	.2514	.3434	.4644	.6186	.8106
1.0449	1.2624	1.3533	1.4300	1.4982	1.5602	1.6174
1.6704	1.7200	1.7664	1.8102	1.8514	1.8904	1.9273
1.9622	1.9953	2.0268	2.0566	2.0850	2.0915	2.0976
2.1033	2.1088	2.1140	2.1191	2.1239	2.1285	2.1329
2.1373	2.1414	2.1454	2.1494	2.1531	2.1568	2.1604
2.1639	2.1673	2.1706	2.1739	2.1771	2.1802	2.1832
2.1862	2.1891	2.1919	2.1947	2.1975	2.2002	2.2028
2.2054	2.2080	2.2105	2.2130	2.2154	2.2178	2.2202
2.2225	2.2248	2.2270	2.2293	2.2315	2.2336	2.2358
2.2379	2.2399	2.2420	2.2440	2.2460	2.2480	2.2500
2.2519	2.2538	2.2557	2.2576	2.2594	2.2612	2.2631
2.2648	2.2666	2.2684	2.2701	2.2718	2.2735	2.2752
2.2769	2.2785	2.2802	2.2818	2.2834	2.2850	2.2866
2.2881	2.2897	2.2912	2.2928	2.2943	2.2958	2.2973
2.2987	2.3002	2.3017	2.3031	2.3045	2.3060	2.3074
2.3088	2.3102	2.3115	2.3129	2.3143	2.3156	2.3169
2.3183	2.3196	2.3209	2.3222	2.3235	2.3248	2.3261
2.3273	2.3286	2.3298	2.3311	2.3323	2.3335	2.3348
2.3360	2.3372	2.3384	2.3396	2.3408	2.3419	2.3431
2.3443	2.3454	2.3466	2.3477	2.3488	2.3500	

***** Hydrograph for Basin A of the UNM Press Building
 COMPUTE NM HYD ID=1 HYD NO=101.1 AREA=0.001813 SQ MI
 PER A=0.0 PER B=16.0 PER C=2.0 PER D=82.0
 TP=0.1333 HR MASS RAINFALL=-1



K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N =
 2.106420
 UNIT PEAK = 5.8694 CFS UNIT VOLUME = .9973 B = 526.28 P60 = 2.01
 00
 AREA = .001487 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

 K = .129350HR TP = .133300HR K/TP RATIO = .970365 SHAPE CONSTANT, N =
 3.640112
 UNIT PEAK = .80891 CFS UNIT VOLUME = .9828 B = 330.42 P60 = 2.01
 00
 AREA = .000326 SQ MI IA = .48333 INCHES INF = 1.20333 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD

ID=1 CODE=1

slit 4

K = .129350HR TP = .133300HR K/TP RATIO = .970365 SHAPE CONSTANT, N =
3.640112
UNIT PEAK = .80891 CFS UNIT VOLUME = .9828 B = 330.42 P60 = 2.01
00
AREA = .000326 SQ MI IA = .48333 INCHES INF = 1.20333 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=1 CODE=1

PARTIAL HYDROGRAPH 101.10

RUNOFF VOLUME = 1.88067 INCHES = .1818 ACRE-FEET
PEAK DISCHARGE RATE = 4.98 CFS AT 1.500 HOURS BASIN AREA = .0018 SQ. MI.

***** Hydrograph for Basin B of the UNM Press Building
COMPUTE NM HYD ID=2 HYD NO=101.2 AREA=0.000577 SQ MI
PER A=0.0 PER B=14.0 PER C=0.0 PER D=86.0
TP=0.1333 HR MASS RAINFALL=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N =
7.106420
UNIT PEAK = 1.9591 CFS UNIT VOLUME = .9933 B = 526.28 P60 = 2.01
00
AREA = .000496 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .132088HR TP = .133300HR K/TP RATIO = .990905 SHAPE CONSTANT, N =
3.563124
UNIT PEAK = .19689 CFS UNIT VOLUME = .9285 B = 324.91 P60 = 2.01
00
AREA = .000081 SQ MI IA = .50000 INCHES INF = 1.25000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=2 CODE=1

PARTIAL HYDROGRAPH 101.20

RUNOFF VOLUME = 1.92816 INCHES = .0593 ACRE-FEET
PEAK DISCHARGE RATE = 1.63 CFS AT 1.500 HOURS BASIN AREA = .0006 SQ. MI.

