City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

August 25, 1994

Federal Emergency Management Agency
Office of Risk Assessment
500 C Street, S.W., Room 422
Washington, DC 20472

Case No.: 93-06-259R (IRS Building)
Community: City of Albuquerque,
Bernalillo County,
New Mexico
Community No.: 350002

Attention: Mr. Michael K. Buckley, P.E., Chief
Hazard Identification Branch

Dear Mr. Buckley:

This submittal is in response to the letter from the Federal Emergency Management Agency (FEMA) to the City of Albuquerque dated February 16, 1994, requesting additional data in order for FEMA to prepare a Letter of Map Revision (LOMR) for the above referenced project. FEMA's letter requested the following information:

The appropriate initial fee of $225, as required by section 72.3 of the National Flood Insurance Program (NFIP) regulations.

As-built plans, certified by a Registered Professional Engineer, of all proposed project elements.

Certification that all fill placed in the currently effective 100-year floodplain and below the proposed base flood elevation is compacted to 95 percent of the maximum density obtainable with the Standard Proctor Test method issued by the American Society for Testing and Materials (ASTM Standard D-698) for all areas to be removed from the 100-year floodplain.

Your prompt response and approval for this LOMR would be greatly appreciated. If you should have any questions concerning this submittal, please do not hesitate to call me at (505) 768-2650.

Cordially,

Susan M Calongne

Susan M. Calongne, P.E.
City/County Floodplain Administrator

smc/wphyd/8749

c: Mr. Robert Hendrix, Branch Chief, Region VI
Mr. Larry D. Read, Chavez-Grieves Consulting Engineers
File

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

CHAVEZ-GRIEVES/CONSULTING ENGINEERS, INC.

5639 JEFFERSON N. E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 344 - 4080 FAX (505) 343 - 8759

July 14, 1993

Mr. David P. Preusch, P.E.
Michael Baker Jr., Inc.
3601 Eisenhower Avenue, Suite 600
Alexandria, Virginia 22304

RE: CASE NO.: 93-06-259R
COMMUNITY: CITY OF ALBUQUERQUE, NEW MEXICO
COMMUNITY NO.: 350002

Dear Mr. Preusch:

This letter transmits the data requested in the June 28th letter from William R. Locke. Included are (1) Form 5, entitled "Riverine Mapping Form," and (2) pages 2, 4, and 6 of Form 3, entitled "Hydrologic Analysis Form." This information is supplemental to our March 9, 1993 report requesting a Conditional Letter of Map Revision (CLOMR) for the 5300 Block of Montgomery Boulevard, Albuquerque, New Mexico.

Please call Larry Read or me if you have any questions regarding our CLOMR request.

Very truly yours,

CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.

Suzi Balogh

Suzi Balogh, P.E.

SB:ms

CC: Gilbert Aldaz, COA

HYDROLOGY DIVISION
JUL 15 1993

FEMA USE ONLY

FORM 5

RIVERINE/COASTAL MAPPING FORM

Community Name: Albuquerque

Flooding Source: Localized shallow flooding

Project Name/Identifier: Proposed Building Site at 5300 Block Montgomery Blvd. NE

Mapping Changes

1. A topographic work map of suitable scale, contour interval, and planimetric definition must be submitted showing (insert N/A when not applicable):

		Included
A.	Revised 100- year floodplain boundaries (Zone A) Plate 5	[X] Yes [ ] No [ ] N/A
B.	Revised 100- and 500-year floodplain boundaries	[ ] Yes [ ] No [X] N/A
C.	Revised 100-year floodway boundaries	[ ] Yes [ ] No [X] N/A
D.	Location and alignment of all cross sections used in the revised hydraulic model with stationing control indicated Plate 4	[X] Yes [ ] No [ ] N/A
E.	Stream alignments, road and dam alignments Plates 1,2, 4,5	[X] Yes [ ] No [ ] N/A
F.	Current community boundaries	[ ] Yes [ ] No [X] N/A
G.	Effective 100- and 500-year floodplain and 100-year floodway boundaries from the FIRM/FBFM reduced or enlarged to the scale of the topographic work map Plates 1, 4	[X] Yes [ ] No [ ] N/A
H.	Tie-ins between the effective and revised 100- and 500-year floodplains and 100-year floodway boundaries Plates 4, 5	[X] Yes [ ] No [ ] N/A
I.	The requestor's property boundaries and community easements Plates 1, 2, 4	[X] Yes [ ] No [ ] N/A
J.	The signed certification of a registered professional engineer FEMA Form 2	[X] Yes [ ] No [ ] N/A
K.	Location and description of reference marks Plates 1,2,4,5	[X] Yes [ ] No [ ] N/A
L.	Vertical datum (example: NGVD 1929, NAVD 1988, etc.) Plates 1, 2, 4, 5	[X] Yes [ ] No [ ] N/A
M.	Coastal zone designations tie into adjacent areas not being revised	[ ] Yes [ ] No [X] N/A
N.	Location and alignment of all coastal transects used to revise the coastal analyses	[ ] Yes [ ] No [X] N/A

If any of the items above are marked no or N/A, please explain: The site is not coastal, lies well within the city of Albuquerque boundaries, and is not within a floodway.

2. What is the source and date of the updated topographic information (example: orthophoto maps, July 1985; field survey, May 1979, beach profiles, June 1987, etc.)? field survey, May 1992

3. What is the scale and contour interval of the following workmaps?

a. Effective FIS 1"=30' scale 1' Contour interval

b. Revision Request 1"=30' scale 1' Contour interval

Note: Revised topographic information must be of equal or greater detail

Mapping Changes (Continued)

4. Attach an annotated FIRM and FBFM at the scale of the effective FIRM and FBFM showing the revised 100-year and 500-year floodplains and the 100-year floodway boundaries and how they tie into those shown on the effective FIRM and FBFM downstream and upstream of the revision, or adjacent to the area of revision for coastal studies. See Plate 5

   Attach additional pages if needed.

5. Flood Boundaries and 100-year water surface elevations:

   Has the 100-year floodplain been shifted or increased or the 100-year water surface elevation increased at any location on property other than the requestor's or community's?

   ☐ Yes ☒ No

   If yes, please give the location of shift or increase and an explanation for the increase.

   _____

   _____

   _____

   a. Have the affected property owners been notified of this shift or increase and the effect it will have on their property? ☐ Yes ☐ No

      If yes, please attach letters from these property owners stating they have no objections to the revised flood boundaries.

   b. What is the number of insurable structures that will be impacted by this shift or increase? _____

6. Have the floodway boundaries shifted or increased at any location compared to those shown on the effective FBFM or FIRM? ☐ Yes ☐ No

   If yes, explain:

   N/A

   _____

   _____

7. If a V-zone has been designated, has it been delineated to extend landward to the heel of the primary frontal dune? ☐ Yes ☐ No

   If no, explain:

   N/A

   _____

   _____

   _____

8. Manual or digital map submission:

   ☒ Manual
   ☐ Digital

   Digital map submissions may be used to update digital FIRMs (DFIRMs). For updating DFIRMs, these submissions must be coordinated with FEMA Headquarters as far in advance of submission as possible.

Earth Fill Placement

1. Has fill been placed in the regulatory floodway? ☐ Yes ☒ No

   If yes, please attach completed Riverine Hydraulic Form.

2. Has fill been placed in floodway fringe (area between the floodway and 100-year floodplain boundaries)? ☐ Yes ☒ No

   If yes, then complete A, B, C, and D below.

   A. Are fill slopes for granular materials steeper than one vertical on one-and-one-half horizontal? ☐ Yes ☐ No

      If yes, justify steeper slopes _____

      _____

   B. Is adequate erosion protection provided for fill slopes exposed to moving flood waters? (Slopes exposed to flows with velocities of up to 5 feet per second (fps) during the 100-year flood must, at a minimum, be protected by a cover of grass, vines, weeds, or similar vegetation; slopes exposed to flows with velocities greater than 5 fps during the 100-year flood must, at a minimum, be protected by stone or rock riprap.) ☐ Yes ☐ No

      If no, describe erosion protection provided _____

      _____

   C. Has all fill placed in revised 100-year floodplain been compacted to 95 percent of the maximum density obtainable with the Standard Proctor Test Method or acceptable equivalent method? ☐ Yes ☐ No

   D. Can structures conceivably be constructed on the fill at any time in the future? ☐ Yes ☐ No

      If yes, provide certification of fill compaction (item C. above) by the community's NFIP permit official, a registered professional engineer, or an accredited soils engineer.

3. Has fill been placed in a V-zone? ☐ Yes ☒ No

   If yes, is the fill protected from erosion by a flood control structure such as a revetment or seawall? ☐ Yes ☐ No

   If yes, attach the coastal structures form.

HYDROLOGIC ANALYSIS FORM

Review of Results

Stream None

Comparison of 100-year Discharges

Location:	FIS:	Revised:
	cfs	cfs
	cfs	cfs
	cfs	cfs
	cfs	cfs
	cfs	cfs

Note: When revised discharges are not significantly different than FIS discharges, FEMA may require a confidence limits analysis on attachment D at a later date to complete the review.

As is often the case with revision requests, only a portion of a stream may actually be revised or be affected by a revision. Therefore, transition to the unrevised portion is important to maintain the continuity of the study. NFIP regulations stipulate that such a transition must be assured. What is the transition from the proposed discharges to the effective discharges? Please explain how the transition was made (attach separate sheet if necessary).

No transition is required since the shallow flooding zone is localized.

Attach a completed Review of Results page for each flooding source.

Is the new hydrologic analysis being developed solely to revise the flow values presented in the FIS (i.e. no changed hydraulic conditions)? ☐ Yes ☒ No

If yes, does the 100-year water-surface elevation change by 1.0 foot or more? ☐ Yes ☐ No

FEMA does not normally revise NFIP maps solely due to insignificant flow changes where changes in 100-year water-surface elevation are less than 1.0 foot.

HYDROLOGIC ANALYSIS FORM

Attachment A: Statistical Analysis of Gage Records

Gaging Station: _____

Gage Location (latitude and longitude): _____

	FIS:	Revised:
1. Number of years of data		
Systematic		
Historical		
2. Homogeneous data	☐ Yes ☐ No	☐ Yes ☐ No
3. Data adjustments	☐ Yes ☐ No	☐ Yes ☐ No
4. Number of high outliers		
Low outliers		
Zero events		
5. Generalized skew		
6. Station skew		
7. Adopted skew		
8. Probability distribution used (justify if log-Pearson III was not used)		
9. Transfer equations to ungaged sites		☐ Yes ☐ No
If yes, specify method		
10. Expected probability*		☐ Yes ☐ No
11. Comparison of results with other analyses		☐ Yes ☐ No
If yes, describe comparison		

* FEMA does not accept expected probability analyses for the purpose of reflecting flood hazard information in a FIS.

If any data is not available, indicate by N/A.

Attach analysis including plot of flood frequency curve.

HYDROLOGIC ANALYSIS FORM

Attachment C: Precipitation/Runoff Model

		FIS:	Revised.
1.	Method or model used:	Not Available	
	Version:	" "	ANYMO 991
	Date:	" "	10-91
2.	Source of rainfall depth:	" "	AHYMO
3.	Source of rainfall distribution:	" "	AHYMO
4.	Rainfall duration:	" "	6 hr
5.	Areal adjustment to precipitation (%):		NA
6.	Hydrograph development method:	" "	AHYMO
7.	Loss rate method:	" "	AHYMO
	Source of soils information:		"
	Source of land use information:	" "	"
8.	Channel routing method:	" "	HEC-2
9.	Reservoir routing:	☐ Yes ☐ No	☒ Yes ☐ No
10.	Baseflow considerations:	☐ Yes ☐ No	☐ Yes ☒ No
	If yes, explain how baseflow was determined:		
11.	Snowmelt considerations:	☐ Yes ☐ No	☐ Yes ☒ No
12.	Model calibration:	☐ Yes ☐ No	☐ Yes ☒ No
	If yes, explain how calibration was performed.		
13.	Future land use conditions:		☒ Yes ☐ No
	If yes, explain why.		

5300 Block on Montgomery Blvd. NE is to be developed as a 4-story office building site.

Note: FEMA policy is to base flooding on existing conditions.

If data is not available, indicate by N/A.

Attach precipitation/runoff model, hydrologic model schematic, and supporting maps.

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 3, 1993

Suzi Balogh, P.E.
Chavez-Grieves Consulting Engineers
5639 Jefferson NE
Albuquerque, New Mexico 87109

RE: GRADING & DRAINAGE PLAN FOR IRS BUILDING, (G-18/D24), RECEIVED OCTOBER 7, 1992 ENGINEER'S STAMP DATED MAY 17, 1993

Dear Mr. Balogh:

Based on the information provided on the referenced submittal, the plan is acceptable for Site Development Plan and Building Permit approval.

Please be advised that prior to Certification of Occupancy release by this office, an Engineer's Certification, meeting the D.P.M. requirements, must be submitted and approved by this office.

If you should have any questions, please do not hesitate to call me at 768-2650.

Cordially,

Gilbert Aldaz, P.E. & P.S.
Civil Engineer/Hydrology

xc: Alan Martinez, Hydrology Insp.
File
GA
wp+2803

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 2, 1993

Bob Hendrix, Branch Chief
Region VI, Federal Center
800 North Loop 288
Denton, Texas 76201-3698

RE: REQUEST FOR CONDITIONAL LETTER OF MAP REVISION FOR PROPOSED INTERNAL REVENUE SERVICE BUILDING SITE, CITY OF ALBUQUERQUE, NEW MEXICO, COMMUNITY NO. 350002

Dear Mr. Hendrix::

The purpose of this letter is to request a CLOMR. for the above referenced site. The request is a privately funded project and has been approved for development by the City of Albuquerque. Enclosed with this letter is the following information:

1. The new implemented detailed application and certification forms for requesting revisions to the National Flood Insurance Program (NFIP) maps. Along with the forms is a detailed technical and NFIP-related considerations in a fashion that should facilitate an efficient review.

2. A check for $560.00 to begin your review.

The referenced site currently accepts street runoff in its undeveloped state. This runoff, then flows through an existing apartment complex, located on the west end of this development. These apartments have received some flooding in the past.

The development proposes to raise this site above the street 100-year floodplain with fill dirt and redirect these flows to the north side of the building with a floodwall. These flows will than be conveyed with a swale across a paved parking lot and diverted into Montgomery Boulevard, where these flows ultimately arrive in their existing condition. The City feels that this development will help reduce or eliminate previous flooding that the existing apartment complex has received in the past. A more conservative approach was taken and the forms were based on a structural improvement instead of using the "Fill" forms, with the intent that this would expedite FEMA's technical review.

PUBLIC WORKS DEPARTMENT

Walter H. Nickerson, Jr., P.E.
Assistant Director Public Works

ENGINEERING GROUP

Telephone (505) 768-2500

Our Community would greatly appreciate your expeditious cursory review and your forwarding of this document to Headquarters for their technical review. If you should have any questions concerning this submittal, please do not hesitate to call me at (505) 768-2650.

Cordially,

Gilbert Aldaz, P.E. & L.S.
City/County Floodplain Administrator

xc: Ms. Suzi Balogh, Chavez-Grieves Engineers
Mr. William R. Locke, FEMA Headquarters
File

(WP+1596)

HENDRIX ROAD N.E./MADEIRA DRIVE N.E. STORM DRAIN IMPROVEMENTS

CITY PROJECT NO. 4054.90

PREPARED BY:

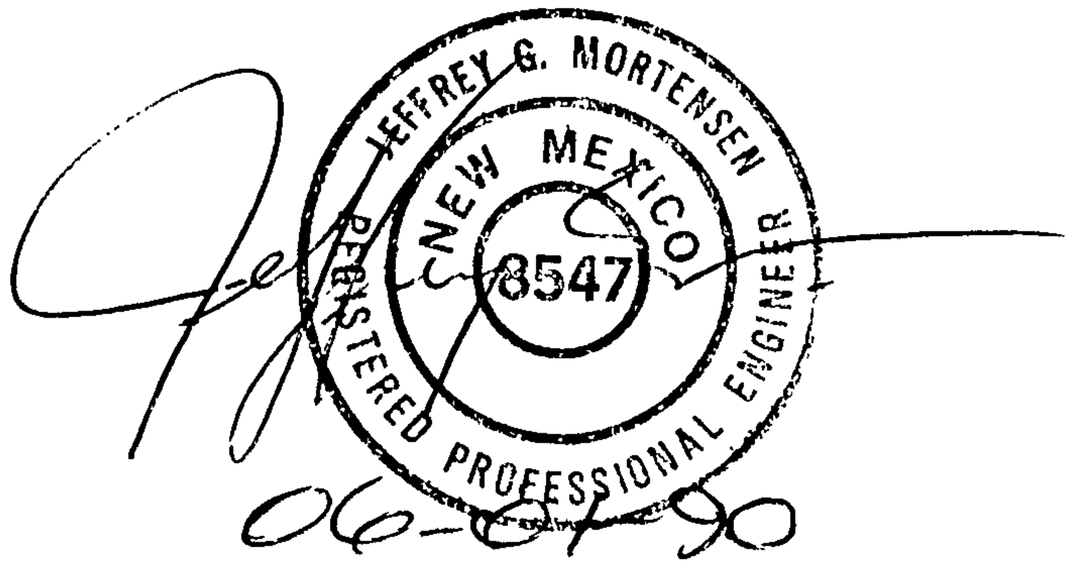
JEFF MORTENSEN & ASSOCIATES, INC.

811 Dallas N.E.
Albuquerque, NM 87110

JUNE 1, 1990

FOR:

CITY OF ALBUQUERQUE
HYDROLOGY SECTION
PUBLIC WORKS DEPARTMENT



JEFF MORTENSEN & ASSOCIATES, INC.
811 DALLAS, N.E. ▫ ALBUQUERQUE, NM 87110
▫ ENGINEERS ▫ TELEPHONE (505) 265-5611 ▫

HYDROLOGY:

The hydrology for the contributing watershed was taken from the "Brooks Apartments Hydrology" prepared by Easterling & Associates, Inc. for the City of Albuquerque and dated 12-29-89. The most recent analysis appearing on Sheet 1 of 1 is for the year 1987. These results are summarized as follows:

Total Area	41.70 Acres	
Acres Landscaped	2.96	(7.1%)
Acres Hardsurface	27.09	(65.0%)
Acres Undeveloped	11.63	(27.9%)

Q_2	Q_{10}	Q_{100}
61	91	138

V_2	V_{10}	V_{100}
1.81	3.00	5.08

Note: Q = CFS, V = Acre Feet

DESIGN REQUIREMENTS AND EXISTING CONDITIONS:

A settlement was reached in Cause No. CIV 88-1254 JC, heard in the United States District Court for the District of New Mexico, and entered into between Plaintiffs and the third party defendant, the City of Albuquerque, which terms were, among others, that the City would install a 30" storm sewer drain at the intersection of Hendrix and Madeira, N.E. Such drain having a capacity of approximately 25 cfs. The previous design of a storm drain across the subject property was prepared as City Project No. 2221. Most approvals had been obtained, however, the project was not pursued by the developer of Lot 2, Lands of Earl C. Montgomery. Because of this, the land was never developed and City Project No. 2221 not constructed. City Project No. 2221 called for the construction of a 30" RCP storm drain having an approximate capacity of 26 cfs.

In an effort to provide ample capacity and provide a system of the same diameter as the downstream existing storm drain, a 36" RCP storm drain was selected for this project. A 36" RCP storm drain will better serve the public as well as providing more capacity than the previously designed 30" RCP.

The previously designed 30" RCP utilized an overland overflow through the developed site to Montgomery Boulevard N.E. in the absence of the development of the site, such an overflow is not available to this project. Hence, the selection of the 36" RCP was made to provide as much capacity as possible without excessive oversizing of the proposed line.

Runoff will be collected at the intersection of Hendrix and Madeira. This intersection is a "sump" which overflows across Lot 2 when the storage capacity of the intersection is exceeded. The storage of stormwater in this intersection has adversely impacted the existing pavement and presents an inconvenience to motorists. In response, storm inlets will be installed at the upstream collection point. The intersection will also be reconstructed to improve drainage and replace deteriorated pavement. From this point of collection by two double 'C' storm inlets, runoff will discharge via an 18" RCP and a 24" RCP lateral to the 36" RCP discussed above. From this point, the runoff will flow within the 36" closed conduit to a point of connection with the existing 36" storm drain in Montgomery Boulevard N.E.

The proposed storm drain system will be within an existing easement previously granted by platting action. The proposed improvements will also satisfy the minimum requirements of the agreements entered into by the City as referenced above. System capacity is demonstrated by the calculations which follow and will always be limited by the capacity of downstream improvements.

CALCULATIONS:

1. Inlet Capacity (Double 'C' Storm Inlet)

Open Area of grate = 1.54 ft. x 5.92 ft. = 9.12 sq. ft.
Maximum height of water over grate = 1 ft.

Orifice Equation: $Q = CA\,[2gh]^{1/2}$
Use C = 0.6

$Q = (0.6)(9.12)[(2)(32.2)(1)]^{1/2}$
Q = 44 cfs

Allowing for a 50% clog factor,
Q = 0.50(44) = 22 cfs

2. Lateral Capacity

a. 18" RCP

(1) Inlet control (Orifice Equation)

$Q = CA\,[2gh]^{1/2}$
h = 20.74 - (17.99 + 0.75) = 2'
A = 1.77 sq. ft.
$Q = (0.6)(1.77)[(2)(32.2)(2)]^{1/2}$
Q = 12 cfs

HGL @ inlet = WSL = 20.74
HGL @ pipe entrance = top of pipe elevation

(2) Pipe Flow (Manning Equation)
$Q = (1.486/n)AR^{2/3}S^{1/2}$

Where n = 0.013
S = 0.02
$Q_{capacity}$ = 15 cfs
Q_{desgin} = 12 cfs
$d_{12\ cfs}$ = 0.68(1.5) = 1.02'

HGL @ MH #5 = 17.30 + 1.02 = 18.32

b. 24" RCP

(1) Inlet Control (Orifice Equation)

$Q = CA[2gh]^{1/2}$
h = 20.74 - (17.49 + 1.0) = 2.25'
A = 3.14 sf
$Q = 0.6(3.14)[(2)(32.2)(2.25)]^{1/2}$
Q = 22 cfs
HGL @ inlet = WSL = 20.74
HGL @ pipe entrance = top of pipe elevation

(2) Pipe Flow (Manning Equation)

$Q = [1.486/n]AR^{2/3}S^{1/2}$
Where n = 0.013
S = 0.0200
$Q_{capacity}$ = 32 cfs

Q_{desgin} = 22 cfs
$d_{22\ cfs}$ = 0.61(2') = 1.22
HGL @ MH #5 = 17.30 + 1.22 = 18.52

3. Storm Drain Capacity (36" RCP) (Manning Equation)

$Q = [1.486/n]AR^{2/3}S^{1/2}$
Where n = 0.013
S = 0.0040

$Q_{capacity}$ = 43 cfs
Q_{design} = 22 + 12 = 34 cfs

$d_{34\ cfs}$ = 0.68(3.0) = 2.04
HGL @ MH #5 = 17.28 + 2.04 = 19.32
HGL in pipe = invert elev + 2.04

This analysis anticipates no "back-up" where the new 36" RCP storm drain connects to the existing 36" RCP storm drain at SDMH #1 in Montgomery Boulevard N.E.

CITY OF ALBUQUERQUE
PLANNING DEPARTMENT
PLANNING DIVISION

AGENDA NUMBER: 06
ENVIRONMENTAL PLANNING COMMISSION
SEPTEMBER 19, 1991
Z-90-20-1

Z-90-20-1 Chavez/Grieves Engineering, agent for Dominion Leasing, Inc., requests site development plan approval for Lot 2, Lands of Earl C. Montgomery, zoned SU-1 for O-1 Permissive Uses excluding Medical Offices, located on the southwest corner of the intersection of Montgomery Boulevard NE and Madeira Drive NE, containing approximately 3.270 acres. (G-18) /D24

COMMENTS FROM OTHER DEPARTMENTS:

ENVIRONMENTAL HEALTH DEPARTMENT	
Air Pollution Control Division	"Vehicle and pedestrian access to this site is not very well defined. Access easement to Montgomery has not yet been acquired. Without this access, traffic would be confined to a right-turn-only pattern on eastbound Montgomery. The site plan also identifies bollards north of Hendrix which would limit access to Montgomery for the apartments east of the proposed development and for the elementary school to the southeast. This condition would result in increased in traffic congestion and vehicle emissions. Vehicle access problems should be mitigated prior to site development plan approval."
FIRE DEPARTMENT/Planning	No comments received.
LAND RESOURCES & REGULATION DEPARTMENT	
Real Property	No comments received.
Zoning Enforcement	"Parking requirements in the O-1 zone are calculated at 1 space per 200 sq. ft. for the first floor and a per 300 sq. ft. for basement and floors above warehousing is not a use allowed in the O-1 zone and therefore, parking regulations for this use are <u>not</u> applicable. "Net calculations for floor space are applied only for multiple occupancy. Landscaping per 40.J. should be applied."
NEIGHBORHOOD SERVICES	"Montgomery Park Neighborhood Association (a recognized neighborhood association) has been notified."
PLANNING DEPARTMENT	
Capital Improvement	No comments received.
PARKS AND RECREATION DEPARTMENT/Administration	"No adverse comment."
OFFICE OF OPEN SPACE	"No adverse comment."
POLICE DEPARTMENT/Planning	"No adverse comment."
SOLID WASTE MANAGEMENT DEPARTMENT/Refuse Division	No comments received.
PUBLIC WORKS DEPARTMENT	

Hydrology	"An approved conceptual grading and drainage plan is required for site plan approval. The major item of concern with this development is the treatment of off-site flows for Hendrix. Presently, a portion of the flows from Hendrix overflows the curb on the west side of Maderia and floods the subject site. A storm drain in Maderia was constructed recently but only intercepts a portion of these flows from Hendrix. The remaining flows will need to be addressed by this development as a condition of development. No objection to the subject request."
Transportation Planning	"No adverse comment."
Transportation Development	"Conditions of site plan approval: • Provision for left turn bay on Montgomery Boulevard. • Provision of shared access easement at Montgomery entrance and inclusion of similar language stating conditions of the easement on site plan. • 25 foot curb returns are required on the Montgomery driveway. • Define location of bollards to place on Madeira Drive. • Define pedestrian access from Montgomery to main building entrance. • The use of small car spaces is limited to 25% of total spaces. • The Madeira driveway should be widened to a 30 foot dimension with curb returns, to provide for truck access. • The secured parking area should be modified to allow for relocation of handicapped spaces, and improved circulation geometrics. • Coordination of future improvements to Montgomery Pedestrian Bridge with the proposed site landscaping and pedestrian access."
Utility Development	"Comments submitted for Z-91-20 still apply. Public infrastructure will be necessary to provide adequate fire protection. 'At a minimum, the applicant should anticipate extending a public water line along Montgomery from Madeira to the transmission line in the alley west of the Brooks Apartments.' The 4-inch water service shown on the plan at Madeira and Hendrix supplies the Brooks Apartments to the west. The meter and service line must be relocated. A water and sewer availability should be requested prior to site plan submittal to DRB. Financial guarantees will be required for public infrastructure, and relocation of private infrastructure, as a condition of site plan sign off."
TRANSIT DEPARTMENT	"The proposed bus bay as shown on site development plan is acceptable."

COMMENTS FROM OTHER AGENCIES:

ALBUQUERQUE FLOOD CONTROL AUTHORITY	"A portion of this site is within a 100-year flood zone as shown on the National Flood Insurance Program "Flood Insurance Rate Map" (Community-Panel No. 350002-0024c, Zone A depth 1). This existing flood zone area should be site grading and drainage plan. The Federal Emergency Management Agency (FEMA) will need to approve a Letter of Map Revision (LOMR) in order to revise the Flood maps based on new construction. We recommend that FEMA approval of a Conditional Letter of Map Revision (CLOMR) be obtained prior to commencing construction at this site."
ALBUQUERQUE PUBLIC SCHOOLS	"Construction of the office building will result in the vacation of Madeira Avenue. The vacation will prevent the school from loading and unloading children along the aforementioned street. The district will be forced to construct a loading bay on the school's northwest corner in order to safely load and unload the facilities elementary students. APS wants to work with the contractor to insure that there are no traffic conflicts between the office building and the school site."
MIDDLE RIO GRANDE COUNCIL OF GOVERNMENTS	"No adverse comment. For information, the Long Range Major Street Plan designates Montgomery Boulevard as a principal arterial."

PLANNING DIVISION COMMENTS TO THE ENVIRONMENTAL PLANNING COMMISSION, AUGUST 15, 1991

Request Summary:

This a request for site development plan approval on a tract of land zoned SU-1 for O-1 Permissive Uses excluding Medical Offices containing approximately 3.27 acres.

Applicable Plans and Policies:

This request lies in the Established Urban Area of the Comprehensive Plan. The policies of the plan promote infill development when air quality, traffic flow, and existing residential land uses are not affected.

Policy B.5.d:

The location, intensity, and design of new development shall respect existing neighborhood values, natural enviromental conditions and carrying capacities, scenic resources and resources of other social, cultural, or recreational concern.

Policy B.5.i:

Employment and service uses shall be located to complement residential areas and shall be sited to minimize adverse effects of noise, lighting, pollution, and traffic on residential environments.

Policy B.5.k:

Land uses adjacent to arterial streets shall be planned to minimize harmful effects of traffic.

Policy C.1.b:

Automobile travel's adverse effects on air quality shall be reduced through a balanced land use/transportation system that promotes the efficient placement of housing, employment, and services.

Policy C.1.d:

Air quality shall be protected by providing a balanced circulation system that encourages mass transit use and alternative means of transportation while providing sufficient roadway capacity to meet mobility and access needs.

Area Characteristics and Zoning History:

The area in general is characterized by high density commercial and residential developments. This site lies close to the Montgomery and San Mateo intersection, the busiest intersection in the city. This large undeveloped site is surrounded by the Towers high-rise apartments, Del Norte High School, the Brook Apartments, and an undeveloped 8.69 acre tract of land zoned SU-1 for O-1 Uses.

A request was submitted for rezoning of the 8.6 acre site to the south from SU-1 PRD to SU-1 for O-1 Uses in 1988 (Z-88-26). The Staff recommended denial of the requests due to the lack of adequate justification, potential for destablizing the zoning on the current tract , and possible traffic impacts. The request was indefinitely deferred. In 1989 the request was resubmitted under different ownership (Z-89-18). A traffic study was part of the package this time. Staff continued to recommend denial. The neighbors who were concerned about the potential for a low quality housing development and the continued existance of a vacant lot attracting unsupervised students supported the request. The Commission approved the request based on the fact that there was substantial community support for the proposal.

In May 1991 a request for a change of zone from R-3 and P to SU-1 for O-1 Permissive Uses excluding medical offices was approved on the subject site. The building area was also limited by the Commission to 85,000 square feet. This decision was based on neighborhood support and a finding that the proposal was consistent with the general pattern of land use in the area.

Analysis:

This is a two phase development containing 64,047 sq. ft. of space that will house an IRS office and records center. It consists of one 4 story building surrounded on three sides by parking. The project is located along a major arterial with limited access. The primary issues in this case are the general layout of the plan, parking, and access.

Architecture, Massing, and Building Elevations: The building is rectangular with access at the northeast corner. It is four stories and approximately 60 feet high. The elevations are composed of split faced concrete block and a material with a stucco appearance. The building is located on the east side of the site, it is separated from Montgomery and the bus stop by a parking lot. Staff believes that there is a better location for the building on this site. If the building were placed on the northern side of the site with landscaping between it and the roadway it would present a better image on Montgomery. This relocation would also create additional stacking space for cars at the Montgomery entrance and provide direct building and bus stop linkage.

Site Access, Circulation, and Parking: The plan contains two points of access; one on Maderia and the other on Montgomery. The plan also indicates that Maderia will be blocked before it reaches Hendrix. This is contrary to previous Commission actions and it would not allow access to Montgomery from the 8.6 acre office site to the south. The location of the street closure should be moved further south. The Transportation Planning Division has made several technical recommendations regarding improvements to the on site circulation. The developer will be responsible for median modifications on Montgomery and construction of the bus bay. Pedestrian access to the site could be improved. There should be a direct link between the bus bay and the front door of the development as mentioned before. The pedestrian overpass touches down on the northeast corner of the site. There is no tie in to the sidewalk system indicated and it is not shown on the landscaping plan.

The parking calculations that have been provided are not based on city standards. The approximate number required is 248, less 10% for proximity to a bus route. The applicant could get an additional 5% reduction for a total requirement of 210 if a bus shelter is provided. The number provided is 176. The Commission can establish alternate standards in this SU-1 zone if appropriate. The current zoning designation precludes medical offices which require significant amounts of parking. If a parking reduction is desired the applicant should provide justification. This justification should state why problems will not arise now or in the future if the building is no longer used as a records center. This justification has not been provided.

Landscaping and Buffering: The applicant has provided a landscaping plan which generally meets City requirements. The plan however does not indicate any landscaping along the western edge of the site as required when office zoning abuts residential zoning. A landscaped break should be provided between the parking area and the residential zoning to the west. The pedestrian overpass should be indicated on the landscaping plan.

Signage and Lighting: No signage or site lighting is indicated. Site lighting should be indicated on the plan.

Findings:

1. The building should be relocated on the site to screen the parking area, achieve a better visual relationship with the street, improve pedestrian access, and improve on site circulation.
2. Additional parking should be provide to meet zoning code specifications or a reduction justified.

3. Modifications are required to location of the street closure, internal circulation, pedestrian access, and landscaping plan.

RECOMMENDATION:

DEFERRAL OF Z-90-20-1 is recommended based on the above Findings.

ACTION TAKEN BY THE ENVIRONMENTAL PLANNING COMMISSION ON AUGUST 15, 1991:

THEREFORE BE IT RESOLVED THAT **Z-90-20-1**, be deferred for thirty days to the September 19, 1991 public hearing.

MOVED BY COMMISSIONER SWEZY
SECONDED BY COMMISSIONER BROWN

MOTION CARRIED 8-1
COMMISSIONER CHAVEZ WAS EXCUSED FOR CONFLICT OF INTEREST

ADDITIONAL STAFF COMMENTS TO THE ENVIRONMENTAL PLANNING COMMISSION ON SEPTEMBER 19, 1991:

The Commission deferred this request in order to provide the applicant and staff time to review the possibility of relocating the building. The Planning Staff met with the applicant and Hydrology. This site receives substantial flows from Hendrix. The new storm drain system can only handle 25% of the 100 year storm flow from Hendrix, the rest must find it's way through the site and on to Montgomery. An alternative location was discussed, however, it would result in a marginal solution for drainage. Staff, therefore, recommends approval of the building at its' current location.

The applicant has provided a textured path to the bus bay. This pathway is at grade in order to avoid grade changes for those who maybe handicapped. This pathway should be protected with curbed areas of landscaping on either side when it passes through parking rows.

The parking calculations have been revised. The parking provided meets the requirements of the zoning code. An additional vehicle entrance has been provided on Maderia, this was done to facilitate drainage flows across the site.

The applicant has not provided a revised landscaping plan, however, the changes that must be made due to plan configuration changes should be relatively minor.

Findings:

1. The site development plan complies with City plans and policies and previous Commission actions on this site.

2. Minor revisions are required to the landscaping plan.

RECOMMENDATION:

APPROVAL OF Z-90-21-1 is recommended based on the above Findings and subject to the following conditions:

Conditions:

1. Curbed landscaped areas shall be provided on either side of the pedestrian link to the bus stop.

2. A revised landscaping plan shall be approved by Staff prior to final sign-off.

Dave Carlson
Planner

DC/lj

12566
cc: Dominion Leasing, Inc., P.O. Box 727, Edmond, OK; 73083
Chavez/Grieves Engineering, 4600 Montgomery NE, Albuq. NM; 87109
Montgomery Park Assoc. of Residents, Tony Gutierrez, 5713 Madeira Pl. NE, Albuq. NM; 87110
Montgomery Park Assoc. of Residents, Norman Tafoya, 3724 Alvarado NE, Albuq. NM; 87110

IT IS REQUESTED THAT THE APPLICANT/AGENT BE PRESENT AT THE HEARING.

CHAVEZ-GRIEVES/CONSULTING ENGINEERS, INC.

4600 MONTGOMERY N.E., BUILDING C, #101
ALBUQUERQUE, NEW MEXICO 87109
(505) 881-7376 FAX (505) 883-7119

September 5, 1991

Mr. Dave Carlson
City of Albuquerque - Planning Division
P.O. Box 1293
Albuquerque, NM 87103

RE: FILE Z-90-20-1

Dear Mr. Carlson:

We have attached twelve (12) copies of the revised site plan for the above referenced case. The revisions reflect those items that we discussed in our meeting following the EPC Hearing of August 15, 1991.

We appreciate the opportunity to take additional time to review alternative siting plans for the proposed IRS building. However, as noted in our meeting with Mr. Fred Aguire, the restraints regarding the design for existing hydrologic conditions and existing elevations on adjacent properties make it physically impossible to relocate the building as requested.

Other revisions required by the hydrologic conditions include the addition of a new access to Madeira in order to provide a path for overflows from the intersection of Hendrix and Madeira, through the parking lot, and out to Montgomery. We have also included park benches adjacent to the new bus stop, as well as additional tree wells to shade the bus stop area and the pedestrian access from the bus stop to the building. As noted, the final site plan does incorporate 236 parking places, which is in excess of the 215 required.

We respectfully submit that the site plan as revised reflects the conditions imposed by the EPC at the rezoning hearing, comments in your previous staff report, and will be beneficial to the community as a whole.

Please call if you have any questions, or if I can be of any further assistance in this matter.

Very truly yours,

CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.

Victor J. Chavez, P.E.

APPLICATION FOR ZONE MAP AMENDMENT AND/OR DEVELOPMENT PLAN

INSTRUCTIONS: PRINT OR TYPE IN BLACK INK ONLY. Use additional sheets, if necessary. Thirty (30) copies (Annexation, forty copies) of all attachments must be submitted with the application and, after folding, shall not exceed 8 1/2 by 14 inches.

Applicant's Name: DOMINION LEASING, INC. **requests**

[ ] Zone Map Amendment [X] Development Plan Review [ ] Annexation
___ Type of Plan (SITE, UTILITY, LANDSCAPE, GRADING & DRAINAGE)

For Lot(s): 2 **Block(s):** ____ **in Subdivision/Addition** LANDS OF EARL C. MONTGOMERY

Presently Zoned SU-1 **and proposed to be zoned as** - - - - **located at:**

Street Address (No. if any): - - - -

Between MONTGOMERY **Street and** MADEIRA **Street**

Total Land Area Covered by Application: Acres 3.270 **Square Feet** 142,441

Number of DU's Proposed 1 **DU's Per Gross Acre** ____ **DU's Per Net Acre** ____

Uniform Property Code Number: 1-018-060-103-49721032
(18 diget property tax Number issued by County Assessor)

NOTE: Neighborhood Notification form must accompany application.

APPLICANT INFORMATION:

Applicant's Mailing Address: P.O. BOX 727 **Phone:** (405)348-9852
EDMOND, OK **Zip Code** 73083
Applicant's Proprietary Interest in Property DEVELOPER
Agent if any: CHAVEZ/GRIEVES ENGINEERING **Phone:** 881-7376
Mailing Address: 4600 MONTGOMERY NE, ALBUQUERQUE **Zip Code:** 87109

APPLICANT SIGNATURE: [signature] Date: 6-28-91
(Owner ~~or~~ Trustee of Property)

List Reason For Request on reverse side or attach separate sheet.

FOR PLANNING STAFF USE ONLY

Application Received By: [signature] **Date:** 6-28-91

Fee: $270.00 **Paid:** $270.00 **Method of Payment:** Check

Cross-Ref.: AX-____ Z-____ S-____ **Other:** ____

No. of Signs Issued: 2 **ZHE or** (EPC?)

Hearing Date: Aug 15, 1991

1 copy each to:
Research Analyst

Applicant

Graphics

Z- 91-20-1

Map Number: G-18

ZO[redacted]AP AMENDMENT REASON FOR R[redacted]ST FORM

Applicant must provide justification why the Zone Map should be amended.

The applicant's reason for request will be evaluated against the Policies for Zone Map Ammendments. The following policy statements form the foundation for evaluation.

THE APPLICANT/AGENT, MUST PROVIDE A SOUND JUSTIFICATION FOR THE CHANGE OF ZONE. IT IS THE APPLICANT'S BURDEN, NOT THE CITY'S, TO SHOW WHY THE CHANGE SHOULD BE MADE.

