DS# 1017

DS INDEX 2059

APN 163-01-212-017

PROJECT Alexander Office Park

SUBMITTAL 1st Submittal - Drainage Study

scanning.doc

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM	DATE: March 8, 1993
TO: Nenad Mirkovic Land Development Services Department of Public Works	FROM: MAS for Tom Chiatovich, PE Chief, Flood Control Dept. of Public Works
SUBJECT: Alexander Office Park Drainage Study File No. DS1017A Date of Engineer's Stamp: 01/24/92 Date Received by City: 02/03/92	COPIES TO: Champion Engineering John McNellis, PE Charles Kajkowski, PE

REMARKS:

1st Submittal

The drainage study for the subject project has been reviewed and

_____ is acceptable in concept subject to conformance to all City standards and the following conditions:

__X__ must be resubmitted or supplemented.

1. The Engineer must provide a topographic map showing the off-site basins and drainage patterns and verify his assumptions regarding off-site flow. The 100-year depth of flow in Jones Boulevard must be calculated and submitted for review. Please note that the high points at the site's entrances as well as a perimeter berm must be set at least 6 inches over the calculated 100-Year flow depth in the street (if finish floors are not set at twice the depth of flow).

2. The grading plan must show all existing and proposed elevations (ie. top-of-curb, flow-lines, high points, median island, lot corners, proposed finish floors, etc.), structures, walls, wall opening details, concrete swales and under-sidewalk drains. Onsite flow depths must be calculated. The Engineer must verify that this development will not create or worsen any ponding condition at the north and south boundaries of the site. Topo and required grading along "old Del Rey Avenue" must also be shown, and any grading on private property will require written permission of the property owner.

3. Figures showing the site location in relation to FEMA Flood Zones and CCRFCD Flood Control Master Plan Update Drainage Facilities (proposed and existing) and Hydrologic Soil Groups must be included in all drainage studies.

END OF REMARKS
ssn

T/R/S: 21/60/01
Q-01

REC. 2-3-93
Q-1
ID# 1017
Z-154-90
Z-82-91

CHAMPION ENGINEERING COMPANY
P. O. BOX 26323
LAS VEGAS, NEVADA 89126
431-4142
385-6509 DURING THE DAY

FEBRUARY 3, 1993

CITY OF LAS VEGAS
DEPARTMENT OF PUBLIC WORKS
400 EAST STEWART
LAS VEGAS, NEVADA 89101

ATT'N: MR. TOM CHIATOVICH, P.E.
CHIEF FLOOD CONTROL

SUBJECT: CONCEPTUAL DRAINAGE STUDY FOR FINAL MAP ON ALEXANDER OFFICE PARK, PLANNED SUBMITTAL FEBRUARY 11, 1993

GENTLEMEN:

SUBMITTED HEREWITH ARE TWO COPIES OF THE DRAINAGE STUDY FOR THE ABOVE REFERRED PROJECT. AS I DISCUSSED WITH JOHN McNELLIS, IT IS IMPORTANT THAT I MEET THE FEBRUARY 11 FILING DEADLINE.

LET ME KNOW IF THERE ARE ANY QUESTIONS ON THE ABOVE AND I WILL GET TOGETHER WITH YOU TO CORRECT ANY DIFFERENCES.

SINCERELY YOURS

Herbert R Champion

HERBERT R. CHAMPION, P. E.
CC FULSTONE ENTERPRISES
WEST COAST BUILDERS
HRC/pc

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE STUDY INFORMATION FORM

Name of Development: ALEXANDER OFFICE PARK Date: 1/24/93

Location of Development: a) Descriptive PORTION OF Govt Lot 2
b) Sect. 1 Twn. 21S Rng. 60E

Name of Owner: WEST COAST BUILDERS Assessors Parcel No: 310-500-001

Contact Person-Name: HERBERT P. CHAMPION Telephone No: 431-4142

Firm: CHAMPION ENGINEERING Co.

