City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

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

November 19, 1985

Jake Bordenave
DMJM/Adam, Hamlyn, Anderson
5700 Harper Drive, NE Suite 280
Albuquerque, New Mexico 87109

RE: CONCEPTUAL DRAINAGE PLAN FOR HAMPTON INN/RESIDENCE INN
RECEIVED OCTOBER 24, 1985 (H-17/D36)

Dear Mr. Bordenave:

I have reviewed the referenced plan and forward the following comments:

1. What is the capacity of catch basin and pipe? Please show where the pipe will outlet. What is the capacity of the new catch basin?

2. Concurrence of AMAFCA will be required for work in their easement.

3. Please address the off-site flows from the Coronado Freeway on ramp.

4. Need City approved street grades for adjoining streets.

5. What is the status of the floodplain revisions?

If you have any questions or comments regarding this project, call me at 766-7644.

Cordially,

Carlos A. Montoya, P.E.
City/County Floodplain Administrator

cc: Bob Grabarschick; Vista Host
1900 Yorktown, Suite 112
Houston, Texas 77056

CAM/bsj

DRAINAGE INFORMATION SHEET

PROJECT TITLE: HAMPTON INN/RESIDENCE INN ZONE ATLAS/DRNG. FILE #: H17/D36

LEGAL DESCRIPTION: ACME ACRES, TRACT A

CITY ADDRESS: CARLISLE BLVD., N. E.

ENGINEERING FIRM: DMJM CONTACT: J. J. BORDENAVE

ADDRESS: 5700 HARPER DR., N. E. SUITE 280 PHONE: 822-7955

OWNER: VISTA HOST CONTACT: BOB GRABARSCHICK

ADDRESS: 1900 YORKTOWN, SUITE 112 HOUSTON TEXAS 77056 PHONE: 713-871-0106

ARCHITECT: PAUL D. GILLESPIE CONTACT: PAUL GILLESPIE

ADDRESS: 726 MT. MORIAH RD, MEMPHIS, TN. PHONE: 901-685-0809

SURVEYOR: DMJM CONTACT: WALT RICHARDS

ADDRESS: 5700 HARPER DR., N. E. SUITE 280 PHONE: 822-7955

CONTRACTOR: N/A CONTACT:

ADDRESS: PHONE:

PRE-DESIGN MEETING:

X YES

___NO

___COPY OF CONFERENCE RECAP SHEET PROVIDED

RECEIVED
OCT 24 1985
HYDROLOGY SECTION

DRB NO. 85-536 9/17/85

EPC NO. V-79-51 12/21/79

PROJ. NO.

TYPE OF SUBMITTAL:

___DRAINAGE REPORT

___DRAINAGE PLAN

X CONCEPTUAL GRADING & DRAINAGE PLAN

___GRADING PLAN

___EROSION CONTROL PLAN

___ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___SKETCH PLAT APPROVAL

___PRELIMINARY PLAT APPROVAL

X 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: 10/24/85

BY: J. J. Bordenave

City of Albuquerque

September 29, 1999

Billy McCarty, P.E.
Chavez-Grieves
5639 Jefferson Street NE
Albuquerque, NM 87109

RE: HAMPTON INN, CUTLER AVENUE CUL-DE-SAC (H17-D36). ENGINEER'S CERTIFICATION FOR CERTIFICATE OF OCCUPANCY APPROVAL. ENGINEER'S STAMP DATED JULY 29, 1999.

Dear Mr. McCarty:

Based on the information provided on your July 30, 1999 submittal, the above referenced project is approved for Certificate of Occupancy.

The Engineer held request in abeyance until a broken storm drainage grate was replaced. (Letter dated 8/11/99 and received 9/2/99)

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

CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.
5639 JEFFERSON STREET NE • SUITE 1 • ALBUQUERQUE, NEW MEXICO 87109 • PHONE (505) 344-4080 • FAX (505) 343-8759

LETTER OF TRANSMITTAL

#-17/0036

TO: COA Hydrology Dept. DATE: 7-29-99
Plaza Del Sol JOB # L25-100-5197
Alb. NM RE: Hampton Inn

ATTN: John Murray

WE ARE SENDING YOU ✓ ATTACHED ___ UNDER SEPARATE COVER, THE FOLLOWING ITEMS:

___ SHOP DRAWINGS	✓ PLANS	___ SPECIFICATIONS	___ DISKETTE
___ CHANGE ORDER	___ PRINTS	___ CALCULATIONS	___ PROPOSAL INFO
✓ COPY OF LETTER	___ SAMPLES	___ REPORT	___ _____

COPIES	DATE	NO.	DESCRIPTION
1	letter		
1	Drainage information Sheet		
1	Grading Certification		

THESE ARE TRANSMITTED AS CHECKED BELOW:

___ FOR YOUR USE	✓ FOR REVIEW & COMMENT
___ AS REQUESTED	___ RETURNED AFTER LOAN TO US
___ PLEASE CORRECT AND RESUBMIT	___ SUBMIT ___ COPIES FOR DISTRIBUTION
___ RESUBMITTAL IS NOT REQUIRED	___ RETURN ___ CORRECTED PRINTS
CORRECTIONS, IF ANY, ARE NOTED	___ BIDS/PROPOSALS DUE _____ 199_

REMARKS:

RECEIVED
JUL 30 1999
HYDROLOGY SECTION

COPIES TO: Files SIGNED: Bill O'Mulcahy

IF ENCLOSURES ARE NOT AS NOTED, KINDLY NOTIFY US AT ONCE. *REV.9/95*

DRAINAGE INFORMATION

PROJECT TITLE: HAMPTON INN ZONE ATLAS/DRNG. FILE #: H-17

DRB#: 95-527 EPC #: Z-85-129, Z-95-89 WORK ORDER _____

LEGAL DESCRIPTION: TRACT A, ACME ACRES

CITY ADDRESS: I-40 AND CARLISLE (2300 CARLISLE NE)

ENGINEERING FIRM: Chavez-Grieves CONTACT: BILLY MCCARTY

ADDRESS: 5639 Jefferson NE PHONE: 344-4080

OWNER: LUMBERMANS INVESTMENT CORPORATION CONTACT: STEVE BURNE

ADDRESS: 7200 MOPAC, AUSTIN, TEXAS PHONE: 512-328-3007

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT

____ DRAINAGE PLAN

____ CONCEPTUAL GRADING & DRAINAGE PLAN

____ GRADING PLAN

____ EROSION CONTROL PLAN

_X_ ENGINEER'S CERTIFICATION

____ OTHER

PRE-DESIGN MEETING:

_X_ YES

____ NO

____ COPY PROVIDED IN REPORT

DATE SUBMITTED: July 29, 1999

BY: BILLY MCCARTY

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL

____ PRELIMINARY PLAT APPROVAL

____ S. DEV. PLAN FOR SUB'D. APPROVAL

____ S. DEV. PLAN FOR BLDG. PRMT. APPROVAL

____ SECTOR PLAN APPROVAL

____ FINAL PLAT APPROVAL

____ FOUNDATION PERMIT APPROVAL

____ BUILDING PERMIT APPROVAL

_X_ CERTIFICATE OF OCCUPANCY APPROVAL

____ GRADING PERMIT APPROVAL

____ PAVING PERMIT APPROVAL

____ S.A.D. DRAINAGE REPORT

____ DRAINAGE REQUIREMENTS

____ DRB SITE PLAN APPROVAL

NUMBER OF PAGES TRANSMITTED: 2
(INCLUDING THIS COVER PAGE)

SENT [ ]

Cawson Templeton
530-7655
pager

g:\l25\100\document\klinger3.fax.wpd

9/2
WRITE LTR

Attention John,
Can you please call Vicki down stairs
And give approval for final C.O.
thank you
Klinger

08/12/99 THU 11:27 [TX/RX NO 9661] 001

CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.
5639 JEFFERSON STREET NE • ALBUQUERQUE, NEW MEXICO 87109 • PHONE (505) 344-4080 • FAX (505) 343-8759

August 11, 1999

John Murray
City of Albuquerque Hydrology Department
2nd Floor Plaza Del Sol
Albuquerque, New Mexico 87103

RE: TRACT A, ACME ACRES (HAMPTON INN)
GRADING CERTIFICATION FOR DRB 95-527

Dear Mr. Murray:

This letter is a follow up to my letter dated July 29, 1999. The broken grate has been replaced. Therefore, please finalize your review and acceptance of the grading certification I submitted to you on July 29, 1999. All of the site work has been completed and the site drains in substantial compliance with the approved grading and drainage plan with my seal dated September 23, 1998. As you know, the owners are expecting to receive their Certificate of Occupancy within the next few days. Therefore, please expedite your review and approval of this certification.

If you have any questions, please call me at 344-4080 so we can resolve them without holding up the Certificate of Occupancy.

Sincerely,

CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.

Billy O. McCarty, P.E.
Project Engineer

cc: Fred Malcolm, Klinger Constructors, Inc.

60-day Temp
good til end
of Sept
NEED D.I.S

G:\L25\100\DOCUMENT\gradecert2.WPD

CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.

5639 JEFFERSON STREET NE • ALBUQUERQUE, NEW MEXICO 87109 • PHONE (505) 344-4080 • FAX (505) 343-8759

July 29, 1999

John Murray
City of Albuquerque Hydrology Department
2nd Floor Plaza Del Sol
Albuquerque, New Mexico 87103

RE: TRACT A, ACME ACRES (HAMPTON INN)
GRADING CERTIFICATION FOR DRB 95-527

Dear Mr. Murray:

I am submitting this certification to you per our phone conversation earlier this week. This certification is based on an as-built survey provided by Land Links Company, Ltd. and site observations I made on July 19, 1999 and July 23, 1999. The site was constructed in substantial compliance with the approved grading and drainage plan with my seal dated September 23, 1998. There is only one item which remains to be completed prior to my certification. One of the onsite inlets was damaged during construction, resulting in a broken grate. Please review this drawing for grading certification in order to expedite the certification process. I will issue the final drawing with my certification as soon as the grate is replaced. As you know, the owners are expecting to receive their Certificate of Occupancy within two weeks. The grate should be replaced prior to the opening date. Therefore, I am submitting this to you now so you will have time to review it prior to my final acceptance.

If you have any questions, please call me at 344-4080 so we can resolve them without holding up the Certificate of Occupancy.

Sincerely,

CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.

Billy O. McCarty, P.E.
Project Engineer

Enclosure

BOM/ln

G:\L25\100\DOCUMENT\gradecert.WPD

DMJM/ Adam, Hamlyn, Anderson

Reply To: ☒ **Albuquerque, NM 87109** **5700 Harper Dr., NE, Suite 280** **505-822-7955**

LETTER OF TRANSMITTAL

TO: CITY OF ALBUQUERQUE
HYDROLOGY

ATTN: MR. FRED AGUIRRE, P. E.
~~XXXXXXXXXXXXXXXXXXXXXXXXXX~~

DATE:	PROJECT NO.
10-24-85	4504-01-01
PROJECT: HAMPTON INN/RESIDENCE INN	

WE TRANSMIT:

(X) herewith ( ) under separate cover via _____
( ) in accordance with your request _____

FOR YOUR:

(X) approval ( ) distribution to parties ( ) information
( ) review & comment ( ) record
(X) use ( ) _____

THE FOLLOWING:

(X) prints ( ) copy of letter ( ) change order
( ) originals ( ) specifications ( ) calculations
( ) shop drawings ( ) _____

RECEIVED
OCT 24 1985
HYDROLOGY SECTION

Copies	Dwg. No.	DESCRIPTION	Action Code

Action Code
A. REVIEWED
B. REVIEWED AS NOTED
C. REVISE & RESUBMIT
D. REJECTED
E. See REMARKS below

REMARKS: _____

COPIES TO: _____

rec'd 10/24/85 &

If enclosures are not as noted, please inform us immediately.

SIGNED: R. J. Boulemetis

CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.

5639 JEFFERSON STREET NE • ALBUQUERQUE, NEW MEXICO 87109 • PHONE (505) 344-4080 • FAX (505) 343-8759

August 11, 1999

John Murray
City of Albuquerque Hydrology Department
2nd Floor Plaza Del Sol
Albuquerque, New Mexico 87103

RE: TRACT A, ACME ACRES (HAMPTON INN)
GRADING CERTIFICATION FOR DRB 95-527

Dear Mr. Murray:

This letter is a follow up to my letter dated July 29, 1999. The broken grate has been replaced. Therefore, please finalize your review and acceptance of the grading certification I submitted to you on July 29, 1999. All of the site work has been completed and the site drains in substantial compliance with the approved grading and drainage plan with my seal dated September 23, 1998. As you know, the owners are expecting to receive their Certificate of Occupancy within the next few days. Therefore, please expedite your review and approval of this certification.

If you have any questions, please call me at 344-4080 so we can resolve them without holding up the Certificate of Occupancy.

Sincerely,

CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.

Billy O. McCarty, P.E.
Project Engineer

cc: Fred Malcolm, Klinger Constructors, Inc.

G:\L25\100\DOCUMENT\gradecert2.WPD

CITY OF
Albuquerque

September 25, 1998

Billy McCarty, P.E.
Chavez-Grieves Consulting Engineers
5639 Jefferson NE
Albuquerque, NM 87109

Re: Hampton Inn (H17/D36) Drainage Plan for building permits approval.
Engineer's stamp dated September 23, 1998.

Dear Mr. McCarty:

The drainage plan dated September 23, 1998 is approved for building permit. Please advise your contractor to attach a copy of the approved drainage plan to each set of the building plans. Our inspector is authorized to sign the building plans once the approved drainage plan is attached.

An Engineer's Certification per the DPM will be required for Certificate of Occupancy approval.

If I can be of further assistance, please feel free to call me at 924-3980.

Sincerely,

Fred J. Aguirre, P.E.
City Hydrologist
Public Works Department

c: Vic Chavez, Chavez-Grieves Consulting Engineers
Andrew Garcia, Drainage Inspector

CITY OF
Albuquerque

September 23, 1997

Martin J. Chávez, Mayor

James Alarid
Chavez-Grieves
5639 Jefferson Street NE
Albuquerque, NM 87109

RE: HAMPTON INN (H17-D36). GRADING AND DRAINAGE PLAN FOR BUILDING PERMIT APPROVAL. ENGINEER'S STAMP DATED AUGUST 5, 1997.

Dear Mr. Alarid:

Based on the information provided on your September 10, 1997 submittal, the above referenced project is approved for Building Permit.

Prior to Certificate of Occupancy approval, an Engineer's Certification will be required.

If I can be of further assistance, please feel free to contact me at 924-3984.

Sincerely,

Lisa Ann Manwill, P.E.
Hydrology

c: Andrew Garcia
File

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 10, 1999

Billy McCarty, P.E.
Chavez-Grieves
5639 Jefferson Street NE
Albuquerque, NM 87109

RE: HAMPTON INN, CUTLER AVENUE CUL-DE-SAC (H17-D36). GRADING PLAN FOR GRADING PERMIT AND PAVING PERMIT APPROVALS. ENGINEER'S STAMP DATED APRIL 16, 1999.

Dear Mr. McCarty:

Based on the information provided on your April 16, 1999 submittal, the above referenced project is approved for Grading and Paving Permits.

Prior to Certificate of Occupancy approval, an Engineer's Certification per the DPM will be required.

If I can be of further assistance, please feel free to contact me at 924-3984.

Sincerely,

John P. Murray, P.E.
Hydrology

c. File

CHAVEZ • GRIEVES
CONSULTING ENGINEERS, INC.
THE ENGINEERING FIRM OF CHOICE

5639 JEFFERSON STREET NE • ALBUQUERQUE, NEW MEXICO 87109 • PHONE (505) 344-4080 • FAX (505) 343-8759

April 16, 1999

Fred Aguirre,
City of Albuquerque Hydrology Department
P. O. Box 1293
Albuquerque, New Mexico 87103

RE: TRACT A, ACME ACRES (CUTLER CUL-DE-SAC)
GRADING AND DRAINAGE PLAN
DRB 95-527

Dear Mr. Aguirre:

Hall Engineering Company, Incorporation analyzed the drainage basin bounded by Washington Street, Interstate 40, Aliso Drive, and the Embudo Channel as part of the Netherwood Park Addition in July 1997. This 20-acre site was analyzed for fully developed commercial conditions. Hall Engineering demonstrated that this site generates 89.30 cfs. which is conveyed by surface flow in Cutler Avenue to the Embudo Channel. This study also called for two (2) Type "A" inlets to be connected to the existing 24" RCP storm drain stub to the AMAFCA 10' x 8' concrete box culvert. The inlet on the south side of Cutler Avenue has been constructed and an 18" RCP stub for an inlet on the north side has been provided. Based on this study, Cutler Avenue has a street capacity of 56.4 cfs. and each inlet will pick up approximately 12 cfs. Although street capacity will be exceeded east of these inlets, this is the extent of the storm drain proposed for Cutler Avenue.

There is also a small basin adjacent to the fork of the Embudo Channel which discharges directly to the existing concrete entrance to the Embudo Channel. Since this basin does not impact the cul-de-sac design or the Netherwood Park Addition, it was not included in the Hall Engineering Study and does not impact the current cul-de-sac design. Therefore, it is not included in this submittal either.

A 100-year, 6-hour peak discharge of 89.30 cfs. has a flow depth of approximately nine inches (9") – see attached calculation. Therefore, the total flow is contained within the right-of-way. Once a portion of the flow is intercepted by the two inlets and the remainder spreads out in the cul-de-sac, eight inch (8") curb will easily contain the reduced flow of 65.3cfs. The cul-de-sac is conservatively designed to convey the full 89.30 cfs. to the Embudo Channel. The driveway entrance to Acme Acres provides the needed water block to ensure that Acme Acres is protected from off-site flow in Cutler Avenue. Two sets of weir capacity calculations are provided to demonstrate that the flow is contained within the cul-de-sac. First, calculations demonstrate the actual flow depth for 65.30 cfs entering the 35' wide rundown and an existing 10' wide weir where the existing rundown releases

flow over the end of the existing 10' X 8' concrete box culvert into the Embudo Channel. Then, there are calculations showing the full 89.30 cfs. for the 35' rundown and the 10' entrance to the Embudo Channel in case the storm drain system fails. In both cases, the full flow from Cutler Avenue is diverted to the Embudo Channel and no flow will enter Acme Acres. This is consistent with both the Hall Engineering Report and the previous Acme Acres report prepared by Chavez-Grieves.

Please review and approve the attached construction plans for paving permit. If you have any questions or comments, please contact me at the above address.

Sincerely,

CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.

