354-B-2
430 Riverside Ind. Pkway
Bld. Addition
Unifirst

1998-0135

on Spreadsheet

CITY OF PORTLAND, MAINE
DEVELOPMENT REVIEW APPLICATION
PLANNING DEPARTMENT PROCESSING FORM

19980135
I. D. Number

Unifirst Corporation
Applicant

10/14/98
Application Date

68 Jonspin Rd, Wilmington, MA 01887
Applicant's Mailing Address

Addition
Project Name/Description

William E. Whited PE RA
Consultant/Agent

430 Riverside Ind Pky
Address of Proposed Site

774-2135
Applicant or Agent Daytime Telephone, Fax

354-b-002
Assessor's Reference: Chart-Block-Lot

Proposed Development (check all that apply): ☐ New Building ☒ Building Addition ☐ Change Of Use ☐ Residential
☐ Office ☐ Retail ☐ Manufacturing ☐ Warehouse/Distribution ☐ Parking Lot ☐ Other (specify)

7,000 sq. ft.	3.75	
Proposed Building square Feet or # of Units	Acreage of Site	Zoning

Check Review Required:

☒ Site Plan (major/minor)
☐ Subdivision # of lots
☐ PAD Review
☐ 14-403 Streets Review
☐ Flood Hazard
☐ Shoreland
☐ HistoricPreservation
☐ DEP Local Certification
☐ Zoning Conditional Use (ZBA/PB)
☐ Zoning Variance
☐ Other

Fees Paid: Site Plan $400.00 Subdivisio ____ Engineer Review $96.00 Date 1/28/99

Planning Approval Status:

Reviewer Kandice Talbot

☐ Approved
☒ Approved w/Conditions See Attached
☐ Denied

Approval Date 11/2/98 Approval Expiration 11/2/99 Extension to ____ ☐ Additional Sheets Attached

☒ OK to Issue Building Permi — Kandi Talbot (signature) — 1/28/99 (date)

Performance Guarantee ☒ Required* ☐ Not Required

* No building permit may be issued until a performance guarantee has been submitted as indicated below

☒ Performance Guarantee Accepted	1/21/99 (date)	$9,888.00 (amount)	4/16/00 (expiration date)
☒ Inspection Fee Paid	1/28/99 (date)	$300.00 (amount)	
☐ Building Permit Issue	____ (date)		
☐ Performance Guarantee Reduced	____ (date)	____ (remaining balance)	____ (signature)
☐ Temporary Certificate of Occupancy	____ (date)	☐ Conditions (See Attached)	
☐ Final Inspection	____ (date)	____ (signature)	
☐ Certificate Of Occupancy	____ (date)		
☐ Performance Guarantee Released	____ (date)	____ (signature)	
☐ Defect Guarantee Submitted	____ (submitted date)	____ (amount)	____ (expiration date)
☐ Defect Guarantee Released	____ (date)	____ (signature)	

CITY OF PORTLAND, MAINE
DEVELOPMENT REVIEW APPLICATION
PLANNING DEPARTMENT PROCESSING FORM

19980135
I. D. Number

Unifirst Corporation
Applicant

10/14/98
Application Date

68 Jonspin Rd, Wilmington, MA 01887
Applicant's Mailing Address

Addition
Project Name/Description

William E. Whited PE RA
Consultant/Agent

430 Riverside Ind Pky
Address of Proposed Site

774-2135
Applicant or Agent Daytime Telephone, Fax

354-b-002
Assessor's Reference: Chart-Block-Lot

Proposed Development (check all that apply): ☐ New Building ☒ Building Addition ☐ Change Of Use ☐ Residential
☐ Office ☐ Retail ☐ Manufacturing ☐ Warehouse/Distribution ☐ Parking Lot ☐ Other (specify)

7,000 sq. ft.
Proposed Building square Feet or # of Units

3.75
Acreage of Site

Zoning

Check Review Required:

☒ Site Plan (major/minor)
☐ Subdivision # of lots
☐ PAD Review
☐ 14-403 Streets Review
☐ Flood Hazard
☐ Shoreland
☐ HistoricPreservation
☐ DEP Local Certification
☐ Zoning Conditional Use (ZBA/PB)
☐ Zoning Variance
☐ Other

Fees Paid: Site Plan $400.00 Subdivision Engineer Revie $96.00 Date: 1/28/99

DRC Approval Status:

Reviewer Jim Wendel

☐ Approved
☒ Approved w/Conditions see attache
☐ Denied

Approval Date 11/2/98 Approval Expiration 11/2/99 Extension to ☒ Additional Sheets Attached

☒ Condition Compliance Jim Wendel (signature) 1/28/99 (date)

Performance Guarantee ☒ Required* ☐ Not Required

* No building permit may be issued until a performance guarantee has been submitted as indicated below

☒ Performance Guarantee Accepted	1/21/99 (date)	$9,888.00 (amount)	4/16/00 (expiration date)
☒ Inspection Fee Paid	1/28/99 (date)	$300.00 (amount)	
☐ Building Permit	(date)		
☐ Performance Guarantee Reduced	(date)	(remaining balance)	(signature)
☐ Temporary Certificate Of Occupancy	(date)	☐ Conditions (See Attached)	
☐ Final Inspection	(date)	(signature)	
☐ Certificate Of Occupancy	(date)		
☐ Performance Guarantee Released	(date)	(signature)	
☐ Defect Guarantee Submitted	(submitted date)	(amount)	(expiration date)
☐ Defect Guarantee Released	(date)	(signature)	

CITY OF PORTLAND, MAINE
DEVELOPMENT REVIEW APPLICATION
PLANNING DEPARTMENT PROCESSING FORM
ADDENDUM

19980135
I. D. Number

Unifirst Corporation
Applicant

10/14/98
Application Date

68 Jonspin Rd, Wilmington, MA 01887
Applicant's Mailing Address

Addition
Project Name/Description

William E. Whited PE RA
Consultant/Agent

430 Riverside Ind Pky
Address of Proposed Site

774-2135
Applicant or Agent Daytime Telephone, Fax

354-b-002
Assessor's Reference: Chart-Block-Lot

DRC Conditions of Approval

- that the applicant fill a low area along Riverside Industrial Parkway where ponding is occurring.

Planning Conditions of Approval

- that the applicant install curb between the parking area and the walkway, which runs along the new addition.

Inspections Conditions of Approval

Fire Conditions of Approval

Planning & Urban Development

Joseph E. Gray Jr.
Director

CITY OF PORTLAND

November 13, 1998

Unifirst Corporation
430 Riverside Industrial Parkway
Portland, ME 04103

re: 430 Riverside Industrial Parkway, Building Addition

Dear Sir:

On November 2, 1998 the Portland Planning Authority granted minor site plan approval for a building addition located at 430 Riverside Industrial Parkway with the following conditions:

i. that the applicant fill a low area along Riverside Industrial Parkway where ponding is occurring.

ii. that the applicant install curb between the parking area and the walkway, which runs along the proposed addition.

The approval is based on the submitted site plan. If you need to make any modifications to the approved site plan, you must submit a revised site plan for staff review and approval.

Please note the following provisions and requirements for all site plan approvals:

1. The site plan approval will be deemed to have expired unless work in the development has commenced within one (1) year of the approval or within a time period agreed upon in writing by the City and the applicant. A one year extension may be granted by this department if requested by the applicant in writing prior to the expiration date of the site plan.

2. A performance guarantee in a form acceptable to the City of Portland and an inspection fee equal to 1.7% of the performance guarantee will have to be posted before beginning any site construction or issuance of a building permit.

3. A defect guarantee, consisting of 10% of the performance guarantee, must be posted before the performance guarantee will be released.

O:\PLAN\DEVREVW\RIVIN430\APPRVLTR.WPD

1st UniFirst Corporation 68 JONSPIN ROAD WILMINGTON, MA 01887

when your image is important

CHECK NO. 339341

BANK OF BOSTON CONNECTICUT

51-80/111 N

ACCOUNTS PAYABLE ACCOUNT

NOT VALID SIX MONTHS AFTER ISSUE

DATE	PAY THIS AMOUNT
1-26-99	$396.00******

PAY TO THE ORDER OF City of Portland

TWO SIGNATURES REQUIRED IF IN EXCESS OF $10,000

⑈339341⑈ ⑆011100805⑆ 574 11653⑈

BankBoston, N.A.
Trade Services
Mail Code: 50-04-01
100 Federal Street
Boston, Massachusetts 02110

BankBoston

AMENDMENT

DATE: January 12, 1999

BENEFICIARY

DELIVERY BY COURIER SERVICE

City of Portland, Maine
Planning and Urban Development
389 Congress Street
Portland,, ME 04101

Credit Number:
S-161-STBY-50065559
Opener Reference No:
CITY OF PORTLAND, MAINE

Dear Sir or Madam:

We are instructed by :

UNIFIRST CORPORATION
68 JONSPIN ROAD
WILMINGTON, MA 01887

By order of UNIFIRST CORPORATION
to amend our credit 50065559 as issued in your favor.

This amendment is an integral part of the original credit.

Amended terms :

In opening paragraph of Letter of Credit,
DELETE "and expiring at our counters on December 22, 1999, or any automatically extended date thereafter."
INSERT "and expiring at our counters on April 16, 2000, or any automatically extended date thereafter."

Re: Page 3 of 3 (This Letter of Credit will automatically expire upon the earlier of:)
Item 2 Now to read: "The expiration date of April 16, 2000, or any automatically extended date as specified herein."

Letter of Credit shall expire on or before April 16, 2000, or any automatically extended date thereafter.

All other terms and conditions of the original credit instrument remain unchanged.
This letter is to accompany all draft(s) and documents. When presenting your draft(s) and documents or when communicating with us please make reference to our reference number shown above.

Yours very truly,

Authorized Official

Planning & Urban Development

Joseph E. Gray Jr.
Director

CITY OF PORTLAND

January 11, 1999

Mr. Mike Flemming
Unifirst Corp.
68 Jonspin Road
Wilmington, MA 01887

RE: Unifirst Corporation Addition, 430 Riverside Industrial Parkway

Dear Mr. Flemming:

Below is the amount that the City is requiring for the review and inspection of the Unifirst Corp. site plan.

Engineering Fee:	2 hours @ $48.00 =	$96.00
Inspection Fee:	minimum fee =	$300.00

If you have any questions, please do not hesitate to contact me at 874-8901.

Sincerely,

Kandice Talbot

Kandice Talbot
Planner

faxed 1/11/99

O:\PLAN\CORRESP\KANDI\LETTERS\FLEMMING.WPD

BankBoston, N.A.
Trade Services
Mail Code: 50-04-01
100 Federal Street
Boston, Massachusetts 02110

BankBoston

Irrevocable Letter of Credit S-161-STBY-50065559
dated December 28, 1998

Applicant:

Unifirst Corporation
68 Jonspin Road
Wilmington, MA 01887

Beneficiary:

City of Portland, Maine
Planning and Urban Development
389 Congress Street
Portland, Maine 04101

Gentlemen:

We hereby open in your favor our Irrevocable Letter of Credit for the the account of Unifirst Corporation, as developer, hereafter referred to as the Developer for a sum or sums not exceeding a total of US$9,888.00 (Nine Thousand Eight Hundred Eighty Eight and No/100 U.S. Dollars) available by your draft(s) drawn on BankBoston N.A. effective December 28, 1998 and expiring at our counter on December 22, 1999, or any automatically extended date thereafter.

Draft(s) must be accompanied by:

The original of this Letter of Credit, and all amendment thereto.

Your statement, dated the same date as the draft, purportedly signed by the Director of Planning and Urban Development reading as follows:

(1) "The Developer has failed to complete by December 22, 2000, or by the expiration date of any temporary certificate of occupancy issued, whichever date comes first, at the Developer's expense, the work on the roads and other public improvements as set forth in a certain Schedule of Costs of Public Improvements dated November 20, 1998"; OR

(2) "The Developer has failed to post the ten percent (10%) Defect Bond or Guarantee required by the Portland City Code sections 14-501 and 14-525";

OR

(3) "The Developer has failed to notify the City of inspections."

In the event of BankBoston N.A.'s dishonor of the City of Portland's sight draft, BankBoston N.A. shall inform the City of Portland in writing of the reason or reasons therefor within three (3) business days of the dishonor.

BankBoston, N.A.
Trade Services
Mail Code: 50-04-01
100 Federal Street
Boston, Massachusetts 02110

BankBoston

Irrevocable Standby Letter of Credit No: S-161-STBY-50065559 Dated 12/28/98

The City of Portland, Director of Planning and Urban Development or the City of Portland, Director of Finance, as provided in section 14-501 of the Portland City Code may authorize BankBoston N.A., by written certification, to reduce the available amount of this Letter of Credit by a specified amount after all underground work in the public right of way has been completed and inspected to the satisfaction of the Department of Public Works, including but not limited to sanitary sewers, storm drains, catch basins, manholes, electrical conduits, and other required improvements constructed chiefly below grade.

It is a condition of this Letter of Credit that it be deemed to be automatically extended without amendment for period(s) of one (1) year each from the current expiration date hereof, or any future expiration date, unless at least sixty (60) days prior to any expiration date, BankBoston N.A. notifies the Director of Planning and Urban Development by courier service at the above listed address that BankBoston N.A. elects not to consider this Letter of Credit renewed for any such additional period.
In the event of such notice, the City may draw hereunder by presentation of a sight draft drawn on BankBoston N.A. accompanied by the original Letter of Credit and all amendments thereto, and a statement, dated the same date as the draft, purportedly signed by the Director of Planning and Urban Development reading as follows:

"This drawing results from notification that BankBoston N.A. has elected not to renew its Letter of Credit No: S-161-STBY-50065559 dated 12/28/98" ; OR

" This drawing results from the Developer's failure to timely complete to the satisfaction of the City the public improvements set forth in a certain Schedule of Costs of Public Improvements dated November 20, 1998."; OR

" This drawing results from the Developer's failure to post a ten percent (10%) Defect Guarantee or Bond as provided in section 14-501 of the Portland City Code." OR

" The drawing results from the Developer's failure to notify the City for inspections."

BankBoston, N.A.
Trade Services
Mail Code: 50-04-01
100 Federal Street
Boston, Massachusetts 02110

BankBoston

Irrevocable Standby Letter of Credit No: S-161-STBY-50065559 dated 12/28/98

This Letter of Credit will automatically expire upon the earlier of:

1. BankBoston N.A.'s receipt of written notification purportedly signed by an authorized official of the City of Portland stating that said work as outlined in a certain Schedule of Costs of Public Improvements dated November 20, 1998 between the Developer and the City of Portland has been completed in accordance with the City of Portland's specifications and BankBoston N.A.'s Letter of Credit No: S-161-STBY-50065559 dated 12/28/98 may be canceled; OR
2. The expiration date of December 22, 1999, or any automatically extended date as specified herein with a final expiration date of April 16, 2001.

Partial drawings ARE permitted.

This Letter of Credit sets forth in full the terms of our undertaking and such undertaking shall not in any way be modified, amended or amplified by reference to any document, instrument or agreement referred to herein or in which this Letter of Credit relates and any such reference shall not be deemed to incorporate herein by reference any document, instrument or agreement.

Drafts drawn hereunder must be marked: "Drawn under BankBoston N.A. Irrevocable Letter of Credit No: S-161-STBY-50065559 dated 12/28/98."

Except so far as otherwise expressly stated herein, this Letter of Credit is subject to the "Uniform Customs and Practice for Documentary Credits (1993 Revision) International Chamber of Commerce, Publication No: 500.

We hereby agree that draft drawn under and in compliance with the terms and conditions of this Letter of Credit will be duly honored if presented at our office at 100 Federal Street, Mail Stop MA BOS 50-04-01, Boston, MA. 02110 on or before 12/22/99, or any automatically extended date thereafter.

Very truly yours,

Authorized Signature

BankBoston, N.A.
Trade Services
Mail Code: 50-04-01
100 Federal Street
Boston, Massachusetts 02110

BankBoston

AMENDMENT

DATE: January 12, 1999

BENEFICIARY

DELIVERY BY COURIER SERVICE

City of Portland, Maine
Planning and Urban Development
389 Congress Street
Portland,, ME 04101

Credit Number:
S-161-STBY-50065559
Opener Reference No:
CITY OF PORTLAND, MAINE

Dear Sir or Madam:

We are instructed by :

UNIFIRST CORPORATION
68 JONSPIN ROAD
WILMINGTON, MA 01887

By order of UNIFIRST CORPORATION
to amend our credit 50065559 as issued in your favor.

This amendment is an integral part of the original credit.

Amended terms :

In opening paragraph of Letter of Credit,
DELETE "and expiring at our counters on December 22, 1999, or any automatically extended date thereafter."
INSERT "and expiring at our counters on April 16, 2000, or any automatically extended date thereafter."

Re: Page 3 of 3 (This Letter of Credit will automatically expire upon the earlier of:)
Item 2 Now to read: "The expiration date of April 16, 2000, or any automatically extended date as specified herein."

Letter of Credit shall expire on or before April 16, 2000, or any automatically extended date thereafter.

All other terms and conditions of the original credit instrument remain unchanged.
This letter is to accompany all draft(s) and documents. When presenting your draft(s) and documents or when communicating with us please make reference to our reference number shown above.

Yours very truly,

Authorized Official

D-1492B (Rev. 7/97)

As amended,
Seen and approved pursuant to City Ord.

Department of Planning and Urban Development
SUBDIVISION/SITE DEVELOPMENT

COST ESTIMATE OF IMPROVEMENTS TO BE COVERED BY PERFORMANCE GUARANTEE

Date Nov. 20, 1998

Name of Project Uni-First Corporation

Address/Location 430 Riverside Industrial Parkway

Developer Owner

Form of Performance Guarantee Letter of Credit

Type of Development: X Subdivision _____ Site Plan (Major/Minor)

TO BE FILLED OUT BY APPLICANT:

	PUBLIC			PRIVATE		
Item	Quantity	Unit Cost	Subtotal	Quantity	Unit Cost	Subtotal
1. STREET/SIDEWALK						
Road	0			156 SY	12.67	1977.00
Granite Curbing	0			0		
Sidewalks	0			67 SY	6.40	429.00
Esplanades	0			0		
Monuments	0			0		
Street Lighting	0			0		
Other	0			130 LF	~~1.99~~ 3.00	~~260.00~~ 390.00
2. SANITARY SEWER						
Manholes	0			0		
Piping	0			0		
Connections	0			0		
Other	0			0		
3. STORM DRAINAGE						
Manholes	0			0		
Catchbasins	0			0		
Piping	0			0		
Detention Basin	0			0		
Other	0			0		
4. SITE LIGTING	0			0		
5. EROSION CONTROL	0			240 LF	5.00	1200.00
6. RECREATION AND OPEN SPACE AMENITIES	0			0		

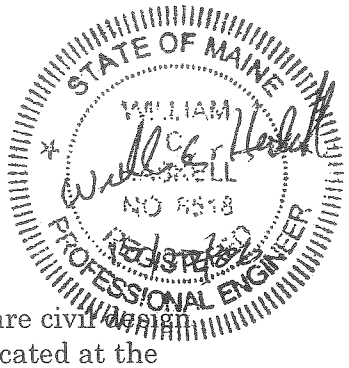
Item	PUBLIC Quantity	Unit Cost	Subtotal	PRIVATE Quantity	Unit Cost	Subtotal
7. LANDSCAPING (Attach breakdown of plant materials, quantities, and unit costs)	See below		4041.00	See below		1851.00
8. MISCELLANEOUS	0					
TOTAL:	$4041.00			$5717.00		
GRAND TOTAL:	$4041.00			~~$5717.00~~ 130.00 $ 5847.00 4041.00 9888.00		

INSPECTION FEE (to be filled out by City)

	PUBLIC	PRIVATE	TOTAL
A: 1.7% of totals:	68.70	99.40	168.10
or			$300.00
B: Alternative Assessment:			
Assessed by:	(name)	(name)	

LANDSCAPING	PUBLIC			PRIVATE		
Loam and Seed	859 SY	$3.34	$2839.00	225 SY	$3.34	$ 751.00
Borrow	170 CY	$7.07	$1202.00			
Relocate Shrubs	0			11 ea	100.00	$1100.00
			$4041.00			$1851.00

STORMWATER MANAGEMENT REPORT



I. Introduction

Gorrill-Palmer Consulting Engineers, Inc in has been retained to prepare civil design plans and water resource narratives for a proposed development site located at the existing Unifirst site in Portland. The site is bordered by Riverside Industrial parkway to the east, and the Maine Turnpike to the west. The following narrative contains the stormwater analysis, which is appropriate for the site.

II. Development Description

This project will occur in one phase. The construction shall consist of a 2240 s.f. addition to the existing Unifirst building. In addition two parking areas will be constructed containing space for 41 vehicles. The existing parcel is characterized as follows;

Existing Parcel Parameters	
Parcel Area	3.76 acres
Existing Impervious Area	2.35 acres
Existing Pervious Area	1.39 acres
Proposed Impervious Area	2.67 acres
Proposed Pervious Area	1.08 acres

III. Surface Water and Downstream Waterbodies

The site currently drains to two stormwater ponds that are allocated to the rear of the site, water from the roof flows to both ponds. Rainfall landing in the current drive way flows towards the southern pond. Rainfall form the loading area is collected in a catch basin and transported toe the western pond.

IV. General Topography

The site is generally level, with a slight pitch form the center to the edge of the property line.

V. Flooding

According to the FEMA maps the site is not located within the 100-year flood area. The 100-year flood elevation is at 33 feet above datum (NGVD 29). No part of the subject lot is below the 100-year flood elevation.

Alterations to Land Cover

Alterations to land cover include the placement of pavement over a parcel of existing grass area on the south side. There will also be pavement placed on the westerly side of the lot. The existing impervious coverage is 63 percent. The alterations will increase the impervious area to 71 percent.

VI. Natural Drainage Ways

The project as currently proposed does not include alterations of any natural drainage ways.

IX Water Quantity Control

A pre- and post-development stormwater model was prepared for this project because of the anticipated increase in overall impervious surface and the need to maintain post-development peak flows at or below the pre-development levels. Subsurface stormwater detention is required to reduce the post-development peak flows.

IX.1 Pre-development Conditions

As indicated in Section II of this report the predevelopment impervious area is about 2.31 acres. Stormwater flows from the high point which is the building site and flows down to one of two detention ponds. The site was delineated into seven subcatchments (S1 – S7) to assess the stormwater impacts from development. The following table summarizes the pre-development stormwater peak flows. Detailed stormwater calculations are included in Attachment D. Watershed maps are included in Attachment C.

Subcatchment/POI	Composite CN	Tc (min)	Peak Flow (cfs)		
			2-year	10-year	25-year
S1	87	54	0.67	1.26	1.54
S2	87	5	1.17	2.18	2.65
S3	84	5	0.71	1.40	1.73
S4	85	5	0.82	1.54	1.96
S5	84	5	1.02	2.01	2.48
S6	98	5	0.28	0.44	0.51
S7	98	5	2.86	4.52	5.30
POI #1	--	--	0.56	1.05	1.22
POI #2	--	--	4.06 (1)	7.00 (1)	6.45 (1)
POI #3	--	--	0.71	1.40	1.73
POI #4	--	--	0.82	1.59	1.96
POI #5	--	--	1.02	2.01	2.48

IX.2 Post-development Conditions

As indicated in Section II, the post-development impervious surface for the total development is anticipated to increase from 2.31 acres to 2.68 acres, therefore stormwater detention is needed. A post-development stormwater plan is included in Attachment C. The following table summarizes the post-development stormwater peak flows with detention.

Comparison of Pre- & Post-Development Flows w/Existing Pond						
Subcatchment/POI	Peak Flow Comparison (cfs)					
	2-yr Pre	2-yr Post	10-yr Pre	10-yr Post	25-yr Pre	25-yr Post
POI #1	0.56	1.04	1.05	2.85	1.22	3.04
POI #2	4.06 (1)	0.58 (1)	7.00 (1)	4.06 (1)	6.45 (1)	7.00 (1)
POI #3	0.71	0.05	1.40	0.70	1.73	1.38
POI #4	0.82	0.04	1.59	0.14	1.96	0.22
POI #5	1.02	0.06	2.01	0.88	2.48	1.73
Notes 1. Pond 2S overtops in the 10 & 25 year storm						

As shown, the post-development peak flows exceed the pre-development flows, therefore we have regraded the pond to provide more storage and maintain the post-development flows to be equal or lower then the pre flows.

Subcatchment/POI	Composite CN	Tc (min)	Peak Flow (cfs)		
			2-year	10-year	25-year
S1	87	50	0.06	0.58	1.09
S2	87	5	0.13	1.17	2.18
S3	84	5	0.05	0.70	1.38
S4	98	5	0.04	0.14	0.22
S5	86	5	0.06	0.88	1.73
S6	98	5	0.08	0.28	0.44
S7	98	5	0.88	2.86	4.45
S8	98	5	0.05	0.15	0.24
S9	97	43	0.21	0.75	1.20
POI #1	--	--	0.28	0.65	1.23
POI #2	--	--	0.58 (1)	4.06 (1)	7.00 (1)
POI #3	--	--	0.05	0.70	1.38
POI #4	--	--	0.04	0.14	0.22
POI #5	--	--	0.06	0.88	1.73
Notes 1. Pond 2S overtops in the 10 & 25 year storm					

Comparison of Pre- & Post-Development Flows w/regraded Pond						
Subcatchment/POI	Peak Flow Comparison (cfs)					
	2-yr Pre	2-yr Post	10-yr Pre	10-yr Post	25-yr Pre	25-yr Post
POI #1	0.56	0.28	1.05	0.65	1.22	1.23
POI #2	4.06 (1)	0.58 (1)	7.00 (1)	4.06 (1)	6.45 (1)	7.00 (1)
POI #3	0.71	0.05	1.40	0.70	1.73	1.38
POI #4	0.82	0.04	1.59	0.14	1.96	0.22
POI #5	1.02	0.06	2.01	0.88	2.48	1.73
Notes 1. Pond 2s overtops in the 10 & 25 year storm. No additional flow is directed to this pond.						

As shown in the previous table, the detention system results in the post-development peak flows being at or below the pre-development levels. The following table summarizes the pond performance

Pond 1 Performance – Designed			
	Pond Performance		
	2-Year	10-Year	25-Year
Peak Inflow (cfs)	1.36	2.34	2.80
Peak Outflow (cfs)	0.65	1.23	1.41
Stage (max elev)	74.98	75.64	76.00
Storage (max cf)	2250	4232	5303
Depth above outlet (ft)	-1.73	-1.07	-0.71

X Stormwater Quality

The City of Portland Technical Design Standards Section V.H requires that the runoff from parking lots be treated for water quality. The proposed design will direct water from part of the access drive and portions of the new truck parking area and existing parking lot to a level spreader and a wooded buffer. The buffer will provide treatment for all storm events for the new truck parking spaces and a portion of the existing parking area.

XI Stormwater Management

The stormwater facility will be maintained by the owner heirs after construction is completed. The contract documents will require the contractor to designate a person responsible for maintenance of the sedimentation control features during construction as required by the Erosion Control Report. Long-term operation/maintenance planned for the stormwater management facilities is presented below.

The "Parties" may contract with such professionals as may be necessary in order to comply with this provision and may rely on the advice of such professionals in carrying out its duty hereunder, provided, that the following operation and maintenance procedures are hereby established as a minimum for compliance with this section.

1. Inspect detention pond for build up of sediment.
2. Check to insure outlet pipe if free of debris.

XII Conclusion

There is a net increase in impervious area therefore stormwater detention is required. Water run off will need to be directed to the detention pond.

