0000 0000 0007

CITY OF
Albuquerque

P.O. Box 1293 Albuquerque, NM 87103

July 10, 1996

Martin J. Chávez, Mayor

Chris Weiss, PE
C.L. Weiss Engineering
P.O. Box 97
Sandia Park, NM 87047

RE: GRADING & DRAINAGE PLAN FOR WESTSIDE ANIMAL CONTROL CENTER PHASE II/III (L-8/D11A)
RECEIVED JUNE 12, 1996 FOR BUILDING PERMIT & WORK ORDER
ENGINEER'S STAMP DATED 5-30-96

Dear Mr. Weiss:

Based on the information included in the submittal referenced above, City Hydrology accepts the Grading & Drainage Plan for Building Permit & Work Order.

It is City Hydrology's understanding that Bernalillo County will issue the Building Permit for this project.

When the Engineer's Certification is submitted to the County for the Certificate of Occupancy, Please send a copy to City Hydrology.

If you have any questions about this project, You may contact me at 768-2727.

Sincerely,

John P. Curtin

John P. Curtin, P.E.
Civil Engineer/Hydrology

c: Andrew Garcia
Roger Paul, Bernalillo County
Russell Golightly, Gregory T. Hicks & Assoc, 112 Second SW 87102

Good for You, Albuquerque!

25×10

0000 0000 0008

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Westside Animal Control Phase II/III ZONE ATLAS / DRNG. FILE #: L-8 / U11A

LEGAL DESCRIPTION: Westside Satellite Center, Albuquerque, NM

CITY ADDRESS: 11800 Sunset Gardens Road SW, Albuquerque, NM 87121

ENGINEERING FIRM: C.L. Weiss Engineering CONTACT: Chris Weiss

ADDRESS: P.O. Box 97, Sandia Park NM, 87047 PHONE: 281-1800

OWNER: N/A CONTACT:

ADDRESS: PHONE:

ARCHITECT: Gregory T. Hicks & Assoc. CONTACT: Russell Golightly

ADDRESS: 112 Second St. S.W. Albuq., NM 87102 PHONE: 243-7492

SURVEYOR: Forstbauer Surveying Co. CONTACT: Ron Forstbauer

ADDRESS: 1100 Alvarado Dr. NE - 87110 PHONE: 268-2112

CONTRACTOR FIRM: N/A CONTACT:

ADDRESS: PHONE:

PRE-DESIGN MEETING:

X YES

NO

COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO.

EPC NO.

PROJ. NO.

TYPE OF SUBMITTAL:

DRAINAGE REPORT

X DRAINAGE PLAN

CONCEPTUAL GRADING & DRAINAGE PLAN

X GRADING PLAN

EROSION CONTROL PLAN

ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

SKETCH PLAT

PRELIMINARY PLAT

SITE DEVELOPMENT PLAN

FINAL PLAT

X BUILDING PERMIT

FOUNDATION PERMIT

CERT. OF OCCUPANCY

ROUGH GRADING PERMIT

GRADING / PAVING PERMIT

X OTHER Work Order

RECEIVED JUN 12 1996 HYDROLOGY DIVISION

DATE SUBMITTED: 6-12-96

BY: C.L. Weiss Engineering, Inc.

25 x 10

0000 0000 0009

FIGURE 5
CITY OF ALBUQUERQUE
NOTICE OF D.R.C. MEETING

6-5-96
(DATE)

PROJECT NO: 4864.90
ZONE ATLAS: L-8

PROJECT NAME: Westside Animal Control Ctr- Ph 2
LOCATION:

TYPE OF PROJECT: ABSA ___ CIP X PWC ___ SAD ___ ALL PRIVATE ___

Contact Person: Milo Myers Phone: 768-2600
Firm: COA - Environmental Health

X Scheduled with the D.R.C. on 6-12-96 at 1:30 in Conf. Room 300
___ No DRC Meeting Scheduled. Please return any comments by ___

The Project Is Scheduled For:
/ / Design Report Review
/ / Pre-Design Meeting
/ / Preliminary Plan Review
/ / Final Plan Review
/X/ Signoff of Plans
/ / ___

The Project Relates To:
/ / Water / / San. Sewer / / Paving / / Storm Drainage /X/ Land

The Attached Package Includes:
/D/ Drawings /S/ Specs /E/ Estimate /R/ Report /M/ Memo Only

Indicated below are the Departments/Divisions that have received project documents and/or are invited to attend. It will be the Project Managers responsiblity to notify, coordinate & inform firms of date and time of scheduled meetings.

S/D/	DRC Chairman	Project Review Section	All Drawings
S/D/	Traffic Repres	Transportation Development	All Drawings
S/D/	Water Repres.	Utility Design	All Drawings
S/D/	Hydro Repres.	Hydrology	All Drawings
/M/	Const. Repres.	Construction	All Drawings
/M/	Ray Chavez	Traffic Operations	All Drawings
/ /	Andre Houle	Street Maintenance	All Paving
/ /	Sergio Miranda	Water (Shutoff Plan)	All Water Shutoff
/ /	Parks Repres.	Parks & Recreation	ALL Landscaping
/ /		Utility Coordinator	ALL PWC & CIP
/ /	Jim Hamel	Transit Department	CIP/Memo
/ /	Rick Roybal	Construction Coordinator	CIP/Memo
/ /	Jim Fink	Line Maintenance	CIP & SAS/Memo
/ /	Joe Dellalonga	City Architect	Arch. Drawings
/ /	Lee Lunsford	SAD Engineer	SAD/Memo
/ /	Joe Luehring	Transportation Develop.	CIP/Memo
/ /	Roger Green	Utility Design	CIP/Water & SAS
/ /	John Liebendorfer	General Services Dept.	Arch. Drawings
S/D/	Greg Smith	PWD/Legal	Specs & Dwgs.
/ /	Richard Sertich	Planning Department	CIP/Memos
/ /	CIP Manager	CIP	CIP/Memos
/ /	Donald Bartlett	Risk Management	Arch. Drawings
S/D/	Milo Myers		

DRCNOTIC. 10/19/95

25 x 10

0000 0000 00 10

FIGURE 6
CITY OF ALBUQUERQUE
NOTICE OF D.R.C. MEETING

2-9-96
(DATE)

PROJECT NO: 486490
ZONE ATLAS: C-08

PROJECT NAME: Westside Animal Control Ctr. - Ph 2
LOCATION:

TYPE OF PROJECT: AHBA ____ CIP X PWC ____ SAD ____ ALL PRIVATE ____

Contact Person: Mike Myers **Phone:** 768-2600
Firm: C Off. Environmental Health

X Scheduled with the D.R.C. on 2-8-96 at 1:30 in Conf. Room 302
____ No DRC Meeting Scheduled. Please return any comments by ____

The Project Is Scheduled For:
/ / Design Report Review
/ / Pre-Design Meeting
/ / Preliminary Plan Review
/X/ Final Plan Review
/ / Signoff of Plans
/ / ____

The Project Relates To:
/ / Water / / San. Sewer / / Paving / / Storm Drainage /X/ Land

The Attached Package Includes:
/D/ Drawings /S/ Spec's /E/ Estimate /R/ Report /M/ Memo Only
* Partial Sets

Indicated below are the Departments/Divisions that have received project documents and/or are invited to attend. It will be the Project Managers responsiblity to notify consulting engineering firms of date and time of scheduled meetings.

S/D/	DRC Chairman	Project Review Section	All Drawings
/*/	Traffic Repres	Transportation Development	All Drawings
/*/	Water Repres.	Utility Design	All Drawings
/*/	Hydro Repres.	Hydrology	All Drawings
/*/	Const. Repres.	Construction	All Drawings
/ /	Ray Chavez	Traffic Operations	All Drawings
/ /	Andre Houle	Street Maintenance	All Paving
/ /	Sergio Miranda	Water (Shutoff Plan)	All Water Shutoff
/*/	Parks Repres. (Diane)	Parks & Recreation	ALL Landscaping
/ /		Utility Coordinator	ALL PWC & CIP
/ /	Jim Hamel	Transit Department	CIP/Memo
/ /	Rick Roybal	Construction Coordinator	CIP/Memo
/ /	Jim Fink	Line Maintenance	CIP & SAS/Memo
S/D/	Joe Dellalonga	City Architect	Arch. Drawings
/ /	Lee Lunsford	SAD Engineer	SAD/Memo
/ /	Joe Luehring	Transportation Develop.	CIP/Memo
/ /	Roger Green	Utility Design	CIP/Water & SAS
S/D/	John Liebendorfer	General Services Dept.	Arch. Drawings
/ /	Greg Smith	PWD/Legal	Specs & Dwgs.
/X/	Richard Sertich	Planning Department	CIP/Memos
/X/	CIP Manager	CIP	CIP/Memos
/ /	Donald Bartlett	Risk Management	Arch. Drawings
/ /	____	____	____

DRCNOTIC. 10/19/95

** Legal already received plan + specs.

25×

0000 0000 0011

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 20, 1995

Chris Weiss, PE
C.L. Weiss Engineering
P.O. Box 97
Sandia Park, NM 87047

RE: GRADING & DRAINAGE PLAN FOR WESTSIDE ANIMAL CONTROL CENTER
PHASE II (~~G/D11W~~)
RECEIVED MAY 26, 1995 FOR BUILDING PERMIT
ENGINEER'S STAMP DATED 5/26/95

Dear Mr. Weiss:

Based on the information included in the submittal referenced above, City Hydrology accepts the Grading & Drainage Plan for Building Permit.

It is City Hydrology's understanding that Bernalillo County will issue the Building Permit.

When the Engineer's Certification is submitted to the County for the Certificate of Occupancy, Please send a copy to City Hydrology.

If you have any questions about this project, You may contact me at 768-2727.

Sincerely,

John P. Curtin

John P. Curtin, P.E.
Civil Engineer/Hydrology

c: Andrew Garcia
Kurt Browning, AMAFCA
Roger Paul, Bernalillo County
Russell Golightly, Gregory T. Hicks & Assoc, 112 Second SW 87102

25 × 10

0000 0000 0012

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Westside Animal Control Phase II ZONE ATLAS / DRNG. FILE #: L-8 / 411A

LEGAL DESCRIPTION: Westside Satellite Center, Albuquerque, NM

CITY ADDRESS: 11800 Sunset Gardens Road SW, Albuquerque, NM 87121

ENGINEERING FIRM: C.L. Weiss Engineering CONTACT: Chris Weiss

ADDRESS: P.O. Box 97, Sandia Park NM, 87047 PHONE: 281-1800

OWNER: N/A CONTACT: _____

ADDRESS: _____ PHONE: _____

ARCHITECT: Gregory T. Hicks & Assoc. CONTACT: Russell Golightly

ADDRESS: 112 Second St. S.W. Albuq., NM 87102 PHONE: 243-7492

SURVEYOR: Forstbauer Surveying Co. CONTACT: Ron Forstbauer

ADDRESS: 1100 Alvarado Dr. NE - 87110 PHONE: 268-2112

CONTRACTOR FIRM: N/A CONTACT: _____

ADDRESS: _____ PHONE: _____

PRE-DESIGN MEETING:

__X__ YES

_____ NO

_____ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. _____

EPC NO. _____

PROJ. NO. _____

TYPE OF SUBMITTAL:

_____ DRAINAGE REPORT

__X__ DRAINAGE PLAN

_____ CONCEPTUAL GRADING & DRAINAGE PLAN

__X__ GRADING PLAN

_____ EROSION CONTROL PLAN

_____ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

_____ SKETCH PLAT

_____ PRELIMINARY PLAT

_____ SITE DEVELOPMENT PLAN

_____ FINAL PLAT

__X__ BUILDING PERMIT

_____ FOUNDATION PERMIT

_____ CERT. OF OCCUPANCY

_____ ROUGH GRADING PERMIT

_____ GRADING / PAVING PERMIT

_____ OTHER _____

DATE SUBMITTED: May 26, 1995

BY: C.L. Weiss Engineering, Inc.

25×10

Weiss Engineering

C.L. Weiss Engineering, Inc
Post Office Box 97
Sandia Park, N.M. 87047

Phone / Fax (505) 281-1800
Alvarado Office (505) 266-3444

May 26, 1995

Mr. John Curtain
City of Albuquerque
Public Works Department
P.O. Box 1293
Albuquerque, New Mexico 87103

RE: REVISED DRAINAGE / GRADING PLAN FOR WESTSIDE ANIMAL CONTROL

Dear Mr. Curtain,

Enclosed with this letter please find two copies of the revised Drainage e/ Grading Plan for the above mentioned property.

The revisions include correcting the scale of the drawing, and correcting the vicinity map. In addition, the architect has provided a copy of Jeff Mortensen's certified drainage plan for Phase I for this property.

If you have any questions, please don't hesitate to call me at 266-3444 or Chris Weiss, Project Engineer at 281-1800.

Sincerely,

Bryan J. Bobrick, Project Manager
C.L. Weiss Engineering, Inc.

0000 0000 00 14

CITY OF ALBUQUERQUE
NOTICE OF D.R.C. MEETING

5-9-95 5/11
(DATE)

PROJECT NO: 4864.90
ZONE ATLAS: L-08

PROJECT NAME: WESTSIDE ANIMAL CONTROL CENTER - PH. 2
LOCATION:

TYPE OF PROJECT: AHBA ___ CIP ✓ PWC ___ SAD ___ ALL PRIVATE ___

Contact Person: MILO G. MYERS Phone: 768-2600
Firm: COA - ENVIRONMENTAL HEALTH

___ Scheduled with the D.R.C. on [redacted] at ___ in Conf. Room ___
✓ No DRC Meeting Scheduled. Please return any comments by [redacted].

The Project Is Scheduled For:
/ / Design Report Review / / Final Plan Review (Approved Infra. List)
/ / Pre-Design Meeting / / Signoff of Plans (Mylars Required)
DL Preliminary Plan Review / / ___

The Project Relates To:
/ / Water / / San. Sewer / / Paving / / Storm Drainage / / ___

The Attached Package Includes:
/D/ Drawings /S/ Spec's /E/ Estimate /R/ Report /M/ Memo Only
*=PARTIAL SET

Indicated below are the Departments/Divisions that have received project documents and/or are invited to attend. It will be the Project Managers responsiblity to notify consulting engineering firms of date and time of scheduled meetings.

S/D/	DRC Chairman	Project Review Section	All
/*/	Traffic Repres	Transportation Development	All
/*/	Water Repres.	Utility Design	All
/*/	Hydro Repres. CURTIS	Hydrology	All
/*/	Const. Repres.	Construction	All
/ /	Bill Coleman	Traffic Operations	
/ /	Dick Salas	Street Maintenance	
/ /	Sergio Miranda	Water (Shutoff Plan)	ALL WATER SHUTOFF
/*/	Diane Scena	Parks & Recreation	ALL LANDSCAPING
/*/	Joe Luehring	Utility Coordinator	ALL PWC & CIP
/ /	Jim Hamel	Transit Department	CIP/Memo
/ /	Rick Roybal	Construction Coordinator	CIP/Memo
/ /	Jim Fink	Line Maintenance	CIP-SAS/Memo
S/D/	Joe Dellalonga	City Architect	ARCHITECTURAL
/ /	Lee Lunsford	SAD Engineer	SAD/Memo
/ /	Brett Locke	Transportation Develop.	CIP/Memo
/ /	Roger Green	Utility Design	CIP/WATER & SAS
S/D/	Mike Minturn	General Services Dept.	BUILDINGS
/ /	Greg Smith	PWD/Legal	DWGS & SPECS
/N/	Richard Sertich	Planning Department	CIP/Memos
/N/	CIP Manager	CIP	CIP/Memos
/ /	___	___	___
/ /	___	___	___

RG/tm (WP+123400) Rev. 11/05/91

25×

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

May 5, 1995

Chris Weiss, PE
C.L. Weiss Engineering
P.O. Box 97
Sandia Park, NM 87047

RE: GRADING & DRAINAGE PLAN FOR WESTSIDE ANIMAL CONTROL CENTER
PHASE II [redacted]
RECEIVED APRIL 5, 1995 FOR BUILDING PERMIT
ENGINEER'S STAMP DATED 4-4-95

Dear Mr. Weiss:

Based on the information included in the submittal referenced above, the following comments must be addressed before City Hydrology will accept the Grading & Drainage Plan for Building Permit:

All of Basin 4 must be certified per the DPM checklist. A copy of a Record Drawing is not adequate. Verify the capacity (volume) of Pond #2. Demonstrate that the proposed runoff does not exceed the value calculated in the Scanlon Drainage Report dated March 1990.

If you have any questions about this project, You may contact me at 768-2727.

Sincerely,

John P. Curtin, P.E.
Civil Engineer/Hydrology

c: Andrew Garcia
Kurt Browning, AMAFCA
Roger Paul, Bernalillo County

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Westside Animal Control ZONE ATLAS / DRNG. FILE #: L-8 / D11

LEGAL DESCRIPTION: Westside Satellite Center, Albuquerque, NM

CITY ADDRESS: 11800 Sunset Gardens Road SW, Albuquerque, NM 87121

ENGINEERING FIRM: C.L. Weiss Engineering CONTACT: Chris Weiss

ADDRESS: P.O. Box 97, Sandia Park NM, 87047 PHONE: 281-1800

OWNER: N/A CONTACT: ____

ADDRESS: ____ PHONE: ____

ARCHITECT: Gregory T. Hicks & Assoc. CONTACT: Russell Golightly

ADDRESS: 112 Second St. S.W. Albuq., NM 87102 PHONE: 243-7492

SURVEYOR: Forstbauer Surveying Co. CONTACT: Ron Forstbauer

ADDRESS: 1100 Alvarado Dr. NE - 87110 PHONE: 268-2112

CONTRACTOR FIRM: N/A CONTACT: ____

ADDRESS: ____ PHONE: ____

PRE-DESIGN MEETING:

__X__ YES
____ NO
____ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. ____
EPC NO. ____
PROJ. NO. ____

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT
__X__ DRAINAGE PLAN
____ CONCEPTUAL GRADING & DRAINAGE PLAN
__X__ GRADING PLAN
____ EROSION CONTROL PLAN
____ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT
____ PRELIMINARY PLAT
____ SITE DEVELOPMENT PLAN
____ FINAL PLAT
__X__ BUILDING PERMIT
____ FOUNDATION PERMIT
____ CERT. OF OCCUPANCY
____ ROUGH GRADING PERMIT
____ GRADING / PAVING PERMIT
____ OTHER ____

DATE SUBMITTED: April 4, 1995

BY: C.L. Weiss Engineering, Inc.

Weiss Engineering

C.L. Weiss Engineering, Inc
Post Office Box 97
Sandia Park, N.M. 87047

Phone / Fax (505) 281-1800
Alvarado Office (505) 266-3444

April 4, 1995

Mr. Bernie J. Montoya, CE
City of Albuquerque
Public Works Department
P.O. Box 1293
Albuquerque, New Mexico 87103

RE: DRAINAGE / GRADING PLAN FOR WESTSIDE ANIMAL CONTROL

Dear Mr. Montoya,

Enclosed with this letter please find three copies of the proposed Drainage e/ Grading Plan for the above mentioned property.

The proposed construction is consistent with the Master Drainage Plan by Scanlon & Assoc. Dated 6-8-90.

Per your request at the Pre-design Conference, I have also enclosed a copy of the approved as-built construction drawings for Phase I for this property (Project No. 4003.91 - Approval dated 6-1-93) which includes the pond and storm drain information.

If you have any questions, please don't hesitate to call me at 266-3444 or Chris Weiss, Project Engineer at 281-1800.

Sincerely,

Bryan J. Bobrick, Project Manager
C.L. Weiss Engineering, Inc.

::reviewed and approved by Chris Weiss, P.E.
Principle Engineer

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

PRE-DESIGN CONFERENCE

DRAINAGE FILE/ZONE ATLAS PAGE NO.: L8-D/A DATE: 6/29/94

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

SUBJECT: Westside Animal Control Ctr.

STREET ADDRESS: _____

LEGAL DESCRIPTION: Westside Satellite Center

APPROVAL REQUESTED:

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

ATTENDANCE:	WHO	REPRESENTING
	Jeff Mortensen	
	Fred J. Dauffe	

FINDINGS:

An updated drainage plan will be required for building permit approval. This plan will need to include the as-built conditions and your proposed improvements. No additional drainage requirements will be imposed if these improvements are consistent with the master plan by Sciarrino. Also, we need certification that the pond & storm drain were constructed per plan.

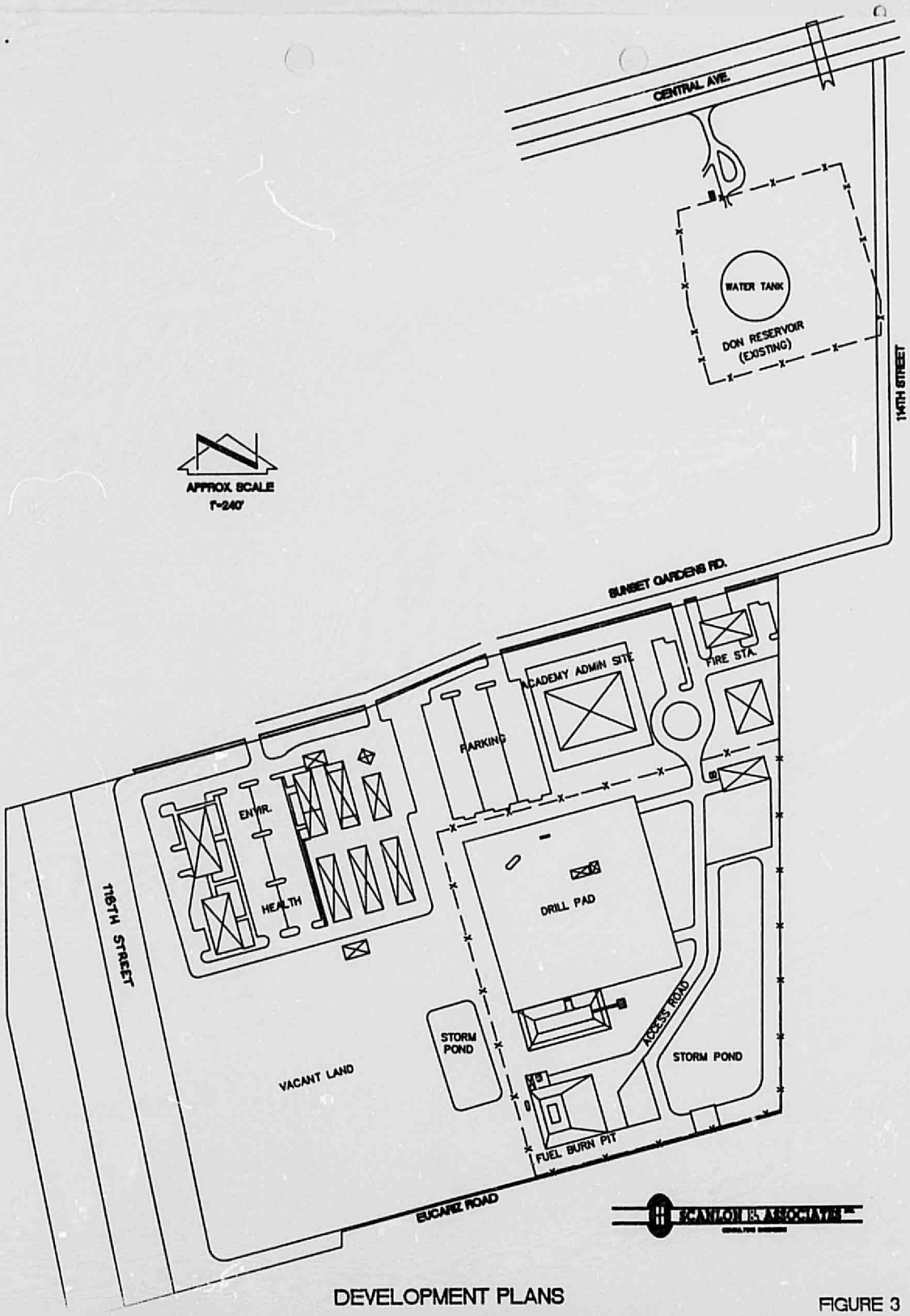
Since this is a City project in the County please submit three copies for approval by AMAFCA, County Pl + City Hydrology.

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: 6/29/94	DATE: 06/29/94

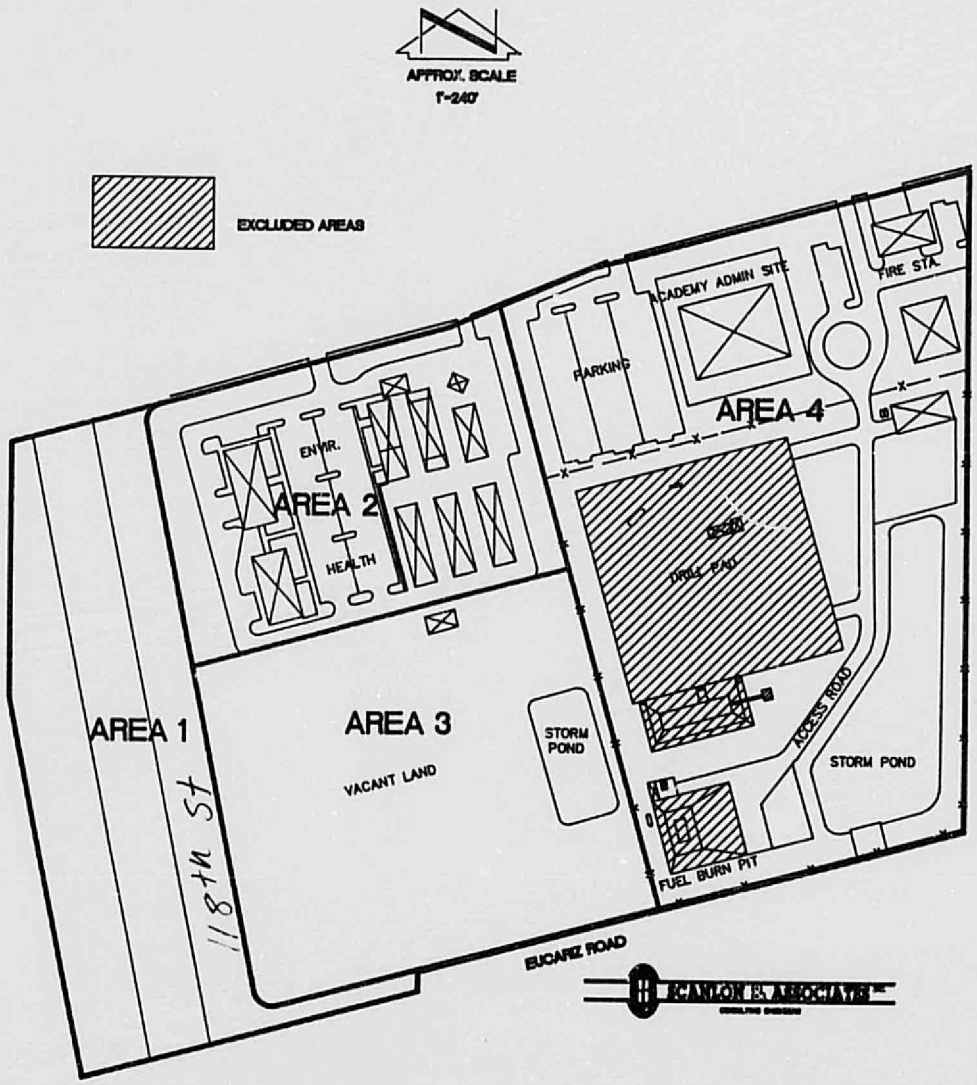
NOTE PLEASE PROVIDE A COPY OF THIS PRE-DESIGN FORM WITH THE DRAINAGE SUBMITTAL.

25 x 10



DEVELOPMENT PLANS

FIGURE 3



ONSITE DRAINAGE AREAS

FIGURE 6

The runoff produced from these 'excluded' areas should be used in the design of the facilities and are included in the table below.

	Area (acres)	Rational "C"	Q_{100} (cfs)	Volume (ac-ft)
LPG Burn Pad	2.81	0.96	13.49	0.44
Re-use Pond	0.40	0.96	1.92	0.07
Liquid Fuel Pad	0.28	0.96	1.34	0.05

All flowrates and volumes have been computed using the Draft D.P.M., 1990. The Rational C that corresponds with the computed flowrate has been shown for a more familiar comparison.

The northern portion of Area 4 will receive the drainage from Basin D which did not flow onto Area 2. A drainage easement will be required for this flow. A channel similar to that discussed in the Area 2 section will run along the eastern boundary of the property before flowing into Pond #2. A channel will also be provided to direct the flow from the parking lot to Pond #2. The same detail will be used for this channel as the others previously mentioned; however this channel will be constructed under the contract for the Fire Academy Site Development.

Pond #2 will collect all the flow from Area 4. Pond #1's outlet is also routed to Pond #2. Pond #2 is to be designed as a partial retention pond with a very small release rate because at this time an appropriate outlet has not been approved.

Below is a summary of the 100-year data for the onsite areas. The hydrographs can be found in the Appendix.

				----6-hr Storm----				*96-hr Storm*	
	Tc	A	C	I	Q	V	T	Q	V
Area 1	10	6.91	0.35	4.99	12.15	0.28	2.7	12.15	0.28
Area 2-u	10	3.01	0.82	4.99	12.26	0.37	6.0	12.26	0.54
Area 2-l	10	3.01	0.82	4.99	12.26	0.37	6.0	12.26	0.54
Area 3	10	8.36	0.70	4.99	29.11	0.80	6.0	29.11	1.06
Area 4-n	10	6.09	0.69	4.99	21.11	0.58	6.0	21.11	0.77
Area 4-s	10	3.28	0.69	4.99	11.34	0.31	5.0	11.34	0.77
Area 4-p	10	2.31	0.46	4.99	5.30	0.12	6.0	5.30	0.12
Basin D	10	11.0	0.70	4.99	38.21	1.05	6.0	38.21	1.40

Tc=Time of Concentration (min)
A=Area (acres)
C=Composite C
I=Intensity(in/hr)
Q=100-yr storm flowrate (cfs)
V=Runoff volume (acre-feet)
T=Total duration of runoff (hr)

(Area Designations)
u=upper
l=lower
n=northern
s=southern
p=pond area

HYDROLOGIC COMPUTATIONS

SCANLON & ASSOCIATES
CONSULTING ENGINEERS
8008 Pennsylvania Circle NE
Albuquerque, New Mexico 87110-7897
(505) 265-6941

Project: Westside Satellite Center
Location: Albuquerque
Job No. 88120.3 Date: Feb. 1990
By: EAC Sheet 1 of 28

using DRAFT – REVISION OF SECTION 22.2, DPM
by DPM Drainage Design Criteria Committee
January 1990

Treatment Percentages

Area	A	B	C	D	
1	90	0	10	0	
2-u	0	30	0	70	
2-l	0	30	0	70	
3	0	40	20	40	(development assumed)
4-N	0	40	20	40	
4-S	0	40	20	40	
4-P	0	100	0	0	
D	0	40	20	40	(development assumed)

Rainfall Depths

zone atlas L-8

p.18, Fig. D — 100-yr $P_{60} = 1.88''$

p.19, Fig. E — 100-yr $P_{360} = 2.20''$

p.20, Fig. F — 100-yr $P_{1440} = 2.67''$

p.21, Eq'n (23) — 100-yr $P_{10day} = 10 - \left(\frac{24.9}{(2.67)^{1.4}}\right) = 3.704''$

p.21, Eq'n (24) — 100-yr $P_{4day} = 2.67 + \{(0.469 * \log 4) + (0.059 * 3)\} * (3.704 - 2.67) = 3.145''$

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

July 23, 1991

Jeff Mortensen, P.E.
Jeff Mortensen & Associates, Inc.
6010-B Midway Park Boulevard, NE
Albuquerque, New Mexico 87109

RE: REVISED DRAINAGE PLAN FOR WESTSIDE ANIMAL CONTROL CENTER (L-8/D11A) REVISION DATED JULY 8, 1991

Dear Mr. Mortensen:

Based on the information provided on your submittal of July 10, 1991, revisions as indicated are acceptable.

Please be advised that if the Building Permit has already been issued, it is your responsibility to see that the contractor is given a copy of this approved revised plan.

Also, prior to Certificate of Occupancy release, we must have on file a copy of the Work Order Acceptance along with acceptance of the tie in of the 18" R.C.P. to the existing manhole on the existing 24" R.C.P.

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

Cordially,

Bernie J. Montoya

Bernie J. Montoya, C.E.
Engineering Assistant

xc: Alan Martinez

BJM/bsj
(WP+1442)

881443

DRAINAGE INFORMATION SHEET

PROJECT TITLE: WESTSIDE ANIMAL CONTROL CENTER ZONE ATLAS/DRNG. FILE #: L-8/D11A

DRB #: _____ EPC #: _____ WORK ORDER #: 4004.90

LEGAL DESCRIPTION: WESTSIDE SATELLITE CENTER

CITY ADDRESS: SUNSET GARDENS SW

ENGINEERING FIRM: JEFF MORTENSEN & ASSOC CONTACT: JEFF MORTENSEN

ADDRESS: 6010 B MIDWAY PARK BLVD NE PHONE: 345-4250

OWNER: CITY OF ALBUQUERQUE CONTACT: ENVIRONMENTAL HEALTH

ADDRESS: PO BOX 1293 PHONE: (FRED MALONE)

ARCHITECT: GREGORY T. HICKS & ASSOC CONTACT: RUSSELL GOLIGHTLY

ADDRESS: 112 2ND ST. SW PHONE: 243-7492

SURVEYOR: N/A CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: GERALD MARTIN CONTACT: FRED GURENE

ADDRESS: _____ PHONE: 828-1144

TYPE OF SUBMITTAL:

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

PRE-DESIGN MEETING:

___ YES
X NO
___ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL
___ PRELIMINARY PLAT APPROVAL
___ S. DEV. PLAN FOR SUB'D. APPROVAL
___ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
___ SECTOR PLAN APPROVAL
___ FINAL PLAT APPROVAL
___ FOUNDATION PERMIT APPROVAL
___ BUILDING PERMIT APPROVAL
___ CERTIFICATE OF OCCUPANCY APPROVAL
___ GRADING PERMIT APPROVAL
___ PAVING PERMIT APPROVAL
___ S.A.D. DRAINAGE REPORT
___ DRAINAGE REQUIREMENTS
X OTHER REVISION (SPECIFY)

RECEIVED JUL 10 1991 HYDROLOGY DIVISION

DATE SUBMITTED: 07-10-91

BY: JEFFREY G. MORTENSEN

25 X

FILE COPY

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

July 31, 1990

Leonard Utter
Jeff Mortensen & Associates, Inc.
6010-B Midway Park Boulevard, NE
Albuquerque, New Mexico 87109

RE: DRAINAGE PLAN FOR WESTSIDE SATELLITE CENTER, (L-8/D11A) ENGINEER'S STAMP DATED JULY 19, 1990

Dear Mr. Utter:

Based on the information provided on the referenced submittal received July 19, 1990, the plan is approved for Building Permit.

Please be advised that prior to work order approval, address how flows will be contained at the most southerly catch basin, it appears there is no curbing around the catch basin.

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

Cordially,

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

wp+1442

DRAINAGE INFORMATION SHEET

PROJECT TITLE: WESTSIDE ENVIRONMENTAL HEALTH FACILITY ZONE ATLAS/DRAINAGE FILE # L-8/D11A

LEGAL DESCRIPTION: WESTSIDE SATELLITE CENTER

CITY ADDRESS: UNAVAILABLE

ENGINEERING FIRM: JEFF MORTENSEN + ASSOC. CONTACT: LEONARD UTTER

ADDRESS: 6010-B MIDWAY PARK BLVD N.E. PHONE: 345-4250

OWNER: CITY OF ALBUQUERQUE CONTACT: ARCHITECT

ADDRESS: PHONE:

ARCHITECT: GREGORY T. HICKS + ASSOC. CONTACT: DAVID KINES

ADDRESS: 112 2ND S.W. PHONE: 243-7492

SURVEYOR: UNAVAILABLE CONTACT: ARCHITECT

ADDRESS: PHONE:

CONTRACTOR: UNAVAILABLE CONTACT: ARCHITECT

ADDRESS: PHONE:

PRE-DESIGN MEETING:

___ YES

✓ NO

___ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO.

EPC NO.

PROJECT NO.

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

✓ DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAIN PLAN

✓ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SECTOR PLAN APPROVAL

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

___ SITE DEVELOPMENT PLAN APPROVAL

___ FINAL PLAT APPROVAL

✓ BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER ___ (SPECIFY)

RECEIVED JUL 19 1990 HYDROLOGY DIVISION

DATE SUBMITTED: 6-18-90

BY: Leonard Utter

REV. 10/85

DEVELOPMENT & BUILDING SERVICE CENTER
ONE STOP
600 SECOND ST. N.W./2ND FLOOR
ATTENTION: _____
505-924-3900

Records Withdrawal Form

Project No. LB-D11A **Date:** 3-11-98

Project Title: Westside Satellite Center

(a. File) b. Mylars c. Redlines/Comments

d. Other _____

Requested By: Tierra West **Phone No.:** 883-7592
Company

Anticipated Return Date: ASAP

Receipt Acknowledged

I here by accept full responsibility for the security of the above noted records/plans until return receipt acknowledgement is completed. Records/plans will be returned to the Development & Building Services Center on or before the indicated anticipated return date.

Delivery Picked Up By:

Name: HAROLD GARCIA **Organization:** Sun Graphics
Print

Signed: [signature] **Date:** 3/11/98
Phone No. 884-2080

Office Use Only

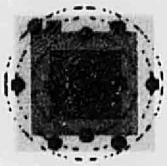
Return Acknowledged

Received by: [signature] **Date:** 3/4/98
Print

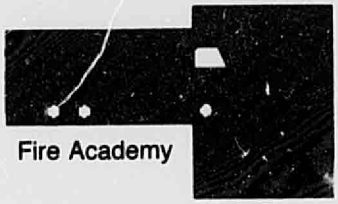
Westside Satellite

City of Albuquerque Public Works Department

Center



Salt Dome



Fire Academy

Animal Control

- Introduction
- Basin Analysis
- Summary of Results
- Calculations/Data

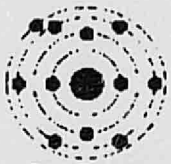
Graphic Exhibits

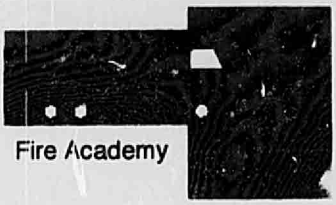
- Existing Site Topo
- Basin Map
- Existing Drainage System

July 1996
C.L. Weiss Engineering, Inc.

Westside Satellite Center

City of Albuquerque Public Works Department





Drainage Report

July 1996

C.L. Weiss Engineering, Inc.

• Introduction

The purpose of this drainage analysis is to update the previously prepared studies for the Westside Satellite Center, a COA facility located within the County. The original drainage study was prepared by Scanlon & Associates (March 1990), along with construction plans for the drainage system (Project No.4003.91). Scanlon's drainage study addressed two specific facilities for the site - the Environmental Health Facility and the Fire Academy. These facilities occupied more than three-fourths of the Satellite Center. The remaining area was treated as a generic future development, with a portion of the remaining area later planned as the Salt Storage Facility. This area was addressed in a follow up report prepared by Holmes & Narver, Inc. (October, 1992). The Holmes & Narver report verified that the intended construction of the Salt Storage Facility would not overwhelm the site's pond capacities. Along those same lines, the planned implementation of additional kennels by the COA prompted the County Public Works Department to request an update of the entire Satellite Center. This report addresses the existing site improvements for the Salt Storage Facility, the Fire Academy and the present Environmental Health Facility, along with the proposed master plan expansion of the kennels. Vacant areas located between the Salt Storage Facility and the proposed kennels, and the area along the east side of the Fire Academy, were treated as undeveloped areas due to the lack of any definitive plans for their use at this time. This report will essentially present an as-built picture of the drainage conditions for the site that exist today.

Site Aerial

• Basin Analysis

The Westside Satellite Center tract is essentially divided into two drainage areas, the west area which drains to Pond #1 and the east side which drains to Pond #2..

The Salt Storage Facility, the Environmental Health Facility and associated adjacent open areas, streets, etc, drain to Pond #1. This portion of the tract is comprised of the following Basins:

- 1 (vacant area and access road to the Salt Storage Facility)
- 2 (Salt Storage Facility)
- 3 (vacant area)
- 4 (Pond #1 and adjoining areas)
- 5 (a portion of the existing and proposed Environmental Health animal control facility)
- 6 (a portion of the existing animal control facility)
- 7 (the remaining portion of the existing animal control facility)
- 8 (the adjoining Sunset Gardens Rd.)
- 9 (the upper portion of an offsite drainage area previously referred to in the Scanlon report as Basin D).

The Fire Academy Facility and associated adjacent open areas, streets, etc, drain to Pond #2. This portion of the tract is comprised of the following Basins:

- 10 (the adjoining Sunset Gardens Rd.)
- 11 (the remainder of the vacant offsite drainage area previously referred to in the Scanlon report as Basin D)
- 12 (the west portion of the Fire Academy main building/parking, etc.)
- 13 (the center portion of the Fire Academy main building/parking, etc.)
- 14 (the east portion of the Fire Academy main building/parking, etc.)
- 15 (a vacant area east of an internal access street)
- 16 (Pond #2 and adjoining areas)

Each basin was analyzed for the 100 year storm event and routed to its respective main pond. Each basin's area and land treatment percentage was taken directly from the current topo map, with the exception of Basin #5 which reflects a combination of existing and proposed improvements. A comparison of the existing facilities and the proposed improvements can be seen by viewing the Existing Site Topo and the Basin Map located in the back of the report.