Billy O. McCarty, PE
Project Engineer

Cy: Steve Byrne, GCI
Lisa Manwill, PE, AMAFCA

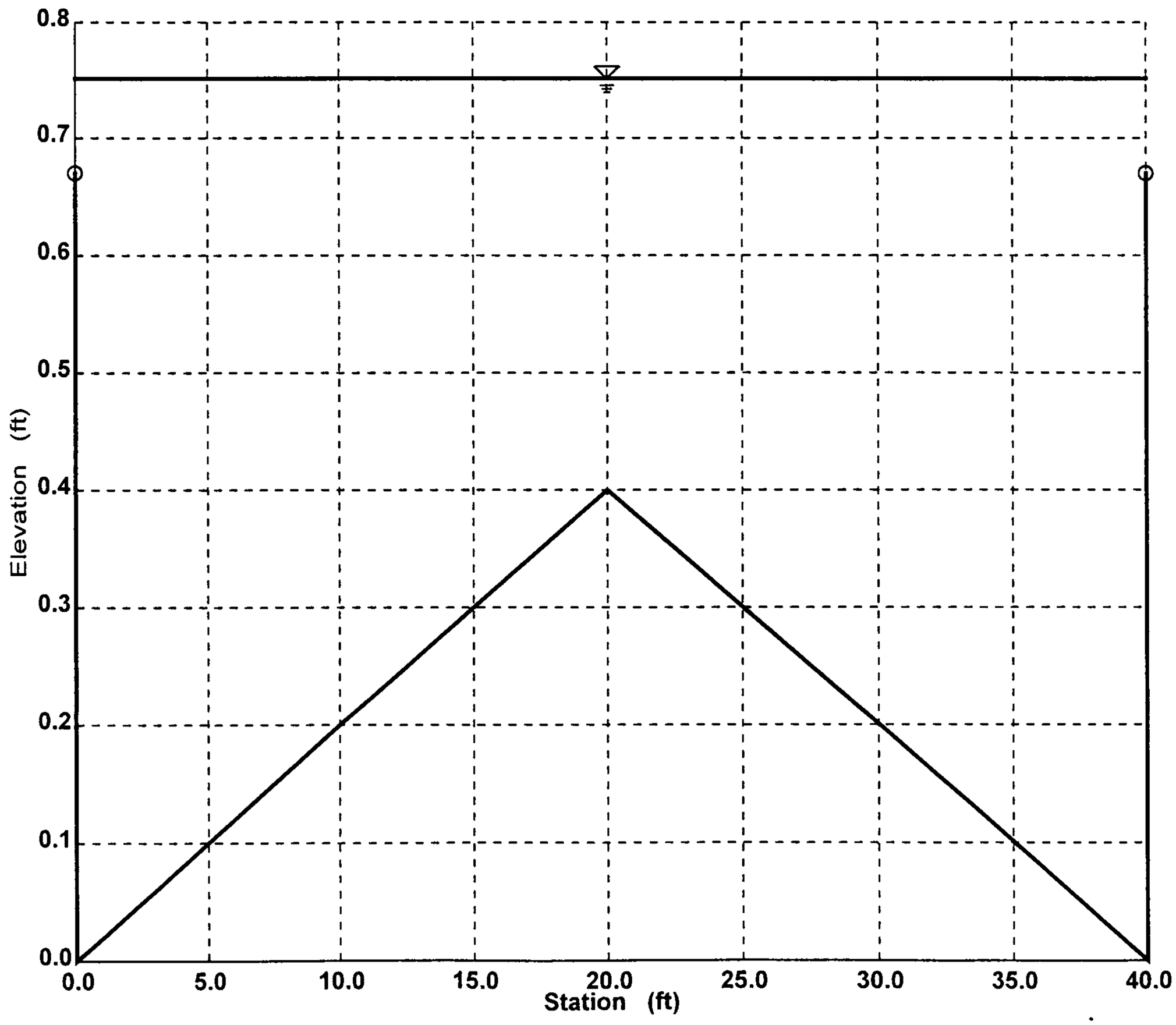
Att: Hall Engineering Calculations and Basin Map (7 pages)
Street Capacity Calculation (1 page)
Weir Capacity Calculation (2 pages)
Construction Plans (2 - 24" x 36" sheets)

G:\L25\100\DOCUMENT\cutler-drain.WPD

CUTLER AVE STREET CAPACITY
Cross Section for Irregular Channel

Project Description	
Project File	g:\l25\100\calcs\cutler.fm2
Worksheet	CUTLER AVE STREET CAPACITY
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

Section Data		
Wtd. Mannings Coefficient	0.017	
Channel Slope	0.005000	ft/ft
Water Surface Elevation	0.75	ft
Discharge	89.30	cfs

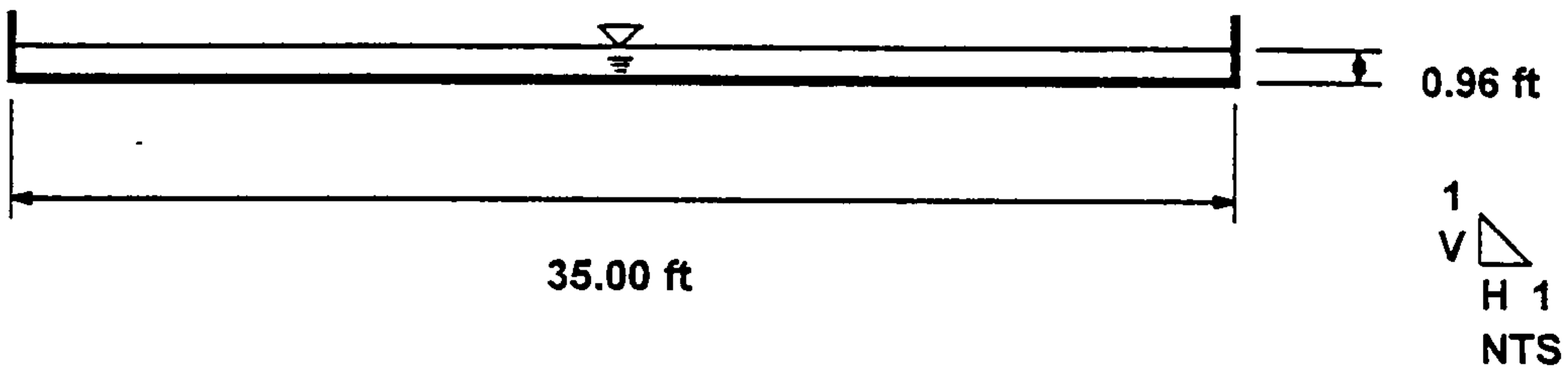


WEIR CAPACITY CALCULATIONS

$Q = 2.7\ L\ H^{1.5}$

where Q = 89.30 csf.
L = 35.00 ft.

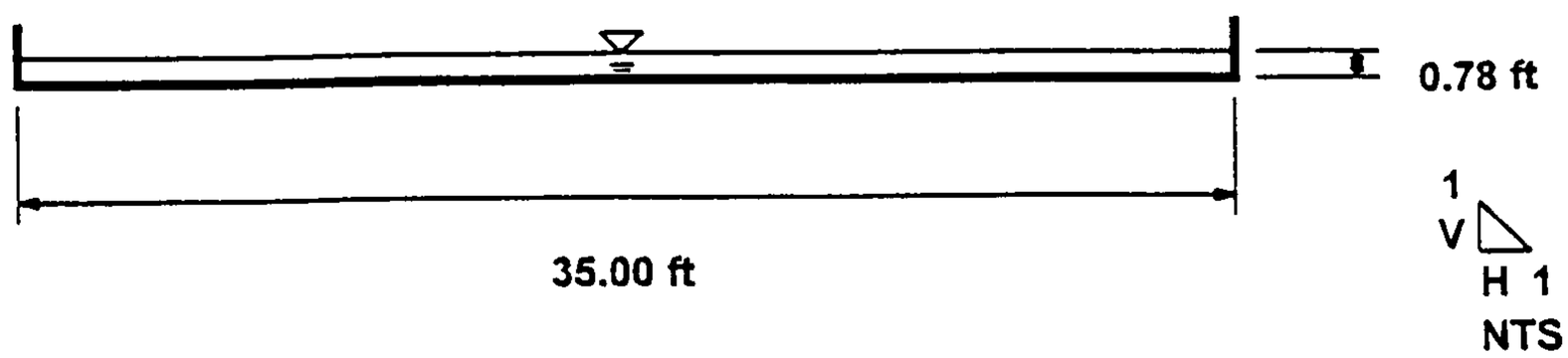
Solve for H: H = 0.96 ft.
minimum channel depth equals 1'



$Q = 2.7\ L\ H^{1.5}$

where Q = 65.30 csf.
L = 35.00 ft.

Solve for H: H = 0.78 ft.

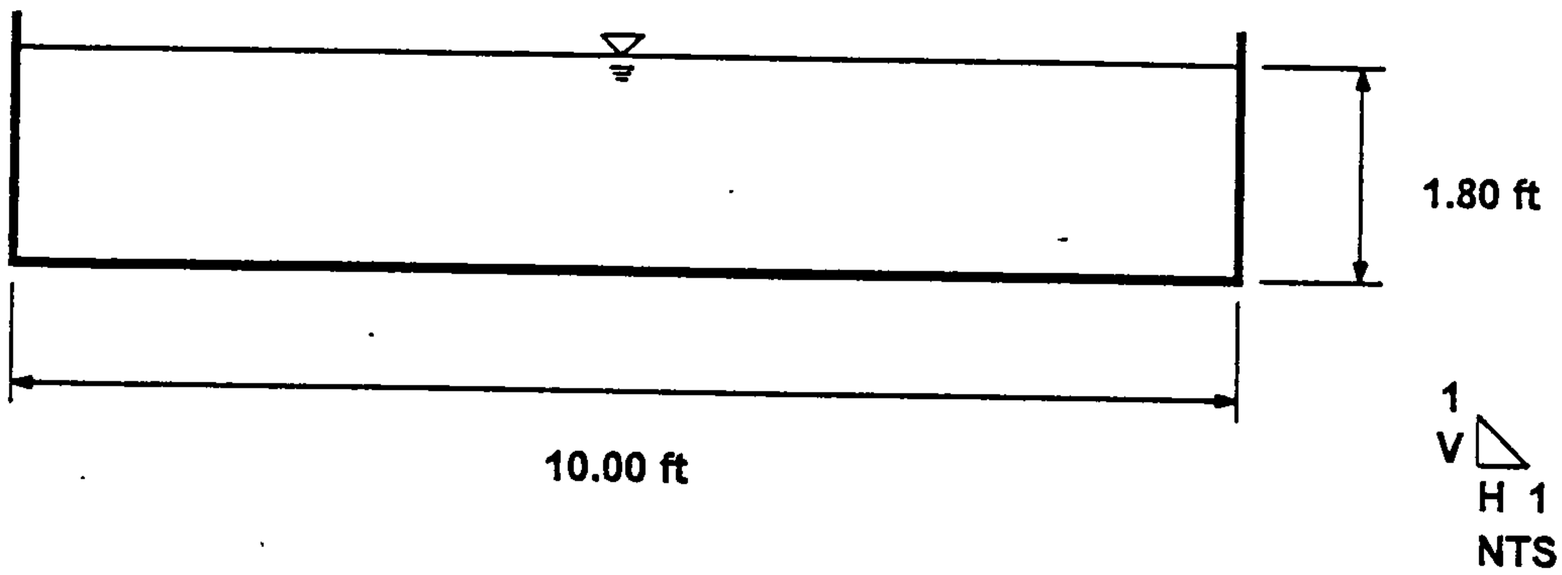


WEIR CAPACITY CALCULATIONS

$Q = 3.0\ L\ H^{1.5}$

where Q = 89.30 csf.
L = 10.00 ft.

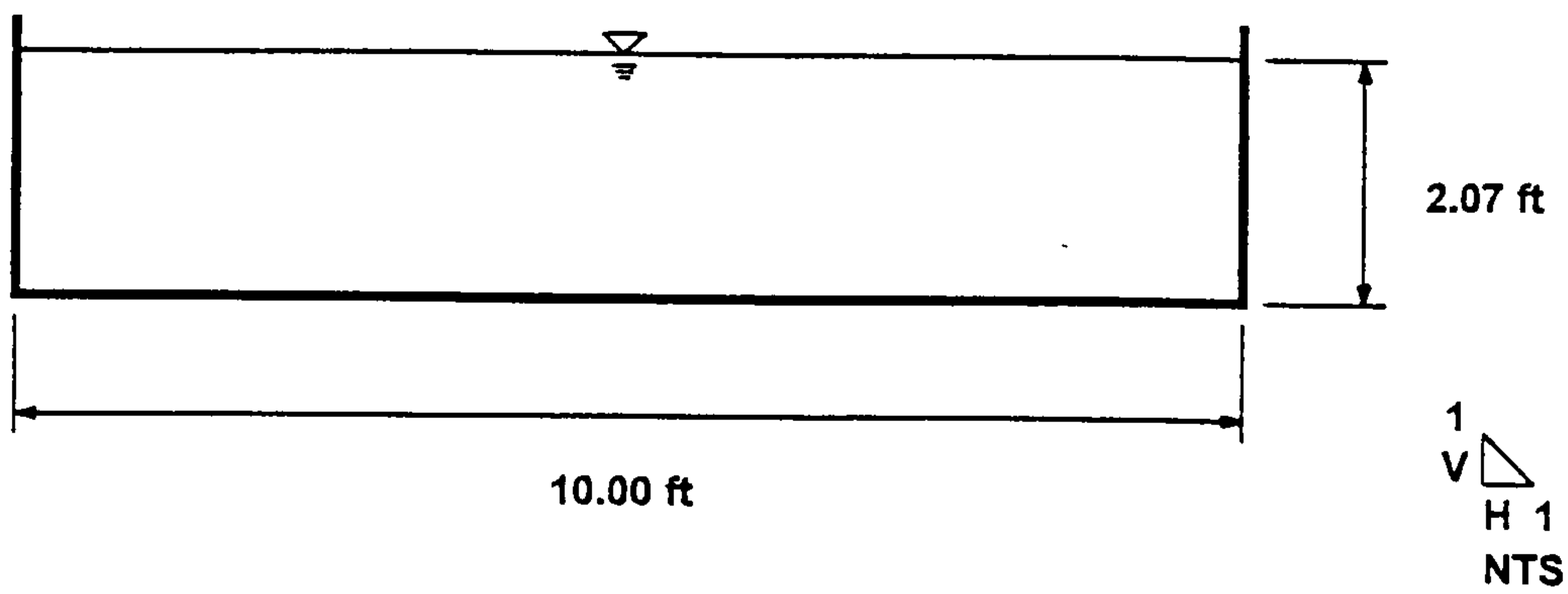
Solve for H: H = 2.07ft.
water surface elevation equals 31.7 + 2.07 = 33.77
Water block equals 33.78 = water surface elevation

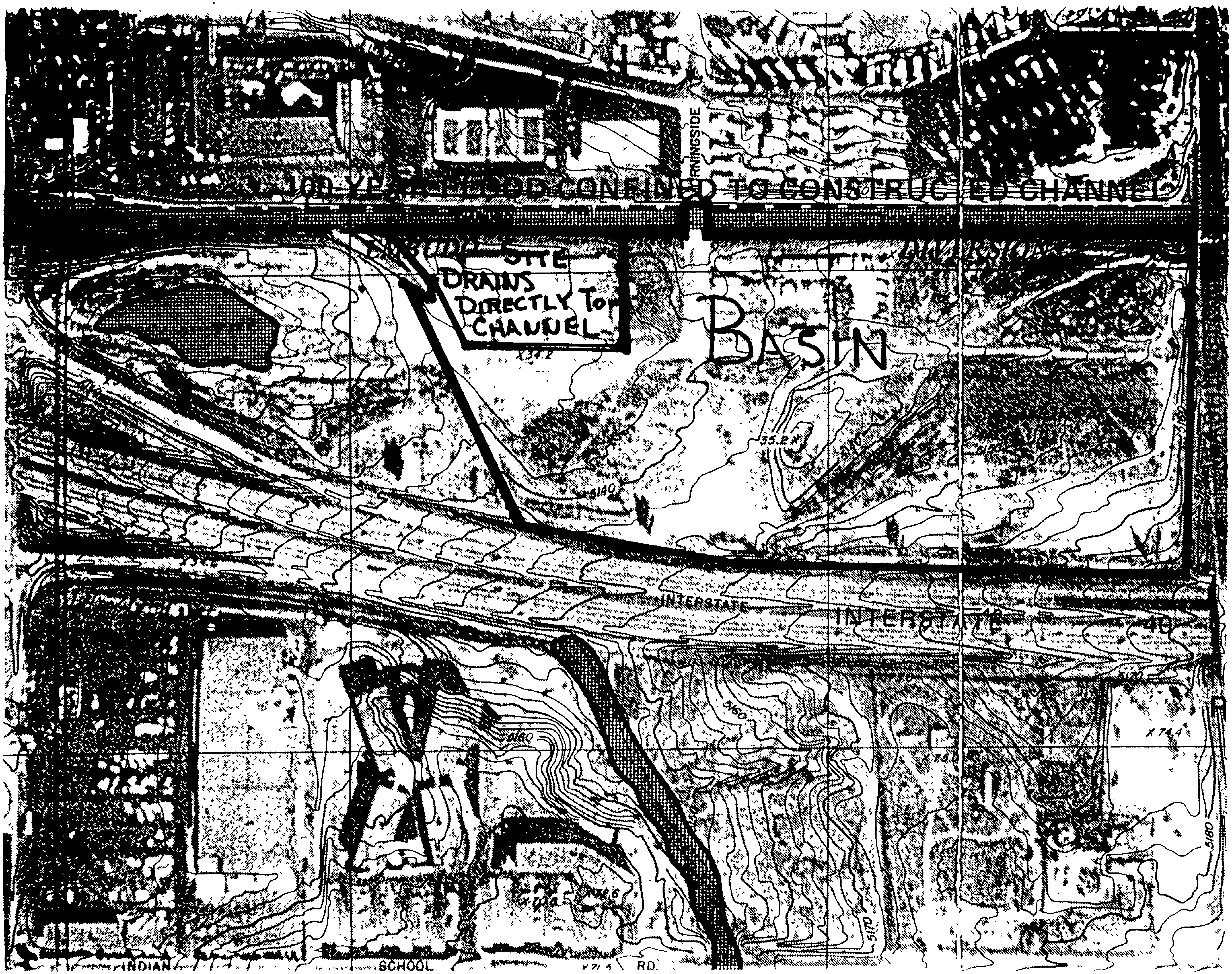


$Q = 3.0\ L\ H^{1.5}$

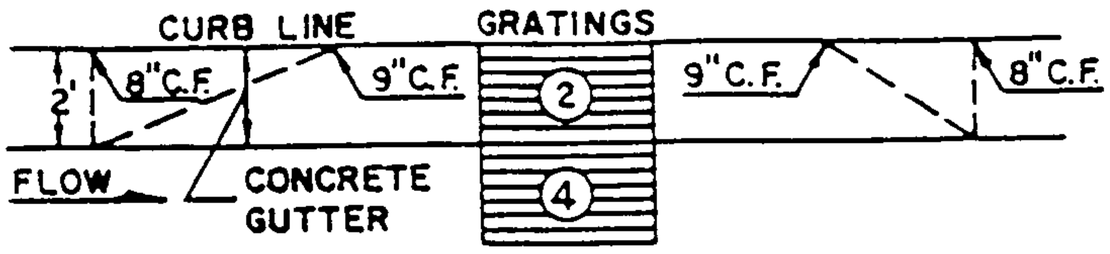
where Q = 65.30 csf.
L = 10.00 ft.

Solve for H: H = 1.80 ft.
water surface elevation equals 31.7 + 1.80 = 33.50
Water block equals 33.78 > 33.50 design is adequate

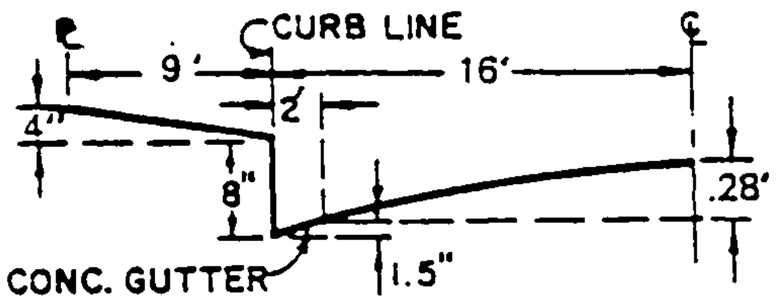



100 YEAR FLOOD CONFINED TO CONSTRUCTED CHANNEL
SITE DRAINS DIRECTLY TO CHANNEL
BASIN
INTERSTATE
INTERSTATE 40
5140
5160
5170
5180
INDIAN SCHOOL RD.

