



# *City of Albuquerque*

September 29, 1999

Thomas T. Mann, P.E.  
Engineering & Surveying Assoc., Inc.  
5312 Noreen Drive NE  
Albuquerque, NM 87111

**RE: PALOMAS BUSINESS PARK, TRACT X-1-A (D19-D24). ENGINEER'S  
CERTIFICATION FOR CERTIFICATE OF OCCUPANCY APPROVAL.  
ENGINEER'S STAMP DATED AUGUST 23, 1999.**

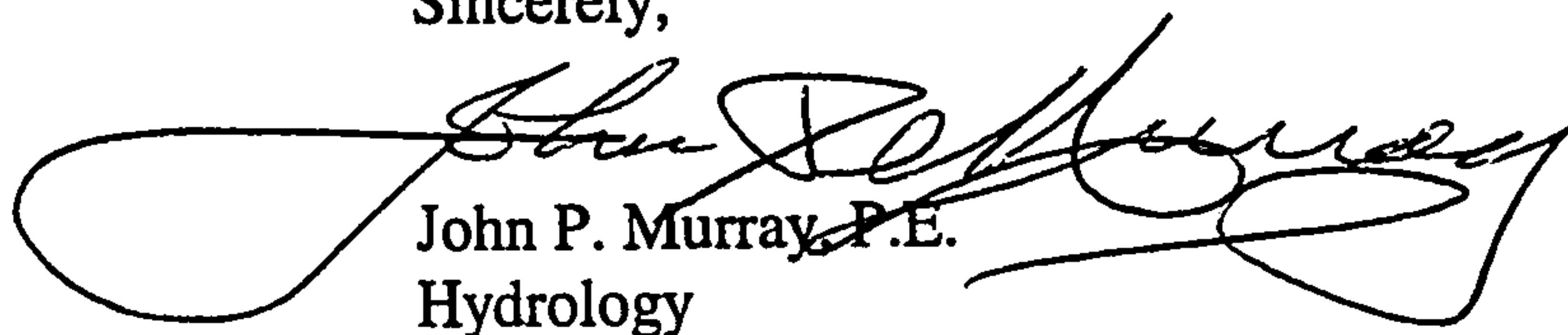
Dear Mr. Mann:

Based on the information provided on your September 1, the above referenced project is approved for Certificate of Occupancy.

This action was deferred until the Engineer signed his seal anew on September 21, 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



# ***City of Albuquerque***

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

March 3, 1999

Tom Mann, P.E.  
Engineering & Surveying Assoc.  
5312 Noreen NE  
Albuquerque, NM 87111

***RE: PALOMAS BUSINESS PARK, TRACT X-1-A (D19-D24). GRADING AND DRAINAGE PLAN FOR BUILDING PERMIT APPROVAL. Churchill Heights Assisted Living, TRACT X-1-B (D19-D22) STORM DRAIN PLAN. ENGINEER'S STAMP for latter DATED MARCH 1, 1999.***

Dear Mr. Mann:

Based on the information provided on your March 2, 1999 submittal, the above referenced project is approved for Building Permit. This submittal presents the storm drain layout for the downstream outlet to the Domingo Baca Channel. Concurrence by AMAFCA has been requested.

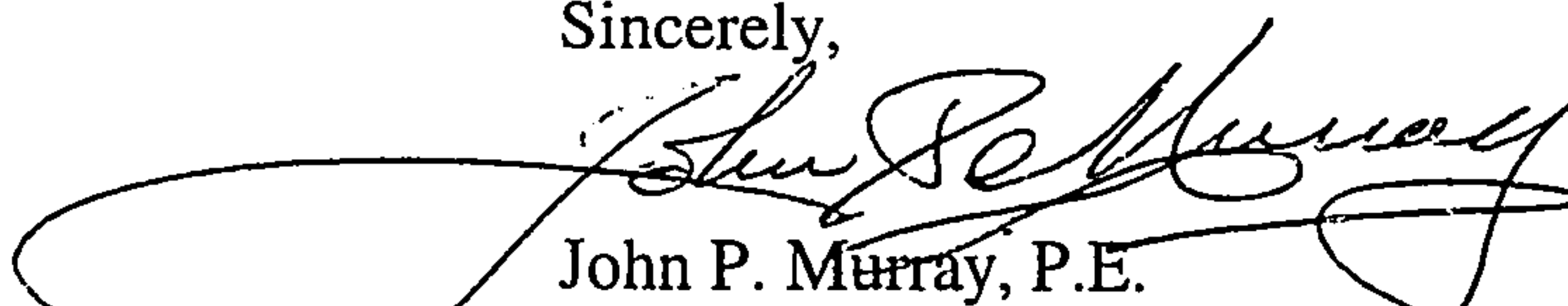
The Churchill Heights, Tract X-1-B (D19-D22), Conceptual Drainage Plan was approved for Site Development Plan and Final Plat by C.O.A. letter dated September 24, 1998. Palomas Business Park, Tract X-1-A (D19-D24), was approved on the same date for Site Development Plan.

Please attach a copy of the approved PLANS 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. The previously recommended M.H./J.B. should be part of the "as-builts".

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  
Larry Read & Assoc.  
Lisa Manwill, AMAFCA

SECTION 19 (PROJECTED),

ED IN APRIL  
ERS WERE FOUND

ISTANCES AND ALL  
OF THE NEW MEXICO  
TEM, CENTRAL ZONE.

AT OF RECORD, TRACTS  
1 THRU 5 AND 28 THRU 32  
NORTH ALBUQUERQUE ACRES  
A DEL NORTE UNIT NO. 9  
21, FOLIO 149.

TO SPLIT ONE TRACT INTO  
IVATE DRAINAGE EASEMENT.

OF RECORD.

