021 (2)

Site Plan Special Permit Amendment Application

For

848 Main Street

(Map C-5 & Parcel 39)

Acton, Massachusetts

Stamski and McNary, Inc.
1000 Main Street Acton, Massachusetts 01720
Engineering – Planning – Surveying
(978) 263-8585
www.stamskiandmcnary.com

Owner/Applicant: Acorn Deck House Company
852 Main Street
Acton, MA 01720

Date: February 18, 2014

Job No. SM-0072B

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STAMSKI AND MCNARY, INC.
1000 Main Street
Acton, Massachusetts 01720
(978) 263-8585
FAX (978) 263-9883

JOSEPH MARCH, P.E., P.L.S.
GEORGE DIMAKARAKOS, P.E.

February 10, 2014

Acton Town Clerk
472 Main Street
Acton, MA 01720

Re: 848 Main Street

Dear Town Clerk,

On behalf of our client, Acorn Deck House Co., we hereby submit the enclosed information for a *Site Plan Special Permit* pursuant to the Board of Selectmen's *Rules and Regulations for Site Plan Special Permits* and the *Town of Acton Zoning Bylaw* for the referenced site.

Very truly yours,

Stamski and McNary, Inc.

William Hall, EIT

George Dimakarakos, P.E.

STAMSKI AND MCNARY, INC.
1000 Main Street
Acton, Massachusetts 01720
(978) 263-8585
FAX (978) 263-9883

JOSEPH MARCH, P.E., P.L.S.
GEORGE DIMAKARAKOS, P.E.

February 10, 2014

Acton Board of Selectmen
472 Main Street
Acton, MA 01720

Re: 848 Main Street

Members of the Board,

On behalf of our client, Acorn Deck House Co., we hereby submit the enclosed information for a *Site Plan Special Permit* pursuant to the Board of Selectmen's *Rules and Regulations for Site Plan Special Permits* and the *Town of Acton Zoning Bylaw* for the referenced site. If required, the applicant will provide a landscape plan under separate cover.

Very truly yours,

Stamski and McNary, Inc.

William Hall, EIT

George Dimakarakos, P.E.

3.1 Application for a Site Plan Special Permit

Town of Acton

APPLICATION FOR SITE PLAN SPECIAL PERMIT

To The

Board Of Selectmen

Refer to the "Rules and Regulations for Site Plan Special Permits" available from the Office of the Board or the Site Plan Coordinator for details on the information and fees required for this application. Contact the Site Plan Coordinator at 264-9632 with any questions concerning the Rules. Incomplete applications may be denied.

Please type or print your application.

APPLICANT'S
Name & Address
Tom Trudeau
852 Main Street
Acton, MA 01720

Telephone (978) 263-6800

OWNER'S
Name & Address
Acton Realty, LLC
852 Main Street
Acton, MA 01720

Telephone (978) 263-6800

Location and Street Address of Site
848 Main Street

Tax Map & Parcel Number
Map C-5, Parcel 39
Area of Site 363,092 SF (8.3354 AC)

Zoning District
Small Manufacturing (SM)
Groundwater Protection District Zone 3

If any site plans have been filed previously for this site give file numbers:
#61873-0068, 72574-0087, 62077-0132, 3778-0149, 101585-0267, 32086-0274, 82187-0286.

The undersigned hereby apply to the Board of Selectmen for a public hearing and a site plan special permit under Section 10.4 of the Zoning Bylaw approving the attached site plan.

The undersigned hereby certify that the information on this application and plans submitted herewith is correct, and that all applicable provisions of Statutes, Regulations, and Bylaws will be complied with.

The above is subscribed to and executed by the undersigned under the penalties of perjury in accordance with Section 1-A of Chapter 268, General Laws of the Commonwealth of Massachusetts.

2-18-14 Thomas Trudeau

Date Signature of Petitioner

OWNER'S KNOWLEDGE AND CONSENT

I hereby assert that I have knowledge of and give my consent to the application presented above.

2-18-14 Thomas Trudeau

Date Signature of Owner

ACTON REALTY LLC
852 MAIN ST.
ACTON, MA 01720-5806

53-7048/2113

166

DATE 2-18-14

PAY TO THE ORDER OF Town of Acton $ 2,500.00/100

Twenty Five Hundred DOLLARS

Security Features Included. Details on Back.

STONEHAM SAVINGS
A division of Salem Five Bancorp

MEMO

MP

© DELUXE deluxe.com/checks SAFETY PAPER

3.2 Certified Abutters List

Town of Acton
472 Main Street
Acton, MA 01720
Telephone (978) 929-6621
Fax (978) 929-6340

Brian McMullen
Assessor

Locus: 848 MAIN ST
Parcel: C5-39

Parcel ID	LOCATION	Owner	Co-Owner	Mailing Address	City	ST	Zip
B5-35	924 MAIN ST	NASHOBA SPORTSMANS CLUB		P.O. BOX 2333	ACTON, MA 1720		
C5-1277	7 JOHN FRANCIS LN	NIC REALTY LLC	LNHL 2012 REVOCABLE TRUST	99 LONGWATER CIR SUITE 203	NORWELL, MA 02061		
C5-1278	5 JOHN FRANCIS LN	NIC REALTY LLC	LNHL 2012 REVOCABLE TRUST	99 LONGWATER CIR SUITE 203	NORWELL, MA 02061		
C5-1279	3 JOHN FRANCIS LN	NIC REALTY LLC	LNHL 2012 REVOCABLE TRUST	99 LONGWATER CIR SUITE 203	NORWELL, MA 02061		
C5-1280	1 JOHN FRANCIS LN	NIC REALTY LLC	LNHL 2012 REVOCABLE TRUST	99 LONGWATER CIR SUITE 203	NORWELL, MA 02061		
C5-1281	8 JOHN FRANCIS LN	NIC REALTY LLC	LNHL 2012 REVOCABLE TRUST	99 LONGWATER CIR SUITE 203	NORWELL, MA 02061		
C5-1282	6 JOHN FRANCIS LN	NIC REALTY LLC	LNHL 2012 REVOCABLE TRUST	99 LONGWATER CIR SUITE 203	NORWELL, MA 02061		
C5-1283	4 JOHN FRANCIS LN	NIC REALTY LLC	LNHL 2012 REVOCABLE TRUST	99 LONGWATER CIR SUITE 203	NORWELL, MA 02061		
C5-1284	2 JOHN FRANCIS LN	NIC REALTY LLC	LNHL 2012 REVOCABLE TRUST	99 LONGWATER CIR SUITE 203	NORWELL, MA 02061		
C5-18	25 LEDGEROCK WAY	TOWN OF ACTON		472 MAIN STREET	ACTON, MA 01720		
C5-2001	1 DEVON DR	BAUER W NEIL	BAUER RICKY ANN	1 DEVON DR	ACTON, MA 01720		
C5-2002	3 DEVON DR	GOODWIN MARY D		3 DEVON DR	ACTON, MA 01720		
C5-2003	5 DEVON DR	GORE GENEVIEVE		5 DEVON DR	ACTON, MA 01720		
C5-2004	7 DEVON DR	FLYNN MARY L & FLYNN PETER G	TRUSTEES OF MARGARET A. FLYNN	7 DEVON DR	ACTON, MA 01720		
C5-2005	9 DEVON DR	KILPATRICK JOHN	KILPATRICK, CAROLYN	9 DEVON DR	ACTON, MA 01720		
C5-2006	11 DEVON DR	KILEY REGINA M		11 DEVON DR	ACTON, MA 01720		
C5-2007	15 DEVON DR	15 DEVON DRIVE LLC		149 HEALD RD	CARLISLE, MA 01741		
C5-2008	17 DEVON DR	DALY FRANCES		17 DEVON DR	ACTON, MA 01720		
C5-2009	19 DEVON DR	O'CONNELL CHARLES	O'CONNELL EILEEN S	19 DEVON DR	ACTON, MA 01720		
C5-2010	21 DEVON DR	KING SANDRA		21 DEVON DR	ACTON, MA 01720		
C5-2011	26 HARTLAND WY	STUTMAN IRIS L TRUSTEE	STUTMAN-1 NOMINEE TRUST	26 HARTLAND WY	ACTON, MA 01720		
C5-2012	24 HARTLAND WY	SMITH JANE W		24 HARTLAND WY	ACTON, MA 01720		
C5-2013	22 HARTLAND WY	JACK ROBERT W	JACK BETTY T	22 HARTLAND WY	ACTON, MA 01720		
C5-2014	20 HARTLAND WY	KLEIN ALISON B		130 W 19TH ST	NEW YORK, NY 10011		
C5-2015	18 HARTLAND WY	CLANCY CHRISTOPHER		7 ACADIA ST	S BOSTON MA 02127		
C5-2016	16 HARTLAND WY	ROTHRAUFF MARGARET M		16 HARTLAND WY	ACTON, MA 01720		
C5-2017	14 HARTLAND WY	MUNROE JUDITH M	FURTADO RICHARD P	14 HARTLAND WY	ACTON, MA 01720		
C5-2018	12 HARTLAND WY	FINNEGAN DEBORAH L	FINNEGAN ROBERT J	12 HARTLAND WY	ACTON, MA 01720		
C5-2019	10 HARTLAND WY	FIFIELD BARBARA P TRUSTEE	C/O BRUCE FIFIELD	406 WEST STREET	LEOMINSTER, MA 01453		
C5-2020	4 TINSDALE DR	LEMERE LEO E JR TRUSTEE	LEO E LEMERE JR INVESTMENT TRUST	4 TINSDALE DR	ACTON, MA 01720		
C5-2021	6 TINSDALE DR	LYFORD GLEN RUSSELL	LYFORD KATHY ANN	6 TINSDALE DR	ACTON, MA 01720		
C5-2022	1 TINSDALE DR	PORTYRATA GERALD W + MARILYN R		1 TINSDALE DR	ACTON, MA 01720		
C5-2023	3 TINSDALE DR	SHEA THOMAS & JOANNE M		3 TINSDALE DR	ACTON, MA 01720		
C5-2024	5 TINSDALE DR	SMITH DAVID F, TR		5 TINSDALE DR	ACTON, MA 01720		
C5-2025	7 TINSDALE DR	SWEENEY BEVERLY G TRUSTEE	7 TINSDALE DRIVE REALTY TRUST	7 TINSDALE DR	ACTON, MA 01720		
C5-2026	36 HARTLAND WY	ANWAR MUHAMMAD DR	ANWAR ASMAT J	36 HARTLAND WY	ACTON, MA 01720		
C5-2027	34 HARTLAND WY	DAVIES WILLIAM T JR	DAVIES JOAN B	34 HARTLAND WY	ACTON, MA 01720		
C5-2028	32 HARTLAND WY	HOFFMAN SUMNER M	HOFFMAN DOLORES W	32 HARTLAND WY	ACTON, MA 01720		
C5-2029	30 HARTLAND WY	TAYLOR MARY E		30 HARTLAND WY	ACTON, MA 01720		
C5-2030	22 DEVON DR	LARSON LINDA M		22 DEVON DR	ACTON, MA 01720		
C5-2031	24 DEVON DR	FRIES JOHN E JR TRUSTEE	FRIES ANNE K TRUSTEE	24 DEVON DR	ACTON, MA 01720		
C5-2032	10 DEVON DR	10 DEVON DRIVE ACTON LLC		4500 DORR ST	TOLEDO, OH 43615		
C5-2033	27 HARTLAND WY #101	SCHECTER MELISSE C		27 HARTLAND WY #101	ACTON, MA 01720		
C5-2033	27 HARTLAND WY #202	CARUCCIO FRANK	CARUCCIO MARIA	27 HARTLAND WY #202	ACTON, MA 01720		
C5-2033	27 HARTLAND WY #203	ANDERSON LORING H	ANDERSON ELEANORE M	27 HARTLAND WY #203	ACTON, MA 01720		
C5-2033	27 HARTLAND WY #204	JEN LUCY		27 HARTLAND DR #204	ACTON, MA 01720		

Brian McMullen
Assessor

Locus: 848 MAIN ST
Parcel: C5-39

Parcel IE	LOCATION	Owner	Co-Owner	Mailing Address	City	ST	Zip
C5-2033-	27 HARTLAND WY #205	HOUSTON ANNE S	HOUSTON KENNETH M	27 HARTLAND WY #205	ACTON, MA 01720		
C5-2033-	27 HARTLAND WY #206	DUSSAULT BARRY	DUSSAULT MARSHA	27 HARTLAND WY #206	ACTON, MA 01720		
C5-2033-	27 HARTLAND WY #207	McKENNA THOMAS E	McKENNA PATRICIA M	27 HARTLAND WY #207	ACTON, MA 01720		
C5-2033-	27 HARTLAND WY #208	MCLAUGHLIN MARY M		27 HARTLAND WY #208	ACTON, MA 01720		
C5-2033-	27 HARTLAND WY #209	HENNEBERRY CLAIRE L		27 HARTLAND WY #209	ACTON, MA 01720		
C5-2033-	27 HARTLAND WY #210	KAPLAN DEANNE L	LEES DAVID E	13235 PALMERS CREEK TERRACE	LAKEWOOD RANCH, FL 34202		
C5-2033-	27 HARTLAND WY #301	POWERS JUDITH ANNE		27 HARTLAND WY #301	ACTON, MA 01720		
C5-2033-	27 HARTLAND WY #102	TRAMPOSCH ELIZABETH L	TRUSTEE OF THE ELIZABETH L TRAMPOSCH TR	27 HARTLAND WY #102	ACTON, MA 01720		
C5-2033-	27 HARTLAND WY #304	PAOLINO ALLISON M		44 STONEYMEADE WY	ACTON, MA 01720		
C5-2033-	27 HARTLAND WY #305	NOCIVELLI JOHN J	BURKE MARY	27 HARTLAND WY #305	ACTON, MA 01720		
C5-2033-	27 HARTLAND WY #306	FREYA FANNING & COMPANY LLC		400 ESSEX ST	BEVERLY FARMS, MA 01915		
C5-2033-	27 HARTLAND WY #309	YATES JOHN W	YATES ROSE	1 MADISON LN	ACTON, MA 01720		
C5-2033-	27 HARTLAND WY #310	DANIEL MICHAEL R	DANIEL JANET E	27 HARTLAND WY #310	ACTON, MA 01720		
C5-2033-	27 HARTLAND WY #103	ALSPAUGH MARLOWE A		27 HARTLAND WY #103	ACTON, MA 01720		
C5-2033-	27 HARTLAND WY #104	BENEDICT SALLY P		27 HARTLAND WY #104	ACTON, MA 01720		
C5-2033-	27 HARTLAND WY #106	ENMAN GAIL M		27 HARTLAND WY #106	ACTON, MA 01720		
C5-2033-	27 HARTLAND WY #107	DWORSACK IRENE C	C/O JAMES DWORSACK	23 SANDY POND #4	AYER, MA 01432		
C5-2033-	27 HARTLAND WY #108	PERKIN CYRIL TRUSTEE	PERKIN REALTY TRUST	27 HARTLAND WY #108	ACTON, MA 01720		
C5-2033-	27 HARTLAND WY #109	ARCHER MARY ANN	ARCHER PAUL	146 RIDGE RD	HOLLIS, NH 03049		
C5-2033-	27 HARTLAND WY #201	BONNEAU VICTOR O	BONNEAU SUZANN J	27 HARTLAND WY #201	ACTON, MA 01720		
C5-38-1	9 LEDGE ROCK WY	REX LUMBER CO		840 MAIN STREET	ACTON, MA 01720		
C5-39-1	852 MAIN ST	TRUDEAU THOMAS TRUSTEE	852 MAIN ST NOMINEE TRUST	852 MAIN ST	ACTON, MA 01720		
C5-39-26	31 HARTLAND WY	FOLEY VERONICA		31 HARTLAND WY	ACTON, MA 01720		
C5-39-26	33 HARTLAND WY	FRIEDMAN JACQUELINE		33 HARTLAND WY	ACTON, MA 01720		
C5-39-27	41 HARTLAND WY	CARBONE MATTHEW	TRUSTEE OF THE DEYOE CHILDRENS GIFT TRUS	41 HARTLAND WY	ACTON, MA 01720		
C5-39-27	43 HARTLAND WY	BKBRM LLC		43 HARTLAND WY	ACTON, MA 01720		
C5-39-27	45 HARTLAND WY	HIGGINS PATRICIA W		45 HARTLAND WY	ACTON, MA 01720		
C5-39-27	47 HARTLAND WY	JONES ROBERT	JONES PATRICIA A TR	47 HARTLAND WY	ACTON, MA 01720		
C5-39-27	39 HARTLAND WY	VARTOUKIAN ARTIN G	VARTOUKIAN ARMENOUCH	39 HARTLAND WY	ACTON, MA 01720		
C5-39-27	37 HARTLAND WY	KORNFELD GEORGE R	KORNFELD HULEN S	37 HARTLAND WY	ACTON, MA 01720		
C5-39-27	35 HARTLAND WY	NAJJAR JOSEPH N	NAJJAR MARY L	35 HARTLAND WY	ACTON, MA 01720		
C5-40	864 MAIN ST	RRM 864 MAIN ST LLC	C/O ROBERT MORAN	198 GREAT RD	ACTON, MA 01720		
C5-40-4	4 EASTERN RD	EASTERN ROAD REALTY LLC		27 OLD EAST STREET	CARLISLE, MA 01741		
C5-40-5	2 EASTERN RD	BERGIN THOMAS F JR	RUTH ANN	91 AUTUMN LANE	WELLS, ME 04090		
C5-41	861 MAIN ST	TOWN OF ACTON		472 MAIN STREET	ACTON, MA 01720		
C5-50	840 MAIN ST	REX LUMBER COMPANY INC		840 MAIN ST	ACTON, MA 01720		
C5-51	845 MAIN ST	TOWN OF ACTON		472 MAIN STREET	ACTON, MA 01720		
C5-61	836 MAIN ST	MUSHROOM INVESTMENTS LLC	C/O CONCORP INC	PO BOX 2766	ACTON, MA 01720		
C5-61-1	838 MAIN ST	MUSHROOM INVESTMENTS LLC	C/O CONCORP INC	PO BOX 2766	ACTON, MA 01720		
C5-6-164	17 HARTLAND WY	ANDERSON MARCIA L		17 HARTLAND WY	ACTON, MA 01720		
C5-6-165	19 HARTLAND WY	REGAN RUTH E TRUSTEE	RE REGAN TRUST NO 1	19 HARTLAND WY	ACTON, MA 01720		
C5-6-166	21 HARTLAND WY	WARNER KATHLEEN		21 HARTLAND WY	ACTON, MA 01720		
C5-6-167	23 HARTLAND WY	RAND JAMES C TRUSTEE	RAND ADRA L TRUSTEE	23 HARTLAND WY	ACTON, MA 01720		
C5-62-1	6 WHEELER LN	MURPHY GREG	MURPHY AMANDA	6 WHEELER RD	ACTON, MA 01720		
C5-632	11 HARTLAND WY	NIC REALTY LLC	C/O NIC REALTY	254 NASHUA RD	LONDENDERRY, NH 03053		
C5-633	13 HARTLAND WY	NIC REALTY LLC	C/O DAVIS MALM & DAGOSTINE PC	7 WESTVIEW DR	LITCHFIELD, NH 03052		
C5-634	15 HARTLAND WY	NIC REALTY LLC	C/O DAVIS MALM & DAGOSTINE PC	7 WESTVIEW DR	LITCHFIELD, NH 03052		
C5-635	1 PRESTON WY	TAYLOR RAYNOR W	TAYLOR HELEN D	1 PRESTON WY	ACTON, MA 01720		
C5-636	3 PRESTON WY	SWEET MATILDA A.		3 PRESTON WY	ACTON, MA 01720		
C5-637	5 PRESTON WY	MARCHAND RICHARDM MARCHAND ANNE	TRUSTEES OF THE MARCHAND FAMILY TRUST	5 PRESTON WY	ACTON, MA 01720		
C5-638	7 PRESTON WY	JACKSON RONALD J	JACKSON CYNTHIA L	7 PRESTON WY	ACTON, MA 01720		
C5-639	9 PRESTON WY	HOERMANN WILLIAM J	HOERMANN ELIZABETH F	9 PRESTON WY	ACTON, MA 01720		
C5-64	841 MAIN ST	COLBERT MARY FAHEY		841 MAIN ST	ACTON, MA 01720		
C5-640	11 PRESTON WY	MULLEN THOMAS E	MULLEN ERLINDA E	11 PRESTON WY	ACTON, MA 01720		
C5-641	15 PRESTON WY	STOICA NARCIS	STOICA VIOLETA	15 PRESTON WY	ACTON, MA 01720		
C5-64-1	843 MAIN ST	MARSHALL DAVID	MARSHALL ELISE E	843 MAIN ST	ACTON, MA 01720		

Brian McMullen
Assessor

Locus: 848 MAIN ST
Parcel: C5-39

Parcel ID	LOCATION	Owner	Co-Owner	Mailing Address	City	ST	Zip
C5-642	16 JOHN FRANCIS LN	CATELLA SHIRLEY		40 NEWTOWN RD	LITTLETON, MA 01773		
C5-643	14 JOHN FRANCIS LN	AHEARN BRIAN	AHEARN BARBARA	14 JOHN FRANCIS LN	ACTON, MA 01720		
C5-644	12 JOHN FRANCIS LN	NIC REALTY LLC		PO BOX 1030	LONDONDERRY, NH 03053		
C5-645	10 JOHN FRANCIS LN	NIC REALTY LLC		99 LONGWATER CIR SUITE 203	NORWELL, MA 02061		
C5-646	9 JOHN FRANCIS LN	NIC REALTY LLC	C/O DAVIS MALM & DAGOSTINE PC	7 WESTVIEW DR	LITCHFIELD, NH 03052		
C5-647	11 JOHN FRANCIS LN	VANTRE THOMAS R	SHIPPEY DONNA M	15 CAPTAIN MILES LANE	CONCORD, MA 01742		
C5-648	17 JOHN FRANCIS LN	KAPRELIAN ALAN S	KAPRELIAN RITA A	17 JOHN FRANCIS LN	ACTON, MA 01720		
C5-649	19 JOHN FRANCIS LN	VAUGHAN TIMOTHY M	VAUGHAN WOLINS INEZ S	19 JOHN FRANCIS LN	ACTON, MA 01720		
C5-650	17 PRESTON WY	RRV LLC	LNHL 2012 REVOCABLE TRUST	99 LONGWATER CIR SUITE 203	NORWELL, MA 02061		
C5-651	19 PRESTON WY	NIC REALY LLC	LNHL 2012 REVOCABLE TRUST	99 LONGWATER CIR SUITE 203	NORWELL, MA 02061		
C5-652	21 PRESTON WY	RRV LLC	LNHL 2012 REVOCABLE TRUST	99 LONGWATER CIR SUITE 203	NORWELL, MA 02061		
C5-653	22 PRESTON WY	POOLER ALLAN B	POOLER LOUISE	22 PRESTON WY	ACTON, MA 01720		
C5-654	20 PRESTON WY	KURCZYNSKI ELIZABETH M		20 PRESTON WY	ACTON, MA 01720		
C5-655	18 PRESTON WY	HARRING CEDRIC F	HARRING ARLETTE E	18 PRESTON WY	ACTON, MA 01720		
C5-656	16 PRESTON WY	PARILLO ARLENE		16 PRESTON WY	ACTON, MA 01720		
C5-657	14 PRESTON WY	SIMMONS WARREN A	SIMMONS BEVERLY M	14 PRESTON WY	ACTON, MA 01720		
C5-658	12 PRESTON WY	WINSBY ROGER M	WINSBY SUZANNE E	12 PRESTON WY	ACTON, MA 01720		
C5-659	10 PRESTON WY	WALCZEWSKI RICHARD	WALCZEWSKI SHARYN	10 PRESTON WY	ACTON, MA 01720		
C5-660	8 PRESTON WY	VUOLO ANTHONY R	VUOLO JANICE M	8 PRESTON WY	ACTON, MA 01720		
C5-661	6 PRESTON WY	FLOOD H W	FLOOD JEANNE B	6 PRESTON WY	ACTON, MA 01720		
C5-662	4 PRESTON WY	SAUER JON R.	SAUER PATRICIA	4 PRESTON WY	ACTON, MA 01720		
C5-663	2 PRESTON WY	SMALL MARY		2 PRESTON WY	ACTON, MA 01720		
C5-685	15 JOHN FRANCIS LN	POWELL JEFFREY L		15 JOHN FRANCIS LN	ACTON, MA 01720		

Abutters and owners of land directly opposite on any public or private street or way and abutters to the abutters within three hundred feet of the property line all as they appear on the most recent applicable tax list.