GRATING CAPACITIES FOR TYPE "B"



GRATING & GUTTER PLAN



TYPICAL HALF STREET SECTION
(ABOVE BASIN)

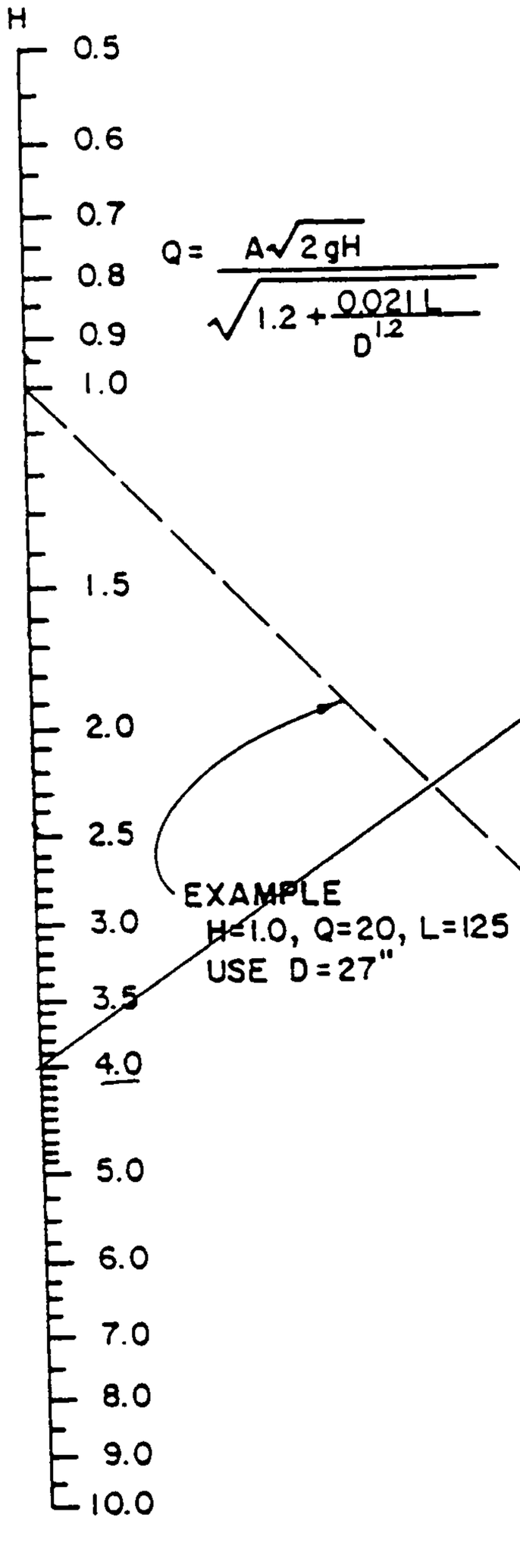
D=DEPTH OF FLOW (FT.) ABOVE NORMAL GUTTER GRADE

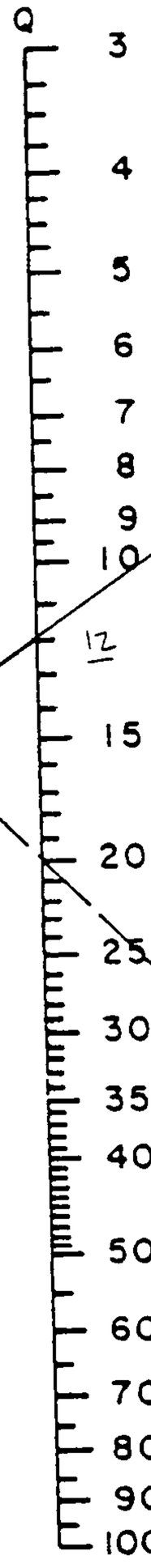
D = 0.67

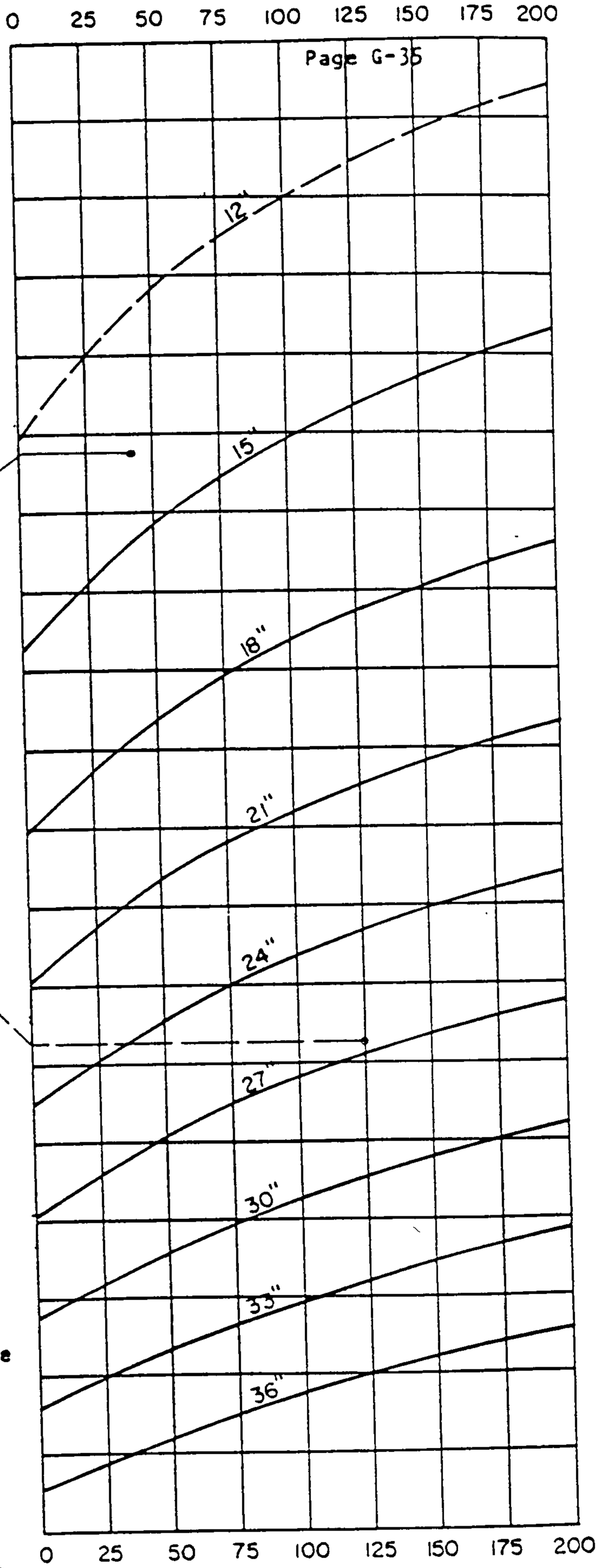
S = 0.005

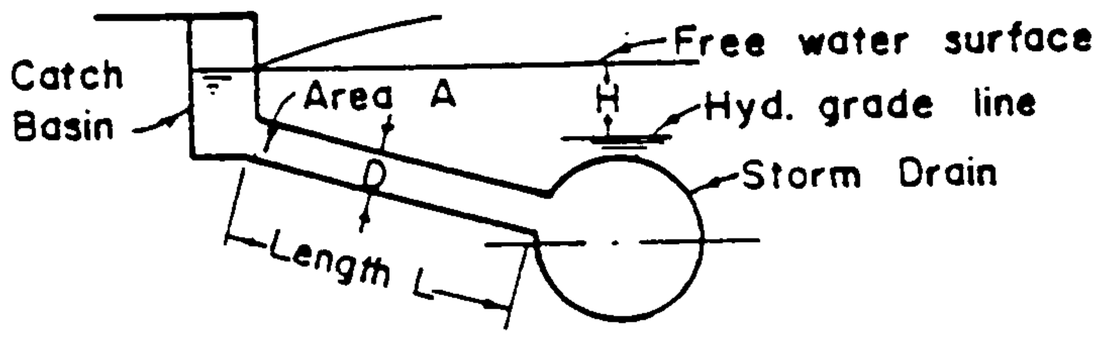
DESIGN OF SPUN CONCRETE CONNECTOR PIPES FLOWING FULL

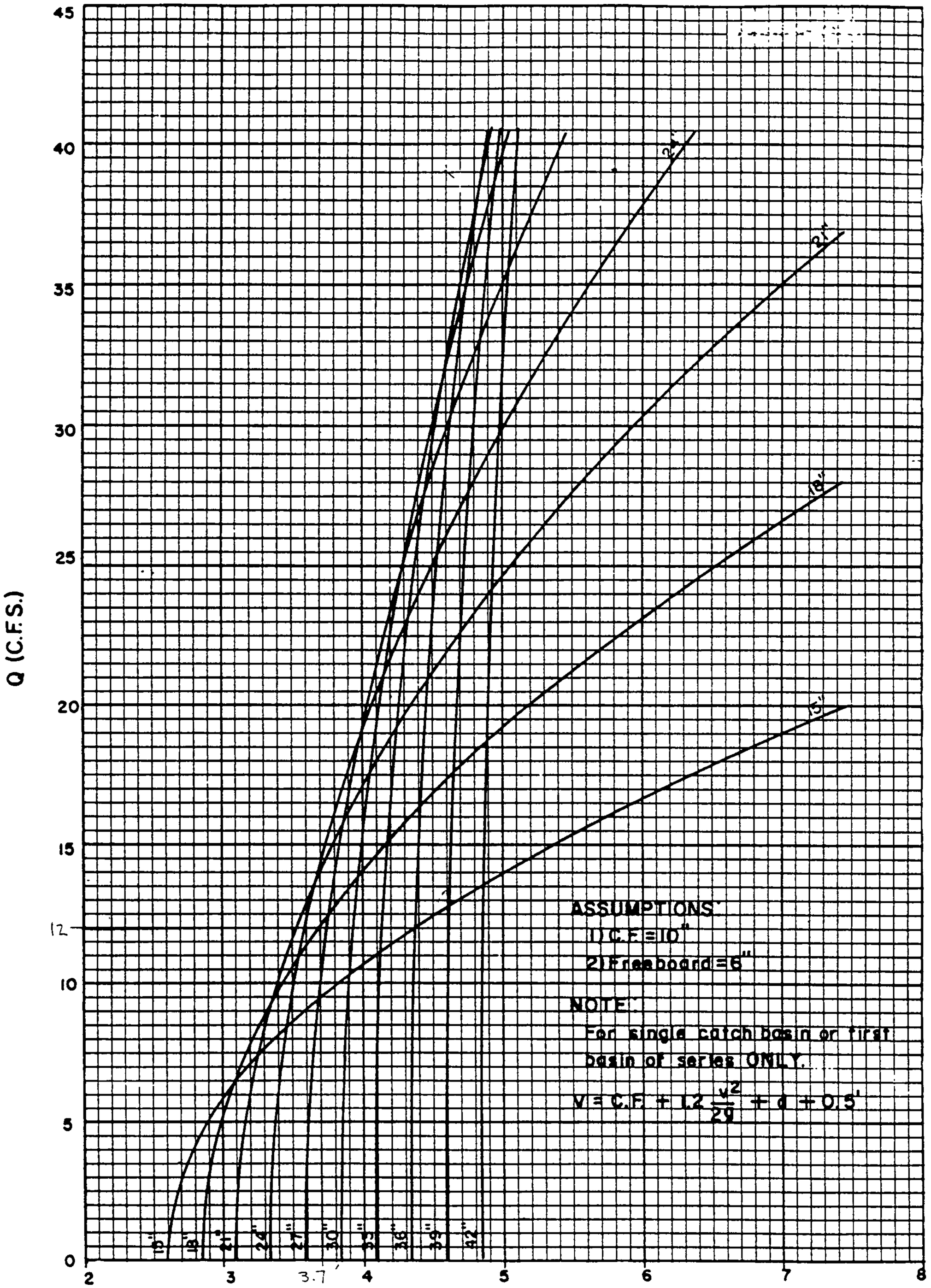
$$Q = \frac{A\sqrt{2gH}}{\sqrt{1.2 + \frac{0.0211L}{D^{1.2}}}}$$











4-82

PLATE 22.3 D-9

Area of Basin

A = 20.00 Acres

Developed Site (Duke City Studios) Discharges Directly into Channel This Area is Excluded From the Basin.
(See Maps Provided)

Land Treatments

Assume 90% Commercial Development

Type "A" = 3.33%

Type "B" = 3.33%

Type "C" = 3.34%

Type "D" = 10%

Find Area In Each Treatment:

A_A = 0.66 Acres

A_B = 0.66 Acres

A_C = 0.66 Acres

A_D = 18.02 Acres

This Site Lies Within Zone 2

$\therefore Q_{PA} = 1.56$

$Q_{PB} = 2.28$

$Q_{PC} = 3.14$

$Q_{PD} = 4.70$

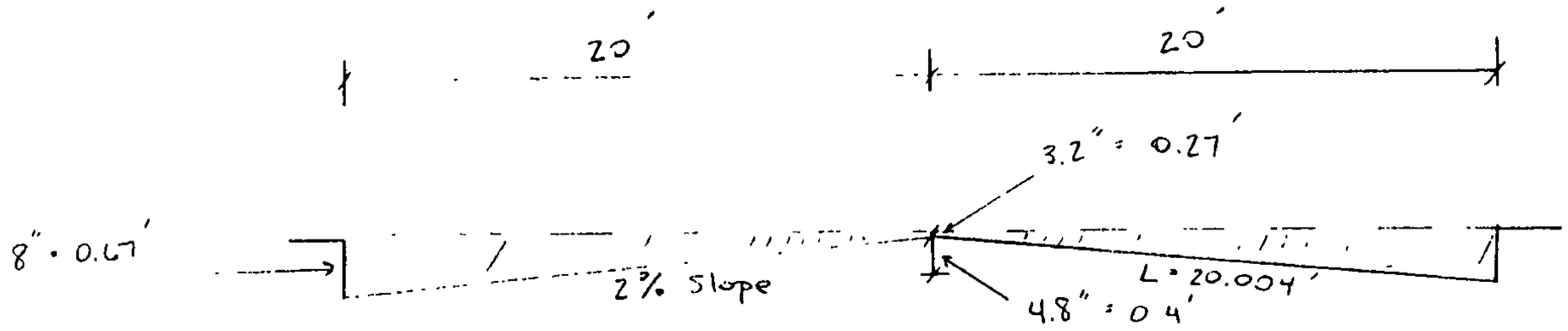
Total $Q_p = Q_{PA} A_A + Q_{PB} A_B + Q_{PC} A_C + Q_{PD} A_D$

$= 1.56 \times 0.66 + 2.28 \times 0.66 + 3.14 \times 0.66 + 4.70 \times 18.02$

Total Q_p = 89.30 cfs

96-1434
Netherwood Park Addition
Basin Area Drainage Calcs. M.M.

HALL ENGINEERING COMPANY INC.
ENGINEERING • SURVEYING • PLANNING • CONSTRUCTION
6840 2ND ST., NW, SUITE 306 • ALBUQUERQUE, NEW MEXICO 87107
PHONE (505) 345-1064 FAX (505) 344-5404



Hydraulic Radius, $R = 0.67 + 20.004 + 0.67 + 20.004 = 41.348'$

Slope of Energy Grade Line, $S = 0.010$

Coefficient of Roughness, $n = 0.17$

Area of flow (Shaded Area), $A = 2\left[\frac{1}{2}(0.4)(20) + (0.27)(20.004)\right]$

$$A = 18.80 \text{ ft}^2$$

Assume $K = 3$

Velocity of Flow $V = K * 10 * \sqrt{S} = 3 * 10 * \sqrt{0.01}$

$$V = 3.0 \text{ ft/sec}$$

Quantity of flow, $Q = VA = 3.0 * 18.8$

$$Q = 56.4 \text{ cfs}$$

$56.4 \text{ ft}^3/\text{sec} < 89.30 \text{ ft}^3/\text{sec}$

$\therefore$ Street Can Carry Existing and Proposed Flows
Future Capacity Exceeds Street Capacity

96-1434
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Basin Area Drainage Calcs. M.M.

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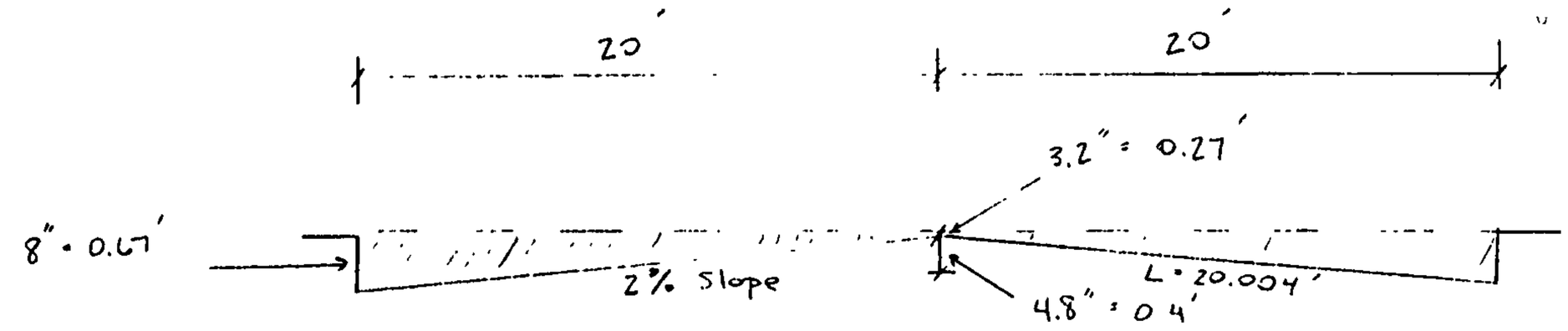

Hydraulic Radius, $R = 0.67 + 20.004 + 0.67 + 20.004 = 41.348'$

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$$A = 18.80 \text{ ft}^2$$

Assume $K = 3$

Velocity of Flow $V = K * 10 * \sqrt{S} = 3 * 10 * \sqrt{0.01}$

$$V = 3.0 \text{ ft/sec}$$

Quantity of flow, $Q = VA = 3.0 * 18.8$

$$Q = 56.4 \text{ cfs}$$

$56.4 \text{ ft}^3/\text{sec} < 89.30 \text{ ft}^3/\text{sec}$

Note: Street Can Carry Existing and Proposed Flows

Future Capacity Exceeds Street Capacity

∴ Divert Flows From Proposed Development Into Existing Storm Drain

96-1434
Nethanwood Park Addition
Basin Area Drainage Calcs. M.M.

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PHONE (505) 345-1084 FAX (505) 344-5404

CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.
THE ENGINEERING FIRM OF CHOICE

5639 JEFFERSON STREET NE · ALBUQUERQUE, NEW MEXICO 87109 · PHONE (505) 344-4080 · FAX (505) 343 8759

August 20, 1997

Lisa Ann Manwill, P.E.
City of Albuquerque Hydrology
P.O. Box 1293
Albuquerque, NM 87103

RE: Drainage Report and Grading and Drainage Plan
Hampton Inn
Albuquerque, New Mexico
C&G NO. L25-100-5197

Dear Ms. Manwill:

Transmitted herewith for grading and paving permit approval is the grading and drainage plan revised per our phone conversation dated 8/19/97. Your comments are addressed as follows:

1. Attached are two revised G&D plans with S.O. 19 notes.

2. Concurrence letter from AMAFCA with three conditions from review of preliminary G&D plan submittal is attached. All three conditions have been addressed in this submittal for grading and paving permit approval. A copy of this permit package has been submitted to AMAFCA.

3. I have completed an analysis accounting for losses from the 90-degree bend at the existing inlet. The hydraulic grade line through the inlet at the bend does increase as flow goes through the inlet but the water never comes close to over-topping the inlet grate.

If you have any questions or wish to discuss this in more detail, please call me.

Sincerely,

CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.

James Alarid, E.I.T.

xc: Brad Ponder, Chavez-Grieves

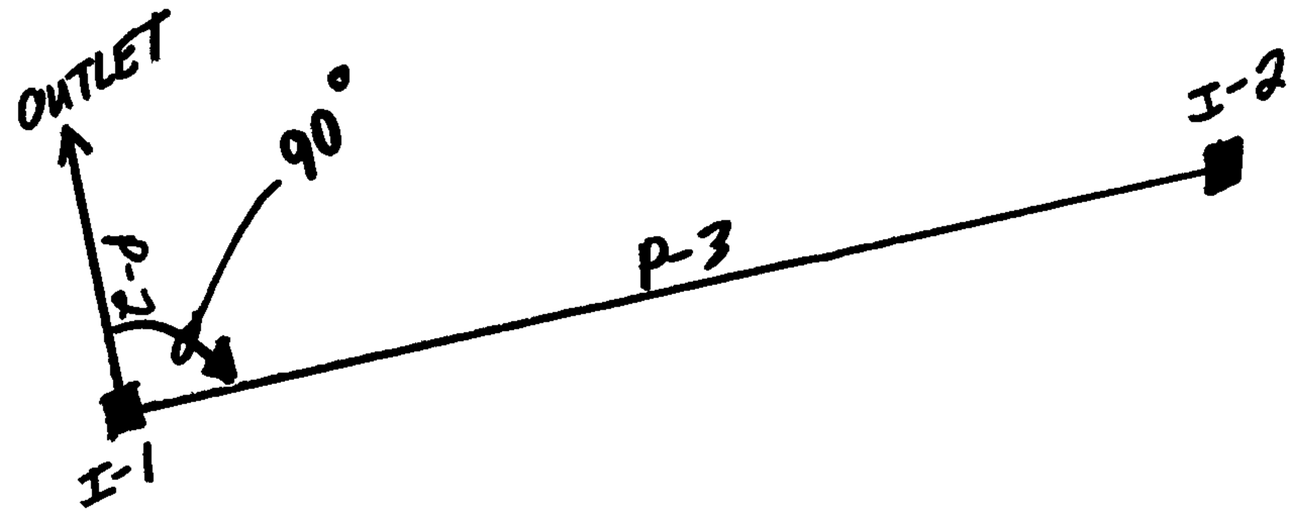
G:\L25\100\DOCUMENT\FLOOD2.WPD

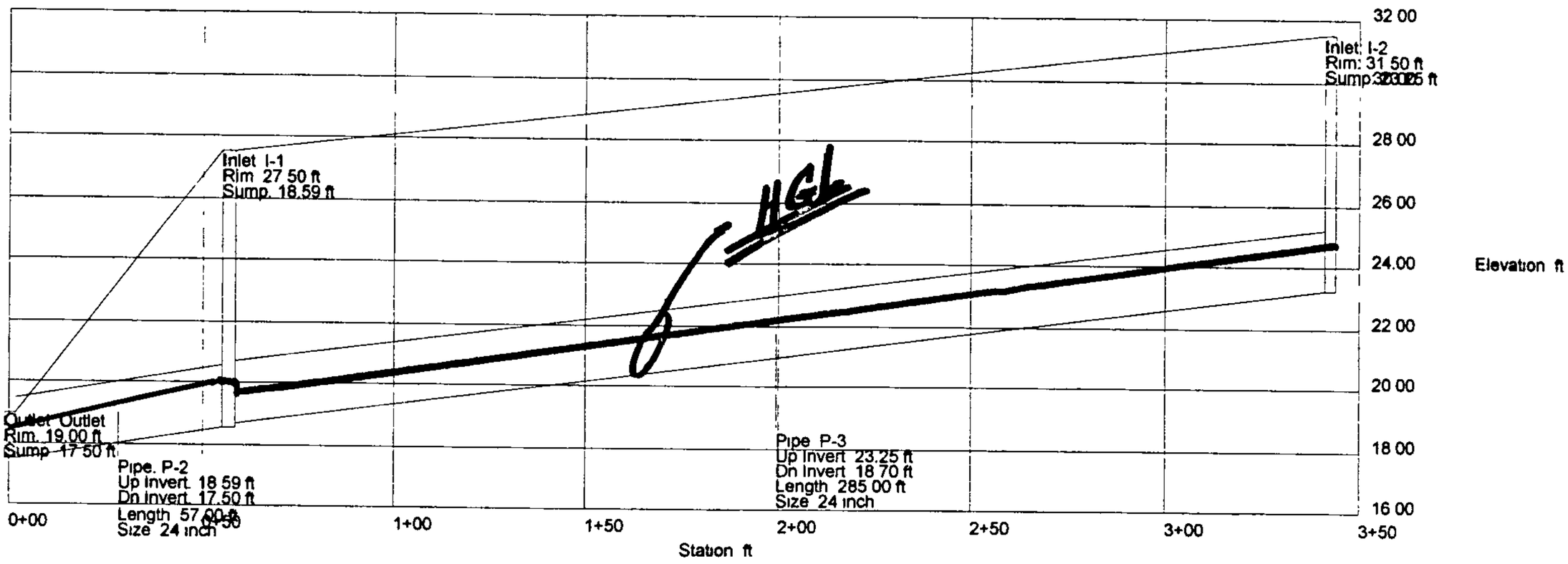
Combined Pipe/Node Report

Pipe	Upstream Node	Downstream Node	Length (ft)	Section Size	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Constructed Slope (ft/ft)	Average Velocity (ft/s)	Discharge (cfs)	Capacity (cfs)	Roughness
P-3	I-2	I-1	285.00	24 inch	23.25	18.70	0.015965	7.86	15.29	28.58	0.013
P-2	I-1	Outlet	57.00	24 inch	18.59	17.50	0.019123	8.13	16.63	31.28	0.013
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

INLETS

HGL In (ft)	HGL Out (ft)	Upstream HGL (ft)	Downstream HGL (ft)
24.66	24.66	24.66	19.74
20.06	20.06	20.06	18.59
18.54	18.54	N/A	N/A





Chavez Grieves Consulting Engineers
37 Brookside Road Waterbury, CT 06708 USA (203) 755-1666

Albuquerque
Metropolitan
Arroyo
Flood
Control
Authority

2600 PROSPECT N E - ALBUQUERQUE, N M 87107
TELEPHONE (505) 884-2215

August 14, 1997

Mr. James Alarid
Chavez Grieves
5639 Jefferson Street N.E.
Albuquerque, New Mexico 87107

Re: Hampton Inn

Dear Mr. Alarid:

AMAFCA has reviewed the subject grading plan. Please address the following comments:

- The drive pads at the south end of the bridge shall be on a 12:1 slope to accommodate future trail use. AMAFCA will install access control gates for the near term.