XIII Attachments

Attached to this section are the following items:

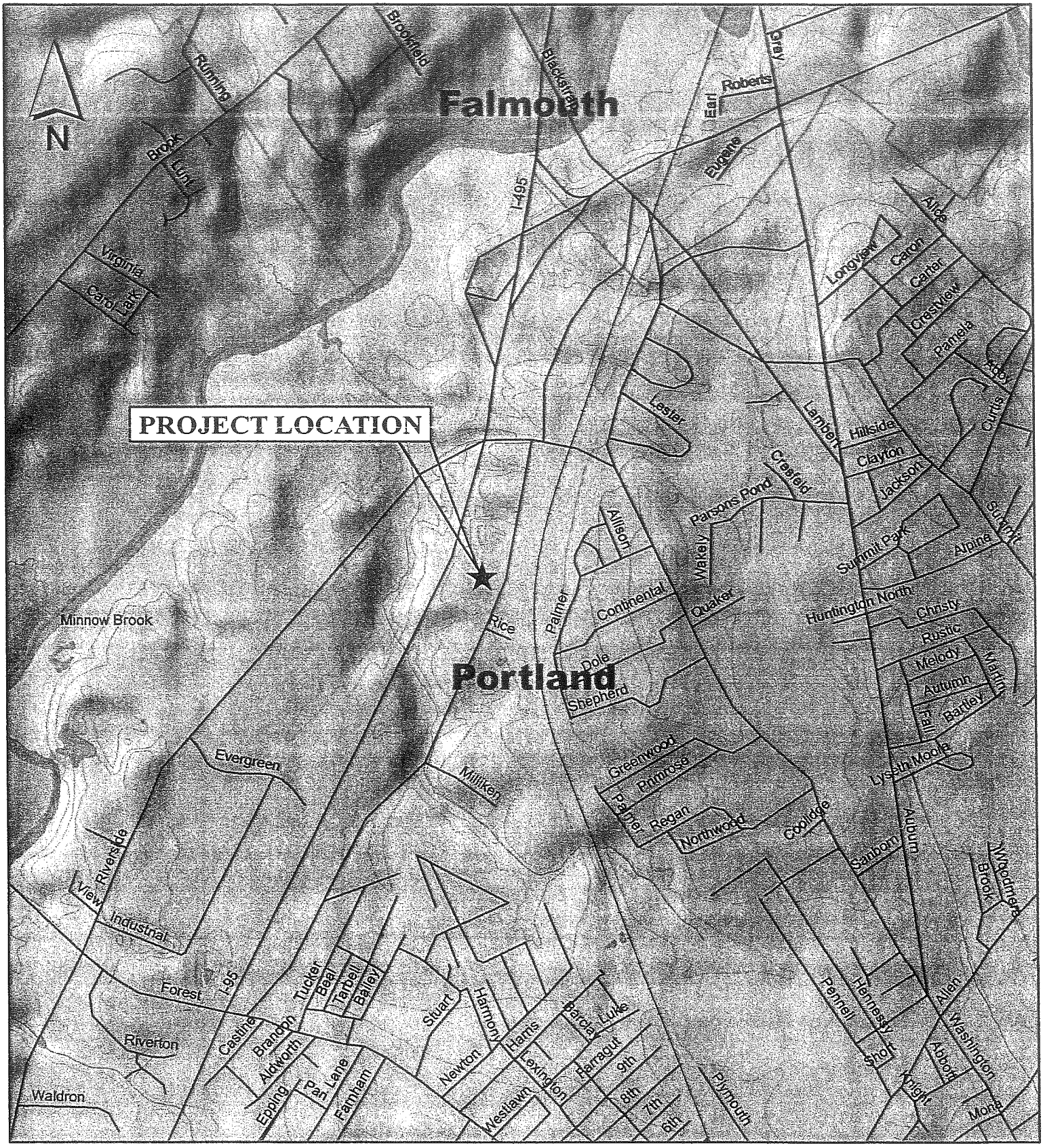
Attachment A – Location Map
Attachment B – Pipe Sizing Calculations
Attachment C – Watershed Maps
Attachment D – HydroCAD Calculations
Attachment E – Water Quality Calculations

Attachment A

Location Map

Location Map

Figure No. 1



UNIFIRST SITE EXPANSION, PORTLAND, MAINE

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FEET
1,000 0 1,000 2,000

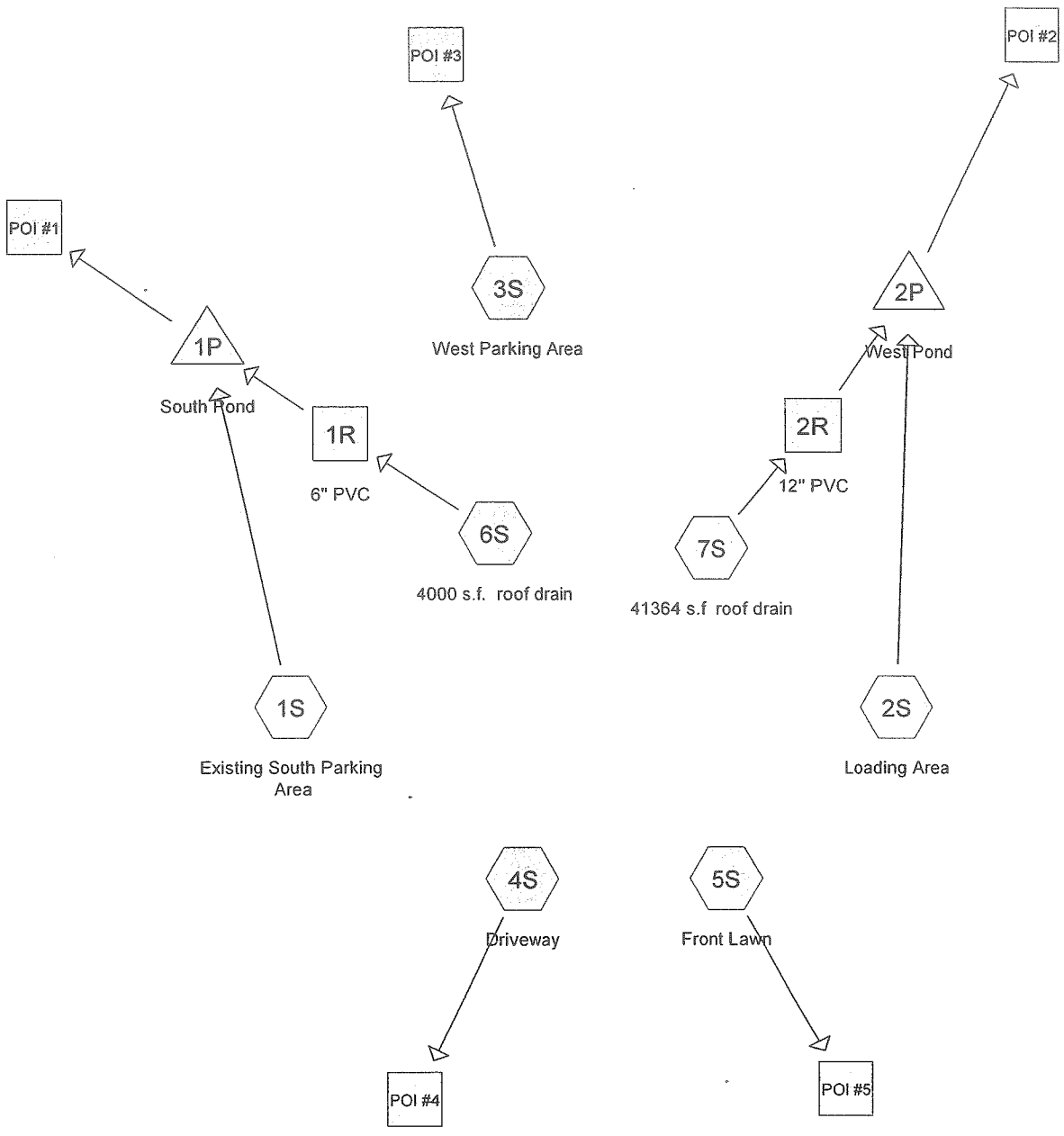
JN:1540
DATE:JUL 2006
FILE: 1540_LOCMAP.MXD
SOURCE: MAINE GIS WEBSITE

Attachment B

Watershed Maps

Attachment C

HydroCAD Calculations



Subcat Reach Pond Link

Drainage Diagram for 1540 watershed pre
Prepared by Gorrill-Palmer Consulting Engineers, INC. 10/10/2006
HydroCAD® 8.00 s/n 001265 © 2006 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcats)
1.397	74	>75% Grass cover, Good, HSG C (1S,2S,3S,4S,5S)
2.360	98	Paved parking & roofs (1S,2S,3S,4S,5S,6S,7S)
3.757		

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing South Parking Area Runoff Area=34,672 sf Runoff Depth=1.74"
Flow Length=228' Tc=54.6 min CN=87 Runoff=0.67 cfs 0.115 af

Subcatchment 2S: Loading Area Runoff Area=24,111 sf Runoff Depth=1.74"
Tc=5.0 min CN=87 Runoff=1.17 cfs 0.080 af

Subcatchment 3S: West Parking Area Runoff Area=16,791 sf Runoff Depth=1.52"
Tc=5.0 min CN=84 Runoff=0.71 cfs 0.049 af

Subcatchment 4S: Driveway Runoff Area=18,589 sf Runoff Depth=1.59"
Tc=5.0 min CN=85 Runoff=0.82 cfs 0.056 af

Subcatchment 5S: Front Lawn Runoff Area=24,114 sf Runoff Depth=1.52"
Tc=5.0 min CN=84 Runoff=1.02 cfs 0.070 af

Subcatchment 6S: 4000 s.f. roof drain Runoff Area=4,000 sf Runoff Depth=2.77"
Tc=5.0 min CN=98 Runoff=0.28 cfs 0.021 af

Subcatchment 7S: 41364 s.f roof drain Runoff Area=41,364 sf Runoff Depth=2.77"
Tc=5.0 min CN=98 Runoff=2.86 cfs 0.219 af

Reach 1R: 6" PVC Avg. Depth=0.20' Max Vel=3.73 fps Inflow=0.28 cfs 0.021 af
D=6.0" n=0.011 L=105.0' S=0.0150 '/' Capacity=0.81 cfs Outflow=0.28 cfs 0.021 af

Reach 2R: 12" PVC Avg. Depth=0.53' Max Vel=6.73 fps Inflow=2.86 cfs 0.219 af
D=12.0" n=0.011 L=80.0' S=0.0150 '/' Capacity=5.16 cfs Outflow=2.85 cfs 0.219 af

Reach POI #1: Inflow=0.56 cfs 0.137 af
Outflow=0.56 cfs 0.137 af

Reach POI #2: Inflow=4.06 cfs 0.300 af
Outflow=4.06 cfs 0.300 af

Reach POI #3: Inflow=0.71 cfs 0.049 af
Outflow=0.71 cfs 0.049 af

Reach POI #4: Inflow=0.82 cfs 0.056 af
Outflow=0.82 cfs 0.056 af

Reach POI #5: Inflow=1.02 cfs 0.070 af
Outflow=1.02 cfs 0.070 af

Pond 1P: South Pond Peak Elev=74.72' Storage=435 cf Inflow=0.70 cfs 0.137 af
Outflow=0.56 cfs 0.137 af

Pond 2P: West Pond Peak Elev=76.60' Storage=1,111 cf Inflow=4.02 cfs 0.299 af
Outflow=4.06 cfs 0.300 af

Total Runoff Area = 3.757 ac Runoff Volume = 0.611 af Average Runoff Depth = 1.95"
37.18% Pervious Area = 1.397 ac 62.82% Impervious Area = 2.360 ac

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing South Parking Area Runoff Area=34,672 sf Runoff Depth=3.29"
Flow Length=228' Tc=54.6 min CN=87 Runoff=1.26 cfs 0.218 af

Subcatchment 2S: Loading Area Runoff Area=24,111 sf Runoff Depth=3.29"
Tc=5.0 min CN=87 Runoff=2.18 cfs 0.152 af

Subcatchment 3S: West Parking Area Runoff Area=16,791 sf Runoff Depth=3.00"
Tc=5.0 min CN=84 Runoff=1.40 cfs 0.096 af

Subcatchment 4S: Driveway Runoff Area=18,589 sf Runoff Depth=3.09"
Tc=5.0 min CN=85 Runoff=1.59 cfs 0.110 af

Subcatchment 5S: Front Lawn Runoff Area=24,114 sf Runoff Depth=3.00"
Tc=5.0 min CN=84 Runoff=2.01 cfs 0.138 af

Subcatchment 6S: 4000 s.f. roof drain Runoff Area=4,000 sf Runoff Depth=4.46"
Tc=5.0 min CN=98 Runoff=0.44 cfs 0.034 af

Subcatchment 7S: 41364 s.f roof drain Runoff Area=41,364 sf Runoff Depth=4.46"
Tc=5.0 min CN=98 Runoff=4.52 cfs 0.353 af

Reach 1R: 6" PVC Avg. Depth=0.26' Max Vel=4.20 fps Inflow=0.44 cfs 0.034 af
D=6.0" n=0.011 L=105.0' S=0.0150 '/' Capacity=0.81 cfs Outflow=0.44 cfs 0.034 af

Reach 2R: 12" PVC Avg. Depth=0.73' Max Vel=7.40 fps Inflow=4.52 cfs 0.353 af
D=12.0" n=0.011 L=80.0' S=0.0150 '/' Capacity=5.16 cfs Outflow=4.51 cfs 0.353 af

Reach POI #1: Inflow=1.05 cfs 0.252 af
Outflow=1.05 cfs 0.252 af

Reach POI #2: Inflow=7.00 cfs 0.516 af
Outflow=7.00 cfs 0.516 af

Reach POI #3: Inflow=1.40 cfs 0.096 af
Outflow=1.40 cfs 0.096 af

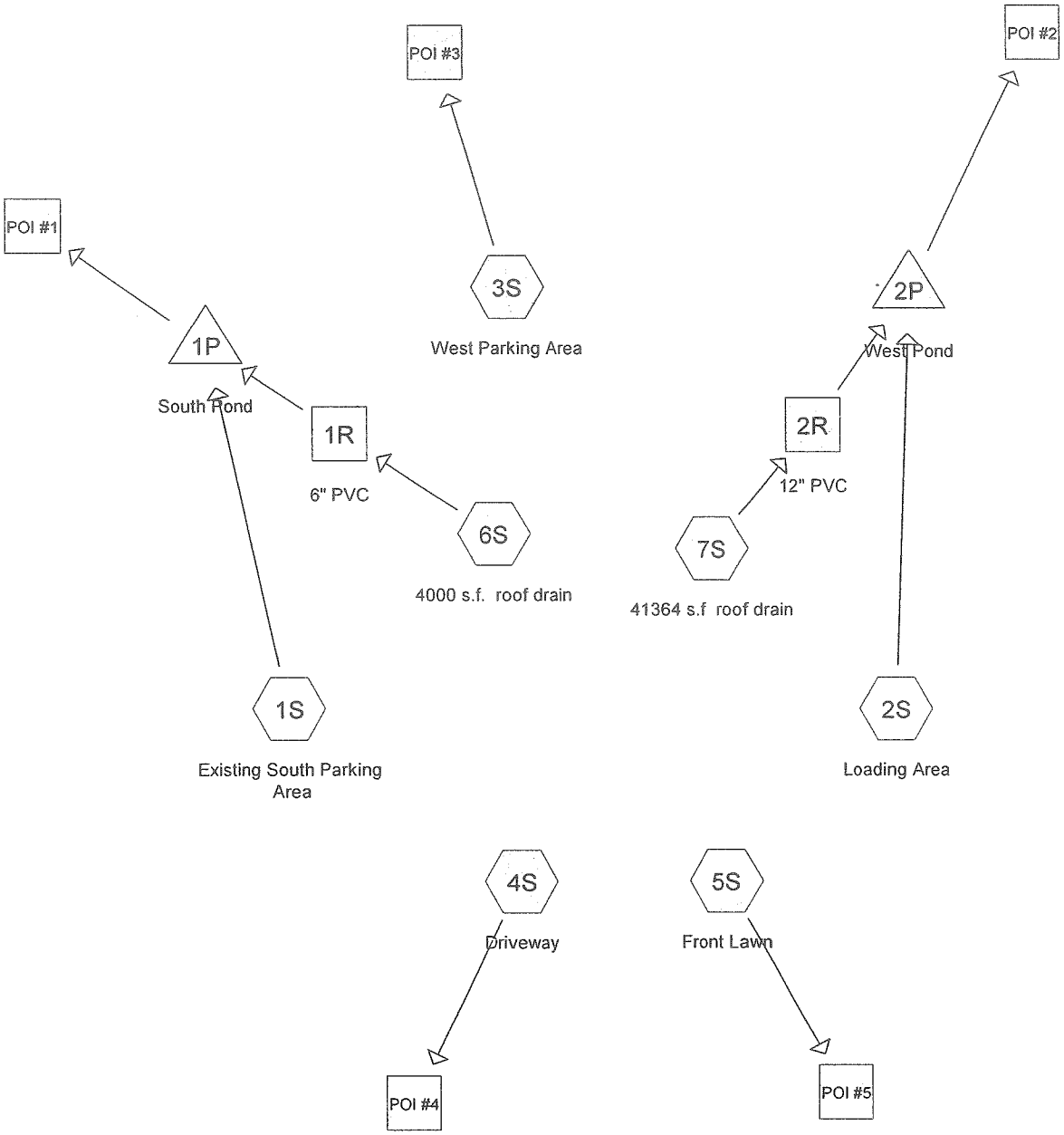
Reach POI #4: Inflow=1.59 cfs 0.110 af
Outflow=1.59 cfs 0.110 af

Reach POI #5: Inflow=2.01 cfs 0.138 af
Outflow=2.01 cfs 0.138 af

Pond 1P: South Pond Peak Elev=75.36' Storage=1,208 cf Inflow=1.31 cfs 0.252 af
Outflow=1.05 cfs 0.252 af

Pond 2P: West Pond Peak Elev=76.77' Storage=1,111 cf Inflow=6.68 cfs 0.505 af
Outflow=7.00 cfs 0.516 af

Total Runoff Area = 3.757 ac Runoff Volume = 1.101 af Average Runoff Depth = 3.52"
37.18% Pervious Area = 1.397 ac 62.82% Impervious Area = 2.360 ac



Subcat Reach Pond Link

Drainage Diagram for 1540 watershed pre

Prepared by Gorrill-Palmer Consulting Engineers, INC. 10/10/2006

Area Listing (all nodes)

Area (acres)	CN	Description (subcats)
1.397	74	>75% Grass cover, Good, HSG C (1S,2S,3S,4S,5S)
2.360	98	Paved parking & roofs (1S,2S,3S,4S,5S,6S,7S)
3.757		

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing South Parking Area Runoff Area=34,672 sf Runoff Depth=4.04"
Flow Length=228' Tc=54.6 min CN=87 Runoff=1.54 cfs 0.268 af

Subcatchment 2S: Loading Area Runoff Area=24,111 sf Runoff Depth=4.04"
Tc=5.0 min CN=87 Runoff=2.65 cfs 0.186 af

Subcatchment 3S: West Parking Area Runoff Area=16,791 sf Runoff Depth=3.73"
Tc=5.0 min CN=84 Runoff=1.73 cfs 0.120 af

Subcatchment 4S: Driveway Runoff Area=18,589 sf Runoff Depth=3.83"
Tc=5.0 min CN=85 Runoff=1.96 cfs 0.136 af

Subcatchment 5S: Front Lawn Runoff Area=24,114 sf Runoff Depth=3.73"
Tc=5.0 min CN=84 Runoff=2.48 cfs 0.172 af

Subcatchment 6S: 4000 s.f. roof drain Runoff Area=4,000 sf Runoff Depth=5.26"
Tc=5.0 min CN=98 Runoff=0.51 cfs 0.040 af

Subcatchment 7S: 41364 s.f roof drain Runoff Area=41,364 sf Runoff Depth=5.26"
Tc=5.0 min CN=98 Runoff=5.30 cfs 0.416 af

Reach 1R: 6" PVC Avg. Depth=0.29' Max Vel=4.36 fps Inflow=0.51 cfs 0.040 af
D=6.0" n=0.011 L=105.0' S=0.0150 '/' Capacity=0.81 cfs Outflow=0.51 cfs 0.040 af

Reach 2R: 12" PVC Avg. Depth=0.85' Max Vel=7.48 fps Inflow=5.30 cfs 0.416 af
D=12.0" n=0.011 L=80.0' S=0.0150 '/' Capacity=5.16 cfs Outflow=5.28 cfs 0.416 af

Reach POI #1: Inflow=1.22 cfs 0.308 af
Outflow=1.22 cfs 0.308 af

Reach POI #2: Inflow=6.95 cfs 0.562 af
Outflow=6.95 cfs 0.562 af

Reach POI #3: Inflow=1.73 cfs 0.120 af
Outflow=1.73 cfs 0.120 af

Reach POI #4: Inflow=1.96 cfs 0.136 af
Outflow=1.96 cfs 0.136 af

Reach POI #5: Inflow=2.48 cfs 0.172 af
Outflow=2.48 cfs 0.172 af

Pond 1P: South Pond Peak Elev=75.63' Storage=1,649 cf Inflow=1.60 cfs 0.308 af
Outflow=1.22 cfs 0.308 af

Pond 2P: West Pond Peak Elev=76.77' Storage=1,111 cf Inflow=7.93 cfs 0.603 af
Outflow=6.95 cfs 0.562 af

Total Runoff Area = 3.757 ac Runoff Volume = 1.339 af Average Runoff Depth = 4.28"
37.18% Pervious Area = 1.397 ac 62.82% Impervious Area = 2.360 ac

Subcatchment 1S: Existing South Parking Area

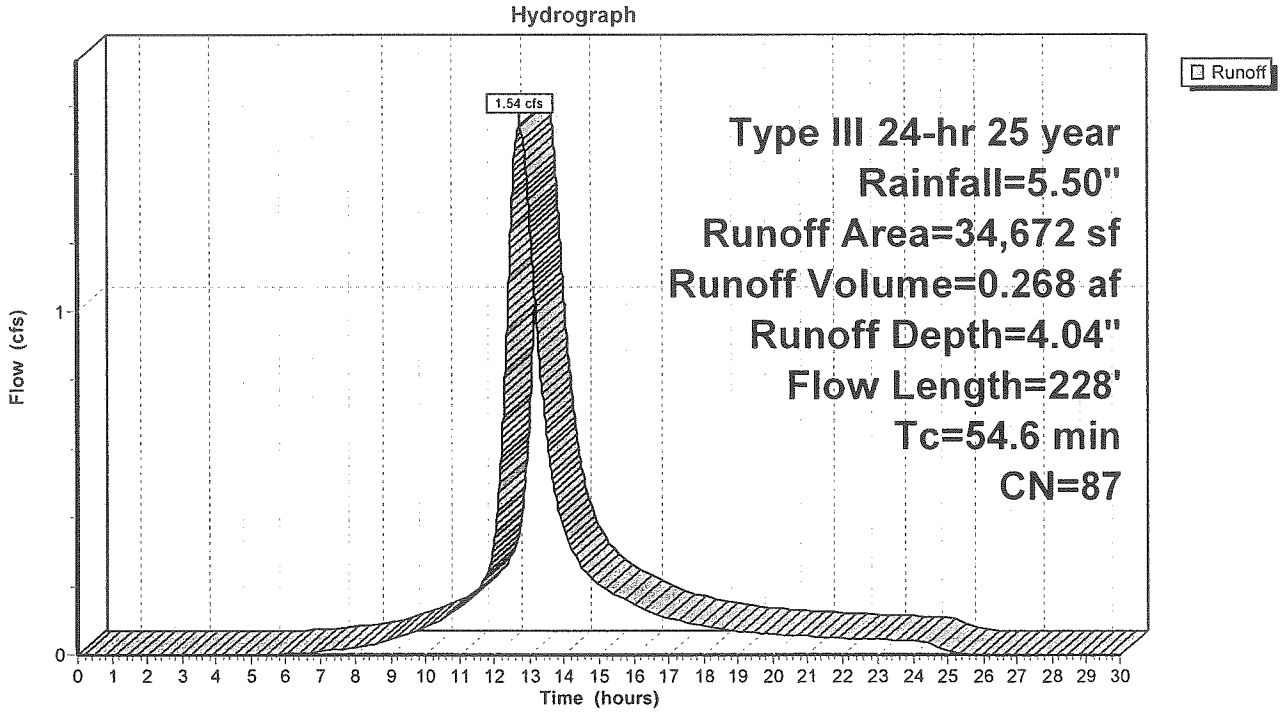
Runoff = 1.54 cfs @ 12.73 hrs, Volume= 0.268 af, Depth= 4.04"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 year Rainfall=5.50"

Area (sf)	CN	Description
15,297	74	>75% Grass cover, Good, HSG C
19,375	98	Paved parking & roofs
34,672	87	Weighted Average
15,297		Pervious Area
19,375		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	110	0.0200	1.36		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.00"
53.2	118	0.0125	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.00"
54.6	228	Total			

Subcatchment 1S: Existing South Parking Area



Subcatchment 2S: Loading Area

Tc was calculated per TR-55 methods to 2.4 minutes, revised to 5 minutes

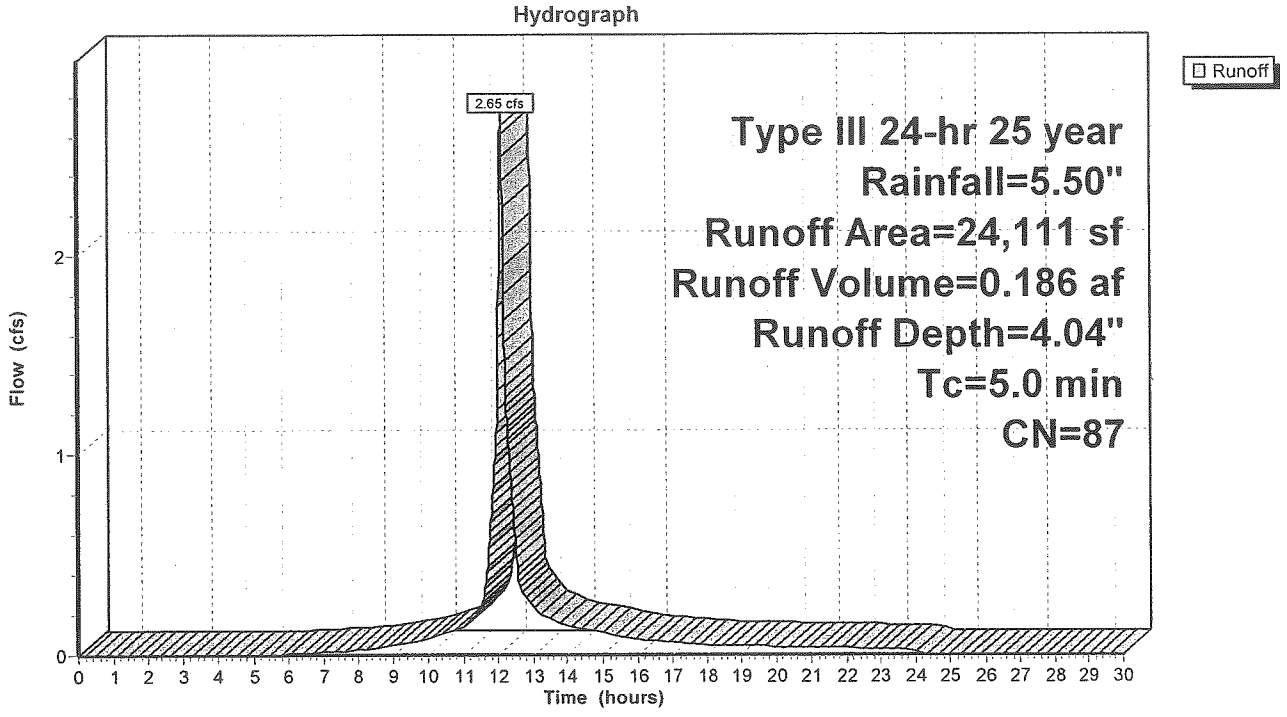
Runoff = 2.65 cfs @ 12.07 hrs, Volume= 0.186 af, Depth= 4.04"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 year Rainfall=5.50"

Area (sf)	CN	Description
11,001	74	>75% Grass cover, Good, HSG C
13,110	98	Paved parking & roofs
24,111	87	Weighted Average
11,001		Pervious Area
13,110		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 2S: Loading Area



Subcatchment 3S: West Parking Area

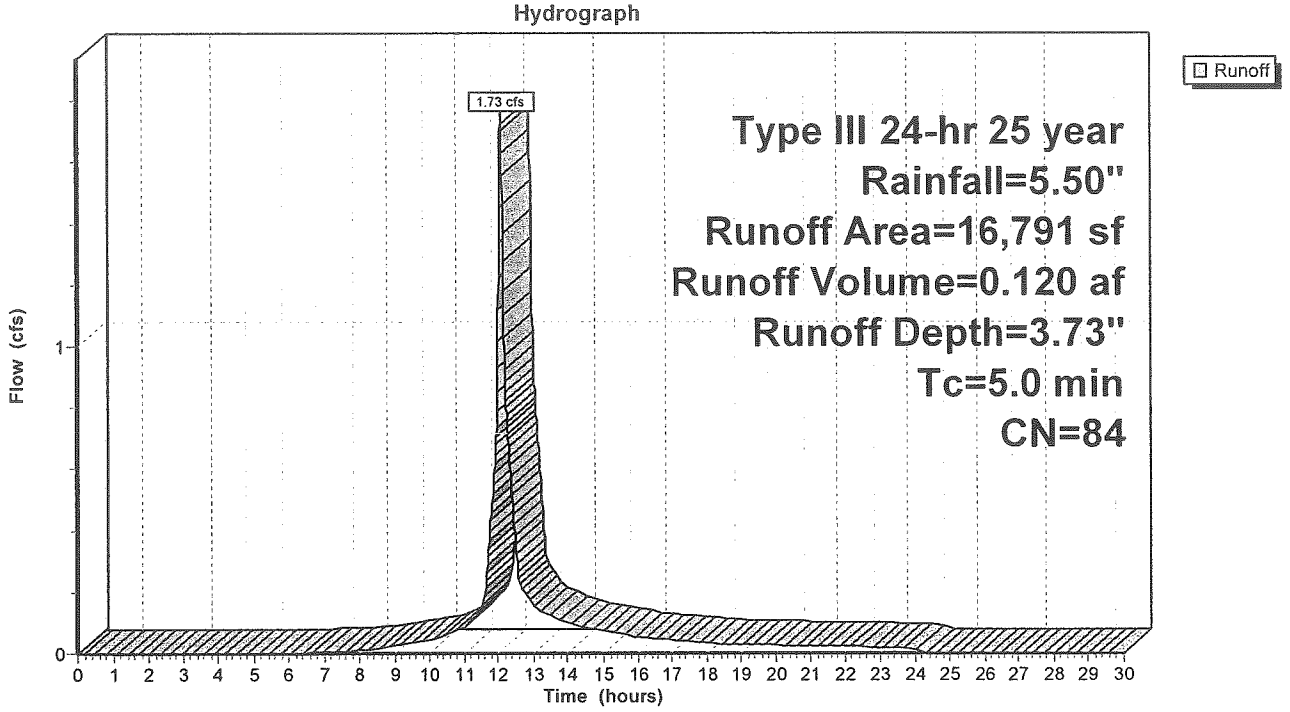
Runoff = 1.73 cfs @ 12.07 hrs, Volume= 0.120 af, Depth= 3.73"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 year Rainfall=5.50"

Area (sf)	CN	Description
9,784	74	>75% Grass cover, Good, HSG C
7,007	98	Paved parking & roofs
16,791	84	Weighted Average
9,784		Pervious Area
7,007		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 3S: West Parking Area



Subcatchment 4S: Driveway

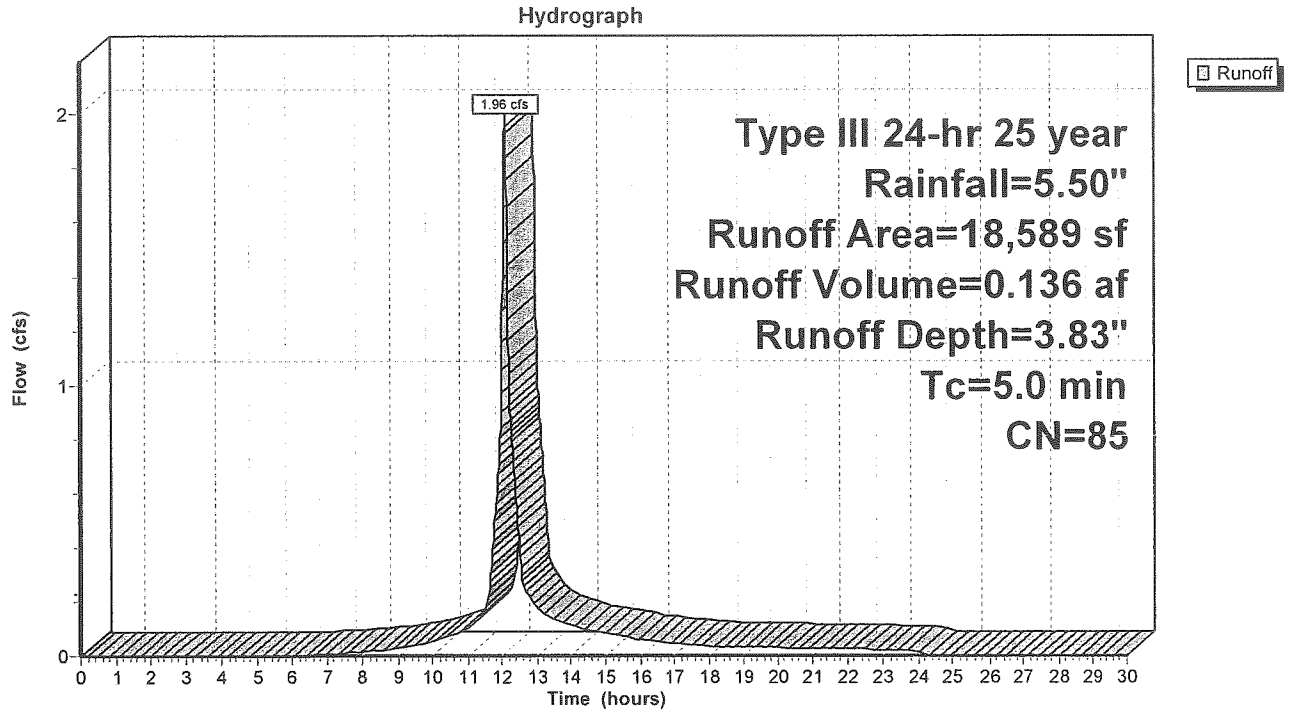
Runoff = 1.96 cfs @ 12.07 hrs, Volume= 0.136 af, Depth= 3.83"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 year Rainfall=5.50"

Area (sf)	CN	Description
8,249	98	Paved parking & roofs
10,340	74	>75% Grass cover, Good, HSG C
18,589	85	Weighted Average
10,340		Pervious Area
8,249		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 4S: Driveway



