DRAINAGE INFORMATION SHEET

E14/D3A

PROJECT TITLE: GUADALUPE PLAZA EXPANSION ZONE ATLAS/DRNG. FILE #: E+F 14

LEGAL DESCRIPTION: TRACT B-1-A, GUADALUPE PLAZA

CITY ADDRESS: 4th AND GUADALUPE

ENGINEERING FIRM: BOHANNAN HUSTON, INC. CONTACT: LAURA MILNE

ADDRESS: 7500 JEFFERSON, NE, ALBQ, NM PHONE: 823-1000

OWNER: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

ARCHITECT: BROOKS-HENSLEY-CREAGER ARCHITECTS CONTACT: JOE HENSLEY

ADDRESS: 121 SOUTH WALL ST., SPOKANE, WA PHONE: (509) 747-7181

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

RECEIVED
OCT 02 1987
HYDROLOGY SECTION

PRE-DESIGN MEETING:

___ YES

✓ NO

___ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. NONE

EPC NO. _____

PROJ. NO. _____

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

✓ DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAINAGE PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

___ SITE DEVELOPMENT PLAN APPROVAL

___ FINAL PLAT APPROVAL

✓ BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

✓ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER _____ (SPECIFY)

DATE SUBMITTED: 10/2/87

BY: Laura Milne

REVISED DRAINAGE AND GRADING PLAN FOR GUADALUPE PLAZA EXPANSION AT 4TH STREET AND GUADALUPE ROAD

Prepared for:

Brooks-Hensley-Creager Architects, P.A.
121 South Wall Street
Spokane, Washington 99204

Prepared by:

Bohannan-Huston, Inc.
7500 Jefferson Street, N.E.
Albuquerque, New Mexico 87109

October, 1987

Job Number 87300.04

James Topmiller
N.M.P.E. No. 9354

CALCULATIONS

ON-SITE HYDROLOGY

EXISTING

ALL BASINS

For Basin A:
% Impervious = 0%
then C = 0.40
6-hr. rain 2.2" (100-year)
Rainfall intensity, I = 4.65 in./hr.
use Tc = 10 min.
then Q = CIA (Q = Peak Discharge)
Q = 0.40 (4.65)(0.644) = 120 cfs

Basin	Area (acre)	Existing Q (cfs)
A	0.644	1.20
B	0.918	1.71
C	0.14	0.223
D	0.926	1.72
E	0.486	0.904
F	1.06	1.97

DEVELOPED

BASIN A

Site Area = 0.644 acres
% impervious = 100%
then C = 0.95
I = 4.65
then Q = 0.95(4.65).644 = 2.84 acres

BASIN B

Site Area = 0.918 acres
% impervious = 100%
then C = 0.95
I = 4.65
then Q = 0.95(4.65)(0.918) = 4.06 cfs

BASIN C

Site Area = 0.12 acres
% impervious = 17.6%
Area pervious = 0.115 acres
then C pervious = 0.25
I = 4.65
then Q = 0.25(4.65)(0.115) = 0.134 cfs
Area impervious = 0.025 acres
then C impervious = 0.95

I = 4.65
then Q impervious = 0.95(4.65)(0.025) = 0.110 cfs
Q = Q perv. + Q imperv. = 0.134 + 0.110 = 0.244 cfs

BASIN D

Site Area = 0.926 acres
% impervious = 75%
Area pervious = 0.231 acres
then C pervious = 0.25
I = 4.65
then Q = 0.25(4.65)(0.231) = 0.269 acres
Area impervious = 0.695 acres
then C impervious = 0.95
I = 4.65
then Q impervious = 0.95(4.65)(0.695) = 3.07 cfs
Q = Q perv. + Q imperv. = 0.269 + 3.07 = 3.34 cfs

BASIN E

Site Area = 0.486 acres
% impervious = 63.4%
Area pervious = 0.178 acres
then C pervious = 0.25
I = 0.40
I = 4.65
then Q = 0.40(4.65)(0.178) = 0.331 cfs
Area impervious = 0.308 acres
then C impervious = 0.95
I = 4.65
then Q impervious = 0.95(4.65)(0.308) = 1.36 cfs
Q = Q perv. + Q imperv. = 0.331 + 1.36 = 1.69 cfs

BASIN F

Site Area = 1.06 acres
% Impervious = 73.2%
Area pervious = 0.286 acres
then C pervious = 0.40
I = 4.65
then Q = 0.40(4.65)(0.286) = 0.532 acres
Area impervious = 0.774 acres
then C impervious = 0.95
I = 4.65
then Q impervious = 0.95(4.65)(0.774) = 3.42 cfs
Q = Q perv. + Q imperv. = 0.532 + 3.42 = 3.95 cfs

DEPTH OF FLOW AT CURB

$Q = 3.34 \qquad N = 0.017 \qquad S_f = .005$

$$Q = \frac{1.486}{n} A R^{2/3} S_f 1/2$$

$$AR^{2/3} = \frac{Q(n)}{1.486(S_f)^{1/2}} = \frac{3.34(0.017)}{1.486(.005)^{1/2}}$$

BY TRIAL - DEPTH OF FLOW AT CURB = 0.36' FOR 100-YEAR.