BY THIS SUBDIVISION:

NT "HEAVEN"

.99996263

E FOUND REBAR &  
CAP #5953

GRANTED  
5/99, TO THE  
POSSIBLE  
ITS.  
OM 0'  
CT X-1-B  
OF

**WYOMING BOULEVARD NE**  
(R/W - EAST HALF - CL TO PL = 62.00')

FOUND REBAR &  
CAP #5953

**PALOMAS AVENUE NE**

(R/W CL TO PL = 30.00')

S89°39'01"E 292.06'

Δ=90°11'30"  
R=25.00'  
L=39.35'  
CB=N45°15'14"E  
CL=35.41'

TRACT X-1-A-1  
0.9645 AC.±

TRACT X-1-A-2  
1.0362 AC.±

S89°38'51"E 317.14'

SET REBAR &  
CAP #5953

15' PRIVATE DRAINAGE EASEMENT  
GRANTED BY PLAT 99-C,46, FILED 3/05/99  
FOR THE CONSTRUCTION OF A STORM  
DRAIN FROM TRACT X-1-A-1 AND  
TRACT X-1-A-2 TO THE DOMINGO BACA  
CHANNEL. MAINTENANCE OF THE FACILITIES  
SHALL BE BY THE OWNER(S) OF  
TRACT X-1-B.

**TRACT X-1-B**

10. CROSS PARKING.

9. TRACT X-1-A-2 IS GRANTED BY THIS PLAT THE  
RIGHT TO DISCHARGE STORM WATER ONTO PAVED  
AREAS OF TRACT X-1-A-1 IN ORDER FOR THE  
WATER TO REACH THE STORM DRAIN LOCATED AT  
THE SOUTHWEST CORNER OF TRACT X-1-A-2.  
MAINTENANCE OF THE PAVED AREAS SHALL BE THE  
RESPONSIBILITY OF THE OWNER(S) OF TRACT X-1-A-2.

FOUND REBAR &  
CAP #6547

10' TELEPHONE & ELECTRIC  
EASEMENT FILED 1/26/83  
BOOK MS 987, PAGE 422.

S00°09'29"W 275.24'

FOUND REBAR &  
CAP #5953

BLOCK WALL ENCROACHES INTO  
PROPERTY APPROX. 0.6'

COUNTRYWOOD SUBDIVISION  
FILED 12/25/00



**LEGEND**

● FC  
○ SE



TRAPEZOIDAL CHANNEL ANALYSIS  
RATING CURVE COMPUTATION

June 23, 1999  
Sandia Credit Union  
Wyoming & Palomas  
Rundown Flow Calculations

=====

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0800
Manning`s Roughness Coefficient (n-value).....	0.0130
Channel Side Slope - Left Side (horizontal/vertical)....	0.01
Channel Side Slope - Right Side (horizontal/vertical)...	0.01
Channel Bottom Width (feet).....	5.5

=====

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.1	3.7	6.80	3.791	0.719	0.819	0.6	5.5
0.2	11.6	10.55	4.160	1.730	1.930	1.1	5.5
0.3	22.3	13.53	4.354	2.841	3.141	1.7	5.5
0.4	35.3	16.04	4.471	3.995	4.395	2.2	5.5
0.5	50.2	18.23	4.546	5.161	5.661	2.8	5.5

=====

TRAPEZOIDAL CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.3 (c) 1986  
Dodson & Associates, Inc., 7015 W. Tidwell, #107, Houston, TX 77092  
(713) 895-8322. A manual with equations & flow chart is available.



# ***City of Albuquerque***

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

March 3, 1999

Tom Mann, P.E.  
Engineering & Surveying Assoc.  
5312 Noreen NE  
Albuquerque, NM 87111

***RE: PALOMAS BUSINESS PARK, TRACT X-1-A (D19-D24). GRADING AND DRAINAGE PLAN FOR BUILDING PERMIT APPROVAL. Churchill Heights Assisted Living, TRACT X-1-B (D19-D22) STORM DRAIN PLAN. ENGINEER'S STAMP for latter DATED MARCH 1, 1999.***

Dear Mr. Mann:

Based on the information provided on your March 2, 1999 submittal, the above referenced project is approved for Building Permit. This submittal presents the storm drain layout for the downstream outlet to the Domingo Baca Channel. Concurrence by AMAFCA has been requested.

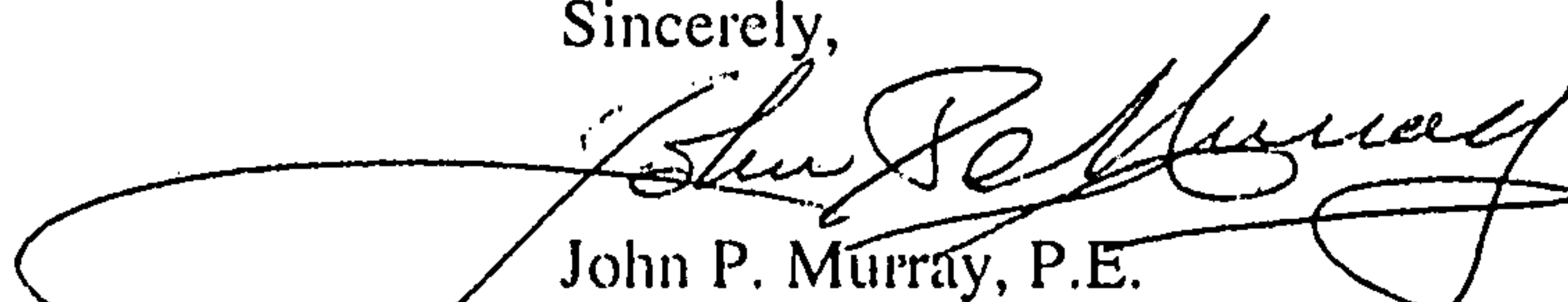
The Churchill Heights, Tract X-1-B (D19-D22), Conceptual Drainage Plan was approved for Site Development Plan and Final Plat by C.O.A. letter dated September 24, 1998. Palomas Business Park, Tract X-1-A (D19-D24), was approved on the same date for Site Development Plan.

Please attach a copy of the approved PLANS 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. The previously recommended M.H./J.B. should be part of the "as-builts".

