



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 27, 2000

Dennis Lorenz, P.E.
Brasher & Lorenz
2201 San Pedro NE
Bldg 1 - Suite 210
Albuquerque, NM 87110

***RE: NETHERLIN HOMES - 8921 W PAN AM FWAY NE (C18-D51). ENGINEER'S
CERTIFICATION FOR CERTIFICATE OF OCCUPANCY APPROVAL.
ENGINEER'S STAMP DATED JANUARY 10, 2000.***

Dear Mr. Lorenz:

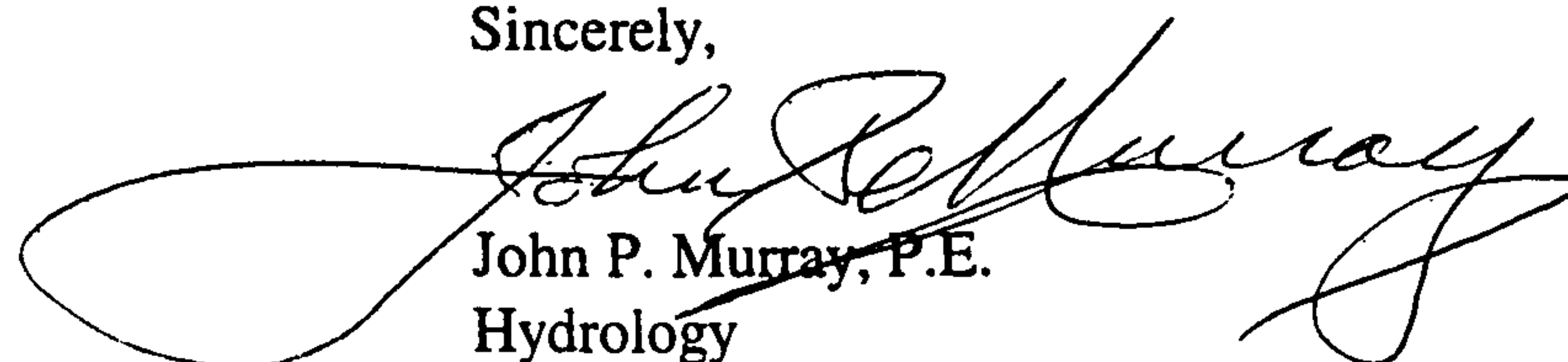
Based on the information provided on your January 13, 2000 submittal, the above referenced project is approved for Certificate of Occupancy.

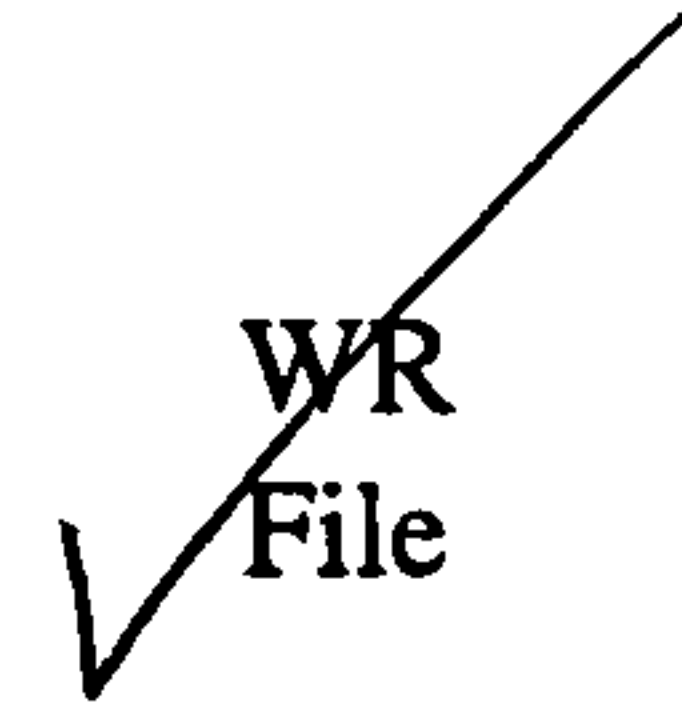
Since the construction of downstream improvements (by others) is in progress, the reduced pond capacity should suffice for the interim.

See also C.O.A. Building Permit Approval Letter dated April 22, 1999.

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

Sincerely,


John P. Murray, P.E.
Hydrology

C:  WR
File

DRAINAGE INFORMATION SHEET

PROJECT TITLE: NEATHERLIN HOMES ZONE ATLAS/DRNG. FILE #: C18-D51
 DRB #: EPC #: WORK ORDER #: 606781
 LEGAL DESCRIPTION: LOT 9 BLK 10 TRA UNIT B NAA.
 CITY ADDRESS: 8921 WEST PAN AMERICAN FWY NE

ENGINEERING FIRM: Brasher & Lorenz, Inc. CONTACT: Dennis A. Lorenz
2201 San Pedro NE Bldg. 1 Suite 210
 ADDRESS: Albuquerque, New Mexico 87110 PHONE: 888-6088

OWNER: NEATHERLIN HOMES CONTACT: JEFF WATSON
 ADDRESS: 8921 W. PAN AMERICAN FWY PHONE: 831-4524

ARCHITECT: NA CONTACT:
 ADDRESS: PHONE:

SURVEYOR: ENGINEER CONTACT:
 ADDRESS: PHONE:

CONTRACTOR: UNIVERSAL CONSTR CONTACT: G. LUNA
 ADDRESS: PO BOX 6008 . 87197 PHONE: 884-0400

TYPE OF SUBMITTAL:

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

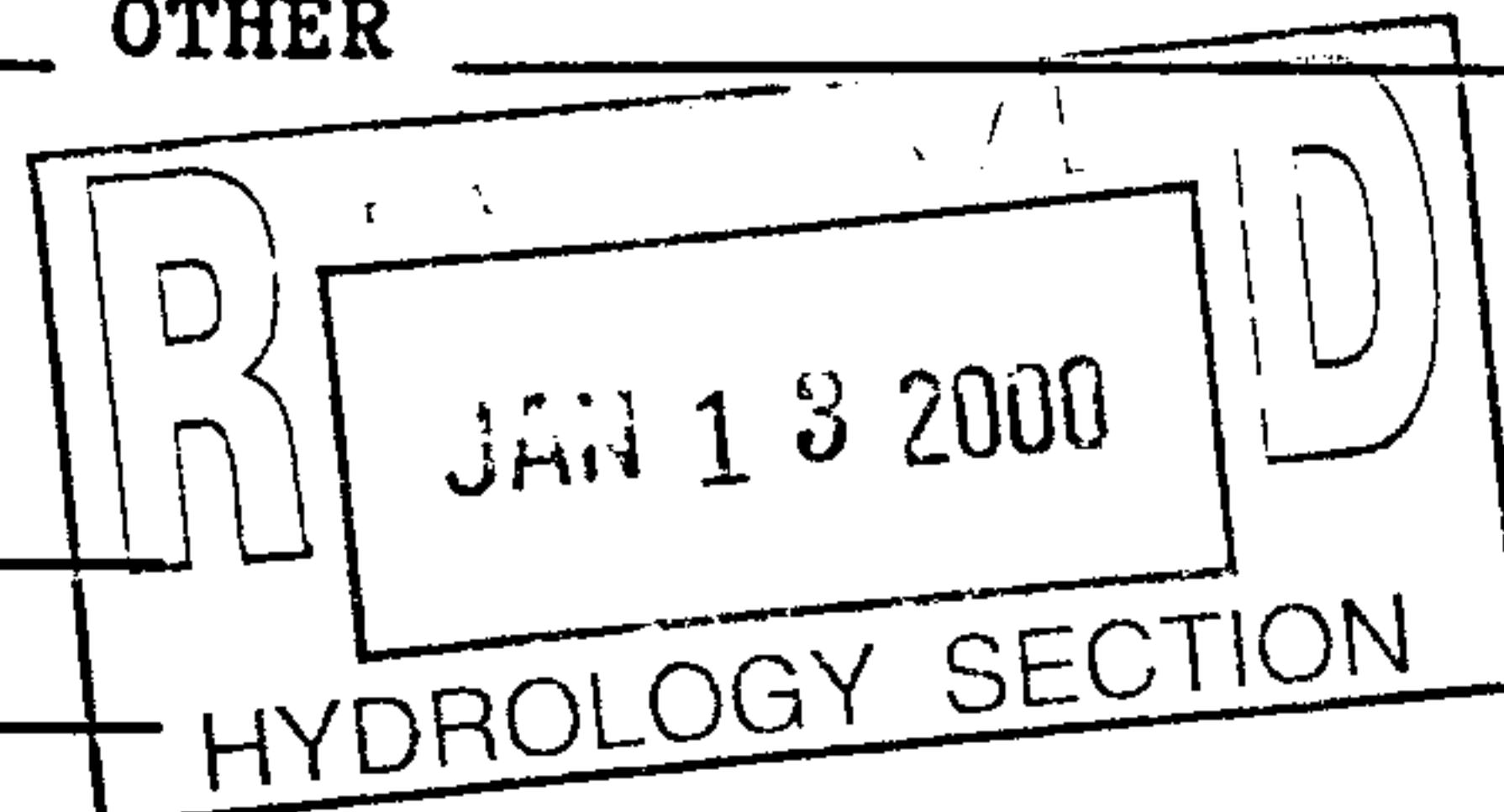
PRE-DESIGN MEETING:

☐ YES
☐ NO
☐ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

☐ SKETCH PLAT APPROVAL
☐ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D. APPROVAL
☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☐ BUILDING PERMIT APPROVAL
☒ CERTIFICATE OF OCCUPANCY APPROVAL
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ S.A.D. DRAINAGE REPORT
☐ DRAINAGE REQUIREMENTS
☐ OTHER (SPECIFY)

DATE SUBMITTED: 1-11-2000
 BY: Dennis A. Lorenz

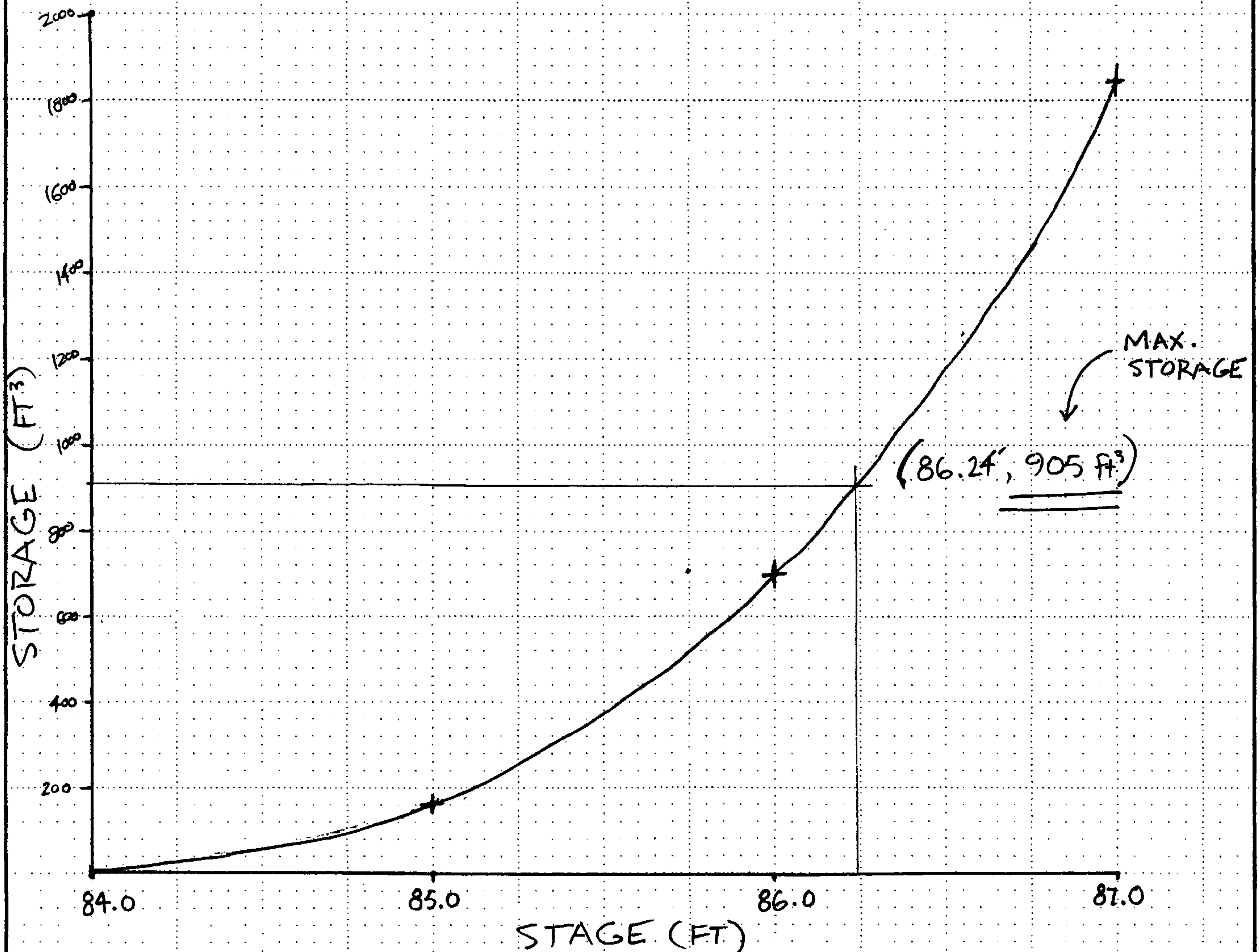


RETENTION POND AS EROSION CONTROL :

TO ACCEPT STREET FLOW FROM EAGLE ROCK,
MAX. WSE = 86.24'

POND CAPACITY

<u>STAGE (FT)</u>	<u>AREA (SF)</u>	<u>CUMULATIVE STORAGE (FT³)</u>
84	36.10	0
85	303.36	169.73
86	772.76	707.79
87	1507.50	1847.92



FOR ADEQUATE EROSION PROTECTION IN R/W, POND MUST HOLD 2-YEAR STORM RUNOFF WITH EXCESS CAPACITY FOR PUBLIC WATER (2-YEAR STORM RUNOFF IN EAGLE ROCK R/W).

ON-SITE RUNOFF, 2-YEAR, 6-HOUR STORM:

EXCESS PRECIPITATION, E, FROM TABLE A-8, DPM 22.2

ZONE 3:

TREATMENT:	A	B	C	D
E:	0.00	0.06	0.20	0.89

LAND TREATMENT PERCENTAGES FOR 0.885 ac. SITE:

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	
	0%	35%	25%	40%	= 100%
AREA (ac.)	0.0000	0.3098	0.2213	0.3540	= 0.885

$$V_{360} \text{ (COMBINING EQ (2-5) \& (2-6))} = E_A A_A + E_B A_B + E_C A_C + E_D A_D$$

$$V_{360} = (0.00)(0.0000) + (0.06)(0.3098) + (0.20)(0.2213) + (0.89)(0.3540)$$

$$= 0.3779 \text{ acre-inches}$$

$$(0.3779 \text{ ac-in}) \left(\frac{1 \text{ ft}}{12 \text{ in}} \right) \left(\frac{43560 \text{ ft}^2}{1 \text{ ac}} \right) = \underline{1371.78 \text{ ft}^3}$$

$$\underset{V_{360}}{1371.78 \text{ ft}^3} > \underset{\text{MAX. STORAGE}}{905 \text{ ft}^3}$$

∴ ATTEMPTING TO USE POND AS EROSION CONTROL WILL INCREASE EROSION FLOWS IN R/W AS 466.78 FT³ OF ON-SITE WATER WOULD BACKFLOW ONTO EAGLE ROCK DR.



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

April 22, 1999

Dennis Lorenz, P.E.
Brasher & Lorenz
2201 San Pedro NE
Bldg 1 - Suite 210
Albuquerque, NM 87110

**RE: NETHERLIN HOMES (C18-D51), STREET PAVING PLAN & PROFILE -
Preliminary Street Design, Engineer's Stamp Dated April 13, 1999, supplement to
DRAINAGE REPORT AND Revised GRADING AND DRAINAGE PLAN FOR
BUILDING PERMIT APPROVAL. ENGINEER'S STAMP DATED MARCH 15,
1999.**

Dear Mr. Lorenz:

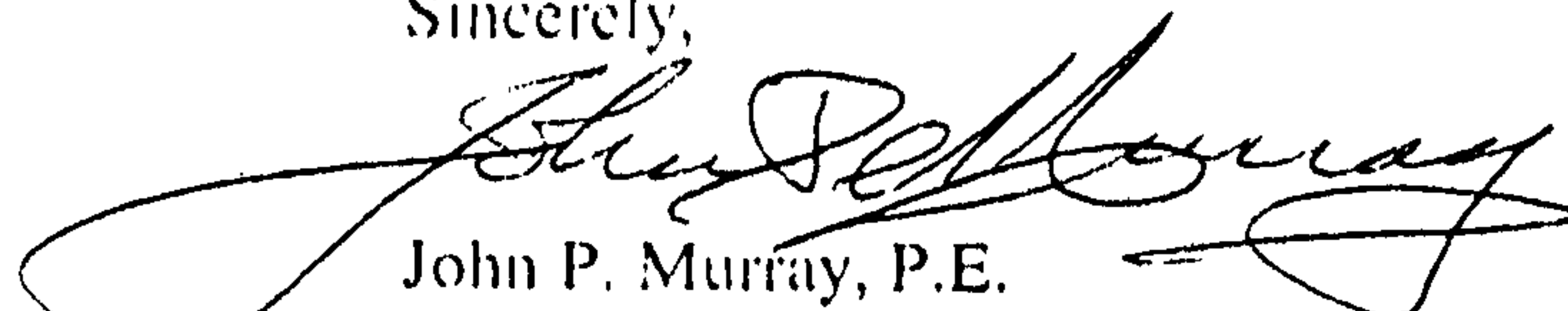
Based on the information provided on your April 13, 1999 supplementary submittal, the above referenced project is approved for Building Permit.

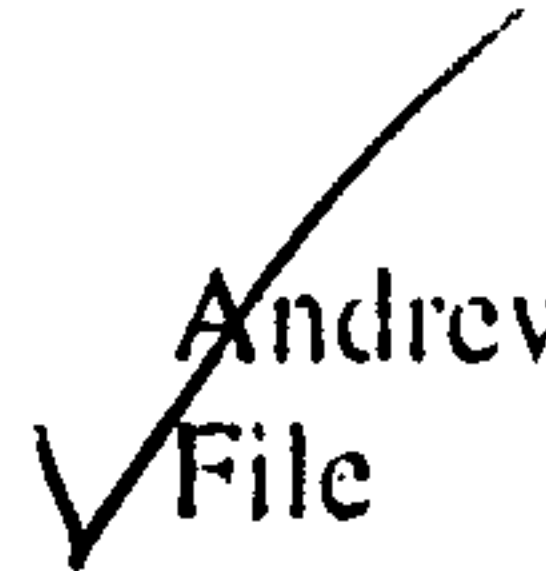
Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

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

BRASHER & LORENZ, INC.