Address: P.O. Box 26323, L.V., NV - 89126

Type of Land Development/Land Disturbance Process:

- ☐ Rezoning
- ☐ Parcel Map
- ☐ Large Parcel Map
- ☒ Subdivision Map
- ☐ Planned Unit Development
- ☐ Building Permit
- ☐ Clearing and Grading Only
- ☐ Other (Please specify below)

1. Total Owned Land Area: At Site: 1.17L Being Developed/Disturbed: 1.17L
2. Is a portion or all of the subject property located in a designated FEMA Flood Hazard Area? YES* (NO)
3. Is the property bordered or crossed by an existing or proposed Clark County Regional Flood Control District Master Planned Facility? YES* (NO)
4. Proposed type of development (Residential, Commercial, Etc.)? COMMERCIAL
5. Approximate upstream land area which drains to the subject site? Basically None
6. Has the site drainage been evaluated in the past? YES (NO) If yes, please identify documentation:
7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: North East Corner Tie Easement on Del Rey Ave ext, being established by City of Las Vegas
8. Briefly describe your proposed schedule for the subject project: Grading as soon as Development Can get approval to rough grade

REGISTERED PROFESSIONAL ENGINEER
HERBERT P. CHAMPION
CIVIL
No. 3791
STATE OF NEVADA

Submit this form as part of the required drainage study to the local entity which has jurisdiction over the subject property. This form may provide sufficient information to serve as the Conceptual Drainage Study.

* Review and concurrence of the Clark County Regional Flood Control District is required.

Reviewer	Date

Local Entity File No.

REFERENCE:

STANDARD FORM 1

I. TITLE PAGE

A CONCEPTUAL DRAINAGE STUDY

FOR

A PORTION OF GOVERNMENT LOT 28, IN SECTION 1,
TOWNSHIP 21 SOUTH, RANGE 60 EAST, M.D.B.&M.
LOCATED ON JONES BOULEVARD SOUTH OF CHARLESTON BOULEVARD