BASIN D - POND DRAINAGE

Use 0.5 cfs

$$A = \frac{Q}{C(2gh)^{1/2}} = \frac{0.5}{0.6[(2)(32.2)(1.5)]^{1/2}} = 0.085 \text{ ft.}^2$$

$$r = \left(\frac{0.085}{\pi}\right)^{1/2} = 0.165 \qquad \text{Use } r = 2.0"$$

$$\text{DRAINAGE TIME} = \frac{5850}{3600(.5)} = 3.25 \text{ HOURS}$$

BASIN E - 10" PIPE CAPACITY

PERIMETER FOR 10" PIPE = 2.62'

$$R_h = \left(\frac{Q(n)}{1.486(A)S_f^{1/2}}\right)^{3/2} = \frac{1.69(0.012)}{1.486(\pi)(5/12)^2(0.005)^{1/2}}$$

$$R_h = \frac{A}{P} = \frac{\pi(5/12)^2}{P} = 0.3539'$$

$P = 1.54' < 2.62'$

POND VOLUMES

BASIN C

ACTUAL VOLUME: $[100(8) + (4)^2].5 = 425$ cf

% Pervious = 17.6%

Pervious = CN = 61

Composite runoff curve # = 67.5

Direct runoff = 0.3 in.

Area C = 6066 ft.^{2}

$6066 \times \frac{.3}{12} = 152$ cf < 425 cf

BASIN D

ACTUAL VOLUME: 120 (32.50)1.5 = 5850 cf

% Pervious = 75%

Pervious CN = 61

Composite runoff curve # = 89

Direct runoff = 1.22 in.: 100-year water surface elevation = 76.75'

Area D = 57450 ft.^{2}

$57450 \times \frac{1.22}{12} =$ 5841 cf ~~5850 cf~~

SEE "POND VOLUME WITH ROOF RUNOFF TO WEST"

BASIN E

Type "D" Inlet $\qquad Q = 1.69$ cfs

FOR DOUBLE GRATE INLET

Area = 3.917 x 3.458 = $13.5\ ft^2$

$$h = \left(\frac{Q}{CA\sqrt{ag}}\right)^2 = \left(\frac{1.659}{.6(13.5)\sqrt{2(32.2)}}\right)^2$$

$$h = 0.0081 \text{ in.}$$

CONTROLS FOR PIPE ORIFICE

FOR 10" PIPE:

$$\text{Area} = \pi r^2 = \pi\left(\frac{10}{12}\right)^2 = 2.18 \text{ ft.}^2$$

$$h = \left(\frac{1.69}{6(2.18)(\sqrt{2(32.2)}}\right)^2 = 0.220 \text{ ft.} = 2.6"$$

FOR SINGLE GRATE INLET:

$$\text{Area} = 3.917 \times 1.73 = 6.77 \text{ ft.}^2$$

$$h = \left(\frac{1.69}{.6(6.77)(64.4)^{1/2}}\right)^2 = 0.0027' = 0.03"$$

CURB OPENING FOR BASIN D POND

$$L = \frac{Q}{C\,H^{3/2}} \qquad Q = 3.34 \text{ cfs}$$

FOR H = .5': $\quad L = \dfrac{3.34}{3.0(.5)^{3/2}} \quad L = 3.1' < 4.0'$

POND VOLUME WITH ROOF RUNOFF TO WEST

BASIN D

DIRECT RUNOFF = 1.22 IN. (PREVIOUSLY CALCULATED)

$$31814\ \text{SF (ROOF AREA)} \times \frac{1.22\ \text{IN}}{12\ \text{IN/FT}} = 3234\ \text{C.F.}$$

TOTAL REQD. POND VOLUME = (previously calculated)

4230 C.F. + 5840 C.F. = 10,070 C.F.

ACTUAL POND VOLUME = $(125 \times 68)\frac{1}{2}(1.5) = 6375$ C.F.

$(180 \times 20)(0.75) = 2700$ C.F.

9075 C.F.

BOHANNAN-HUSTON INC.