CONSULTING ENGINEERS

2201 SAN PEDRO NE BUILDING 1 SUITE 210 ALBUQUERQUE, NM 87110 PHONE (505) 888-6088 FAX (505) 888-6188

January 11, 2000

John Murray, PE
Public Works Department/Hydrology
City of Albuquerque
600 Second Street NW
Albuquerque, NM 87103

SUBJECT: DRAINAGE CERTIFICATION FOR NEATHERLIN HOMES
C-18/D51

Dear John:

Submitted herewith for review and approval is one copy of the Grading & Drainage Certification for the subject project. The Plan was revised on May 24, 1999 to satisfy access requirements imposed by the New Mexico State Highway & Transportation Department. The NMSHTD would only allow a single access drive into the site. Therefore, it was necessary to eliminate the easternmost drive to obtain driveway and utility permits from the Department. This change has no impact on drainage since all runoff drains internally to an on-site retention pond. Since we were under construction at the time, it was felt that the revision could be documented with the Engineer's Certification.

The site is in substantial compliance with the approved Plan, with one exception. The interim retention pond does not provide the recommended 100 year 10 day storage. The actual as-built volume of 4529 cf is equivalent to the 100 year 6 hour volume. The retention pond requirement was imposed due to a lack of downstream improvements. The necessary downstream improvements are presently being constructed by TVI, which provide an outfall for the subject project. Per the approved Plan, once downstream improvements are in place the interim retention pond may be converted to a 1533 cf permanent detention pond with a 1.45 cfs controlled discharge to Eagle Rock Avenue. Since downstream improvements will be available within months it is my opinion that reconstructing the pond would only be a punitive measure.

We respectfully request Certificate of Occupancy approval. If you have any questions, please call.

Sincerely,

BRASHER & LORENZ, INC.

Dennis A. Lorenz, PE
Principal

/dl/8051.cert
encl

1-10-2000

(1) AS-BUILT POND VOLUME

PER PLAN $V_{360} = 0.1052 \text{ AF} = 4583 \text{ CF}$ $V_{1440} = 0.1723 \text{ AF} = 7505 \text{ CF}$

PER AS-BUILT SURVEY (ATTACHED)

 $V_{\text{ACTUAL}} = 1.67.73 \text{ CY}$ $= \underline{\underline{4529 \text{ CF}}}$

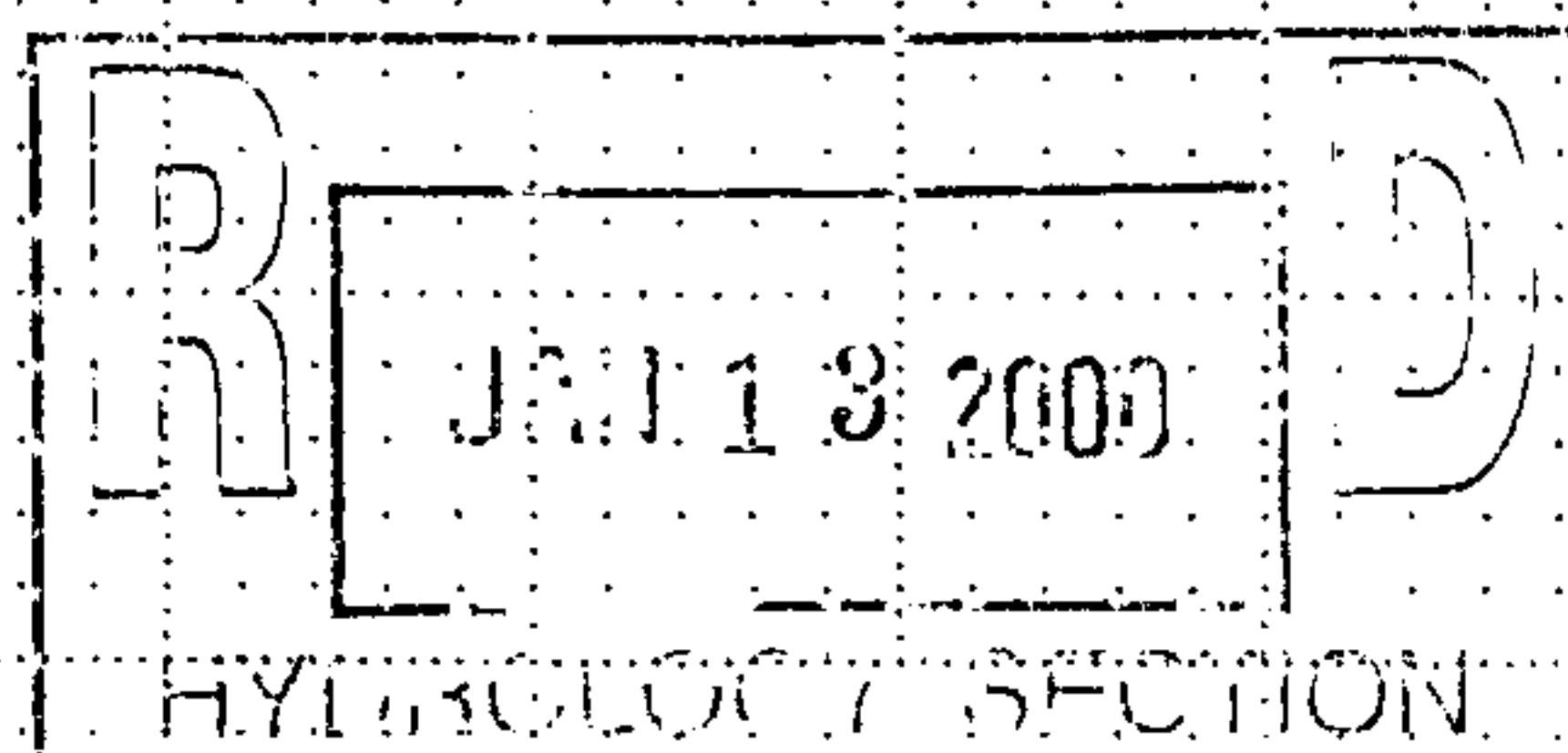
POND DOES NOT PROVIDE 100% 10 DAY
STORAGE AS RECOMMENDED BY PLAN.

 $V_{\text{ACTUAL}} \sim V_{360}$

FUTURE DETENTION POND VOL = 1533 CF

WITH $Q_{\text{OUT}} = 1.45 \text{ CFS}$.

DOWNSSTREAM IMPROVEMENTS UNDER CONSTR
THAT WILL ALLOW CONVERSION FROM
INTERIM RETENTION, TO PERMANENT
DETENTION POND.



Average End Area Earthworks | DCA DTM 386 Ver 11.0 | Project: 8051CERT

Surface 1: A

Min. X: 4960.4234
Min. Y: 4832.1864
Max. X: 5005.2625
Max. Y: 5023.7033
Random Points: 30
Fault Points: -
Contour Points: -
Total: 30
Min. Elev.: 85.9100
Max. Elev.: 90.7400
Mean Elev.: 88.8383

Surface 2: B

Min. X: 4947.1957
Min. Y: 4826.1927
Max. X: 5035.5447
Max. Y: 5040.8293
Random Points: -
Fault Points: -
Contour Points: 58
Total: 58
Min. Elev.: 89.0000
Max. Elev.: 89.0000
Mean Elev.: 89.0000

Producing grid sections for surface: B

Complete: 100%

Number of sections: 61

Cut: 101.093747 cu.yds.