CONSISTING OF 1.76 ACRES MORE OR LESS

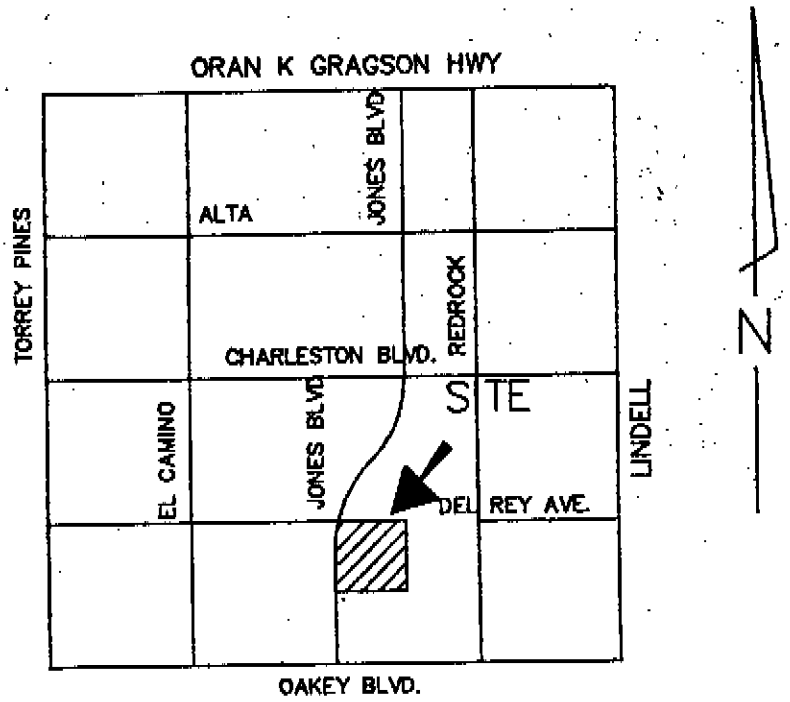
PREPARED FOR WEST COAST BUILDERS

JANUARY 26, 1993

BY

HERBERT R. CHAMPION, PROFESSIONAL CIVIL ENGINEER
940 SOUTH MARTIN LUTHER KING BLVD.
LAS VEGAS, NEVADA 89106

TELEPHONE (702) 431-4142
****
FOR MAIL DELIVERY
P.O. BOX 26323
LAS VEGAS, NEVADA 89126
****



VICINITY MAP
NTS

TABLE OF CONTENTS

FEMA FIRM
REVISED F.C.M.P. UPDATE FIGURES
1- DRAINAGE FACILITIES
2. HYDROLOGIC SOIL GROUP

I. GENERAL LOCATION AND DEVELOPMENT DESCRIPTION

A. LOCATION OF PROPERTY

1. LOCATED 410.95 FEET NORTH OF DOE AVENUE ON JONES BLVD. BETWEEN DOE AVENUE AND CHARLESTON BOULEVARD.
2. BEING GOVERNMENT LOT 28 IN THE NW 1/4 OF SECTION 1, T21S, R60E, EXCEPTING THE SOUTH 410.69 FEET THEREOF FURTHER EXCEPTING ANY PORTION OF SAID LAND CONVEYED TO CLARK COUNTY, NEVADA BY DEED RECORDED DECEMBER 7, 1973 IN BOOK 386 AS DOCUMENT NO. 34516, OFFICIAL RECORDS APN 310-500-001.
3. THE DRAINAGE BASIN ENCOMPASSING THE SITE CONSISTS OF A FAIRLY BROAD DEVELOPING AREA WHICH DISTRIBUTS DRAINAGE TO THE NORTH AND SOUTH OF THE SITE, TO CHARLESTON BLVD. TO THE NORTH AND OAKEY BLVD. TO THE SOUTH. THE DEVELOPED PROPERTIES TO THE WEST AND THE JONES BLVD. CONFIGURATION PREVENT FLOWS FROM THE WEST MAKING ANY IMPACT ON THE SITE UNDER STUDY.

   THE ONSITE DRAINAGE FLOWS EASTERLY UNTIL IT REACHES THE PROPERTY LINE WALLS OF A RESIDENTIAL SUBDIVISION, WHERE IT PONDS TEMPORARILY THEN FLOWS NORTH ALONG THESE WALLS TO THE NORTH LOT LINE OF THIS PARCEL, THEN FLOWS EAST IN THE ABANDONED DEL REY AVENUE RIGHT OF WAY TO REDROCK STREET.

4. THERE ARE NO EXISTING REGIONAL FLOOD CONTROL FACILITIES IN THE IMMEDIATE VICINITY OF THIS PARCEL.

5. THERE ARE NO BUILDINGS ON THE SITE AT PRESENT. THE PRELIMINARY GRADING PLAN ATTACHED SHOWS PROPOSED CONSTRUCTION.

6. GENERAL LOCATION MAP (SEE GRADING PLAN ATTACHED)

B. DESCRIPTION OF THE PROPERTY

1. THIS IS A 1.76 ACRE SITE.
2. OPEN GROUND WITH SOME MINOR GROWTH CONSISTING OF SILTY SOILS AND GRAVEL. THE EXISTING PROPERTY HAS BEEN ROUGH GRADED IN THE PAST. JONES BLVD. IS PAVED WITH CURB AND GUTTER AND IS UNDER NEVADA DEPARTMENT OF TRANSPORTATION MAINTENANCE.
3. GENERAL SITE TOPOGRAPHY CAN BE DESCRIBED AS RELATIVLEY FLAT SITTING LOWER THAN JONES BLVD., WITH AN AVERAGE 1.91 % SLOPE TO THE EAST.
4. THERE ARE NO EXISTING IRRIGATION FACILITIES ON THE PROPERTY.
5. THIS 1.76 ACRE SITE IS BEING IMPROVED AS A COMMERCIAL SITE.
6. THE EXISTING 8" ACP WATER MAIN WILL BE ABANDONED IN PLACE WITH SERVICE TO THE PROPERTY TAKEN AT THE WEST END.

II. EXISTING AND PROPOSED HYDROLOGY

A. OFFSITE DRAINAGE DESCRIPTION

1. DISCUSSION OF OFFSITE FLOWS
   a. UPSTREAM LOCAL FACILITIES RUNOFF

      THE DRAINAGE FROM WEST OF JONES BOULEVARD FLOWS TO CHARLESTON BOULEVARD WITHOUT IMPACTING THIS SITE.

   b. UPSTREAM REGIONAL FACILITIES RUNOFF

      THE REGIONAL FLOOD CONTROL DISTRICT MASTER PLAN AND THE UPDATE REFLECT NO MAJOR DRAINAGE FACILITIES IN THE VICINITY OF THIS PROJECT.

B ON SITE DRAINAGE DESCRIPTION

1. THE HISTORICAL ONSITE DRAINAGE PATTERN HAS BEEN EASTERLY AND THIS PATTERN IS BEING MAINTAINED AS CLOSE AS POSSIBLE WITH THE LOT GRADING.