The Scanlon report was used primarily to establish the background for understanding the routing of the drainage system. An item by item comparison between the Scanlon report and existing conditions regarding the inflow and outflow rates to the ponds, maximum volumes and depths and other basin factors would really have no value except to determine if the intent of the original design was followed, to define flow "A" to point " B".

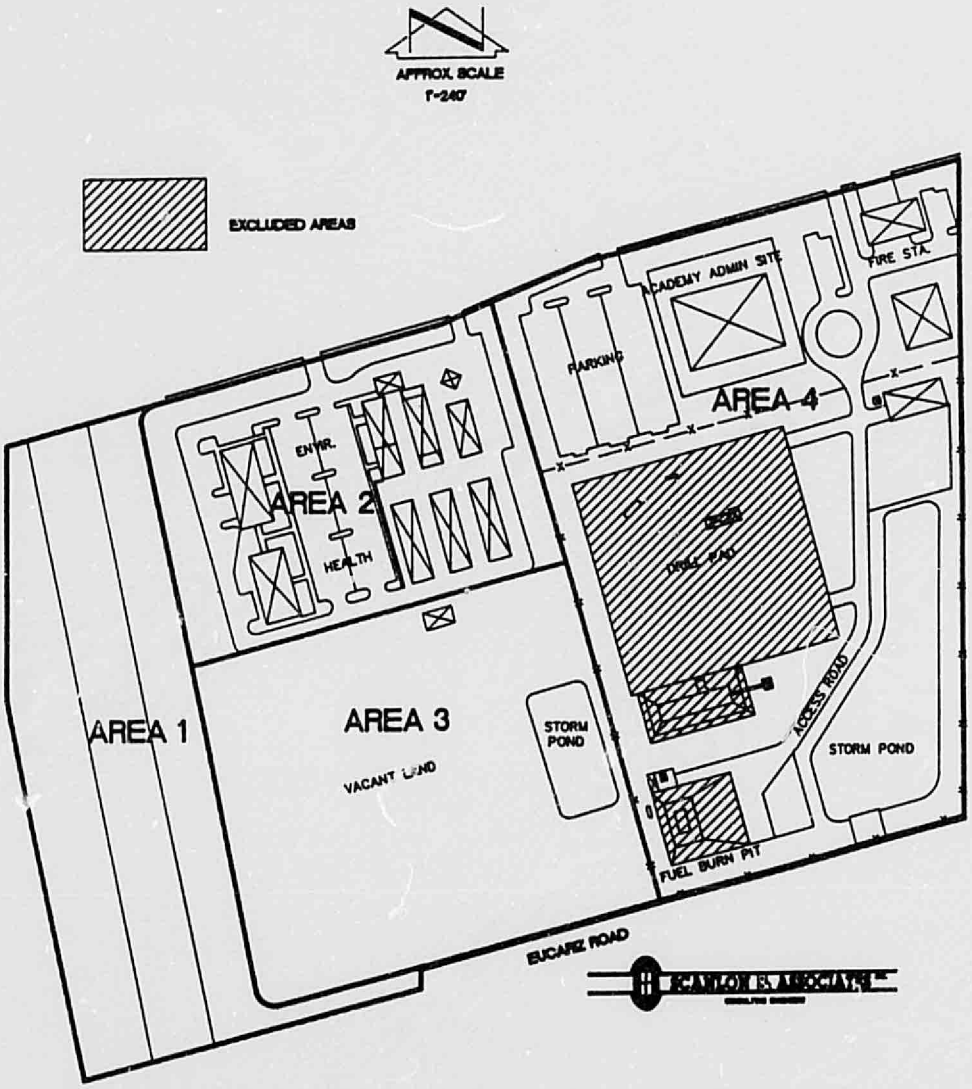
Comparison of on-site basin areas between the Scanlon report and the existing site, while difficult to compare apples to apples, revealed an interesting difference. All the on-site basin areas more or less agreed, except for Area 4, which covered the Fire Academy. Note the differences below:

Basin #	Scanlon Report	Equivalent Existing
Area 2	6.02 Ac (Figure 6).	6.0 Ac (From existing Topo Map)
Area 3	8.36 Ac (Figure 6).	7.8 Ac (From existing Topo Map)
Area 4	11.68 Ac (Figure 6).	15.3 Ac (From existing Topo Map)
	26.06 Ac.	29.1 Ac

The 3 acre total difference could be attributed to the accuracy of the maps used in preparation of the original report, but that is only conjecture.

The acreage of Area 1 (off-site) and Basin D (off-site) were relatively the same between the two comparisons.

Land treatment for off-site Area 1 in the Scanlon report was assumed to be undeveloped, while this report accounted for the street improvements. Off-site Basin D in the Scanlon report was assumed to be developed with an A = 0%, B = 40%, C = 20%, and D = 40%. This report assumed that the equivalent off-site basin, referred to as Basins #9 and #11, treated this area as existing undeveloped. A developed basin would be pure speculation as to shape, use and potential discharge points. As a matter of comparison, an equivalent developed Basin #9 and #11 flow rate of 38.21 cfs (Scanlon - page 10) was routed through the site, and capacity does not exist in the present storm drain pipe and channel to handle this increase. The end result of routing the undeveloped flow from these basins (#9 & 11) through the site shows how the system works as it now exists. Any development on the north side of Sunset Gardens Rd. which drains to this system will have to be controlled release matching the undeveloped flow rates to keep from overwhelming the storm drain pipes and channels.



ONSITE DRAINAGE AREAS

FIGURE 6

- Summary of Results

Pond #1

- The end point of study concerns the inlet located on the north side of Sunset Gardens Rd., which picks up the undeveloped flows from Basin #9. The inlet is in a sump condition and captures all 12 cfs from the basin.

- The next inlet on the 24" RCP line is on the south side of the street and captures the entire 1.7 cfs flow from Basin #8.

These two inlets are draining to a 24" RCP which meets at a MH junction with Basins #6 & 7. This pipe functions as an open channel, with sufficient capacity to handle the existing basins. If the Basin #9 flow was increased to the developed flow rate (per Scanlon report), the pipe would have insufficient capacity to handle the flow (see storm sewer tabulation where Line ID 1A Q = 38.7). Two additional sections of the downstream channel would also overflow if subjected to these Q's.

Basins #6 & #7 each drain to single inlets in a sump, with total capture of the 2.4 and 1.9 cfs respectively. Drainage in the 18" RCP functions as an open channel with sufficient capacity to handle the flows.

- Basin #5 presently drains to the inlet for Basin #6, but will be diverted to a double inlet in a sump condition when the kennels are completed. The total 15.9 cfs will be captured by the inlet before traveling through a short reach in an 18" RCP to discharge into the channel. Capacity exists in all sections of the pipe and channel for this basin.

- These photos represent the typical characteristics of the existing kennel facility (Basin #5). Clockwise, looking north at the west parking area; looking east toward the existing flow path to the inlet for Basin #6; looking north between existing kennels.

- These photos represent the channel for Basins #5 through #9 as the channel enters the north end of Pond #1; the rundown from Basin #1; and the rundown from Basin #2, the spillway and pond outlet structure (cw)

The rundowns and spillway were constructed per plan and were not analyzed.

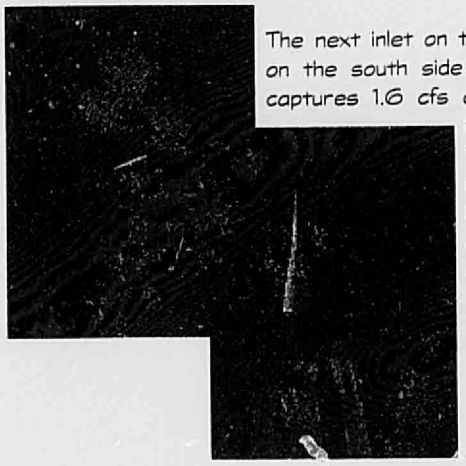
- Capacity exists in the channel for all reaches. The channel section was analyzed as a box section due to the limits of choice of the software program. The flow depth ranges between 3 and 7 inches for the various channel grade changes (see Storm Sewer Tabulation).

- Total peak flow entering Pond #1 equals 62 cfs, with a peak discharge rate of 14.7 cfs draining into Pond #2 by way of an 18" /24" RCP outlet structure. Referencing the Reservoir Report, note the undulations in the stage/discharge plot. This represents a pulsating backwater effect occurring in the discharge pipe. As the pipe clears, the head on the standpipe orifice regains and surpasses the capacity of

the outflow pipe, resulting in a temporary backwater effect in the pipe. This does not represent an adverse situation to draining the pond. Total volume stored equals 69,615 cf (1.6 Ac.Ft) at an elevation of 36.96 ft. Drainage of the pond occurs within 6 hours. Capacity in Pond #1 exists for the present and additional facilities. Comparison with the Scanlon report shows max. inflow = 85 cfs, outflow = 7.4 cfs, storage = 1.8 Ac.Ft (P.11).

Pond #2

- The end point of study concerns the inlet located on the north side of Sunset Gardens Rd., which picks up the undeveloped flows from Basin #11. The inlet is in a sump condition and captures all 2.1 cfs from the basin.

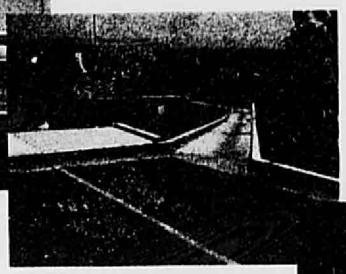


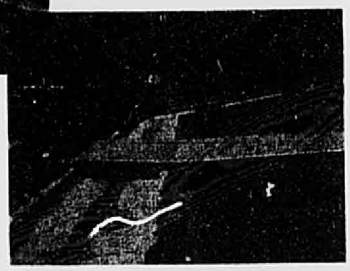
The next inlet on the 24" RCP line is on the south side of the street and captures 1.6 cfs of the 1.9 cfs flow from Basin #10. The effects of the runoff bypass can be seen in the erosion beyond the end of the curb

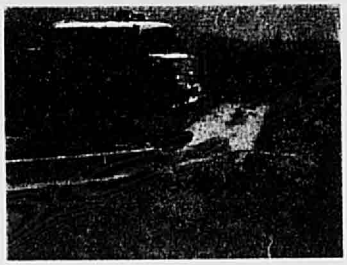
- These two inlets drain into a 24" RCP which empties into an open channel located along the east side of the site.. The first portion of channel is silted in. Basin #15 drains to this channel which empties into the north end of Pond #2. Capacity exists in the clean portion of the channel, but the silted in portion definitely needs cleaning to carry flows from the inlets and the adjacent open area.

- The center portion of the Fire Academy drains to an open concrete channel which meanders around the fire tower area before emptying into Pond #2 in the NW corner of the pond. Capacity exists in the channel for each of the three contributing basins Additional curb height was constructed on the outside curves of the channel to help contain the flows during changes in direction. The channel transitions to a valley gutter where it crosses each of two internal access streets.

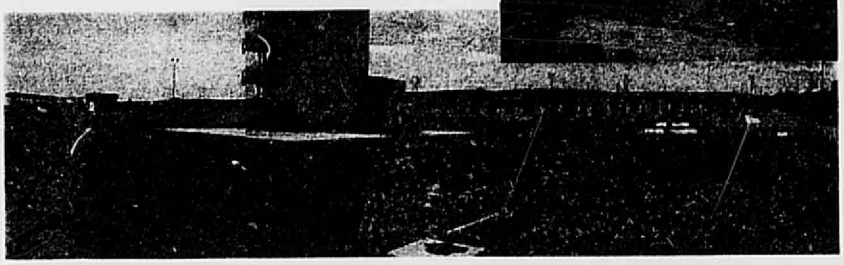
The beginning of the channel drains the west parking lot and picks up flows from the south side of the main building. It then curves around the fire tower area before angling across the internal access road and dropping into the pond







- The following areas are excluded from the contributing basins - the fire tower area and the fire practice holding pond. These areas are self-contained to reuse the fire flows. The storage pond has an overflow pipe which connects to the Pond #1 outflow pipe. Some storm water could leave this area if the depth of the standing water in the storage pond was at the overflow elevation during a storm event.



- The inlets to the pond include the two concrete channels and the inflow pipe from Pond #1

- Total peak flow entering Pond #2 equals 33.6 cfs, with a peak discharge rate of 0.7 cfs draining out of Pond #2 by way of an 18" RCP outlet structure to an arroyo east of the site

- Total volume stored equals 118,467 cf (2.7 AcFt) at an elevation of 18.34 ft. Drainage of the pond occurs within 25 hours. Capacity in Pond #2 exists for the present and additional facilities. Comparison with the Scanlon report shows a max. inflow = 62 cfs, outflow = 0.9 cfs and a max. storage of 3.4 AcFt.

- The outflow pipe from Pond #2 operates as an open channel and has capacity for the release flows.

- Overall, the inlets, pipes, channels and ponds have capacity to handle the existing and planned facility expansion of the animal control facility. Development of the remaining vacant areas should be analyzed to determine the effect on any of the pipes or channels - the ponds appear to have adequate capacity. Development of the contributing offsite area should have its developed flow rate restricted to no more than that of the present undeveloped rate to insure capacity within the site's pipe and channel reaches.

Basin 1

AREA OF SITE: 223,325 SF = 5.13 Ac.

Calculations are based on the Drainage Design Criteriafor Bernalillo County, Section 22.2, DPM, Vol 2, dated Jan., 1993

HISTORIC FLOWS:

On-Site Historic Land Condition

Area a	=	223,325	SF
Area b	=	0	SF
Area c	=	0	SF
Area d	=	0	SF
Total Area	=	223,325	SF

DEVELOPED FLOWS:

On-Site Developed Land Condition

Area a	=	204,883	SF
Area b	=	0	SF
Area c	=	0	SF
Area d	=	18,442	SF
Total Area	=	223,325	SF

EXCESS PRECIPITATION:

Precip. Zone 1

Ea	=	0.44
Eb	=	0.67
Ec	=	0.99
Ed	=	1.97

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted } E = \frac{EaAa + EbAb + EcAc + EdAd}{Aa + Ab + Ac + Ad}$$

Historic E	=	0.44	in.	Developed E	=	0.57	in.

On-Site Volume of Runoff: $V360 = \frac{E*A}{12}$

Historic V360	=	8189	CF	Developed V360	=	10540	CF

On-Site Peak Discharge Rate: Qp = QpaAa+QpbAb+QpcAc+QpdAd / 43,560

For Precipitation Zone 1

Qpa	=	1.29	Qpc	=	2.87
Qbb	=	2.03	Qpd	=	4.37

Historic Qp	=	6.6	CFS	Developed Qp	=	7.9	CFS

Basin 1 is comprised of the off-site area west of the site and the undeveloped tract located between the Animal Control Area and the Salt Dome facility. This area drains directly into Pond #1 by way of a defined concrete rundown located at the north quadrant of the pond.

Basin #2

AREA OF SITE: 152,359 SF = 3.5 Ac.

HISTORIC FLOWS:

On-Site Historic Land Condition

Area a	=	152,359	SF
Area b	=	0	SF
Area c	=	0	SF
Area d	=	0	SF
Total Area	=	152,359	SF

DEVELOPED FLOWS:

On-Site Developed Land Condition

Area a	=	0	SF
Area b	=	0	SF
Area c	=	0	SF
Area d	=	152,359	SF
Total Area	=	152,359	SF

EXCESS PRECIPITATION:

Precip. Zone 1

Ea	=	0.44
Eb	=	0.67
Ec	=	0.99
Ed	=	1.97

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted E} = \frac{EaAa + EbAb + EcAc + EdAd}{Aa + Ab + Ac + Ad}$$

Historic E	=	0.44	in.	Developed E	=	1.97	in.

On-Site Volume of Runoff: $V360 = \frac{E*A}{12}$

Historic V360	=	5586	CF	Developed V360	=	25012	CF

On-Site Peak Discharge Rate: Qp = QpaAa+QpbAb+QpcAc+QpdAd / 43,560

For Precipitation Zone 1

Qpa	=	1.29	Qpc	=	2.67
Qbb	=	2.03	Qpd	=	4.37

Historic Qp	=	4.5	CFS	Developed Qp	=	15.3	CFS

Basin 2 is comprised of the Street Maintenance Facility and is completely paved. This area drains directly into Pond #1 by way of a defined concrete rundown located at the SW corner of the pond.

Basin #3

AREA OF SITE: 34,392 SF = 0.79 Ac.

HISTORIC FLOWS:

On-Site Historic Land Condition

Area a	=	34,392	SF
Area b	=	0	SF
Area c	=	0	SF
Area d	=	0	SF
Total Area	=	34,392	SF

DEVELOPED FLOWS:

On-Site Developed Land Condition

Area a	=	23,607	SF
Area b	=	0	SF
Area c	=	4,023	SF
Area d	=	6,762	SF
Total Area	=	34,392	SF

EXCESS PRECIPITATION:

Precip. Zone 1

Ea	=	0.44
Eb	=	0.67
Ec	=	0.99
Ed	=	1.97

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted E} = \frac{EaAa + EbAb + EcAc + EdAd}{Aa + Ab + Ac + Ad}$$

Historic E	=	0.44	in.	Developed E	=	0.81	in.

On-Site Volume of Runoff: $V360 = \frac{E*A}{12}$

Historic V360	=	1261	CF	Developed V360	=	2308	CF

On-Site Peak Discharge Rate: Qp = QpaAa+QpbAb+QpcAc+QpdAd / 43,560

For Precipitation Zone 1

Qpa	=	1.29	Qpc	=	2.87
Qpb	=	2.03	Qpd	=	4.37
Historic Qp	=	1.0 CFS	Developed Qp	=	1.6 CFS

Basin 3 is comprised of the a portion of an undeveloped tract located south of the Animal Control Facility. This area drains directly into Pond #1 as sheet flow into the NW corner of the pond..

Basin #4

AREA OF SITE: 47,213 SF = 1.08 Ac.

HISTORIC FLOWS:

On-Site Historic Land Condition

Area a	=	47,213	SF
Area b	=	0	SF
Area c	=	0	SF
Area d	=	0	SF
Total Area	=	47,213	SF

DEVELOPED FLOWS:

On-Site Developed Land Condition

Area a	=	0	SF
Area b	=	0	SF
Area c	=	45,326	SF
Area d	=	1,887	SF
Total Area	=	47,213	SF

EXCESS PRECIPITATION:

Precip. Zone 1

Ea	=	0.44
Eb	=	0.67
Ec	=	0.99
Ed	=	1.97

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted E} = \frac{EaAa + EbAb + EcAc + EdAd}{Aa + Ab + Ac + Ad}$$

Historic E	=	0.44	in.	Developed E	=	1.03	in.

On-Site Volume of Runoff: $V360 = \frac{E*A}{12}$

Historic V360	=	1731	CF	Developed V360	=	4049	CF

On-Site Peak Discharge Rate: Qp = QpaAa+QpbAb+QpcAc+QpdAd / 43,560

For Precipitation Zone 1

Qpa	=	1.29	Qpc	=	2.87
Qbb	=	2.03	Qpd	=	4.37

Historic Qp	=	1.4	CFS	Developed Qp	=	3.2	CFS

Basin 4 is comprised of Pond,#1 and the surrounding area which drains into the pond.

Basin #5

AREA OF SITE: 175,600 SF = 4.03 Ac.

HISTORIC FLOWS:

On-Site Historic Land Condition

Area a	=	175,600	SF
Area b	=	0	SF
Area c	=	0	SF
Area d	=	0	SF
Total Area	=	175,600	SF

DEVELOPED FLOWS:

On-Site Developed Land Condition

Area a	=	0	SF
Area b	=	32,400	SF
Area c	=	0	SF
Area d	=	143,200	SF
Total Area	=	175,600	SF

EXCESS PRECIPITATION:

Precip. Zone 1

Ea = 0.44
Eb = 0.67
Ec = 0.99
Ed = 1.97

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted E} = \frac{EaAa + EbAb + EcAc + EdAd}{Aa + Ab + Ac + Ad}$$

Historic E	=	0.44	in.	Developed E	=	1.73	in.

On-Site Volume of Runoff: $V360 = \frac{E*A}{12}$

Historic V360	=	6439	CF	Developed V360	=	25318	CF

On-Site Peak Discharge Rate: Qp = QpaAa+QpbAb+QpcAc+QpdAd / 43,560

For Precipitation Zone 1

Qpa	=	1.29	Qpc	=	2.87
Qpb	=	2.03	Qpd	=	4.37

Historic Qp	=	5.2	CFS	Developed Qp	=	15.9	CFS

Basin 5 is comprised of the majority of the existing Animal Control Facility, along with the proposed kennel expansion area. This area will drain to a double inlet in a sump condition. Flow from the inlet travels through a short reach of storm pipe to reach the open channel which drains to Pond #1.

Basin #6

AREA OF SITE: 25,950 SF = 0.6 Ac.

HISTORIC FLOWS:

On-Site Historic Land Condition

Area a	=	25,950	SF
Area b	=	0	SF
Area c	=	0	SF
Area d	=	0	SF
Total Area	=	25,950	SF

DEVELOPED FLOWS:

On-Site Developed Land Condition

Area a	=	0	SF
Area b	=	2,950	SF
Area c	=	0	SF
Area d	=	23,000	SF
Total Area	=	25,950	SF

EXCESS PRECIPITATION:

Precip. Zone 1

Ea	=	0.44
Eb	=	0.67
Ec	=	0.99
Ed	=	1.97

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted E} = \frac{EaAa + EbAb + EcAc + EdAd}{Aa + Ab + Ac + Ad}$$

Historic E	=	0.44	in.	Developed E	=	1.82	in.

On-Site Volume of Runoff: $V360 = \frac{E*A}{12}$

Historic V360	=	952	CF	Developed V360	=	3941	CF

On-Site Peak Discharge Rate: Qp = QpaAa+QpbAb+QpcAc+QpdAd / 43,560

For Precipitation Zone 1

Qpa	=	1.29		Qpc	=	2.87	
Qbb	=	2.03		Qpd	=	4.37	
Historic Qp	=	0.8	CFS	Developed Qp	=	2.4	CFS

Basin 6 is comprised of the existing portion of the kennels. This area will drain to a single inlet in a sump condition. Flow from the inlet travels through a short reach of storm pipe to the inlet which captures flows from Basin 7. From there, flows travel a short reach to the open channel which drains to Pond #1.

Basin #7

AREA OF SITE: 20,500 SF = 0.47 Ac.

HISTORIC FLOWS:

On-Site Historic Land Condition

Area a	=	20,500	SF
Area b	=	0	SF
Area c	=	0	SF
Area d	=	0	SF
Total Area	=	20,500	SF

DEVELOPED FLOWS:

On-Site Developed Land Condition

Area a	=	0	SF
Area b	=	2,520	SF
Area c	=	0	SF
Area d	=	17,980	SF
Total Area	=	20,500	SF

EXCESS PRECIPITATION:

Precip. Zone 1

Ea	=	0.44
Eb	=	0.67
Ec	=	0.99
Ed	=	1.97

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted E} = \frac{EaAa + EbAb + EcAc + EdAd}{Aa + Ab + Ac + Ad}$$

Historic E	=	0.44	in.	Developed E	=	1.81 in.

On-Site Volume of Runoff: $V360 = \frac{E*A}{12}$

Historic V360	=	752	CF	Developed V360	=	3092 CF

On-Site Peak Discharge Rate: Qp = QpaAa+QpbAb+QpcAc+QpdAd / 43,560

For Precipitation Zone 1

Qpa	=	1.29	Qpc	=	2.87
Qpb	=	2.03	Qpd	=	4.37

Historic Qp	=	0.6	CFS	Developed Qp	=	1.9 CFS

Basin 7 is comprised of the remaining portion of the kennels and associated buildings. This area will drain to a single inlet in a sump condition before traveling a short reach to the open channel which drains to Pond #1.

Basin #8

AREA OF SITE: 23,288 SF = 0.53 Ac.

HISTORIC FLOWS:

On-Site Historic Land Condition

Area a	=	23,288	SF
Area b	=	0	SF
Area c	=	0	SF
Area d	=	0	SF
Total Area	=	23,288	SF

DEVELOPED FLOWS:

On-Site Developed Land Condition

Area a	=	0	SF
Area b	=	11,056	SF
Area c	=	0	SF
Area d	=	12,232	SF
Total Area	=	23,288	SF

EXCESS PRECIPITATION:

Precip. Zone 1

Ea	=	0.44
Eb	=	0.67
Ec	=	0.99
Ed	=	1.97

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted E} = \frac{EaAa + EbAb + EcAc + EdAd}{Aa + Ab + Ac + Ad}$$

Historic E	=	0.44	in.	Developed E	=	1.35	in.

On-Site Volume of Runoff: $V360 = \frac{E*A}{12}$

Historic V360	=	854	CF	Developed V360	=	2625	CF

On-Site Peak Discharge Rate: Qp = QpaAa+QpbAb+QpcAc+QpdAd / 43,560

For Precipitation Zone 1

Qpa	=	1.29	Qpc	=	2.87
Qpb	=	2.03	Qpd	=	4.37

Historic Qp	=	0.7	CFS	Developed Qp	=	1.7	CFS

Basin 8 is comprised of the adjoining street to the Animal Control Clinic and associated landscaped side areas. This area drains to a double combination inlet on the south side of the street, and is connected to several hundred feet of storm drain which empties into the open channel before draining to Pond #1. This storm drain and channel form the east limit of the basins draining to Pond #1.

Basin 9 (Existing Condition)

AREA OF SITE: 409,464 SF = 9.4 Ac.

HISTORIC FLOWS:

On-Site Historic Land Condition

Area a	=	409,464	SF
Area b	=	0	SF
Area c	=	0	SF
Area d	=	0	SF
Total Area	=	409,464	SF

DEVELOPED FLOWS:

On-Site Developed Land Condition

Area a	=	409,464	SF
Area b	=	0	SF
Area c	=	0	SF
Area d	=	0	SF
Total Area	=	409,464	SF

EXCESS PRECIPITATION:

Precip. Zone 1

Ea	=	0.44
Eb	=	0.67
Ec	=	0.99
Ed	=	1.97

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted } E = \frac{EaAa + EbAb + EcAc + EdAd}{Aa + Ab + Ac + Ad}$$

Historic E	=	0.44	in.	Developed E	=	0.44 in.

On-Site Volume of Runoff: $V360 = \frac{E*A}{12}$

Historic V360	=	15014	CF	Developed V360	=	15014 CF

On-Site Peak Discharge Rate. Qp = QpaAa+QpbAb+QpcAc+QpdAd / 43,560

For Precipitation Zone 1

Qpa	=	1.29	Qpc	=	2.87
Qbb	=	2.03	Qpd	=	4.37

Historic Qp	=	12.1	CFS	Developed Qp	=	12.1 CFS

Basin 9 is comprised of a portion of an undeveloped offsite area which drains to a double grate inlet located in a sump condition. This inlet is connected to the street inlet previously referred to for Basin 8.

Basin #10

AREA OF SITE: 20,622 SF = 0.47 Ac.

HISTORIC FLOWS:

On-Site Historic Land Condition

Area a	=	20,622	SF
Area b	=	0	SF
Area c	=	0	SF
Area d	=	0	SF
Total Area	=	20,622	SF

DEVELOPED FLOWS:

On-Site Developed Land Condition

Area a	=	0	SF
Area b	=	3,462	SF
Area c	=	0	SF
Area d	=	17,160	SF
Total Area	=	20,622	SF

EXCESS PRECIPITATION:

Precip. Zone 1

Ea = 0.44
Eb = 0.67
Ec = 0.99
Ed = 1.97

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted E} = \frac{EaAa + EbAb + EcAc + EdAd}{Aa + Ab + Ac + Ad}$$

Historic E	=	0.44	in.	Developed E	=	1.75	in.

On-Site Volume of Runoff: $V360 = \frac{E*A}{12}$

Historic V360	=	756	CF	Developed V360	=	3010	CF

On-Site Peak Discharge Rate: Qp = QpaAa+QpbAb+QpcAc+QpdAd / 43,560

For Precipitation Zone 1

Qpa	=	1.29	Qpc	=	2.87
Qbb	=	2.03	Qpd	=	4.37

Historic Qp	=	0.6	CFS	Developed Qp	=	1.9	CFS

Basin 10 is comprised of the adjoining street to the Fire Facility and associated landscaped side areas. This area drains to a double combination inlet on the south side of the street, and is connected to several hundred feet of storm drain that empties into the open channel which drains to Pond #2 This storm drain and channel form the east limit of the basins draining to Pond #2.

Basin #11

AREA OF SITE: 69,696 SF = 1.6 Ac.

HISTORIC FLOWS:

On-Site Historic Land Condition

Area a	=	69,696	SF
Area b	=	0	SF
Area c	=	0	SF
Area d	=	0	SF
Total Area	=	69,696	SF

DEVELOPED FLOWS:

On-Site Developed Land Condition

Area a	=	69,696	SF
Area b	=	0	SF
Area c	=	0	SF
Area d	=	0	SF
Total Area	=	69,696	SF

EXCESS PRECIPITATION:

Precip. Zone 1

Ea = 0.44
Eb = 0.67
Ec = 0.99
Ed = 1.97

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted E} = \frac{EaAa + EbAb + EcAc + EdAd}{Aa + Ab + Ac + Ad}$$

Historic E	=	0.44 in.	Developed E	=	0.44 in.

On-Site Volume of Runoff: $V360 = \frac{E*A}{12}$

Historic V360	=	2556 CF	Developed V360	=	2556 CF

On-Site Peak Discharge Rate: Qp = QpaAa+QpbAb+QpcAc+QpdAd / 43,560

For Precipitation Zone 1

Qpa	=	1.29	Qpc	=	2.87
Qbb	=	2.03	Qpd	=	4.37
Historic Qp	=	2.1 CFS	Developed Qp	=	2.1 CFS

Basin 11 is comprised of a portion of an undeveloped offsite area which drains to a double grate inlet located in a sump condition. This inlet is connected to the street inlet previously referred to for Basin 10.

Basin #12

AREA OF SITE: 77,109 SF = 1.77 Ac.

HISTORIC FLOWS:

On-Site Historic Land Condition

Area a	=	77,109	SF
Area b	=	0	SF
Area c	=	0	SF
Area d	=	0	SF
Total Area	=	77,109	SF

DEVELOPED FLOWS:

On-Site Developed Land Condition

Area a	=	48,858	SF
Area b	=	0	SF
Area c	=	0	SF
Area d	=	28,251	SF
Total Area	=	77,109	SF

EXCESS PRECIPITATION:

Precip. Zone 1

Ea = 0.44
Eb = 0.67
Ec = 0.99
Ed = 1.97

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted E} = \frac{EaAa + EbAb + EcAc + EdAd}{Aa + Ab + Ac + Ad}$$

Historic E	=	0.44	in.	Developed E	=	1.00	in.

On-Site Volume of Runoff: V360 = $\frac{E*A}{12}$

Historic V360	=	2827	CF	Developed V360	=	8429	CF

On-Site Peak Discharge Rate: Qp = QpaAa+QpbAb+QpcAc+QpdAd / 43,560

For Precipitation Zone 1

Qpa	=	1.29	Qpc	=	2.87
Qbb	=	2.03	Qpd	=	4.37

Historic Qp	=	2.3	CFS	Developed Qp	=	4.3	CFS

Basins 12, 13 and 14 all drain to a central concrete channel located in the center of the Fire Facility. This channel empties into Pond #2 in the NW quadrant of the pond.

Basin #13

AREA OF SITE: 60,130 SF = 1.38 Ac.

HISTORIC FLOWS:

On-Site Historic Land Condition

Area a	=	60,130	SF
Area b	=	0	SF
Area c	=	0	SF
Area d	=	0	SF
Total Area	=	60,130	SF

DEVELOPED FLOWS:

On-Site Developed Land Condition

Area a	=	9,040	SF
Area b	=	34,790	SF
Area c	=	0	SF
Area d	=	16,300	SF
Total Area	=	60,130	SF

EXCESS PRECIPITATION:

Precip. Zone 1

Ea = 0.44
Eb = 0.67
Ec = 0.99
Ed = 1.97

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted E} = \frac{EaAa + EbAb + EcAc + EdAd}{Aa + Ab + Ac + Ad}$$

Historic E	=	0.44	in.	Developed E	=	0.99	in.

On-Site Volume of Runoff: $V360 = \frac{E*A}{12}$

Historic V360	=	2205	CF	Developed V360	=	4950	CF

On-Site Peak Discharge Rate: Qp = QpaAa+QpbAb+QpcAc+QpdAd / 43,560

For Precipitation Zone 1

Qpa	=	1.29	Qpc	=	2.87
Qpb	=	2.03	Qpd	=	4.37

Historic Qp	=	1.8	CFS	Developed Qp	=	3.5	CFS

Basins 12, 13 and 14 all drain to a central concrete channel located in the center of the Fire Facility. This channel empties into Pond #2 in the NW quadrant of the pond.

Basin #14

AREA OF SITE: 85,263 SF = 1.96 Ac.

HISTORIC FLOWS:

On-Site Historic Land Condition

Area a	=	85,263	SF
Area b	=	0	SF
Area c	=	0	SF
Area d	=	0	SF
Total Area	=	85,263	SF

DEVELOPED FLOWS:

On-Site Developed Land Condition

Area a	=	20,800	SF
Area b	=	21,963	SF
Area c	=	11,700	SF
Area d	=	30,800	SF
Total Area	=	85,263	SF

EXCESS PRECIPITATION:

Precip. Zone 1

Ea = 0.44
Eb = 0.67
Ec = 0.99
Ed = 1.97

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted E} = \frac{EaAa + EbAb + EcAc + EdAd}{Aa + Ab + Ac + Ad}$$

Historic E	=	0.44 in.		Developed E	=	1.13 in.

On-Site Volume of Runoff: $V360 = \frac{E*A}{12}$

Historic V360	=	3126 CF		Developed V360	=	8011 CF

On-Site Peak Discharge Rate: Qp = QpaAa+QpbAb+QpcAc+QpdAd / 43,560

For Precipitation Zone 1

Qpa	=	1.29		Qpc	=	2.87
Qbb	=	2.03		Qpd	=	4.37
Historic Qp	=	2.5 CFS		Developed Qp	=	5.5 CFS

Basins 12, 13 and 14 all drain to a central concrete channel located in the center of the Fire Facility. This channel empties into Pond #2 in the NW quadrant of the pond. Basin 14 basically uses the internal street to collect flows for final outflow into the concrete channel near the outfall into Pond #2.

AREA OF SITE: 53,910 SF = 1.24 Ac.

HISTORIC FLOWS:

On-Site Historic Land Condition

Area a	=	53,910	SF
Area b	=	0	SF
Area c	=	0	SF
Area d	=	0	SF
Total Area	=	53,910	SF

DEVELOPED FLOWS:

On-Site Developed Land Condition

Area a	=	53,910	SF
Area b	=	0	SF
Area c	=	0	SF
Area d	=	0	SF
Total Area	=	53,910	SF

EXCESS PRECIPITATION:

Precip. Zone 1

Ea = 0.44
Eb = 0.67
Ec = 0.99
Ed = 1.97

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted E} = \frac{EaAa + EbAb + EcAc + EdAd}{Aa + Ab + Ac + Ad}$$

Historic E	=	0.44	in.	Developed E	=	0.44	in.

On-Site Volume of Runoff: $V360 = \frac{E*A}{12}$

Historic V360	=	1977	CF	Developed V360	=	1977	CF

On-Site Peak Discharge Rate: $Qp = QpaAa+QpbAb+QpcAc+QpdAd / 43,560$

For Precipitation Zone 1

Qpa	=	1.29	Qpc	=	2.87
Qbb	=	2.03	Qpd	=	4.37

Historic Qp	=	1.6	CFS	Developed Qp	=	1.6	CFS

Basin 15 drains to a concrete channel located in the east side of the Fire Facility. This channel empties into Pond #2 in the NE quadrant of the pond and serves Basins 10 and 11 previously referenced.

AREA OF SITE: 217,618 SF = 5 Ac.

HISTORIC FLOWS:

On-Site Historic Land Condition

Area a	=	217,618	SF
Area b	=	0	SF
Area c	=	0	SF
Area d	=	0	SF
Total Area	=	217,618	SF

DEVELOPED FLOWS:

On-Site Developed Land Condition

Area a	=	0	SF
Area b	=	53,875	SF
Area c	=	163,713	SF
Area d	=	0	SF
Total Area	=	217,588	SF

EXCESS PRECIPITATION:

Precip. Zone 1

Ea = 0.44
Eb = 0.67
Ec = 0.99
Ed = 1.97

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted E} = \frac{EaAa + EbAb + EcAc + EdAd}{Aa + Ab + Ac + Ad}$$

Historic E	=	0.44	in.	Developed E	=	0.91	in.

On-Site Volume of Runoff: $V360 = \frac{E*A}{12}$

Historic V360	=	7979	CF	Developed V360	=	16514	CF

On-Site Peak Discharge Rate: Qp = QpaAa+QpbAb+QpcAc+QpdAd / 43,560

For Precipitation Zone 1

Qpa	=	1.29	Qpc	=	2.87
Qpb	=	2.03	Qpd	=	4.37

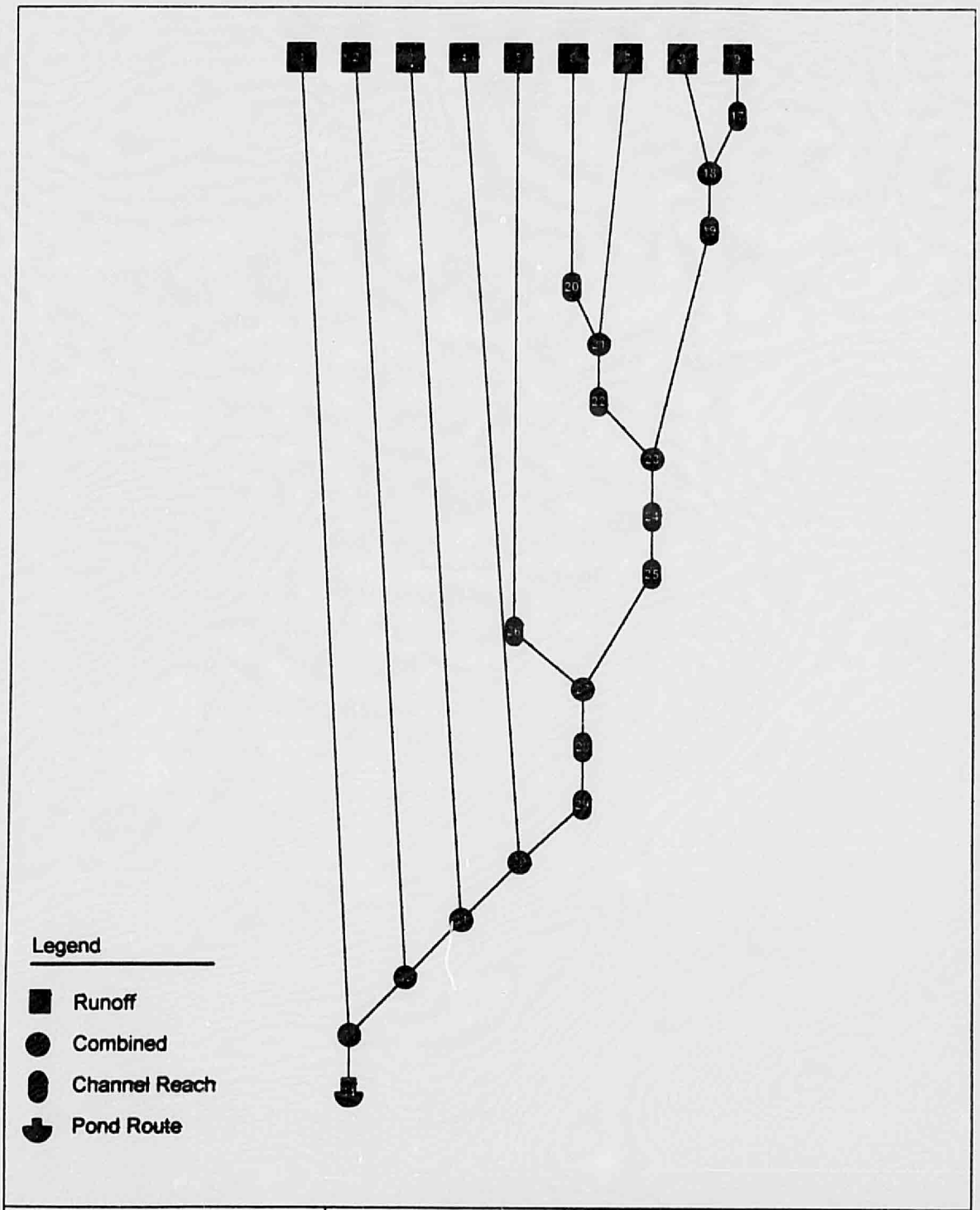
Historic Qp	=	6.4	CFS	Developed Qp	=	13.3	CFS

Basin 16 is comprised of Pond #2 and the surrounding area which drains into the pond.

