HYDROLOGY G17/D17 2 PLANS

G17/D17

2 PLANS

Undeveloped Drainage

Area of site = 65 × 163 = 10595 sf

Area of Alley = 65 × 20 = 1300 sf

Area of Undeveloped Basin 11,895 sf = 0.273 ac.

$I/6$ = 2.2 in/6hr - Plate 22.2 D-1

$I = (I/6)(6.84)\, t_c^{-0.51}$ Plate 22.2 D-2

I = 4.65 in/hr (100-yr)

I = 4.65 × .657 = 3.06 in/hr (10-yr)

t_c < 10 min

Soil Type EmB - Type "B"

"c" = 0.34 (0% Impervious) Plate 22.2 C-1

Undeveloped Flow Rate

$Q_{10} = I_{10} \times A \times$ "c" = 0.28 cfs

$Q_{100} = I_{100} \times A \times$ "c" = 0.43 cfs

$$Vol = \frac{Area \times I/6 \times \text{"c"}}{12} = \frac{11895 \times 2.2 \times .34}{12}$$

Vol = 741 cf

PROJECT NAME	3904 Carlisle NE	SHEET 1	OF 4
PROJECT NO.	21542	BY Dmyn	DATE 12/8/82
SUBJECT	Undeveloped Drainage	CH'D	DATE

Developed Drainage

Basin A

Area = 6880 sf = 0.158 ac.

"c" = 0.92

95% Impervious Plate 22.2 C-1

$Q_{100} = I_{100} \times A \times$ "c" = 0.68 cfs

$Q_{10} = I_{10} \times A \times$ "c" = 0.44 cfs

Basin B

Area = 5085 sf = 0.117 ac.

"c" = 0.92

95% Impervious Plate 22.2 C-1

$Q_{100} = I_{100} \times A \times$ "c" = 0.50

$Q_{10} = I_{10} \times A \times$ "c" = 0.33

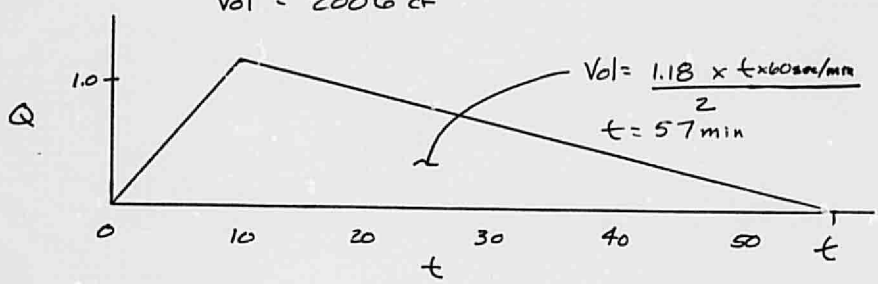
Peak Runoff from site

$Q_{100} = 0.68 + 0.50 = 1.18$ cfs

$Q_{10} = 0.44 + 0.33 = 0.77$ cfs

$$Vol = \frac{Area \times I/6 \times \text{"c"}}{12} = \frac{11895 \times 2.2 \times 0.92}{12}$$

Vol = 2006 cf



$$Vol = \frac{1.18 \times t \times 60 \text{ sec/min}}{2}$$

t = 57 min

PROJECT NAME		SHEET 2	OF 4
PROJECT NO.		BY	DATE
SUBJECT		CH'D	DATE

Water Surface Elev.	Depth	Water Surface Area	Volume	Discharge (cfs)
5117.5	0.0	0	0	
5117.6	0.1	70	3.5	
5117.7	0.2	522	33	0.08
5117.8	0.3	1449	132	0.15
5117.9	0.4	1962	303	0.20
5118.0	0.5	2406	521	0.24
5118.1	0.6	2882	785	0.28
5118.2	0.7	3413	1100	0.31
5118.2 including landscape area	0.7		1141	0.31