HEARING NOTICES FOR ALL SPECIAL PERMITS MUST BE SENT TO THE PLANNING BOARD, TOWN HALL IN THE FOLLOWING TOWNS:

Boxborough, MA 01729	Maynard, MA 01754	Concord, MA 01742	Littleton, MA 01460
Carlisle, MA 01741	Stow, MA 01775	Westford, MA 01886	Sudbury, MA 01776

Kelly Schorr
Acton Assessors Office

2/7/2014

3.3 Use Description

Use Description

Existing Conditions

The existing site is approximately 8.33 ac and contains an existing building, roofed storage areas, a fire pond, and associated gravel, crushed pavement and paved areas. The building is currently being used to manufacture modular homes. A gravel surface on the northern portion of the site is being used as a processing area for firewood. Approximately 45,626 sf of bituminous concrete pavement and 7,758 sf of gravel have been added to the site without approval. Approximately 18,593 sf of the bituminous concrete pavement was approved to be a gravel paved area for flatbed and trailer storage.

Proposed Conditions

The proposed work is to pave the existing gravel surface on the northwest part of the site and remove a portion of the existing bituminous concrete pavement to the south to provide compliance with the perimeter landscaping requirement in the Town of Acton Zoning Bylaw. The firewood processing area will be relocated to be further away from the abutting properties. Stormwater BMP's will be provided to treat and infiltrate runoff from the site. The amount of earth removed from this project will be negligible. The site is not going to store or generate hazardous waste. The proposed use will not be changing from small manufacturing, therefore there will be no impact on current traffic conditions.

3.4 Record Plans

(3) Return to: THW
ECKERT SEAMANS CHERIN MELLOTT
TWO INTERNATIONAL PLACE, FLOOR 16
BOSTON, MA 02110

Bk: 53416 Pg: 128
2009 00165310
Bk: 53416 Pg: 128 Doc: DEED
Page: 1 of 3 08/20/2009 12:41 PM

P3

QUITCLAIM DEED

Property Address: 848 Main Street, Acton, Massachusetts

DH Properties, LLC, a Massachusetts limited liability company, of Acton, Massachusetts, by and through Stewart F. Grossman, of Looney & Grossman LLP, 101 Arch Street, Boston, Massachusetts, duly authorized Receiver pursuant to Order of Suffolk County, Massachusetts Superior Court in the action styled and numbered Stoneham Savings Bank vs. DH Properties LLC, et al, Civil Action No. 08-5357, recorded herewith,

for CONSIDERATION paid and in full consideration of One Million Seven Hundred Thousand Dollars ($1,700,000.00),

grants to Thomas Trudeau, Trustee of 848 Main Street Nominee Trust, u/d/t dated August 10, 2009, recorded with the Middlesex South District of Registry of Deeds herewith, of 852 Main Street, Acton, Massachusetts 01720

with quitclaim covenants

The land in Acton, Middlesex County, Massachusetts, as bounded and described on "Exhibit A" ATTACHED HERETO AND MADE A PART HEREOF.

This conveyance does not constitute the sale or transfer of all or substantially all of the company's assets within the Commonwealth of Massachusetts.

For title reference, see Deed of Deck House, Inc., dated December 19, 2003 and recorded at the Middlesex South District Registry of Deeds in Book 41720, Page 589.

[REMAINDER OF PAGE BLANK]
[SIGNATURES ON FOLLOWING PAGE]

MASSACHUSETTS EXCISE TAX
Southern Middlesex District ROD # 001
Date: 08/20/2009 12:41 PM
Ctrl# 128049 31316 Doc# 00165310
Fee: $7,752.00 Cons: $1,700,000.00

L:\14475\000\11.doc

Witness my hand seal this 19 day of August, 2009.

DH PROPERTIES, LLC

By: Stewart F. Grossman, not individually but as Receiver, as aforesaid

COMMONWEALTH OF MASSACHUSETTS

Suffolk, ss.

On this 19th day of August, 2009, before me, the undersigned Notary Public, personally appeared the above-named Stewart F. Grossman as aforesaid, proved to me by satisfactory evidence of identification, being (check whichever applies): [ ] driver's license or other state or federal governmental document bearing a photographic image, [ ] oath or affirmation of a credible witness known to me who knows the above signatory, or [X] my own personal knowledge of the identity of the signatory, to be the person whose name is signed above, and acknowledged the foregoing to be signed by him/her, as his/her free act and deed, voluntarily for its stated purpose.

(Print Name of Notary Public): _____
My Commission Expires: _____
Qualified in the Commonwealth of Massachusetts

TODD H. WHILTON
Notary Public
Commonwealth of Massachusetts
My Commission Expires
January 21, 2018

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EXHIBIT "A"

848 MAIN STREET, ACTON, MA

The land at 848 Main Street, Acton, Middlesex County, Massachusetts, being shown as Lot A-2 and Parcel A on a plan entitled "Plan of Land in Acton, Massachusetts" prepared by Stamski and McNary, Inc., dated June 19, 2006, recorded with Middlesex South District Registry of Deeds, Book 33760, Page 375.

For title see deed recorded with said Registry herewith.

RECORD OWNER:

DECK HOUSE, INC.
930 MAIN STREET
ACTON, MASSACHUSETTS

ZONING DISTRICT:

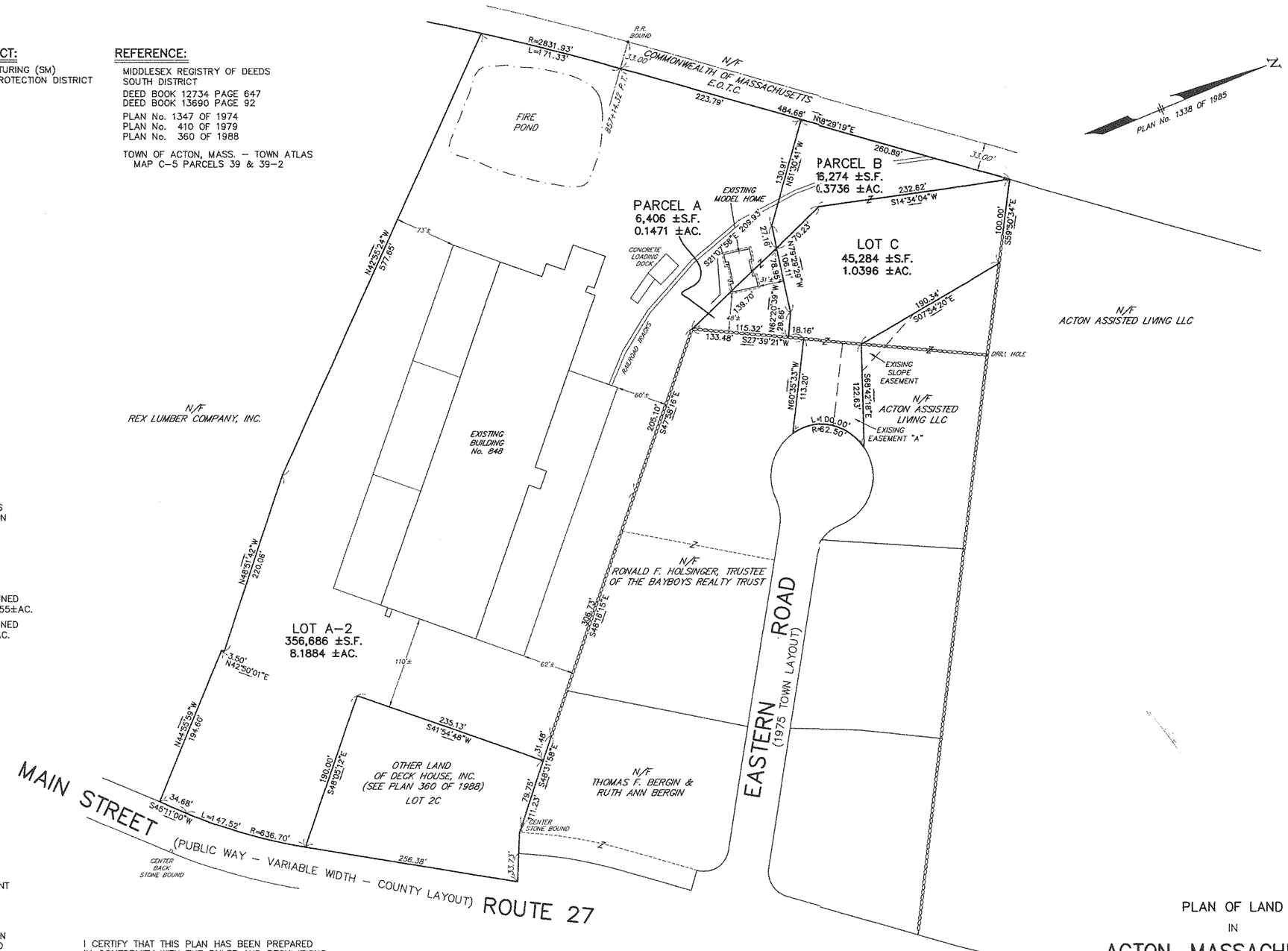
SMALL MANUFACTURING (SM)
GROUNDWATER PROTECTION DISTRICT
ZONE 3

REFERENCE:

MIDDLESEX REGISTRY OF DEEDS
SOUTH DISTRICT
DEED BOOK 12734 PAGE 647
DEED BOOK 13690 PAGE 92

PLAN No. 1347 OF 1974
PLAN No. 410 OF 1979
PLAN No. 360 OF 1988

TOWN OF ACTON, MASS. – TOWN ATLAS
MAP C–5 PARCELS 39 & 39–2



NOTES:

1.) THIS PLAN IS BASED ON THE REFERENCED PLANS AND DEEDS AND AN ON THE GROUND SURVEY. THE CERTIFICATION HEREON IS INTENDED TO MEET THE REQUIREMENTS OF THE REGISTRY OF DEEDS ONLY, AND IS NOT CERTIFICATION TO THE TITLE OR OWNERSHIP OF THE PROPERTY SHOWN, OR AS TO THE EXISTENCE OF UNRECORDED EASEMENTS. OWNERSHIP OF ABUTTING PROPERTIES ARE FROM CURRENT ASSESSOR'S RECORDS.

2.) PARCEL A IS NOT A LEGAL BUILDING LOT, IT IS TO BE COMBINED WITH LOT A–2 FOR A TOTAL AREA OF 363,092±S.F OR 8.3355±AC.

3.) PARCEL B IS NOT A LEGAL BUILDING LOT, IT IS TO BE COMBINED WITH LOT C FOR A TOTAL AREA OF 61,558±S.F OR 1.4132±AC.

Middlesex Registry of Deeds,
Southern District
Cambridge, Massachusetts
Plan No. 1004 of 2001
Rec'd 10-2 2001
at 2:02 pm P.M. Book 1054
Rec'd, Bk 53760 Page 375
Attest

PLANNING BOARD ENDORSEMENT IS NOT A DETERMINATION AS TO CONFORMANCE WITH ZONING REQUIREMENTS

APPROVAL UNDER SUBDIVISION CONTROL LAW NOT REQUIRED
ACTON PLANNING BOARD

September 17, 2001
DATE

I CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN CONFORMITY WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS.

17 AUG 01
DATE

REGISTERED PROFESSIONAL LAND SURVEYOR

PLAN OF LAND
IN
ACTON, MASSACHUSETTS
(MIDDLESEX COUNTY)

FOR: DECK HOUSE, INC.
SCALE: 1"=60' JUNE 19, 2001

STAMSKI AND MCNARY, INC.
80 HARRIS STREET ACTON, MASSACHUSETTS
ENGINEERING – PLANNING – SURVEYING

0 30 60 120 180 240 FT

(2294DHANR.dwg) 848 MAIN STREET SM–72

1004

3.5 Drainage Calculations

Stormwater Management

The proposed project is to add a paved surface to the site as well as stormwater BMP's to treat and infiltrate runoff from impervious surfaces on the site.

Pre Development-

The existing site is approximately 8.33 ac and contains an existing building, roofed storage areas, a fire pond, and associated bituminous concrete pavement and gravel. The building is currently being used to manufacture modular homes. Approximately 45,626 sf of pavement and 7,758 sf of gravel have been added to the site without providing treatment for the added runoff. The site has been divided into 4 subcatchments as shown on the attached drainage map.

Subcatchment 1 is located to the south and drains in to an existing detention basin which overflows to a catch basin in Main Street. Subcatchment 2 is the southern portion of the building roof and a portion of pavement. This subcatchment drains to 3 existing leaching catch basins on site. Subcatchment 3 is the northwest area of the site that drains to the fire pond on site. Subcatchment 4 is the area of roof and pavement on the eastern portion of the site. This area drains off the site towards Eastern Road.

Post Development-

The proposed work is to bring the site into compliance with the Town of Acton Zoning Bylaws and the Rules and Regulations for Site Plan Special Permits. This requires the removal of pavement on the southern portion of the site and the addition of pavement in the western portion of the site. Stormwater controls are proposed to treat and infiltrate the runoff created by the added impervious areas on site as well as the impervious areas that were added without providing treatment. The proposed subcatchments are shown on the attached drainage map.

The pavement parking area in Subcatchment 1 will drain to a deep sump hooded catch basin and manhole prior to discharging into the existing basin. This will provide pre-treatment for stormwater before infiltrating in the detention basin. Subcatchment 2 will not be adjusted and will continue to drain to the 3 leaching catch basins. Subcatchment 3 will continue to drain to the fire pond through sheet flow. Subcatchment 4 will no longer be draining off site. An infiltration trench will be installed to capture and infiltrate the roof runoff and all other impervious in the subcatchment will be sent to deep sump hooded catch basins and manholes for pre-treatment prior to discharging to the fire pond.

In accordance with the Town of Acton Zoning Bylaw, Section 10.4.3.1, the peak rate of stormwater runoff will not exceed the existing rate based on a 10-year storm event. The peak off site runoff was decreased due to infiltrating roof runoff and redirecting the impervious area of Subcatchment 4 to the existing fire pond on site. The peak runoff rates have been summarized in the following tables.

Discharge Summary Tables

Total Runoff

2-year Storm		10-year Storm	
Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)
2.486	0.069	5.088	0.349

Total Volume

2-year Storm		10-year Storm	
Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)
7,785	276	15,800	1,468

In accordance with the Rules and Regulations for Site Plan Special Permits, water balance calculations have also been performed. Detailed calculations for water balance, infiltration trench sizing, inlet grate capacity, and pipe sizing are attached.

Design Basis

1. The United States Department of Agriculture Natural Resource Conservation Service (N.R.C.S.) TR55 methodology was used to determine offsite rates of runoff.
2. The twenty-four hour rainfall, taken from N.R.C.S. publications, is 4.5 inches for the 10-year storm, and 3.1 inches for the 2-year storm event.
3. The hydrologic calculations were performed using the computer program: "Hydraflow Hydrographs 2007" by Intelisolve.
4. The soil types of the site were taken from the N.R.C.S. Soil Survey Map for Acton.
5. Soil conditions and observed seasonal high groundwater table were based on on-site soil evaluations.
6. The Natural Resources Conservation Service (N.R.C.S.) soil survey indicated the presences of Merrimac-Urban land complex. This soil group rates as Hydrologic Group A.

Pre Development

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.2

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	0.839	2	726	3,314	----	------	------	E1
2	SCS Runoff	3.098	2	724	10,402	----	------	------	E2
3	SCS Runoff	0.262	2	740	2,502	----	------	------	E3
4	SCS Runoff	2.485	2	724	7,706	----	------	------	E4
5	Reservoir	0.270	2	750	3,311	1	95.33	716	Existing Basin
6	Diversion1	0.255	2	750	3,234	5	------	------	Exfiltration
7	Diversion2	0.015	2	750	77	5	------	------	Overflow
8	Combine	2.486	2	724	7,783	4, 7	------	------	Total Runoff

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.2

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	2.479	2	724	7,962	----	------	------	E1
2	SCS Runoff	4.532	2	724	15,485	----	------	------	E2
3	SCS Runoff	2.025	2	726	8,484	----	------	------	E3
4	SCS Runoff	5.046	2	724	15,133	----	------	------	E4
5	Reservoir	0.872	2	744	7,959	1	95.92	1,961	Existing Basin
6	Diversion1	0.700	2	744	7,309	5	------	------	Exfiltration
7	Diversion2	0.172	2	744	650	5	------	------	Overflow
8	Combine	5.087	2	724	15,783	4, 7	------	------	Total Runoff

Worksheet 2: Runoff curve number and runoff **SM-0072B**

Project: 848 Main Street By WJH Date 01/22/14

Location: Acton, MA Checked _____ Date _____

Circle one: Present Developed Subcatchment 1

1. Runoff curve number (CN)

Soil name and hydrologic group (appendix	Cover description (cover type, treatment, and hydrologic condition: percent impervious: unconnected/connected impervious area ratio)	CN 1/ Table 2-2	CN 1/ Fig. 2-3	CN 1/ Fig. 2-4	Area Acres	Product of CN x Area
A	Woods- Good Condition	30			0.00	
A	Open Space- Good Condition	39			0.89	34.83
A	Pavement	98			0.50	49.29
A	Roof	98			0.00	
A	Gravel	84			0.36	29.82
					Totals =	1.75	113.94

1/ Use only one CN source per line.

CN (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{113.94}{1.75} = 65.07$; Use CN = 65.1

2. Runoff

		Storm #1	Storm #2	Storm #3
Frequency.....	yr	2	10	100
Rainfall, P (24-hour).....	in	3.1	4.5	6.4
Runoff, Q..... (Use P and CN with table 2-1, fig. 2-1,) or eqs. 2-3 and 2-4.)	in	0.56	1.34	2.65
Runoff, Q.....	cf	3530	8486	16863

(210-VI-TR-55, Second Ed., June 1986)

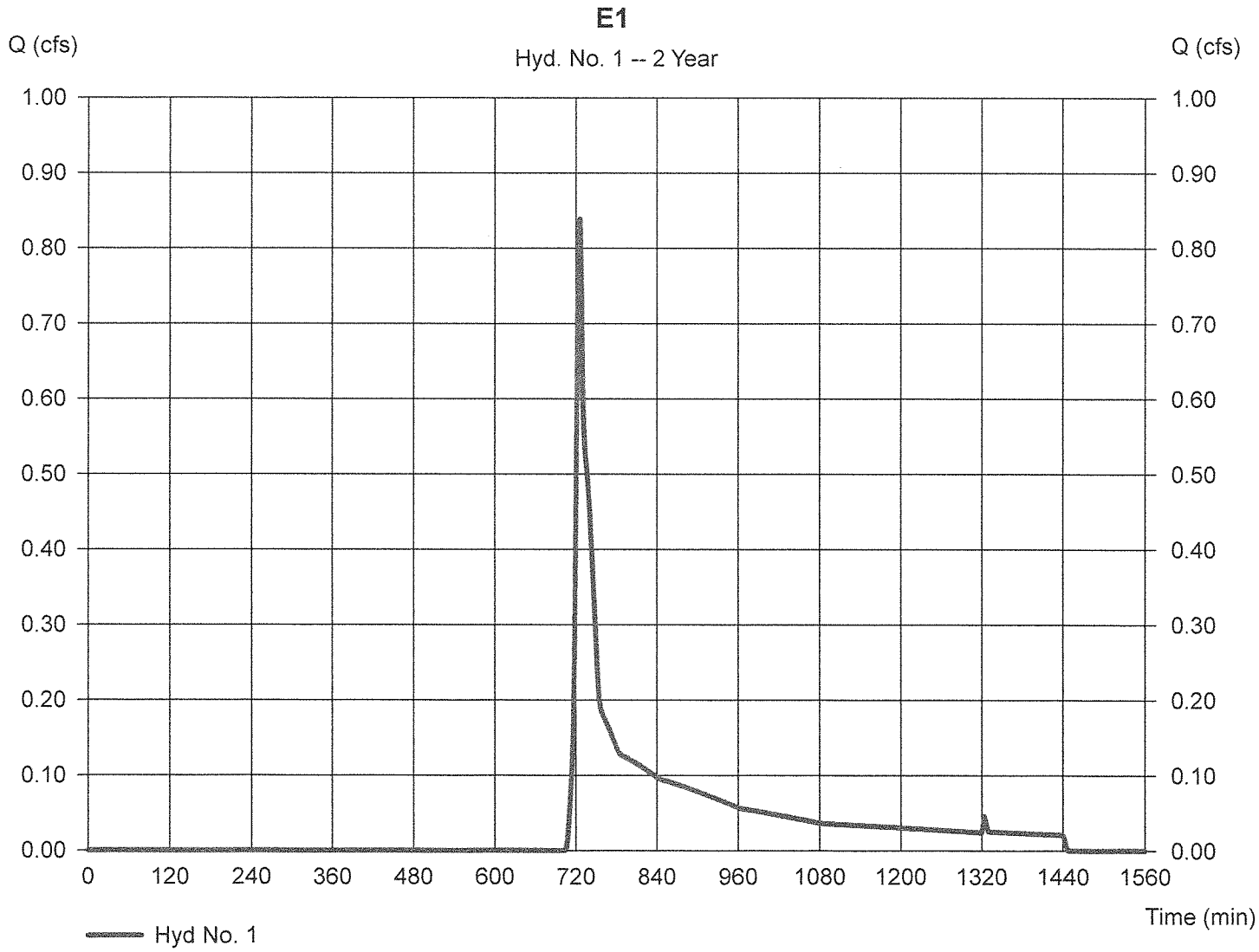
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Feb 4, 2014

Hyd. No. 1

E1

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.839 cfs
Storm frequency	=	2 yrs	Time to peak	=	726 min
Time interval	=	2 min	Hyd. volume	=	3,314 cuft
Drainage area	=	1.750 ac	Curve number	=	65.1
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.10 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484