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (acft)	Return period (yrs)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	Rational	7.9	1	12	0.24	100	—	—	—	Basin #1
2	Rational	15.3	1	12	0.58	100	—	—	—	Basin #2
3	Rational	1.6	1	12	0.05	100	—	—	—	Basin #3
4	Rational	3.2	1	12	0.10	100	—	—	—	Basin #4
5	Rational	15.9	1	12	0.59	100	—	—	—	Basin #5
6	Rational	2.4	1	12	0.09	100	—	—	—	Basin #6
7	Rational	1.9	1	12	0.07	100	—	—	—	Basin #7
8	Rational	1.7	1	12	0.06	100	—	—	—	Basin #8
9	Rational	12.1	1	12	0.35	100	—	—	—	Basin #9
17	Reach	12.1	1	12	0.35	100	9	—	—	Basin 9 SS
18	Combine	13.8	1	12	0.41	100	17 + 8	—	—	Basin 8 + 9 SS
19	Reach	13.8	1	12	0.41	100	18	—	—	Routed 8 + 9
20	Reach	2.4	1	12	0.09	100	6	—	—	Basin 6 to 7CB
21	Combine	4.3	1	12	0.16	100	20 + 7	—	—	Add 6SS w/7
22	Reach	4.3	1	12	0.16	100	21	—	—	Route 6 & 7
23	Combine	18.1	1	12	0.58	100	22 + 19	—	—	Add 6-7 & 19
24	Reach	18.1	1	12	0.58	100	23	—	—	Route end pipe
25	Reach	18.1	1	12	0.58	100	24	—	—	Grade Break
26	Reach	15.9	1	12	0.58	100	5	—	—	Basin 5 SS
27	Combine	34.0	1	12	1.16	100	25 + 26	—	—	Add 25 & 26
28	Reach	34.0	1	12	1.16	100	27	—	—	Steep Channel
29	Reach	34.0	1	12	1.16	100	28	—	—	End channel
30	Combine	37.2	1	12	1.25	100	4 + 29	—		Add Pond + 29
31	Combine	38.8	1	12	1.31	100	30 + 3	—	—	Add Pond + 3
32	Combine	54.1	1	12	1.88	100	31 + 2	—	—	Add Pond + 2
33	Combine	62.0	1	12	2.12	100	32 + 1	—	—	Add Pond + 1
34	Reservoir	14.7	1	40	1.89	100	33	36.96	69615	Route Pond 1

Proj. file: HYDRO.GPW	IDF file: COAWSAT.IDF	Run date: 06-23-1996



Proj. file: HYDRO.GPW	IDF file: COAWSAT.IDF	27 hydrographs	06-23-1996

Hydrograph Report

Hyd. No. 1

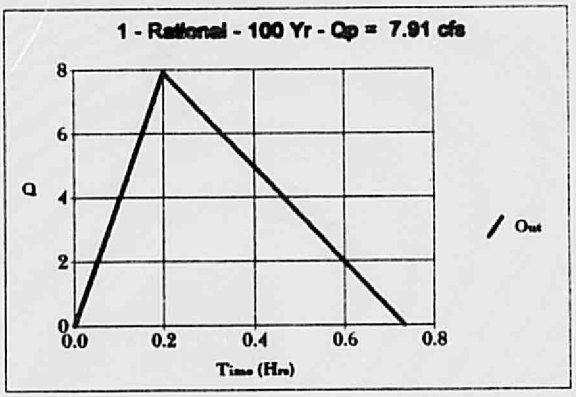
Basin #1

Hydrograph type	= Rational	Peak discharge	= 7.91 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 5.13 ac	Runoff coeff.	= .27
Intensity	= 5.71 in/hr	Time of conc. (Tc)	= 12 min
I-D-F Curve	= COAWSAT.IDF	Reced. limb factor	= 2.7

Total Volume = 10,539 cuft, 0.242 acft

Hydrograph Discharge Table

Time (hrs	Outflow cfs)	Time (hrs	Outflow cfs)
0.02	0.66	0.57	2.47
0.03	1.32	0.58	2.23
0.05	1.98	0.60	1.98
0.07	2.64	0.62	1.73
0.08	3.30	0.63	1.48
0.10	3.96	0.65	1.24
0.12	4.62	0.67	0.99
0.13	5.27	0.68	0.74
0.15	5.93	0.70	0.49
0.17	6.59	0.72	0.25
0.18	7.25		
0.20	7.91 <<		
0.22	7.66	...*End*	
0.23	7.42		
0.25	7.17		
0.27	6.92		
0.28	6.68		
0.30	6.43		
0.32	6.18		
0.33	5.93		
0.35	5.69		
0.37	5.44		
0.38	5.19		
0.40	4.95		
0.42	4.70		
0.43	4.45		
0.45	4.20		
0.47	3.96		
0.48	3.71		
0.50	3.46		
0.52	3.21		
0.53	2.97		
0.55	2.72		



[redacted]

Hyd. No. 2

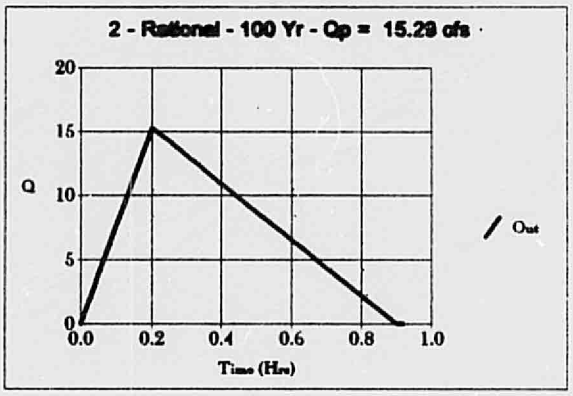
Basin #2

Hydrograph type	= Rational	Peak discharge	= 15.29 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 3.5 ac	Runoff coeff.	= .765
Intensity	= 5.71 in/hr	Time of conc. (Tc)	= 12 min
I-D-F Curve	= COAWSAT.IDF	Reced. limb factor	= 3.55

Total Volume = 25,053 cuft, 0.575 acft

Hydrograph Discharge Table

Time -- Outflow (hrs	cfs)	Time -- Outflow (hrs	cfs)
0.02	1.27	0.57	7.28
0.03	2.55	0.58	6.92
0.05	3.82	0.60	6.55
0.07	5.10	0.62	6.19
0.08	6.37	0.63	5.83
0.10	7.65	0.65	5.46
0.12	8.92	0.67	5.10
0.13	10.20	0.68	4.73
0.15	11.47	0.70	4.37
0.17	12.75	0.72	4.01
0.18	14.02	0.73	3.64
0.20	15.29 <<	0.75	3.28
0.22	14.93	0.77	2.91
0.23	14.57	0.78	2.55
0.25	14.20	0.80	2.18
0.27	13.84	0.82	1.82
0.28	13.47	0.83	1.46
0.30	13.11	0.85	1.09
0.32	12.75	0.87	0.73
0.33	12.38	0.88	0.36
0.35	12.02		
0.37	11.65		
0.38	11.29	...*End*	
0.40	10.92		
0.42	10.56		
0.43	10.20		
0.45	9.83		
0.47	9.47		
0.48	9.10		
0.50	8.74		
0.52	8.38		
0.53	8.01		
0.55	7.65		



[redacted]

Hyd. No. 3

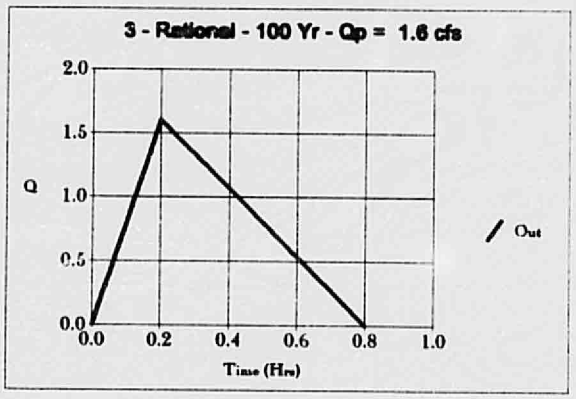
Basin #3

Hydrograph type	= Rational	Peak discharge	= 1.60 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= .79 ac	Runoff coeff.	= .355
Intensity	= 5.71 in/hr	Time of conc. (Tc)	= 12 min
I-D-F Curve	= COAWSAT.IDF	Reced. limb factor	= 3

Total Volume = 2,307 cuft, 0.053 acft

Hydrograph Discharge Table

Time (hrs	Outflow cfs)	Time (hrs	Outflow cfs)
0.02	0.13	0.57	0.62
0.03	0.27	0.58	0.58
0.05	0.40	0.60	0.53
0.07	0.53	0.62	0.49
0.08	0.67	0.63	0.45
0.10	0.80	0.65	0.40
0.12	0.93	0.67	0.36
0.13	1.07	0.68	0.31
0.15	1.20	0.70	0.27
0.17	1.34	0.72	0.22
0.18	1.47	0.73	0.18
0.20	1.60 <<	0.75	0.13
0.22	1.56	0.77	0.09
0.23	1.51	0.78	0.04
0.25	1.47		
0.27	1.42		
0.28	1.38	*...End*	
0.30	1.34		
0.32	1.29		
0.33	1.25		
0.35	1.20		
0.37	1.16		
0.38	1.11		
0.40	1.07		
0.42	1.02		
0.43	0.98		
0.45	0.93		
0.47	0.89		
0.48	0.85		
0.50	0.80		
0.52	0.76		
0.53	0.71		
0.55	0.67		



[redacted]

Hyd. No. 4

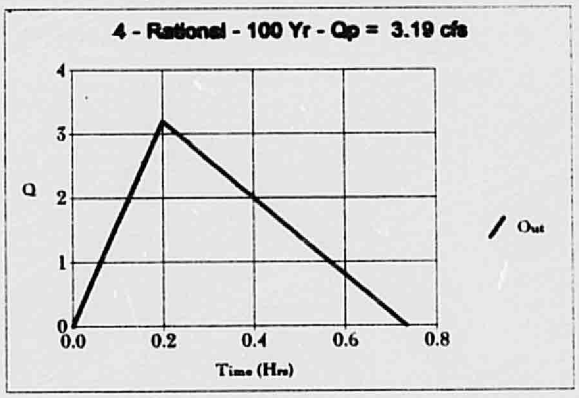
Basin #4

Hydrograph type	= Rational	Peak discharge	= 3.20 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 1.08 ac	Runoff coeff.	= .518
Intensity	= 5.71 in/hr	Time of conc. (Tc)	= 12 min
I-D-F Curve	= COAWSAT.IDF	Reced. limb factor	= 2.7

Total Volume = 4,257 cuft, 0.098 acft

Hydrograph Discharge Table

Time – Outflow (hrs	cfs)	Time – Outflow (hrs	cfs)
0.02	0.27	0.57	1.00
0.03	0.53	0.58	0.90
0.05	0.80	0.60	0.80
0.07	1.07	0.62	0.70
0.08	1.33	0.63	0.60
0.10	1.60	0.65	0.50
0.12	1.86	0.67	0.40
0.13	2.13	0.68	0.30
0.15	2.40	0.70	0.20
0.17	2.66	0.72	0.10
0.18	2.93		
0.20	3.20 <<		
0.22	3.10	...*End*	
0.23	3.00		
0.25	2.90		
0.27	2.80		
0.28	2.70		
0.30	2.60		
0.32	2.50		
0.33	2.40		
0.35	2.30		
0.37	2.20		
0.38	2.10		
0.40	2.00		
0.42	1.90		
0.43	1.80		
0.45	1.70		
0.47	1.60		
0.48	1.50		
0.50	1.40		
0.52	1.30		
0.53	1.20		
0.55	1.10		



[redacted]

Hyd. No. 5

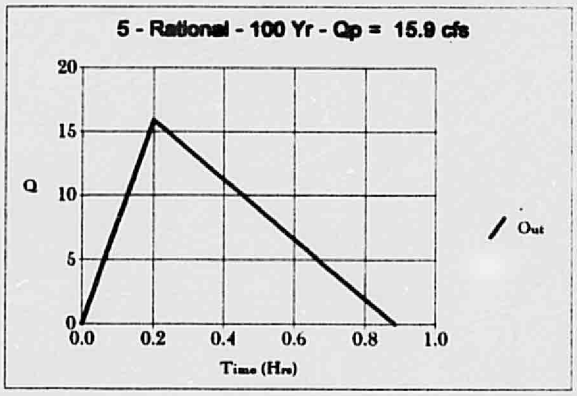
Basin #5

Hydrograph type	= Rational	Peak discharge	= 15.91 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 4.03 ac	Runoff coeff.	= .691
Intensity	= 5.71 in/hr	Time of conc. (Tc)	= 12 min
I-D-F Curve	= COAWSAT.IDF	Reced. limb factor	= 3.45

Total Volume = 25,484 cuft, 0.585 acft

Hydrograph Discharge Table

Time (hrs)	Outflow (cfs)	Time (hrs)	Outflow (cfs)
0.02	1.33	0.57	7.37
0.03	2.65	0.58	6.98
0.05	3.98	0.60	6.60
0.07	5.30	0.62	6.21
0.08	6.63	0.63	5.82
0.10	7.95	0.65	5.43
0.12	9.28	0.67	5.04
0.13	10.60	0.68	4.66
0.15	11.93	0.70	4.27
0.17	13.26	0.72	3.88
0.18	14.58	0.73	3.49
0.20	15.91 <<	0.75	3.10
0.22	15.52	0.77	2.72
0.23	15.13	0.78	2.33
0.25	14.74	0.80	1.94
0.27	14.36	0.82	1.55
0.28	13.97	0.83	1.16
0.30	13.58	0.85	0.78
0.32	13.19	0.87	0.39
0.33	12.80		
0.35	12.42		
0.37	12.03	...End	
0.38	11.64		
0.40	11.25		
0.42	10.86		
0.43	10.48		
0.45	10.09		
0.47	9.70		
0.48	9.31		
0.50	8.92		
0.52	8.54		
0.53	8.15		
0.55	7.76		



[redacted]

Hyd. No. 6

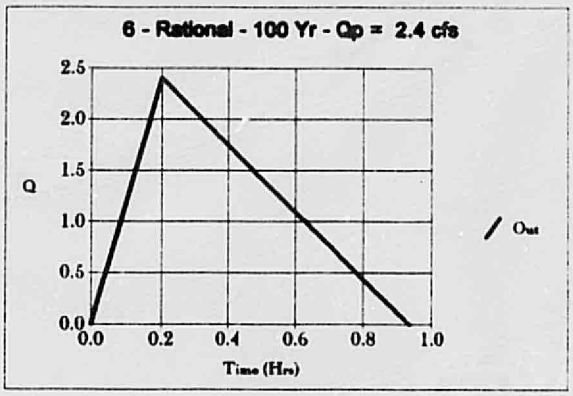
Basin #6

Hydrograph type	= Rational	Peak discharge	= 2.40 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= .6 ac	Runoff coeff.	= .701
Intensity	= 5.71 in/hr	Time of conc. (Tc)	= 12 min
I-D-F Curve	= COAWSAT.IDF	Reced. limb factor	= 3.7

Total Volume = 4,085 cuft, 0.093 acft

Hydrograph Discharge Table

Time – Outflow (hrs cfs)		Time – Outflow (hrs cfs)	
0.02	0.20	0.57	1.20
0.03	0.40	0.58	1.15
0.05	0.60	0.60	1.09
0.07	0.80	0.62	1.04
0.08	1.00	0.63	0.98
0.10	1.20	0.65	0.93
0.12	1.40	0.67	0.87
0.13	1.60	0.68	0.82
0.15	1.80	0.70	0.76
0.17	2.00	0.72	0.71
0.18	2.20	0.73	0.66
0.20	2.40 <<	0.75	0.60
0.22	2.35	0.77	0.55
0.23	2.29	0.78	0.49
0.25	2.24	0.80	0.44
0.27	2.18	0.82	0.38
0.28	2.13	0.83	0.33
0.30	2.07	0.85	0.27
0.32	2.02	0.87	0.22
0.33	1.97	0.88	0.16
0.35	1.91	0.90	0.11
0.37	1.86	0.92	0.05
0.38	1.80		
0.40	1.75		
0.42	1.69	...*End*	
0.43	1.64		
0.45	1.58		
0.47	1.53		
0.48	1.47		
0.50	1.42		
0.52	1.37		
0.53	1.31		
0.55	1.26		



[redacted]

Hyd. No. 7

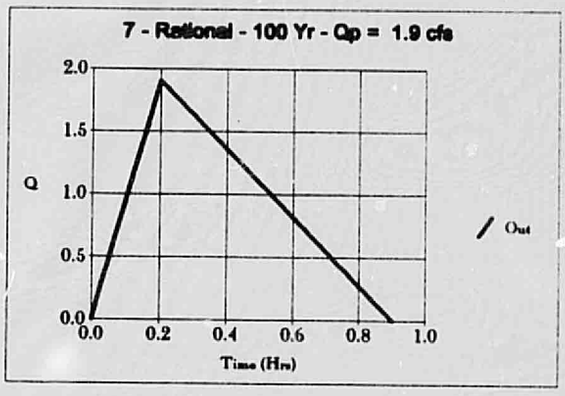
Basin #7

Hydrograph type	= Rational	Peak discharge	= 1.90 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= .47 ac	Runoff coeff.	= .709
Intensity	= 5.71 in/hr	Time of conc. (Tc)	= 12 min
I-D-F Curve	= COAWSAT.IDF	Reced. limb factor	= 3.5

Total Volume = 3,084 cuft, 0.071 acft

Hydrograph Discharge Table

Time (hrs	Outflow cfs)	Time (hrs	Outflow cfs)
0.02	0.16	0.57	0.91
0.03	0.32	0.58	0.86
0.05	0.48	0.60	0.82
0.07	0.63	0.62	0.77
0.08	0.79	0.63	0.73
0.10	0.95	0.65	0.68
0.12	1.11	0.67	0.63
0.13	1.27	0.68	0.59
0.15	1.43	0.70	0.54
0.17	1.59	0.72	0.50
0.18	1.74	0.73	0.45
0.20	1.90 <<	0.75	0.41
0.22	1.86	0.77	0.36
0.23	1.81	0.78	0.32
0.25	1.77	0.80	0.27
0.27	1.72	0.82	0.23
0.28	1.68	0.83	0.18
0.30	1.63	0.85	0.14
0.32	1.59	0.87	0.09
0.33	1.54	0.88	0.05
0.35	1.50		
0.37	1.45		
0.38	1.40	...*End*	
0.40	1.36		
0.42	1.31		
0.43	1.27		
0.45	1.22		
0.47	1.18		
0.48	1.13		
0.50	1.09		
0.52	1.04		
0.53	1.00		
0.55	0.95		



[redacted]

Hyd. No. 8

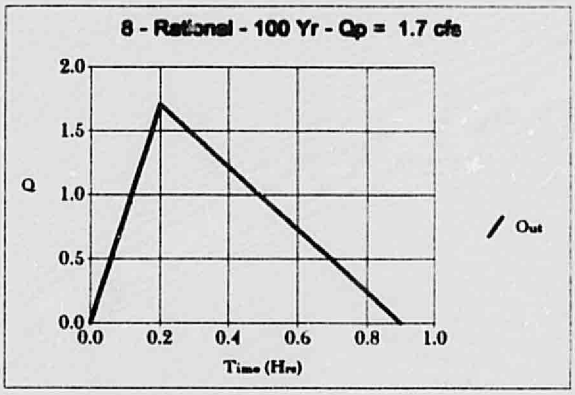
Basin #8

Hydrograph type	= Rational	Peak discharge	= 1.70 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= .53 ac	Runoff coeff.	= .563
Intensity	= 5.71 in/hr	Time of conc. (Tc)	= 12 min
I-D-F Curve	= COAWSAT.IDF	Reced. limb factor	= 3.5

Total Volume = 2,761 cuft, 0.063 acft

Hydrograph Discharge Table

Time (hrs	Outflow cfs)	Time (hrs	Outflow cfs)
0.02	0.14	0.57	0.81
0.03	0.28	0.58	0.77
0.05	0.43	0.60	0.73
0.07	0.57	0.62	0.69
0.08	0.71	0.63	0.65
0.10	0.85	0.65	0.61
0.12	0.99	0.67	0.57
0.13	1.14	0.68	0.53
0.15	1.28	0.70	0.49
0.17	1.42	0.72	0.45
0.18	1.56	0.73	0.41
0.20	1.70 <<	0.75	0.37
0.22	1.66	0.77	0.32
0.23	1.62	0.78	0.28
0.25	1.58	0.80	0.24
0.27	1.54	0.82	0.20
0.28	1.50	0.83	0.16
0.30	1.46	0.85	0.12
0.32	1.42	0.87	0.08
0.33	1.38	0.88	0.04
0.35	1.34		
0.37	1.30		
0.38	1.26	...*End*	
0.40	1.22		
0.42	1.18		
0.43	1.14		
0.45	1.10		
0.47	1.06		
0.48	1.01		
0.50	0.97		
0.52	0.93		
0.53	0.89		
0.55	0.85		



[redacted]

Hyd. No. 9

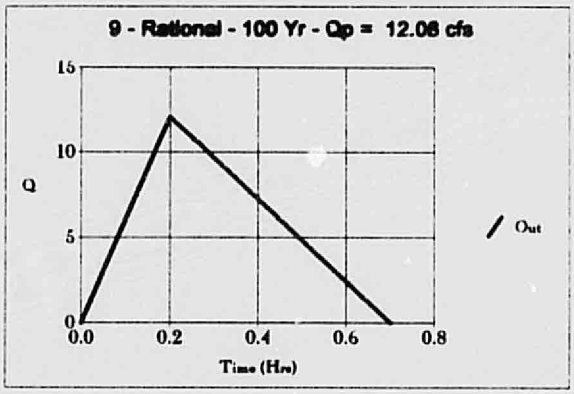
Basin #9

Hydrograph type	= Rational	Peak discharge	= 12.08 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 9.4 ac	Runoff coeff.	= .225
Intensity	= 5.71 in/hr	Time of conc. (Tc)	= 12 min
I-D-F Curve	= COAWSAT.IDF	Reced. limb factor	= 2.5

Total Volume = 15,223 cuft, 0.349 acft

Hydrograph Discharge Table

Time (hrs)	Outflow (cfs)	Time (hrs)	Outflow (cfs)
0.02	1.01	0.57	3.22
0.03	2.01	0.58	2.82
0.05	3.02	0.60	2.42
0.07	4.03	0.62	2.01
0.08	5.03	0.63	1.61
0.10	6.04	0.65	1.21
0.12	7.05	0.67	0.81
0.13	8.05	0.68	0.40
0.15	9.06		
0.17	10.07		
0.18	11.07	...*End*	
0.20	12.08 <<		
0.22	11.68		
0.23	11.28		
0.25	10.87		
0.27	10.47		
0.28	10.07		
0.30	9.67		
0.32	9.26		
0.33	8.86		
0.35	8.46		
0.37	8.05		
0.38	7.65		
0.40	7.25		
0.42	6.85		
0.43	6.44		
0.45	6.04		
0.47	5.64		
0.48	5.24		
0.50	4.83		
0.52	4.43		
0.53	4.03		
0.55	3.62		



Hydrograph Report

Hyd. No. 17

Basin 9 SS

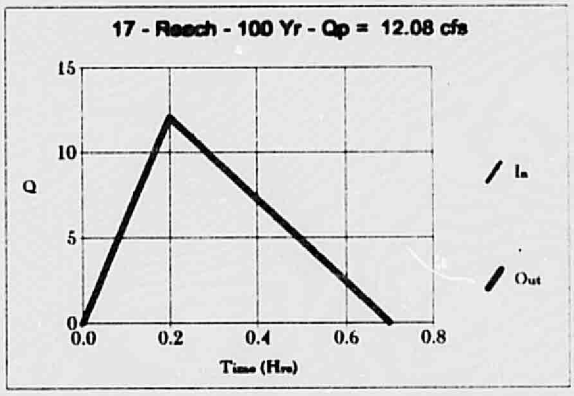
Hydrograph type	= Reach	Peak discharge	= 12.08 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 9	Reach length	= 39 ft
Channel velocity	= 9.6 ft/s	Routing coeff.	= 0.8496

Convex routing method used.

Total Volume = 15,223 cuft, 0.349 acft

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.02	1.01	1.01
0.03	2.01	2.01
0.05	3.02	3.02
0.07	4.03	4.03
0.08	5.03	5.03
0.10	6.04	6.04
0.12	7.05	7.05
0.13	8.05	8.05
0.15	9.06	9.06
0.17	10.07	10.07
0.18	11.07	11.07
0.20	12.08 <<	12.08 <<
0.22	11.68	11.68
0.23	11.28	11.28
0.25	10.87	10.87
0.27	10.47	10.47
0.28	10.07	10.07
0.30	9.67	9.67
0.32	9.26	9.26
0.33	8.86	8.86
0.35	8.46	8.46
0.37	8.05	8.05
0.38	7.65	7.65
0.40	7.25	7.25
0.42	6.85	6.85
0.43	6.44	6.44
0.45	6.04	6.04
0.47	5.64	5.64
0.48	5.24	5.24
0.50	4.83	4.83
0.52	4.43	4.43
0.53	4.03	4.03
0.55	3.62	3.62
0.57	3.22	3.22
0.58	2.82	2.82
0.60	2.42	2.42



Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.62	2.01	2.01
0.63	1.61	1.61
0.65	1.21	1.21
0.67	0.81	0.81
0.68	0.40	0.40

...End

Continues on next page...

[redacted]

Hyd. No. 18

Basin 8 + 9 SS

Hydrograph type	= Combine	Peak discharge	= 13.79 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
1st inflow hyd. No.	= 17	2nd inflow hyd. No.	= 8

Total Volume = 17,984 cuft, 0.413 acft

Hydrograph Discharge Table

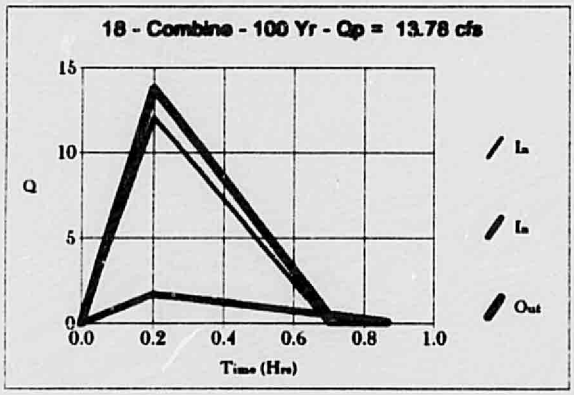
Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.02	1.01		0.14		1.15
0.03	2.01		0.28		2.30
0.05	3.02		0.43		3.45
0.07	4.03		0.57		4.60
0.08	5.03		0.71		5.74
0.10	6.04		0.85		6.89
0.12	7.05		0.99		8.04
0.13	8.05		1.14		9.19
0.15	9.06		1.28		10.34
0.17	10.07		1.42		11.49
0.18	11.07		1.56		12.64
0.20	12.08 <<		1.70 <<		13.79 <<
0.22	11.68		1.66		13.34
0.23	11.28		1.62		12.90
0.25	10.87		1.58		12.46
0.27	10.47		1.54		12.01
0.28	10.07		1.50		11.57
0.30	9.67		1.46		11.13
0.32	9.26		1.42		10.68
0.33	8.86		1.38		10.24
0.35	8.46		1.34		9.80
0.37	8.05		1.30		9.35
0.38	7.65		1.26		8.91
0.40	7.25		1.22		8.47
0.42	6.85		1.18		8.02
0.43	6.44		1.14		7.58
0.45	6.04		1.10		7.14
0.47	5.64		1.06		6.69
0.48	5.24		1.01		6.25
0.50	4.83		0.97		5.81
0.52	4.43		0.93		5.36
0.53	4.03		0.89		4.92
0.55	3.62		0.85		4.48
0.57	3.22		0.81		4.03
0.58	2.82		0.77		3.59
0.60	2.42		0.73		3.15
0.62	2.01		0.69		2.70

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.63	1.61		0.65		2.26
0.65	1.21		0.61		1.82
0.67	0.81		0.57		1.37
0.68	0.40		0.53		0.93
0.70	0.00		0.49		0.49
0.72	0.00		0.45		0.45
0.73	0.00		0.41		0.41
0.75	0.00		0.37		0.37
0.77	0.00		0.32		0.32
0.78	0.00		0.28		0.28
0.80	0.00		0.24		0.24
0.82	0.00		0.20		0.20
0.83	0.00		0.16		0.16
0.85	0.00		0.12		0.12
0.87	0.00		0.08		0.08
0.88	0.00		0.04		0.04

...End



Hyd. No. 19

Routed 8 + 9

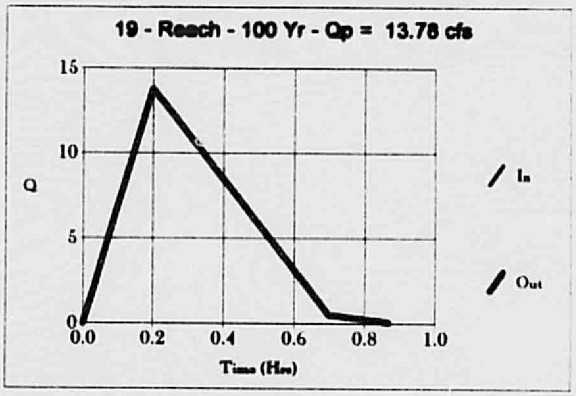
Hydrograph type	= Reach	Peak discharge	= 13.79 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 18	Reach length	= 239 ft
Channel velocity	= 6.9 ft/s	Routing coeff.	= 0.8023

Convex routing method used.

Total Volume = 17,984 cuft, 0.413 acft

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.02	1.15	1.15
0.03	2.30	2.30
0.05	3.45	3.45
0.07	4.60	4.60
0.08	5.74	5.74
0.10	6.89	6.89
0.12	8.04	8.04
0.13	9.19	9.19
0.15	10.34	10.34
0.17	11.49	11.49
0.18	12.64	12.64
0.20	13.79 <<	13.79 <<
0.22	13.34	13.34
0.23	12.90	12.90
0.25	12.46	12.46
0.27	12.01	12.01
0.28	11.57	11.57
0.30	11.13	11.13
0.32	10.68	10.68
0.33	10.24	10.24
0.35	9.80	9.80
0.37	9.35	9.35
0.38	8.91	8.91
0.40	8.47	8.47
0.42	8.02	8.02
0.43	7.58	7.58
0.45	7.14	7.14
0.47	6.69	6.69
0.48	6.25	6.25
0.50	5.81	5.81
0.52	5.36	5.36
0.53	4.92	4.92
0.55	4.48	4.48
0.57	4.03	4.03
0.58	3.59	3.59
0.60	3.15	3.15



Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.62	2.70	2.70
0.63	2.26	2.26
0.65	1.82	1.82
0.67	1.37	1.37
0.68	0.93	0.93
0.70	0.49	0.49
0.72	0.45	0.45
0.73	0.41	0.41
0.75	0.37	0.37
0.77	0.32	0.32
0.78	0.28	0.28
0.80	0.24	0.24
0.82	0.20	0.20
0.83	0.16	0.16
0.85	0.12	0.12
0.87	0.08	0.08
0.88	0.04	0.04

...End

Continues on next page...

[redacted]

Hyd. No. 20

Basin 6 to 7CB

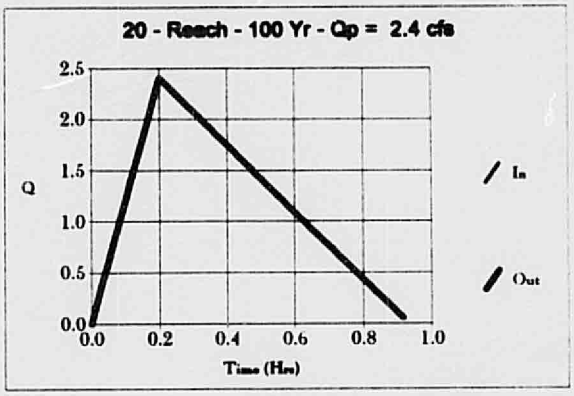
Hydrograph type	= Reach	Peak discharge	= 2.40 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 6	Reach length	= 46 ft
Channel velocity	= 4.6 ft/s	Routing coeff.	= 0.7302

Convex routing method used.

Total Volume = 4,036 cuft, 0.093 acft

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.02	0.20	0.20
0.03	0.40	0.40
0.05	0.60	0.60
0.07	0.80	0.80
0.08	1.00	1.00
0.10	1.20	1.20
0.12	1.40	1.40
0.13	1.60	1.60
0.15	1.80	1.80
0.17	2.00	2.00
0.18	2.20	2.20
0.20	2.40 <<	2.40 <<
0.22	2.35	2.35
0.23	2.29	2.29
0.25	2.24	2.24
0.27	2.18	2.18
0.28	2.13	2.13
0.30	2.07	2.07
0.32	2.02	2.02
0.33	1.97	1.97
0.35	1.91	1.91
0.37	1.86	1.86
0.38	1.80	1.80
0.40	1.75	1.75
0.42	1.69	1.69
0.43	1.64	1.64
0.45	1.58	1.58
0.47	1.53	1.53
0.48	1.47	1.47
0.50	1.42	1.42
0.52	1.37	1.37
0.53	1.31	1.31
0.55	1.26	1.26
0.57	1.20	1.20
0.58	1.15	1.15
0.60	1.09	1.09



Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.62	1.04	1.04
0.63	0.98	0.98
0.65	0.93	0.93
0.67	0.87	0.87
0.68	0.82	0.82
0.70	0.76	0.76
0.72	0.71	0.71
0.73	0.66	0.66
0.75	0.60	0.60
0.77	0.55	0.55
0.78	0.49	0.49
0.80	0.44	0.44
0.82	0.38	0.38
0.83	0.33	0.33
0.85	0.27	0.27
0.87	0.22	0.22
0.88	0.16	0.16
0.90	0.11	0.11
0.92	0.05	0.05

Continues on next page...

...End

[redacted]

Hyd. No. 21

Add 6SS w/7

Hydrograph type	= Combine	Peak discharge	= 4.31 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
1st inflow hyd. No.	= 20	2nd inflow hyd. No.	= 7

Total Volume = 7,120 cuft, 0.163 acft

Hydrograph Discharge Table

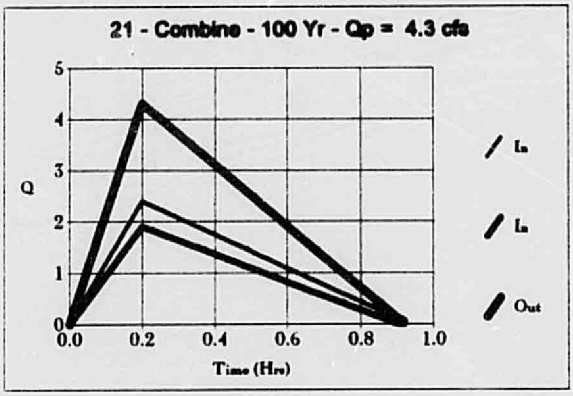
Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.02	0.20		0.16		0.36
0.03	0.40		0.32		0.72
0.05	0.60		0.48		1.08
0.07	0.80		0.63		1.44
0.08	1.00		0.79		1.79
0.10	1.20		0.95		2.15
0.12	1.40		1.11		2.51
0.13	1.60		1.27		2.87
0.15	1.80		1.43		3.23
0.17	2.00		1.59		3.59
0.18	2.20		1.74		3.95
0.20	2.40 <<		1.90 <<		4.31 <<
0.22	2.35		1.86		4.21
0.23	2.29		1.81		4.11
0.25	2.24		1.77		4.01
0.27	2.18		1.72		3.91
0.28	2.13		1.68		3.81
0.30	2.07		1.63		3.71
0.32	2.02		1.59		3.61
0.33	1.97		1.54		3.51
0.35	1.91		1.50		3.41
0.37	1.86		1.45		3.31
0.38	1.80		1.40		3.21
0.40	1.75		1.36		3.11
0.42	1.69		1.31		3.01
0.43	1.64		1.27		2.91
0.45	1.58		1.22		2.81
0.47	1.53		1.18		2.71
0.48	1.47		1.13		2.61
0.50	1.42		1.09		2.51
0.52	1.37		1.04		2.41
0.53	1.31		1.00		2.31
0.55	1.26		0.95		2.21
0.57	1.20		0.91		2.11
0.58	1.15		0.86		2.01
0.60	1.09		0.82		1.91
0.62	1.04		0.77		1.81

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.63	0.98		0.73		1.71
0.65	0.93		0.68		1.61
0.67	0.87		0.63		1.51
0.68	0.82		0.59		1.41
0.70	0.76		0.54		1.31
0.72	0.71		0.50		1.21
0.73	0.66		0.45		1.11
0.75	0.60		0.41		1.01
0.77	0.55		0.36		0.91
0.78	0.49		0.32		0.81
0.80	0.44		0.27		0.71
0.82	0.38		0.23		0.61
0.83	0.33		0.18		0.51
0.85	0.27		0.14		0.41
0.87	0.22		0.09		0.31
0.88	0.16		0.05		0.21
0.90	0.11		0.00		0.11
0.92	0.05		0.00		0.05

...End



[redacted]

Hyd. No. 22

Route 6 & 7

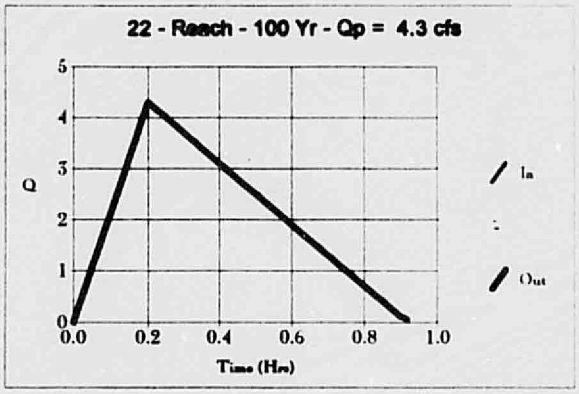
Hydrograph type	= Reach	Peak discharge	= 4.31 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 21	Reach length	= 20 ft
Channel velocity	= 9.3 ft/s	Routing coeff.	= 0.8455

Convex routing method used.

Total Volume = 7,120 cuft, 0.163 acft

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.02	0.36	0.36
0.03	0.72	0.72
0.05	1.08	1.08
0.07	1.44	1.44
0.08	1.79	1.79
0.10	2.15	2.15
0.12	2.51	2.51
0.13	2.87	2.87
0.15	3.23	3.23
0.17	3.59	3.59
0.18	3.95	3.95
0.20	4.31 <<	4.31 <<
0.22	4.21	4.21
0.23	4.11	4.11
0.25	4.01	4.01
0.27	3.91	3.91
0.28	3.81	3.81
0.30	3.71	3.71
0.32	3.61	3.61
0.33	3.51	3.51
0.35	3.41	3.41
0.37	3.31	3.31
0.38	3.21	3.21
0.40	3.11	3.11
0.42	3.01	3.01
0.43	2.91	2.91
0.45	2.81	2.81
0.47	2.71	2.71
0.48	2.61	2.61
0.50	2.51	2.51
0.52	2.41	2.41
0.53	2.31	2.31
0.55	2.21	2.21
0.57	2.11	2.11
0.58	2.01	2.01
0.60	1.91	1.91



Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.62	1.81	1.81
0.63	1.71	1.71
0.65	1.61	1.61
0.67	1.51	1.51
0.68	1.41	1.41
0.70	1.31	1.31
0.72	1.21	1.21
0.73	1.11	1.11
0.75	1.01	1.01
0.77	0.91	0.91
0.78	0.81	0.81
0.80	0.71	0.71
0.82	0.61	0.61
0.83	0.51	0.51
0.85	0.41	0.41
0.87	0.31	0.31
0.88	0.21	0.21
0.90	0.11	0.11
0.92	0.05	0.05

Continues on next page...

