HYDROLOGY

F17/D49

WEST COAST
SOUND

F17-D49

1 PLAN

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

HYDROLOGY SECTION PROJ. NO. E17 DATE: 11-14-84

PLANNING DIVISION NO. Building Permit

CONFERENCE RECAP

SUBJECT: Lot 1 Reindeer Addition @ I-25 Frontage Rd & Bogan Ave.

	WHO	REPRESENTING
ATTENDANCE:	Carlos Montoya	
	Hermann Head	

FINDINGS: ① Approve drainage Plan as per DPM is required prior to issuance of building permit. ② Must address channel stability ③ Floodplain encroaches into ~~floodway~~ site. Structure must be flood proofed ④ Must coordinate ~~work~~ with Highway dept on work in Hagbury R/W. ⑤ Site detention to be determined by analysis of downstream capacity. Site is at bottom of drainage area. ⑥ Erosion Control plan required for the period of construction

The undersigned agrees that the above findings are summarized accurately and are only subject to change if further investigation reveals that they are not reasonable or that they are based on inaccurate information.

SIGNED:	Carlos A Montoya	SIGNED:	
TITLE:	Civil Engr	TITLE:	
DATE:	11-14-84	DATE:	11-14-84

INFORMATION SHEET

PROJECT TITLE West Coast Sound TYPE OF SUBMITTAL Grading & Drainage Plan

ZONE ATLAS PAGE NO. F-17/D49 CITY ADDRESS 4830 Pan American Freeway

LEGAL DESCRIPTION Lot 1A, Raindeer Addition

ENGINEERING FIRM Hall Engineering Co. CONTACT Richard Hall

ADDRESS 337 Eubank Blvd. N.E. PHONE 292-1115

OWNER West Coast Sound Sys. Inc. CONTACT Mike Mattioli

ADDRESS 4701 Lincoln Rd. N.E. PHONE 884-8713

ARCHITECT N/A CONTACT

ADDRESS PHONE

SURVEYOR Hall Engineering Co. CONTACT Richard Hall

ADDRESS 337 Eubank Blvd. N.E. PHONE 292-1115

CONTRACTOR Dura Built Products, Inc. CONTACT LLoyd Goldrick

ADDRESS 4808 Jefferson N.E. PHONE 883-9100

PRE-DESIGN MEETING:

X YES
___ NO
X COPY OF CONFERENCE RECAP SHEET PROVIDED

PLEASE CHECK TYPE OF APPROVAL EXPECTED WITH THIS SUBMITTAL:

___ SKETCH PLAT APPROVAL
___ PRELIMINARY PLAT APPROVAL
___ SITE DEVELOPMENT PLAN APPROVAL
___ FINAL PLAT APPROVAL
X BUILDING PERMIT APPROVAL
___ CERTIFICATE OF OCCUPANCY APPROVAL
___ ROUGH GRADING PERMIT APPROVAL
___ GRADING/PAVING PERMIT APPROVAL
___ OTHER _____ (SPECIFY)

DATE SUBMITTED: November 29, 1984

BY: Richard Hall

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DRAINAGE INFORMATION

I. References

A. City of Albuquerque, Development Process Manual (DPM), Volume 2, Design Criteria
B. Soil Survey of Bernalillo County and Parts of Sandoval and Valencia Counties, New Mexico, U.S. Soil Conservation Service, Sheet 32
C. Flood Insurance Rate Map, City of Albuquerque, New Mexico 16/50

II. General Information

A. Site Location and Elevation Data
1. Legal Description: Lot 1A, Reindeer Addition
2. Total Site Area: 217945 sq ft - 5.003 acres
3. City Address: 4830 Pan American Freeway
4. City Bench Mark: TBM North bonnett bolt of firehydrant located near the intersection of Frontage Road and Bogan Ave. on Bogan Ave. I-25-18 Elev 5125.7
5. Front portion of property lies within a designated 100-year flood boundary. Reference C.

B. Soil Type Reference B Embudo (Emb)
Hydrologic Soils Group "B"

C. 6-hour, 100-year rain, R_6 = 2.2 inches Reference A, Plate 22.2 D-1

D. Runoff Coefficient ("C" Factor) Reference A, Plate 22.2 C-1
Undeveloped "C" Factor, curve B is 0.34
Developed "C" Factor, assume the following values:

Buildings and concrete surfaces	1.0
Asphalt concrete paving	0.9
Landscaping, same as natural soil	0.34

Weighted "C" Factor:

Type of Surface	"C"	Area (SF)	C x A
Buildings	1.0	35500	35500
Concrete	1.0	1410	1410
Asphalt paving	0.9	63837	57453
Landscaping or natural	0.34	117198	39847
Totals		217945	134210

$$\text{Weighted "C" Factor} = \frac{\sum (\text{"C"} \times A)}{\sum A} = 0.62$$

E. Time of Concentration - Developed Area

Watershed length L = 675 ft
Watershed change in elevation h = 7 ft
Watershed slope S = h/L = 0.0104 ft/ft

by Kirpich equation $T = 0.0078\ (L^{0.77}/S^{0.385})$
$T = 6.82$

T_c = 10 minutes minimum

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F. Intensity Reference A, Plate 22.2 D-2

$I = R_6 \times 6.84 \times T_c^{-0.51}$

$= 4.65$

G. Peak Discharge - Rational Method: Q = CIA

$Q = 0.62 \times 4.65 \times 5.003$

$= 14.42$ cfs

III. Existing Conditions (Undeveloped)

A. "C" Factor = 0.34

B. Time of Concentration

Watershed length L = 675 ft

Watershed change in elevation h = 7 ft

Watershed slope S = h/L = 0.0104 ft/ft

by Kirpich equation $T = 0.0078\ (L^{0.77}/S^{0.385})$

T = 6.82 minutes

T_c = 10 minutes minimum

C. Intensity Reference A, Plate 22.2 D-2

$I = (R_6 \times 6.84) / T_c^{0.51}$

$= 4.65$

D. Peak Discharge - Rational Method: Q = CIA

$Q = 0.34 \times 4.65 \times 5.003$

$= 7.9$ cfs

IV. Flood plain encroaches site (Zone AO, Depth 1') Minimum finished floors set at 2' above flood zone.

V. Channel Stability

Proposed improvement is at least 230' from existing channel.