PROJECT NAME GUADALUPE PLAZA SHEET ____ OF ____

PROJECT NO. 87300.04 BY [illegible] DATE 10/15/87

SUBJECT ____ CH'D ____ DATE ____

TOTAL LAND AREA FOR GUADALUPE PLAZA INCLUDING SMITH'S AND ALBUQUERQUE FEDERAL LAND = 646,866 SF (FROM ARCHITECT'S SITE PLAN + filed plat)

BASIN C = 6650 (ROOF) + 6100 (FROM ORIGINAL CALCS.) = 12750

BASIN D = 31814 SF (ROOFS) + 40337 (FROM ORIGINAL CALCS.) = 72151 SF

TOTAL AREA DRAINING TO POND = (WITH ROOFS DRAINING TO BACK.)

646866
- 12750
- 72151
561965 SF

FOR 100 YEAR FLOOD

PERCENT IMPERVIOUS = 85%

CN = 92

COMPOSITE RUNOFF CURVE NO. = 97.5

DIRECT RUNOFF = 1.9 IN.

REQUIRED VOLUME = 561965 SF $\times \frac{1.9 \text{ IN}}{12 \text{ IN/FT}}$ = 88978 C.F.

88978 < 101057 ∴ O.K.

↓

SEE AS-BUILT GRADING PLAN OF SMITH'S FOR CALCULATIONS.

BOHANNAN-HUSTON INC.

PROJECT NAME GUADALUPE Plaza SHEET ____ OF ____

PROJECT NO. 87300.04 BY [illegible] DATE 10/15/87

SUBJECT ____ CH'D ____ DATE ____

October 20, 1987

Mr. Ron Brown
Venture Partner
Guadalupe Plaza Joint Venture
3411 Candelaria, N.E.
Albuquerque, NM 87107

Mr. Fred Urbanek
Vice President Facility Engineering
Smith's Management Corporation
1550 South Redwood Road
Salt Lake City, UT 84104

Re: Cross-Lot Drainage Assurances for Guadalupe Expansion (E14/D3A)

Gentlemen:

The purpose of this letter is to provide the City of Albuquerque with adequate assurances concerning the cross-lot drainage of Guadalupe Plaza, Tracts B-1-A and B-2-A (plat filed and dated April 23, 1981). The existing Smith's store is located on Tract B-2-A. Existing and proposed characteristics of the site require cross-lot drainage of storm runoff between the two separately owned tracts.

Your concurrences, by signature below, certifies that the owner of Tract B-2-A is permitting Tract B-1-A storm runoff to cross Tract B-2-A. It further assures that the owner of Tract B-1-A is providing reciprocal drainage permission for Tract B-2-A runoff to cross Tract B-1-A.

These agreements and assurances provided hereon shall be binding upon the land, the undersigned parties, their heirs and assigns.

The signed original of this letter will be provided to the City of Albuquerque in response to the request made in their letter of October 8, 1987. We will return copies of this signed original to you for your files. If you have any questions, please contact James Topmiller or me.

Sincerely,

Laura Milne

Laura Milne
Project Engineer

CONCURRENCES:

Mr. Ron Brown
Venture Partner
Guadalupe Plaza Joint Venture

Mr. Fred Urbanek
Vice President Facility Engineering
Smith's Management Corporation

LM/da
Job No. 87300.04

BOHANNAN-HUSTON INC.

COURTYARD I, 7500 JEFFERSON STREET, N.E. ALBUQUERQUE, NEW MEXICO 87109 (505) 823-1000
UNIVERSITY PLAZA, SUITE 104, 330 GARFIELD SANTA FE, NEW MEXICO 87501 (505) 988-7671
6713 VISCOUNT BLVD. EL PASO, TEXAS 79925 (915) 778-4491

October 19, 1987

Bernie Montoya, P.E.
Utility Development Division
Hydrology Section
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Re: Drainage/Grading Plan for Guadalupe Plaza Expansion (E14/D3A)

Dear Bernie:

We have received your letter of October 8, 1987, to James Topmiller, summarizing your preliminary review of the referenced drainage plan. The required information has been addressed as follows:

1. For confirmation of the existing pond volume, please see the enclosed as-built plan of the Guadalupe Plaza Phase I drainage, which includes the pond volume of 52,457 c.f. In addition, please note that the 2 existing parking areas are designed to hold 24,300 c.f. each. Therefore, the total 100-year storm volume, designed and built during Phase I, is 101,057.00 c.f. We have calculated the required 100-year pond volume to be approximately 89,000 c.f., taking the ultimate buildout of the site into account (see enclosed calculation sheets).

   Please note that the drainage/grading plan has been revised to show the majority of roof area draining to the west. This change, however, has been incorporated into the design calculations.