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  
Larry Read & Assoc.  
Lisa Manwill, AMAFCA



# ***City of Albuquerque***

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 22, 1999

Tom Mann, P.E.  
Engineering & Surveying Assoc.  
5312 Noreen NE  
Albuquerque, NM 87111

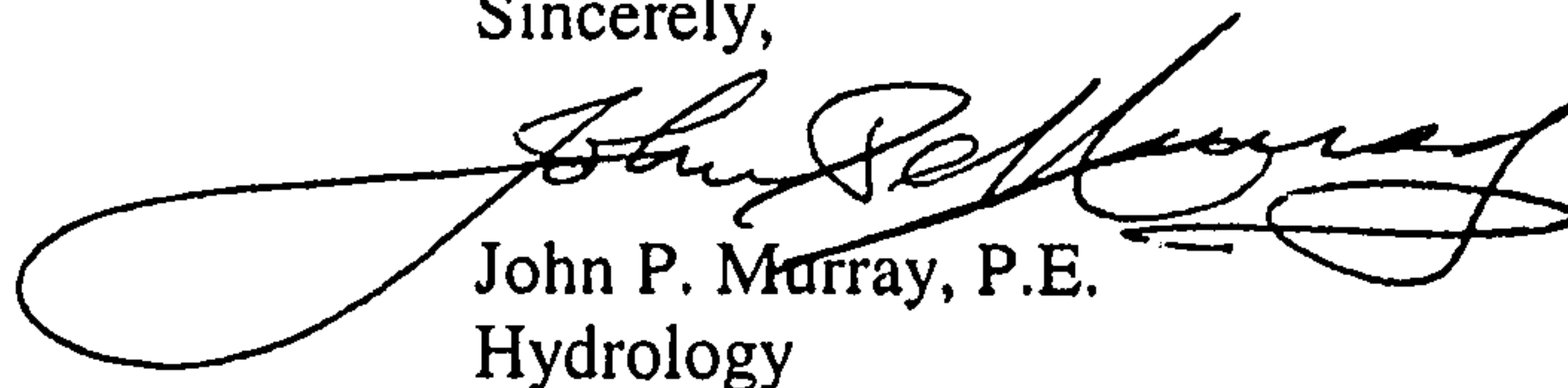
***RE: PALOMAS BUSINESS PARK, TRACT X-1-A (D19-D24). CONCEPTUAL GRADING AND DRAINAGE PLAN FOR SITE DEVELOPMENT PLAN FOR SUBDIVISION APPROVAL. ENGINEER'S STAMP DATED AUGUST 24, 1998. New Stamp Date Of September 2, 1998.***

Dear Mr. Mann:

This is to acknowledge that the G&D Plan stamped September 2, 1998 corrected the direction of the North arrow shown on same plan stamped August 24, 1998.

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  
~~Larry Read & Assoc.~~



# ***City of Albuquerque***

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 6, 2000

Kim Kemper, P.E.  
Kemper-Vaughan Consulting Engineers  
3700 Coors Road NW  
Albuquerque, New Mexico 87120

***RE: Engineer's Certification Plan for Sandia Credit Union (D19/D24), Submitted for  
Certificate of Occupancy Approval, Engineer's Certification Stamp Dated 1/3/00.***

Dear Mr. Kemper:

Based on the information provided, the above referenced plan is adequate for release of the Certificate of Occupancy for the Sandia Credit Union located at Palomas and Wyoming.

If you have any questions, or if I may be of further assistance to you, please call me at 924-3982.

Sincerely,

Susan M. Calongne, P.E.  
City/County Floodplain Administrator

c: Whitney Reiersen, City Hydrology  
File





# ***City of Albuquerque***

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

August 9, 1999

Kim Kemper, P.E.  
Kemper-Vaughan Consulting Engineers  
3700 Coors Road NW  
Albuquerque, New Mexico 87120

***RE: Grading and Drainage Plan for Sandia Credit Union (D19/D24), Submitted for Building Permit Approval, Engineer's Stamp Dated 7/16/99.***

Dear Mr. Kemper:

Based on the information provided, the above referenced Grading and Drainage plan dated July 16, 1999 is approved for Building Permit release.

As you are aware, the Engineer's Certification is required prior to release of the Certificate of Occupancy for this site.

If you have any questions, or if I may be of further assistance to you, please call me at 924-3982.

Sincerely,

Susan M. Calongne, P.E.  
City/County Floodplain Administrator

c: Whitney Reiersen, City Hydrology  
File





# ***City of Albuquerque***

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

July 30, 1999

Kim Kemper, P.E.  
Kemper-Vaughan Consulting Engineers  
3700 Coors Road NW  
Albuquerque, New Mexico 87120

***RE: Grading and Drainage Plan for Sandia Credit Union (D19/D24), Submitted for Final Plat Approval, and Building Permit Approval, Engineer's Stamp Dated 7/16/99.***

Dear Mr. Kemper:

My previous letter of July 2, 1999 requested that additional comments be addressed on the plan prior to Building Permit approval. Although the supplemental information provided in the submittal of July 16, 1999 may have addressed my concerns about downstream capacity, the pertinent information must appear on your grading and drainage plan, since each plan must be able to stand alone.

If you have any questions, or if I may be of further assistance to you, please call me at 924-3982.