Subcatchment 5S: Front Lawn

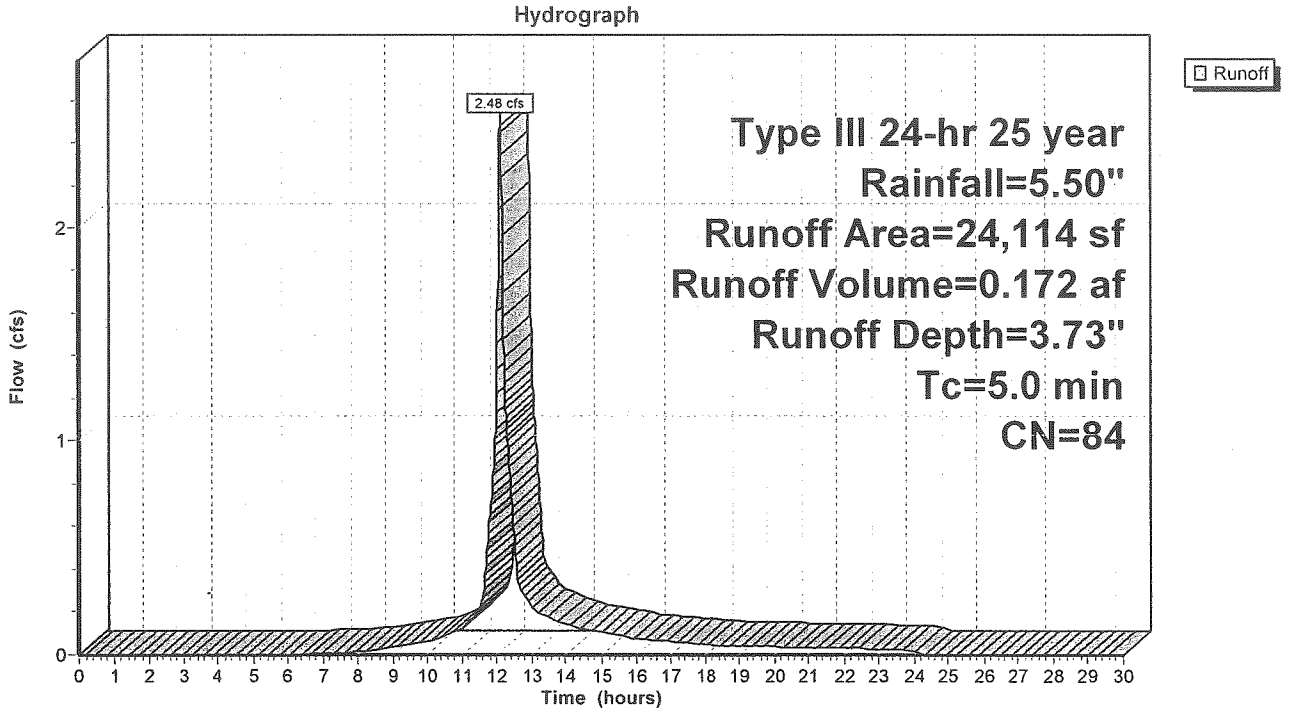
Runoff = 2.48 cfs @ 12.07 hrs, Volume= 0.172 af, Depth= 3.73"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 year Rainfall=5.50"

Area (sf)	CN	Description
9,694	98	Paved parking & roofs
14,420	74	>75% Grass cover, Good, HSG C
24,114	84	Weighted Average
14,420		Pervious Area
9,694		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 5S: Front Lawn



Subcatchment 6S: 4000 s.f. roof drain

4000 s.f roof drain

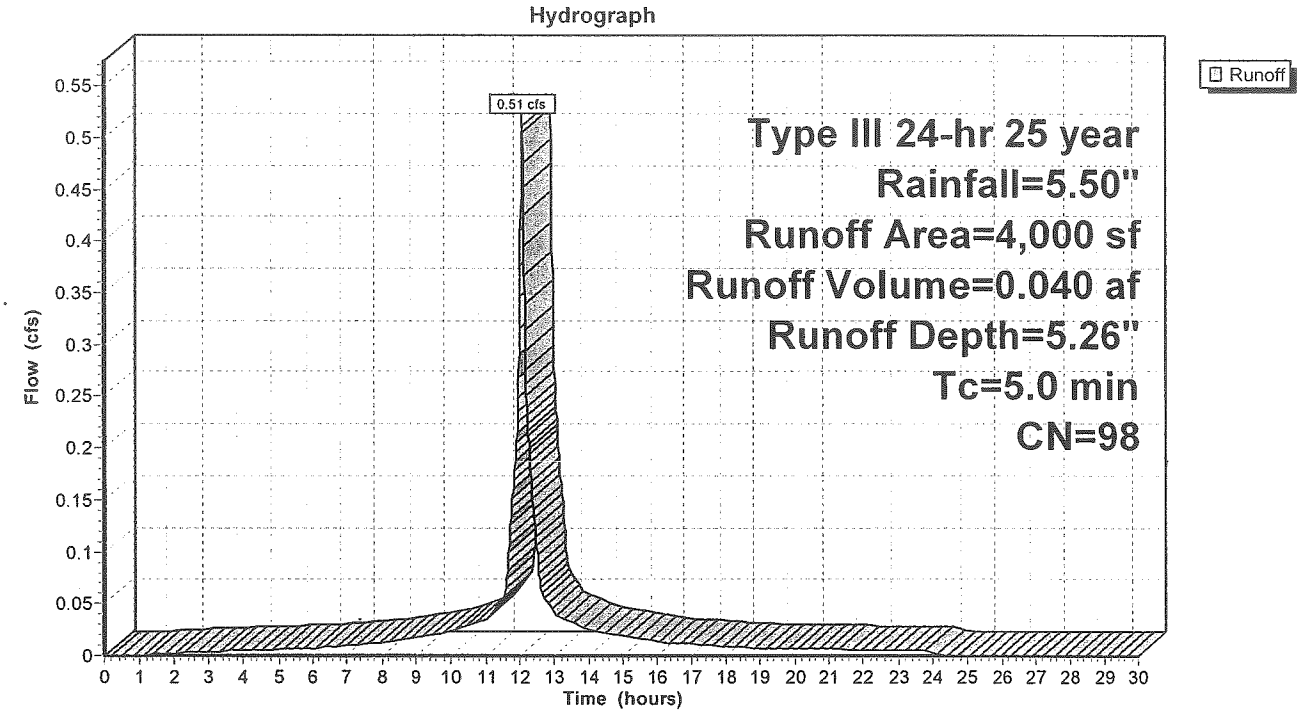
Runoff = 0.51 cfs @ 12.07 hrs, Volume= 0.040 af, Depth= 5.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 year Rainfall=5.50"

Area (sf)	CN	Description
4,000	98	Paved parking & roofs
4,000		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Roof drain to 6in pipe**

Subcatchment 6S: 4000 s.f. roof drain



Subcatchment 7S: 41364 s.f roof drain

43990 s.f. roof drain

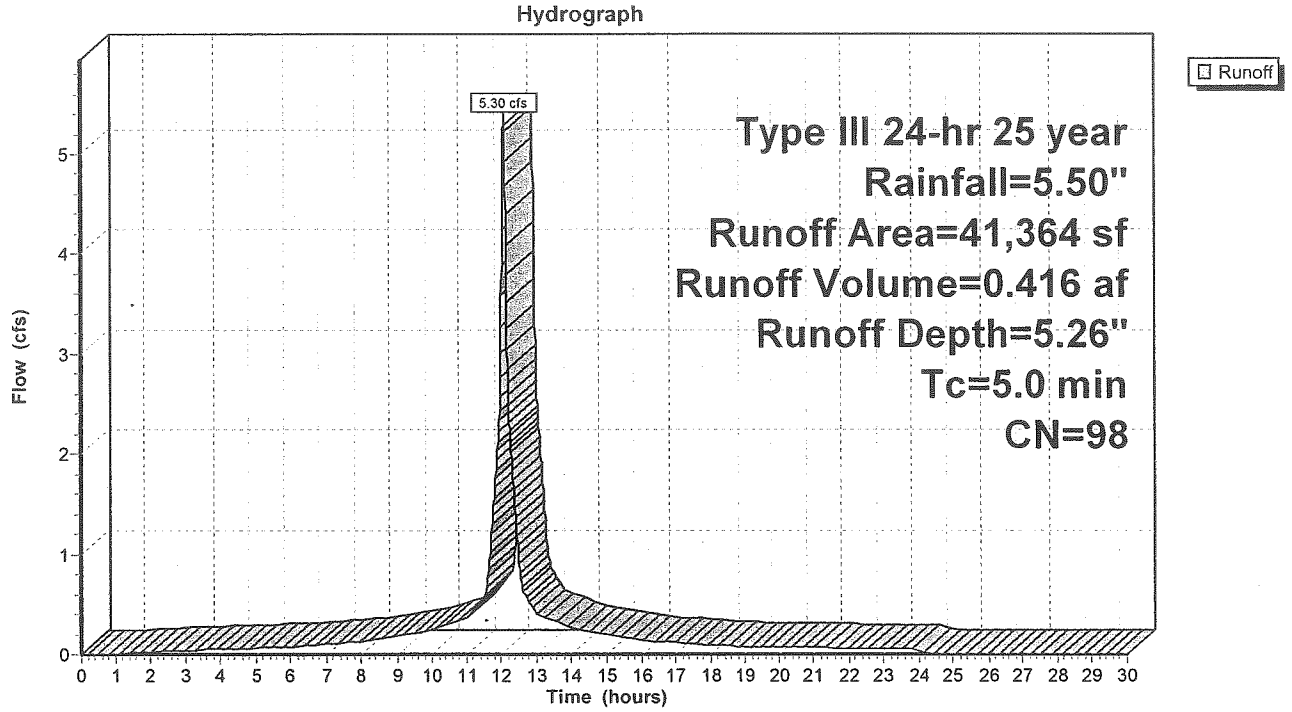
Runoff = 5.30 cfs @ 12.07 hrs, Volume= 0.416 af, Depth= 5.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 year Rainfall=5.50"

Area (sf)	CN	Description
41,364	98	Paved parking & roofs
41,364		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, 41364 s.f. roof**

Subcatchment 7S: 41364 s.f roof drain



Reach 1R: 6" PVC

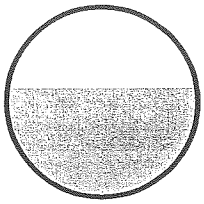
[52] Hint: Inlet conditions not evaluated

Inflow Area = 0.092 ac, Inflow Depth = 5.26" for 25 year event
Inflow = 0.51 cfs @ 12.07 hrs, Volume= 0.040 af
Outflow = 0.51 cfs @ 12.08 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.7 min

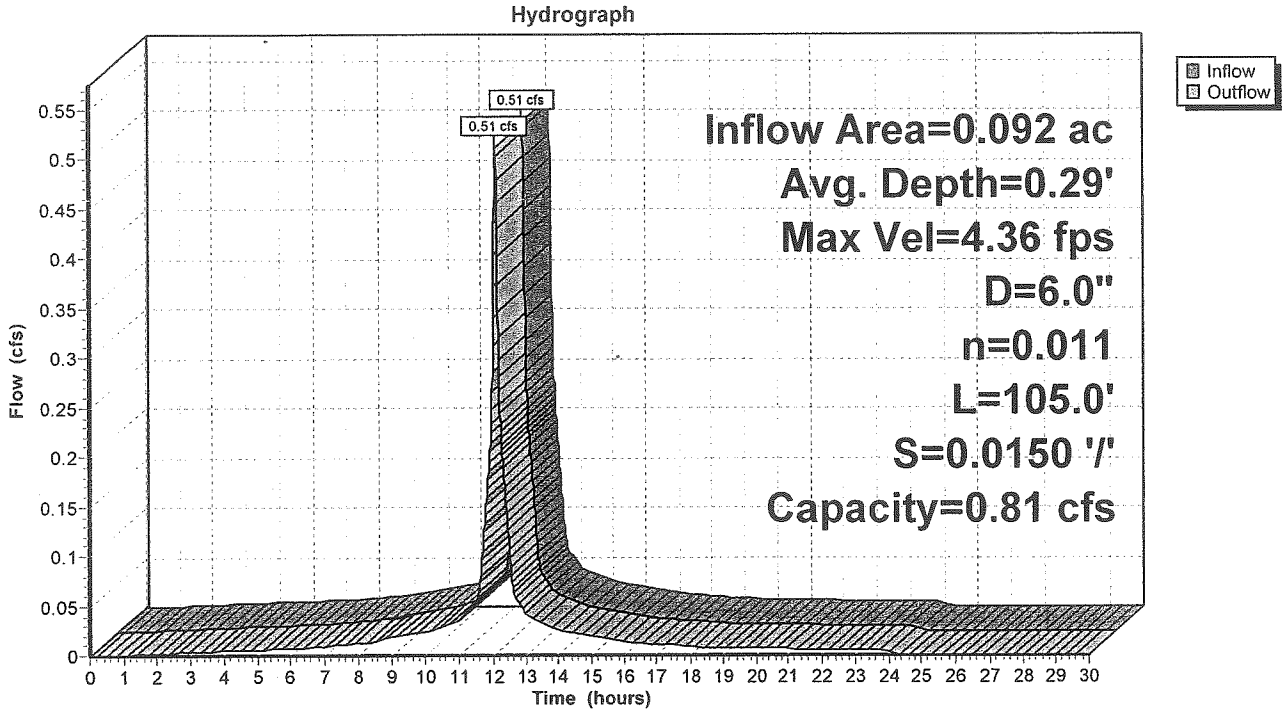
Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.36 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.48 fps, Avg. Travel Time= 1.2 min

Peak Storage= 12 cf @ 12.08 hrs, Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 0.50', Capacity at Bank-Full= 0.81 cfs

6.0" Diameter Pipe, n= 0.011
Length= 105.0' Slope= 0.0150 '/'
Inlet Invert= 78.06', Outlet Invert= 76.49'



Reach 1R: 6" PVC



Reach 2R: 12" PVC

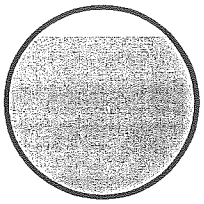
[52] Hint: Inlet conditions not evaluated
[55] Hint: Peak inflow is 103% of Manning's capacity

Inflow Area = 0.950 ac, Inflow Depth = 5.26" for 25 year event
Inflow = 5.30 cfs @ 12.07 hrs, Volume= 0.416 af
Outflow = 5.28 cfs @ 12.08 hrs, Volume= 0.416 af, Atten= 0%, Lag= 0.4 min

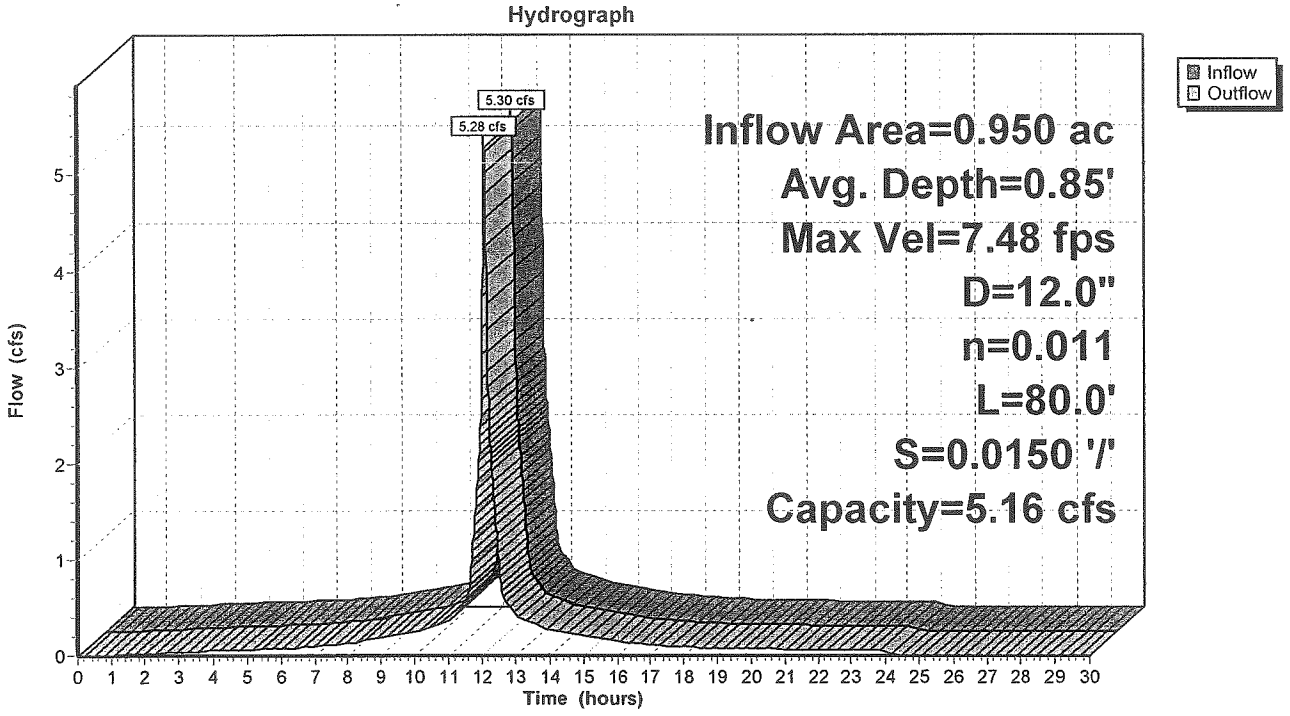
Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 7.48 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.72 fps, Avg. Travel Time= 0.5 min

Peak Storage= 57 cf @ 12.07 hrs, Average Depth at Peak Storage= 0.85'
Bank-Full Depth= 1.00', Capacity at Bank-Full= 5.16 cfs

12.0" Diameter Pipe, n= 0.011
Length= 80.0' Slope= 0.0150 '/'
Inlet Invert= 75.04', Outlet Invert= 73.84'



Reach 2R: 12" PVC



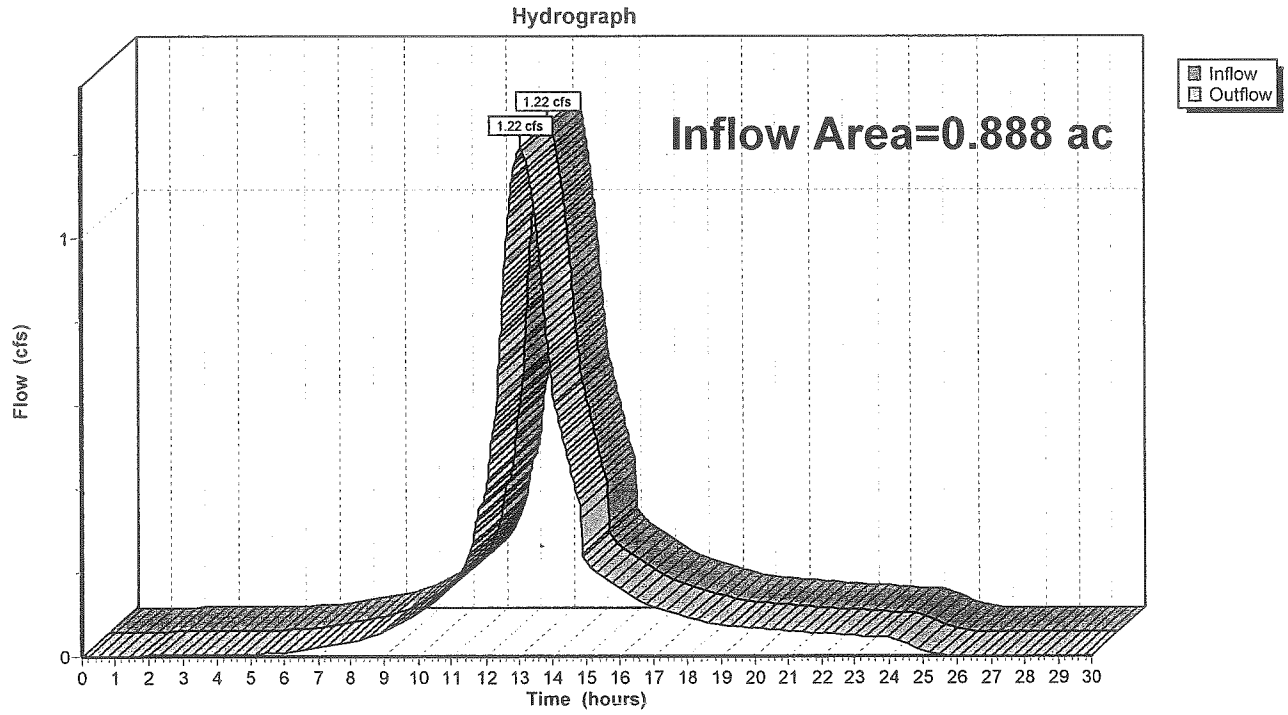
Reach POI #1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.888 ac, Inflow Depth = 4.17" for 25 year event
Inflow = 1.22 cfs @ 13.06 hrs, Volume= 0.308 af
Outflow = 1.22 cfs @ 13.06 hrs, Volume= 0.308 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Reach POI #1:



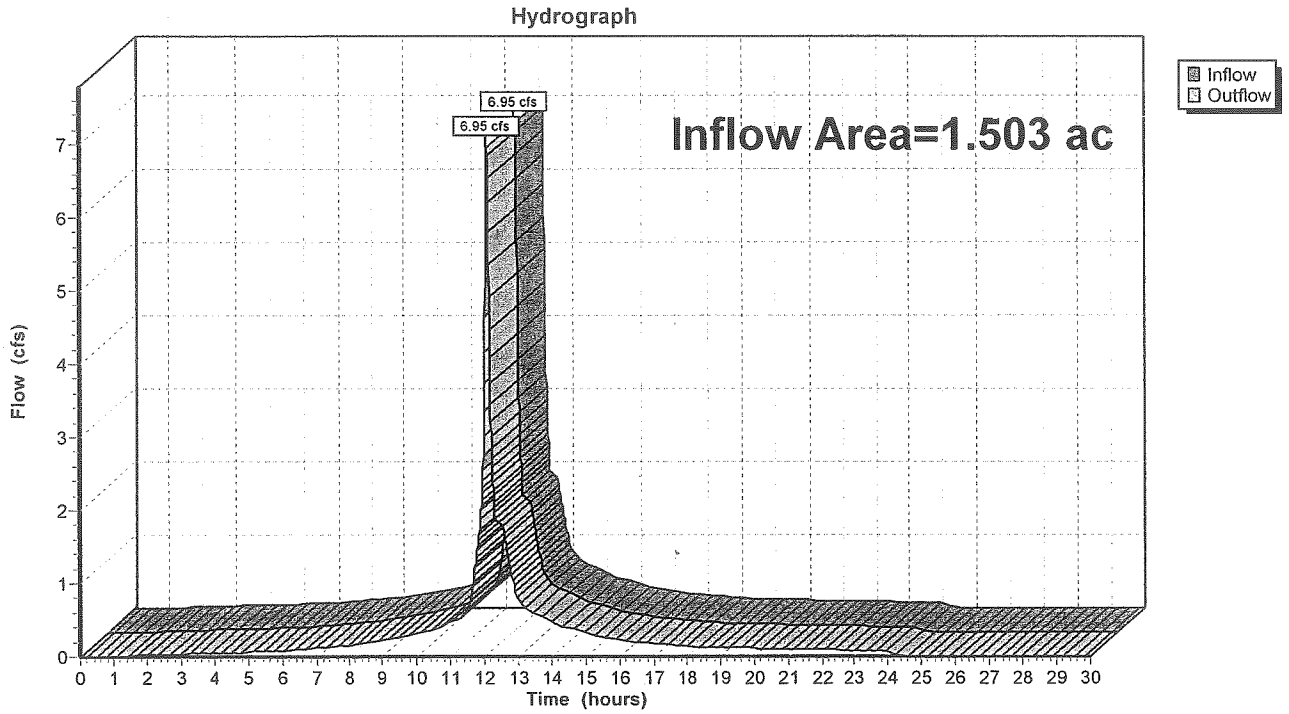
Reach POI #2:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.503 ac, Inflow Depth = 4.49" for 25 year event
Inflow = 6.95 cfs @ 12.07 hrs, Volume= 0.562 af
Outflow = 6.95 cfs @ 12.07 hrs, Volume= 0.562 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Reach POI #2:



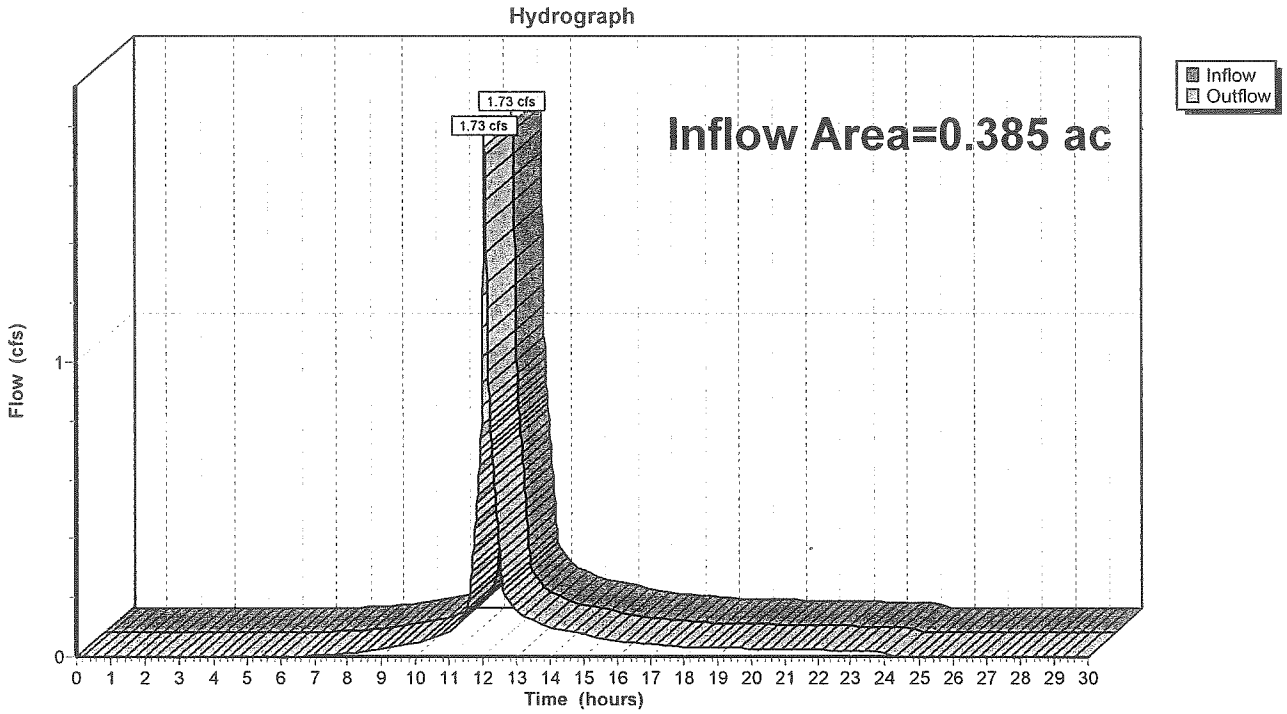
Reach POI #3:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.385 ac, Inflow Depth = 3.73" for 25 year event
Inflow = 1.73 cfs @ 12.07 hrs, Volume= 0.120 af
Outflow = 1.73 cfs @ 12.07 hrs, Volume= 0.120 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Reach POI #3:



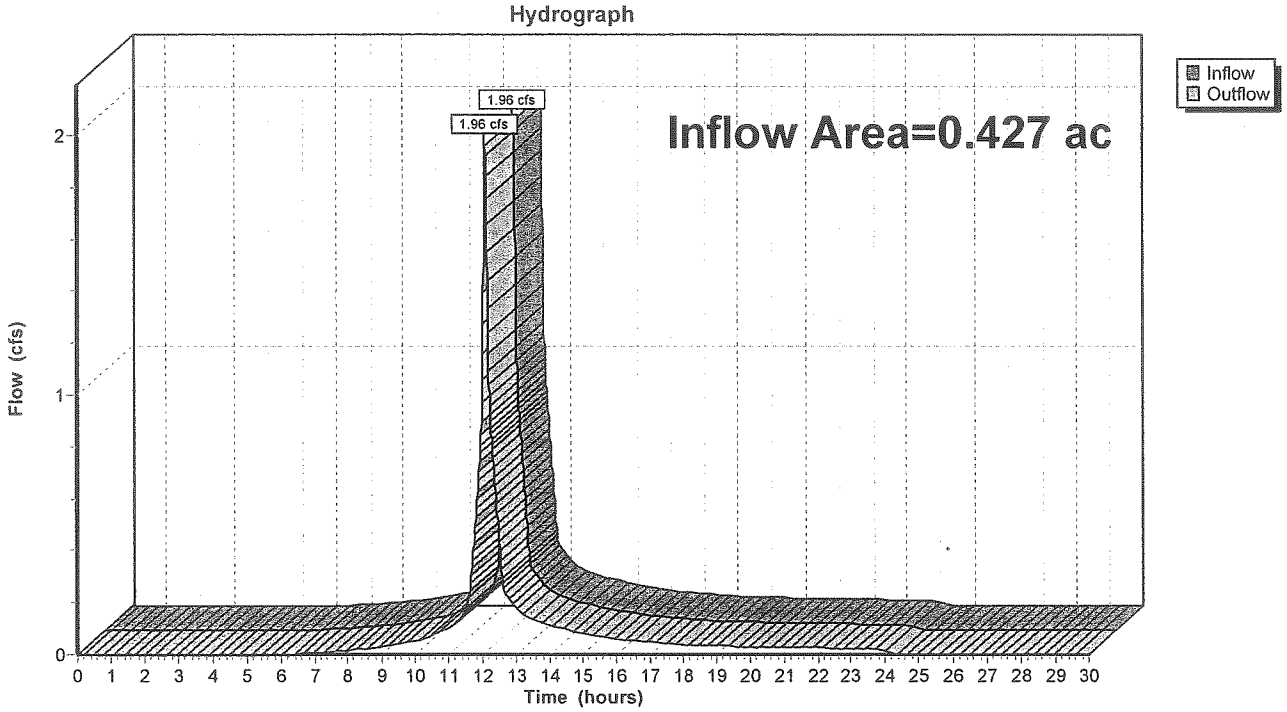
Reach POI #4:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.427 ac, Inflow Depth = 3.83" for 25 year event
Inflow = 1.96 cfs @ 12.07 hrs, Volume= 0.136 af
Outflow = 1.96 cfs @ 12.07 hrs, Volume= 0.136 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Reach POI #4:



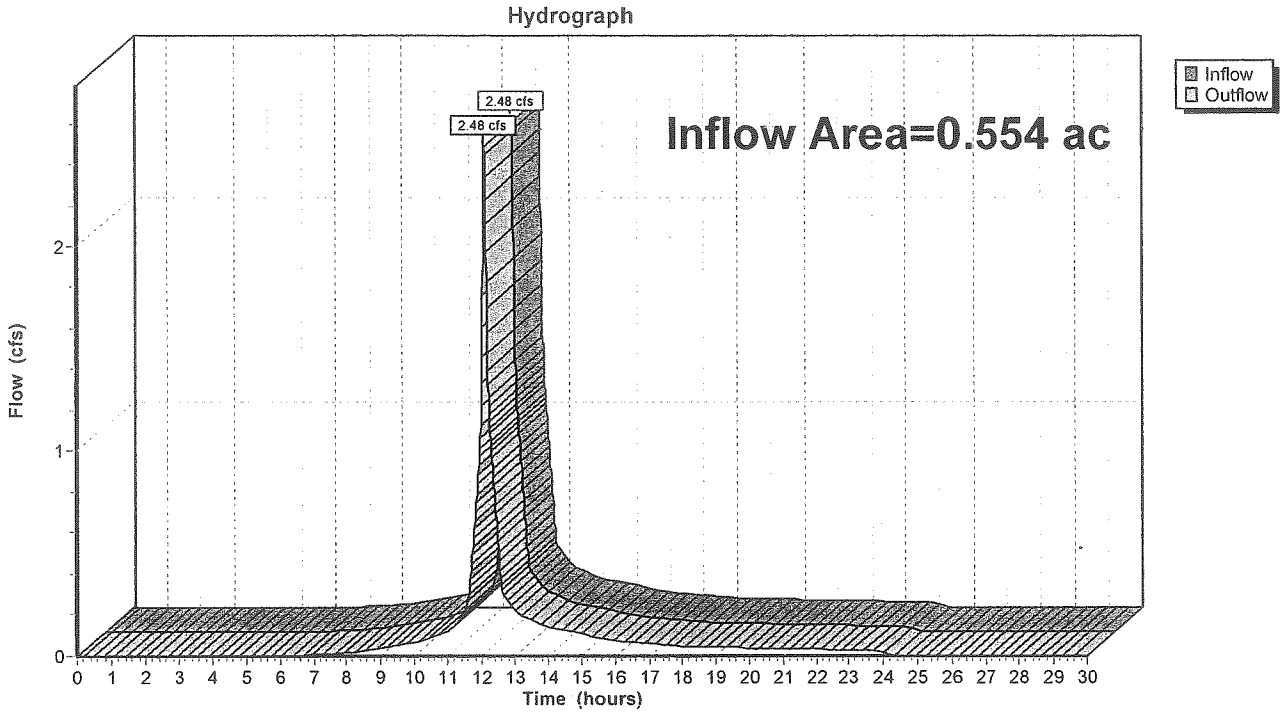
Reach POI #5:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.554 ac, Inflow Depth = 3.73" for 25 year event
Inflow = 2.48 cfs @ 12.07 hrs, Volume= 0.172 af
Outflow = 2.48 cfs @ 12.07 hrs, Volume= 0.172 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Reach POI #5:



Pond 1P: South Pond

Inflow Area = 0.888 ac, Inflow Depth = 4.17" for 25 year event
Inflow = 1.60 cfs @ 12.69 hrs, Volume= 0.308 af
Outflow = 1.22 cfs @ 13.06 hrs, Volume= 0.308 af, Atten= 24%, Lag= 22.1 min
Primary = 1.22 cfs @ 13.06 hrs, Volume= 0.308 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 75.63' @ 13.06 hrs Surf.Area= 1,827 sf Storage= 1,649 cf

Plug-Flow detention time= 10.7 min calculated for 0.308 af (100% of inflow)
Center-of-Mass det. time= 10.7 min (841.0 - 830.3)

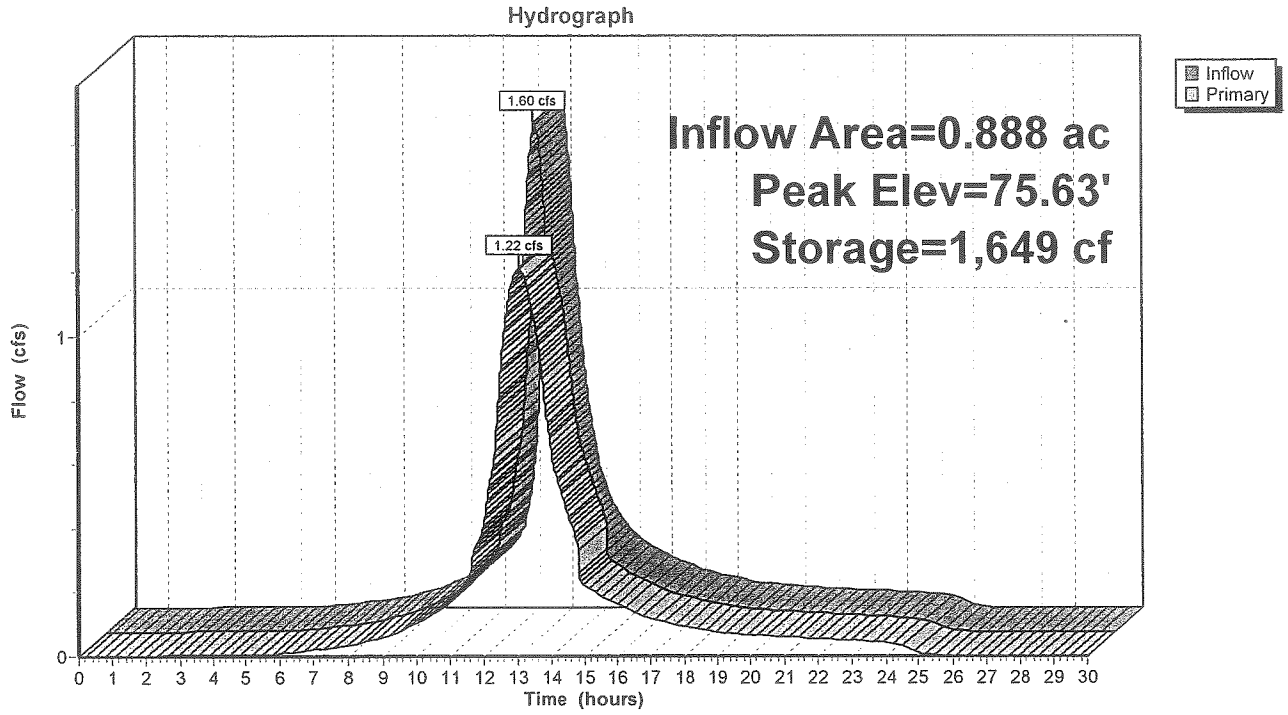
Volume	Invert	Avail.Storage	Storage Description
#1	74.00'	2,275 cf	**South Pond (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
74.00	161	0	0
75.00	1,047	604	604
76.00	2,294	1,671	2,275

Device	Routing	Invert	Outlet Devices
#1	Device 4	73.41'	**4.5" Vert. 4.5" Orifice** C= 0.600
#2	Device 4	74.91'	**0.50' W x 0.25' H Vert. 3"x6" Orifice** C= 0.600
#3	Device 4	76.71'	**24.0" Horiz. Grate** Limited to weir flow C= 0.600
#4	Primary	73.41'	**12.0" x 40.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 72.72' S= 0.0172 '/' Cc= 0.900 n= 0.011

Primary OutFlow Max=1.22 cfs @ 13.06 hrs HW=75.63' (Free Discharge)
└**4=Culvert** (Passes 1.22 cfs of 4.95 cfs potential flow)
  ├**1=4.5" Orifice** (Orifice Controls 0.76 cfs @ 6.86 fps)
  ├**2=3"x6" Orifice** (Orifice Controls 0.46 cfs @ 3.69 fps)
  └**3=Grate** (Controls 0.00 cfs)

Pond 1P: South Pond



Pond 2P: West Pond

[93] Warning: Storage range exceeded by 0.90'
[63] Warning: Exceeded Reach 2R inflow depth by 0.98' @ 12.17 hrs

Inflow Area = 1.503 ac, Inflow Depth = 4.81" for 25 year event
Inflow = 7.93 cfs @ 12.07 hrs, Volume= 0.603 af
Outflow = 6.95 cfs @ 12.07 hrs, Volume= 0.562 af, Atten= 12%, Lag= 0.0 min
Primary = 6.95 cfs @ 12.07 hrs, Volume= 0.562 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 76.77' @ 12.07 hrs Surf.Area= 1,257 sf Storage= 1,111 cf

Plug-Flow detention time= 45.6 min calculated for 0.562 af (93% of inflow)
Center-of-Mass det. time= 8.3 min (770.1 - 761.8)

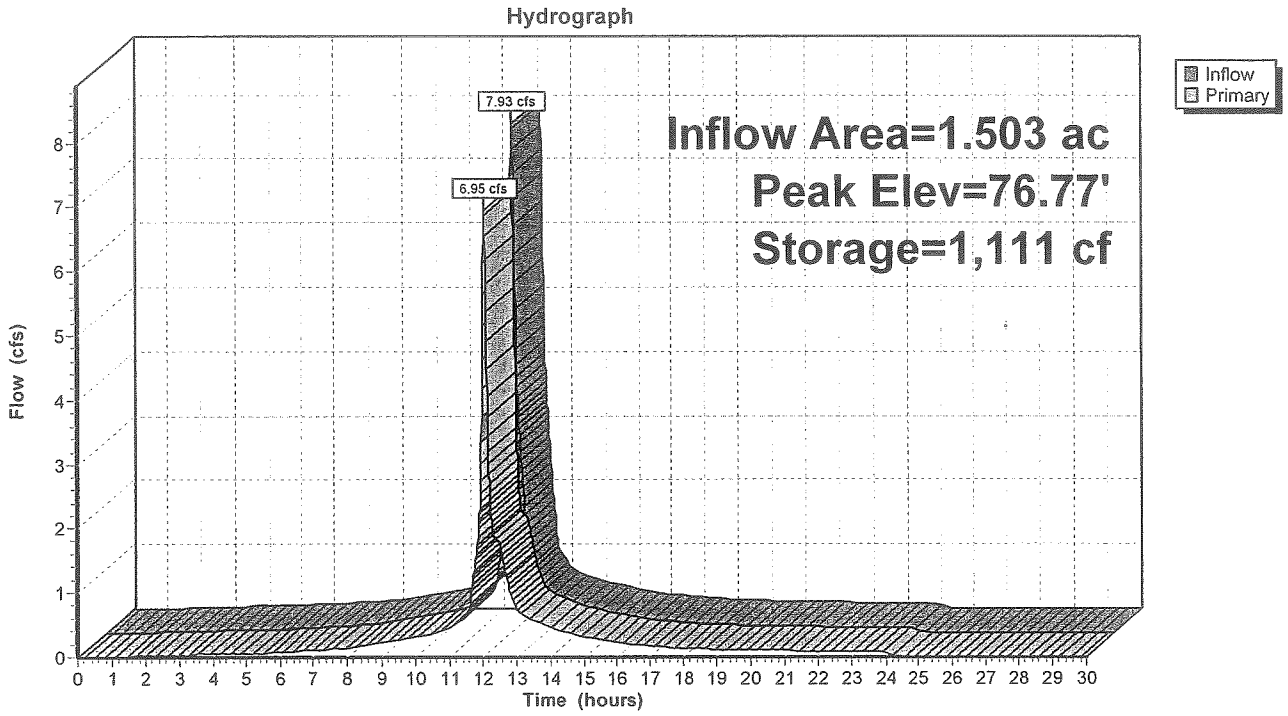
Volume	Invert	Avail.Storage	Storage Description
#1	73.41'	1,111 cf	**South Pond (Prismatic)** Listed below

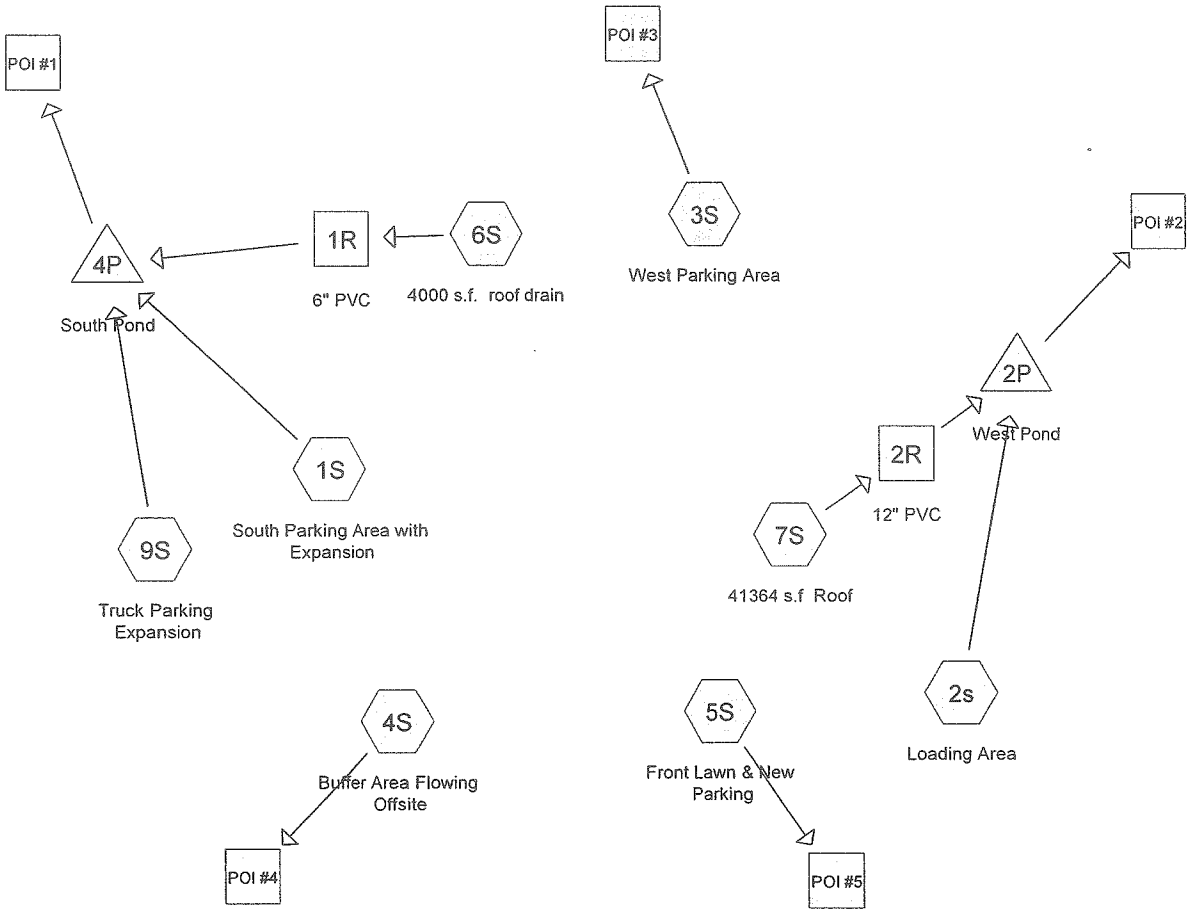
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
73.41	100	0	0
74.00	130	68	68
75.00	461	296	363
75.87	1,257	747	1,111

Device	Routing	Invert	Outlet Devices
#1	Device 4	73.41'	**4.5" Vert. 4.5 " Orifice** C= 0.600
#2	Device 4	74.99'	**1.00' W x 0.25' H Vert. 3"x12" Orifice** C= 0.600
#3	Device 4	76.41'	**24.0" Horiz. Grate** Limited to weir flow C= 0.600
#4	Primary	66.41'	**12.0" x 65.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 65.92' S= 0.0075 '/' Cc= 0.900 n= 0.011

Primary OutFlow Max=6.94 cfs @ 12.07 hrs HW=76.77' (Free Discharge)
└**4=Culvert** (Passes 6.94 cfs of 11.50 cfs potential flow)
  ├**1=4.5 " Orifice** (Orifice Controls 0.95 cfs @ 8.58 fps)
  ├**2=3"x12" Orifice** (Orifice Controls 1.55 cfs @ 6.19 fps)
  └**3=Grate** (Weir Controls 4.44 cfs @ 1.96 fps)

Pond 2P: West Pond





Subcat Reach Pond Link

Drainage Diagram for 1540 watershed post

Prepared by Gorrill-Palmer Consulting Engineers, INC. 10/10/2006

Area Listing (all nodes)

Area (acres)	CN	Description (subcats)
1.083	74	>75% Grass cover, Good, HSG C (1S,2s,3S,5S,9S)
2.622	98	Paved parking & roofs (1S,2s,3S,4S,5S,6S,7S,9S)
3.705		

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: South Parking Area with Expansion Runoff Area=28,556 sf Runoff Depth=1.74"
Flow Length=222' Tc=50.0 min CN=87 Runoff=0.58 cfs 0.095 af

Subcatchment 2s: Loading Area Runoff Area=24,111 sf Runoff Depth=1.74"
Tc=5.0 min CN=87 Runoff=1.17 cfs 0.080 af

Subcatchment 3S: West Parking Area Runoff Area=16,591 sf Runoff Depth=1.52"
Tc=5.0 min CN=84 Runoff=0.70 cfs 0.048 af

Subcatchment 4S: Buffer Area Flowing Offsite Runoff Area=1,992 sf Runoff Depth=2.77"
Tc=5.0 min CN=98 Runoff=0.14 cfs 0.011 af

Subcatchment 5S: Front Lawn & New Parking Runoff Area=20,785 sf Runoff Depth=1.52"
Tc=5.0 min CN=84 Runoff=0.88 cfs 0.060 af

Subcatchment 6S: 4000 s.f. roof drain Runoff Area=4,000 sf Runoff Depth=2.77"
Tc=5.0 min CN=98 Runoff=0.28 cfs 0.021 af

Subcatchment 7S: 41364 s.f Roof Runoff Area=41,364 sf Runoff Depth=2.77"
Tc=5.0 min CN=98 Runoff=2.86 cfs 0.219 af

Subcatchment 9S: Truck Parking Expansion Runoff Area=24,008 sf Runoff Depth=2.66"
Flow Length=335' Tc=43.5 min CN=97 Runoff=0.75 cfs 0.122 af

Reach 1R: 6" PVC Avg. Depth=0.20' Max Vel=3.73 fps Inflow=0.28 cfs 0.021 af
D=6.0" n=0.011 L=105.0' S=0.0150 '/' Capacity=0.81 cfs Outflow=0.28 cfs 0.021 af

Reach 2R: 12" PVC Avg. Depth=0.53' Max Vel=6.73 fps Inflow=2.86 cfs 0.219 af
D=12.0" n=0.011 L=80.0' S=0.0150 '/' Capacity=5.16 cfs Outflow=2.85 cfs 0.219 af

Reach POI #1: Inflow=0.65 cfs 0.238 af
Outflow=0.65 cfs 0.238 af

Reach POI #2: Inflow=4.06 cfs 0.300 af
Outflow=4.06 cfs 0.300 af

Reach POI #3: Inflow=0.70 cfs 0.048 af
Outflow=0.70 cfs 0.048 af

Reach POI #4: Inflow=0.14 cfs 0.011 af
Outflow=0.14 cfs 0.011 af

Reach POI #5: Inflow=0.88 cfs 0.060 af
Outflow=0.88 cfs 0.060 af

Pond 2P: West Pond Peak Elev=76.60' Storage=1,111 cf Inflow=4.02 cfs 0.299 af
Outflow=4.06 cfs 0.300 af

Pond 4P: South Pond Peak Elev=74.98' Storage=2,250 cf Inflow=1.36 cfs 0.238 af
Outflow=0.65 cfs 0.238 af

Total Runoff Area = 3.705 ac Runoff Volume = 0.657 af Average Runoff Depth = 2.13"
29.23% Pervious Area = 1.083 ac 70.77% Impervious Area = 2.622 ac

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: South Parking Area with Expansion Runoff Area=28,556 sf Runoff Depth=3.29"
Flow Length=222' Tc=50.0 min CN=87 Runoff=1.09 cfs 0.179 af

Subcatchment 2s: Loading Area Runoff Area=24,111 sf Runoff Depth=3.29"
Tc=5.0 min CN=87 Runoff=2.18 cfs 0.152 af

Subcatchment 3S: West Parking Area Runoff Area=16,591 sf Runoff Depth=3.00"
Tc=5.0 min CN=84 Runoff=1.38 cfs 0.095 af

Subcatchment 4S: Buffer Area Flowing Offsite Runoff Area=1,992 sf Runoff Depth=4.46"
Tc=5.0 min CN=98 Runoff=0.22 cfs 0.017 af

Subcatchment 5S: Front Lawn & New Parking Runoff Area=20,785 sf Runoff Depth=3.00"
Tc=5.0 min CN=84 Runoff=1.73 cfs 0.119 af

Subcatchment 6S: 4000 s.f. roof drain Runoff Area=4,000 sf Runoff Depth=4.46"
Tc=5.0 min CN=98 Runoff=0.44 cfs 0.034 af

Subcatchment 7S: 41364 s.f Roof Runoff Area=41,364 sf Runoff Depth=4.46"
Tc=5.0 min CN=98 Runoff=4.52 cfs 0.353 af

Subcatchment 9S: Truck Parking Expansion Runoff Area=24,008 sf Runoff Depth=4.35"
Flow Length=335' Tc=43.5 min CN=97 Runoff=1.20 cfs 0.200 af

Reach 1R: 6" PVC Avg. Depth=0.26' Max Vel=4.20 fps Inflow=0.44 cfs 0.034 af
D=6.0" n=0.011 L=105.0' S=0.0150 '/' Capacity=0.81 cfs Outflow=0.44 cfs 0.034 af

Reach 2R: 12" PVC Avg. Depth=0.73' Max Vel=7.40 fps Inflow=4.52 cfs 0.353 af
D=12.0" n=0.011 L=80.0' S=0.0150 '/' Capacity=5.16 cfs Outflow=4.51 cfs 0.353 af

Reach POI #1: Inflow=1.23 cfs 0.413 af
Outflow=1.23 cfs 0.413 af

Reach POI #2: Inflow=7.00 cfs 0.516 af
Outflow=7.00 cfs 0.516 af

Reach POI #3: Inflow=1.38 cfs 0.095 af
Outflow=1.38 cfs 0.095 af

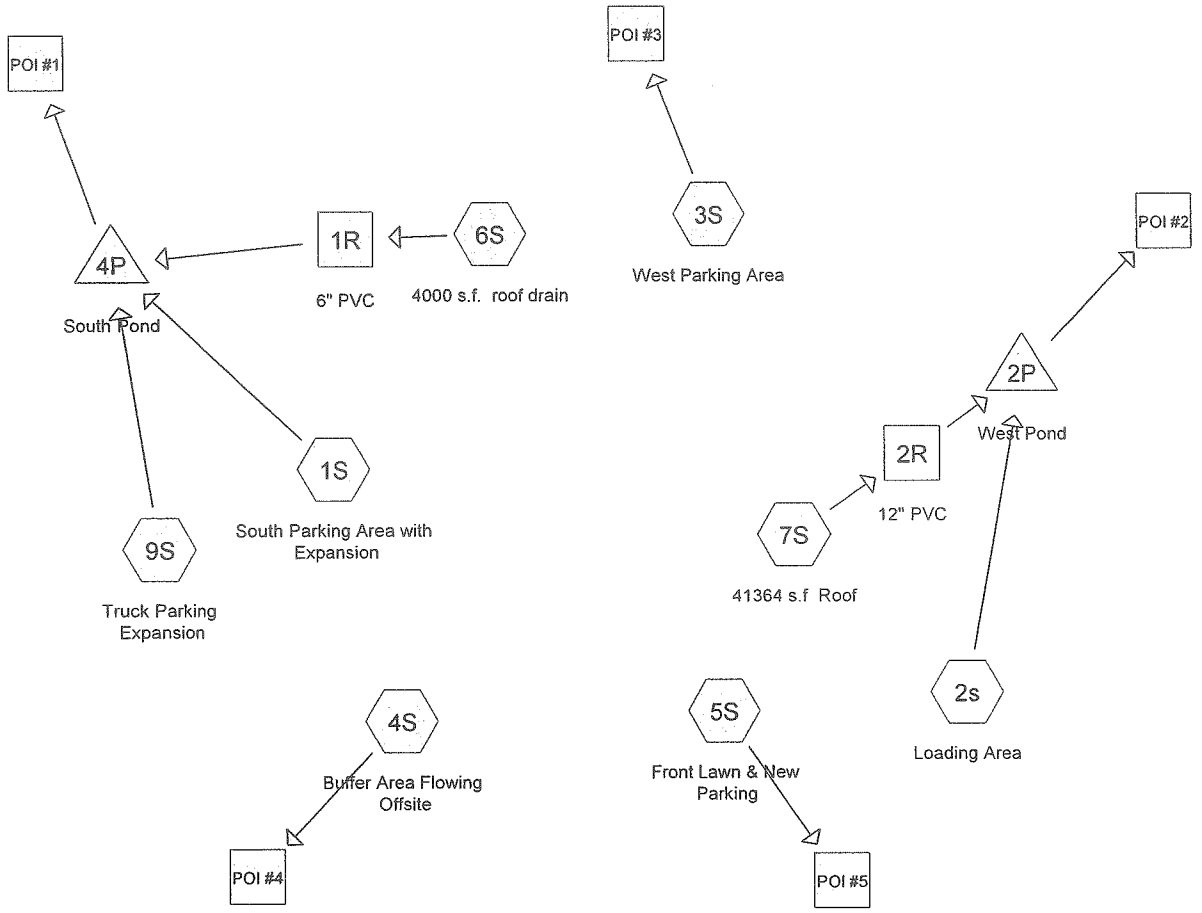
Reach POI #4: Inflow=0.22 cfs 0.017 af
Outflow=0.22 cfs 0.017 af

Reach POI #5: Inflow=1.73 cfs 0.119 af
Outflow=1.73 cfs 0.119 af

Pond 2P: West Pond Peak Elev=76.77' Storage=1,111 cf Inflow=6.68 cfs 0.505 af
Outflow=7.00 cfs 0.516 af

Pond 4P: South Pond Peak Elev=75.64' Storage=4,232 cf Inflow=2.34 cfs 0.413 af
Outflow=1.23 cfs 0.413 af

Total Runoff Area = 3.705 ac Runoff Volume = 1.149 af Average Runoff Depth = 3.72"
29.23% Pervious Area = 1.083 ac 70.77% Impervious Area = 2.622 ac



Subcat Reach Pond Link

Drainage Diagram for 1540 watershed post

Prepared by Gorrill-Palmer Consulting Engineers, INC. 10/10/2006

Area Listing (all nodes)

Area (acres)	CN	Description (subcats)
1.083	74	>75% Grass cover, Good, HSG C (1S,2s,3S,5S,9S)
2.622	98	Paved parking & roofs (1S,2s,3S,4S,5S,6S,7S,9S)
3.705		

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: South Parking Area with Expansion Runoff Area=28,556 sf Runoff Depth=4.04"
Flow Length=222' Tc=50.0 min CN=87 Runoff=1.34 cfs 0.221 af

Subcatchment 2s: Loading Area Runoff Area=24,111 sf Runoff Depth=4.04"
Tc=5.0 min CN=87 Runoff=2.65 cfs 0.186 af

Subcatchment 3S: West Parking Area Runoff Area=16,591 sf Runoff Depth=3.73"
Tc=5.0 min CN=84 Runoff=1.71 cfs 0.118 af

Subcatchment 4S: Buffer Area Flowing Offsite Runoff Area=1,992 sf Runoff Depth=5.26"
Tc=5.0 min CN=98 Runoff=0.26 cfs 0.020 af

Subcatchment 5S: Front Lawn & New Parking Runoff Area=20,785 sf Runoff Depth=3.73"
Tc=5.0 min CN=84 Runoff=2.14 cfs 0.148 af

Subcatchment 6S: 4000 s.f. roof drain Runoff Area=4,000 sf Runoff Depth=5.26"
Tc=5.0 min CN=98 Runoff=0.51 cfs 0.040 af

Subcatchment 7S: 41364 s.f Roof Runoff Area=41,364 sf Runoff Depth=5.26"
Tc=5.0 min CN=98 Runoff=5.30 cfs 0.416 af

Subcatchment 9S: Truck Parking Expansion Runoff Area=24,008 sf Runoff Depth=5.15"
Flow Length=335' Tc=43.5 min CN=97 Runoff=1.42 cfs 0.236 af

Reach 1R: 6" PVC Avg. Depth=0.29' Max Vel=4.36 fps Inflow=0.51 cfs 0.040 af
D=6.0" n=0.011 L=105.0' S=0.0150 '/' Capacity=0.81 cfs Outflow=0.51 cfs 0.040 af

Reach 2R: 12" PVC Avg. Depth=0.85' Max Vel=7.48 fps Inflow=5.30 cfs 0.416 af
D=12.0" n=0.011 L=80.0' S=0.0150 '/' Capacity=5.16 cfs Outflow=5.28 cfs 0.416 af

Reach POI #1: Inflow=1.41 cfs 0.497 af
Outflow=1.41 cfs 0.497 af

Reach POI #2: Inflow=6.95 cfs 0.562 af
Outflow=6.95 cfs 0.562 af

Reach POI #3: Inflow=1.71 cfs 0.118 af
Outflow=1.71 cfs 0.118 af

Reach POI #4: Inflow=0.26 cfs 0.020 af
Outflow=0.26 cfs 0.020 af

Reach POI #5: Inflow=2.14 cfs 0.148 af
Outflow=2.14 cfs 0.148 af

Pond 2P: West Pond Peak Elev=76.77' Storage=1,111 cf Inflow=7.93 cfs 0.603 af
Outflow=6.95 cfs 0.562 af

Pond 4P: South Pond Peak Elev=76.00' Storage=5,305 cf Inflow=2.80 cfs 0.497 af
Outflow=1.41 cfs 0.497 af

Total Runoff Area = 3.705 ac Runoff Volume = 1.387 af Average Runoff Depth = 4.49"
29.23% Pervious Area = 1.083 ac 70.77% Impervious Area = 2.622 ac

Subcatchment 1S: South Parking Area with Expansion

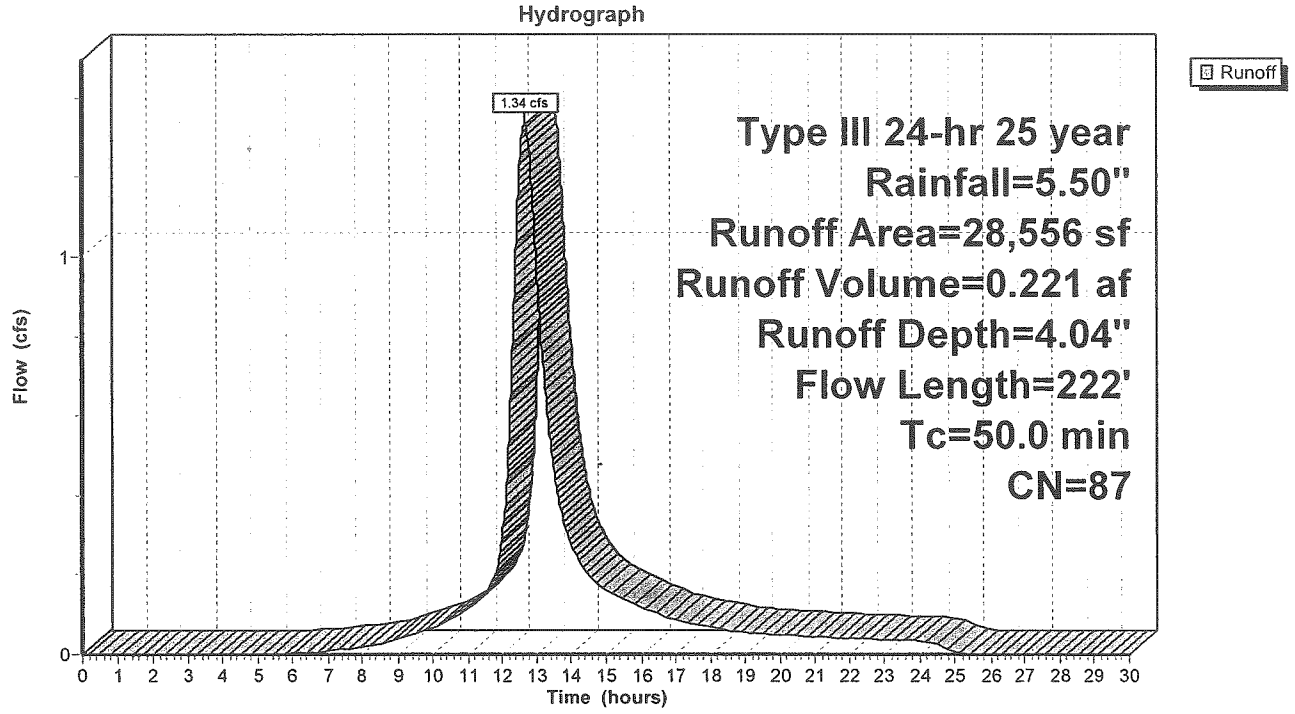
Runoff = 1.34 cfs @ 12.67 hrs, Volume= 0.221 af, Depth= 4.04"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 year Rainfall=5.50"

Area (sf)	CN	Description
13,447	74	>75% Grass cover, Good, HSG C
15,109	98	Paved parking & roofs
28,556	87	Weighted Average
13,447		Pervious Area
15,109		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	117	0.0182	1.32		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
48.5	105	0.0125	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.00"
50.0	222	Total			