...End

[redacted]

Hyd. No. 23

Add 6-7 & 19

Hydrograph type	= Combine	Peak discharge	= 18.09 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
1st inflow hyd. No.	= 22	2nd inflow hyd. No.	= 19

Total Volume = 25,104 cuft, 0.576 acft

Hydrograph Discharge Table

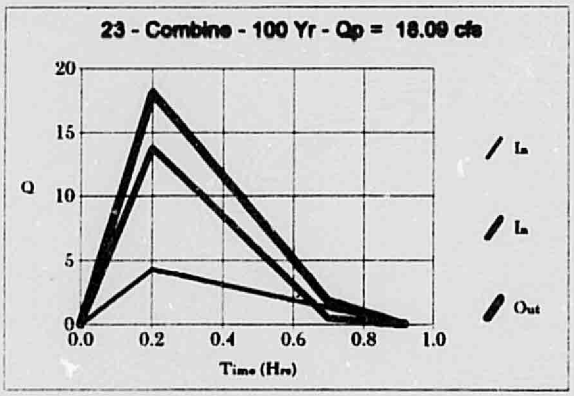
Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.02	0.36		1.15		1.51
0.03	0.72		2.30		3.02
0.05	1.08		3.45		4.52
0.07	1.44		4.60		6.03
0.08	1.79		5.74		7.54
0.10	2.15		6.89		9.05
0.12	2.51		8.04		10.55
0.13	2.87		9.19		12.06
0.15	3.23		10.34		13.57
0.17	3.59		11.49		15.08
0.18	3.95		12.64		16.58
0.20	4.31 <<		13.79 <<		18.09 <<
0.22	4.21		13.34		17.55
0.23	4.11		12.90		17.01
0.25	4.01		12.46		16.46
0.27	3.91		12.01		15.92
0.28	3.81		11.57		15.38
0.30	3.71		11.13		14.83
0.32	3.61		10.68		14.29
0.33	3.51		10.24		13.75
0.35	3.41		9.80		13.20
0.37	3.31		9.35		12.66
0.38	3.21		8.91		12.12
0.40	3.11		8.47		11.57
0.42	3.01		8.02		11.03
0.43	2.91		7.58		10.49
0.45	2.81		7.14		9.94
0.47	2.71		6.69		9.40
0.48	2.61		6.25		8.86
0.50	2.51		5.81		8.31
0.52	2.41		5.36		7.77
0.53	2.31		4.92		7.23
0.55	2.21		4.48		6.68
0.57	2.11		4.03		6.14
0.58	2.01		3.59		5.60
0.60	1.91		3.15		5.05
0.62	1.81		2.70		4.51

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.63	1.71		2.26		3.97
0.65	1.61		1.82		3.43
0.67	1.51		1.37		2.88
0.68	1.41		0.93		2.34
0.70	1.31		0.49		1.80
0.72	1.21		0.45		1.65
0.73	1.11		0.41		1.51
0.75	1.01		0.37		1.37
0.77	0.91		0.32		1.23
0.78	0.81		0.28		1.09
0.80	0.71		0.24		0.95
0.82	0.61		0.20		0.81
0.83	0.51		0.16		0.67
0.85	0.41		0.12		0.53
0.87	0.31		0.08		0.39
0.88	0.21		0.04		0.25
0.90	0.11		0.00		0.11
0.92	0.05		0.00		0.05

...End



[redacted]

Hyd. No. 24

Route end pipe

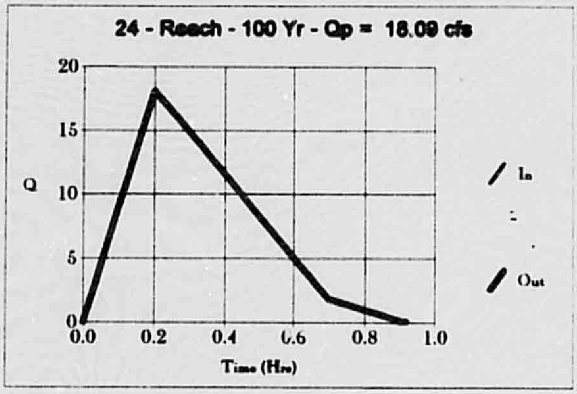
Hydrograph type	= Reach	Peak discharge	= 18.09 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 23	Reach length	= 13 ft
Channel velocity	= 6.1 ft/s	Routing coeff.	= 0.7821

Convex routing method used.

Total Volume = 25,104 cuft, 0.576 acft

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.02	1.51	1.51
0.03	3.02	3.02
0.05	4.52	4.52
0.07	6.03	6.03
0.08	7.54	7.54
0.10	9.05	9.05
0.12	10.55	10.55
0.13	12.06	12.06
0.15	13.57	13.57
0.17	15.08	15.08
0.18	16.58	16.58
0.20	18.09 <<	18.09 <<
0.22	17.55	17.55
0.23	17.01	17.01
0.25	16.46	16.46
0.27	15.92	15.92
0.28	15.38	15.38
0.30	14.83	14.83
0.32	14.29	14.29
0.33	13.75	13.75
0.35	13.20	13.20
0.37	12.66	12.66
0.38	12.12	12.12
0.40	11.57	11.57
0.42	11.03	11.03
0.43	10.49	10.49
0.45	9.94	9.94
0.47	9.40	9.40
0.48	8.86	8.86
0.50	8.31	8.31
0.52	7.77	7.77
0.53	7.23	7.23
0.55	6.68	6.68
0.57	6.14	6.14
0.58	5.60	5.60
0.60	5.05	5.05



Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.62	4.51	4.51
0.63	3.97	3.97
0.65	3.43	3.43
0.67	2.88	2.88
0.68	2.34	2.34
0.70	1.80	1.80
0.72	1.65	1.65
0.73	1.51	1.51
0.75	1.37	1.37
0.77	1.23	1.23
0.78	1.09	1.09
0.80	0.95	0.95
0.82	0.81	0.81
0.83	0.67	0.67
0.85	0.53	0.53
0.87	0.39	0.39
0.88	0.25	0.25
0.90	0.11	0.11
0.92	0.05	0.05

Continues on next page...

...End

[redacted]

Hyd. No. 25

Grade Break

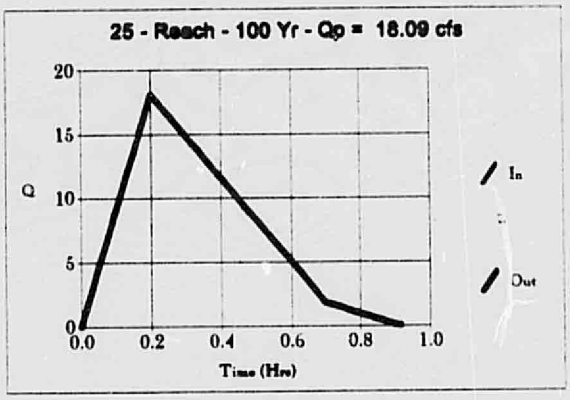
Hydrograph type	= Reach	Peak discharge	= 18.09 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 24	Reach length	= 228 ft
Channel velocity	= 7.3 ft/s	Routing coeff.	= 0.8111

Convex routing method used.

Total Volume = 25,104 cuft, 0.576 acft

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.02	1.51	1.51
0.03	3.02	3.02
0.05	4.52	4.52
0.07	6.03	6.03
0.08	7.54	7.54
0.10	9.05	9.05
0.12	10.55	10.55
0.13	12.06	12.06
0.15	13.57	13.57
0.17	15.08	15.08
0.18	16.58	16.58
0.20	18.09 <<	18.09 <<
0.22	17.55	17.55
0.23	17.01	17.01
0.25	16.46	16.46
0.27	15.92	15.92
0.28	15.38	15.38
0.30	14.83	14.83
0.32	14.29	14.29
0.33	13.75	13.75
0.35	13.20	13.20
0.37	12.66	12.66
0.38	12.12	12.12
0.40	11.57	11.57
0.42	11.03	11.03
0.43	10.49	10.49
0.45	9.94	9.94
0.47	9.40	9.40
0.48	8.86	8.86
0.50	8.31	8.31
0.52	7.77	7.77
0.53	7.23	7.23
0.55	6.68	6.68
0.57	6.14	6.14
0.58	5.60	5.60
0.60	5.05	5.05



Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.62	4.51	4.51
0.63	3.97	3.97
0.65	3.43	3.43
0.67	2.88	2.88
0.68	2.34	2.34
0.70	1.80	1.80
0.72	1.65	1.65
0.73	1.51	1.51
0.75	1.37	1.37
0.77	1.23	1.23
0.78	1.09	1.09
0.80	0.95	0.95
0.82	0.81	0.81
0.83	0.67	0.67
0.85	0.53	0.53
0.87	0.39	0.39
0.88	0.25	0.25
0.90	0.11	0.11
0.92	0.05	0.05

Continues on next page...

...End

[redacted]

Hyd. No. 26

Basin 5 SS

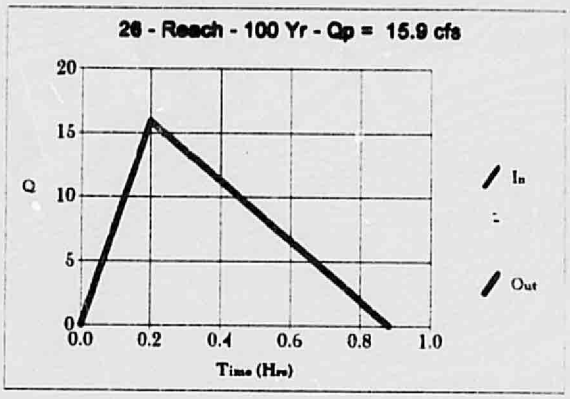
Hydrograph type	= Reach	Peak discharge	= 15.91 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 5	Reach length	= 24.5 ft
Channel velocity	= 13.7 ft/s	Routing coeff.	= 0.8896

Convex routing method used.

Total Volume = 25,293 cuft, 0.581 acft

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.02	1.33	1.33
0.03	2.65	2.65
0.05	3.98	3.98
0.07	5.30	5.30
0.08	6.63	6.63
0.10	7.95	7.95
0.12	9.28	9.28
0.13	10.60	10.60
0.15	11.93	11.93
0.17	13.26	13.26
0.18	14.58	14.58
0.20	15.91 <<	15.91 <<
0.22	15.52	15.52
0.23	15.13	15.13
0.25	14.74	14.74
0.27	14.36	14.36
0.28	13.97	13.97
0.30	13.58	13.58
0.32	13.19	13.19
0.33	12.80	12.80
0.35	12.42	12.42
0.37	12.03	12.03
0.38	11.64	11.64
0.40	11.25	11.25
0.42	10.86	10.86
0.43	10.48	10.48
0.45	10.09	10.09
0.47	9.70	9.70
0.48	9.31	9.31
0.50	8.92	8.92
0.52	8.54	8.54
0.53	8.15	8.15
0.55	7.76	7.76
0.57	7.37	7.37
0.58	6.98	6.98
0.60	6.60	6.60



Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.62	6.21	6.21
0.63	5.82	5.82
0.65	5.43	5.43
0.67	5.04	5.04
0.68	4.66	4.66
0.70	4.27	4.27
0.72	3.88	3.88
0.73	3.49	3.49
0.75	3.10	3.10
0.77	2.72	2.72
0.78	2.33	2.33
0.80	1.94	1.94
0.82	1.55	1.55
0.83	1.16	1.16
0.85	0.78	0.78
0.87	0.39	0.39

...End

Continues on next page...

[redacted]

Hyd. No. 27

Add 25 & 26

Hydrograph type = Combine
Storm frequency = 100 yrs
1st inflow hyd. No. = 25

Peak discharge = 34.00 cfs
Time interval = 1 min
2nd inflow hyd. No. = 26

Total Volume = 50,397 cuft, 1.157 acft

Hydrograph Discharge Table

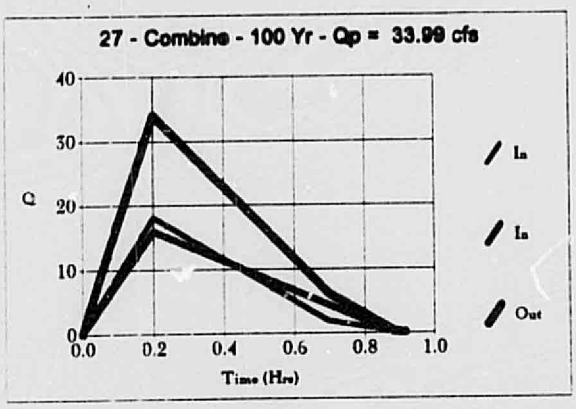
Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.02	1.51		1.33		2.83
0.03	3.02		2.65		5.67
0.05	4.52		3.98		8.50
0.07	6.03		5.30		11.33
0.08	7.54		6.63		14.17
0.10	9.05		7.95		17.00
0.12	10.55		9.28		19.83
0.13	12.06		10.60		22.67
0.15	13.57		11.93		25.50
0.17	15.08		13.26		28.33
0.18	16.58		14.58		31.17
0.20	18.09 <<		15.91 <<		34.00 <<
0.22	17.55		15.52		33.07
0.23	17.01		15.13		32.14
0.25	16.46		14.74		31.21
0.27	15.92		14.36		30.27
0.28	15.38		13.97		29.34
0.30	14.83		13.58		28.41
0.32	14.29		13.19		27.48
0.33	13.75		12.80		26.55
0.35	13.20		12.42		25.62
0.37	12.66		12.03		24.69
0.38	12.12		11.64		23.76
0.40	11.57		11.25		22.83
0.42	11.03		10.86		21.89
0.43	10.49		10.48		20.96
0.45	9.94		10.09		20.03
0.47	9.40		9.70		19.10
0.48	8.86		9.31		18.17
0.50	8.31		8.92		17.24
0.52	7.77		8.54		16.31
0.53	7.23		8.15		15.38
0.55	6.68		7.76		14.44
0.57	6.14		7.37		13.51
0.58	5.60		6.98		12.58
0.60	5.05		6.60		11.65
0.62	4.51		6.21		10.72

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.63	3.97		5.82		9.79
0.65	3.43		5.43		8.86
0.67	2.88		5.04		7.93
0.68	2.34		4.66		6.99
0.70	1.80		4.27		6.06
0.72	1.65		3.88		5.53
0.73	1.51		3.49		5.01
0.75	1.37		3.10		4.48
0.77	1.23		2.72		3.95
0.78	1.09		2.33		3.42
0.80	0.95		1.94		2.89
0.82	0.81		1.55		2.36
0.83	0.67		1.16		1.84
0.85	0.53		0.78		1.31
0.87	0.39		0.39		0.78
0.88	0.25		0.00		0.25
0.90	0.11		0.00		0.11
0.92	0.05		0.00		0.05

...End



[redacted]

Hyd. No. 28

Steep Channel

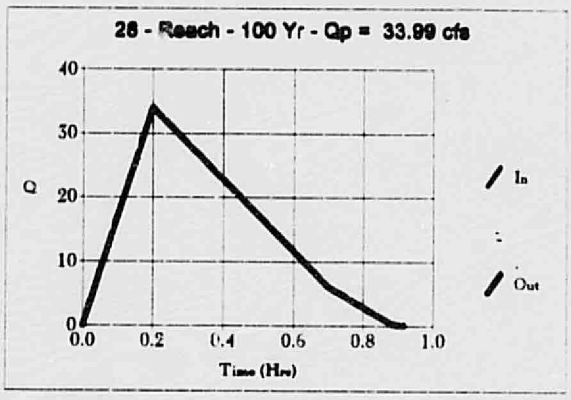
Hydrograph type	= Reach	Peak discharge	= 34.00 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 27	Reach length	= 10 ft
Channel velocity	= 18.5 ft/s	Routing coeff.	= 0.9158

Convex routing method used.

Total Volume = 50,397 cuft, 1.157 acft

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.02	2.83	2.83
0.03	5.67	5.67
0.05	8.50	8.50
0.07	11.33	11.33
0.08	14.17	14.17
0.10	17.00	17.00
0.12	19.83	19.83
0.13	22.67	22.67
0.15	25.50	25.50
0.17	28.33	28.33
0.18	31.17	31.17
0.20	34.00 <<	34.00 <<
0.22	33.07	33.07
0.23	32.14	32.14
0.25	31.21	31.21
0.27	30.27	30.27
0.28	29.34	29.34
0.30	28.41	28.41
0.32	27.48	27.48
0.33	26.55	26.55
0.35	25.62	25.62
0.37	24.69	24.69
0.38	23.76	23.76
0.40	22.83	22.83
0.42	21.89	21.89
0.43	20.96	20.96
0.45	20.03	20.03
0.47	19.10	19.10
0.48	18.17	18.17
0.50	17.24	17.24
0.52	16.31	16.31
0.53	15.38	15.38
0.55	14.44	14.44
0.57	13.51	13.51
0.58	12.58	12.58
0.60	11.65	11.65



Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.62	10.72	10.72
0.63	9.79	9.79
0.65	8.86	8.86
0.67	7.93	7.93
0.68	6.99	6.99
0.70	6.06	6.06
0.72	5.53	5.53
0.73	5.01	5.01
0.75	4.48	4.48
0.77	3.95	3.95
0.78	3.42	3.42
0.80	2.89	2.89
0.82	2.36	2.36
0.83	1.84	1.84
0.85	1.31	1.31
0.87	0.78	0.78
0.88	0.25	0.25
0.90	0.11	0.11
0.92	0.05	0.05

Continues on next page...

...End

[redacted]

Hyd. No. 29

End channel

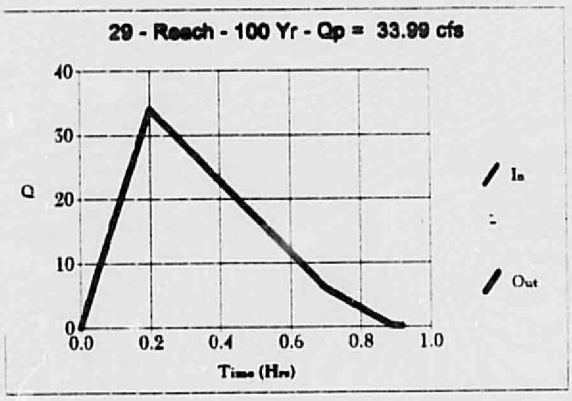
Hydrograph type	= Reach	Peak discharge	= 34.00 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 28	Reach length	= 128 ft
Channel velocity	= 15.7 ft/s	Routing coeff.	= 0.9023

Convex routing method used.

Total Volume = 50,397 cuft, 1.157 acft

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.02	2.83	2.83
0.03	5.67	5.67
0.05	8.50	8.50
0.07	11.33	11.33
0.08	14.17	14.17
0.10	17.00	17.00
0.12	19.83	19.83
0.13	22.67	22.67
0.15	25.50	25.50
0.17	28.33	28.33
0.18	31.17	31.17
0.20	34.00 <<	34.00 <<
0.22	33.07	33.07
0.23	32.14	32.14
0.25	31.21	31.21
0.27	30.27	30.27
0.28	29.34	29.34
0.30	28.41	28.41
0.32	27.48	27.48
0.33	26.55	26.55
0.35	25.62	25.62
0.37	24.69	24.69
0.38	23.76	23.76
0.40	22.83	22.83
0.42	21.89	21.89
0.43	20.96	20.96
0.45	20.03	20.03
0.47	19.10	19.10
0.48	18.17	18.17
0.50	17.24	17.24
0.52	16.31	16.31
0.53	15.38	15.38
0.55	14.44	14.44
0.57	13.51	13.51
0.58	12.58	12.58
0.60	11.65	11.65



Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.62	10.72	10.72
0.63	9.79	9.79
0.65	8.86	8.86
0.67	7.93	7.93
0.68	6.99	6.99
0.70	6.06	6.06
0.72	5.53	5.53
0.73	5.01	5.01
0.75	4.48	4.48
0.77	3.95	3.95
0.78	3.42	3.42
0.80	2.89	2.89
0.82	2.36	2.36
0.83	1.84	1.84
0.85	1.31	1.31
0.87	0.78	0.78
0.88	0.25	0.25
0.90	0.11	0.11
0.92	0.05	0.05

Continues on next page...

...End

[redacted]

Hyd. No. 30

Add Pond + 29

Hydrograph type	= Combine	Peak discharge	= 37.20 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
1st inflow hyd. No.	= 4	2nd inflow hyd. No.	= 29

Total Volume = 54,616 cuft, 1.254 acft

Hydrograph Discharge Table

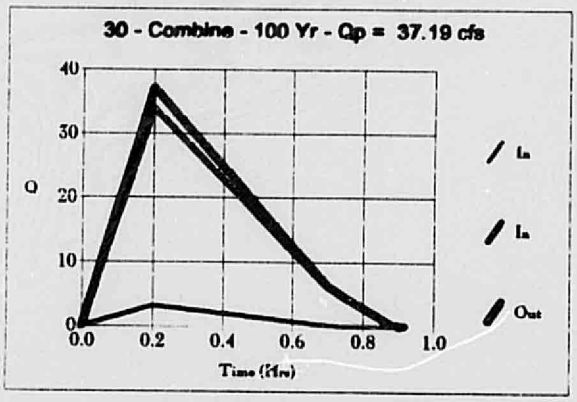
Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.02	0.27		2.83		3.10
0.03	0.53		5.67		6.20
0.05	0.80		8.50		9.30
0.07	1.07		11.33		12.40
0.08	1.33		14.17		15.50
0.10	1.60		17.00		18.60
0.12	1.86		19.83		21.70
0.13	2.13		22.67		24.80
0.15	2.40		25.50		27.90
0.17	2.66		28.33		31.00
0.18	2.93		31.17		34.10
0.20	3.20 <<		34.00 <<		37.20 <<
0.22	3.10		33.07		36.16
0.23	3.00		32.14		35.13
0.25	2.90		31.21		34.10
0.27	2.80		30.27		33.07
0.28	2.70		29.34		32.04
0.30	2.60		28.41		31.01
0.32	2.50		27.48		29.98
0.33	2.40		26.55		28.95
0.35	2.30		25.62		27.92
0.37	2.20		24.69		26.88
0.38	2.10		23.76		25.85
0.40	2.00		22.83		24.82
0.42	1.90		21.89		23.79
0.43	1.80		20.96		22.76
0.45	1.70		20.03		21.73
0.47	1.60		19.10		20.70
0.48	1.50		18.17		19.67
0.50	1.40		17.24		18.64
0.52	1.30		16.31		17.60
0.53	1.20		15.38		16.57
0.55	1.10		14.44		15.54
0.57	1.00		13.51		14.51
0.58	0.90		12.58		13.48
0.60	0.80		11.65		12.45
0.62	0.70		10.72		11.42

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.63	0.60		9.79		10.39
0.65	0.50		8.86		9.36
0.67	0.40		7.93		8.33
0.68	0.30		6.99		7.29
0.70	0.20		6.06		6.26
0.72	0.10		5.53		5.63
0.73	0.00		5.01		5.01
0.75	0.00		4.48		4.48
0.77	0.00		3.95		3.95
0.78	0.00		3.42		3.42
0.80	0.00		2.89		2.89
0.82	0.00		2.36		2.36
0.83	0.00		1.84		1.84
0.85	0.00		1.31		1.31
0.87	0.00		0.78		0.78
0.88	0.00		0.25		0.25
0.90	0.00		0.11		0.11
0.92	0.00		0.05		0.05

...End



[redacted]

Hyd. No. 31

Add Pond + 3

Hydrograph type	= Combine	Peak discharge	= 38.80 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
1st inflow hyd. No.	= 30	2nd inflow hyd. No.	= 3

Total Volume = 56,923 cuft, 1.307 acft

Hydrograph Discharge Table

Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.02	3.10		0.13		3.23
0.03	6.20		0.27		6.47
0.05	9.30		0.40		9.70
0.07	12.40		0.53		12.93
0.08	15.50		0.67		16.17
0.10	18.60		0.80		19.40
0.12	21.70		0.93		22.63
0.13	24.80		1.07		25.87
0.15	27.90		1.20		29.10
0.17	31.00		1.34		32.33
0.18	34.10		1.47		35.56
0.20	37.20 <<		1.60 <<		38.80 <<
0.22	36.16		1.56		37.72
0.23	35.13		1.51		36.65
0.25	34.10		1.47		35.57
0.27	33.07		1.42		34.50
0.28	32.04		1.38		33.42
0.30	31.01		1.34		32.34
0.32	29.98		1.29		31.27
0.33	28.95		1.25		30.19
0.35	27.92		1.20		29.12
0.37	26.88		1.16		28.04
0.38	25.85		1.11		26.97
0.40	24.82		1.07		25.89
0.42	23.79		1.02		24.81
0.43	22.76		0.98		23.74
0.45	21.73		0.93		22.66
0.47	20.70		0.89		21.59
0.48	19.67		0.85		20.51
0.50	18.64		0.80		19.44
0.52	17.60		0.76		18.36
0.53	16.57		0.71		17.29
0.55	15.54		0.67		16.21
0.57	14.51		0.62		15.13
0.58	13.48		0.58		14.06
0.60	12.45		0.53		12.98
0.62	11.42		0.49		11.91

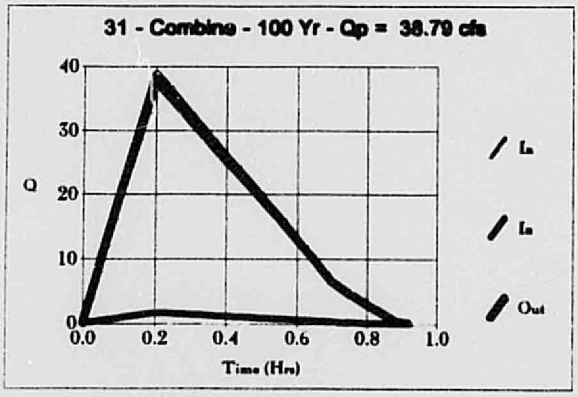
Continues on next page...

[redacted]

Hydrograph Discharge Table

Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.63	10.39		0.45		10.83
0.65	9.36		0.40		9.76
0.67	8.33		0.36		8.68
0.68	7.29		0.31		7.61
0.70	6.26		0.27		6.53
0.72	5.63		0.22		5.86
0.73	5.01		0.18		5.18
0.75	4.48		0.13		4.61
0.77	3.95		0.09		4.04
0.78	3.42		0.04		3.47
0.80	2.89		0.00		2.89
0.82	2.36		0.00		2.36
0.83	1.84		0.00		1.84
0.85	1.31		0.00		1.31
0.87	0.78		0.00		0.78
0.88	0.25		0.00		0.25
0.90	0.11		0.00		0.11
0.92	0.05		0.00		0.05

...End



[redacted]

Hyd. No. 32

Add Pond + 2

Hydrograph type	= Combine	Peak discharge	= 54.09 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
1st inflow hyd. No.	= 31	2nd inflow hyd. No.	= 2

Total Volume = 81,700 cuft, 1.876 acft

Hydrograph Discharge Table

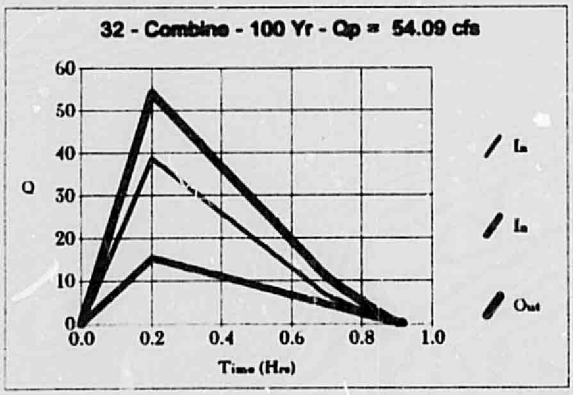
Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.02	3.23		1.27		4.51
0.03	6.47		2.55		9.02
0.05	9.70		3.82		13.52
0.07	12.93		5.10		18.03
0.08	16.17		6.37		22.54
0.10	19.40		7.65		27.05
0.12	22.63		8.92		31.55
0.13	25.87		10.20		36.06
0.15	29.10		11.47		40.57
0.17	32.33		12.75		45.08
0.18	35.56		14.02		49.58
0.20	38.80 <<		15.29 <<		54.09 <<
0.22	37.72		14.93		52.65
0.23	36.65		14.57		51.21
0.25	35.57		14.20		49.77
0.27	34.50		13.84		48.33
0.28	33.42		13.47		46.89
0.30	32.34		13.11		45.45
0.32	31.27		12.75		44.01
0.33	30.19		12.38		42.57
0.35	29.12		12.02		41.13
0.37	28.04		11.65		39.69
0.38	26.97		11.29		38.26
0.40	25.89		10.92		36.82
0.42	24.81		10.56		35.38
0.43	23.74		10.20		33.94
0.45	22.66		9.83		32.50
0.47	21.59		9.47		31.06
0.48	20.51		9.10		29.62
0.50	19.44		8.74		28.18
0.52	18.36		8.38		26.74
0.53	17.29		8.01		25.30
0.55	16.21		7.65		23.86
0.57	15.13		7.28		22.42
0.58	14.06		6.92		20.98
0.60	12.98		6.55		19.54
0.62	11.91		6.19		18.10

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.63	10.83		5.83		16.66
0.65	9.76		5.46		15.22
0.67	8.68		5.10		13.78
0.68	7.61		4.73		12.34
0.70	6.53		4.37		10.90
0.72	5.86		4.01		9.86
0.73	5.18		3.64		8.83
0.75	4.61		3.28		7.89
0.77	4.04		2.91		6.95
0.78	3.47		2.55		6.01
0.80	2.89		2.18		5.08
0.82	2.36		1.82		4.18
0.83	1.84		1.46		3.29
0.85	1.31		1.09		2.40
0.87	0.78		0.73		1.51
0.88	0.25		0.36		0.61
0.90	0.11		0.00		0.11
0.92	0.05		0.00		0.05

...End



[redacted]

Hyd. No. 33

Add Pond + 1

Hydrograph type	= Combine	Peak discharge	= 62.00 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
1st inflow hyd. No.	= 32	2nd inflow hyd. No.	= 1

Total Volume = 92,144 cuft, 2.115 acft

Hydrograph Discharge Table

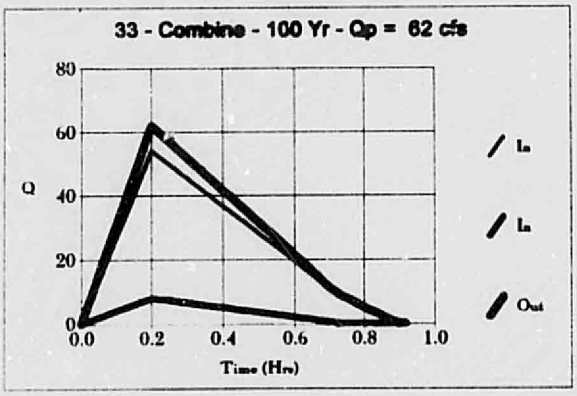
Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.02	4.51		0.66		5.17
0.03	9.02		1.32		10.33
0.05	13.52		1.98		15.50
0.07	18.03		2.64		20.67
0.08	22.54		3.30		25.84
0.10	27.05		3.96		31.00
0.12	31.55		4.62		36.17
0.13	36.06		5.27		41.34
0.15	40.57		5.93		46.50
0.17	45.08		6.59		51.67
0.18	49.58		7.25		56.84
0.20	54.09 <<		7.91 <<		62.00 <<
0.22	52.65		7.66		60.32
0.23	51.21		7.42		58.63
0.25	49.77		7.17		56.94
0.27	48.33		6.92		55.26
0.28	46.89		6.68		53.57
0.30	45.45		6.43		51.88
0.32	44.01		6.18		50.20
0.33	42.57		5.93		48.51
0.35	41.13		5.69		46.82
0.37	39.69		5.44		45.13
0.38	38.26		5.19		43.45
0.40	36.82		4.95		41.76
0.42	35.38		4.70		40.07
0.43	33.94		4.45		38.39
0.45	32.50		4.20		36.70
0.47	31.06		3.96		35.01
0.48	29.62		3.71		33.33
0.50	28.18		3.46		31.64
0.52	26.74		3.21		29.95
0.53	25.30		2.97		28.26
0.55	23.86		2.72		26.58
0.57	22.42		2.47		24.89
0.58	20.98		2.23		23.20
0.60	19.54		1.98		21.52
0.62	18.10		1.73		19.83

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.63	16.66		1.48		18.14
0.65	15.22		1.24		16.46
0.67	13.78		0.99		14.77
0.68	12.34		0.74		13.08
0.70	10.90		0.49		11.39
0.72	9.86		0.25		10.11
0.73	8.83		0.00		8.83
0.75	7.89		0.00		7.89
0.77	6.95		0.00		6.95
0.78	6.01		0.00		6.01
0.80	5.08		0.00		5.08
0.82	4.18		0.00		4.18
0.83	3.29		0.00		3.29
0.85	2.40		0.00		2.40
0.87	1.51		0.00		1.51
0.88	0.61		0.00		0.61
0.90	0.11		0.00		0.11
0.92	0.05		0.00		0.05

...End



[redacted]

Hyd. No. 34

Route Pond 1

Hydrograph type	= Reservoir	Peak discharge	= 14.69 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 33	Reservoir name	= Pond #1
Max. Elevation	= 36.96 ft	Max. Storage	= 69,615 cuft

Storage Indication method used. Total Volume = 82,521 cuft, 1.894 acft

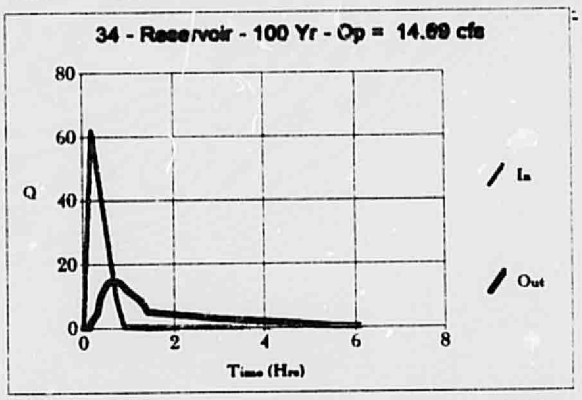
Hydrograph Discharge Table

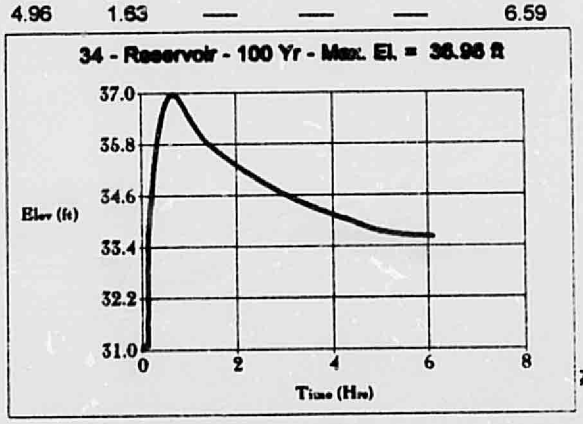
Time (hrs)	Inflow (cfs)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Outflow (cfs)
0.13	41.34	33.63	11.66	0.16	—	—	—	—	0.16
0.15	46.50	33.87	12.38	1.24	—	—	—	—	1.24
0.17	51.67	34.09	13.00	1.76	—	—	—	—	1.76
0.18	56.84	34.27	13.52	2.11	—	—	—	—	2.11
0.20	62.00 <<	34.48	14.06	2.44	—	—	—	—	2.44
0.22	60.32	34.69	14.59	2.79	—	—	—	—	2.79
0.23	58.63	34.89	15.09	3.26	—	—	—	—	3.26
0.25	56.94	35.08	15.52	3.65	—	—	—	—	3.65
0.27	55.26	35.25	15.91	3.93	—	—	—	—	3.93
0.28	53.57	35.41	16.27	4.24	—	—	—	—	4.24
0.30	51.88	35.56	16.60	4.49	—	—	—	—	4.49
0.32	50.20	35.71	16.92	4.72	—	—	—	—	4.72
0.33	48.51	35.85	17.22	4.92	1.04	—	—	—	5.96
0.35	46.82	35.98	17.49	5.11	2.92	—	—	—	8.03
0.37	45.13	36.09	17.72	5.26	3.74	—	—	—	9.00
0.38	43.45	36.19	17.92	5.40	4.36	—	—	—	9.75
0.40	41.76	36.28	18.11	5.52	4.66	—	—	—	10.37
0.42	40.07	36.37	18.28	5.63	5.28	—	—	—	10.91
0.43	38.39	36.45	18.44	5.73	5.64	—	—	—	11.37
0.45	36.70	36.52	18.58	5.82	6.00	—	—	—	11.83
0.47	35.01	36.59	18.72	5.91	6.41	—	—	—	12.32
0.48	33.33	36.65	18.84	5.98	6.85	—	—	—	12.83
0.50	31.64	36.71	18.94	6.05	7.24	—	—	—	13.29
0.52	29.95	36.76	19.04	6.09	7.57	—	—	—	13.66
0.53	28.26	36.80	19.12	6.13	7.86	—	—	—	13.99
0.55	26.58	36.84	19.19	6.05	8.09	—	—	—	14.14
0.57	24.89	36.87	19.26	5.98	8.29	—	—	—	14.27
0.58	23.20	36.90	19.31	5.92	8.46	—	—	—	14.38
0.60	21.52	36.92	19.35	5.90	8.59	—	—	—	14.49
0.62	19.83	36.94	19.38	5.89	8.69	—	—	—	14.58
0.63	18.14	36.95	19.41	5.88	8.76	—	—	—	14.64
0.65	16.46	36.96	19.42	5.88	8.80	—	—	—	14.68
0.67	14.77	36.96	19.43	5.88	8.82	—	—	—	14.69 <<
0.68	13.08	36.96	19.42	5.88	8.80	—	—	—	14.68
0.70	11.39	36.96	19.41	5.88	8.76	—	—	—	14.65
0.72	10.11	36.94	19.39	5.89	8.70	—	—	—	14.59
0.73	8.83	36.93	19.36	5.90	8.62	—	—	—	14.52

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Outflow (cfs)
0.75	7.89	36.91	19.33	5.91	8.52	—	—	—	14.43
0.77	6.95	36.89	19.29	5.93	8.40	—	—	—	14.34
0.78	6.01	36.87	19.25	5.98	8.27	—	—	—	14.25
0.80	5.08	36.84	19.20	6.04	8.12	—	—	—	14.15
0.82	4.18	36.82	19.15	6.10	7.95	—	—	—	14.05
0.83	3.29	36.79	19.10	6.12	7.77	—	—	—	13.89
0.85	2.40	36.76	19.04	6.09	7.56	—	—	—	13.66
0.87	1.51	36.72	18.97	6.06	7.35	—	—	—	13.41
0.88	0.61	36.69	18.91	6.02	7.11	—	—	—	13.13
0.90	0.11	36.65	18.84	5.98	6.85	—	—	—	12.93
0.92	0.05	36.62	18.77	5.94	6.59	—	—	—	12.52
0.93	0.00	36.58	18.70	5.89	6.35	—	—	—	12.25
0.95	0.00	36.55	18.63	5.85	6.15	—	—	—	12.00
0.97	0.00	36.51	18.56	5.81	5.94	—	—	—	11.75
0.98	0.00	36.48	18.50	5.77	5.78	—	—	—	11.55
1.00	0.00	36.45	18.43	5.73	5.63	—	—	—	11.36
1.02	0.00	36.41	18.37	5.69	5.49	—	—	—	11.18
1.03	0.00	36.38	18.31	5.65	5.35	—	—	—	10.99
1.05	0.00	36.35	18.25						
1.07	0.00	36.32	18.18						
1.08	0.00	36.29	18.12						
1.10	0.00	36.26	18.06						
1.12	0.00	36.23	18.01						
1.13	0.00	36.20	17.95						
1.15	0.00	36.17	17.89						
1.17	0.00	36.15	17.84						
1.18	0.00	36.12	17.78						
1.20	0.00	36.09	17.73						
1.22	0.00	36.07	17.68						
1.23	0.00	36.04	17.62						
1.25	0.00	36.02	17.57						
1.27	0.00	35.99	17.52						
1.28	0.00	35.97	17.47						
1.30	0.00	35.94	17.42						
1.32	0.00	35.92	17.37						
1.33	0.00	35.89	17.32	4.99	2.11	—	—	—	7.10
1.35	0.00	35.87	17.28	4.96	1.63	—	—	—	6.59
1.37	0.00	35.85	17.23						
1.38	0.00	35.83	17.19						
1.40	0.00	35.82	17.16						
1.42	0.00	35.80	17.12						
1.43	0.00	35.79	17.09						
1.45	0.00	35.77	17.06						
1.47	0.00	35.75	17.03						
1.48	0.00	35.74	16.99						
1.50	0.00	35.72	16.96						
1.52	0.00	35.71	16.93						
1.53	0.00	35.69	16.90						
1.55	0.00	35.68	16.87						
1.57	0.00	35.66	16.83						





Reservoir Report

Reservoir No. 1

Pond #1

Culvert / Orifice Structures

		[A]	[B]	[C]
Rise (in)	=	18.0	12.0	9.0
Span (in)	=	18.0	12.0	9.0
No. Barrels	=	1	1	4
Invert El. (ft)	=	31.00	33.65	35.80
Length (ft)	=	100.0	0.0	0.0
Slope (%)	=	0.05	0.00	0.00
N-Value	=	.013	.013	.013
Orif. Coeff.	=	0.60	0.60	0.70
Multi-Stage	=	—	Yes	Yes

Weir Structures

		[A]	[B]	[C]
Crest Len (ft)	=	15.0	0.0	0.0
Crest El. (ft)	=	38.60	0.00	0.00
Weir Coeff.	=	2.60	3.00	3.00
Eqn. Exp.	=	1.50	1.50	1.50
Multi-Stage	=	No	No	No

Tailwater Elevation = 0.00 ft

Note: All outflows have been analyzed under inlet and outlet control.

Stage / Storage / Discharge Table

Stage (ft)	Storage (cuft)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Discharge (cfs)
0.0	00	31.00	0.00	0.00	0.00	0.00	—	—	0.00
0.1	04	31.10	1.65	0.00	0.00	0.00	—	—	0.00
0.2	07	31.20	2.69	0.00	0.00	0.00	—	—	0.00
0.3	11	31.30	3.30	0.00	0.00	0.00	—	—	0.00
0.4	14	31.40	3.81	0.00	0.00	0.00	—	—	0.00
0.5	18	31.50	4.25	0.00	0.00	0.00	—	—	0.00
0.6	22	31.60	4.66	0.00	0.00	0.00	—	—	0.00
0.7	25	31.70	5.03	0.00	0.00	0.00	—	—	0.00
0.8	29	31.80	5.38	0.00	0.00	0.00	—	—	0.00
0.9	32	31.90	5.71	0.00	0.00	0.00	—	—	0.00
1.0	36	32.00	6.02	0.00	0.00	0.00	—	—	0.00
1.1	346	32.10	6.31	0.00	0.00	0.00	—	—	0.00
1.2	657	32.20	6.59	0.00	0.00	0.00	—	—	0.00
1.3	967	32.30	6.86	0.00	0.00	0.00	—	—	0.00
1.4	1,278	32.40	7.12	0.00	0.00	0.00	—	—	0.00
1.5	1,588	32.50	7.37	0.00	0.00	0.00	—	—	0.00
1.6	1,898	32.60	7.84	0.00	0.00	0.00	—	—	0.00
1.7	2,209	32.70	8.29	0.00	0.00	0.00	—	—	0.00
1.8	2,519	32.80	8.72	0.00	0.00	0.00	—	—	0.00
1.9	2,830	32.90	9.12	0.00	0.00	0.00	—	—	0.00
2.0	3,140	33.00	9.51	0.00	0.00	0.00	—	—	0.00
2.1	4,221	33.10	9.89	0.00	0.00	0.00	—	—	0.00
2.2	5,301	33.20	10.24	0.00	0.00	0.00	—	—	0.00
2.3	6,382	33.30	10.59	0.00	0.00	0.00	—	—	0.00
2.4	7,462	33.40	10.93	0.00	0.00	0.00	—	—	0.00

Continues on next page...