2. THE ONSITE DRAINAGE IN AN UNDEVELOPED STATE AMOUNTS TO 1 CFS FLOW TO THE EAST AS SHOWN IN TR55 CALCULATION SHEET, EXHIBIT "A" ATTACHED. THE DEVELOPED FLOW AMOUNTS TO 9 CFS, AS SHOWN IN EXHIBIT "B" ATTACHED.

3. SOILS INFORMATION

   BASED ON THE SOIL CONSERVATION SERVICE SOIL SURVEY, THE NATIVE MATERIALS ARE TYPE 260 JEAN GRAVELLY LOAMY FINE SAND, VERY DEEP AND WELL DRAINED, RUNOFF SLOW, AND PERMIABILITY RAPID.

   SINCE THE MATERIALS ENCOUNTERED FALL INTO THE "A" CLASSIFICATION, THE CURVE NUMBER ASSIGNED THIS SITE IS 64, BASED ON TR 55 TABLE (2-2d-RUNOFF CURVE NUMBERS FOR ARID AND SEMI ARID RANGELANDS) UNDEVELOPED, AND A CN OF 98 BASED ON TABLE (2-2a FOR DEVELOPING URBAN AREAS) FOR DEVELOPED.

C EXISTING DRAINAGE PROBLEMS

1. THE EXISTING DRAINAGE HAS HISTORICALLY PONDED AT THE EASTERLY PROPERTY LINE WALLS OF THE SUBDIVISION EAST EAST OF THIS PARCEL, AND SOAKED INTO THE GROUND. WITH AN ALL PAVED CONDITION RESULTING FROM THIS DEVELOPMENT, THE ONSITE DRAINAGE NEEDS TO BE CARRIED AWAY FORM THE SITE. THIS HAS BEEN ACCOMPLISHED BY DRAINING TO THE OLD DEL REY AVENUE RIGHT OF WAY THEN TO REDROCK STREET.

III PROPOSED DRAINAGE FACILITIES

A FLOW ROUTING

1. THE LOT HAS BEEN DESIGNED SUCH THAT NO FLOWS FROM THE JONES BLVD. GUTTER CAN FLOW INTO THE SITE, WHILE ONSITE DRAINAGE FLOWS ALONG THE BACK END OF THE PARKING LANES AT EACH ENTRANCE TO THE PARKING LOTS TO THE EASTERLY END OF THE PARCEL WHERE IT IS GRADED TO DRAIN TO THE OLD DEL REY RIGHT OF WAY THEN EASTERLY TO RED ROCK STREET.

IV CONCLUSIONS

A COMPLIANCE WITH MANUAL: THE DESIGN COMPLIES.

B ABILITY TO PROVIDE EMERGENCY ALL WEATHER ACCESS: IT DOES.

C COMPLIANCE WITH FEMA: THERE IS NO FEMA REGULATED FLOODPLAIN OVERLAYING THIS SITE..

D. OFFSITE FLOW RATES AND EFFECT ON PROPERTIES: THE ONSITE 100 YEAR FLOW RATE IS SO MINOR, IT WILL NOT EFFECT DOWN HILL PROPERTIES TO A GREAT DEGREE.

E. PREVIOUS DRAINAGE STUDIES

1. I KNOW OF NO OTHER STUDIES WHICH WILL AFFECT THIS SITE.

V EXHIBITS

A TR-55 UNDEVELOPED CALCULATION SHEET
B TR-55 DEVELOPING CALCULATION SHEET
C PORTION OF SOIL CONSERVATION SOIL SURVEY MAP
D PROTION OF 1990 AERIAL PHOTO IN AREA OF SITE
E DEVELOPMENT PLAN

TR-55 CURVE NUMBER COMPUTATION VERSION 1.11

Project : ALEXANDER OFFICE PARK
County : CLARK State: NV
Subtitle: ONSITE DRAINAGE UNDEVELOPED

User: HRC Date: 01-26-93
Checked: ____ Date: _____

COVER DESCRIPTION		Hydrologic Soil Group A	B	C	D
		Acres (CN)			
ARID AND SEMIARID RANGELANDS					
Desert shrub	poor	1.67(63)	-	-	.09(88)
Total Area (by Hydrologic Soil Group)		1.67			.09