IN ADDITION, THE COST OF LAND OF OTHER ECONOMIC CONSIDERATIONS OF THE APPLICANT WILL NOT BE THE DETERMINING FACTOR FOR A CHANGE OF ZONE.

LOCATION ON A MAJOR STREET IS NOT IN ITSELF SUFFICIENT JUSTIFICATION FOR APARTMENT, OFFICE, OR COMMERCIAL ZONING.

Assistance in completing the reason for request may be obtained by scheduling a pre-application discussion. Failure to state your reasons constitutes an unacceptable application. (use additional sheet, if necessary.)

REASON FOR REQUEST: PROPERTY IS PROPERLY ZONED. APPLICANT REQUESTS SITE DEVELOPMENT APPROVAL FOR A NEW FOUR STORY OFFICE BUILDING WITH RELATED ASPHALT PARKING AND LANDSCAPING.

CHAVEZ-GRIEVES/CONSULTING ENGINEERS, INC.

4600 MONTGOMERY N.E., BUILDING C, #101
ALBUQUERQUE, NEW MEXICO 87109
(505) 881-7376 FAX (505) 883-7119

July 8, 1991

Mr. Dave Carlson
Planning Department
The City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

RE: IRS BUILDING DEVELOPMENT

Dear Mr. Carlson:

I am responding to your comments regarding the above-mentioned project. You communicated these comments to me by telephone on July 2, 1991. My response to your comments are as follows:

1. A bar scale will be incorporated onto the plans prior to the scheduled E.P.C. hearing.

2. Future building development will be clarified by note on the site plan. Future plans for the building will include the expansion of floors 2-4, over the secured covered parking area. Future parking is also planned and is noted on the site plan.

3. Parking requirements have been calculated based on net leasable square footage. Based on zoning requirements, 173 spaces are required and 194 spaces have been provided. In addition, zoning requirements state that parking requirements of a building shall be reduced 10 percent if it is within 300 feet of a regular Albuquerque Transit System Route. The site plan indicates a City bus bay will be constructed along the north property line. This site should qualify for a reduction in the total number of parking spaces.

4. Dimensions indicating driveway widths and locations are shown on the site plan.

5. The refuse enclosure will be constructed per City Standards. Detail attached.

6. The bus bay shown along the north property line will be constructed per City Standards. Detail attached.

7. A dimension from the northeast property corner to the bus bay will be shown prior to the scheduled E.P.C. hearing. A dimension is presently given from the northwest property corner to the P.C. of the bus bay (west end), 24.55 feet. This is also the dimension between the western property line and face of curb at the east side of the driveway entrance.

8. A bus bay enclosure was not planned unless required.

9. Dimensions for the sidewalk width are not shown on the plan, however, 6 foot wide sidewalks will be provided.

Should you have any additional questions or comments, please do not hesitate to call me.

Very truly yours,

CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.

Ray Gomez

RG:ms

(2)

10' Bus Bay

R = 150
Δ = 18-11-42
L = 47.63
T = 24.02

For 12' Bus Bay

R = 150'
Δ = 19° 56' 50"
L = 52.22' along Face of Curb
T = 26.38'

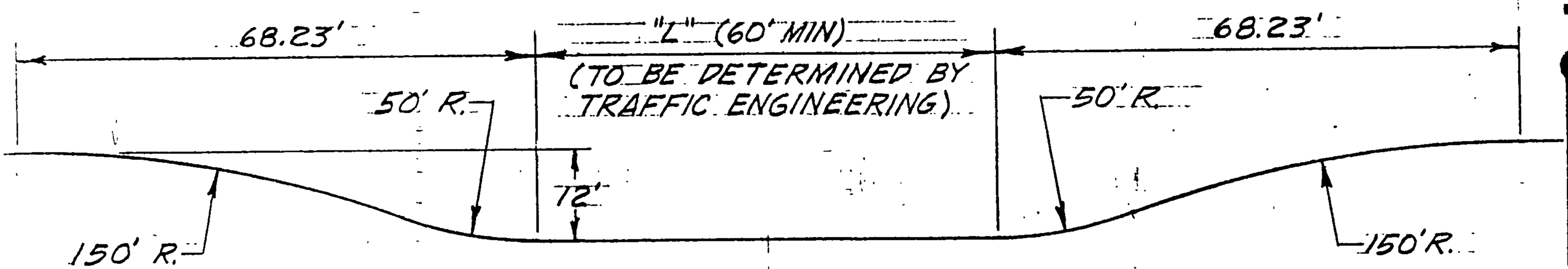
(3)

12' Bus Bay

R = 50'
Δ = 19° 56' 50"
L = 17.41'
T = 8.79'
C = 17.34

10' Bus Bay

R = 50
Δ = 18-11-42
L = 15.88
T = 8.01



SCALE: 1" = 20'

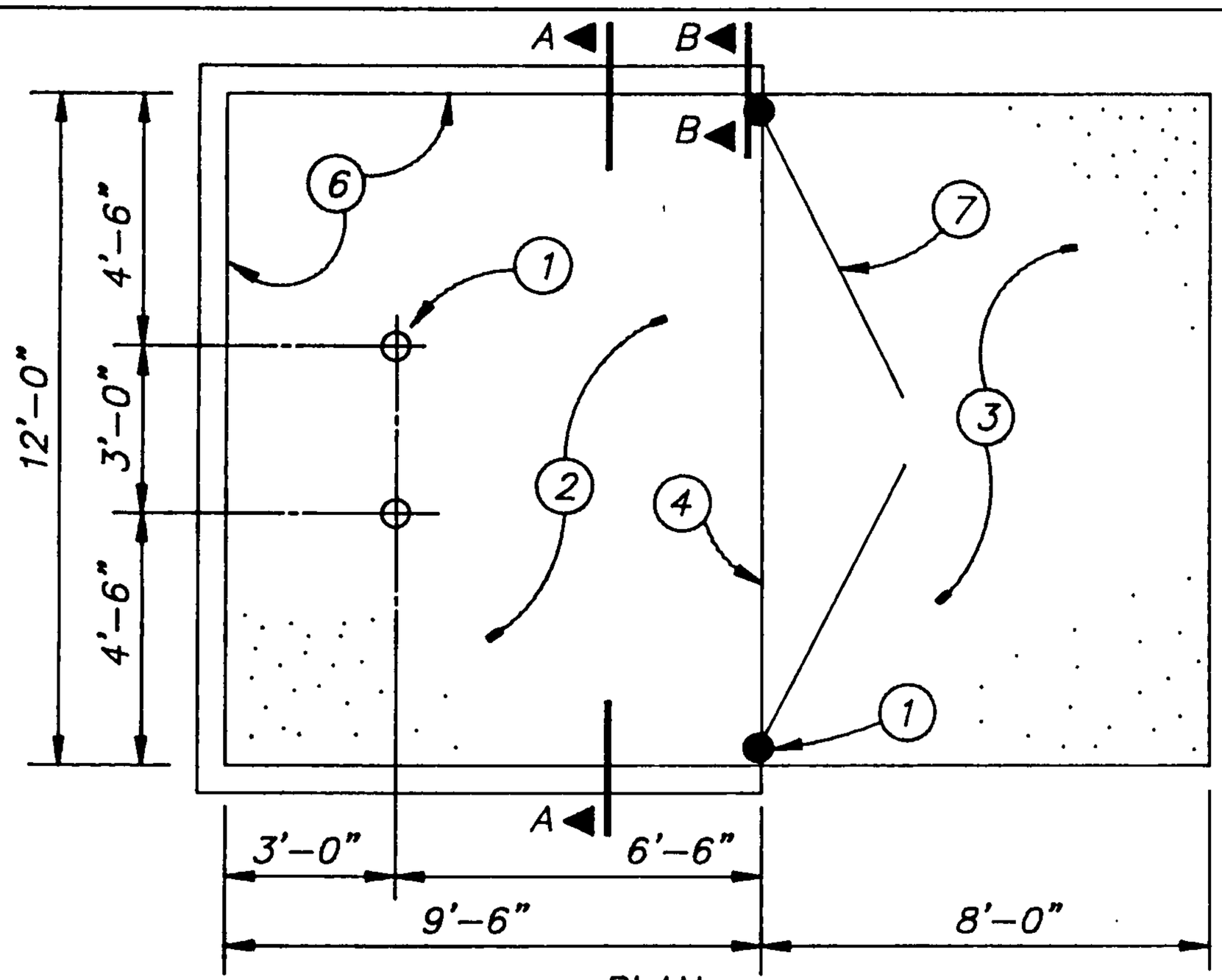
TYPICAL BUS BAY

Vehicle Length = MAY 40'
MIN 35'

10' wide is permissable but w/ justification
but 12' is preferable by traffic + bus company

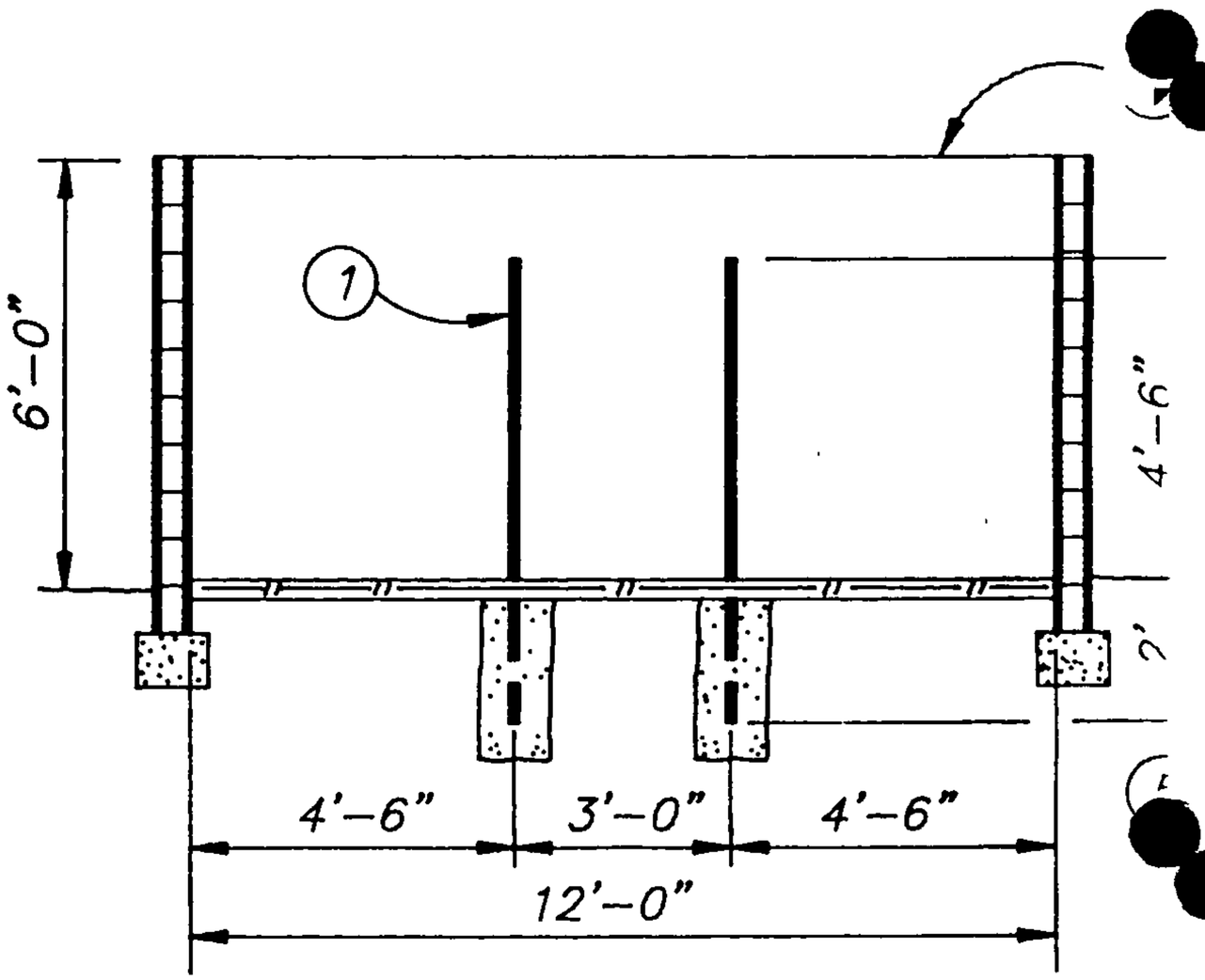
From Dave Harmon - Traffic Eng. 15 July 1986 SKD.

REVISIONS	TYPICAL BUS BAY
	CITY OF ALBUQUERQUE TRAFFIC ENGINEERING DIVISION
	DRAWN BY E.D.F. DATE 3-31-81
	CHECKED BY D.W.H. SCALE 1" = 20'



PLAN

1/4"=1'-0"

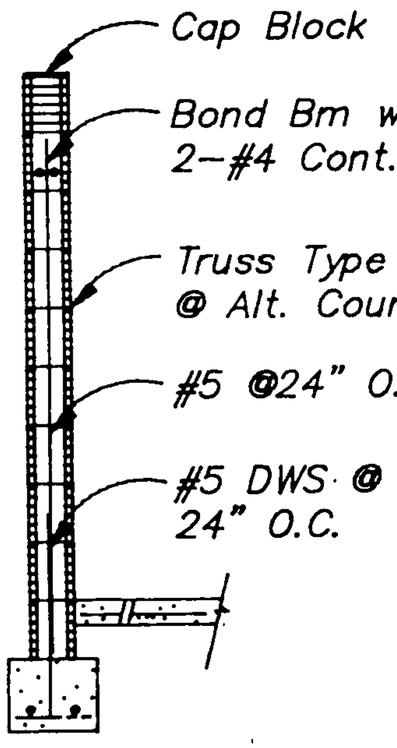


SECTION A–A

1/4"=1

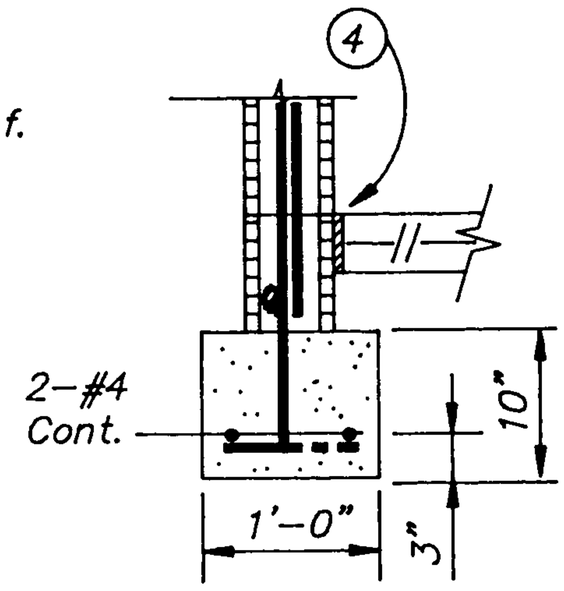
REFUSE ENCLOSURE DETAIL

QCIVIL5A



SECTION B–B

3/8"=1'–0"



FOOTING DETAIL

3/4"=1'–0"

CONSTRUCTION NOTES

1. All Concrete to be 4000 PSI.
2. All Reinforcing Steel to be Grade 40. Grout All Reinforced Cells Solid.
3. Grout All Cells Solid Below Grade.
4. Finish Enclosure Walls to Match Exterior of Building Finish.

◯ KEYED NOTES

1 4" O.D. Concrete Filled Pipe Encased in 6" Conc. All Around and Embedded 2'–0".

2 Concrete Slab: 4" Thick with 1.4X1.4 6X6 WWF. Slope to Drain 1/8" per Foot.

3 Concrete Apron: 6" Thick with 1.4X1.4 6X6 WWF.

4 1/2" Expansion Joint.

5 Finish Grade. See Grading Plan.

6 8" CMU

7 6' High Gates: Steel Frame With 6" Cedar Pickets (No Space Between Pickets).

AS NOTED

DOMINION
LEASING, INC.

June 27, 1991

City of Albuquerque Planning Department
Planning Division, 4th Floor
Government Center, One Civic Plaza
Albuquerque, New Mexico

Re: Proposed IRS building

Gentlemen,

Please accept this letter as authorization for the firm of Chavez-Grieves Consulting Engineers to serve as the agent of Dominion Leasing relative to the application before the EPC for the proposed facility at the intersection of Montgomery Blvd. and Madiera Street. Messrs. Victor Chavez and Ray Gomez of that firm may represent our company in all matters dealing with our request for a building permit on that site.

Should there be any questions about this application, please feel free to contact our engineers or to call me in Oklahoma City at the number below.

Cordially,

James T. Hunter, Vice President
Dominion Leasing, Inc.

jth/mb

P.O. BOX 727 ♦ 450 SOUTH COLTRANE ROAD ♦ EDMOND, OKLAHOMA 73083 ♦ 405/348-0852 ♦ FAX 405/348-0805

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Date: June 27, 1991

TO: Jeff Lowry

Thank you for your inquiry of 6/27/91 (date) requesting the names of Recognized Neighborhood Associations who would be affected under the provisions of O-92 by your proposed project at Southwest corner of Montgomery (address) and Madeira NE, zone map page(s) G-18.

Our records indicate that the Recognized Neighborhood Associations affected by this proposal and their contact names are as follows:

Montgomery Park Assoc. of Residents
Association
Contacts: Tony Gutierrez
5713 Madeira Pl. NE
Albuq. NM 87110
Norman Tafoya
3724 Alvarado NE
Albuq. NM 87110

Association
Contacts:

Additional Associations will be found on attached sheet if necessary:
Extra sheet attached: Yes (No) (circle one)

Please note that according to O-92 you are required to notify each of these contact persons by certified mail, return receipt requested, before your application filing will be accepted by the Planning Department.

If you have any questions about the information provided above please call me at 768-3790.

Sincerely,

Mary Lou Haywood-Spells
Neighborhood Coordination

NEIGHBORHOOD NOTIFICATION

ADDENDUM TO APPLICATION

This certifies that I, RAY GOMEZ have notified via certified mail, return receipt request, two representatives of the following Recognized Office of Neighborhood Associations, as furnished of Neighborhood Coordination Office* regarding our application for

_____ZONE MAP AMENDMENT
__X__SITE DEVELOPMENT PLAN APPROVAL OR AMENDMENT
_____ANNEXATION
_____MAJOR SUBDIVISION
_____VACATION OF PUBLIC RIGHT-OF-WAY
_____PRIVATE SECTOR DEVELOPMENT PLAN

for property located at THE SOUTHWEST CORNER OF MONTGOMERY AND MADEIRA ROADS, LOT 2 LANDS OF EARL C. MONTGOMERY.

(legal description)

MONTGOMERY PARK ASSOC. OF RESIDENTS
(Neighborhood Association)

(Neighborhood Association)

(Neighborhood Association)

(Neighborhood Association)

TONY GUTIERREZ
(Representative)
5713 MADEIRA PL.NE, ALBQ.,87110
(Address)
(Phone)

NORMAN TAFOYA
(Representative)
3724 ALVARADO NE, ALBQ., 87110
(Address)
(Phone)

(Representative)
(Address)
(Phone)

(Representative)
(Address)
(Phone)

Certified by Ray Gomez (Owner/Agent) For Dominion Leasing Inc (Owner)

Printed name of person signing RAY GOMEZ Phone# 881-7376 Date 6/28/91

*The Neighborhood Coordination Office is located in the 5th Floor of the Old City Hall Building, 768-3790

REV. 11/8/90

CASE# Z-91-20-1

ALBUQUERQUE
NEW MEXICO
1706

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

PLANNING
DEPARTMENT
DEV.
SEP 6 12 PM '91

September 6, 1991

Mr. Robert A. Fosnaugh
2730 San Pedro N.E. Suite H
Albuquerque, N.M. 87110

RE: SYCAMORE PLAZA TRAFFIC IMPACT STUDY

Dear Bob:

We have begun the formal review period for the subject site as of today. Our final comments regarding the zone change and site plan approval are due by Friday, September 20th.

In order for a comprehensive review of your study we must have it in hand by Wednesday, September 11th. If the study is not satisfactory and revisions are needed, final transportation comments will not be available by that deadline. The submittal would be declared incomplete and a deferral would be requested.

If you have any questions please feel free to call me at 768-2680.

Sincerely,

Joseph D. Montano
Senior Planner

cc: John Winton
David Harmon
Dave Carlson

Ref. 806WP+

CHAVEZ-GRIEVES/CONSULTING ENGINEERS, INC.

4600 MONTGOMERY N.E., BUILDING C, #101
ALBUQUERQUE, NEW MEXICO 87109
(505) 881-7376 FAX (505) 883-7119

September 5, 1991

Mr. Dave Carlson
City of Albuquerque - Planning Division
P.O. Box 1293
Albuquerque, NM 87103

RE: FILE Z-90-20-1

Dear Mr. Carlson:

We have attached twelve (12) copies of the revised site plan for the above referenced case. The revisions reflect those items that we discussed in our meeting following the EPC Hearing of August 15, 1991.

We appreciate the opportunity to take additional time to review alternative siting plans for the proposed IRS building. However, as noted in our meeting with Mr. Fred Aguire, the restraints regarding the design for existing hydrologic conditions and existing elevations on adjacent properties make it physically impossible to relocate the building as requested.

Other revisions required by the hydrologic conditions include the addition of a new access to Madeira in order to provide a path for overflows from the intersection of Hendrix and Madeira, through the parking lot, and out to Montgomery. We have also included park benches adjacent to the new bus stop, as well as additional tree wells to shade the bus stop area and the pedestrian access from the bus stop to the building. As noted, the final site plan does incorporate 236 parking places, which is in excess of the 215 required.

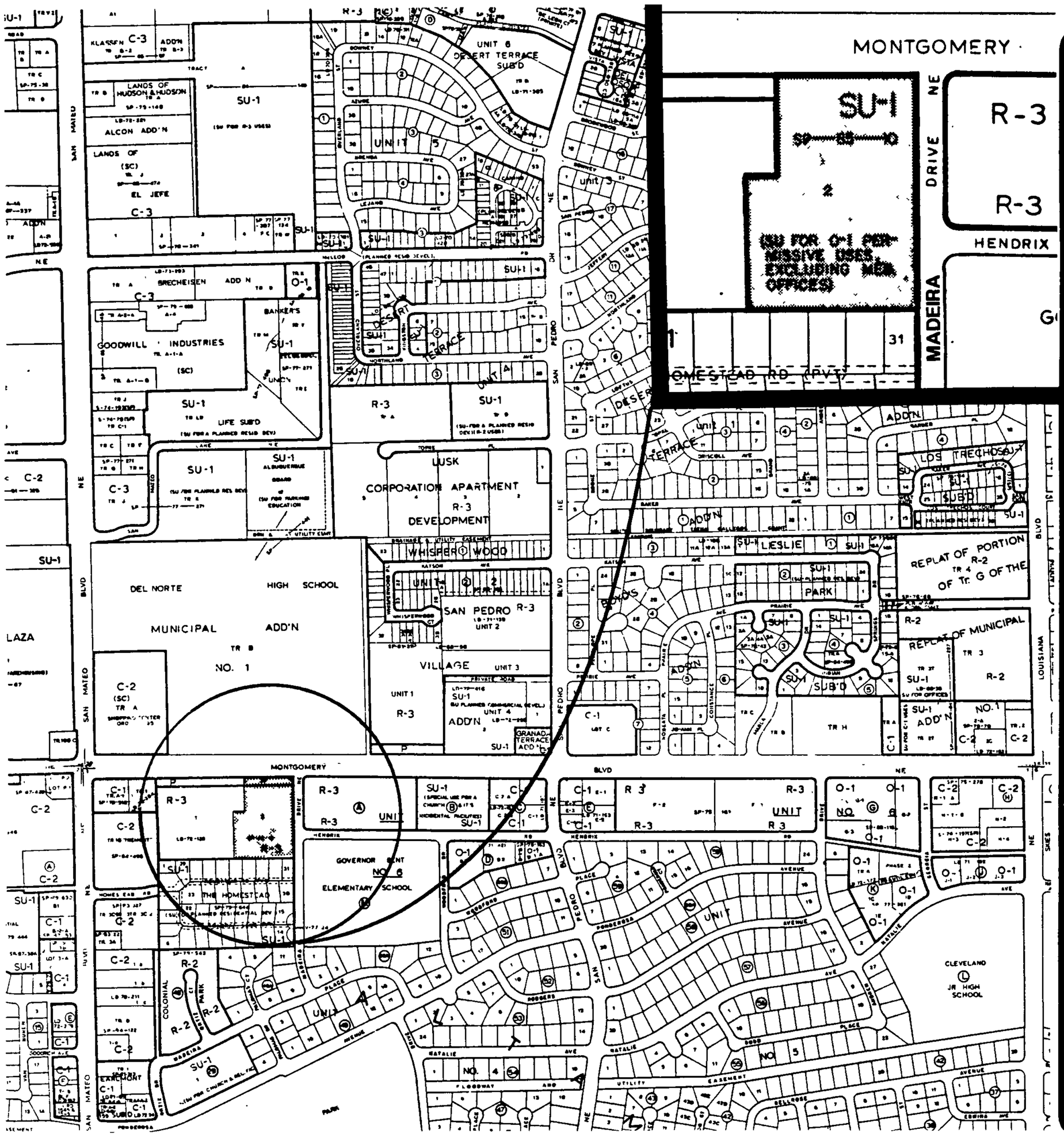
We respectfully submit that the site plan as revised reflects the conditions imposed by the EPC at the rezoning hearing, comments in your previous staff report, and will be beneficial to the community as a whole.

Please call if you have any questions, or if I can be of any further assistance in this matter.

Very truly yours,

CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.

Victor J. Chavez, P.E.



Z-91-20-1

Z-90-20-1

Chavez/Grieves Engineering, agent for Dominion Leasing, Inc., requests site development plan approval for Lot 2, Lands of Earl C. Montgomery, zoned SU-1 for O-1 Permissive Uses excluding Medical Offices, located on the southwest corner of the intersection of Montgomery Boulevard NE and Madeira Drive NE, containing approximately 3.270 acres. (G-18)
DEFERRED FROM AUGUST 15, 1991

CASE ASSIGNED TO: (name)

DAVE

SKETCH REVIEWED AND APPROVED BY (case planner)

RECOMMENDED APPROVAL BY:

date

date approved

HEARING DATE	8-15-91	MAP NO.	G-18

FILE NO. **Z-91-20-1**

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

July 29, 1991

Victor J. Chavez, P.E.
Chavez-Grieves Consulting Engineers
4600-C Montgomery Boulevard, NE
Albuquerque, New Mexico 87109

RE: CONCEPTUAL GRADING & DRAINAGE PLAN FOR IRS BUILDING
RECEIVED JUNE 28, 1991 FOR BUILDING PERMIT (G-18/D24)

Dear Mr. Chavez:

Attached to this letter is a copy of a pre-design form prepared by Fred Aguirre on June 6, 1991. The form states:

> "address the off-site flows from Hendrix/Madiera (Minus those flows intercepted by the recently constructed storm drain in Madiera) and how they will be dealt with"

Your plan states that the recently constructed storm drain intercepts all off-site flows; therefore, offsite flows will not flow across this building.

I have attached a copy of the report prepared for this recently constructed storm drain. This storm drain was sized to handle about 25% of the off-site flows; therefore, the other 75% impacts this site. Please provide the analysis and requirements for the off-site analysis as required in the pre-design.

If you should have any questions, please do not hesitate to call me at 768-2650.

Cordially,

Gilbert Aldaz, P.E. & P.S.
Civil Engineer/Hydrology

xc: Fred Aguirre, City Hydrologist

GA
wp+2803

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

PRE-DESIGN CONFERENCE

DRAINAGE FILE/ZONE ATLAS PAGE NO.: G18-D24 DATE: 6/6/91

EPC NO.: _____ DRB NO.: _____ ZONE: R3

SUBJECT: ?

STREET ADDRESS: INTERSECTION OF HENDRIX MADERIA

LEGAL DESCRIPTION: TRACT 2, (?)

APPROVAL REQUESTED:

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

	WHO	REPRESENTING
ATTENDANCE:	JEFF LOWRY	CHAVEZ GRIEVES
	FRED J. DALIPE	CITY,

FINDINGS:

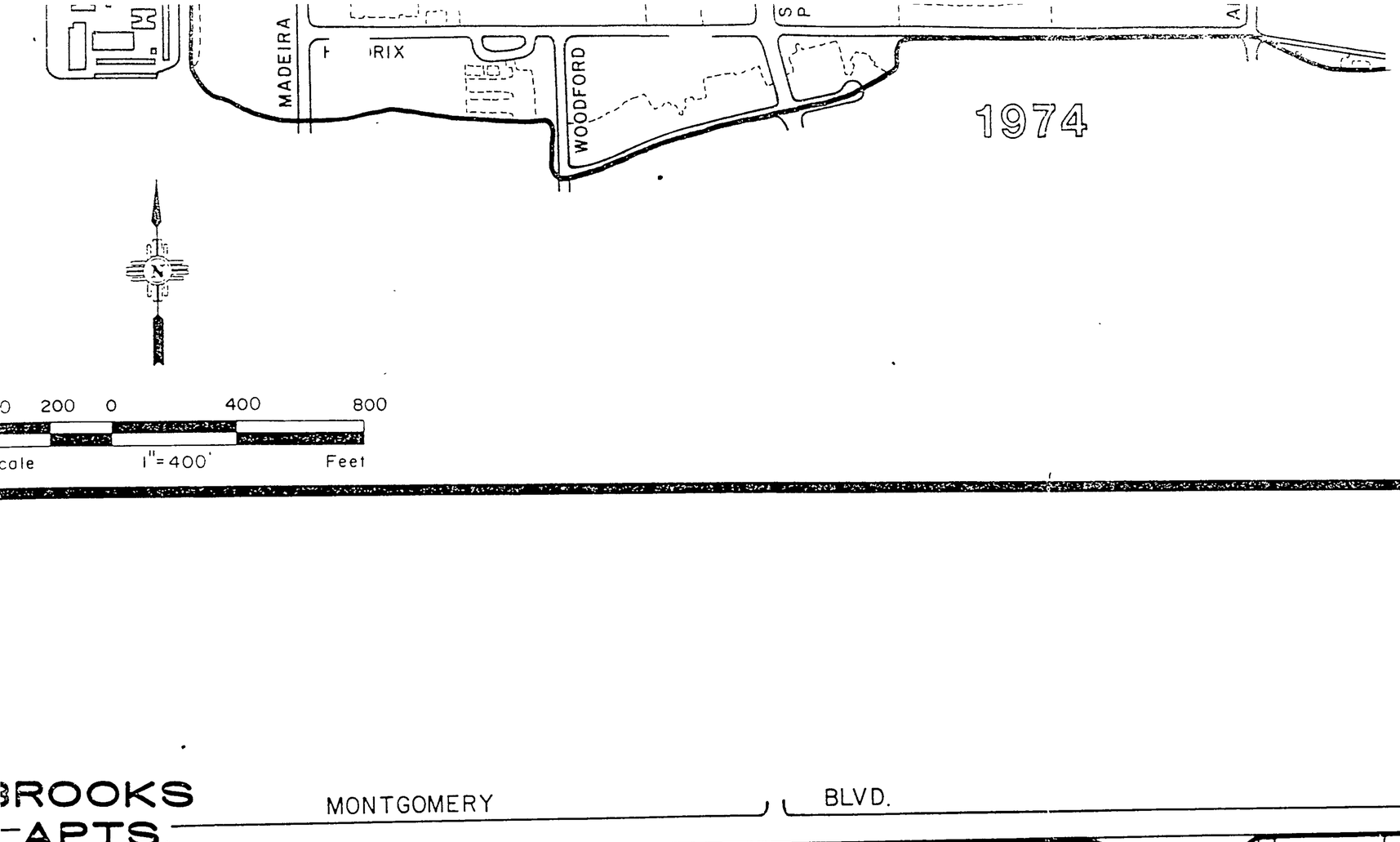
AN APPROVED DRAINAGE PLAN WILL BE REQUIRED FOR BUILDING PERMIT APPROVAL BY HYDROLOGY.

- THE DRAINAGE PLAN WILL NEED TO ADDRESS THE OFF-SITE FLOWS FROM HENDRIX/MADERIA (MINUS THOSE FLOWS INTERCEPTED BY THE RECENTLY CONSTRUCTED S.D. IN MADERIA) AND HOW THEY WILL BE DEALT WITH.
- NO OBJECTION TO FREE DISCHARGE FROM THIS SITE INTO THE S.D. IN MONTGOMERY (OR INTO BACK OF CATCH BASIN)

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:	[signature]	SIGNED:	[signature]
TITLE:		TITLE:	
DATE:	6/6/91	DATE:	6/6/91

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



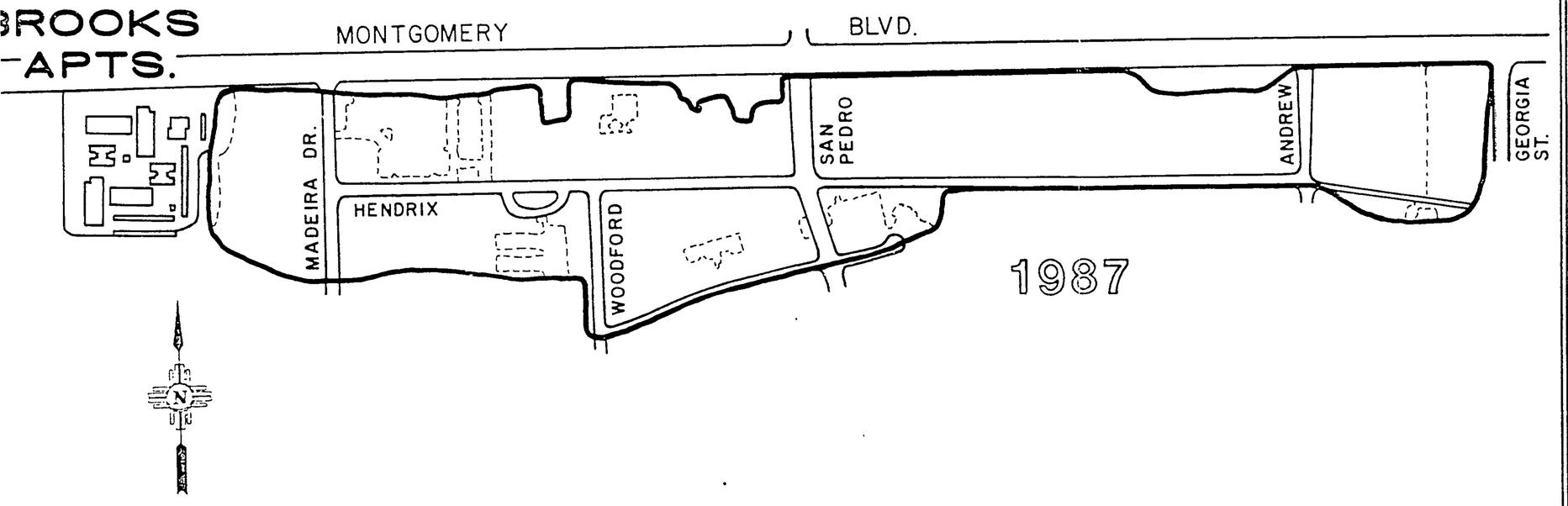
0 200 0 400 800

Scale 1"=400' Feet

Q_2	Q_{10}	Q_{100}
52	77	117
V_2	V_{10}	V_{100}
1.27	2.22	4.02

Note: Q=CFS
V=ACRE FEET

1987



0 200 0 400 800

Scale 1"=400' Feet

Total Area	41.70 Acr
Acres Landscaped	2.96 (7.1
Acres Hardsurface	27.09 (65.(
Acres Undeveloped	11.63 (27.9

Q_2	Q_{10}	Q_{100}
61	91	138
V_2	V_{10}	V_{100}
1.81	3.00	5.08

Note: Q=CFS
V=ACRE FEET

HENDRIX ROAD N.E./MADEIRA DRIVE N.E. STORM DRAIN IMPROVEMENTS

CITY PROJECT NO. 4054.90

PREPARED BY:

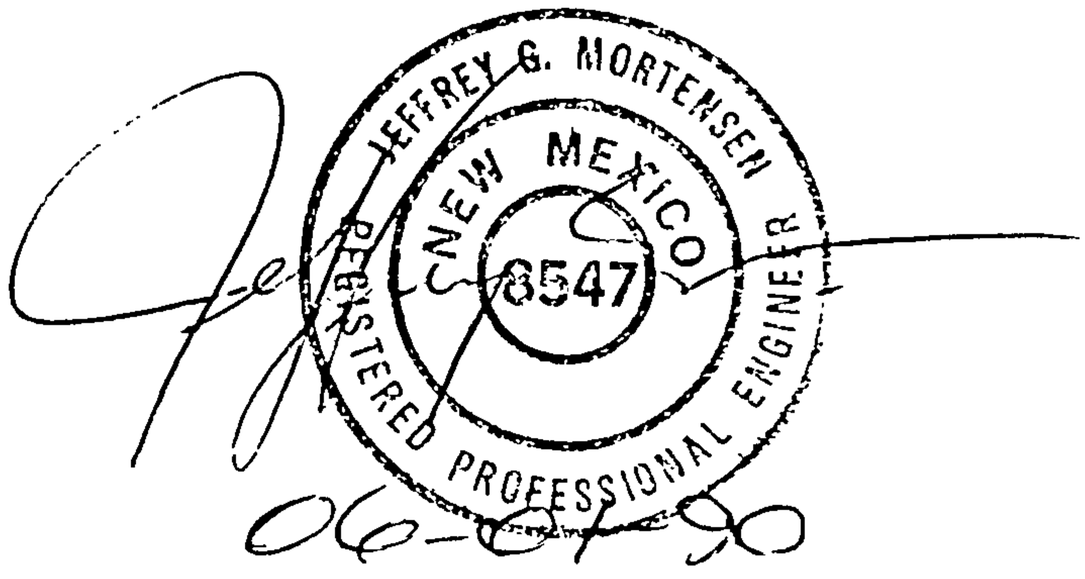
JEFF MORTENSEN & ASSOCIATES, INC.

811 Dallas N.E.
Albuquerque, NM 87110

JUNE 1, 1990

FOR:

CITY OF ALBUQUERQUE
HYDROLOGY SECTION
PUBLIC WORKS DEPARTMENT



JEFF MORTENSEN & ASSOCIATES, INC.
811 DALLAS, N.E. ▫ ALBUQUERQUE, NM 87110
▫ ENGINEERS ▫ TELEPHONE (505) 265-5611 ▫

HYDROLOGY:

The hydrology for the contributing watershed was taken from the "Brooks Apartments Hydrology" prepared by Easterling & Associates, Inc. for the City of Albuquerque and dated 12-29-89. The most recent analysis, appearing on Sheet 1 of 1 is for the year 1987. These results are summarized as follows:

Total Area	41.70 Acres
Acres Landscaped	2.96 (7.1%)
Acres Hardsurface	27.09 (65.0%)
Acres Undeveloped	11.63 (27.9%)

Q_2	Q_{10}	Q_{100}
61	91	138

V_2	V_{10}	V_{100}
1.81	3.00	5.08

Note: Q = CFS, V = Acre Feet

DESIGN REQUIREMENTS AND EXISTING CONDITIONS:

A settlement was reached in Cause No. CIV 88-1254 JC, heard in the United States District Court for the District of New Mexico, and entered into between Plaintiffs and the third party defendant, the City of Albuquerque, which terms were, among others, that the City would install a 30" storm sewer drain at the intersection of Hendrix and Madeira, N.E. Such drain having a capacity of approximately 25 cfs. The previous design of a storm drain across the subject property was prepared as City Project No. 2221. Most approvals had been obtained, however, the project was not pursued by the developer of Lot 2, Lands of Earl C. Montgomery. Because of this, the land was never developed and City Project No. 2221 not constructed. City Project No. 2221 called for the construction of a 30" RCP storm drain having an approximate capacity of 26 cfs.

In an effort to provide ample capacity and provide a system of the same diameter as the downstream existing storm drain, a 36" RCP storm drain was selected for this project. A 36" RCP storm drain will better serve the public as well as providing more capacity than the previously designed 30" RCP.

The previously designed 30" RCP utilized an overland overflow through the developed site to Montgomery Boulevard N.E. in the absence of the development of the site, such an overflow is not available to this project. Hence, the selection of the 36" RCP was made to provide as much capacity as possible without excessive oversizing of the proposed line.