- Identify the AMAFCA right of way monuments installed in the ground as shown on the attached plat.

- Please have the owner submit to us a certificate of insurance as required by the grant of access easement for the bridge crossing.

AMAFCA will then approve the grading and driange plan for the site.

If you have any questions, please call.

Sincerely,
AMAFCA

John Kelly
Field Engineer

Clean up issues w/ AMAFCA

cc Fred Aguirre, City of Alb.

CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.

5639 JEFFERSON STREET NE ALBUQUERQUE, NEW MEXICO 87109 PHONE (505) 344 4080 FAX (505) 343 8759

GRADING AND DRAINAGE PLAN

FOR THE

HAMPTON INN

ALBUQUERQUE, NEW MEXICO

JULY 1997

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CONSULTING ENGINEERS, INC.

5639 JEFFERSON STREET NE · ALBUQUERQUE, NEW MEXICO 87109 · PHONE (505) 344·4080 FAX (505) 343 8759

GRADING AND DRAINAGE PLAN

FOR THE

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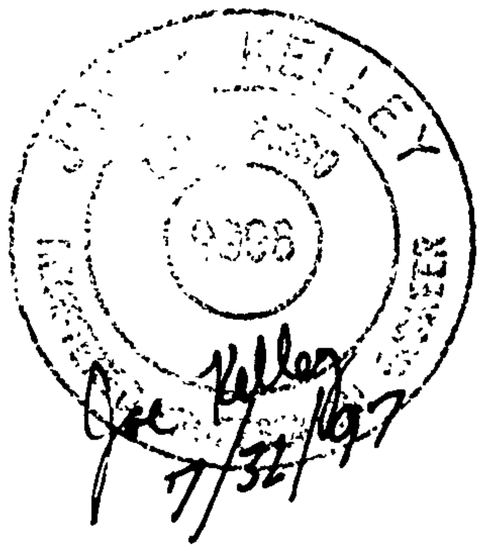
ALBUQUERQUE, NEW MEXICO



JULY 1997

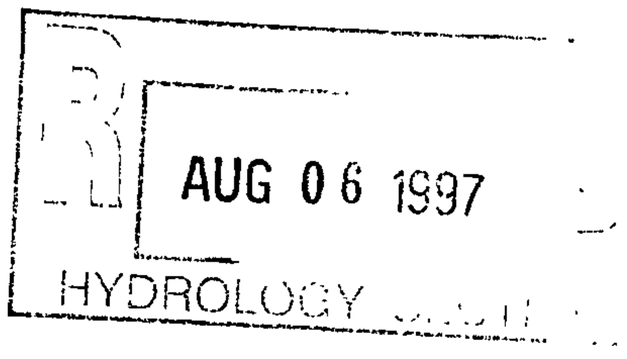


TABLE OF CONTENTS

LIST OF FIGURES

I. PURPOSE OF THIS REPORT

This report has been prepared to obtain a grading and paving permit for the Tract -A Acme Acres property which is the future site of the Hampton Inn. A grading and paving permit is sought at this time to proceed with the construction of the onsite private driveway, drainage improvements and to clean up the site of trash and debris that has been deposited on the property over the years. Public utility improvements are needed to develop this site so the finished grades of the developed site must be established prior to installation of any public utilities.

II. LOCATION

This site is located at the northeast corner of Interstate 40 and Carlisle Boulevard, in Albuquerque, New Mexico. It is bounded on the south by Interstate 40, on the west by Carlisle Boulevard, on the north by the Embudo Diversion Channel, and on the east by a combination of the Embudo Diversion Channel and the end of Cutler Avenue.

III. LEGAL DESCRIPTION

Tract A, Acme Acres.

IV. ZONING AND SURROUNDING DEVELOPMENT

The present zoning of the site is C-3, Heavy Commercial. The proposed development is a four story hotel of approximately 125 rooms.

V. FLOOD HAZARD ZONES

As shown by Panel 3500020023 of the National Flood Insurance Rate Maps for the City of Albuquerque, dated October 14, 1983, a portion of the site is in a designated flood hazard Zone AH. A request for map revision (FEMA LOMR) was submitted by the City of Albuquerque to the Federal Emergency Management Agency on September 17, 1985. A response was received on December 4, 1985 granting a change from Zone AH to Zone C (refer to letter in Appendix B). Zone C designates "Areas of minimal flooding."

RUNOFF COMPARISON		
Basin	**Existing Q_{100} (cfs)**	**Developed Q_{100} (cfs)**
A	4.92	1.37
B	0.34	0.38
C	7.62	5.75
D1	--	1.77
D2	--	6.31
D3	--	6.65
D4	--	0.78
Total "D"	--	15.51
Total	12.88	23.01

Figure I

VI. EXISTING SITE CONDITIONS AND DRAINAGE PATTERN

The existing site is currently undeveloped. The recent construction of an access bridge over the Embudo Diversion Channel and vehicular traffic on the site has caused some disturbance of the native vegetation. Surface debris in the form of rock piles, construction waste and other foreign material was observed on the site. The general slope of the site is to the west and northwest. Existing slopes range from 0.5 to 1.5 percent. At the present time, the site is divided into three drainage basins (refer to Drawing 1.02). Basin-A discharges directly into a depressed area at the northwest corner of the property where an existing drop inlet and 24 inch diameter RCP pipe conveys the storm water into the Embudo Diversion Channel. Peak discharge from Basin-A is 4.92 cfs. Basin-C drains into a depressed area along the existing fence bordering the I-40/Carlisle Boulevard Off Ramp. Peak discharge for the south basin is 7.62 cfs and is contained in the basin. Basin-B has a peak discharge of 0.34 cfs and discharges directly north into the Embudo Diversion Channel by overland flow. Refer to Appendix A for AHYMO analysis of the existing basins. Analysis of the existing drop inlet and outlet pipe indicates the maximum capacity to be 24 cfs. Refer to orifice analysis in Appendix A.

VII. PREVIOUS RELATED REPORTS

The present site was originally to be developed under a Grading and Drainage Submittal by DMJM/Adam, Hamlyn, Anderson, dated 9/27/85 (H17/D36). The

planned development was abandoned following that submittal.

VIII. PROPOSED SITE CONDITIONS AND DRAINAGE PATTERN

The new site improvements consist of a four story hotel, attached lobby, detached swimming pool area, vehicle parking, vehicle access road from the new bridge to the west end of Cutler Avenue, landscaping and other features.

The developed Hampton Inn site is proposed to be divided into four drainage basins. Basin D4 will collect storm runoff from a small area to the south of the entrance road which will discharge into the entrance road once the site is graded to accommodate the Hampton Inn. Basin-D3 will collect storm runoff from the southern half of the roof area, south parking, access road and bordering landscaped areas. A new drop inlet in the road will route the runoff from Basin D3 & D4 to Basin-D1 through a new 18" storm drain. Basin-D1 will collect storm runoff from the entrance area of the hotel complex in a depressed landscaped area and discharge into a new drop inlet. Runoff from Basin-D1 will combine with runoff from Basins D3 & D4 in the new drop inlet and be routed to a new storm drain manhole through a new 18" storm drain. Basin-D2 will collect storm runoff from the northern half of the roof area, north and east parking areas and bordering landscaped areas. Runoff from basin-D2 will discharge to a new drop inlet and be routed through a new 18" storm drain to a new storm drain manhole where it will combine with runoff from Basins D1, D3 & D4. The combined runoff from the "D" basins will be routed from the new manhole mentioned above to an existing drop inlet in the northwest corner of the property via a new 24" storm drain. The existing drop inlet discharges directly to the Embudo Diversion Channel via an existing 24" storm drain. The existing drop inlet is owned by the City of Albuquerque therefore, the SO-19 notes have been included on sheet 1.01 and the SO-19 signature block has been included on sheet 1.04. The undisturbed areas in Basins A, B, and C will remain in their undeveloped states.

A pre-design meeting was held with Mr. John Kelly of AMAFCA to discuss the additional flow to the Embudo Diversion Channel. The proposed grading and drainage scheme was acceptable pending AMAFCA review of the construction documents for the Hampton Inn. A copy of this submittal has been forwarded to AMAFCA for their review and approval. There will be some transitional grading from the proposed access road to the undeveloped areas west and south. Since the developed and undeveloped lands are owned by the same party, no grading easements will be necessary.

IX. HYDROLOGY/HYDRAULICS

The runoff calculations and design have been done in accordance with Section 22.2 of the Development Process Manual of the City of Albuquerque, January 1993.

Appendices

Appendix A
Hydraulic Calculations

Hydrologic Output -- Hampton Inn, Tract -A Acme Acres -- 100-Year, 6-Hour Storm

```
     AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
          RUN DATE (MON/DAY/YR) = 07/26/1997
          START TIME (HR:MIN:SEC) = 10:11:02      USER NO.= CHVZ_GNM.I01
          INPUT FILE = G:\ENGINEER\AHYMO.IN

*S*****************************************************************************
*S**************    CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.    **************
*S**************       HAMPTON INN SITE/TRACT A, ACME ACRES      **************
*S*****************************************************************************
*S*  FILENAME:  G:\W24\W2410051\ENGINEER\AHYMO.IN/OUT
*S*****************************************************************************
*S******* 100 YEAR STORM, 6 HOUR STORM
START                  0.00
RAINFALL               TYPE=1 RAIN QUARTER=0.0 RAIN ONE=2.02
                       RAIN SIX=2.36 RAIN DAY=2.70  DT=0.03333

COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
DT =     .033330 HOURS          END TIME =     5.999400 HOURS
    .0000   .0016   .0032   .0049   .0066   .0084   .0101
    .0120   .0139   .0158   .0177   .0198   .0218   .0240
    .0262   .0284   .0308   .0332   .0357   .0382   .0409
    .0437   .0465   .0495   .0526   .0559   .0593   .0628
    .0666   .0706   .0748   .0803   .0863   .0927   .1064
    .1370   .1842   .2519   .3444   .4660   .6209   .8139
   1.0494  1.2680  1.3593  1.4364  1.5049  1.5673  1.6247
   1.6780  1.7278  1.7745  1.8185  1.8599  1.8991  1.9361
   1.9713  2.0046  2.0361  2.0661  2.0946  2.1012  2.1073
   2.1130  2.1185  2.1238  2.1288  2.1336  2.1383  2.1427
   2.1470  2.1512  2.1552  2.1592  2.1630  2.1667  2.1703
   2.1738  2.1772  2.1805  2.1838  2.1869  2.1900  2.1931
   2.1960  2.1990  2.2018  2.2046  2.2074  2.2101  2.2127
   2.2153  2.2179  2.2204  2.2229  2.2253  2.2277  2.2301
   2.2324  2.2347  2.2370  2.2392  2.2414  2.2436  2.2457
   2.2478  2.2499  2.2519  2.2540  2.2560  2.2580  2.2599
   2.2619  2.2638  2.2657  2.2675  2.2694  2.2712  2.2730
   2.2748  2.2766  2.2783  2.2801  2.2818  2.2835  2.2852
   2.2869  2.2885  2.2902  2.2918  2.2934  2.2950  2.2966
   2.2981  2.2997  2.3012  2.3028  2.3043  2.3058  2.3073
   2.3087  2.3102  2.3117  2.3131  2.3145  2.3160  2.3174
   2.3188  2.3201  2.3215  2.3229  2.3243  2.3256  2.3269
   2.3283  2.3296  2.3309  2.3322  2.3335  2.3348  2.3361
   2.3373  2.3386  2.3398  2.3411  2.3423  2.3435  2.3448
   2.3460  2.3472  2.3484  2.3496  2.3508  2.3519  2.3531
   2.3543  2.3554  2.3566  2.3577  2.3589  2.3600

*S  COMPUTE THE RUNOFF FROM THE EXISTING BASINS
*S  BASIN A
COMPUTE NM HYD         ID=1  HYD=BASIN_A  DA=.004874 SQ MI
                       %A=100  %B=0  %C=0  %D=0
                       TP=0.1333  RAINFALL=-1

    K =   .159902HR    TP =   .133300HR    K/TP RATIO =  1.199568     SHAPE CONSTANT, N =  2.962187
    UNIT PEAK =   10.191    CFS   UNIT VOLUME =    .9984       B =   278.72      P60 = 2.0200
    AREA =      .004874 SQ MI    IA =    .65000 INCHES    INF =   1.67000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD              ID=1  CODE=1

                                   HYDROGRAPH FROM AREA BASIN_A


    RUNOFF VOLUME =      .53780 INCHES     =        .1398 ACRE-FEET
```

Hydrologic Output -- Hampton Inn, Tract -A Acme Acres -- 100-Year, 6-Hour Storm

```
    PEAK DISCHARGE RATE =       4.92 CFS  AT   1.533 HOURS   BASIN AREA =   .0049 SQ. MI.


*S  BASIN B
COMPUTE NM HYD      ID=3  HYD=BASIN_B  DA=.000326 SQ MI
                    %A=100  %B=0  %C=0  %D=0
                    TP=0.1333  RAINFALL=-1

    K =   .159902HR    TP =   .133300HR    K/TP RATIO =  1.199568     SHAPE CONSTANT, N =  2.962187
    UNIT PEAK =   .68165    CFS   UNIT VOLUME =    .9785       B =   278.72      P60 = 2.0200
    AREA =      .000326 SQ MI    IA =    .65000 INCHES    INF =   1.67000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=3  CODE=1

                                        HYDROGRAPH FROM AREA BASIN_B

    RUNOFF VOLUME =      .53780 INCHES     =        .0094 ACRE-FEET
    PEAK DISCHARGE RATE =       .34 CFS  AT   1.533 HOURS   BASIN AREA =   .0003 SQ. MI.


*S  BASIN C
COMPUTE NM HYD      ID=2  HYD=BASIN_C  DA=.007555 SQ MI
                    %A=100  %B=0  %C=0  %D=0
                    TP=0.1333  RAINFALL=-1

    K =   .159902HR    TP =   .133300HR    K/TP RATIO =  1.199568     SHAPE CONSTANT, N =  2.962187
    UNIT PEAK =   15.797    CFS   UNIT VOLUME =    .9988       B =   278.72      P60 = 2.0200
    AREA =      .007555 SQ MI    IA =    .65000 INCHES    INF =   1.67000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=2  CODE=1

                                        HYDROGRAPH FROM AREA BASIN_C

    RUNOFF VOLUME =      .53780 INCHES     =        .2167 ACRE-FEET
    PEAK DISCHARGE RATE =      7.62 CFS  AT   1.533 HOURS   BASIN AREA =   .0076 SQ. MI.


*S  COMPUTE THE RUN-OFF FROM THE DEVELOPED BASINS.
*S  BASIN A
COMPUTE NM HYD      ID=1  HYD=BASIN_A  DA=.001356 SQ MI
                    %A=100  %B=0  %C=0  %D=0
                    TP=0.1333  RAINFALL=-1

    K =   .159902HR    TP =   .133300HR    K/TP RATIO =  1.199568     SHAPE CONSTANT, N =  2.962187
    UNIT PEAK =   2.8353    CFS   UNIT VOLUME =    .9945       B =   278.72      P60 = 2.0200
    AREA =      .001356 SQ MI    IA =    .65000 INCHES    INF =   1.67000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA BASIN_A

    RUNOFF VOLUME =      .53780 INCHES     =        .0389 ACRE-FEET
    PEAK DISCHARGE RATE =      1.37 CFS  AT   1.533 HOURS   BASIN AREA =   .0014 SQ. MI.
```

Hydrologic Output -- Hampton Inn, Tract -A Acme Acres -- 100-Year, 6-Hour Storm

```
*S  BASIN B
COMPUTE NM HYD       ID=2  HYD=BASIN_B  DA=.000342 SQ MI
                     %A=90  %B=0  %C=10  %D=0
                     TP=0.1333  RAINFALL=-1

    K =   .154668HR    TP =   .133300HR    K/TP RATIO =  1.160300     SHAPE CONSTANT, N =  3.054899
    UNIT PEAK =   .73446    CFS   UNIT VOLUME =    .9806       B =   286.27      P60 = 2.0200
    AREA =      .000342 SQ MI    IA =    .62000 INCHES    INF =   1.58600 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD            ID=2  CODE=1

                                        HYDROGRAPH FROM AREA BASIN_B


    RUNOFF VOLUME =      .58194 INCHES     =        .0106 ACRE-FEET
    PEAK DISCHARGE RATE =        .38 CFS  AT   1.533 HOURS   BASIN AREA =   .0003 SQ. MI.


*S  BASIN C
COMPUTE NM HYD       ID=3  HYD=BASIN_C  DA=.0057026 SQ MI
                     %A=100  %B=0  %C=0  %D=0
                     TP=0.1333  RAINFALL=-1

    K =   .159902HR    TP =   .133300HR    K/TP RATIO =  1.199568     SHAPE CONSTANT, N =  2.962187
    UNIT PEAK =   11.924    CFS   UNIT VOLUME =    .9985       B =   278.72      P60 = 2.0200
    AREA =      .005703 SQ MI    IA =    .65000 INCHES    INF =   1.67000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD            ID=3  CODE=1

                                        HYDROGRAPH FROM AREA BASIN_C


    RUNOFF VOLUME =      .53780 INCHES     =        .1636 ACRE-FEET
    PEAK DISCHARGE RATE =       5.75 CFS  AT   1.533 HOURS   BASIN AREA =   .0057 SQ. MI.


*S  BASIN D1
COMPUTE NM HYD       ID=4  HYD=BASIN_D1  DA=.000646 SQ MI
                     %A=0  %B=20  %C=0  %D=80
                     TP=0.1333  RAINFALL=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   2.0404    CFS   UNIT VOLUME =    .9941       B =   526.28      P60 = 2.0200
    AREA =      .000517 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


    K =   .132208HR    TP =   .133300HR    K/TP RATIO =   .991810     SHAPE CONSTANT, N =  3.559824
    UNIT PEAK =   .31468    CFS   UNIT VOLUME =    .9569       B =   324.67      P60 = 2.0200
    AREA =      .000129 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD            ID=4  CODE=1

                                        HYDROGRAPH FROM AREA BASIN_D1


    RUNOFF VOLUME =     1.85752 INCHES     =        .0640 ACRE-FEET
    PEAK DISCHARGE RATE =       1.77 CFS  AT   1.500 HOURS   BASIN AREA =   .0006 SQ. MI.
```