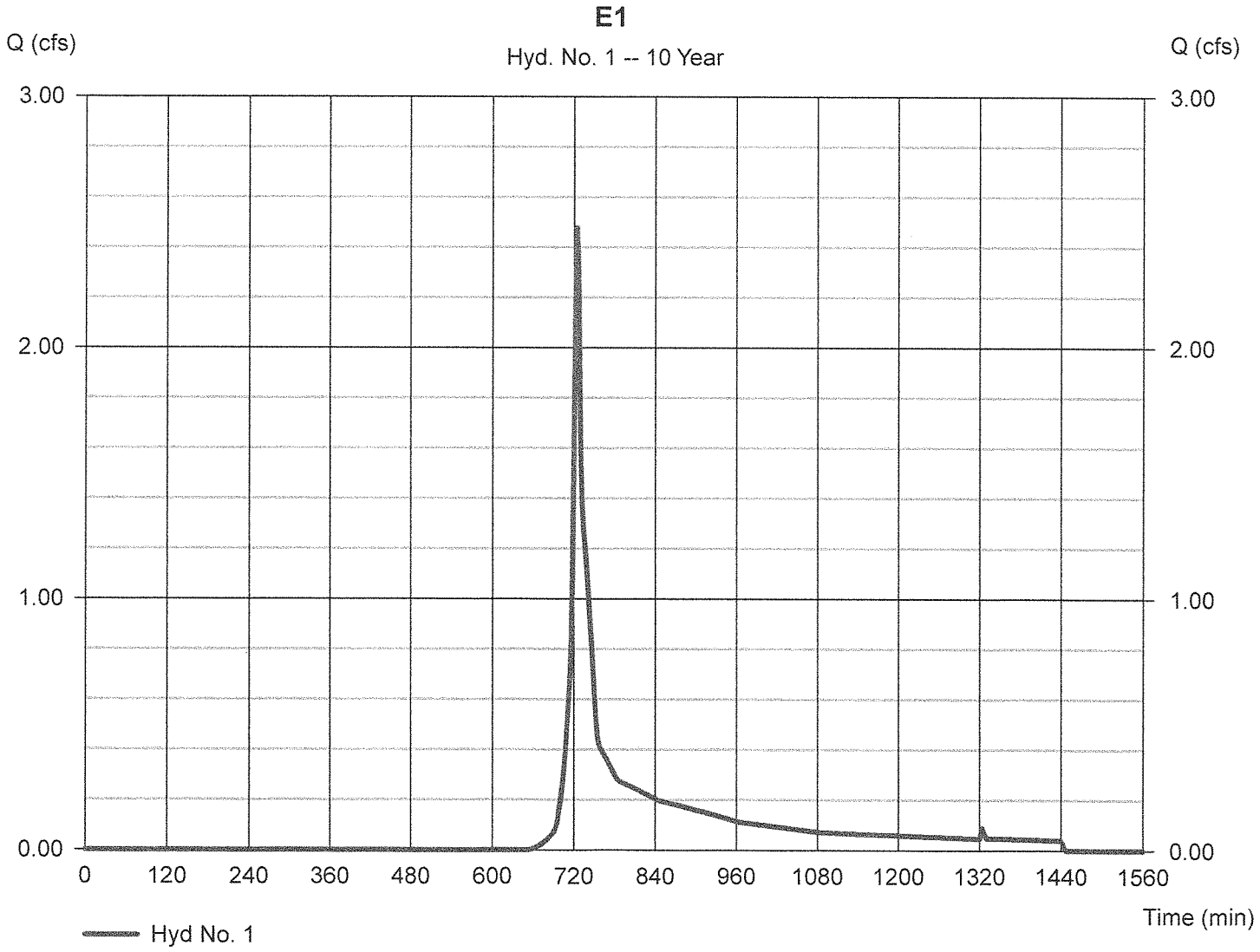
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Feb 4, 2014

Hyd. No. 1

E1

Hydrograph type	= SCS Runoff	Peak discharge	= 2.479 cfs
Storm frequency	= 10 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 7,962 cuft
Drainage area	= 1.750 ac	Curve number	= 65.1
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.50 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Worksheet 2: Runoff curve number and runoff **SM-0072B**

Project: 848 Main Street By WJH Date 01/22/14

Location: Acton, MA Checked _____ Date _____

Circle one: Present Developed Subcatchment 2

1. Runoff curve number (CN)

Soil name and hydrologic group (appendix	Cover description (cover type, treatment, and hydrologic condition: percent impervious: unconnected/connected impervious area ratio)	CN 1/ Table 2-2	CN 1/ Fig. 2-3	CN 1/ Fig. 2-4	Area Acres	Product of CN x Area
A	Woods- Good Condition	30			0.00	
A	Open Space- Good Condition	39			0.00	0.04
A	Pavement	98			0.27	26.56
A	Roof	98			0.79	77.81
A	Gravel	84			0.00	
					Totals = 1.07	104.41

1/ Use only one CN source per line.

CN (weighted) = $\frac{\text{total product}}{\text{total area}}$ = $\frac{104.41}{1.07}$ = 97.94 ; Use CN = 97.9

2. Runoff

		Storm #1	Storm #2	Storm #3
Frequency.....	yr	2	10	100
Rainfall, P (24-hour).....	in	3.1	4.5	6.4
Runoff, Q..... (Use P and CN with table 2-1, fig. 2-1,) or eqs. 2-3 and 2-4.)	in	2.86	4.26	6.15
Runoff, Q.....	cf	11073	16475	23817

(210-VI-TR-55, Second Ed., June 1986)

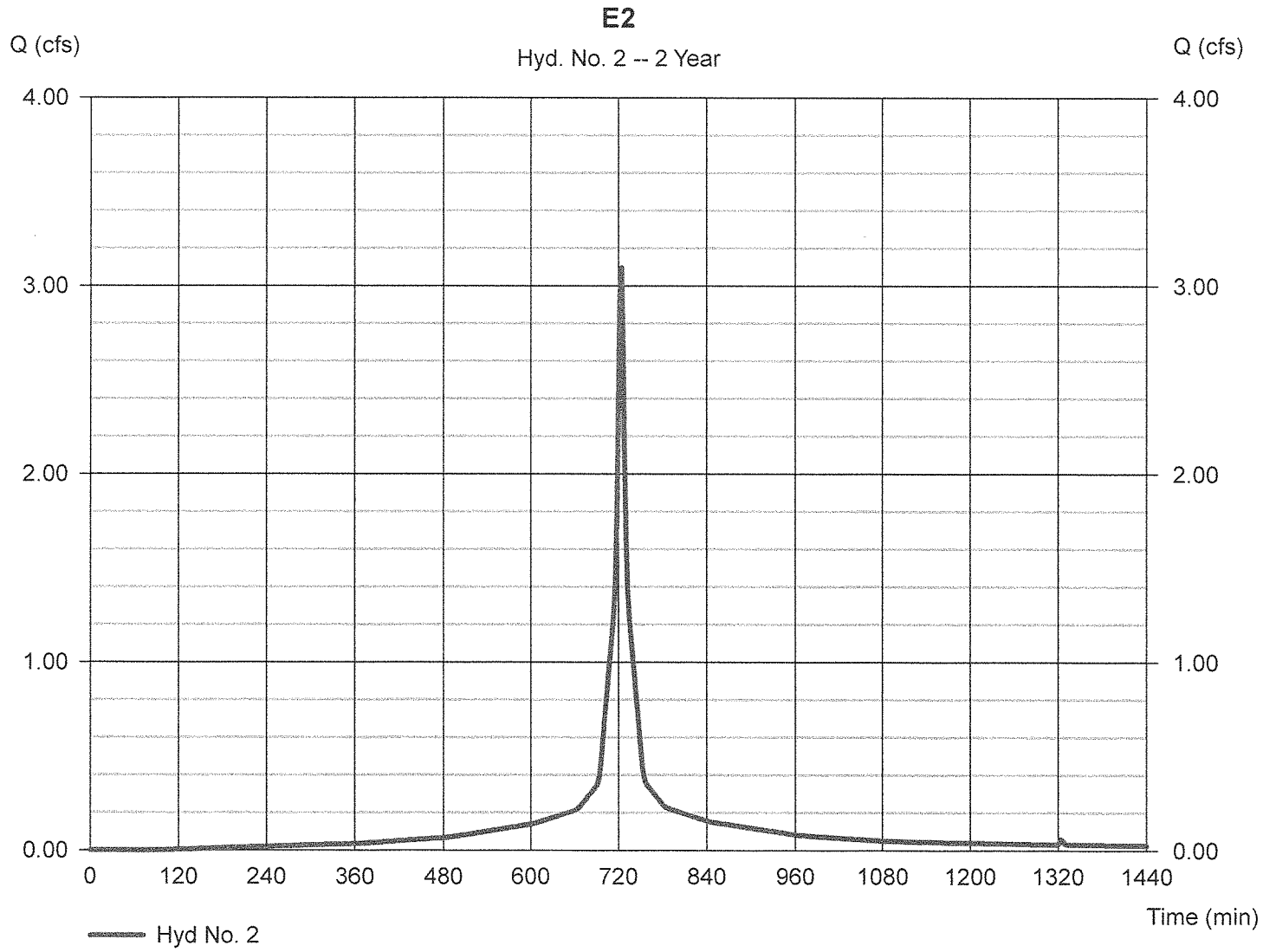
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Feb 4, 2014

Hyd. No. 2

E2

Hydrograph type	= SCS Runoff	Peak discharge	= 3.098 cfs
Storm frequency	= 2 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 10,402 cuft
Drainage area	= 1.070 ac	Curve number	= 97.9
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



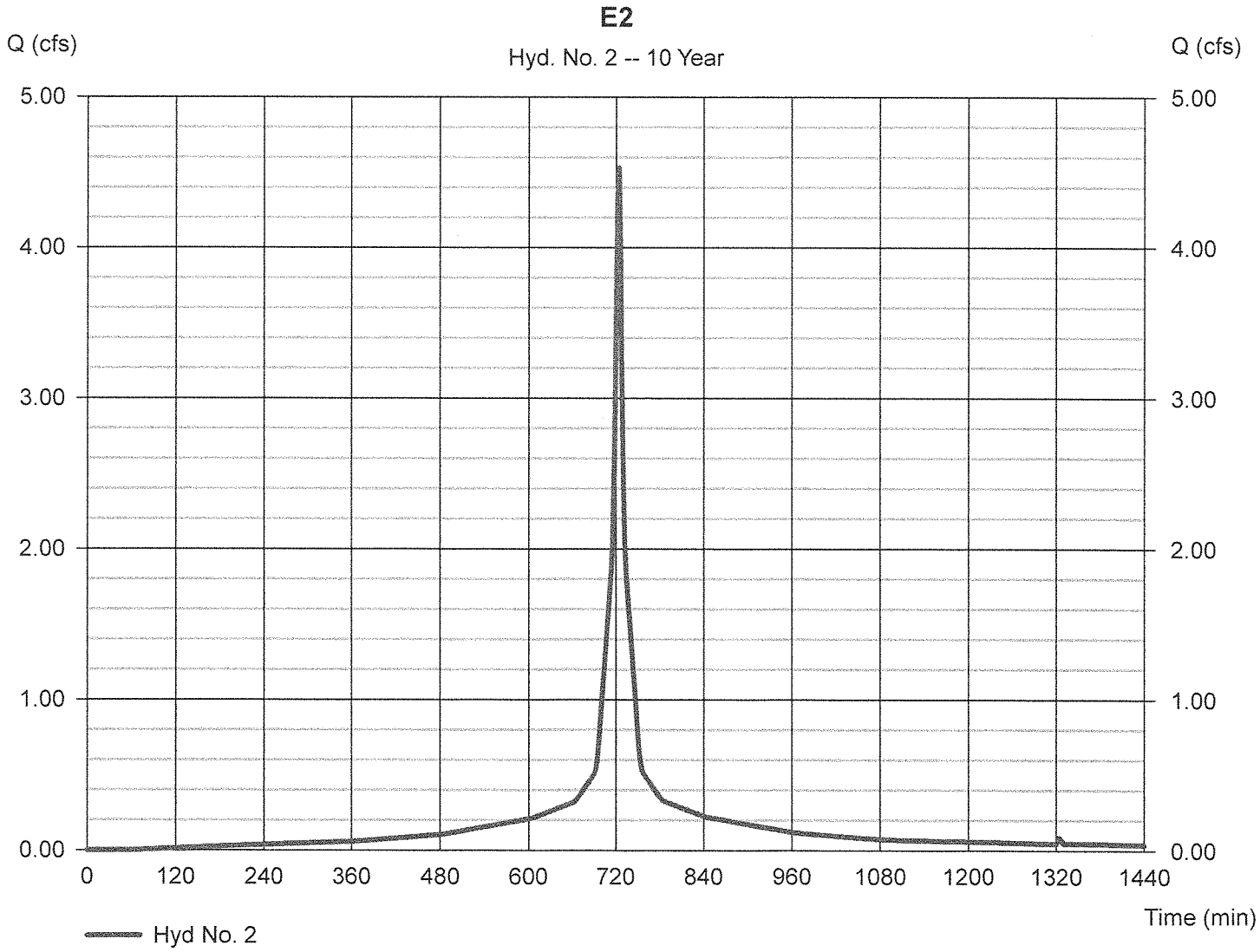
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Feb 4, 2014

Hyd. No. 2

E2

Hydrograph type	= SCS Runoff	Peak discharge	= 4.532 cfs
Storm frequency	= 10 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 15,485 cuft
Drainage area	= 1.070 ac	Curve number	= 97.9
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.50 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Worksheet 2: Runoff curve number and runoff **SM-0072B**

Project: 848 Main Street By WJH Date 01/22/14

Location: Acton, MA Checked _____ Date _____

Circle one: Present Developed Subcatchment 3

1. Runoff curve number (CN)

Soil name and hydrologic group (appendix	Cover description (cover type, treatment, and hydrologic condition: percent impervious: unconnected/connected impervious area ratio)	CN 1/ Table 2-2	CN 1/ Fig. 2-3	CN 1/ Fig. 2-4	Area Acres	Product of CN x Area
A	Woods- Good Condition	30			0.00	
A	Open Space- Good Condition	39			2.52	98.09
A	Pavement	98			0.40	39.49
A	Roof	98			0.51	50.18
A	Gravel	84			0.00	
					Totals =	3.43	187.76

1/ Use only one CN source per line.

CN (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{187.76}{3.43} = 54.74$; Use CN = 54.7

2. Runoff

		Storm #1	Storm #2	Storm #3
Frequency.....	yr	2	10	100
Rainfall, P (24-hour).....	in	3.1	4.5	6.4
Runoff, Q..... (Use P and CN with table 2-1, fig. 2-1,) or eqs. 2-3 and 2-4.)	in	0.22	0.73	1.73
Runoff, Q.....	cf	2681	9075	21551

(210-VI-TR-55, Second Ed., June 1986)

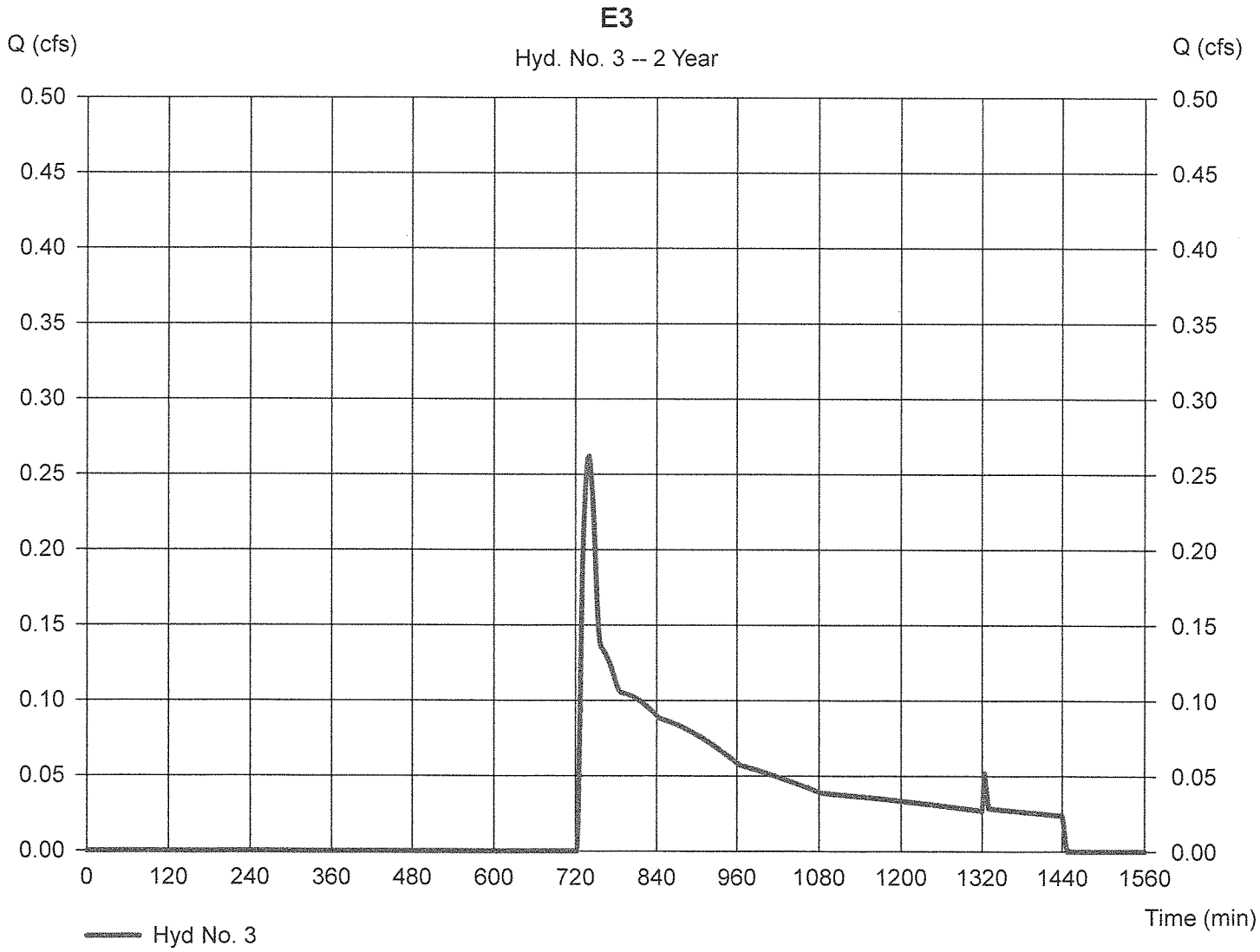
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Feb 4, 2014

Hyd. No. 3

E3

Hydrograph type	= SCS Runoff	Peak discharge	= 0.262 cfs
Storm frequency	= 2 yrs	Time to peak	= 740 min
Time interval	= 2 min	Hyd. volume	= 2,502 cuft
Drainage area	= 3.430 ac	Curve number	= 54.7
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



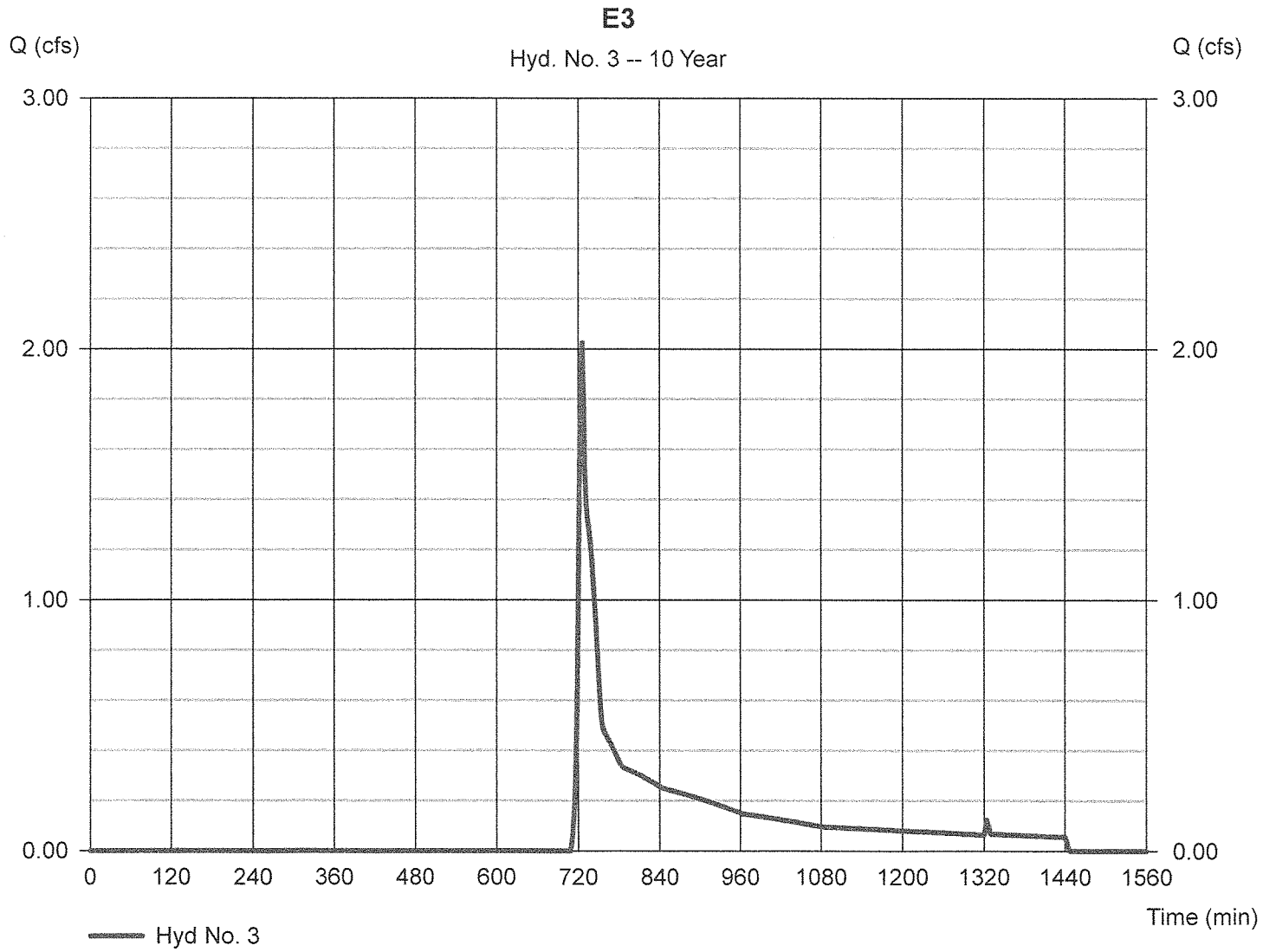
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Feb 4, 2014

Hyd. No. 3

E3

Hydrograph type	= SCS Runoff	Peak discharge	= 2.025 cfs
Storm frequency	= 10 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 8,484 cuft
Drainage area	= 3.430 ac	Curve number	= 54.7
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.50 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Worksheet 2: Runoff curve number and runoff **SM-0072B**

Project: 848 Main Street By WJH Date 01/22/14

Location: Acton, MA Checked _____ Date _____

Circle one: Present Developed Subcatchment 4

1. Runoff curve number (CN)

Soil name and hydrologic group (appendix	Cover description (cover type, treatment, and hydrologic condition: percent impervious: unconnected/connected impervious area ratio)	CN 1/ Table 2-2	CN 1/ Fig. 2-3	CN 1/ Fig. 2-4	Area Acres	Product of CN x Area
A	Woods- Good Condition	30			0.00	
A	Open Space- Good Condition	39			0.76	29.48
A	Pavement	98			0.23	22.25
A	Roof	98			1.03	100.45
A	Gravel	84			0.07	6.13
				Totals =	2.08	158.31

1/ Use only one CN source per line.