ADD HYD ID=1 HYD NO=102.1 ID=1 ID=2
PRINT HYD ID=1 CODE=1

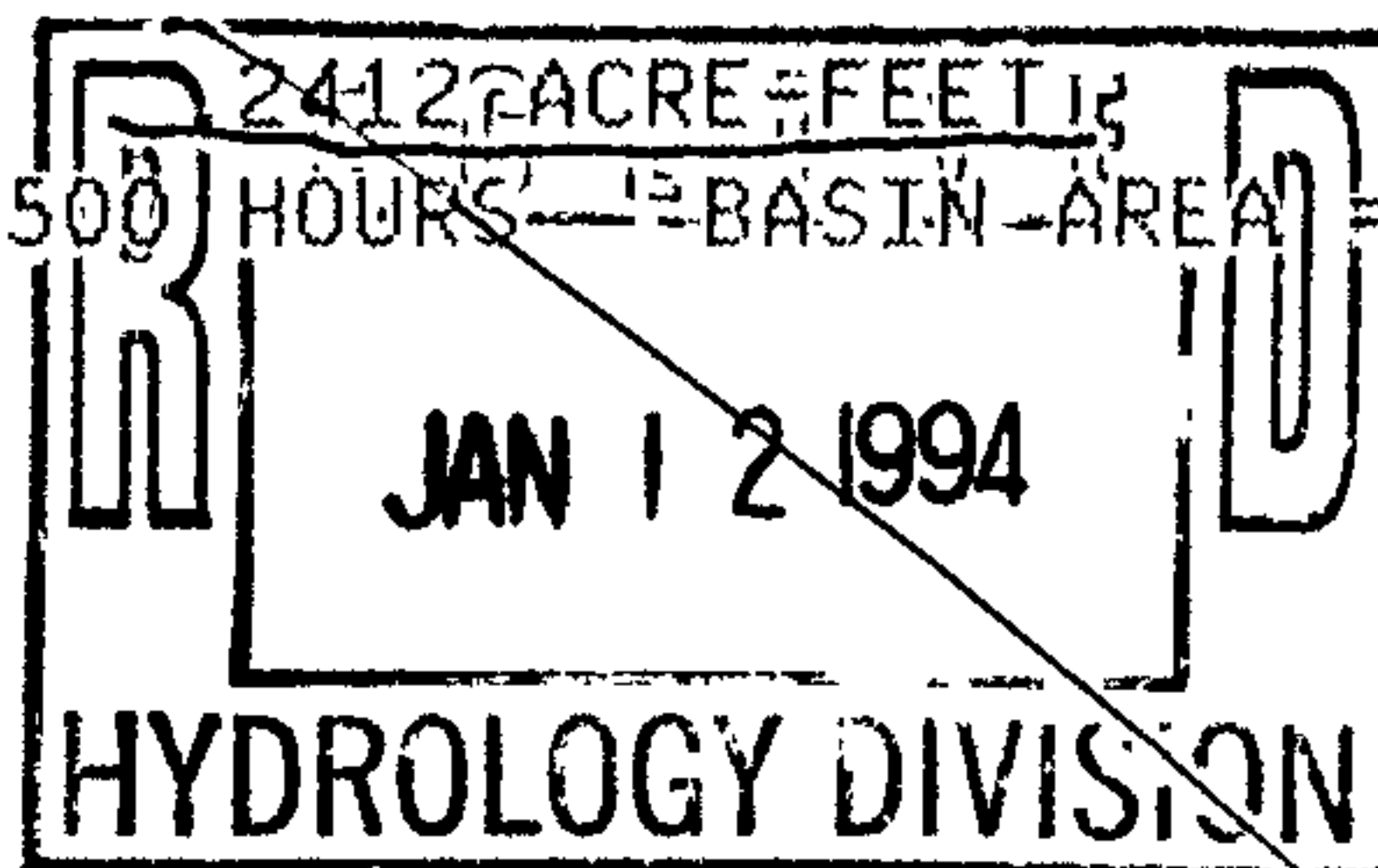
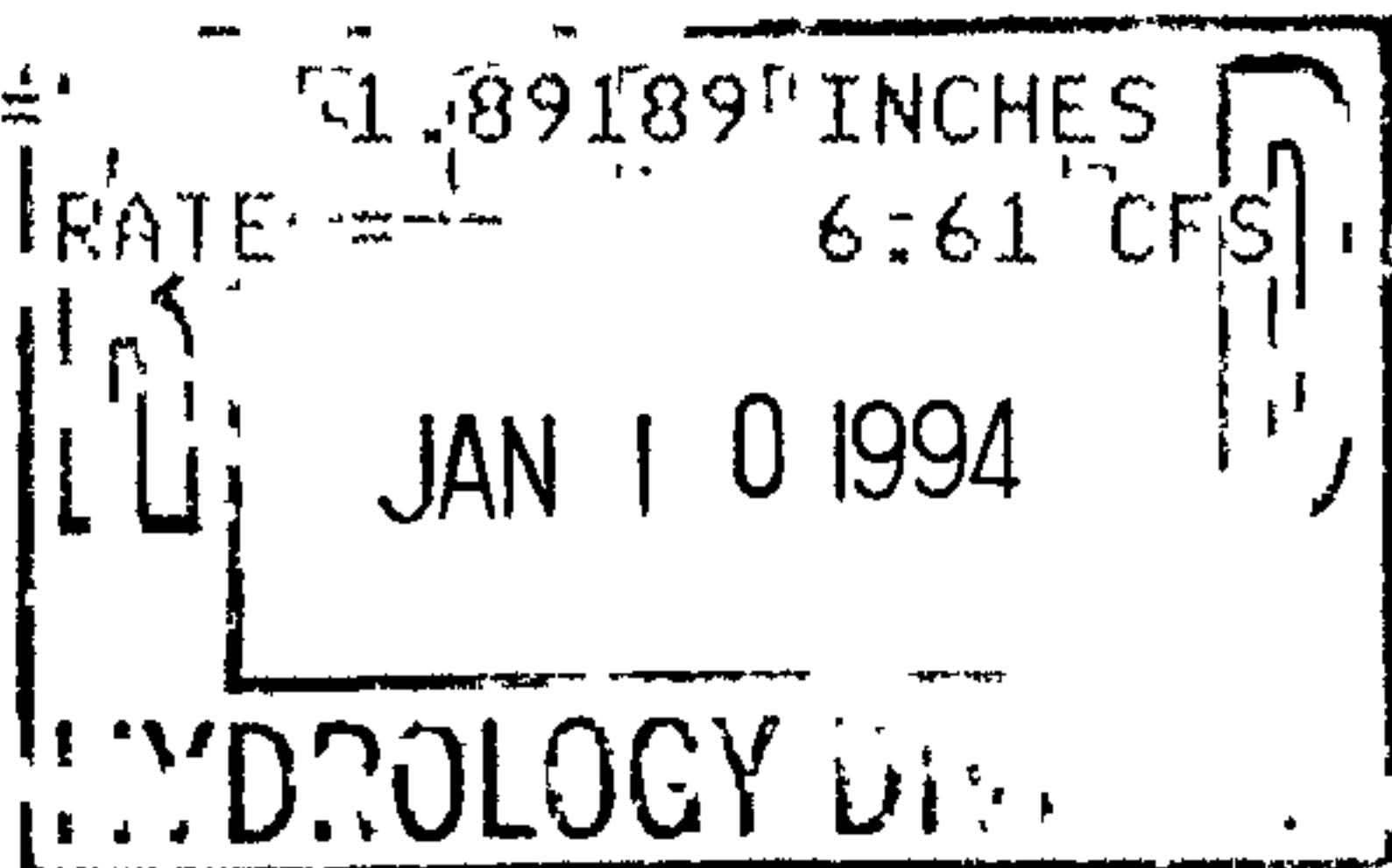
PARTIAL HYDROGRAPH 102.10