VI. Conclusion

Time of concentration from the proposed development will occur and discharged before water from entire site peaks

calculations:

proposed development

Tc = 6.8 minutes (TRUE)

Tc = 10 minutes (minimum)

Total water shed area

Tc = 14.4 minutes

refer to hydrograph (exhibit c), time to peak for the total water shed area will accure 7.6 minutes after the proposed development has peaked. Thus free discharge into Pan American Freeway right-of-way is recommended and proposed.

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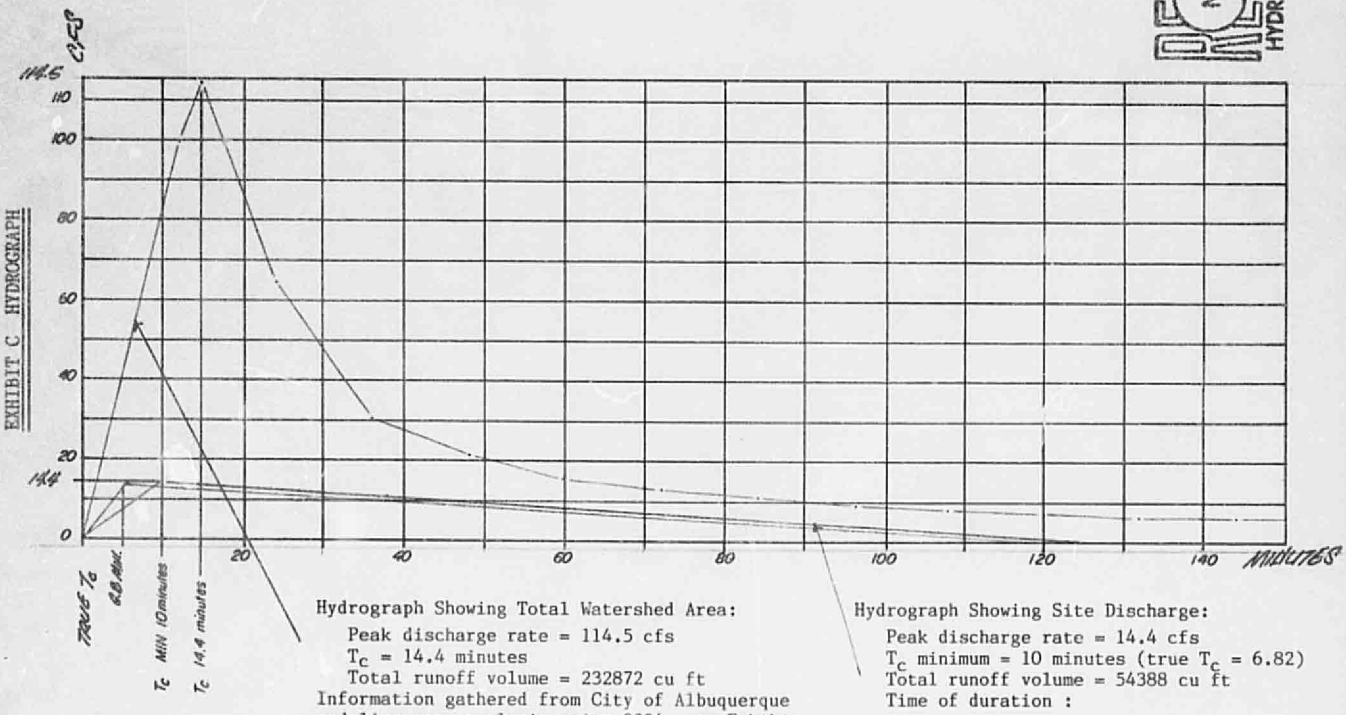
EXHIBIT C HYDROGRAPH



Hydrograph Showing Total Watershed Area:

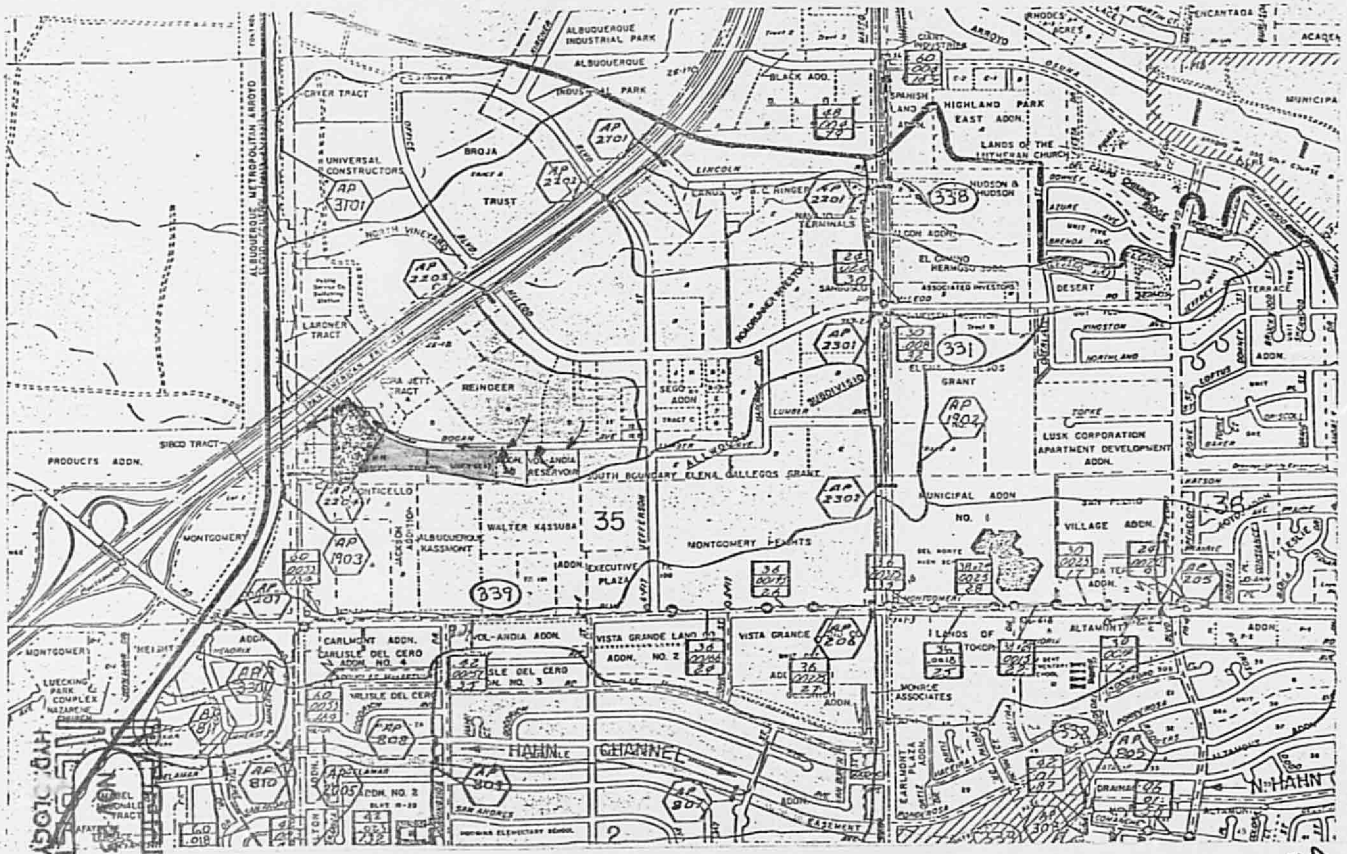
Peak discharge rate = 114.5 cfs
T_c = 14.4 minutes
Total runoff volume = 232872 cu ft
Information gathered from City of Albuquerque modeling map, analysis point 2204, see Exhibit Map B.

Hydrograph Showing Site Discharge:

Peak discharge rate = 14.4 cfs
T_c minimum = 10 minutes (true T_c = 6.82)
Total runoff volume = 54388 cu ft
Time of duration :

T = 2V/GP(60) = 125 minutes

THIS MICROIMAGE IS THE BEST POSSIBLE
REPRODUCTION DUE TO THE POOR QUALITY
OF THE ORIGINAL DOCUMENT



HYDROLOGY SECTION

1984

OFF-SITE FLOW WATERSHED AREA

APPROX 5.9 ac (BY PLANIMETER)

C = 0.84 plate C-1

Q = CIA

= 0.84 x 4.6 x 5.9

= 9.23

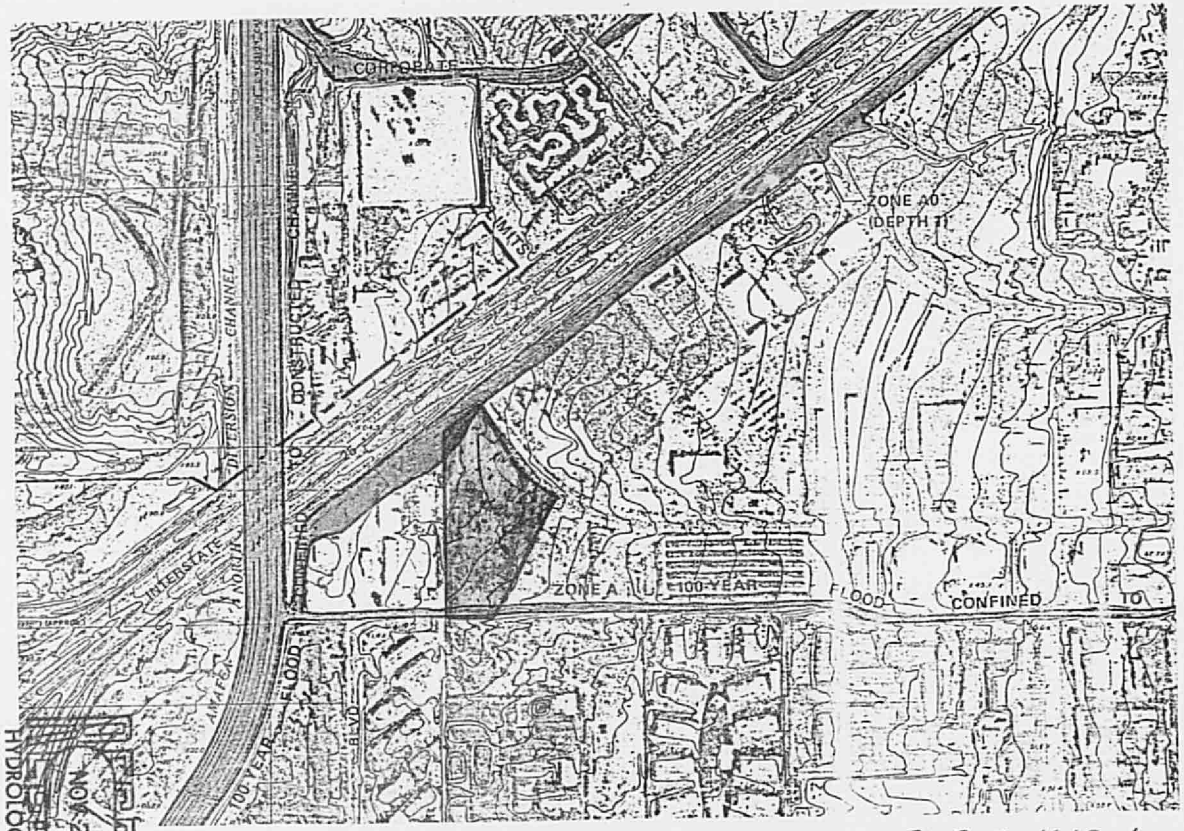
NOTE

OFF-SITE FLOW ACCEPTED AND ROUTED THROUGH DEVELOPMENT.