CN (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{158.31}{2.08} = 76.07$; Use CN = 76.1

2. Runoff

		Storm #1	Storm #2	Storm #3
Frequency.....	yr	2	10	100
Rainfall, P (24-hour).....	in	3.1	4.5	6.4
Runoff, Q..... (Use P and CN with table 2-1, fig. 2-1,) or eqs. 2-3 and 2-4.)	in	1.09	2.14	3.74
Runoff, Q.....	cf	8213	16134	28217

(210-VI-TR-55, Second Ed., June 1986)

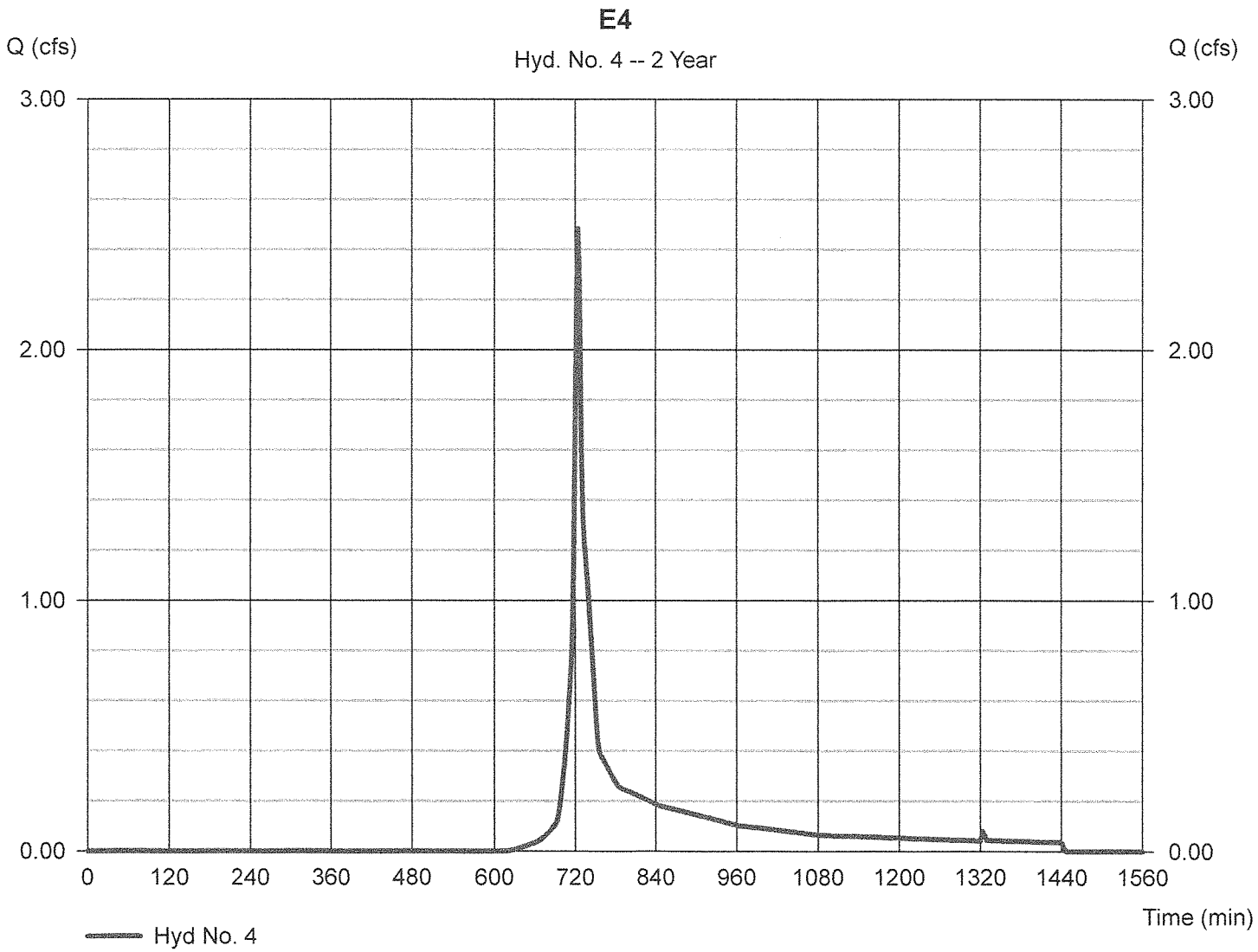
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Feb 4, 2014

Hyd. No. 4

E4

Hydrograph type	= SCS Runoff	Peak discharge	= 2.485 cfs
Storm frequency	= 2 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 7,706 cuft
Drainage area	= 2.080 ac	Curve number	= 76.1
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



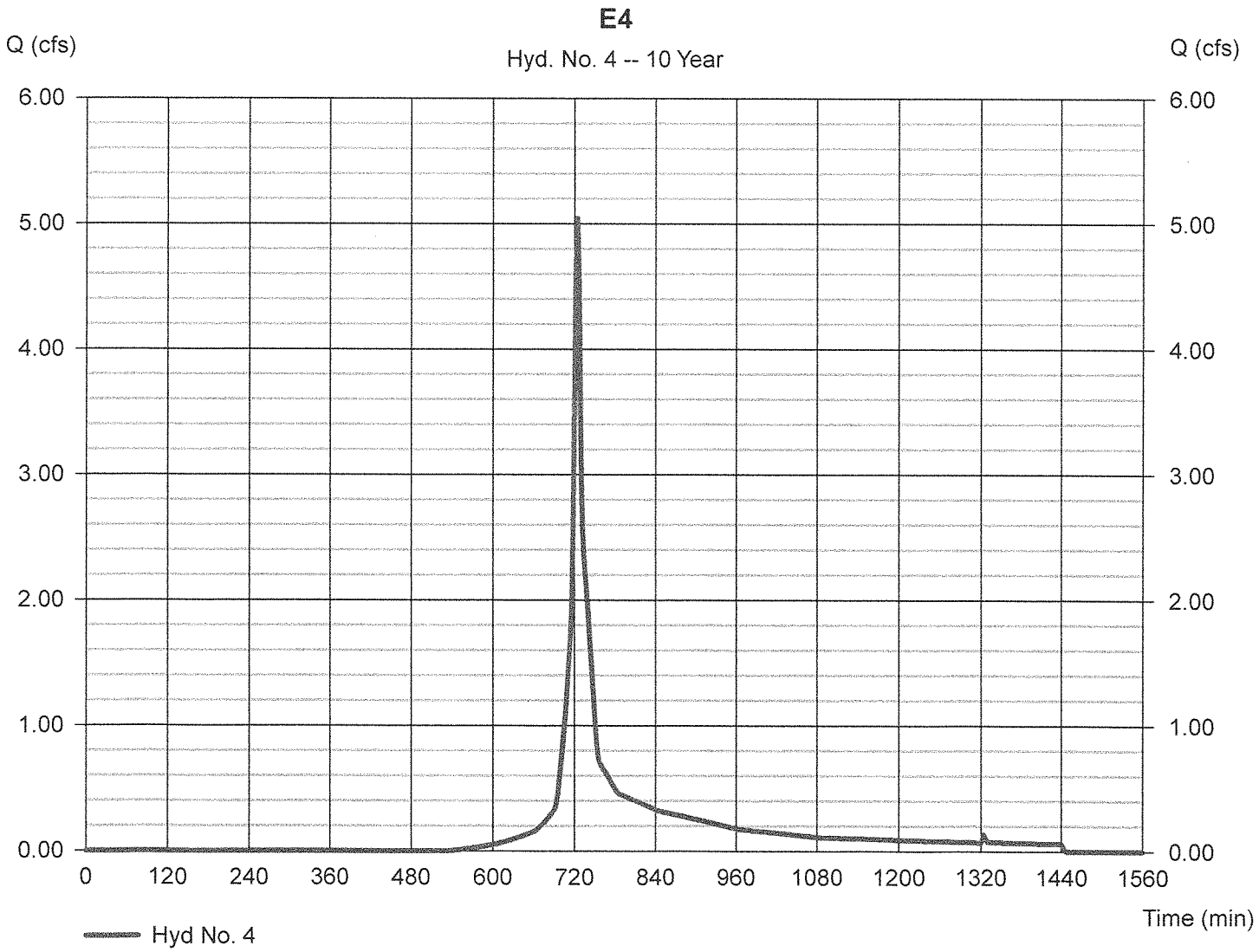
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Feb 4, 2014

Hyd. No. 4

E4

Hydrograph type	= SCS Runoff	Peak discharge	= 5.046 cfs
Storm frequency	= 10 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 15,133 cuft
Drainage area	= 2.080 ac	Curve number	= 76.1
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.50 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

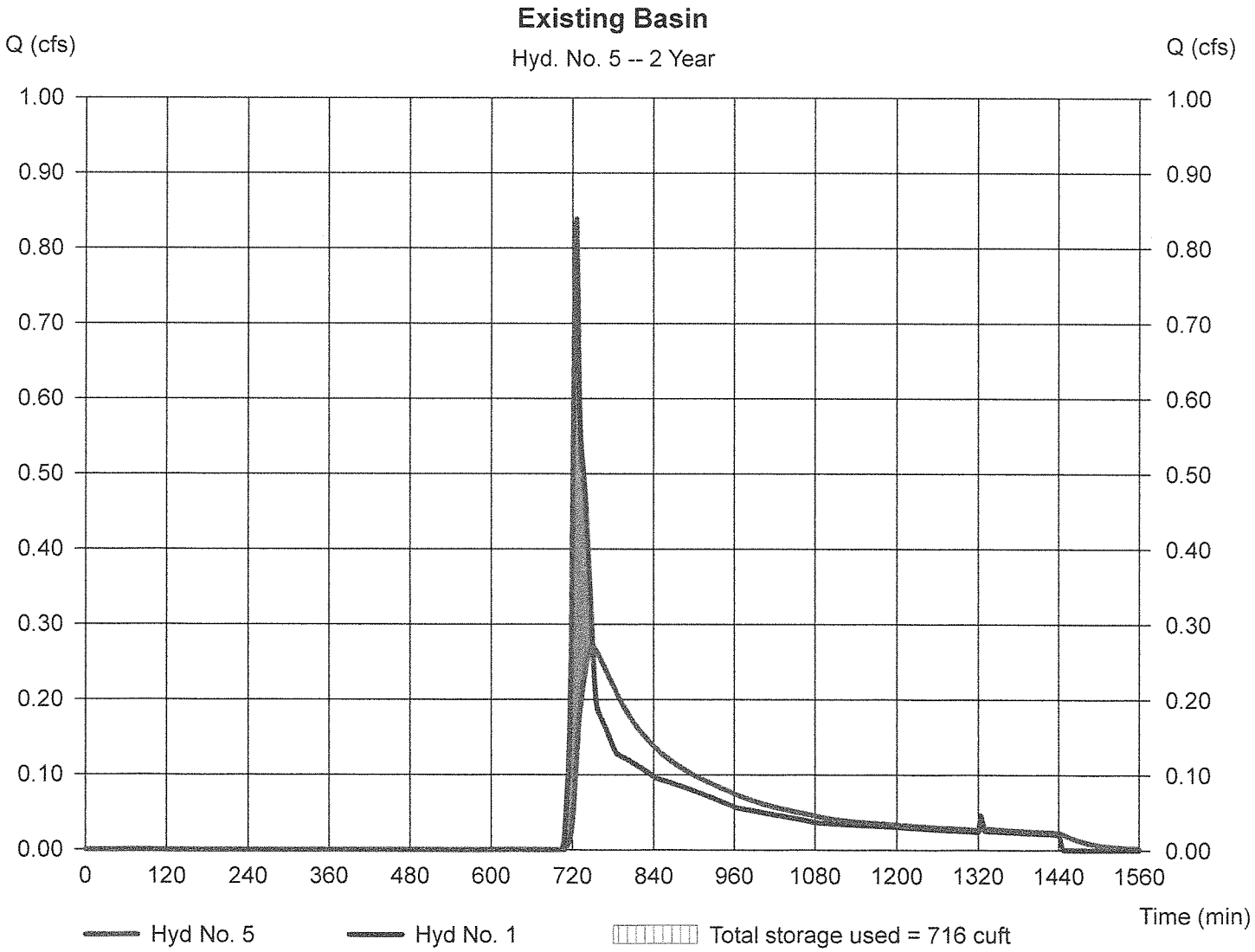
Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Feb 4, 2014

Hyd. No. 5

Existing Basin

Hydrograph type	= Reservoir	Peak discharge	= 0.270 cfs
Storm frequency	= 2 yrs	Time to peak	= 750 min
Time interval	= 2 min	Hyd. volume	= 3,311 cuft
Inflow hyd. No.	= 1 - E1	Max. Elevation	= 95.33 ft
Reservoir name	= Existing Basin	Max. Storage	= 716 cuft

Storage Indication method used. Outflow includes exfiltration.



Hydrograph Report

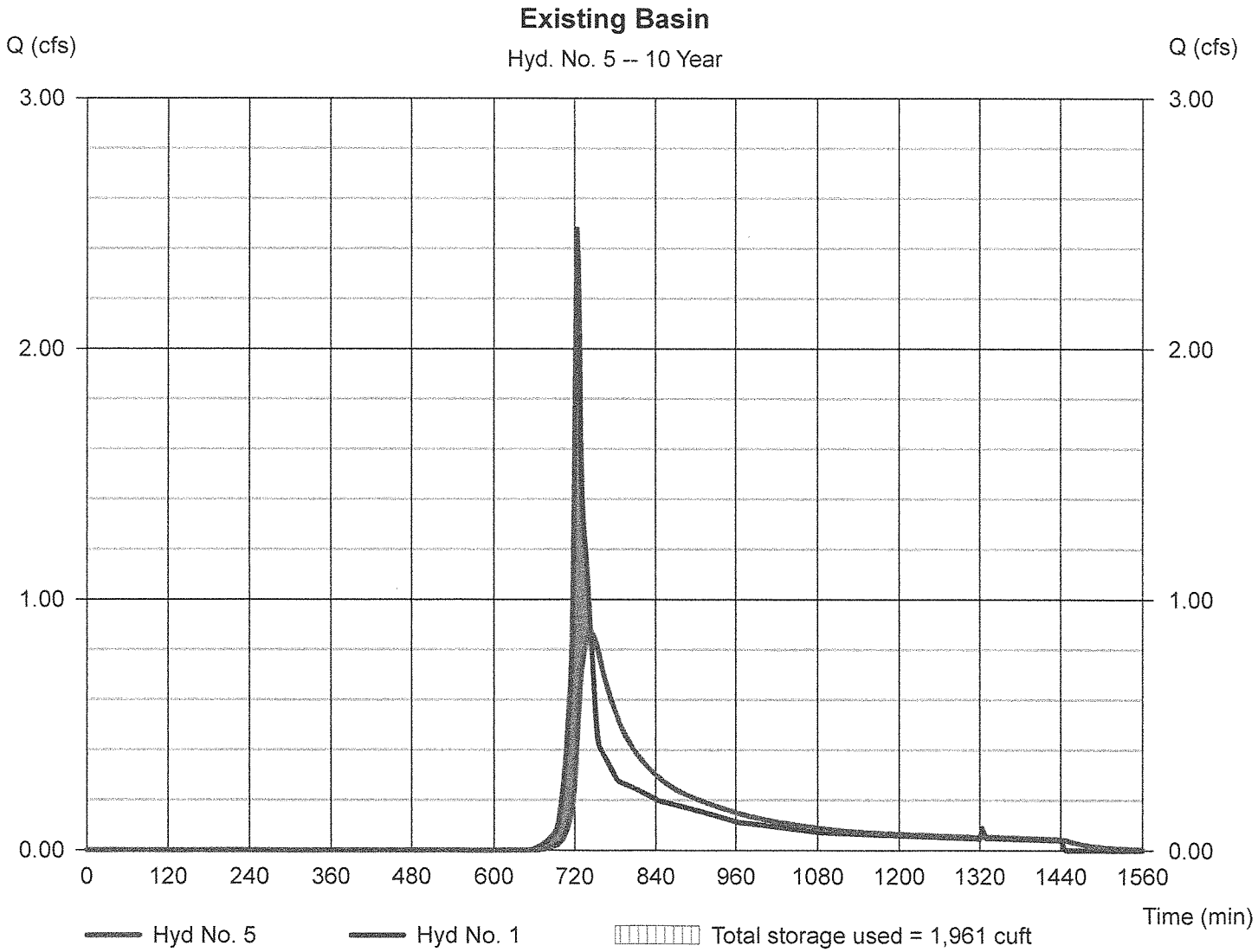
Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Feb 4, 2014

Hyd. No. 5

Existing Basin

Hydrograph type	= Reservoir	Peak discharge	= 0.872 cfs
Storm frequency	= 10 yrs	Time to peak	= 744 min
Time interval	= 2 min	Hyd. volume	= 7,959 cuft
Inflow hyd. No.	= 1 - E1	Max. Elevation	= 95.92 ft
Reservoir name	= Existing Basin	Max. Storage	= 1,961 cuft

Storage Indication method used. Outflow includes exfiltration.



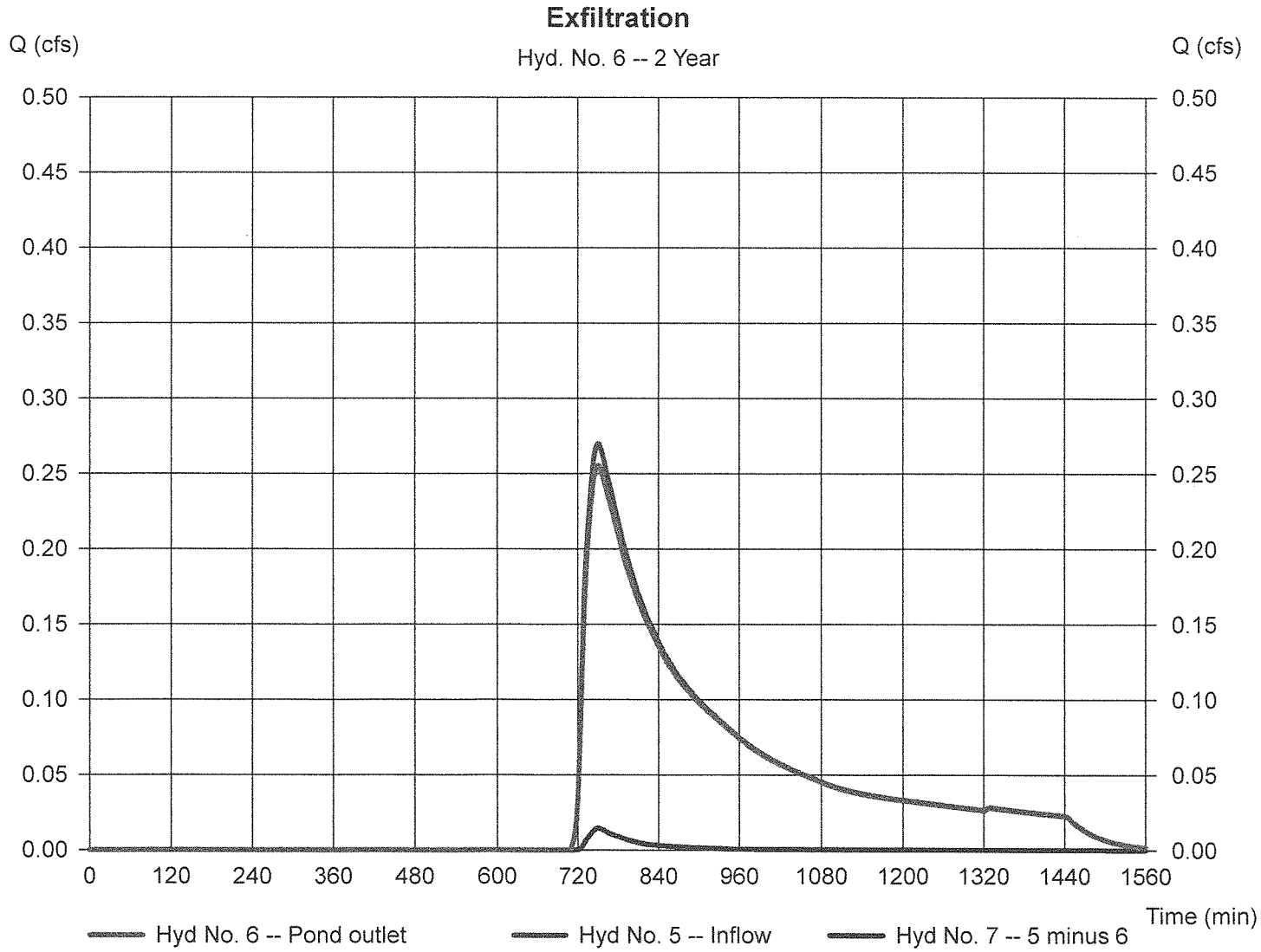
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 Tuesday, Feb 4, 2014

Hyd. No. 6

Exfiltration

Hydrograph type	=	Diversion1	Peak discharge	=	0.255 cfs
Storm frequency	=	2 yrs	Time to peak	=	750 min
Time interval	=	2 min	Hyd. volume	=	3,234 cuft
Inflow hydrograph	=	5 - Existing Basin	2nd diverted hyd.	=	7
Diversion method	=	Pond - Existing Basin	Pond structure	=	Exfiltration



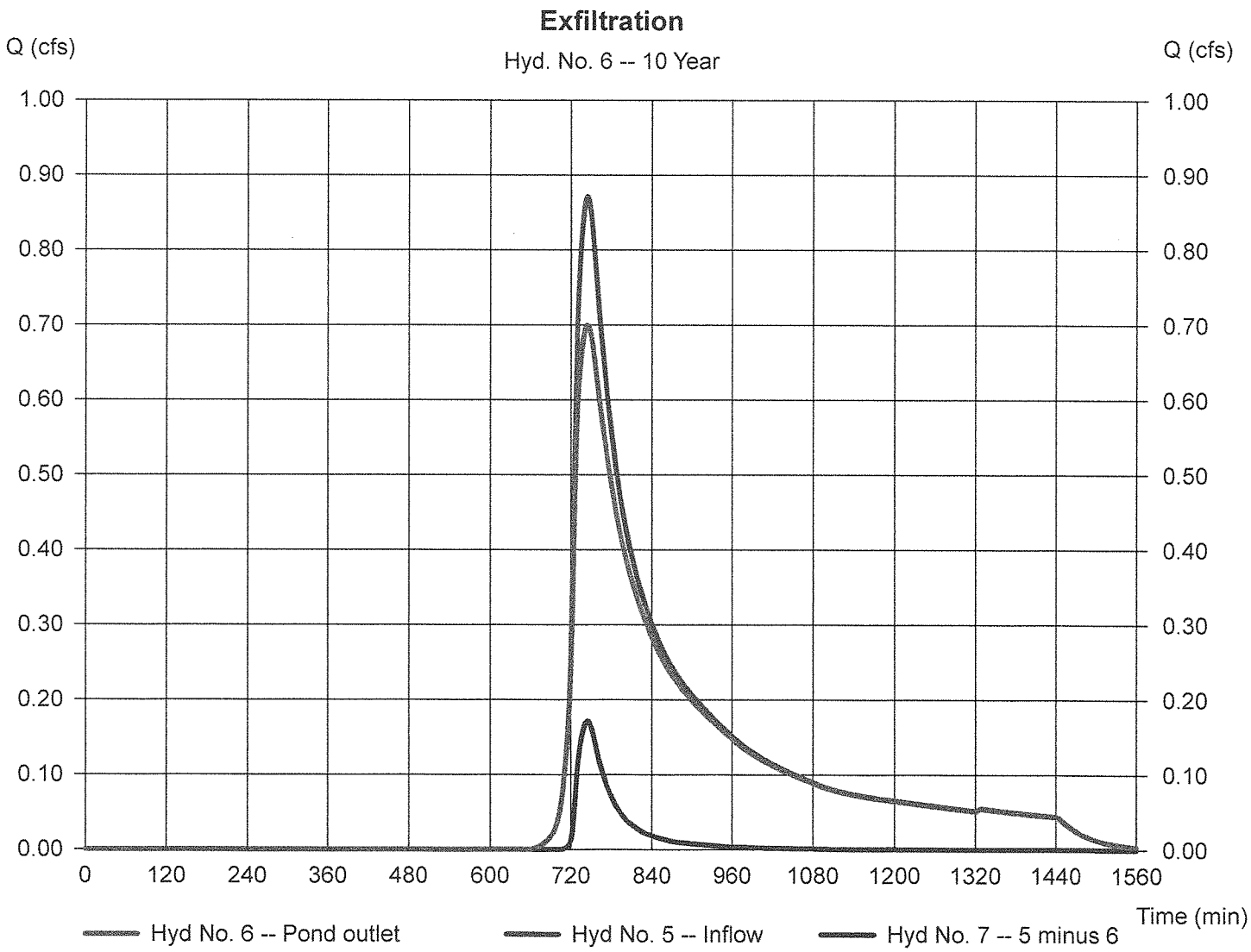
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Feb 4, 2014