2. Since retention ponds are not acceptable, we have sloped Basin C so that it will drain directly into the street. This seemed the most reasonable solution due to the negligible amount of runoff this area will generate.

3. We have added an emergency spillway for the detention pond of Basin D, which is located at the southwest edge of the property.

4. Per our telephone conversation of October 15, 1987, I have sent a letter to the property owners of Tracts B-1-A and B-2-A, Guadalupe Plaza, to confirm their concurrence with the cross-lot drainage. We would ask that the review process continue with the understanding that final approval is dependent upon the City's receipt of this letter in the near future.

BOHANNAN-HUSTON INC.
COURTYARD I, 7500 JEFFERSON STREET, N.E. ALBUQUERQUE, NEW MEXICO 87109 (505) 823-1000
UNIVERSITY PLAZA, SUITE 104, 330 GARFIELD SANTA FE, NEW MEXICO 87501 (505) 988-7671
6713 VISCOUNT BLVD. EL PASO, TEXAS 79925 (915) 778-4491

E14/D3A

As for the plan drawing:

1. The finish floor elevations are now shown to full mean sea level designation.

2. The connection from the pond to the existing catch basin, as well as the pond detail, now shows a 12" RCP.

We are hopeful that this submittal will obtain your approval for rough grading and building permit purposes.

If you have any questions or comments, please feel free to call.

Sincerely,

Laura Milne

Laura Milne
Project Engineer

cc: Ron Brown
Joe Hensley

LM/da
Job No. 87300.05

E14|D3A

FILE COPY

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

February 9, 1989

James Topmiller, P.E.
Bohannan-Huston, Inc.
7500 Jefferson Street, NE
Albuquerque, New Mexico 87109

RE: CERTIFICATION FOR 10" DRAIN PIPE @ GUADALUPE PLAZA
(E-14/D3A) RECEIVED FEBRUARY 2, 1989

Dear Mr. Topmiller:

Based on the information contained in your letter of February 2, 1989, certification is acceptable. I have notified Mr. Dale Romero that he can obtain his permanent Certificate of Occupancy from Hydrology.

If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,

Bernie J. Montoya

Bernie J. Montoya, C.E.
Engineering Assistant

BJM/bsj
(WP+419)

BOHANNAN-HUSTON INC.

COURTYARD I, 7500 JEFFERSON STREET, N.E. ALBUQUERQUE, NM 87109
TEL (505) 823-1000 FAX (505) 821-0892

February 2, 1989

Bernie Montoya
Hydrology Division
Public Work Department
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Re: Guadalupe Plaza - Drainage Certification (E14/D3A)

Dear Bernie:

In accordance with our recent discussion, by this letter I am supplying the required certification for the buried 10" drain pipe at the referenced development. From my recent field inspection of the drain pipe, the drain pipe substantially conforms to the requirements of the approved drainage plan.

Due to an oversight during the construction, the drain pipe was buried and paved over prior to City Hydrology inspection. Based on our discussion, I visited the site, viewed the external components of the drain pipe and watched while hose water was discharged into the drain pipe inlet at the west side of the buildings. Drainage appeared to discharge freely and easily at the outlet.

I hope that this certification provides the necessary information for release of permanent certificates of occupancy. Please contact me if I can answer any questions you may have.

Sincerely,

James Topmiller, P.E.
Project Manager

cc: Dale Romero

/da
Job No. 87300.02

FILE COPY

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

ENGINEERING GROUP

INTER-OFFICE CORRESPONDENCE November 3, 1987

TO:
Tom Aragon, Transportation System Division

FROM:
Fred J. Aguirre, Hydrologist; Engineering Group/PWD

SUBJECT:
PRIVATE DRAINAGE FACILITIES WITHIN PUBLIC RIGHTS-OF-WAY/EASEMENT
GUADALUPE PLAZA EXPANSION (PHASE II) E-14/D3A)

Transmitted herewith, is a copy of the approved drainage plan for the referenced project incorporating the S.O. #19 design.

In accordance with the new process, this plan is being submitted to you for permitting and inspection. Please provide this section with a signed-off copy per the signature block upon construction and acceptance by your office.

As you are aware, the signed-off S.O. #19 is required by this office for Certificate of Occupancy release; hence your expeditious processing of this plan would be greatly appreciated and would avoid any unnecessary delay in the release of the Certificate of Occupancy.

Thank you for your cooperation, and if you should have any questions and/or comments regarding the process, please feel free to call me at 768-2650.