Discharge is based upon 4" PVC outlet with inlet control

Area = 0.0873

$Q = cA\sqrt{2gh}$

$c = 0.6$

PROJECT NAME 3904 Carlisle NE SHEET 3 OF 4

PROJECT NO. 21542 BY Dmyer DATE 12/8/82

SUBJECT Pond Volume and Discharge Rate CH'D DATE

PROJECT NAME 3904 Carlisle NE SHEET 4 OF 4

PROJECT NO. 21542 BY [illegible] DATE 12/6/92

SUBJECT Detention Pond Size CH'D DATE

Time	Incoming Q (cfs)	Accumulated Volume-Entering	Estimated Depth	Discharge Rate	Incremental Volume-Out	Accumulated Volume-Out	Volume Stored (cf)
0	0	0	0	0	0	0	0
5	0.59	88.5	0.3	0.15	22.5	22.5	66
10	1.18	354	0.5	0.24	58.5	81	273
15	1.05	688	0.6	0.28	78	159	529
20	0.93	986	0.7	0.31	93	252	734
25	0.80	1245	0.7	0.31	93	345	900
30	0.68	1468	0.7	0.31	93	438	1030
35	0.55	1652	0.7	0.31	93	531	1121
40	0.43	1800	0.7	0.31	93	624	1176
45	0.30	1909	0.7	0.31	93	717	1192
50	0.18	1982	0.7	0.31	93	810	1172
55	0.05	2016	0.7	0.31	93	903	1113
58	0.00	2035	0.7	0.31	93	996	1039

← Req'd Storage Amount

INFORMATION SHEET

PROJECT TITLE 3904 Carlisle, NE TYPE OF SUBMITTAL Drainage Plan

ZONE ATLAS PAGE NO. G-17 CITY ADDRESS 3904 Carlisle Blvd., NE

LEGAL DESCRIPTION

ENGINEERING FIRM Bohannan–Huston, Inc. CONTACT Dave Millikan

ADDRESS 4125 Carlisle Blvd., NE PHONE 881-2000

OWNER Westwind, Inc. CONTACT Steve Haley

ADDRESS 6413 Cranbrook, NE PHONE 822-1341

ARCHITECT CONTACT

ADDRESS PHONE

SURVEYOR CONTACT

ADDRESS PHONE

CONTRACTOR Westwind, Inc. CONTACT Steve Haley

ADDRESS 6413 Cranbrook, NE PHONE 822-1341

DATE SUBMITTED 12-9-82

BY David M.G. Millikan

RECEIVED
DEC 10 1982
ENGINEERING

ENGINEERS PLANNERS PHOTOGRAMMETRISTS

BOHANNAN-HUSTON INC.

4125 CARLISLE BLVD., N.E. ALBUQUERQUE, NEW MEXICO 87107 505 881-2000
8713 VISCOUNT BLVD., EL PASO, TEXAS 79925 915 778-4491
330 GARFIELD, SANTA FE, NEW MEXICO 87501 505 988-7671

RECEIVED
DEC 10 1982
ENGINEERING

December 9, 1982

G17-D17

RECEIVED
DEC 09 1982

Mr. Fred Aguirre
City Hydrology
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Re: Drainage Plan for 3904 Carlisle Boulevard, N.E.

Dear Fred:

This letter and its enclosures are intended to meet the requirements for the Drainage Plan for 3904 Carlisle Boulevard, N.E. The lot is located on the east side of Carlisle Boulevard, just north of its intersection with Palo Duro Avenue, N.E. The site is undeveloped at the present time. There are no upland flows impacting the site, and the site is not located within a Flood Hazard Zone (see AMDS – Flood Hazard Boundary Map enclosed).

Capacity limitations exist downstream of this site. Therefore, the runoff discharged from this site after development will be limited to the flow discharged through a 4" PVC outlet pipe. The site will be graded to detain the necessary runoff within the parking area adjacent to Carlisle Boulevard. The landscaped area at the southwest corner or the building will be graded so that its irrigation waters are retained.

Grades have been approved by the City for the alley at the rear of the site. The approved grades indicate a high point in the alley approximately ten feet north of the north property line of this site. These approved grades also indicate an inverted crown in the alley with it draining to Palo Duro Avenue. Therefore, upon completion of the alley, as shown on the approved plan, the alley will not contribute runoff to this site.