Sincerely,

Susan M. Calongne, P.E.  
City/County Floodplain Administrator

c: File

7/14/99

Inlet @ sw corner Tract X-1-A-2

$$INV = 96.0$$

length to inlet @ sw corner Tract X-1-A-1

$$L = 145'$$

Inlet @ sw corner Tract X-1-A-1

$$INV = 91.74 \text{ (Reed dwp.)}$$

$$\phi = 12" \quad \text{area} = 0.785 \quad n = 0.013 \quad R = \frac{0.785}{3.14} = 0.25$$

$$Q = \frac{1.49}{0.013} (0.785) (0.25)^{2/3} \left( \frac{4.26}{145} \right)^{1/2} = 6.12 \text{ cfs}$$

$$\text{Flow from Tract X-1-A-2 } (2.60 * 0.10 + 5.02 * 0.90) 1.04 = \underline{\underline{4.97 \text{ cfs} < 6.12 \text{ cfs}}}$$

18" PVC

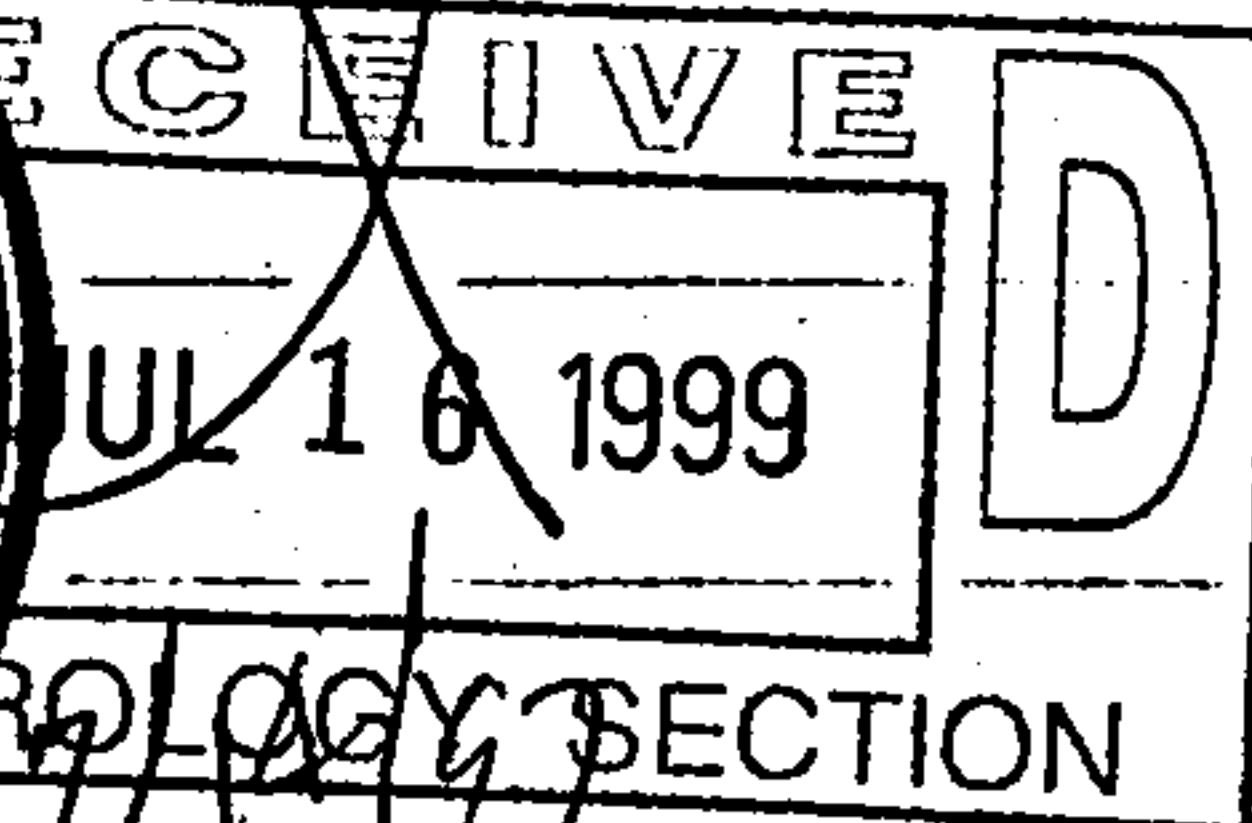
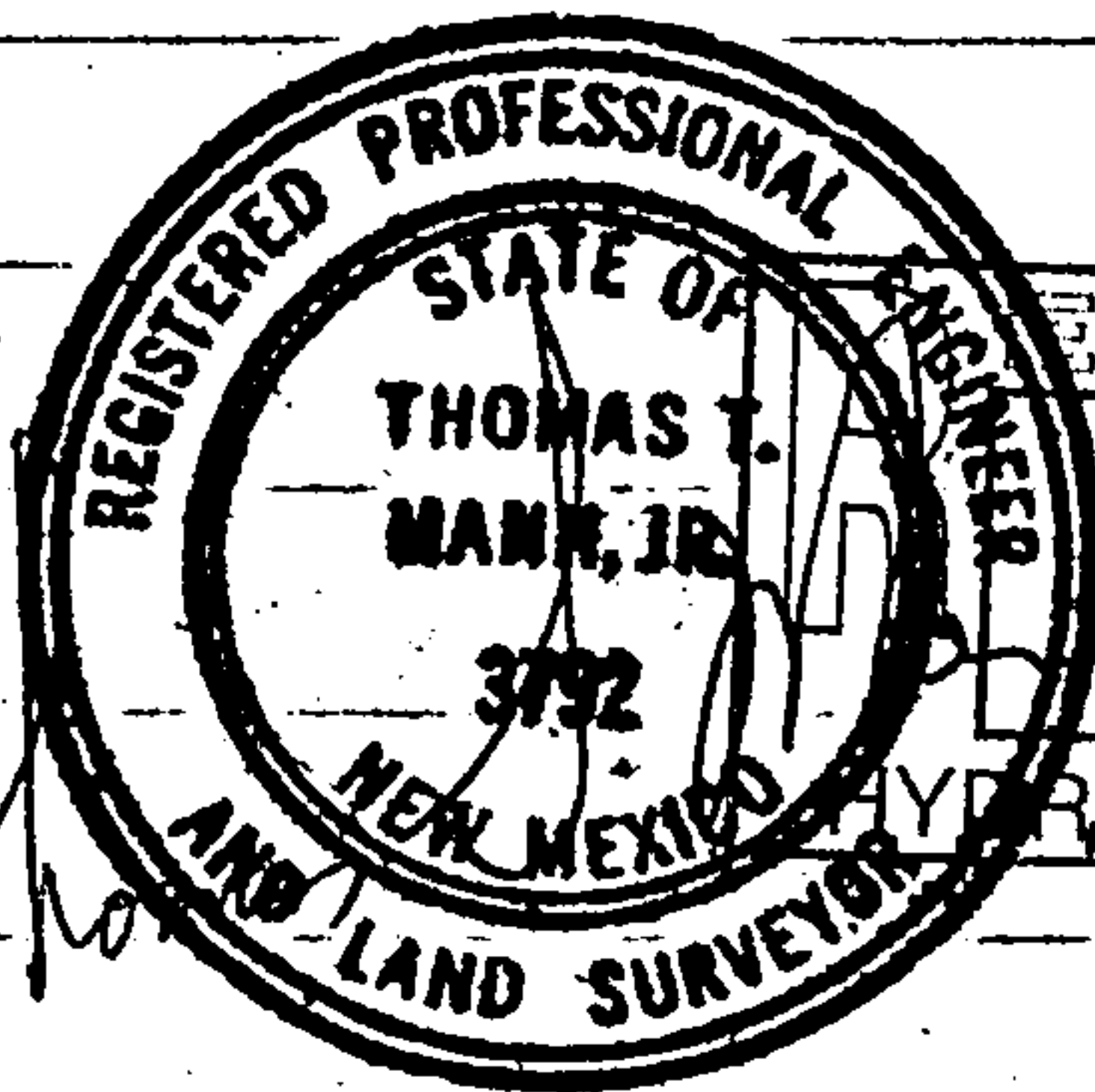
$$S = \frac{0.87}{87} = 0.01 \quad \text{area} = 1.77 \quad R = \frac{1.77}{4.71} = 0.38$$