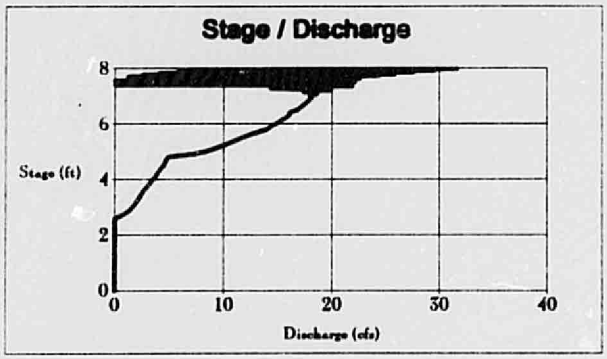
Stage / Storage / Discharge Table

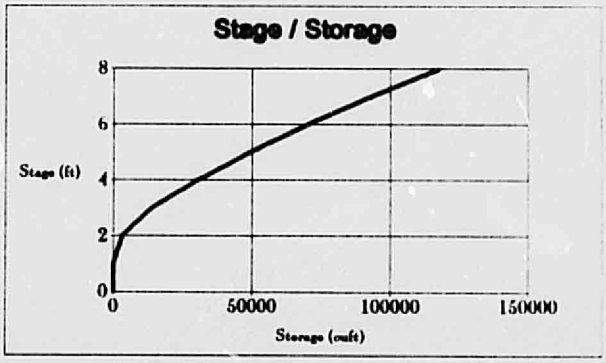
Stage (ft)	Storage (cuft)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Discharge (cfs)
2.5	8,543	33.50	11.25	0.00	0.00	0.00	—	—	0.00
2.6	9,623	33.60	11.57	0.00	0.00	0.00	—	—	0.00
2.7	10,704	33.70	11.88	0.60	0.00	0.00	—	—	0.60
2.8	11,784	33.80	12.18	1.04	0.00	0.00	—	—	1.04
2.9	12,865	33.90	12.47	1.34	0.00	0.00	—	—	1.34
3.0	13,945	34.00	12.76	1.58	0.00	0.00	—	—	1.58
3.1	15,608	34.10	13.04	1.79	0.00	0.00	—	—	1.79
3.2	17,272	34.20	13.32	1.98	0.00	0.00	—	—	1.98
3.3	18,935	34.30	13.59	2.16	0.00	0.00	—	—	2.16
3.4	20,599	34.40	13.85	2.32	0.00	0.00	—	—	2.32
3.5	22,262	34.50	14.11	2.47	0.00	0.00	—	—	2.47
3.6	23,925	34.60	14.36	2.61	0.00	0.00	—	—	2.61
3.7	25,589	34.70	14.61	2.80	0.00	0.00	—	—	2.80
3.8	27,252	34.80	14.86	3.05	0.00	0.00	—	—	3.05
3.9	28,916	34.90	15.10	3.27	0.00	0.00	—	—	3.27
4.0	30,579	35.00	15.34	3.49	0.00	0.00	—	—	3.49
4.1	32,469	35.10	15.57	3.69	0.00	0.00	—	—	3.69
4.2	34,359	35.20	15.80	3.82	0.00	0.00	—	—	3.82
4.3	36,248	35.30	16.03	4.05	0.00	0.00	—	—	4.05
4.4	38,138	35.40	16.25	4.23	0.00	0.00	—	—	4.23
4.5	40,028	35.50	16.48	4.39	0.00	0.00	—	—	4.39
4.6	41,918	35.60	16.69	4.55	0.00	0.00	—	—	4.55
4.7	43,808	35.70	16.91	4.71	0.00	0.00	—	—	4.71
4.8	45,697	35.80	17.12	4.86	0.00	0.00	—	—	4.86
4.9	47,587	35.90	17.33	5.00	2.22	0.00	—	—	7.22
5.0	49,477	36.00	17.54	5.14	3.14	0.00	—	—	8.28
5.1	51,565	36.10	17.74	5.28	3.84	0.00	—	—	9.12
5.2	53,653	36.20	17.95	5.41	4.44	0.00	—	—	9.85
5.3	55,741	36.30	18.15	5.54	4.96	0.00	—	—	10.51
5.4	57,829	36.40	18.35	5.67	5.44	0.00	—	—	11.11
5.5	59,916	36.50	18.54	5.80	5.87	0.00	—	—	11.67
5.6	62,004	36.60	18.74	5.92	6.47	0.00	—	—	12.39
5.7	64,092	36.70	18.93	6.04	7.19	0.00	—	—	13.23
5.8	66,180	36.80	19.12	6.13	7.85	0.00	—	—	13.98
5.9	68,268	36.90	19.31	5.92	8.45	0.00	—	—	14.37
6.0	70,356	37.00	19.49	5.85	9.02	0.00	—	—	14.87
6.1	72,643	37.10	19.68	5.73	9.55	0.00	—	—	15.27
6.2	74,930	37.20	19.86	5.64	10.05	0.00	—	—	15.69
6.3	77,218	37.30	20.04	5.54	10.53	0.00	—	—	16.07
6.4	79,505	37.40	20.22	5.46	10.67	0.00	—	—	16.13
6.5	81,792	37.50	20.40	5.55	11.28	0.00	—	—	16.84
6.6	84,079	37.60	20.58	5.26	11.85	0.00	—	—	17.11
6.7	86,366	37.70	20.75	5.22	12.26	0.00	—	—	17.48
6.8	88,654	37.80	20.93	5.11	12.65	0.00	—	—	17.77
6.9	90,941	37.90	21.10	5.06	13.04	0.00	—	—	18.09
7.0	93,228	38.00	21.27	4.97	13.04	0.00	—	—	18.01
7.1	94,953	38.07	21.39	5.13	13.45	0.00	—	—	18.58
7.1	96,677	38.14	21.51	4.81	12.64	0.00	—	—	17.45
7.2	98,402	38.21	21.62	5.68	14.16	0.00	—	—	19.84
7.3	100,126	38.28	21.74	3.96	10.38	0.00	—	—	14.34

Continues on next page...

Stage / Storage / Discharge Table

Stage (ft)	Storage (cuft)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Discharge (cfs)
7.4	101,851	38.35	21.86	7.33	14.64	0.00	—	—	21.86
7.4	103,575	38.42	21.97	0.00	0.00	0.00	—	—	0.00
7.5	105,300	38.49	22.09	7.88	15.10	0.00	—	—	22.09
7.6	107,024	38.56	22.20	0.00	0.00	0.00	—	—	0.00
7.6	108,749	38.63	22.32	8.00	15.55	0.20	—	—	22.52
7.7	110,473	38.70	22.43	0.00	0.00	1.23	—	—	1.23
7.7	111,243	38.73	22.48	8.09	15.87	1.83	—	—	24.31
7.8	112,012	38.76	22.53	0.00	0.00	2.50	—	—	2.50
7.8	112,782	38.79	22.57	8.14	16.05	3.23	—	—	25.80
7.8	113,552	38.82	22.62	0.00	0.00	4.02	—	—	4.02
7.9	114,322	38.85	22.67	8.20	16.23	4.87	—	—	27.54
7.9	115,091	38.88	22.72	0.00	0.00	5.78	—	—	5.78
7.9	115,861	38.91	22.77	8.25	16.41	6.73	—	—	29.50
7.9	116,631	38.94	22.81	0.00	0.00	7.73	—	—	7.73
8.0	117,400	38.97	22.86	8.30	16.59	8.78	—	—	31.64
8.0	118,170	39.00	22.91	0.00	0.00	9.87	—	—	9.87

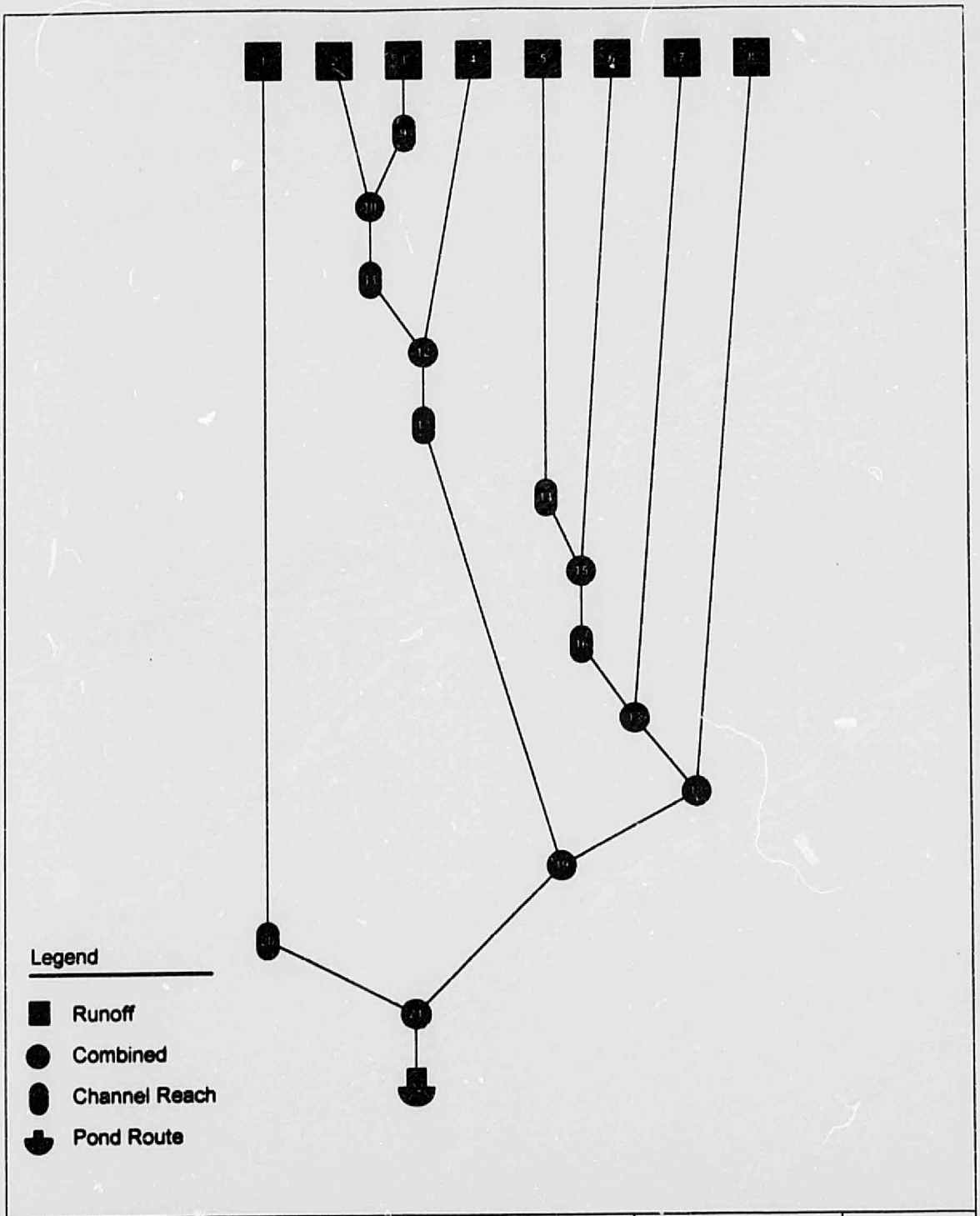




Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (acft)	Return period (yrs)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	Manual	14.7	1	40	1.89	100	—	—	—	Route Pond 1
2	Rational	1.9	1	12	0.07	100	—	—	—	Basin #10
3	Rational	2.1	1	12	0.07	100	—	—	—	Basin #11
4	Rational	1.6	1	12	0.05	100	—	—	—	Basin #15
5	Rational	4.3	1	12	0.16	100	—	—	—	Basin #12
6	Rational	3.5	1	12	0.12	100	—	—	—	Basin #13
7	Rational	5.5	1	12	0.19	100	—	—	—	Basin #14
8	Rational	13.3	1	12	0.38	100	—	—	—	Basin #16
9	Reach	2.1	1	12	0.07	100	3	—	—	Basin 11SS
10	Combine	4.0	1	12	0.14	100	2 + 9	—	—	Add 10+11
11	Reach	4.0	1	12	0.14	100	10	—	—	Route SS
12	Combine	5.6	1	12	0.19	100	4 + 11	—	—	Add Basin 15
13	Reach	5.4	1	14	0.19	100	12	—	—	Route Channel
14	Reach	4.3	1	12	0.15	100	5	—	—	Basin 12 Chann
15	Combine	7.8	1	12	0.27	100	14 + 6	—	—	Basin 13
16	Reach	7.6	1	14	0.27	100	15	—	—	Channel
17	Combine	12.9	1	13	0.46	100	7 + 16	—	—	Add Basin 14
18	Combine	25.8	1	13	0.84	100	8 + 17	—	—	Add to Pond 2
19	Combine	31.2	1	13	1.04	100	13 + 18	—	—	Add to Pond 2
20	Reach	14.7	1	41	1.88	100	1	—	—	Pond 1 Outlet
21	Combine	33.6	1	13	2.92	100	19 + 20	—	—	Pond 1+Pond 2
22	Reservoir	0.7	1	305	0.90	100	21	18.34	118467	Pond 2 Route

Proj. file: HYDRO2.GPW	IDF file: COAWSAT.IDF	Run date: 06-23-1996



Proj. file: HYDRO2.GPW	IDF file: COAWSAT.IDF	22 hydrographs	06-23-1996

25×10

Hydrograph Report

Hyd. No. 1

Route Pond 1

Hydrograph type = Manual
Storm frequency = 100 yrs

Peak discharge = 14.69 cfs
Time interval = 1 min

Total Volume = 82,521 cuft, 1.894 acft

Hydrograph Discharge Table

Time – Outflow (hrs cfs)		Time – Outflow (hrs cfs)		Time – Outflow (hrs cfs)		Time – Outflow (hrs cfs)	
0.13	0.16	0.68	14.68	1.23	8.63	1.78	4.36
0.15	1.24	0.70	14.65	1.25	8.42	1.80	4.34
0.17	1.76	0.72	14.59	1.27	8.20	1.82	4.31
0.18	2.11	0.73	14.52	1.28	7.93	1.83	4.29
0.20	2.44	0.75	14.43	1.30	7.67	1.85	4.27
0.22	2.79	0.77	14.34	1.32	7.41	1.87	4.25
0.23	3.26	0.78	14.25	1.33	7.10	1.88	4.22
0.25	3.65	0.80	14.15	1.35	6.59	1.90	4.20
0.27	3.93	0.82	14.05	1.37	6.11	1.92	4.18
0.28	4.24	0.83	13.89	1.38	5.67	1.93	4.15
0.30	4.49	0.85	13.66	1.40	5.26	1.95	4.13
0.32	4.72	0.87	13.41	1.42	4.88	1.97	4.11
0.33	5.96	0.88	13.13	1.43	4.84	1.98	4.09
0.35	8.03	0.90	12.83	1.45	4.81	2.00	4.06
0.37	9.00	0.92	12.52	1.47	4.79	2.02	4.04
0.38	9.75	0.93	12.25	1.48	4.77	2.03	4.01
0.40	10.37	0.95	12.00	1.50	4.74	2.05	3.98
0.42	10.91	0.97	11.75	1.52	4.72	2.07	3.95
0.43	11.37	0.98	11.55	1.53	4.70	2.08	3.92
0.45	11.83	1.00	11.36	1.55	4.68	2.10	3.89
0.47	12.32	1.02	11.18	1.57	4.65	2.12	3.86
0.48	12.83	1.03	10.99	1.58	4.63	2.13	3.83
0.50	13.29	1.05	10.81	1.60	4.61	2.15	3.81
0.52	13.66	1.07	10.62	1.62	4.59	2.17	3.79
0.53	13.99	1.08	10.43	1.63	4.56	2.18	3.78
0.55	14.14	1.10	10.24	1.65	4.54	2.20	3.76
0.57	14.27	1.12	10.05	1.67	4.52	2.22	3.74
0.58	14.38	1.13	9.86	1.68	4.49	2.23	3.73
0.60	14.49	1.15	9.66	1.70	4.47	2.25	3.71
0.62	14.58	1.17	9.46	1.72	4.45	2.27	3.70
0.63	14.64	1.18	9.26	1.73	4.43	2.28	3.68
0.65	14.68	1.20	9.06	1.75	4.40	2.30	3.66
0.67	14.69 <<	1.22	8.84	1.77	4.38	2.32	3.63

Continues on next page...

Hydrograph Discharge Table

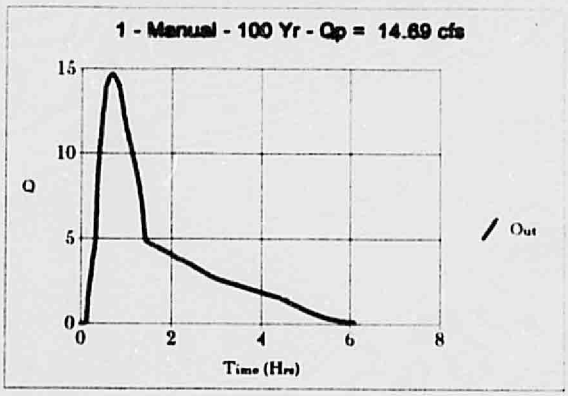
Time (hrs	Outflow cfs)	Time (hrs	Outflow cfs)	Time (hrs	Outflow cfs)	Time (hrs	Outflow cfs)
2.33	3.61	3.17	2.51	4.00	1.86	4.83	1.02
2.35	3.59	3.18	2.49	4.02	1.85	4.85	1.00
2.37	3.57	3.20	2.48	4.03	1.84	4.87	0.97
2.38	3.54	3.22	2.47	4.05	1.82	4.88	0.95
2.40	3.52	3.23	2.46	4.07	1.81	4.90	0.93
2.42	3.50	3.25	2.44	4.08	1.80	4.92	0.90
2.43	3.48	3.27	2.43	4.10	1.78	4.93	0.88
2.45	3.45	3.28	2.42	4.12	1.77	4.95	0.86
2.47	3.42	3.30	2.40	4.13	1.76	4.97	0.84
2.48	3.40	3.32	2.39	4.15	1.74	4.98	0.82
2.50	3.37	3.33	2.38	4.17	1.73	5.00	0.80
2.52	3.35	3.35	2.36	4.18	1.72	5.02	0.78
2.53	3.32	3.37	2.35	4.20	1.70	5.03	0.76
2.55	3.29	3.38	2.34	4.22	1.69	5.05	0.74
2.57	3.27	3.40	2.33	4.23	1.68	5.07	0.73
2.58	3.24	3.42	2.31	4.25	1.67	5.08	0.71
2.60	3.22	3.43	2.30	4.27	1.65	5.10	0.69
2.62	3.19	3.45	2.29	4.28	1.64	5.12	0.68
2.63	3.16	3.47	2.27	4.30	1.63	5.13	0.66
2.65	3.14	3.48	2.26	4.32	1.62	5.15	0.64
2.67	3.11	3.50	2.25	4.33	1.60	5.17	0.63
2.68	3.09	3.52	2.23	4.35	1.59	5.18	0.61
2.70	3.06	3.53	2.22	4.37	1.58	5.20	0.60
2.72	3.04	3.55	2.21	4.38	1.56	5.22	0.58
2.73	3.01	3.57	2.20	4.40	1.54	5.23	0.56
2.75	2.98	3.58	2.18	4.42	1.51	5.25	0.54
2.77	2.96	3.60	2.17	4.43	1.49	5.27	0.52
2.78	2.93	3.62	2.16	4.45	1.47	5.28	0.51
2.80	2.91	3.63	2.15	4.47	1.45	5.30	0.49
2.82	2.88	3.65	2.13	4.48	1.43	5.32	0.47
2.83	2.86	3.67	2.12	4.50	1.41	5.33	0.46
2.85	2.83	3.68	2.11	4.52	1.40	5.35	0.44
2.87	2.81	3.70	2.09	4.53	1.38	5.37	0.43
2.88	2.79	3.72	2.08	4.55	1.36	5.38	0.42
2.90	2.77	3.73	2.07	4.57	1.34	5.40	0.40
2.92	2.75	3.75	2.05	4.58	1.32	5.42	0.39
2.93	2.73	3.77	2.04	4.60	1.30	5.43	0.38
2.95	2.71	3.78	2.03	4.62	1.27	5.45	0.36
2.97	2.69	3.80	2.02	4.63	1.25	5.47	0.35
2.98	2.67	3.82	2.00	4.65	1.23	5.48	0.34
3.00	2.65	3.83	1.99	4.67	1.21	5.50	0.33
3.02	2.63	3.85	1.98	4.68	1.19	5.52	0.32
3.03	2.61	3.87	1.96	4.70	1.17	5.53	0.31
3.05	2.60	3.88	1.95	4.72	1.15	5.55	0.30
3.07	2.58	3.90	1.94	4.73	1.13	5.57	0.29
3.08	2.57	3.92	1.93	4.75	1.12	5.58	0.28
3.10	2.56	3.93	1.91	4.77	1.10	5.60	0.27
3.12	2.54	3.95	1.90	4.78	1.08	5.62	0.26
3.13	2.53	3.97	1.89	4.80	1.06	5.63	0.25
3.15	2.52	3.98	1.87	4.82	1.04	5.65	0.24

Continues on next page...

[redacted]

Hydrograph Discharge Table

Time – Outflow (hrs	cfs)	Time – Outflow (hrs	cfs)
5.67	0.24	6.50	0.04
5.68	0.23	6.52	0.04
5.70	0.22	6.53	0.04
5.72	0.21	6.55	0.04
5.73	0.21	6.57	0.04
5.75	0.20	6.58	0.04
5.77	0.19	6.60	0.04
5.78	0.19	6.62	0.04
5.80	0.18	6.63	0.03
5.82	0.18	6.65	0.03
5.83	0.17	6.67	0.03
5.85	0.16	6.68	0.03
5.87	0.16	6.70	0.03
5.88	0.15	6.72	0.03
5.90	0.15	6.73	0.03
5.92	0.14	6.75	0.03
5.93	0.14	6.77	0.03
5.95	0.13	6.78	0.03
5.97	0.13	6.80	0.02
5.98	0.13	6.82	0.02
6.00	0.12	6.83	0.02
6.02	0.12	6.85	0.02
6.03	0.11	6.87	0.02
6.05	0.11	6.88	0.02
6.07	0.11	6.90	0.02
6.08	0.10	6.92	0.02
6.10	0.10	6.93	0.02
6.12	0.10	6.95	0.02
6.13	0.09	6.97	0.02
6.15	0.09	6.98	0.02
6.17	0.09	7.00	0.02
6.18	0.08	7.02	0.02
6.20	0.08	7.03	0.02
6.22	0.08	7.05	0.02
6.23	0.08	7.07	0.01
6.25	0.07	7.08	0.01
6.27	0.07	7.10	0.01
6.28	0.07	7.12	0.01
6.30	0.07	7.13	0.01
6.32	0.06	7.15	0.01
6.33	0.06	7.17	0.01
6.35	0.06	7.18	0.01
6.37	0.06	7.20	0.01
6.38	0.06	7.22	0.01
6.40	0.05	7.23	0.01
6.42	0.05	7.25	0.01
6.43	0.05		
6.45	0.05		
6.47	0.05	...End	
6.48	0.05		



[redacted]

Hyd. No. 2

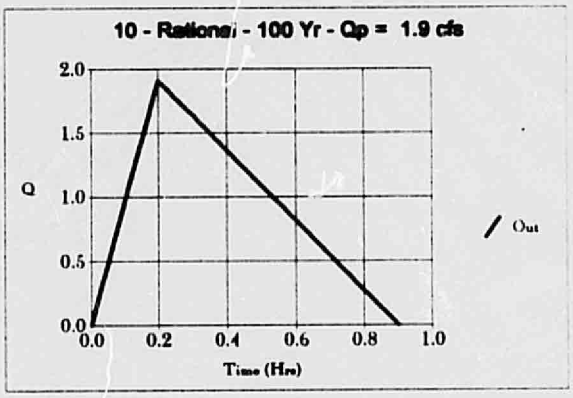
Basin #10

Hydrograph type	= Rational	Peak discharge	= 1.91 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= .47 ac	Runoff coeff.	= .71
Intensity	= 5.71 in/hr	Time of conc. (Tc)	= 12 min
I-D-F Curve	= COAWSAT.IDF	Reced. limb factor	= 3.5

Total Volume = 3,068 cuft, 0.071 acft

Hydrograph Discharge Table

Time (hrs	Outflow cfs)	Time (hrs	Outflow cfs)
0.02	0.16	0.57	0.91
0.03	0.32	0.58	0.86
0.05	0.48	0.60	0.82
0.07	0.64	0.62	0.77
0.08	0.79	0.63	0.73
0.10	0.95	0.65	0.68
0.12	1.11	0.67	0.64
0.13	1.27	0.68	0.59
0.15	1.43	0.70	0.54
0.17	1.59	0.72	0.50
0.18	1.75	0.73	0.45
0.20	1.91 <<	0.75	0.41
0.22	1.86	0.77	0.36
0.23	1.82	0.78	0.32
0.25	1.77	0.80	0.27
0.27	1.72	0.82	0.23
0.28	1.68	0.83	0.18
0.30	1.63	0.85	0.14
0.32	1.59	0.87	0.09
0.33	1.54	0.88	0.05
0.35	1.50		
0.37	1.45		
0.38	1.41	-	...*End*
0.40	1.36		
0.42	1.32		
0.43	1.27		
0.45	1.23		
0.47	1.18		
0.48	1.13		
0.50	1.09		
0.52	1.04		
0.53	1.00		
0.55	0.95		



[redacted]

Hyd. No. 3

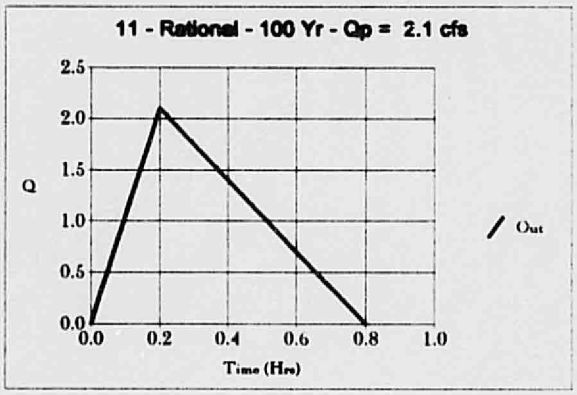
Basin #11

Hydrograph type	= Rational	Peak discharge	= 2.10 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 1.6 ac	Runoff coeff.	= .23
Intensity	= 5.71 in/hr	Time of conc. (Tc)	= 12 min
I-D-F Curve	= COAWSAT.IDF	Receding limb factor	= 3

Total Volume = 3,027 cuft, 0.069 acft

Hydrograph Discharge Table

Time (hrs	Outflow cfs)	Time (hrs	Outflow cfs)
0.02	0.18	0.57	0.82
0.03	0.35	0.58	0.76
0.05	0.53	0.60	0.70
0.07	0.70	0.62	0.64
0.08	0.88	0.63	0.58
0.10	1.05	0.65	0.53
0.12	1.23	0.67	0.47
0.13	1.40	0.68	0.41
0.15	1.58	0.70	0.35
0.17	1.75	0.72	0.29
0.18	1.93	0.73	0.23
0.20	2.10 <<	0.75	0.18
0.22	2.04	0.77	0.12
0.23	1.99	0.78	0.06
0.25	1.93		
0.27	1.87		
0.28	1.81	...End	
0.30	1.75		
0.32	1.69		
0.33	1.64		
0.35	1.58		
0.37	1.52		
0.38	1.46		
0.40	1.40		
0.42	1.34		
0.43	1.28		
0.45	1.23		
0.47	1.17		
0.48	1.11		
0.50	1.05		
0.52	0.99		
0.53	0.93		
0.55	0.88		



[redacted]

Hyd. No. 4

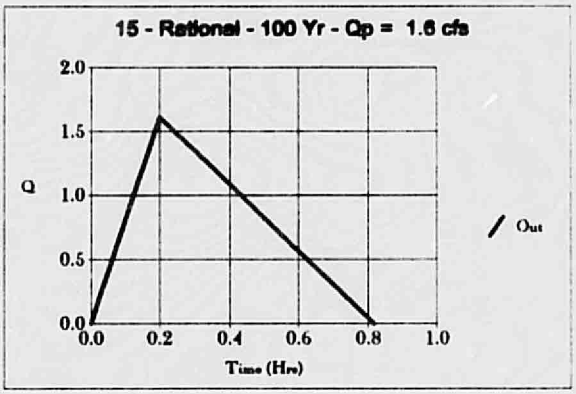
Basin #15

Hydrograph type	= Rational	Peak discharge	= 1.61 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 1.24 ac	Runoff coeff.	= .227
Intensity	= 5.71 in/hr	Time of conc. (Tc)	= 12 min
I-D-F Curve	= COAWSAT.IDF	Reced. limb factor	= 3.1

Total Volume = 2,373 cuft, 0.054 acft

Hydrograph Discharge Table

Time – Outflow (hrs cfs)		Time – Outflow (hrs cfs)	
0.02	0.13	0.57	0.65
0.03	0.27	0.58	0.61
0.05	0.40	0.60	0.56
0.07	0.54	0.62	0.52
0.08	0.67	0.63	0.48
0.10	0.80	0.65	0.43
0.12	0.94	0.67	0.39
0.13	1.07	0.68	0.35
0.15	1.21	0.70	0.30
0.17	1.34	0.72	0.26
0.18	1.47	0.73	0.22
0.20	1.61 <<	0.75	0.17
0.22	1.56	0.77	0.13
0.23	1.52	0.78	0.09
0.25	1.48	0.80	0.04
0.27	1.43		
0.28	1.39		
0.30	1.35	...*End*	
0.32	1.30		
0.33	1.26		
0.35	1.22		
0.37	1.17		
0.38	1.13		
0.40	1.09		
0.42	1.04		
0.43	1.00		
0.45	0.96		
0.47	0.91		
0.48	0.87		
0.50	0.83		
0.52	0.78		
0.53	0.74		
0.55	0.70		



[redacted]

Hyd. No. 5

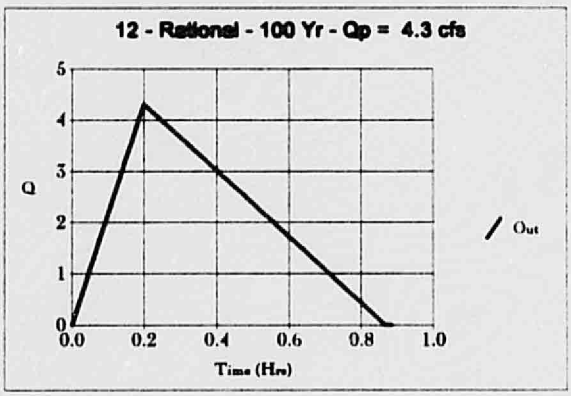
Basin #12

Hydrograph type	= Rational	Peak discharge	= 4.31 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 1.77 ac	Runoff coeff.	= .426
Intensity	= 5.71 in/hr	Time of conc. (Tc)	= 12 min
I-D-F Curve	= COAWSAT.IDF	Reced. limb factor	= 3.4

Total Volume = 6,823 cuft, 0.157 acft

Hydrograph Discharge Table

Time -- Outflow (hrs cfs)		Time -- Outflow (hrs cfs)	
0.02	0.36	0.57	1.94
0.03	0.72	0.58	1.83
0.05	1.08	0.60	1.72
0.07	1.44	0.62	1.62
0.08	1.79	0.63	1.51
0.10	2.15	0.65	1.40
0.12	2.51	0.67	1.29
0.13	2.87	0.68	1.18
0.15	3.23	0.70	1.08
0.17	3.59	0.72	0.97
0.18	3.95	0.73	0.86
0.20	4.31 <<	0.75	0.75
0.22	4.20	0.77	0.65
0.23	4.09	0.78	0.54
0.25	3.98	0.80	0.43
0.27	3.88	0.82	0.32
0.28	3.77	0.83	0.22
0.30	3.66	0.85	0.11
0.32	3.55		
0.33	3.45		
0.35	3.34	...*End*	
0.37	3.23		
0.38	3.12		
0.40	3.02		
0.42	2.91		
0.43	2.80		
0.45	2.69		
0.47	2.58		
0.48	2.48		
0.50	2.37		
0.52	2.26		
0.53	2.15		
0.55	2.05		



[redacted]

Hyd. No. 6

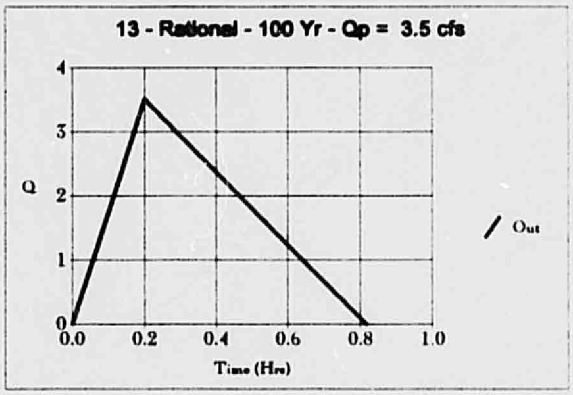
Basin #13

Hydrograph type	= Rational	Peak discharge	= 3.51 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 1.38 ac	Runoff coeff.	= .445
Intensity	= 5.71 in/hr	Time of conc. (Tc)	= 12 min
I-D-F Curve	= COAWSAT.IDF	Reced. limb factor	= 3.1

Total Volume = 5,178 cuft, 0.119 acft

Hydrograph Discharge Table

Time (hrs	Outflow cfs)	Time (hrs	Outflow cfs)
0.02	0.29	0.57	1.42
0.03	0.58	0.58	1.33
0.05	0.88	0.60	1.23
0.07	1.17	0.62	1.14
0.08	1.46	0.63	1.04
0.10	1.75	0.65	0.95
0.12	2.05	0.67	0.85
0.13	2.34	0.68	0.76
0.15	2.63	0.70	0.66
0.17	2.92	0.72	0.57
0.18	3.22	0.73	0.47
0.20	3.51 <<	0.75	0.38
0.22	3.41	0.77	0.28
0.23	3.32	0.78	0.19
0.25	3.22	0.80	0.09
0.27	3.13		
0.28	3.03		
0.30	2.94	*...End*	
0.32	2.84		
0.33	2.75		
0.35	2.65		
0.37	2.56		
0.38	2.47		
0.40	2.37		
0.42	2.28		
0.43	2.18		
0.45	2.09		
0.47	1.99		
0.48	1.90		
0.50	1.80		
0.52	1.71		
0.53	1.61		
0.55	1.52		



[redacted]

Hyd. No. 7

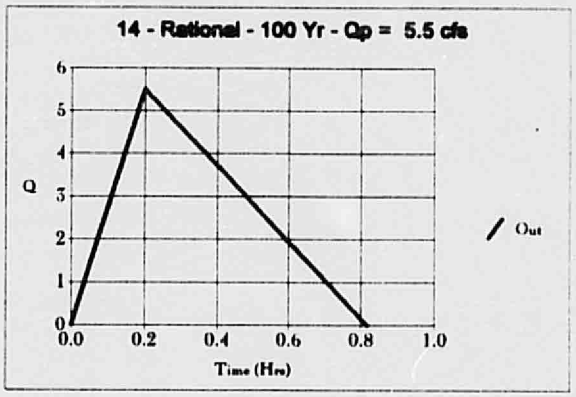
Basin #14

Hydrograph type	= Rational	Peak discharge	= 5.51 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 1.96 ac	Runoff coeff.	= .492
Intensity	= 5.71 in/hr	Time of conc. (Tc)	= 12 min
I-D-F Curve	= COAWSAT.IDF	Reced. limb factor	= 3.1

Total Volume = 8,131 cuft, 0.187 acft

Hydrograph Discharge Table

Time – Outflow (hrs	cfs)	Time – Outflow (hrs	cfs)
0.02	0.46	0.57	2.23
0.03	0.92	0.58	2.08
0.05	1.38	0.60	1.94
0.07	1.84	0.62	1.79
0.08	2.30	0.63	1.64
0.10	2.75	0.65	1.49
0.12	3.21	0.67	1.34
0.13	3.67	0.68	1.19
0.15	4.13	0.70	1.04
0.17	4.59	0.72	0.89
0.18	5.05	0.73	0.74
0.20	5.51 <<	0.75	0.60
0.22	5.36	0.77	0.45
0.23	5.21	0.78	0.30
0.25	5.06	0.80	0.15
0.27	4.91		
0.28	4.76		
0.30	4.62	...End	
0.32	4.47		
0.33	4.32		
0.35	4.17		
0.37	4.02		
0.38	3.87		
0.40	3.72		
0.42	3.57		
0.43	3.42		
0.45	3.28		
0.47	3.13		
0.48	2.98		
0.50	2.83		
0.52	2.68		
0.53	2.53		
0.55	2.38		



[redacted]

Hyd. No. 8

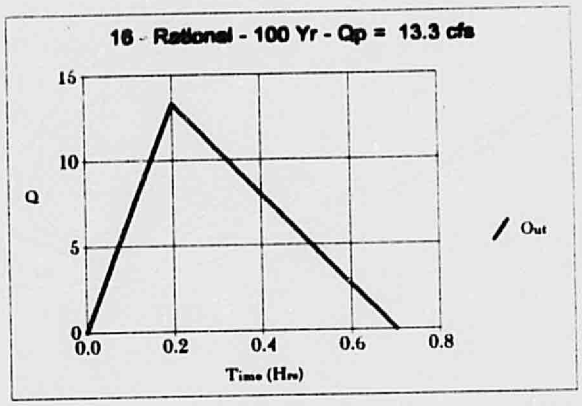
Basin #16

Hydrograph type	= Rational	Peak discharge	= 13.31 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 5 ac	Runoff coeff.	= .466
Intensity	= 5.71 in/hr	Time of conc. (Tc)	= 12 min
I-D-F Curve	= COAWSAT.IDF	Reced. limb factor	= 2.5

Total Volume = 16,770 cuft, 0.385 acft

Hydrograph Discharge Table

Time (hrs)	Outflow cfs)	Time (hrs)	Outflow cfs)
0.02	1.11	0.57	3.55
0.03	2.22	0.58	3.11
0.05	3.33	0.60	2.66
0.07	4.44	0.62	2.22
0.08	5.55	0.63	1.77
0.10	6.65	0.65	1.33
0.12	7.76	0.67	0.89
0.13	8.87	0.68	0.44
0.15	9.98		
0.17	11.09		
0.18	12.20	...End	
0.20	13.31 <<		
0.22	12.87		
0.23	12.42		
0.25	11.98		
0.27	11.54		
0.28	11.09		
0.30	10.65		
0.32	10.20		
0.33	9.76		
0.35	9.32		
0.37	8.87		
0.38	8.43		
0.40	7.99		
0.42	7.54		
0.43	7.10		
0.45	6.65		
0.47	6.21		
0.48	5.77		
0.50	5.32		
0.52	4.88		
0.53	4.44		
0.55	3.99		



Hyd. No. 9

Basin 11SS

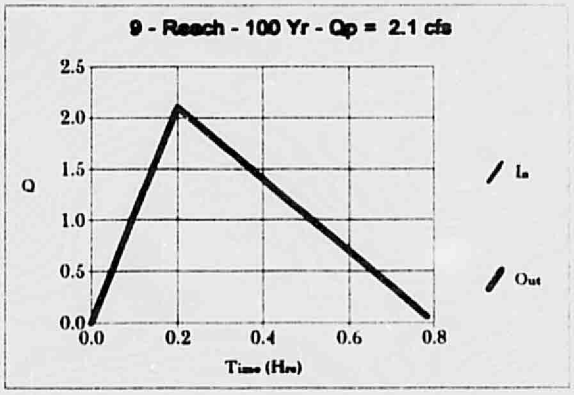
Hydrograph type	= Reach	Peak discharge	= 2.10 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 3	Reach length	= 53 ft
Channel velocity	= 3.3 ft/s	Routing coeff.	= 0.6600

Convex routing method used.

Total Volume = 3,027 cuft, 0.069 acft

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.02	0.18	0.18
0.03	0.35	0.35
0.05	0.53	0.53
0.07	0.70	0.70
0.08	0.88	0.88
0.10	1.05	1.05
0.12	1.23	1.23
0.13	1.40	1.40
0.15	1.58	1.58
0.17	1.75	1.75
0.18	1.93	1.93
0.20	2.10 <<	2.10 <<
0.22	2.04	2.04
0.23	1.99	1.99
0.25	1.93	1.93
0.27	1.87	1.87
0.28	1.81	1.81
0.30	1.75	1.75
0.32	1.69	1.69
0.33	1.64	1.64
0.35	1.58	1.58
0.37	1.52	1.52
0.38	1.46	1.46
0.40	1.40	1.40
0.42	1.34	1.34
0.43	1.28	1.28
0.45	1.23	1.23
0.47	1.17	1.17
0.48	1.11	1.11
0.50	1.05	1.05
0.52	0.99	0.99
0.53	0.93	0.93
0.55	0.88	0.88
0.57	0.82	0.82
0.58	0.76	0.76
0.60	0.70	0.70



Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.62	0.64	0.64
0.63	0.58	0.58
0.65	0.53	0.53
0.67	0.47	0.47
0.68	0.41	0.41
0.70	0.35	0.35
0.72	0.29	0.29
0.73	0.23	0.23
0.75	0.18	0.18
0.77	0.12	0.12
0.78	0.06	0.06

...End

Continues on next page...