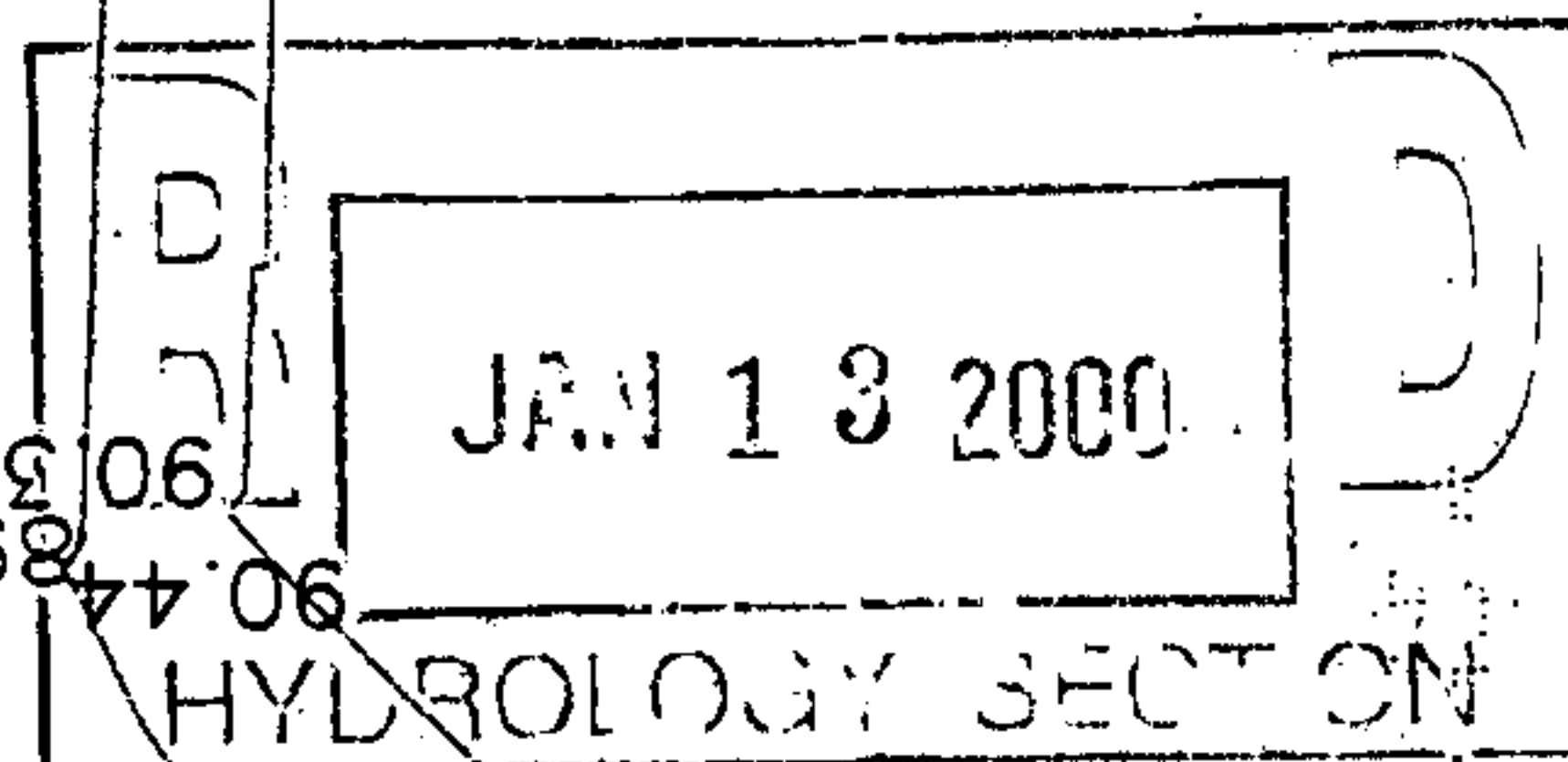
Fill: 167.729841 cu.yds. 4529 CF

~~Net: 66.636094 cu.yds.~~ (FILL)

Volume calculations done. Press any key to continue...

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NTS





City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

April 5, 1999

Dennis Lorenz, P.E.
Brasher & Lorenz
2201 San Pedro NE
Bldg 1 - Suite 210
Albuquerque, NM 87110

RE: NETHERLIN HOMES (C18-D51). Revised GRADING AND DRAINAGE PLAN FOR BUILDING PERMIT APPROVAL. ENGINEER'S STAMP DATED MARCH 15, 1999.

Dear Mr. Lorenz:

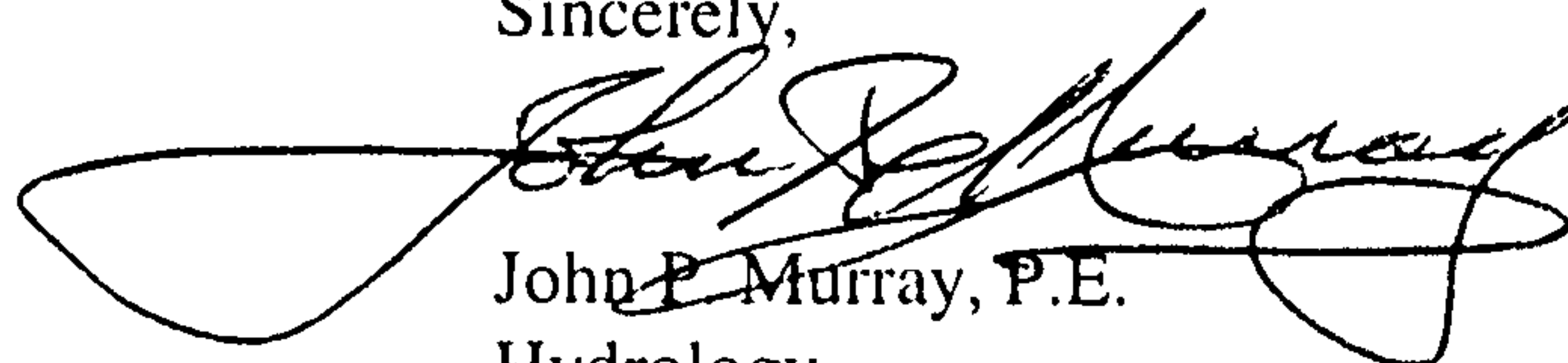
Based on the information provided on your March 16, 1999 resubmittal, City Hydrology has the following comments:

The second paragraph of City Hydrology's letter, dated February 3, 1999, regarding the Drainage Report implied rather than specified the need to determine and show the grading together with the storm drainage requirements for Eagle Rock Avenue between the I-25 Frontage Road and San Mateo Blvd. TVI will be developing the next four (4) lots to the west of this project (See Encl#1). It too proposes paving half the street section plus, if necessary, the other half of the intersection with the Frontage Road.

The Oakland Avenue Drainage Report (C18-D37) addressed similar issues (See Encl #2). As the lead project, the Netherlin Homes needs to establish the requirements for an integrated design for Eagle Rock Avenue.

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

FYI Amy Driscoll, C-G
Rick Spears, Custer Basavich



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

February 3, 1999

Dennis A. Lorenz, PE
Brasher & Lorenz, Inc.
2201 San Pedro NE Bldg 1 Suite 210
Albuquerque, NM 87110

**RE: DRAINAGE REPORT FOR NEATHERLIN HOMES (C-18/D-51)
RECEIVED DEC 31, 1998 FOR BUILDING PERMIT
ENGINEER'S STAMP DATED 12-24-98**

Dear Mr. Lorenz:

Based on the information included in the submittal referenced above, City Hydrology has the following comments that must be addressed:

Provide a copy of the infrastructure list. How will the Eagle Rock storm drain be built? Why are you proposing temporary street paving instead of permanent improvements? How did you determine street grades for Eagle Rock? The two lots need to be combined into one. Why is the developed basin 100 only 0.8 acres?

The Erosion Control Notes must be on the Plan instead of in the Report. A water block is required on Eagle Rock to prevent runoff from the frontage road from entering Eagle Rock. It appears that runoff will puddle along the west edge of paving on Eagle Rock. Runoff from Eagle Rock must be drained into the pond. Concrete rundown should extend to bottom of pond to prevent slope erosion.

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

Sincerely,

John P. Curtin, P.E.
Project Manager, PWD/Hyd

c: Andrew Garcia

DRAINAGE INFORMATION SHEET

PROJECT TITLE: NEATHERLIN HOMES ZONE ATLAS/DRNG. FILE #: C-18/51
DRB #: — EPC #: — WORK ORDER #: —
LEGAL DESCRIPTION: LOTS 9+10 BLOCK 10 TRA UNIT B NAA
CITY ADDRESS: 8921 W. PAN AMERICAN FWY NE
ENGINEERING FIRM: Brasher & Lorenz, Inc. CONTACT: Dennis A. Lorenz
2201 San Pedro NE Bldg. 1 Suite 210
ADDRESS: Albuquerque, New Mexico 87110 PHONE: 888-6088
OWNER: NEATHERLIN HOMES CONTACT: JEFF WATSON
ADDRESS: 7300 FM 2818 N. #100 PHONE: 831-4524
BRYAN, TX 77807
ARCHITECT: — CONTACT: —
ADDRESS: — PHONE: —
SURVEYOR: NA CONTACT: —
ADDRESS: — PHONE: —
CONTRACTOR: NA CONTACT: —
ADDRESS: — PHONE: —

TYPE OF SUBMITTAL:

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

PRE-DESIGN MEETING:

☒ YES
☐ NO
☒ COPY PROVIDED

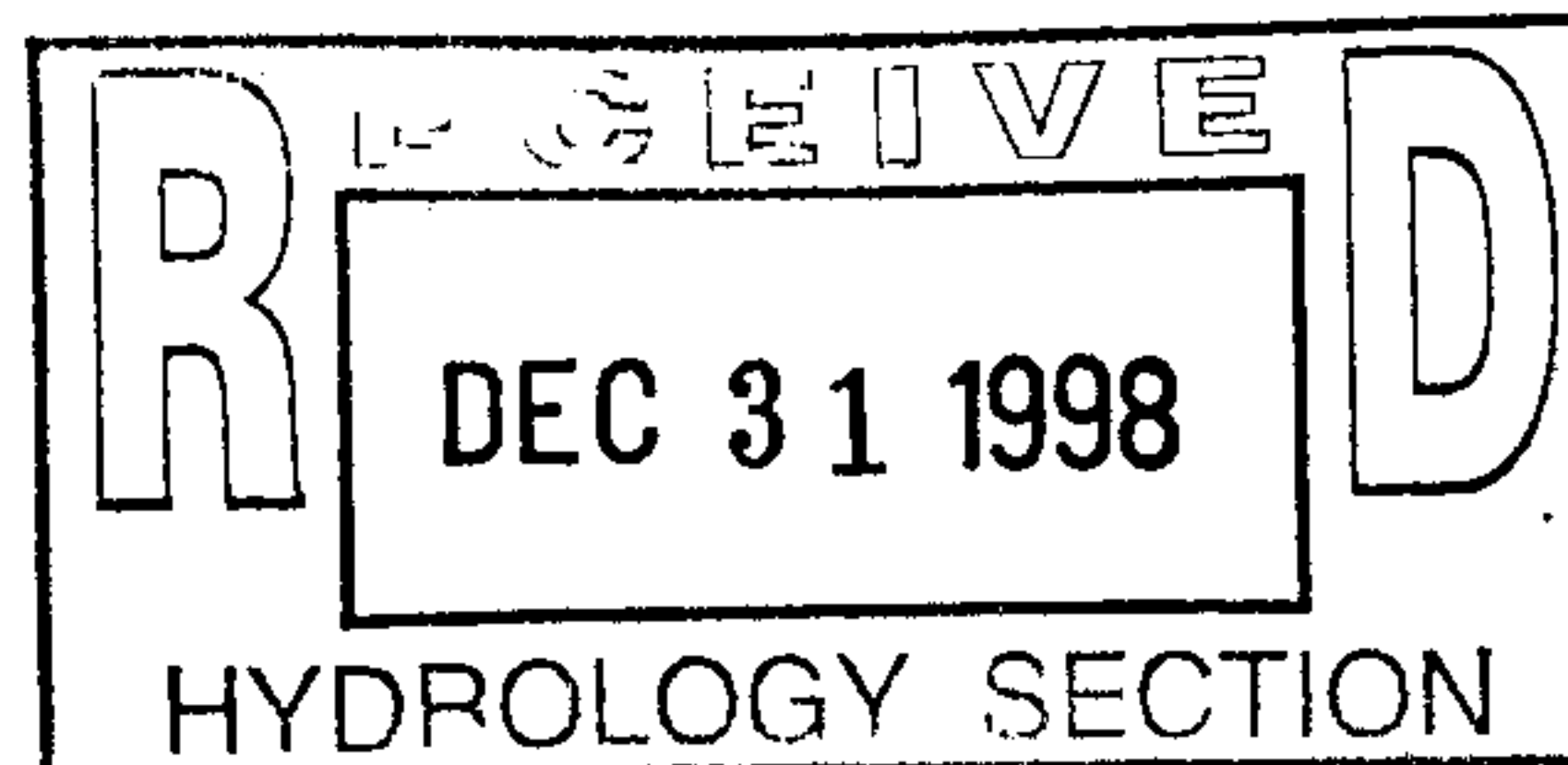
CHECK TYPE OF APPROVAL SOUGHT:

☐ SKETCH PLAT APPROVAL
☐ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D. APPROVAL
☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☒ BUILDING PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY APPROVAL
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ S.A.D. DRAINAGE REPORT
☐ DRAINAGE REQUIREMENTS
☐ OTHER — (SPECIFY)

DATE SUBMITTED:

12.28.98

BY:

Dennis A. Lorenz

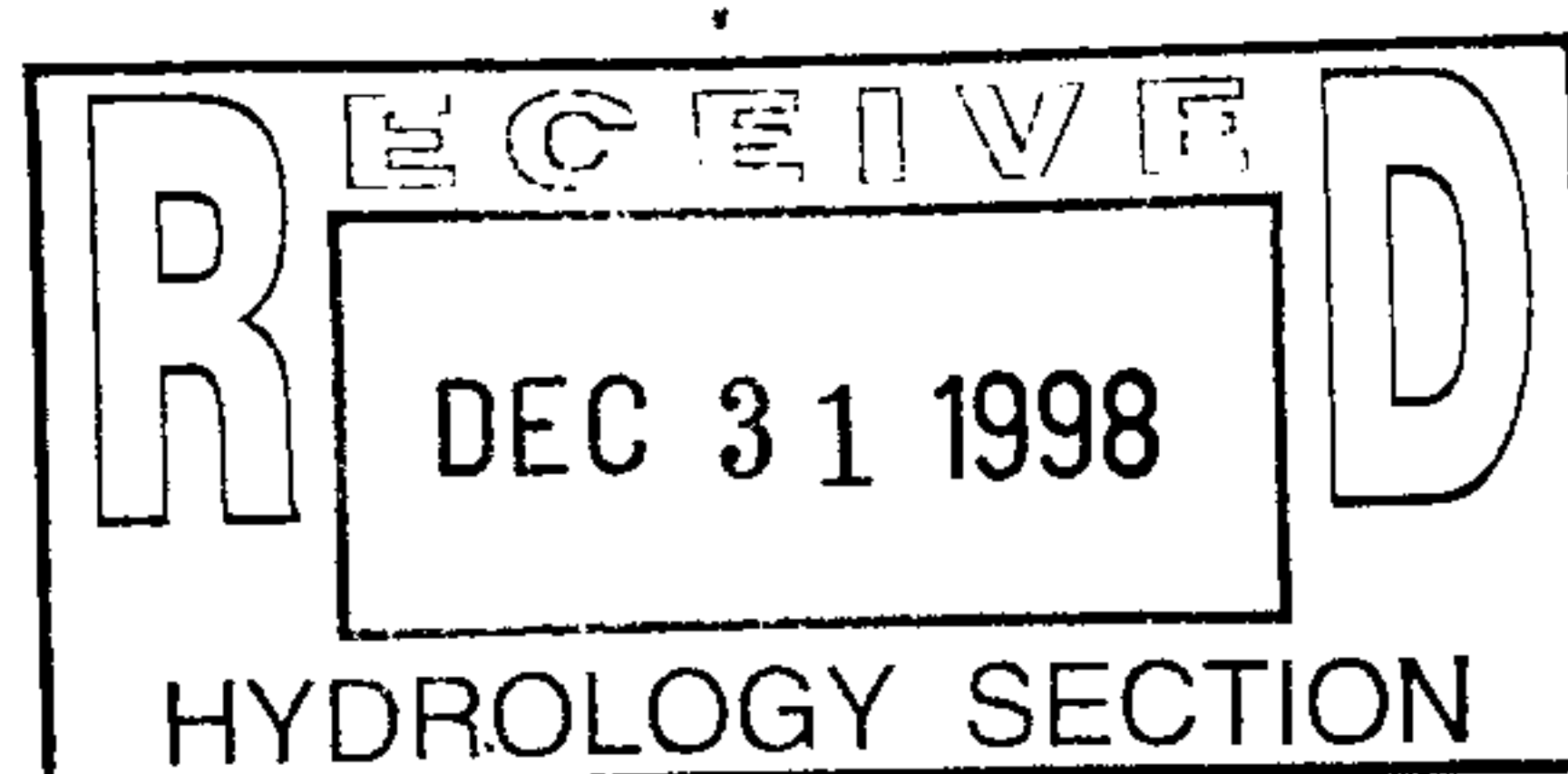
DRAINAGE REPORT
FOR
NEATHERLIN HOMES

Albuquerque, New Mexico

Prepared By:

BRASHER & LORENZ, INC.
Consulting Engineers
2201 San Pedro NE, Building No. 1, Suite 210
Albuquerque, New Mexico 87110

December 1998

A circular professional engineer seal for the State of New Mexico. The outer ring contains the text "DENNIS A. LORENZ" at the top and "NEW MEXICO" at the bottom. The inner circle contains the number "10417". The seal is signed with a cursive signature and the date "12-24-98" is written next to it.

Dennis A. Lorenz, P.E.
Principal

PURPOSE AND SCOPE

Pursuant to the established Drainage Ordinance for the City of Albuquerque and the Development Process Manual, this Drainage Report outlines the drainage management criteria for controlling developed runoff from the project site. The project consists of the development of the property into a model home park for Neatherlin Homes. Paving, landscaping, utility, grading, and drainage improvements will be provided to support the project. The scope of this plan is to establish drainage criteria for the safe management of excess runoff. The report is presented to obtain Building Permit and Work Order approval.

SITE DESCRIPTION

The project site is approximately 0.885 acres in size and is located on West Pan American Freeway NE, at Eagle Rock Avenue NE (See Figure 1). The site is presently described as Lots 9 & 10, Block 10, Tract A, Unit B, North Albuquerque Acres. The site is bounded on the north by Eagle Rock Avenue (unimproved), on the east by the West Pan American Freeway, and on the south and west by unimproved properties. The property is presently undeveloped. On-site topography slopes from east to west at approximately 3 percent. The site is well vegetated with native grasses.

EXISTING CONDITIONS

Under existing conditions all on-site flows drain west in a sheet flow fashion. Site flows mix with runoff from downstream properties and outfall to existing street and storm sewer improvements in San Mateo Boulevard. All upstream runoff is captured by the West Pan American Freeway street improvements which include curb and gutter. No off-site flows enter the property.

As shown by the attached FIRM Panel (Figure 2) and enclosed LOMR this site does not lie within a designated flood hazard zone.

SUMMARY OF EXISTING DRAINAGE PLANS

Per the **Drainage Plan for Oakland Avenue (C-18/D37)**, prepared by Bordenave Designs, 12-19-97 (see back pocket), the allowable discharge rate for this site is 1.75 cfs per acre, or $(0.885)1.75 = 1.55$ cfs. The Plan was prepared to establish drainage management criteria for a large drainage basin bounded by Modesto on the north, I-25 on the east, Alameda on the south and San Mateo on the west. An existing storm drain located in San Mateo has capacity of 96 cfs, which equates to a unit discharge for the study basin of 1.75 cfs per acre. A 24 inch storm drain with 6 drop inlets is recommended in Eagle rock just east of San Mateo to collect flows from the project site.

PROPOSED CONDITIONS

As shown by the Plan, the project consists of the development of the property into a model homes sales facility for Neatherlin Homes. Paving, utility, landscaping and

drainage improvements will be constructed as necessary to support the project. The Plan shows the elevations required to properly grade and construct the recommended improvements. The direction of drainage flows are given by flow arrows and on-site drainage basins are identified.

In accordance with the approved Masterplan, this report recommends ponding of excess runoff. Since Eagle Rock is unimproved, and the storm drain recommended in the Masterplan has not been constructed, this site will implement retention ponding on an interim basis. This Plan recommends construction of a 7505 cf interim retention pond. When Eagle Rock and downstream storm drainage facilities are constructed the retention pond will be converted into a detention pond. This Plan proposes a future 1533 cf detention pond with a controlled release of 1.45 cfs into Eagle Rock. The Plan provides details for the construction of each pond. Construction of the future detention pond should only be accomplished after a subsequent review by City Hydrology Staff to verify the criteria and details necessary to obtain grading and SO 19 permits.