Runoff will be collected at the intersection of Hendrix and Madeira. This intersection is a "sump" which overflows across Lot 2 when the storage capacity of the intersection is exceeded. The storage of stormwater in this intersection has adversely impacted the existing pavement and presents an inconvenience to motorists. In response, storm inlets will be installed at the upstream collection point. The intersection will also be reconstructed to improve drainage and replace deteriorated pavement. From this point of collection by two double 'C' storm inlets, runoff will discharge via an 18" RCP and a 24" RCP lateral to the 36" RCP discussed above. From this point, the runoff will flow within the 36" closed conduit to a point of connection with the existing 36" storm drain in Montgomery Boulevard N.E.

The proposed storm drain system will be within an existing easement previously granted by platting action. The proposed improvements will also satisfy the minimum requirements of the agreements entered into by the City as referenced above. System capacity is demonstrated by the calculations which follow and will always be limited by the capacity of downstream improvements.

CALCULATIONS:

1. Inlet Capacity (Double 'C' Storm Inlet)

Open Area of grate = 1.54 ft. x 5.92 ft. = 9.12 sq. ft.
Maximum height of water over grate = 1 ft.

Orifice Equation: $Q = CA\,[2gh]^{1/2}$
Use C = 0.6

$Q = (0.6)(9.12)[(2)(32.2)(1)]^{1/2}$
Q = 44 cfs

Allowing for a 50% clog factor,
Q = 0.50(44) = 22 cfs

2. Lateral Capacity

a. 18" RCP

(1) Inlet control (Orifice Equation)

$Q = CA\,[2gh]^{1/2}$
h = 20.74 - (17.99 + 0.75) = 2'
A = 1.77 sq. ft.
$Q = (0.6)(1.77)[(2)(32.2)(2)]^{1/2}$
Q = 12 cfs

HGL @ inlet = WSL = 20.74
HGL @ pipe entrance = top of pipe elevation

(2) Pipe Flow (Manning Equation)
$Q = (1.486/n)AR^{2/3}S^{1/2}$

Where n = 0.013
S = 0.02
$Q_{capacity}$ = 15 cfs
Q_{desgin} = 12 cfs
$d_{12\ cfs}$ = 0.68(1.5) = 1.02'

HGL @ MH #5 = 17.30 + 1.02 = 18.32

b. 24" RCP

(1) Inlet Control (Orifice Equation)

$Q = CA[2gh]^{1/2}$
h = 20.74 - (17.49 + 1.0) = 2.25'
A = 3.14 sf
$Q = 0.6(3.14)[(2)(32.2)(2.25)]^{1/2}$
Q = 22 cfs
HGL @ inlet = WSL = 20.74
HGL @ pipe entrance = top of pipe elevation

(2) Pipe Flow (Manning Equation)

$Q = [1.486/n]AR^{2/3}S^{1/2}$
Where n = 0.013
S = 0.0200
$Q_{capacity}$ = 32 cfs

Q_{desgin} = 22 cfs
$d_{22\ cfs}$ = 0.61(2') = 1.22
HGL @ MH #5 = 17.30 + 1.22 = 18.52

3. Storm Drain Capacity (36" RCP) (Manning Equation)

$Q = [1.486/n]AR^{2/3}S^{1/2}$
Where n = 0.013
S = 0.0040

$Q_{capacity}$ = 43 cfs
Q_{design} = 22 + 12 = 34 cfs

$d_{34\ cfs}$ = 0.68(3.0) = 2.04
HGL @ MH #5 = 17.28 + 2.04 = 19.32
HGL in pipe = invert elev + 2.04

This analysis anticipates no "back-up" where the new 36" RCP storm drain connects to the existing 36" RCP storm drain at SDMH #1 in Montgomery Boulevard N.E.

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

July 21, 1992

David H. Grieves, P.E.
Chavez-Grieves Consulting Engineers
4600-C Montgomery Boulevard, NE
Albuquerque, New Mexico 87109

RE: GRADING & DRAINAGE REPORT FOR IRS BUILDING
RECEIVED JUNE 22, 1992 FOR LETTER OF MAP REVISION
REQUEST FOR FEMA (G-18/D24)

Dear Mr. Grieves:

Based on the information provided, the following comments should be addressed prior to forwarding a submittal to FEMA:

1. You are proposing to divert flows overland into Montgomery. How does this diversion comply with the D.P.M. for Arterial Street carrying capacity? The pre-design had no objection to free discharge from this site into the storm drain in Montgomery.

2. Is there a hydraulic jump taking place at the location where you are turning flows 90 degrees? It appears that flows will be forced against the building in order to change the flow direction, is this the case.

3. The D.P.M. requires that flows in ponding areas be kept at least 15 feet away from the building because the possibility of the building having some settlement. Was there a soils report prepared indicating that the settlement would not take place?

4. What are the reasons that you are proposing to utilize riprap instead of concrete. I would highly recommend that you consider using concrete due to flows percolating the riprap and likelihood of settlement. Also, concrete has a whole lot more stability than riprap. You are also proposing grass treatment in this diversion. I do not believe grass has the stability in order to keep the building from being damaged.

5. A drainage easement and covenant will need to be executed for the public waters.

6. Due to the unsteady flow conditions and the possibility of the building being damaged, I would consider having the University run a model study. You should consider as a minimum of using a HEC II analysis.

7. I have attached a checklist for a LOMR, the report should follow the checklist for ease of review by FEMA.

8. All work within the right-of-way such as the major curb cuts and sidewalk culverts will require work order approval, not S.O. # 19 approval.

9. Your HYMO run indicates a reservoir route, where is this taking place?

If you should have any questions, please do not hesitate to call me at 768-2650.

Cordially,

Gilbert Aldaz, P.E. & P.S.
Civil Engineer/Hydrology

GA
wp+2803

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

November 20, 1992

Larry Reed
Chavez-Grieves Consulting Engineers
4600-C Montgomery Boulevard, NE
Albuquerque, New Mexico 87109

RE: GRADING & DRAINAGE REPORT FOR IRS BUILDING, RECEIVED OCTOBER 7, 1992 FOR CONDITIONAL LETTER OF MAP REVISION REQUEST FOR FEMA (G-18/D24)

Dear Mr. Reed:

Based on the information provided, the following comments should be addressed prior to forwarding a submittal to FEMA:

1. The Drainage Ordinance states "The 100-year design runoff shall not exceed a depth of 0.87 feet at any point within the street right-of-way, or 0.2 feet above top of curb". Page 6 of your report identifies a street depth of 1.71 feet. This is contrary to Ordinance requirements.

2. Are you proposing sidewalk culverts for the diversion of the 100-year floodplain? I could not locate them on the plan. If not, than you will need to secure Transportation's approval for the elimination of sidewalk culverts plates.

3. The Data checklist found in the back of the report for the CLOMR should be moved to the front of the report. Within each checklist item you should identify the page where the information can be found in the report for ease of review by FEMA.

4. Retaining walls in excess of 8 feet in height will require a variance from City Zoning.

5. Page 5 indicates that no sediment analysis was performed. You need to expand on why you feel that a sediment analysis is not needed; otherwise FEMA will reject your submittal.

If you should have any questions, please do not hesitate to call me at 768-2650.

Cordially,

Gilbert Aldaz, P.E. & P.S.
Civil Engineer/Hydrology

GA/wp+2803
file

93095239 8737

Hydro

PERMANENT EASEMENT

Grant of Permanent Easement, between Dominion Leasing, Inc. ("Grantor"), whose address is P.O. Box 727, Edmond, OK 73083 and the City of Albuquerque, a New Mexico municipal corporation ("City"), whose address is P. O. Box 1293, Albuquerque, New Mexico 87103.

Grantor grants to the City an exclusive, permanent easement ("Easement") in, over, upon and across the real property described on Exhibit "A" attached hereto ("Property") for the construction, installation, maintenance, repair, modification, replacement and operation of a storm water crossing, together with the right to remove trees, bushes, undergrowth and any other obstacles upon the Property if the City determines they interfere with the appropriate use of this Easement.

Grantor covenants and warrants that Grantor is the owner in fee simple of the Property, that Grantor has a good lawful right to convey the Property or any part thereof and that Grantor will forever warrant and defend the title to the Property against all claims from all persons or entities.

The grant and other provisions of this Easement constitute covenants running with the land for the benefit of the City and its successors and assigns until terminated.

WITNESS my hand and seal this 23rd day of July, 1993.

GRANTOR:

(Individual)

GRANTOR:

By: C. L. B.
Its: President
(Corporation or Partnership)

STATE OF NEW MEXICO
COUNTY OF BERNALILLO
FILED

93 AUG 30 PM 4:09

B. 23 - 8737 - 8739

(Approved by Legal Dept.
as to form only-10/90)

INDIVIDUAL

STATE OF _____)
)ss.
COUNTY OF _____)

The foregoing instrument was acknowledged before me this _____ day of _____, 19___, by _____.

_____
Notary Public

My Commission Expires:

_____

CORPORATION

STATE OF Oklahoma)
)ss.
COUNTY OF Oklahoma)

The foregoing instrument was acknowledged before me this 23 day of July, 1993, by Calvin Burgess, President of Dominion Leasing, Inc., an Oklahoma corporation, on behalf of the corporation.

Dana L. Taylor
Notary Public

My Commission Expires:

April 16, 1997

PARTNERSHIP

STATE OF _____)
)ss.
COUNTY OF _____)

The foregoing instrument was acknowledged before me this _____ day of _____, 19___, by _____ partner(s), on behalf of _____, a partnership.

_____
Notary Public

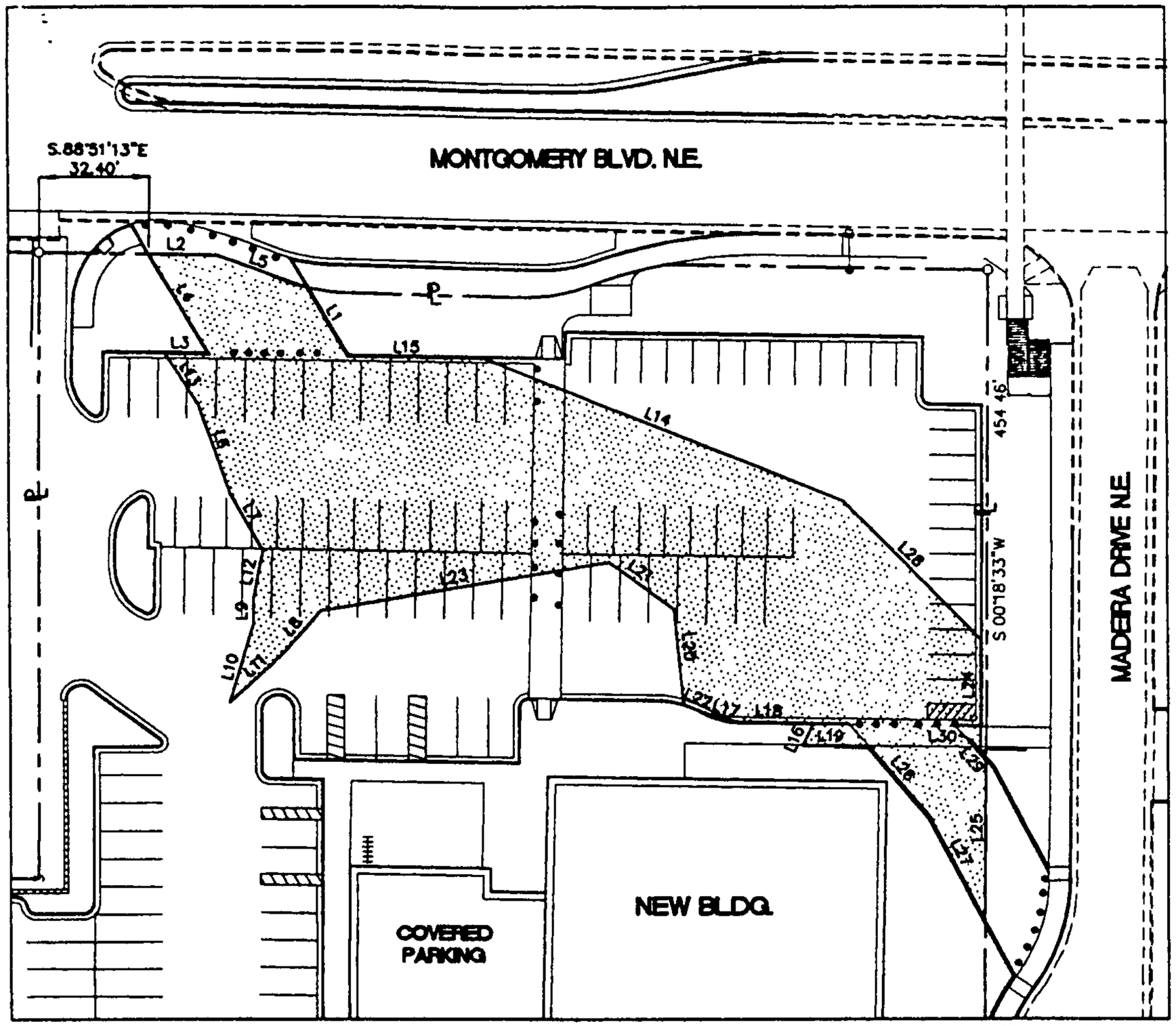
My Commission Expires:

_____

(EXHIBIT "A" ATTACHED)

ID:3

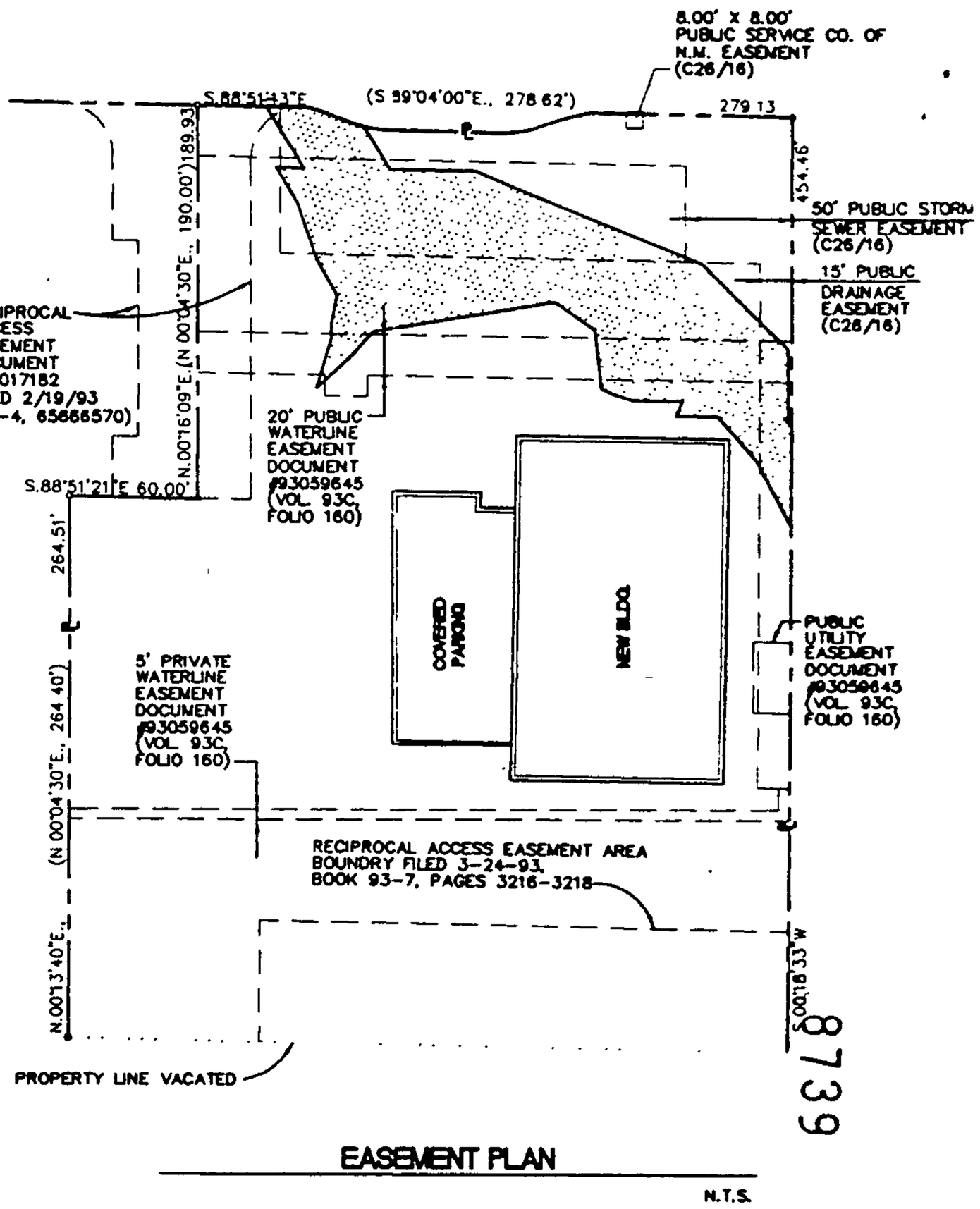
(Approved by Legal Dept. as to form only-10/90)



SCALE: 1"=40'-0"

LINE TABLE

LINE	DIRECTION	DISTANCE	LINE	DIRECTION	DISTANCE
L1	N30°14'50"W	24.05	L16	N23°28'03"E	7.70
L2	S88°51'13"E	19.83	L17	N73°14'23"W	10.11
L3	S89°04'00"E	12.88	L18	N89°04'00"W	22.75
L4	N30°14'50"W	34.73	L19	N89°43'51"W	19.50
L5	N70°00'10"W	27.75	L20	N05°42'38"W	28.77
L6	N18°29'07"W	27.86	L21	N53°36'56"W	23.60
L7	N28°33'57"W	20.49	L22	N65°04'36"W	6.16
L8	S41°20'52"W	16.65	L23	S80°19'09"W	86.23
L9	S00°00'00"E	7.00	L24	S00°05'03"W	33.19
L10	N16°35'14"E	24.52	L25	S00°18'20"W	48.58
L11	S46°29'16"W	21.79	L26	N40°01'09"W	28.32
L12	N10°34'25"E	15.26	L27	N27°09'46"W	35.51
L13	N31°30'28"W	18.36	L28	S44°24'16"E	58.21
L14	S67°40'49"E	114.25	L29	S39°42'23"E	5.46
L15	N89°04'00"W	39.76	L30	N89°04'00"W	1.81



EASEMENT PLAN

N.T.S.

EXHIBIT "A" - TRACT A FEDERAL PLAZA DRAINAGE EASEMENT AREA

BANK TRANSIT NO	$ CHECKS	$ CASH	NET	DATE	NAME	DESCRIPTION	RECEIVED BY
		9 ~~P~~		8/30	Pablo Wood	9355239	

IF (ENCIRCLED) INDICATES CASH RETURNED FOR ADJUSTMENT TO NET AMOUNT OF ACTUAL PAYMENT

INVALID WITHOUT SIGNATURE

County of Bernalillo

COUNTY CLERK
ONE CIVIC PLAZA N W.
ALBUQUERQUE, NEW MEXICO 87102

CC 133770

RETAIN THIS RECEIPT FOR YOUR RECORDS

SIGNATURE

CONTRACT CONTROL FORM

Contact Person Terri Martin
Phone No. 768-2561

~~SCC~~ pA163

REQ 4676.ES
CCN 9301164
ORIG CCN 9301164

PRELIMINARY REVIEW

Type of Agreement: PERMANENT EASEMENT No.: ___ New: ✓ Supplement: ___
Description: 1R."A" FEDERAL PLAZA (I.R.S. BUILDING)
Dept/Div: PUBLIC WORKS/Proj. Mgt. Fund: _____ Acct: _____ Act: _____
Vendor: DOMINION LEASING INC. Contract Period: _____ - Perm.
Contract Amount: $ -0- Rec: ___ FY Aggregate $ _____
Fed Tax No. _____ St Tax No. _____ Issuer: _____ Date Issued: _____

WAIVERS REQUIRED:

RFP: ___ Ins: ___ Waiver Letter Attached: Yes ___ No ___ Approved: Yes ___ No ___

PROCUREMENT:

RFP No.: _____ Date Closed: _____ Approval By Whom: _____

DRAFT CONTRACT:

Recd by Legal: _____ Rejected/Returned to Dept: 8/3/93, P.J.C.
Returned to Legal: 8[illegible]17 Approved: 8/20/93 Initials: K.J.C.

INSURANCE AND BONDS REQUIRED:

Bond(s) required: Yes ___ No ___ Type: _____ Attached: Yes ___ No ___
Insurance required: CGL ___ Auto ___ WC ___ Other _____ Attached: Yes ___ No ___

FINAL CONTRACT REVIEW

APPROVALS REQUIRED:

	Date Delivered	Returned to Dept	Approved by	Approval Date
~~Purchasing:~~ HyDR	7/28	7/29	[illegible]	7/29
Asst. City Attorney:	7/29	1	K.J.C.	8/20/93
CIP:	1	1	[illegible]	
City Attorney:	1	1	[illegible]	8/21/93
CAO:	1	1		
Other:	1	1		
Council:	1	1		

EC No: _____ Approved: _____ Date: _____

DISTRIBUTION:

	Date:	By:
User Department	8-1-93	
Vendor		
City Clerk		
Treasury		

11-18-91

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

May 25, 1994

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

RE: IRS BUILDING ENCROACHMENT AGREEMENT
FILE: G-18/D24

Our letter of June 10, 1993 advised you that we would modify an encroachment agreement to reflect as-constructed conditions as a part of the IRS project Certificate of Occupancy process. The encroachment agreement covers a 4-inch private waterline serving the Brooks Apartments which encroaches on 15-foot public drainage easement. It was filed June 3, 1993 in Book 93-14, pages 5721-5726.

Our letter described our proposed relocation of the 4-inch waterline to avoid conflict with the existing 36-inch storm drain. It also stated that the relocated line would not fall within the limits of the encroachment agreement. However, review of Exhibit 1 of the encroachment agreement (attached) shows that the encroachment area designation is general enough to apply to both the originally proposed waterline line alignment and the relocated waterline alignment. Therefore, modification of the encroachment agreement is not necessary.

Please call Larry Read if you have any questions regarding this matter.

CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.

Suzi Balogh

Suzi Balogh, P.E.

SB/cjr

Enclosure

cc: Jay Crawford, Canam Construction

MAY 25 1994

8.00' X 8.00'
PUBLIC SERVICE CO. OF
N.M. EASEMENT
(C26/16)

S.88°51'13"E.

279.13

189.93'

25' PUBLIC STORM SEWER
EASEMENT (C26/16)

70' PUBLIC DRAINAGE
EASEMENT (C26/16)

50' PUBLIC STORM
SEWER EASEMENT
(C26/16)

454.46'

15' PUBLIC
DRAINAGE
EASEMENT
(C26/16)

(N.00°04'30"E., 190.00')

RECIPROCAL
ACCESS
EASEMENT

20' PUBLIC
WATERLINE
EASEMENT

N.00°16'09"E.,

S.88°51'21"E. 60.00'

RECIPROCAL ACCESS EASEMENT CONTRACT

	APPROVED	DATE
600 2nd St., NW BUILDING & INSPECTION		5/21/93
600 2nd St., NW ZONING	E. Concini	5-21-9
4th Floor 600 2nd St., NW TRAFFIC ENGINEER		5/ /93
4th Floor City Hall UTILITILS ENGINEER		5-27-93
3rd Floor Co[illegible], Bldg E[illegible]		5-27-93

HYDROLOGY

264.51'

264.40'E.

(N.00°04'30"E.,

10' PRIVATE
WATERLINE
EASEMENT

COVERED
PARKING

NEW BLDG.

PUBLIC
UTILITY
EASEMENT

ENCROACHMENT
AREA

PROPOSED 4"
PRIVATE WATERLINE

RECIPROCAL ACCESS EASEMENT AREA
BOUNDRY FILED 3-24-93,
BOOK 93-7, PAGES 3216-3218

N.00°13'40"E.,

S.00°18'33"W

N.88°50'58"W.,

(N.89°04'00"W., 338.62')

338.62'

PROPERTY LINE TO
BE VACATED

EXIBIT 1

SCALE: N.T.S.

NORTH

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 2, 1994

Suzi Balogh
Chavez-Grieves
5639 Jefferson St. NE
Albuquerque, NM 87109

RE: ENGINEER CERTIFICATION FOR TEMPORARY CERTIFICATE OF OCCUPANCY FOR IRS BUILDING (G18-D24) CERTIFICATION STATEMENT DATED 5/16/94.

Dear Ms. Balogh:

Based on the information provided on your May 16, 1994 submittal, a 30 day temporary Certificate of Occupancy may be granted at this time.

Please be advised that the permanent Certificate of Occupancy will not be granted until the following items are submitted:

1. Copy of the acceptance letter for the work order improvements.

2. The as-built submittal indicates that some off-site grading has taken place at the northwest corner of the site. Please provide documentation that the adjacent property owner has granted his permission.

If I can be of further assistance, please feel free to contact me at 768-2667.

Sincerely,

Bernie J. Montoya, CE
Engineering Associate

BJM/dl/WPHYD/2803

c: Andrew Garcia
File

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 2, 1994

Suzi Balogh
Chavez-Grieves
5639 Jefferson St. NE
Albuquerque, NM 87109

RE: ENGINEER CERTIFICATION FOR TEMPORARY CERTIFICATE OF OCCUPANCY FOR IRS BUILDING (G18-D24) CERTIFICATION STATEMENT DATED 5/16/94.

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Sincerely,

Bernie J. Montoya, CE
Engineering Associate

BJM/dl/WPHYD/2803

c: Andrew Garcia
File

JUL 12 1994
HYDROLOGY DIVISION

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 7, 1994

CERTIFICATE OF COMPLETION AND ACCEPTANCE

Ms. Suzi Balogh
c/o Dominion Leasing, Inc.
5639 Jefferson Street N.E.
Albuquerque, NM 87109

RE: PROJECT NO. 4676.80, IRS BUILDING
(MAP NO. G-18)

Dear Ms. Balough:

This is to certify that the City of Albuquerque accepts Project No. 4676.80 as being completed according to approved plans and construction specifications. Please be advised this certificate of completion and acceptance shall only become effective upon final plat approval and filing in the office of the Bernalillo County Clerk's Office.

The project is described as follows:

- Busbay and turnbay construction on Montgomery Boulevard. Construction of waterline extension and storm drain manholes.

The contractor's correction period begins the date of this letter and will be effective for a period of one (1) year.

Sincerely,

Rick Roybal, PE
City Engineer,
Engineering Group
Public Works Department

Sincerely,

Russell B. Givler, PE
Chief Construction Engineer,
Engineering Group
Public Works Department

cc: Chavez-Grieves
Sundance Mechanical
Fred Aguirre, Engineering Group, PWD
Lynda Michelle DeVanti, Engineering Group, PWD
Terri Martin, Engineering Group, PWD
Martin Barker, Engineering Group, PWD
Steve Gonzales, Special Assessments, DFM
A.N. Gaume, Operations Group, PWD
Sam Hall, Operations Group, PWD
Jim Fink, Operations Group, PWD
Ray Chavez, Engineering Group, PWD
Stuart Reeder, Water/Wastewater Group, PWD
Dave Parks, Engineering Group, PWD
Bill Coleman, Engineering Group, PWD
Josie Gutierrez, New Meter Sales, Finance Group, PWD
Richard Zamora, Engineering Group, PWD
f/Project No. 4676.80
f/Readers
f/Warranty:Contract

BROOKS APT'S
308

DEVELOPMENT AGREEMENT

This Development Agreement is entered into this 15th day of February, 1993, between BENJAMIN J. and GERALDINE ROSCOE, hereinafter referred to as "Roscoe", and DOMINION LEASING, INC., an Oklahoma Corporation, hereinafter referred to as "Dominion".

RECITALS:

A. Whereas Roscoe and Dominion have executed on even date Reciprocal Easements for Common Access between Lots 1 and 2, Lands of Earl C. Montgomery, Section 1, Township 10 North, Range 3 East, NMPM, City of Albuquerque, County of Bernalillo, State of New Mexico, wherein a 65-foot wide common access onto Montgomery Boulevard is created for the benefit of both parties.

B. Whereas said Reciprocal Easements for Common Access do not address all considerations between the parties with respect to the construction of certain improvements, and they desire to reduce those additional considerations to a written agreement.

AGREEMENTS:

NOW THEREFORE, in consideration of the covenants herein contained, the parties hereto do hereby agree as follows:

1. Dominion will commence physical development of Lot 2 and construction of an office building thereon not later than April 1, 1993 and will complete all improvements on Roscoe's property and on the easements, not later than March 31, 1994.

2. At its sole expense, Dominion will remove the existing entry gate at the northeast corner of Lot 1 and will relocate it to the south end of the north car port to run east and west across Roscoe's portion of the easement to connect with the wall on Dominion's portion of the easement. Relocation responsibilities of Dominion will include electrical service, concrete footings and welding, if needed, to render the gate functional at its new location.

3. At its sole expense, Dominion will remove and reinstall the existing Brook Apartments' sign near the existing northeast entry to a location of Roscoe's choice.

4. At its sole expense, Dominion will construct a concrete retaining wall along the property line between Lots 1 and 2, except for the north 135 feet of said property line, and will construct on that wall a six-foot high wood fence with intermittent masonry pilasters.

5. At its sole expense, Dominion will remove Roscoe's paving with the easement to the extent necessary and will rebuild and resurface said space in accordance with paving plans as prepared by Chavez-Grieves Consulting Engineers. All work on Lot 1 will be performed as expediously as possible to minimize disruption of access to driveways and parking areas along the east side of Lot 1 for residents of Roscoe's Buildings, ~~C,D & E.~~ Therefore, the maximum period of time that access will be closed to Roscoe's east parking area will be sixteen (16) consecutive calendar days, during which period Dominion will provide free replacement parking for up to 60 vehicles along the north portion of Lot 2 and will provide a curb cut on Madiera Street for access to said replacement parking.

6. The west six feet of the south 260 feet of Lot 2 may be used by Roscoe for tenant parking for a term of 25 years, and Dominion will improve said six-foot strip with three inches of asphalt not later than May 1, 1994.

7. At its sole expense, Dominion will install and connect a water line of the same size as now connects the apartments from a meter on Madiera Street across the south property line of Lot 2 and not more than 30 feet into Lot 1 at its southeast corner, thence, north inside of Lot 1 to the point that it intersects the existing main water service line, and install a shut-off valve at or near that point. Dominion will grant a five-foot utility easement across the south property line of Lot 2 simultaneous with the execution of this Agreement. Dominion will provide notice of interruption of water service to Roscoe three (3) days prior to the connection with the new water line. On the date of connection, disruption of water service to Lot 1 will be limited to a period not longer than six (6) hours. In the event that water service should be interrupted for longer than six hours due to this connect, Dominion will pay to Roscoe a penalty of Three Hundreds Dollars ($300) for every hour in excess of six hours that water service is interrupted. Dominion will restore the surface ground above the water line to its erstwhile appearance and utility.

8. At its sole expense, Dominion will rebuild and expand the existing approach on Montgomery Boulevard at the northeast corner of Lot 1 and will rebuild any curbs that might be damaged or removed as a result of said construction. Any improvements so affected on Lot 1 will also be backfilled with select soil and planted with landscaping to complement the common entry. For improved access to Lots 1 and 2 from Montgomery Boulevard, Dominion will also construct a left-turn lane in the concrete median on Montgomery Boulevard in accordance with City specifications.

Dominion will purge, clear, or remove all debris that may enter the water supply of The Book Apartments as a result of the new water line connection.

9. All of the above specified improvements will be constructed in a good and workmanlike manner to City of Albuquerque specifications, where applicable.

10. Roscoe and Dominion share a common interest in the quality and quantity of landscaping to be installed in the area of the approach onto Montgomery Boulevard, more particularly described as (1) the small island on Lot 2 due east of Roscoe's carport, and (2) those areas along Montgomery within seventy (70) linear feet of the property line between Lots 1 and 2 where said line intersects with Montgomery Boulevard. Consequently, Roscoe will have the right to approve the landscaping planned for those areas prior to its installation, which approval shall not be unreasonably withheld. All landscape design and installation will be at the sole expense of Dominion.

11. At its sole expense, Dominion will modify two existing parking spaces at the north end of Roscoe's north carport by removing existing curbing and extending these spaces westward up to eight (8) feet to provide greater parking depth. The scope of work will include demolition, new curbing and new asphalt as needed, using the same specifications as for the proposed driveway within the reciprocal easements.

12. At its sole expense, Dominion will, on that certain portion of Roscoe's parking lot immediately north of the clubhouse for The Brook Apartments containing not more than 5,000 square feet, fill in all cracks in the parking surface with hot tar then apply one application of standard asphalt sealer to the surface, then repaint parking stripes.

13. As further assurance to Roscoe that Dominion will fulfill its obligations under this Development Agreement, Roscoe and Dominion agree to execute an Escrow Agreement with Albuquerque Title Company as Escrow Agent simultaneous herewith. Dominion will fund the escrow account with Five Thousand Dollars ($5,000.00), interest earnings on such funds which will accrue to the sole benefit of Dominion. In the event that all conditions, covenants, and requirements of this Development Agreement required of Dominion shall have not been satisfied or performed by the first day of June, 1994, satisfying the Escrow Agreement will provide that the cost of any deficiency or deficiencies thereunder, as determined by a third party expert to be selected by Albuquerque Title Company as Escrow Agent, be paid over to Roscoe as damages for said deficiency.

IN WITNESS WHEREOF, each of the parties hereto have duly executed this Development Agreement and affixed their hands hereto effective the day and year first above written.

OWNERS OF LOT ONE

Benjamin J. Roscoe

Geraldine Roscoe

OWNERS OF LOT TWO

Attest:

DOMINION LEASING, INC.

By: Susan Burgess
Susan Burgess, Secretary

By: Calvin Burgess
Calvin Burgess, President

Benjamin J. Roscoe and Geraldine Roscoe appeared before me on February 17, 1993 and signed their names on this document. They are known to me and they executed the same as their free act and deed.

My Commission expires:
Dec 5, 1994

Notary

DOMINION LEASING, INC.

P.O. Box 727
Edmond, OK 73083

(405) 348-9852 FAX (405) 348-9805

450 S. Coltrane
Edmond, OK 73034

TELEFAX TRANSMISSION

TO: LARRY READ

FAX NUMBER:

COMPANY: CHAVEZ - GRIEVES

FROM: J. CRAWFORD

DATE: 7/12/94

NUMBER OF PAGES TO FOLLOW: 4.

COMMENTS: PER YR REQUEST

****

IF THERE ARE ANY PROBLEMS WITH THIS TRANSMISSION, PLEASE CALL OUR OFFICE AT (405) 348-9852. OUR TELEFAX NUMBER IS (405)348-9805.

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

July 12, 1994

Larry Reed
Chavez-Grieves
5639 Jefferson St. NE
Albuquerque, NM 87109

RE: ENGINEER CERTIFICATION FOR FINANCIAL GUARANTEES FOR IRS BUILDING (G18-D24) ADDITIONAL INFORMATION RECEIVED ON 7/12/94.

Dear Reed:

Based on the information provided on your submittal dated July 12, 1994, Engineer Certification for Financial Guarantee is acceptable.

If I can be of further assistance, please feel free to contact me at 768-2667.

Sincerely,

Bernie J. Montoya, CE
Engineering Associate

BJM/dl/WPHYD/2803

c: Andrew Garcia
LyndaMichelle DeVanti
File

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.

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

UPDATE TO

FLOOD PLAIN REVISION STUDY

FOR

PROPOSED BUILDING SITE

AT

5300 BLOCK OF MONTGOMERY BOULEVARD NE

ALBUQUERQUE, NEW MEXICO

NOVEMBER 18, 1993

RECEIVED
NOV 19 1993
HYDROLOGY DIVISION

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

November 18, 1993

Mr. David P. Preusch, P.E.
Michael Baker Jr., Inc.
3601 Eisenhower Avenue, Suite 600
Alexandria, Virginia 22304

RE: CASE NO.: 93-06-259R
COMMUNITY: CITY OF ALBUQUERQUE, NEW MEXICO
COMMUNITY NO.: 350002

This letter transmits the data requested in William R. Locke's August 20th letter. This information is supplemental to our March 9, 1993 report requesting a Conditional Letter of Map Revision (CLOMR) for the 5300 Block of Montgomery Boulevard NE, Albuquerque, New Mexico.

Item 1 in the letter regarded discrepancies between the routing lengths in the AHYMO models and the routing lengths shown on the topographic maps (Plates 1 and 4.) Our primary reason for including the on-site routing was to account for attenuation of the off-site flow hydrograph as it passed through the site. However, the short routing lengths resulted in negligible hydrograph attenuation, and we have elected to delete on-site routing. The revised AHYMO runs are attached along with Plates 1 and 4 which have been revised to reflect deletion of the AHYMO routing sections.

Item 2 in the letter regarded discrepancies between HEC-2 channel section reaches and the reach lengths shown on Plate 4. We have revised the HEC-2 runs and Plate 4, both of which are included with this submittal.

Item 3 in the letter regarded providing evidence that adequate design and maintenance systems are in place for the Madeira retaining wall.

- Freeboard: A minimum of 1.07 feet of freeboard is provided for the Madeira retaining wall as shown on page 2 of Form 8 (pages 1 and 2 of Form 8 have been updated and are attached.) Also, the maximum developed water surface elevation of 5222.53 is 1.12 feet below the proposed building finished floor elevation.

The 100-year off-site hydrograph reflects developed urban conditions. Therefore, there is no reason why the peak off-site flow should increase and no reason why the maximum developed water surface elevation should increase. Similarly, the impacts of sediment and ice accumulation should be negligible because of the developed conditions. Debris accumulation will be avoided because the retaining wall ends in a channel that is large enough to pass any accumulated material.

- Closures: The only "opening" in the Madeira retaining wall is a set of stairs near the southeast corner of the proposed building. The stairs will act to retain water east of the building just as the wall itself does.

- Embankment Protection: The Madeira retaining wall is cast-in-place concrete construction. There is no embankment requiring protection.

- Embankment and Foundation Stability: The Madeira retaining wall was designed with the assumption that the water level equals the top of wall elevation on the Madeira side of the wall. The most critical load condition for the wall, however, is on the building side of the wall. The wall design included analysis of seepage through the wall foundation. Please refer to the attached retaining wall detail and design calculations.

- Settlement: Settlement of the wall is acceptable for standard retaining wall designs. Compaction will be a minimum of 95%, ASTM D1557, the site soils are silty sands, and the retaining wall weight is minimal since it is distributed by the foundation.

- Interior Drainage: There are no interior drainage systems required or provided for the Madeira retaining wall.

- Operation Plans: No operation plans are required for the Madeira retaining wall since there are no closures or interior drainage systems.

- Maintenance Plans: The Madeira retaining wall will be cast-in-place concrete construction with no closures or interior drainage systems. The owner of the wall, Dominion Leasing, Inc., will maintain the wall and will ensure that its stability, height, and overall integrity are maintained. Please see the attached Permanent Easement and Agreement and Covenant.

- Certification Requirements: Certified as-built plans will be submitted at the time a Letter of Map Revision is requested.

Some additional concerns were voiced by Mark Pirrello in a phone conversation last August. These are addressed below:

- The grades shown on Form 8, page 2 of 9 have been updated. Please use the enclosed page 2 to update our earlier submittal.

- Basin B is non-contributing in the developed condition. This site is nearing construction completion and has been regraded to discharge to the west.

- The attached AHYMO runs show that the maximum water surface elevation of the pond in Madeira and Hendrix is 5222.72 under existing conditions. They also show that development will decrease this maximum water surface elevation to 5222.53, since the existing earthen berm (top elevation 5222.4) is replaced with a four-inch mountable curb (top elevation 5221.45.) Since development will not increase existing ponding in the Madeira and Hendrix intersection, we have not contacted the property owners on the northeast and southeast corners of the intersection.

- Both the on-site flow and the off-site flow channeled through the site are discharged to Montgomery Boulevard. There is one area inlet on the west side of the proposed building that will discharge to the Montgomery Boulevard storm drain. Since the flow intercepted by this inlet will be minor, it was not considered in the analysis.

Please call Larry Read or me if you have any questions regarding our CLOMR request.

CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.

Suzi Balogh

Suzi Balogh, P.E.

cc: Gilbert Aldaz, City/County Floodplain Administrator
City of Albuquerque

Encl.