Hydrologic Output -- Hampton Inn, Tract -A Acme Acres -- 100-Year, 6-Hour Storm

```
*S  BASIN D2
COMPUTE NM HYD       ID=5  HYD=BASIN_D2  DA=.002137 SQ MI
                     %A=0  %B=5  %C=0  %D=95
                     TP=0.1333  RAINFALL=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   8.0151    CFS   UNIT VOLUME =    .9981       B =   526.28      P60 = 2.0200
    AREA =      .002030 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


    K =   .132208HR    TP =   .133300HR    K/TP RATIO =   .991810     SHAPE CONSTANT, N =  3.559824
    UNIT PEAK =   .26025    CFS   UNIT VOLUME =    .9489       B =   324.67      P60 = 2.0200
    AREA =      .000107 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD            ID=5  CODE=1

                                HYDROGRAPH FROM AREA BASIN_D2

    RUNOFF VOLUME =     2.05842 INCHES     =        .2346 ACRE-FEET
    PEAK DISCHARGE RATE =       6.31 CFS  AT   1.500 HOURS   BASIN AREA =   .0021 SQ. MI.


*S  BASIN D3
COMPUTE NM HYD       ID=6  HYD=BASIN_D3  DA=.002253 SQ MI
                     %A=0  %B=5  %C=0  %D=95
                     TP=0.1333  RAINFALL=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   8.4502    CFS   UNIT VOLUME =    .9981       B =   526.28      P60 = 2.0200
    AREA =      .002140 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


    K =   .132208HR    TP =   .133300HR    K/TP RATIO =   .991810     SHAPE CONSTANT, N =  3.559824
    UNIT PEAK =   .27437    CFS   UNIT VOLUME =    .9489       B =   324.67      P60 = 2.0200
    AREA =      .000113 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD            ID=6  CODE=1

                                HYDROGRAPH FROM AREA BASIN_D3

    RUNOFF VOLUME =     2.05842 INCHES     =        .2473 ACRE-FEET
    PEAK DISCHARGE RATE =       6.65 CFS  AT   1.500 HOURS   BASIN AREA =   .0023 SQ. MI.


*S  BASIN D4
COMPUTE NM HYD       ID=61  HYD=BASIN_D4  DA=.000762956 SQ MI
                     %A=100  %B=0  %C=0  %D=0
                     TP=0.1333  RAINFALL=-1

    K =   .159902HR    TP =   .133300HR    K/TP RATIO =  1.199568     SHAPE CONSTANT, N =  2.962187
    UNIT PEAK =   1.5953    CFS   UNIT VOLUME =    .9905       B =   278.72      P60 = 2.0200
    AREA =      .000763 SQ MI    IA =    .65000 INCHES    INF =   1.67000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD            ID=61  CODE=1
```

Hydrologic Output -- Hampton Inn, Tract -A Acme Acres -- 100-Year, 6-Hour Storm

HYDROGRAPH FROM AREA BASIN_D4

RUNOFF VOLUME = .53780 INCHES = .0219 ACRE-FEET
PEAK DISCHARGE RATE = .78 CFS AT 1.533 HOURS BASIN AREA = .0008 SQ. MI.

```
*S  ADD BASINS D3 AND D4
ADD HYD             ID=62 HYD=AP_1 ID I=6 TO ID II=61
PRINT HYD           ID=62 CODE=1
```

HYDROGRAPH FROM AREA AP_1

RUNOFF VOLUME = 1.67363 INCHES = .2692 ACRE-FEET
PEAK DISCHARGE RATE = 7.41 CFS AT 1.500 HOURS BASIN AREA = .0030 SQ. MI.

```
*S  ROUTE BASIN D3 AND D4 TO NEW CATCH BASIN VIA 18" DIA. CLOSED PIPE
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.0175
                     DIA=18 IN N=.013
```

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.08	.04	.07	.67
.16	.10	.32	.92
.23	.18	.74	1.09
.31	.27	1.32	1.22
.39	.37	2.07	1.32
.47	.47	2.95	1.39
.55	.58	3.95	1.44
.63	.70	5.05	1.48
.70	.81	6.22	1.50
.78	.93	7.45	1.50
.86	1.05	8.70	1.50
.94	1.16	9.94	1.50
1.02	1.27	11.14	1.50
1.09	1.38	12.26	1.50
1.17	1.48	13.27	1.50
1.25	1.57	14.10	1.50
1.33	1.66	14.70	1.50
1.41	1.72	14.95	1.50
1.50	1.77	14.95	1.50

```
COMPUTE TRAVEL TIME ID=7 REACH=1 VS NO=1 L=260 SLP=.0175
```

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.078	.035	.07	.0348
.156	.098	.32	.0223
.235	.176	.74	.0173
.313	.267	1.32	.0146
.391	.366	2.07	.0128
.469	.472	2.95	.0116
.547	.583	3.95	.0107
.625	.697	5.05	.0100

Hydrologic Output -- Hampton Inn, Tract -A Acme Acres -- 100-Year, 6-Hour Storm

.704	.814	6.22	.0094
.782	.931	7.45	.0090
.860	1.048	8.70	.0087
.938	1.163	9.94	.0085
1.016	1.274	11.14	.0083
1.094	1.381	12.26	.0081
1.173	1.482	13.27	.0081
1.251	1.574	14.10	.0081
1.329	1.656	14.70	.0081
1.407	1.722	14.95	.0083
1.500	1.767	14.95	.0085

```
ROUTE          ID=7 HYD=18PIPE INFLOW ID=62 DT=0.03333
PRINT HYD      ID=7 CODE=1
```

HYDROGRAPH FROM AREA 18PIPE

RUNOFF VOLUME = 1.67379 INCHES = .2692 ACRE-FEET
PEAK DISCHARGE RATE = 7.35 CFS AT 1.500 HOURS BASIN AREA = .0030 SQ. MI.

```
*S  ADD BASINS D1, D3 AND D4 AT AP1
ADD HYD        ID=8 HYD=AP_1 ID I=4 TO ID II=62
PRINT HYD      ID=8 CODE=1
```

HYDROGRAPH FROM AREA AP_1

RUNOFF VOLUME = 1.70599 INCHES = .3332 ACRE-FEET
PEAK DISCHARGE RATE = 9.18 CFS AT 1.500 HOURS BASIN AREA = .0037 SQ. MI.

```
*S  ROUTE BASIN D2 TO NEW MANHOLE NO2 AT AP-2 VIA 18" DIA. CLOSED PIPE
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.0175
                   DIA=18 IN N=.013
```

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.08	.04	.07	.67
.16	.10	.32	.92
.23	.18	.74	1.09
.31	.27	1.32	1.22
.39	.37	2.07	1.32
.47	.47	2.95	1.39
.55	.58	3.95	1.44
.63	.70	5.05	1.48
.70	.81	6.22	1.50
.78	.93	7.45	1.50
.86	1.05	8.70	1.50
.94	1.16	9.94	1.50
1.02	1.27	11.14	1.50
1.09	1.38	12.26	1.50
1.17	1.48	13.27	1.50
1.25	1.57	14.10	1.50
1.33	1.66	14.70	1.50
1.41	1.72	14.95	1.50
1.50	1.77	14.95	1.50

```
COMPUTE TRAVEL TIME ID=9 REACH=1 VS NO=1 L=205 SLP=.0175
```

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS

.078	.035	.07	.0274
.156	.098	.32	.0176
.235	.176	.74	.0137
.313	.267	1.32	.0115
.391	.366	2.07	.0101
.469	.472	2.95	.0091
.547	.583	3.95	.0084
.625	.697	5.05	.0079
.704	.814	6.22	.0074
.782	.931	7.45	.0071
.860	1.048	8.70	.0069
.938	1.163	9.94	.0067
1.016	1.274	11.14	.0065
1.094	1.381	12.26	.0064
1.173	1.482	13.27	.0064
1.251	1.574	14.10	.0064
1.329	1.656	14.70	.0064
1.407	1.722	14.95	.0066
1.500	1.767	14.95	.0067

ROUTE ID=9 HYD=18PIPE INFLOW ID=5 DT=0.03333
PRINT HYD ID=9 CODE=1

HYDROGRAPH FROM AREA 18PIPE

RUNOFF VOLUME = 2.05853 INCHES = .2346 ACRE-FEET
PEAK DISCHARGE RATE = 6.28 CFS AT 1.500 HOURS BASIN AREA = .0021 SQ. MI.

*S ROUTE BASIN D1, D3 AND D4 TO NEW MANHOLE NO2 AT AP-2 VIA 18" DIA. CLOSED PIP
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.0175
DIA=18 IN N=.013

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.08	.04	.07	.67
.16	.10	.32	.92
.23	.18	.74	1.09
.31	.27	1.32	1.22
.39	.37	2.07	1.32
.47	.47	2.95	1.39
.55	.58	3.95	1.44
.63	.70	5.05	1.48
.70	.81	6.22	1.50
.78	.93	7.45	1.50
.86	1.05	8.70	1.50
.94	1.16	9.94	1.50
1.02	1.27	11.14	1.50
1.09	1.38	12.26	1.50
1.17	1.48	13.27	1.50
1.25	1.57	14.10	1.50
1.33	1.66	14.70	1.50
1.41	1.72	14.95	1.50
1.50	1.77	14.95	1.50

COMPUTE TRAVEL TIME ID=10 REACH=1 VS NO=1 L=80 SLP=.0175

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.078	.035	.07	.0107
.156	.098	.32	.0069
.235	.176	.74	.0053
.313	.267	1.32	.0045

.391	.366	2.07	.0039
.469	.472	2.95	.0036
.547	.583	3.95	.0033
.625	.697	5.05	.0031
.704	.814	6.22	.0029
.782	.931	7.45	.0028
.860	1.048	8.70	.0027
.938	1.163	9.94	.0026
1.016	1.274	11.14	.0025
1.094	1.381	12.26	.0025
1.173	1.482	13.27	.0025
1.251	1.574	14.10	.0025
1.329	1.656	14.70	.0025
1.407	1.722	14.95	.0026
1.500	1.767	14.95	.0026

```
ROUTE          ID=10 HYD=18PIPE INFLOW ID=8 DT=0.03333
PRINT HYD      ID=10 CODE=1
```

HYDROGRAPH FROM AREA 18PIPE

RUNOFF VOLUME = 1.70612 INCHES = .3332 ACRE-FEET
PEAK DISCHARGE RATE = 9.18 CFS AT 1.500 HOURS BASIN AREA = .0037 SQ. MI.

```
*S  ADD BASINS D1, D2, D3 AND D4 AT AP-2
ADD HYD          ID=11 HYD=AP_2 ID I=9 TO ID II=10
PRINT HYD        ID=11 CODE=1
```

HYDROGRAPH FROM AREA AP_2

RUNOFF VOLUME = 1.83582 INCHES = .5678 ACRE-FEET
PEAK DISCHARGE RATE = 15.46 CFS AT 1.500 HOURS BASIN AREA = .0058 SQ. MI.

```
*S  ROUTE BASIN D (COMBINED) TO EXISTING CATCH BASIN AT AP-3 VIA 24" DIA. CLOSED
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.0175
                   DIA=24 IN N=.013
```

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.10	.06	.16	.89
.21	.17	.68	1.22
.31	.31	1.58	1.45
.42	.47	2.85	1.62
.52	.65	4.45	1.76
.63	.84	6.35	1.85
.73	1.04	8.50	1.93
.83	1.24	10.87	1.97
.94	1.45	13.40	2.00
1.04	1.66	16.04	2.00
1.15	1.86	18.73	2.00
1.25	2.07	21.40	2.00
1.35	2.27	23.98	2.00
1.46	2.46	26.40	2.00
1.56	2.63	28.57	2.00
1.67	2.80	30.37	2.00
1.77	2.94	31.66	2.00
1.88	3.06	32.19	2.00
2.00	3.14	32.19	2.00

```
COMPUTE TRAVEL TIME ID=12 REACH=1 VS NO=1 L=300 SLP=.01
```

TRAVEL TIME TABLE

REACH= 1.0

Hydrologic Output -- Hampton Inn, Tract -A Acme Acres -- 100-Year, 6-Hour Storm

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.104	.062	.16	.0331
.208	.174	.68	.0212
.313	.314	1.58	.0165
.417	.475	2.85	.0139
.521	.651	4.45	.0122
.625	.839	6.35	.0110
.730	1.037	8.50	.0102
.834	1.240	10.87	.0095
.938	1.447	13.40	.0090
1.042	1.655	16.04	.0086
1.146	1.863	18.73	.0083
1.251	2.067	21.40	.0080
1.355	2.265	23.98	.0079
1.459	2.456	26.40	.0078
1.563	2.635	28.57	.0077
1.668	2.799	30.37	.0077
1.772	2.943	31.66	.0077
1.876	3.061	32.19	.0079
2.000	3.142	32.19	.0081

```
ROUTE              ID=12 HYD=24PIPE INFLOW ID=11 DT=0.03333
PRINT HYD          ID=12 CODE=1

                                    HYDROGRAPH FROM AREA 24PIPE


    RUNOFF VOLUME =     1.83590 INCHES     =        .5678 ACRE-FEET
    PEAK DISCHARGE RATE =      15.29 CFS  AT   1.500 HOURS   BASIN AREA =   .0058 SQ. MI.


*S  ADD BASINS A AND D (COMBINED) AT AP-3
ADD HYD            ID=13 HYD=AP_3 ID I=1 TO ID II=12
PRINT HYD          ID=13 CODE=1

                                    HYDROGRAPH FROM AREA AP_3


    RUNOFF VOLUME =     1.58981 INCHES     =        .6067 ACRE-FEET
    PEAK DISCHARGE RATE =      16.63 CFS  AT   1.500 HOURS   BASIN AREA =   .0072 SQ. MI.


FINISH

    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 10:11:02
```

CHAVEZ • GRIEVES
CONSULTING ENGINEERS, INC.
5639 JEFFERSON STREET N.E. • ALBUQUERQUE, NEW MEXICO 87109
PHONE (505) 344-4080 • FAX (505) 343-8759

SHEET NO. 1 OF 1
JOB HAMPTON INN I-40 & CARLISLE
SUBJECT GRADING & DRAINAGE
CLIENT W & H ARCHITECTS
JOB NO. W24.100.5195
BY PONOCE DATE 8/15/95

1. ANALYSIS OF EXISTING CATCH BASIN, DISCHARGE INTO THE EMBUDO DIVERSION CHANNEL

GIVEN:

± CATCH BASIN 24" x 24" OPENING
PIPE 24" DIA RCP DIRECT TO CHANNEL

FIND:

CAPACITY OF BASIN / PIPE SYSTEM TO CONVEY STORM FLOW TO CHANNEL

a) USE ORIFICE EQUATION

$A = (24" \times 1FT/12")^2 \times \pi/4 = 3.1415$ SF (Ft^2)

$g = 32.2$ Ft/s^2

$h = 2.5$ FT

$Q = 0.6(A)\sqrt{2(g)(h)}$

$= 0.6(3.1415)\sqrt{2(32.2)(2.5)}$

$= 24.0$ CFS

ANSWER:

CAPACITY OF SYSTEM WITH DEPTH EQUAL TO 2.5 FEET

$\underline{\underline{Q = 24 \text{ CFS}}}$

Appendix B
Previous Correspondence

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

September 18, 1995

RECEIVED SEP 2 5 1995

Brad Ponder
Chavez-Grieves Consulting Engineers, Inc.
5639 Jefferson Street NE
Albuquerque, NM 87109

RE: HAMPTON INN (H17-D36) DRAINAGE REPORT FOR SITE DEVELOPMENT PLAN FOR BUILDING PERMIT APPROVAL, BUILDING PERMIT APPROVAL, GRADING PERMIT APPROVAL AND PAVING PERMIT APPROVAL. ENGINEER'S STAMP DATED 9-8-95.

Dear Mr. Ponder:

Based on the information provided on your September 8, 1995 submittal, the above referenced project is approved for Site Development Plan for Building Permit.

Prior to Building Permit, Grading Permit, and Paving Permit approval, please address the following comments.

1. Show more proposed spot elevations. Please give all proposed elevations for catch basin rims and pipe inverts. Also, give rim elevations for existing inlets.

2. Because you are tieing into the back of an existing City inlet, you will need to use the SO-19 format in the DPM.

3. Please get AMAFCA's concurrence on additional flows routed to the Embudo Diversion Channel.

If I can be of further assistance, please feel free to contact me at 768-3622.

Sincerely,

Lisa Ann Manwill
Engineering Assoc./Hyd.

c: Kurt Browning - AMAFCA
Andrew Garcia
File

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
UTILITY DEVELOPMENT DIVISION/HYDROLOGY SECTION

PRE-DESIGN CONFERENCE

..INAGE FILE/ZONE ATLAS PAGE NO.: H17 D36 DATE: 7-25-95

PC NO.: _____ DRB NO.: _____ ZONE: H17

JBJECT: HAMPTON INN

TREET ADDRESS: _____

EGAL DESCRIPTION: That certain parcel of land situated in the
Of County of Bernalillo, New Mexico being one of Tract "A"
ME AREA AS THE SAME IS SHOWN ON THE PLAT ENTITLED "ACME ACRES"
PPROVAL REQUESTED:

____	PRELIMINARY PLAT	____	FINAL PLAT
✓	SITE DEVELOPMENT PLAN	✓	BUILDING PERMIT
✓	GRADING/PAVING PERMIT	____	OTHER

Filed 10-17-85 in BOOK C28 PG 133 in Off of Bernalillo County, Clerk

	WHO	REPRESENTING
TTENDANCE:	BRAD PONDER	CHAVEZ-GRIEVES
	LISA ANN MANWILL	COA

NDINGS:

NEED ANALYSIS ON EXISTING CATCH BASIN - WILL DEVELOPED CONDITIONS FACILITATE EXISTING FACILITIES.

OWNER WANTS TO SUBDIVIDE - WILL NEED TO REPLAT & DEDICATE DRAINAGE EASEMENTS. (PER SD LINE TOO!)

LANDSCAPING ⇒ FOR SEDIMENT REDUCTION INTO INLET & EXISTING STORM SEWER.

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

GNED: Lisa Manwill SIGNED: Brad Ponder

TLE: Assoc. Engineer COA TITLE: Project Manager

TE: 7-25-95 DATE: 7/25/95

NOTE* PLEASE PROVIDE A COPY OF THIS PRE-DESIGN FORM WITH THE DRAINAGE SUBMITTAL

Federal Emergency Management Agency

Washington. D.C. 20472

NOV 2 3 985

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

IA-RA-RS (102)

Honorable Harry E. Kinney
Mayor of the City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

Community: City of Albuquerque,
Bernalillo County,
New Mexico
Effective Date of
this Revision: November 29, 1985
Community Number: 350002
Suffix Code: C

Dear Mayor Kinney:

This is in reference to a letter, dated September 17, 1985, submitted by Mr. Carlos A. Montoya, City Flood Plain Administrator for the City of Albuquerque, forwarded to us by our Region VI office. In his letter, Mr. Montoya requested that the Federal Emergency Management Agency (FEMA) issue a Letter of Map Revision (LOMR) to the effective Flood Insurance Rate Map (FIRM) and Flood Boundary and Floodway Map (FBFM) for the City of Albuquerque, New Mexico, based on fill recently placed on the Acme Acres development site. The site is located south of the Embudo Diversion Channel, northeast of the intersection of Carlisle Boulevard and Interstate Route 40.

We reviewed the data submitted by Mr. Montoya, which contained a report and topographic mapping dated August 23, 1985, describing the Acme Acres site, prepared by DMJM/Adam, Hamlyn, Anderson. Based on our review of this information, the effective FIRM and FBFM have been revised as shown on the enclosed annotated copies of the FIRM and FBFM. The flood hazard zone designation for the revised area has been changed from Zone AH to Zone C. This LOMR amends the currently effective FIRM and FBFM 350002 panel 0023, dated October 14, 1983, and will be incorporated into the next physical map revision for the City of Albuquerque, New Mexico.

These modifications have been made pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (P.L. 93-234) and are in accordance with the National Flood Insurance Act of 1968, as amended (Title XIII of the Housing and Urban Development Act of 1968, P.L. 90-448) 42 U.S.C. 4001-4128, and 44 CFR Part 65.

Public notification of modification to the Base Flood Elevations (BFEs) and zone designations will be given in the Journal Tribune, on or about December 9, 1985, and December 16, 1985. In addition, notice of changes will be published in the Federal Register. A copy of this notification is enclosed.

As required by the legislation, a community must adopt and enforce flood plain management measures in order to ensure continued eligibility to participate in the National Flood Insurance Program. Therefore, the City of Albuquerque must enforce these regulations using, at a minimum, the elevations and zone designations in the special flood hazard areas as shown on your community's FIRM, including the modifications made by this LOMR.

The revised BFEs and zone designations are effective as of the date of this letter; however, within 90 days of the second publication in the Journal Tribune, a citizen may request FEMA to reconsider this determination. Any request for reconsideration must be based on scientific or technical data. All interested parties are on notice that until the 90-day period elapses, the Agency's determination to modify the BFEs and zone designations may itself be modified.

We encourage you to disseminate widely throughout the community the information on the elevation changes in order that interested persons may offer new information or comments.

The community number and suffix code listed above will be used for all flood insurance policies and renewals issued for your community.

A Consultation Coordination Officer (CCO) has been designated to assist you with any problems you may have concerning the City of Albuquerque. The CCO will be the primary liaison between your community and the Federal Emergency Management Agency. Your CCO is:

Mr. R. Dell Greer, Chief
FEMA, Natural & Technological
Hazards Division
Federal Regional Center
800 North Loop 288
Denton, Texas 76201
(817) 387-5811

Any questions may be directed to your CCO.