Since the alley is not paved from the south boundary of this site to Palo Duro Avenue, the owner desires to construct temporary pavement in the alley at this time. The grades have been set so minimal grading (less than 0.5 feet) will be required for construction of the ultimate improvements.

PRINCIPALS
JERRY R. BOHANNAN, P. E. & L.S.
LARRY W. HUSTON
DONALD T. CREMANS, P. E.
C.J. (SKIP) MEAD, P. E.
MICHIAL M. EMERY, P. E.

ASSOCIATES
ANDRES ARAGON VIAMONTE, P. E.
JACK EICHORN
ROBERT H. GREENLEE, P. E.
G. LEE TRUSSELL
ISAAC J. PINO, P. E.
RAMON LARA, P. E.
DARRELL L. WADE, P. E.
PATRICK L. STIEHR, P. E.
DAVID M. Y. MILLIKAN, P. E.

Along with construction of the temporary pavement, the alley will drain through the detention facility of this building site. This results in less discharge from the site with the temporary alley pavement than with the alley in its ultimate condition. Due to grade restraints, it is not feasible to design the parking area to contain the entire runoff with the alley contributing runoff to the site.

The ponding volume required with the alley contributing is 1192 cubic feet (see enclosed computations). The required ponding volume without the alley contributing is less. Approximately 1140 cubic feet of ponding has been provided on the site. The detention of the runoff, as proposed, will decrease the peak flow rate discharged from the site. If the capacity of the pond is exceeded, the flows will be discharged through the driveway and curb cut to Carlisle Boulevard.

Development of the site, as shown, will not intensify the drainage problems downstream of the site. The present site is unvegetated, and the length of time for development of this site will be approximately three months. For these reasons, it is felt that erosion control measures will not be necessary.

Your prompt review and approval of this plan will be appreciated. If you have any questions, please feel free to call Dave Millikan or me.

Sincerely yours,

Michial M. Emery

Michial M. Emery, P.E.
Vice President

cc: Mr. John Clarke

Enclosures

DMYM/dlh
Job No. 2 154 2

BOHANNAN-HUSTON INC.
ENGINEERS PLANNERS PHOTOGRAMMETRISTS
4125 CARLISLE BLVD., N.E. ALBUQUERQUE, NEW MEXICO 87107 505 881-2000
6713 VISCOUNT BLVD., EL PASO, TEXAS 79925 915 778-4491
330 GARFIELD, SANTA FE, NEW MEXICO 87501 505 988-7671

April 7, 1983

Mr. Andre Houle
City Engineering – Hydrology
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Re: As-Built Drainage and Grading Plan for 3904 Carlisle Boulevard, NE

Dear Andre:

Enclosed is a copy of the as-built drainage and grading plan for 3904 Carlisle Boulevard, NE. It is in substantial compliance with the approved drainage plan for this project.

Our client is anxious to obtain a Certificate of Occupancy for this project. Your prompt review and acceptance of this certification of the as-built drainage and grading plan will be appreciated.

If you have any questions, please feel free to call Dave Millikan or me.

Sincerely,

Michial M. Emery, P.E.
Vice President

cc: Mr. Steve Haley

Enclosures

DMYM/dlh
Job No. 3 138 1

PRINCIPALS
JERRY R. BOHANNAN, P. E. & L.S.
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DARRELL L. WADE, P. E.
PATRICK L. STIEHR, P. E.
DAVID M. Y. MILLIKAN, P. E.

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

December 15, 1982

Mr. David M. Y. Millikan, PE
Bohannan-Huston Inc.
4125 Carlisle NE
Albuquerque, New Mexico 87107

Re: 3904 Carlisle NE Drainage Report
(File No. G17-D17)

Dear Mr. Millikan:

The referenced drainage plan submitted December 9, 1982 is approved, however, before the building plans can be released by this office, copies of Special Order 19 (which includes the temporary alley paving) must be attached to the building plans.

Also, please advise your client that the proposed grades on site are critical in that they do not allow much room for grade deviations in order to be in compliance with the approved drainage plan.

If you have any questions regarding the above, please feel free to call me at 766-7644.