NTS

D

THIS MICROIMAGE IS THE BEST POSSIBLE
REPRODUCTION DUE TO THE POOR QUALITY
OF THE ORIGINAL DOCUMENT



EXIBIT MAP A

(REF: PAHHEC 16/50 FIRM)

SITE

APPROXIMATE 100 YEAR FLOOD BOUNDARY

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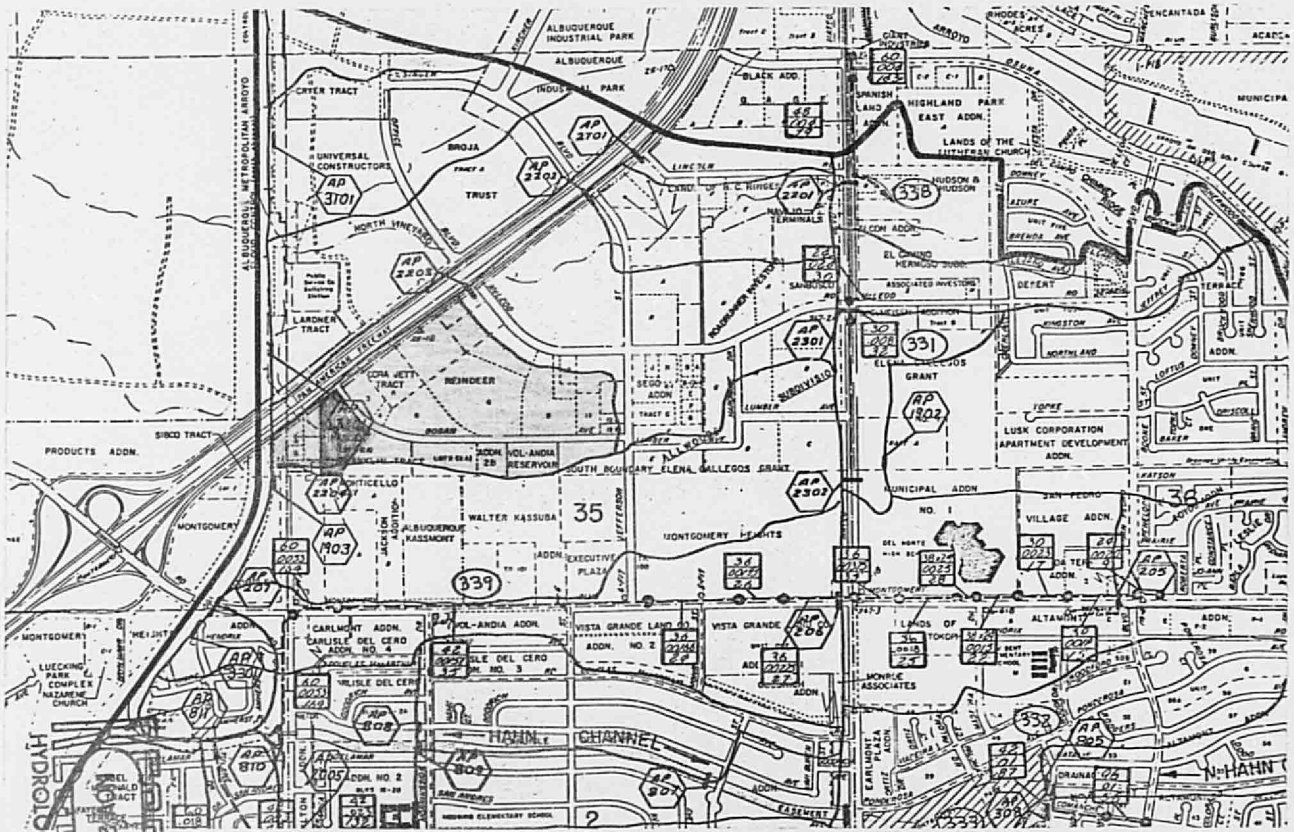
THIS MICROIMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT



```
* COMPUTE HYD ABOVE AP2204 AT CARLISLE & NORTH DIVERSION CHANNEL *
COMPUTE HYD          ID=1      PERVIOUS
                     HYD=2204.1
                     DT=.02
                     DA=.124
                     CN=80
                     K=-.112
                     TP=-.224
                     MASS RNFL=-1
     SHAPE CONSTANT, N =  7.947
     UNIT PEAK =      312.5CFS

PRINT HYD            ID=1      CODE=10

                     HYDROGRAPH NUMBER 2204.1

     TIME      FLOW        TIME      FLOW        TIME      FLOW
     HRS       CFS         HRS       CFS         HRS       CFS
     0.000      0.         2.000      6.         4.000      3.
     0.200    100.         2.200      5.         4.200      3.
     0.400     64.         2.400      5.         4.400      3.
     0.600     30.         2.600      5.         4.600      3.
     0.800     21.         2.800      4.         4.800      3.
     1.000     15.         3.000      4.         5.000      2.
     1.200     12.         3.200      4.         5.200      2.
     1.400     10.         3.400      3.         5.400      2.
     1.600      8.         3.600      3.         5.600      2.
     1.800      7.         3.800      3.         5.800      2.

     RUNOFF VOLUME =      5.346 ACRE-FT
     PEAK DISCHARGE RATE =      114.5 CFS
     PEAK OCCURRED AT  0.24 HRS.

COMPUTE HYD          ID=2      IMPERVIOUS
                     HYD=2204.2
     TIME      FLOW        TIME      FLOW        TIME      FLOW
     HRS       CFS         HRS       CFS         HRS       CFS
     0.000      0.         2.000      6.         4.000      3.
     0.200    100.         2.200      5.         4.200      3.
     0.400     64.         2.400      5.         4.400      3.
     0.600     30.         2.600      5.         4.600      3.
     0.800     21.         2.800      4.         4.800      3.
     1.000     15.         3.000      4.         5.000      2.
     1.200     12.         3.200      4.         5.200      2.
     1.400     10.         3.400      3.         5.400      2.
     1.600      8.         3.600      3.         5.600      2.
     1.800      7.         3.800      3.         5.800      2.

     RUNOFF VOLUME =      5.346 ACRE-FT