Hydrograph Report

Hyd. No. 10

Add 10+11

Hydrograph type	= Combine	Peak discharge	= 4.01 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
1st inflow hyd. No.	= 2	2nd inflow hyd. No.	= 9

Total Volume = 6,115 cuft, 0 140 acft

Hydrograph Discharge Table

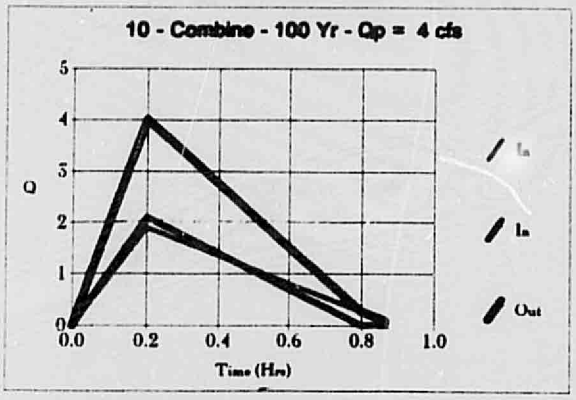
Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.02	0.16		0.18		0.33
0.03	0.32		0.35		0.67
0.05	0.48		0.53		1.00
0.07	0.64		0.70		1.34
0.08	0.79		0.88		1.67
0.10	0.95		1.05		2.00
0.12	1.11		1.23		2.34
0.13	1.27		1.40		2.67
0.15	1.43		1.58		3.01
0.17	1.59		1.75		3.34
0.18	1.75		1.93		3.67
0.20	1.91 <<		2.10 <<		4.01 <<
0.22	1.86		2.04		3.90
0.23	1.82		1.99		3.80
0.25	1.77		1.93		3.70
0.27	1.72		1.87		3.59
0.28	1.68		1.81		3.49
0.30	1.63		1.75		3.39
0.32	1.59		1.69		3.28
0.33	1.54		1.64		3.18
0.35	1.50		1.58		3.07
0.37	1.45		1.52		2.97
0.38	1.41		1.46		2.87
0.40	1.36		1.40		2.76
0.42	1.32		1.34		2.66
0.43	1.27		1.28		2.56
0.45	1.23		1.23		2.45
0.47	1.18		1.17		2.35
0.48	1.13		1.11		2.24
0.50	1.09		1.05		2.14
0.52	1.04		0.99		2.04
0.53	1.00		0.93		1.93
0.55	0.95		0.88		1.83
0.57	0.91		0.82		1.73
0.58	0.86		0.76		1.62
0.60	0.82		0.70		1.52
0.62	0.77		0.64		1.41

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.63	0.73		0.58		1.31
0.65	0.68		0.53		1.21
0.67	0.64		0.47		1.10
0.68	0.59		0.41		1.00
0.70	0.54		0.35		0.89
0.72	0.50		0.29		0.79
0.73	0.45		0.23		0.69
0.75	0.41		0.18		0.58
0.77	0.36		0.12		0.48
0.78	0.32		0.06		0.38
0.80	0.27		0.00		0.27
0.82	0.23		0.00		0.23
0.83	0.18		0.00		0.18
0.85	0.14		0.00		0.14
0.87	0.09		0.00		0.09
0.88	0.05		0.00		0.05

...End



[redacted]

Hyd. No. 11

Route SS

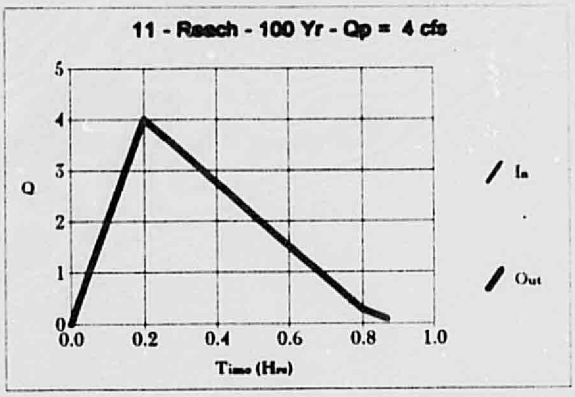
Hydrograph type	= Reach	Peak discharge	= 4.01 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 10	Reach length	= 174 ft
Channel velocity	= 5.2 ft/s	Routing coeff.	= 0.7536

Convex routing method used.

Total Volume = 6,115 cuft, 0.140 acft

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.02	0.33	0.33
0.03	0.67	0.67
0.05	1.00	1.00
0.07	1.34	1.34
0.08	1.67	1.67
0.10	2.00	2.00
0.12	2.34	2.34
0.13	2.67	2.67
0.15	3.01	3.01
0.17	3.34	3.34
0.18	3.67	3.67
0.20	4.01 <<	4.01 <<
0.22	3.90	3.90
0.23	3.80	3.80
0.25	3.70	3.70
0.27	3.59	3.59
0.28	3.49	3.49
0.30	3.39	3.39
0.32	3.28	3.28
0.33	3.18	3.18
0.35	3.07	3.07
0.37	2.97	2.97
0.38	2.87	2.87
0.40	2.76	2.76
0.42	2.66	2.66
0.43	2.56	2.56
0.45	2.45	2.45
0.47	2.35	2.35
0.48	2.24	2.24
0.50	2.14	2.14
0.52	2.04	2.04
0.53	1.93	1.93
0.55	1.83	1.83
0.57	1.73	1.73
0.58	1.62	1.62
0.60	1.52	1.52



Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.62	1.41	1.41
0.63	1.31	1.31
0.65	1.21	1.21
0.67	1.10	1.10
0.68	1.00	1.00
0.70	0.89	0.89
0.72	0.79	0.79
0.73	0.69	0.69
0.75	0.58	0.58
0.77	0.48	0.48
0.78	0.38	0.38
0.80	0.27	0.27
0.82	0.23	0.23
0.83	0.18	0.18
0.85	0.14	0.14
0.87	0.09	0.09
0.88	0.05	0.05

Continues on next page...

...End

[redacted]

Hyd. No. 12

Add Basin 15

Hydrograph type = Combine
Storm frequency = 100 yrs
1st inflow hyd. No. = 4

Peak discharge = 5.62 cfs
Time interval = 1 min
2nd inflow hyd. No. = 11

Total Volume = 8,479 cuft, 0.195 acft

Hydrograph Discharge Table

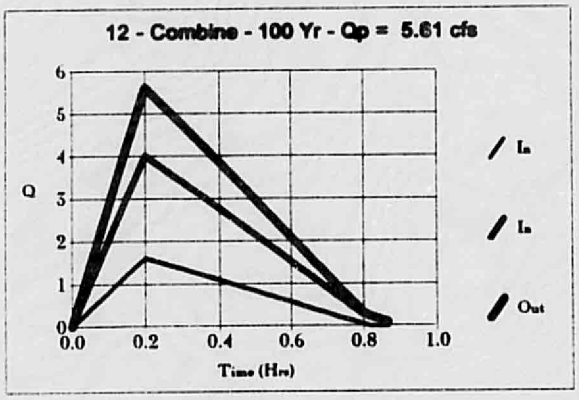
Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.02	0.13		0.33		0.47
0.03	0.27		0.67		0.94
0.05	0.40		1.00		1.40
0.07	0.54		1.34		1.87
0.08	0.67		1.67		2.34
0.10	0.80		2.00		2.81
0.12	0.94		2.34		3.28
0.13	1.07		2.67		3.74
0.15	1.21		3.01		4.21
0.17	1.34		3.34		4.68
0.18	1.47		3.67		5.15
0.20	1.61 <<		4.01 <<		5.62 <<
0.22	1.56		3.90		5.47
0.23	1.52		3.80		5.32
0.25	1.48		3.70		5.17
0.27	1.43		3.59		5.03
0.28	1.39		3.49		4.88
0.30	1.35		3.39		4.73
0.32	1.30		3.28		4.59
0.33	1.26		3.18		4.44
0.35	1.22		3.07		4.29
0.37	1.17		2.97		4.14
0.38	1.13		2.87		4.00
0.40	1.09		2.76		3.85
0.42	1.04		2.66		3.70
0.43	1.00		2.56		3.55
0.45	0.96		2.45		3.41
0.47	0.91		2.35		3.26
0.48	0.87		2.24		3.11
0.50	0.83		2.14		2.97
0.52	0.78		2.04		2.82
0.53	0.74		1.93		2.67
0.55	0.70		1.83		2.52
0.57	0.65		1.73		2.38
0.58	0.61		1.62		2.23
0.60	0.56		1.52		2.08
0.62	0.52		1.41		1.94

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.63	0.48		1.31		1.79
0.65	0.43		1.21		1.64
0.67	0.39		1.10		1.49
0.68	0.35		1.00		1.35
0.70	0.30		0.89		1.20
0.72	0.26		0.79		1.05
0.73	0.22		0.69		0.90
0.75	0.17		0.58		0.76
0.77	0.13		0.48		0.61
0.78	0.09		0.38		0.46
0.80	0.04		0.27		0.32
0.82	0.00		0.23		0.23
0.83	0.00		0.18		0.18
0.85	0.00		0.14		0.14
0.87	0.00		0.09		0.09
0.88	0.00		0.05		0.05

...End



[redacted]

Hyd. No. 13

Route Channel

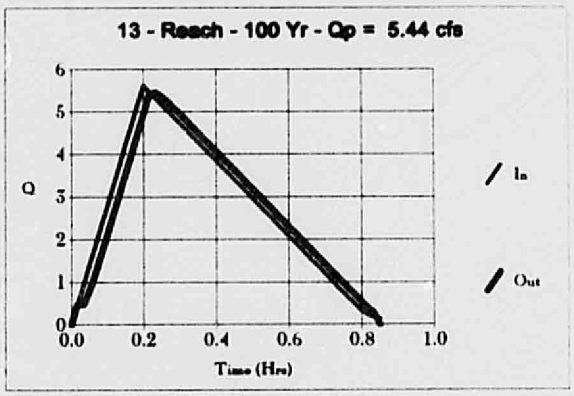
Hydrograph type	= Reach	Peak discharge	= 5.44 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 12	Reach length	= 411 ft
Channel velocity	= 3.5 ft/s	Routing coeff.	= 0.6731

Convex routing method used.

Total Volume = 8,485 cuft, 0.195 acft

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.02	0.47	0.47
0.03	0.94	0.47
0.05	1.40	0.78
0.07	1.87	1.20
0.08	2.34	1.65
0.10	2.81	2.12
0.12	3.28	2.58
0.13	3.74	3.05
0.15	4.21	3.52
0.17	4.68	3.98
0.18	5.15	4.45
0.20	5.62 <<	4.92
0.22	5.47	5.39
0.23	5.32	5.44 <<
0.25	5.17	5.36
0.27	5.03	5.24
0.28	4.88	5.10
0.30	4.73	4.95
0.32	4.59	4.80
0.33	4.44	4.66
0.35	4.29	4.51
0.37	4.14	4.36
0.38	4.00	4.22
0.40	3.85	4.07
0.42	3.70	3.92
0.43	3.55	3.77
0.45	3.41	3.63
0.47	3.26	3.48
0.48	3.11	3.33
0.50	2.97	3.18
0.52	2.82	3.04
0.53	2.67	2.89
0.55	2.52	2.74
0.57	2.38	2.60
0.58	2.23	2.45
0.60	2.08	2.30



Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.62	1.94	2.15
0.63	1.79	2.01
0.65	1.64	1.86
0.67	1.49	1.71
0.68	1.35	1.57
0.70	1.20	1.42
0.72	1.05	1.27
0.73	0.90	1.12
0.75	0.76	0.98
0.77	0.61	0.83
0.78	0.46	0.68
0.80	0.32	0.53
0.82	0.23	0.39
0.83	0.18	0.28

...End

Continues on next page...

[redacted]

Hyd. No. 14

Basin 12 Channel

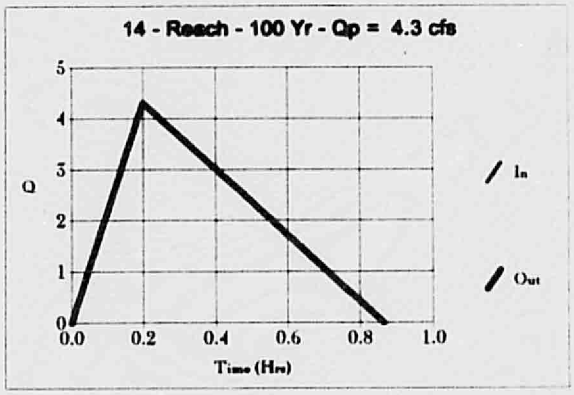
Hydrograph type	= Reach	Peak discharge	= 4.31 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 5	Reach length	= 109 ft
Channel velocity	= 7.4 ft/s	Routing coeff.	= 0.8132

Convex routing method used.

Total Volume = 6,719 cuft, 0.154 acft

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.02	0.36	0.36
0.03	0.72	0.72
0.05	1.08	1.08
0.07	1.44	1.44
0.08	1.79	1.79
0.10	2.15	2.15
0.12	2.51	2.51
0.13	2.87	2.87
0.15	3.23	3.23
0.17	3.59	3.59
0.18	3.95	3.95
0.20	4.31 <<	4.31 <<
0.22	4.20	4.20
0.23	4.09	4.09
0.25	3.98	3.98
0.27	3.88	3.88
0.28	3.77	3.77
0.30	3.66	3.66
0.32	3.55	3.55
0.33	3.45	3.45
0.35	3.34	3.34
0.37	3.23	3.23
0.38	3.12	3.12
0.40	3.02	3.02
0.42	2.91	2.91
0.43	2.80	2.80
0.45	2.69	2.69
0.47	2.58	2.58
0.48	2.48	2.48
0.50	2.37	2.37
0.52	2.26	2.26
0.53	2.15	2.15
0.55	2.05	2.05
0.57	1.94	1.94
0.58	1.83	1.83
0.60	1.72	1.72



Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.62	1.62	1.62
0.63	1.51	1.51
0.65	1.40	1.40
0.67	1.29	1.29
0.68	1.18	1.18
0.70	1.08	1.08
0.72	0.97	0.97
0.73	0.86	0.86
0.75	0.75	0.75
0.77	0.65	0.65
0.78	0.54	0.54
0.80	0.43	0.43
0.82	0.32	0.32
0.83	0.22	0.22
0.85	0.11	0.11

...End

Continues on next page...

[redacted]

Hyd. No. 15

Basin 13

Hydrograph type	= Combine	Peak discharge	= 7.82 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
1st inflow hyd. No.	= 14	2nd inflow hyd. No.	= 6

Total Volume = 11,876 cuft, 0.273 acft

Hydrograph Discharge Table

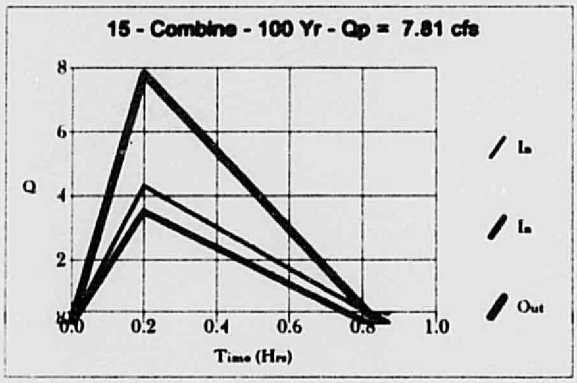
Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.02	0.36		0.29		0.65
0.03	0.72		0.58		1.30
0.05	1.08		0.88		1.95
0.07	1.44		1.17		2.61
0.08	1.79		1.46		3.26
0.10	2.15		1.75		3.91
0.12	2.51		2.05		4.56
0.13	2.87		2.34		5.21
0.15	3.23		2.63		5.86
0.17	3.59		2.92		6.51
0.18	3.95		3.22		7.16
0.20	4.31 <<		3.51 <<		7.82 <<
0.22	4.20		3.41		7.61
0.23	4.09		3.32		7.41
0.25	3.98		3.22		7.21
0.27	3.88		3.13		7.01
0.28	3.77		3.03		6.80
0.30	3.66		2.94		6.60
0.32	3.55		2.84		6.40
0.33	3.45		2.75		6.20
0.35	3.34		2.65		5.99
0.37	3.23		2.56		5.79
0.38	3.12		2.47		5.59
0.40	3.02		2.37		5.39
0.42	2.91		2.28		5.18
0.43	2.80		2.18		4.98
0.45	2.69		2.09		4.78
0.47	2.58		1.99		4.58
0.48	2.48		1.90		4.37
0.50	2.37		1.80		4.17
0.52	2.26		1.71		3.97
0.53	2.15		1.61		3.77
0.55	2.05		1.52		3.56
0.57	1.94		1.42		3.36
0.58	1.83		1.33		3.16
0.60	1.72		1.23		2.96
0.62	1.62		1.14		2.75

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.63	1.51		1.04		2.55
0.65	1.40		0.95		2.35
0.67	1.29		0.85		2.15
0.68	1.18		0.76		1.94
0.70	1.08		0.66		1.74
0.72	0.97		0.57		1.54
0.73	0.86		0.47		1.34
0.75	0.75		0.38		1.13
0.77	0.65		0.28		0.93
0.78	0.54		0.19		0.73
0.80	0.43		0.09		0.53
0.82	0.32		0.00		0.32
0.83	0.22		0.00		0.22
0.85	0.11		0.00		0.11

...End



[redacted]

Hyd. No. 16

Channel

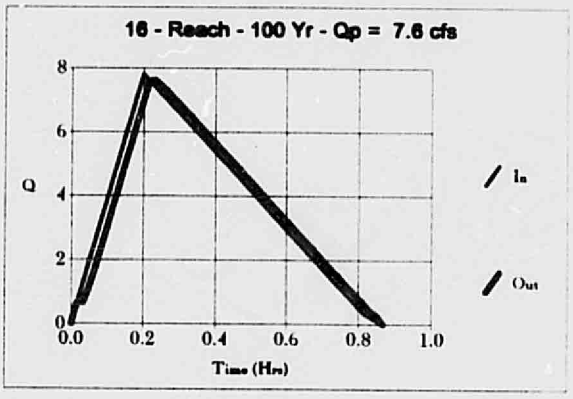
Hydrograph type	= Reach	Peak discharge	= 7.61 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 15	Reach length	= 427 ft
Channel velocity	= 4.8 ft/s	Routing coeff.	= 0.7385

Convex routing method used.

Total Volume = 11,917 cuft, 0.274 acft

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.02	0.65	0.65
0.03	1.30	0.65
0.05	1.95	1.13
0.07	2.61	1.74
0.08	3.26	2.38
0.10	3.91	3.03
0.12	4.56	3.68
0.13	5.21	4.33
0.15	5.86	4.98
0.17	6.51	5.63
0.18	7.16	6.28
0.20	7.82 <<	6.93
0.22	7.61	7.58
0.23	7.41	7.61 <<
0.25	7.21	7.46
0.27	7.01	7.27
0.28	6.80	7.08
0.30	6.60	6.87
0.32	6.40	6.67
0.33	6.20	6.47
0.35	5.99	6.27
0.37	5.79	6.06
0.38	5.59	5.86
0.40	5.39	5.66
0.42	5.18	5.46
0.43	4.98	5.25
0.45	4.78	5.05
0.47	4.58	4.85
0.48	4.37	4.65
0.50	4.17	4.44
0.52	3.97	4.24
0.53	3.77	4.04
0.55	3.56	3.84
0.57	3.36	3.63
0.58	3.16	3.43
0.60	2.96	3.23



Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.62	2.75	3.03
0.63	2.55	2.82
0.65	2.35	2.62
0.67	2.15	2.42
0.68	1.94	2.22
0.70	1.74	2.01
0.72	1.54	1.81
0.73	1.34	1.61
0.75	1.13	1.41
0.77	0.93	1.20
0.78	0.73	1.00
0.80	0.53	0.80
0.82	0.32	0.60
0.83	0.22	0.39
0.85	0.11	0.26

...End

Continues on next page...

[redacted]

Hyd. No. 17

Add Basin 14

Hydrograph type = Combine
Storm frequency = 100 yrs
1st inflow hyd. No. = 7

Peak discharge = 12.94 cfs
Time interval = 1 min
2nd inflow hyd. No. = 16

Total Volume = 20,014 cuft, 0.459 acft

Hydrograph Discharge Table

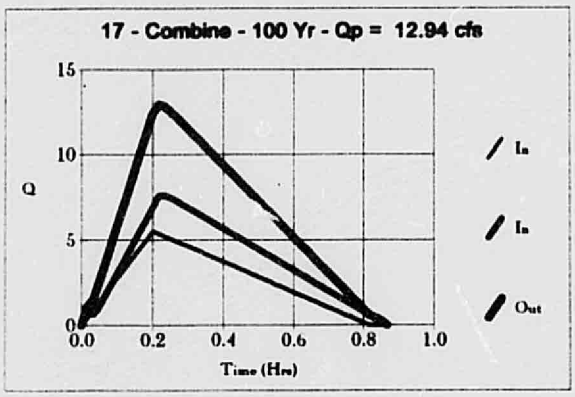
Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.02	0.46		0.65		1.11
0.03	0.92		0.65		1.57
0.05	1.38		1.13		2.51
0.07	1.84		1.74		3.58
0.08	2.30		2.38		4.67
0.10	2.75		3.03		5.78
0.12	3.21		3.68		6.89
0.13	3.67		4.33		8.00
0.15	4.13		4.98		9.11
0.17	4.59		5.63		10.22
0.18	5.05		6.28		11.33
0.20	5.51 <<		6.93		12.44
0.22	5.36		7.58		12.94 <<
0.23	5.21		7.61 <<		12.82
0.25	5.06		7.46		12.52
0.27	4.91		7.27		12.19
0.28	4.76		7.08		11.84
0.30	4.62		6.87		11.49
0.32	4.47		6.67		11.14
0.33	4.32		6.47		10.79
0.35	4.17		6.27		10.44
0.37	4.02		6.06		10.08
0.38	3.87		5.86		9.73
0.40	3.72		5.66		9.38
0.42	3.57		5.46		9.03
0.43	3.42		5.25		8.68
0.45	3.28		5.05		8.33
0.47	3.13		4.85		7.98
0.48	2.98		4.65		7.62
0.50	2.83		4.44		7.27
0.52	2.68		4.24		6.92
0.53	2.53		4.04		6.57
0.55	2.38		3.84		6.22
0.57	2.23		3.63		5.87
0.58	2.08		3.43		5.52
0.60	1.94		3.23		5.17
0.62	1.79		3.03		4.81

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.63	1.64		2.82		4.46
0.65	1.49		2.62		4.11
0.67	1.34		2.42		3.76
0.68	1.19		2.22		3.41
0.70	1.04		2.01		3.06
0.72	0.89		1.81		2.71
0.73	0.74		1.61		2.35
0.75	0.60		1.41		2.00
0.77	0.45		1.20		1.65
0.78	0.30		1.00		1.30
0.80	0.15		0.80		0.95
0.82	0.00		0.60		0.60
0.83	0.00		0.39		0.39
0.85	0.00		0.26		0.26

...End



Hyd. No. 18

Add to Pond 2

Hydrograph type	= Combine	Peak discharge	= 25.81 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
1st inflow hyd. No.	= 8	2nd inflow hyd. No.	= 17

Total Volume = 36,785 cuft, 0.844 acft

Hydrograph Discharge Table

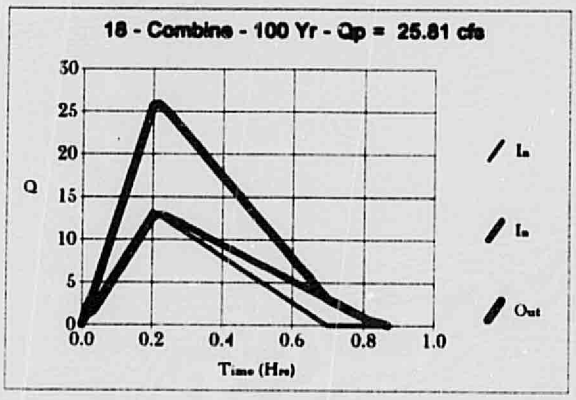
Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.02	1.11		1.11		2.22
0.03	2.22		1.57		3.79
0.05	3.33		2.51		5.84
0.07	4.44		3.58		8.01
0.08	5.55		4.67		10.22
0.10	6.65		5.78		12.44
0.12	7.76		6.89		14.65
0.13	8.87		8.00		16.87
0.15	9.98		9.11		19.09
0.17	11.09		10.22		21.31
0.18	12.20		11.33		23.53
0.20	13.31 <<		12.44		25.75
0.22	12.87		12.94 <<		25.81 <<
0.23	12.42		12.82		25.24
0.25	11.98		12.52		24.50
0.27	11.54		12.19		23.72
0.28	11.09		11.84		22.93
0.30	10.65		11.49		22.14
0.32	10.20		11.14		21.34
0.33	9.76		10.79		20.55
0.35	9.32		10.44		19.75
0.37	8.87		10.08		18.96
0.38	8.43		9.73		18.16
0.40	7.99		9.38		17.37
0.42	7.54		9.03		16.57
0.43	7.10		8.68		15.78
0.45	6.65		8.33		14.98
0.47	6.21		7.98		14.19
0.48	5.77		7.62		13.39
0.50	5.32		7.27		12.60
0.52	4.88		6.92		11.80
0.53	4.44		6.57		11.01
0.55	3.99		6.22		10.21
0.57	3.55		5.87		9.42
0.58	3.11		5.52		8.62
0.60	2.66		5.17		7.83
0.62	2.22		4.81		7.03

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.63	1.77		4.46		6.24
0.65	1.33		4.11		5.44
0.67	0.89		3.76		4.65
0.68	0.44		3.41		3.85
0.70	0.00		3.06		3.06
0.72	0.00		2.71		2.71
0.73	0.00		2.35		2.35
0.75	0.00		2.00		2.00
0.77	0.00		1.65		1.65
0.78	0.00		1.30		1.30
0.80	0.00		0.95		0.95
0.82	0.00		0.60		0.60
0.83	0.00		0.39		0.39
0.85	0.00		0.26		0.26

...End



[redacted]

Hyd. No. 19

Add to Pond 2

Hydrograph type = Combine
Storm frequency = 100 yrs
1st inflow hyd. No. = 13

Peak discharge = 31.20 cfs
Time interval = 1 min
2nd inflow hyd. No. = 18

Total Volume = 45,270 cuft, 1.039 acft

Hydrograph Discharge Table

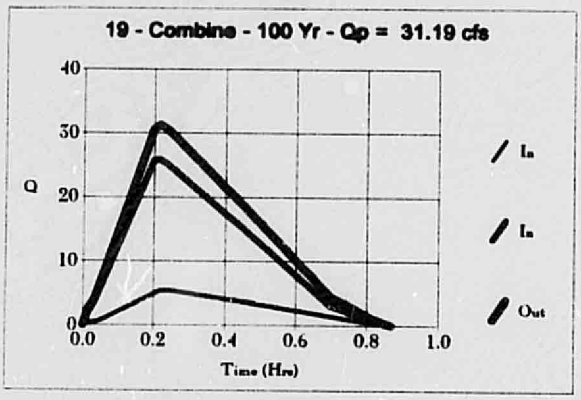
Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.02	0.47		2.22		2.69
0.03	0.47		3.79		4.26
0.05	0.78		5.84		6.62
0.07	1.20		8.01		9.21
0.08	1.65		10.22		11.87
0.10	2.12		12.44		14.55
0.12	2.58		14.65		17.24
0.13	3.05		16.87		19.92
0.15	3.52		19.09		22.61
0.17	3.98		21.31		25.30
0.18	4.45		23.53		27.99
0.20	4.92		25.75		30.67
0.22	5.39		25.81 <<		31.20 <<
0.23	5.44 <<		25.24		30.68
0.25	5.36		24.50		29.86
0.27	5.24		23.72		28.96
0.28	5.10		22.93		28.03
0.30	4.95		22.14		27.09
0.32	4.80		21.34		26.15
0.33	4.66		20.55		25.20
0.35	4.51		19.75		24.26
0.37	4.36		18.96		23.32
0.38	4.22		18.16		22.38
0.40	4.07		17.37		21.44
0.42	3.92		16.57		20.49
0.43	3.77		15.78		19.55
0.45	3.63		14.98		18.61
0.47	3.48		14.19		17.67
0.48	3.33		13.39		16.72
0.50	3.18		12.60		15.78
0.52	3.04		11.80		14.84
0.53	2.89		11.01		13.90
0.55	2.74		10.21		12.96
0.57	2.60		9.42		12.01
0.58	2.45		8.62		11.07
0.60	2.30		7.83		10.13
0.62	2.15		7.03		9.19

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.63	2.01		6.24		8.24
0.65	1.86		5.44		7.30
0.67	1.71		4.65		6.36
0.68	1.57		3.85		5.42
0.70	1.42		3.06		4.47
0.72	1.27		2.71		3.98
0.73	1.12		2.35		3.48
0.75	0.98		2.00		2.98
0.77	0.83		1.65		2.48
0.78	0.68		1.30		1.98
0.80	0.53		0.95		1.48
0.82	0.39		0.60		0.98
0.83	0.28		0.39		0.67
0.85	0.00		0.26		0.26

...End



[redacted]

Hyd. No. 20

Pond 1 Outlet

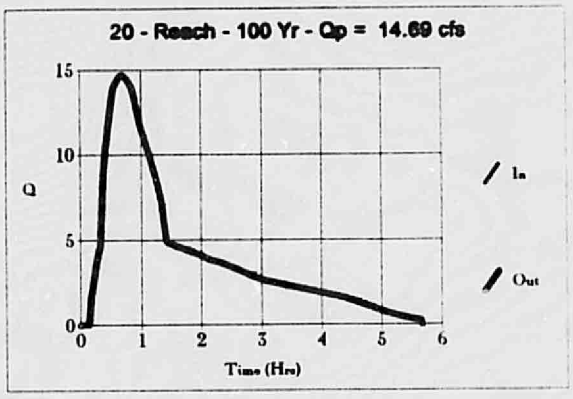
Hydrograph type	= Reach	Peak discharge	= 14.69 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 1	Reach length	= 443 ft
Channel velocity	= 13 ft/s	Routing coeff.	= 0.8844

Convex routing method used.

Total Volume = 82,071 cuft, 1.884 acft

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.15	1.24	0.14
0.17	1.76	1.11
0.18	2.11	1.69
0.20	2.44	2.06
0.22	2.79	2.39
0.23	3.26	2.74
0.25	3.65	3.20
0.27	3.93	3.59
0.28	4.24	3.89
0.30	4.49	4.20
0.32	4.72	4.45
0.33	5.96	4.69
0.35	8.03	5.81
0.37	9.00	7.77
0.38	9.75	8.86
0.40	10.37	9.65
0.42	10.91	10.29
0.43	11.37	10.84
0.45	11.83	11.31
0.47	12.32	11.77
0.48	12.83	12.26
0.50	13.29	12.76
0.52	13.66	13.23
0.53	13.99	13.61
0.55	14.14	13.94
0.57	14.27	14.11
0.58	14.38	14.25
0.60	14.49	14.36
0.62	14.58	14.47
0.63	14.64	14.57
0.65	14.68	14.63
0.67	14.69 <<	14.67
0.68	14.68	14.69 <<
0.70	14.65	14.68
0.72	14.59	14.65
0.73	14.52	14.60



Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Outflow (cfs)
0.75	14.43	14.53
0.77	14.34	14.44
0.78	14.25	14.35
0.80	14.15	14.26
0.82	14.05	14.17
0.83	13.89	14.06
0.85	13.66	13.91
0.87	13.41	13.69
0.88	13.13	13.44
0.90	12.83	13.17
0.92	12.52	12.87
0.93	12.25	12.56
0.95	12.00	12.28
0.97	11.75	12.03
0.98	11.55	11.78
1.00	11.36	11.57
1.02	11.18	11.39
1.03	10.99	11.20
1.05	10.81	11.02
1.07	10.62	10.83
1.08	10.43	10.64
1.10	10.24	10.46
1.12	10.05	10.26
1.13	9.86	10.07
1.15	9.66	9.88
1.17	9.46	9.68
1.18	9.26	9.48
1.20	9.06	9.29
1.22	8.84	9.09
1.23	8.63	8.87
1.25	8.42	8.66
1.27	8.20	8.45
1.28	7.93	8.23
1.30	7.67	7.96
1.32	7.41	7.70
1.33	7.10	7.45
1.35	6.59	7.14
1.37	6.11	6.65
1.38	5.67	6.17
1.40	5.26	5.73
1.42	4.88	5.31
1.43	4.84	4.93
1.45	4.81	4.85
1.47	4.79	4.82
1.48	4.77	4.79
1.50	4.74	4.77
1.52	4.72	4.75
1.53	4.70	4.72
1.55	4.68	4.70
1.57	4.65	4.68

Continues on next page...

[redacted]

Hyd. No. 21

Pond 1+Pond 2

Hydrograph type = Combine
Storm frequency = 100 yrs
1st inflow hyd. No. = 19

Peak discharge = 33.59 cfs
Time interval = 1 min
2nd inflow hyd. No. = 20

Total Volume = 127,341 cuft, 2.923 acft

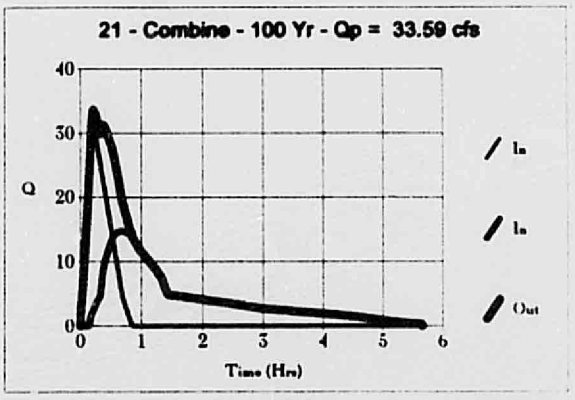
Hydrograph Discharge Table

Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.02	2.69		0.00		2.69
0.03	4.26		0.00		4.26
0.05	6.62		0.00		6.62
0.07	9.21		0.00		9.21
0.08	11.87		0.00		11.87
0.10	14.55		0.00		14.55
0.12	17.24		0.00		17.24
0.13	19.92		0.00		19.92
0.15	22.61		0.14		22.75
0.17	25.30		1.11		26.41
0.18	27.99		1.69		29.67
0.20	30.67		2.06		32.73
0.22	31.20 <<		2.39		33.59 <<
0.23	30.68		2.74		33.42
0.25	29.86		3.20		33.07
0.27	28.96		3.59		32.55
0.28	28.03		3.89		31.91
0.30	27.09		4.20		31.28
0.32	26.15		4.45		30.60
0.33	25.20		4.69		29.89
0.35	24.26		5.81		30.08
0.37	23.32		7.77		31.09
0.38	22.38		8.86		31.24
0.40	21.44		9.65		31.08
0.42	20.49		10.29		30.78
0.43	19.55		10.84		30.39
0.45	18.61		11.31		29.92
0.47	17.67		11.77		29.43
0.48	16.72		12.26		28.98
0.50	15.78		12.76		28.54
0.52	14.84		13.23		28.07
0.53	13.90		13.61		27.51
0.55	12.96		13.94		26.90
0.57	12.01		14.11		26.13
0.58	11.07		14.25		25.32
0.60	10.13		14.36		24.49
0.62	9.19		14.47		23.66

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	1st Inflow (cfs)	+	2nd Inflow (cfs)	=	Outflow (cfs)
0.63	8.24		14.57		22.81
0.65	7.30		14.63		21.93
0.67	6.36		14.67		21.03
0.68	5.42		14.69 <<		20.11
0.70	4.47		14.68		19.16
0.72	3.98		14.65		18.63
0.73	3.48		14.60		18.08
0.75	2.98		14.53		17.51
0.77	2.48		14.44		16.92
0.78	1.98		14.35		16.33
0.80	1.48		14.26		15.75
0.82	0.98		14.17		15.15
0.83	0.67		14.06		14.74
0.85	0.26		13.91		14.17
0.87	0.00		13.69		13.69
0.88	0.00		13.44		13.44
0.90	0.00		13.17		13.17
0.92	0.00		12.87		12.87
0.93	0.00		12.56		12.56
0.95	0.00		12.28		12.28
0.97	0.00		12.03		12.03
0.98	0.00		11.78		11.78
1.00	0.00		11.57		11.57
1.02	0.00		11.39		11.39
1.03	0.00		11.20		11.20
1.05	0.00		11.02		11.02
1.07	0.00		10.83		10.83
1.08	0.00		10.64		10.64
1.10	0.00		10.46		10.46
1.12	0.00		10.26		10.26
1.13	0.00		10.07		10.07
1.15	0.00		9.88		9.88
1.17	0.00		9.68		9.68
1.18	0.00		9.48		
1.20	0.00		9.29		
1.22	0.00		9.09		
1.23	0.00		8.87		
1.25	0.00		8.66		
1.27	0.00		8.45		
1.28	0.00		8.23		
1.30	0.00		7.96		
1.32	0.00		7.70		
1.33	0.00		7.45		
1.35	0.00		7.14		
1.37	0.00		6.65		
1.38	0.00		6.17		
1.40	0.00		5.73		
1.42	0.00		5.31		
1.43	0.00		4.93		
1.45	0.00		4.85		



Continues on next page...

[redacted]

Hyd. No. 22

Pond 2 Route

Hydrograph type	= Reservoir	Peak discharge	= 0.73 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 21	Reservoir name	= Pond #2
Max. Elevation	= 18.34 ft	Max. Storage	= 118,467 cuft

Storage indication method used.

Total Volume = 39,176 cuft, 0.899 acft

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Outflow (cfs)
1.13	10.07	17.51	15.37	0.03	—	—	—	—	0.03
1.15	9.88	17.53	15.40	0.06	—	—	—	—	0.06
1.17	9.68	17.54	15.44	0.09	—	—	—	—	0.09
1.18	9.48	17.56	15.47	0.12	—	—	—	—	0.12
1.20	9.29	17.57	15.51	0.15	—	—	—	—	0.15
1.22	9.09	17.59	15.54	0.18	—	—	—	—	0.18
1.23	8.87	17.60	15.57	0.21	—	—	—	—	0.21
1.25	8.66	17.61	15.60	0.22	—	—	—	—	0.22
1.27	8.45	17.62	15.63	0.23	—	—	—	—	0.23
1.28	8.23	17.64	15.66	0.24	—	—	—	—	0.24
1.30	7.96	17.65	15.68	0.25	—	—	—	—	0.25
1.32	7.70	17.66	15.71	0.26	—	—	—	—	0.26
1.33	7.45	17.67	15.74	0.27	—	—	—	—	0.27
1.35	7.14	17.68	15.76	0.28	—	—	—	—	0.28
1.37	6.65	17.69	15.78	0.29	—	—	—	—	0.29
1.38	6.17	17.70	15.81	0.30	—	—	—	—	0.30
1.40	5.73	17.71	15.83	0.31	—	—	—	—	0.31
1.42	5.31	17.72	15.84	0.31	—	—	—	—	0.31
1.43	4.93	17.73	15.86	0.32	—	—	—	—	0.32
1.45	4.85	17.73	15.88	0.32	—	—	—	—	0.32
1.47	4.82	17.74	15.89	0.33	—	—	—	—	0.33
1.48	4.79	17.75	15.91	0.33	—	—	—	—	0.33
1.50	4.77	17.75	15.92	0.33	—	—	—	—	0.33
1.52	4.75	17.76	15.94	0.34	—	—	—	—	0.34
1.53	4.72	17.77	15.95	0.34	—	—	—	—	0.34
1.55	4.70	17.77	15.97	0.35	—	—	—	—	0.35
1.57	4.68	17.78	15.98	0.35	—	—	—	—	0.35
1.58	4.66	17.79	16.00	0.36	—	—	—	—	0.36
1.60	4.63	17.79	16.01	0.36	—	—	—	—	0.36
1.62	4.61	17.80	16.03	0.37	—	—	—	—	0.37
1.63	4.59	17.81	16.04	0.37	—	—	—	—	0.37
1.65	4.57	17.81	16.06	0.37	—	—	—	—	0.37
1.67	4.54	17.82	16.07	0.38	—	—	—	—	0.38
1.68	4.52	17.82	16.09	0.38	—	—	—	—	0.38
1.70	4.50	17.83	16.10	0.38	—	—	—	—	0.38
1.72	4.47	17.84	16.11	0.39	—	—	—	—	0.39
1.73	4.45	17.84	16.13	0.39	—	—	—	—	0.39

Continues on next page...