TOTAL DRAINAGE AREA: 1.76 Acres WEIGHTED CURVE NUMBER:64*

TR-55 Tc and Tt THRU SUBAREA COMPUTATION VERSION 1.11

Project : ALEXANDER OFFICE PARK
County : CLARK State: NV
Subtitle: ONSITE DRAINAGE UNDEVELOPED

User: HRC Date: 01-26-93
Checked: ____ Date: _____

Flow Type	Length (ft)	Slope (ft/ft)	Surface code	n	Area (sq/ft)	Wp (ft)	Velocity (ft/sec)	Time (hr)
Shallow Concent'd	387	.0191	U					0.048

Time of Concentration = 0.05*

--- Sheet Flow Surface Codes ---
A Smooth Surface
B Fallow (No Res.)
C Cultivated < 20 % Res.
D Cultivated > 20 % Res.
E Grass-Range, Short
F Grass, Dense
G Grass, Burmuda
H Woods, Light
I Woods, Dense

--- Shallow Concentrated --- Surface Codes ---
P Paved
U Unpaved

TR-55 GRAPHICAL DISCHARGE METHOD VERSION 1.11

Project : ALEXANDER OFFICE PARK
County : CLARK State: NV
Subtitle: ONSITE DRAINAGE UNDEVELOPED

User: HRC Date: 01-26-93
Checked: ____ Date: _____

Data: Drainage Area : 1.76 * Acres
Runoff Curve Number : 64 *
Time of Concentration: 0.05 * Hours
Rainfall Type : II
Pond and Swamp Area : NONE

Storm Number	1	2	3
Frequency (yrs)	10	25	100
24-Hr Rainfall (in)	1.8	2.4	2.96
Ia/P Ratio	0.63	0.47	0.38
Used	0.50	0.47	0.38
Runoff (in)	0.07	0.24	0.45
Unit Peak Discharge (cfs/acre/in)	1.228	1.427	1.782
Pond and Swamp Factor 0.0% Ponds Used	1.00	1.00	1.00
Peak Discharge (cfs)	0	1	1

EXHIBIT "A"

* - Value(s) provided from TR-55 system routines

TR-55 Tc and Tt THRU SUBAREA COMPUTATION VERSION 1.11

Project : ALEXANDER OFFICE PARK
County : CLARK State: NV
Subtitle: ONSITE DRAINAGE DEVELOPING

User: HRC Date: 01-26-93
Checked: ____ Date: ____

Flow Type	Length (ft)	Slope (ft/ft)	Surface code	n	Area (sq/ft)	Wp (ft)	Velocity (ft/sec)	Time (hr)
Shallow Concent'd	387	.0191	P					0.038

Time of Concentration = 0.04*

--- Sheet Flow Surface Codes ---

A Smooth Surface
B Fallow (No Res.)
C Cultivated < 20 % Res.
D Cultivated > 20 % Res.
E Grass-Range, Short
F Grass, Dense
G Grass, Burmuda
H Woods, Light
I Woods, Dense

--- Shallow Concentrated Surface Codes ---

P Paved
U Unpaved

TR-55 CURVE NUMBER COMPUTATION VERSION 1.11

Project : ALEXANDER OFFICE PARK
County : CLARK State: NV
Subtitle: ONSITE DRAINAGE DEVELOPING

User: HRC Date: 01-26-93
Checked: ____ Date: ____

COVER DESCRIPTION	Hydrologic Soil Group A	B	C	D
	Acres (CN)			
FULLY DEVELOPED URBAN AREAS (Veg Estab.)				
Impervious Areas				
Paved parking lots, roofs, driveways	1.67(98)	-	-	.09(98)
Total Area (by Hydrologic Soil Group)	1.67			.09

TOTAL DRAINAGE AREA: 1.76 Acres WEIGHTED CURVE NUMBER:98*

TR-55 GRAPHICAL DISCHARGE METHOD VERSION 1.11

Project : ALEXANDER OFFICE PARK
County : CLARK State: NV
Subtitle: ONSITE DRAINAGE DEVELOPING