     PEAK DISCHARGE RATE =      114.5 CFS
     PEAK OCCURRED AT  0.24 HRS.

COMPUTE HYD          ID=2      IMPERVIOUS
                     HYD=2204.2
                     DT=.02
                     DA=0
                     CN=95
                     K=-.112
                     TP=-.224
                     MASS RNFL=-1
     SHAPE CONSTANT, N =  7.947
     UNIT PEAK =        0.0CFS

PRINT HYD            ID=2      CODE=10

                     HYDROGRAPH NUMBER 2204.2

     TIME      FLOW        TIME      FLOW        TIME      FLOW
     HRS       CFS         HRS       CFS         HRS       CFS
     0.000      0.         2.000      0.         4.000      0.
     0.200      0.         2.200      0.         4.200      0.
     0.400      0.         2.400      0.         4.400      0.
     0.600      0.         2.600      0.         4.600      0.
     0.800      0.         2.800      0.         4.800      0.
     1.000      0.         3.000      0.         5.000      0.
     1.200      0.         3.200      0.         5.200      0.
     1.400      0.         3.400      0.         5.400      0.
     1.600      0.         3.600      0.         5.600      0.
     1.800      0.         3.800      0.         5.800      0.

     RUNOFF VOLUME =      0.000 ACRE-FT
     PEAK DISCHARGE RATE =        1.0 CFS
     PEAK OCCURRED AT  0.24 HRS.

ADD HYD              ID=1      HYD=2204.3
                     ID=1      ID=2
PRINT HYD            ID=1      CODE=10

                     HYDROGRAPH NUMBER 2204.3

     TIME      FLOW        TIME      FLOW        TIME      FLOW
     HRS       CFS         HRS       CFS         HRS       CFS
     0.000      0.         2.000      6.         4.000      3.
     0.200    100.         2.200      5.         4.200      3.
     0.400     64.         2.400      5.         4.400      3.
     0.600     30.         2.600      5.         4.600      3.
     0.800     21.         2.800      4.         4.800      3.
     1.000     15.         3.000      4.         5.000      2.
     1.200     12.         3.200      4.         5.200      2.
     1.400     10.         3.400      3.         5.400      2.
     1.600      8.         3.600      3.         5.600      2.
     1.800      7.         3.800      3.         5.800      2.

     RUNOFF VOLUME =      5.346 ACRE-FT
     PEAK DISCHARGE RATE =      114.5 CFS
     PEAK OCCURRED AT  0.24 HRS.
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VALUES FOR HYDROGRAPH SHOWING TOTAL WATERSHED AREA

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

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