$$Q = \frac{1.49}{0.013} (1.77) (0.38)^{2/3} (0.01)^{1/2} = 10.64 \text{ cfs}$$

24" PVC

$$S = \frac{2.97}{297} = 0.01 \quad \text{area} = 3.14 \quad R = \frac{3.14}{6.28} = 0.50$$

$$Q = \frac{1.49}{0.013} (3.14) (0.50)^{2/3} (0.01)^{1/2} = 22.67 \text{ cfs}$$



# FLOOD PLAIN:

As shown on Panel 3501 1C0 141 D, dated September 20, 1996, no portion of this site is in a designated flood plain. The Zone A flood plain, shown on the south side of the site, is noted as confined to the constructed channel.

## CALCULATIONS:

Precipitation Zone 3  
Total site = 3 acres

## EXISTING CONDITIONS:

Land treatment - B=100% due to prior grading.

$$Q100 = 2.60 \text{ CFS/ac} \cdot 3 \text{ ac} = 7.50 \text{ CFS}$$

$$Q10 = 7.80 \text{ CFS} \cdot 0.667 = 5.20 \text{ CFS}$$

$$Y100 = \frac{0.92 \text{ in} \cdot 3 \text{ ac} \cdot 43560}{12} = 10,019 \text{ CF}$$

$$Y10 = 10,019 \text{ CF} \cdot 0.667 = 6683 \text{ CF}$$

## PROPOSED CONDITIONS:

Land Treatments: B (Turf) = 16% C (SW Landscape) = 16%  
D = 68%

$$Q100 = (3.0 \cdot .16 \cdot 2.60) + (3.0 \cdot 0.16 \cdot 3.95) + (3.0 \cdot .68 \cdot 5.02) = 13.4 \text{ CFS}$$

$$Q10 = 13.14 \text{ CFS} \cdot 0.667 = 8.77 \text{ CFS}$$

$$V100 = (3.0 \cdot .16 \cdot .92) + (3.0 \cdot .16 \cdot 1.29) + (3.0 \cdot .68 \cdot 2.36) = \frac{5.87}{12} \cdot 43560 = 21,327 \text{ CF}$$

$$V10 = 21,327 \text{ CF} \cdot 0.667 = 14,225 \text{ CF}$$

Increased due to this project

$$Q100 = 5.34 \text{ CFS}$$

$$Q10 = 3.57 \text{ CFS}$$

$$V100 = 11,308 \text{ CF}$$

$$V10 = 7,542 \text{ CF}$$

Total discharge to the Domingo Baca Arroyo

Tract X-1-A (per T.R. Mann PCAN dated 8/24/98)

$$Q100 = 9.31 \text{ CFS}$$

This Tract:

$$Q100 = 13.14 \text{ CFS}$$

$$Q100 \text{ (Total)} = 22.45 \text{ CFS}$$

Pipe Capacity:

$$18" \text{ PVC @ } 1\% \text{ QCAP} = 10.5 \text{ CFS}$$

$$24" \text{ PVC @ } 1\% \text{ QCAP} = 22.4 \text{ CFS} \quad ? \quad Q100 \text{ (Total)} = 22.45 \text{ CFS}$$