[redacted]

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Outflow (cfs)
1.75	4.43	17.85	16.14	0.39	—	—	—	—	0.39
1.77	4.41	17.86	16.15	0.40	—	—	—	—	0.40
1.78	4.38	17.86	16.17	0.40	—	—	—	—	0.40
1.80	4.36	17.87	16.18	0.40	—	—	—	—	0.40
1.82	4.34	17.87	16.20	0.41	—	—	—	—	0.41
1.83	4.32	17.88	16.21	0.41	—	—	—	—	0.41
1.85	4.29	17.89	16.22	0.41	—	—	—	—	0.41
1.87	4.27	17.89	16.24	0.42	—	—	—	—	0.42
1.88	4.25	17.90	16.25	0.42	—	—	—	—	0.42
1.90	4.23	17.90	16.26	0.42	—	—	—	—	0.42
1.92	4.20	17.91	16.27	0.43	—	—	—	—	0.43
1.93	4.18	17.91	16.29	0.43	—	—	—	—	0.43
1.95	4.16	17.92	16.30	0.43	—	—	—	—	0.43
1.97	4.13	17.93	16.31	0.44	—	—	—	—	0.44
1.98	4.11	17.93	16.32	0.44	—	—	—	—	0.44
2.00	4.09	17.94	16.34	0.44	—	—	—	—	0.44
2.02	4.07	17.94	16.35	0.44	—	—	—	—	0.44
2.03	4.04	17.95	16.36	0.45	—	—	—	—	0.45
2.05	4.01	17.95	16.37	0.45	—	—	—	—	0.45
2.07	3.98	17.96	16.38	0.45	—	—	—	—	0.45
2.08	3.95	17.96	16.40	0.45	—	—	—	—	0.45
2.10	3.92	17.97	16.41	0.46	—	—	—	—	0.46
2.12	3.89	17.98	16.42	0.46	—	—	—	—	0.46
2.13	3.86	17.98	16.43	0.46	—	—	—	—	0.46
2.15	3.83	17.99	16.44	0.47	—	—	—	—	0.47
2.17	3.81	17.99	16.45	0.47	—	—	—	—	0.47
2.18	3.79	18.00	16.47	0.47	—	—	—	—	0.47
2.20	3.78	18.00	16.48	0.47	—	—	—	—	0.47
2.22	3.76	18.00	16.49	0.48	—	—	—	—	0.48
2.23	3.75	18.01	16.49	0.48	—	—	—	—	0.48
2.25	3.73	18.01	16.50	0.48	—	—	—	—	0.48
2.27	3.72	18.02	16.51	0.49	—	—	—	—	0.49
2.28	3.70	18.02	16.52	0.49	—	—	—	—	0.49
2.30	3.68	18.03	16.53	0.49	—	—	—	—	0.49
2.32	3.66	18.03	16.54	0.50	—	—	—	—	0.50
2.33	3.64	18.03	16.55	0.50	—	—	—	—	0.50
2.35	3.61	18.04	16.56	0.50	—	—	—	—	0.50
2.37	3.59	18.04	16.56	0.51	—	—	—	—	0.51
2.38	3.57	18.04	16.57	0.51	—	—	—	—	0.51
2.40	3.55	18.05	16.58	0.51	—	—	—	—	0.51
2.42	3.52	18.05	16.59	0.52	—	—	—	—	0.52
2.43	3.50	18.06	16.60	0.52	—	—	—	—	0.52
2.45	3.48	18.06	16.61	0.52	—	—	—	—	0.52
2.47	3.45	18.06	16.61	0.53	—	—	—	—	0.53
2.48	3.43	18.07	16.62	0.53	—	—	—	—	0.53
2.50	3.40	18.07	16.63	0.53	—	—	—	—	0.53
2.52	3.37	18.07	16.64	0.54	—	—	—	—	0.54
2.53	3.35	18.08	16.65	0.54	—	—	—	—	0.54
2.55	3.32	18.08	16.65	0.54	—	—	—	—	0.54
2.57	3.30	18.08	16.66	0.55	—	—	—	—	0.55

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Outflow (cfs)
2.58	3.27	18.09	16.67	0.55	—	—	—	—	0.55
2.60	3.25	18.09	16.68	0.55	—	—	—	—	0.55
2.62	3.22	18.10	16.68	0.56	—	—	—	—	0.56
2.63	3.19	18.10	16.69	0.56	—	—	—	—	0.56
2.65	3.17	18.10	16.70	0.56	—	—	—	—	0.56
2.67	3.14	18.11	16.70	0.56	—	—	—	—	0.56
2.68	3.12	18.11	16.71	0.56	—	—	—	—	0.56
2.70	3.09	18.11	16.72	0.56	—	—	—	—	0.56
2.72	3.07	18.11	16.72	0.56	—	—	—	—	0.56
2.73	3.04	18.12	16.73	0.56	—	—	—	—	0.56
2.75	3.01	18.12	16.74	0.56	—	—	—	—	0.56
2.77	2.99	18.12	16.74	0.56	—	—	—	—	0.56
2.78	2.96	18.13	16.75	0.56	—	—	—	—	0.56
2.80	2.94	18.13	16.76	0.56	—	—	—	—	0.56
2.82	2.91	18.13	16.76	0.56	—	—	—	—	0.56
2.83	2.88	18.14	16.77	0.57	—	—	—	—	0.57
2.85	2.86	18.14	16.78	0.57	—	—	—	—	0.57
2.87	2.83	18.14	16.78	0.57	—	—	—	—	0.57
2.88	2.81	18.14	16.79	0.57	—	—	—	—	0.57
2.90	2.79	18.15	16.80	0.57	—	—	—	—	0.57
2.92	2.77	18.15	16.80	0.57	—	—	—	—	0.57
2.93	2.75	18.15	16.81	0.57	—	—	—	—	0.57
2.95	2.73	18.16	16.81	0.57	—	—	—	—	0.57
2.97	2.71	18.16	16.82	0.57	—	—	—	—	0.57
2.98	2.69	18.16	16.82	0.57	—	—	—	—	0.57
3.00	2.67	18.16	16.83	0.57	—	—	—	—	0.57
3.02	2.65	18.17	16.84	0.57	—	—	—	—	0.57
3.03	2.63	18.17	16.84	0.57	—	—	—	—	0.57
3.05	2.61	18.17	16.85	0.57	—	—	—	—	0.57
3.07	2.60	18.17	16.85	0.57	—	—	—	—	0.57
3.08	2.59	18.18	16.86	0.57	—	—	—	—	0.57
3.10	2.57	18.18	16.86	0.57	—	—	—	—	0.57
3.12	2.56	18.18	16.87	0.57	—	—	—	—	0.57
3.13	2.55	18.18	16.87	0.57	—	—	—	—	0.57
3.15	2.53	18.19	16.88	0.57	—	—	—	—	0.57
3.17	2.52	18.19	16.89	0.57	—	—	—	—	0.57
3.18	2.51	18.19	16.89	0.57	—	—	—	—	0.57
3.20	2.50	18.19	16.90	0.57	—	—	—	—	0.57
3.22	2.48	18.20	16.90	0.57	—	—	—	—	0.57
3.23	2.47	18.20	16.91	0.58	—	—	—	—	0.58
3.25	2.46	18.20	16.91	0.58	—	—	—	—	0.58
3.27	2.44	18.20	16.92	0.58	—	—	—	—	0.58
3.28	2.43	18.21	16.92	0.58	—	—	—	—	0.58
3.30	2.42	18.21	16.93	0.59	—	—	—	—	0.59
3.32	2.40	18.21	16.93	0.59	—	—	—	—	0.59
3.33	2.39	18.21	16.94	0.59	—	—	—	—	0.59
3.35	2.38	18.21	16.94	0.59	—	—	—	—	0.59
3.37	2.37	18.22	16.95	0.60	—	—	—	—	0.60
3.38	2.35	18.22	16.95	0.60	—	—	—	—	0.60
3.40	2.34	18.22	16.95	0.60	—	—	—	—	0.60

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Outflow (cfs)
3.42	2.33	18.22	16.96	0.61	—	—	—	—	0.61
3.43	2.32	18.23	16.96	0.61	—	—	—	—	0.61
3.45	2.30	18.23	16.97	0.61	—	—	—	—	0.61
3.47	2.29	18.23	16.97	0.61	—	—	—	—	0.61
3.48	2.28	18.23	16.98	0.62	—	—	—	—	0.62
3.50	2.26	18.23	16.98	0.62	—	—	—	—	0.62
3.52	2.25	18.24	16.99	0.62	—	—	—	—	0.62
3.53	2.24	18.24	16.99	0.62	—	—	—	—	0.62
3.55	2.22	18.24	16.99	0.63	—	—	—	—	0.63
3.57	2.21	18.24	17.00	0.63	—	—	—	—	0.63
3.58	2.20	18.24	17.00	0.63	—	—	—	—	0.63
3.60	2.19	18.25	17.01	0.63	—	—	—	—	0.63
3.62	2.17	18.25	17.01	0.64	—	—	—	—	0.64
3.63	2.16	18.25	17.02	0.64	—	—	—	—	0.64
3.65	2.15	18.25	17.02	0.64	—	—	—	—	0.64
3.67	2.13	18.25	17.02	0.64	—	—	—	—	0.64
3.68	2.12	18.26	17.03	0.65	—	—	—	—	0.65
3.70	2.11	18.26	17.03	0.65	—	—	—	—	0.65
3.72	2.09	18.26	17.04	0.65	—	—	—	—	0.65
3.73	2.08	18.26	17.04	0.65	—	—	—	—	0.65
3.75	2.07	18.26	17.04	0.65	—	—	—	—	0.65
3.77	2.06	18.26	17.05	0.66	—	—	—	—	0.66
3.78	2.04	18.27	17.05	0.66	—	—	—	—	0.66
3.80	2.03	18.27	17.05	0.66	—	—	—	—	0.66
3.82	2.02	18.27	17.06	0.66	—	—	—	—	0.66
3.83	2.01	18.27	17.06	0.67	—	—	—	—	0.67
3.85	1.99	18.27	17.07	0.67	—	—	—	—	0.67
3.87	1.98	18.28	17.07	0.67	—	—	—	—	0.67
3.88	1.97	18.28	17.07	0.67	—	—	—	—	0.67
3.90	1.95	18.28	17.08	0.67	—	—	—	—	0.67
3.92	1.94	18.28	17.08	0.68	—	—	—	—	0.68
3.93	1.93	18.28	17.08	0.68	—	—	—	—	0.68
3.95	1.91	18.28	17.09	0.68	—	—	—	—	0.68
3.97	1.90	18.28	17.09	0.68	—	—	—	—	0.68
3.98	1.89	18.29	17.09	0.68	—	—	—	—	0.68
4.00	1.87	18.29	17.10	0.69	—	—	—	—	0.69
4.02	1.86	18.29	17.10	0.69	—	—	—	—	0.69
4.03	1.85	18.29	17.10	0.69	—	—	—	—	0.69
4.05	1.84	18.29	17.10	0.69	—	—	—	—	0.69
4.07	1.82	18.29	17.11	0.69	—	—	—	—	0.69
4.08	1.81	18.30	17.11	0.69	—	—	—	—	0.69
4.10	1.80	18.30	17.11	0.70	—	—	—	—	0.70
4.12	1.79	18.30	17.12	0.70	—	—	—	—	0.70
4.13	1.77	18.30	17.12	0.70	—	—	—	—	0.70
4.15	1.76	18.30	17.12	0.70	—	—	—	—	0.70
4.17	1.75	18.30	17.13	0.70	—	—	—	—	0.70
4.18	1.73	18.30	17.13	0.70	—	—	—	—	0.70
4.20	1.72	18.30	17.13	0.70	—	—	—	—	0.70
4.22	1.71	18.31	17.13	0.70	—	—	—	—	0.70
4.23	1.69	18.31	17.14	0.71	—	—	—	—	0.71

Continues on next page...

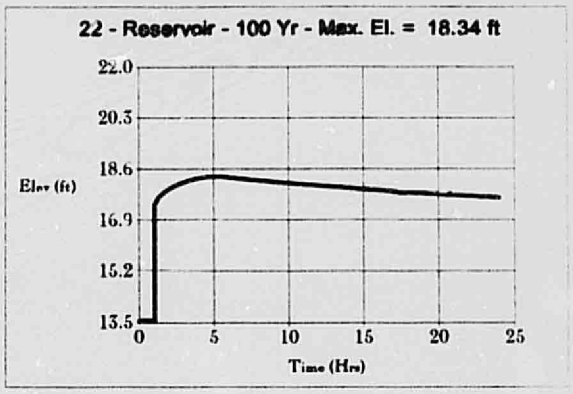
Hydrograph Discharge Table

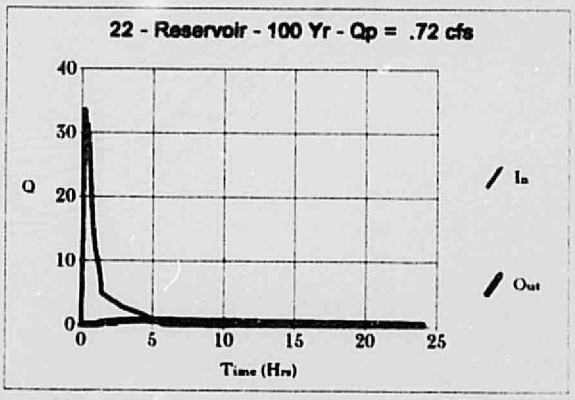
Time (hrs)	Inflow (cfs)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Outflow (cfs)
4.25	1.68	18.31	17.14	0.71	—	—	—	—	0.71
4.27	1.67	18.31	17.14	0.71	—	—	—	—	0.71
4.28	1.66	18.31	17.14	0.71	—	—	—	—	0.71
4.30	1.64	18.31	17.15	0.71	—	—	—	—	0.71
4.32	1.63	18.31	17.15	0.71	—	—	—	—	0.71
4.33	1.62	18.31	17.15	0.71	—	—	—	—	0.71
4.35	1.61	18.32	17.15	0.71	—	—	—	—	0.71
4.37	1.59	18.32	17.16	0.71	—	—	—	—	0.71
4.38	1.58	18.32	17.16	0.71	—	—	—	—	0.71
4.40	1.56	18.32	17.16	0.71	—	—	—	—	0.71
4.42	1.54	18.32	17.16	0.71	—	—	—	—	0.71
4.43	1.52	18.32	17.16	0.71	—	—	—	—	0.71
4.45	1.50	18.32	17.17	0.71	—	—	—	—	0.71
4.47	1.48	18.32	17.17	0.71	—	—	—	—	0.71
4.48	1.46	18.32	17.17	0.72	—	—	—	—	0.72
4.50	1.44	18.32	17.17	0.72	—	—	—	—	0.72
4.52	1.42	18.33	17.17	0.72	—	—	—	—	0.72
4.53	1.40	18.33	17.18	0.72	—	—	—	—	0.72
4.55	1.38	18.33	17.18	0.72	—	—	—	—	0.72
4.57	1.36	18.33	17.18	0.72	—	—	—	—	0.72
4.58	1.34	18.33	17.18	0.72	—	—	—	—	0.72
4.60	1.32	18.33	17.18	0.72	—	—	—	—	0.72
4.62	1.30	18.33	17.18	0.72	—	—	—	—	0.72
4.63	1.28	18.33	17.19	0.72	—	—	—	—	0.72
4.65	1.26	18.33	17.19	0.72	—	—	—	—	0.72
4.67	1.24	18.33	17.19	0.72	—	—	—	—	0.72
4.68	1.22	18.33	17.19	0.72	—	—	—	—	0.72
4.70	1.19	18.33	17.19	0.72	—	—	—	—	0.72
4.72	1.18	18.33	17.19	0.72	—	—	—	—	0.72
4.73	1.16	18.33	17.19	0.72	—	—	—	—	0.72
4.75	1.14	18.34	17.20	0.72	—	—	—	—	0.72
4.77	1.12	18.34	17.20	0.72	—	—	—	—	0.72
4.78	1.10	18.34	17.20	0.72	—	—	—	—	0.72
4.80	1.08	18.34	17.20	0.72	—	—	—	—	0.72
4.82	1.06	18.34	17.20	0.72	—	—	—	—	0.72
4.83	1.05	18.34	17.20	0.72	—	—	—	—	0.72
4.85	1.02	18.34	17.20	0.72	—	—	—	—	0.72
4.87	1.00	18.34	17.20	0.72	—	—	—	—	0.72
4.88	0.98	18.34	17.20	0.72	—	—	—	—	0.72
4.90	0.95	18.34	17.20	0.72	—	—	—	—	0.72
4.92	0.93	18.34	17.20	0.72	—	—	—	—	0.72
4.93	0.91	18.34	17.20	0.73	—	—	—	—	0.73
4.95	0.89	18.34	17.20	0.73	—	—	—	—	0.73
4.97	0.86	18.34	17.21	0.73	—	—	—	—	0.73
4.98	0.84	18.34	17.21	0.73	—	—	—	—	0.73
5.00	0.82	18.34	17.21	0.73	—	—	—	—	0.73
5.02	0.80	18.34	17.21	0.73	—	—	—	—	0.73
5.03	0.78	18.34	17.21	0.73	—	—	—	—	0.73
5.05	0.77	18.34	17.21	0.73	—	—	—	—	0.73
5.07	0.75	18.34	17.21	0.73	—	—	—	—	0.73

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow (cfs)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Outflow (cfs)
5.08	0.73	18.34 <<	17.21	0.73	—	—	—	—	0.73 <<
5.10	0.71	18.34	17.21	0.73	—	—	—	—	0.73
5.12	0.69	18.34	17.21	0.73	—	—	—	—	0.73
5.13	0.68	18.34	17.21	0.73					
5.15	0.66	18.34	17.21	0.73					
5.17	0.65	18.34	17.21	0.73					
5.18	0.63	18.34	17.21	0.73					
5.20	0.61	18.34	17.21	0.73					
5.22	0.60	18.34	17.20	0.73					
5.23	0.58	18.34	17.20	0.73					
5.25	0.56	18.34	17.20	0.73					
5.27	0.54	18.34	17.20	0.72					
5.28	0.53	18.34	17.20	0.72					
5.30	0.51	18.34	17.20	0.72					
5.32	0.49	18.34	17.20	0.72					
5.33	0.48	18.34	17.20	0.72					
5.35	0.46	18.34	17.20	0.72					
5.37	0.45	18.34	17.20	0.72					
5.38	0.43	18.34	17.20	0.72					
5.40	0.42	18.34	17.20	0.72					
5.42	0.40	18.34	17.20	0.72	—	—	—	—	0.72
5.43	0.39	18.34	17.20	0.72	—	—	—	—	0.72
5.45	0.38	18.34	17.20	0.72	—	—	—	—	0.72
5.47	0.37	18.34	17.19	0.72					
5.48	0.35	18.33	17.19	0.72					
5.50	0.34	18.33	17.19	0.72					
5.52	0.33	18.33	17.19	0.72					
5.53	0.32	18.33	17.19	0.72					
5.55	0.31	18.33	17.19	0.72					
5.57	0.30	18.33	17.19	0.72					
5.58	0.29	18.33	17.19	0.72					
5.60	0.28	18.33	17.19	0.72					
5.62	0.27	18.33	17.19	0.72					
5.63	0.26	18.33	17.18	0.72					
5.65	0.25	18.33	17.18	0.72					
5.67	0.00	18.33	17.18	0.72					
5.68	0.00	18.33	17.18	0.72					
5.70	0.00	18.33	17.18	0.72					
5.72	0.00	18.33	17.18	0.72					
5.73	0.00	18.32	17.17	0.72					
5.75	0.00	18.32	17.17	0.72	—	—	—	—	0.72
5.77	0.00	18.32	17.17	0.72	—	—	—	—	0.72
5.78	0.00	18.32	17.17	0.71	—	—	—	—	0.71
5.80	0.00	18.32	17.17	0.71	—	—	—	—	0.71
5.82	0.00	18.32	17.16	0.71	—	—	—	—	0.71
5.83	0.00	18.32	17.16	0.71	—	—	—	—	0.71
5.85	0.00	18.32	17.16	0.71	—	—	—	—	0.71
5.87	0.00	18.32	17.16	0.71	—	—	—	—	0.71
5.88	0.00	18.32	17.16	0.71	—	—	—	—	0.71
5.90	0.00	18.32	17.15	0.71	—	—	—	—	0.71





Continues on next page...

Reservoir Report

Pond #2

Culvert / Orifice Structures

		[A]	[B]	[C]
Rise (in)	=	18.0	6.0	8.0
Span (in)	=	18.0	6.0	8.0
No. Barrels	=	1	1	4
Invert El. (ft)	=	13.50	17.50	19.00
Length (ft)	=	92.0	0.0	0.0
Slope (%)	=	0.03	0.00	0.00
N-Value	=	.013	.013	.013
Orif. Coeff.	=	0.60	0.60	0.60
Multi-Stage	=	——	Yes	Yes

Weir Structures

		[A]	[B]	[C]
Crest Len (ft)	=	15.0	0.0	0.0
Crest El. (ft)	=	21.10	0.00	0.00
Weir Coeff.	=	3.00	3.00	3.00
Eqn. Exp.	=	1.50	1.50	1.50
Multi-Stage	=	No	No	No

Tailwater Elevation = 0.00 ft

Note: All outflows have been analyzed under inlet and outlet control.

Stage / Storage / Discharge Table

Stage (ft)	Storage (cuft)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Discharge (cfs)
0.0	00	13.50	0.00	0.00	0.00	0.00	—	—	0.00
0.1	80	13.55	1.32	0.00	0.00	0.00	—	—	0.00
0.1	160	13.60	1.90	0.00	0.00	0.00	—	—	0.00
0.2	241	13.65	2.33	0.00	0.00	0.00	—	—	0.00
0.2	321	13.70	2.69	0.00	0.00	0.00	—	—	0.00
0.3	401	13.75	3.01	0.00	0.00	0.00	—	—	0.00
0.3	481	13.80	3.30	0.00	0.00	0.00	—	—	0.00
0.3	561	13.85	3.56	0.00	0.00	0.00	—	—	0.00
0.4	642	13.90	3.81	0.00	0.00	0.00	—	—	0.00
0.4	722	13.95	4.04	0.00	0.00	0.00	—	—	0.00
0.5	802	14.00	4.25	0.00	0.00	0.00	—	—	0.00
0.6	1,801	14.10	4.66	0.00	0.00	0.00	—	—	0.00
0.7	2,800	14.20	5.03	0.00	0.00	0.00	—	—	0.00
0.8	3,799	14.30	5.38	0.00	0.00	0.00	—	—	0.00
0.9	4,798	14.40	5.71	0.00	0.00	0.00	—	—	0.00
1.0	5,797	14.50	6.02	0.00	0.00	0.00	—	—	0.00
1.1	6,795	14.60	6.31	0.00	0.00	0.00	—	—	0.00
1.2	7,794	14.70	6.59	0.00	0.00	0.00	—	—	0.00
1.3	8,793	14.80	6.86	0.00	0.00	0.00	—	—	0.00
1.4	9,792	14.90	7.12	0.00	0.00	0.00	—	—	0.00
1.5	10,791	15.00	7.37	0.00	0.00	0.00	—	—	0.00
1.6	12,933	15.10	7.84	0.00	0.00	0.00	—	—	0.00
1.7	15,074	15.20	8.29	0.00	0.00	0.00	—	—	0.00
1.8	17,216	15.30	8.72	0.00	0.00	0.00	—	—	0.00
1.9	19,357	15.40	9.12	0.00	0.00	0.00	—	—	0.00

Continues on next page...

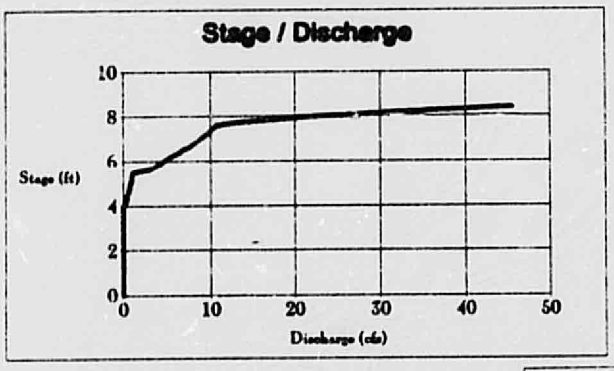
Stage / Storage / Discharge Table

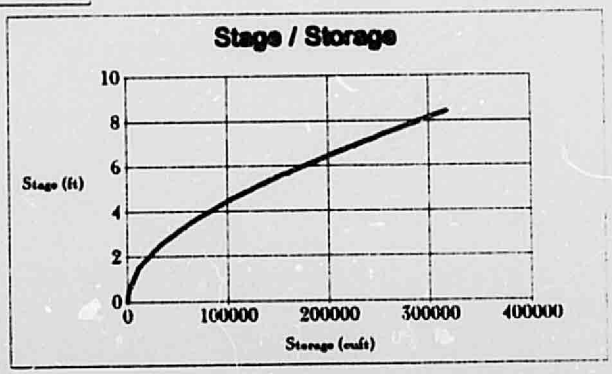
Stage (ft)	Storage (cuft)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Discharge (cfs)
2.0	21,499	15.50	9.51	0.00	0.00	0.00	—	—	0.00
2.1	23,640	15.60	9.89	0.00	0.00	0.00	—	—	0.00
2.2	25,782	15.70	10.24	0.00	0.00	0.00	—	—	0.00
2.3	27,923	15.80	10.59	0.00	0.00	0.00	—	—	0.00
2.4	30,065	15.90	10.93	0.00	0.00	0.00	—	—	0.00
2.5	32,206	16.00	11.25	0.00	0.00	0.00	—	—	0.00
2.6	35,270	16.10	11.57	0.00	0.00	0.00	—	—	0.00
2.7	38,333	16.20	11.88	0.00	0.00	0.00	—	—	0.00
2.8	41,397	16.30	12.18	0.00	0.00	0.00	—	—	0.00
2.9	44,460	16.40	12.47	0.00	0.00	0.00	—	—	0.00
3.0	47,524	16.50	12.76	0.00	0.00	0.00	—	—	0.00
3.1	50,587	16.60	13.04	0.00	0.00	0.00	—	—	0.00
3.2	53,651	16.70	13.32	0.00	0.00	0.00	—	—	0.00
3.3	56,714	16.80	13.59	0.00	0.00	0.00	—	—	0.00
3.4	59,778	16.90	13.85	0.00	0.00	0.00	—	—	0.00
3.5	62,841	17.00	14.11	0.00	0.00	0.00	—	—	0.00
3.6	66,781	17.10	14.36	0.00	0.00	0.00	—	—	0.00
3.7	70,720	17.20	14.61	0.00	0.00	0.00	—	—	0.00
3.8	74,660	17.30	14.86	0.00	0.00	0.00	—	—	0.00
3.9	78,600	17.40	15.10	0.00	0.00	0.00	—	—	0.00
4.0	82,540	17.50	15.34	0.00	0.00	0.00	—	—	0.00
4.1	86,479	17.60	15.57	0.21	0.00	0.00	—	—	0.21
4.2	90,419	17.70	15.80	0.30	0.00	0.00	—	—	0.30
4.3	94,359	17.80	16.03	0.37	0.00	0.00	—	—	0.37
4.4	98,298	17.90	16.25	0.42	0.00	0.00	—	—	0.42
4.5	102,238	18.00	16.48	0.47	0.00	0.00	—	—	0.47
4.6	107,006	18.10	16.69	0.56	0.00	0.00	—	—	0.56
4.7	111,773	18.20	16.91	0.58	0.00	0.00	—	—	0.58
4.8	116,541	18.30	17.12	0.70	0.00	0.00	—	—	0.70
4.9	121,308	18.40	17.33	0.76	0.00	0.00	—	—	0.76
5.0	126,076	18.50	17.54	0.82	0.00	0.00	—	—	0.82
5.1	130,844	18.60	17.74	0.87	0.00	0.00	—	—	0.87
5.2	135,611	18.70	17.95	0.92	0.00	0.00	—	—	0.92
5.3	140,379	18.80	18.15	0.97	0.00	0.00	—	—	0.97
5.4	145,146	18.90	18.35	1.01	0.00	0.00	—	—	1.01
5.5	149,914	19.00	18.54	1.06	0.00	0.00	—	—	1.06
5.6	155,309	19.10	18.74	1.10	1.50	0.00	—	—	2.60
5.7	160,703	19.20	18.93	1.14	2.13	0.00	—	—	3.26
5.8	166,098	19.30	19.12	1.18	2.60	0.00	—	—	3.78
5.9	171,492	19.40	19.31	1.21	3.01	0.00	—	—	4.22
6.0	176,887	19.50	19.49	1.25	3.36	0.00	—	—	4.61
6.1	182,282	19.60	19.68	1.29	3.68	0.00	—	—	4.97
6.2	187,676	19.70	19.86	1.32	4.07	0.00	—	—	5.39
6.3	193,071	19.80	20.04	1.35	4.59	0.00	—	—	5.95
6.4	198,465	19.90	20.22	1.39	5.06	0.00	—	—	6.45
6.5	203,860	20.00	20.40	1.42	5.28	0.00	—	—	6.70
6.6	209,662	20.10	20.58	1.45	5.89	0.00	—	—	7.33
6.7	215,463	20.20	20.75	1.48	6.26	0.00	—	—	7.74
6.8	221,265	20.30	20.93	1.51	6.61	0.00	—	—	8.12
6.9	227,067	20.40	21.10	1.54	6.94	0.00	—	—	8.48

Continues on next page...

Stage / Storage / Discharge Table

Stage (ft)	Storage (cuft)	Elevation (ft)	Culv. A (cfs)	Culv. B (cfs)	Culv. C (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Discharge (cfs)
7.0	232,869	20.50	21.27	1.57	7.26	0.00	—	—	8.83
7.1	238,670	20.60	21.44	1.60	7.57	0.00	—	—	9.16
7.2	244,472	20.70	21.61	1.62	7.86	0.00	—	—	9.48
7.3	250,274	20.80	21.77	1.65	8.14	0.00	—	—	9.79
7.4	256,075	20.90	21.94	1.68	8.41	0.00	—	—	10.09
7.5	261,877	21.00	22.10	1.70	8.68	0.00	—	—	10.38
7.5	262,478	21.01	22.12	1.71	8.70	0.00	—	—	10.41
7.5	263,080	21.02	22.14	1.71	8.73	0.00	—	—	10.44
7.5	263,681	21.03	22.15	1.71	8.76	0.00	—	—	10.47
7.5	264,282	21.04	22.17	1.71	8.78	0.00	—	—	10.50
7.6	264,884	21.05	22.19	1.72	8.81	0.00	—	—	10.52
7.6	265,485	21.06	22.20	1.72	8.83	0.00	—	—	10.55
7.6	266,086	21.07	22.22	1.72	8.86	0.00	—	—	10.58
7.6	266,688	21.08	22.23	1.73	8.88	0.00	—	—	10.61
7.6	267,289	21.09	22.25	1.73	8.91	0.00	—	—	10.64
7.6	267,890	21.10	22.27	1.73	8.93	0.00	—	—	10.66
7.7	273,475	21.19	22.41	1.75	9.16	1.22	—	—	12.13
7.8	279,060	21.28	22.56	1.78	9.38	3.44	—	—	14.59
7.9	284,645	21.37	22.70	1.80	9.59	6.31	—	—	17.71
8.0	290,230	21.46	22.84	1.82	9.80	9.72	—	—	21.34
8.1	295,815	21.55	22.99	1.84	10.01	13.58	—	—	25.44
8.1	301,400	21.64	23.13	1.86	10.21	17.86	—	—	29.93
8.2	306,985	21.73	23.27	1.89	10.41	22.50	—	—	34.79
8.3	312,570	21.82	23.41	1.91	10.60	27.49	—	—	40.00
8.4	318,155	21.91	23.55	1.93	10.79	32.81	—	—	45.52
8.5	323,740	22.00	23.68	1.95	10.98	38.42	—	—	51.35





Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line size (in)	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line slope (%)	HGL down (ft)	HGL up (ft)	Minor loss (ft)	Dns line No.
1	3F	32.33	9 x 72 b	19.0	33.09	38.98	31.000	33.33	39.22	0.00	End
2	3E	32.35	9 x 72 b	15.5	38.98	39.94	6.194	39.38	40.34	0.00	1
3	3D	32.53	9 x 72 b	93.5	39.94	41.58	1.754	40.52	42.16	0.00	2
4	3C	32.54	9 x 72 b	10.0	41.58	43.03	14.500	41.88	43.33	0.00	3
5	4B	15.89	9 x 72 b	19.0	43.03	44.09	5.579	43.29	44.35	0.00	4
6	4A	15.91	18 c	24.5	44.09	45.20	4.531	45.03	46.14	0.00	5
7	3B	17.47	9 x 72 b	110.0	43.03	45.00	1.791	43.43	45.40	0.00	4
8	3A	17.65	9 x 72 b	118.0	45.00	46.50	1.271	45.44	46.94	0.00	7
9	1C	17.67	24 c	13.0	46.50	46.60	0.769	47.96	48.08	0.78	8
10	2B	4.27	18 c	20.0	47.10	47.90	4.000	48.86	48.74	0.00	9
11	2A	2.40	18 c	46.0	47.90	48.30	0.870	48.74	48.89	0.00	10
12	1B	13.75	24 c	239.0	47.60	49.50	0.795	48.83	50.73	0.00	9
13	1A	12.08	24 c	39.0	49.50	50.30	2.051	50.35	51.15	0.00	12

PROJECT FILE: SS3A.STM | I-D-F FILE: COAWSAT.IDF | TOTAL NO. LINES: 13 | RUN DATE: 06-28-1996

NOTES: c = circular; e = elliptical; b = box; Return period = 100 Yrs.; * indicates surcharge condition.

Storm Sewer Tabulation

Line #	Line ID	Incr. Area (ac)	Rnoff coeff (C)	Incr. CA	Sum CA	Tc (min)	Rnfal Intsn (in/hr)	Total runoff (cfs)	Add. flow (cfs)	Total flow (cfs)	Capac. @ full (cfs)	Line size (in x in)	Line length (ft)	Line slope (%)	Veloc. up (ft/s)	Veloc. down (ft/s)	NG up (ft)	NG down (ft)	Invert up (ft)	Invert down (ft)	Dns line #
1	3F	0.00	0.00	0.00	5.95	13.4	5.43	32.3	0.0	32.3	137.6	9 x 72 b	19	31.00	22.4	22.4	40.00	0.00	38.98	33.09	0
2	3E	0.00	0.00	0.00	5.95	13.4	5.43	32.3	0.0	32.3	61.5	9 x 72 b	16	6.19	13.5	13.5	41.00	40.00	39.94	38.98	1
3	3D	0.00	0.00	0.00	5.95	13.2	5.47	32.5	0.0	32.5	32.7	9 x 72 b	94	1.75	9.3	9.3	43.00	41.00	41.58	39.94	2
4	3C	0.00	0.00	0.00	5.95	13.2	5.47	32.5	0.0	32.5	94.1	9 x 72 b	10	14.50	18.1	18.1	44.00	43.00	43.03	41.58	3
5	4B	0.00	0.00	0.00	2.78	12.0	5.71	15.9	0.0	15.9	58.4	9 x 72 b	19	5.58	10.2	10.2	45.00	44.00	44.09	43.03	4
6	4A	4.03	0.69	2.78	2.78	12.0	5.71	15.9	0.0	15.9	22.4	18 c	25	4.53	13.7	13.7	50.00	45.00	45.20	44.09	5
7	3B	0.00	0.00	0.00	3.17	13.0	5.52	17.5	0.0	17.5	33.1	9 x 72 b	110	1.79	7.3	7.3	46.00	44.00	45.00	43.03	4
8	3A	0.00	0.00	0.00	3.17	12.7	5.57	17.7	0.0	17.7	27.9	9 x 72 b	118	1.27	6.7	6.7	47.50	46.00	46.50	45.00	7
9	1C	0.00	0.00	0.00	3.17	12.7	5.58	17.7	0.0	17.7	19.8	24 c	13	0.77	7.1	7.1	50.00	47.50	46.60	46.50	8
10	2B	0.47	0.71	0.33	0.75	12.3	5.66	4.3	0.0	4.3	21.0	18 c	20	4.00	4.2	2.4	50.90	50.00	47.90	47.10	9
11	2A	0.60	0.70	0.42	0.42	12.0	5.71	2.4	0.0	2.4	9.8	18 c	46	0.87	3.7	2.4	52.80	50.90	48.30	47.90	10
12	1B	0.53	0.56	0.30	2.41	12.1	5.70	13.8	0.0	13.8	20.2	24 c	239	0.79	6.8	6.8	53.50	50.00	49.50	47.60	9
13	1A	9.40	0.22	2.11	2.11	12.0	5.71	12.1	0.0	12.1	32.4	24 c	39	2.05	9.4	9.4	53.50	53.50	50.30	49.50	12

PROJECT FILE: SS3A.STM | I-D-F FILE: COAWSAT.IDF | TOTAL NUMBER OF LINES: 13 | RUN DATE: 06-28-1996

NOTES: c = circular; e = elliptical; b = box; Intensity = 75.86997 / (Tc + 10.7) ^ .8283418; Return period = 100 Yrs.

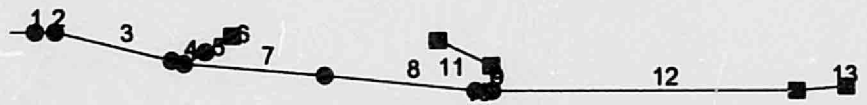
Inlet Report

Line #	Line ID	Drng area (ac)	Inlet time (min)	Intensity (in/hr)	Runoff coeff (C)	Q = CIA (cfs)	Q carry (cfs)	Inlet type	Inlet length (ft)	Grate area (sqft)	Grate perim (ft)	Cap factor (K)	Gutter slope (ft/ft)	Cross slope (ft/ft)	Q captured (cfs)	Q bypass (cfs)	Spread (ft)	Dns inlet #
1	3F	0.00	0.0	0.00	0.00	0.00	0.00	MH	0.0	0.0	0.0	0	0.000	0.000	0.00	0.00	0.00	Off
2	3E	0.00	0.0	0.00	0.00	0.00	0.00	MH	0.0	0.0	0.0	0	0.000	0.000	0.00	0.00	0.00	1
3	3D	0.00	0.0	0.00	0.00	0.00	0.00	MH	0.0	0.0	0.0	0	0.000	0.000	0.00	0.00	0.00	2
4	3C	0.00	0.0	0.00	0.00	0.00	0.00	MH	0.0	0.0	0.0	0	0.000	0.000	0.00	0.00	0.00	3
5	4B	0.00	0.0	0.00	0.00	0.00	0.00	MH	0.0	0.0	0.0	0	0.000	0.000	0.00	0.00	0.00	4
6	4A	4.03	12.0	5.71	0.69	15.91	0.00	Grate	0.0	8.0	17.8	0	0.000	0.010	15.91	0.00	41.84	5
7	3B	0.00	0.0	0.00	0.00	0.00	0.00	MH	0.0	0.0	0.0	0	0.000	0.000	0.00	0.00	0.00	4
8	3A	0.00	0.0	0.00	0.00	0.00	0.00	MH	0.0	0.0	0.0	0	0.000	0.000	0.00	0.00	0.00	7
9	1C	0.00	0.0	0.00	0.00	0.00	0.00	MH	0.0	0.0	0.0	0	0.000	0.000	0.00	0.00	0.00	8
10	2B	0.47	12.0	5.71	0.71	1.90	0.00	Grate	0.0	4.0	12.8	0	0.000	0.010	1.90	0.00	12.65	9
11	2A	0.60	12.0	5.71	0.70	2.40	0.00	Grate	0.0	4.0	12.8	0	0.000	0.010	2.40	0.00	14.78	10
12	1B	0.53	12.0	5.71	0.56	1.70	0.00	Comb.	6.8	11.3	11.0	24	0.010	0.030	1.70	0.00	6.83	Off
13	1A	9.40	12.0	5.71	0.22	12.08	0.00	Grate	0.0	8.0	11.8	0	0.000	0.010	12.08	0.00	45.81	Off

PROJECT FILE: SS3A.STM | I-D-F FILE: COAWSAT.IDF | TOTAL NUMBER OF LINES: 13 | RUN DATE: 06-28-1996

NOTES: Inlet N-Values = .016 ; Average inlet throat height = 6 in.; Intensity = 75.86997 / (Inlet time + 10.7) ^ .8283418; Return period = 100 Yrs

Plan View



Proj. file: SS3.STM	IDF file: COAWSAT.IDF	No. Lines: 13	06-25-1996

25X

Storm Sewer - Pond #2

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line size (in)	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line slope (%)	HGL down (ft)	HGL up (ft)	Minor loss (ft)	Dns line No.
1	5C	14.70	24 c	129.5	15.30	20.75	4.208	16.08	21.53	0.00	End
2	5B	14.70	18 c	215.0	20.75	26.50	2.674	21.83	27.58	0.00	1
3	5A	14.70	18 c	98.0	26.50	31.00	4.592	27.40	31.90	0.00	2

PROJECT FILE: SS6.STM	I-D-F FILE: COAWSAT.IDF	TOTAL NO. LINES: 3	RUN DATE: 06-26-1996

NOTES: c = circular; e = elliptical; b = box; Return period = 100 Yrs.; * indicates surcharge condition.

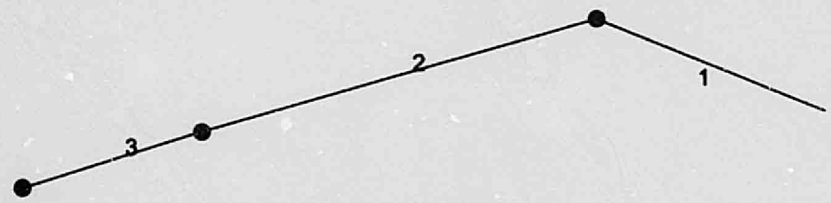
Storm Sewer Tabulation

Line #	Line ID	Incr. Area (ac)	Rnoff coeff (C)	Incr. CA	Sum CA	Tc (min)	Rnfal Inten (in/hr)	Total runoff (cfs)	Add. flow (cfs)	Total flow (cfs)	Capac @ full (cfs)	Line size (in x in)	Line length (ft)	Line slope (%)	Veloc. up (ft/s)	Veloc. down (ft/s)	NG up (ft)	NG down (ft)	Invert up (ft)	Invert down (ft)	Dns line #
1	5C	0.00	0.00	0.00	0.00	0.5	0.00	0.0	0.0	14.7	46.4	24 c	130	4.21	12.9	12.9	28.50	0.00	20.75	15.30	0
2	5B	0.00	0.00	0.00	0.00	0.1	0.00	0.0	0.0	14.7	17.2	18 c	215	2.67	10.8	10.8	31.20	28.50	26.50	20.75	1
3	5A	0.00	0.00	0.00	0.00	0.0	0.00	0.0	14.7	14.7	22.5	18 c	98	4.59	13.2	13.2	33.65	31.20	31.00	26.50	2

PROJECT FILE: SS6.STM	I-D-F FILE: COAWSAT.IDF	TOTAL NUMBER OF LINES: 3	RUN DATE: 06-28-1996

NOTES: c = circular; e = elliptical; b = box; Intensity = 75.86997 / (Tc + 10.7) ^ .8283418; Return period = 100 Yrs.