January 10, 1985

Richard Hall
Hall Engineering Company, Inc.
337 Eubank Boulevard, NE
Albuquerque, New Mexico 87123

RE: GRADING & DRAINAGE PLAN FOR WEST COAST SOUND (F-17/D49)
RECEIVED NOVEMBER 23, 1984

Dear Rick:

I have reviewed the referenced submittal and forward these comments:

1. The plan does not have a date nor a legal description on it.

2. An approved "Drainage Facilities Within City Right-of Way and or Easement" will need to be attached to the construction set prior to Hydrology sign-off.

Should you have any questions or comments, please call me at 766-7644.

Cordially,

Billy J. Goolsby

Billy J. Goolsby, C.E.
Design Hydrology Section

BJG/bsj

INFORMATION SHEET

PROJECT TITLE West Coast Sound TYPE OF SUBMITTAL 2nd Submittal-Grading & Drainage Plan- F-17 D49

ZONE ATLAS PAGE NO. F-17 CITY ADDRESS 4830 Pan American Freeway

LEGAL DESCRIPTION Lot 1 A, Reindeer Addition

ENGINEERING FIRM Hall Engineering Co., Inc CONTACT Herman Hood

ADDRESS 337 Eubank # 103 N.E. PHONE 292-1115

OWNER West Coast Sound Systems CONTACT Mike Mattioli

ADDRESS 4701 Lincoln Rd. N.E. PHONE 884-8713

ARCHITECT Pacheco Group CONTACT Jesse A Pacheco Jr.

ADDRESS 807 8th N.W. PHONE 243-1721

SURVEYOR Hall Engineering Co., Inc CONTACT Herman Hood

ADDRESS 337 Eubank # 103, N.E. PHONE 292-1115

CONTRACTOR Dura-Bilt Products CONTACT Llyod Goldrick

ADDRESS 4808 Jefferson N.E. PHONE 883-9100

PRE-DESIGN MEETING:

X YES
___ NO
___ COPY OF CONFERENCE RECAP SHEET PROVIDED

PLEASE CHECK TYPE OF APPROVAL EXPECTED WITH THIS SUBMITTAL:

___ SKETCH PLAT APPROVAL
___ PRELIMINARY PLAT APPROVAL
___ SITE DEVELOPMENT PLAN APPROVAL
___ FINAL PLAT APPROVAL
X BUILDING PERMIT APPROVAL
___ CERTIFICATE OF OCCUPANCY APPROVAL
___ ROUGH GRADING PERMIT APPROVAL
___ GRADING/PAVING PERMIT APPROVAL
___ OTHER _____ (SPECIFY)

RECEIVED
JAN 24 1985
HYDROLOGY SECTION

DATE SUBMITTED: January 24, 1985

BY: Richard Hall

HALL ENGINEERING COMPANY INC.
337 EUBANK N.E., SUITE 103
ALBUQUERQUE, NEW MEXICO 87123
Phones: (505) 292-1115 & 292-1116

January 24, 1985

Mr. Billy Goolsby, C. E.
Design Hydrology Section
City of Albuquerque
123 Central N.W.
Albuquerque, NM 87102

RE: GRADING AND DRAINAGE PLAN FOR WEST COAST SOUND SYSTEM, INC.
F17/D49

Dear Mr. Goolsby:

In response to your comments on the above referenced project, I have addressed them as follows:

1. Noted legal description on the plan.

2. Attached a copy of an approved application for permit to construct the driveway on public right-of-way from the State Highway Department.

I trust this will enable us to complete this plan. Thank you for your time and attention in this matter.