Subcatchment 1S: South Parking Area with Expansion



Subcatchment 2s: Loading Area

Tc was calculated per TR-55 methods to 2.4 minutes, revised to 5 minutes

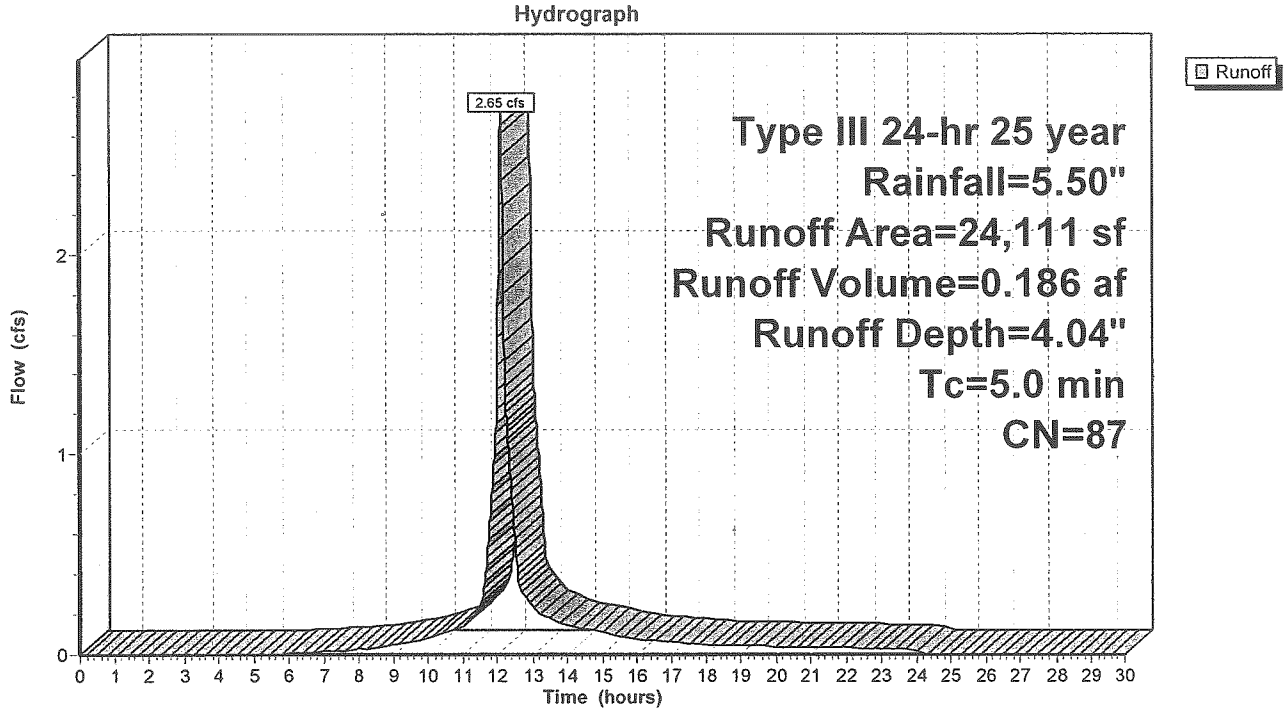
Runoff = 2.65 cfs @ 12.07 hrs, Volume= 0.186 af, Depth= 4.04"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 year Rainfall=5.50"

Area (sf)	CN	Description
11,001	74	>75% Grass cover, Good, HSG C
13,110	98	Paved parking & roofs
24,111	87	Weighted Average
11,001		Pervious Area
13,110		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 2s: Loading Area



Subcatchment 3S: West Parking Area

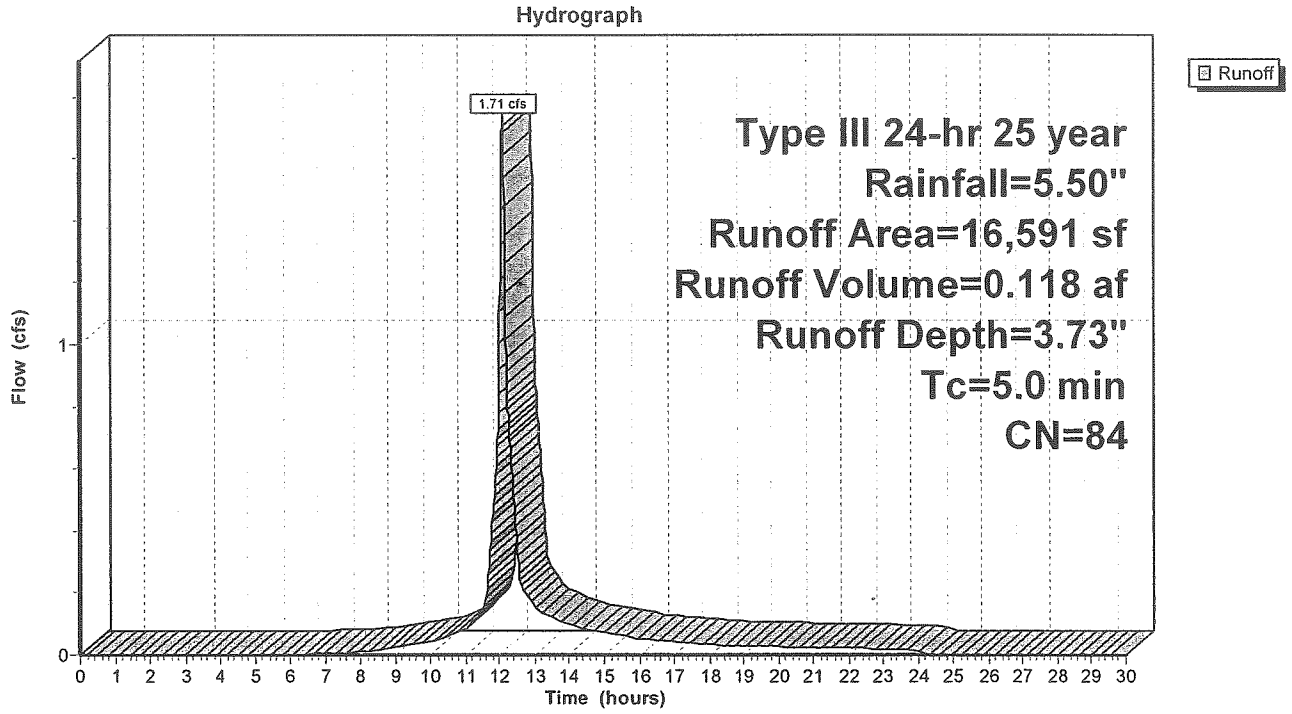
Runoff = 1.71 cfs @ 12.07 hrs, Volume= 0.118 af, Depth= 3.73"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 year Rainfall=5.50"

Area (sf)	CN	Description
9,584	74	>75% Grass cover, Good, HSG C
7,007	98	Paved parking & roofs
16,591	84	Weighted Average
9,584		Pervious Area
7,007		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 3S: West Parking Area



Subcatchment 4S: Buffer Area Flowing Offsite

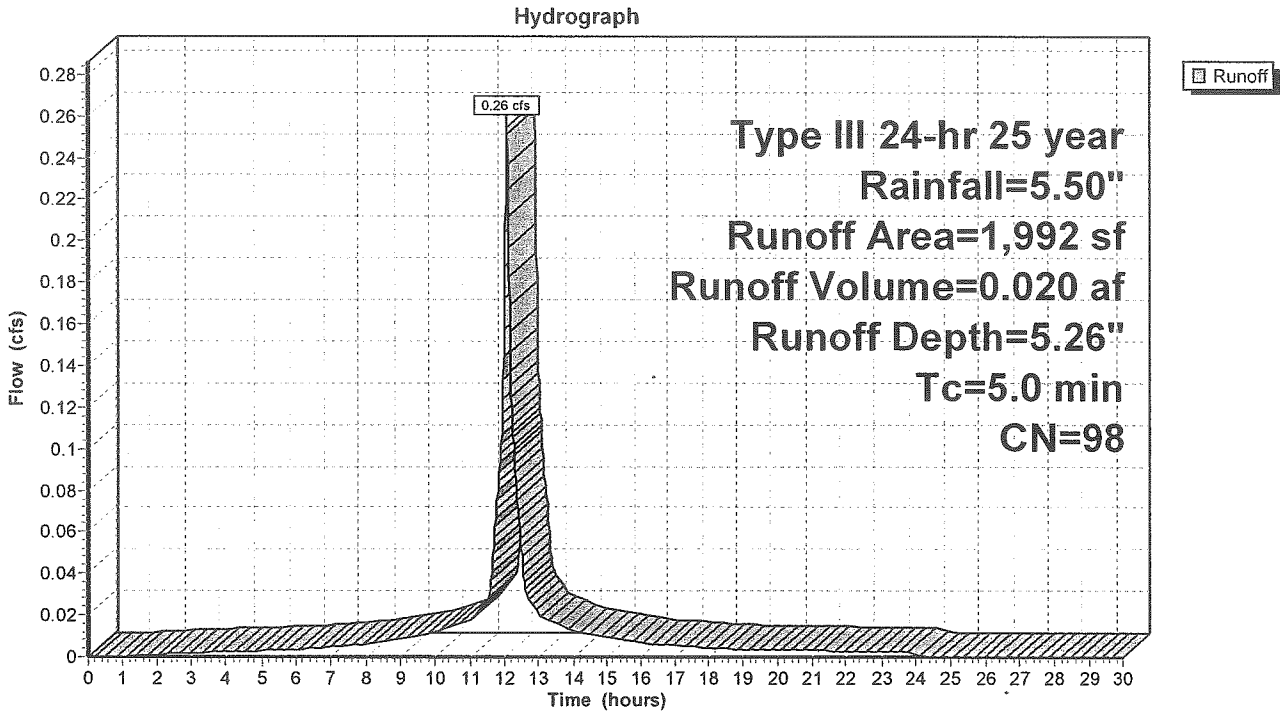
Runoff = 0.26 cfs @ 12.07 hrs, Volume= 0.020 af, Depth= 5.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 year Rainfall=5.50"

Area (sf)	CN	Description
1,992	98	Paved parking & roofs
1,992		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct Entry

Subcatchment 4S: Buffer Area Flowing Offsite



Subcatchment 5S: Front Lawn & New Parking

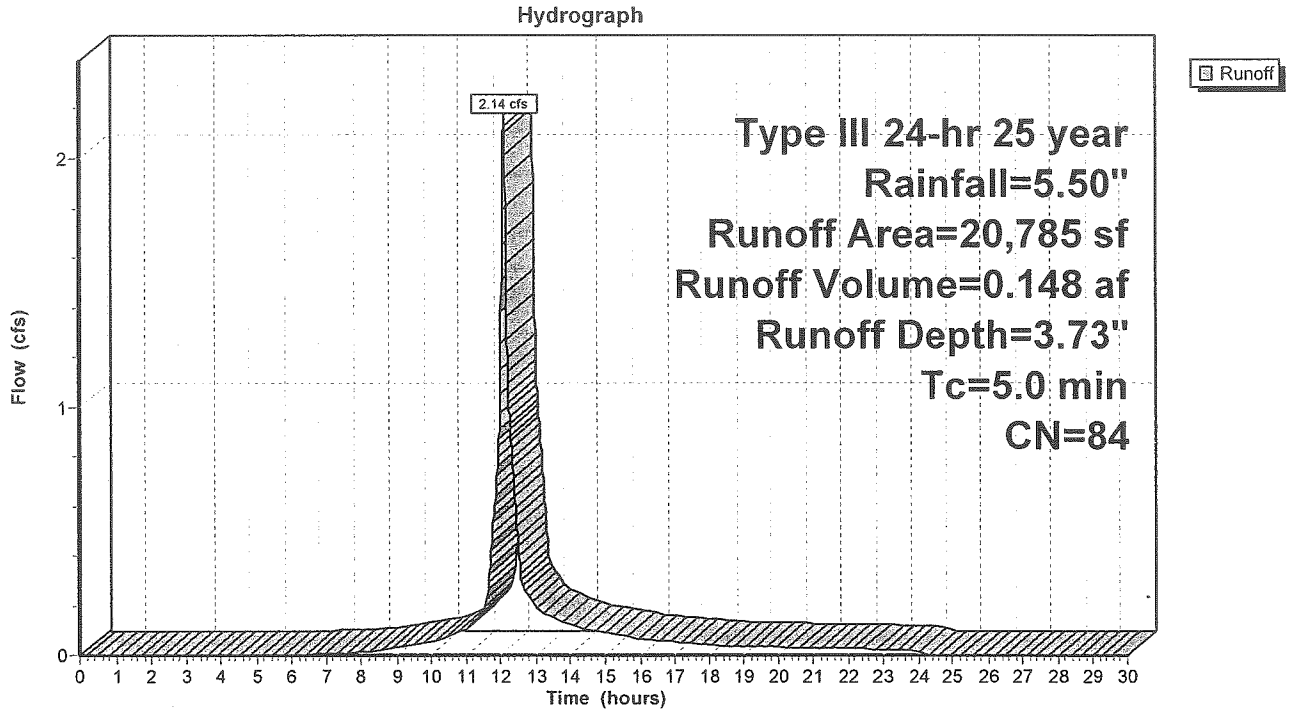
Runoff = 2.14 cfs @ 12.07 hrs, Volume= 0.148 af, Depth= 3.73"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 year Rainfall=5.50"

Area (sf)	CN	Description
9,035	98	Paved parking & roofs
11,750	74	>75% Grass cover, Good, HSG C
20,785	84	Weighted Average
11,750		Pervious Area
9,035		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 5S: Front Lawn & New Parking



Subcatchment 6S: 4000 s.f. roof drain

4000 s.f roof drain

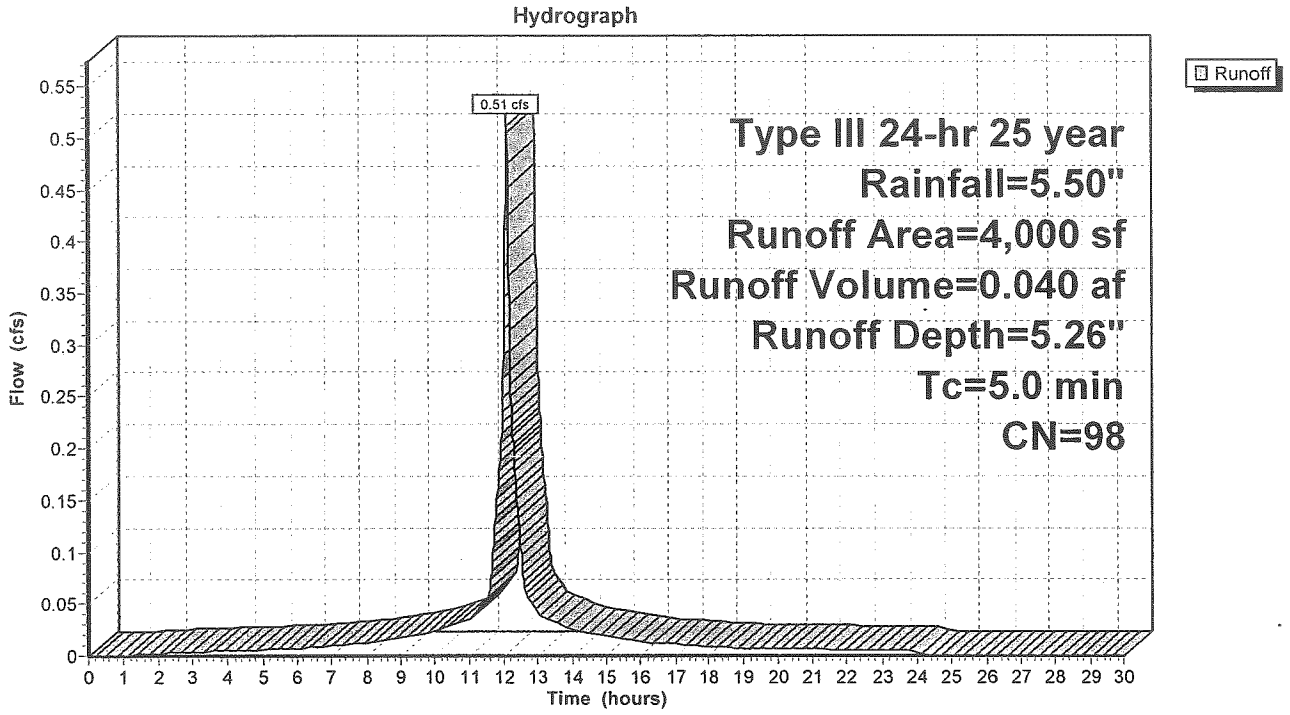
Runoff = 0.51 cfs @ 12.07 hrs, Volume= 0.040 af, Depth= 5.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 year Rainfall=5.50"

Area (sf)	CN	Description
4,000	98	Paved parking & roofs
4,000		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Roof drain to 6in pipe**

Subcatchment 6S: 4000 s.f. roof drain



Subcatchment 7S: 41364 s.f Roof

41364 s.f. roof drain

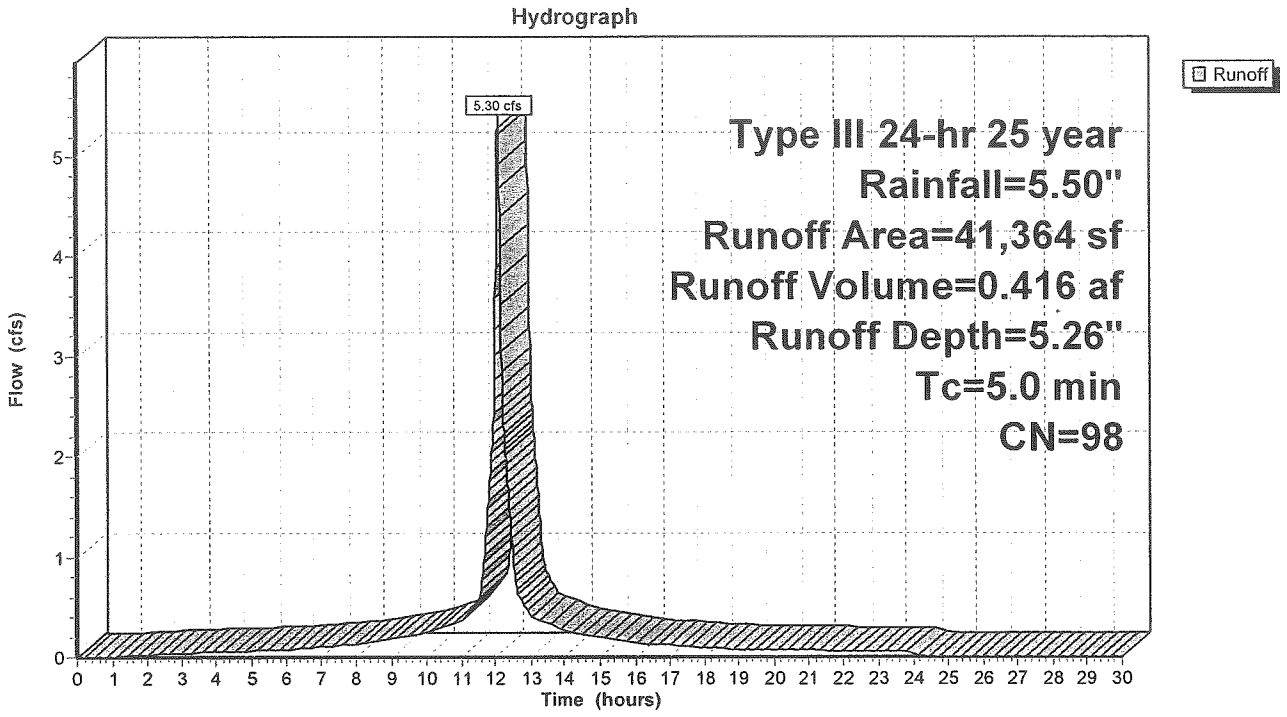
Runoff = 5.30 cfs @ 12.07 hrs, Volume= 0.416 af, Depth= 5.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 year Rainfall=5.50"

Area (sf)	CN	Description
41,364	98	Paved parking & roofs
41,364		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, 41364 s.f. roof**

Subcatchment 7S: 41364 s.f Roof



Subcatchment 9S: Truck Parking Expansion

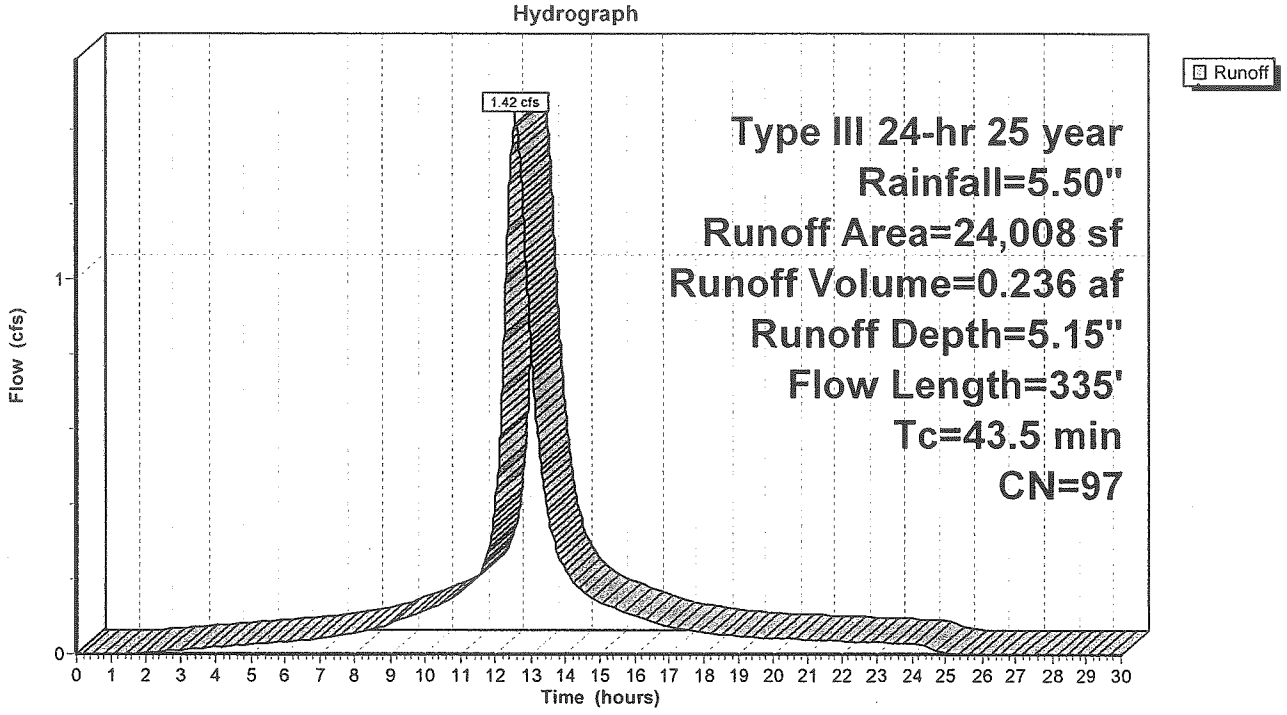
Runoff = 1.42 cfs @ 12.57 hrs, Volume= 0.236 af, Depth= 5.15"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 year Rainfall=5.50"

Area (sf)	CN	Description
1,403	74	>75% Grass cover, Good, HSG C
22,605	98	Paved parking & roofs
24,008	97	Weighted Average
1,403		Pervious Area
22,605		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	150	0.0167	1.34		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.00"
0.6	80	0.0125	2.27		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
41.0	105	0.0190	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.00"
43.5	335	Total			

Subcatchment 9S: Truck Parking Expansion



Reach 1R: 6" PVC

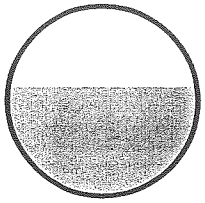
[52] Hint: Inlet conditions not evaluated

Inflow Area = 0.092 ac, Inflow Depth = 5.26" for 25 year event
Inflow = 0.51 cfs @ 12.07 hrs, Volume= 0.040 af
Outflow = 0.51 cfs @ 12.08 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.7 min

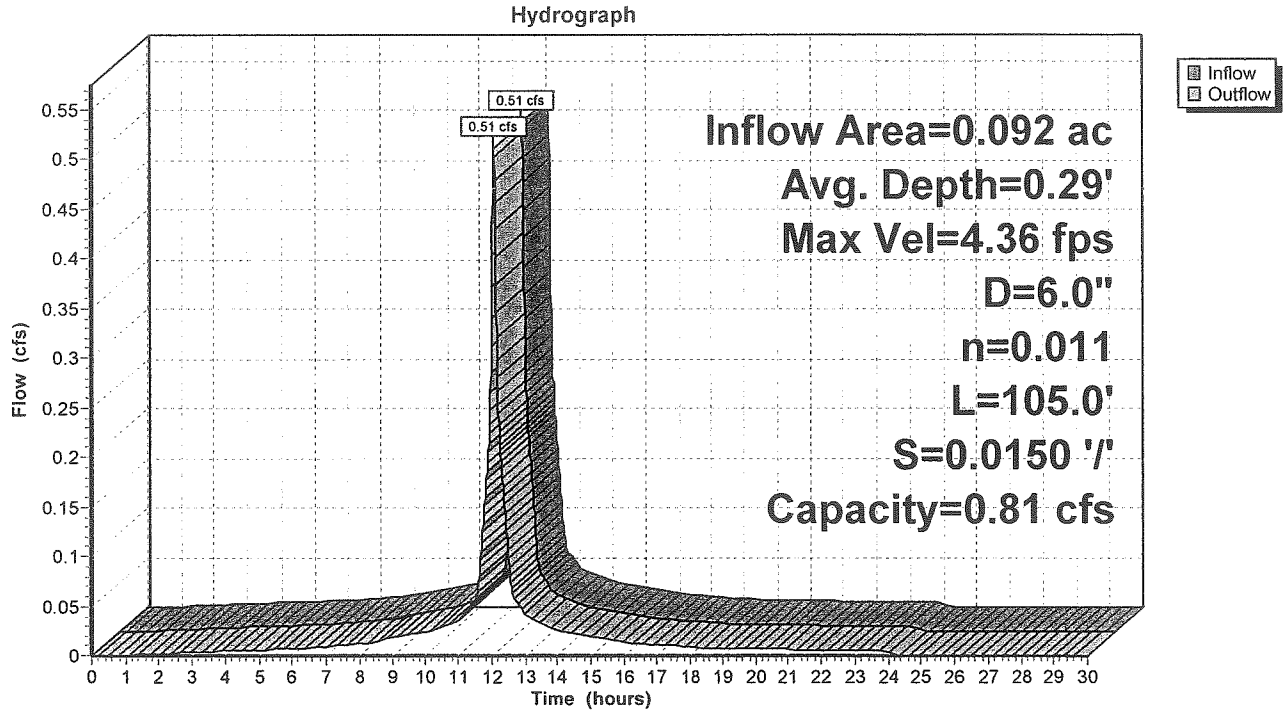
Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.36 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.48 fps, Avg. Travel Time= 1.2 min

Peak Storage= 12 cf @ 12.08 hrs, Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 0.50', Capacity at Bank-Full= 0.81 cfs

6.0" Diameter Pipe, n= 0.011
Length= 105.0' Slope= 0.0150 '/'
Inlet Invert= 78.06', Outlet Invert= 76.49'



Reach 1R: 6" PVC



Reach 2R: 12" PVC

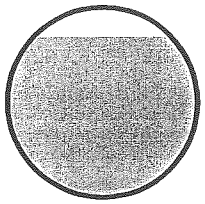
[52] Hint: Inlet conditions not evaluated
[55] Hint: Peak inflow is 103% of Manning's capacity

Inflow Area = 0.950 ac, Inflow Depth = 5.26" for 25 year event
Inflow = 5.30 cfs @ 12.07 hrs, Volume= 0.416 af
Outflow = 5.28 cfs @ 12.08 hrs, Volume= 0.416 af, Atten= 0%, Lag= 0.4 min

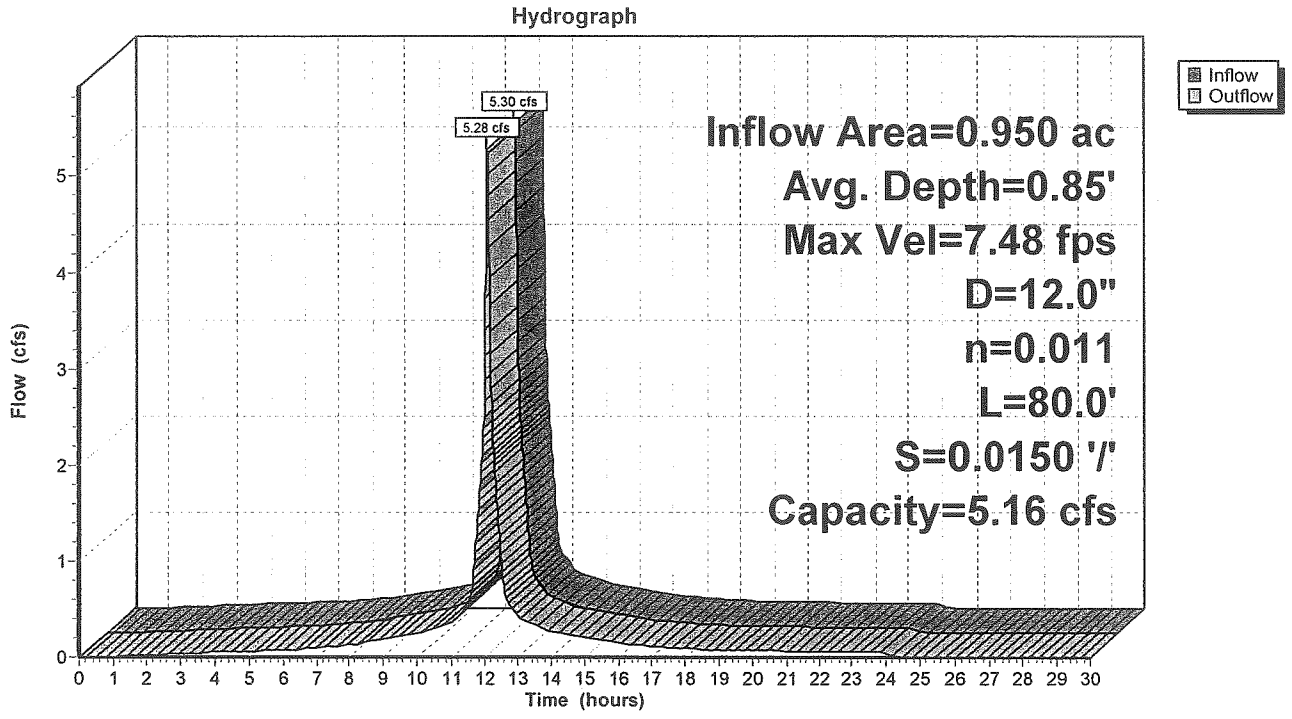
Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 7.48 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.72 fps, Avg. Travel Time= 0.5 min

Peak Storage= 57 cf @ 12.07 hrs, Average Depth at Peak Storage= 0.85'
Bank-Full Depth= 1.00', Capacity at Bank-Full= 5.16 cfs

12.0" Diameter Pipe, n= 0.011
Length= 80.0' Slope= 0.0150 '/'
Inlet Invert= 75.04', Outlet Invert= 73.84'