REVISED AHYMO PRINTOUT

100-YEAR STORM

EXISTING CONDITIONS

```
START                    TIME=0.0
*   ****COMPUTE  HYDROGRAPHS FOR  THE  IRS BUILDING  FLOOD  PLAIN
STUDY****
*  ****    FILE IRSE100s.DAT      -     HYMO PER DEC DPM REVISIONS
   ****
*   *********          EXISTING  CONDITIONS -  100 YEAR  STORM
**********
*
RAINFALL              TYPE=1   RAIN QUARTER=0.0
                      RAIN  ONE=2.14  RAIN SIX=2.60  RAIN  DAY=3.10
DT=.0333333
*** CREATE HYD FOR OFFSITE RUNOFF HYD NO 101.1 BASIN A ***
COMPUTE NM HYD        ID=1   HYD NO= 101.1  DA=0.0687SQ MI
                      PER A=0.0  PER B=19.0 PER  C=17.0 PER  D=64.0
TP= -0.1980
                      MASSRAIN=-1
PRINT HYD             ID=1       CODE=0
*
*HYD 601 DISCHARGE THROUGH INLET/PIPE SYSTEM AT MADIERA ST.
*HYD 601.1 DISCHARGE OVER BERM BEHIND
*EXISTING CURB SECTION WEST SIDE OF MADIERA ST.
*
DIVIDE HYD              ID=1 CODE=999 ID=3 HYD NO=601
                                      ID=4 HYD NO=601.1
                      TOTAL FLOW      DIVIDED FLOW
                          1.96             1.96
                          12.7             12.7
                          25.3             25.3
                          28.3             28.3
                          29.7             29.7
                          30.0             29.7
                          50.0             29.7
                         200.0             29.7
PRINT HYD               ID=3 CODE=0
PRINT HYD               ID=4 CODE=0
*
ROUTE RESERVOIR      ID=1 HYD 501 INFLOW ID=4 CODE=2
                     OUTFLOW (CFS)   STORAGE (AC FT)   ELEV (FT)
                         0                0.0            5219.84
                        0.01              .5372          5222.40
                        7.5               .5648          5222.45
                        21.2              .5925          5222.50
                        38.9              .6201          5222.55
                        59.8              .6477          5222.60
                        83.6              .6754          5222.65
                       109.9              .7030          5222.70
                       138.5              .7306          5222.75
                       169.2              .7582          5222.80
                       202.0              .7859          5222.85
                       236.5              .8135          5222.90
*
PRINT HYD               ID=1       CODE=0
**
****CREATE HYD FOR ONSITE RUNOFF BASIN C= HYD 102.1****
```

```
COMPUTE NM HYD          ID=8   HYD NO= 102.1  DA=0.0050 SQ MI
                        PER A=90.0 PER  B=0.0 PER C=10.0  PER D=0.0
TP= -0.1340
                        MASSRAIN=-1
*
PRINT HYD               ID=8 CODE=0
ADD HYD                 ID=9 HYD=103  ID=1 ID=8
*
PRINT HYD               ID=9 CODE=0
*
****CREATE HYD FOR OFFSITE RUNOFF FROM BASIN B=103.1****
COMPUTE NM HYD          ID=10   HYD NO= 103.1  DA=0.0010 SQ MI
                        PER A=100.0  PER B=0.0 PER C=0.0  PER D=0.0
TP= -0.1340
                        MASSRAIN=-1
*
PRINT HYD               ID=10 CODE=0
*
ADD HYD                 ID=11 HYD=104 ID=9 ID=10
*
PRINT HYD               ID=11 CODE=0
*
FINISH
```

```
    AHYMO PROGRAM (AHYMO392) - AMAFCA VERSION OF HYMO - MARCH, 1992
         RUN DATE (MON/DAY/YR) = 11/08/1993
         START TIME (HR:MIN:SEC) = 17:39:54     USER NO.= S_BALOGH.S92
         INPUT FILE = irse100s.dat

START                TIME=0.0
*  ****COMPUTE HYDROGRAPHS FOR THE IRS BUILDING FLOOD PLAIN STUDY****
*  ****    FILE IRSE100s.DAT     -    HYMO PER DEC DPM REVISIONS      ****
*  **********      EXISTING CONDITIONS - 100 YEAR STORM     **********
*
RAINFALL           TYPE=1   RAIN QUARTER=0.0
                   RAIN ONE=2.14 RAIN SIX=2.60 RAIN DAY=3.10 DT=.0333333

 COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
 DT =    .033333 HOURS       END TIME =     5.999995 HOURS
    .0000   .0027   .0055   .0084   .0113   .0143   .0173
    .0204   .0236   .0269   .0302   .0337   .0372   .0408
    .0445   .0484   .0523   .0564   .0606   .0649   .0694
    .0741   .0789   .0839   .0892   .0946   .1004   .1063
    .1126   .1193   .1263   .1322   .1385   .1453   .1598
    .1923   .2424   .3143   .4123   .5412   .7056   .9102
   1.1599  1.3908  1.4875  1.5691  1.6417  1.7077  1.7685
   1.8250  1.8777  1.9272  1.9738  2.0177  2.0591  2.0984
   2.1356  2.1709  2.2043  2.2361  2.2663  2.2737  2.2808
   2.2875  2.2939  2.3001  2.3061  2.3118  2.3173  2.3226
   2.3278  2.3328  2.3377  2.3424  2.3470  2.3515  2.3558
   2.3601  2.3643  2.3684  2.3724  2.3763  2.3801  2.3839
   2.3875  2.3911  2.3947  2.3982  2.4016  2.4050  2.4083
   2.4116  2.4148  2.4179  2.4210  2.4241  2.4271  2.4301
   2.4331  2.4360  2.4388  2.4417  2.4445  2.4472  2.4499
   2.4526  2.4553  2.4579  2.4605  2.4631  2.4656  2.4682
   2.4706  2.4731  2.4755  2.4780  2.4803  2.4827  2.4851
   2.4874  2.4897  2.4919  2.4942  2.4964  2.4987  2.5008
   2.5030  2.5052  2.5073  2.5094  2.5115  2.5136  2.5157
   2.5177  2.5198  2.5218  2.5238  2.5258  2.5278  2.5297
   2.5317  2.5336  2.5355  2.5374  2.5393  2.5412  2.5431
   2.5449  2.5468  2.5486  2.5504  2.5522  2.5540  2.5558
   2.5575  2.5593  2.5610  2.5628  2.5645  2.5662  2.5679
   2.5696  2.5713  2.5730  2.5746  2.5763  2.5779  2.5795
   2.5812  2.5828  2.5844  2.5860  2.5876  2.5892  2.5907
   2.5923  2.5939  2.5954  2.5969  2.5985  2.6000

*** CREATE HYD FOR OFFSITE RUNOFF HYD NO 101.1 BASIN A ***
COMPUTE NM HYD       ID=1   HYD NO= 101.1  DA=0.0687SQ MI
                     PER A=0.0 PER B=19.0 PER C=17.0 PER D=64.0 TP= -0.1980
                     MASSRAIN=-1

    K =   .107984HR    TP =   .198000HR    K/TP RATIO =   .545373     SHAPE CONSTANT, N =  7.100187
    UNIT PEAK =   116.80    CFS   UNIT VOLUME =    .9999      B =   525.98      F60 = 2.1400
    AREA =      .043968 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333
```

K = .180625HR TP = .198000HR K/TP RATIO = .912247 SHAPE CONSTANT, N = 3.881852
UNIT PEAK = 43.370 CFS UNIT VOLUME = .9998 B = 347.21 P60 = 2.1400
AREA = .024732 SQ MI I4 = .42917 INCHES INF = 1.05167 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033333

PRINT HYD ID=1 CODE=0

PARTIAL HYDROGRAPH 101.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.633	138.8	3.267	2.7	4.900	1.2	6.533	.1
.033	.0	1.667	124.8	3.300	2.6	4.933	1.2	6.567	.1
.067	.0	1.700	110.9	3.333	2.5	4.967	1.2	6.600	.1
.100	.0	1.733	98.8	3.367	2.4	5.000	1.2	6.633	.1
.133	.0	1.767	88.5	3.400	2.3	5.033	1.2	6.667	.1
.167	.0	1.800	79.7	3.433	2.2	5.067	1.2	6.700	.1
.200	.0	1.833	72.4	3.467	2.2	5.100	1.2	6.733	.1
.233	.0	1.867	66.2	3.500	2.1	5.133	1.2	6.767	.1
.267	.0	1.900	61.0	3.533	2.0	5.167	1.2	6.800	.1
.300	.0	1.933	56.5	3.567	2.0	5.200	1.2	6.833	.1
.333	.0	1.967	52.5	3.600	1.9	5.233	1.2	6.867	.0
.367	.0	2.000	48.9	3.633	1.8	5.267	1.2	6.900	.0
.400	.0	2.033	45.6	3.667	1.8	5.300	1.2	6.933	.0
.433	.0	2.067	42.5	3.700	1.8	5.333	1.2	6.967	.0
.467	.0	2.100	39.2	3.733	1.7	5.367	1.2	7.000	.0
.500	.0	2.133	35.3	3.767	1.7	5.400	1.2	7.033	.0
.533	.0	2.167	31.0	3.800	1.6	5.433	1.2	7.067	.0
.567	.0	2.200	26.8	3.833	1.6	5.467	1.2	7.100	.0
.600	.0	2.233	23.0	3.867	1.6	5.500	1.2	7.133	.0
.633	.0	2.267	19.9	3.900	1.5	5.533	1.2	7.167	.0
.667	.0	2.300	17.5	3.933	1.5	5.567	1.2	7.200	.0
.700	.0	2.333	15.6	3.967	1.5	5.600	1.2	7.233	.0
.733	.0	2.367	14.0	4.000	1.5	5.633	1.2	7.267	.0
.767	.0	2.400	12.8	4.033	1.4	5.667	1.2	7.300	.0
.800	.0	2.433	11.7	4.067	1.4	5.700	1.2	7.333	.0
.833	.0	2.467	10.9	4.100	1.4	5.733	1.2	7.367	.0
.867	.0	2.500	10.1	4.133	1.4	5.767	1.2	7.400	.0
.900	.0	2.533	9.4	4.167	1.4	5.800	1.2	7.433	.0
.933	.1	2.567	8.8	4.200	1.3	5.833	1.2	7.467	.0
.967	.2	2.600	8.2	4.233	1.3	5.867	1.2	7.500	.0
1.000	.6	2.633	7.7	4.267	1.3	5.900	1.2	7.533	.0
1.033	1.2	2.667	7.2	4.300	1.3	5.933	1.2	7.567	.0
1.067	1.8	2.700	6.8	4.333	1.3	5.967	1.2	7.600	.0
1.100	2.3	2.733	6.3	4.367	1.3	6.000	1.3	7.633	.0
1.133	2.8	2.767	6.0	4.400	1.3	6.033	1.3	7.667	.0
1.167	3.2	2.800	5.6	4.433	1.3	6.067	1.2	7.700	.0
1.200	3.9	2.833	5.3	4.467	1.2	6.100	1.2	7.733	.0
1.233	5.5	2.867	5.0	4.500	1.2	6.133	1.1	7.767	.0
1.267	8.7	2.900	4.7	4.533	1.2	6.167	.9	7.800	.0
1.300	14.3	2.933	4.4	4.567	1.2	6.200	.8	7.833	.0
1.333	23.4	2.967	4.2	4.600	1.2	6.233	.6	7.867	.0
1.367	36.7	3.000	4.0	4.633	1.2	6.267	.5	7.900	.0
1.400	54.8	3.033	3.8	4.667	1.2	6.300	.4	7.933	.0

1.433	77.9	3.067	3.6	4.700	1.2	6.333	.3	7.967	.0
1.467	104.3	3.100	3.4	4.733	1.2	6.367	.2	8.000	.0
1.500	129.5	3.133	3.2	4.767	1.2	6.400	.2	8.033	.0
1.533	147.3	3.167	3.1	4.800	1.2	6.433	.2	8.067	.0
1.567	153.9	3.200	2.9	4.833	1.2	6.467	.2		
1.600	149.9	3.233	2.8	4.867	1.2	6.500	.1		

RUNOFF VOLUME = 1.89625 INCHES = 6.9478 ACRE-FEET
PEAK DISCHARGE RATE = 153.92 CFS AT 1.567 HOURS BASIN AREA = .0687 SQ. MI.

*
*HYD 601 DISCHARGE THROUGH INLET/PIPE SYSTEM AT MADIERA ST.
*HYD 601.1 DISCHARGE OVER BERM BEHIND
*EXISTING CURB SECTION WEST SIDE OF MADIERA ST.
*
DIVIDE HYD ID=1 CODE=999 ID=3 HYD NO=601
ID=4 HYD NO=601.1

TOTAL FLOW	DIVIDED FLOW
1.96	1.96
25.3	25.3
28.3	28.3
29.7	29.7
30.0	29.7
50.0	29.7
200.0	29.7

PRINT HYD ID=3 CODE=0

HYDROGRAPH FROM AREA 601.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.633	29.7	3.267	2.7	4.900	1.2	6.533	.1
.033	.0	1.667	29.7	3.300	2.6	4.933	1.2	6.567	.1
.067	.0	1.700	29.7	3.333	2.5	4.967	1.2	6.600	.1
.100	.0	1.733	29.7	3.367	2.4	5.000	1.2	6.633	.1
.133	.0	1.767	29.7	3.400	2.3	5.033	1.2	6.667	.1
.167	.0	1.800	29.7	3.433	2.2	5.067	1.2	6.700	.1
.200	.0	1.833	29.7	3.467	2.2	5.100	1.2	6.733	.1
.233	.0	1.867	29.7	3.500	2.1	5.133	1.2	6.767	.1
.267	.0	1.900	29.7	3.533	2.0	5.167	1.2	6.800	.1
.300	.0	1.933	29.7	3.567	2.0	5.200	1.2	6.833	.1
.333	.0	1.967	29.7	3.600	1.9	5.233	1.2	6.867	.0
.367	.0	2.000	29.7	3.633	1.8	5.267	1.2	6.900	.0
.400	.0	2.033	29.7	3.667	1.8	5.300	1.2	6.933	.0
.433	.0	2.067	29.7	3.700	1.8	5.333	1.2	6.967	.0
.467	.0	2.100	29.7	3.733	1.7	5.367	1.2	7.000	.0
.500	.0	2.133	29.7	3.767	1.7	5.400	1.2	7.033	.0
.533	.0	2.167	29.7	3.800	1.6	5.433	1.2	7.067	.0
.567	.0	2.200	26.8	3.833	1.6	5.467	1.2	7.100	.0
.600	.0	2.233	23.0	3.867	1.6	5.500	1.2	7.133	.0
.633	.0	2.267	19.9	3.900	1.5	5.533	1.2	7.167	.0
.667	.0	2.300	17.5	3.933	1.5	5.567	1.2	7.200	.0

.700	.0	2.333	15.6	3.967	1.5	5.600	1.2	7.233	.0
.733	.0	2.367	14.0	4.000	1.5	5.633	1.2	7.267	.0
.767	.0	2.400	12.8	4.033	1.4	5.667	1.2	7.300	.0
.800	.0	2.433	11.7	4.067	1.4	5.700	1.2	7.333	.0
.833	.0	2.467	10.9	4.100	1.4	5.733	1.2	7.367	.0
.867	.0	2.500	10.1	4.133	1.4	5.767	1.2	7.400	.0
.900	.0	2.533	9.4	4.167	1.4	5.800	1.2	7.433	.0
.933	.1	2.567	8.8	4.200	1.3	5.833	1.2	7.467	.0
.967	.2	2.600	8.2	4.233	1.3	5.867	1.2	7.500	.0
1.000	.6	2.633	7.7	4.267	1.3	5.900	1.2	7.533	.0
1.033	1.2	2.667	7.2	4.300	1.3	5.933	1.2	7.567	.0
1.067	1.8	2.700	6.8	4.333	1.3	5.967	1.2	7.600	.0
1.100	2.3	2.733	6.3	4.367	1.3	6.000	1.3	7.633	.0
1.133	2.8	2.767	6.0	4.400	1.3	6.033	1.3	7.667	.0
1.167	3.2	2.800	5.6	4.433	1.3	6.067	1.2	7.700	.0
1.200	3.9	2.833	5.3	4.467	1.2	6.100	1.2	7.733	.0
1.233	5.5	2.867	5.0	4.500	1.2	6.133	1.1	7.767	.0
1.267	8.7	2.900	4.7	4.533	1.2	6.167	.9	7.800	.0
1.300	14.3	2.933	4.4	4.567	1.2	6.200	.8	7.833	.0
1.333	23.4	2.967	4.2	4.600	1.2	6.233	.6	7.867	.0
1.367	29.7	3.000	4.0	4.633	1.2	6.267	.5	7.900	.0
1.400	29.7	3.033	3.8	4.667	1.2	6.300	.4	7.933	.0
1.433	29.7	3.067	3.6	4.700	1.2	6.333	.3	7.967	.0
1.467	29.7	3.100	3.4	4.733	1.2	6.367	.2	8.000	.0
1.500	29.7	3.133	3.2	4.767	1.2	6.400	.2	8.033	.0
1.533	29.7	3.167	3.1	4.800	1.2	6.433	.2	8.067	.0
1.567	29.7	3.200	2.9	4.833	1.2	6.467	.2		
1.600	29.7	3.233	2.8	4.867	1.2	6.500	.1		

RUNOFF VOLUME = 1.89624 INCHES = 3.3550 ACRE-FEET
PEAK DISCHARGE RATE = 29.70 CFS AT 1.367 HOURS BASIN AREA = .0332 SQ. MI.

PRINT HYD ID=4 CODE=0

HYDROGRAPH FROM AREA 601.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	.467	.0	.933	.0	1.400	25.1	1.867	36.5
.033	.0	.500	.0	.967	.0	1.433	48.2	1.900	31.3
.067	.0	.533	.0	1.000	.0	1.467	74.6	1.933	26.8
.100	.0	.567	.0	1.033	.0	1.500	99.8	1.967	22.8
.133	.0	.600	.0	1.067	.0	1.533	117.6	2.000	19.2
.167	.0	.633	.0	1.100	.0	1.567	124.2	2.033	15.9
.200	.0	.667	.0	1.133	.0	1.600	120.2	2.067	12.8
.233	.0	.700	.0	1.167	.0	1.633	109.1	2.100	9.5
.267	.0	.733	.0	1.200	.0	1.667	95.1	2.133	5.6
.300	.0	.767	.0	1.233	.0	1.700	81.2	2.167	1.3
.333	.0	.800	.0	1.267	.0	1.733	69.1		
.367	.0	.833	.0	1.300	.0	1.767	58.8		
.400	.0	.867	.0	1.333	.0	1.800	50.0		
.433	.0	.900	.0	1.367	7.0	1.833	42.7		

RUNOFF VOLUME = 1.89625 INCHES = 3.5928 ACRE-FEET
PEAK DISCHARGE RATE = 124.22 CFS AT 1.567 HOURS BASIN AREA = .0355 SQ. MI.

*
ROUTE RESERVOIR ID=1 HYD 501 INFLOW ID=4 CODE=2

OUTFLOW (CFS)	STORAGE (AC FT)	ELEV (FT)
0	0.0	5219.84
0.01	.5372	5222.40
7.5	.5648	5222.45
21.2	.5925	5222.50
38.9	.6201	5222.55
59.8	.6477	5222.60
109.9	.7030	5222.70
169.2	.7582	5222.80
202.0	.7859	5222.85
236.5	.8135	5222.90

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TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	5219.84	.000	.00
.07	.00	5219.84	.000	.00
.13	.00	5219.84	.000	.00
.20	.00	5219.84	.000	.00
.27	.00	5219.84	.000	.00
.33	.00	5219.84	.000	.00
.40	.00	5219.84	.000	.00
.47	.00	5219.84	.000	.00
.53	.00	5219.84	.000	.00
.60	.00	5219.84	.000	.00
.67	.00	5219.84	.000	.00
.73	.00	5219.84	.000	.00
.80	.00	5219.84	.000	.00
.87	.00	5219.84	.000	.00
.93	.00	5219.84	.000	.00
1.00	.00	5219.84	.000	.00
1.07	.00	5219.84	.000	.00
1.13	.00	5219.84	.000	.00
1.20	.00	5219.84	.000	.00
1.27	.00	5219.84	.000	.00
1.33	.00	5219.84	.000	.00
1.40	25.12	5220.10	.054	.00
1.47	74.57	5221.38	.324	.01
1.53	117.62	5222.70	.701	107.67
1.60	120.17	5222.72	.714	121.97
1.67	95.06	5222.68	.693	100.61
1.73	69.12	5222.63	.663	73.90
1.80	50.03	5222.59	.640	53.98
1.87	36.48	5222.55	.621	39.43
1.93	26.83	5222.52	.605	29.38

2.00	19.16	5222.50	.593	21.23
2.07	12.82	5222.48	.580	15.09
2.13	5.57	5222.45	.567	8.36
2.20	.00	5222.42	.548	2.81
2.27	.00	5222.40	.539	.58
2.33	.00	5222.40	.538	.12
2.40	.00	5222.40	.537	.03
2.47	.00	5222.40	.537	.01
2.53	.00	5222.40	.537	.01
2.60	.00	5222.40	.537	.01
2.67	.00	5222.40	.537	.01
2.73	.00	5222.40	.537	.01
2.80	.00	5222.40	.537	.01
2.87	.00	5222.40	.537	.01
2.93	.00	5222.40	.537	.01
3.00	.00	5222.40	.537	.01
3.07	.00	5222.40	.537	.01
3.13	.00	5222.40	.537	.01
3.20	.00	5222.40	.537	.01
3.27	.00	5222.40	.537	.01
3.33	.00	5222.40	.536	.01
3.40	.00	5222.40	.536	.01
3.47	.00	5222.40	.536	.01
3.53	.00	5222.40	.536	.01
3.60	.00	5222.40	.536	.01
3.67	.00	5222.40	.536	.01
3.73	.00	5222.40	.536	.01
3.80	.00	5222.39	.536	.01
3.87	.00	5222.39	.536	.01
3.93	.00	5222.39	.536	.01
4.00	.00	5222.39	.536	.01
4.07	.00	5222.39	.536	.01
4.13	.00	5222.39	.536	.01
4.20	.00	5222.39	.536	.01
4.27	.00	5222.39	.536	.01
4.33	.00	5222.39	.536	.01
4.40	.00	5222.39	.536	.01
4.47	.00	5222.39	.536	.01
4.53	.00	5222.39	.535	.01
4.60	.00	5222.39	.535	.01
4.67	.00	5222.39	.535	.01
4.73	.00	5222.39	.535	.01
4.80	.00	5222.39	.535	.01
4.87	.00	5222.39	.535	.01
4.93	.00	5222.39	.535	.01
5.00	.00	5222.39	.535	.01
5.07	.00	5222.39	.535	.01
5.13	.00	5222.39	.535	.01
5.20	.00	5222.39	.535	.01
5.27	.00	5222.39	.535	.01
5.33	.00	5222.39	.535	.01
5.40	.00	5222.39	.535	.01
5.47	.00	5222.39	.535	.01
5.53	.00	5222.39	.535	.01

5.60	.00	5222.39	.535	.01
5.67	.00	5222.39	.535	.01
5.73	.00	5222.39	.534	.01
5.80	.00	5222.39	.534	.01
5.87	.00	5222.39	.534	.01
5.93	.00	5222.39	.534	.01
6.00	.00	5222.39	.534	.01
6.07	.00	5222.39	.534	.01
6.13	.00	5222.39	.534	.01
6.20	.00	5222.39	.534	.01
6.27	.00	5222.38	.534	.01
6.33	.00	5222.38	.534	.01
6.40	.00	5222.38	.534	.01
6.47	.00	5222.38	.534	.01
6.53	.00	5222.38	.534	.01
6.60	.00	5222.38	.534	.01
6.67	.00	5222.38	.534	.01
6.73	.00	5222.38	.534	.01
6.80	.00	5222.38	.534	.01
6.87	.00	5222.38	.534	.01
6.93	.00	5222.38	.533	.01
7.00	.00	5222.38	.533	.01
7.07	.00	5222.38	.533	.01
7.13	.00	5222.38	.533	.01
7.20	.00	5222.38	.533	.01
7.27	.00	5222.38	.533	.01
7.33	.00	5222.38	.533	.01
7.40	.00	5222.38	.533	.01
7.47	.00	5222.38	.533	.01
7.53	.00	5222.38	.533	.01
7.60	.00	5222.38	.533	.01
7.67	.00	5222.38	.533	.01
7.73	.00	5222.38	.533	.01
7.80	.00	5222.38	.533	.01
7.87	.00	5222.38	.533	.01
7.93	.00	5222.38	.533	.01
8.00	.00	5222.38	.533	.01
8.07	.00	5222.38	.533	.01
8.13	.00	5222.38	.533	.01
8.20	.00	5222.38	.532	.01
8.27	.00	5222.38	.532	.01
8.33	.00	5222.38	.532	.01
8.40	.00	5222.38	.532	.01
8.47	.00	5222.38	.532	.01
8.53	.00	5222.38	.532	.01
8.60	.00	5222.38	.532	.01
8.67	.00	5222.38	.532	.01
8.73	.00	5222.38	.532	.01
8.80	.00	5222.38	.532	.01
8.87	.00	5222.37	.532	.01
8.93	.00	5222.37	.532	.01
9.00	.00	5222.37	.532	.01
9.07	.00	5222.37	.532	.01
9.13	.00	5222.37	.532	.01

9.20	.00	5222.37	.532	.01
9.27	.00	5222.37	.532	.01
9.33	.00	5222.37	.532	.01
9.40	.00	5222.37	.531	.01
9.47	.00	5222.37	.531	.01
9.53	.00	5222.37	.531	.01
9.60	.00	5222.37	.531	.01
9.67	.00	5222.37	.531	.01
9.73	.00	5222.37	.531	.01
9.80	.00	5222.37	.531	.01
9.87	.00	5222.37	.531	.01
9.93	.00	5222.37	.531	.01
10.00	.00	5222.37	.531	.01
10.07	.00	5222.37	.531	.01
10.13	.00	5222.37	.531	.01
10.20	.00	5222.37	.531	.01
10.27	.00	5222.37	.531	.01
10.33	.00	5222.37	.531	.01
10.40	.00	5222.37	.531	.01
10.47	.00	5222.37	.531	.01
10.53	.00	5222.37	.531	.01
10.60	.00	5222.37	.530	.01
10.67	.00	5222.37	.530	.01
10.73	.00	5222.37	.530	.01
10.80	.00	5222.37	.530	.01
10.87	.00	5222.37	.530	.01
10.93	.00	5222.37	.530	.01
11.00	.00	5222.37	.530	.01
11.07	.00	5222.37	.530	.01
11.13	.00	5222.37	.530	.01
11.20	.00	5222.37	.530	.01
11.27	.00	5222.37	.530	.01
11.33	.00	5222.37	.530	.01
11.40	.00	5222.36	.530	.01
11.47	.00	5222.36	.530	.01
11.53	.00	5222.36	.530	.01
11.60	.00	5222.36	.530	.01
11.67	.00	5222.36	.530	.01
11.73	.00	5222.36	.530	.01
11.80	.00	5222.36	.530	.01
11.87	.00	5222.36	.529	.01
11.93	.00	5222.36	.529	.01
12.00	.00	5222.36	.529	.01
12.07	.00	5222.36	.529	.01
12.13	.00	5222.36	.529	.01
12.20	.00	5222.36	.529	.01
12.27	.00	5222.36	.529	.01
12.33	.00	5222.36	.529	.01
12.40	.00	5222.36	.529	.01
12.47	.00	5222.36	.529	.01
12.53	.00	5222.36	.529	.01
12.60	.00	5222.36	.529	.01
12.67	.00	5222.36	.529	.01
12.73	.00	5222.36	.529	.01

12.80	.00	5222.36	.529	.01
12.87	.00	5222.36	.529	.01
12.93	.00	5222.36	.529	.01
13.00	.00	5222.36	.529	.01
13.07	.00	5222.36	.528	.01
13.13	.00	5222.36	.528	.01
13.20	.00	5222.36	.528	.01
13.27	.00	5222.36	.528	.01
13.33	.00	5222.36	.528	.01
13.40	.00	5222.36	.528	.01
13.47	.00	5222.36	.528	.01
13.53	.00	5222.36	.528	.01
13.60	.00	5222.36	.528	.01
13.67	.00	5222.36	.528	.01
13.73	.00	5222.36	.528	.01
13.80	.00	5222.36	.528	.01
13.87	.00	5222.36	.528	.01
13.93	.00	5222.35	.528	.01
14.00	.00	5222.35	.528	.01
14.07	.00	5222.35	.528	.01
14.13	.00	5222.35	.528	.01
14.20	.00	5222.35	.528	.01
14.27	.00	5222.35	.528	.01
14.33	.00	5222.35	.527	.01
14.40	.00	5222.35	.527	.01
14.47	.00	5222.35	.527	.01
14.53	.00	5222.35	.527	.01
14.60	.00	5222.35	.527	.01
14.67	.00	5222.35	.527	.01
14.73	.00	5222.35	.527	.01
14.80	.00	5222.35	.527	.01
14.87	.00	5222.35	.527	.01
14.93	.00	5222.35	.527	.01
15.00	.00	5222.35	.527	.01
15.07	.00	5222.35	.527	.01
15.13	.00	5222.35	.527	.01
15.20	.00	5222.35	.527	.01
15.27	.00	5222.35	.527	.01
15.33	.00	5222.35	.527	.01
15.40	.00	5222.35	.527	.01
15.47	.00	5222.35	.527	.01
15.53	.00	5222.35	.526	.01
15.60	.00	5222.35	.526	.01
15.67	.00	5222.35	.526	.01
15.73	.00	5222.35	.526	.01
15.80	.00	5222.35	.526	.01
15.87	.00	5222.35	.526	.01
15.93	.00	5222.35	.526	.01
16.00	.00	5222.35	.526	.01
16.07	.00	5222.35	.526	.01
16.13	.00	5222.35	.526	.01
16.20	.00	5222.35	.526	.01
16.27	.00	5222.35	.526	.01
16.33	.00	5222.35	.526	.01

16.40	.00	5222.35	.526	.01
16.47	.00	5222.35	.526	.01
16.53	.00	5222.35	.526	.01
16.60	.00	5222.34	.526	.01
16.67	.00	5222.34	.526	.01
16.73	.00	5222.34	.526	.01
16.80	.00	5222.34	.525	.01
16.87	.00	5222.34	.525	.01
16.93	.00	5222.34	.525	.01
17.00	.00	5222.34	.525	.01
17.07	.00	5222.34	.525	.01
17.13	.00	5222.34	.525	.01
17.20	.00	5222.34	.525	.01
17.27	.00	5222.34	.525	.01
17.33	.00	5222.34	.525	.01
17.40	.00	5222.34	.525	.01
17.47	.00	5222.34	.525	.01
17.53	.00	5222.34	.525	.01
17.60	.00	5222.34	.525	.01
17.67	.00	5222.34	.525	.01
17.73	.00	5222.34	.525	.01
17.80	.00	5222.34	.525	.01
17.87	.00	5222.34	.525	.01
17.93	.00	5222.34	.525	.01
18.00	.00	5222.34	.524	.01
18.07	.00	5222.34	.524	.01
18.13	.00	5222.34	.524	.01
18.20	.00	5222.34	.524	.01
18.27	.00	5222.34	.524	.01
18.33	.00	5222.34	.524	.01
18.40	.00	5222.34	.524	.01
18.47	.00	5222.34	.524	.01
18.53	.00	5222.34	.524	.01
18.60	.00	5222.34	.524	.01
18.67	.00	5222.34	.524	.01
18.73	.00	5222.34	.524	.01
18.80	.00	5222.34	.524	.01
18.87	.00	5222.34	.524	.01
18.93	.00	5222.34	.524	.01
19.00	.00	5222.34	.524	.01
19.07	.00	5222.34	.524	.01
19.13	.00	5222.33	.524	.01
19.20	.00	5222.33	.524	.01
19.27	.00	5222.33	.523	.01
19.33	.00	5222.33	.523	.01
19.40	.00	5222.33	.523	.01
19.47	.00	5222.33	.523	.01
19.53	.00	5222.33	.523	.01
19.60	.00	5222.33	.523	.01
19.67	.00	5222.33	.523	.01
19.73	.00	5222.33	.523	.01
19.80	.00	5222.33	.523	.01
19.87	.00	5222.33	.523	.01
19.93	.00	5222.33	.523	.01

PEAK DISCHARGE = 123.315 CFS - PEAK OCCURS AT HOUR 1.57
MAXIMUM WATER SURFACE ELEVATION = 5222.723
MAXIMUM STORAGE = .7155 AC-FT INCREMENTAL TIME= .033333HRS

*
PRINT HYD ID=1 CODE=0

OUTFLOW HYDROGRAPH RESERVOIR 501.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	4.000	.0	8.000	.0	12.000	.0	16.000	.0
.033	.0	4.033	.0	8.033	.0	12.033	.0	16.033	.0
.067	.0	4.067	.0	8.067	.0	12.067	.0	16.067	.0
.100	.0	4.100	.0	8.100	.0	12.100	.0	16.100	.0
.133	.0	4.133	.0	8.133	.0	12.133	.0	16.133	.0
.167	.0	4.167	.0	8.167	.0	12.167	.0	16.167	.0
.200	.0	4.200	.0	8.200	.0	12.200	.0	16.200	.0
.233	.0	4.233	.0	8.233	.0	12.233	.0	16.233	.0
.267	.0	4.267	.0	8.267	.0	12.267	.0	16.267	.0
.300	.0	4.300	.0	8.300	.0	12.300	.0	16.300	.0
.333	.0	4.333	.0	8.333	.0	12.333	.0	16.333	.0
.367	.0	4.367	.0	8.367	.0	12.367	.0	16.367	.0
.400	.0	4.400	.0	8.400	.0	12.400	.0	16.400	.0
.433	.0	4.433	.0	8.433	.0	12.433	.0	16.433	.0
.467	.0	4.467	.0	8.467	.0	12.467	.0	16.467	.0
.500	.0	4.500	.0	8.500	.0	12.500	.0	16.500	.0
.533	.0	4.533	.0	8.533	.0	12.533	.0	16.533	.0
.567	.0	4.567	.0	8.567	.0	12.567	.0	16.567	.0
.600	.0	4.600	.0	8.600	.0	12.600	.0	16.600	.0
.633	.0	4.633	.0	8.633	.0	12.633	.0	16.633	.0
.667	.0	4.667	.0	8.667	.0	12.667	.0	16.667	.0
.700	.0	4.700	.0	8.700	.0	12.700	.0	16.700	.0
.733	.0	4.733	.0	8.733	.0	12.733	.0	16.733	.0
.767	.0	4.767	.0	8.767	.0	12.767	.0	16.767	.0
.800	.0	4.800	.0	8.800	.0	12.800	.0	16.800	.0
.833	.0	4.833	.0	8.833	.0	12.833	.0	16.833	.0
.867	.0	4.867	.0	8.867	.0	12.867	.0	16.867	.0
.900	.0	4.900	.0	8.900	.0	12.900	.0	16.900	.0
.933	.0	4.933	.0	8.933	.0	12.933	.0	16.933	.0
.967	.0	4.967	.0	8.967	.0	12.967	.0	16.967	.0
1.000	.0	5.000	.0	9.000	.0	13.000	.0	17.000	.0
1.033	.0	5.033	.0	9.033	.0	13.033	.0	17.033	.0
1.067	.0	5.067	.0	9.067	.0	13.067	.0	17.067	.0
1.100	.0	5.100	.0	9.100	.0	13.100	.0	17.100	.0
1.133	.0	5.133	.0	9.133	.0	13.133	.0	17.133	.0
1.167	.0	5.167	.0	9.167	.0	13.167	.0	17.167	.0
1.200	.0	5.200	.0	9.200	.0	13.200	.0	17.200	.0
1.233	.0	5.233	.0	9.233	.0	13.233	.0	17.233	.0
1.267	.0	5.267	.0	9.267	.0	13.267	.0	17.267	.0
1.300	.0	5.300	.0	9.300	.0	13.300	.0	17.300	.0
1.333	.0	5.333	.0	9.333	.0	13.333	.0	17.333	.0
1.367	.0	5.367	.0	9.367	.0	13.367	.0	17.367	.0
1.400	.0	5.400	.0	9.400	.0	13.400	.0	17.400	.0

1.433	.0	5.433	.0	9.433	.0	13.433	.0	17.433	.0
1.467	.0	5.467	.0	9.467	.0	13.467	.0	17.467	.0
1.500	5.3	5.500	.0	9.500	.0	13.500	.0	17.500	.0
1.533	107.7	5.533	.0	9.533	.0	13.533	.0	17.533	.0
1.567	123.3	5.567	.0	9.567	.0	13.567	.0	17.567	.0
1.600	122.0	5.600	.0	9.600	.0	13.600	.0	17.600	.0
1.633	113.2	5.633	.0	9.633	.0	13.633	.0	17.633	.0
1.667	100.6	5.667	.0	9.667	.0	13.667	.0	17.667	.0
1.700	86.8	5.700	.0	9.700	.0	13.700	.0	17.700	.0
1.733	73.9	5.733	.0	9.733	.0	13.733	.0	17.733	.0
1.767	62.8	5.767	.0	9.767	.0	13.767	.0	17.767	.0
1.800	54.0	5.800	.0	9.800	.0	13.800	.0	17.800	.0
1.833	46.2	5.833	.0	9.833	.0	13.833	.0	17.833	.0
1.867	39.4	5.867	.0	9.867	.0	13.867	.0	17.867	.0
1.900	34.2	5.900	.0	9.900	.0	13.900	.0	17.900	.0
1.933	29.4	5.933	.0	9.933	.0	13.933	.0	17.933	.0
1.967	25.1	5.967	.0	9.967	.0	13.967	.0	17.967	.0
2.000	21.2	6.000	.0	10.000	.0	14.000	.0	18.000	.0
2.033	18.2	6.033	.0	10.033	.0	14.033	.0	18.033	.0
2.067	15.1	6.067	.0	10.067	.0	14.067	.0	18.067	.0
2.100	11.9	6.100	.0	10.100	.0	14.100	.0	18.100	.0
2.133	8.4	6.133	.0	10.133	.0	14.133	.0	18.133	.0
2.167	5.4	6.167	.0	10.167	.0	14.167	.0	18.167	.0
2.200	2.8	6.200	.0	10.200	.0	14.200	.0	18.200	.0
2.233	1.3	6.233	.0	10.233	.0	14.233	.0	18.233	.0
2.267	.6	6.267	.0	10.267	.0	14.267	.0	18.267	.0
2.300	.3	6.300	.0	10.300	.0	14.300	.0	18.300	.0
2.333	.1	6.333	.0	10.333	.0	14.333	.0	18.333	.0
2.367	.1	6.367	.0	10.367	.0	14.367	.0	18.367	.0
2.400	.0	6.400	.0	10.400	.0	14.400	.0	18.400	.0
2.433	.0	6.433	.0	10.433	.0	14.433	.0	18.433	.0
2.467	.0	6.467	.0	10.467	.0	14.467	.0	18.467	.0
2.500	.0	6.500	.0	10.500	.0	14.500	.0	18.500	.0
2.533	.0	6.533	.0	10.533	.0	14.533	.0	18.533	.0
2.567	.0	6.567	.0	10.567	.0	14.567	.0	18.567	.0
2.600	.0	6.600	.0	10.600	.0	14.600	.0	18.600	.0
2.633	.0	6.633	.0	10.633	.0	14.633	.0	18.633	.0
2.667	.0	6.667	.0	10.667	.0	14.667	.0	18.667	.0
2.700	.0	6.700	.0	10.700	.0	14.700	.0	18.700	.0
2.733	.0	6.733	.0	10.733	.0	14.733	.0	18.733	.0
2.767	.0	6.767	.0	10.767	.0	14.767	.0	18.767	.0
2.800	.0	6.800	.0	10.800	.0	14.800	.0	18.800	.0
2.833	.0	6.833	.0	10.833	.0	14.833	.0	18.833	.0
2.867	.0	6.867	.0	10.867	.0	14.867	.0	18.867	.0
2.900	.0	6.900	.0	10.900	.0	14.900	.0	18.900	.0
2.933	.0	6.933	.0	10.933	.0	14.933	.0	18.933	.0
2.967	.0	6.967	.0	10.967	.0	14.967	.0	18.967	.0
3.000	.0	7.000	.0	11.000	.0	15.000	.0	19.000	.0
3.033	.0	7.033	.0	11.033	.0	15.033	.0	19.033	.0
3.067	.0	7.067	.0	11.067	.0	15.067	.0	19.067	.0
3.100	.0	7.100	.0	11.100	.0	15.100	.0	19.100	.0
3.133	.0	7.133	.0	11.133	.0	15.133	.0	19.133	.0
3.167	.0	7.167	.0	11.167	.0	15.167	.0	19.167	.0
3.200	.0	7.200	.0	11.200	.0	15.200	.0	19.200	.0

3.233	.0	7.233	.0	11.233	.0	15.233	.0	19.233	.0
3.267	.0	7.267	.0	11.267	.0	15.267	.0	19.267	.0
3.300	.0	7.300	.0	11.300	.0	15.300	.0	19.300	.0
3.333	.0	7.333	.0	11.333	.0	15.333	.0	19.333	.0
3.367	.0	7.367	.0	11.367	.0	15.367	.0	19.367	.0
3.400	.0	7.400	.0	11.400	.0	15.400	.0	19.400	.0
3.433	.0	7.433	.0	11.433	.0	15.433	.0	19.433	.0
3.467	.0	7.467	.0	11.467	.0	15.467	.0	19.467	.0
3.500	.0	7.500	.0	11.500	.0	15.500	.0	19.500	.0
3.533	.0	7.533	.0	11.533	.0	15.533	.0	19.533	.0
3.567	.0	7.567	.0	11.567	.0	15.567	.0	19.567	.0
3.600	.0	7.600	.0	11.600	.0	15.600	.0	19.600	.0
3.633	.0	7.633	.0	11.633	.0	15.633	.0	19.633	.0
3.667	.0	7.667	.0	11.667	.0	15.667	.0	19.667	.0
3.700	.0	7.700	.0	11.700	.0	15.700	.0	19.700	.0
3.733	.0	7.733	.0	11.733	.0	15.733	.0	19.733	.0
3.767	.0	7.767	.0	11.767	.0	15.767	.0	19.767	.0
3.800	.0	7.800	.0	11.800	.0	15.800	.0	19.800	.0
3.833	.0	7.833	.0	11.833	.0	15.833	.0	19.833	.0
3.867	.0	7.867	.0	11.867	.0	15.867	.0	19.867	.0
3.900	.0	7.900	.0	11.900	.0	15.900	.0	19.900	.0
3.933	.0	7.933	.0	11.933	.0	15.933	.0	19.933	.0
3.967	.0	7.967	.0	11.967	.0	15.967	.0	19.967	.0

RUNOFF VOLUME = 1.62027 INCHES = 3.0699 ACRE-FEET
PEAK DISCHARGE RATE = 123.31 CFS AT 1.567 HOURS BASIN AREA = .0355 SQ. MI.