Hyd. No. 6

Exfiltration

Hydrograph type	=	Diversion1	Peak discharge	=	0.700 cfs
Storm frequency	=	10 yrs	Time to peak	=	744 min
Time interval	=	2 min	Hyd. volume	=	7,309 cuft
Inflow hydrograph	=	5 - Existing Basin	2nd diverted hyd.	=	7
Diversion method	=	Pond - Existing Basin	Pond structure	=	Exfiltration



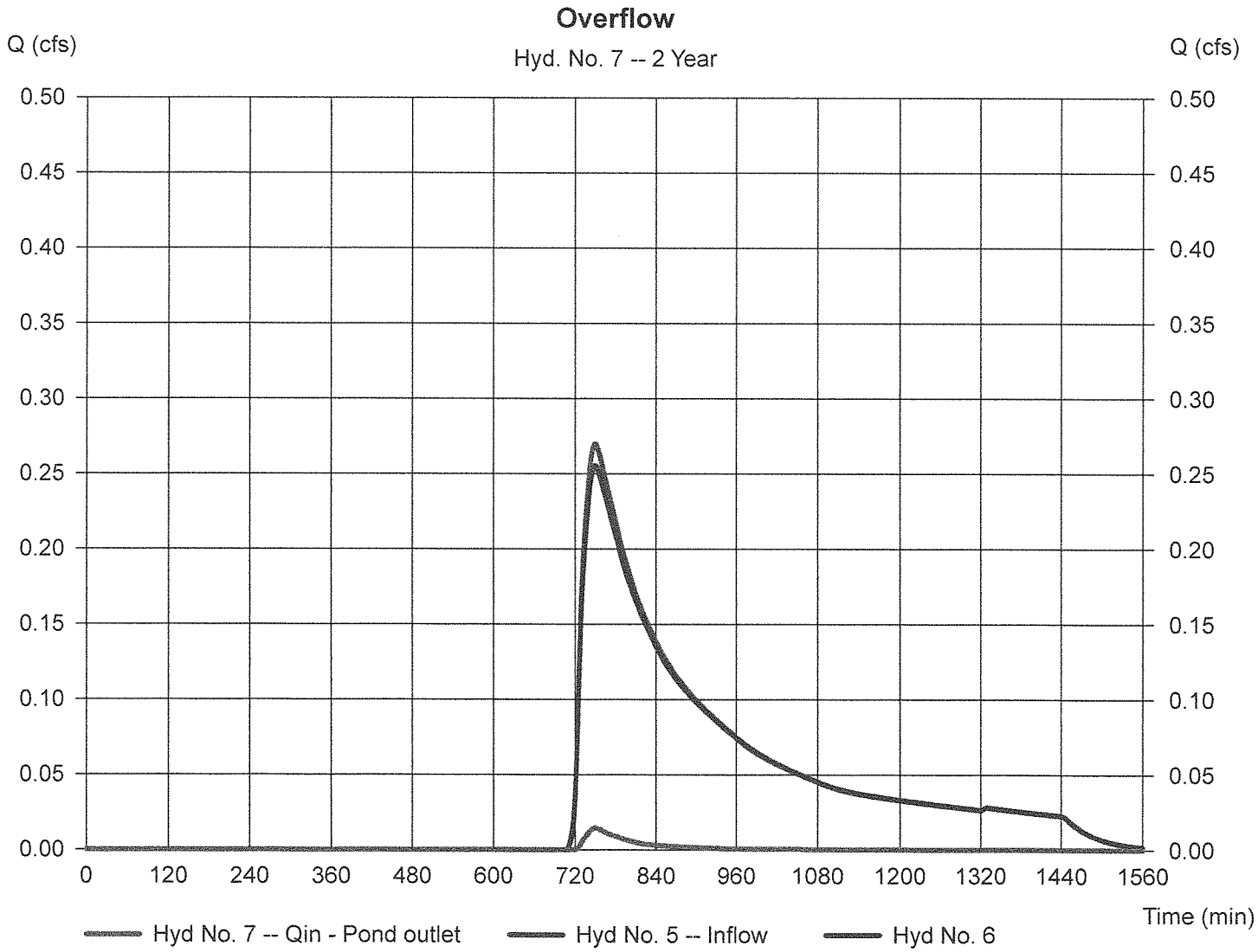
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 Tuesday, Feb 4, 2014

Hyd. No. 7

Overflow

Hydrograph type	=	Diversion2	Peak discharge	=	0.015 cfs
Storm frequency	=	2 yrs	Time to peak	=	750 min
Time interval	=	2 min	Hyd. volume	=	77 cuft
Inflow hydrograph	=	5 - Existing Basin	2nd diverted hyd.	=	6
Diversion method	=	Pond - Existing Basin	Pond structure	=	Exfiltration



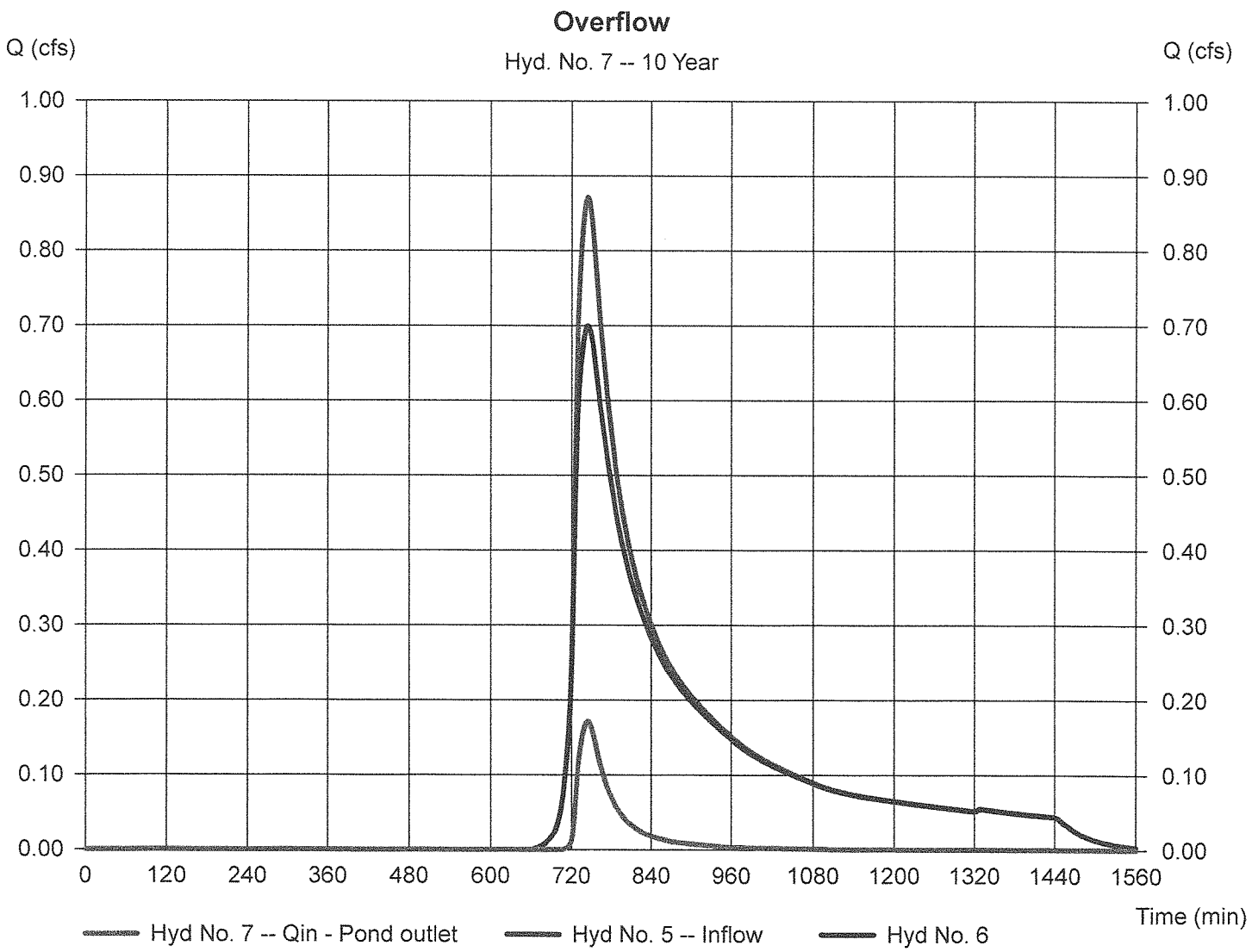
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 Tuesday, Feb 4, 2014

Hyd. No. 7

Overflow

Hydrograph type	=	Diversion2	Peak discharge	=	0.172 cfs
Storm frequency	=	10 yrs	Time to peak	=	744 min
Time interval	=	2 min	Hyd. volume	=	650 cuft
Inflow hydrograph	=	5 - Existing Basin	2nd diverted hyd.	=	6
Diversion method	=	Pond - Existing Basin	Pond structure	=	Exfiltration



Pond Report

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Feb 4, 2014

Pond No. 1 - Existing Basin

Pond Data

Contours - User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 95.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	95.00	728	0	0
1.00	96.00	3,990	2,140	2,140
2.00	97.00	4,847	4,411	6,552
3.00	98.00	8,291	6,492	13,044

Culvert / Orifice Structures

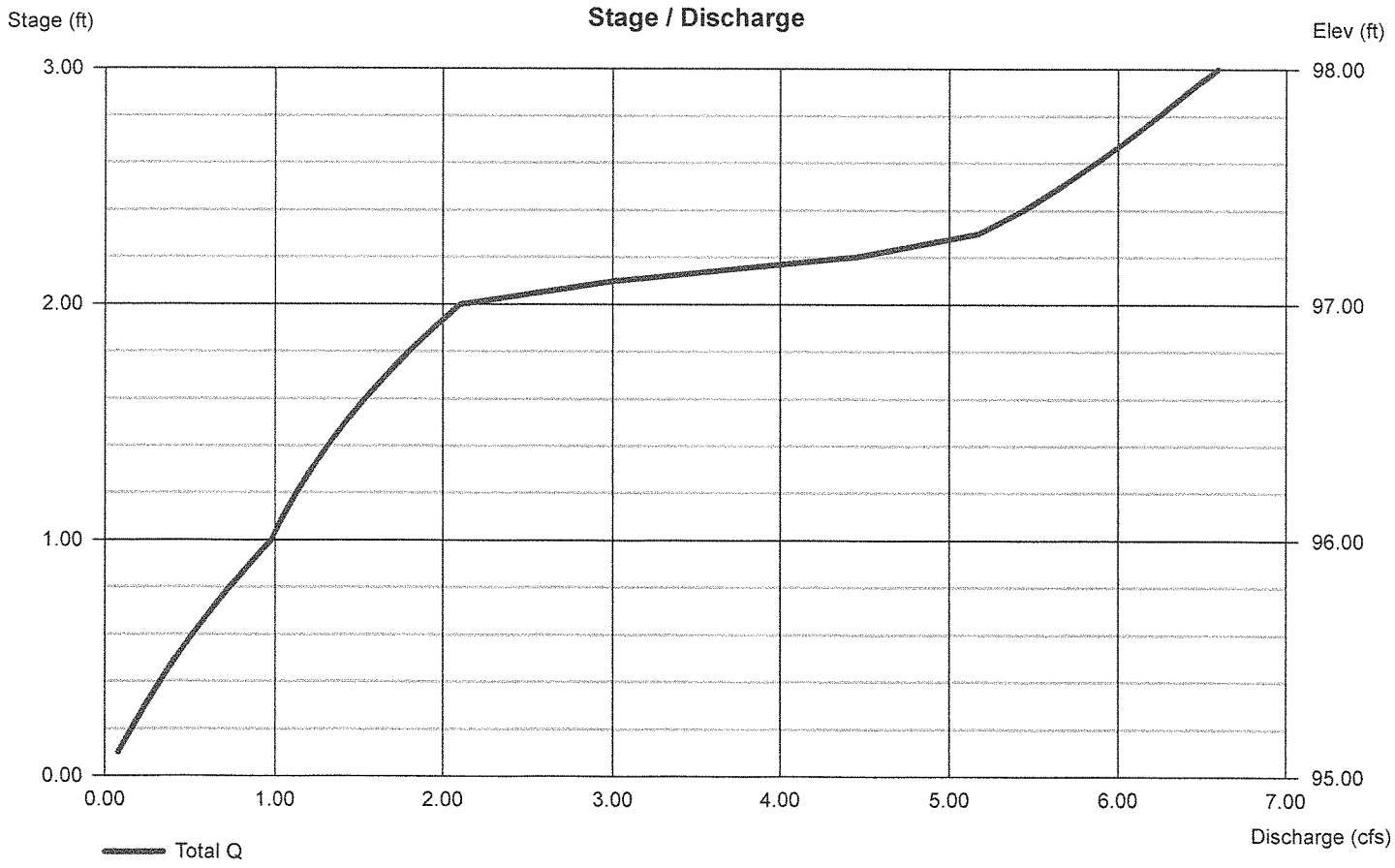
	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 12.00	0.00	0.00	0.00
Span (in)	= 12.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 95.00	0.00	0.00	0.00
Length (ft)	= 68.00	0.00	0.00	0.00
Slope (%)	= 0.44	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 8.00	0.00	0.00	0.00
Crest El. (ft)	= 97.00	95.00	0.00	0.00
Weir Coeff.	= 3.33	0.22	3.33	3.33
Weir Type	= Riser	10 degV	---	---
Multi-Stage	= Yes	Yes	No	No

Exfil.(in/hr) = 8.270 (by Contour)
TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



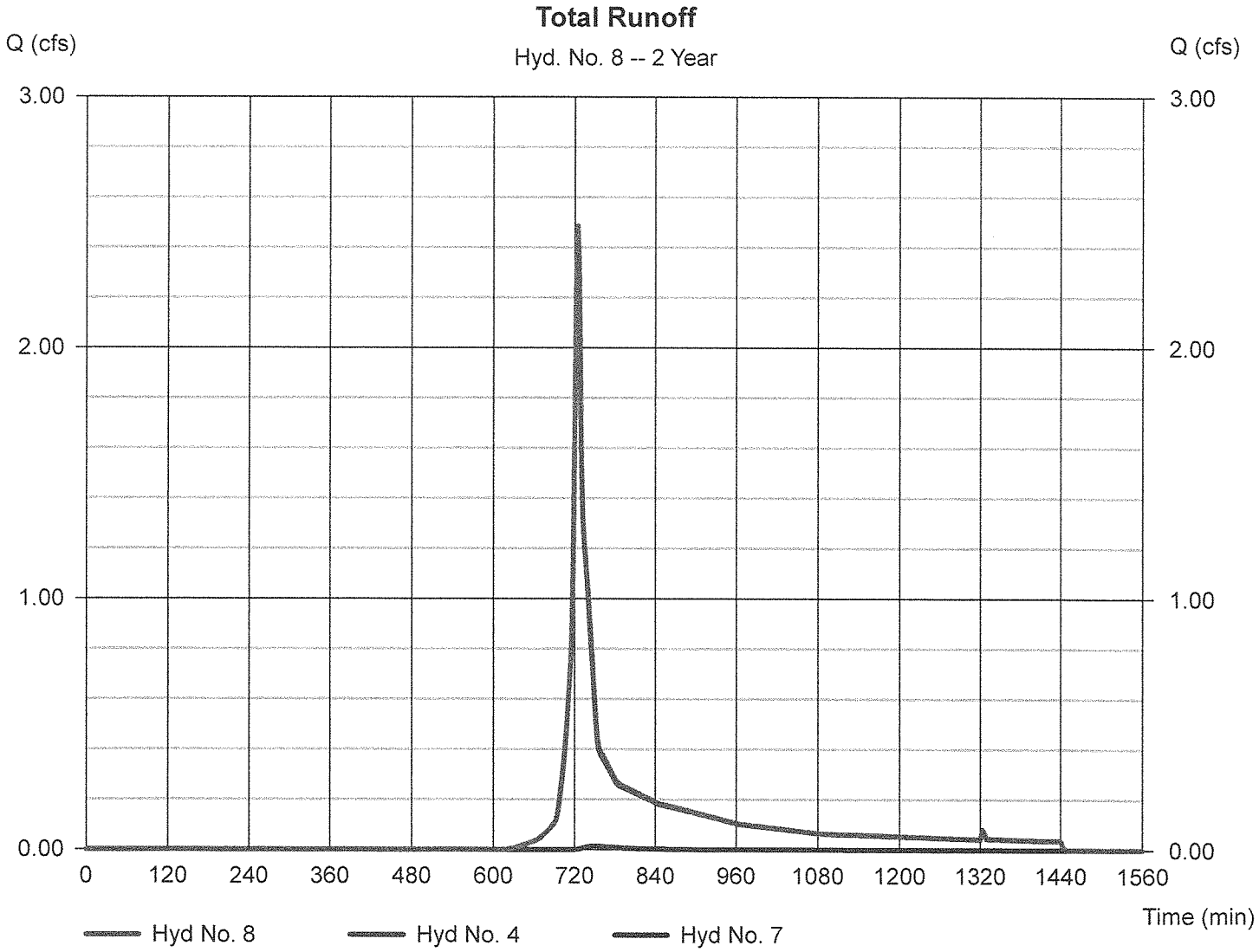
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 Tuesday, Feb 4, 2014

Hyd. No. 8

Total Runoff

Hydrograph type	= Combine	Peak discharge	= 2.486 cfs
Storm frequency	= 2 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 7,783 cuft
Inflow hyds.	= 4, 7	Contrib. drain. area	= 2.080 ac



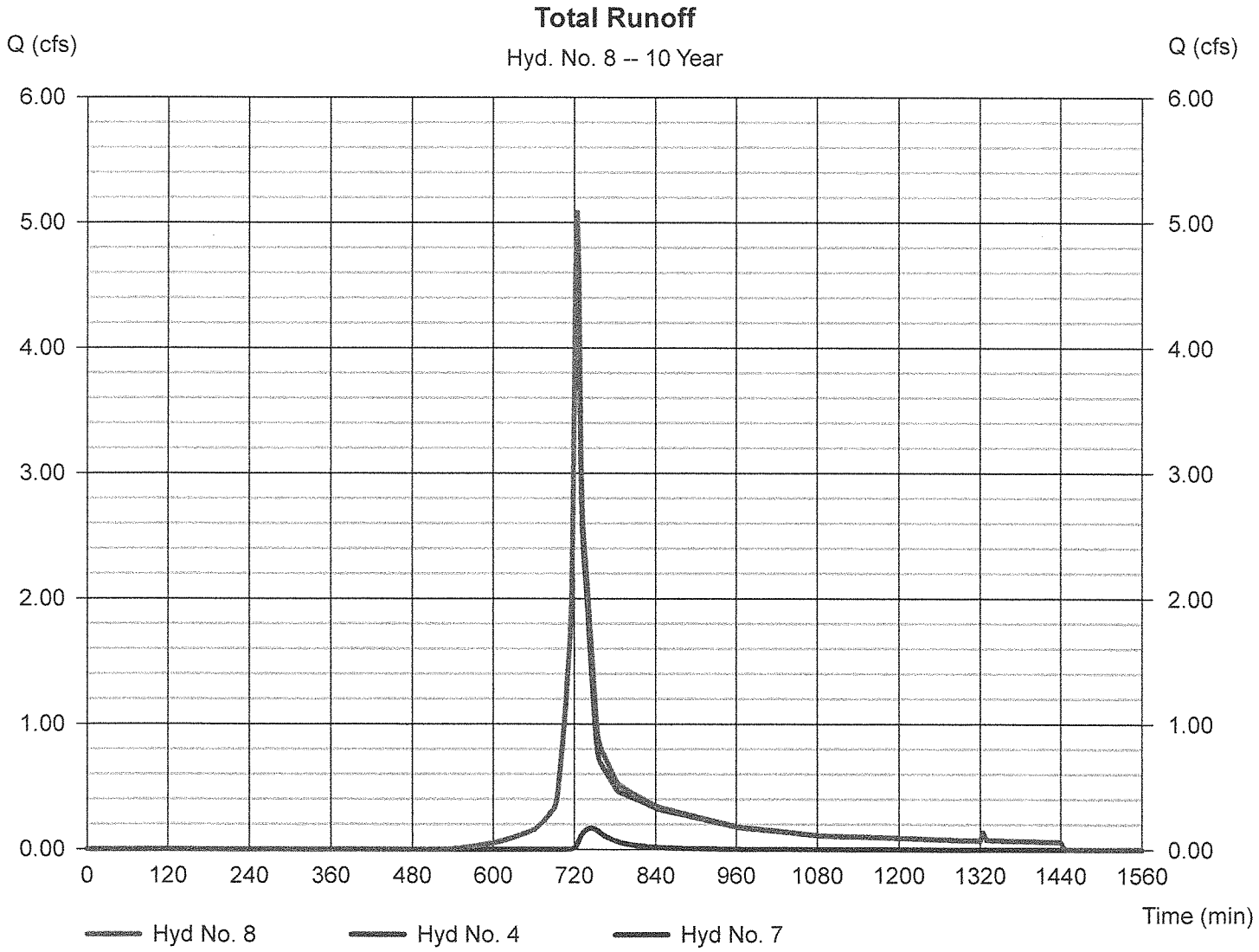
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 Tuesday, Feb 4, 2014

Hyd. No. 8

Total Runoff

Hydrograph type	= Combine	Peak discharge	= 5.087 cfs
Storm frequency	= 10 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 15,783 cuft
Inflow hyds.	= 4, 7	Contrib. drain. area	= 2.080 ac



Post Development

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.2

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	1.644	2	724	5,322	----	------	------	P1
2	SCS Runoff	3.098	2	724	10,402	----	------	------	P2
3	SCS Runoff	0.496	2	728	3,545	----	------	------	P3
4	SCS Runoff	1.609	2	724	4,902	----	------	------	P4
5	Reservoir	0.546	2	746	5,319	1	95.63	1,340	Existing Basin
6	Diversion1	0.478	2	746	5,051	5	------	------	Exfiltration
7	Diversion2	0.067	2	746	269	5	------	------	Overflow
8	Combine	1.949	2	726	8,447	3, 4,	------	------	To Fire Pond

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.2

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	3.648	2	724	11,064	----	------	------	P1
2	SCS Runoff	4.532	2	724	15,485	----	------	------	P2
3	SCS Runoff	2.806	2	724	10,496	----	------	------	P3
4	SCS Runoff	3.110	2	724	9,295	----	------	------	P4
5	Reservoir	1.133	2	744	11,062	1	96.20	3,031	Existing Basin
6	Diversion1	0.797	2	744	9,632	5	------	------	Exfiltration
7	Diversion2	0.336	2	744	1,430	5	------	------	Overflow
8	Combine	5.916	2	724	19,791	3, 4,	------	------	To Fire Pond

Worksheet 2: Runoff curve number and runoff **SM-0072B**

Project: 848 Main Street By WJH Date 01/22/14

Location: Acton, MA Checked _____ Date _____

Circle one: Present Developed Subcatchment 1

1. Runoff curve number (CN)

Soil name and hydrologic group (appendix	Cover description (cover type, treatment, and hydrologic condition: percent impervious: unconnected/connected impervious area ratio)	CN 1/ Table 2-2	CN 1/ Fig. 2-3	CN 1/ Fig. 2-4	Area Acres	Product of CN x Area
A	Woods- Good Condition	30			0.00	
A	Open Space- Good Condition	39			0.76	29.56
A	Pavement	98			0.99	97.41
A	Roof	98			0.00	
A	Gravel	84			0.00	
					Totals = 1.75	126.97

1/ Use only one CN source per line.