Sincerely,

Richard Hall

Richard V. Hall, P.E.
President

RH;jh

RECEIVED
JAN 24 1985
HYDROLOGY SECTION

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

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

January 29, 1985

Mr. Richard V. Hall
Hall Engineering Company, Inc.
337 Eubank NE, Suite 103
Albuquerque, NM 87123

REF: GRADING AND DRAINAGE PLAN FOR WEST COAST SOUND SYSTEM, INC. (F17-D49)
RECEIVED JANUARY 24, 1985

Dear Richard:

The above referenced plan, dated January 23, 1985, is approved.

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

If I can be of further assistance, please contact me at 766-7644.

Sincerely yours,

Billy J. Goolsby

Billy J. Goolsby, PE
Civil Engineer/Hydrology

BJG:mrk

Form M-26
Revised 8-2-68

STATE HIGHWAY DEPARTMENT OF NEW MEXICO

SANTA FE, NEW MEXICO

Orig.-G.O. Files (White)
1 copy-District Engineer (Blue)
1 copy-Applicant (White)
1 copy-Traffic Services Engr. (Pink)

District No. 3
State Hwy. No. I-25 E. Fr. Rd.
Project No. IR-025-4(65)223
Sta. 235+00
Permit No. 3-1741

APPLICATION FOR PERMIT TO CONSTRUCT DRIVEWAY ON PUBLIC RIGHT OF WAY

To: STATE HIGHWAY DEPARTMENT OF NEW MEXICO
Attn: DISTRICT HIGHWAY ENGINEER

Albuquerque, NEW MEXICO

APPLICATION is hereby made by DURA BILT PRODUCTS, INC., 4808 Jefferson N.E., Alb. NM 87109
(Name of Applicant) (Post Office Address)

For permission to construct driveway(s) at the following described location: 4830 Pan American Freeway N.E.
South-East corner of Pan American Freeway and Bogan Avenue

in Albuquerque, Bernalillo County, along State Highway No. I-25 in accordance with attached plan or sketch. Work will commence on or about 12-12-84 and will require approximately _____ days.

Gate ( ), Cattleguard ( ), Additional Fence ( ), will be required which applicant agrees to furnish and hereafter maintain in good repair and closed to livestock. N/A

If this permit is granted, we further agree to comply with all the conditions, restrictions and regulations of the State Highway Department.

(Owner)

By M. S. MATTIOLI

Title PRESIDENT. WEST COAST SOUND SYSTEMS. INC.

PERMIT granted this 12th day of December 19 84

Subject to the above stated conditions and the following additional requirements:

All work performed on State Right-of-Way shall meet the Standard Specifications for Road and Bridge Construction (Edition of 1984).

Traffic Control shall be in accordance with Manual on Uniform Traffic Control Devices for Streets and Highways.

The State Right-of-Way must be restored to its original condition or better.