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**
****CREATE HYD FOR ONSITE RUNOFF BASIN C= HYD 102.1****
COMPUTE NM HYD       ID=8   HYD NO= 102.1  DA=0.0050 SQ MI
                     PER A=90.0 PER B=0.0 PER C=10.0 PER D=0.0 TP= -0.1340
                     MASSRAIN=-1

   K =  .154257HR    TP =  .134000HR    K/TP RATIO =  1.151169     SHAPE CONSTANT, N =  3.077592
   UNIT PEAK =  10.750   CFS  UNIT VOLUME =   .9985      B =  288.09      P60 = 2.1400
   AREA =     .005000 SQ MI   IA =   .62000 INCHES   INF =  1.58600 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

*
PRINT HYD            ID=8 CODE=0
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PARTIAL HYDROGRAPH 102.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	.833	.0	1.667	3.8	2.500	.2	3.333	.0
.033	.0	.867	.0	1.700	3.1	2.533	.2	3.367	.0
.067	.0	.900	.0	1.733	2.5	2.567	.2	3.400	.0
.100	.0	.933	.0	1.767	2.1	2.600	.2	3.433	.0
.133	.0	.967	.0	1.800	1.7	2.633	.2	3.467	.0
.167	.0	1.000	.0	1.833	1.3	2.667	.1	3.500	.0
.200	.0	1.033	.0	1.867	1.1	2.700	.1	3.533	.0

.233	.0	1.067	.0	1.900	.9	2.733	.1	3.567	.0
.267	.0	1.100	.0	1.933	.8	2.767	.1	3.600	.0
.300	.0	1.133	.0	1.967	.7	2.800	.1	3.633	.0
.333	.0	1.167	.0	2.000	.6	2.833	.1	3.667	.0
.367	.0	1.200	.0	2.033	.6	2.867	.1	3.700	.0
.400	.0	1.233	.0	2.067	.5	2.900	.1	3.733	.0
.433	.0	1.267	.0	2.100	.5	2.933	.1	3.767	.0
.467	.0	1.300	.0	2.133	.5	2.967	.1	3.800	.0
.500	.0	1.333	.1	2.167	.4	3.000	.1	3.833	.0
.533	.0	1.367	.3	2.200	.4	3.033	.1	3.867	.0
.567	.0	1.400	2.2	2.233	.4	3.067	.1	3.900	.0
.600	.0	1.433	4.1	2.267	.3	3.100	.1	3.933	.0
.633	.0	1.467	5.6	2.300	.3	3.133	.1	3.967	.0
.667	.0	1.500	6.3	2.333	.3	3.167	.0	4.000	.0
.700	.0	1.533	6.4	2.367	.3	3.200	.0	4.033	.0
.733	.0	1.567	6.0	2.400	.3	3.233	.0	4.067	.0
.767	.0	1.600	5.3	2.433	.2	3.267	.0	4.100	.0
.800	.0	1.633	4.5	2.467	.2	3.300	.0	4.133	.0

RUNOFF VOLUME = .70167 INCHES = .1871 ACRE-FEET
PEAK DISCHARGE RATE = 6.40 CFS AT 1.533 HOURS BASIN AREA = .0050 SQ. MI.

ADD HYD ID=9 HYD=103 ID=1 ID=8
*
PRINT HYD ID=9 CODE=0

PARTIAL HYDROGRAPH 103.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	4.000	.0	8.000	.0	12.000	.0	16.000	.0
.033	.0	4.033	.0	8.033	.0	12.033	.0	16.033	.0
.067	.0	4.067	.0	8.067	.0	12.067	.0	16.067	.0
.100	.0	4.100	.0	8.100	.0	12.100	.0	16.100	.0
.133	.0	4.133	.0	8.133	.0	12.133	.0	16.133	.0
.167	.0	4.167	.0	8.167	.0	12.167	.0	16.167	.0
.200	.0	4.200	.0	8.200	.0	12.200	.0	16.200	.0
.233	.0	4.233	.0	8.233	.0	12.233	.0	16.233	.0
.267	.0	4.267	.0	8.267	.0	12.267	.0	16.267	.0
.300	.0	4.300	.0	8.300	.0	12.300	.0	16.300	.0
.333	.0	4.333	.0	8.333	.0	12.333	.0	16.333	.0
.367	.0	4.367	.0	8.367	.0	12.367	.0	16.367	.0
.400	.0	4.400	.0	8.400	.0	12.400	.0	16.400	.0
.433	.0	4.433	.0	8.433	.0	12.433	.0	16.433	.0
.467	.0	4.467	.0	8.467	.0	12.467	.0	16.467	.0
.500	.0	4.500	.0	8.500	.0	12.500	.0	16.500	.0
.533	.0	4.533	.0	8.533	.0	12.533	.0	16.533	.0
.567	.0	4.567	.0	8.567	.0	12.567	.0	16.567	.0
.600	.0	4.600	.0	8.600	.0	12.600	.0	16.600	.0
.633	.0	4.633	.0	8.633	.0	12.633	.0	16.633	.0
.667	.0	4.667	.0	8.667	.0	12.667	.0	16.667	.0
.700	.0	4.700	.0	8.700	.0	12.700	.0	16.700	.0

.733	.0	4.733	.0	8.733	.0	12.733	.0	16.733	.0
.767	.0	4.767	.0	8.767	.0	12.767	.0	16.767	.0
.800	.0	4.800	.0	8.800	.0	12.800	.0	16.800	.0
.833	.0	4.833	.0	8.833	.0	12.833	.0	16.833	.0
.867	.0	4.867	.0	8.867	.0	12.867	.0	16.867	.0
.900	.0	4.900	.0	8.900	.0	12.900	.0	16.900	.0
.933	.0	4.933	.0	8.933	.0	12.933	.0	16.933	.0
.967	.0	4.967	.0	8.967	.0	12.967	.0	16.967	.0
1.000	.0	5.000	.0	9.000	.0	13.000	.0	17.000	.0
1.033	.0	5.033	.0	9.033	.0	13.033	.0	17.033	.0
1.067	.0	5.067	.0	9.067	.0	13.067	.0	17.067	.0
1.100	.0	5.100	.0	9.100	.0	13.100	.0	17.100	.0
1.133	.0	5.133	.0	9.133	.0	13.133	.0	17.133	.0
1.167	.0	5.167	.0	9.167	.0	13.167	.0	17.167	.0
1.200	.0	5.200	.0	9.200	.0	13.200	.0	17.200	.0
1.233	.0	5.233	.0	9.233	.0	13.233	.0	17.233	.0
1.267	.0	5.267	.0	9.267	.0	13.267	.0	17.267	.0
1.300	.0	5.300	.0	9.300	.0	13.300	.0	17.300	.0
1.333	.2	5.333	.0	9.333	.0	13.333	.0	17.333	.0
1.367	.8	5.367	.0	9.367	.0	13.367	.0	17.367	.0
1.400	2.2	5.400	.0	9.400	.0	13.400	.0	17.400	.0
1.433	4.1	5.433	.0	9.433	.0	13.433	.0	17.433	.0
1.467	5.6	5.467	.0	9.467	.0	13.467	.0	17.467	.0
1.500	11.6	5.500	.0	9.500	.0	13.500	.0	17.500	.0
1.533	114.1	5.533	.0	9.533	.0	13.533	.0	17.533	.0
1.567	129.3	5.567	.0	9.567	.0	13.567	.0	17.567	.0
1.600	127.2	5.600	.0	9.600	.0	13.600	.0	17.600	.0
1.633	117.7	5.633	.0	9.633	.0	13.633	.0	17.633	.0
1.667	104.4	5.667	.0	9.667	.0	13.667	.0	17.667	.0
1.700	89.9	5.700	.0	9.700	.0	13.700	.0	17.700	.0
1.733	76.4	5.733	.0	9.733	.0	13.733	.0	17.733	.0
1.767	64.9	5.767	.0	9.767	.0	13.767	.0	17.767	.0
1.800	55.6	5.800	.0	9.800	.0	13.800	.0	17.800	.0
1.833	47.5	5.833	.0	9.833	.0	13.833	.0	17.833	.0
1.867	40.5	5.867	.0	9.867	.0	13.867	.0	17.867	.0
1.900	35.1	5.900	.0	9.900	.0	13.900	.0	17.900	.0
1.933	30.2	5.933	.0	9.933	.0	13.933	.0	17.933	.0
1.967	25.8	5.967	.0	9.967	.0	13.967	.0	17.967	.0
2.000	21.9	6.000	.0	10.000	.0	14.000	.0	18.000	.0
2.033	18.8	6.033	.0	10.033	.0	14.033	.0	18.033	.0
2.067	15.6	6.067	.0	10.067	.0	14.067	.0	18.067	.0
2.100	12.4	6.100	.0	10.100	.0	14.100	.0	18.100	.0
2.133	8.8	6.133	.0	10.133	.0	14.133	.0	18.133	.0
2.167	5.8	6.167	.0	10.167	.0	14.167	.0	18.167	.0
2.200	3.2	6.200	.0	10.200	.0	14.200	.0	18.200	.0
2.233	1.6	6.233	.0	10.233	.0	14.233	.0	18.233	.0
2.267	.9	6.267	.0	10.267	.0	14.267	.0	18.267	.0
2.300	.6	6.300	.0	10.300	.0	14.300	.0	18.300	.0
2.333	.4	6.333	.0	10.333	.0	14.333	.0	18.333	.0
2.367	.3	6.367	.0	10.367	.0	14.367	.0	18.367	.0
2.400	.3	6.400	.0	10.400	.0	14.400	.0	18.400	.0
2.433	.2	6.433	.0	10.433	.0	14.433	.0	18.433	.0
2.467	.2	6.467	.0	10.467	.0	14.467	.0	18.467	.0
2.500	.2	6.500	.0	10.500	.0	14.500	.0	18.500	.0

2.533	.2	6.533	.0	10.533	.0	14.533	.0	18.533	.0
2.567	.2	6.567	.0	10.567	.0	14.567	.0	18.567	.0
2.600	.2	6.600	.0	10.600	.0	14.600	.0	18.600	.0
2.633	.2	6.633	.0	10.633	.0	14.633	.0	18.633	.0
2.667	.2	6.667	.0	10.667	.0	14.667	.0	18.667	.0
2.700	.1	6.700	.0	10.700	.0	14.700	.0	18.700	.0
2.733	.1	6.733	.0	10.733	.0	14.733	.0	18.733	.0
2.767	.1	6.767	.0	10.767	.0	14.767	.0	18.767	.0
2.800	.1	6.800	.0	10.800	.0	14.800	.0	18.800	.0
2.833	.1	6.833	.0	10.833	.0	14.833	.0	18.833	.0
2.867	.1	6.867	.0	10.867	.0	14.867	.0	18.867	.0
2.900	.1	6.900	.0	10.900	.0	14.900	.0	18.900	.0
2.933	.1	6.933	.0	10.933	.0	14.933	.0	18.933	.0
2.967	.1	6.967	.0	10.967	.0	14.967	.0	18.967	.0
3.000	.1	7.000	.0	11.000	.0	15.000	.0	19.000	.0
3.033	.1	7.033	.0	11.033	.0	15.033	.0	19.033	.0
3.067	.1	7.067	.0	11.067	.0	15.067	.0	19.067	.0
3.100	.1	7.100	.0	11.100	.0	15.100	.0	19.100	.0
3.133	.1	7.133	.0	11.133	.0	15.133	.0	19.133	.0
3.167	.1	7.167	.0	11.167	.0	15.167	.0	19.167	.0
3.200	.1	7.200	.0	11.200	.0	15.200	.0	19.200	.0
3.233	.1	7.233	.0	11.233	.0	15.233	.0	19.233	.0
3.267	.0	7.267	.0	11.267	.0	15.267	.0	19.267	.0
3.300	.0	7.300	.0	11.300	.0	15.300	.0	19.300	.0
3.333	.0	7.333	.0	11.333	.0	15.333	.0	19.333	.0
3.367	.0	7.367	.0	11.367	.0	15.367	.0	19.367	.0
3.400	.0	7.400	.0	11.400	.0	15.400	.0	19.400	.0
3.433	.0	7.433	.0	11.433	.0	15.433	.0	19.433	.0
3.467	.0	7.467	.0	11.467	.0	15.467	.0	19.467	.0
3.500	.0	7.500	.0	11.500	.0	15.500	.0	19.500	.0
3.533	.0	7.533	.0	11.533	.0	15.533	.0	19.533	.0
3.567	.0	7.567	.0	11.567	.0	15.567	.0	19.567	.0
3.600	.0	7.600	.0	11.600	.0	15.600	.0	19.600	.0
3.633	.0	7.633	.0	11.633	.0	15.633	.0	19.633	.0
3.667	.0	7.667	.0	11.667	.0	15.667	.0	19.667	.0
3.700	.0	7.700	.0	11.700	.0	15.700	.0	19.700	.0
3.733	.0	7.733	.0	11.733	.0	15.733	.0	19.733	.0
3.767	.0	7.767	.0	11.767	.0	15.767	.0	19.767	.0
3.800	.0	7.800	.0	11.800	.0	15.800	.0	19.800	.0
3.833	.0	7.833	.0	11.833	.0	15.833	.0	19.833	.0
3.867	.0	7.867	.0	11.867	.0	15.867	.0	19.867	.0
3.900	.0	7.900	.0	11.900	.0	15.900	.0	19.900	.0
3.933	.0	7.933	.0	11.933	.0	15.933	.0	19.933	.0
3.967	.0	7.967	.0	11.967	.0	15.967	.0	19.967	.0

RUNOFF VOLUME = 1.50693 INCHES = 3.2570 ACRE-FEET
PEAK DISCHARGE RATE = 129.27 CFS AT 1.567 HOURS BASIN AREA = .0405 SQ. MI.

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*
****CREATE HYD FOR OFFSITE RUNOFF FROM BASIN B=103.1****
COMPUTE NM HYD       ID=10   HYD NO= 103.1  DA=0.0010 SQ MI
                     PER A=100.0 PER B=0.0 PER C=0.0 PER D=0.0 TP= -0.1340
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MASSRAIN=-1

K = .159231HR TP = .134000HR K/TP RATIO = 1.188293 SHAPE CONSTANT, N = 2.988024
UNIT PEAK = 2.0959 CFS UNIT VOLUME = .9930 B = 280.84 F60 = 2.1400
AREA = .001000 SQ MI IA = .65000 INCHES INF = 1.67300 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033333

*
PRINT HYD ID=10 CODE=0

PARTIAL HYDROGRAPH 103.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	.700	.0	1.400	.4	2.100	.1	2.800	.0
.033	.0	.733	.0	1.433	.7	2.133	.1	2.833	.0
.067	.0	.767	.0	1.467	1.0	2.167	.1	2.867	.0
.100	.0	.800	.0	1.500	1.2	2.200	.1	2.900	.0
.133	.0	.833	.0	1.533	1.2	2.233	.1	2.933	.0
.167	.0	.867	.0	1.567	1.1	2.267	.1	2.967	.0
.200	.0	.900	.0	1.600	1.0	2.300	.1	3.000	.0
.233	.0	.933	.0	1.633	.8	2.333	.1	3.033	.0
.267	.0	.967	.0	1.667	.7	2.367	.1	3.067	.0
.300	.0	1.000	.0	1.700	.6	2.400	.0	3.100	.0
.333	.0	1.033	.0	1.733	.5	2.433	.0	3.133	.0
.367	.0	1.067	.0	1.767	.4	2.467	.0	3.167	.0
.400	.0	1.100	.0	1.800	.3	2.500	.0	3.200	.0
.433	.0	1.133	.0	1.833	.3	2.533	.0	3.233	.0
.467	.0	1.167	.0	1.867	.2	2.567	.0	3.267	.0
.500	.0	1.200	.0	1.900	.2	2.600	.0	3.300	.0
.533	.0	1.233	.0	1.933	.1	2.633	.0	3.333	.0
.567	.0	1.267	.0	1.967	.1	2.667	.0	3.367	.0
.600	.0	1.300	.0	2.000	.1	2.700	.0	3.400	.0
.633	.0	1.333	.0	2.033	.1	2.733	.0	3.433	.0
.667	.0	1.367	.1	2.067	.1	2.767	.0		

RUNOFF VOLUME = .65517 INCHES = .0349 ACRE-FEET
PEAK DISCHARGE RATE = 1.20 CFS AT 1.533 HOURS BASIN AREA = .0010 SQ. MI.

*
ADD HYD ID=11 HYD=104 ID=9 ID=10
*
PRINT HYD ID=11 CODE=0

PARTIAL HYDROGRAPH 104.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	4.000	.0	8.000	.0	12.000	.0	16.000	.0
.033	.0	4.033	.0	8.033	.0	12.033	.0	16.033	.0
.067	.0	4.067	.0	8.067	.0	12.067	.0	16.067	.0
.100	.0	4.100	.0	8.100	.0	12.100	.0	16.100	.0

.133	.0	4.133	.0	8.133	.0	12.133	.0	16.133	.0
.167	.0	4.167	.0	8.167	.0	12.167	.0	16.167	.0
.200	.0	4.200	.0	8.200	.0	12.200	.0	16.200	.0
.233	.0	4.233	.0	8.233	.0	12.233	.0	16.233	.0
.267	.0	4.267	.0	8.267	.0	12.267	.0	16.267	.0
.300	.0	4.300	.0	8.300	.0	12.300	.0	16.300	.0
.333	.0	4.333	.0	8.333	.0	12.333	.0	16.333	.0
.367	.0	4.367	.0	8.367	.0	12.367	.0	16.367	.0
.400	.0	4.400	.0	8.400	.0	12.400	.0	16.400	.0
.433	.0	4.433	.0	8.433	.0	12.433	.0	16.433	.0
.467	.0	4.467	.0	8.467	.0	12.467	.0	16.467	.0
.500	.0	4.500	.0	8.500	.0	12.500	.0	16.500	.0
.533	.0	4.533	.0	8.533	.0	12.533	.0	16.533	.0
.567	.0	4.567	.0	8.567	.0	12.567	.0	16.567	.0
.600	.0	4.600	.0	8.600	.0	12.600	.0	16.600	.0
.633	.0	4.633	.0	8.633	.0	12.633	.0	16.633	.0
.667	.0	4.667	.0	8.667	.0	12.667	.0	16.667	.0
.700	.0	4.700	.0	8.700	.0	12.700	.0	16.700	.0
.733	.0	4.733	.0	8.733	.0	12.733	.0	16.733	.0
.767	.0	4.767	.0	8.767	.0	12.767	.0	16.767	.0
.800	.0	4.800	.0	8.800	.0	12.800	.0	16.800	.0
.833	.0	4.833	.0	8.833	.0	12.833	.0	16.833	.0
.867	.0	4.867	.0	8.867	.0	12.867	.0	16.867	.0
.900	.0	4.900	.0	8.900	.0	12.900	.0	16.900	.0
.933	.0	4.933	.0	8.933	.0	12.933	.0	16.933	.0
.967	.0	4.967	.0	8.967	.0	12.967	.0	16.967	.0
1.000	.0	5.000	.0	9.000	.0	13.000	.0	17.000	.0
1.033	.0	5.033	.0	9.033	.0	13.033	.0	17.033	.0
1.067	.0	5.067	.0	9.067	.0	13.067	.0	17.067	.0
1.100	.0	5.100	.0	9.100	.0	13.100	.0	17.100	.0
1.133	.0	5.133	.0	9.133	.0	13.133	.0	17.133	.0
1.167	.0	5.167	.0	9.167	.0	13.167	.0	17.167	.0
1.200	.0	5.200	.0	9.200	.0	13.200	.0	17.200	.0
1.233	.0	5.233	.0	9.233	.0	13.233	.0	17.233	.0
1.267	.0	5.267	.0	9.267	.0	13.267	.0	17.267	.0
1.300	.0	5.300	.0	9.300	.0	13.300	.0	17.300	.0
1.333	.2	5.333	.0	9.333	.0	13.333	.0	17.333	.0
1.367	1.0	5.367	.0	9.367	.0	13.367	.0	17.367	.0
1.400	2.6	5.400	.0	9.400	.0	13.400	.0	17.400	.0
1.433	4.8	5.433	.0	9.433	.0	13.433	.0	17.433	.0
1.467	6.6	5.467	.0	9.467	.0	13.467	.0	17.467	.0
1.500	12.8	5.500	.0	9.500	.0	13.500	.0	17.500	.0
1.533	115.3	5.533	.0	9.533	.0	13.533	.0	17.533	.0
1.567	130.4	5.567	.0	9.567	.0	13.567	.0	17.567	.0
1.600	128.2	5.600	.0	9.600	.0	13.600	.0	17.600	.0
1.633	118.5	5.633	.0	9.633	.0	13.633	.0	17.633	.0
1.667	105.1	5.667	.0	9.667	.0	13.667	.0	17.667	.0
1.700	90.5	5.700	.0	9.700	.0	13.700	.0	17.700	.0
1.733	76.9	5.733	.0	9.733	.0	13.733	.0	17.733	.0
1.767	65.3	5.767	.0	9.767	.0	13.767	.0	17.767	.0
1.800	56.0	5.800	.0	9.800	.0	13.800	.0	17.800	.0
1.833	47.8	5.833	.0	9.833	.0	13.833	.0	17.833	.0
1.867	40.7	5.867	.0	9.867	.0	13.867	.0	17.867	.0
1.900	35.3	5.900	.0	9.900	.0	13.900	.0	17.900	.0

1.933	30.3	5.933	.0	9.933	.0	13.933	.0	17.933	.0
1.967	25.9	5.967	.0	9.967	.0	13.967	.0	17.967	.0
2.000	22.0	6.000	.0	10.000	.0	14.000	.0	18.000	.0
2.033	18.9	6.033	.0	10.033	.0	14.033	.0	18.033	.0
2.067	15.7	6.067	.0	10.067	.0	14.067	.0	18.067	.0
2.100	12.5	6.100	.0	10.100	.0	14.100	.0	18.100	.0
2.133	8.9	6.133	.0	10.133	.0	14.133	.0	18.133	.0
2.167	5.9	6.167	.0	10.167	.0	14.167	.0	18.167	.0
2.200	3.3	6.200	.0	10.200	.0	14.200	.0	18.200	.0
2.233	1.7	6.233	.0	10.233	.0	14.233	.0	18.233	.0
2.267	1.0	6.267	.0	10.267	.0	14.267	.0	18.267	.0
2.300	.6	6.300	.0	10.300	.0	14.300	.0	18.300	.0
2.333	.5	6.333	.0	10.333	.0	14.333	.0	18.333	.0
2.367	.4	6.367	.0	10.367	.0	14.367	.0	18.367	.0
2.400	.3	6.400	.0	10.400	.0	14.400	.0	18.400	.0
2.433	.3	6.433	.0	10.433	.0	14.433	.0	18.433	.0
2.467	.3	6.467	.0	10.467	.0	14.467	.0	18.467	.0
2.500	.3	6.500	.0	10.500	.0	14.500	.0	18.500	.0
2.533	.2	6.533	.0	10.533	.0	14.533	.0	18.533	.0
2.567	.2	6.567	.0	10.567	.0	14.567	.0	18.567	.0
2.600	.2	6.600	.0	10.600	.0	14.600	.0	18.600	.0
2.633	.2	6.633	.0	10.633	.0	14.633	.0	18.633	.0
2.667	.2	6.667	.0	10.667	.0	14.667	.0	18.667	.0
2.700	.2	6.700	.0	10.700	.0	14.700	.0	18.700	.0
2.733	.2	6.733	.0	10.733	.0	14.733	.0	18.733	.0
2.767	.1	6.767	.0	10.767	.0	14.767	.0	18.767	.0
2.800	.1	6.800	.0	10.800	.0	14.800	.0	18.800	.0
2.833	.1	6.833	.0	10.833	.0	14.833	.0	18.833	.0
2.867	.1	6.867	.0	10.867	.0	14.867	.0	18.867	.0
2.900	.1	6.900	.0	10.900	.0	14.900	.0	18.900	.0
2.933	.1	6.933	.0	10.933	.0	14.933	.0	18.933	.0
2.967	.1	6.967	.0	10.967	.0	14.967	.0	18.967	.0
3.000	.1	7.000	.0	11.000	.0	15.000	.0	19.000	.0
3.033	.1	7.033	.0	11.033	.0	15.033	.0	19.033	.0
3.067	.1	7.067	.0	11.067	.0	15.067	.0	19.067	.0
3.100	.1	7.100	.0	11.100	.0	15.100	.0	19.100	.0
3.133	.1	7.133	.0	11.133	.0	15.133	.0	19.133	.0
3.167	.1	7.167	.0	11.167	.0	15.167	.0	19.167	.0
3.200	.1	7.200	.0	11.200	.0	15.200	.0	19.200	.0
3.233	.1	7.233	.0	11.233	.0	15.233	.0	19.233	.0
3.267	.1	7.267	.0	11.267	.0	15.267	.0	19.267	.0
3.300	.1	7.300	.0	11.300	.0	15.300	.0	19.300	.0
3.333	.1	7.333	.0	11.333	.0	15.333	.0	19.333	.0
3.367	.0	7.367	.0	11.367	.0	15.367	.0	19.367	.0
3.400	.0	7.400	.0	11.400	.0	15.400	.0	19.400	.0
3.433	.0	7.433	.0	11.433	.0	15.433	.0	19.433	.0
3.467	.0	7.467	.0	11.467	.0	15.467	.0	19.467	.0
3.500	.0	7.500	.0	11.500	.0	15.500	.0	19.500	.0
3.533	.0	7.533	.0	11.533	.0	15.533	.0	19.533	.0
3.567	.0	7.567	.0	11.567	.0	15.567	.0	19.567	.0
3.600	.0	7.600	.0	11.600	.0	15.600	.0	19.600	.0
3.633	.0	7.633	.0	11.633	.0	15.633	.0	19.633	.0
3.667	.0	7.667	.0	11.667	.0	15.667	.0	19.667	.0
3.700	.0	7.700	.0	11.700	.0	15.700	.0	19.700	.0

3.733	.0	7.733	.0	11.733	.0	15.733	.0	19.733	.0
3.767	.0	7.767	.0	11.767	.0	15.767	.0	19.767	.0
3.800	.0	7.800	.0	11.800	.0	15.800	.0	19.800	.0
3.833	.0	7.833	.0	11.833	.0	15.833	.0	19.833	.0
3.867	.0	7.867	.0	11.867	.0	15.867	.0	19.867	.0
3.900	.0	7.900	.0	11.900	.0	15.900	.0	19.900	.0
3.933	.0	7.933	.0	11.933	.0	15.933	.0	19.933	.0
3.967	.0	7.967	.0	11.967	.0	15.967	.0	19.967	.0

RUNOFF VOLUME = 1.48642 INCHES = 3.2919 ACRE-FEET
PEAK DISCHARGE RATE = 130.39 CFS AT 1.567 HOURS BASIN AREA = .0415 SQ. MI.

```
*
FINISH

    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 17:39:59
```

REVISED AHYMO PRINTOUT

100-YEAR STORM

PROPOSED CONDITIONS

```
START                    TIME=0.0
*   ****COMPUTE  HYDROGRAPHS FOR  THE  IRS BUILDING  FLOOD  PLAIN
STUDY****
*  ****     FILE IRSp100.dat    ****
*   *********          PROPOSED  CONDITIONS -  100  YEAR STORM
*********
*** COMPUTE RAINFALL TABLE ***
*
RAINFALL                 TYPE=1   RAIN QUARTER=0.0
                         RAIN ONE=2.14 RAIN SIX=2.60 RAIN DAY=3.10
                         DT=.0333333
*
*** COMPUTE OFFSITE FLOW HYDROGRAPH (BASIN A) ***
*
COMPUTE NM HYD           ID=1   HYD NO= 100.0  DA=0.0687SQ MI
                         PER  A=0.0 PER  B=19.0 PER C=17.0  PER D=64.0
TP= -0.1980
                         MASSRAIN=-1
PRINT HYD                ID=1       CODE=0
*
*** DELETE FLOW TO MADEIRA/HENDRIX INLETS ***
*
*HYD 100.10=DISCHARGE THROUGH INLET/PIPE SYSTEM AT MADIERA ST.
*HYD 100.20=PONDING IN MADEIRA/HENDRIX INTERSECTION
DIVIDE HYD               ID=1 CODE=999 ID=3 HYD NO=100.10
                                       ID=4 HYD NO=100.20
                         TOTAL FLOW      DIVIDED FLOW
                           1.96            1.96
                           12.7            12.7
                           25.3            25.3
                           28.3            28.3
                           29.7            29.7
                           30.0            29.7
                           50.0            29.7
                          200.0            29.7
*
PRINT HYD                  ID=3 CODE=0
PRINT HYD                  ID=4 CODE=0
*
*** ROUTE THROUGH HENDRIX/MADEIRA POND ***
*
ROUTE RESERVOIR       ID=2 HYD 100.10 INFLOW ID=4 CODE=2
                      OUTFLOW (CFS)   STORAGE (AC FT)  ELEV (FT)
                         0                .0000            5219.84
                       00.01              .1504            5221.45
                       00.11              .1551            5221.50
                       01.66              .1644            5221.60
                       05.97              .1966            5221.70
                       13.84              .2288            5221.80
                       25.94              .2610            5221.90
                       42.84              .2932            5222.00
                       55.04              .3351            5222.10
                       68.22              .3770            5222.20
                       82.30              .4190            5222.30
```

```
                                97.25                .4609                5222.40
                               113.00                .5028                5222.50
                               129.52                .5563                5222.60
                               164.74                .6633                5222.80
                               202.67                .7703                5223.00
                               543.14                .8964                5223.20
*
PRINT HYD                ID=2       CODE 0
*
*** COMPUTE ONSITE FLOW HYDROGRAPH (BASIN C) ***
*
COMPUTE NM HYD           ID=5  HYD NO= 200.00  DA=0.0050 SQ MI
                         PER A=0.0 PER B=26.0 PER C=0.0 PER D=74.0
                         TP= -0.1670
                         MASSRAIN=-1
*
PRINT HYD                ID=5 CODE=0
*
*** COMPUTE TOTAL SITE DISCHARGE HYDROGRAPH ***
*
ADD HYD                  ID=6 HYD 300.00 ID=2  ID=5
PRINT HYD                ID=6 CODE=0
*
FINISH
```

```
    AHYMO PROGRAM (AHYMO392) - AMAFCA VERSION OF HYMO - MARCH, 1992
         RUN DATE (MON/DAY/YR) = 11/18/1993
         START TIME (HR:MIN:SEC) = 06:56:37     USER NO.= S_BALOGH.S92
         INPUT FILE = irsp100.dat

START                TIME=0.0
*  ****COMPUTE HYDROGRAPHS FOR THE IRS BUILDING FLOOD PLAIN STUDY****
*  ****    FILE IRSp100.dat   ****
*  *********     PROPOSED CONDITIONS - 100 YEAR STORM     *********
*** COMPUTE RAINFALL TABLE ***
*
RAINFALL             TYPE=1   RAIN QUARTER=0.0
     RAIN ONE=2.14 RAIN SIX=2.60 RAIN DAY=3.10

COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
DT =    .033333 HOURS       END TIME =     5.999940 HOURS
   .0000   .0027   .0055   .0084   .0113   .0143   .0173
   .0204   .0236   .0269   .0302   .0337   .0372   .0408
   .0445   .0484   .0523   .0564   .0606   .0649   .0694
   .0741   .0789   .0839   .0892   .0946   .1004   .1063
   .1126   .1193   .1263   .1322   .1385   .1453   .1598
   .1923   .2424   .3142   .4123   .5412   .7055   .9101
  1.1598  1.3908  1.4874  1.5690  1.6417  1.7077  1.7685
  1.8250  1.8777  1.9272  1.9737  2.0176  2.0591  2.0984
  2.1356  2.1708  2.2043  2.2361  2.2662  2.2737  2.2808
  2.2875  2.2939  2.3001  2.3061  2.3118  2.3173  2.3226
  2.3278  2.3328  2.3376  2.3424  2.3470  2.3515  2.3558
  2.3601  2.3643  2.3684  2.3724  2.3763  2.3801  2.3838
  2.3875  2.3911  2.3947  2.3982  2.4016  2.4050  2.4083
  2.4116  2.4148  2.4179  2.4210  2.4241  2.4271  2.4301
  2.4331  2.4360  2.4388  2.4417  2.4445  2.4472  2.4499
  2.4526  2.4553  2.4579  2.4605  2.4631  2.4656  2.4682
  2.4706  2.4731  2.4755  2.4780  2.4803  2.4827  2.4851
  2.4874  2.4897  2.4919  2.4942  2.4964  2.4986  2.5008
  2.5030  2.5052  2.5073  2.5094  2.5115  2.5136  2.5157
  2.5177  2.5198  2.5218  2.5238  2.5258  2.5278  2.5297
  2.5317  2.5336  2.5355  2.5374  2.5393  2.5412  2.5431
  2.5449  2.5468  2.5486  2.5504  2.5522  2.5540  2.5558
  2.5575  2.5593  2.5610  2.5628  2.5645  2.5662  2.5679
  2.5696  2.5713  2.5730  2.5746  2.5763  2.5779  2.5795
  2.5812  2.5828  2.5844  2.5860  2.5876  2.5892  2.5907
  2.5923  2.5939  2.5954  2.5969  2.5985  2.6000

*
*** COMPUTE OFFSITE FLOW HYDROGRAPH (BASIN A) ***
*
COMPUTE NM HYD       ID=1   HYD NO= 100.0  DA=0.0687SQ MI
                     PER A=0.0 PER B=19.0 PER C=17.0 PER D=64.0 TP= -0.1980
                     MASSRAIN=-1

    K =   .107984HR    TP =   .198000HR    K/TP RATIO =   .545373     SHAPE CONSTANT, N =  7.100187
    UNIT PEAK =   116.80    CFS   UNIT VOLUME =    .9999      B =   525.98      P60 = 2.1400
    AREA =      .043968 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
```

RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033333

K = .180625HR TP = .198000HR . K/TP RATIO = .912247 SHAPE CONSTANT, N = 3.881852
UNIT PEAK = 43.370 CFS UNIT VOLUME = .9998 B = 347.21 P60 = 2.1400
AREA = .024732 SQ MI IA = .42917 INCHES INF = 1.05167 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033333

PRINT HYD ID=1 CODE=0

PARTIAL HYDROGRAPH 100.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.633	138.8	3.267	2.7	4.900	1.2	6.533	.1
.033	.0	1.667	124.8	3.300	2.6	4.933	1.2	6.567	.1
.067	.0	1.700	111.0	3.333	2.5	4.967	1.2	6.600	.1
.100	.0	1.733	98.8	3.367	2.4	5.000	1.2	6.633	.1
.133	.0	1.767	68.5	3.400	2.3	5.033	1.2	6.667	.1
.167	.0	1.800	79.7	3.433	2.2	5.067	1.2	6.700	.1
.200	.0	1.833	72.4	3.467	2.2	5.100	1.2	6.733	.1
.233	.0	1.867	66.2	3.500	2.1	5.133	1.2	6.767	.1
.267	.0	1.900	61.0	3.533	2.0	5.167	1.2	6.800	.1
.300	.0	1.933	56.5	3.567	2.0	5.200	1.2	6.833	.1
.333	.0	1.967	52.5	3.600	1.9	5.233	1.2	6.867	.0
.367	.0	2.000	48.9	3.633	1.8	5.267	1.2	6.900	.0
.400	.0	2.033	45.6	3.667	1.8	5.300	1.2	6.933	.0
.433	.0	2.067	42.5	3.700	1.8	5.333	1.2	6.967	.0
.467	.0	2.100	39.2	3.733	1.7	5.367	1.2	7.000	.0
.500	.0	2.133	35.3	3.767	1.7	5.400	1.2	7.033	.0
.533	.0	2.167	31.0	3.800	1.6	5.433	1.2	7.067	.0
.567	.0	2.200	26.8	3.833	1.6	5.467	1.2	7.100	.0
.600	.0	2.233	23.0	3.867	1.6	5.500	1.2	7.133	.0
.633	.0	2.267	19.9	3.900	1.5	5.533	1.2	7.167	.0
.667	.0	2.300	17.5	3.933	1.5	5.567	1.2	7.200	.0
.700	.0	2.333	15.6	3.967	1.5	5.600	1.2	7.233	.0
.733	.0	2.367	14.0	4.000	1.5	5.633	1.2	7.267	.0
.767	.0	2.400	12.8	4.033	1.4	5.667	1.2	7.300	.0
.800	.0	2.433	11.7	4.067	1.4	5.700	1.2	7.333	.0
.833	.0	2.467	10.9	4.100	1.4	5.733	1.2	7.367	.0
.867	.0	2.500	10.1	4.133	1.4	5.767	1.2	7.400	.0
.900	.0	2.533	9.4	4.167	1.4	5.800	1.2	7.433	.0
.933	.1	2.567	8.8	4.200	1.3	5.833	1.2	7.467	.0
.967	.2	2.600	8.2	4.233	1.3	5.867	1.2	7.500	.0
1.000	.6	2.633	7.7	4.267	1.3	5.900	1.2	7.533	.0
1.033	1.2	2.667	7.2	4.300	1.3	5.933	1.2	7.567	.0
1.067	1.8	2.700	6.8	4.333	1.3	5.967	1.2	7.600	.0
1.100	2.3	2.733	6.3	4.367	1.3	6.000	1.3	7.633	.0
1.133	2.8	2.767	6.0	4.400	1.3	6.033	1.3	7.667	.0
1.167	3.2	2.800	5.6	4.433	1.3	6.067	1.2	7.700	.0
1.200	3.9	2.833	5.3	4.467	1.2	6.100	1.2	7.733	.0
1.233	5.5	2.867	5.0	4.500	1.2	6.133	1.1	7.767	.0
1.267	8.7	2.900	4.7	4.533	1.2	6.167	.9	7.800	.0
1.300	14.3	2.933	4.4	4.567	1.2	6.200	.8	7.833	.0

1.333	23.3	2.967	4.2	4.600	1.2	6.233	.6	7.867	.0
1.367	36.7	3.000	4.0	4.633	1.2	6.267	.5	7.900	.0
1.400	54.8	3.033	3.8	4.667	1.2	6.300	.4	7.933	.0
1.433	77.8	3.067	3.6	4.700	1.2	6.333	.3	7.967	.0
1.467	104.3	3.100	3.4	4.733	1.2	6.367	.2	8.000	.0
1.500	129.5	3.133	3.2	4.767	1.2	6.400	.2	8.033	.0
1.533	147.3	3.167	3.1	4.800	1.2	6.433	.2	8.067	.0
1.567	153.9	3.200	2.9	4.833	1.2	6.467	.2		
1.600	149.9	3.233	2.8	4.867	1.2	6.500	.1		

RUNOFF VOLUME = 1.89622 INCHES = 6.9477 ACRE-FEET
PEAK DISCHARGE RATE = 153.91 CFS AT 1.567 HOURS BASIN AREA = .0687 SQ. MI.

```
*
*** DELETE FLOW TO MADEIRA/HENDRIX INLETS ***
*
*HYD 100.10=DISCHARGE THROUGH INLET/PIPE SYSTEM AT MADIERA ST.
*HYD 100.20=PONDING IN MADEIRA/HENDRIX INTERSECTION
DIVIDE HYD          ID=1 CODE=999 ID=3 HYD NO=100.10
                                  ID=4 HYD NO=100.20
                    TOTAL FLOW      DIVIDED FLOW
                      1.96            1.96
                      12.7            12.7
                      25.3            25.3
                      28.3            28.3
                      29.7            29.7
                      30.0            29.7
                      50.0            29.7
                     200.0            29.7
*
PRINT HYD            ID=3 CODE=0
```

PARTIAL HYDROGRAPH 100.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.633	29.7	3.267	2.7	4.900	1.2	6.533	.1
.033	.0	1.667	29.7	3.300	2.6	4.933	1.2	6.567	.1
.067	.0	1.700	29.7	3.333	2.5	4.967	1.2	6.600	.1
.100	.0	1.733	29.7	3.367	2.4	5.000	1.2	6.633	.1
.133	.0	1.767	29.7	3.400	2.3	5.033	1.2	6.667	.1
.167	.0	1.800	29.7	3.433	2.2	5.067	1.2	6.700	.1
.200	.0	1.833	29.7	3.467	2.2	5.100	1.2	6.733	.1
.233	.0	1.867	29.7	3.500	2.1	5.133	1.2	6.767	.1
.267	.0	1.900	29.7	3.533	2.0	5.167	1.2	6.800	.1
.300	.0	1.933	29.7	3.567	2.0	5.200	1.2	6.833	.1
.333	.0	1.967	29.7	3.600	1.9	5.233	1.2	6.867	.0
.367	.0	2.000	29.7	3.633	1.8	5.267	1.2	6.900	.0
.400	.0	2.033	29.7	3.667	1.8	5.300	1.2	6.933	.0
.433	.0	2.067	29.7	3.700	1.8	5.333	1.2	6.967	.0
.467	.0	2.100	29.7	3.733	1.7	5.367	1.2	7.000	.0
.500	.0	2.133	29.7	3.767	1.7	5.400	1.2	7.033	.0

.533	.0	2.167	29.7	3.800	1.6	5.433	1.2	7.067	.0
.567	.0	2.200	26.8	3.833	1.6	5.467	1.2	7.100	.0
.600	.0	2.233	23.0	3.867	1.6	5.500	1.2	7.133	.0
.633	.0	2.267	19.9	3.900	1.5	5.533	1.2	7.167	.0
.667	.0	2.300	17.5	3.933	1.5	5.567	1.2	7.200	.0
.700	.0	2.333	15.6	3.967	1.5	5.600	1.2	7.233	.0
.733	.0	2.367	14.0	4.000	1.5	5.633	1.2	7.267	.0
.767	.0	2.400	12.8	4.033	1.4	5.667	1.2	7.300	.0
.800	.0	2.433	11.7	4.067	1.4	5.700	1.2	7.333	.0
.833	.0	2.467	10.9	4.100	1.4	5.733	1.2	7.367	.0
.867	.0	2.500	10.1	4.133	1.4	5.767	1.2	7.400	.0
.900	.0	2.533	9.4	4.167	1.4	5.800	1.2	7.433	.0
.933	.1	2.567	8.8	4.200	1.3	5.833	1.2	7.467	.0
.967	.2	2.600	8.2	4.233	1.3	5.867	1.2	7.500	.0
1.000	.6	2.633	7.7	4.267	1.3	5.900	1.2	7.533	.0
1.033	1.2	2.667	7.2	4.300	1.3	5.933	1.2	7.567	.0
1.067	1.8	2.700	6.8	4.333	1.3	5.967	1.2	7.600	.0
1.100	2.3	2.733	6.3	4.367	1.3	6.000	1.3	7.633	.0
1.133	2.8	2.767	6.0	4.400	1.3	6.033	1.3	7.667	.0
1.167	3.2	2.800	5.6	4.433	1.3	6.067	1.2	7.700	.0
1.200	3.9	2.833	5.3	4.467	1.2	6.100	1.2	7.733	.0
1.233	5.5	2.867	5.0	4.500	1.2	6.133	1.1	7.767	.0
1.267	8.7	2.900	4.7	4.533	1.2	6.167	.9	7.800	.0
1.300	14.3	2.933	4.4	4.567	1.2	6.200	.8	7.833	.0
1.333	23.3	2.967	4.2	4.600	1.2	6.233	.6	7.867	.0
1.367	29.7	3.000	4.0	4.633	1.2	6.267	.5	7.900	.0
1.400	29.7	3.033	3.8	4.667	1.2	6.300	.4	7.933	.0
1.433	29.7	3.067	3.6	4.700	1.2	6.333	.3	7.967	.0
1.467	29.7	3.100	3.4	4.733	1.2	6.367	.2	8.000	.0
1.500	29.7	3.133	3.2	4.767	1.2	6.400	.2	8.033	.0
1.533	29.7	3.167	3.1	4.800	1.2	6.433	.2	8.067	.0
1.567	29.7	3.200	2.9	4.833	1.2	6.467	.2		
1.600	29.7	3.233	2.8	4.867	1.2	6.500	.1		

RUNOFF VOLUME = 1.89621 INCHES = 3.3550 ACRE-FEET

PEAK DISCHARGE RATE = 29.70 CFS AT 1.367 HOURS BASIN AREA = .0332 SQ. MI.