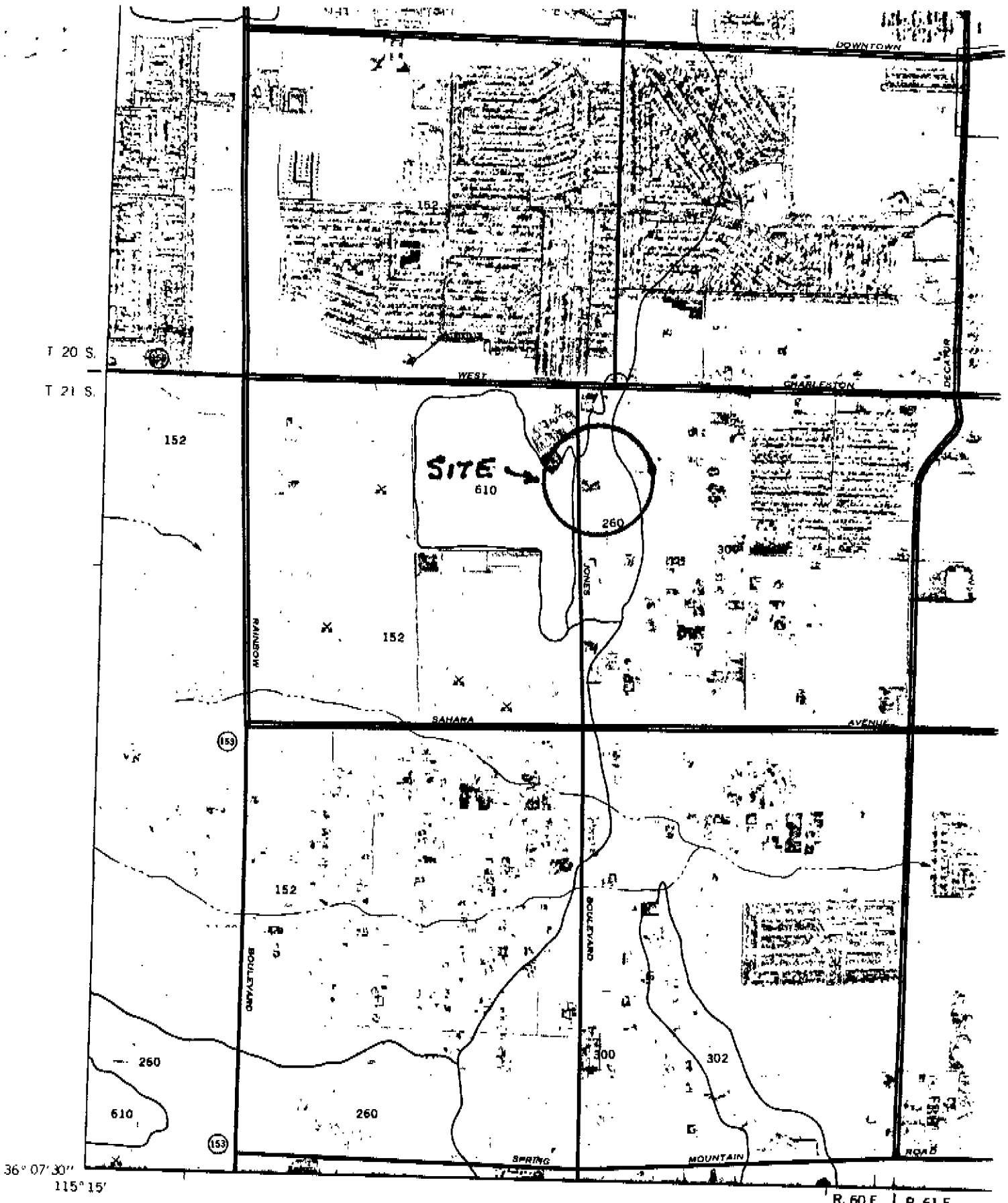
User: HRC Date: 01-26-93
Checked: ____ Date: ____

Data: Drainage Area : 1.76 * Acres
Runoff Curve Number : 98 *
Time of Concentration: 0.04 * Hours
Rainfall Type : II
Pond and Swamp Area : NONE

Storm Number	1	2	3
Frequency (yrs)	10	25	100
24-Hr Rainfall (in)	1.8	2.4	2.96
Ia/P Ratio	0.02	0.02	0.01
Used	0.10	0.10	0.10
Runoff (in)	1.58	2.17	2.73
Unit Peak Discharge (cfs/acre/in)	1.934	1.934	1.934
Pond and Swamp Factor 0.0% Ponds Used	1.00	1.00	1.00
Peak Discharge (cfs)	5	7	9