Sincerely,

Fred J. Aguirre, PE
Civil Engineer/Hydrology

FJA/el

cc: Steve Haley
6413 Cranbrook, NE
Albuquerque, N. M. 87111

INFORMATION SHEET

PROJECT TITLE 3904 Carlisle NE TYPE OF SUBMITTAL Certification

ZONE ATLAS PAGE NO. G-17 CITY ADDRESS 3904 Carlisle NE

LEGAL DESCRIPTION Lot 1, N. 5 ft Lot 2, N. 65 ft Lot 4, Block 8, North Carlisle Addition

ENGINEERING FIRM Bohannan - Huston, Inc CONTACT Dave Millikan

ADDRESS 4125 Carlisle Blvd. NE PHONE 881-2000

OWNER _____ CONTACT _____

ADDRESS _____ PHONE _____

ARCHITECT R. Schalk - Designer CONTACT _____

ADDRESS 400 San Felipe NW PHONE 242-4591

SURVEYOR Bohannan - Huston, Inc. CONTACT Dave Millikan

ADDRESS 4125 Carlisle Blvd. NE PHONE 881-2000

CONTRACTOR Westwind, Inc. CONTACT Steve Haley

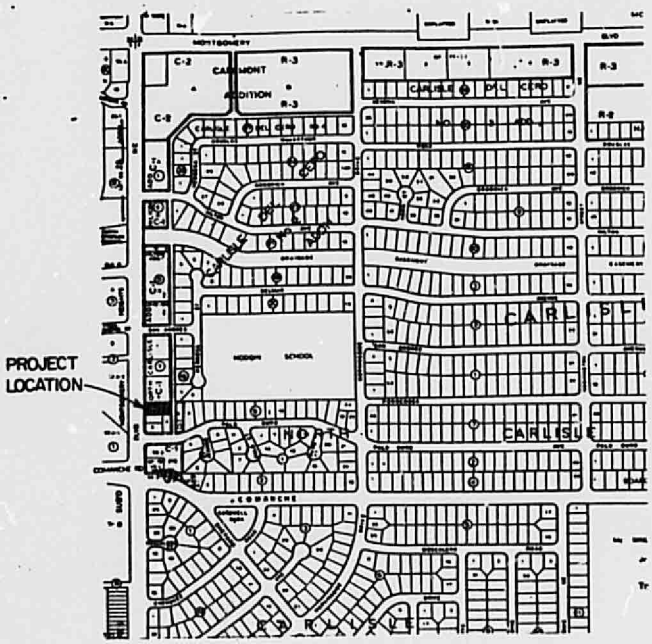
ADDRESS 6413 Cranbrook NE PHONE 822-1341

DATE SUBMITTED 4-7-83

BY David Mymillikan

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



G-17-Z

DAVID M. Y. MILLAR
NEW MEXICO
1547
1-18-83
REGISTERED PROFESSIONAL ENGINEER

1/83

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 and Cash Paving No. 31 "

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.