Reach 2R: 12" PVC



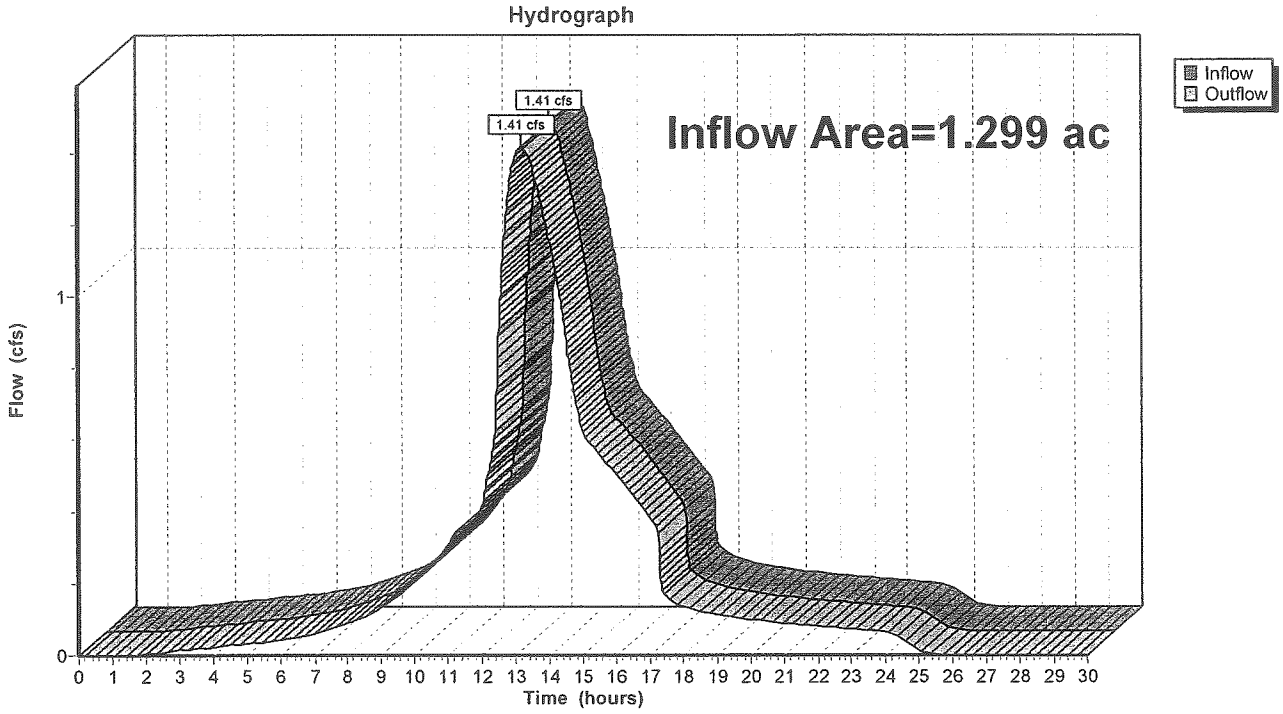
Reach POI #1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.299 ac, Inflow Depth = 4.60" for 25 year event
Inflow = 1.41 cfs @ 13.16 hrs, Volume= 0.497 af
Outflow = 1.41 cfs @ 13.16 hrs, Volume= 0.497 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Reach POI #1:



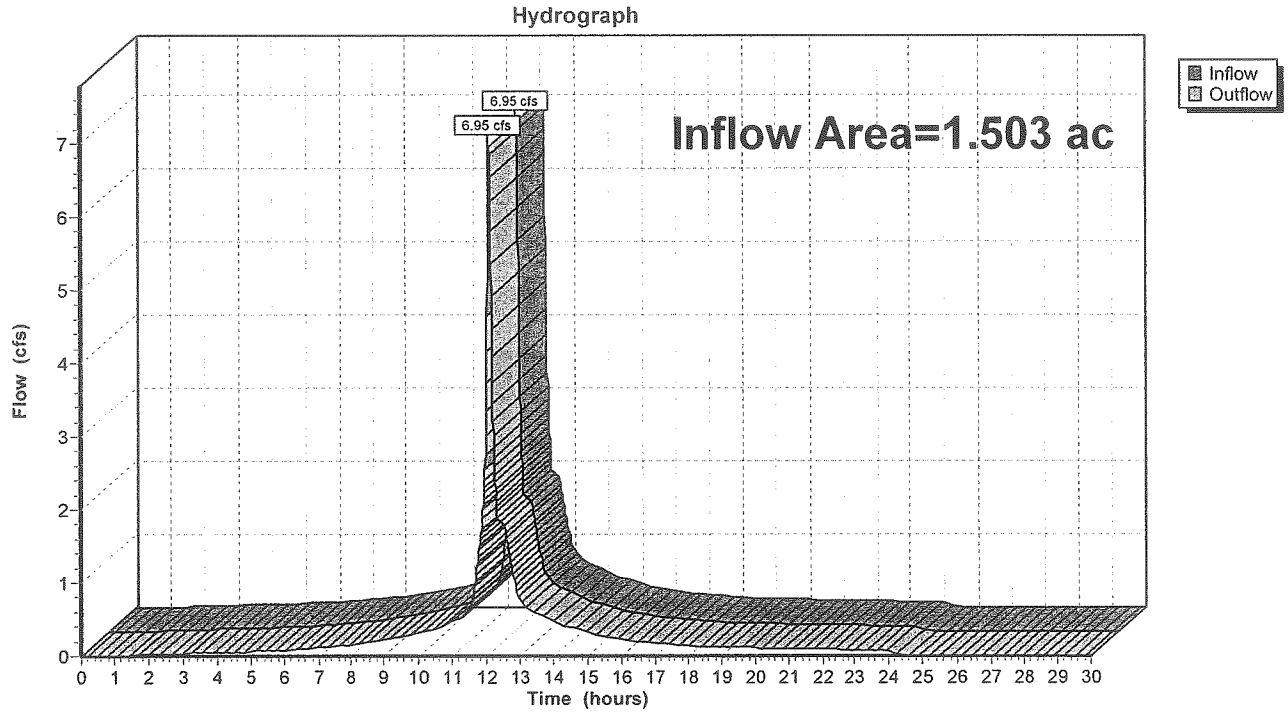
Reach POI #2:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.503 ac, Inflow Depth = 4.49" for 25 year event
Inflow = 6.95 cfs @ 12.07 hrs, Volume= 0.562 af
Outflow = 6.95 cfs @ 12.07 hrs, Volume= 0.562 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Reach POI #2:



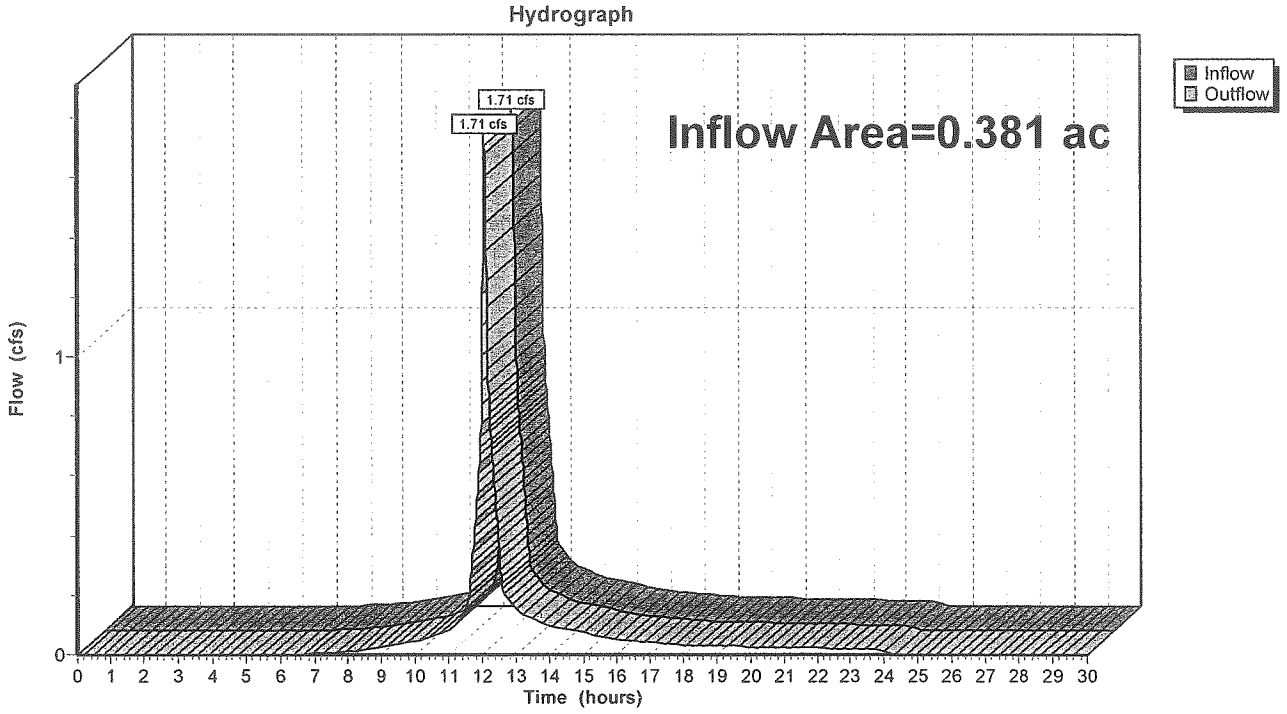
Reach POI #3:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.381 ac, Inflow Depth = 3.73" for 25 year event
Inflow = 1.71 cfs @ 12.07 hrs, Volume= 0.118 af
Outflow = 1.71 cfs @ 12.07 hrs, Volume= 0.118 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Reach POI #3:



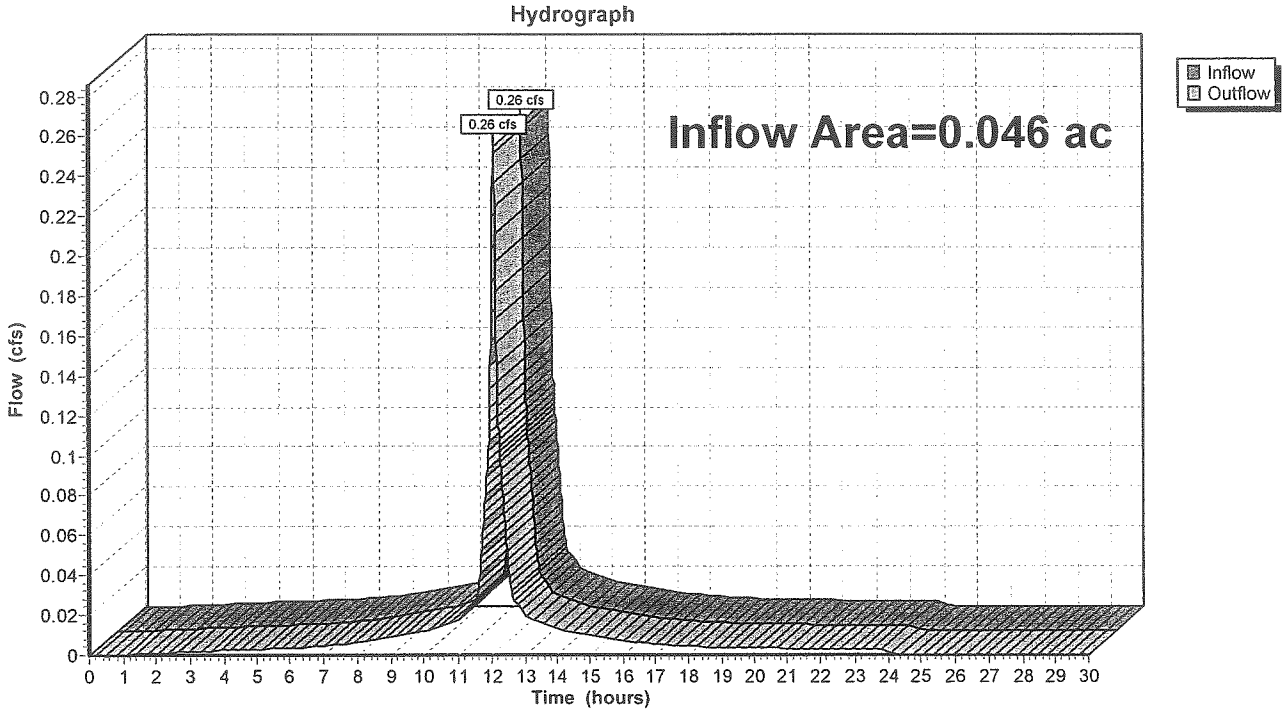
Reach POI #4:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.046 ac, Inflow Depth = 5.26" for 25 year event
Inflow = 0.26 cfs @ 12.07 hrs, Volume= 0.020 af
Outflow = 0.26 cfs @ 12.07 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Reach POI #4:



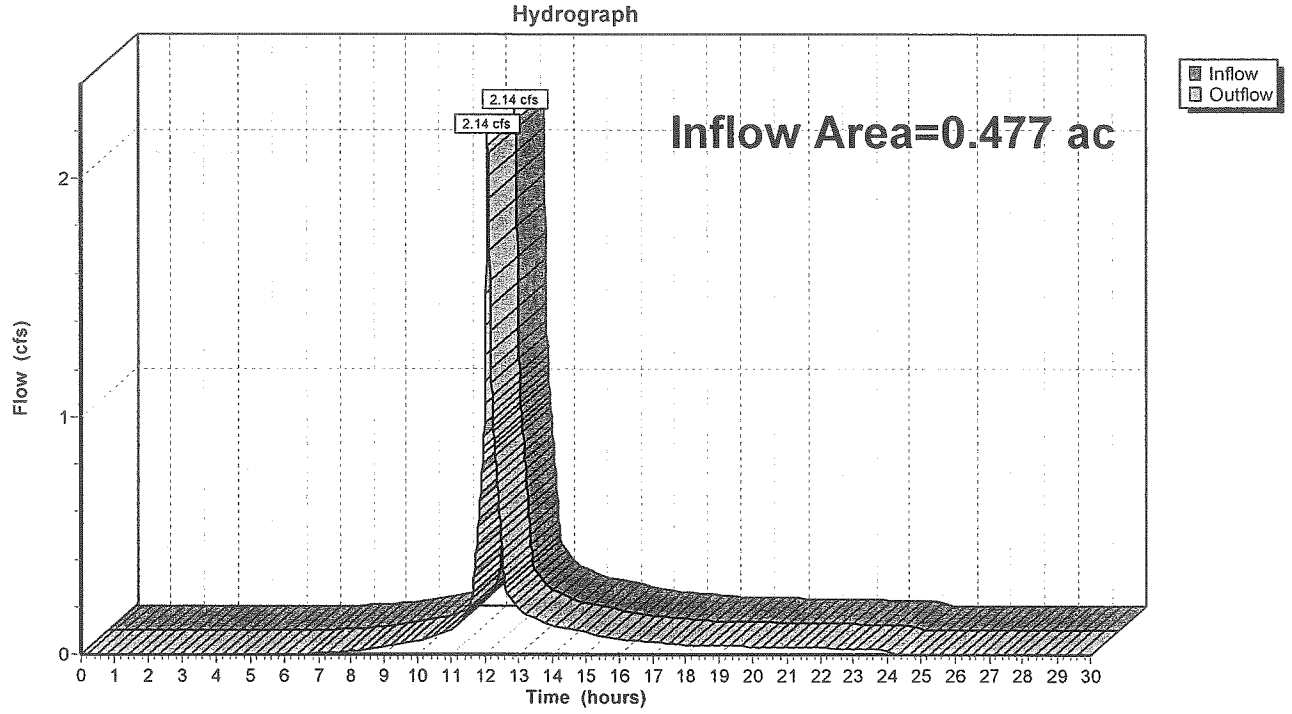
Reach POI #5:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.477 ac, Inflow Depth = 3.73" for 25 year event
Inflow = 2.14 cfs @ 12.07 hrs, Volume= 0.148 af
Outflow = 2.14 cfs @ 12.07 hrs, Volume= 0.148 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Reach POI #5:



Pond 2P: West Pond

[93] Warning: Storage range exceeded by 0.90'
[63] Warning: Exceeded Reach 2R inflow depth by 0.98' @ 12.17 hrs

Inflow Area = 1.503 ac, Inflow Depth = 4.81" for 25 year event
Inflow = 7.93 cfs @ 12.07 hrs, Volume= 0.603 af
Outflow = 6.95 cfs @ 12.07 hrs, Volume= 0.562 af, Atten= 12%, Lag= 0.0 min
Primary = 6.95 cfs @ 12.07 hrs, Volume= 0.562 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 76.77' @ 12.07 hrs Surf.Area= 1,257 sf Storage= 1,111 cf

Plug-Flow detention time= 45.6 min calculated for 0.562 af (93% of inflow)
Center-of-Mass det. time= 8.3 min (770.1 - 761.8)

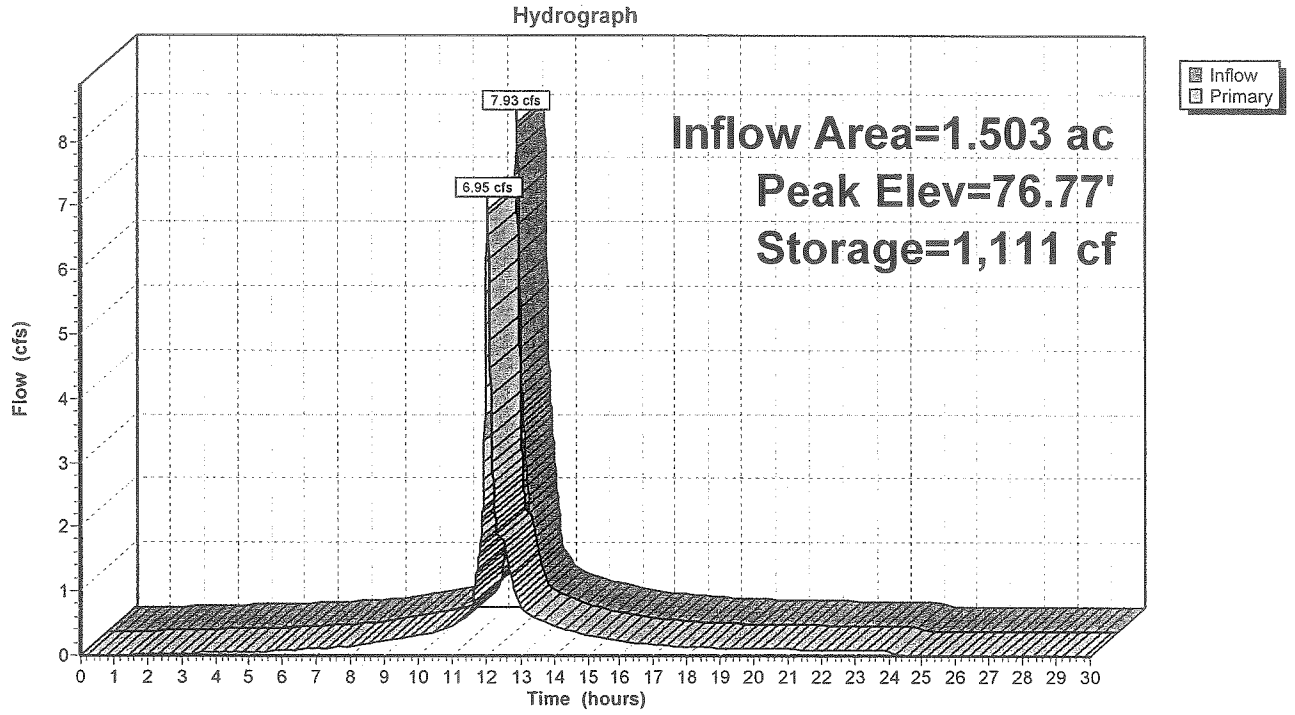
Volume	Invert	Avail.Storage	Storage Description
#1	73.41'	1,111 cf	**South Pond (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
73.41	100	0	0
74.00	130	68	68
75.00	461	296	363
75.87	1,257	747	1,111

Device	Routing	Invert	Outlet Devices
#1	Device 4	73.41'	**4.5" Vert. 4.5" Orifice** C= 0.600
#2	Device 4	74.99'	**1.00' W x 0.25' H Vert. 3"x12" Orifice** C= 0.600
#3	Device 4	76.41'	**24.0" Horiz. Grate** Limited to weir flow C= 0.600
#4	Primary	66.41'	**12.0" x 65.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 65.92' S= 0.0075 '/' Cc= 0.900 n= 0.011

Primary OutFlow Max=6.94 cfs @ 12.07 hrs HW=76.77' (Free Discharge)
└**4=Culvert** (Passes 6.94 cfs of 11.50 cfs potential flow)
  ├**1=4.5" Orifice** (Orifice Controls 0.95 cfs @ 8.58 fps)
  ├**2=3"x12" Orifice** (Orifice Controls 1.55 cfs @ 6.19 fps)
  └**3=Grate** (Weir Controls 4.44 cfs @ 1.96 fps)

Pond 2P: West Pond



Pond 4P: South Pond

Inflow Area = 1.299 ac, Inflow Depth = 4.60" for 25 year event
Inflow = 2.80 cfs @ 12.61 hrs, Volume= 0.497 af
Outflow = 1.41 cfs @ 13.16 hrs, Volume= 0.497 af, Atten= 49%, Lag= 32.9 min
Primary = 1.41 cfs @ 13.16 hrs, Volume= 0.497 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 76.00' @ 13.16 hrs Surf.Area= 3,391 sf Storage= 5,305 cf

Plug-Flow detention time= 36.9 min calculated for 0.497 af (100% of inflow)
Center-of-Mass det. time= 36.9 min (844.3 - 807.4)

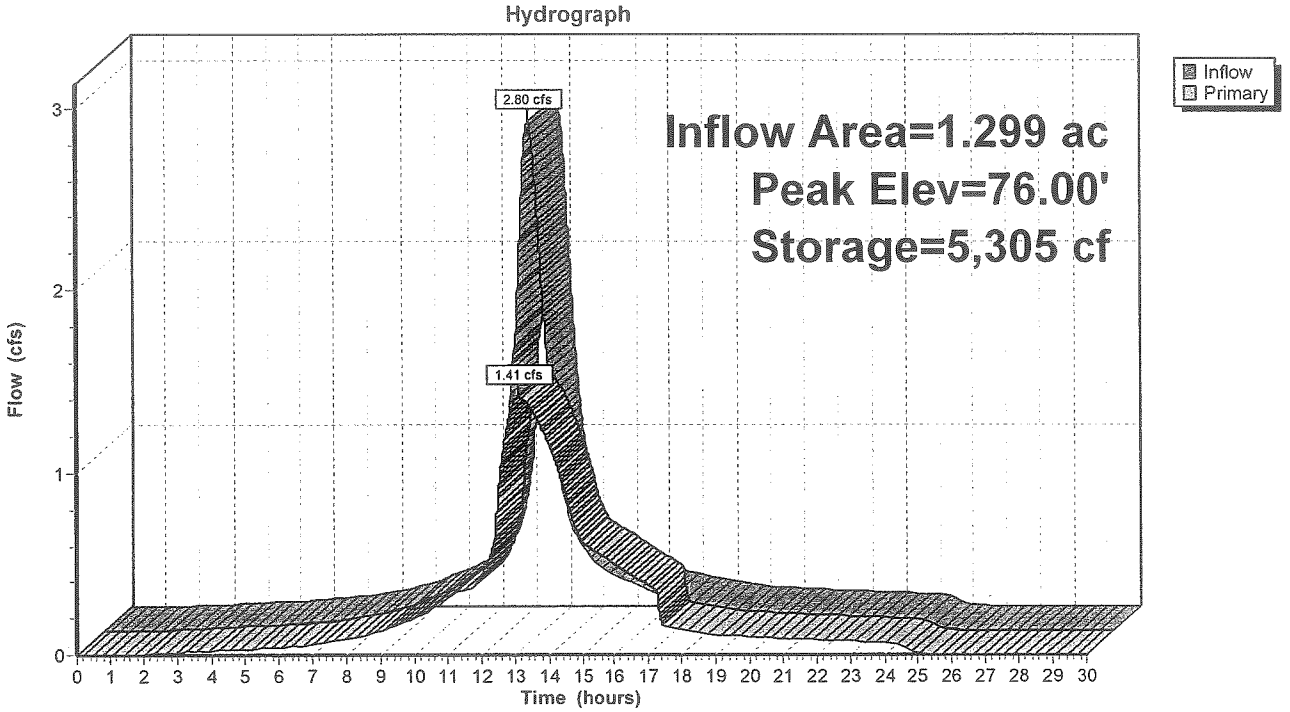
Volume	Invert	Avail.Storage	Storage Description
#1	74.00'	5,309 cf	**South Pond (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
74.00	1,965	0	0
75.00	2,630	2,298	2,298
76.00	3,392	3,011	5,309

Device	Routing	Invert	Outlet Devices
#1	Device 4	73.41'	**4.5" Vert. 4.5" Orifice** C= 0.600
#2	Device 4	74.91'	**0.50' W x 0.25' H Vert. 3"x6" Orifice** C= 0.600
#3	Device 4	76.71'	**24.0" Horiz. Grate** Limited to weir flow C= 0.600
#4	Primary	73.41'	**12.0" x 40.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 72.72' S= 0.0172 '/' Cc= 0.900 n= 0.011

Primary OutFlow Max=1.41 cfs @ 13.16 hrs HW=76.00' (Free Discharge)
↑—**4=Culvert** (Passes 1.41 cfs of 5.47 cfs potential flow)
  ↑—**1=4.5" Orifice** (Orifice Controls 0.82 cfs @ 7.46 fps)
  ├—**2=3"x6" Orifice** (Orifice Controls 0.59 cfs @ 4.72 fps)
  └—**3=Grate** (Controls 0.00 cfs)

Pond 4P: South Pond



Attachment D

Typical Site Photos

Previously Submitted

TABLE OF CONTENTS

William E. Whited, Inc.
Professional Engineer
Registered Architect

October 14, 1998

City of Portland
Planning Department
398 Congress Street
Portland, ME 04101

RE: UniFirst Corp. Expansion
Riverside Industrial Parkway

Dear Sir/Madam:

This application is filed on behalf of UniFirst Corporation, 68 Jonspin Road, Wilmington, MA. The estimated cost is approximately $350,000. Existing on the site is laundry and servicing of workplace uniforms for many businesses. The proposed addition is to house the incoming laundry on the first floor and to rack the laundered uniforms on the second floor.

Total land area of site is 3.75 acres. Total floor area of the building with the addition will be 49,250 sq. ft. The total ground coverage with the addition will be 45,250 sq. ft. The existing ground coverage of the building is 42,260 sq. ft. There are no easements or other burdens on the existing property. Estimated quantities of solid waste are two dumpsters, one for cardboard products and one for wash products. These dumpsters are emptied weekly.

The existing building is served by public sewer, water and streets. The addition will add no additional burden to these facilities. The wash water from the laundry machines is treated separately and does not enter into the public sewer system. Existing surface drainage is within the lot and directed to detention basins on the westerly and southerly corners of the lot. There is no change in the run-off pattern and the water will flow in its present courses. There is also no change in the total impervious surface of the building and development because the land to be covered is now paved.

The new wing will have a 110 x 10 ft. planting strip on the south side which is a slight increase in the amount of planting area on the lot compared to its present condition. There are minor adjustments to the entrance drive at the facade of the building facing Riverside Industrial Parkway to accommodate a new truck delivery dock which receives soaps, etc., about once each week.

The project will start upon approval of the various boards and agencies and is expected to be completed during the winter months. There are no new state and federal regulatory approvals that this development is subject to, and no applications are pending with those agencies. There are no unusual natural features, wildlife fishery habitats, or geology sites located on or near this site and no steps need to be taken to protect them.

One Union Wharf (207) 774 2135
P.O. Box 127 - Portland, Maine 04112

Because this is an existing site with no grading changes, a waiver from the requirements of a 2 ft. contour topographical survey is requested.

Enclosed is a financial statement from UniFirst Corp. showing their financial strength and ability to carry out this project. Also included is my resume and resume of the contractor that has been engaged for this project. Within the application is a copy of the owner's deed.

Sincerely,

William E. Whited, P.E., R.A.
WILLIAM E. WHITED, INC.

Site Review Pre-Application
Multi-Family/Attached Single Family Dwellings/Two-Family Dwelling or Commercial Structures and Additions Thereto

In the interest of processing your application in the quickest possible manner, please complete the Information below for Site Plan Review

NOTEIf you or the property owner owes real estate or personal property taxes or user charges on ANY PROPERTY within the City, payment arrangements must be made before permits of any kind are accepted.**

Applicant: UniFirst Corporation

Application Date: 10-9-98

Applicant's Mailing Address: 68 Jonspin Road, Wilmington, MA 01887

Project Name/Description: UniFirst Corp. Expansion

Consultant/Agent: William E. Whited, P.E., R.A.

Address Of Proposed Site: 430 Riverside Industrial Parkway

Applicant/Agent Daytime telephone and FAX: 774-2135 FAX 879-5579

Assessor's Reference, Chart#, Block. Lot#

Proposed Development (Check all that apply) ____New Building ____ Building Addition _X_ Change of Use ____ Residential ____ Office ____ Retail

____ Manufacturing ____ Warehouse/Distribution ____ Other(Specify) Laundry - Distribution

Existing	-	42,250 Sq. Ft.
Addition	-	7,000 Sq. Ft.
TOTAL	-	49,250 Sq. Ft.

Proposed Building Square Footage and /or # of Units

3.75 Acreage of Site

Industrial II Zoning

You must Include the following with you application:

1) A Copy of Your Deed or Purchase and Sale Agreement

2) 7 sets of Site Plan packages containing the information found in the attached sample plans and checklist.

(Section 14-522 of the Zoning Ordinance outlines the process, copies are available for review at the counter, photocopies are $ 0.25 per page)

I hereby certify that I am the Owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if an approval for the proposed project or use described in this application is issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this approval at any reasonable hour to enforce the provisions of the codes applicable to this approval.

Signature of applicant: William E. Whited	Date: 10-09-98

Site Review Fee: Major $500.00 Minor 400.00

This application is for site review ONLY, a Building Permit application and associated fees will be required prior to construction.

CITY OF PORTLAND, MAINE
SITE PLAN CHECKLIST

UniFirst Corp. Expansion, 430 Riverside Indus. Pkwy
Project Name, Address of Project

I.d. Number

Submitted () & Date	Item	Required Information	Section 14-525 (b,c)
N.A.	(1)	Standard boundary survey (stamped by a registered surveyor, at a scale of not less than 1 inch to 100 feet and including:	1
X	(2)	Name and address of applicant and name of proposed development	a
X	(3)	Scale and north points	b
X	(4)	Boundaries of the site	c
X	(5)	Total land area of site	d
N.A.	(6)	Topography - existing and proposed (2 feet intervals or less)	e
	(7)	Plans based on the boundary survey including:	2
N.A.	(8)	Existing soil conditions	a
N.A.	(9)	Location of water courses, marshes, rock outcroppings and wooded areas	b
X	(10)	Location, ground floor area and grade elevations of building and other structures existing and proposed, elevation drawings of exterior facades, and materials to be used	c
X	(11)	Approximate location of buildings or other structures on parcels abutting the site	d
X	(12)	Location of on-site waste receptacles	e
X	(13)	Public utilities	e
X	(14)	Water and sewer mains	e
X	(15)	Culverts, drains, existing and proposed, showing size and directions of flows	e
X	(16)	Location and dimensions, and ownership of easements, public or private rights-of-way, both existing and proposed	f
X	(17)	Location and dimensions of on-site pedestrian and vehicular accessways	g
X	(18)	Parking areas	g
X	(19)	Loading facilities	g
X	(20)	Design of ingress and egress of vehicles to and from the site onto public streets	g
X	(21)	Curb and sidewalks	g
	(22)	Landscape plan showing:	h
X	(23)	Location of existing proposed vegetation	h
X	(24)	Type of vegetation	h
X	(25)	Quantity of plantings	h
X	(26)	Size of proposed landscaping	h
X	(27)	Existing areas to be preserved	h
X	(28)	Preservation measures to be employed	h
X	(29)	Details of planting and preservation specifications	h
X	(30)	Location and dimensions of all fencing and screening	i
X	(31)	Location and intensity of outdoor lighting system	j
X	(32)	Location of fire hydrants, existing and proposed	k
X	(33)	Written statement	c
X	(34)	Description of proposed uses to be located on site	l
N.A.	(35)	Quantity and type of residential, if any	l
X	(36)	Total land area of the site	b2
X	(37)	Total floor area and ground coverage of each proposed building and structure	b2
X	(38)	General summery of existing and proposed easements or other burdens	c3
X	(39)	Method of handling solid waste disposal	4

O:\PLAN\CORRESP\SECRETAR\FORMS\SPLIST.JMD

X	(40)	Applicant's evaluation of availability of off-site public facilities, including sewer, water and streets	5
X	(41)	Description of any problems of drainage or topography, or a representation that there are none	6
X	(42)	An estimate of the time period required for completion of the development	7
X	(43)	A list of all state and federal regulatory approvals to which the development may be subject	8
X	(44)	The status of any pending applications	8
X	(45)	Anticipated timeframe for obtaining such permits	h8
X	(46)	A letter of non jurisdiction	h8
X	(47)	Evidence of financial and technical capability to undertake and complete the development including a letter from a responsible financial institution stating that is has reviewed the planned development and would seriously consider financing it when approved.	