Drainage to be installed as shown on plans.

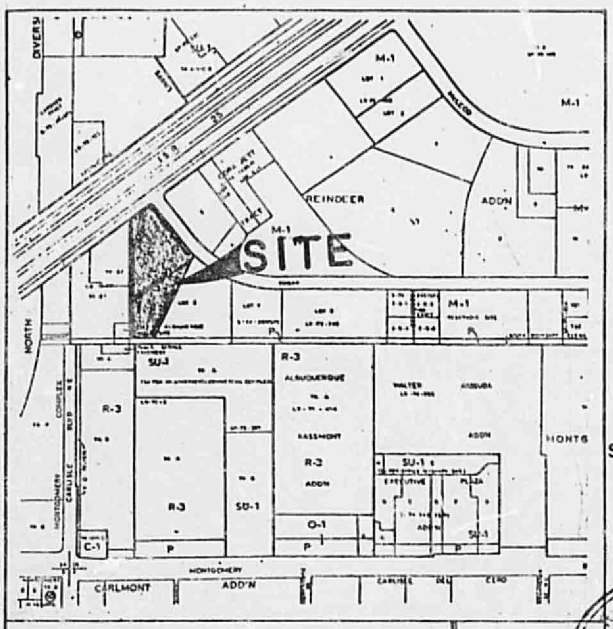
STATE HIGHWAY DEPARTMENT OF NEW MEXICO

By _____
District Highway Engineer

Entire backfill shall meet at least 95% of modified Proctor Density as specified in AASHO T180-57.

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



VICINITY MAP | F-17-Z

REFERENCE CITY DATUM
ACS 1-25-18 5112.63
INTERSECTION OF MONTGOMERY & EAST FRONTAGE ROAD OF I-25, ON THE EAST SIDE OF EAST FRONTAGE ROAD

LOT 1A
REINDEER ADDITION

LLOYD GOLDRICK
4830 PAN AMERICAN FREEWAY N.E.

RICHARD V. HALL
NEW MEXICO
CERTIFIED PROFESSIONAL ENGINEER

F17-D49

NOTICE TO CONTRACTOR

1. An excavation/construction permit will be required before beginning any work within City right-of-way. An approved copy of these plans must be submitted at the time of application for this permit.

2. All work detailed on these plans to be performed, except as otherwise stated or provided hereon, shall be constructed in accordance with "Contract Documents for City-Wide Utilities PW 85-1."

3. Two working days prior to any excavation, contractor must contact Line Locating Service, 765-1234, for location of existing utilities.

4. Prior to construction, the contractor shall excavate and verify the horizontal and vertical locations of all obstructions. Should a conflict exist, the contractor shall notify the engineer so that the conflict can be resolved with a minimum amount of delay.

5. Backfill compaction shall be according to ARTERIAL street use.

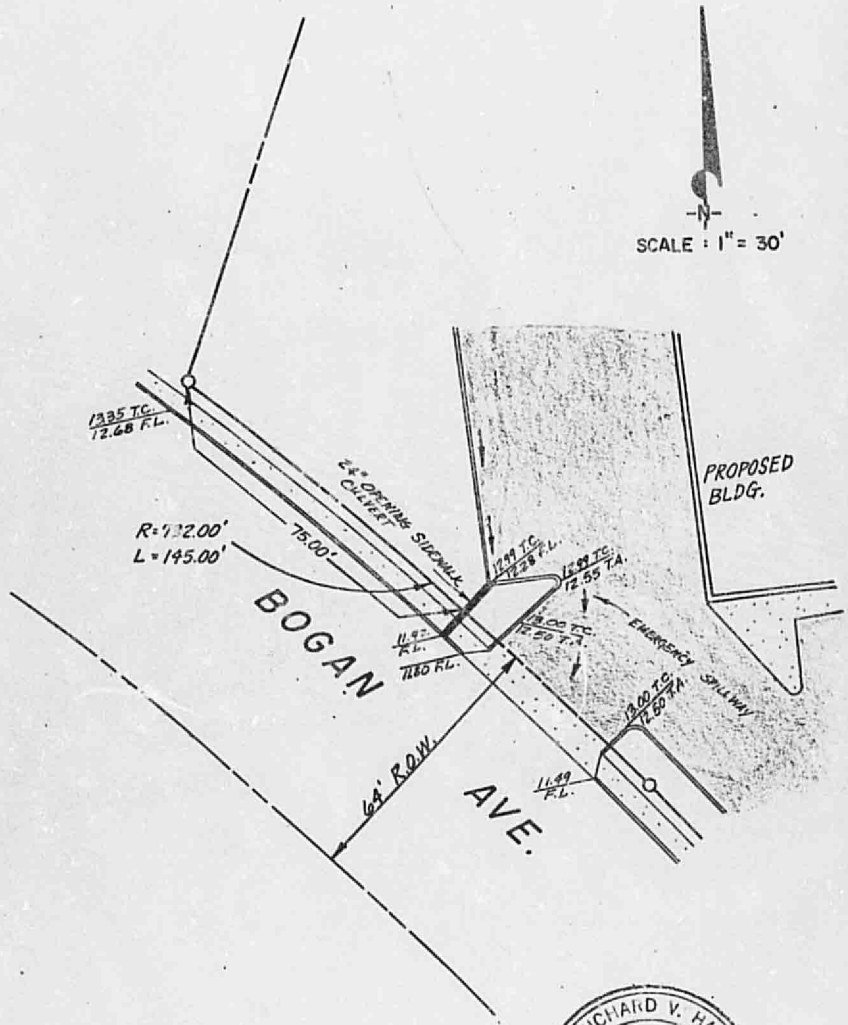
CHAVEZ CONSTRUCTION

E-79

APPROVALS	NAME	DATE	TITLE: WEST COAST SOUND WAREHOUSE 4830 Pan American Freeway NE	
A.C.E./DESIGN		8/16/85		
INSPECTOR				
A.C.E./FIELD		8/2/85	PERMIT NO. 21842 SHEET 1 OF 3	MAP NO. F-17-Z

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



RICHARD V. HALL
NEW MEXICO
5145
REGISTERED PROFESSIONAL ENGINEER

E-79.

CHAVEZ CONSTRUCTION

APPROVALS	NAME	DATE
A.C.E./DESIGN		07/16/85
INSPECTOR		
A.C.E./FIELD		8/2/85

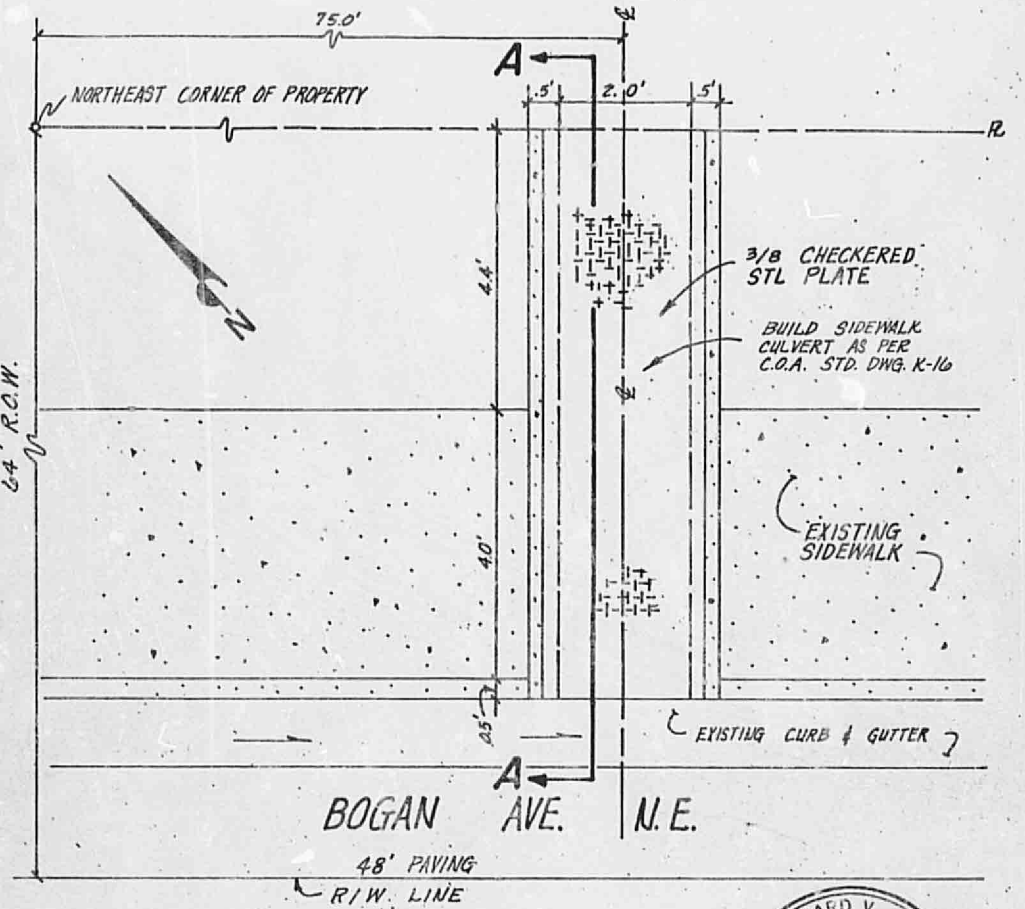
TITLE: WEST COAST SOUND WAREHOUSE
4830 Pan American Freeway NE

PERMIT NO. 21842
SHEET 2 OF 3

MAP NO. F-17-Z

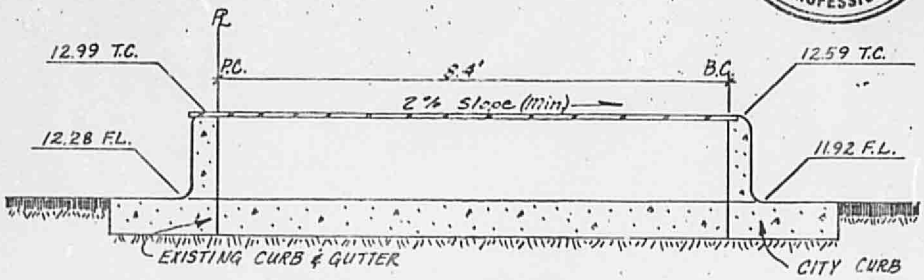
CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



PLAN

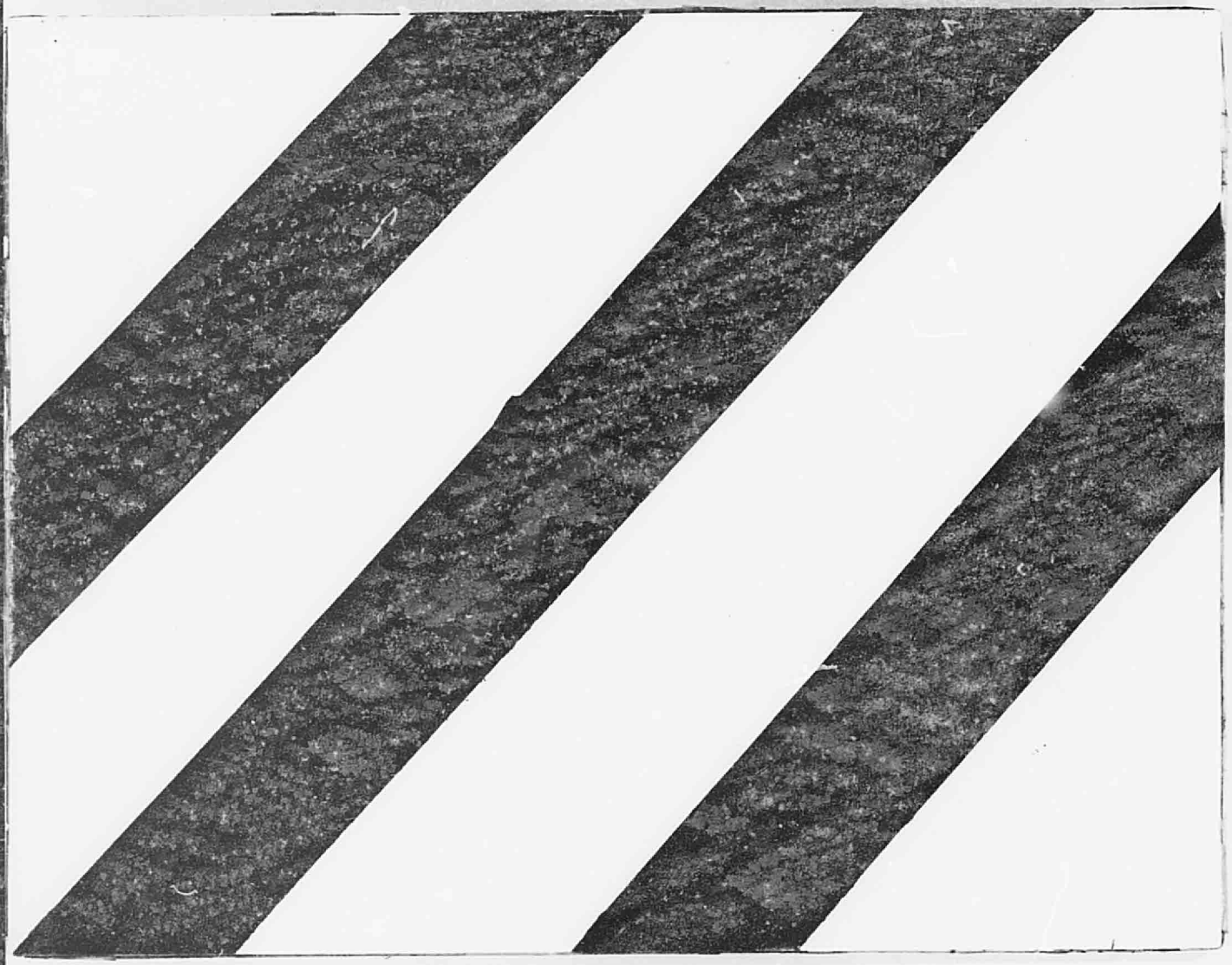
SCALE : 1" = 2'



SECTION A-A

SCALE : 1" = 2'

CHAVEZ CONSTRUCTION

E-79

APPROVALS	NAME	DATE	TITLE: WEST COAST SOUND WAREHOUSE 4830 Pan American Freeway NE	
A.C.E./DESIGN	[illegible]	07/16/81		
INSPECTOR	F.L.		PERMIT NO. 21842	MAP
A.C.E./FIELD	W. J. McCamman	8/3/81	SHEET 3 OF 3	NO. F-17-Z