FJA/bsj

Attachment

FILE COPY

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Ken Schultz
Mayor

UTILITY DEVELOPMENT DIVISION
HYDROLOGY SECTION
(505) 768-2650

November 2, 1987

James Topmiller, P.E.
Bohannan-Huston, Inc.
7500 Jefferson Street, NE
Albuquerque, New Mexico 87109

RE: REVISED DRAINAGE PLAN FOR GUADALUPE PLAZA EXPANSION (E-14/D3A)
ENGINEER'S STAMP DATED OCTOBER 8, 1987

Dear Mr. Topmiller:

Based on the information provided on your submittal of October 22, 1987, the above referenced drainage plan is approved for Building Permit.

Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology. Also, a separate permit is required for construction within City right-of-way.

If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,

/Bernie J. Montoya

Bernie J. Montoya, C.E.
Engineering Assistant

BJM/bsj

cc: Becky Sandoval

DRAINAGE INFORMATION SHEET

E14/03A

PROJECT TITLE: GUADALUPE PLAZA EXPANSION ZONE ATLAS/DRNG. FILE #: ~~E 3 F 14~~

LEGAL DESCRIPTION: TRACT B-1-A, GUADALUPE PLAZA

CITY ADDRESS: 44h & GUADALUPE

ENGINEERING FIRM: BOHANNAN HUSTON, INC. CONTACT: LAURA MILNE

ADDRESS: 2500 JEFFERSON, NE, ALBQ, NM PHONE: 823-1000

OWNER: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

ARCHITECT: BROOKS·HENSLEY·CREGER ARCHITECTS CONTACT: JOE HENSLEY

ADDRESS: 121 SOUTH WALL, SPOKANE, WA. PHONE: (509) 747-7181

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

RECEIVED
OCT 22 1987
HYDROLOGY SECTION

PRE-DESIGN MEETING:

___ YES
✓ NO
___ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. NONE
EPC NO. _____
PROJ. NO. _____

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT
✓ DRAINAGE PLAN
___ CONCEPTUAL GRADING & DRAINAGE PLAN
___ GRADING PLAN
___ EROSION CONTROL PLAN
___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

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

DATE SUBMITTED: 10/21/87

BY: Laura Milne

FILE COPY

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Ken Schultz
Mayor

UTILITY DEVELOPMENT DIVISION
HYDROLOGY SECTION
(505) 768-2650

October 8, 1987

James Topmiller
Bohannan Huston, Inc.
7500 Jefferson, NE
Albuquerque, New Mexico 87109

RE: DRAINAGE PLAN FOR GUADALUPE PLAZA EXPANSION (E14/D3A)
RECEIVED OCTOBER 2, 1987

Dear James:

A preliminary review of your submittal for Building Permit approval has shown that the following information is lacking for this section to begin the review process:

Information Needed

1. Confirmation of existing pond volume to which proposed Basins F, E, B and A will be routed to (does volume capacity exist, taking into consideration the existing Phase I portion?)

2. Retention ponds are no longer acceptable, therefore, Basin C must be drained within a 24 hour period.

3. Location of Emergency Spillway for Basin D.

4. Please provide a copy of document allowing cross-lot-line drainage.

Plan Drawing

1. Finish floor elevations must be shown to full mean-sea-level designation.

2. On your plan drawing, the connection from the pond to the existing catch basin is shown as 36" PVC, your pond detail shows 12" RCP, please explain.

Please provide this information, so that we may process your request as expediently as possible.

Cordially,

/Bernie J Montoya

Bernie J. Montoya, C.E.
Engineering Assistant

BJM/lk

BOHANNAN-HUSTON INC.

COURTYARD I, 7500 JEFFERSON STREET, N.E. ALBUQUERQUE, NEW MEXICO 87109 (505) 823-1000
UNIVERSITY PLAZA, SUITE 104, 330 GARFIELD SANTA FE, NEW MEXICO 87501 (505) 988-7671
6713 VISCOUNT BLVD. EL PASO, TEXAS 79925 (915) 778-4491

October 2, 1987

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

Re: Guadalupe Plaza Expansion

Dear Fred:

We are enclosing the drainage report for the referenced project. The project will be a shopping center and parking lot which is the second and final phase of an ultimate plan.

If you have any questions or comments, please call either James Topmiller or myself.

Sincerely,

Laura Milne

Laura Milne
Project Engineer

Enclosure

cc: Ron Brown
Joe Hensley

LM/da
Job No. 87300.04

SCALE: 1" = 40'

PLAN
10" CURB OUTLET DETAIL
NO SCALE

8" & 10" CURB OUTLET DETAIL
NO SCALE

DRAINAGE REPORT TEXT

Site Location

The site is located on the northwest corner of 4th and Grecian Avenue N.W. The Vicinity Map shown on this sheet identifies the site location.