Note: Depending on the size and scope of the proposed development, the Planning Board or Planning Authority may request additional information, including (but not limited to):

- drainage patterns and facilities;
- erosion and sedimentation controls to be used during construction;
- a parking and/or traffic study;
- a noise study;
- an environmental impact study;
- a sun shadow study;
- a study of particulates and any other noxious emissions; and
- a wind impact analysis.

Other comments:

This project proposes to demolish a 1,000 sq. ft. wing on the existing building and replace it with a 40 x 100 ft. two-story wing, thereby adding 7,000 sq. ft. to the building. The increased ground footprint of the building is 3,000 sq. ft. for a total of 45,250 sq. ft. of ground footprint. The area where most of this addition will be constructed is paved. A 50 ft. by 20 ft. landscaped area to be within the new building lines will be mitigated by a 100 ft. by 10 ft. planting area along the south wall of the addition. There will be no significant increase in impervious surfaces on the site; therefore, a new run-off analysis is not justified.

UniFirst Corporation
68 Jonspin Road
Wilmington, Massachusetts 01887-1086
Telephone (978) 658-8888
Facsimile (978) 657-5663

October 7, 1998

City of Portland
389 Congress Street
Portland, ME 04101

To Whom it may concern:

Mr. William E. Whited is designated our agent with the City of Portland for UniFirst's expansion to its facility at 430 Riverside Industrial Parkway, Portland, ME, 04103. If there are any questions, I can be reached at the number listed below.

Sincerely,

Michael T. Fleming
Project Manager
68 Jonspin Road
Wilmington, MA
(978) 658-8888 x650

QUIT-CLAIM DEED WITH COVENANT

063937

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, by purchase and assignment of partnership interests dated October 10, 1986, UNIFIRST CORPORATION, a Massachusetts corporation having a principal place of business at 15 Olympia Avenue, Woburn, Massachusetts 01801 ("Grantee") acquired all of the partnership interests in THE CROATTI FAMILY PARTNERSHIP, a Massachusetts general partnership located in said Woburn, in the County of Middlesex and Commonwealth of Massachusetts ("Grantor");

WHEREAS, such transaction vested legal ownership of the property described below (the "Property"), as well as other property, in the Grantee;

WHEREAS, the amount of the consideration for the transaction described above which is allocated to the Property is $696,000, which represents the full and fair consideration for this conveyance; and

WHEREAS, record title to the Property stands in the name of the Grantor;

NOW, THEREFORE, in order to convey record title to the Property to the Grantee, the Grantor does hereby REMISE, RELEASE, BARGAIN, SELL AND CONVEY, and forever QUIT-CLAIM unto the said Grantee, its successors and assigns forever, a certain lot or parcel of land, with the buildings thereon, situated on

the westerly side of Riverside Industrial Parkway in the City of Portland, County of Cumberland and State of Maine, said parcel being further bounded and described as follows:

> Beginning at an iron set in the ground on the westerly side of Riverside Industrial Parkway in said Portland, said iron being one thousand two hundred ninety-three and one hundredth (1,293.01) feet southerly along the westerly sideline of said Riverside Industrial Parkway from the former southerly line of Riverside Street; thence running South 14° 11' West along said sideline of Riverside Industrial Parkway ninety-six and ninety-nine hundredths (96.99) feet to an iron set in the ground; thence running South 18° 38' West along said sideline of Riverside Industrial Parkway three hundred three (303) feet to an iron set in the ground; thence running North 71° 22' West by land formerly of ADC Building Fund Incorporated four hundred thirty-six and eighteen hundredths (436.18) feet to an iron set in the ground at land of the Maine Turnpike Authority; thence running in a general northeasterly direction along land of the Maine Turnpike Authority three hundred sixty-eight and fourteen hundredths (368.14) feet to an iron set in the ground at land formerly of ADC Building Fund Incorporated; thence running South 75° 49' East by said last mentioned land formerly of ADC Building Fund Incorporated four hundred twelve and fifty-one hundredths (412.51) feet to an iron set in the ground and the point of beginning.

Being the same premises conveyed to the Grantor by IUSC, Realty, Inc. ("IUSC") by deed dated August 31, 1983 and recorded in the Cumberland County Registry of Deeds (the "Registry") in Book 6638, Page 283.

This conveyance is made subject to municipal real estate taxes of the City of Portland assessed after July 1, 1986 and to a Mortgage and Conditional Assignment of leases and rents from Grantor to IUSC, both dated August 31, 1983, recorded in the Registry in Book 6638, Page 286 and Book 6638, Page 296, respectively, securing outstanding indebtedness of $5,031,150

($499,533 of which is allocated to the Property), which taxes and indebtedness the Grantee assumes and agrees to pay.

IN WITNESS WHEREOF, the said CROATTI FAMILY PARTNERSHIP has caused this instrument to be sealed and signed in its name by UNIFIRST CORPORATION, its general partner, by John B. Bartlett, its Senior Vice President hereunto duly authorized, this 16th day of October, 1986.

THE CROATTI FAMILY PARTNERSHIP

SIGNED, SEALED AND DELIVERED IN THE PRESENCE OF:

BY: UNIFIRST CORPORATION
General Partner

By: John B. Bartlett
John B. Bartlett
Senior Vice President
hereunto duly authorized

THE COMMONWEALTH OF MASSACHUSETTS

Middlesex, ss. October 16, 1986

Then personally appeared the above-named John B. Bartlett, Senior Vice President of UNIFIRST CORPORATION, general partner of said grantor partnership as aforesaid and acknowledged the above instrument to be the free act and deed of said corporation in said capacity and the free act and deed of said partnership.

Before me,

Notary Public
My commission expires: 10-20-90
(notarial seal)
ADAM N. WEISENBERG

SVS:1832/U

RECEIVED
RECORDED REGISTRY OF DEEDS
1986 NOV 20 AM 10:53
CUMBERLAND COUNTY

AFFIDAVIT

063936

THE COMMONWEALTH OF MASSACHUSETTS)
)
SUFFOLK, SS.) October 16, 1986

I, William H. Gorham, of full age, on my oath, duly sworn, depose and say as follows:

1. I am a member in good standing of the bar of The Commonwealth of Massachusetts, having been admitted to practice in 1958.

2. I am the president of William H. Gorham, P.C., a Massachusetts professional corporation, which is a partner of the law firm of Goodwin, Procter & Hoar, Exchange Place, Boston, Massachusetts 02109.

3. William H. Gorham, P.C. is counsel to IUSC Realty, Inc., a Massachusetts corporation ("IUSC"), The Croatti Family Partnership, a Massachusetts general partnership (the "Partnership"), and UniFirst Corporation, a Massachusetts corporation ("UniFirst"), and has served in such capacities from before 1983.

4. William H. Gorham, P.C. participated in a transaction on August 31, 1983 involving IUSC's conveyance to the Partnership of certain land in Portland, Cumberland County, Maine, described in a deed from the Partnership to UniFirst recorded herewith (the "Deed"), and I am personally familiar with that transaction.

5. On August 31, 1983, the sole partners of the Partnership were Ronald Croatti, Frederick Croatti, Cecile Levenstein, and Cynthia Croatti Brown, and such persons remained the sole partners of the Partnership until October 10, 1986.

6. William H. Gorham, P.C. participated in and I am personally familiar with a transaction on October 10, 1986 wherein UniFirst acquired, by purchase and assignment thereof, all of the partnership interests in the Partnership, from the above-named persons. Such transaction vested legal title to the property described in the Deed in UniFirst.

7. The Deed recorded herewith has been entered into in order to vest record title to the property described therein in UniFirst, as set forth in the Deed.

8. I certify that the facts stated herein are relevant to the title to the property described in the Deed and will be of benefit and assistance in clarifying the chain of such title.

Further I say not.

Dated: 10/16/86

William H. Gorham

Subscribed and sworn to before me this 16th day of October, 1986.

Notary Public
My commission expires: 10-26-90

THE COMMONWEALTH OF MASSACHUSETTS

Suffolk, SS. October 16, 1986

Then personally appeared before me the above-named William H. Gorham and acknowledged the foregoing instrument to be his free act and deed.

Notary Public
My commission expires: 10-26-90

SVS:1906/U

RECEIVED
RECORDED REGISTRY OF DEEDS
1986 NOV 20 AM 10:52
CUMBERLAND COUNTY

WILLIAM E. WHITED, P.E., R.A.

EDUCATION:

Bachelor of Science, with distinction in Civil Engineering, University of Maine (1952)
Honors - Tau Beta Pi, Honorary Engineering Society
Honors - Phi Kappa Phi Honorary Scholastic Society

PROFESSIONAL REGISTRATIONS:

Professional Engineer: Maine (1956), New Hampshire and South Carolina.

Registered Architect: Maine (1980), New Hampshire and So. Carolina.

Certificate: National Council of Architectural Registration Boards (NCARB)

PROFESSIONAL ORGANIZATIONS:

American Consulting Engineers Council

American Society of Civil Engineers

Construction Specifications Institute

PROFESSIONAL EXPERIENCE:

1979 - present: President and owner of William E. Whited, Inc., (formerly Dearborn/Whited, Inc.). Providing architectural and engineering services for religious, educational, institutional, municipal, residential, commercial, industrial buildings, and stadiums. Prepared technical assistance reports for private educational buildings.

1971 - 1978: Principal of Group:design. Provided architectural and engineering services for religious, educational, institutional, municipal, residential, commercial, and industrial buildings.

1967 - 1971: Principal of Group Engineers. Provided consulting engineering services for civil, structural, mechanical and electrical systems for religious, educational, institutional, municipal, residential, and industrial buildings.

1952 - 1967: Structural engineer with the Austin Company. Construction engineer and highway design engineer with Howard, Needles, Tammen & Bergendoff. Town planning engineer with the Town of Houlton.

UNIFIRST CORPORATION

Annual Report 1997

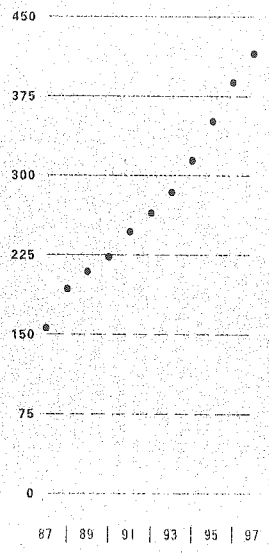
Our corporate mission is to be recognized as the leading provider of quality uniform products and services for business. Our careful focus on serving each customer's special needs and providing total satisfaction enables us to grow, to provide an equitable return on investment, and to create opportunities for our team partners.

We are committed to conducting our business in a fair, honest, and responsible manner in accordance with all environmental and government regulations and with the highest standards of business ethics.

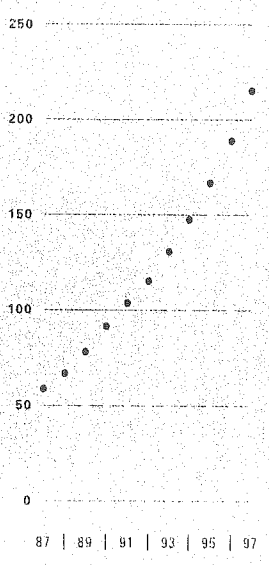
Our company is a leader in supplying uniform and work clothing programs to businesses of all types and sizes throughout the United States and Canada. Over the years UniFirst has become one of the fastest growing companies in the multibillion dollar garment services business.

With a core business dedicated to the rental, lease, and sale of work clothing, uniforms, and careerwear to businesses in virtually all industrial categories, we recognize that our continued success depends on the skill, creativity, and initiative of all our team partners. That is why we are constantly seeking bright, talented, self-motivated individuals to help us extend our record of success into the 21st century . . . and why training and continuous employee development are never-ending corporate priorities.

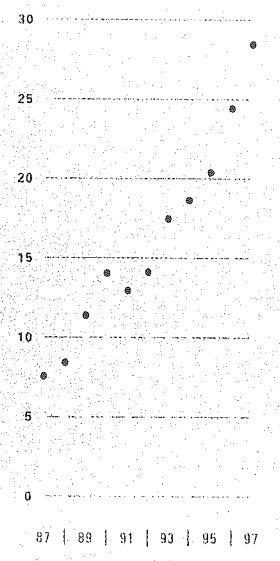
(in millions of dollars)



REVENUES



SHAREHOLDERS' EQUITY

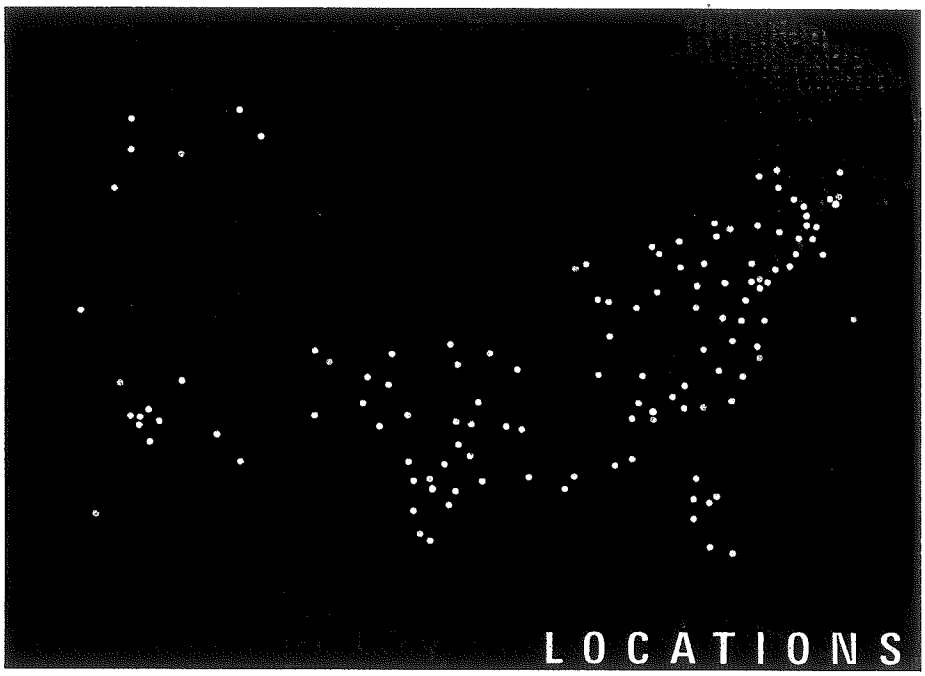


NET INCOME

FINANCIAL HIGHLIGHTS

UniFirst Corporation and Subsidiaries

Fiscal Year Ended August (in thousands, except per share amounts)	1997	1996	% change
Revenues	$419,093	$391,794	7.0%
Income from operations	47,001	40,915	14.9%
Net income	28,723	24,662	16.5%
Shareholders' equity	217,192	191,109	13.6%
Net income per share	1.40	1.20	16.7%



SERVICE LOCATIONS

MANUFACTURING PLANTS NUCLEAR LOCATIONS

UniFirst Corporation is a leader in the growing garment services business. Headquartered in Wilmington, Massachusetts, the Company serves well over one hundred thousand customer locations in forty-five states, Canada and Europe. Our seven thousand team partners provide superior quality occupational garments, career apparel and imagewear programs to businesses of all kinds.

UniFirst operates from one hundred twenty-eight locations in the United States, Canada and Europe, including one hundred eleven Customer Service Centers, eleven Nuclear Decontamination Facilities, three Distribution Centers and three Manufacturing Plants.

TO OUR SHAREHOLDERS:

Fiscal 1997 was a good beginning to UniFirst's seventh decade of operations. Revenues and net income were the highest in our history, continuing a long trend of financial improvement.

Revenues for the year rose 7% to a record $419 million from the prior year's $392 million. When adjusted for an additional week of revenues in fiscal 1996, comparable revenue growth was 9%. Improvement of over 10% in the conventional uniform rental business was offset by lower revenue from the nuclear garment services business.

Net income rose 16.5% to a record $28.7 million from $24.7 million the year before. On a per-share basis, net income increased to $1.40 from $1.20 in fiscal 1996. Increased operating efficiencies contributed to our record results.

Revenue expansion came from both internal and external sources. Our conventional uniform business grew during the year, with all customer programs (rental, lease, and direct sale) contributing to the increase. The strategic acquisitions we made in the prior year aided revenue growth by augmenting our geographic coverage and customer base. Similarly, acquisitions completed during this year will add to fiscal year 1998 revenues.

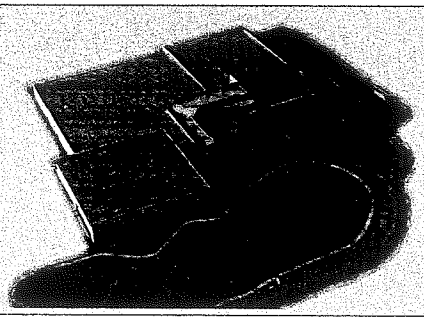
We maintain a strong balance sheet with low debt ratios so we have the flexibility to take advantage of opportunities to acquire other high-quality garment service businesses. At year-end, our balance sheet was in good shape, with shareholders' equity of $217 million and long-term debt less than 16 percent of total capitalization.

Importantly though, even while investing in business development and growth (we launched start-up operations in San Francisco, New Orleans, Evansville, IN and Savannah, GA during the year), we've successfully kept our costs well controlled and haven't compromised the integrity of the excellent service practices that have kept our customers satisfied year after year.

The niche businesses making up our specialized garment services include Interstate Nuclear Services, UniClean Cleanroom Services, and Specialty Uniform. Our nuclear garment services business has been adjusting to utility deregulation by aiming for longer-term government contracts domestically, and by investing in the development of our European operations. Nevertheless, reduced public utility and Department of Energy cleanup activity put pressure on revenue and profit growth. In the UniClean area, we reorganized to enhance reporting and control and have placed fresh emphasis on expanding our geographic coverage. At Specialty Uniform, we continued to develop the Los Angeles and Boston markets for high end custom care clothing rental while, at the same time, evaluating other major metropolitan areas for potential entry.

OPERATIONAL HIGHLIGHTS

We continued to expand and improve our infrastructure during the year with capital expenditures of approximately $47 million. We spent significantly more than we did the year before, primarily due to continuing work on our new distribution center in Owensboro, Kentucky. This facility, which is absorbing major commitments of energy and effort by a dedicated, multifunctional team, is the keystone of our new, quick response, customer service system. It should enable us to raise to new levels our industry's standards for rental garment deliveries and direct sale order fulfillment. We plan to open Owensboro in the second quarter of fiscal 1998, and will incur some associated start-up costs.



The advanced systems we're installing in our Owensboro facility will allow us to set new standards for delivery response times.

UniFirst has always been a pioneer in the industrial laundry and garment services business. The industry is still growing, and UniFirst is growing along with it. From our modest entrepreneurial beginnings in 1936, we now have 7,000 team partners servicing well over 100,000 customer locations from more than 100 facilities in the United States, Canada and Europe.

The industry is growing because businesses of all sizes are looking for every competitive advantage they can find. A company's "image" can be one of the most potent weapons in its marketing arsenal. Not surprisingly, that image is projected by employees, especially when they deal with customers face to face. So the more companies are coming to realize that the way employees look can bolster their reputations in the competitive marketplace, the more they're incorporating employee uniform programs into their strategies for success.

To give some idea of the size of the market we're dealing with, of the 126 million Americans in the work force, about 57 million wear some form of specialized work clothing. Of these, about 8 million work for companies that rent their uniforms and 17 million more work in uniforms that their employers buy for them.

There is no question that changes in the economy and in worker occupations are stimulating demand for uniforms. No wonder over half of UniFirst's new customers haven't previously had uniform programs. It's also why more and more employers who have been buying uniforms are discovering the advantages of renting them. As buyers become renters, the $4.5 billion industrial laundry industry will certainly expand.

Where does UniFirst fit in? We are the fourth-largest uniform rental company in North America. The top five companies generate over 50 percent of the industry's volume and the remaining business is divided among almost 800 other companies with annual revenues that range from $500 thousand to as high as $200 million. The base of providers is fragmented, competition is intensifying, and operating costs are increasing. Big suppliers like UniFirst have the financial resources to further consolidate the industry by acquiring smaller suppliers.

UniFirst's revenues have grown from $160 million to $419 million in 10 years. We're balancing ourselves geographically so we are less affected by downturns in regional economies and can serve national accounts (larger customers with many locations across the country). Our long-term strategy is to continue to offer the finest products and services in the industry and to expand internally and through acquisitions to have the ability to provide these products and services to 75 percent of the working population of the U.S. and Canada.

We are a product manufacturer as well as a service provider, and doing both well allows us to succeed.

~ *We design our uniforms. We have the resources to develop innovative and unique garment programs for large customers as well as to create distinctive clothing designs with broad appeal for our standard line.*

~ *We manufacture our uniforms. This ensures that the garments and emblems we design are produced with better quality, greater economy, and shorter response times to our customers.*

~ *We have the industry's widest selection of product services. We provide industrial uniforms, image uniforms, careerwear, professional clothing, and highly specialized protective wear (including fire resistant garments, cleanroom garments and nuclear garments), so our breadth of experience is unsurpassed.*

~ *Ultimately, we are a service business. We manage very large pick-up and delivery routes with over a thousand vehicles traveling tens of thousands of miles every day to make their weekly service calls. This every week contact with customers builds strong relationships. We also schedule regular customer goodwill visits to discuss how their uniform programs suit them and what we can do to make them better. In addition, we have an independent contractor conduct an annual satisfaction survey. The purpose of all this is to pinpoint opportunities for improvement and to prevent problems before they occur. It works.*

All these elements are key parts of our success. We can and do give our customers what they want when they want it, and we give our team partners the power and authority to deliver what we promise.

We have built an organization that is sufficiently flexible and well equipped to respond to any customer's clothing needs in exactly the right way. We can let our customers tailor any kind of uniform program they want. They can rent the clothing and have us take care of its cleaning and repair. They can lease the clothing and have their employees maintain the garments themselves. Or they can buy the clothing outright.

Substantially all of our business is rental or lease services covered by standard 3 to 5 year rental agreements. We clean and maintain the clothing, mats, mops, wipers or other textile products, and benefit from a predictable revenue stream, depending on the term of service specified in the contract. With clothing, for example, we assume complete responsibility for outfitting employees in the garments the customer chooses; the employer has no up-front investment and is relieved of cleaning and maintenance worries and inventory headaches. The employees receive individual fittings, weekly cleaning and finishing, continuous garment maintenance, and guaranteed replacement whenever necessary – all for one low weekly charge. Heavy-soil manufacturing and service businesses have traditionally preferred rental agreements, while the light-soil service businesses, retailers, independent tradesmen, and specialized occupations, such as medical personnel and police, usually purchased their uniforms. What we are seeing is more and more of these buyers converting to rental programs, not only because they offer greater consistency of appearance due to the clothing being cleaned, repaired and replaced in a timely manner, but because they offer economic advantages too.

UniFirst's unique Val-U-Lease program provides all of the convenience benefits of our rental service, with the exception of the weekly cleaning. Many businesses have discovered that our Val-U-Lease program is a smart alternative to buying.

For those customers who still prefer to own their work clothing, or want merely to purchase certain items to supplement their rental or lease programs, UniFirst offers an extensive selection at attractive prices.

The basics of the uniform industry have not changed much over the last six decades. The customer is king, and quality and service are our "duty to the crown." Through the years, new equipment, technology, and thinking have enabled us to do our duty "faster, better, and cheaper." That, plus our commitment to problem solving and relationship building, has resulted in over 95% of our customers consistently saying they're satisfied with our service.

Tactics

We want to execute our strategy by:

~ *Aggressively pursuing and acquiring high-quality uniform service businesses*

~ *Managing geographic growth*

~ *Growing niche businesses to maintain our distinction as the industry's most diversified work clothing supplier*

~ *Leading the industry in the use of advanced technologies aimed at achieving the highest productivity at lowest cost*

~ *Expanding clothing manufacturing capability, so that we can provide the fastest order response times of any uniform or work clothing supplier*

~ *Nurturing a corporate culture based on empowerment, individual responsibility, and a shared vision of success*

Great service is achievable and sustainable only through the hard work and commitment of high-quality people. They are our most valuable asset, and we continue to invest in them to keep their skills the best in our industry. They and only they are responsible for our reputation for innovation, integrity and exceptional customer value.

Our training department uses formal classroom settings and custom-developed interactive video systems employing the latest technology to provide unparalleled training opportunities in problem-solving methods and techniques. These videos are geared to our sales managers, sales representatives, district service managers, route representatives, production-line people and others. It's this training and reinforcement that assures consistency in the delivery of superior service to our customers.

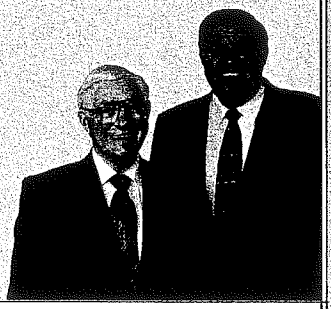
To attract and retain good people who will enable us to succeed in a service business built on relationships, UniFirst offers up-to-date facilities, attractive work environments and competitive wages. We also provide a comprehensive benefits package that adds significantly to basic compensation. We want our people to enjoy their work and spread some of that same feeling to our customers every time they come into contact with them.

To motivate UniFirst's team partners to achieve excellent levels of personal performance, we make sure everyone is rewarded directly with a share of the profits he or she helps earn. All non-union team partners – now over 90% of the total – are eligible to participate in our profit sharing plan, to which the Company currently contributes 17 percent of net income. This profit participation, combined with the investments we make to train and motivate our people to reach new levels of personal performance, makes them true partners in our success. It assures that the Company achieves continual improvement in its financial performance as well, providing a good return on the investment of all our shareholders.

We processed millions of rental garments for our customers in fiscal 1997 and sold hundreds of thousands more. We invested in our people so they can perform their jobs better and benefit from the results they achieve. And we reinvested in our business with new equipment, new technologies and new approaches, all of which add up to better service for the customer.

We're working hard to exceed customer expectations and to make everyone a "customer for life." We're exercising proper management and cost controls to enhance profitability. We're guiding our enterprise toward increased value for our customers, team partners, and shareholders. In the end, that result will be the best measure of our success.

Sincerely,



Aldo Croatti
Chairman of the Board

Ronald D. Croatti
President and
Chief Executive Officer

FISCAL 1997 COMPARED WITH FISCAL 1996

In 1997 revenues increased $27.3 million or 7.0% over 1996. This increase can be attributed to acquisitions (2.4%), price increases (1.0%) and growth from existing operations (5.5%) offset by one week less of revenue in fiscal 1997 (1.9%).

Income from operations increased to $47.0 million in 1997 from $40.9 million in 1996. As a percent of revenues, income from operations increased to 11.2% in 1997 from 10.4% in 1996. The main reason for the increase is improved profit margins in the Company's conventional uniform rental business, principally attributable to increased operating efficiencies.

During 1997, net interest expense (interest expense less interest income) was $2.1 million as compared to $2.4 million in 1996. The decrease is attributable to lower interest rates in fiscal 1997.

The Company's effective income tax rate was 36.0% in both 1997 and 1996.

FISCAL 1996 COMPARED WITH FISCAL 1995

In 1996 revenues increased $36.8 million or 10.4% over 1995. This increase can be attributed to an extra week of revenue (1.9%), acquisitions (1.7%), price increases (1.0%) and growth from existing operations (5.8%).

Income from operations increased to $40.9 million in 1996 from $34.5 million in 1995. As a percent of revenues, income from operations increased to 10.4% in 1996 from 9.7% in 1995. The main reason for the increase is improved profit margins in the Company's conventional uniform rental business, principally attributable to lower uniform merchandise costs. The Company also achieved comparative improvements from a restructuring of its service management and teleresources operations and contribution from its Canadian operations improved. Offsetting these advances were lower contributions from the Company's nuclear garment services business.

During 1996, net interest expense (interest expense less interest income) was $2.4 million as compared to $2.8 million in 1995. The decrease is attributable to lower average debt levels and lower interest rates during fiscal 1996.

The Company's effective income tax rate was 36.0% in 1996 and 35.0% in 1995. The increase is due primarily to reduced benefits from corporate-owned life insurance and higher state income taxes.

LIQUIDITY AND CAPITAL RESOURCES

Shareholders' equity at August 30, 1997 was $217.2 million, 84.2% of total capitalization, indicating the overall strength of the Company's balance sheet.

Net cash provided by operating activities was $55.8 million in 1997 and totaled $139.8 million for the three years ended August 30, 1997. These cash flows were used primarily to fund $99.0 million in capital expenditures to expand and update Company facilities. Additionally, $32.8 million was used for acquisitions during this three year period.

The Company had $4.1 million in cash and cash equivalents as well as a line of credit to borrow an additional $26.7 million as of August 30, 1997. The Company believes its ability to generate cash from operations will adequately cover its foreseeable capital requirements.

EFFECTS OF INFLATION

Inflation has had the effect of increasing the reported amounts of the Company's revenues and costs. The Company uses the last-in, first-out (LIFO) method to value a significant portion of inventories. This method tends to reduce the amount of income due to inflation included in the Company's results of operations. The Company believes that, through increases in its prices and productivity improvements, it has been able to recover increases in costs and expenses attributable to inflation.