Plan View



Proj. file: SS6.STM	IDF file: COAWSAT.IDF	No. Lines: 3	06-26-1996

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line size (in)	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line slope (%)	HGL down (ft)	HGL up (ft)	Minor loss (ft)	Dns line No.
1	6N	12.40	9 x 72 b	20.5	20.25	26.76	31.756	21.02	27.27	0.00	End
2	6M	12.40	9 x 72 b	6.5	26.76	27.14	5.846	26.98	27.36	0.00	1
3	6L	12.45	9 x 72 b	31.5	27.14	27.37	0.730	27.56	27.79	0.00	2
4	6K	7.37	9 x 72 b	53.0	27.37	27.64	0.509	27.79	28.00	0.00	3
5	6J	7.43	9 x 72 b	62.5	27.64	28.22	0.928	27.92	28.50	0.00	4
6	6I	7.45	9 x 72 b	15.0	28.22	28.28	0.400	28.58	28.66	0.00	5
7	6H	7.48	9 x 72 b	25.5	28.28	28.48	0.784	28.66	28.84	0.00	6
8	6G	7.57	9 x 72 b	91.0	28.48	29.47	1.088	28.76	29.75	0.00	7
9	6F	7.58	9 x 72 b	10.0	29.47	29.57	1.000	29.75	29.85	0.00	8
10	6E	7.65	9 x 72 b	76.0	29.57	30.35	1.026	29.85	30.63	0.00	9
11	6D	7.69	9 x 72 b	36.0	30.35	30.78	1.194	30.63	31.06	0.00	10
12	6C	4.29	9 x 72 b	50.0	30.78	34.84	8.120	31.06	35.09	0.00	11
13	6B	4.30	9 x 72 b	25.5	34.84	37.63	10.941	34.94	37.73	0.00	12
14	6A	4.31	9 x 72 b	33.0	37.63	41.33	11.212	37.73	41.43	0.00	13

PROJECT FILE: SS4.STM	I-D-F FILE: COAWSAT.IDF	TOTAL NO. LINES: 14	RUN DATE: 06-28-1996

NOTES: c = circular; e = elliptical; b = box; Return period = 100 Yrs.; * Indicates surcharge condition.

Storm Sewer Tabulation

Line #	Line ID	Incr. Area (ac)	Rnoff coeff (C)	Incr. CA	Sum CA	Tc (min)	Rnfal Inten (in/hr)	Total runoff (cfs)	Add. flow (cfs)	Total flow (cfs)	Capac. @ full (cfs)	Line size (in x in)	Line length (ft)	Line slope (%)	Veloc. up (ft/s)	Veloc. down (ft/s)	NG up (ft)	NG down (ft)	Invert up (ft)	Invert down (ft)	Dns line #
1	6N	0.00	0.00	0.00	2.33	14.1	5.32	12.4	0.0	12.4	139.3	9 x 72 b	21	31.76	4.0	2.8	0.00	0.00	26.76	20.25	0
2	6M	0.00	0.00	0.00	2.33	14.1	5.32	12.4	0.0	12.4	59.6	9 x 72 b	7	5.85	9.4	9.4	0.00	0.00	27.14	26.76	1
3	6L	1.96	0.49	0.96	2.33	13.9	5.34	12.4	0.0	12.4	21.1	9 x 72 b	32	0.73	4.9	4.9	0.00	0.00	27.37	27.14	2
4	6K	0.00	0.00	0.00	1.37	13.7	5.39	7.4	0.0	7.4	17.6	9 x 72 b	53	0.51	3.4	2.9	0.00	0.00	27.64	27.37	3
5	6J	0.00	0.00	0.00	1.37	13.4	5.43	7.4	0.0	7.4	23.8	9 x 72 b	63	0.93	4.4	4.4	0.00	0.00	28.22	27.64	4
6	6I	0.00	0.00	0.00	1.37	13.4	5.44	7.4	0.0	7.4	15.6	9 x 72 b	15	0.40	3.2	3.4	0.00	0.00	28.28	28.22	5
7	6H	0.00	0.00	0.00	1.37	13.2	5.47	7.5	0.0	7.5	21.9	9 x 72 b	26	0.78	3.4	3.3	0.00	0.00	28.48	28.28	6
8	6G	0.00	0.00	0.00	1.37	12.9	5.53	7.6	0.0	7.6	25.8	9 x 72 b	91	1.09	4.5	4.5	0.00	0.00	29.47	28.48	7
9	6F	0.00	0.00	0.00	1.37	12.9	5.54	7.6	0.0	7.6	24.7	9 x 72 b	10	1.00	4.5	4.5	0.00	0.00	29.57	29.47	8
10	6E	0.00	0.00	0.00	1.37	12.6	5.59	7.7	0.0	7.7	25.0	9 x 72 b	76	1.03	4.6	4.6	0.00	0.00	30.35	29.57	9
11	6D	1.38	0.44	0.61	1.37	12.4	5.62	7.7	0.0	7.7	27.0	9 x 72 b	36	1.19	4.6	4.6	0.00	0.00	30.78	30.35	10
12	6C	0.00	0.00	0.00	0.75	12.1	5.68	4.3	0.0	4.3	70.4	9 x 72 b	50	8.12	2.8	2.6	0.00	0.00	34.84	30.78	11
13	6B	0.00	0.00	0.00	0.75	12.1	5.70	4.3	0.0	4.3	81.8	9 x 72 b	26	10.94	7.2	7.2	0.00	0.00	37.63	34.84	12
14	6A	1.77	0.43	0.75	0.75	12.0	5.71	4.3	0.0	4.3	82.8	9 x 72 b	33	11.21	7.2	7.2	0.00	0.00	41.33	37.63	13

PROJECT FILE: SS4.STM	I-D-F FILE: COAWSAT.IDF	TOTAL NUMBER OF LINES: 14	RUN DATE: 06-28-1996

NOTES: c = circular; e = elliptical; b = box; Intensity = 75.86997 / (Tc + 10.7) ^ .8283418; Return period = 100 Yrs.

Plan View

Proj. file: SS4.STM	IDF file: COAWSAT.IDF	No. Lines: 14	06-26-1996

25 X

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line size (in)	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line slope (%)	HGL down (ft)	HGL up (ft)	Minor loss (ft)	Dns line No.
1	8C	5.10	9 x 72 b	13.0	17.88	22.69	37.000	17.96	22.77	0.00	End
2	8B	5.19	9 x 72 b	125.0	22.69	23.75	0.848	22.93	23.99	0.00	1
3	8A	5.46	9 x 72 b	272.0	23.75	24.89	0.419	24.05	25.19	0.00	2
4	7B	3.98	24 c	173.0	24.89	26.50	0.931	25.45	27.09	0.00	3
5	7A	2.10	24 c	39.0	26.50	26.70	0.513	27.09	27.21	0.00	4

PROJECT FILE: SS5.STM	I-D-F FILE: COAWSAT.IDF	TOTAL NO. LINES: 5	RUN DATE: 06-28-1996

NOTES: c = circular; e = elliptical; b = box; Return period = 100 Yrs.; * indicates surcharge condition.

25 x 10

Storm Sewer Tabulation

Line #	Line ID	Incr. Area (ac)	Rnoff coeff (C)	Incr. CA	Sum CA	Tc (min)	Rnfall Intsn (in/hr)	Total runoff (cfs)	Add. flow (cfs)	Total flow (cfs)	Capac. @ full (cfs)	Line size (in x in)	Line length (ft)	Line slope (%)	Veloc. up (ft/s)	Veloc. down (ft/s)	NG up (ft)	NG down (ft)	Invert up (ft)	Invert down (ft)	Dns line #
1	8C	0.00	0.00	0.00	0.98	14.8	5.18	5.1	0.0	5.1	150.4	9 x 72 b	13	37.00	10.6	10.6	0.00	0.00	22.69	17.88	0
2	8B	0.00	0.00	0.00	0.98	14.3	5.28	5.2	0.0	5.2	22.8	9 x 72 b	125	0.85	3.6	3.6	0.00	0.00	23.75	22.69	1
3	8A	1.24	0.23	0.28	0.98	12.8	5.55	5.5	0.0	5.5	16.0	9 x 72 b	272	0.42	3.1	3.1	0.00	0.00	24.89	23.75	2
4	7B	0.47	0.71	0.33	0.70	12.2	5.67	4.0	0.0	4.0	21.8	24 c	173	0.93	5.1	5.1	0.00	0.00	26.50	24.89	3
5	7A	1.60	0.23	0.37	0.37	12.0	5.71	2.1	0.0	2.1	16.2	24 c	39	0.51	3.3	2.7	0.00	0.00	26.70	26.50	4

PROJECT FILE: SS5.STM | I-D-F FILE: COAWSAT.IDF | TOTAL NUMBER OF LINES: 5 | RUN DATE: 06-28-1996

NOTES: c = circular; e = elliptical; b = box; Intensity = 75.86997 / (Tc + 10.7) ^ .8283418; Return period = 100 Yrs.

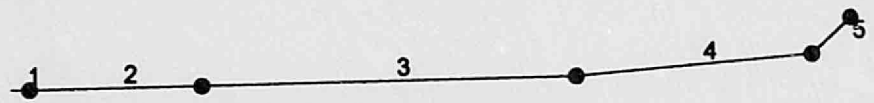
Inlet Report

Line #	Line ID	Drng area (ac)	Inlet time (min)	Intensity (in/hr)	Runoff coeff (C)	Q = CIA (cfs)	Q carry (cfs)	Inlet type	Inlet length (ft)	Grate area (sqft)	Grate perim (ft)	Cap factor (K)	Gutter slope (ft/ft)	Cross slope (ft/ft)	Q captured (cfs)	Q bypass (cfs)	Spread (ft)	Dns inlet #
1	8C	0.00	0.0	0.00	0.00	0.00	0.00	MH	0.0	0.0	0.0	0	0.000	0.000	0.00	0.00	0.00	Off
2	8B	0.00	0.0	0.00	0.00	0.00	0.00	MH	0.0	0.0	0.0	0	0.000	0.000	0.00	0.00	0.00	1
3	8A	1.24	12.0	5.71	0.23	1.61	0.00	KnCap	0.0	0.0	0.0	0	0.004	0.010	1.61	0.00	15.86	2
4	7B	0.47	12.0	5.71	0.71	1.91	0.00	Comb.	6.8	11.3	11.0	24	0.029	0.040	1.57	0.34	4.88	Off
5	7A	1.60	12.0	5.71	0.23	2.10	0.00	Grate	0.0	8.0	11.8	0	0.000	0.010	2.10	0.00	14.27	Off

PROJECT FILE: SS5.STM | I-D-F FILE: COAWSAT.IDF | TOTAL NUMBER OF LINES: 5 | RUN DATE: 06-26-1996

NOTES: Inlet N-Values = .016 ; Average inlet throat height = 6 in.; Intensity = 75.86997 / (Inlet time + 10.7) ^ .8283418; Return period = 100 Yrs.

Plan View



Proj. file: SS5.STM	IDF file: COAWSAT.IDF	No. Lines: 5	06-26-1996

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line size (in)	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line slope (%)	HGL down (ft)	HGL up (ft)	Minor loss (ft)	Dns line No.
1	9B	0.70	18 c	277.0	1.23	10.70	3.419	1.43	10.90	0.00	End
2	9A	0.70	18 c	92.0	10.70	13.50	3.043	10.90	13.70	0.00	1

PROJECT FILE: SS7.STM	I-D-F FILE: COAWSAT.IDF	TOTAL NO. LINES: 2	RUN DATE: 06-26-1996

NOTES: c = circular; e = elliptical; b = box; Return period = 100 Yrs.; * indicates surcharge condition.

25 X 10

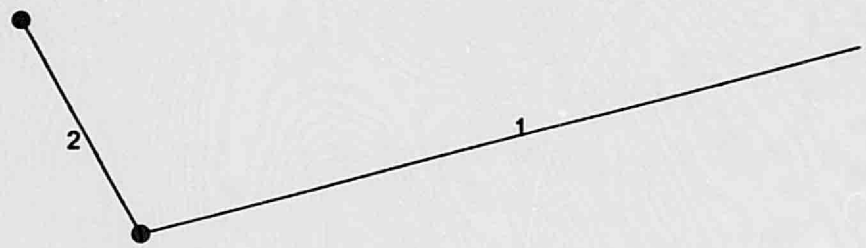
Storm Sewer Tabulation

Line #	Line ID	Incr. Area (ac)	Rnoff coeff (C)	Incr. CA	Sum CA	Tc (min)	Rnfall intsn (in/hr)	Total runoff (cfs)	Add. flow (cfs)	Total flow (cfs)	Capac. @ full (cfs)	Line size (in x in)	Line length (ft)	Line slope (%)	Veloc. up (ft/s)	Veloc. down (ft/s)	NG up (ft)	NG down (ft)	Invert up (ft)	Invert down (ft)	Dns line #
1	9B	0.00	0.00	0.00	0.00	0.3	0.00	0.0	0.0	0.7	19.4	18 c	277	3.42	5.0	5.0	18.00	0.00	10.70	1.23	0
2	9A	0.00	0.00	0.00	0.00	0.0	0.00	0.0	0.7	0.7	18.3	18 c	92	3.04	5.0	5.0	17.50	18.00	13.50	10.70	1

PROJECT FILE: SS7.STM	I-D-F FILE: COAWSAT.IDF	TOTAL NUMBER OF LINES: 2	RUN DATE: 06-28-1996

NOTES: c = circular; e = elliptical; b = box; Intensity = 75.86997 / (Tc + 10.7) ^ .8263418; Return period = 100 Yrs.

Plan View



Proj. file: SS7.STM	IDF file: COAWSAT.IDF	No. Lines: 2	06-26-1996

Storm Sewer Summary Report

Line No.	Line ID	Channel Flow Depth	Flow rate (cfs)	Line size (in)	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line slope (%)	HGL down (ft)	HGL up (ft)	Minor loss (ft)	Dns line No.
1	3F	4"	57.91	12 x 72 b	19.0	33.09	38.98	31.000	33.43	39.32	0.00	End
2	3E	7"	57.94	12 x 72 b	15.5	38.98	39.94	6.194	39.56	40.52	0.00	1
3	3D	10"	58.22	12 x 72 b	93.5	39.94	41.58	1.754	40.80	42.44	0.00	2
4	3C	5"	58.23	12 x 72 b	10.0	41.58	43.03	14.500	42.02	43.47	0.00	3
5	4B	3"	15.89	12 x 72 b	19.0	43.03	44.09	5.579	43.29	44.35	0.00	4
6	4A		15.91	18 c	24.5	44.09	45.20	4.531	45.03	46.14	0.00	5
7	3B	8"	43.21	12 x 72 b	110.0	43.03	45.00	1.791	43.73	45.70	0.00	4
8	3A	9"	43.53	12 x 72 b	118.0	45.00	46.50	1.271	45.78	47.28	0.00	7
9	1C		43.56	24 c	13.0	46.50	46.60	0.769	48.48*	48.95*	2.98	8
10	2B		4.22	18 c	20.0	47.10	47.90	4.000	51.94*	51.97*	0.00	9
11	2A		2.40	18 c	46.0	47.90	48.30	0.870	51.97*	52.00*	0.00	10
12	1B		40.29	24 c	239.0	47.60	49.50	0.795	51.94*	59.53*	0.00	9
13	1A		38.66	24 c	39.0	49.50	50.30	2.051	59.53*	60.67*	0.00	12

PROJECT FILE: SS3A.STM | I-D-F FILE: COAWSAT.IDF | TOTAL NO. LINES: 13 | RUN DATE: 06-28-1996

NOTES: c = circular; e = elliptical; b = box; Return period = 100 Yrs.; * indicates surcharge condition.

25 x

Storm Sewer Tabulation

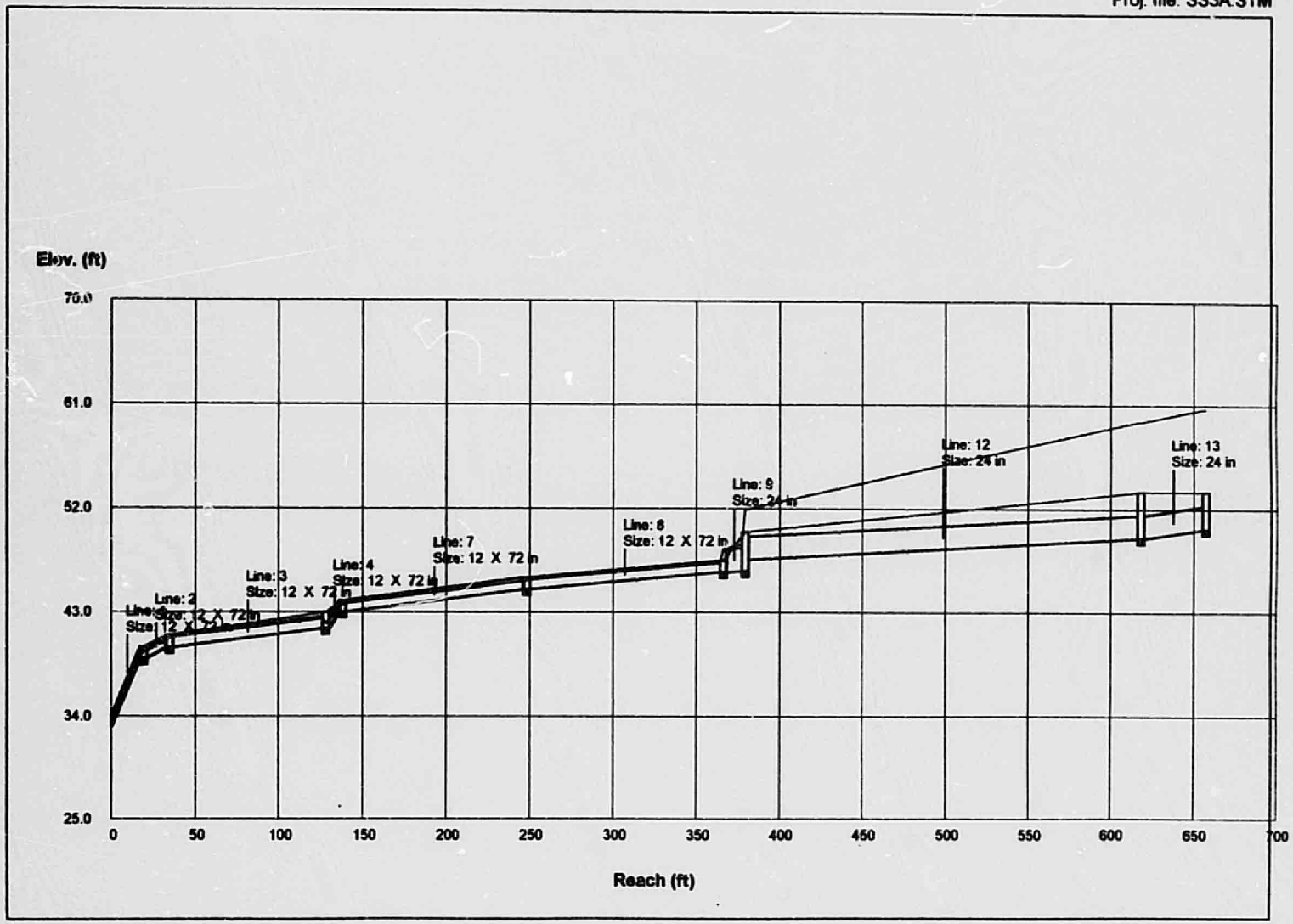
Line #	Line ID	Incr. Area (ac)	Rnoff coeff (C)	Incr. CA	Sum CA	Tc (min)	Rnfal Inten (in/hr)	Total runoff (cfs)	Add. flow (cfs)	Total flow (cfs)	Capac. @ full (cfs)	Line size (in x in)	Line length (ft)	Line slope (%)	Veloc. up (ft/s)	Veloc. down (ft/s)	NG up (ft)	NG down (ft)	Invert up (ft)	invert down (ft)	Dns line #
1	3F	0.00	0.00	0.00	10.60	13.3	5.46	57.9	0.0	57.9	217.0	12 x 72 b	19	31.00	28.4	28.4	40.00	0.00	38.98	33.09	0
2	3E	0.00	0.00	0.00	10.60	13.3	5.46	57.9	0.0	57.9	97.0	12 x 72 b	16	6.19	16.6	16.6	41.00	40.00	39.94	38.98	1
3	3D	0.00	0.00	0.00	10.60	13.1	5.49	58.2	0.0	58.2	51.6	12 x 72 b	94	1.75	11.3	11.3	43.00	41.00	41.58	39.94	2
4	3C	0.00	0.00	0.00	10.60	13.1	5.49	58.2	0.0	58.2	148.4	12 x 72 b	10	14.50	22.1	22.1	44.00	43.00	43.03	41.58	3
5	4B	0.00	0.00	0.00	2.78	12.0	5.71	15.9	0.0	15.9	92.1	12 x 72 b	19	5.58	10.2	10.2	45.00	44.00	44.09	43.03	4
6	4A	4.03	0.69	2.78	2.78	12.0	5.71	15.9	0.0	15.9	22.4	18 c	25	4.53	13.7	13.7	50.00	45.00	45.20	44.09	5
7	3B	0.00	0.00	0.00	7.82	12.9	5.53	43.2	0.0	43.2	52.2	12 x 72 b	110	1.79	10.3	10.3	46.00	44.00	45.00	43.03	4
8	3A	0.00	0.00	0.00	7.82	12.7	5.57	43.5	0.0	43.5	43.9	12 x 72 b	118	1.27	9.3	9.3	47.50	46.00	46.50	45.00	7
9	1C	0.00	0.00	0.00	7.82	12.7	5.57	43.6	0.0	43.6	19.8	24 c	13	0.77	13.9	13.9	50.00	47.50	46.60	46.50	8
10	2B	0.47	0.71	0.33	0.75	12.6	5.60	4.2	0.0	4.2	21.0	18 c	20	4.00	2.4	2.4	50.90	50.00	47.90	47.10	9
11	2A	0.60	0.70	0.42	0.42	12.0	5.71	2.4	0.0	2.4	9.8	18 c	46	0.87	1.4	1.4	52.80	50.90	48.30	47.90	10
12	1B	0.53	0.56	0.30	7.07	12.1	5.70	40.3	0.0	40.3	20.2	24 c	239	0.79	12.8	12.8	53.50	50.00	49.50	47.60	9
13	1A	9.40	0.72	6.77	6.77	12.0	5.71	38.7	0.0	38.7	32.4	24 c	39	2.05	12.3	12.3	53.50	53.50	50.30	49.50	12

PROJECT FILE: SS3A.STM | I-D-F FILE: COAWSAT.IDF | TOTAL NUMBER OF LINES: 13 | RUN DATE: 06-28-1996

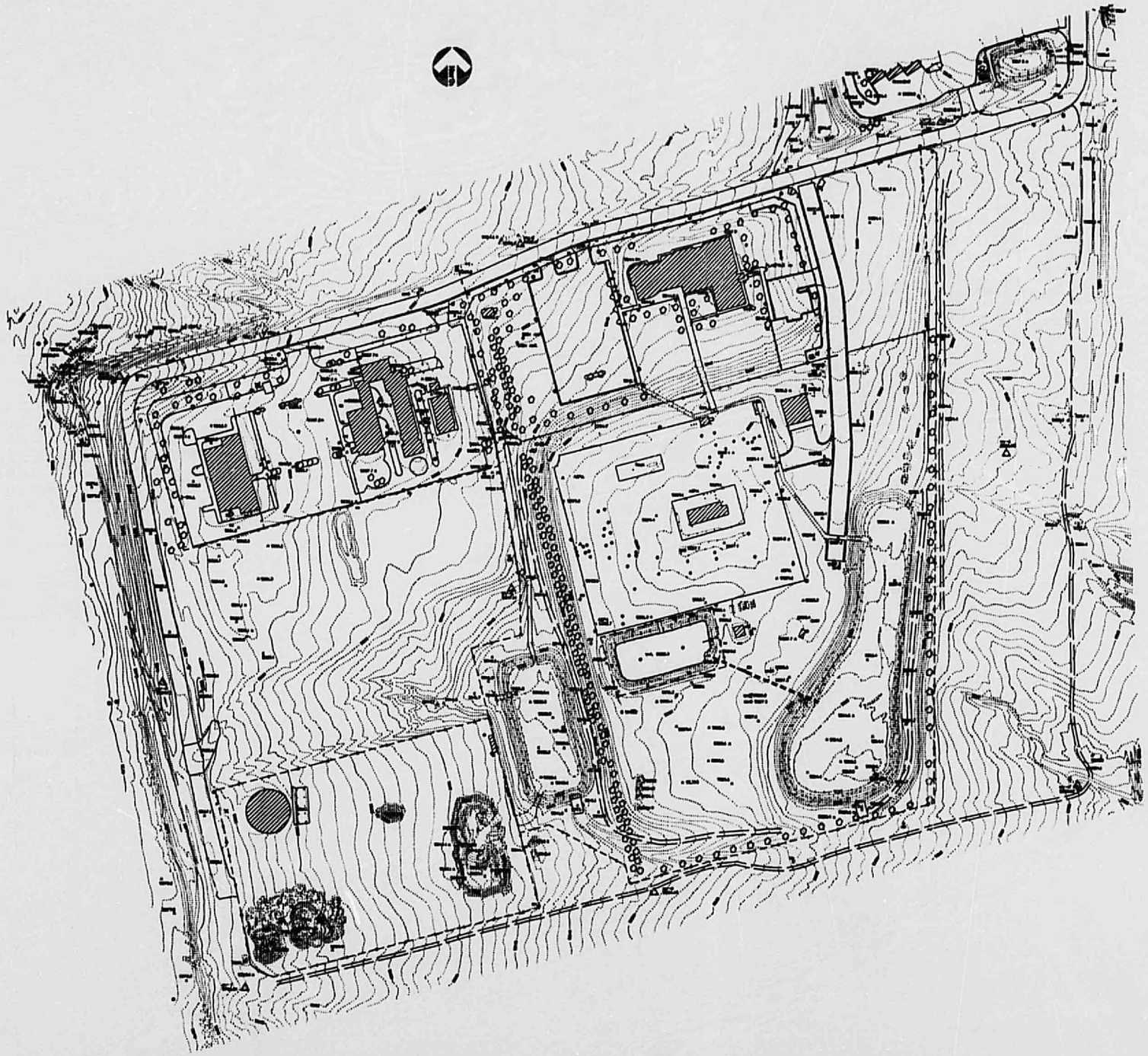
NOTES: c = circular; e = elliptical; b = box; Intensity = 75.86997 / (Tc + 10.7) ^ .8283418; Return period = 100 Yrs.

Storm Sewer Profile

Proj. file: SS3A.STM



25 X



KEYNOTES

C.L. WEBB ENGINEERING, INC.

SANDIA PARK OFFICE

POST OFFICE BOX 37
SANDIA PARK, NEW MEXICO 87047
(505) 281-1505

ALVARADO OFFICE

800 ALVARADO DR. NE
ALBUQUERQUE, NEW MEXICO
(505) 265-3444

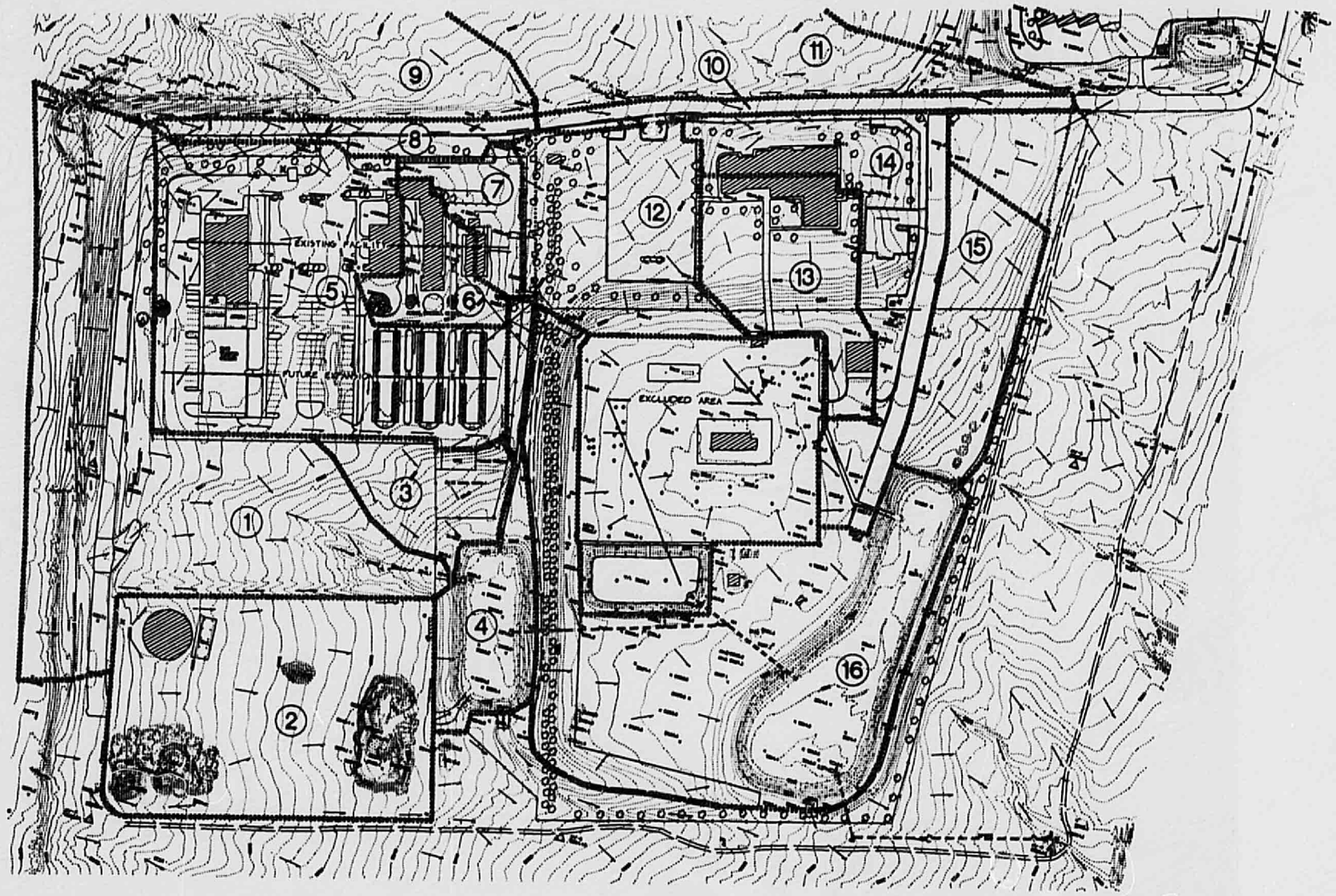
Westside Satellite Center

Scale	Drawn By	Checked By	Job Number	Date
1" = 80'	CLW	CLW		JULY 1990

Existing Site Topography

1

SH. 1 of 3



KEYNOTES

C.L. WEBB ENGINEERING, INC.

SANDIA PARK OFFICE
POST OFFICE BOX 17
SANDIA PARK, NM 87047
(505) 281-8605

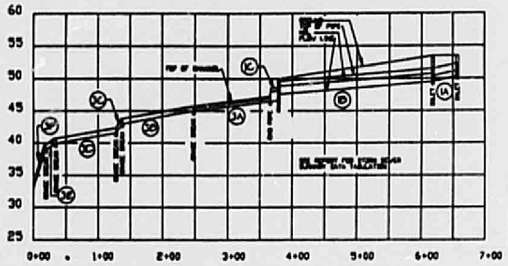
ALVARADO OFFICE
100 ALVARADO DR. NE
ALBUQUERQUE, NM 87110
(505) 265-3444

WESTSIDE SATELLITE CENTER

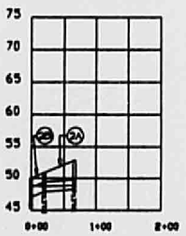
Scale	Drawn By	Checked By	Job Number	Date
1" = 80'	C.L.W.	C.L.W.		JULY 1990

Basin Map

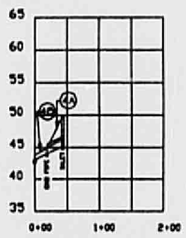
2
SH. 2 OF 3



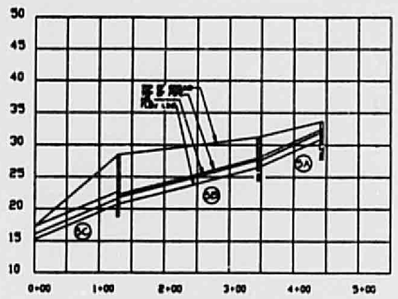
PIPE/CHANNEL SYSTEM TO POND #1



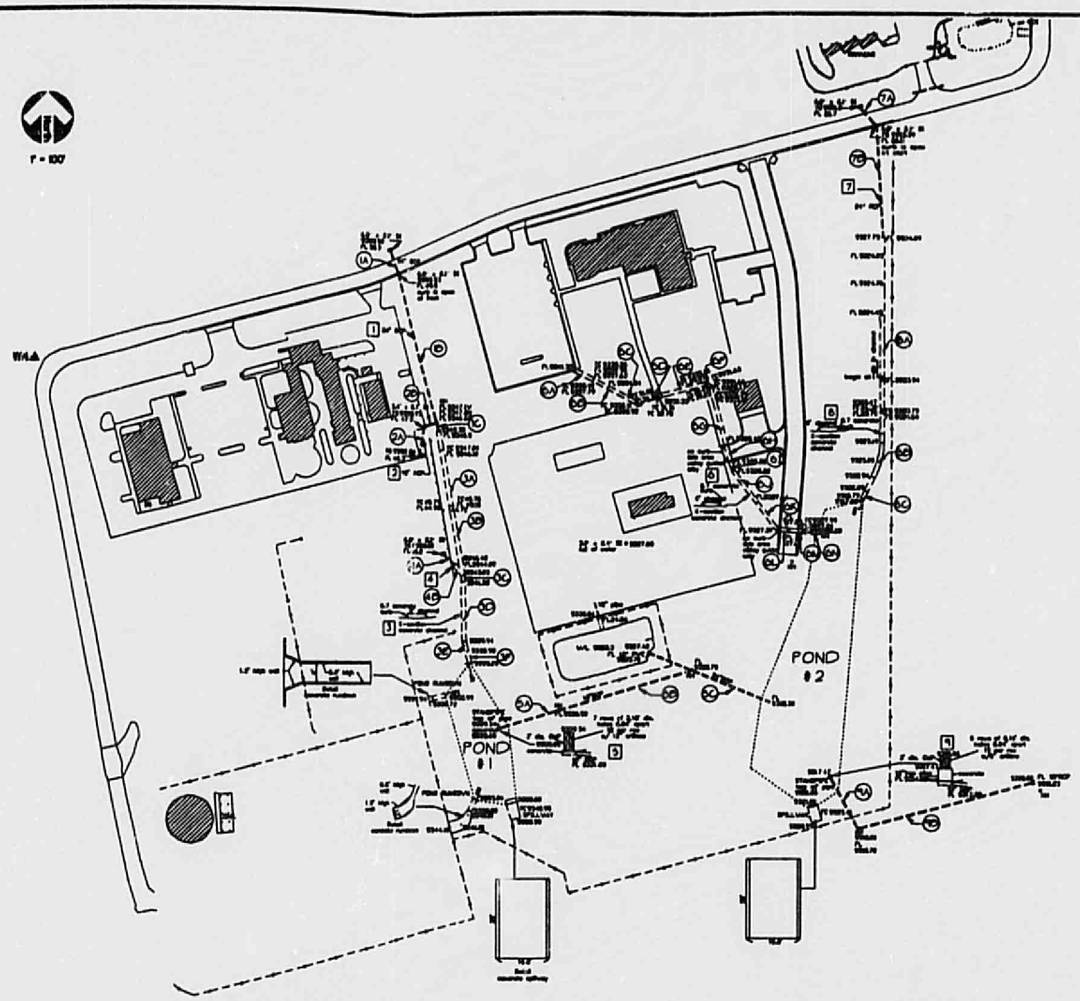
BASIN 6 + 7 INLET



BASIN 5 INLET

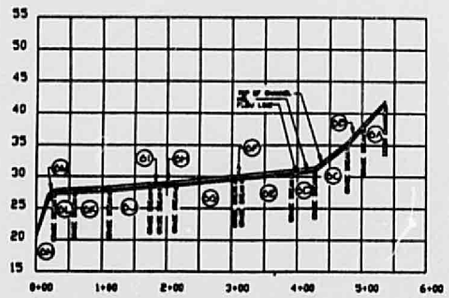


POND #1 OUTLET

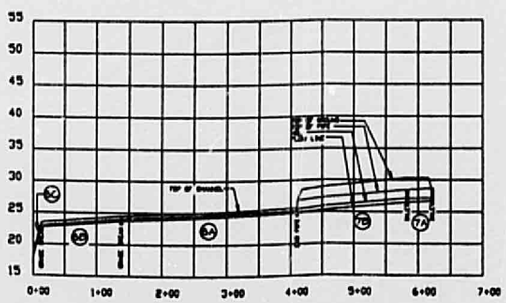


POND #1

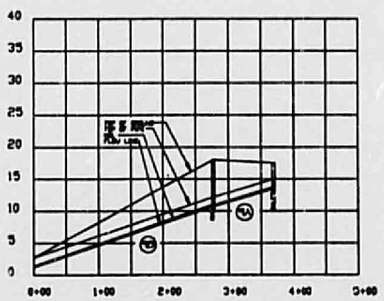
POND #2



CHANNEL SYSTEM TO POND #2



PIPE/CHANNEL SYSTEM TO POND #2



POND #2 OUTLET

KEYNOTES

EXISTING STORM DRAINAGE SYSTEM

1 24" RCP STORM DRAIN
- (1A) 3' @ 0.03% SLOPE
- (1B) 23' @ 0.006% SLOPE
- (1C) 13' @ 0.006% SLOPE

2 18" RCP STORM DRAIN
- (2A) 46' @ 0.009% SLOPE
- (2B) 30' @ 0.040% SLOPE

3 6' WIDE CONCRETE CHANNEL
- (3A) 118' @ 0.013% SLOPE
- (3B) 110' @ 0.018% SLOPE
- (3C) 10' @ 0.14% SLOPE
- (3D) 93.5' @ 0.018% SLOPE
- (3E) 155' @ 0.063% SLOPE
- (3F) 1' @ 0.310% SLOPE

4 18" RCP STORM DRAIN
- (4A) 24.5' @ 0.045% SLOPE
- (4B) 1' @ 0.036% SLOPE (CHANNEL)

5 POND #1 OUTLET PIPE
- (5A) 98'-18" RCP @ 0.046% SLOPE
- (5B) 210'-18" RCP @ 0.037% SLOPE
- (5C) 1275'-24" RCP @ 0.043% SLOPE

6 6' WIDE CONCRETE CHANNEL
- (6A) 33' @ 0.12% SLOPE
- (6B) 25.5' @ 0.10% SLOPE
- (6C) 50' @ 0.06% SLOPE
- (6D) 36' @ 0.01% SLOPE
- (6E) 76' @ 0.010% SLOPE
- (6F) 10' @ 0.010% SLOPE
- (6G) 4' @ 0.01% SLOPE
- (6H) 25.5' @ 0.006% SLOPE
- (6I) 15' @ 0.004% SLOPE
- (6J) 63.5' @ 0.009% SLOPE
- (6K) 53' @ 0.005% SLOPE
- (6L) 31.5' @ 0.007% SLOPE
- (6M) 6.5' @ 0.058% SLOPE
- (6N) 20.5' @ 0.31% SLOPE

7 24" RCP STORM DRAIN
- (7A) 3' @ 0.005% SLOPE
- (7B) 173.5' @ 0.009% SLOPE

8 6' WIDE CONCRETE CHANNEL
- (8A) 272' @ 0.004% SLOPE
- (8B) 125' @ 0.006% SLOPE
- (8C) 1' @ 0.37% SLOPE

9 POND #2 OUTLET PIPE
- (9A) 92'-18" RCP @ 0.030% SLOPE
- (9B) 277'-18" RCP @ 0.034% SLOPE

C.L. WEBB ENGINEERING, INC.

SANDIA PARK OFFICE
POST OFFICE BOX 77
SANDIA PARK, NM 87047
(505) 281-9003

ALVARADO OFFICE
500 ALVARADO DR. NE
ALBUQUERQUE, NM 87110
(505) 266-2444

Revisions

C.W.

Westside Satellite Center
As-Built Plan

Scale	Drawn By	Checked By	Job Number	Date
1" = 100'	C.L.W.	C.L.W.		JULY 1993

Existing Drainage System
SS / Channels / Outlets

3
SH. 3 of 3