Sincerely,

John L. Matticks
Acting Chief, Risk Studies Division
Federal Insurance Administration

Enclosures
cc: Mr. Carlos A. Montoya
Mr. Jean J. Bordenave, P.E., DMJM/Adam, Hamlyn, Anderson
Mr. Rick Tejada, Landowner

DRAINAGE INFORMATION

PROJECT TITLE: HAMPTON INN ZONE ATLAS/DRNG. FILE #: H-17

DRB#: 95-527 EPC #: Z-85-129, Z-95-89 WORK ORDER _____

LEGAL DESCRIPTION: TRACT A, ACME ACRES

CITY ADDRESS: I-40 AND CARLISLE (2300 CARLISLE NE)

ENGINEERING FIRM: Chavez-Grieves CONTACT: BILLY MCCARTY

ADDRESS: 5639 Jefferson NE PHONE: 344-4080

OWNER: LUMBERMANS INVESTMENT CORPORATION CONTACT: STEVE BURNE

ADDRESS: 7200 MOPAC, AUSTIN, TEXAS PHONE: 512-328-3007

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT

__X__ DRAINAGE PLAN

____ CONCEPTUAL GRADING & DRAINAGE PLAN

____ GRADING PLAN

____ EROSION CONTROL PLAN

____ ENGINEER'S CERTIFICATION

____ OTHER

PRE-DESIGN MEETING:

__X__ YES

____ NO

__X__ COPY PROVIDED IN REPORT

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL

____ PRELIMINARY PLAT APPROVAL

____ S. DEV. PLAN FOR SUB'D. APPROVAL

____ S. DEV. PLAN FOR BLDG. PRMT. APPROVAL

____ SECTOR PLAN APPROVAL

____ FINAL PLAT APPROVAL

____ FOUNDATION PERMIT APPROVAL

__X__ BUILDING PERMIT APPROVAL

____ CERTIFICATE OF OCCUPANCY APPROVAL

____ GRADING PERMIT APPROVAL

____ PAVING PERMIT APPROVAL

____ S.A.D. DRAINAGE REPORT

____ DRAINAGE REQUIREMENTS

____ DRB SITE PLAN APPROVAL

DATE SUBMITTED: September 24, 1998

BY: BILLY MCCARTY

CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.
THE ENGINEERING FIRM OF CHOICE

5639 JEFFERSON STREET NE · ALBUQUERQUE, NEW MEXICO 87109 · PHONE (505) 344·4080 FAX (505) 343 8759

LETTER OF TRANSMITTAL

TO: CITY HYDROLOGY DPT. **DATE:** JULY 18, 1997
2ND FLOOR PLAZA DEL SOL **JOB #**
RE:

ATTN:

WE ARE SENDING YOU ___ATTACHED ___**UNDER SEPARATE COVER, THE FOLLOWING ITEMS:**

___SHOP DRAWINGS	___PLANS	___SPECIFICATIONS	___DISKETTE
___CHANGE ORDER	___PRINTS	___CALCULATIONS	___PROPOSAL INFO
___COPY OF LETTER	___SAMPLES	___REPORT	___ _____

COPIES	DATE	NO.	DESCRIPTION
1			COPY OF CONCEPTUAL GRADING AND DRAINAGE PLAN FOR SITE PLAN APPROVAL

THESE ARE TRANSMITTED AS CHECKED BELOW:

___FOR YOUR USE
___AS REQUESTED
___PLEASE CORRECT AND RESUBMIT
___RESUBMITTAL IS NOT REQUIRED
CORRECTIONS, IF ANY, ARE NOTED

___FOR REVIEW & COMMENT
___RETURNED AFTER LOAN TO US
___SUBMIT___COPIES FOR DISTRIBUTION
___RETURN___CORRECTED PRINTS
___BIDS/PROPOSALS DUE _____ 199_

RECEIVED
JUL 18 1997
HYDROLOGY SECTION

REMARKS:

COPIES TO: FILE **SIGNED:**

IF ENCLOSURES ARE NOT AS NOTED, KINDLY NOTIFY US AT ONCE. *REV.9/95*

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

July 25, 1995

Brad Ponder
Chavez-Grieves Consulting Engineers, Inc.
5639 Jefferson Street NE
Albuquerque, NM 87109

RE: PRE-DESIGN MEETING 7-25-95 FOR CONCEPTUAL GRADING AND DRAINAGE FOR HAMPTON INN (H17/D36).

Dear Mr. Ponder:

Please comply with or address the following items in your next submittal. These items are in addition to issues we discussed in the pre-design meeting on 7-25-95.

1. Use the SO-19 format in the DPM section 22.7

2. Use COA Standard Detail 2237 for Drain Line Connection to Existing Storm Drain.

3. In the pre-design meeting, you stated that your intent is to let the southeastern tract/basin to sheet flow over Cutler Ave. to the channel. You will need to acquire the owners permission to direct your flow over the subject property.

Also, please be advised that a separate permit is required for construction within City Right-of-Way. a copy of this approval letter must be on hand when applying for the excavation permit.

If I can be of further assistance, please feel free to contact me at 768-3622.

Sincerely,

Lisa Ann Manwill
Engineering Associate

c: File

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

September 18, 1995

Brad Ponder
Chavez-Grieves Consulting Engineers, Inc.
5639 Jefferson Street NE
Albuquerque, NM 87109

RE: HAMPTON INN (H17-D36) DRAINAGE REPORT FOR SITE DEVELOPMENT PLAN FOR BUILDING PERMIT APPROVAL, BUILDING PERMIT APPROVAL, GRADING PERMIT APPROVAL AND PAVING PERMIT APPROVAL. ENGINEER'S STAMP DATED 9-8-95.

Dear Mr. Ponder:

Based on the information provided on your September 8, 1995 submittal, the above referenced project is approved for Site Development Plan for Building Permit.

Prior to Building Permit, Grading Permit, and Paving Permit approval, please address the following comments.

1. Show more proposed spot elevations. Please give all proposed elevations for catch basin rims and pipe inverts. Also, give rim elevations for existing inlets.

2. Because you are tieing into the back of an existing City inlet, you will need to use the SO-19 format in the DPM.

3. Please get AMAFCA's concurrence on additional flows routed to the Embudo Diversion Channel.

If I can be of further assistance, please feel free to contact me at 768-3622.

Sincerely,

Lisa Ann Manwill
Engineering Assoc./Hyd.

c: Andrew Garcia
File

CITY OF
Albuquerque

July 31, 1997

Martin J. Chávez, Mayor

James Alarid
Chavez-Grieves
5639 Jefferson Street NE
Albuquerque, NM 87109

RE: HAMPTON INN (H17-D36). CONCEPTUAL GRADING AND DRAINAGE PLAN FOR SITE DEVELOPMENT PLAN FOR BUILDING PERMIT APPROVAL. ENGINEER'S STAMP DATED JULY 19, 1997.

Dear Mr. Alarid:

Based on the information provided on your July 18, 1997 submittal, the above referenced project is approved for Site Development Plan for Building Permit. Prior to further approvals, please address the following comments.

1. What are the requirements in Cutler Avenue? Are there any storm drain requirements? Your Developed Drainage Basin drawing indicates that Cutler connects to your site. The Conceptual Grading and Drainage Plan show that Cutler is a cul-de-sac.

2. Where does the flow from off site basins "B" and "C" go?

3. Please get AMAFCA's concurrence on additional flows routed to the Embudo Diversion Channel.

If I can be of further assistance, please feel free to contact me at 768-3622.

Sincerely,

Lisa Ann Manwill, P.E.
Engineering Assoc./Hyd.

c: Andrew Garcia
File

Albuquerque
Metropolitan
Arroyo
Flood
Control
Authority

2600 PROSPECT N E - ALBUQUERQUE, N M 87107
TELEPHONE (505) 884-2215

August 28, 1997

Mr. James Alarid
Chavez Grieves
5639 Jefferson Street N.E.
Albuquerque, New Mexico 87107

Re: Hampton Inn

Dear Mr. Alarid:

AMAFCA has received your resubmittal and concurs with your responses regarding the on site issues. However, a field review of the access road and bridge leading to the site shows that not all the work associated with access road and bridge is complete.

Specifically the following items need to be completed:

- Guardrail from existing Carlisle bridge to new bridge.
- Sidewalk was not built per plans along north and east side of access road, nor was sidewalk culvert installed. This area needs to be filled proper elevation behind top of curb, and reseeded.
- At one time I had discussions with Brad Ponder(?) regarding changes to the access to the site, including modifications to the top of channel. Is this still contemplated?

I also suggest you coordinate work with the NMSHTD regarding their plans to rebuild the Carlisle/I-40 Interchange in the next year or so. This project includes a new bridge over the Embudo Channel which will affect your access, inclding likely closure of it during construction. Contact Alan Whitesel at NMSHTD or the consulting engineer, David Beene at Bohannan Huston.

Please inform me of how these issues will be addressed. It appears that an additional sheet for the offsite improvements may be needed. At that time AMAFCA will approve the grading and drainage plan for the site.

If you have any questions, please call.

Sincerely,
AMAFCA

John Kelly
Field Engineer

cc Fred Aguirre, Lisa Manwill, City of Alb.

CITY OF
Albuquerque

August 21, 1997

Martin J. Chávez, Mayor

James Alarid
Chavez-Grieves
5639 Jefferson Street NE
Albuquerque, NM 87109

RE: HAMPTON INN (H17-D36). DRAINAGE REPORT FOR GRADING AND PAVING PERMIT. ENGINEER'S STAMP DATED AUGUST 5, 1997.

Dear Mr. Alarid:

Based on the information provided on your August 6, 1997 submittal, the above referenced project can not be approved until all issues with AMAFCA are addressed. Please provide the City with confirmation of AMAFCA's acceptance.

If I can be of further assistance, please feel free to contact me at 924-3984.

Sincerely,

Lisa Ann Manwill, P.E.
Engineering Assoc./Hyd.

c: John Kelly - AMAFCA
Andrew Garcia - COA
File

DRAINAGE INFORMATION

PROJECT TITLE HAMPTON INN CUTLER AVE CUL-DE-SAC ZONE ATLAS/DRNG. FILE #: H-17 036

DRB#: 95-527 EPC #: Z-85-129 Z-95-89 WORK ORDER #: _____

LEGAL DESCRIPTION: TRACTS A-1-A AND A-1-B, ACME ACRES

CITY ADDRESS: I-40 AND CARLISLE

ENGINEERING FIRM: CHAVEZ-GRIEVES CONTACT: BILLY McCARTY

ADDRESS: 5639 JEFFERSON NE PHONE: 344-4080

OWNER: LUMBERMANS INVESTMENT CORPORATION CONTACT: STEVE BYRNE

ADDRESS: 7200 MOPAC AUSTIN, TX PHONE: _____

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT

____ DRAINAGE PLAN

____ CONCEPTUAL GRADING & DRAINAGE PLAN

_X_ GRADING PLAN

____ EROSION CONTROL PLAN

____ ENGINEER'S CERTIFICATION

____ OTHER

PRE-DESIGN MEETING:

____ YES

_X_ NO

____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL

____ PRELIMINARY PLAT APPROVAL

____ S. DEV. PLAN FOR SUB'D. APPROVAL

____ S. DEV. PLAN FOR BLDG. PRMT. APPROVAL

____ SECTOR PLAN APPROVAL

____ FINAL PLAT APPROVAL

____ FOUNDATION PERMIT APPROVAL

____ BUILDING PERMIT APPROVAL

____ CERTIFICATE OF OCCUPANCY APPROVAL

_X_ GRADING PERMIT APPROVAL

_X_ PAVING PERMIT APPROVAL

____ S.A.D. DRAINAGE REPORT

____ DRAINAGE REQUIREMENTS

____ OTHER _____ (SPECIFY)

DATE SUBMITTED: APRIL 16, 1999

BY: BILLY McCARTY

RECEIVED
APR 16 1999
HYDROLOGY SECTION

H17-D36

DRAINAGE INFORMATION

PROJECT TITLE: HAMPTON INN ZONE ATLAS/DRNG. FILE #: H-17

DRB#: 95-527 EPC #: Z-85-129, Z-95-89 WORK ORDER

LEGAL DESCRIPTION: TRACT A, ACME ACRES

CITY ADDRESS: I-40 AND CARLISLE

ENGINEERING FIRM: Chavez-Grieves CONTACT: JAMES ALARID

ADDRESS: 5639 Jefferson NE PHONE: 344-4080

OWNER: LUMBERMANS INVESTMENT CORPORATION CONTACT: STEVE BURNE

ADDRESS: 7200 MOPAC, AUSTIN, TEXAS PHONE: 512-328-3007

ARCHITECT: CONTACT:

ADDRESS: PHONE:

SURVEYOR: CONTACT:

ADDRESS: PHONE:

CONTRACTOR: CONTACT:

ADDRESS: PHONE:

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT

____ DRAINAGE PLAN

__X__ CONCEPTUAL GRADING & DRAINAGE PLAN

____ GRADING PLAN

____ EROSION CONTROL PLAN

____ ENGINEER'S CERTIFICATION

____ OTHER

PRE-DESIGN MEETING:

__X__ YES

____ NO

__X__ COPY PROVIDED IN REPORT

DATE SUBMITTED: July 16,1997

BY: JAMES ALARID

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL

____ PRELIMINARY PLAT APPROVAL

____ S. DEV. PLAN FOR SUB'D. APPROVAL

____ S. DEV. PLAN FOR BLDG. PRMT. APPROVAL

____ SECTOR PLAN APPROVAL

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____ GRADING PERMIT APPROVAL

____ PAVING PERMIT APPROVAL

____ S.A.D. DRAINAGE REPORT

____ DRAINAGE REQUIREMENTS

__X__ DRB SITE PLAN APPROVAL

THE ENGINEERING FIRM OF CHOICE

CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.

5639 JEFFERSON STREET NE · ALBUQUERQUE, NEW MEXICO 87109 · PHONE (505) 344·4080 · FAX (505) 343 8759

July 3, 1997

Fred Aguirre,
City of Albuquerque Hydrology Department
2nd Floor Plaza Del Sol
Albuquerque, New Mexico 87103

RE: TRACT A, ACME ACRES (HAMPTOM INN)
REVISED CONCEPTUAL GRADING PLAN REQUIRED BY DRB
DRB 95-527

Dear Mr. Aguirre:

Transmitted herewith is the revised conceptual grading and drainage plan for the above mentioned DRB case. This report and plan was submitted September 8, 1995 and received approval for site development plan for building permit approval. The project was stopped soon after. Now that the project is being revived you informed us in the July 1, 1997 DRB hearing that the preliminary grading plan must be resubmitted to City Hydrology to show the changed road alignment. In 1995 we were granted approval for site development plan from city hydrology (see attached letter).

Should you have any questions, please call.

Sincerely,

CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.

James Alarid
Project Engineer

Cy: Steve Byrne, GCI
Brad Ponder, Chavez-Grieves

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

September 18, 1995

Brad Ponder
Chavez-Grieves Consulting Engineers, Inc.
5639 Jefferson Street NE
Albuquerque, NM 87109

RE: HAMPTON INN (H17-D36) DRAINAGE REPORT FOR SITE DEVELOPMENT PLAN FOR BUILDING PERMIT APPROVAL, BUILDING PERMIT APPROVAL, GRADING PERMIT APPROVAL AND PAVING PERMIT APPROVAL. ENGINEER'S STAMP DATED 9-8-95.

Dear Mr. Ponder:

Based on the information provided on your September 8, 1995 submittal, the above referenced project is approved for Site Development Plan for Building Permit.

Prior to Building Permit, Grading Permit, and Paving Permit approval, please address the following comments.

1. Show more proposed spot elevations. Please give all proposed elevations for catch basin rims and pipe inverts. Also, give rim elevations for existing inlets.

2. Because you are tieing into the back of an existing City inlet, you will need to use the SO-19 format in the DPM.

3. Please get AMAFCA's concurrence on additional flows routed to the Embudo Diversion Channel.

If I can be of further assistance, please feel free to contact me at 768-3622.

Sincerely,

Lisa Ann Manwill
Engineering Assoc./Hyd.

c: Kurt Browning - AMAFCA
Andrew Garcia
File

DRAINAGE INFORMATION

PROJECT TITLE: HAMPTON INN ZONE ATLAS/DRNG. FILE #: H-17

DRB#: 95-527 EPC #: Z-85-129, Z-95-89 WORK ORDER

LEGAL DESCRIPTION: TRACT A, ACME ACRES

CITY ADDRESS: I-40 AND CARLISLE

ENGINEERING FIRM: Chavez-Grieves CONTACT: JAMES ALARID

ADDRESS: 5639 Jefferson NE PHONE: 344-4080

OWNER: LUMBERMANS INVESTMENT CORPORATION CONTACT: STEVE BURNE

ADDRESS: 7200 MOPAC, AUSTIN, TEXAS PHONE: 512-328-3007

ARCHITECT: CONTACT:

ADDRESS: PHONE:

SURVEYOR: CONTACT:

ADDRESS: PHONE:

CONTRACTOR: CONTACT:

ADDRESS: PHONE:

TYPE OF SUBMITTAL:

_X_ DRAINAGE REPORT

_X_ DRAINAGE PLAN

____ CONCEPTUAL GRADING & DRAINAGE PLAN

_X_ GRADING PLAN

_X_ EROSION CONTROL PLAN

____ ENGINEER'S CERTIFICATION

____ OTHER

PRE-DESIGN MEETING:

_X_ YES

____ NO

_X_ COPY PROVIDED IN REPORT

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL

____ PRELIMINARY PLAT APPROVAL

____ S. DEV. PLAN FOR SUB'D. APPROVAL

____ S. DEV. PLAN FOR BLDG. PRMT. APPROVAL

____ SECTOR PLAN APPROVAL

____ FINAL PLAT APPROVAL

____ FOUNDATION PERMIT APPROVAL

____ BUILDING PERMIT APPROVAL

____ CERTIFICATE OF OCCUPANCY APPROVAL

_X_ GRADING PERMIT APPROVAL

_X_ PAVING PERMIT APPROVAL

____ S.A.D. DRAINAGE REPORT

____ DRAINAGE REQUIREMENTS

____ DRB SITE PLAN APPROVAL

DATE SUBMITTED: August 5,1997

BY: JAMES ALARID

CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.

5639 JEFFERSON STREET NE · ALBUQUERQUE, NEW MEXICO 87109 · PHONE (505) 344·4080 · FAX (505) 343·8759

August 5, 1997

Lisa Ann Manwill, P.E.
City of Albuquerque Hydrology
P.O. Box 1293
Albuquerque, NM 87103

RE: Drainage Report and Grading and Drainage Plan
Hampton Inn
Albuquerque, New Mexico
C&G NO. L25-100-5197

Dear Ms. Manwill:

Transmitted herewith for grading and paving permit approval is the grading and drainage plan revised per your comments dated 7/18/96. Your comments are addressed as follows:

1. A cul-de-sac will be constructed at the end of Cutler. A driveway from the cul-de-sac will be the means of access for the Hampton Inn. The cul-de-sac will be constructed as a public improvement.

2. Runoff from Basin C is contained within the basin in a depressed area. Runoff from Basin B discharges directly to the Embudo Diversion Channel. Refer to narrative in attached report.

3. Concurrence from AMAFCA is attached.

If you have any questions or wish to discuss this in more detail, please call me.

Sincerely,

CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.

James Alarid, E.I.T.

xc: Brad Ponder, Chavez-Grieves

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CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.

5639 JEFFERSON STREET NE · ALBUQUERQUE, NEW MEXICO 87109 · PHONE (505) 344 4080 FAX (505) 343 8759

GRADING AND DRAINAGE PLAN

FOR THE

HAMPTON INN

LOCATED AT

INTERSTATE 40 AND CARLISLE BOULEVARD

ALBUQUERQUE, NEW MEXICO

JULY 1997

THE ENGINEERING FIRM OF CHOICE

CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.

5639 JEFFERSON STREET NE · ALBUQUERQUE, NEW MEXICO 87109 · PHONE (505) 344 4080 · FAX (505) 343 8759

GRADING AND DRAINAGE PLAN

FOR THE

HAMPTON INN

LOCATED AT

INTERSTATE 40 AND CARLISLE BOULEVARD

ALBUQUERQUE, NEW MEXICO

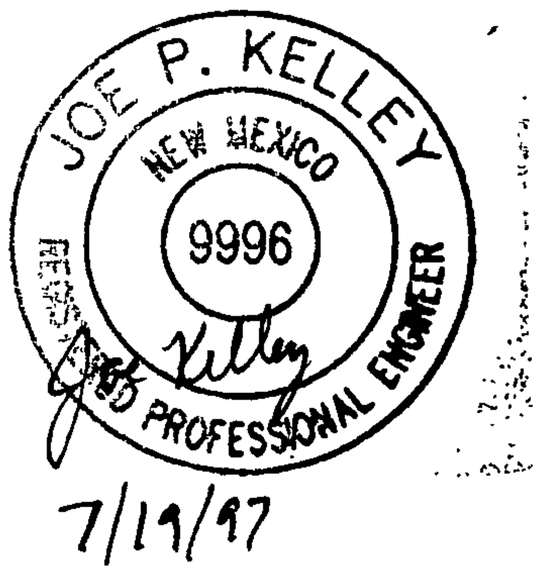

TABLE OF CONTENTS

I. PURPOSE OF THIS REPORT

This report has been prepared to accompany a submittal to the DRB for site plan approval. A final grading and drainage plan will be submitted to City Hydrology prior to the request for building permit approval.