PRINT HYD ID=4 CODE=0

PARTIAL HYDROGRAPH 100.20

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	.467	.0	.933	.0	1.400	25.1	1.867	36.5
.033	.0	.500	.0	.967	.0	1.433	48.1	1.900	31.3
.067	.0	.533	.0	1.000	.0	1.467	74.6	1.933	26.8
.100	.0	.567	.0	1.033	.0	1.500	99.8	1.967	22.8
.133	.0	.600	.0	1.067	.0	1.533	117.6	2.000	19.2
.167	.0	.633	.0	1.100	.0	1.567	124.2	2.033	15.9
.200	.0	.667	.0	1.133	.0	1.600	120.2	2.067	12.8
.233	.0	.700	.0	1.167	.0	1.633	109.1	2.100	9.5
.267	.0	.733	.0	1.200	.0	1.667	95.1	2.133	5.6

.300	.0	.767	.0	1.233	.0	1.700	81.3	2.167	1.3
.333	.0	.800	.0	1.267	.0	1.733	69.1		
.367	.0	.833	.0	1.300	.0	1.767	58.8		
.400	.0	.867	.0	1.333	.0	1.800	50.0		
.433	.0	.900	.0	1.367	7.0	1.833	42.7		

RUNOFF VOLUME = 1.89621 INCHES = 3.5927 ACRE-FEET
PEAK DISCHARGE RATE = 124.21 CFS AT 1.567 HOURS BASIN AREA = .0355 SQ. MI.

*
*** ROUTE THROUGH HENDRIX/MADEIRA POND ***
*
ROUTE RESERVOIR ID=2 HYD 100.10 INFLOW ID=4 CODE=2

OUTFLOW (CFS)	STORAGE (AC FT)	ELEV (FT)
0	.0000	5219.84
00.01	.1504	5221.45
00.11	.1551	5221.50
01.66	.1644	5221.60
05.97	.1966	5221.70
25.94	.2610	5221.90
42.84	.2932	5222.00
55.04	.3351	5222.10
68.22	.3770	5222.20
82.30	.4190	5222.30
97.25	.4609	5222.40
113.00	.5028	5222.50
129.52	.5563	5222.60
164.74	.6633	5222.80
202.67	.7703	5223.00
543.14	.8964	5223.20

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TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	5219.84	.000	.00
.07	.00	5219.84	.000	.00
.13	.00	5219.84	.000	.00
.20	.00	5219.84	.000	.00
.27	.00	5219.84	.000	.00
.33	.00	5219.84	.000	.00
.40	.00	5219.84	.000	.00
.47	.00	5219.84	.000	.00
.53	.00	5219.84	.000	.00
.60	.00	5219.84	.000	.00
.67	.00	5219.84	.000	.00
.73	.00	5219.84	.000	.00
.80	.00	5219.84	.000	.00
.87	.00	5219.84	.000	.00
.93	.00	5219.84	.000	.00
1.00	.00	5219.84	.000	.00

1.07	.00	5219.84	.000	.00
1.13	.00	5219.84	.000	.00
1.20	.00	5219.84	.000	.00
1.27	.00	5219.84	.000	.00
1.33	.00	5219.84	.000	.00
1.40	25.11	5220.42	.054	.00
1.47	74.56	5221.95	.276	34.07
1.53	117.62	5222.38	.452	94.18
1.60	120.17	5222.53	.520	118.29
1.67	95.07	5222.46	.487	106.97
1.73	69.13	5222.30	.417	81.71
1.80	50.03	5222.14	.353	60.67
1.87	36.47	5222.02	.300	44.95
1.93	26.83	5221.93	.269	30.28
2.00	19.16	5221.87	.251	22.90
2.07	12.82	5221.81	.231	16.49
2.13	5.57	5221.74	.209	9.84
2.20	.00	5221.66	.184	4.32
2.27	.00	5221.61	.167	2.05
2.33	.00	5221.55	.160	.85
2.40	.00	5221.51	.156	.33
2.47	.00	5221.50	.155	.13
2.53	.00	5221.50	.155	.10
2.60	.00	5221.49	.154	.09
2.67	.00	5221.48	.154	.08
2.73	.00	5221.48	.153	.07
2.80	.00	5221.48	.153	.06
2.87	.00	5221.47	.153	.06
2.93	.00	5221.47	.152	.05
3.00	.00	5221.47	.152	.04
3.07	.00	5221.46	.152	.04
3.13	.00	5221.46	.152	.03
3.20	.00	5221.46	.151	.03
3.27	.00	5221.46	.151	.03
3.33	.00	5221.46	.151	.02
3.40	.00	5221.46	.151	.02
3.47	.00	5221.46	.151	.02
3.53	.00	5221.45	.151	.02
3.60	.00	5221.45	.151	.02
3.67	.00	5221.45	.151	.01
3.73	.00	5221.45	.150	.01
3.80	.00	5221.45	.150	.01
3.87	.00	5221.45	.150	.01
3.93	.00	5221.45	.150	.01
4.00	.00	5221.45	.150	.01
4.07	.00	5221.45	.150	.01
4.13	.00	5221.45	.150	.01
4.20	.00	5221.45	.150	.01
4.27	.00	5221.45	.150	.01
4.33	.00	5221.45	.150	.01
4.40	.00	5221.45	.150	.01
4.47	.00	5221.44	.150	.01
4.53	.00	5221.44	.150	.01
4.60	.00	5221.44	.150	.01

4.67	.00	5221.44	.150	.01
4.73	.00	5221.44	.150	.01
4.80	.00	5221.44	.150	.01
4.87	.00	5221.44	.150	.01
4.93	.00	5221.44	.149	.01
5.00	.00	5221.44	.149	.01
5.07	.00	5221.44	.149	.01
5.13	.00	5221.44	.149	.01
5.20	.00	5221.44	.149	.01
5.27	.00	5221.44	.149	.01
5.33	.00	5221.44	.149	.01
5.40	.00	5221.44	.149	.01
5.47	.00	5221.44	.149	.01
5.53	.00	5221.44	.149	.01
5.60	.00	5221.43	.149	.01
5.67	.00	5221.43	.149	.01
5.73	.00	5221.43	.149	.01
5.80	.00	5221.43	.149	.01
5.87	.00	5221.43	.149	.01
5.93	.00	5221.43	.149	.01
6.00	.00	5221.43	.149	.01
6.07	.00	5221.43	.149	.01
6.13	.00	5221.43	.149	.01
6.20	.00	5221.43	.148	.01
6.27	.00	5221.43	.148	.01
6.33	.00	5221.43	.148	.01
6.40	.00	5221.43	.148	.01
6.47	.00	5221.43	.148	.01
6.53	.00	5221.43	.148	.01
6.60	.00	5221.43	.148	.01
6.67	.00	5221.43	.148	.01
6.73	.00	5221.42	.148	.01
6.80	.00	5221.42	.148	.01
6.87	.00	5221.42	.148	.01
6.93	.00	5221.42	.148	.01
7.00	.00	5221.42	.148	.01
7.07	.00	5221.42	.148	.01
7.13	.00	5221.42	.148	.01
7.20	.00	5221.42	.148	.01
7.27	.00	5221.42	.148	.01
7.33	.00	5221.42	.148	.01
7.40	.00	5221.42	.147	.01
7.47	.00	5221.42	.147	.01
7.53	.00	5221.42	.147	.01
7.60	.00	5221.42	.147	.01
7.67	.00	5221.42	.147	.01
7.73	.00	5221.42	.147	.01
7.80	.00	5221.42	.147	.01
7.87	.00	5221.42	.147	.01
7.93	.00	5221.41	.147	.01
8.00	.00	5221.41	.147	.01
8.07	.00	5221.41	.147	.01
8.13	.00	5221.41	.147	.01
8.20	.00	5221.41	.147	.01

8.27	.00	5221.41	.147	.01
8.33	.00	5221.41	.147	.01
8.40	.00	5221.41	.147	.01
8.47	.00	5221.41	.147	.01
8.53	.00	5221.41	.147	.01
8.60	.00	5221.41	.147	.01
8.67	.00	5221.41	.146	.01
8.73	.00	5221.41	.146	.01
8.80	.00	5221.41	.146	.01
8.87	.00	5221.41	.146	.01
8.93	.00	5221.41	.146	.01
9.00	.00	5221.41	.146	.01
9.07	.00	5221.40	.146	.01
9.13	.00	5221.40	.146	.01
9.20	.00	5221.40	.146	.01
9.27	.00	5221.40	.146	.01
9.33	.00	5221.40	.146	.01
9.40	.00	5221.40	.146	.01
9.47	.00	5221.40	.146	.01
9.53	.00	5221.40	.146	.01
9.60	.00	5221.40	.146	.01
9.67	.00	5221.40	.146	.01
9.73	.00	5221.40	.146	.01
9.80	.00	5221.40	.146	.01
9.87	.00	5221.40	.146	.01
9.93	.00	5221.40	.145	.01
10.00	.00	5221.40	.145	.01
10.07	.00	5221.40	.145	.01
10.13	.00	5221.40	.145	.01
10.20	.00	5221.40	.145	.01
10.27	.00	5221.39	.145	.01
10.33	.00	5221.39	.145	.01
10.40	.00	5221.39	.145	.01
10.47	.00	5221.39	.145	.01
10.53	.00	5221.39	.145	.01
10.60	.00	5221.39	.145	.01
10.67	.00	5221.39	.145	.01
10.73	.00	5221.39	.145	.01
10.80	.00	5221.39	.145	.01
10.87	.00	5221.39	.145	.01
10.93	.00	5221.39	.145	.01
11.00	.00	5221.39	.145	.01
11.07	.00	5221.39	.145	.01
11.13	.00	5221.39	.144	.01
11.20	.00	5221.39	.144	.01
11.27	.00	5221.39	.144	.01
11.33	.00	5221.39	.144	.01
11.40	.00	5221.38	.144	.01
11.47	.00	5221.38	.144	.01
11.53	.00	5221.38	.144	.01
11.60	.00	5221.38	.144	.01
11.67	.00	5221.38	.144	.01
11.73	.00	5221.38	.144	.01
11.80	.00	5221.38	.144	.01

11.87	.00	5221.38	.144	.01
11.93	.00	5221.38	.144	.01
12.00	.00	5221.38	.144	.01
12.07	.00	5221.38	.144	.01
12.13	.00	5221.38	.144	.01
12.20	.00	5221.38	.144	.01
12.27	.00	5221.38	.144	.01
12.33	.00	5221.38	.144	.01
12.40	.00	5221.38	.143	.01
12.47	.00	5221.38	.143	.01
12.53	.00	5221.38	.143	.01
12.60	.00	5221.37	.143	.01
12.67	.00	5221.37	.143	.01
12.73	.00	5221.37	.143	.01
12.80	.00	5221.37	.143	.01
12.87	.00	5221.37	.143	.01
12.93	.00	5221.37	.143	.01
13.00	.00	5221.37	.143	.01
13.07	.00	5221.37	.143	.01
13.13	.00	5221.37	.143	.01
13.20	.00	5221.37	.143	.01
13.27	.00	5221.37	.143	.01
13.33	.00	5221.37	.143	.01
13.40	.00	5221.37	.143	.01
13.47	.00	5221.37	.143	.01
13.53	.00	5221.37	.143	.01
13.60	.00	5221.37	.143	.01
13.67	.00	5221.37	.142	.01
13.73	.00	5221.37	.142	.01
13.80	.00	5221.36	.142	.01
13.87	.00	5221.36	.142	.01
13.93	.00	5221.36	.142	.01
14.00	.00	5221.36	.142	.01
14.07	.00	5221.36	.142	.01
14.13	.00	5221.36	.142	.01
14.20	.00	5221.36	.142	.01
14.27	.00	5221.36	.142	.01
14.33	.00	5221.36	.142	.01
14.40	.00	5221.36	.142	.01
14.47	.00	5221.36	.142	.01
14.53	.00	5221.36	.142	.01
14.60	.00	5221.36	.142	.01
14.67	.00	5221.36	.142	.01
14.73	.00	5221.36	.142	.01
14.80	.00	5221.36	.142	.01
14.87	.00	5221.36	.142	.01
14.93	.00	5221.35	.142	.01
15.00	.00	5221.35	.141	.01
15.07	.00	5221.35	.141	.01
15.13	.00	5221.35	.141	.01
15.20	.00	5221.35	.141	.01
15.27	.00	5221.35	.141	.01
15.33	.00	5221.35	.141	.01
15.40	.00	5221.35	.141	.01

15.47	.00	5221.35	.141	.01
15.53	.00	5221.35	.141	.01
15.60	.00	5221.35	.141	.01
15.67	.00	5221.35	.141	.01
15.73	.00	5221.35	.141	.01
15.80	.00	5221.35	.141	.01
15.87	.00	5221.35	.141	.01
15.93	.00	5221.35	.141	.01
16.00	.00	5221.35	.141	.01
16.07	.00	5221.35	.141	.01
16.13	.00	5221.35	.141	.01
16.20	.00	5221.34	.141	.01
16.27	.00	5221.34	.140	.01
16.33	.00	5221.34	.140	.01
16.40	.00	5221.34	.140	.01
16.47	.00	5221.34	.140	.01
16.53	.00	5221.34	.140	.01
16.60	.00	5221.34	.140	.01
16.67	.00	5221.34	.140	.01
16.73	.00	5221.34	.140	.01
16.80	.00	5221.34	.140	.01
16.87	.00	5221.34	.140	.01
16.93	.00	5221.34	.140	.01
17.00	.00	5221.34	.140	.01
17.07	.00	5221.34	.140	.01
17.13	.00	5221.34	.140	.01
17.20	.00	5221.34	.140	.01
17.27	.00	5221.34	.140	.01
17.33	.00	5221.33	.140	.01
17.40	.00	5221.33	.140	.01
17.47	.00	5221.33	.140	.01
17.53	.00	5221.33	.139	.01
17.60	.00	5221.33	.139	.01
17.67	.00	5221.33	.139	.01
17.73	.00	5221.33	.139	.01
17.80	.00	5221.33	.139	.01
17.87	.00	5221.33	.139	.01
17.93	.00	5221.33	.139	.01
18.00	.00	5221.33	.139	.01
18.07	.00	5221.33	.139	.01
18.13	.00	5221.33	.139	.01
18.20	.00	5221.33	.139	.01
18.27	.00	5221.33	.139	.01
18.33	.00	5221.33	.139	.01
18.40	.00	5221.33	.139	.01
18.47	.00	5221.33	.139	.01
18.53	.00	5221.33	.139	.01
18.60	.00	5221.32	.139	.01
18.67	.00	5221.32	.139	.01
18.73	.00	5221.32	.139	.01
18.80	.00	5221.32	.139	.01
18.87	.00	5221.32	.138	.01
18.93	.00	5221.32	.138	.01
19.00	.00	5221.32	.138	.01

19.07	.00	5221.32	.138	.01
19.13	.00	5221.32	.138	.01
19.20	.00	5221.32	.138	.01
19.27	.00	5221.32	.138	.01
19.33	.00	5221.32	.138	.01
19.40	.00	5221.32	.138	.01
19.47	.00	5221.32	.138	.01
19.53	.00	5221.32	.138	.01
19.60	.00	5221.32	.138	.01
19.67	.00	5221.32	.138	.01
19.73	.00	5221.32	.138	.01
19.80	.00	5221.31	.138	.01
19.87	.00	5221.31	.138	.01
19.93	.00	5221.31	.138	.01

PEAK DISCHARGE = 118.291 CFS - PEAK OCCURS AT HOUR 1.60
MAXIMUM WATER SURFACE ELEVATION = 5222.532
MAXIMUM STORAGE = .5199 AC-FT INCREMENTAL TIME= .033333HRS

*
PRINT HYD ID=2 CODE 0

PARTIAL HYDROGRAPH 100.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	4.000	.0	8.000	.0	12.000	.0	16.000	.0
.033	.0	4.033	.0	8.033	.0	12.033	.0	16.033	.0
.067	.0	4.067	.0	8.067	.0	12.067	.0	16.067	.0
.100	.0	4.100	.0	8.100	.0	12.100	.0	16.100	.0
.133	.0	4.133	.0	8.133	.0	12.133	.0	16.133	.0
.167	.0	4.167	.0	8.167	.0	12.167	.0	16.167	.0
.200	.0	4.200	.0	8.200	.0	12.200	.0	16.200	.0
.233	.0	4.233	.0	8.233	.0	12.233	.0	16.233	.0
.267	.0	4.267	.0	8.267	.0	12.267	.0	16.267	.0
.300	.0	4.300	.0	8.300	.0	12.300	.0	16.300	.0
.333	.0	4.333	.0	8.333	.0	12.333	.0	16.333	.0
.367	.0	4.367	.0	8.367	.0	12.367	.0	16.367	.0
.400	.0	4.400	.0	8.400	.0	12.400	.0	16.400	.0
.433	.0	4.433	.0	8.433	.0	12.433	.0	16.433	.0
.467	.0	4.467	.0	8.467	.0	12.467	.0	16.467	.0
.500	.0	4.500	.0	8.500	.0	12.500	.0	16.500	.0
.533	.0	4.533	.0	8.533	.0	12.533	.0	16.533	.0
.567	.0	4.567	.0	8.567	.0	12.567	.0	16.567	.0
.600	.0	4.600	.0	8.600	.0	12.600	.0	16.600	.0
.633	.0	4.633	.0	8.633	.0	12.633	.0	16.633	.0
.667	.0	4.667	.0	8.667	.0	12.667	.0	16.667	.0
.700	.0	4.700	.0	8.700	.0	12.700	.0	16.700	.0
.733	.0	4.733	.0	8.733	.0	12.733	.0	16.733	.0
.767	.0	4.767	.0	8.767	.0	12.767	.0	16.766	.0
.800	.0	4.800	.0	8.800	.0	12.800	.0	16.800	.0
.833	.0	4.833	.0	8.833	.0	12.833	.0	16.833	.0
.867	.0	4.867	.0	8.867	.0	12.867	.0	16.866	.0
.900	.0	4.900	.0	8.900	.0	12.900	.0	16.900	.0
.933	.0	4.933	.0	8.933	.0	12.933	.0	16.933	.0

.967	.0	4.967	.0	8.967	.0	12.967	.0	16.966	.0
1.000	.0	5.000	.0	9.000	.0	13.000	.0	17.000	.0
1.033	.0	5.033	.0	9.033	.0	13.033	.0	17.033	.0
1.067	.0	5.067	.0	9.067	.0	13.067	.0	17.066	.0
1.100	.0	5.100	.0	9.100	.0	13.100	.0	17.100	.0
1.133	.0	5.133	.0	9.133	.0	13.133	.0	17.133	.0
1.167	.0	5.167	.0	9.167	.0	13.167	.0	17.166	.0
1.200	.0	5.200	.0	9.200	.0	13.200	.0	17.200	.0
1.233	.0	5.233	.0	9.233	.0	13.233	.0	17.233	.0
1.267	.0	5.267	.0	9.267	.0	13.267	.0	17.266	.0
1.300	.0	5.300	.0	9.300	.0	13.300	.0	17.300	.0
1.333	.0	5.333	.0	9.333	.0	13.333	.0	17.333	.0
1.367	.0	5.367	.0	9.367	.0	13.367	.0	17.366	.0
1.400	.0	5.400	.0	9.400	.0	13.400	.0	17.400	.0
1.433	.1	5.433	.0	9.433	.0	13.433	.0	17.433	.0
1.467	34.1	5.467	.0	9.467	.0	13.467	.0	17.466	.0
1.500	67.9	5.500	.0	9.500	.0	13.500	.0	17.500	.0
1.533	94.2	5.533	.0	9.533	.0	13.533	.0	17.533	.0
1.567	112.3	5.567	.0	9.567	.0	13.567	.0	17.566	.0
1.600	118.3	5.600	.0	9.600	.0	13.600	.0	17.600	.0
1.633	116.1	5.633	.0	9.633	.0	13.633	.0	17.633	.0
1.667	107.0	5.667	.0	9.667	.0	13.667	.0	17.666	.0
1.700	94.2	5.700	.0	9.700	.0	13.700	.0	17.700	.0
1.733	81.7	5.733	.0	9.733	.0	13.733	.0	17.733	.0
1.767	70.5	5.767	.0	9.767	.0	13.767	.0	17.766	.0
1.800	60.7	5.800	.0	9.800	.0	13.800	.0	17.800	.0
1.833	52.2	5.833	.0	9.833	.0	13.833	.0	17.833	.0
1.867	45.0	5.867	.0	9.867	.0	13.867	.0	17.866	.0
1.900	36.6	5.900	.0	9.900	.0	13.900	.0	17.900	.0
1.933	30.3	5.933	.0	9.933	.0	13.933	.0	17.933	.0
1.967	25.8	5.967	.0	9.967	.0	13.967	.0	17.966	.0
2.000	22.9	6.000	.0	10.000	.0	14.000	.0	18.000	.0
2.033	19.7	6.033	.0	10.033	.0	14.033	.0	18.033	.0
2.067	16.5	6.067	.0	10.067	.0	14.067	.0	18.066	.0
2.100	13.3	6.100	.0	10.100	.0	14.100	.0	18.100	.0
2.133	9.8	6.133	.0	10.133	.0	14.133	.0	18.133	.0
2.167	6.0	6.167	.0	10.167	.0	14.167	.0	18.166	.0
2.200	4.3	6.200	.0	10.200	.0	14.200	.0	18.200	.0
2.233	3.0	6.233	.0	10.233	.0	14.233	.0	18.233	.0
2.267	2.0	6.267	.0	10.267	.0	14.267	.0	18.266	.0
2.300	1.4	6.300	.0	10.300	.0	14.300	.0	18.300	.0
2.333	.9	6.333	.0	10.333	.0	14.333	.0	18.333	.0
2.367	.5	6.367	.0	10.367	.0	14.367	.0	18.366	.0
2.400	.3	6.400	.0	10.400	.0	14.400	.0	18.400	.0
2.433	.2	6.433	.0	10.433	.0	14.433	.0	18.433	.0
2.467	.1	6.467	.0	10.467	.0	14.467	.0	18.466	.0
2.500	.1	6.500	.0	10.500	.0	14.500	.0	18.500	.0
2.533	.1	6.533	.0	10.533	.0	14.533	.0	18.533	.0
2.567	.1	6.567	.0	10.567	.0	14.567	.0	18.566	.0
2.600	.1	6.600	.0	10.600	.0	14.600	.0	18.600	.0
2.633	.1	6.633	.0	10.633	.0	14.633	.0	18.633	.0
2.667	.1	6.667	.0	10.667	.0	14.667	.0	18.666	.0
2.700	.1	6.700	.0	10.700	.0	14.700	.0	18.700	.0
2.733	.1	6.733	.0	10.733	.0	14.733	.0	18.733	.0

2.767	.1	6.767	.0	10.767	.0	14.767	.0	18.766	.0
2.800	.1	6.800	.0	10.800	.0	14.800	.0	18.800	.0
2.833	.1	6.833	.0	10.833	.0	14.833	.0	18.833	.0
2.867	.1	6.867	.0	10.867	.0	14.867	.0	18.866	.0
2.900	.1	6.900	.0	10.900	.0	14.900	.0	18.900	.0
2.933	.0	6.933	.0	10.933	.0	14.933	.0	18.933	.0
2.967	.0	6.967	.0	10.967	.0	14.967	.0	18.966	.0
3.000	.0	7.000	.0	11.000	.0	15.000	.0	19.000	.0
3.033	.0	7.033	.0	11.033	.0	15.033	.0	19.033	.0
3.067	.0	7.067	.0	11.067	.0	15.067	.0	19.066	.0
3.100	.0	7.100	.0	11.100	.0	15.100	.0	19.100	.0
3.133	.0	7.133	.0	11.133	.0	15.133	.0	19.133	.0
3.167	.0	7.167	.0	11.167	.0	15.167	.0	19.166	.0
3.200	.0	7.200	.0	11.200	.0	15.200	.0	19.200	.0
3.233	.0	7.233	.0	11.233	.0	15.233	.0	19.233	.0
3.267	.0	7.267	.0	11.267	.0	15.267	.0	19.266	.0
3.300	.0	7.300	.0	11.300	.0	15.300	.0	19.300	.0
3.333	.0	7.333	.0	11.333	.0	15.333	.0	19.333	.0
3.367	.0	7.367	.0	11.367	.0	15.367	.0	19.366	.0
3.400	.0	7.400	.0	11.400	.0	15.400	.0	19.400	.0
3.433	.0	7.433	.0	11.433	.0	15.433	.0	19.433	.0
3.467	.0	7.467	.0	11.467	.0	15.467	.0	19.466	.0
3.500	.0	7.500	.0	11.500	.0	15.500	.0	19.500	.0
3.533	.0	7.533	.0	11.533	.0	15.533	.0	19.533	.0
3.567	.0	7.567	.0	11.567	.0	15.567	.0	19.566	.0
3.600	.0	7.600	.0	11.600	.0	15.600	.0	19.600	.0
3.633	.0	7.633	.0	11.633	.0	15.633	.0	19.633	.0
3.667	.0	7.667	.0	11.667	.0	15.667	.0	19.666	.0
3.700	.0	7.700	.0	11.700	.0	15.700	.0	19.700	.0
3.733	.0	7.733	.0	11.733	.0	15.733	.0	19.733	.0
3.767	.0	7.767	.0	11.767	.0	15.767	.0	19.766	.0
3.800	.0	7.800	.0	11.800	.0	15.800	.0	19.800	.0
3.833	.0	7.833	.0	11.833	.0	15.833	.0	19.833	.0
3.867	.0	7.867	.0	11.867	.0	15.867	.0	19.866	.0
3.900	.0	7.900	.0	11.900	.0	15.900	.0	19.900	.0
3.933	.0	7.933	.0	11.933	.0	15.933	.0	19.933	.0
3.967	.0	7.967	.0	11.967	.0	15.967	.0	19.966	.0

RUNOFF VOLUME = 1.82357 INCHES = 3.4550 ACRE-FEET
PEAK DISCHARGE RATE = 118.29 CFS AT 1.600 HOURS BASIN AREA = .0355 SQ. MI.

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*
*** COMPUTE ONSITE FLOW HYDROGRAPH (BASIN C) ***
*
COMPUTE NM HYD      ID=5  HYD NO= 200.00  DA=0.0050 SQ MI
                    PER A=0.0 PER B=26.0 PER C=0.0 PER D=74.0
                    TP= -0.1670
                    MASSRAIN=-1
```

K = .091015HR TP = .167000HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 11.660 CFS UNIT VOLUME = .9992 B = 526.28 P60 = 2.1400
AREA = .003700 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR

RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033333

K = .167446HR TP = .167000HR K/TP RATIO = 1.002670 SHAPE CONSTANT, N = 3.520804
UNIT PEAK = 2.5054 CFS UNIT VOLUME = .9944 B = 321.84 P60 = 2.1400
AREA = .001300 SQ MI IA = .50000 INCHES INF = 1.25000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033333

*
PRINT HYD ID=5 CODE=0

PARTIAL HYDROGRAPH 200.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.433	7.8	2.867	.3	4.300	.1	5.733	.1
.033	.0	1.467	10.0	2.900	.3	4.333	.1	5.767	.1
.067	.0	1.500	11.9	2.933	.3	4.367	.1	5.800	.1
.100	.0	1.533	12.6	2.967	.3	4.400	.1	5.833	.1
.133	.0	1.567	12.2	3.000	.2	4.433	.1	5.867	.1
.167	.0	1.600	11.0	3.033	.2	4.467	.1	5.900	.1
.200	.0	1.633	9.7	3.067	.2	4.500	.1	5.933	.1
.233	.0	1.667	8.4	3.100	.2	4.533	.1	5.967	.1
.267	.0	1.700	7.4	3.133	.2	4.567	.1	6.000	.1
.300	.0	1.733	6.6	3.167	.2	4.600	.1	6.033	.1
.333	.0	1.767	5.9	3.200	.2	4.633	.1	6.067	.1
.367	.0	1.800	5.4	3.233	.2	4.667	.1	6.100	.1
.400	.0	1.833	4.9	3.267	.2	4.700	.1	6.133	.1
.433	.0	1.867	4.6	3.300	.2	4.733	.1	6.167	.1
.467	.0	1.900	4.3	3.333	.2	4.767	.1	6.200	.0
.500	.0	1.933	4.0	3.367	.2	4.800	.1	6.233	.0
.533	.0	1.967	3.7	3.400	.2	4.833	.1	6.267	.0
.567	.0	2.000	3.5	3.433	.1	4.867	.1	6.300	.0
.600	.0	2.033	3.3	3.467	.1	4.900	.1	6.333	.0
.633	.0	2.067	3.1	3.500	.1	4.933	.1	6.367	.0
.667	.0	2.100	2.8	3.533	.1	4.967	.1	6.400	.0
.700	.0	2.133	2.4	3.567	.1	5.000	.1	6.433	.0
.733	.0	2.167	2.0	3.600	.1	5.033	.1	6.467	.0
.767	.0	2.200	1.7	3.633	.1	5.067	.1	6.500	.0
.800	.0	2.233	1.4	3.667	.1	5.100	.1	6.533	.0
.833	.0	2.267	1.2	3.700	.1	5.133	.1	6.567	.0
.867	.0	2.300	1.1	3.733	.1	5.167	.1	6.600	.0
.900	.0	2.333	1.0	3.767	.1	5.200	.1	6.633	.0
.933	.0	2.367	.9	3.800	.1	5.233	.1	6.667	.0
.967	.0	2.400	.8	3.833	.1	5.267	.1	6.700	.0
1.000	.1	2.433	.7	3.867	.1	5.300	.1	6.733	.0
1.033	.1	2.467	.7	3.900	.1	5.333	.1	6.767	.0
1.067	.2	2.500	.6	3.933	.1	5.367	.1	6.800	.0
1.100	.2	2.533	.6	3.967	.1	5.400	.1	6.833	.0
1.133	.3	2.567	.6	4.000	.1	5.433	.1	6.867	.0
1.167	.3	2.600	.5	4.033	.1	5.467	.1	6.900	.0
1.200	.4	2.633	.5	4.067	.1	5.500	.1	6.933	.0
1.233	.6	2.667	.4	4.100	.1	5.533	.1	6.967	.0
1.267	1.1	2.700	.4	4.133	.1	5.567	.1	7.000	.0

1.300	1.7	2.733	.4	4.167	.1	5.600	.1	7.033	.0
1.333	2.7	2.767	.4	4.200	.1	5.633	.1	7.067	.0
1.367	4.0	2.800	.3	4.233	.1	5.667	.1		
1.400	5.7	2.833	.3	4.267	.1	5.700	.1		

RUNOFF VOLUME = 1.98233 INCHES = .5286 ACRE-FEET
PEAK DISCHARGE RATE = 12.62 CFS AT 1.533 HOURS BASIN AREA = .0050 SQ. MI.

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*
*** COMPUTE TOTAL SITE DISCHARGE HYDROGRAPH ***
*
ADD HYD          ID=6 HYD 300.00 ID=2  ID=5
PRINT HYD        ID=6 CODE=0
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HYDROGRAPH FROM AREA 300.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	4.000	.1	8.000	.0	12.000	.0	16.000	.0
.033	.0	4.033	.1	8.033	.0	12.033	.0	16.033	.0
.067	.0	4.067	.1	8.067	.0	12.067	.0	16.067	.0
.100	.0	4.100	.1	8.100	.0	12.100	.0	16.100	.0
.133	.0	4.133	.1	8.133	.0	12.133	.0	16.133	.0
.167	.0	4.167	.1	8.167	.0	12.167	.0	16.167	.0
.200	.0	4.200	.1	8.200	.0	12.200	.0	16.200	.0
.233	.0	4.233	.1	8.233	.0	12.233	.0	16.233	.0
.267	.0	4.267	.1	8.267	.0	12.267	.0	16.267	.0
.300	.0	4.300	.1	8.300	.0	12.300	.0	16.300	.0
.333	.0	4.333	.1	8.333	.0	12.333	.0	16.333	.0
.367	.0	4.367	.1	8.367	.0	12.367	.0	16.367	.0
.400	.0	4.400	.1	8.400	.0	12.400	.0	16.400	.0
.433	.0	4.433	.1	8.433	.0	12.433	.0	16.433	.0
.467	.0	4.467	.1	8.467	.0	12.467	.0	16.467	.0
.500	.0	4.500	.1	8.500	.0	12.500	.0	16.500	.0
.533	.0	4.533	.1	8.533	.0	12.533	.0	16.533	.0
.567	.0	4.567	.1	8.567	.0	12.567	.0	16.567	.0
.600	.0	4.600	.1	8.600	.0	12.600	.0	16.600	.0
.633	.0	4.633	.1	8.633	.0	12.633	.0	16.633	.0
.667	.0	4.667	.1	8.667	.0	12.667	.0	16.667	.0
.700	.0	4.700	.1	8.700	.0	12.700	.0	16.700	.0
.733	.0	4.733	.1	8.733	.0	12.733	.0	16.733	.0
.767	.0	4.767	.1	8.767	.0	12.767	.0	16.766	.0
.800	.0	4.800	.1	8.800	.0	12.800	.0	16.800	.0
.833	.0	4.833	.1	8.833	.0	12.833	.0	16.833	.0
.867	.0	4.867	.1	8.867	.0	12.867	.0	16.866	.0
.900	.0	4.900	.1	8.900	.0	12.900	.0	16.900	.0
.933	.0	4.933	.1	8.933	.0	12.933	.0	16.933	.0
.967	.0	4.967	.1	8.967	.0	12.967	.0	16.966	.0
1.000	.1	5.000	.1	9.000	.0	13.000	.0	17.000	.0
1.033	.1	5.033	.1	9.033	.0	13.033	.0	17.033	.0
1.067	.2	5.067	.1	9.067	.0	13.067	.0	17.066	.0
1.100	.2	5.100	.1	9.100	.0	13.100	.0	17.100	.0

1.133	.3	5.133	.1	9.133	.0	13.133	.0	17.133	.0
1.167	.3	5.167	.1	9.167	.0	13.167	.0	17.166	.0
1.200	.4	5.200	.1	9.200	.0	13.200	.0	17.200	.0
1.233	.6	5.233	.1	9.233	.0	13.233	.0	17.233	.0
1.267	1.1	5.267	.1	9.267	.0	13.267	.0	17.266	.0
1.300	1.7	5.300	.1	9.300	.0	13.300	.0	17.300	.0
1.333	2.7	5.333	.1	9.333	.0	13.333	.0	17.333	.0
1.367	4.0	5.367	.1	9.367	.0	13.367	.0	17.366	.0
1.400	5.7	5.400	.1	9.400	.0	13.400	.0	17.400	.0
1.433	7.9	5.433	.1	9.433	.0	13.433	.0	17.433	.0
1.467	44.1	5.467	.1	9.467	.0	13.467	.0	17.466	.0
1.500	79.8	5.500	.1	9.500	.0	13.500	.0	17.500	.0
1.533	106.8	5.533	.1	9.533	.0	13.533	.0	17.533	.0
1.567	124.5	5.567	.1	9.567	.0	13.567	.0	17.566	.0
1.600	129.3	5.600	.1	9.600	.0	13.600	.0	17.600	.0
1.633	125.8	5.633	.1	9.633	.0	13.633	.0	17.633	.0
1.667	115.4	5.667	.1	9.667	.0	13.667	.0	17.666	.0
1.700	101.6	5.700	.1	9.700	.0	13.700	.0	17.700	.0
1.733	88.3	5.733	.1	9.733	.0	13.733	.0	17.733	.0
1.767	76.4	5.767	.1	9.767	.0	13.767	.0	17.766	.0
1.800	66.0	5.800	.1	9.800	.0	13.800	.0	17.800	.0
1.833	57.1	5.833	.1	9.833	.0	13.833	.0	17.833	.0
1.867	49.5	5.867	.1	9.867	.0	13.867	.0	17.866	.0
1.900	40.9	5.900	.1	9.900	.0	13.900	.0	17.900	.0
1.933	34.3	5.933	.1	9.933	.0	13.933	.0	17.933	.0
1.967	29.5	5.967	.1	9.967	.0	13.967	.0	17.966	.0
2.000	26.4	6.000	.1	10.000	.0	14.000	.0	18.000	.0
2.033	23.0	6.033	.1	10.033	.0	14.033	.0	18.033	.0
2.067	19.6	6.067	.1	10.067	.0	14.067	.0	18.066	.0
2.100	16.1	6.100	.1	10.100	.0	14.100	.0	18.100	.0
2.133	12.2	6.133	.1	10.133	.0	14.133	.0	18.133	.0
2.167	8.0	6.167	.1	10.167	.0	14.167	.0	18.166	.0
2.200	6.0	6.200	.1	10.200	.0	14.200	.0	18.200	.0
2.233	4.4	6.233	.0	10.233	.0	14.233	.0	18.233	.0
2.267	3.3	6.267	.0	10.267	.0	14.267	.0	18.266	.0
2.300	2.4	6.300	.0	10.300	.0	14.300	.0	18.300	.0
2.333	1.8	6.333	.0	10.333	.0	14.333	.0	18.333	.0
2.367	1.4	6.367	.0	10.367	.0	14.367	.0	18.366	.0
2.400	1.1	6.400	.0	10.400	.0	14.400	.0	18.400	.0
2.433	1.0	6.433	.0	10.433	.0	14.433	.0	18.433	.0
2.467	.8	6.467	.0	10.467	.0	14.467	.0	18.466	.0
2.500	.7	6.500	.0	10.500	.0	14.500	.0	18.500	.0
2.533	.7	6.533	.0	10.533	.0	14.533	.0	18.533	.0
2.567	.6	6.567	.0	10.567	.0	14.567	.0	18.566	.0
2.600	.6	6.600	.0	10.600	.0	14.600	.0	18.600	.0
2.633	.6	6.633	.0	10.633	.0	14.633	.0	18.633	.0
2.667	.5	6.667	.0	10.667	.0	14.667	.0	18.666	.0
2.700	.5	6.700	.0	10.700	.0	14.700	.0	18.700	.0
2.733	.5	6.733	.0	10.733	.0	14.733	.0	18.733	.0
2.767	.4	6.767	.0	10.767	.0	14.767	.0	18.766	.0
2.800	.4	6.800	.0	10.800	.0	14.800	.0	18.800	.0
2.833	.4	6.833	.0	10.833	.0	14.833	.0	18.833	.0
2.867	.4	6.867	.0	10.867	.0	14.867	.0	18.866	.0
2.900	.3	6.900	.0	10.900	.0	14.900	.0	18.900	.0

2.933	.3	6.933	.0	10.933	.0	14.933	.0	18.933	.0
2.967	.3	6.967	.0	10.967	.0	14.967	.0	18.966	.0
3.000	.3	7.000	.0	11.000	.0	15.000	.0	19.000	.0
3.033	.3	7.033	.0	11.033	.0	15.033	.0	19.033	.0
3.067	.3	7.067	.0	11.067	.0	15.067	.0	19.066	.0
3.100	.2	7.100	.0	11.100	.0	15.100	.0	19.100	.0
3.133	.2	7.133	.0	11.133	.0	15.133	.0	19.133	.0
3.167	.2	7.167	.0	11.167	.0	15.167	.0	19.166	.0
3.200	.2	7.200	.0	11.200	.0	15.200	.0	19.200	.0
3.233	.2	7.233	.0	11.233	.0	15.233	.0	19.233	.0
3.267	.2	7.267	.0	11.267	.0	15.267	.0	19.266	.0
3.300	.2	7.300	.0	11.300	.0	15.300	.0	19.300	.0
3.333	.2	7.333	.0	11.333	.0	15.333	.0	19.333	.0
3.367	.2	7.367	.0	11.367	.0	15.367	.0	19.366	.0
3.400	.2	7.400	.0	11.400	.0	15.400	.0	19.400	.0
3.433	.2	7.433	.0	11.433	.0	15.433	.0	19.433	.0
3.467	.2	7.467	.0	11.467	.0	15.467	.0	19.466	.0
3.500	.2	7.500	.0	11.500	.0	15.500	.0	19.500	.0
3.533	.2	7.533	.0	11.533	.0	15.533	.0	19.533	.0
3.567	.1	7.567	.0	11.567	.0	15.567	.0	19.566	.0
3.600	.1	7.600	.0	11.600	.0	15.600	.0	19.600	.0
3.633	.1	7.633	.0	11.633	.0	15.633	.0	19.633	.0
3.667	.1	7.667	.0	11.667	.0	15.667	.0	19.666	.0
3.700	.1	7.700	.0	11.700	.0	15.700	.0	19.700	.0
3.733	.1	7.733	.0	11.733	.0	15.733	.0	19.733	.0
3.767	.1	7.767	.0	11.767	.0	15.767	.0	19.766	.0
3.800	.1	7.800	.0	11.800	.0	15.800	.0	19.800	.0
3.833	.1	7.833	.0	11.833	.0	15.833	.0	19.833	.0
3.867	.1	7.867	.0	11.867	.0	15.867	.0	19.866	.0
3.900	.1	7.900	.0	11.900	.0	15.900	.0	19.900	.0
3.933	.1	7.933	.0	11.933	.0	15.933	.0	19.933	.0
3.967	.1	7.967	.0	11.967	.0	15.967	.0	19.966	.0

RUNOFF VOLUME = 1.84315 INCHES = 3.9836 ACRE-FEET
PEAK DISCHARGE RATE = 129.34 CFS AT 1.600 HOURS BASIN AREA = .0405 SQ. MI.

*
FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 06:56:41

REVISED HEC-2 PRINTOUT

100-YEAR STORM

PROPOSED CONDITIONS

SUBCRITICAL FLOW