TEMPORARY EROSION CONTROL PLAN

1. Temporary Erosion Control is required to limit the discharge of sediment into the public street and/or storm drainage system and to protect adjacent properties from excess runoff during construction. After the initial site clearing, the temporary erosion control facilities should be constructed to direct excess runoff and sediment to the outfall locations.
2. The retention pond shall be constructed during the initial grading operations to provide a storage location for all excess runoff generated by the site.
3. Earthen erosion control berms or silt fencing should then be placed along the downstream project boundaries to direct runoff to the retention pond.
4. The Contractor shall obtain a Top Soil Disturbance Permit from Environmental Health prior to performing any earthwork related operations.
5. It is the Contractor's responsibility to properly maintain all temporary erosion control facilities during the construction phase of the project.

Must be on Plan.

NEATHERLIN

BOSI

1/

INTERIM RETENTION POND

12-24-98

① SIZE INTERIM RETENTION POND

PER AHYMO:

$$V_{360} = 0.1052 \text{ AF}$$

DET $V_{10 \text{ DAY}}$:

$$P_{360} = 2.6'' \quad P_{10 \text{ D}} = 4.90''$$

$$V_{10 \text{ D}} = V_{360} + A_D (P_{360} - P_{10 \text{ D}}) / 12$$

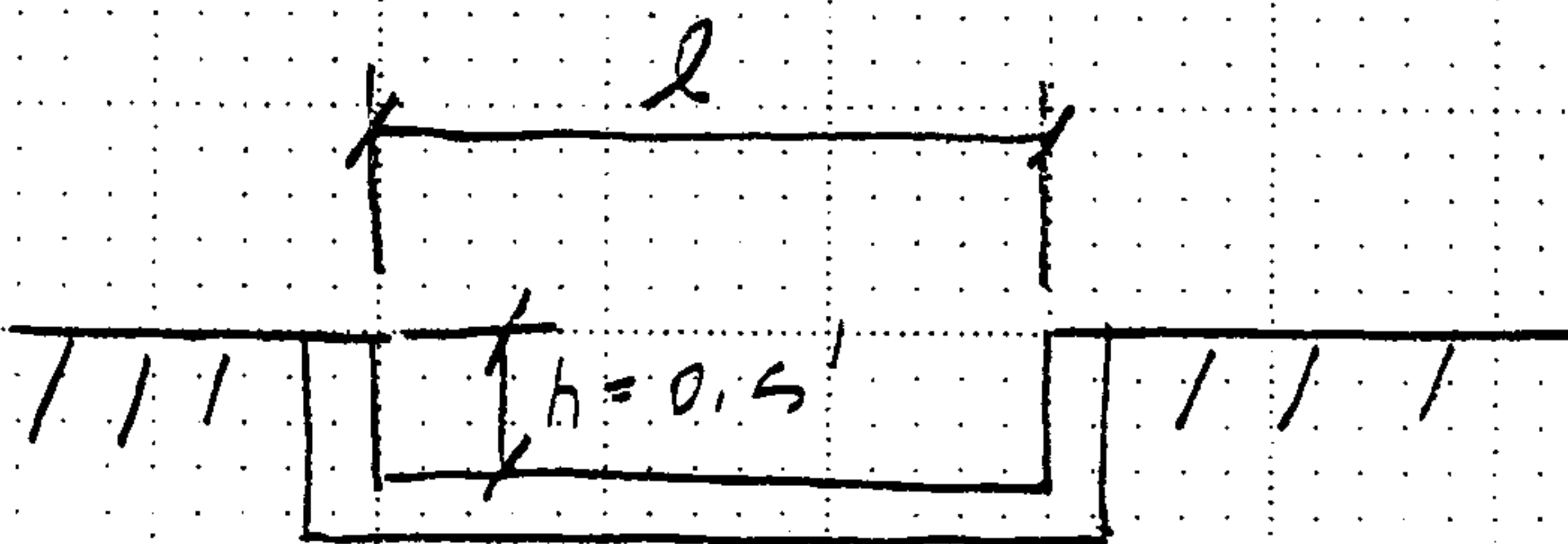
$$A_D = 0.35 \text{ AC}$$

$$V_{10 \text{ DAY}} = 0.1723 \text{ AF}$$

$$= \underline{\underline{7505 \text{ CF}}}$$

② SIZE POND INLET FROM PARKING LOT

$$Q_{100} = 0.84 \text{ cfs} \quad \text{BASIN 101.A}$$



WEIRS

Enter up to 10 weirs.

Enter <Return> only for flowrate and length to end.

FLOWRATE (CFS)	LENGTH (FT)	COEFF (-)	HEAD (FT)
0.84	1.0	2.300	0.50

USE $L = 18''$

NEATHERLIN

8051

1/

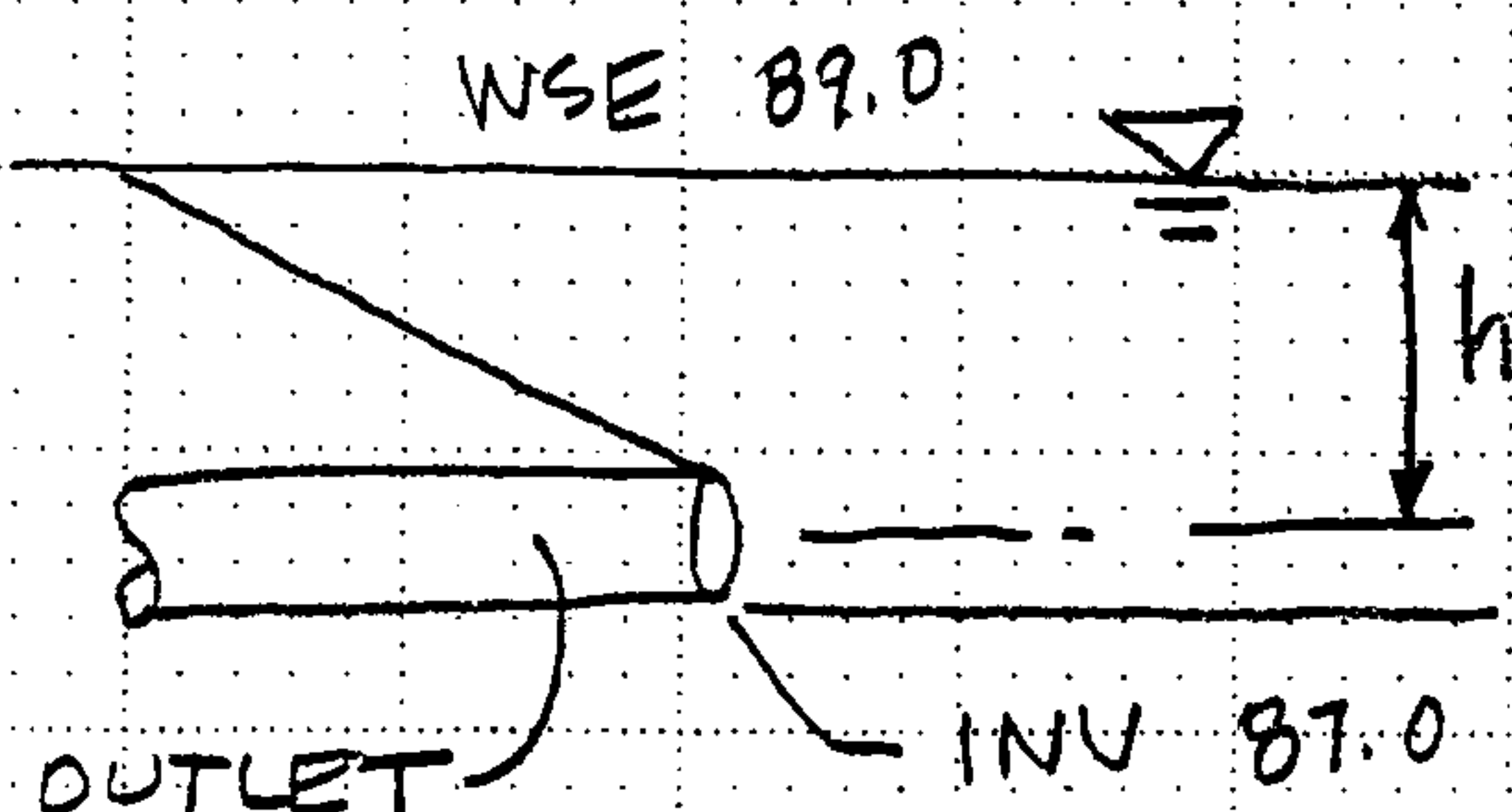
POND ROUTING

12-24-98

① FUTURE DETENTION POND DESIGN

PER DMP LIMIT DISCHARGE TO 1.75 CFS/AC

$$1.75 \text{ CFS/AC} (0.885 \text{ AC}) = 1.55 \text{ CFS}$$



$$Q = CA\sqrt{2gh}$$

$$C = 0.6$$

$$g = 32.2 \text{ f/s}^2$$

⇒ ASSUME INLET CONTROL

PIPE DIA	h_{MAX}	Q_{MAX}	
6"	1.75'	1.27 CFS	
7"	1.71'	1.76	TRY 7" INLET
8"	1.67'	2.11	

ELEV	h	Q_{OUT}	POND AREA SF	POND VOL AF
87	0	0	603.75	0
88	0.71	1.14	1076.17	0.01928
89	1.71	1.76	1672.13	0.05083

⇒ PER AHYMO OUTPUT:

$$Q_{\text{OUT}} = 1.45 \text{ CFS}$$

$$V = 0.0352 \text{ AF} = 1533 \text{ CF}$$

$$\text{WSE} = 88.5$$

NEATHERLIN

8051

2/

POND ROUTING

12-24-98

CHECK FOR PIPE FLOW:

SEWER PIPES

Enter up to 10 pipes.