Existing Conditions

The site slopes erratically to the southeast at approximately one percent (1%) and has native covering. Using the Rational method to determine peak discharge rates during 100-year storms, we find that the undeveloped site develops 7.73 cfs. No outstanding physical feature or development occurs on the site.

Adjacent development includes a residential area to the South and commercial to the east. This project will connect directly to this existing commercial development, as it is Phase II of the development. The north is bounded by the Gallegos Lateral and the west is bounded by the Harwood Lateral.

The existing drainage pattern for the site is the free discharge of runoff in a sheet flow manner to the commercial parking lot to the east and into Grecian Avenue N.W. The SCS soil type for the site is Gila loam, Gb, and the hydrological soil group is Type B (see Soil Map this sheet). The site currently receives minimal off-site flows from the adjacent lateral berms.

The Flood Insurance Map provided on this sheet indicates that flood areas do not exist within the site.

Proposed Conditions

The existing undeveloped peak discharge to Grecian Avenue N.W. will not increase under proposed developed conditions since the majority of runoff will be collected in one of the three on site ponding areas. The largest pond is existing and is located at the Southeast corner of the property. This pond is designed to take the full runoff of the site and was completed in the earlier phases of the shopping center. The developed site develops 16.12 cfs, however, all but 3.58 cfs is collected in the existing detention pond, which was initially built for this purpose. The remaining 3.58 cfs is the discharge from Basin C and Basin D, for which new detention ponds are proposed.

Basin C generates a volume of 152 cf which will be collected in the 426 cf permanent retention ponding area at the southeast edge of the site.

Basin D has a discharge rate of 3.34 cfs which is to be collected in the minimum 5653 cf pond at the southwest corner of the site. This pond will have controlled discharge directly into the existing storm sewer inlet on Grecian Avenue N.W. The controlled discharge rate is set at a negligible 0.6 cfs so as not to disrupt the hydraulics of the existing storm sewer system. The pond volume is sized to hold the 100-year storm for this basin.

VICINITY MAP
NOT TO SCALE ZONE ATLAS MAP E, F-14

FLOODWAY MAP
NOT TO SCALE

SOILS MAP
NOT TO SCALE

EXISTING SMITH STORE

TRACT B-2-A

TRACT B-1-A

FF = 4978.5

20' WATERLINE EASEMENT

5' POWER & TELEPHONE EASEMENT

6' GASLINE EASEMENT

GALLEGOS LATERAL

HARWOOD LATERAL

GRECIAN ROAD N.W.

GUADALUPE TRAIL N.W.