C-14

APPROVALS	NAME	DATE
ACE DESIGN	G. Kilpatrick	24 Jan 83
INSP	W. Salas	2-28-83
ACE		

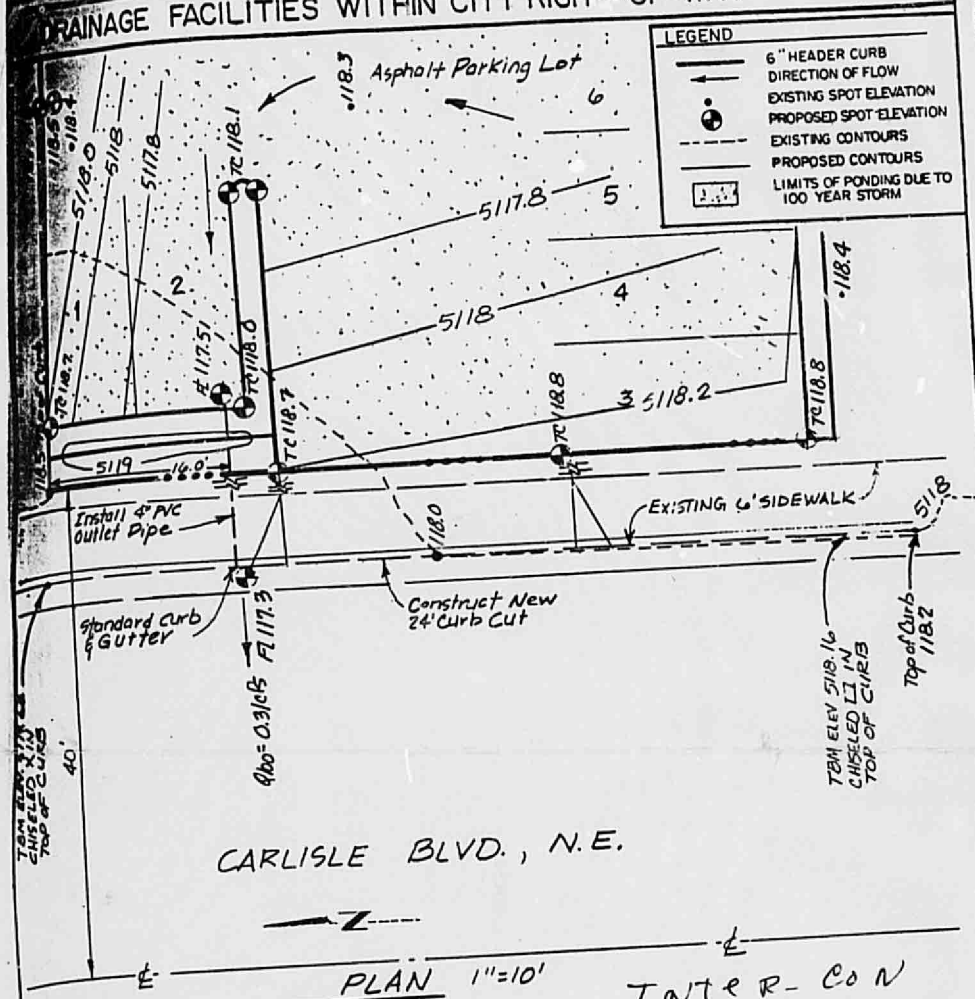
TITLE: 3904 Carlisle, N.E.
NORTH CARLISLE ADDITION
Lot 1, N. 5 ft. Lot 2, N. 65 ft Lot 4 Block 8

PERMIT NO.
SHEET 1 OF 2

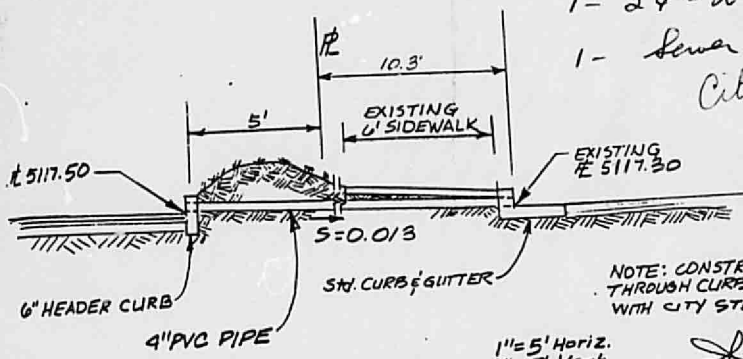
MAP NO. G17

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



INTER-CON
1- 24' Driped & c.e.
1- Sewer Tap
City to file
Permit No?
Remaining Drawing
EAH



NOTE: CONSTRUCT DRAINLINES THROUGH CURBS IN ACCORDANCE WITH CITY STD. DRWG. K-15

PROFILE

1/83

APPROVALS	NAME	DATE
A.C.E./DESIGN	G. Kelich	20 Jan 83
INSPECTOR	[illegible]	3-29-83
A.C.E./FIELD	M. Kennedy	4-7-83

TITLE: 3904 Carlisle, NE
NORTH CARLISLE ADDITION
Lot 1, N. 6ft Lot 2, N 65 ft Lot 4 Block B A

PERMIT NO.
SHEET 2 OF 2

MAP NO. G-17