EXIST ASPHALT

EXIST CONCRETE SIDEWALK

EXIST CURB AND GUTTER

EXIST CONTOURS

PROPERTY BOUNDARY

NEW SPOT ELEVATION

NEW COUNTOUR

NEW STORM DRAIN LINE

## ABBREVIATIONS

TC/TCC	TOP OF CONCRETE/CONCRETE CURB
FL	FLOWLINE
CMU	CONCRETE MASONARY UNIT
INV	INVERT
TW	TOP OF WALL

## TEMPORARY BENCHMARK (TEM)

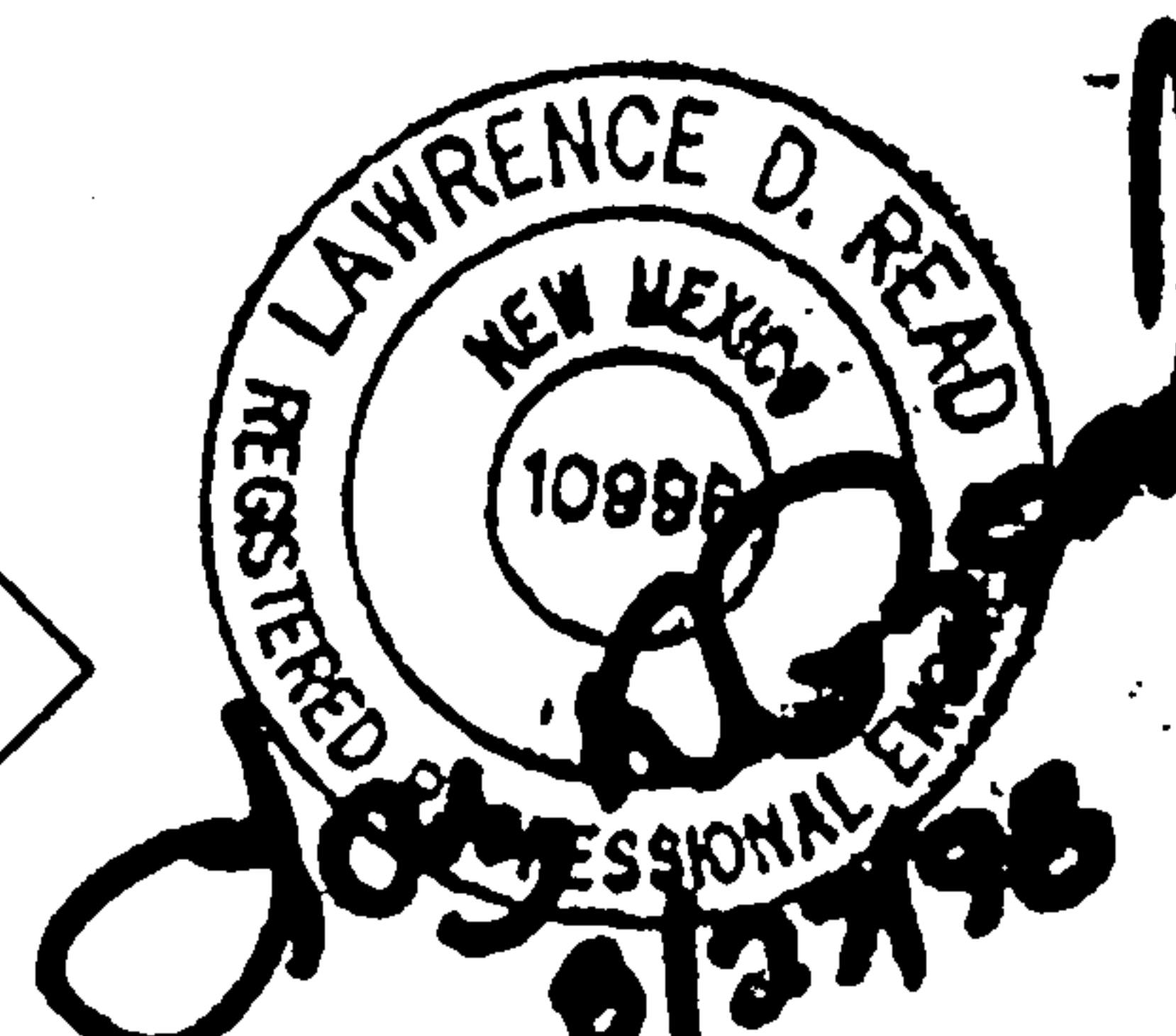
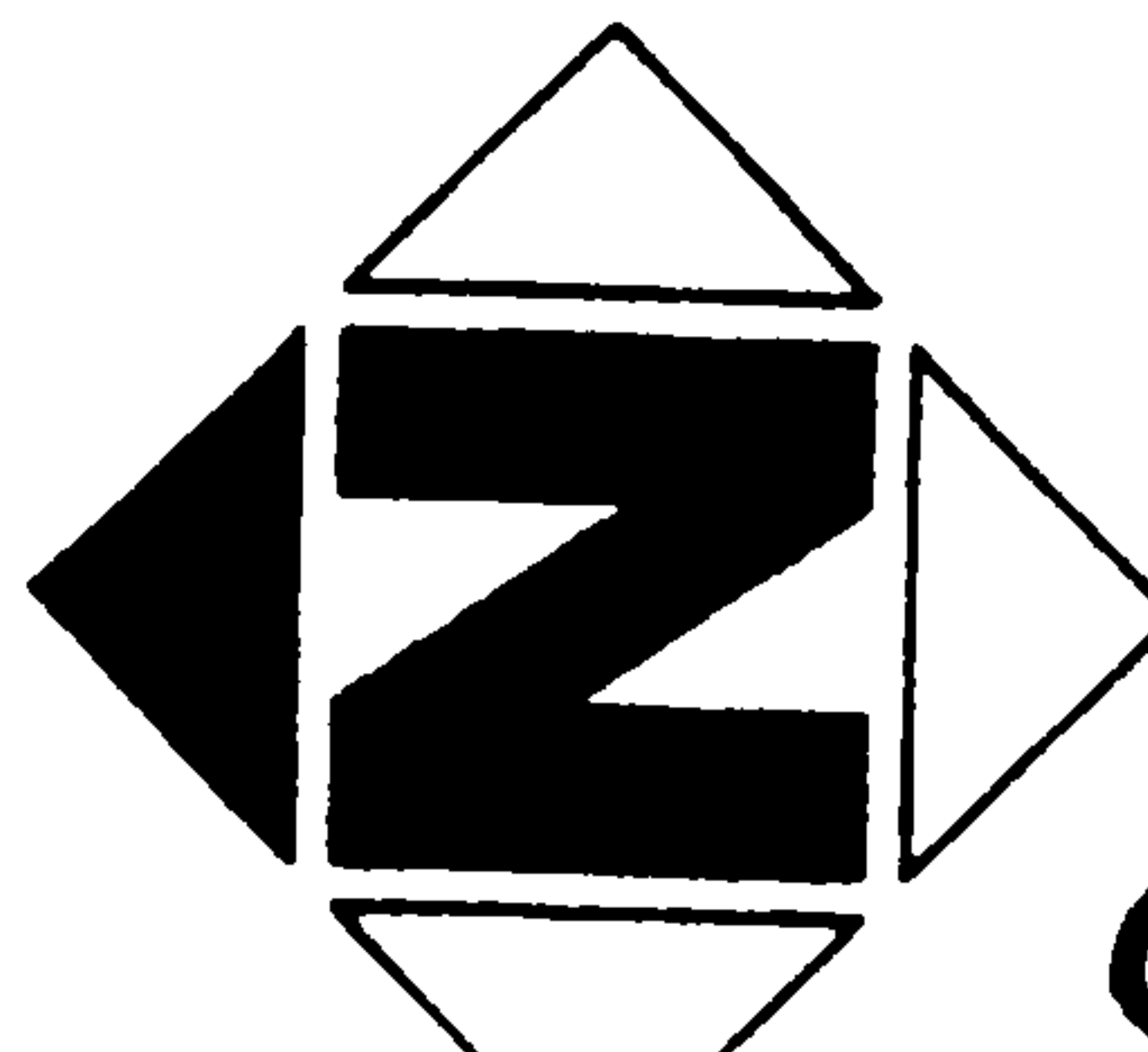
TOP OF #5 REBAR, SET FOR THE S.E. CORNER OF TRACT X-1-B, LOCATED AS SHOWN ON PLAN.  
ELEV.=5395.40'