CN (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{126.97}{1.75} = 72.47$; Use CN = 72.5

2. Runoff

		Storm #1	Storm #2	Storm #3
Frequency.....	yr	2	10	100
Rainfall, P (24-hour).....	in	3.1	4.5	6.4
Runoff, Q..... (Use P and CN with table 2-1, fig. 2-1,) or eqs. 2-3 and 2-4.)	in	0.89	1.86	3.37
Runoff, Q.....	cf	5675	11803	21437

(210-VI-TR-55, Second Ed., June 1986)

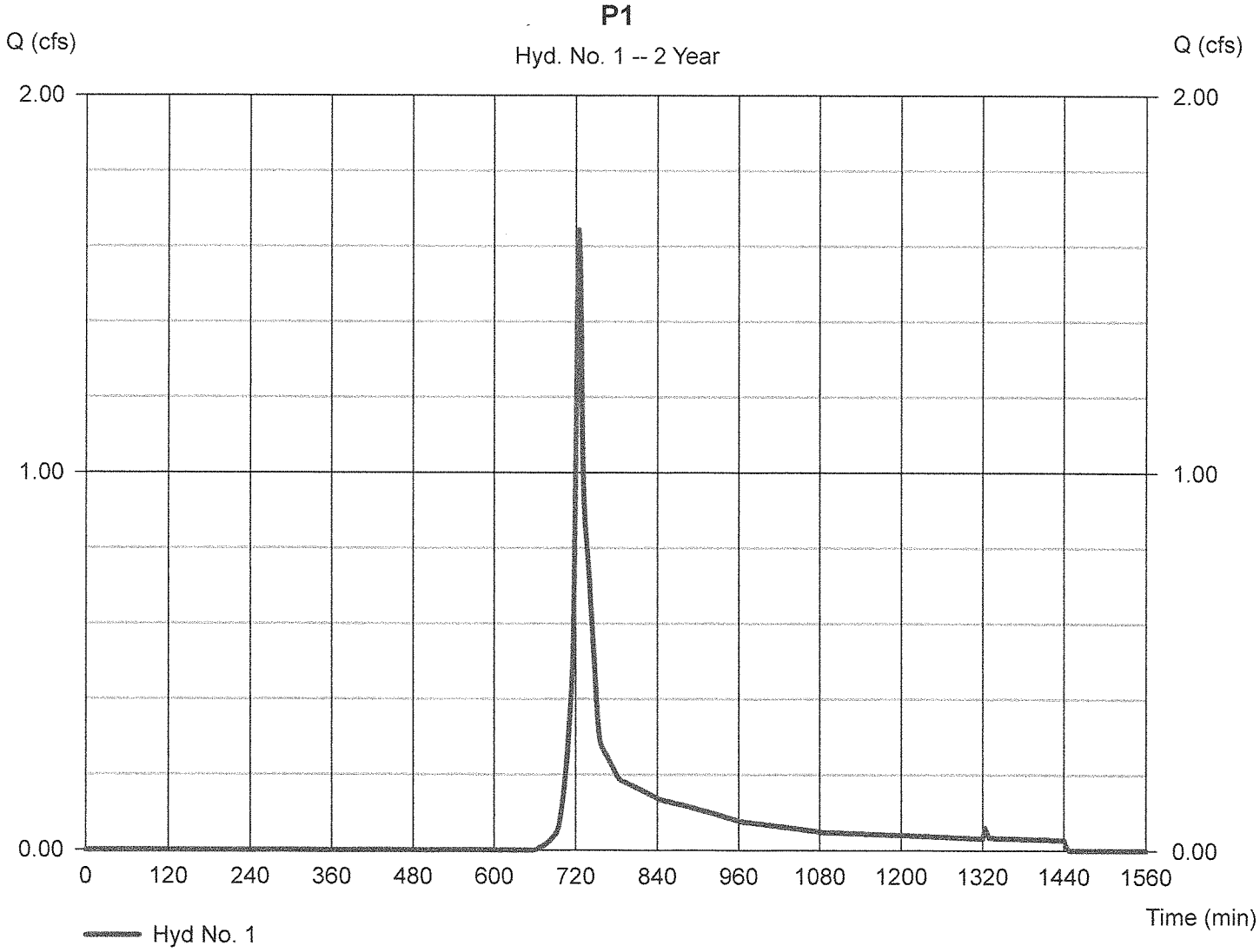
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Feb 4, 2014

Hyd. No. 1

P1

Hydrograph type	= SCS Runoff	Peak discharge	= 1.644 cfs
Storm frequency	= 2 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 5,322 cuft
Drainage area	= 1.750 ac	Curve number	= 72.5
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



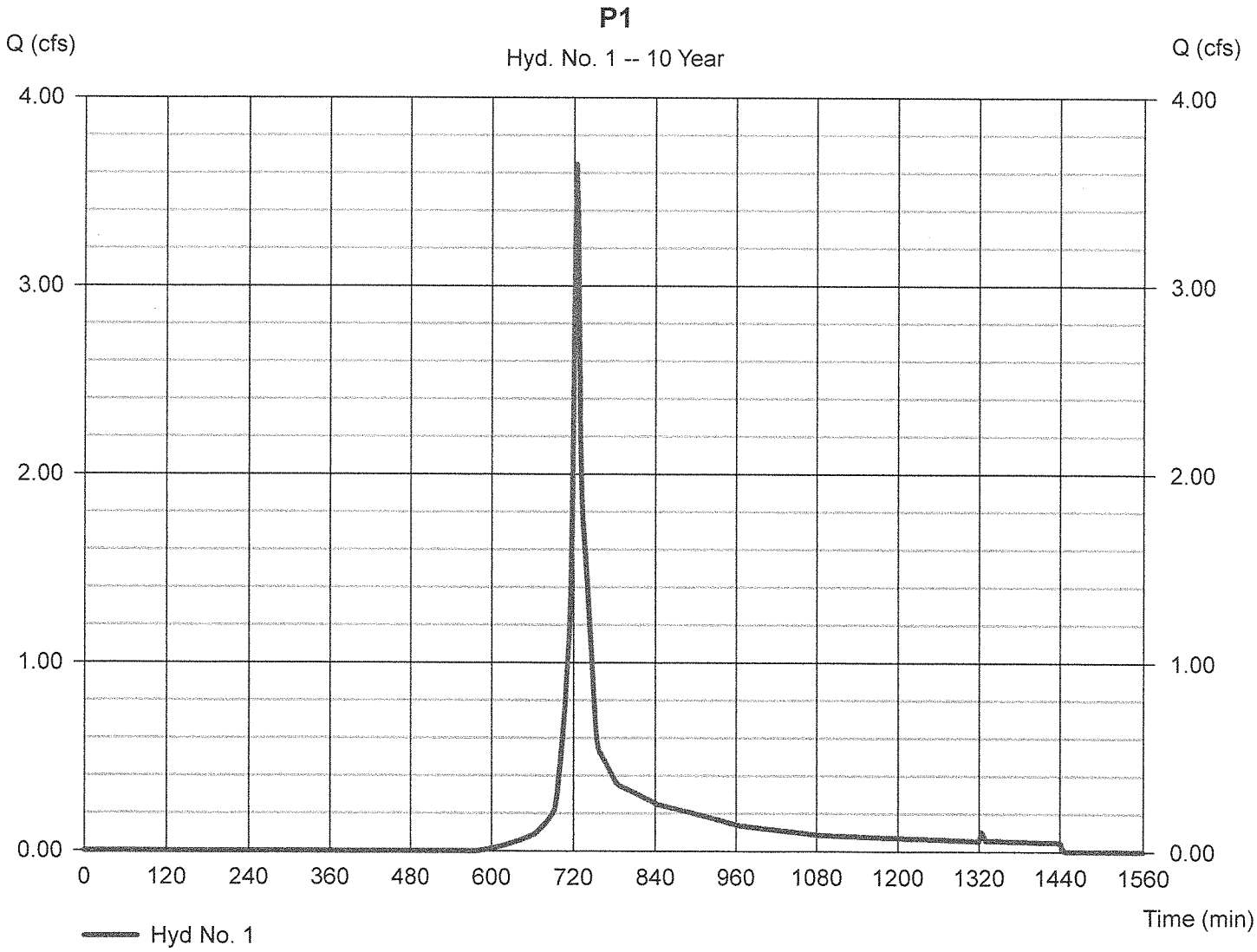
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Feb 4, 2014

Hyd. No. 1

P1

Hydrograph type	= SCS Runoff	Peak discharge	= 3.648 cfs
Storm frequency	= 10 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 11,064 cuft
Drainage area	= 1.750 ac	Curve number	= 72.5
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.50 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Worksheet 2: Runoff curve number and runoff **SM-0072B**

Project: 848 Main Street By WJH Date 01/22/14

Location: Acton, MA Checked _____ Date _____

Circle one: Present Developed Subcatchment 2

1. Runoff curve number (CN)

Soil name and hydrologic group (appendix	Cover description (cover type, treatment, and hydrologic condition: percent impervious: unconnected/connected impervious area ratio)	CN 1/ Table 2-2	CN 1/ Fig. 2-3	CN 1/ Fig. 2-4	Area Acres	Product of CN x Area
A	Woods- Good Condition	30			0.00	
A	Open Space- Good Condition	39			0.00	0.04
A	Pavement	98			0.27	26.56
A	Roof	98			0.79	77.81
A	Gravel	84			0.00	
					Totals = 1.07	104.41

1/ Use only one CN source per line.

CN (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{104.41}{1.07} = 97.94$; Use CN = 97.9

2. Runoff

		Storm #1	Storm #2	Storm #3
Frequency.....	yr	2	10	100
Rainfall, P (24-hour).....	in	3.1	4.5	6.4
Runoff, Q..... (Use P and CN with table 2-1, fig. 2-1,) or eqs. 2-3 and 2-4.)	in	2.86	4.26	6.15
Runoff, Q.....	cf	11073	16475	23817

(210-VI-TR-55, Second Ed., June 1986)

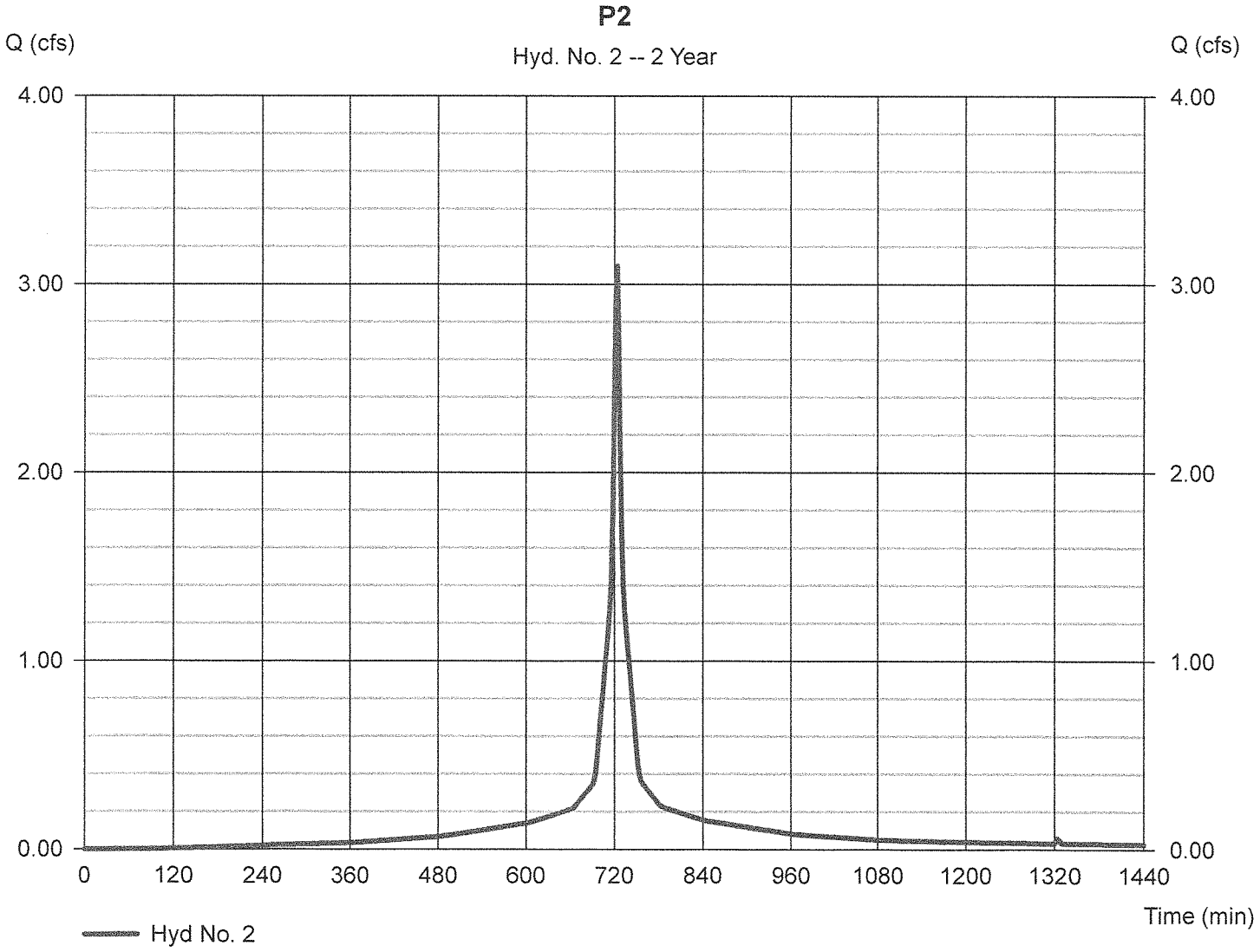
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Feb 4, 2014

Hyd. No. 2

P2

Hydrograph type	= SCS Runoff	Peak discharge	= 3.098 cfs
Storm frequency	= 2 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 10,402 cuft
Drainage area	= 1.070 ac	Curve number	= 97.9
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



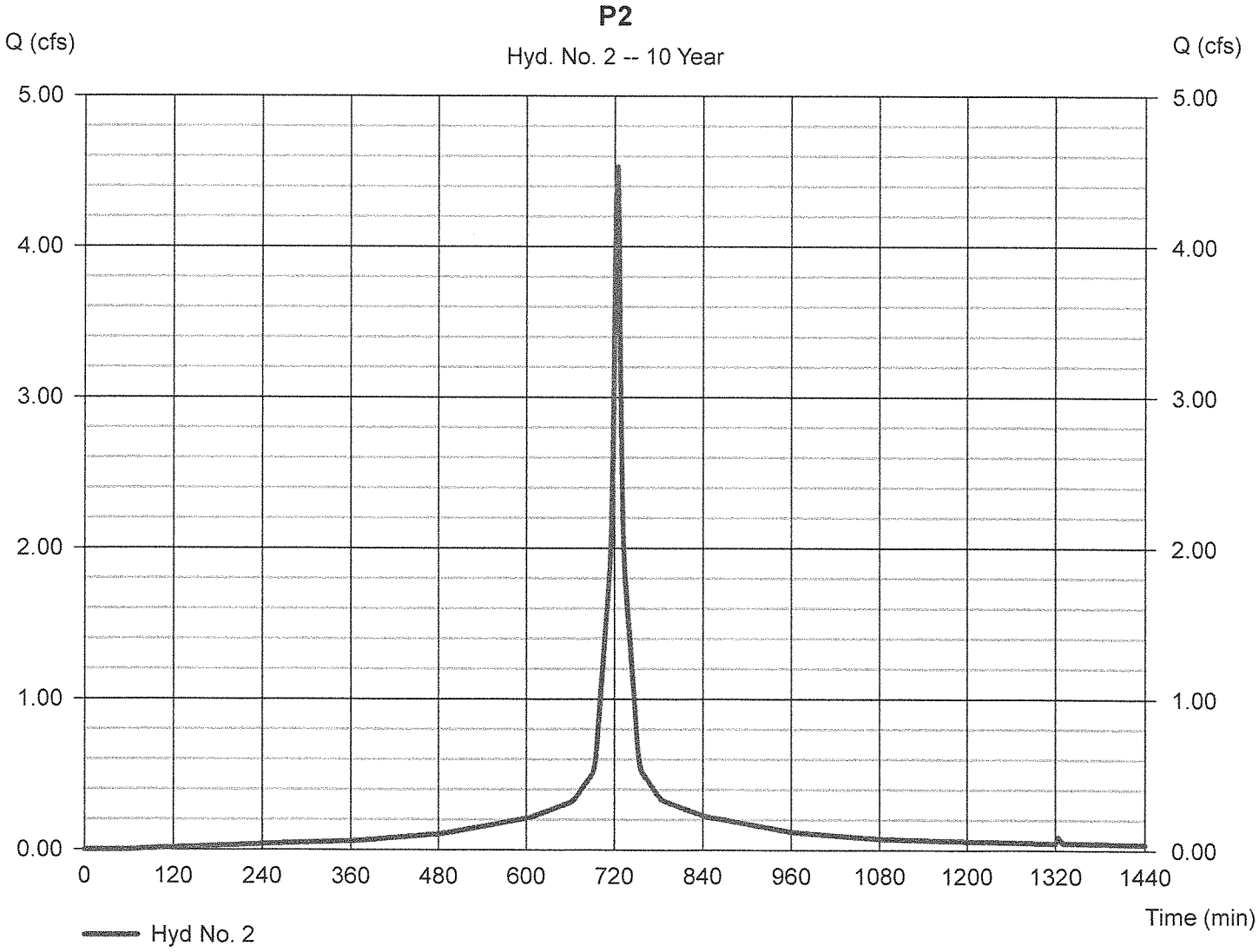
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Feb 4, 2014

Hyd. No. 2

P2

Hydrograph type	= SCS Runoff	Peak discharge	= 4.532 cfs
Storm frequency	= 10 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 15,485 cuft
Drainage area	= 1.070 ac	Curve number	= 97.9
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.50 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Worksheet 2: Runoff curve number and runoff **SM-0072B**

Project: 848 Main Street By WJH Date 01/22/14

Location: Acton, MA Checked _____ Date _____

Circle one: Present Developed Subcatchment 3

1. Runoff curve number (CN)

Soil name and hydrologic group (appendix	Cover description (cover type, treatment, and hydrologic condition: percent impervious: unconnected/connected impervious area ratio)	CN 1/ Table 2-2	CN 1/ Fig. 2-3	CN 1/ Fig. 2-4	Area Acres	Product of CN x Area
A	Woods- Good Condition	30			0.00	
A	Open Space- Good Condition	39			2.32	90.48
A	Pavement	98			0.56	54.39
A	Roof	98			0.51	50.18
A	Gravel	84			0.04	3.19
	Totals =				3.43	198.24

1/ Use only one CN source per line.

CN (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{198.24}{3.43} = 57.88$; Use CN = 57.9

2. Runoff

		Storm #1	Storm #2	Storm #3
Frequency.....	yr	2	10	100
Rainfall, P (24-hour).....	in	3.1	4.5	6.4
Runoff, Q..... (Use P and CN with table 2-1, fig. 2-1,) or eqs. 2-3 and 2-4.)	in	0.30	0.90	2.00
Runoff, Q.....	cf	3769	11165	24871

(210-VI-TR-55, Second Ed., June 1986)

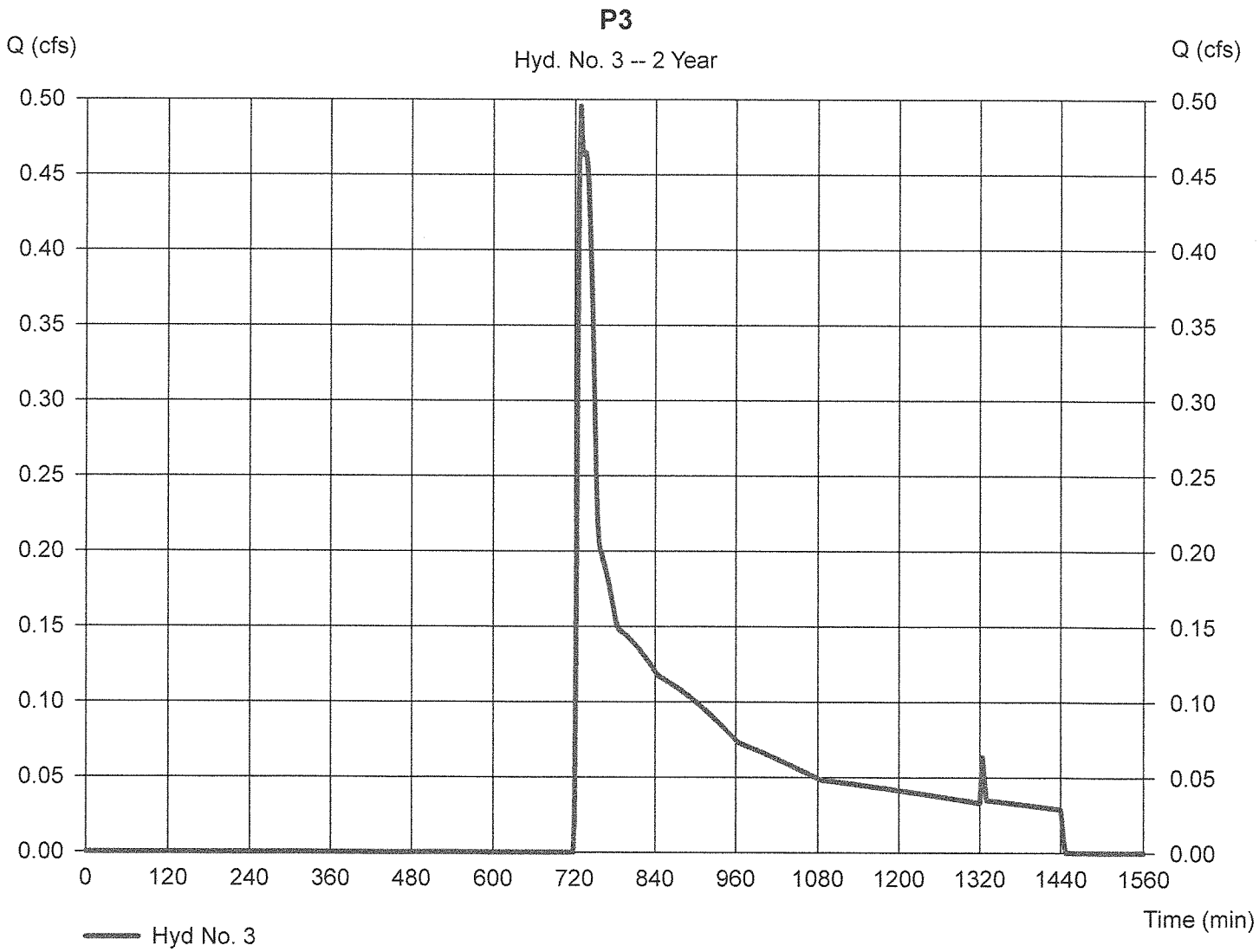
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Feb 4, 2014

Hyd. No. 3

P3

Hydrograph type	= SCS Runoff	Peak discharge	= 0.496 cfs
Storm frequency	= 2 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 3,545 cuft
Drainage area	= 3.430 ac	Curve number	= 57.9
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