10" DRAINAGE DIP-EXTENDED THROUGH CURB AS NECESSARY PER CURB DETAIL

INSTALL TYPE "D" INLET SINGLE-PER CO.A. #2206

10" DIP PIPE S = 0.005

6" DIP COORDINATE WITH STRUCTURAL DRAWINGS FOR LOCATION OF ROOF GUTTER AND PIPE

SEE CURB OUTLET DETAIL FOR INV-MATCH GUTTER

12" RCP CONNECT TO EXISTING INLINE INV (N) = 72.3 INV (S) = 71.3

INSTALL CONCRETE RUNDOWN PER SECTION D-D WITH FLOWLINE ELEV.= 75.2

INSTALL 2 - 21" WIDE SIDEWALK CULVERT (DOUBLE) SEE C.O.A. DWG 2236

POND VOLUME REQUIRED = 5653 CF

GRASS BOTTOM

Existing 74.9 TC

Existing 74.3 TC

Existing 75.07 FL

Existing 75.13 FL

NOTES

1. NO FROZEN MATERIALS SHALL BE PLACED IN FILL.
2. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234 FOR LOCATION OF EXISTING UTILITIES.
3. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL UTILITIES. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
4. PRIOR TO GRADING, ALL VEGETATION, DEBRIS AND NEAR SURFACE ORGANICALLY CONTAMINATED SOIL SHALL BE STRIPPED TO A 6" DEPTH FROM ALL AREAS TO BE GRADED. VEGETATION AND DEBRIS SHALL BE DISPOSED OF OFF-SITE. TOPSOIL STRIPPINGS SHALL BE DISPOSED OF OFF-SITE OR STOCKPILED FOR USE IN PLANTERS AND NON-STRUCTURAL FILLS.
5. ALL ON-SITE EXCAVATED MATERIAL PLACED IN FILL SHALL MEET THE REQUIREMENTS OF THE SOILS ENGINEER OR ARCHITECT OR THE FILL SHALL BE OBTAINED FROM AN APPROVED OFF-SITE BORROW AREA.
6. DURING ROUGH GRADING OF THE SITE, ALL BUILDING PADS SHALL BE GRADED TO THREE FEET BEYOND SPECIFIED HORIZONTAL DIMENSIONS.
7. SUBGRADE TOLERANCE OF ALL BUILDING PADS, PARKING AREAS, ROADWAYS, DRAINAGE IMPROVEMENTS, ETC. SHALL BE ± 0.05 FEET.
8. FINISHED TOP OF ASPHALT TOLERANCE FOR ALL AREAS WITH SLOPES LESS THAN + .02 FEET FINISHED TOP OF ASPHALT TOLERANCE FOR ALL AREAS WITH SLOPES GREATER THAN 1% IS ± .10 FEET.
9. EARTH SLOPES SHALL NOT EXCEED 3 HORIZONTAL TO 1 VERTICAL.
10. GRADING AND EARTHWORK OPERATIONS SHALL BE PERFORMED IN ACCORDANCE WITH ALL CURRENT CITY, COUNTY, STATE AND FEDERAL DUST CONTROL REGULATIONS.
11. DO NOT PUDDLE OR JET BACKFILL.
12. CONTRACTOR SHALL PROVIDE EQUIPMENT TO REMOVE EXCESSIVE SURFACE WATER WHICH MAY ACCUMULATE DURING CONSTRUCTION. IF EARTHWORK IS INTERRUPTED BY SURFACE WATER ACCUMULATION, FILL OPERATIONS SHALL NOT RESUME UNTIL APPROVED BY SOILS ENGINEER.
13. BURIED STORM SEWER/DRAINAGE PIPES SHALL BE INSPECTED BY THE CITY'S HYDROLOGY INSPECTOR PRIOR TO BACKFILLING. CALL 768-2650.

CURB DETAIL (B)

SECTION C-C
POND DETAIL
NOT TO SCALE

SECTION A-A
CURB TRANSITION
NOT TO SCALE

SECTION D-D
CONCRETE RUNDOWN
NOT TO SCALE

SECTION B-B
CONCRETE GUTTER
NOT TO SCALE

LEGEND

4975	EXISTING CONTOUR
4980	PROPOSED CONTOUR
78.0 TC	TOP OF CURB
76.1 TA	TOP OF ASPHALT
	DIRECTION OF FLOW
	EXISTING CURB
	PROPOSED CURB
	BASIN BOUNDARY

LEGAL DESCRIPTION

TRACT B-1-A, GUADALUPE PLAZA

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE

BENCH MARKS
STA. IS BHI 3" BRASS CAP IN 6" x 12" CONCRETE STAMPED 31\73-144 1983.
STA. IS LOCATED AT THE WEST NORTH-WEST PROPERTY RETURN AT THE INTER-SECTION OF FOURTH STREET, N.W. AND GUADALUPE TRAIL, N.W.
ELEV. 4974.40

AS-BUILT INFORMATION

CONTRACTOR	
WORK STAKED BY	DATE
FIELD WORKS ACCEPTANCE BY	DATE
FIELD VERIFICATION BY	DATE
DRAWINGS CORRECTED BY	DATE

MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

ENGINEER'S SEAL

NO.	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	
		DESIGNED BY LM/LAD	DATE SEPT. 87
		DRAWN BY THL	DATE SEPT. 87
		CHECKED BY JT	DATE SEPT. 87