RUNOFF VOLUME = 1.89189 INCHES = .0593 ACRE-FEET
PEAK DISCHARGE RATE = 6.61 CFS AT 1.500 HOURS BASIN AREA = .0024 SQ. MI.

FINISH

NORMAL PROGRAM FINISH

END TIME (HR:MIN:SEC) = 12:47:13





City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

February 17, 1993

John M. MacKenzie, P.E.
D. Mark Goodwin & Assoc., PA
P.O. Box 90606
Albuquerque, N.M. 87199

RE: DRAINAGE & GRADING PLAN FOR UNM BUSINESS PARK, TRACT 1 (N-15/D6) 2
RECEIVED JANUARY 27, 1993 FOR BUILDING PERMIT APPROVAL
STAMPED & DATED 1-27-93

Dear Mr. MacKenzie:

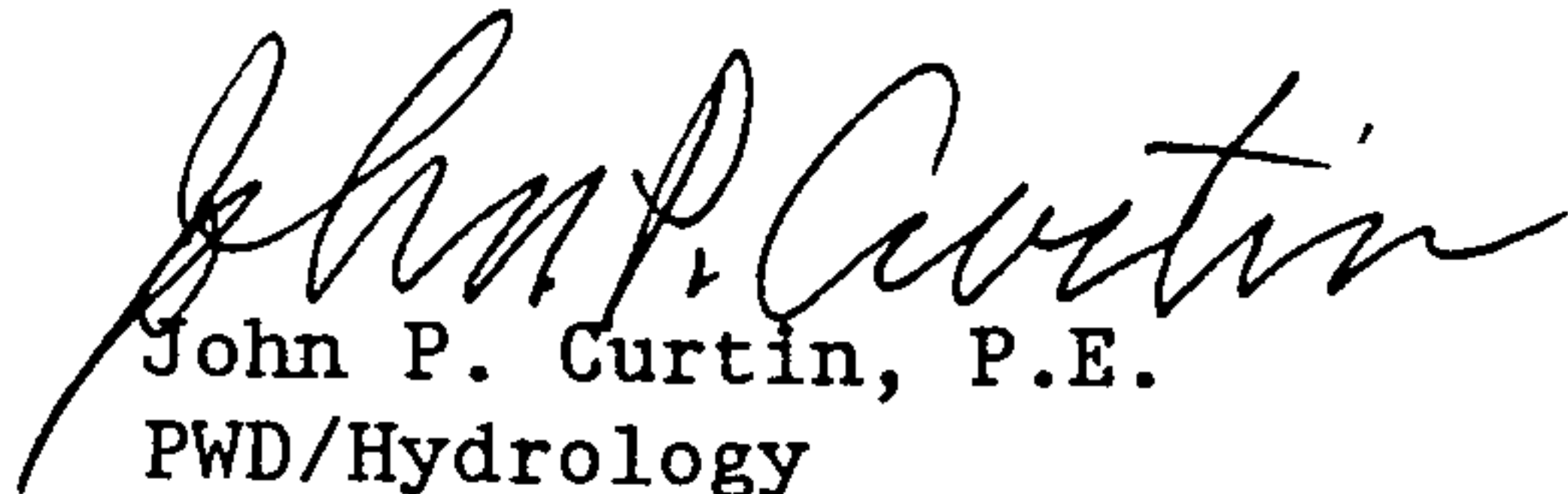
Based on the information included in the submittal referenced above, City Hydrology approves the Building Permit for this Project.