Enter <Return> only for flowrate and diameter to end.

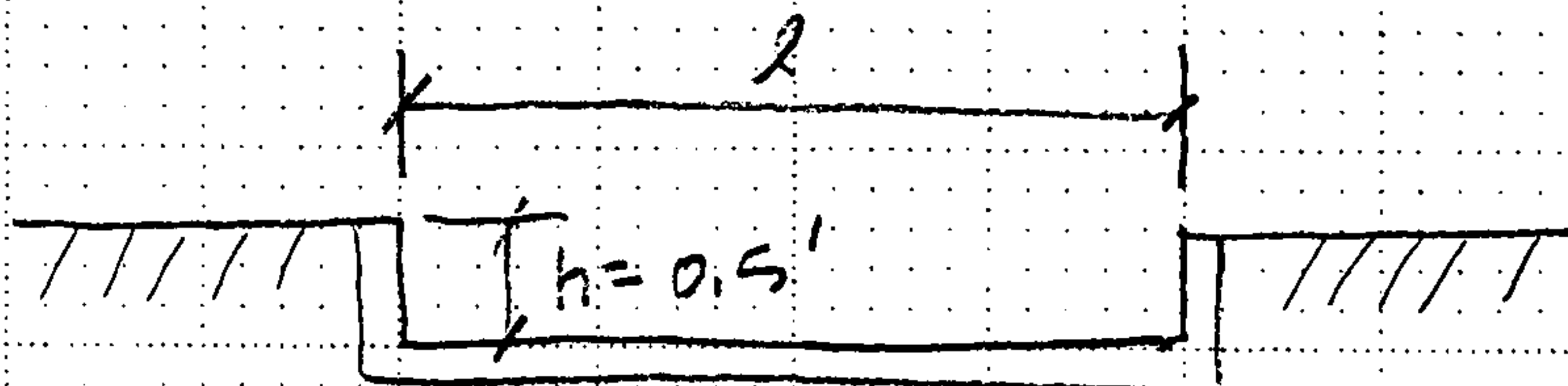
FLOWRATE (CFS)	DIAMETER (IN)	FRICTION (FT ^{1/6})	SLOPE (%)	VELOCITY (FPS)
1.55	8.36	0.0130	1.30	4.07
1.55	10.00	0.0130	0.50	2.84 ←
1.39	8.00	0.0130	1.33	3.99

NEED 10" PIPE TO ACHIEVE GRAVITY FLOW

⇒ USE 10" PIPE ; LIMIT POND OUTLET
TO 7" DIA < PROVIDE ORIFICE PLATE >
WITH AREA = 0.28 SF

② POND OVERFLOW SPILLWAY

$$Q_{100} = 3.0 \text{ CFS}$$



WEIRS

Enter up to 10 weirs.

Enter <Return> only for flowrate and length to end.

FLOWRATE (CFS)	LENGTH (FT)	CORFF (-)	HEAD (FT)
3.00	3.4	2.500	0.50

USE L = 3.50 FT

NEATHERLIN

8051

3/

POND ROUTING

12-24-98

OVER FLOW SPILLWAY CONNECTS TO SW
CULVERT AT EAGLE ROCK
SIZE SW CULVERT:

MAN-MADE CHANNELS

VARIABLES LIST:

Y - FLOW DEPTH

B - CHANNEL BOTTOM WIDTH

S - CHANNEL SLOPE

Q - FLOWRATE

M - CHANNEL SIDE SLOPE

N - CHANNEL ROUGHNESS

VARIABLE TO BE SOLVED (Y, Q, B, M, S OR N) ? Y

Q (CFS) ? 3.0

B (FT) ? 1.0

M (FT/FT) ? 0

S (FT/FT) ? .02

N (FT^{1/6}) ? .013

RESULTS

Y= 0.48 FT

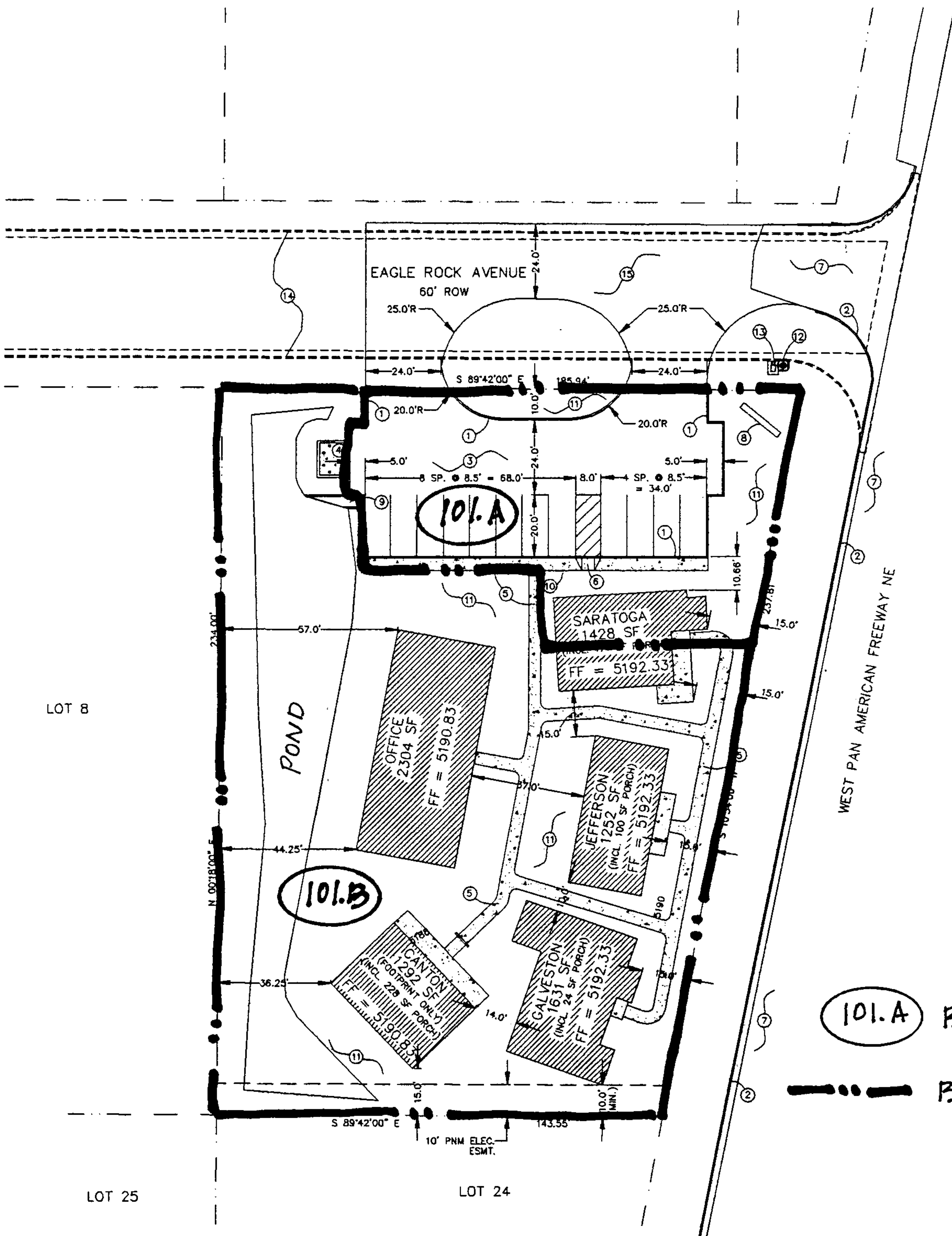
A= 0.48 SF

P= 1.95 FT

V= 6.30 FPS

F= 1.61 SUPER-CRITICAL FLOW

USE 12" SW
CULVERT



101.A BASIN I.D.

--- BASIN DIVIDE

DRAINAGE BASINS



Federal Emergency Management Agency

Washington, D.C. 20472

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

IN REPLY REFER TO:
Case No.: 98-06-660P

The Honorable Jim Baca
Mayor, City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

Community: City of Albuquerque, New Mexico
Community No.: 350002
Panels Affected: 35001C0128 D, 0129 D,
0133 D, 0137 D, and 0141 D

Effective Date of
This Revision: **SEP 11 1998**

102-I-A-C

Dear Mayor Baca:

This responds to a request that the Federal Emergency Management Agency (FEMA) revise the effective Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS) report for Bernalillo County, New Mexico and Incorporated Areas (the effective FIRM and FIS report for your community), in accordance with Part 65 of the National Flood Insurance Program (NFIP) regulations. In a letter dated January 31, 1997, Ms. Susan M. Calongne, P.E., Floodplain Administrator, City of Albuquerque, requested that FEMA revise the FIRM and FIS report to show the effects of the following projects in the La Cueva Arroyo watershed:

North La Cueva Arroyo:

- La Cueva training dike at Eagle Rock Avenue
- Three 10-foot by 10-foot reinforced-concrete box culverts beneath Interstate Highway 25 (I-25)
- A concrete-lined channel from I-25 to North Diversion Channel

South La Cueva Arroyo:

- San Pedro storm drain beneath San Pedro Drive from Signal Avenue to Modesto Avenue
- A concrete-lined channel from I-25 to the North La Cueva channel
- Wildflower Training Dike to guide floodwaters to the South La Cueva channel

South El Camino Arroyo:

- South El Camino Diversion to divert floodwaters from South El Camino Arroyo to the North La Cueva channel

This request also included more detailed topographic information along North La Cueva Arroyo from its confluence with North Diversion Channel to Wyoming Boulevard; along South La Cueva Arroyo from its confluence with North La Cueva Arroyo to approximately 1,400 feet upstream of Louisiana Boulevard; and along South El Camino Arroyo from approximately 1,200 feet downstream of San Mateo Boulevard to I-25. This revision is entirely within the City of Albuquerque because portions of the unincorporated areas of Bernalillo County were annexed by the City in March 1995.