RECEIVED
OCT 22 1987
HYDROLOGY SECTION

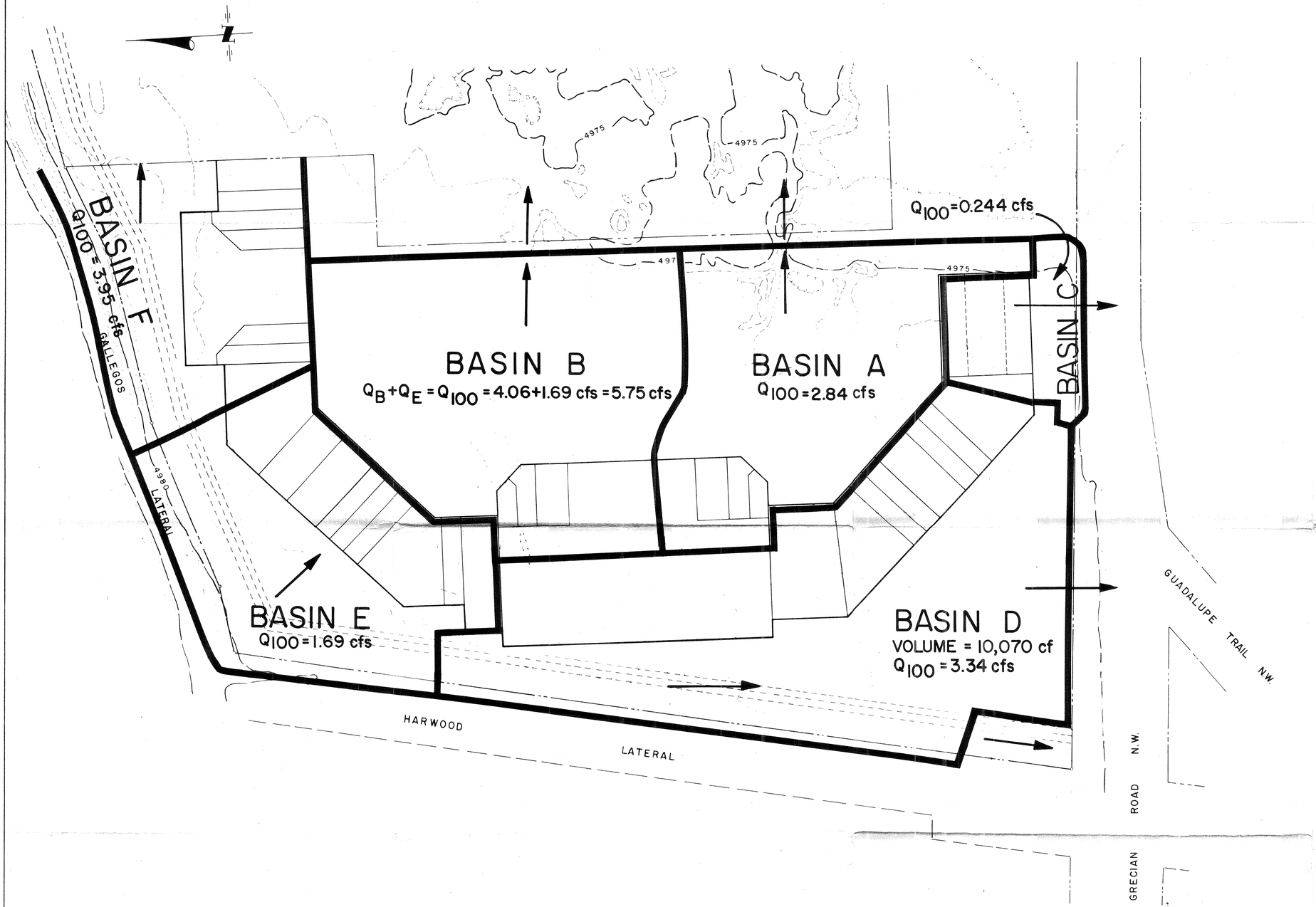
TITLE:
GUADALUPE PLAZA EXPANSION (PHASE II)
GRADING & DRAINAGE PLAN

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
City Engineer			Liquid Waste		
A.C.E.-Design			Traffic		
A.C.E.-Hydrology			Water		

SCALE: 1" = 40'
BHI JOB № 8730000
DRAWING NO.
MAP NO. E, F-14
SHEET OF

E14 | D3A

BRUNING 44-232



SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

BENCH MARKS

STA. IS BM 3" BRASS CAP IN 6"x 12" CONCRETE STAMPED 31173-144 1983. STA. IS LOCATED AT THE WEST NORTH-WEST PROPERTY RETURN AT THE INTER-SECTION OF FOURTH STREET, N.W. AND GUADALUPE TRAIL, N.W.

ELEV. 4974.40

AS-BUILT INFORMATION

CONTRACTOR

WORK STAKED BY: DATE

INSPECTIONS ACCEPTANCE BY: DATE

FIELD VERIFICATION BY: DATE

DRAWINGS CORRECTED BY: DATE

MICRO-FILM INFORMATION

RECORDED BY: DATE

NO.

ENGINEER'S SEAL

RECEIVED OCT - 9 1987 HYDROLOGY SECTION

RECEIVED OCT 9 1987 HYDROLOGY SECTION

RECEIVED OCT 22 1987 HYDROLOGY SECTION

NO.	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	

DESIGNED BY LM/LAD DATE SEPT. 87

DRAWN BY THL DATE SEPT. 87

CHECKED BY JT DATE SEPT. 87

SCALE: 1" = 40'

DEVELOPED BASIN SHEET

TITLE:
GUADALUPE PLAZA EXPANSION (PHASE II)

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
City Engineer			Liquid Waste		
A C E - Design			Traffic		
A C E - Hydrology			Water		

DRAWING NO.

MAP NO. E,F-14

SHEET OF

BHI JOB Nº 8730000

BRUNING 44-232

E14 / D3A