```
C
C      2
C      7CHANGE TO PAVEMENT W/ n=0.017
C      2RETURN TO CONCRETE W/ n=0.013
T1IRS PROPOSED DEVELOPMENT - 100 YEAR STORM
T2SUBCRITICAL RUN
T3       IRS PROPOSED
J1      0       0       0       0       0       0       0  129.34   20.31       0
J2     -1       0       0       0       0       0      -1       0       0       0
NC      0       0    .013      .3      .5
X1      9      10     .01   86.01       0       0       0       0       0       0
GR 20.30    0.01   19.60    0.02   19.74   15.00   19.41   15.01   19.37   17.00
GR 19.50   21.00   20.00   35.50   21.00   62.50   22.32   86.00   22.82   86.01
X1      8       7     .01   35.01    33.5    33.5    33.5       0       0       0
GR 21.14     .01   20.06     .02   20.00    8.00   19.90   20.00   20.00   22.00
GR 20.31   35.00   20.81   35.01
NC      0       0    .017       0       0
X1      7       5     .01   65.01    23.5    23.5    23.5       0       0       0
GR 21.25     .01   21.00    5.00   20.13   50.00   20.31   65.00   21.25   65.01
X1      6       5     .01  117.01      22      22      22       0       0       0
GR 21.45     .01   20.95     .02   20.22   64.00   20.73  117.00   21.40  117.01
X1      5       5     .01   87.01      50      50      50       0       0       0
GR 22.00     .01   21.00   23.00   20.53   55.50   20.75   87.00   21.37   87.01
X1      4       7     .01  127.01      53      53      53       0       0       0
GR 21.90     .01   21.53   13.50   21.00   38.00   20.86   58.50   21.00   78.00
GR 22.00  127.00   22.50  127.01
X1      3       7     .01   64.01    85.5    85.5    85.5       0       0       0
GR 22.80     .01   21.80     .02   21.37    9.00   21.37    9.01   21.37   21.00
GR 22.08   64.00   22.58   64.01
NC      0       0    .013       0       0
X1      2       5     .01   23.00      29      29      29       0       0       0
GR 23.34     .01   21.44     .02   21.51   13.00   21.52   22.99   23.20   23.00
X1      1       5     0.01  23.00      43      43      43       0       0       0
GR 23.60    0.01   21.45    0.01   21.67   13.00   21.93   22.99   23.60   23.00
EJ
ER
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**********************************************************
*  WATER SURFACE PROFILES                                *
*  DEVELOPED BY THE COE                                  *
*  VERSION OF SEPTEMBER 1988                             *
*                                                        *
*  RUN DATE    11/18/93   TIME    9:25:47                *
**********************************************************
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**************************************
*  DODSON AND ASSOCIATES, INC.       *
*  HYDROLOGIST AND CIVIL ENGINEERS   *
*  7015 W TIDWELL SUITE 107          *
*  HOUSTON, TEXAS 77092              *
*  (713) 895-8322                    *
**************************************
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X     X  XXXXXXX   XXXXX             XXXXX
X     X  X       X     X           X     X
X     X  X       X                       X
XXXXXXX  XXXX    X         XXXXX    XXXXX
X     X  X       X                 X
X     X  X       X     X           X
X     X  XXXXXXX   XXXXX             XXXXXXX
```

END OF BANNER

THIS RUN EXECUTED 11/18/93 9:25:47

****
HEC2 RELEASE DATED SEPT 88

****

T1IRS PROPOSED DEVELOPMENT - 100 YEAR STORM
T2SUBCRITICAL RUN
T3 IRS PROPOSED

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0	0	0	0	0	0	0	129.34	20.31	0
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	-1	0	0	0	0	0	-1	0	0	0

NC	0	0	.013	.3	.5					
X1	9	10	.01	86.01	0	0	0	0	0	0
GR	20.30	0.01	19.60	0.02	19.74	15.00	19.41	15.01	19.37	17.00
GR	19.50	21.00	20.00	35.50	21.00	62.50	22.32	86.00	22.82	86.01
X1	8	7	.01	35.01	33.5	33.5	33.5	0	0	0
GR	21.14	.01	20.06	.02	20.00	8.00	19.90	20.00	20.00	22.00
GR	20.31	35.00	20.81	35.01						
NC	0	0	.017	0	0					
	CHANGE TO PAVEMENT W/ n=0.017									
X1	7	5	.01	65.01	23.5	23.5	23.5	0	0	0
GR	21.25	.01	21.00	5.00	20.13	50.00	20.31	65.00	21.25	65.01
X1	6	5	.01	117.01	22	22	22	0	0	0
GR	21.45	.01	20.95	.02	20.22	64.00	20.73	117.00	21.40	117.01
X1	5	5	.01	87.01	50	50	50	0	0	0
GR	22.00	.01	21.00	23.00	20.53	55.50	20.75	87.00	21.37	87.01
X1	4	7	.01	127.01	53	53	53	0	0	0
GR	21.90	.01	21.53	13.50	21.00	38.00	20.86	58.50	21.00	78.00
GR	22.00	127.00	22.50	127.01						
X1	3	7	.01	64.01	85.5	85.5	85.5	0	0	0
GR	22.80	.01	21.80	.02	21.37	9.00	21.37	9.01	21.37	21.00
GR	22.08	64.00	22.58	64.01						
NC	0	0	.013	0	0					

RETURN TO CONCRETE W/ n=0.013

X1	2	5	.01	23.00	29	29	29	0	0	0
R	23.34	.01	21.44	.02	21.51	13.00	21.52	22.99	23.20	23.00
X1	1	5	0.01	23.00	43	43	43	0	0	0
R	23.60	0.01	21.45	0.01	21.67	13.00	21.93	22.99	23.60	23.00

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV= .300 CEHV= .500
*SECNO 9.000
3280 CROSS SECTION 9.00 EXTENDED .11 FEET

3720 CRITICAL DEPTH ASSUMED

9.00	1.04	20.41	20.41	20.31	20.72	.31	.00	.00	20.30
129.	0.	129.	0.	0.	29.	0.	0.	0.	22.82
.00	.00	4.50	.00	.000	.013	.000	.000	19.37	.01
.003029	0.	0.	0.	0	7	0	.00	46.51	46.52

*SECNO 8.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

8.00	.89	20.79	20.79	.00	21.17	.38	.10	.03	21.14
129.	0.	129.	0.	0.	26.	0.	0.	0.	20.81
.00	.00	4.95	.00	.000	.013	.000	.000	19.90	.01
.002887	34.	34.	34.	0	15	0	.00	35.00	35.01

*SECNO 7.000
CHANGE TO PAVEMENT W/ n=0.017

7.00	1.01	21.14	21.00	.00	21.30	.16	.06	.06	21.25
129.	0.	129.	0.	0.	40.	0.	0.	0.	21.25
.00	.00	3.24	.00	.000	.017	.000	.000	20.13	2.19
.002561	24.	24.	24.	5	8	0	.00	62.81	65.01

*SECNO 6.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

6.00	1.11	21.33	20.86	.00	21.36	.03	.02	.04	21.45
129.	0.	129.	0.	0.	93.	0.	0.	0.	21.40
.01	.00	1.39	.00	.000	.017	.000	.000	20.22	.01
.000351	22.	22.	22.	2	14	0	.00	117.00	117.01

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

SECNO 5.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

5.00	.77	21.30	21.21	.00	21.47	.17	.04	.07	22.00
129.	0.	129.	0.	0.	39.	0.	0.	0.	21.37
.01	.00	3.30	.00	.000	.017	.000	.000	20.53	16.11
.003171	50.	50.	50.	2	14	0	.00	70.90	87.01

SECNO 4.000
/185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

4.00	.65	21.51	21.51	.00	21.72	.20	.22	.02	21.90
129.	0.	129.	0.	0.	36.	0.	0.	0.	22.50
.02	.00	3.63	.00	.000	.017	.000	.000	20.86	14.41
.005824	53.	53.	53.	0	15	0	.00	88.59	103.00

*SECNO 3.000
185 MINIMUM SPECIFIC ENERGY
720 CRITICAL DEPTH ASSUMED

3.00	.77	22.14	22.14	.00	22.39	.25	.48	.02	22.80
129.	0.	129.	0.	0.	32.	0.	0.	0.	22.58
.02	.00	4.02	.00	.000	.017	.000	.000	21.37	.02
.005332	86.	86.	86.	0	8	0	.00	63.98	64.00

ISECNO 2.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
RETURN TO CONCRETE W/ n=0.013

2.00	1.04	22.48	22.48	.00	22.98	.50	.11	.12	23.34
129.	0.	129.	0.	0.	23.	0.	0.	0.	23.20
.02	.00	5.68	.00	.000	.013	.000	.000	21.44	.01
.002788	29.	29.	29.	0	11	0	.00	22.98	23.00

ISECNO 1.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.00	1.21	22.66	22.66	.00	23.16	.50	.12	.00	23.60
129.	0.	129.	0.	0.	23.	0.	0.	1.	23.60
.03	.00	5.66	.00	.000	.013	.000	.000	21.45	.01
.002754	43.	43.	43.	0	8	0	.00	22.98	22.99

PROFILE FOR STREAM IRS PROPOSED

PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

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ELEVATION    19.      20.      20.      21.      21.      22.      22.      23.      23.      24.
   SECNO   CUMDIS

    9.00     0.  I        .       L.W     E .       .        .        .        R.       .        .        .
             5.  . I      .        MLW     E .       .        .        .  R     .        .        .        .
            10.  .  I     .        . MWL     E       .        .     R  .        .        .        .        .
            15.  .    I   .        .  MW L   .E      .        .R       .        .        .        .        .
            20.  .     I  .        .    W   L. E     .     R  .        .        .        .        .        .
            25.  .      I .        .     W   .L  E    R.       .        .        .        .        .        .
            30.  .       I.        .       W .  RLE   .        .        .        .        .        .        .

    8.00    35.  .       .I       .      WR.    LE  .        .        .        .        .        .        .
            40.  .       . I      .       CWR    LE  .        .        .        .        .        .        .
            45.  .       .  I     .        CW R  LE  .        .        .        .        .        .        .
            50.  .       .   I    .        .C WR  LE .        .        .        .        .        .        .
            55.  .       .    I   .        . C W RLE .        .        .        .        .        .        .
    7.00    60.  .       .    I   .        .  C W  LE.        .        .        .        .        .        .
            65.  .       .     I  .        . C   W RE.        .        .        .        .        .        .
            70.  .       .     I  .        .C     W E.        .        .        .        .        .        .
            75.  .       .     I  .        .C      WEL        .        .        .        .        .        .
    6.00    80.  .       .      I .        C        WERL      .        .        .        .        .        .
            85.  .       .       I.        C        WER L     .        .        .        .        .        .
            90.  .       .       I.        .C       WE   L    .        .        .        .        .        .
            95.  .       .        I.       . C      WE    L   .        .        .        .        .        .
           100.  .       .        I.       .  C     WRE    L  .        .        .        .        .        .
           105.  .       .         I       .  C     WRE     L .        .        .        .        .        .
           110.  .       .         .I      .   C    WRE      L.        .        .        .        .        .
           115.  .       .         .I      .    C   WRE       L.       .        .        .        .        .
           120.  .       .         . I     .    C   WR E       L       .        .        .        .        .
           125.  .       .         .  I    .     C  WR E       .L      .        .        .        .        .
    5.00   130.  .       .         .  I    .      C WR E       . L     .        .        .        .        .
           135.  .       .         .   I   .      C W.ME       . L     .        .        .        .        .
           140.  .       .         .   I   .       CW. MER     . L     .        .        .        .        .
           145.  .       .         .  I    .      C W  E R   . L      .        .        .        .        .
           150.  .       .         .  I    .       CW   E    R. L     .        .        .        .        .
           155.  .       .         .  I    .        CW  EM    .RL     .        .        .        .        .
           160.  .       .         .   I   .        CW   EM   .L R    .        .        .        .        .
           165.  .       .         .    I  .        .W   E M  .L   R  .        .        .        .        .
           170.  .       .         .    I  .        .CW   E M .L    R .        .        .        .        .
           175.  .       .         .     I.        . W   E  M.L      R.       .        .        .        .
           180.  .       .         .     I.        . CW   E  ML       .R       .        .        .        .
    4.00   185.  .       .         .      I        .  W   E  .L       . R      .        .        .        .
           190.  .       .         .      I        .   W   E .ML      . R      .        .        .        .
           195.  .       .         .     .I        .   W    E. ML     . R      .        .        .        .
           200.  .       .         .    . I       .    W   E.  ML     . R      .        .        .        .
           205.  .       .         .    . I       .     W  E   ML     . R      .        .        .        .
           210.  .       .         .    .  I      .     W  .E  ML     . R      .        .        .        .
           215.  .       .         .    .  I      .      W . E M L    . R      .        .        .        .
           220.  .       .         .    .   I     .       W . E  M L . R      .        .        .        .
           225.  .       .         .    .    I    .        W. E  M L. R      .        .        .        .
           230.  .       .         .    .    I    .        W.  E  M L R      .        .        .        .
           235.  .       .         .    .     I   .         W   E  M.L R     .        .        .        .
           240.  .       .         .    .     I   .         .W   E M. L R    .        .        .        .
           245.  .       .         .    .      I  .         . W  E  M  LR    .        .        .        .
           250.  .       .         .    .       I .         . W   E .M  L    .        .        .        .
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| | | |

THIS RUN EXECUTED 11/18/93 9:25:48

****
HEC2 RELEASE DATED SEPT 88
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

IRS PROPOSED

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	9.000	.00	.00	.00	19.37	129.34	20.41	20.41	20.72	30.29	4.50	28.77	23.50
*	8.000	33.50	.00	.00	19.90	129.34	20.79	20.79	21.17	28.87	4.95	26.15	24.07
	7.000	23.50	.00	.00	20.13	129.34	21.14	21.00	21.30	25.61	3.24	39.91	25.56
*	6.000	22.00	.00	.00	20.22	129.34	21.33	20.86	21.36	3.51	1.39	92.75	69.07
*	5.000	50.00	.00	.00	20.53	129.34	21.30	21.21	21.47	31.71	3.30	39.21	22.97
*	4.000	53.00	.00	.00	20.86	129.34	21.51	21.51	21.72	58.24	3.63	35.60	16.95
*	3.000	85.50	.00	.00	21.37	129.34	22.14	22.14	22.39	53.32	4.02	32.18	17.71
*	2.000	29.00	.00	.00	21.44	129.34	22.48	22.48	22.98	27.88	5.68	22.78	24.50
*	1.000	43.00	.00	.00	21.45	129.34	22.66	22.66	23.16	27.54	5.66	22.85	24.65

.RS PROPOSED

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	9.000	129.34	20.41	.00	.00	.10	46.51	.00
*	8.000	129.34	20.79	.00	.38	.00	35.00	33.50
	7.000	129.34	21.14	.00	.35	.00	62.81	23.50
*	6.000	129.34	21.33	.00	.19	.00	117.00	22.00
*	5.000	129.34	21.30	.00	-.03	.00	70.90	50.00
*	4.000	129.34	21.51	.00	.21	.00	88.59	53.00
	3.000	129.34	22.14	.00	.63	.00	63.98	85.50
*	2.000	129.34	22.48	.00	.34	.00	22.98	29.00
	1.000	129.34	22.66	.00	.17	.00	22.98	43.00

SUMMARY OF ERRORS AND SPECIAL NOTES

:AUTION SECNO= 9.000 PROFILE= 1 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 8.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 8.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

JARNING SECNO= 6.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

JARNING SECNO= 5.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 4.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 4.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 3.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 3.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

:AUTION SECNO= 2.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 2.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

:AUTION SECNO= 1.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 1.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

REVISED HEC-2 PRINTOUT

100-YEAR STORM

PROPOSED CONDITIONS

SUPERCRITICAL FLOW

```
C
C      2
C      3CHANGE TO PAVEMENT W/ n = 0.017
C      8RETURN TO CONCRETE W/ n=0.013
T1IRS PROPOSED DEVELOPMENT - 100 YEAR STORM
T2SUPERCRITICAL FLOW RUN
T3       IRS PROPOSED
J1     0       0       0       1       0       0       0  129.34   22.53       0
J2    -1       0       0       0       0       0      -1       0       0       0
NC     0       0    .013      .3      .5
X1     1       5       0   23.00      43      43      43       0       0       0
GR 23.60       0   21.45    0.01   21.67   13.00   21.93   22.99   23.60   23.00
X1     2       5     .01   23.00      29      29      29       0       0       0
GR 23.34     .01   21.44     .02   21.51   13.00   21.52   22.99   23.20   23.00
NC     0       0    .017       0       0
X1     3       7     .01   64.01    85.5    85.5    85.5       0       0       0
GR 22.80     .01   21.80     .02   21.37    9.00   21.37    9.01   21.37   21.00
GR 22.08   64.00   22.58   64.01
X1     4       7     .01  127.01      53      53      53       0       0       0
GR 21.90     .01   21.53   13.50   21.00   38.00   20.86   58.50   21.00   78.00
GR 22.00  127.00   22.50  127.01
X1     5       5     .01   87.01      50      50      50       0       0       0
GR 22.00     .01   21.00   23.00   20.53   55.50   20.75   87.00   21.37   87.01
X1     6       5     .01  117.01      22      22      22       0       0       0
GR 21.50     .01   21.00     .02   20.22   64.00   20.73  117.00   21.40  117.01
X1     7       5     .01   65.01    23.5    23.5    23.5       0       0       0
GR 21.25    0.01   21.00    5.00   20.13   50.00   20.31   65.00   21.25   65.01
NC     0       0    .013       0       0
X1     8       7     .01   35.01    33.5    33.5    33.5       0       0       0
GR 21.14     .01   20.06     .02   20.00    8.00   19.90   20.00   20.00   22.00
GR 20.31   35.00   20.81   35.01
X1     9      10    0.01   86.01       0       0       0       0       0       0
GR 20.30    0.01   19.60    0.02   19.74   15.00   19.41   15.01   19.37   17.00
GR 19.50   21.00   20.00   35.50   21.00    62.5   22.32   86.00   22.82   86.01
EJ
ER
```

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**********************************************************
*  WATER SURFACE PROFILES                                *
:  DEVELOPED BY THE COE                                  *
:  VERSION OF SEPTEMBER 1988                             *
*                                                        *
:  RUN DATE    11/18/93   TIME    9:56:25                *
**********************************************************
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****************************************
*  DODSON AND ASSOCIATES, INC.         *
*  HYDROLOGIST AND CIVIL ENGINEERS     *
*  7015 W TIDWELL SUITE 107            *
*  HOUSTON, TEXAS 77092                *
*  (713) 895-8322                      *
****************************************
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```
X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X           X     X
X     X  X        X                       X
XXXXXXX  XXXX     X         XXXXX    XXXXX
X     X  X        X                       X
X     X  X        X     X                 X
X     X  XXXXXXXX   XXXXX               XXXXXXX
```

END OF BANNER

THIS RUN EXECUTED 11/18/93 9:56:25

```
**************************************************
 HEC2 RELEASE DATED SEPT 88

**************************************************

 1IRS PROPOSED DEVELOPMENT - 100 YEAR STORM
T2SUPERCRITICAL FLOW RUN
 3      IRS PROPOSED

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
       0         0         0         1         0         0         0    129.34     22.53         0

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
      -1         0         0         0         0         0        -1         0         0         0


IC        0         0      .013        .3        .5
X1        1         5         0     23.00        43        43        43         0         0         0
GR    23.60         0     21.45      0.01     21.67     13.00     21.93     22.99     23.60     23.00

J1        2         5       .01     23.00        29        29        29         0         0         0
GR    23.34       .01     21.44       .02     21.51     13.00     21.52     22.99     23.20     23.00

IC        0         0      .017         0         0
          CHANGE TO PAVEMENT W/ n = 0.017
J1        3         7       .01     64.01      85.5      85.5      85.5         0         0         0
GR    22.80       .01     21.80       .02     21.37      9.00     21.37      9.01     21.37     21.00
GR    22.08     64.00     22.58     64.01

J1        4         7       .01    127.01        53        53        53         0         0         0
GR    21.90       .01     21.53     13.50     21.00     38.00     20.86     58.50     21.00     78.00
GR    22.00    127.00     22.50    127.01

J1        5         5       .01     87.01        50        50        50         0         0         0
GR    22.00       .01     21.00     23.00     20.53     55.50     20.75     87.00     21.37     87.01

J1        6         5       .01    117.01        22        22        22         0         0         0
GR    21.50       .01     21.00       .02     20.22     64.00     20.73    117.00     21.40    117.01

J1        7         5       .01     65.01      23.5      23.5      23.5         0         0         0
GR    21.25      0.01     21.00      5.00     20.13     50.00     20.31     65.00     21.25     65.01

NC        0         0      .013         0         0
          RETURN TO CONCRETE W/ n=0.013
X1        8         7       .01     35.01      33.5      33.5      33.5         0         0         0
GR    21.14       .01     20.06       .02     20.00      8.00     19.90     20.00     20.00     22.00
GR    20.31     35.00     20.81     35.01
```

X1	9	10	0.01	86.01	0	0	0	0	0	0
GR	20.30	0.01	19.60	0.02	19.74	15.00	19.41	15.01	19.37	17.00
GR	19.50	21.00	20.00	35.50	21.00	62.5	22.32	86.00	22.82	86.01

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV= .300 CEHV= .500

SECNO 1.000

1.00	1.08	22.53	22.66	22.53	23.19	.66	.00	.00	23.60
129.	0.	129.	0.	0.	20.	0.	0.	0.	23.60
.00	.00	6.50	.00	.000	.013	.000	.000	21.45	.00
.004307	0.	0.	0.	0	7	0	.00	22.99	22.99

SECNO 2.000

685 20 TRIALS ATTEMPTED WSEL,CWSEL

3710 WSEL ASSUMED BASED ON MIN DIFF

2.00	.94	22.38	22.49	.00	23.00	.63	.18	.03	23.34
129.	0.	129.	0.	0.	20.	0.	0.	0.	23.20
.00	.00	6.34	.00	.000	.013	.000	.000	21.44	.02
.003995	43.	43.	43.	20	8	0	.00	22.98	23.00

*SECNO 3.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

CHANGE TO PAVEMENT W/ n = 0.017

3.00	.53	21.90	22.14	.00	22.70	.81	.25	.05	22.80
129.	0.	129.	0.	0.	18.	0.	0.	0.	22.58
.00	.00	7.20	.00	.000	.017	.000	.000	21.37	.02
.029122	29.	29.	29.	6	15	0	.00	53.37	53.39

SECNO 4.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

4.00	.65	21.51	21.51	.00	21.72	.20	.95	.98	21.90
129.	0.	129.	0.	0.	36.	0.	0.	0.	22.50
.01	.00	3.63	.00	.000	.017	.000	.000	20.86	14.41
.005824	86.	86.	86.	20	11	0	.00	88.59	103.00

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

SECNO 5.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

5.00	.68	21.21	21.21	.00	21.45	.24	.30	.21	22.00
129.	0.	129.	0.	0.	33.	0.	0.	0.	21.37
.01	.00	3.95	.00	.000	.017	.000	.000	20.53	18.24
.005559	53.	53.	53.	20	8	0	.00	68.76	87.01

SECNO 6.000

6.00	.58	20.80	20.86	.00	21.07	.27	.38	.01	21.50
129.	0.	129.	0.	0.	31.	0.	0.	0.	21.40
.02	.00	4.15	.00	.000	.017	.000	.000	20.22	16.32
.010788	50.	50.	50.	5	11	0	.00	100.69	117.00

SECNO 7.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

7.00	.87	21.00	21.00	.00	21.27	.27	.16	.19	21.25
129.	0.	129.	0.	0.	31.	0.	0.	0.	21.25
.02	.00	4.15	.00	.000	.017	.000	.000	20.13	5.08
.005459	22.	22.	22.	20	14	0	.00	59.93	65.01

#SECNO 8.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
RETURN TO CONCRETE W/ n=0.013

8.00	.89	20.79	20.79	.00	21.17	.38	.09	.14	21.14
129.	0.	129.	0.	0.	26.	0.	0.	0.	20.81
.02	.00	4.94	.00	.000	.013	.000	.000	19.90	.01
.002885	24.	24.	24.	20	8	0	.00	35.00	35.01

#SECNO 9.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

9.00	.80	20.17	20.41	.00	20.90	.73	.16	.11	20.30
129.	0.	129.	0.	0.	19.	0.	0.	0.	22.82
.02	.00	6.86	.00	.000	.013	.000	.000	19.37	.01
.010236	34.	34.	34.	10	8	0	.00	40.33	40.34

PROFILE FOR STREAM IRS PROPOSED

PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

```
ELEVATION    19.      20.      20.      21.      21.      22.      22.      23.      23.      24.
   SECNO   CUMDIS

    1.00      0.  .        .        .        .        . I      .        . W  C   .    E   .   L    .        .
              5.  .        .        .        .        . I      .        . W C    .    E   .  L     .        .
             10.  .        .        .        .        . I      .        . W C    .    E   . L      .        .
             15.  .        .        .        .        . I      .        . W  C   .   E    . RL     .        .
             20.  .        .        .        .        . I      .        . W C    .   E    .RL      .        .
             25.  .        .        .        .        .I       .        .W  C    .  E     R L      .        .
             30.  .        .        .        .        .I       .        .W C     .  E    R.L       .        .
             35.  .        .        .        .        .I       .        .W C     .  E    R L       .        .
             40.  .        .        .        .        .I       .        W  C     .  E    R  L      .        .
    2.00     45.  .        .        .        .        .I       .        W C      .  E    R L.      .        .
             50.  .        .        .        .        .I       .       W.C       . E R   L .       .        .
             55.  .        .        .        .        .I       .     W  C        .ER   L  .        .        .
             60.  .        .        .        .        .I       .    W   C.       ER   L   .        .        .
             65.  .        .        .        .        I        .   W   C .      E . L    .        .        .
             70.  .        .        .        .        I        . W   C  .     RE  L     .        .        .
    3.00     75.  .        .        .        .        I        .W   C   .   R  E L.     .        .        .
             80.  .        .        .        .       I.        W    C   .  MRE  L .     .        .        .
             85.  .        .        .        .       I.        W   C    .  ME L  .     .        .        .
             90.  .        .        .        .      I .       W.  C     . MERL   .     .        .        .
             95.  .        .        .        .      I .       W. C      .ME L    .     .        .        .
            100.  .        .        .        .     I  .      W . C      ME LR    .     .        .        .
            105.  .        .        .        .    I   .      W .C      ME L R   .     .        .        .
            110.  .        .        .        .    I   .     W  C       E.L  R   .     .        .        .
            115.  .        .        .        .   I    .     W  C     EM L  R    .     .        .        .
            120.  .        .        .        .   I    .    W  C.     EM L.  R   .     .        .        .
            125.  .        .        .        .  I     .    W C .    EM L . R   .     .        .        .
            130.  .        .        .        . I      .    WC  .   EM L  . R   .     .        .        .
            135.  .        .        .        . I      .   W C  . E ML   . R   .     .        .        .
            140.  .        .        .        .I       .   WC   . E ML   . R   .     .        .        .
            145.  .        .        .        . I      .   WC   .E ML    . R   .     .        .        .
            150.  .        .        .        .I       .   W    E. ML    . R   .     .        .        .
            155.  .        .        .        I        .  WC   E .ML     . R   .     .        .        .
    4.00    160.  .        .        .        I        .  W   E  .L      . R   .     .        .        .
            165.  .        .        .       I.        . W   E   ML       R   .     .        .        .
            170.  .        .        .       I.        . W   E  M.L     R .   .     .        .        .
            175.  .        .        .      I  .       .W   E  M .L   R   .   .     .        .        .
            180.  .        .        .     I   .       .W   E M  .L  R     .   .     .        .        .
            185.  .        .        .     I   .       W   E M   . L       .   .     .        .        .
            190.  .        .        .    I    .      W.   EM    R L       .   .     .        .        .
            195.  .        .        .   I     .      W.  EM   R . L       .   .     .        .        .
            200.  .        .        .   I     .      W . E  R   . L       .   .     .        .        .
            205.  .        .        .  I      .      W . ER     . L       .   .     .        .        .
            210.  .        .        .  I      .     W  .RE      . L       .   .     .        .        .
    5.00    215.  .        .        . I       .     W  R E      .  L      .   .     .        .        .
            220.  .        .        . I       .    W   RE       . L       .   .     .        .        .
            225.  .        .        .I        .    W   E        .L        .   .     .        .        .
            230.  .        .        .I        .   WC   ER       L         .   .     .        .        .
            235.  .        .        .I        .   W    ER      L.        .   .     .        .        .
            240.  .        .        I         .  W    E R     L .       .   .     .        .        .
            245.  .        .       I.         .  WC   E  R    L  .      .   .     .        .        .
            250.  .        .       I.         . WC   E   R    L  .      .   .     .        .        .
```

```
        260.  .        .       I .       WC   E   .R  L    .       .       .       .       .       .
6.00    265.  .        .      I  .       WC   E    .R L    .       .       .       .       .       .
        270.  .        .      I  .        W   E    RL      .       .       .       .       .       .
        275.  .        .     I   .        WC   E  RL       .       .       .       .       .       .
        280.  .        .     I   .        .WC   E L.       .       .       .       .       .       .
7.00    285.  .        .    I    .         . W   E .       .       .       .       .       .       .
        290.  .        .   I     .         . W  RLE .      .       .       .       .       .       .
        295.  .        .  I      .         .W  R  E .      .       .       .       .       .       .
        300.  .        . I       .         W R  LE  .      .       .       .       .       .       .
        305.  .        .I        .        WR    E  .       .       .       .       .       .       .
8.00    310.  .        .I        .       WR.   LE  .       .       .       .       .       .       .
        315.  .       I.         .      W  . L E  .       .       .       .       .       .       .
        320.  .     I  .         .    WC  L  E    .R      .       .       .       .       .       .
        325.  .    I   .         .  WMC  L .  E    .    R  .       .       .       .       .       .
        330.  .  I     .         .W MCL    . E     .       . R     .       .       .       .       .
        335.  . I      .        W.M C      . E     .       .      R.       .       .       .       .
9.00    340.  I        .     W  L.C        .E      .       .       .      R.       .       .       .
```

THIS RUN EXECUTED 11/18/93 9:56:26

****
HEC2 RELEASE DATED SEPT 88
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

IRS PROPOSED

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	E6	10*KS	VCH	AREA	.01K
	1.000	.00	.00	.00	21.45	129.34	22.53	22.66	23.19	43.07	6.50	19.90	19.71
	2.000	43.00	.00	.00	21.44	129.34	22.38	22.49	23.00	39.95	6.34	20.39	20.46
*	3.000	29.00	.00	.00	21.37	129.34	21.90	22.14	22.70	291.22	7.20	17.95	7.58
	4.000	85.50	.00	.00	20.86	129.34	21.51	21.51	21.72	58.24	3.63	35.60	16.95
*	5.000	53.00	.00	.00	20.53	129.34	21.21	21.21	21.45	55.59	3.95	32.71	17.35
	6.000	50.00	.00	.00	20.22	129.34	20.80	20.86	21.07	107.88	4.15	31.16	12.45
*	7.000	22.00	.00	.00	20.13	129.34	21.00	21.00	21.27	54.59	4.15	31.19	17.51
*	8.000	23.50	.00	.00	19.90	129.34	20.79	20.79	21.17	28.85	4.94	26.16	24.08
*	9.000	33.50	.00	.00	19.37	129.34	20.17	20.41	20.90	102.36	6.86	18.85	12.78

RS PROPOSED

UMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
1.000	129.34	22.53	.00	.00	.00	22.99	.00
2.000	129.34	22.38	.00	-.15	.00	22.98	43.00
3.000	129.34	21.90	.00	-.48	.00	53.37	29.00
4.000	129.34	21.51	.00	-.39	.00	88.59	85.50
5.000	129.34	21.21	.00	-.30	.00	68.76	53.00
6.000	129.34	20.80	.00	-.41	.00	100.69	50.00
7.000	129.34	21.00	.00	.20	.00	59.93	22.00
8.000	129.34	20.79	.00	-.21	.00	35.00	23.50
9.000	129.34	20.17	.00	-.62	.00	40.33	33.50

SUMMARY OF ERRORS AND SPECIAL NOTES

```
:AUTION SECNO=     2.000  PROFILE=  1  WSEL ASSUMED BASED ON MIN DIFF
:AUTION SECNO=     2.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO=     3.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

:AUTION SECNO=     4.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     4.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
:AUTION SECNO=     4.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=     5.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
:AUTION SECNO=     5.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
:AUTION SECNO=     5.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=     7.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
:AUTION SECNO=     7.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
:AUTION SECNO=     7.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

:AUTION SECNO=     8.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
:AUTION SECNO=     8.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     8.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

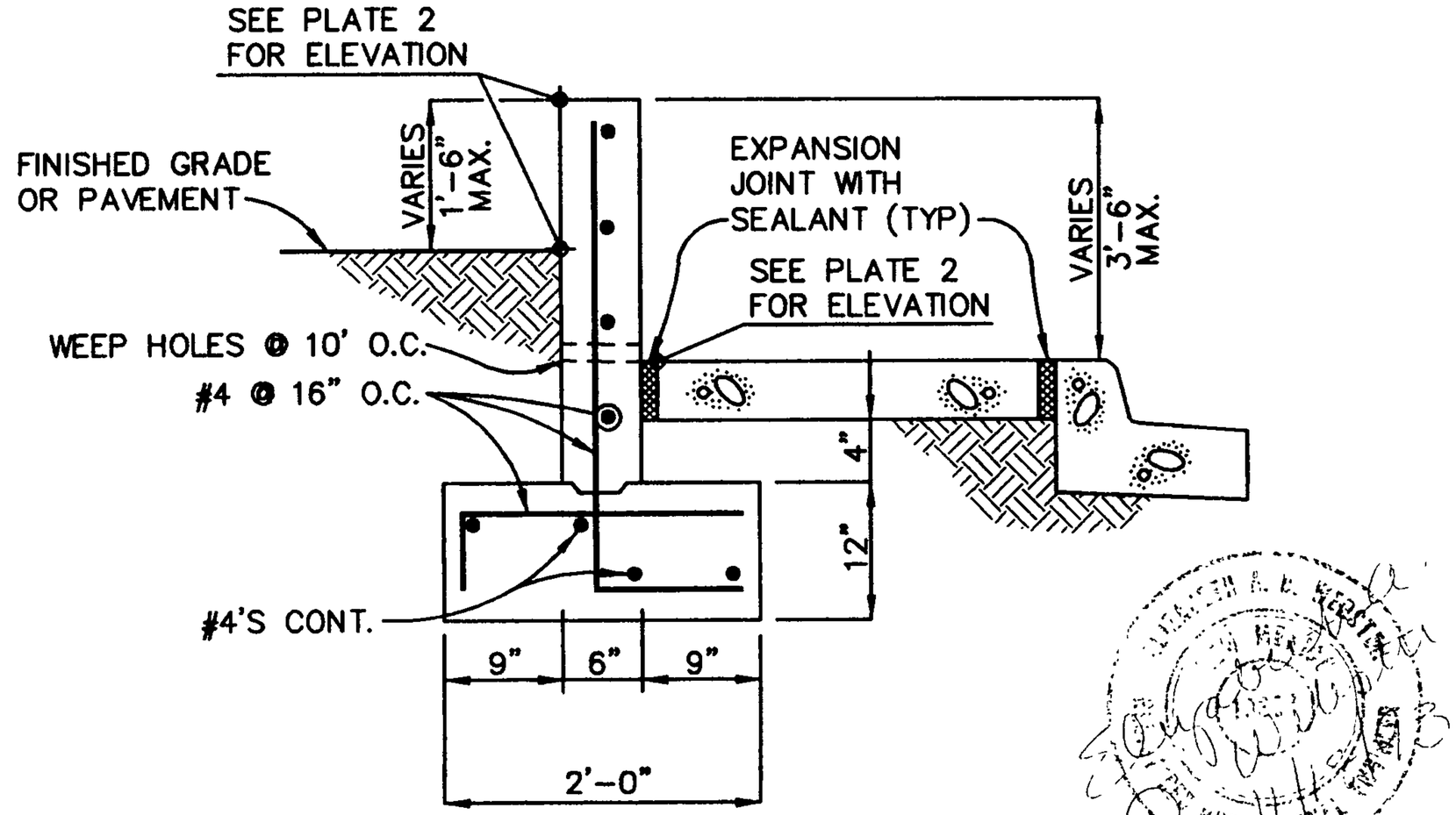
 ARNING SECNO=     9.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
```

REVISED

COMPUTER FILES

MADEIRA RETAINING

WALL DETAIL



MADEIRA RETAINING WALL DETAIL

N.T.S.