## SURVEY INFO.

TOPOGRAPHIC SURVEY PERFORMED BY CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC. ALBUQUERQUE, NEW MEXICO AUGUST 1998.

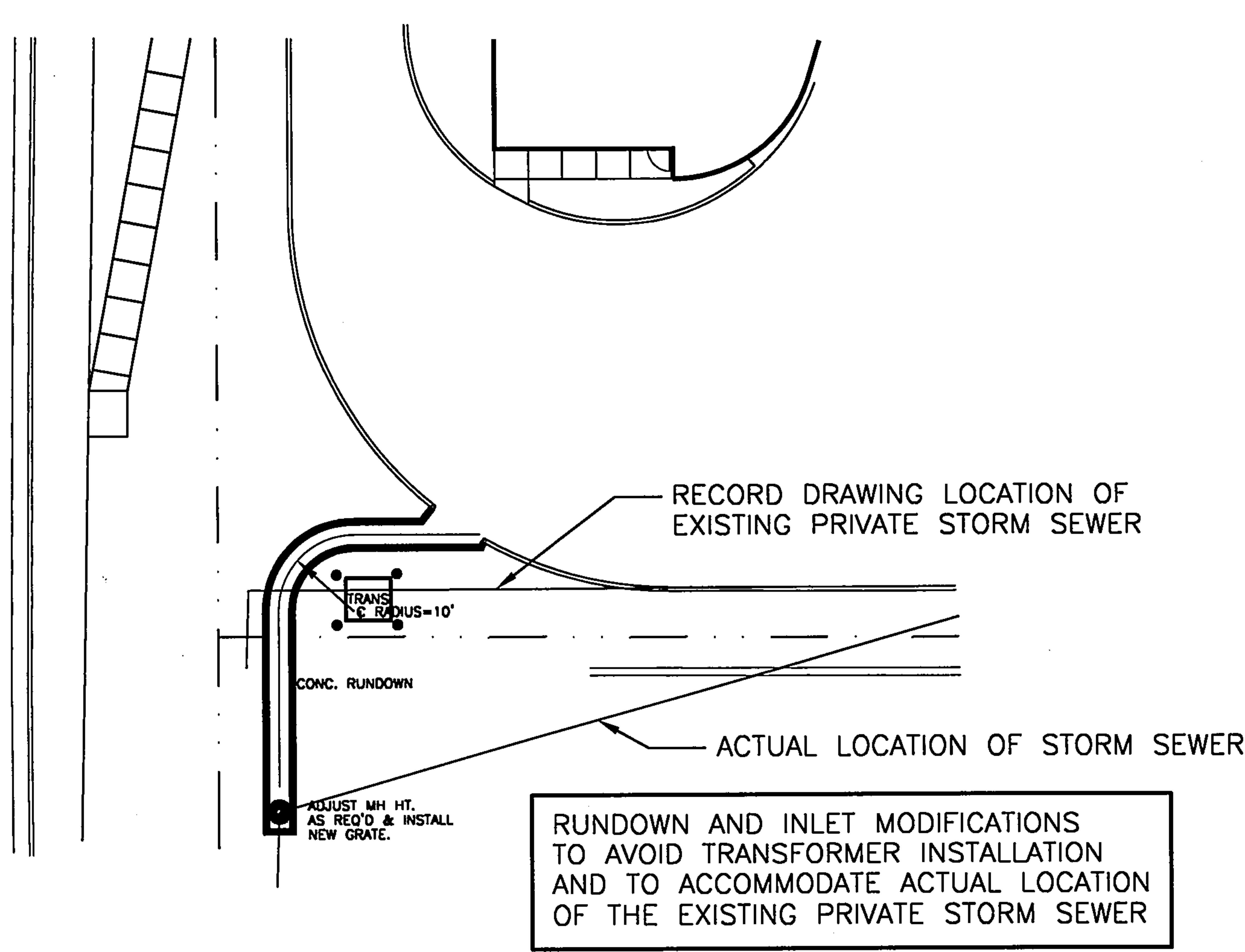
## NOTES

1. THIS IS NOT A BOUNDARY SURVEY, APPARENT PROPERTY CORNERS ARE SHOWN FOR ORIENTATION ONLY.
2. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL THE UTILITIES IN THE AREA EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DO CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. THE SURVEYOR HAS PHYSICALLY LOCATED THE UNDERGROUND UTILITIES, EXCEPT AS NOTED.