It should be noted that previous discussions with City of Albuquerque Hydrology staff involved the entire acreage of Tract A of Acme Acres, approximately 6.92 acres. The property owner/developer decided, prior to the EPC submittal, to develop only the Hampton Inn portion of the parcel, therefore, this report addresses only the 4 plus acres of the Hampton Inn site.

II. LOCATION

This site is located at the northeast corner of Interstate 40 and Carlisle Boulevard, in Albuquerque, New Mexico. It is bounded on the south by Interstate 40, on the west by Carlisle Boulevard, on the north by the Embudo Diversion Channel, and on the east by a combination of the Embudo Diversion Channel and the end of Cutler Avenue.

III. LEGAL DESCRIPTION

Tract A, Acme Acres.

IV. ZONING AND SURROUNDING DEVELOPMENT

The present zoning of the site is C-3, Heavy Commercial. The proposed development is a four story hotel of approximately 125 rooms.

V. FLOOD HAZARD ZONES

As shown by Panel 3500020023 of the National Flood Insurance Rate Maps for the City of Albuquerque, dated October 14, 1983, a portion of the site is in a designated flood hazard Zone AH. A request for map revision (FEMA LOMR) was submitted by the City of Albuquerque to the Federal Emergency Management Agency on September 17, 1985. A response was received on December 4, 1985 granting a change from Zone AH to Zone C (refer to letter in Appendix B).

VI. EXISTING SITE CONDITIONS AND DRAINAGE PATTERN

The existing site is currently undeveloped. The recent construction of an access bridge over the Embudo Diversion Channel and vehicular traffic on the site has caused some disturbance of the native vegetation. Surface debris in the form of rock piles, construction waste and other foreign material was observed on the site. The general slope of the site is to the west northwest. Existing slopes range from 0.5 to 1.5 percent. At the present time, the site is divided into three drainage basins (refer to Drawing DB1), two of approximately equal size and a third significantly smaller basin. The north basin drains directly into a depressed area at the northwest corner of the property where an existing drop inlet and 24 inch diameter RCP pipe conveys the storm water into the Embudo Diversion Channel. Peak discharge for the north basin is 5.51 cfs. The south basin drains into a depressed area along the existing fence bordering the I-40/Carlisle Boulevard Off Ramp. It appears that if this depressed area reaches approximately three feet in depth, the overflow would drain into the same inlet and pipe as mentioned for the north basin; however, recent inspection did not show evidence of such overflow. Peak discharge for the south basin is 7.38 cfs and is contained in the basin. The smaller east basin has a peak discharge of 0.35 cfs and routes directly north into the Embudo Diversion Channel by overland flow. Refer to Appendix A for AHYMO analysis of the existing basins.

Analysis of the existing drop inlet and outlet pipe indicates the maximum capacity to be 24 cfs. Refer to orifice analysis in Appendix A.

VII. PREVIOUS RELATED REPORTS

The present site was originally to be developed under a Grading and Drainage Submittal by DMJM/Adam, Hamlyn, Anderson, dated 9/27/85 (H17/D36). The planned development appears to have been abandoned following this submittal.

VIII. PROPOSED SITE CONDITIONS AND DRAINAGE PATTERN

The new site improvements consist of a four story hotel, attached lobby, detached swimming pool area, vehicle parking, vehicle access road from the new bridge to the west end of Cutler Avenue, landscaping and other features.

The developed Hampton Inn site is proposed to be divided into three drainage basins. The western basin (D1) will collect storm flows from the entrance area of the hotel complex into a depressed landscaped area. The northern basin (D2) will collect storm flows from the northern half of the roof area, north and east parking areas and bordering landscaped areas. The southern basin (D3) will collect storm flows from the southern half of the roof area, south parking, access road and bordering landscaped areas. The undisturbed areas in Basins A, B, and C will

remain in their undeveloped states.

The proposed routing of storm runoff as determined from the AHYMO analysis (refer to Appendix A) are as follows:

Basin D3 through 18" diameter closed pipe to catch basin in Basin D1.

Basin D1 added to D3, routed to new manhole, added to the routed runoff of Basin D2, then routed through 18" diameter closed pipe to discharge.

The combined Basin D (D1, D2, D3) is proposed to connect to the existing concrete catch basin located at the northwest corner of the property where direct discharge into the Embudo Diversion Channel will occur. Routing will be through an 18" diameter closed pipe. Peak discharge of Basin D at the existing catch basin is 14.52 cfs. The peak flow from the downsized Basin A is 1.37 cfs. Added together results in a total peak discharge of 15.89 cfs, which is less than the maximum capacity of 24 cfs for the existing catch basin.

what about Basin B&C do they drain to this system.

There will be some transitional grading from the proposed access road to the undeveloped areas west and south. Since the developed and undeveloped lands are owned by the same party, no grading easements will be necessary.

IX. HYDROLOGY/HYDRAULICS

The runoff calculations and design have been done in accordance with Section 22.2 of the Development Process Manual of the City of Albuquerque, January 1993.

OK

RUNOFF COMPARISON		
Basin	**Existing Q_{100} (cfs)**	**Developed Q_{100} (cfs)**
A	4.92	1.37
B	0.34	0.38
C	7.62	6.44
D1	--	1.77
D2	--	6.31
D3	--	6.65

Appendixes

Appendix A

CHAVEZ • GRIEVES
CONSULTING ENGINEERS, INC.
5639 JEFFERSON STREET N.E. • ALBUQUERQUE, NEW MEXICO 87109
PHONE (505) 344-4080 • FAX (505) 343-8759

SHEET NO. 1 OF 1
JOB HAMPTON INN I-40 & CARLISLE
SUBJECT GRADING & DRAINAGE
CLIENT W & H ARCHITECTS
JOB NO. W24.100.5195
BY PONOCK DATE 8/15/95

1. ANALYSIS OF EXISTING CATCH BASIN, DISCHARGE INTO THE EMBUDO DIVERSION CHANNEL

GIVEN:

CATCH BASIN — 24" x 24" OPENING
PIPE — 24" DIA RCP DIRECT TO CHANNEL

FIND:

CAPACITY OF BASIN / PIPE SYSTEM TO CONVEY STORM FLOW TO CHANNEL

a) USE ORIFICE EQUATION

$A = (24" \times 1FT/12")^2 \times \pi/4 = 3.1415\ SF\ (FT^2)$

$g = 32.2\ FT/S^2$

$h = 2.5\ FT$

$Q = 0.6(A)\sqrt{2(g)(h)}$

$= 0.6(3.1415)\sqrt{2(32.2)(2.5)}$

$= 24.0\ CFS$

ANSWER:

CAPACITY OF SYSTEM WITH DEPTH EQUAL TO 2.5 FEET

$Q = 24\ CFS$

```
    AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
         RUN DATE (MON/DAY/YR) = 09/06/1995
         START TIME (HR:MIN:SEC) = 16:44:13     USER NO.= CHVZ_GNM.I01
         INPUT FILE = AHYMO.IN

*S*************************************************************************
*S**************    CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.   **************
*S**************       HAMPTON INN SITE/TRACT A, ACME ACRES     **************
*S*************************************************************************
*S*  FILENAME:  G:\W24\W2410051\ENGINEER\AHYMO.IN/OUT
*S*************************************************************************
*S******* 100 YEAR STORM, 6 HOUR STORM
START                 0.00
RAINFALL              TYPE=1 RAIN QUARTER=0.0 RAIN ONE=2.02
                      RAIN SIX=2.36 RAIN DAY=2.70  DT=0.03333

                 COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
                 DT =    .033330 HOURS       END TIME =     5.999400 HOURS
                    .0000   .0016   .0032   .0049   .0066   .0084   .0101
                    .0120   .0139   .0158   .0177   .0198   .0218   .0240
                    .0262   .0284   .0308   .0332   .0357   .0382   .0409
                    .0437   .0465   .0495   .0526   .0559   .0593   .0628
                    .0666   .0706   .0748   .0803   .0863   .0927   .1064
                    .1370   .1842   .2519   .3444   .4660   .6209   .8139
                   1.0494  1.2680  1.3593  1.4364  1.5049  1.5673  1.6247
                   1.6780  1.7278  1.7745  1.8185  1.8599  1.8991  1.9361
                   1.9713  2.0046  2.0361  2.0661  2.0946  2.1012  2.1073
                   2.1130  2.1185  2.1238  2.1288  2.1336  2.1383  2.1427
                   2.1470  2.1512  2.1552  2.1592  2.1630  2.1667  2.1703
                   2.1738  2.1772  2.1805  2.1838  2.1869  2.1900  2.1931
                   2.1960  2.1990  2.2018  2.2046  2.2074  2.2101  2.2127
                   2.2153  2.2179  2.2204  2.2229  2.2253  2.2277  2.2301
                   2.2324  2.2347  2.2370  2.2392  2.2414  2.2436  2.2457
                   2.2478  2.2499  2.2519  2.2540  2.2560  2.2580  2.2599
                   2.2619  2.2638  2.2657  2.2675  2.2694  2.2712  2.2730
                   2.2748  2.2766  2.2783  2.2801  2.2818  2.2835  2.2852
                   2.2869  2.2885  2.2902  2.2918  2.2934  2.2950  2.2966
                   2.2981  2.2997  2.3012  2.3028  2.3043  2.3058  2.3073
                   2.3087  2.3102  2.3117  2.3131  2.3145  2.3160  2.3174
                   2.3188  2.3201  2.3215  2.3229  2.3243  2.3256  2.3269
                   2.3283  2.3296  2.3309  2.3322  2.3335  2.3348  2.3361
                   2.3373  2.3386  2.3398  2.3411  2.3423  2.3435  2.3448
                   2.3460  2.3472  2.3484  2.3496  2.3508  2.3519  2.3531
                   2.3543  2.3554  2.3566  2.3577  2.3589  2.3600

*S  COMPUTE THE RUNOFF FROM THE EXISTING BASINS
*S  BASIN A
COMPUTE NM HYD        ID=1  HYD=BASIN_A  DA=.004874 SQ MI
                      %A=100  %B=0  %C=0  %D=0
                      TP=0.1333  RAINFALL=-1

    K =   .159902HR    TP =   .133300HR    K/TP RATIO =  1.199568     SHAPE CONSTANT, N =  2.962187
    UNIT PEAK =   10.191    CFS   UNIT VOLUME =    .9984       B =   278.72      P60 = 2.0200
    AREA =      .004874 SQ MI    IA =    .65000 INCHES    INF =   1.67000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD             ID=1  CODE=1

                                        HYDROGRAPH FROM AREA BASIN_A


    RUNOFF VOLUME =      .53780 INCHES     =        .1398 ACRE-FEET
    PEAK DISCHARGE RATE =       4.92 CFS  AT   1.533 HOURS   BASIN AREA =   .0049 SQ. MI.



*S  BASIN B
COMPUTE NM HYD        ID=3  HYD=BASIN_B  DA=.000326 SQ MI
                      %A=100  %B=0  %C=0  %D=0
                      TP=0.1333  RAINFALL=-1
```

```
    K =   .159902HR     TP =   .133300HR     K/TP RATIO =  1.199568      SHAPE CONSTANT, N =  2.962187
    UNIT PEAK =   .68165     CFS   UNIT VOLUME =     .9785        B =   278.72       P60 = 2.0200
    AREA =       .000326 SQ MI     IA =     .65000 INCHES     INF =   1.67000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=3  CODE=1

                                        HYDROGRAPH FROM AREA BASIN_B


    RUNOFF VOLUME =       .53780 INCHES      =         .0094 ACRE-FEET
    PEAK DISCHARGE RATE =         .34 CFS  AT   1.533 HOURS   BASIN AREA =   .0003 SQ. MI.



*S  BASIN C
COMPUTE NM HYD      ID=2  HYD=BASIN_C  DA=.007555 SQ MI
                    %A=100  %B=0  %C=0  %D=0
                    TP=0.1333  RAINFALL=-1

    K =   .159902HR     TP =   .133300HR     K/TP RATIO =  1.199568      SHAPE CONSTANT, N =  2.962187
    UNIT PEAK =   15.797     CFS   UNIT VOLUME =     .9988        B =   278.72       P60 = 2.0200
    AREA =       .007555 SQ MI     IA =     .65000 INCHES     INF =   1.67000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=2  CODE=1

                                        HYDROGRAPH FROM AREA BASIN_C


    RUNOFF VOLUME =       .53780 INCHES      =         .2167 ACRE-FEET
    PEAK DISCHARGE RATE =        7.62 CFS  AT   1.533 HOURS   BASIN AREA =   .0076 SQ. MI.



*S  COMPUTE THE RUN-OFF FROM THE DEVELOPED BASINS.
*S  BASIN A
COMPUTE NM HYD      ID=1  HYD=BASIN_A  DA=.001356 SQ MI
                    %A=100  %B=0  %C=0  %D=0
                    TP=0.1333  RAINFALL=-1

    K =   .159902HR     TP =   .133300HR     K/TP RATIO =  1.199568      SHAPE CONSTANT, N =  2.962187
    UNIT PEAK =   2.8353     CFS   UNIT VOLUME =     .9945        B =   278.72       P60 = 2.0200
    AREA =       .001356 SQ MI     IA =     .65000 INCHES     INF =   1.67000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA BASIN_A


    RUNOFF VOLUME =       .53780 INCHES      =         .0389 ACRE-FEET
    PEAK DISCHARGE RATE =        1.37 CFS  AT   1.533 HOURS   BASIN AREA =   .0014 SQ. MI.



*S  BASIN B
COMPUTE NM HYD      ID=2  HYD=BASIN_B  DA=.000342 SQ MI
                    %A=90  %B=0  %C=10  %D=0
                    TP=0.1333  RAINFALL=-1

    K =   .154668HR     TP =   .133300HR     K/TP RATIO =  1.160300      SHAPE CONSTANT, N =  3.054899
    UNIT PEAK =   .73446     CFS   UNIT VOLUME =     .9806        B =   286.27       P60 = 2.0200
    AREA =       .000342 SQ MI     IA =     .62000 INCHES     INF =   1.58600 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=2  CODE=1

                                        HYDROGRAPH FROM AREA BASIN_B
```

```
    RUNOFF VOLUME =      .58194 INCHES     =         .0106 ACRE-FEET
    PEAK DISCHARGE RATE =        .38 CFS  AT    1.533 HOURS   BASIN AREA =    .0003 SQ. MI.


*S  BASIN C
COMPUTE NM HYD       ID=3  HYD=BASIN_C  DA=.006386 SQ MI
                     %A=100  %B=0  %C=0  %D=0
                     TP=0.1333  RAINFALL=-1

    K =    .159902HR     TP =    .133300HR     K/TP RATIO =  1.199568     SHAPE CONSTANT, N =  2.962187
    UNIT PEAK =   13.353     CFS   UNIT VOLUME =     .9987       B =   278.72      P60 = 2.0200
    AREA =       .006386 SQ MI     IA =     .65000 INCHES     INF =   1.67000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD            ID=3  CODE=1

                                        HYDROGRAPH FROM AREA BASIN_C

    RUNOFF VOLUME =      .53780 INCHES     =         .1832 ACRE-FEET
    PEAK DISCHARGE RATE =       6.44 CFS  AT    1.533 HOURS   BASIN AREA =    .0064 SQ. MI.


*S  BASIN D1
COMPUTE NM HYD       ID=4  HYD=BASIN_D1  DA=.000646 SQ MI
                     %A=0  %B=20  %C=0  %D=80
                     TP=0.1333  RAINFALL=-1

    K =    .072649HR     TP =    .133300HR     K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =    2.0404     CFS   UNIT VOLUME =     .9941       B =   526.28      P60 = 2.0200
    AREA =       .000517 SQ MI     IA =     .10000 INCHES     INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =    .132208HR     TP =    .133300HR     K/TP RATIO =   .991810     SHAPE CONSTANT, N =  3.559824
    UNIT PEAK =    .31468     CFS   UNIT VOLUME =     .9569       B =   324.67      P60 = 2.0200
    AREA =       .000129 SQ MI     IA =     .50000 INCHES     INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD            ID=4  CODE=1

                                        HYDROGRAPH FROM AREA BASIN_D1


    RUNOFF VOLUME =      1.85752 INCHES     =         .0640 ACRE-FEET
    PEAK DISCHARGE RATE =       1.77 CFS  AT    1.500 HOURS   BASIN AREA =    .0006 SQ. MI.


*S  BASIN D2
COMPUTE NM HYD       ID=5  HYD=BASIN_D2  DA=.002137 SQ MI
                     %A=0  %B=5  %C=0  %D=95
                     TP=0.1333  RAINFALL=-1

    K =    .072649HR     TP =    .133300HR     K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =    8.0151     CFS   UNIT VOLUME =     .9981       B =   526.28      P60 = 2.0200
    AREA =       .002030 SQ MI     IA =     .10000 INCHES     INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =    .132208HR     TP =    .133300HR     K/TP RATIO =   .991810     SHAPE CONSTANT, N =  3.559824
    UNIT PEAK =    .26025     CFS   UNIT VOLUME =     .9489       B =   324.67      P60 = 2.0200
    AREA =       .000107 SQ MI     IA =     .50000 INCHES     INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD            ID=5  CODE=1

                                        HYDROGRAPH FROM AREA BASIN_D2
```

RUNOFF VOLUME = 2.05842 INCHES = .2346 ACRE-FEET
PEAK DISCHARGE RATE = 6.31 CFS AT 1.500 HOURS BASIN AREA = .0021 SQ. MI.

*S BASIN D3
COMPUTE NM HYD ID=6 HYD=BASIN_D3 DA=.002253 SQ MI
%A=0 %B=5 %C=0 %D=95
TP=0.1333 RAINFALL=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 8.4502 CFS UNIT VOLUME = .9981 B = 526.28 P60 = 2.0200
AREA = .002140 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .132208HR TP = .133300HR K/TP RATIO = .991810 SHAPE CONSTANT, N = 3.559824
UNIT PEAK = .27437 CFS UNIT VOLUME = .9489 B = 324.67 P60 = 2.0200
AREA = .000113 SQ MI IA = .50000 INCHES INF = 1.25000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=6 CODE=1

HYDROGRAPH FROM AREA BASIN_D3

RUNOFF VOLUME = 2.05842 INCHES = .2473 ACRE-FEET
PEAK DISCHARGE RATE = 6.65 CFS AT 1.500 HOURS BASIN AREA = .0023 SQ. MI.

*S ROUTE BASIN D3 TO NEW CATCH BASIN AT AP-1 VIA 18" DIA. CLOSED PIPE
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.0175
DIA=18 IN N=.013

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.08	.04	.07	.67
.16	.10	.32	.92
.23	.18	.74	1.09
.31	.27	1.32	1.22
.39	.37	2.07	1.32
.47	.47	2.95	1.39
.55	.58	3.95	1.44
.63	.70	5.05	1.48
.70	.81	6.22	1.50
.78	.93	7.45	1.50
.86	1.05	8.70	1.50
.94	1.16	9.94	1.50
1.02	1.27	11.14	1.50
1.09	1.38	12.26	1.50
1.17	1.48	13.27	1.50
1.25	1.57	14.10	1.50
1.33	1.66	14.70	1.50
1.41	1.72	14.95	1.50
1.50	1.77	14.95	1.50

COMPUTE TRAVEL TIME ID=7 REACH=1 VS NO=1 L=260 SLP=.0175

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.078	.035	.07	.0348
.156	.098	.32	.0223
.235	.176	.74	.0173
.313	.267	1.32	.0146

.391	.366	2.07	.0128
.469	.472	2.95	.0116
.547	.583	3.95	.0107
.625	.697	5.05	.0100
.704	.814	6.22	.0094
.782	.931	7.45	.0090
.860	1.048	8.70	.0087
.938	1.163	9.94	.0085
1.016	1.274	11.14	.0083
1.094	1.381	12.26	.0081
1.173	1.482	13.27	.0081
1.251	1.574	14.10	.0081
1.329	1.656	14.70	.0081
1.407	1.722	14.95	.0083
1.500	1.767	14.95	.0085

```
ROUTE                ID=7 HYD=18PIPE INFLOW ID=6 DT=0.03333
PRINT HYD            ID=7 CODE=1
```

HYDROGRAPH FROM AREA 18PIPE

```
    RUNOFF VOLUME =     2.05852 INCHES     =        .2473 ACRE-FEET
    PEAK DISCHARGE RATE =       6.60 CFS  AT    1.500 HOURS   BASIN AREA =    .0023 SQ. MI.


*S  ADD BASINS D1 AND D3 AT AP-1
ADD HYD              ID=8 HYD=AP_1 ID I=4 TO ID II=7
PRINT HYD            ID=8 CODE=1
```

HYDROGRAPH FROM AREA AP_1

```
    RUNOFF VOLUME =     2.01345 INCHES     =        .3113 ACRE-FEET
    PEAK DISCHARGE RATE =       8.37 CFS  AT    1.500 HOURS   BASIN AREA =    .0029 SQ. MI.


*S  ROUTE BASIN D2 TO NEW MANHOLE NO2 AT AP-2 VIA 18" DIA. CLOSED PIPE
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.0175
                     DIA=18 IN N=.013
```

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.08	.04	.07	.67
.16	.10	.32	.92
.23	.18	.74	1.09
.31	.27	1.32	1.22
.39	.37	2.07	1.32
.47	.47	2.95	1.39
.55	.58	3.95	1.44
.63	.70	5.05	1.48
.70	.81	6.22	1.50
.78	.93	7.45	1.50
.86	1.05	8.70	1.50
.94	1.16	9.94	1.50
1.02	1.27	11.14	1.50
1.09	1.38	12.26	1.50
1.17	1.48	13.27	1.50
1.25	1.57	14.10	1.50
1.33	1.66	14.70	1.50
1.41	1.72	14.95	1.50
1.50	1.77	14.95	1.50

```
COMPUTE TRAVEL TIME ID=9 REACH=1 VS NO=1 L=205 SLP=.0175
```

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.078	.035	.07	.0274
.156	.098	.32	.0176
.235	.176	.74	.0137
.313	.267	1.32	.0115
.391	.366	2.07	.0101
.469	.472	2.95	.0091
.547	.583	3.95	.0084
.625	.697	5.05	.0079
.704	.814	6.22	.0074
.782	.931	7.45	.0071
.860	1.048	8.70	.0069
.938	1.163	9.94	.0067
1.016	1.274	11.14	.0065
1.094	1.381	12.26	.0064
1.173	1.482	13.27	.0064
1.251	1.574	14.10	.0064
1.329	1.656	14.70	.0064
1.407	1.722	14.95	.0066
1.500	1.767	14.95	.0067

ROUTE ID=9 HYD=18PIPE INFLOW ID=5 DT=0.03333
PRINT HYD ID=9 CODE=1

HYDROGRAPH FROM AREA 18PIPE

RUNOFF VOLUME = 2.05853 INCHES = .2346 ACRE-FEET
PEAK DISCHARGE RATE = 6.28 CFS AT 1.500 HOURS BASIN AREA = .0021 SQ. MI.