The Drainage & Grading plan must be included in the set of construction document that you submit for Building Permit.

Certification of grades in accordance with the DPM checklist will be required before any Certificate of Occupancy is released.

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

Sincerely,


John P. Curtin, P.E.
PWD/Hydrology

xc: Alan Martinez

WPHYD+3484;jpc

PUBLIC WORKS DEPARTMENT

DR... IAGE INFORMATION SHEET

PROJECT TITLE: UNM Press Building ZONE ATLAS/DRNG, FILE#: N-15 / Δ 6

LEGAL DESCRIPTION: University of New Mexico Business Park, Tract 1

CITY ADDRESS: Spirit Drive SE

ENGINEERING FIRM: D. Mark Goodwin & Assoc., PA CONTACT: John M. MacKenzie, PE
ADDRESS: P.O. Box 90606 87199 PHONE: 828-2200

OWNER: University of New Mexico CONTACT: Mr. Kim Murphy
ADDRESS: Scholes Hall, Rm 233, UNM PHONE: 277-4620

ARCHITECT: Design Collaborative Southwest CONTACT: Del Dixon
ADDRESS: 105 4th Street SW 87102 PHONE: 843-9639

SURVEYOR: Bohannon-Huston, Inc. CONTACT: Rick Beltramo, PE
ADDRESS: 7500 Jefferson NE 87113 PHONE: 823-1000

CONTRACTOR: n/a CONTACT: _____
ADDRESS: _____ PHONE: _____

PRE-DESIGN MEETING

☐ YES
☒ NO
☐ COPY OF CONFERENCE RECAP
SHEET PROVIDED

TYPE OF SUBMITTAL

☐ DRAINAGE REPORT
☒ DRAINAGE PLAN
☐ CONCEPTUAL GRADING &
DRAINAGE PLAN
☒ GRADING PLAN
☐ EROSION PLAN
☐ ENGINEER'S CERTIFICATION

DRB NO. _____

EPC NO. _____

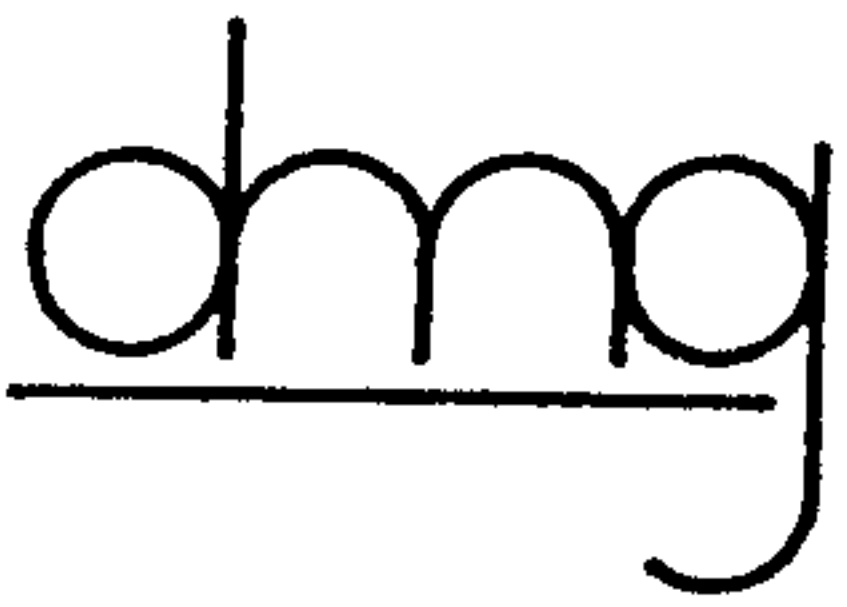
PROJ NO. 17

TYPE OF APPROVAL SOUGHT

☐ SKETCH PLAT APPROVAL
☐ PRELIMINARY PLAT APPROVAL
☐ SITE DEVELOPMENT PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☒ BUILDING PERMIT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☐ CERTIFICATION OF OCCUPANCY APPROVAL
☐ ROUGH GRADING PERMIT APPROVAL
☐ GRADING / PAVING PERMIT APPROVAL
☐ OTHER _____

DATE SUBMITTED: January 27 1993

BY: John M. MacKenzie
John M. MacKenzie, PE



D. MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS & SURVEYORS

PROJ VNM Press Building
SUBJECT Drainage
BY JMM DATE 1/27/93
CHECKED _____ DATE _____
SHEET 1 OF _____

As shown on the Grading and Drainage Plan, runoff generated on this site will be conveyed into an adjacent retention pond. The pond capacity will be sized to accept the 100-year 10-day storm per the COA DPM.