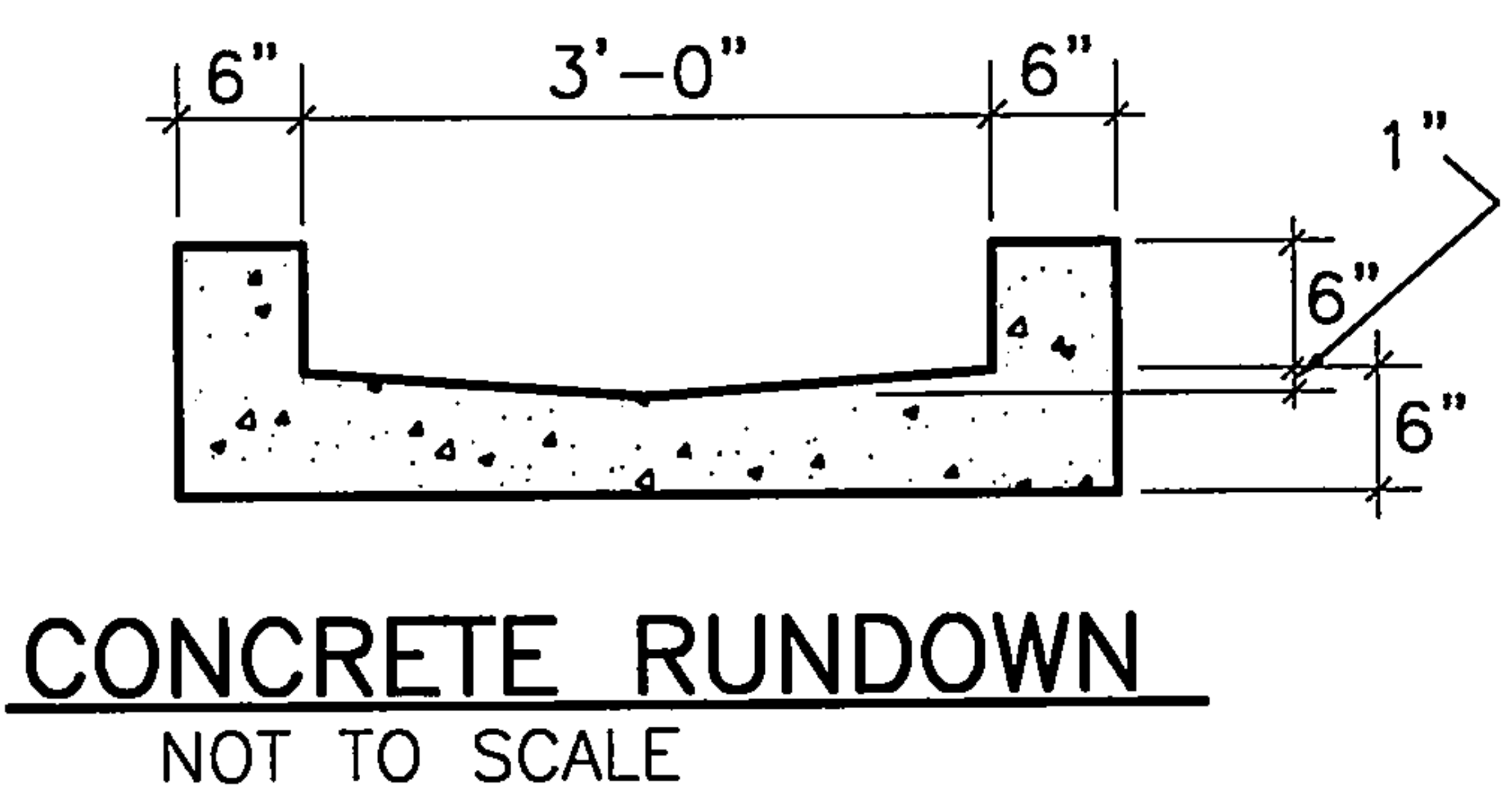
**SANDIA CREDIT UNION SUPPLEMENTAL DRAWING  
ORIGINAL PLAN ENGINEER'S SEAL DATED 7-16-99**



RUNDOWN CAPACITIES:

FLOW DEPTH	Q
0.1'	0.6 cfs
0.2'	1.9 cfs
0.3'	3.5 cfs
0.4'	5.5 cfs
0.5'	7.7 cfs

(n=0.015, SLOPE=1.0% min )



**CITY OF ALBUQUERQUE  
PLANNING DEPARTMENT  
DEVELOPMENT SERVICE / HYDROLOGY SECTION**

DATE: \_\_\_\_\_  
CONFERENCE RECAP

ZONE ATLAS PAGE NO: D-19 / D024  
DRAINAGE FILE: \_\_\_\_\_  
ZONING: \_\_\_\_\_  
DRB: \_\_\_\_\_  
SUBJECT: Sandia Area FCU  
STREET ADDRESS (IF KNOWN): 8000 Palomas Ave NE  
SUBDIVISION NAME: \_\_\_\_\_

APPROVAL REQUESTED:

ATTENDANCE: Curtis Cherne,

FINDINGS:

Since the addition is on the 2nd story there is no change to the existing drainage scheme. In addition, the small amount of flatwork does not require a paving permit.

A Grading Plan is not req'd for Building Permit approval.

THE UNDERSIGNED AGREES THAT THE ABOVE FINDINGS ARE SUMMARIZED ACCURATELY AND ARE SUBJECT TO CHANGE IF FURTHER INVESTIGATION REVEALS THAT THEY ARE NOT REASONABLE OR THAT THEY ARE BASED ON INACCURATE INFORMATION.

SIGNED: Curtis A. Cherne  
NAME (PRINT): Curtis A. Cherne

SIGNED: [Signature]  
NAME (PRINT): BILL KLEIN SCHMIDT  
SLABLER HERZ ARCHITECTS

**\*\*NOTE\*\* PLEASE PROVIDE A COPY OF THIS RECAP WITH YOUR DRAINAGE SUBMITTAL.**

**THE PARKING, CURBING AND DRIVE ISLES (TRAFFIC CIRCULATION LAYOUT) FOR  
THIS SITE ARE IN SUBSTANTIAL COMPLIANCE WITH THE SITE PLAN WITH  
ARCHITECTS SEAL DATED 9-20-99.**