All data required to complete our review of this request were submitted with letters from Mr. Kurt Browning, P.E., Drainage Engineer, Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA); Mr. Daniel J. Grochowski, P.E., P.S., Project Manager, Bohannon-Huston, Inc.; and Ms. Calongne.

We have completed our review of the submitted data, the flood data shown on the effective FIRM and FIS report, and the Letter of Map Revision (LOMR) dated August 1, 1997. We have revised the FIRM and FIS report to modify the elevations, floodplain boundary delineations, and zone designations of the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood) along North La Cueva Arroyo from its confluence with North Diversion Channel to Wyoming Boulevard; along South La Cueva Arroyo from its confluence with North La Cueva Arroyo to approximately 1,400 feet upstream of Louisiana Boulevard; and along South El Camino Arroyo from approximately 1,200 feet downstream of San Mateo Boulevard to I-25. As a result of the modifications, the base flood is contained within the channel banks along North La Cueva Arroyo from its confluence with North Diversion Channel to I-25 and along South La Cueva Arroyo from its confluence with North La Cueva Arroyo to I-25. The base flood elevations (BFEs) decreased along the revised reaches of North and South La Cueva Arroyos. The width of the Special Flood Hazard Area (SFHA), the area that would be inundated by the base flood, increased in some areas and decreased in other areas. The increases in SFHA width are contained on property owned by the AMAFCA. The modifications are shown on the enclosed annotated copies of FIRM Panel(s) 35001C0128 D, 35001C0129 D, 35001C0133 D, 35001C0137 D, and 35001C0141 D and affected portions of the Summary of Discharges Table. This LOMR hereby revises the above-referenced panel(s) of the effective FIRM and the affected portions of the FIS report, both dated September 20, 1996.

The modifications are effective as of the date shown above. The map panel(s) as listed above and as modified by this letter will be used for all flood insurance policies and renewals issued for your community.

The following table is a partial listing of existing and modified BFEs:

Location	Existing BFE (feet)*	Modified BFE (feet)*
North La Cueva Arroyo:		
Approximately 500 feet upstream of confluence with North Diversion Channel	2 ¹	None ²
Just downstream of I-25	1 ¹	None ²
Just upstream of I-25	3 ¹	None
Just downstream of Wyoming Boulevard	1 ¹	None
South La Cueva Arroyo:		
Just upstream of Jefferson Street	3 ¹	None ²
Just downstream of I-25	1 ¹	None ²
South El Camino Arroyo:		
Just downstream of I-25	2 ¹	None ³

*Referenced to the National Geodetic Vertical Datum, rounded to the nearest whole foot

¹Depth above ground, rounded to the nearest whole foot

²Base flood contained in channel

³Base flood contained in diversion

Public notification of the proposed modified BFEs will be given in the *Albuquerque Journal* on or about October 8 and October 15, 1998. A copy of this notification is enclosed. In addition, a notice of changes will be published in the *Federal Register*. Within 90 days of the second publication in the *Albuquerque Journal*, a citizen may request that FEMA reconsider the determination made by this LOMR. Any request for reconsideration must be based on scientific or technical data. All interested parties are on notice that,

until the 90-day period elapses, the determination to modify the BFEs presented in this LOMR may itself be modified.

Because this LOMR will not be printed and distributed to primary users, such as local insurance agents and mortgage lenders, your community will serve as a repository for these new data. We encourage you to disseminate the information reflected by this LOMR throughout the community, so that interested persons, such as property owners, local insurance agents, and mortgage lenders, may benefit from the information. We also encourage you to prepare a related article for publication in your community's local newspaper. This article should describe the assistance that officials of your community will give to interested persons by providing these data and interpreting the NFIP maps.

We will not physically revise and republish the FIRM and FIS report for your community to reflect the modifications made by this LOMR at this time. When changes to the previously cited FIRM panel(s) and FIS report warrant physical revision and republication in the future, we will incorporate the modifications made by this LOMR at that time.

This LOMR is based on minimum floodplain management criteria established under the NFIP. Your community is responsible for approving all floodplain development, and for ensuring all necessary permits required by Federal or State law have been received. State, county, and community officials, based on knowledge of local conditions and in the interest of safety, may set higher standards for construction in the SFHA. If the State, county, or community has adopted more restrictive or comprehensive floodplain management criteria, these criteria take precedence over the minimum NFIP criteria.

The basis of this LOMR is, in whole or in part, a channel-modification/culvert project. NFIP regulations, as cited in Paragraph 60.3(b)(7), require that communities ensure that the flood-carrying capacity within the altered or relocated portion of any watercourse is maintained. This provision is incorporated into your community's existing floodplain management regulations. Consequently, the ultimate responsibility for maintenance of the modified channel and culvert rests with your community.

This determination has been made pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (Public Law 93-234) and is in accordance with the National Flood Insurance Act of 1968, as amended (Title XIII of the Housing and Urban Development Act of 1968, Public Law 90-448), 42 U.S.C. 4001-4128, and 44 CFR Part 65. Pursuant to Section 1361 of the National Flood Insurance Act of 1968, as amended, communities participating in the NFIP are required to adopt and enforce floodplain management regulations that meet or exceed minimum NFIP criteria. These criteria are the minimum and do not supersede any State or local requirements of a more stringent nature. This includes adoption of the effective FIRM to which the regulations apply and the modifications described in this LOMR. Our records show that your community has met this requirement.

A Consultation Coordination Officer (CCO) has been designated to assist your community. The CCO will be the primary liaison between your community and FEMA. For information regarding your CCO, please contact:

Mr. James LeGrotte
Director, Mitigation Division
Federal Emergency Management Agency, Region VI
Federal Regional Center, Room 206
800 North Loop 288
Denton, Texas 76201-3698
(940) 898-5127

FEMA makes flood insurance available in participating communities; in addition, we encourage communities to develop their own loss reduction and prevention programs. Our Project Impact initiative, developed by FEMA Director James Lee Witt, seeks to focus the energy of businesses, citizens, and communities in the United States on the importance of reducing their susceptibility to the impact of all natural disasters, including floods, hurricanes, severe storms, earthquakes, and wildfires. Natural hazard mitigation is most effective when it is planned for and implemented at the local level, by the entities who are most knowledgeable of local conditions and whose economic stability and safety are at stake. For your information, we are enclosing a Project Impact Fact Sheet. For additional information on Project Impact, please visit our Web site at www.fema.gov.

If you have any questions regarding floodplain management regulations for your community or the NFIP in general, please contact the CCO for your community at the telephone number cited above. If you have any technical questions regarding this LOMR, please contact Mr. Alan Johnson of our staff in Washington, DC, either by telephone at (202) 646-3403 or by facsimile at (202) 646-4596.

Sincerely,



Alan A. Johnson, P.E., Project Engineer
Hazards Study Branch
Mitigation Directorate

For: Matthew B. Miller, P.E., Chief
Hazards Study Branch
Mitigation Directorate

Enclosure(s)

cc: Ms. Susan M. Calongne, P.E. v
Floodplain Administrator
City of Albuquerque

Mr. Kurt Browning, P.E.
Drainage Engineer
Albuquerque Metropolitan Arroyo
Flood Control Authority

Mr. Daniel J. Grochowski, P.E., P.S.
Project Manager
Bohannon-Huston, Inc.

Table 3. Summary of Discharges for Shallow Flooding Areas (Cont'd)

<u>Flooding Source and Location</u>	<u>Drainage Area (square miles)</u>	<u>100-Year Peak Discharges (cfs)</u>
Boca Negra Arroyo - South ¹	2.82	1,282
Boca Negra Arroyo ¹ Just downstream of confluence with South Branch	7.20	2,911
Borrega Arroyo "A" ¹ At confluence of Borrega Arroyo	0.60	293
Borrega Arroyo ¹ At confluence of Borrega Arroyo "A"	0.32	171
At outfall	1.26	614 ³
South El Camino Arroyo At Tramway Boulevard ²	1.85	2,853
At Ventura Street ²	2.59	3,301
At Interstate Highway 25	3.17	2,053
North La Cueva Arroyo At Tramway Boulevard ²	2.81	3,759
At Ventura Street ²	3.54	3,494
At Interstate Highway 25	4.36	2,746
At North Diversion Channel	8.52	4,869
Arroyo De Domingo Baca ² At confluence with Baca Tributary	3.26	2,550
Dam inflow	4.43	3,845
Dam outflow	4.43	761
At Ventura Street	5.84	1,142
At Interstate Highway 25	7.33	2,146
At North Diversion Channel	12.73	3,620

REVISED DATA

¹Flows from Matotan, 1975

²Flows from Northeast Heights Drainage Management Plan - Leonard Rice - April 1975

³By Regression Analysis

REVISED TO
REFLECT LOMR
DATED SEP 11 1998