ELEVEN YEAR FINANCIAL SUMMARY

UniFirst Corporation and Subsidiaries

Fiscal Year Ended August (in thousands, except ratios and per share amounts)	1997	1996	1995	1994	1993	1992	1991	1990	1989	1988	1987
SUMMARY OF OPERATIONS											
Revenues	$419,093	$391,794	$355,041	$318,039	$287,728	$268,190	$250,432	$226,682	$212,731	$196,296	$159,900
Income from operations, before depreciation and amortization	70,387	61,729	53,725	50,369	47,199	42,010	38,562	38,749	35,768	32,207	28,161
Depreciation and amortization	23,386	20,814	19,194	17,912	16,454	15,999	14,229	12,422	12,309	12,298	10,494
Income from operations	47,001	40,915	34,531	32,457	30,745	26,011	24,333	26,327	23,459	19,909	17,667
Interest expense (income), net	2,118	2,398	2,787	2,513	2,669	4,098	4,320	3,513	4,880	5,965	4,622
Other income	–	–	–	–	–	–	–	–	–	–	1,300
Provision for income taxes	16,160	13,855	11,110	11,073	10,387	7,570	6,803	8,516	6,968	5,289	6,530
Net income	28,723	24,662	20,634	18,871	17,689	14,343*	13,210	14,298	11,611	8,655	7,815
FINANCIAL POSITION AT YEAR END											
Total assets	$339,626	$302,378	$272,691	$250,160	$219,064	$212,097	$204,398	$189,411	$172,389	$171,010	$166,304
Long-term obligations	40,837	39,365	36,376	41,602	32,231	47,641	52,032	53,134	53,735	66,476	69,505
Shareholders' equity	217,192	191,109	168,596	149,472	132,723	117,329	105,888	93,739	80,249	69,127	60,681
FINANCIAL RATIOS											
Net income as a % of revenues	6.9%	6.3%	5.8%	5.9%	6.1%	5.3%	5.3%	6.3%	5.5%	4.4%	4.9%
Return on average shareholders' equity	14.1%	13.7%	13.0%	13.4%	14.1%	12.9%	13.2%	16.4%	15.6%	13.3%	13.7%
Weighted average number of shares outstanding	20,511	20,511	20,511	20,506	20,453	20,451	20,426	20,431	20,353	20,168	20,158
PER SHARE DATA											
Revenues	$20.43	$19.10	$17.31	$15.51	$14.07	$13.11	$12.26	$11.09	$10.45	$ 9.73	$ 7.93
Income from operations, before depreciation and amortization	3.43	3.01	2.62	2.46	2.31	2.05	1.89	1.90	1.76	1.60	1.40
Net Income											
Primary	1.40	1.20	1.01	0.92	0.86	0.70	0.65	0.70	0.57	0.43	0.39
Fully diluted	1.40	1.20	1.01	0.92	0.86	0.67	0.63	0.67	0.56	0.43	0.39
Shareholders' equity	10.59	9.32	8.22	7.29	6.49	5.74	5.18	4.59	3.94	3.43	3.01
Dividends											
Common stock	.12	.11	.10	.10	.10	.06	.06	.06	.05	.05	.05
Class B common stock	.10	.09	.08	.08	.04	–	–	–	–	–	–

Per share amounts for all years have been restated to reflect a two for one stock split declared by the Board of Directors on November 18, 1993.

** Amount reflects income before extraordinary item and accounting change. Net income was $12,923.*

CONSOLIDATED BALANCE SHEETS

UniFirst Corporation and Subsidiaries

	August 30, 1997	August 31, 1996
ASSETS		
Current assets:		
Cash and cash equivalents	$ 4,054,000	$ 3,425,000
Receivables, less reserves of $1,299,000 in 1997 and $843,000 in 1996	39,431,000	36,634,000
Inventories	19,497,000	17,053,000
Rental merchandise in service	40,013,000	37,973,000
Prepaid expenses	149,000	127,000
Total current assets	103,144,000	95,212,000
Property and equipment:		
Land, buildings and leasehold improvements	137,281,000	119,346,000
Machinery and equipment	142,242,000	120,671,000
Motor vehicles	37,276,000	33,278,000
	316,799,000	273,295,000
Less - accumulated depreciation	128,532,000	113,191,000
	188,267,000	160,104,000
Other assets	48,215,000	47,062,000
	$339,626,000	$302,378,000
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Current maturities of long-term obligations	$ 1,040,000	$ 1,058,000
Notes payable	3,213,000	2,757,000
Accounts payable	13,085,000	11,697,000
Accrued liabilities	45,637,000	37,371,000
Accrued and deferred income taxes	2,555,000	3,679,000
Total current liabilities	65,530,000	56,562,000
Long-term obligations, net of current maturities	39,797,000	38,307,000
Deferred income taxes	17,107,000	16,400,000
Shareholders' equity:		
Preferred stock, $1.00 par value; 2,000,000 shares authorized; none issued	–	–
Common stock, $.10 par value; 30,000,000 shares authorized; issued and outstanding 7,898,864 shares in 1997 and 7,886,664 shares in 1996	790,000	789,000
Class B common stock, $.10 par value; 20,000,000 shares authorized; issued and outstanding 12,611,744 shares in 1997 and 12,623,944 in 1996	1,261,000	1,262,000
Capital surplus	7,078,000	7,078,000
Retained earnings	208,949,000	182,384,000
Cumulative translation adjustment	(886,000)	(404,000)
Total shareholders' equity	217,192,000	191,109,000
	$339,626,000	$302,378,000

The accompanying notes are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENTS OF INCOME

UniFirst Corporation and Subsidiaries

Year Ended	August 30, 1997	August 31, 1996	August 26, 1995
Revenues	$419,093,000	$391,794,000	$355,041,000
Cost and expenses:			
Operating costs	256,896,000	240,672,000	222,205,000
Selling and administrative expenses	91,810,000	89,393,000	79,111,000
Depreciation and amortization	23,386,000	20,814,000	19,194,000
	372,092,000	350,879,000	320,510,000
Income from operations	47,001,000	40,915,000	34,531,000
Interest expense (income):			
Interest expense	2,351,000	2,659,000	2,963,000
Interest income	(233,000)	(261,000)	(176,000)
	2,118,000	2,398,000	2,787,000
Income before income taxes	44,883,000	38,517,000	31,744,000
Provision for income taxes	16,160,000	13,855,000	11,110,000
Net income	$ 28,723,000	$ 24,662,000	$ 20,634,000
Weighted average number of shares outstanding	20,510,608	20,510,608	20,510,608
Net income per share	$ 1.40	$ 1.20	$ 1.01
Dividends per share:			
Common stock	$ 0.12	$ 0.11	$ 0.10
Class B common stock	$ 0.10	$ 0.09	$ 0.08

The accompanying notes are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

UniFirst Corporation and Subsidiaries

	Common Shares	Class B Common Shares	Common Stock	Class B Common Stock	Capital Surplus	Retained Earnings	Cumulative Translation Adjustment
Balance, August 27, 1994	7,884,644	12,625,964	$788,000	$1,263,000	$7,042,000	$140,866,000	$(487,000)
Net income	–	–	–	–	–	20,634,000	–
Dividends	–	–	–	–	–	(1,799,000)	–
Other	–	–	–	–	36,000	–	–
Shares converted	2,000	(2,000)	1,000	(1,000)	–	–	–
Translation adjustment	–	–	–	–	–	–	253,000
Balance, August 26, 1995	7,886,644	12,623,964	789,000	1,262,000	7,078,000	159,701,000	(234,000)
Net income	–	–	–	–	–	24,662,000	–
Dividends	–	–	–	–	–	(1,979,000)	–
Shares converted	20	(20)	–	–	–	–	–
Translation adjustment	–	–	–	–	–	–	(170,000)
Balance, August 31, 1996	7,886,664	12,623,944	789,000	1,262,000	7,078,000	182,384,000	(404,000)
Net income	–	–	–	–	–	28,723,000	–
Dividends	–	–	–	–	–	(2,158,000)	–
Shares converted	12,200	(12,200)	1,000	(1,000)	–	–	–
Translation adjustment	–	–	–	–	–	–	(482,000)
Balance, August 30, 1997	7,898,864	12,611,744	$790,000	$1,261,000	$7,078,000	$208,949,000	$(886,000)

The accompanying notes are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENTS OF CASH FLOWS

UniFirst Corporation and Subsidiaries

Year Ended	August 30, 1997	August 31, 1996	August 26, 1995
CASH FLOWS FROM OPERATING ACTIVITIES			
Net income	$28,723,000	$24,662,000	$20,634,000
Adjustments:			
Depreciation	19,512,000	17,339,000	15,960,000
Amortization of other assets	3,874,000	3,475,000	3,234,000
Receivables	(2,455,000)	(2,272,000)	(2,935,000)
Inventories	(2,485,000)	(370,000)	(938,000)
Rental merchandise in service	(690,000)	(3,523,000)	(1,198,000)
Prepaid expenses	(22,000)	(9,000)	15,000
Accounts payable	1,401,000	(1,331,000)	476,000
Accrued liabilities	8,284,000	1,906,000	7,967,000
Accrued and deferred income taxes	(1,102,000)	(191,000)	(1,572,000)
Deferred income taxes	715,000	1,812,000	899,000
Net cash provided by operating activities	55,755,000	41,498,000	42,542,000
CASH FLOWS FROM INVESTING ACTIVITIES			
Acquisition of businesses, net of cash acquired	(7,309,000)	(18,245,000)	(7,226,000)
Capital expenditures	(47,432,000)	(27,182,000)	(24,409,000)
Other assets, net	(112,000)	(1,432,000)	(1,575,000)
Net cash used in investing activities	(54,853,000)	(46,859,000)	(33,210,000)
CASH FLOWS FROM FINANCING ACTIVITIES			
Increase in debt	3,533,000	12,762,000	4,079,000
Reduction of debt	(1,648,000)	(7,886,000)	(9,879,000)
Cash dividends paid or payable	(2,158,000)	(1,979,000)	(1,799,000)
Other	–	–	36,000
Net cash provided by (used in) financing activities	(273,000)	2,897,000	(7,563,000)
Net increase (decrease) in cash and cash equivalents	629,000	(2,464,000)	1,769,000
Cash and cash equivalents at beginning of year	3,425,000	5,889,000	4,120,000
Cash and cash equivalents at end of year	$ 4,054,000	$ 3,425,000	$ 5,889,000
SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION			
Interest paid	$ 2,327,000	$ 2,691,000	$ 3,010,000
Income taxes paid	$16,577,000	$12,439,000	$11,712,000

The accompanying notes are an integral part of these consolidated financial statements.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Business Description

UniFirst Corporation is a leading company in the garment services business. The Company designs, manufactures, personalizes, rents, cleans, delivers and sells a variety of superior quality occupational garments, career apparel and imagewear programs to businesses of all kinds. The Company also decontaminates and cleans, in separate facilities, garments which may have been exposed to radioactive materials.

Principles of Consolidation and Other

The consolidated financial statements include the accounts of the Company and its subsidiaries, all of which are wholly-owned. Intercompany balances and transactions are eliminated in consolidation. The Company recognizes revenues when the actual services are provided to customers.

Use of Estimates

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts in the financial statements and accompanying notes. Actual results could differ from those estimates.

Fiscal Year

The Company's fiscal year ends on the last Saturday in August. For financial reporting purposes, fiscal 1997 was a 52 week year, while fiscal 1996 had 53 weeks and 1995 had 52 weeks.

Inventories

Inventories are stated at the lower of cost or market value. The Company uses the last-in, first-out (LIFO) method to value a significant portion of its inventories. Had the Company used the first-in, first-out (FIFO) accounting method, inventories would have been approximately $1,240,000 and $1,195,000 higher at August 30, 1997 and August 31, 1996, respectively.

Rental Merchandise in Service

Rental merchandise in service, stated at cost less amortization, is being amortized on a straight-line basis over the estimated service lives (primarily 12 months) of the merchandise.

Property and Equipment

The Company provides for depreciation on the straight-line method based on the following estimated useful lives:

Buildings	30-40 years
Leasehold improvements	Term of lease
Machinery and equipment	3-10 years
Motor vehicles	3-5 years

Other Assets

Customer contracts are amortized over periods of up to seventeen years. Restrictive covenants are amortized over the terms of the respective non-competition agreements, which range from five to fifteen years. Goodwill is amortized over periods of up to forty years.

Income Taxes

Deferred income taxes are provided for temporary differences between amounts recognized for income tax and financial reporting purposes at currently enacted tax rates.

Net Income Per Share

Net income per share is calculated using the weighted average number of common shares outstanding during the year. There were no common equivalent shares outstanding in 1995, 1996 or 1997.

Cash Flow Disclosures

Cash and cash equivalents include cash in banks and bank short-term investments with maturities of less than ninety days.

2. ACQUISITIONS

Information relating to the acquisitions of industrial laundry businesses which were accounted for as purchases is as follows:

Year Ended	August 30, 1997	August 31, 1996	August 26, 1995
Fair market value of assets acquired	$7,413,000	$18,360,000	$8,688,000
Liabilities assumed or created	104,000	115,000	1,462,000
Acquisition of businesses, net of cash acquired	$ 7,309,000	$ 18,245,000	$ 7,226,000

The results of operations of these acquisitions have been included on the Company's consolidated financial statements since their respective acquisition dates. None of these acquisitions were significant in relation to the Company's consolidated financial statements and therefore pro forma financial information has not been presented.

3. INCOME TAXES

The provision for income taxes consists of the following:

Year Ended	August 30, 1997	August 31, 1996	August 26, 1995
Current:			
Federal & Foreign	$14,259,000	$ 8,615,000	$10,597,000
State	2,039,000	2,584,000	1,818,000
	16,298,000	11,199,000	12,415,000
Deferred:			
Federal & Foreign	(762,000)	2,295,000	(1,516,000)
State	624,000	361,000	211,000
	(138,000)	2,656,000	(1,305,000)
	$16,160,000	$13,855,000	$11,110,000

The following table reconciles the provision for income taxes using the statutory federal income tax rate to the actual provision for income taxes:

Year Ended	August 30, 1997	August 31, 1996	August 26, 1995
Income taxes at the statutory federal income tax rate	$15,709,000	$13,481,000	$11,110,000
Puerto Rico exempt income	(988,000)	(877,000)	(678,000)
Corporate owned life insurance	(775,000)	(770,000)	(825,000)
State income taxes	1,450,000	1,222,000	1,170,000
Foreign income taxes	567,000	262,000	99,000
Other	197,000	537,000	234,000
	$16,160,000	$13,855,000	$11,110,000

The Company's Puerto Rico subsidiary's income is 90% exempt from Puerto Rico income taxes through 2001. The Company provides for anticipated tollgate taxes on the repatriation of the subsidiary's accumulated earnings.

The tax effect of items giving rise to the Company's net deferred tax liabilities are as follows:

	August 30, 1997	August 31, 1996	August 26, 1995
Rental merchandise in service	$14,429,000	$13,814,000	$12,626,000
Tax in excess of book depreciation	15,533,000	14,836,000	12,906,000
Accruals and other	(9,324,000)	(7,819,000)	(7,248,000)
	$20,638,000	$20,831,000	$18,284,000

4. LONG-TERM OBLIGATIONS

Long-term obligations outstanding on the accompanying consolidated balance sheets are as follows:

	August 30, 1997	August 31, 1996
Unsecured revolving credit agreement with two banks, interest rates of 6.19% and 5.75%, respectively	$33,279,000	$30,525,000
Notes payable, interest from 5.2% - 8.5%, payable in various installments through 2005	4,782,000	5,252,000
Amounts due for restrictive covenants and other, payable in various installments through 2005	2,776,000	3,588,000
	40,837,000	39,365,000
Less - current maturities	1,040,000	1,058,000
	$39,797,000	$38,307,000

Aggregate current maturities of long-term obligations for each of the next five years are $1,040,000, $1,038,000, $34,044,000, $862,000, $891,000 and $2,962,000 thereafter.

The Company's unsecured revolving credit agreement runs through December 31, 1999. As of August 30, 1997, the maximum line of credit was $60,000,000.

In 1996 the Company entered into an interest rate swap agreement with a bank, notional amount $15,000,000, maturing December 12, 1998. The Company pays a fixed rate of 5.53% and receives a variable rate tied to the LIBOR rate. As of August 30, 1997 the variable rate was 5.72%.

Certain of the long-term obligations contain among other things, provisions regarding net worth and debt coverage. Under the most restrictive of these provisions, the Company was required to maintain minimum consolidated tangible net worth of $133,357,000 as of August 30, 1997. Certain notes payable are guaranteed or secured by assets of the Company.

As of August 30, 1997 and August 31, 1996, the fair market values of the Company's outstanding debt and swap agreement approximate their carrying value.

5. EMPLOYEE BENEFIT PLANS

The Company has a profit sharing plan with a 401(k) feature for all eligible employees not under collective bargaining agreements. The amount of the Company's contribution is determined at the discretion of the Company. Contributions charged to expense under the plan were $4,882,000 in 1997, $4,184,000 in 1996 and $3,508,000 in 1995.

Some employees under collective bargaining agreements are covered by union-sponsored multi-employer pension plans. Company contributions, generally based upon hours worked, are in accordance with negotiated labor contracts. Payments to the plans amounted to $279,000 in 1997, $221,000 in 1996 and $156,000 in 1995. Information is not readily available for the Company to determine its share of unfunded vested benefits, if any, under these plans.

6. OTHER ASSETS

Other assets on the accompanying consolidated balance sheets are as follows:

	August 30, 1997	August 31, 1996
Customer contracts, restrictive covenants and other assets arising from acquisitions, less accumulated amortization of $19,433,000 and $18,884,000, respectively	$24,804,000	$22,697,000
Goodwill, less accumulated amortization of $3,455,000 and $2,876,000, respectively	21,389,000	21,250,000
Other	2,022,000	3,115,000
	$48,215,000	$47,062,000

7. ACCRUED LIABILITIES

Accrued liabilities on the accompanying consolidated balance sheets are as follows:

	August 30, 1997	August 31, 1996
Insurance	$17,735,000	$16,100,000
Payroll related	13,818,000	13,254,000
Other	14,084,000	8,017,000
	$45,637,000	$37,371,000

8. COMMITMENTS AND CONTINGENCIES

Lease Commitments

The Company leases certain buildings from independent parties. Total rent expense on all leases was $2,401,000 in 1997, $2,108,000 in 1996 and $1,867,000 in 1995.

Annual minimum lease commitments for all years subsequent to August 30, 1997 are $2,193,000 in 1998, $1,434,000 in 1999, $772,000 in 2000, $471,000 in 2001, $222,000 in 2002 and $55,000 thereafter.

Contingencies

The Company and its subsidiaries are subject to legal proceedings and claims arising from the conduct of their business operations, including personal injury, customer contract, employment claims and environmental matters. In the opinion of management, such proceedings and claims are not likely to result in losses which would have a material adverse effect upon the financial position or results of operations of the Company.

As security for certain agreements, the Company had standby irrevocable bank commercial letters of credit and mortgages of $18,182,000 and $16,332,000 outstanding as of August 30, 1997 and August 31, 1996, respectively.

9. SHAREHOLDERS' EQUITY

The significant attributes of each type of stock are as follows:

Common stock – Each share is entitled to one vote and is freely transferable. Each share of common stock is entitled to a cash dividend equal to 125% of any cash dividend paid on each share of Class B common stock.

Class B common stock – Each share is entitled to ten votes and can be converted to common stock on a share-for-share basis. Until converted to common stock, however, Class B shares are not freely transferable.

The Company adopted an incentive stock option plan in November, 1996 and reserved 150,000 shares of common stock for issue under the plan. As of August 30, 1997 no options had been granted under the plan.

To the Board of Directors and Shareholders of UniFirst Corporation:

We have audited the accompanying consolidated balance sheets of UniFirst Corporation (a Massachusetts corporation) and subsidiaries as of August 30, 1997 and August 31, 1996 and the related consolidated statements of income, shareholders' equity and cash flows for each of the three years in the period ended August 30, 1997. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of UniFirst Corporation and subsidiaries as of August 30, 1997 and August 31, 1996, and the results of their operations and their cash flows for each of the three years in the period ended August 30, 1997, in conformity with generally accepted accounting principles.

ARTHUR ANDERSEN LLP

Boston, Massachusetts
November 5, 1997

QUARTERLY FINANCIAL DATA (UNAUDITED)

UniFirst Corporation and Subsidiaries

The following is a summary of the results of operations for each of the quarters within the years ended August 30, 1997 and August 31, 1996.

(In thousands, except per share amounts)

1997	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Revenues	$103,976	$102,064	$107,124	$105,929
Income before income taxes	12,274	8,638	11,535	12,436
Net income	7,855	5,529	7,382	7,957
Weighted average shares outstanding	20,511	20,511	20,511	20,511
Net income per share	$0.38	$0.27	$0.36	$0.39

1996	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Revenues	$95,413	$100,825	$98,554	$97,002
Income before income taxes	10,578	7,712	10,313	9,914
Net income	6,770	4,936	6,600	6,356
Weighted average shares outstanding	20,511	20,511	20,511	20,511
Net income per share	$0.33	$0.24	$0.32	$0.31

COMMON STOCK PRICES AND DIVIDENDS PER SHARE

For the Years Ended August 30, 1997 and August 31, 1996:

	Price Per Share		Dividends Per Share	
1997	High	Low	Class B Common Stock	Common Stock
First Quarter	$21 3/4	$18 1/4	$0.024	$0.030
Second Quarter	23	20 1/8	0.024	0.030
Third Quarter	21 1/8	18 3/4	0.024	0.030
Fourth Quarter	25 1/2	18 7/8	0.024	0.030

	Price Per Share		Dividends Per Share	
1996	High	Low	Class B Common Stock	Common Stock
First Quarter	$15 5/8	$13 1/2	$0.020	$0.025
Second Quarter	19 1/2	15 1/8	0.020	0.025
Third Quarter	25 1/4	17 7/8	0.024	0.030
Fourth Quarter	23	19 1/4	0.024	0.030

The Company's common shares are traded on the New York Stock Exchange (NYSE Symbol: UNF).

The approximate number of shareholders of record of the Company's common stock and Class B common stock as of November 5, 1997 were 165 and 19 respectively.

OFFICERS

Aldo Croatti
Chairman of the Board

Ronald D. Croatti
Vice Chairman, President and Chief Executive Officer

Robert L. Croatti
Executive Vice President

John B. Bartlett
Senior Vice President and Chief Financial Officer

Cynthia Croatti
Treasurer

Bruce P. Boynton
Vice President, Canadian Operations

Dennis G. Assad
Vice President, Sales and Marketing

William H. Gorham
Secretary and Clerk

DIRECTORS

Aldo Croatti
Chairman of the Board

Ronald D. Croatti
Vice Chairman of the Board, President and Chief Executive Officer

Cynthia Croatti
Treasurer

Donald J. Evans
General Counsel and First Deputy Commissioner, Massachusetts Department of Revenue (formerly Partner, Goodwin, Procter and Hoar, Attorneys)

Reynold L. Hoover
Environmental Consultant, formerly Manager, Environmental Affairs, The Stanley Works (Retired)

Albert Cohen
Chairman and Chief Executive Officer, Electronic Space Systems Corporation

CORPORATE INFORMATION

Form 10-K
Shareholders may obtain without charge a copy of the Company's 1997 Form 10-K. Written requests should be addressed to John B. Bartlett, Senior Vice President.

Transfer Agent
BankBoston, N.A. c/o Boston EquiServe

Independent Public Accountants
Arthur Andersen LLP

Legal Counsel
Goodwin, Procter and Hoar

UniFirst Corporation
68 Jonspin Road Wilmington, MA 01887-1086 (978) 658-8888

BAYSTATE

Industrial Welding & Fabrication, Inc.

10 Flagstone Drive
Hudson, NH 03051

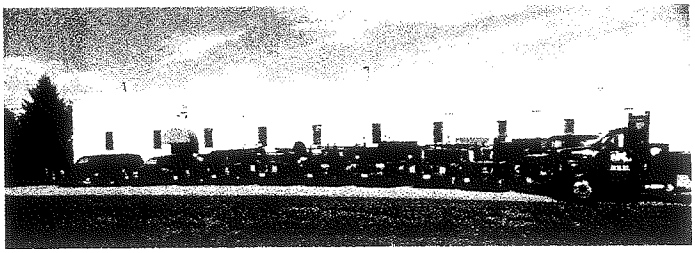
Phone: (603) 881-7663

- 25,000 sq. ft. Fabrication Shop
- Certified Welding Under Section IX of the ASME & AWS D1.1 Codes
- Structural Steel Fabrication & Erection
- Mechanical Piping Systems
- Process Piping
- Commercial & Industrial Plumbing
- Structural and Mechanical Engineering Services Available
- All Types of Welding
- Portable Equipment
- Precision Machining
- Handicap Railings

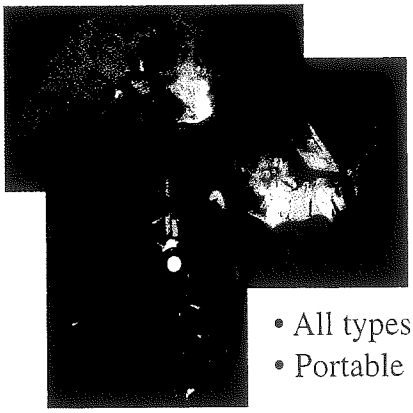
Bay State Industrial Welding & Fabrication, Inc.

is a total quality contractor capable of performing all activities associated with construction, repair, and maintenance of industrial piping systems. In conjunction with piping work we also provide expertise in the following:

- All types of custom fabrication
- Portable equipment
- Handicap railings and ramps
- Precision machining
- Structural steel fabrication and erection

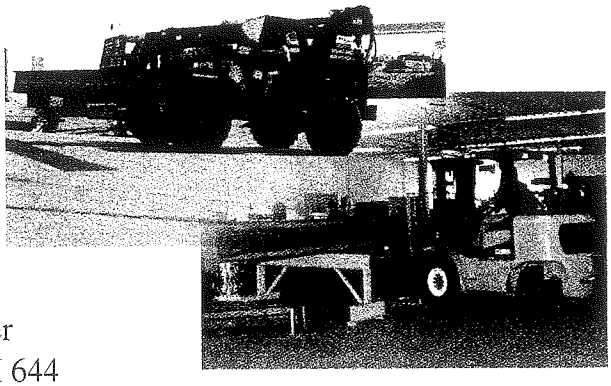


Certified welding under Section IX of the ASME & AWS D1.1 codes.



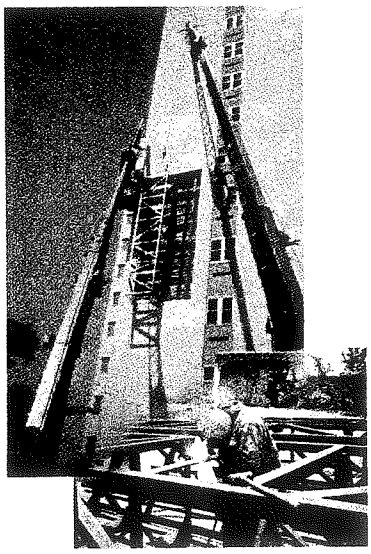
- All types of welding
- Portable equipment

Inventory of Equipment



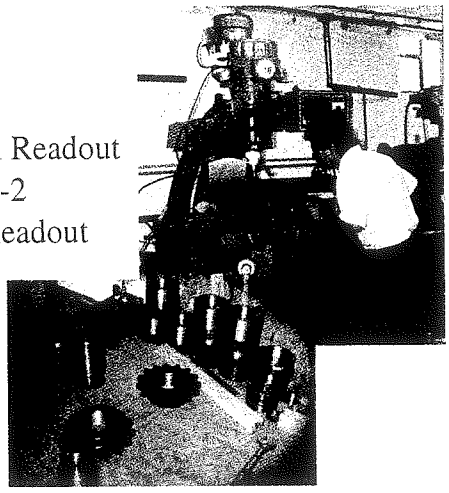
- Service Trucks
- Dump Truck
- Ramp Truck
- Flat Bed
- Bobcat 751 Loader
- Lull Highlander II 644
- 30' Articulating Boom Lift
- 20' Platform Manlift
- 26' Platform Manlift
- 25,000 Sq. Ft. Fab Shop
- Pipe Threaders to 6"
- Portable Welding Machines
- Forklift 5,000 lb. cap.
- Forklift 8,000 lb. cap.
- Bay State Stocks a Large Inventory of Beams - Angle - Channels Flat Stock - Square Tubing & Pipe

All types of general construction

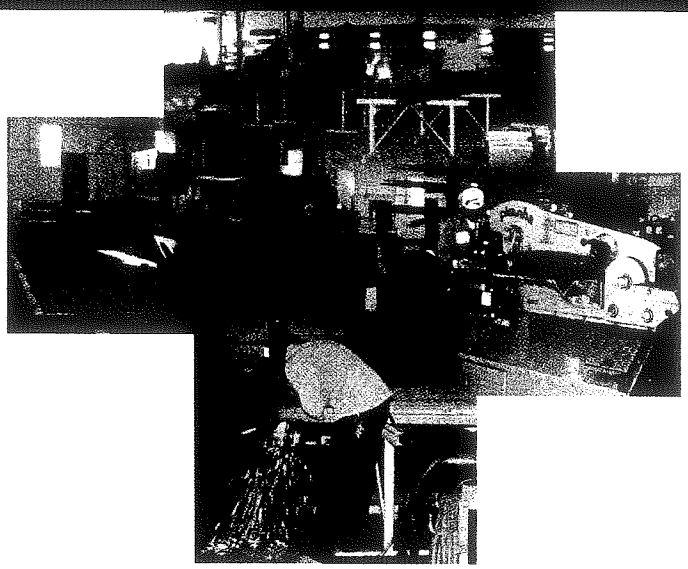


Precision Machining

- Precision Machine Shop
- 1-Bridgeport with Numerical Readout
- 1-Sharp with Proto Trak MX-2
- 14" Lathe with Numerical Readout
- 18" Lathe



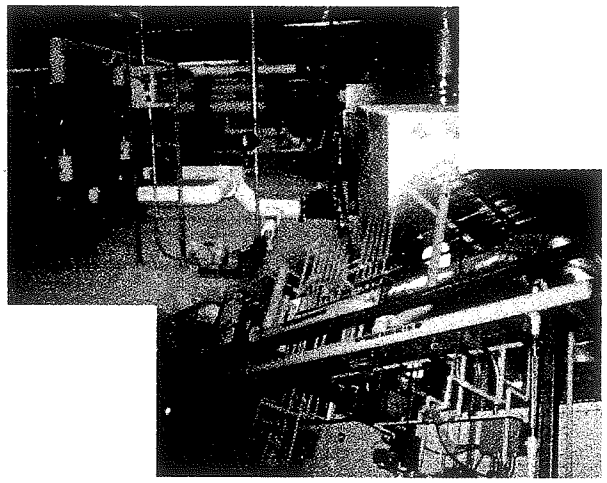
Bay State Industrial Welding & Fabrication, Inc. is AISC Certified Conventional / Complex Steel Building Structures.



- Design Engineering & Drafting Services
- Wrought Iron Railings & Commercial Rails
- Structural and Mechanical Engineering Services Available

Shop Equipment

- 175 Ton CNC 12 ft. Accurpress Brake
- 10 ft. x 1/4 in. Accurshear
- (3) 16" Horizontal Band Saws
- 70 Ton Iron Worker-to Shear, Punch and Slot



Master Plumbing/Gas/Pipefitters

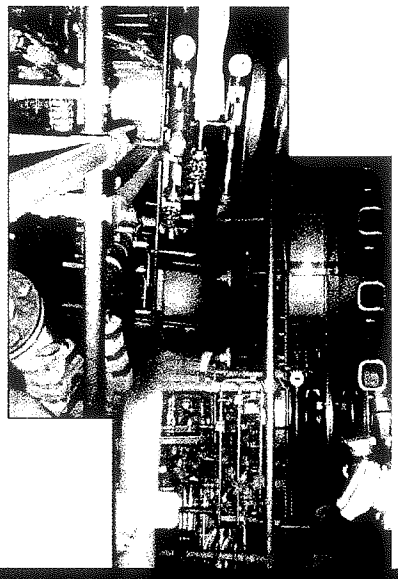
Bay State fabricates piping systems with flanged and screwed joints as well as systems fabricated with welding, brazing, and soldering processes.

In many instances it is possible to deliver fully welded and painted precision built pipe assemblies to the job site for fast and efficient field installation.

Master License # MA12525

Piping Systems

Utilizes the extensive expertise of our Production and Engineering Personnel to plan and Engineer innovative methods to maximize job safety and minimize downtime.



We would appreciate the opportunity to discuss any upcoming projects which would require the types of services we provide. Please give us a call: 1-800-828-WELD(9353) Fax: 603-881-8052.

Bay State holds membership in the following:

AISC-American Institute of Steel Construction, Inc.
AWS-American Welding Society
ABC-Associated Builders and Contractors, Inc.

24 Hour On-Call Emergency Service

Pager #: 1-978-803-3400

BAYSTATE

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