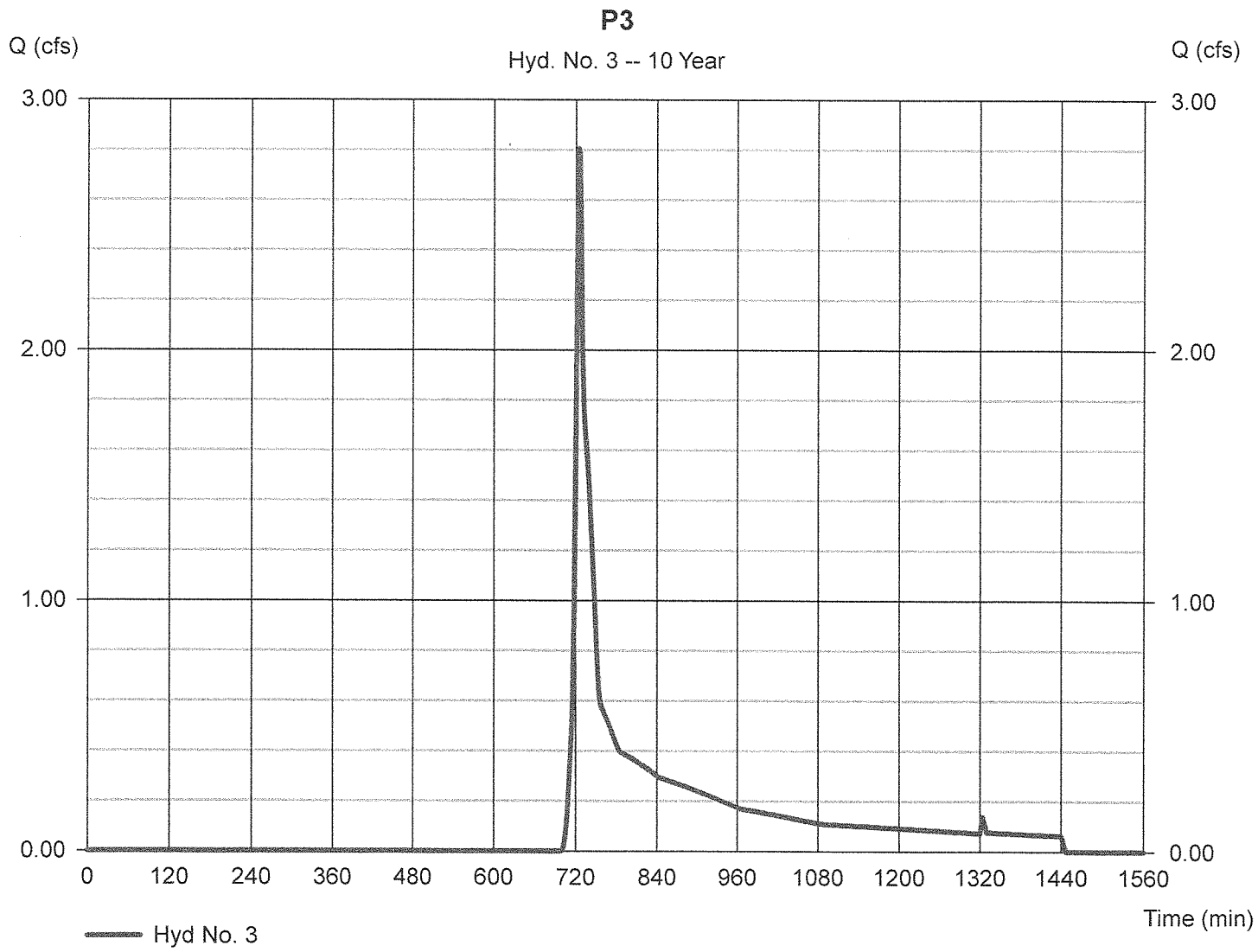
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Feb 4, 2014

Hyd. No. 3

P3

Hydrograph type	= SCS Runoff	Peak discharge	= 2.806 cfs
Storm frequency	= 10 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 10,496 cuft
Drainage area	= 3.430 ac	Curve number	= 57.9
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.50 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Worksheet 2: Runoff curve number and runoff **SM-0072B**

Project: 848 Main Street By WJH Date 01/22/14

Location: Acton, MA Checked _____ Date _____

Circle one: Present **Developed** Subcatchment 4

1. Runoff curve number (CN)

Soil name and hydrologic group (appendix	Cover description (cover type, treatment, and hydrologic condition: percent impervious: unconnected/connected impervious area ratio)	CN 1/ Table 2-2	CN 1/ Fig. 2-3	CN 1/ Fig. 2-4	Area Acres	Product of CN x Area
A	Woods- Good Condition	30			0.00	
A	Open Space- Good Condition	39			0.39	15.05
A	Pavement	98			0.67	65.66
A	Roof	98			0.11	10.68
A	Gravel	84			0.00	
					Totals = 1.17	91.40

1/ Use only one CN source per line.

CN (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{91.40}{1.17} = 78.45$; Use CN = 78.5

2. Runoff

		Storm #1	Storm #2	Storm #3
Frequency.....	yr	2	10	100
Rainfall, P (24-hour).....	in	3.1	4.5	6.4
Runoff, Q..... (Use P and CN with table 2-1, fig. 2-1,) or eqs. 2-3 and 2-4.)	in	1.23	2.33	3.98
Runoff, Q.....	cf	5194	9855	16837

(210-VI-TR-55, Second Ed., June 1986)

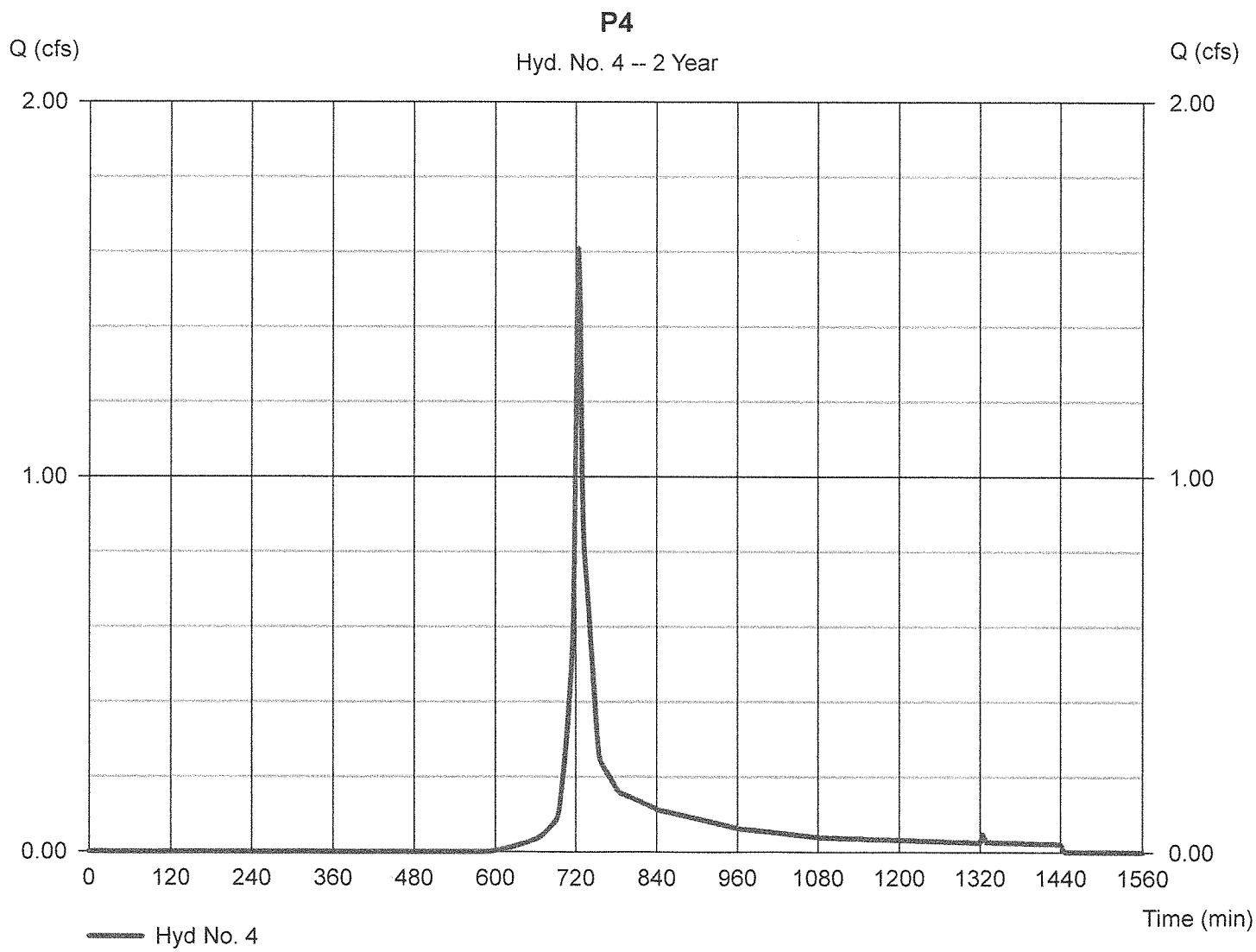
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 Tuesday, Feb 4, 2014

Hyd. No. 4

P4

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.609 cfs
Storm frequency	=	2 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	4,902 cuft
Drainage area	=	1.170 ac	Curve number	=	78.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.10 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484



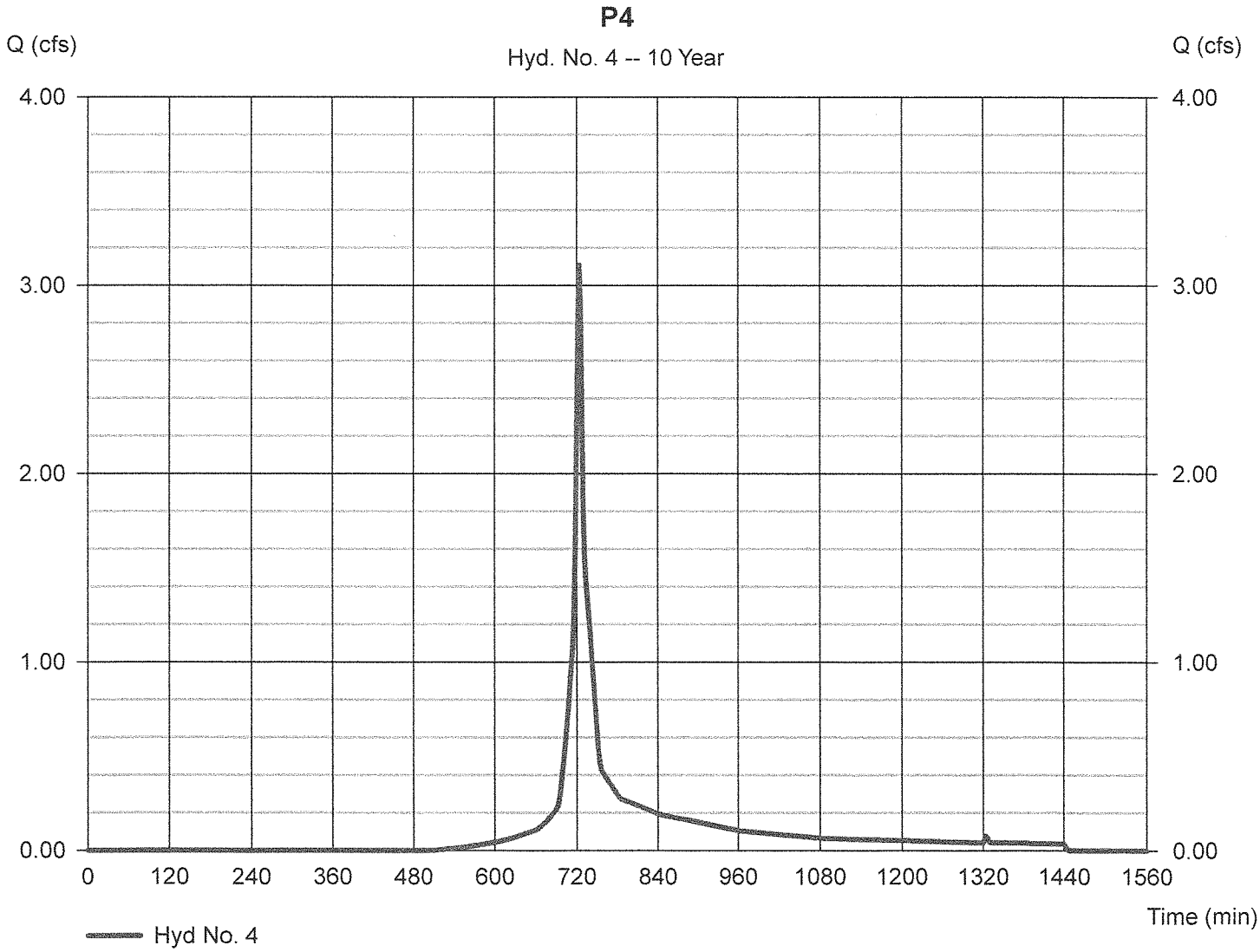
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Feb 4, 2014

Hyd. No. 4

P4

Hydrograph type	= SCS Runoff	Peak discharge	= 3.110 cfs
Storm frequency	= 10 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 9,295 cuft
Drainage area	= 1.170 ac	Curve number	= 78.5
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.50 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

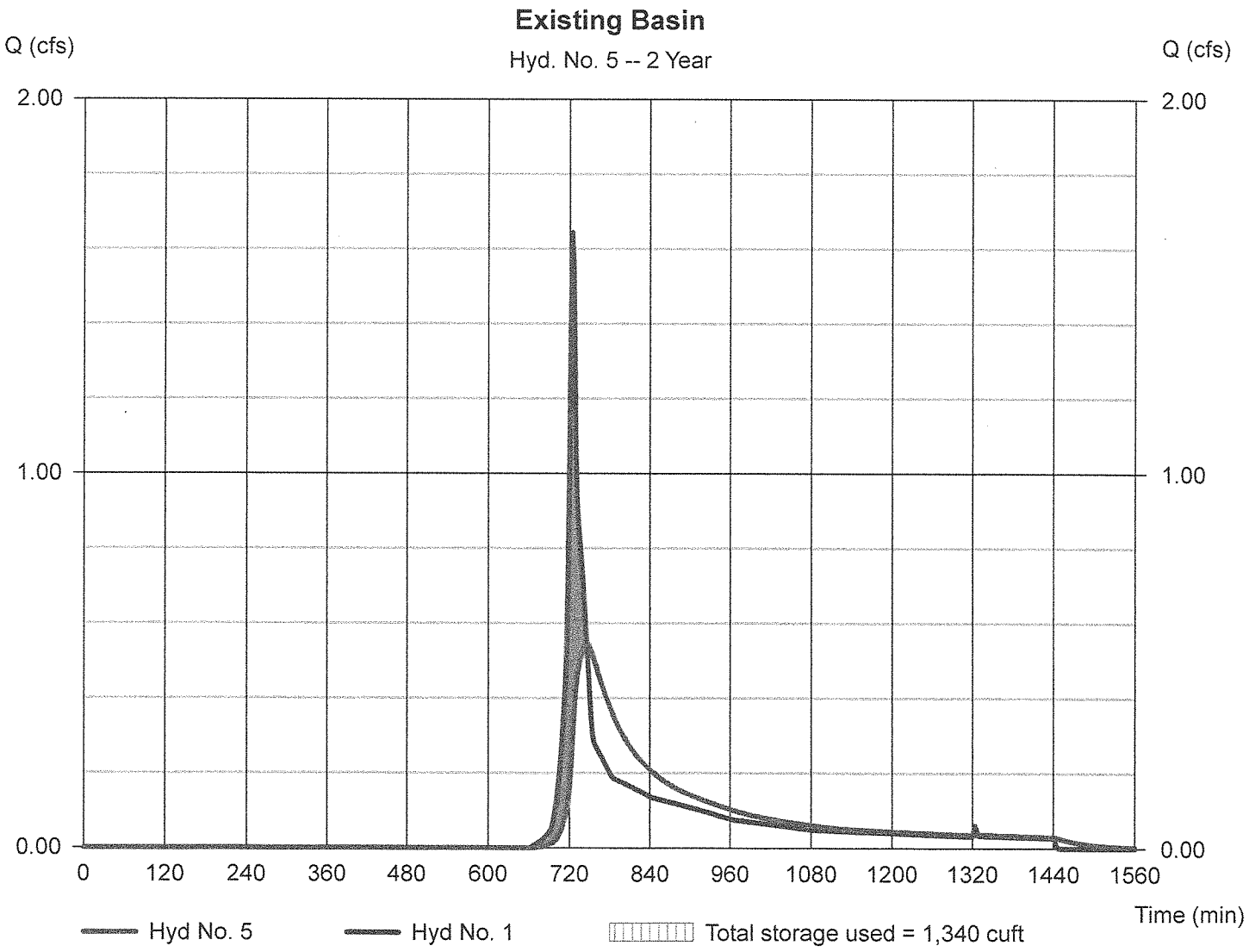
Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Feb 4, 2014

Hyd. No. 5

Existing Basin

Hydrograph type	= Reservoir	Peak discharge	= 0.546 cfs
Storm frequency	= 2 yrs	Time to peak	= 746 min
Time interval	= 2 min	Hyd. volume	= 5,319 cuft
Inflow hyd. No.	= 1 - P1	Max. Elevation	= 95.63 ft
Reservoir name	= Existing Basin	Max. Storage	= 1,340 cuft

Storage Indication method used. Outflow includes exfiltration.



Hydrograph Report

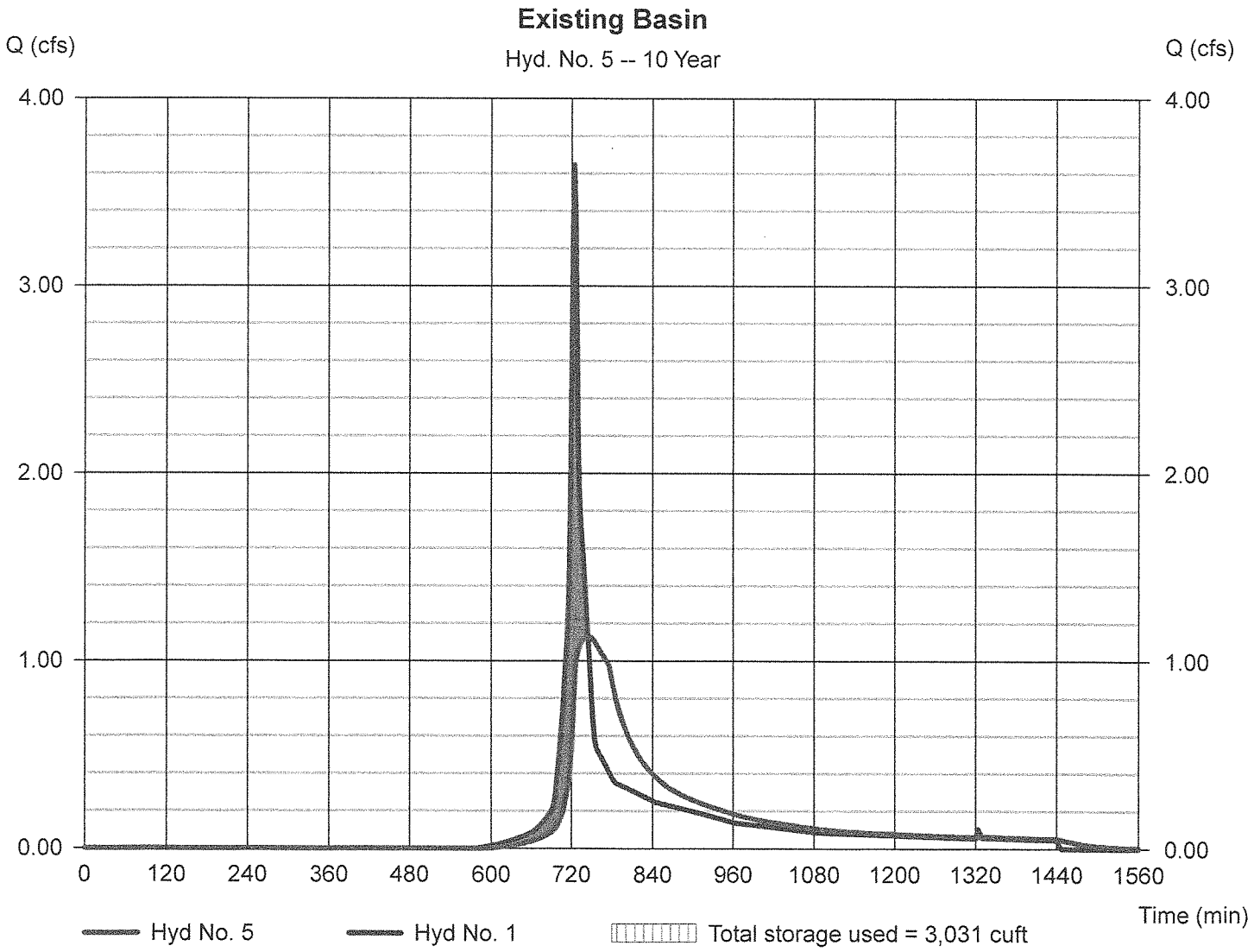
Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Feb 4, 2014

Hyd. No. 5

Existing Basin

Hydrograph type	= Reservoir	Peak discharge	= 1.133 cfs
Storm frequency	= 10 yrs	Time to peak	= 744 min
Time interval	= 2 min	Hyd. volume	= 11,062 cuft
Inflow hyd. No.	= 1 - P1	Max. Elevation	= 96.20 ft
Reservoir name	= Existing Basin	Max. Storage	= 3,031 cuft

Storage Indication method used. Outflow includes exfiltration.