For 10-day storms:

$$P_{1440} = 2.75 \text{ in}$$

$$A_{\text{SITE}} = 1.949 \text{ Acres}$$

$$P_{10 \text{ days}} = 10.0 = \left(24.9 / (2.75 \text{ in})^{1.4} \right) \quad (28)$$

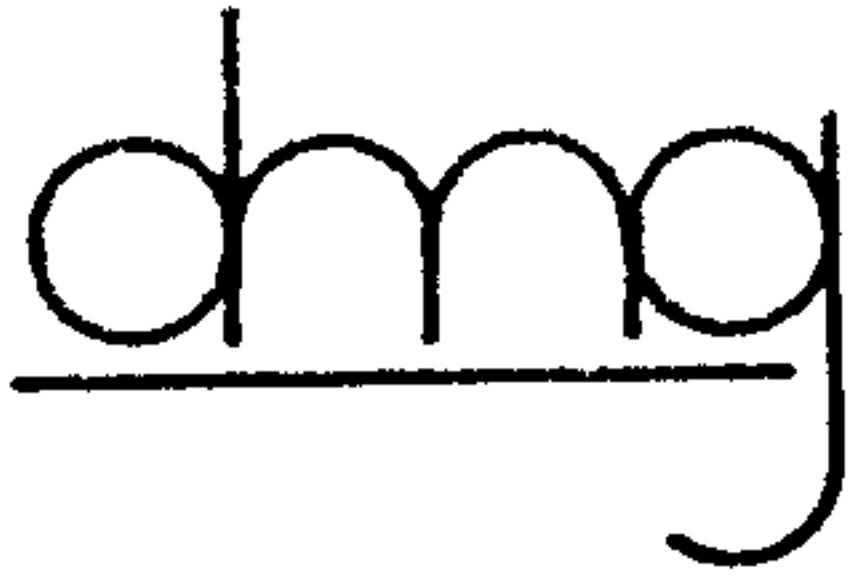
$$P_{10 \text{ day}} = 3.96 \text{ in}$$

$$V_{360} = 0.3223 \text{ Ac} \cdot \text{Ft} \quad (\text{see AHYMO output})$$

$$V_{10 \text{ day}} = V_{360} + A_{\text{SITE}} \left(\frac{P_{10 \text{ day}} - P_{360}}{12} \right)$$

$$V_{10 \text{ day}} = 0.3223 \text{ Ac} \cdot \text{Ft} + (1.949 \text{ Ac}) \left(\frac{3.96 \text{ in} - 2.75 \text{ in}}{12} \right)$$

$$V_{10 \text{ day}} = 0.4992 \text{ Ac} \cdot \text{Ft}$$



D. MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS & SURVEYORS

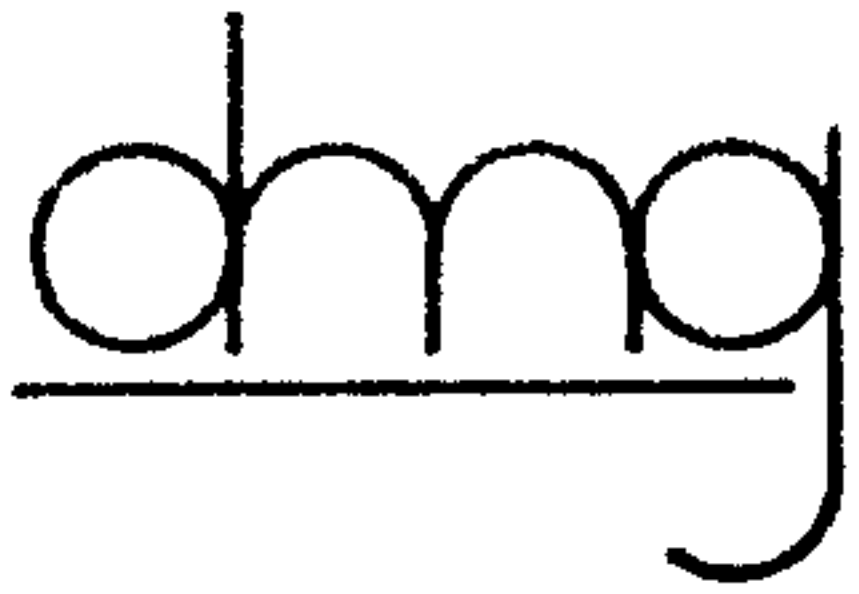
PROJECT UNM Press Bldg
SUBJECT Drainage
BY JMM DATE 1/27/93
CHECKED _____ DATE _____
SHEET 2 OF _____

Retention Pond Capacity

Elevation (MSL)	Area (sq. ft.)	Depth (ft.)	Avg. Area (sq. ft.)	Volume (cu. ft.)
5299.1	3150			
		0.9	3608	3247
5300.0	4066			
		1.0	4783	4783
5301.0	5500			
		1.0	6253	6253
5302.0	7006			
		1.0	7795	7795
5303.0	8584			

Total Pond Capacity = 22078

= 10.507 Ac.Ft.



D. MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS & SURVEYORS

PROJECT UNH Press Bldg.
SUBJECT Drainage
BY JMM DATE 1/27/93
CHECKED _____ DATE _____
SHEET 3 OF _____

The emergency spillway will accommodate the
100 year, 6-hour storm as follows:

$$L = \frac{Q}{2.9(H)^{3/2}} = \frac{8.73 \text{ cfs}}{(2.9)(0.67)^{3/2}} = 5.49 \text{ ft} \quad \text{use 6' wide by 8" high spillway}$$

Gross Section of Spillway:

$$A = 4.02 \text{ ft}^2 \quad \text{W.P.} = 6 + (.67) \cdot 2 = 7.34$$

$$H = \frac{4.02}{7.34} = 0.55$$

$$Q = \frac{1.49}{.015} (4.02)(0.55)^{2/3} (0.01)^{1/2} = 26.8 \text{ cfs OK}$$

p 4

***** Hydrograph For The UNM Press Building - Undeveloped Conditions

PAIN ONE=2.01 IN PAIN SIX=2.35 IN

COMPUTED 6-HOUR_RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2

DT = .033330 HOURS			END TIME = 5.999400 HOURS			
.0000	.0016	.0033	.0049	.0066	.0084	.0102
.0120	.0139	.0158	.0178	.0199	.0219	.0241
.0263	.0286	.0309	.0333	.0358	.0384	.0411
.0439	.0467	.0497	.0529	.0561	.0596	.0631
.0669	.0709	.0751	.0807	.0866	.0930	.1066
.1371	.1840	.2514	.3434	.4644	.6186	.8106
1.0449	1.2624	1.3533	1.4300	1.4982	1.5602	1.6174
1.6704	1.7200	1.7664	1.8102	1.8514	1.8904	1.9273
1.9622	1.9953	2.0268	2.0566	2.0850	2.0915	2.0976
2.1033	2.1088	2.1140	2.1191	2.1239	2.1285	2.1329
2.1373	2.1414	2.1454	2.1494	2.1531	2.1568	2.1604
2.1639	2.1673	2.1706	2.1739	2.1771	2.1802	2.1832
2.1862	2.1891	2.1919	2.1947	2.1975	2.2002	2.2028
2.2054	2.2080	2.2105	2.2130	2.2154	2.2178	2.2202
2.2225	2.2248	2.2270	2.2293	2.2315	2.2336	2.2358
2.2379	2.2399	2.2420	2.2440	2.2460	2.2480	2.2500
2.2519	2.2538	2.2557	2.2576	2.2594	2.2612	2.2631
2.2648	2.2666	2.2684	2.2701	2.2718	2.2735	2.2752
2.2769	2.2785	2.2802	2.2818	2.2834	2.2850	2.2866
2.2881	2.2897	2.2912	2.2928	2.2943	2.2958	2.2973
2.2987	2.3002	2.3017	2.3031	2.3045	2.3060	2.3074
2.3088	2.3102	2.3115	2.3129	2.3143	2.3156	2.3169
2.3183	2.3196	2.3209	2.3222	2.3235	2.3248	2.3261
2.3273	2.3286	2.3298	2.3311	2.3323	2.3335	2.3348
2.3360	2.3372	2.3384	2.3396	2.3408	2.3419	2.3431
2.3443	2.3454	2.3466	2.3477	2.3488	2.3500	

PER A=90.0 PER B=0.00 PER C=10.0 PER D=0.00

K = .154884HR TP = .133300HR K/TP RATIO = 1.161917 SHAPE
CONSTANT, N = 3.050921

UNIT PEOP. = 6.5427 CFS UNIT VOLUME = .4975 B = 285.95
F60 = 2.0100

AREA = .003050 SQ IN TA = .62000 INCHES UNF : 1.58500 1

19 02 1947 11 11

PRINT HYD

1 1 CODE=1

p5

PARTIAL HYDROGRAPH 101.10

RUNOFF VOLUME = .57503 INCHES = .0935-ACRE-FEET
PEAK DISCHARGE RATE = 3.32_CFS AT 1.533 HOURS BASIN AREA =
.0031 SQ. MI.

FINISH

NORMAL PROGRAM FINISH

END TIME (HR:MIN:SEC) = 11:58:05

RUN DATE (M DAY/YR) = 12/16/1992

START TIME (H:MIN:SEC) = 16:25:35 LER NO. = Z_GOODWN.S92

INPUT FILE = UNMPRESS

p6

START TIME=0.0

***** Hydrograph For The UNM Press Building - Developed Conditions

RAINFALL TYPE=1 RAIN QUARTER=0.0 IN

RAIN ONE=2.01 IN RAIN SIX=2.35 IN

RAIN DAY=2.75 IN DT=0.033333 HR

COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2
- PEAK AT 1.40 HR.