*S ROUTE BASIN D1 AND D3 TO NEW MANHOLE NO2 AT AP-2 VIA 18" DIA. CLOSED PIPE
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.0175
DIA=18 IN N=.013

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.08	.04	.07	.67
.16	.10	.32	.92
.23	.18	.74	1.09
.31	.27	1.32	1.22
.39	.37	2.07	1.32
.47	.47	2.95	1.39
.55	.58	3.95	1.44
.63	.70	5.05	1.48
.70	.81	6.22	1.50
.78	.93	7.45	1.50
.86	1.05	8.70	1.50
.94	1.16	9.94	1.50
1.02	1.27	11.14	1.50
1.09	1.38	12.26	1.50
1.17	1.48	13.27	1.50
1.25	1.57	14.10	1.50
1.33	1.66	14.70	1.50
1.41	1.72	14.95	1.50
1.50	1.77	14.95	1.50

COMPUTE TRAVEL TIME ID=10 REACH=1 VS NO=1 L=80 SLP=.0175

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.078	.035	.07	.0107
.156	.098	.32	.0069

.235	.176	.74	.0053
.313	.267	1.32	.0045
.391	.366	2.07	.0039
.469	.472	2.95	.0036
.547	.583	3.95	.0033
.625	.697	5.05	.0031
.704	.814	6.22	.0029
.782	.931	7.45	.0028
.860	1.048	8.70	.0027
.938	1.163	9.94	.0026
1.016	1.274	11.14	.0025
1.094	1.381	12.26	.0025
1.173	1.482	13.27	.0025
1.251	1.574	14.10	.0025
1.329	1.656	14.70	.0025
1.407	1.722	14.95	.0026
1.500	1.767	14.95	.0026

```
ROUTE          ID=10 HYD=18PIPE INFLOW ID=8 DT=0.03333
PRINT HYD      ID=10 CODE=1
```

HYDROGRAPH FROM AREA 18PIPE

RUNOFF VOLUME = 2.01363 INCHES = .3113 ACRE-FEET
PEAK DISCHARGE RATE = 8.35 CFS AT 1.500 HOURS BASIN AREA = .0029 SQ. MI.

```
*S  ADD BASINS D1, D2 AND D3 AT AP-2
ADD HYD        ID=11 HYD=AP_2 ID I=9 TO ID II=10
PRINT HYD      ID=11 CODE=1
```

HYDROGRAPH FROM AREA AP_2

RUNOFF VOLUME = 2.03249 INCHES = .5459 ACRE-FEET
PEAK DISCHARGE RATE = 14.63 CFS AT 1.500 HOURS BASIN AREA = .0050 SQ. MI.

```
*S  ROUTE BASIN D (COMBINED) TO EXISTING CATCH BASIN AT AP-3 VIA 18" DIA. CLOSED
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.0175
                     DIA=18 IN N=.013
```

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.08	.04	.07	.67
.16	.10	.32	.92
.23	.18	.74	1.09
.31	.27	1.32	1.22
.39	.37	2.07	1.32
.47	.47	2.95	1.39
.55	.58	3.95	1.44
.63	.70	5.05	1.48
.70	.81	6.22	1.50
.78	.93	7.45	1.50
.86	1.05	8.70	1.50
.94	1.16	9.94	1.50
1.02	1.27	11.14	1.50
1.09	1.38	12.26	1.50
1.17	1.48	13.27	1.50
1.25	1.57	14.10	1.50
1.33	1.66	14.70	1.50
1.41	1.72	14.95	1.50
1.50	1.77	14.95	1.50

```
COMPUTE TRAVEL TIME ID=12 REACH=1 VS NO=1 L=300 SLP=.01
```

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.078	.035	.07	.0402
.156	.098	.32	.0257
.235	.176	.74	.0200
.313	.267	1.32	.0168
.391	.366	2.07	.0148
.469	.472	2.95	.0133
.547	.583	3.95	.0123
.625	.697	5.05	.0115
.704	.814	6.22	.0109
.782	.931	7.45	.0104
.860	1.048	8.70	.0100
.938	1.163	9.94	.0098
1.016	1.274	11.14	.0095
1.094	1.381	12.26	.0094
1.173	1.482	13.27	.0093
1.251	1.574	14.10	.0093
1.329	1.656	14.70	.0094
1.407	1.722	14.95	.0096
1.500	1.767	14.95	.0099

```
ROUTE              ID=12 HYD=18PIPE INFLOW ID=11 DT=0.03333
PRINT HYD          ID=12 CODE=1
```

HYDROGRAPH FROM AREA 18PIPE

RUNOFF VOLUME = 2.03259 INCHES = .5459 ACRE-FEET
PEAK DISCHARGE RATE = 14.52 CFS AT 1.533 HOURS BASIN AREA = .0050 SQ. MI.

```
*S  ADD BASINS A AND D (COMBINED) AT AP-3
ADD HYD            ID=13 HYD=AP_3 ID I=1 TO ID II=12
PRINT HYD          ID=13 CODE=1
```

HYDROGRAPH FROM AREA AP_3

RUNOFF VOLUME = 1.71540 INCHES = .5848 ACRE-FEET
PEAK DISCHARGE RATE = 15.89 CFS AT 1.533 HOURS BASIN AREA = .0064 SQ. MI.

```
FINISH
```

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 16:44:15

Appendix B

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
UTILITY DEVELOPMENT DIVISION/HYDROLOGY SECTION

PRE-DESIGN CONFERENCE

RAINAGE FILE/ZONE ATLAS PAGE NO.: H17/D36 DATE: 7-25-95

PC NO.: _____ DRB NO.: _____ ZONE: H17

UBJECT: HAMPTON INN

TREET ADDRESS: _____

EGAL DESCRIPTION: That certain parcel of land situated in the
OIT County of Bernalillo, New Mexico being and of Tract "A"
ME area and the same is shown on the plat entitled "Acme Hwy"
Filed 10-17-85 in Book C28 PG 133 in off of Bernalillo County, Clerk

APPROVAL REQUESTED:

____	PRELIMINARY PLAT	____	FINAL PLAT
✓	SITE DEVELOPMENT PLAN	✓	BUILDING PERMIT
✓	GRADING/PAVING PERMIT	____	OTHER

	WHO	REPRESENTING
TTENDANCE:	BRAD PONDER	CHAVEZ-GRIEVES
	LISA ANN MANWILL	COA

INDINGS:

NEED ANALYSIS ON EXISTING CATCH BASIN - WILL DEVELOPED CONDITIONS FACILITATE EXISTING FACILITIES.

OWNER WANTS TO SUBDIVIDE - WILL NEED TO REPLAT & DEDICATE DRAINAGE EASEMENTS. (FOR SD LINE TOO!)

LANDSCAPING ⇒ FOR SEDIMENT REDUCTION INTO NEW & EXISTING STORM SEWER.

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

GNED: Lisa Manwill SIGNED: Brad Ponder

ITLE: Assoc. Engineer COA TITLE: Project Manager

TE: 7-25-95 DATE: 7/25/95

***NOTE** PLEASE PROVIDE A COPY OF THIS PRE-DESIGN FORM WITH THE DRAINAGE SUBMITTAL.

Federal Emergency Management Agency

Washington. D.C. 20472

NOV 25 985

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

IA-RA-RS (102)

Honorable Harry E. Kinney
Mayor of the City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

Community: City of Albuquerque,
Bernalillo County,
New Mexico
Effective Date of
this Revision: November 29, 1985
Community Number: 350002
Suffix Code: C

Dear Mayor Kinney:

This is in reference to a letter, dated September 17, 1985, submitted by Mr. Carlos A. Montoya, City Flood Plain Administrator for the City of Albuquerque, forwarded to us by our Region VI office. In his letter, Mr. Montoya requested that the Federal Emergency Management Agency (FEMA) issue a Letter of Map Revision (LOMR) to the effective Flood Insurance Rate Map (FIRM) and Flood Boundary and Floodway Map (FBFM) for the City of Albuquerque, New Mexico, based on fill recently placed on the Acme Acres development site. The site is located south of the Embudo Diversion Channel, northeast of the intersection of Carlisle Boulevard and Interstate Route 40.

We reviewed the data submitted by Mr. Montoya, which contained a report and topographic mapping dated August 23, 1985, describing the Acme Acres site, prepared by DMJM/Adam, Hamlyn, Anderson. Based on our review of this information, the effective FIRM and FBFM have been revised as shown on the enclosed annotated copies of the FIRM and FBFM. The flood hazard zone designation for the revised area has been changed from Zone AH to Zone C. This LOMR amends the currently effective FIRM and FBFM 350002 panel 0023, dated October 14, 1983, and will be incorporated into the next physical map revision for the City of Albuquerque, New Mexico.

These modifications have been made pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (P.L. 93-234) and are in accordance with the National Flood Insurance Act of 1968, as amended (Title XIII of the Housing and Urban Development Act of 1968, P.L. 90-448) 42 U.S.C. 4001-4128, and 44 CFR Part 65.

Public notification of modification to the Base Flood Elevations (BFEs) and zone designations will be given in the Journal Tribune, on or about December 9, 1985, and December 16, 1985. In addition, notice of changes will be published in the Federal Register. A copy of this notification is enclosed.

As required by the legislation, a community must adopt and enforce flood plain management measures in order to ensure continued eligibility to participate in the National Flood Insurance Program. Therefore, the City of Albuquerque must enforce these regulations using, at a minimum, the elevations and zone designations in the special flood hazard areas as shown on your community's FIRM, including the modifications made by this LOMR.

The revised BFEs and zone designations are effective as of the date of this letter; however, within 90 days of the second publication in the Journal Tribune, a citizen may request FEMA to reconsider this determination. Any request for reconsideration must be based on scientific or technical data. All interested parties are on notice that until the 90-day period elapses, the Agency's determination to modify the BFEs and zone designations may itself be modified.

We encourage you to disseminate widely throughout the community the information on the elevation changes in order that interested persons may offer new information or comments.

The community number and suffix code listed above will be used for all flood insurance policies and renewals issued for your community.

A Consultation Coordination Officer (CCO) has been designated to assist you with any problems you may have concerning the City of Albuquerque. The CCO will be the primary liaison between your community and the Federal Emergency Management Agency. Your CCO is:

Mr. R. Dell Greer, Chief
FEMA, Natural & Technological
Hazards Division
Federal Regional Center
800 North Loop 288
Denton, Texas 76201
(817) 387-5811

Any questions may be directed to your CCO.

Sincerely,

John L. Matticks
Acting Chief, Risk Studies Division
Federal Insurance Administration

Enclosures
cc: Mr. Carlos A. Montoya
Mr. Jean J. Bordenave, P.E., DMJM/Adam, Hamlyn, Anderson
Mr. Rick Tejada, Landowner

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

July 25, 1995

Brad Ponder
Chavez-Grieves Consulting Engineers, Inc.
5639 Jefferson Street NE
Albuquerque, NM 87109

RE: PRE-DESIGN MEETING 7-25-95 FOR CONCEPTUAL GRADING AND DRAINAGE FOR HAMPTON INN (H17/D36).

Dear Mr. Ponder:

Please comply with or address the following items in your next submittal. These items are in addition to issues we discussed in the pre-design meeting on 7-25-95.

1. Use the SO-19 format in the DPM section 22.7

2. Use COA Standard Detail 2237 for Drain Line Connection to Existing Storm Drain.

3. In the pre-design meeting, you stated that your intent is to let the southeastern tract/basin to sheet flow over Cutler Ave. to the channel. You will need to acquire the owners permission to direct your flow over the subject property.

Also, please be advised that a separate permit is required for construction within City Right-of-Way. a copy of this approval letter must be on hand when applying for the excavation permit.

If I can be of further assistance, please feel free to contact me at 768-3622.

Sincerely,

Lisa Ann Manwill
Engineering Associate

c: File

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY

Signature Date

J-22-Z

LOCATION MAP

LEGAL DESCRIPTION OF PROPERTY SERVED: Lot 20, Block 2, Panorama Heights Addition

BENCH MARK: ACS No. 3-J22 ACS Brass cap, ENE ret of inter Lomas and Chelwood Park Blvd. Elevation 5664.77

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 City of Albuquerque Interim Standard Specifications for Public Works Construction, 1985.
3. Two working Days prior to any excavation, contractor must contact Line Locating Service, 260-1990 for location of existing utilities.
4. Prior to construction, the contractor shall excavate and verify the horizontal and vertical locations of all constructions. 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 _____ street use.
6. Maintenance of these facilities shall be the responsibility of the Owner of the property served.

APPROVALS	NAME	DATE	TITLE:
HYDROLOGY			
INSPECTOR			PERMIT NO. / MAP NO.
A.C.E./FIELD			SHEET OF

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
UTILITY DEVELOPMENT DIVISION/HYDROLOGY SECTION

PRE-DESIGN CONFERENCE

DRAINAGE FILE/ZONE ATLAS PAGE NO.: H17/D36 DATE: 7-25-95

EPC NO.: ______ DRB NO.: ______ ZONE: H17

SUBJECT: HAMPTON INN

STREET ADDRESS: ______

LEGAL DESCRIPTION: That certain parcel of land situated in the COA County of Bernalillo, New Mexico being all of Tract "A" ACME [illegible] as the same is shown on the plat entitled "[illegible] filed [illegible] in Book C-[illegible] pg 130 [illegible]

APPROVAL REQUESTED:
- ____ PRELIMINARY PLAT
- ____ FINAL PLAT
- ✓ SITE DEVELOPMENT PLAN
- ✓ BUILDING PERMIT
- ✓ GRADING/PAVING PERMIT
- ____ OTHER

	WHO	REPRESENTING
ATTENDANCE:	BRAD PONDER	CHAVEZ-GRIEVES
	LISA ANN MANWILL	COA

FINDINGS:

NEED ANALYSIS ON EXISTING CATCH BASIN - WILL DEVELOPED CONDITIONS FACILITATE EXISTING FACILITIES

OWNER WANTS TO SUBDIVIDE - WILL NEED TO REPLAT & DEDICATE DRAINAGE EASEMENTS. (FOR SD LINE TOO!)

LANDSCAPING ⇒ FOR SEDIMENT REDUCTION INTO NEW & EXISTING STORM SEWERS

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:	Lisa Manwill	SIGNED:	Brad Ponder
TITLE:	[illegible] Engineer COA	TITLE:	PROJECT MANAGER
DATE:	7-25-95	DATE:	7/25/95

****NOTE** PLEASE PROVIDE A COPY OF THIS PRE-DESIGN FORM WITH THE DRAINAGE SUBMITTAL.**

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

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

November 19, 1985

Jake Bordenave
DMJM/Adam, Hamlyn, Anderson
5700 Harper Drive, NE Suite 280
Albuquerque, New Mexico 87109

RE: CONCEPTUAL DRAINAGE PLAN FOR HAMPTON INN/RESIDENCE INN
RECEIVED OCTOBER 24, 1985 (H-17/D36)

Dear Mr. Bordenave:

I have reviewed the referenced plan and forward the following comments:

1. What is the capacity of catch basin and pipe? Please show where the pipe will outlet. What is the capacity of the new catch basin?

2. Concurrence of AMAFCA will be required for work in their easement.

3. Please address the off-site flows from the Coronado Freeway on ramp.

4. Need City approved street grades for adjoining streets.

5. What is the status of the floodplain revisions?

If you have any questions or comments regarding this project, call me at 766-7644.

Cordially,

Carlos A. Montoya, P.E.
City/County Floodplain Administrator

cc: Bob Grabarschick; Vista Host
1900 Yorktown, Suite 112
Houston, Texas 77056

CAM/bsj

DRB No.: ~~85-536-1~~
DRC No.:
Date Submitted: DRB-84-88

EXHIBIT "D"
TO
SUBDIVISION IMPROVEMENTS AGREEMENT

DEVELOPMENT REVIEW BOARD (D.R.B.)
REQUIRED INFRASTRUCTURE LISTING

FOR: ACME ACRES, TRACT A-1

Following is a summary of Public Infrastructure required to be constructed or financially guaranteed to be constructed for the above development.

TYPE OF IMPROVEMENT	LOCATION
12" Water Main & Appurt.	ON Tract A-1 of Academy Acres FROM the existing 6" stub approximately 17 feet north of the Cutler Avenue south right-of-way line and 70 feet west of the east property line of Tract A-1 where it crosses the end of Cutler Avenue paralleling the existing 36" concrete cylinder waterline TO the existing 24" C.I. water line approximately 97 feet south and 12 feet west of the northwest property corner of Tract A-1 of Acme Acres.
40' Permanent Residential Street: Standard Curb & Gutter, both sides of street, 4' Sidewalk, both sides of street & Asphalt Pavement.	ON Cutler Avenue FROM the east property line of Acme Acres Tact A-1 TO a point approximately 128 feet east of the east property line of Acme Acres Tract A-1.
20' Half Section Permanent Residential Street: Standard curb & gutter, south side of street. 4' Sidewalk, southside of street & Asphalt Pavement	ON the south side of Cutler Avenue FROM a point approximately 128 feet east of the east property line of Acme Acres Tract A-1 TO a point approximately 171 feet east of the east property line of Acme Acres Tract A-1.
4' Wide Temporary Paving	ON the north side of Cutler Avenue FROM a point approximately 128 feet east of the east property line of Acme Acres Tract A-1 TO a point approximately 171 feet east of the east property line of Acme Acres Tract A-1.
24' Wide Temporary Paving	ON Cutler Avenue FROM a point approximately 171 feet east of the east property line of Acme Acres Tract A-1 TO a point approximately 645 feet east of the east property line of Acme Acres Tract A-1.

Prepared By: Michael R. Kibbee

Print Name: Michael Kibbee

Firm: DMJM

* *

DEVELOPMENT REVIEW BOARD MEMBER APPROVALS

Robert A. Fosnaugh 3/25/86
Traffic Date

Rhonda M. Knight 3/25/86
WUD Date

James Sayers 3/25/86
Parks & Rec. Date

Fred J. Lenzer 3/25/86
City Engineer/AMAFCA Date

Richard D. Mercer 3/25
DRB Chairman Date

7117-D36

Federal Emergency Management Agency

Washington, D.C. 20472

NOV 29 1985

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

IA-RA-RS (102)

Honorable Harry E. Kinney
Mayor of the City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

Community: City of Albuquerque,
Bernalillo County,
New Mexico
Effective Date of
this Revision: November 29, 1985
Community Number: 350002
Suffix Code: C

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Mr. R. Dell Greer, Chief
FEMA, Natural & Technological
Hazards Division
Federal Regional Center
800 North Loop 288
Denton, Texas 76201
(817) 387-5811

Any questions may be directed to your CCO.

Sincerely,

John L. Matticks
Acting Chief, Risk Studies Division
Federal Insurance Administration

Enclosures
cc: Mr. Carlos A. Montoya
Mr. Jean J. Bordenave, P.E., DMJM/Adam, Hamlyn, Anderson
Mr. Rick Tejada, Landowner

3/24/86

SIGNED OFF SITE PLAN with

the understanding that any

outstanding comments will be

SATISFIED prior to Building permit

approval by Hydrology. This

is my understanding with Jake Bodmer

and Lawrence Klein

3/20/86