RETAINING WALL DESIGN

DESCRIPTION >> DESIGNED BY ELIZABETH A. D. WEBSTER
>> NEW MEXICO PROFESSIONAL REGISTRATION NUMBER 10837

SOIL DATA

ALLOWABLE BEARING	=	1,500 psf
ACTIVE LATERAL	=	60.0 pcf
.....MAX PRESS.	=	0.0 pcf
.....SLOPE PRESS.	=	0.0 pcf
BACKFILL SLOPE	=	0 :1
(horiz:vert,0=Level)		
PASSIVE PRESS.	=	350 pcf
SOIL DENSITY	=	110 pcf
SOIL HT OVER TOE	=	8 in

LATERAL LOADS

LATERAL LOAD ACTING ON		
STEM ABOVE SOIL	=	0 psf
ADD'L LATERAL LOAD	=	0 plf
TOP OF FTG TO START	=	0.00 ft
TOP OF FTG TO END	=	0.00 ft

VERTICAL LOADS

AXIAL DL ON STEM	=	0
AXIAL LL ON STEM	=	0
...ECC(Toward Toe='+')=		0
SURCHARGE OVER TOE	=	0
SURCHARGE OVER HEEL	=	0
...RESISTS OVERTURNING ?		
Toe	:	Y
Heel	:	Y

ADJACENT FOOTING

VERTICAL LOAD	=	0
LOAD ECCENTRICITY	=	0.00
FOOTING WIDTH	=	0
FTG. CL TO WALL	=	0
VERT. POSITION OF FTG.		
...Above/Below:[+/-]=		0
SPREAD FOOTING ?		Y

WALL & FOOTING DATA

RETAINED HEIGHT	=	3 ft	TOE WIDTH	=	0.75
WALL HT. ABOVE SOIL	=	0.5 ft	HEEL WIDTH	=	1.25
KEY DEPTH	=	0 in	Total Width	=	2.00
KEY WIDTH	=	0 in			
KEY DIST TO TOE	=	0.00 ft	THICKNESS	=	12

SUMMARY

Pressure @ Toe	=	1,274 psf	Factors of Safety:		
Pressure @ Heel	=	0 psf	Overturning	=	1.66
Allowable Press.	=	1,500 psf	Sliding	=	1.99
Ecc. of resultant	=	6.57 in			
Max. Shear @ Toe	=	0.00 psi	Allow. Ftg Shear	=	93.11
Max Shear @ Heel	=	0.00 psi			

SLIDING CHECK

FTG/SOIL FRICTION	=	0.35	Lateral Pressure	=	480
SOIL TO NEGLECT	=	0 in	- Passive Pressure	=	486
Factor of Safety	=	1.99	- Friction	=	303
			Add'l Force Required	=	0

FOOTING DESIGN

Soil Press. Mult.		--Toe--	--Heel--
By ACI Eq. 9-1	psf=	1,783	0
Mu - Upward	ft-#=	409	0
Mu - Downward	ft-#=	88	189
Mu - Design	ft-#=	321	(189)
One-Way Shear:			
Actual	psi=	0.0	0.0
Allowable	psi=	93.1	93.1
Cover over Rebar	in=	3.00	3.00
'd'	in=	9.00	9.00
Ru = Mu/bd^2	psi=	4.4	2.6

f'c	=	3,000
Fy	=	60,000
Min. As Percent	=	0.0014
OMIT SP UNDER HEEL?		Y

Rebar Choices

	-- Toe --		-- Heel
# 4 @	15.87	in o.c.	15.87
# 5 @	24.60	"	24.60
# 6 @	34.92	"	34.92
# 7 @	47.62	"	47.62
# 8 @	48.00	"	48.00
# 9 @	48.00	"	48.00
#10 @	48.00	"	48.00
#11 @	48.00	"	48.00

STEM DESIGN

NOTE: Concrete M & V are factored Mu & Vu

		<- Stem Sections -> Top				Bottom
WALL TYPE..... 1:Mas,2:Conc,3:Not Used	:	2	2	2	2	2
DESIGN HEIGHT ABOVE FTG.	=	4	3	2	1	0
REBAR: 0:Cntr,1:Edge	?	0	0	0	0	0
'd' FOR DESIGN	=	3.00	3.00	3.00	3.00	3.00
.DESIGN DATA.....						
THICKNESS (nominal)	=	6	6	6	6	6
REBAR SIZE	#	4	4	4	4	4
REBAR SPACING	=	16	16	16	16	16
Lateral Load @ Section	=	0	0	51	204	436
Moment....Actual	=	0	0	17	136	454
Moment....Allow.	=	1,925	1,925	1,925	1,925	1,925
Shear.....Actual	=	0.0	0.0	0.8	4.3	10.5
Shear.....Allow.	=	93.1	93.1	93.1	93.1	93.1
....Interaction Result	=	0.000	0.000	0.009	0.071	0.236
Wall Weight	=	75.0	75.0	75.0	75.0	75.0
n : Modular Ratio	=	9.29	9.29	9.29	9.29	9.29
Rebar Embed Length	=	12.00	12.00	12.00	12.00	6.00
.MASONRY STEM DATA.....						
f'm	=	1,500	1,500	1,500	1,500	1,500
Fs	=	24,000	24,000	24,000	24,000	24,000
ALL CELLS GROUTED	?	N	N	N	N	N
USE SPECIAL INSP.	?	N	N	N	N	N
Load Duration Factor	=	1.00	1.00	1.00	1.00	1.00
.CONCRETE STEM DATA.....						
f'c	=	3,000	3,000	3,000	3,000	3,000
Fy	=	60,000	60,000	60,000	60,000	60,000

SUMMARY OF FORCES & MOMENTS

Origin of Force:		<-Overturning Moments-> #	ft	ft-#	<- Resisting Moments - #	ft	ft-#
Active Soil Press.	=	480.0	1.33	640	--	--	--
Soil over Heel	=	--	--	--	247.5	1.63	402.18
Soil over Toe	=	-83.3	0.56	-46.29	55.0	0.38	20.625
Sloped Soil @ Heel	=	--	--	--	0.0	0.00	0
Adjacent Ftg. Load	=	0.0	0.00	0	0.0	0.00	0
Surcharge Over Heel	=	--	--	--	0.0	0.00	0
Surcharge over Toe	=	0.0	0.00	0	0.0	0.00	0
Axial Load on Wall	=	--	--	0	0.0	0.00	0
Load @ Proj. Wall	=	0.0	0.00	0	--	--	--
Averaged Stem Wts.	=	--	--	--	262.5	1.00	262.5
Added Lateral Load	=	0.0	0.00	0	--	--	--
Footing Weight	=	--	--	--	300.0	1.00	299.99
Key Weight	=	--	--	--	0.0	0.00	0
Vertical Component of Active Pressure	=	--	--	--	0.0	0.00	0
Totals	=	396.666		593.70	865.0		985.31
Values Used For Soil Pressure Calcs = (Vert. Component of Active Pressure Removed)					865.0		985.31

STEM VALUE MODIFICATIONS

	<- Top				Bottom
'N' Multiplier =	750	750	750	750	750
Center 'd' Modifier =	1.00	1.00	1.00	1.00	1.00
Edge 'd' Modifier =	1.00	1.00	1.00	1.00	1.00
Wall Wt. Multiplier =	1.00	1.00	1.00	1.00	1.00
Block Type: 1=LtWt, 2=MedWt =	1	1	1	1	1

REVISED FORM 8

(PAGES 1 AND 2 OF 9)

FEMA USE ONLY

FORM 8

LEVEE/FLOODWALL SYSTEM ANALYSES FORM

Community Name: Albuquerque

Flooding Source: Localized Shallow Flooding

Project Name/Identifier: Proposed Building Site at 5300 Block Montgomery Blvd. NE

Reach to be Revised

Downstream limit: Montgomery Blvd one block west of Madeira
Upstream limit: Madeira and Hendrix Intersection

This Levee/Floodwall analysis is based on:

- [x] upgrading of an existing levee/floodwall system
- [ ] a newly constructed levee/floodwall system
- [ ] reanalysis of an existing levee/floodwall system

Levee/Floodwall System Elements

1. Levee elements and locations are:

[ ]	earthen embankment, dike, berm, etc.	Station _____	to	_____
[x]	structural floodwall*	Station _____	to	_____
[ ]	Other (describe) _____	Station _____	to	_____

Structural Type:

- [x] monolithic cast-in place reinforced concrete
- [ ] reinforced concrete masonry block
- [ ] sheet piling
- [ ] others (describe) _____

* Along Madeira south of depressed sidewalk entrance to channel

2. Has this levee/floodwall system been certified by a Federal agency to provide protection against the 100-year flood event?

[ ] Yes [x] No

If yes, by which agency? _____

If yes, complete only the interior drainage section on pages 7 and 8 of 9 of this form and the operation and maintenance section of Form 1.

LEVEE/FLOODWALL SYSTEM ANALYSES FORM

Levee/Floodwall System Elements (Cont'd)

3. Attach certified drawings containing the following information (indicate drawing sheet numbers):

   a. Plan of the levee embankment and floodwall structures. Sheet Numbers Plates2-4

   b. A profile of the levee/floodwall system showing the 100-year water surface elevation, levee and/or wall crest and foundation, and closure locations for the total levee system. Sheet Numbers NA

   c. A profile of the 100-year water surface elevation, closure opening outlet and inlet invert elevations, type and size of opening , and kind of closure device. Sheet Numbers NA

   d. A layout detail for the embankment protection measures. Sheet Numbers NA

   e. Location, layout, and size and shape of the levee embankment features, foundation treatment, floodwall structure, closure structures, and pump stations. Sheet Numbers NA

Freeboard

1. The minimum freeboard provided above the 100-year water surface elevation is:

   Riverine

3.0 feet or more at the downstream end and throughout	☐ Yes	☒ No
3.5 feet or more at the upstream end	☐ Yes	☒ No
4.0 feet immediately upstream of all structures and constrictions	☐ Yes	☒ No

   Coastal

1.0 foot above the height of the one percent wave for the 100-year stillwater surge elevation or maximum wave runup (whichever is greater).	☐ Yes	☐ No
2.0 feet above 100-year stillwater surge elevation	☐ Yes	☐ No

   Please note, occasionally exceptions are made to the minimum freeboard requirement. If an exception is requested, attach documentation addressing Part 65.10 (b) (1) (ii) of the National Flood Insurance Program regulations.

   If no is answered to any of the above, please explain where and why: Retaining wall replaces existing earthen berm and is utilized to force flows to enter site at depressed sidewalk section.

2. Tabulate the elevations at critical locations (tabulate values at each levee crest grade change)

Station	Location	100-Year Water Surface Elevation	Levee Crest	Freeboard (ft.)
2 + 31	Upper end	22.53	23.60	1.07
1 + 15		22.53	23.60	1.07
1 + 07		22.53	24.10	1.57
0 + 84		22.53	23.60	1.07
0 + 60		22.53	24.32	1.79
0 + 17	~~Lower end~~	22.53	24.10	1.57
0 + 00	Lower end	22.53	23.95	1.42

(Extend table on an added sheet as needed and reference)

PERMANENT EASEMENT

AND

AGREEMENT AND COVENANT

93095239 8737 4676.80

PERMANENT EASEMENT

Grant of Permanent Easement, between Dominion Leasing, Inc. ("Grantor"), whose address is P.O. Box 727, Edmond, OK 73083 and the City of Albuquerque, a New Mexico municipal corporation ("City"), whose address is P. O. Box 1293, Albuquerque, New Mexico 87103.

Grantor grants to the City an exclusive, permanent easement ("Easement") in, over, upon and across the real property described on Exhibit "A" attached hereto ("Property") for the construction, installation, maintenance, repair, modification, replacement and operation of a storm water crossing, together with the right to remove trees, bushes, undergrowth and any other obstacles upon the Property if the City determines they interfere with the appropriate use of this Easement.

Grantor covenants and warrants that Grantor is the owner in fee simple of the Property, that Grantor has a good lawful right to convey the Property or any part thereof and that Grantor will forever warrant and defend the title to the Property against all claims from all persons or entities.

The grant and other provisions of this Easement constitute covenants running with the land for the benefit of the City and its successors and assigns until terminated.

WITNESS my hand and seal this 23rd day of July, 1993.

GRANTOR:

(Individual)

GRANTOR:

By: _____
Its: President
(Corporation or Partnership)

STATE OF NEW MEXICO
COUNTY OF BERNALILLO
FILED FOR RECORD

93 AUG 30 PM 4:09

93.23 8737-8739

(Approved by Legal Dept.
as to form only-10/90)

INDIVIDUAL

STATE OF _____)
)ss.
COUNTY OF _____)

The foregoing instrument was acknowledged before me this _____ day of _____, 19___, by _____.

_____
Notary Public

My Commission Expires:

_____

CORPORATION

STATE OF Oklahoma)
)ss.
COUNTY OF Oklahoma)

The foregoing instrument was acknowledged before me this 23 day of July, 1993, by Calvin Burgess, President of Dominion Leasing, Inc., an Oklahoma corporation, on behalf of the corporation.

Dana L. Taylor
Notary Public

My Commission Expires:

April 16, 1997

PARTNERSHIP

STATE OF _____)
)ss.
COUNTY OF _____)

The foregoing instrument was acknowledged before me this _____ day of _____, 19___, by _____ partner(s), on behalf of _____, a partnership.

_____
Notary Public

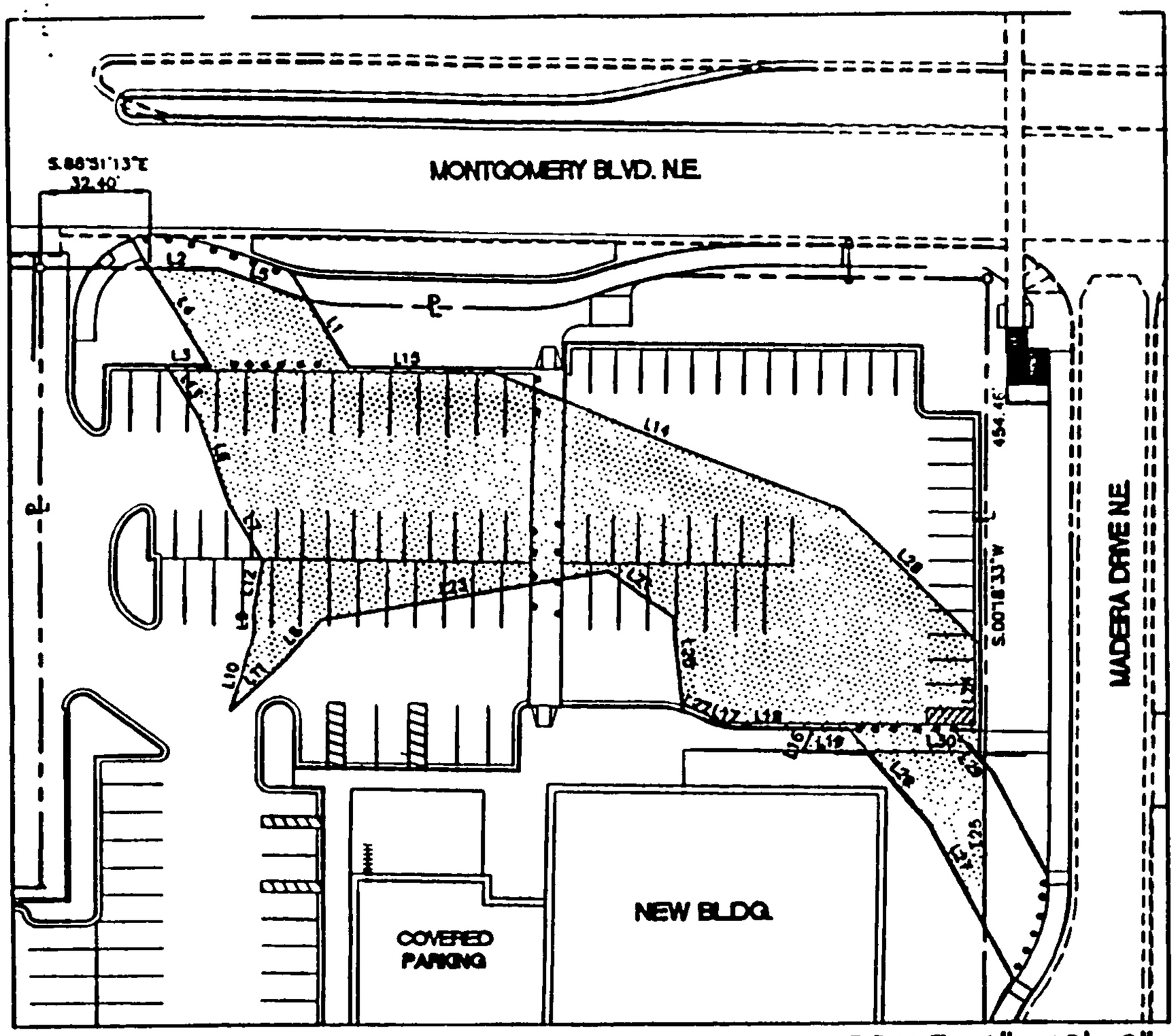
My Commission Expires:

_____

(EXHIBIT "A" ATTACHED)

10:3

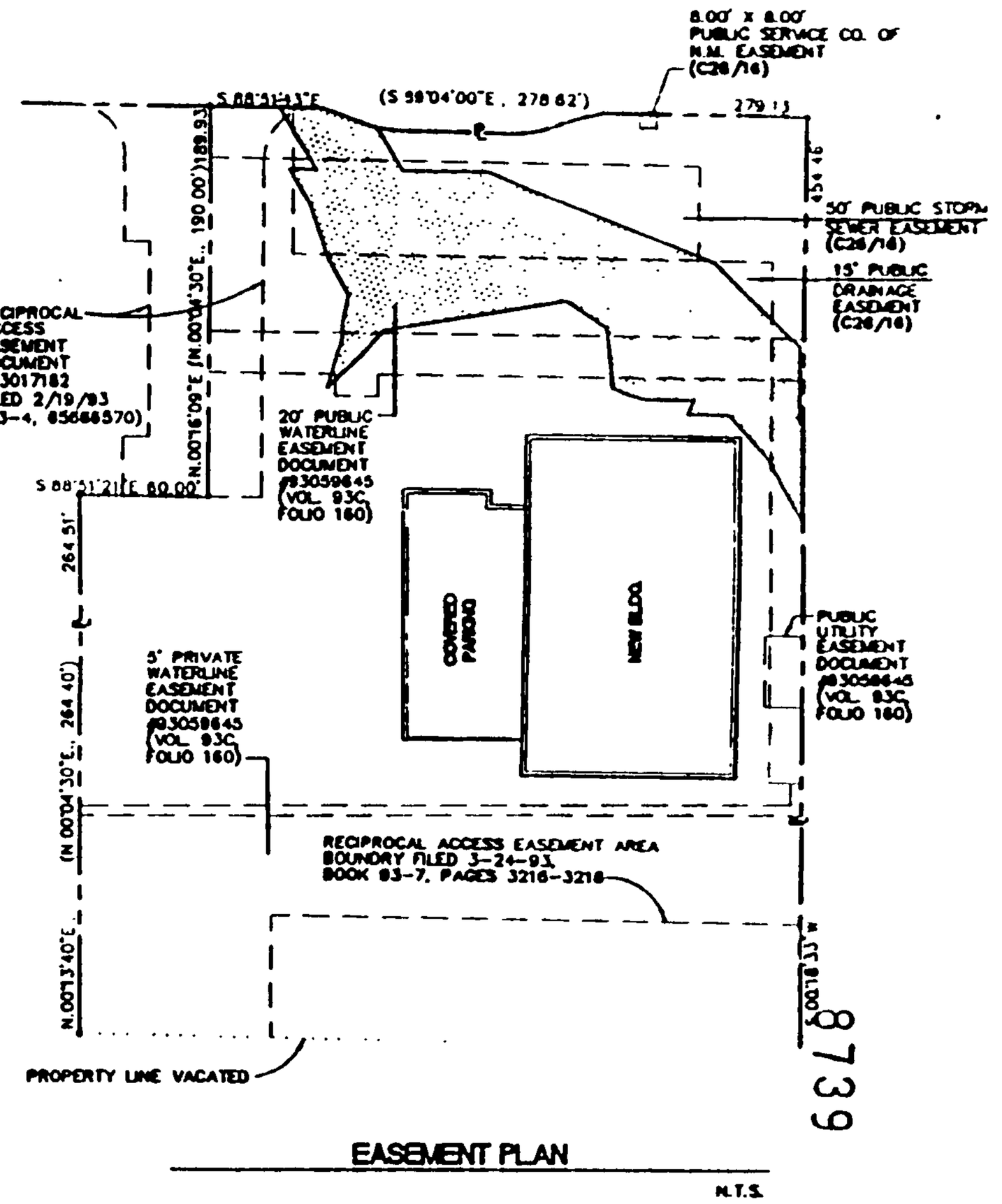
(Approved by Legal Dept. as to form only-10/90)



SCALE: 1"=40'-0"

LINE TABLE

LINE	DIRECTION	DISTANCE	LINE	DIRECTION	DISTANCE
L1	N30°14'50"W	24.05	L16	N23°28'03"E	7.70
L2	S88°51'13"E	19.83	L17	N75°14'23"W	10.11
L3	S89°04'00"E	12.88	L18	N89°04'00"W	22.75
L4	N30°14'50"W	34.73	L19	N89°43'51"W	19.50
L5	N70°00'10"W	27.75	L20	N05°42'58"W	28.77
L6	N18°29'07"W	27.88	L21	N53°36'56"W	23.80
L7	N28°33'57"W	20.48	L22	N65°04'38"W	8.16
L8	S41°20'52"W	18.85	L23	S80°19'09"W	84.23
L9	S00°00'00"E	7.00	L24	S00°05'03"W	33.18
L10	N18°35'14"E	24.52	L25	S00°18'20"W	48.56
L11	S46°29'16"W	21.79	L26	N40°01'09"W	28.32
L12	N10°34'25"E	15.26	L27	N27°09'46"W	35.51
L13	N31°30'28"W	18.34	L28	S44°24'18"E	58.21
L14	S47°40'49"E	114.25	L29	S39°42'23"E	5.46
L15	N89°04'00"W	39.76	L30	N89°04'00"W	1.81



EASEMENT PLAN

N.T.S.

87139

EXHIBIT "A" - TRACT A FEDERAL PLAZA DRAINAGE EASEMENT AREA

93101975

5788

AGREEMENT AND COVENANT

This agreement and covenant, between the City of Albuquerque, New Mexico ("City") and Dominion Leasing, Inc., ("User") is made in Albuquerque, New Mexico and is entered into as of the date of recording this agreement with the Bernalillo County Clerk.

1. Recital. The User is the owner of certain real property ("User's Property") located at Montgomery and Madeira, in Albuquerque, New Mexico, and more particularly described as:

Tract A, Federal Plaza (for: I.R.S.)

The City is the owner of certain real property, easement or public right-of-way ("City's Property") in the vicinity of, contiguous to, abutting or within User's Property, and more particularly described as:

a drainage easement as shown in Exhibit 'A'

The User wishes to construct upon, improve or repair and to maintain the following "Improvement" on the City's Property (or already has done so):

paving, curb and gutter, and a concrete channel to control 100-yr storm flows crossing the project site.

A sketch of the proposed or existing Improvement is attached as Exhibit A and made a part of this agreement.

The City agrees to permit the Improvement to exist on the City's Property provided the User complies with the terms of this agreement.

2. City Use of City's Property and City Liability. The City has the right to enter upon the City's Property at any time and perform whatever inspection, installation, maintenance, repair, modification or removal ("Work") it deems appropriate without liability to the User. If the Work affects the Improvement the City will not be financially or otherwise responsible for rebuilding or repairing the Improvement. The user promptly will repair the Improvement to the City's satisfaction. The cost of repairing the Improvement will be paid by User.

93 SEP 15 PM 2:37

12-11-89

93-25788-
5793

3. User's responsibility for Improvement. The User will be solely responsible for constructing, maintaining, repairing and, if required, removing the Improvement, all in accordance with standards required by the City. ~~XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX~~ The User will be solely responsible for paying all related costs. The User will not permit the Improvement to constitute a hazard to the health or safety of the general public or to interfere with the City's use of the City's Property. The User will conform with all applicable laws, ordinances and regulations.

4. Use of the Improvement. If the City's Property is a public right-of-way, it shall be open to the use of the general public at all times, subject to reasonable curtailment during periods of construction, maintenance or repair.

5. Demand for Repair, Modification or Removal. The City may send written notice ("Notice") to the User requiring the User to repair, modify or remove the Improvement within 30 days ("Deadline") and the User will comply promptly with the requirements of the Notice. If removal is demanded, the City also may require the User to return the City's Property to its original condition by the Deadline. The User will perform all required work by the Deadline, at User's sole expense.

6. Failure to Perform by User and Emergency Work by City. If the User fails to comply with the terms of the Notice by the Deadline stated, or, if the City determines that an emergency condition exists, the City may perform the work itself. The City then may assess the User for the cost of the work and for any other expenses or damages which result from User's failure to perform. The User agrees promptly to pay the City the amount assessed. If the User fails to pay the City within thirty (30) days after the City gives the User written notice of the amount due, the City may impose a lien against User's Property for the total resulting amount.

7. Cancellation of Agreement and Release of Covenant. This agreement may be cancelled and User's covenants released by the City at will by the City's mailing to the User notice of the City's intention to record a Cancellation and Release with the Bernalillo County Clerk. The Cancellation and Release will be effective thirty (30) days after the date of mailing the notice to the User unless a later date is stated in the notice or the Cancellation and Release. After the effective date, the City will record the Cancellation and Release with the Bernalillo County Clerk.

8. Condemnation. If any part of the User's Property is ever condemned by the City, the User will forego all claims to compensation for any portion of User's structure which encroaches on City Property and for severance damage to the remaining portion of User's structure on User's Property.

9. Assessment. Nothing in this agreement shall be construed to relieve the User, his heirs, assigns and successors from an assessment against User's Property for improvements to the City Property under a duly authorized and approved Special Assessment District. The parties specifically agree that the value of the Improvement will not reduce the amount assessed by the City.

10. Notice. For purposes of giving formal written notice to the User, User's address is:

P.O. Box 727
Edmond, OK 73083

Notice may be given to the User either in person or by mailing the notice by regular U.S. mail, postage paid. Notice will be considered to have been received by the User within 3 days after the notice is mailed if there is no actual evidence of receipt. The User may change User's address by giving written notice of the change by certified mail, return receipt requested, to the City Engineer at P.O. Box 1293, Albuquerque, New Mexico 87103.

11. Indemnification. The User agrees to defend, indemnify and hold harmless the City, its officials, agents and employees from and the against any and all claims, actions, suits or proceedings of any kind brought against said parties as a result of User's use of the City's Property. To the extent, if at all, Section 56-7-1 NMSA 1978 is applicable to this Agreement, this Agreement to indemnify will not extend to liability, claims, damages, losses or expenses, including attorney's fees, arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications by the indemnitee, or the agents or employees of the indemnitee; or (2) the giving of or the failure to give direction or instructions by the indemnitee, where such giving or failure to give directions or instructions is the primary cause of bodily injury to persons or damage to property.

12. Term. This agreement shall continue until revoked by the City pursuant to Section 7 above.

13. Binding on User's Property. The covenants and obligations of the User set forth herein shall be binding on User, his heirs, assigns and successors and on User's Property and constitute convenants running with User's Property until released by the City.

14. Entire Agreement. This agreement contains the entire agreement of the parties and supersedes any and all other agreements or understandings, oral or written, whether previous to the execution hereof or contemporaneous herewith.

15. Changes of Agreement. Changes to this agreement are not binding unless made in writing, signed by both parties.

16. Construction and Severability. If any part of this agreement is held to be invalid or unenforceable, the remainder of the agreement will remain valid and enforceable if the remainder is reasonably capable of completion.

17. Captions. The captions to the sections or paragraphs of this agreement are not part of this agreement and will not affect the meaning or construction of any of its provisions.

CITY OF ALBUQUERQUE

Approved By:

Bob V. Stover

Chief Administrative Officer
Dated: 9-1-93

CITY OF ALBUQUERQUE

Approved By:

Richard B Reed 8/27/93
City Engineer Date

Approved By:

Robert E Ce 8.30.93
Public Works Director Date

USER:

Calvin Burgess

President
Dominion Leasing, Inc.
July 23, 1993

STATE OF OKLAHOMA)
) ss.
COUNTY OF OKLAHOMA)

The foregoing instrument was acknowledged before me this 23 **day of** July **1993, by** Calvin Burgess President of Dominion Leasing, Inc., an Oklahoma corporation, on behalf of the corporation.

Dana L. Taylor
Notary Public

My commission expires:
April 16, 1997

12-11-89

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

This instrument was acknowledged before me this 1st day of December, 1993, by Arthur A. Blumenfeld, Chief Administrative Officer for the City of Albuquerque, a New Mexico municipal corporation, on behalf of the corporation.

Elsie Davis
Notary Public

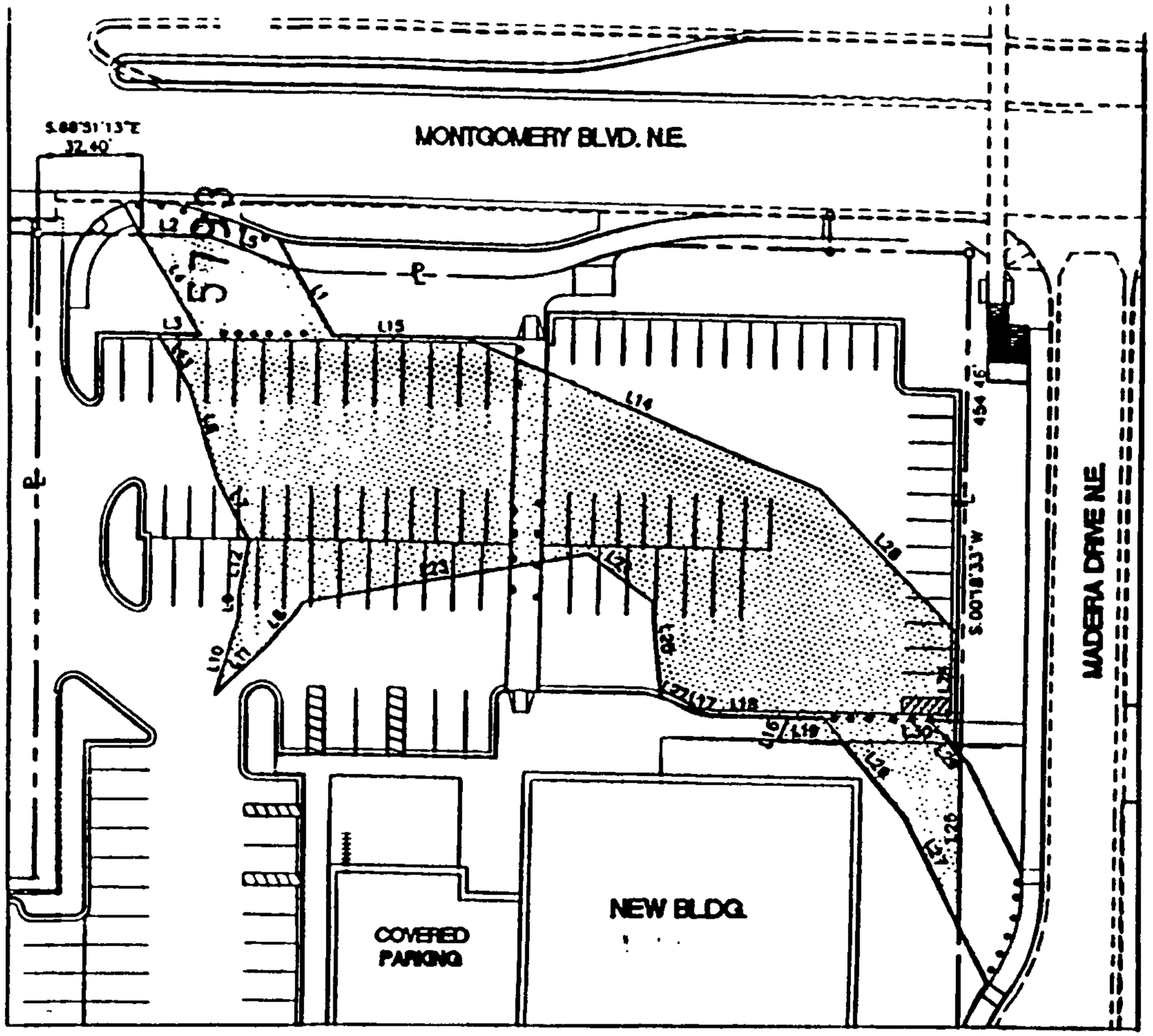
OFFICIAL SEAL
ELSIE DAVIS
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires: 4-2-94

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

This instrument was acknowledged before me this 30th day of August, 1993, by Robert E Gurule, Director of Public Works for the City of Albuquerque, a New Mexico municipal corporation, on behalf of the corporation.

Pauline S. Saavedra
Notary Public

My Commission Expires:
8-7-97



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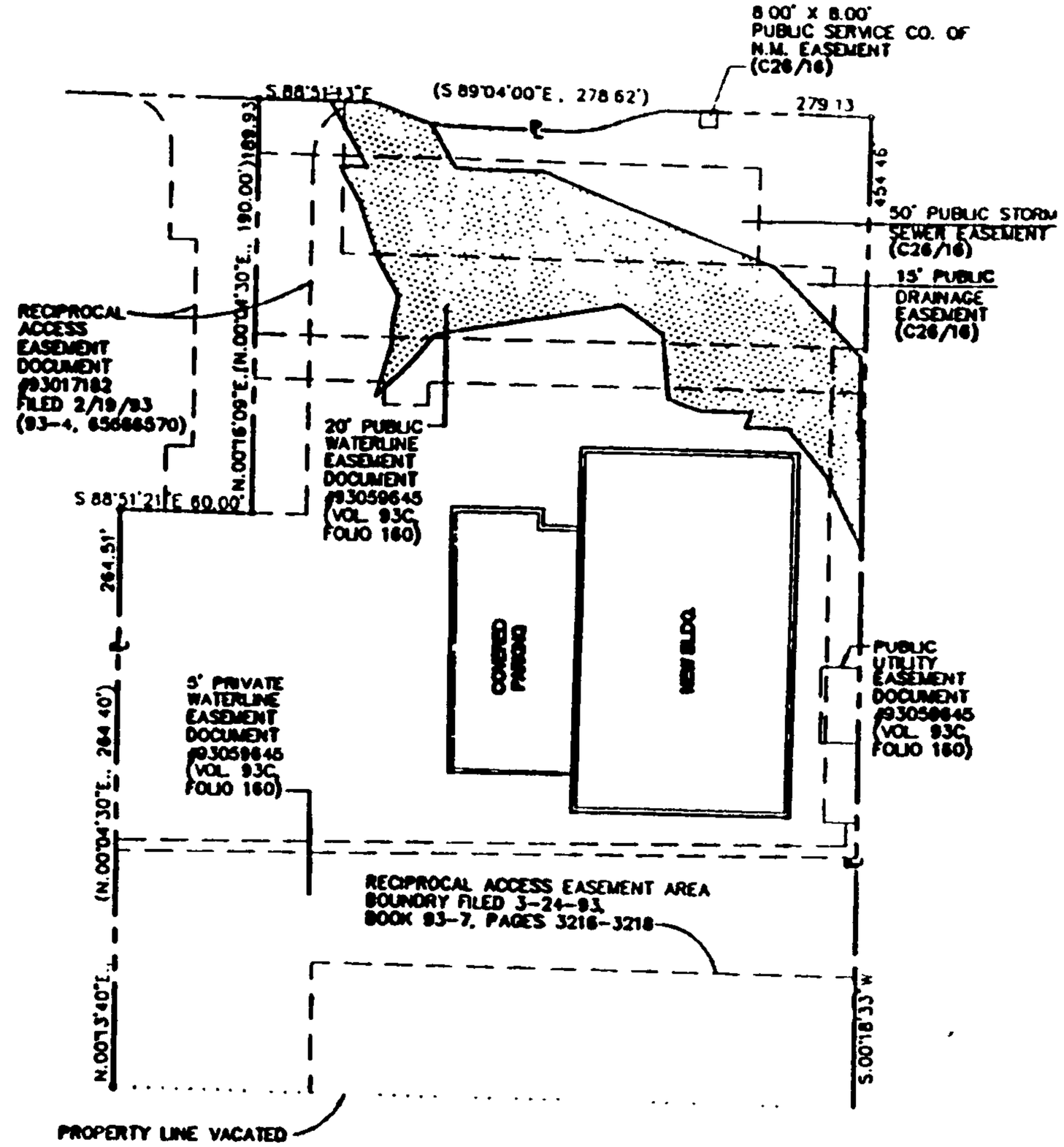
L3	S89°04'00"E	12.88	L18	N89°04'00"W	22.75
L4	N30°14'50"W	34.73	L19	N89°43'51"W	19.50
L5	N70°00'10"W	27.75	L20	N05°42'36"W	28.77
L6	N18°29'07"W	27.86	L21	N53°36'56"W	23.60
L7	N28°33'57"W	20.49	L22	N65°04'36"W	8.16
L8	S41°20'52"W	16.65	L23	S80°19'09"W	86.23
L9	S00°00'00"E	7.00	L24	S00°05'03"W	33.19
L10	N16°35'14"E	24.52	L25	S00°18'20"W	48.58
L11	S46°29'16"W	21.79	L26	N40°01'09"W	28.32
L12	N10°34'25"E	15.26	L27	N27°09'46"W	35.51
L13	N31°30'28"W	18.36	L28	S44°24'18"E	58.21
L14	S67°40'49"E	114.25	L29	S39°42'23"E	5.46
L15	N89°04'00"W	39.78	L30	N89°04'00"W	1.81



EASEMENT PLAN

N.T.S.

EXHIBIT "A" - TRACT A FEDERAL PLAZA DRAINAGE EASEMENT AREA

REVISED PLATES

(PLATES 1, 2, AND 4)