DT = .033333 HOURS			END TIME = 5.999400 HOURS			
.0000	.0016	.0033	.0049	.0066	.0084	.0102
.0120	.0139	.0158	.0178	.0199	.0219	.0241
.0263	.0286	.0309	.0333	.0358	.0384	.0411
.0439	.0467	.0497	.0529	.0561	.0596	.0631
.0669	.0709	.0751	.0807	.0866	.0930	.1066
.1371	.1840	.2514	.3434	.4644	.6186	.8106
1.0449	1.2624	1.3533	1.4300	1.4982	1.5602	1.6174
1.6704	1.7200	1.7664	1.8102	1.8514	1.8904	1.9273
1.9622	1.9953	2.0268	2.0566	2.0850	2.0915	2.0976
2.1033	2.1088	2.1140	2.1191	2.1239	2.1285	2.1329
2.1373	2.1414	2.1454	2.1494	2.1531	2.1568	2.1604
2.1639	2.1673	2.1706	2.1739	2.1771	2.1802	2.1832
2.1862	2.1891	2.1919	2.1947	2.1975	2.2002	2.2028
2.2054	2.2080	2.2105	2.2130	2.2154	2.2178	2.2202
2.2225	2.2248	2.2270	2.2293	2.2315	2.2336	2.2358
2.2379	2.2399	2.2420	2.2440	2.2460	2.2480	2.2500
2.2519	2.2538	2.2557	2.2576	2.2594	2.2612	2.2631
2.2648	2.2666	2.2684	2.2701	2.2718	2.2735	2.2752
2.2769	2.2785	2.2802	2.2818	2.2834	2.2850	2.2866
2.2881	2.2897	2.2912	2.2928	2.2943	2.2958	2.2973
2.2987	2.3002	2.3017	2.3031	2.3045	2.3060	2.3074
2.3088	2.3102	2.3115	2.3129	2.3143	2.3156	2.3169
2.3183	2.3196	2.3209	2.3222	2.3235	2.3248	2.3261
2.3273	2.3286	2.3298	2.3311	2.3323	2.3335	2.3348
2.3360	2.3372	2.3384	2.3396	2.3408	2.3419	2.3431
2.3443	2.3454	2.3466	2.3477	2.3488	2.3500	

***** Hydrograph for Basin A of the UNM Press BuildingCOMPUTE NM HYD ID=1 HYD NO=101.1 AREA=0.002313 SQ MIPER A=0.0 PER B=10.0 PER C=0.0 PER D=90.0

TP=0.1333 HR MASS RAINFALL=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE
 CONSTANT, N = 7.106420
 UNIT PEAK = 8.2187 CFS UNIT VOLUME = .9981 B = 526.28
 P60 = 2.0100
 AREA = .002002 SQ MI IA = .10000 INCHES INF = .04000 1
 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT
 = .033333

AREA = .002092 SQ MI IA = .10000 INCHES INF = .04000 1
INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT
= .033330

p 7

K = .132088HR TP = .133300HR K/TP RATIO = .990905 SHAPE
CONSTANT, N = 3.563124
UNIT PEAK = .56377 CFS UNIT VOLUME = .9763 B = 324.91
P60 = 2.0100
AREA = .000231 SQ MI IA = .50000 INCHES INF = 1.25000 1
INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT
= .033330

PRINT HYD ID=1 CODE=1

PARTIAL HYDROGRAPH 101.10

RUNOFF VOLUME = 1.98165 INCHES = .2445 ACRE-FEET
PEAK DISCHARGE RATE = 6.61 CFS AT 1.500 HOURS BASIN AREA =
.0023 SQ. MI.

UN 27

***** Hydrograph for Basin R of the UNM Press Building

COMPUTE NH HYD ID=2 HYD NO=101.2 AREA=0.000737 SQ MI

PER A=0.0 PER B=10.0 PER C=0.0 PER D=90.0

TP=0.1333 HR MASS RAINFALL=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE
CONSTANT, N = 7.106420
UNIT PEAK = 2.6187 CFS UNIT VOLUME = .9949 B = 526.28
P60 = 2.0100
AREA = .000663 SQ MI IA = .10000 INCHES INF = .04000 1
INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT
= .033330

K = .132088HR TP = .133300HR K/TP RATIO = .990905 SHAPE
CONSTANT, N = 3.563124
UNIT PEAK = .17964 CFS UNIT VOLUME = .9222 B = 324.91
P60 = 2.0100
AREA = .000074 SQ MI IA = .50000 INCHES INF = 1.25000 1
INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT
= .033330

PRINT HYD ID=2 CODE=1

PARTIAL HYDROGRAPH 101.20

RUNOFF VOLUME = 1.98165 INCHES = .0779 ACRE-FEET
PEAK DISCHARGE RATE = 2.12 CFS AT 1.500 HOURS BASIN AREA =
.0007 SQ. MI.