EXHIBIT "B"

* - Value(s) provided from TR-55 system routines



PORTION OF SOILS SURVEY MAP

This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1973 and 1977 aerial photography. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

1 3/4 1/2 1

EXHIBIT "C"

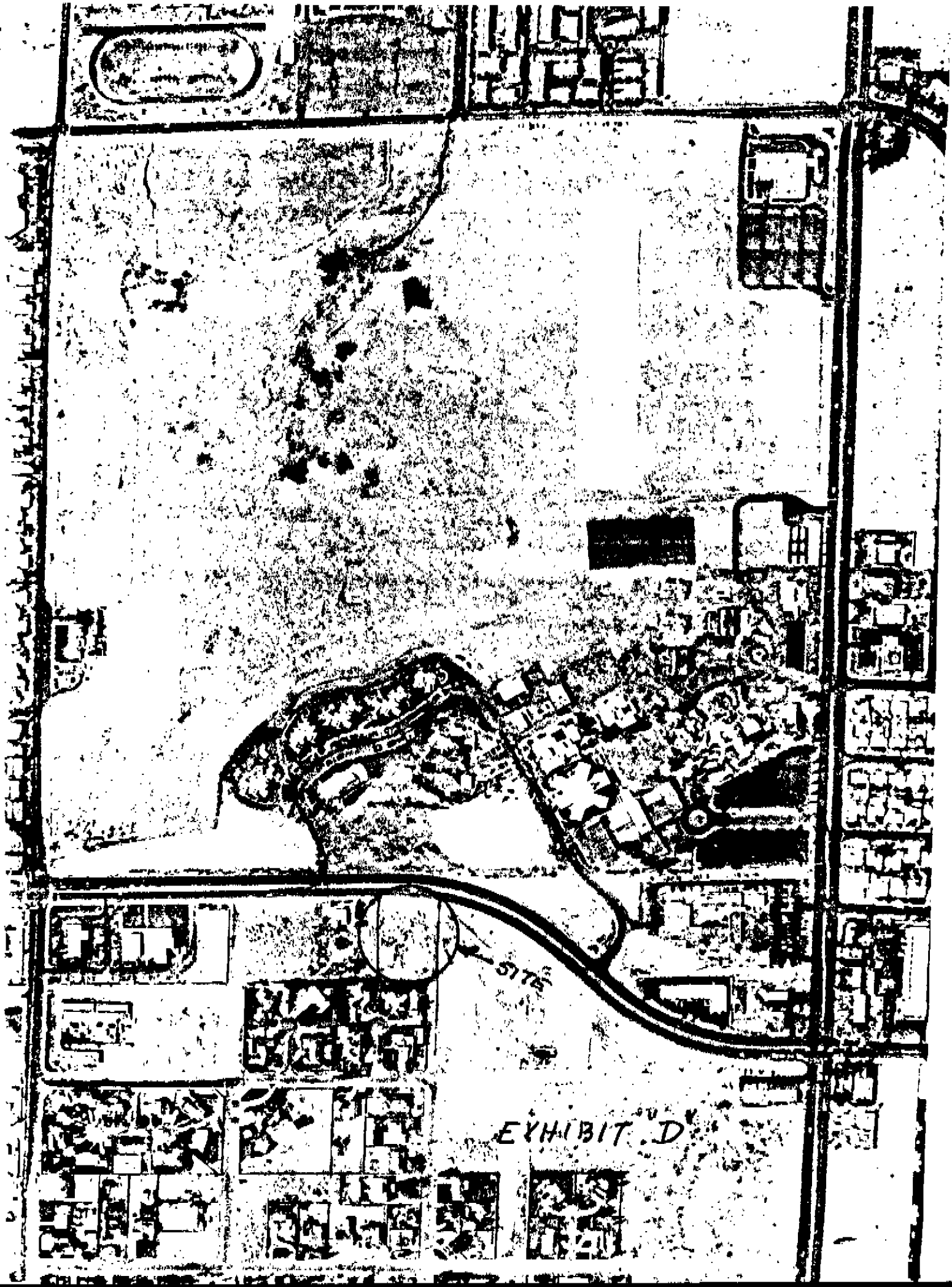

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EXHIBIT "D"