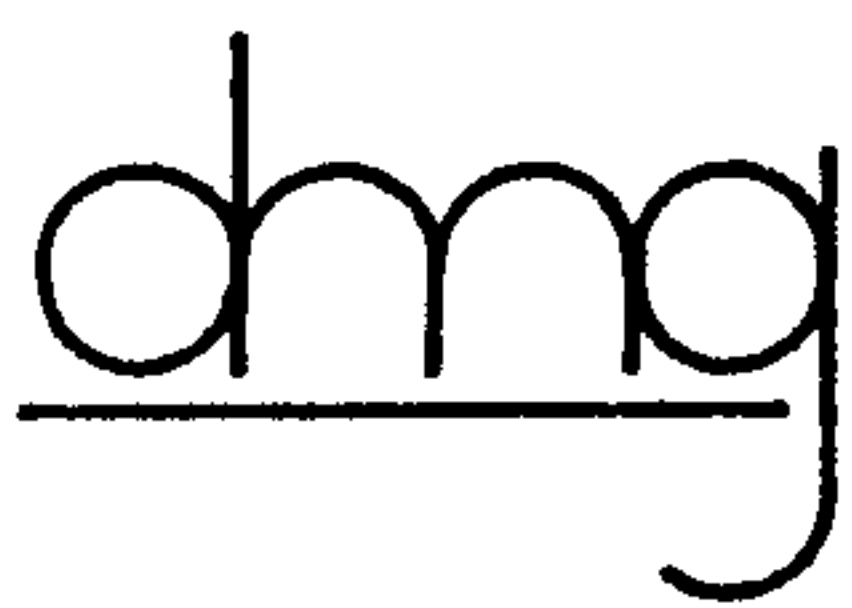
ADD HYD ID=1 HYD NO=102.1 ID=1 ID=2

PRINT HYD ID=1 CODE=1

PARTIAL HYDROGRAPH 102.10

RUNOFF VOLUME = 1.98147 INCHES = .3233 ACRE-FEET
PEAK DISCHARGE RATE = 8.73 CFS AT 1.500 HOURS BASIN AREA =
.0031 SQ. MI.

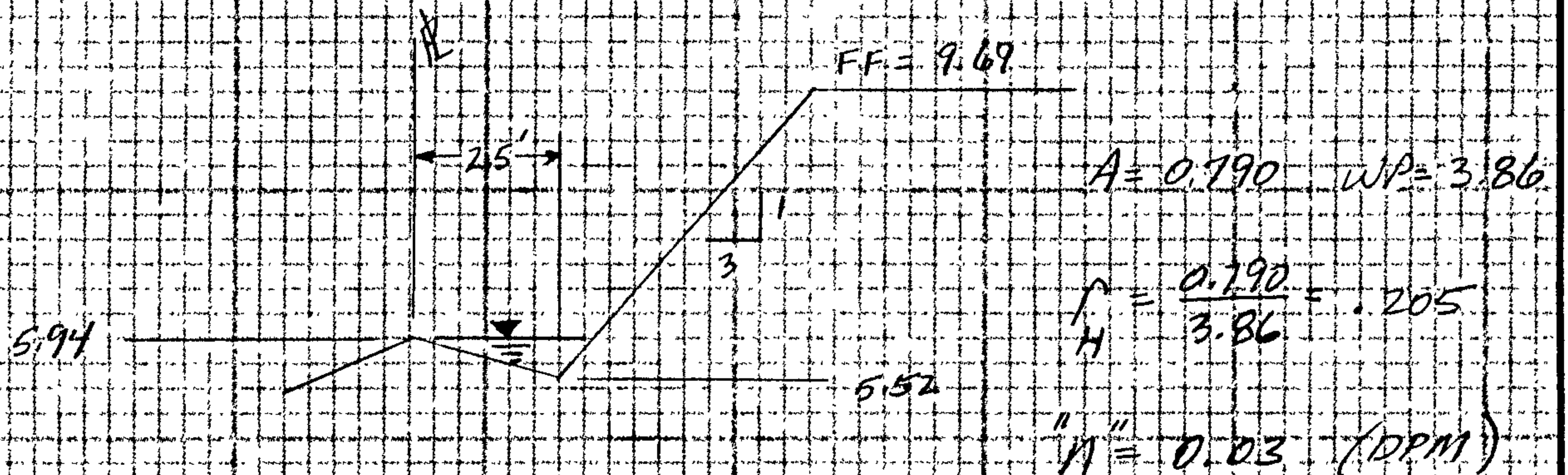
FINISH



D. MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS & SURVEYORS

PROJECT NM Press Building
SUBJECT Drainage
BY JMM DATE 12/22/92
CHECKED _____ DATE _____
SHEET 2 OF _____

The drainage basins will be divided as shown on the plan. The capacity of the earthen swale proposed around the south and west sides of the building will be evaluated at the northwest building corner.



The slope of the channel at this location is 2.67%

$$Q = \frac{1.49}{0.03} (0.790) (.205)^{.67} (.0267)^{.5} = 2.22 \text{ cfs}$$

The areal percentage of this development draining through this swale is 24.2%

From the total of 8.27 cfs produced from the AHVMO output, this swale is expected to receive

$$Q = 2.11 \text{ cfs}$$

DEC 22 1992



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

July 24, 1992

Rick Beltramo, P.E.
BOHANNAN-HUSTON, INC.
7500 Jefferson Dr. NE
Albuquerque, N.M. 87110

RE: DRAINAGE PLAN FOR UNM BUSINESS PARK, TRACT 1 (N-15/D6)
RECEIVED JUNE 5, 1992 FOR PRELIMINARY & FINAL PLAT APPROVAL

Dear Mr. Beltramo:

Based on the information included in the submittal referenced above and the conditions UNM agreed to in Kim Murphy's letter dated June 17, 1992, this project is approved for Preliminary & Final Plat.

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

Sincerely,

John P. Curtin, P.E.
PWD/Hydrology

xc: Alan Martinez

WPHYD+3484

PUBLIC WORKS DEPARTMENT