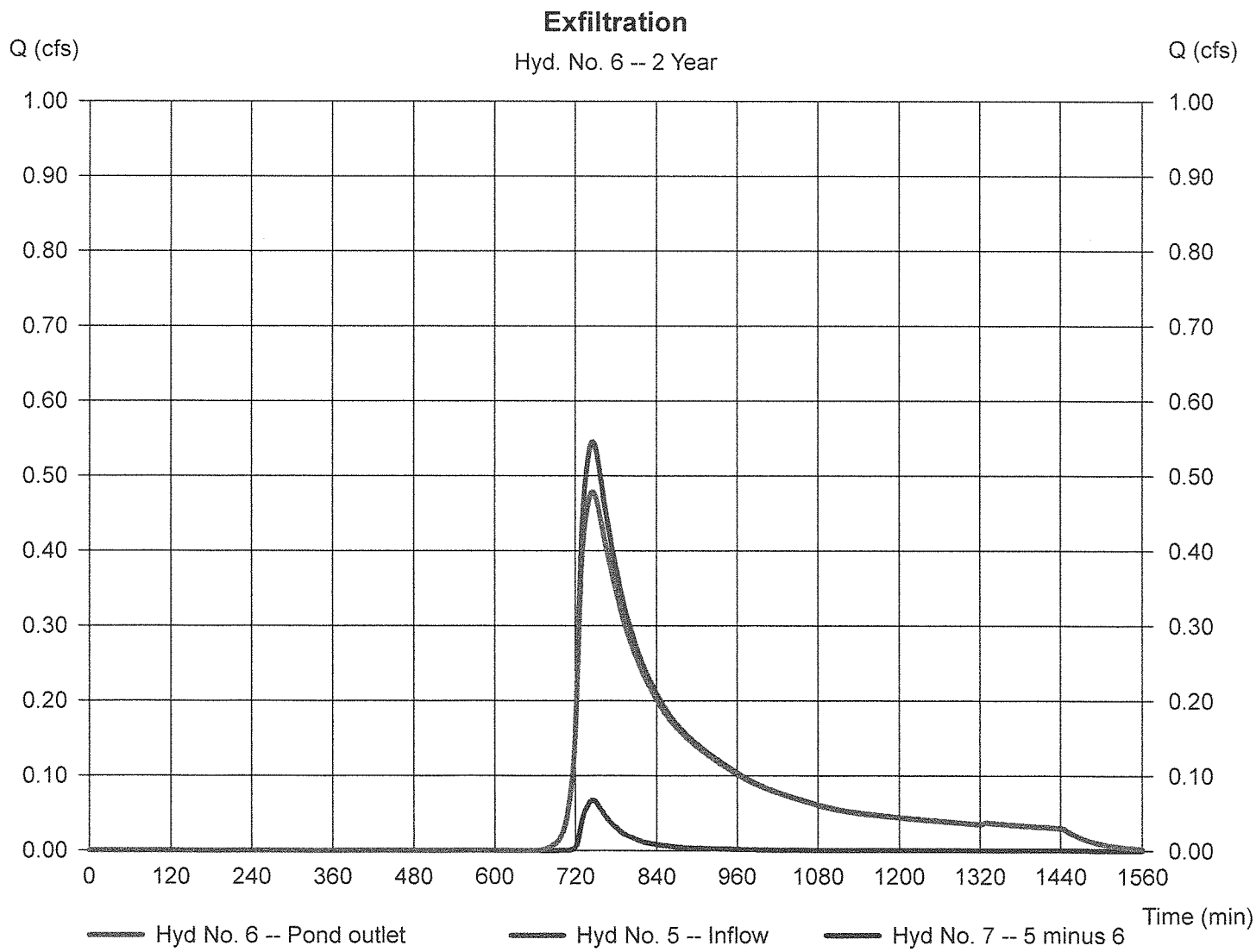
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Feb 4, 2014

Hyd. No. 6

Exfiltration

Hydrograph type	= Diversion1	Peak discharge	= 0.478 cfs
Storm frequency	= 2 yrs	Time to peak	= 746 min
Time interval	= 2 min	Hyd. volume	= 5,051 cuft
Inflow hydrograph	= 5 - Existing Basin	2nd diverted hyd.	= 7
Diversion method	= Pond - Existing Basin	Pond structure	= Exfiltration



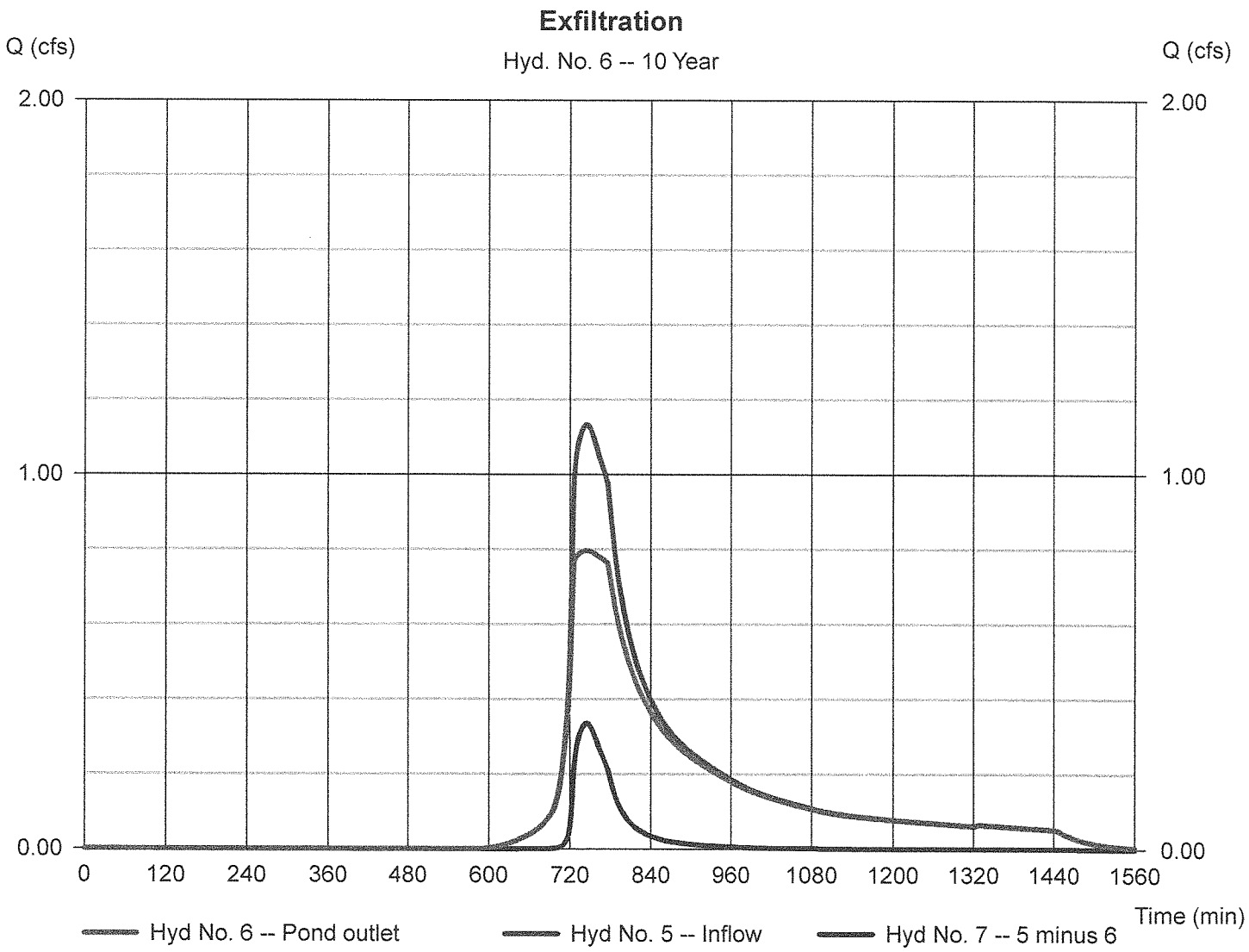
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Feb 4, 2014

Hyd. No. 6

Exfiltration

Hydrograph type	=	Diversion1	Peak discharge	=	0.797 cfs
Storm frequency	=	10 yrs	Time to peak	=	744 min
Time interval	=	2 min	Hyd. volume	=	9,632 cuft
Inflow hydrograph	=	5 - Existing Basin	2nd diverted hyd.	=	7
Diversion method	=	Pond - Existing Basin	Pond structure	=	Exfiltration



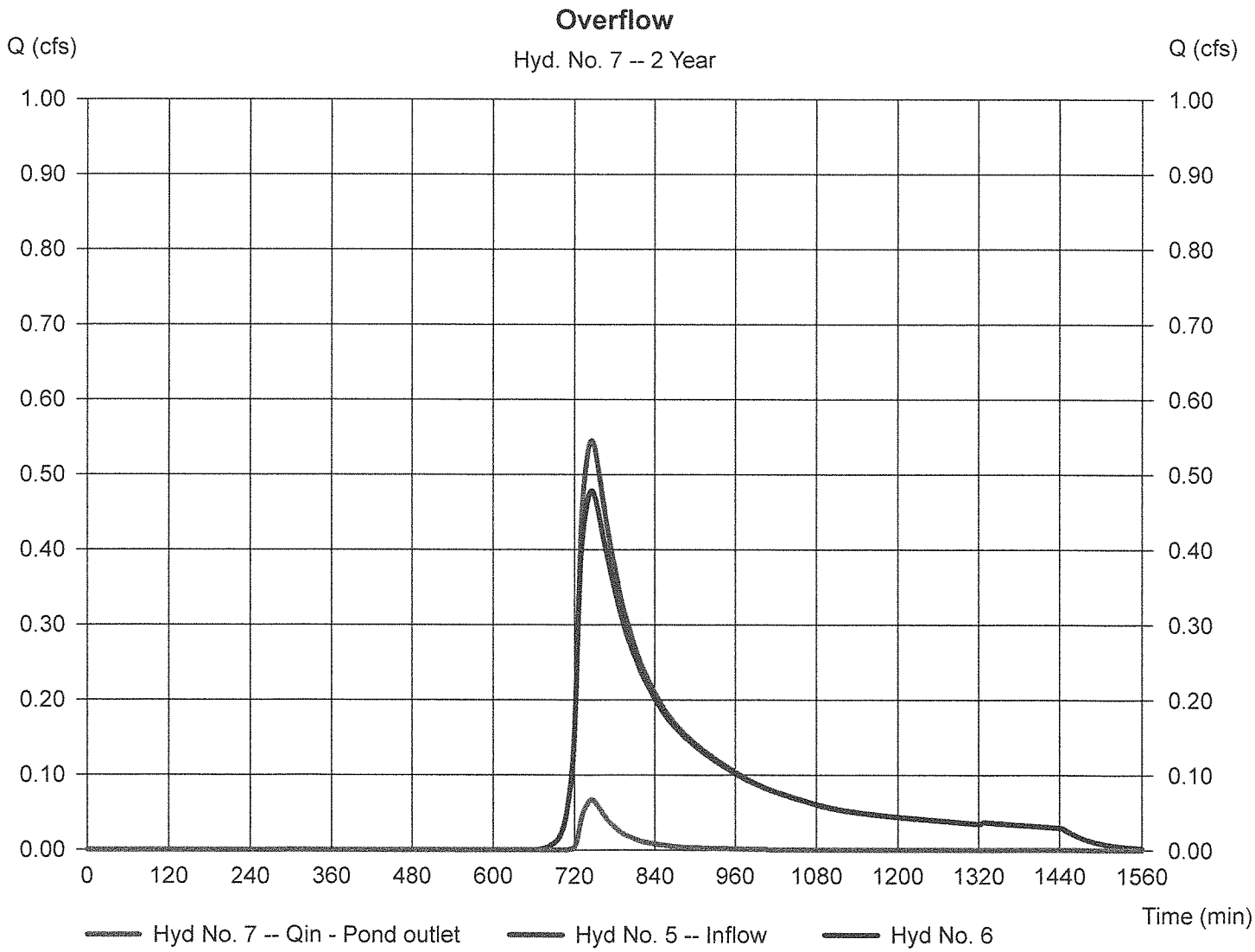
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 Tuesday, Feb 4, 2014

Hyd. No. 7

Overflow

Hydrograph type	=	Diversion2	Peak discharge	=	0.067 cfs
Storm frequency	=	2 yrs	Time to peak	=	746 min
Time interval	=	2 min	Hyd. volume	=	269 cuft
Inflow hydrograph	=	5 - Existing Basin	2nd diverted hyd.	=	6
Diversion method	=	Pond - Existing Basin	Pond structure	=	Exfiltration



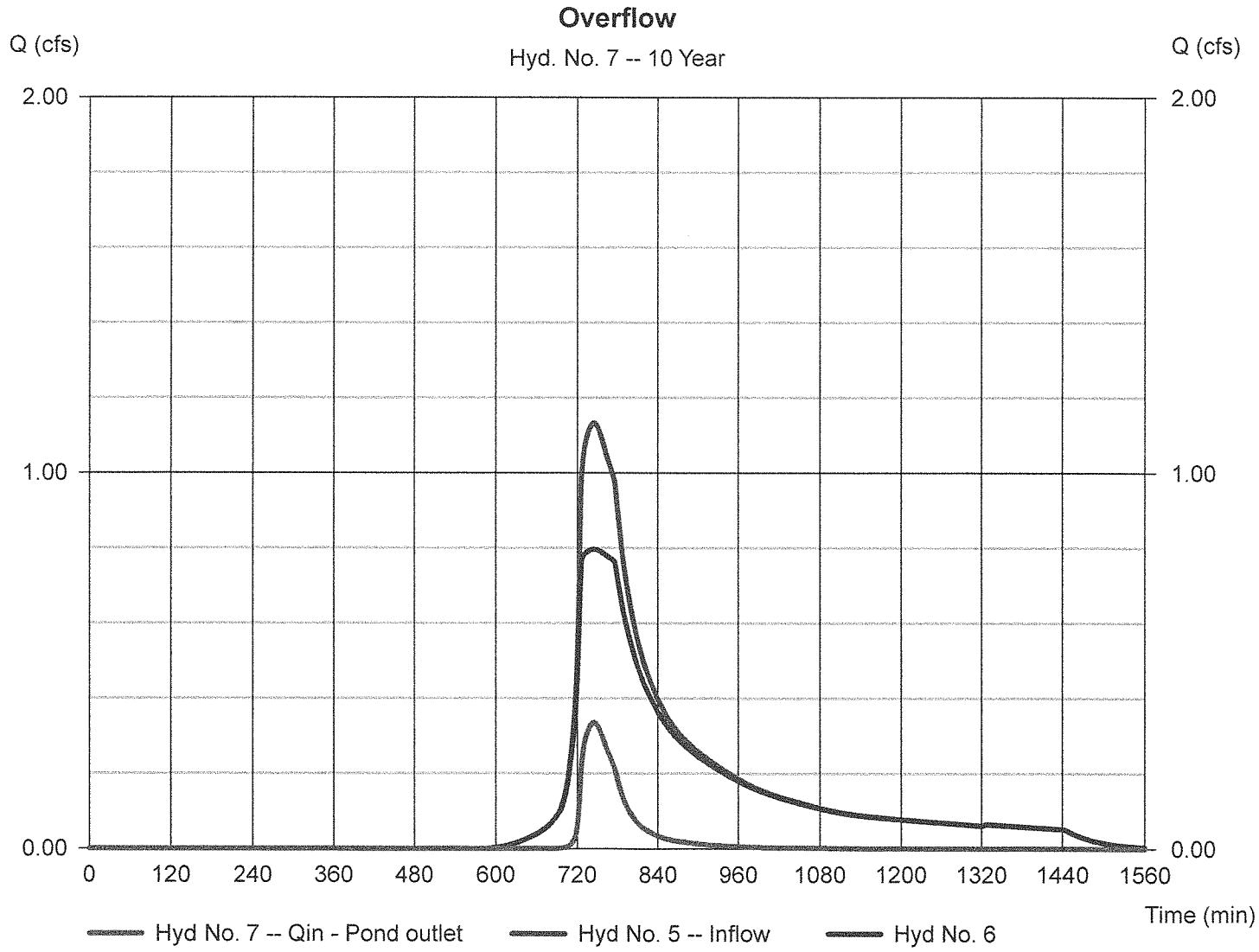
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Feb 4, 2014

Hyd. No. 7

Overflow

Hydrograph type	=	Diversion2	Peak discharge	=	0.336 cfs
Storm frequency	=	10 yrs	Time to peak	=	744 min
Time interval	=	2 min	Hyd. volume	=	1,430 cuft
Inflow hydrograph	=	5 - Existing Basin	2nd diverted hyd.	=	6
Diversion method	=	Pond - Existing Basin	Pond structure	=	Exfiltration



Pond Report

Hydraflow Hydrographs by Intelisolve v9.2 — Tuesday, Feb 4, 2014

Pond No. 1 - Existing Basin

Pond Data

Contours - User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 95.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	95.00	728	0	0
1.00	96.00	3,990	2,140	2,140
2.00	97.00	4,847	4,411	6,552
3.00	98.00	8,291	6,492	13,044

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 12.00	0.00	0.00	0.00
Span (in)	= 12.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 95.00	0.00	0.00	0.00
Length (ft)	= 68.00	0.00	0.00	0.00
Slope (%)	= 0.44	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

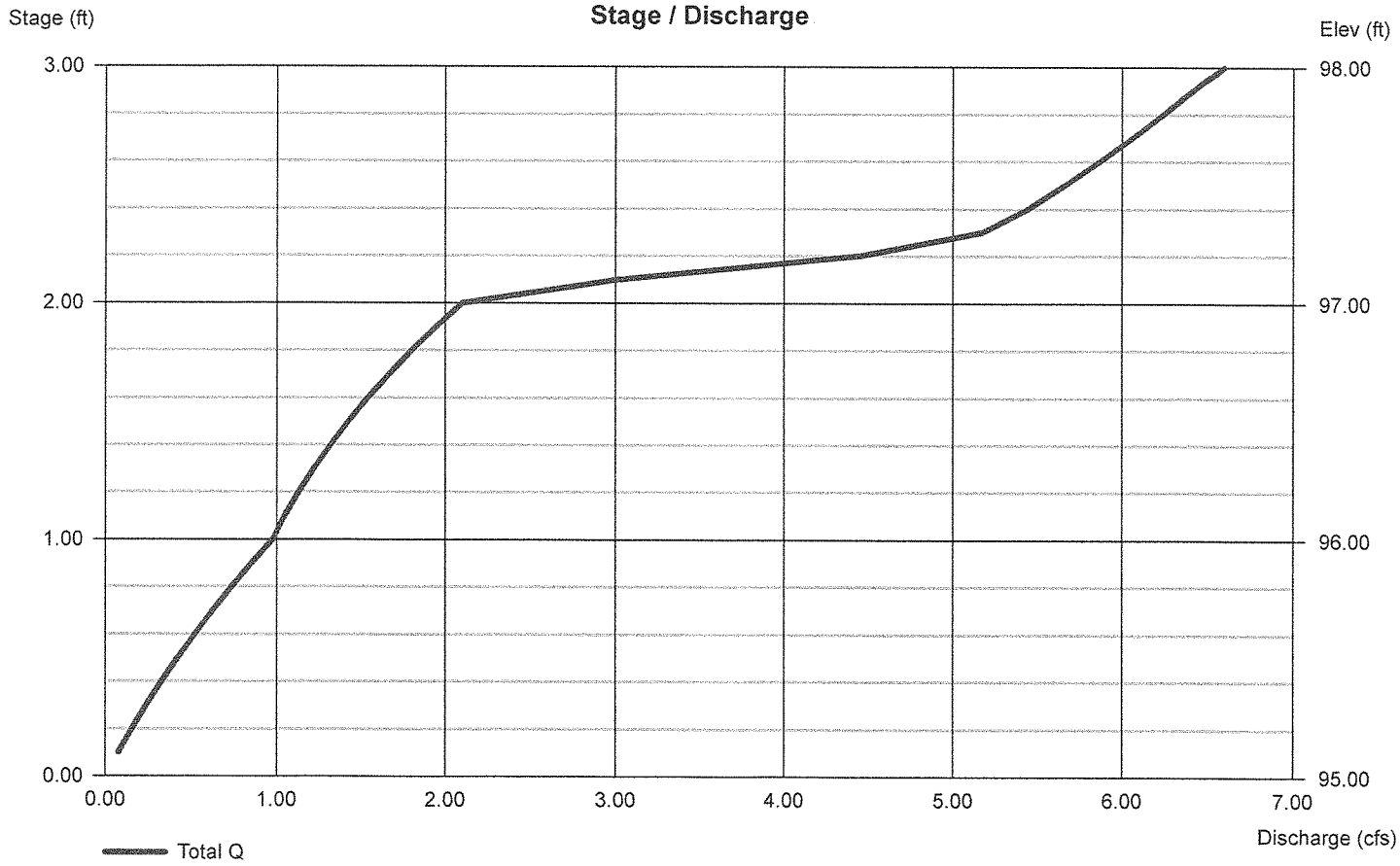
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 8.00	0.00	0.00	0.00
Crest El. (ft)	= 97.00	95.00	0.00	0.00
Weir Coeff.	= 3.33	0.22	3.33	3.33
Weir Type	= Riser	10 degV	---	---
Multi-Stage	= Yes	Yes	No	No

Exfil.(in/hr) = 8.270 (by Contour)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



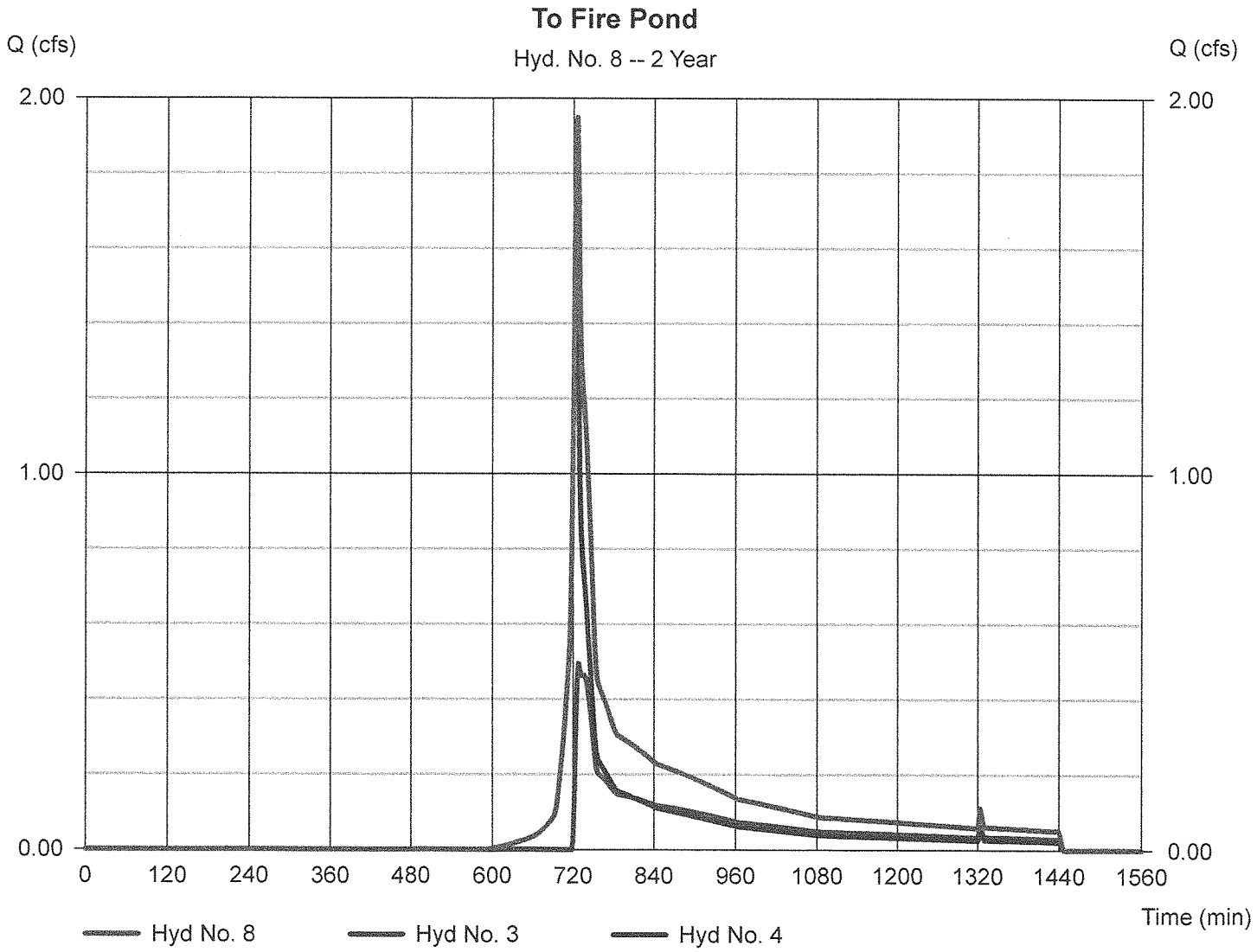
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 Tuesday, Feb 4, 2014

Hyd. No. 8

To Fire Pond

Hydrograph type	= Combine	Peak discharge	= 1.949 cfs
Storm frequency	= 2 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 8,447 cuft
Inflow hyds.	= 3, 4	Contrib. drain. area	= 4.600 ac



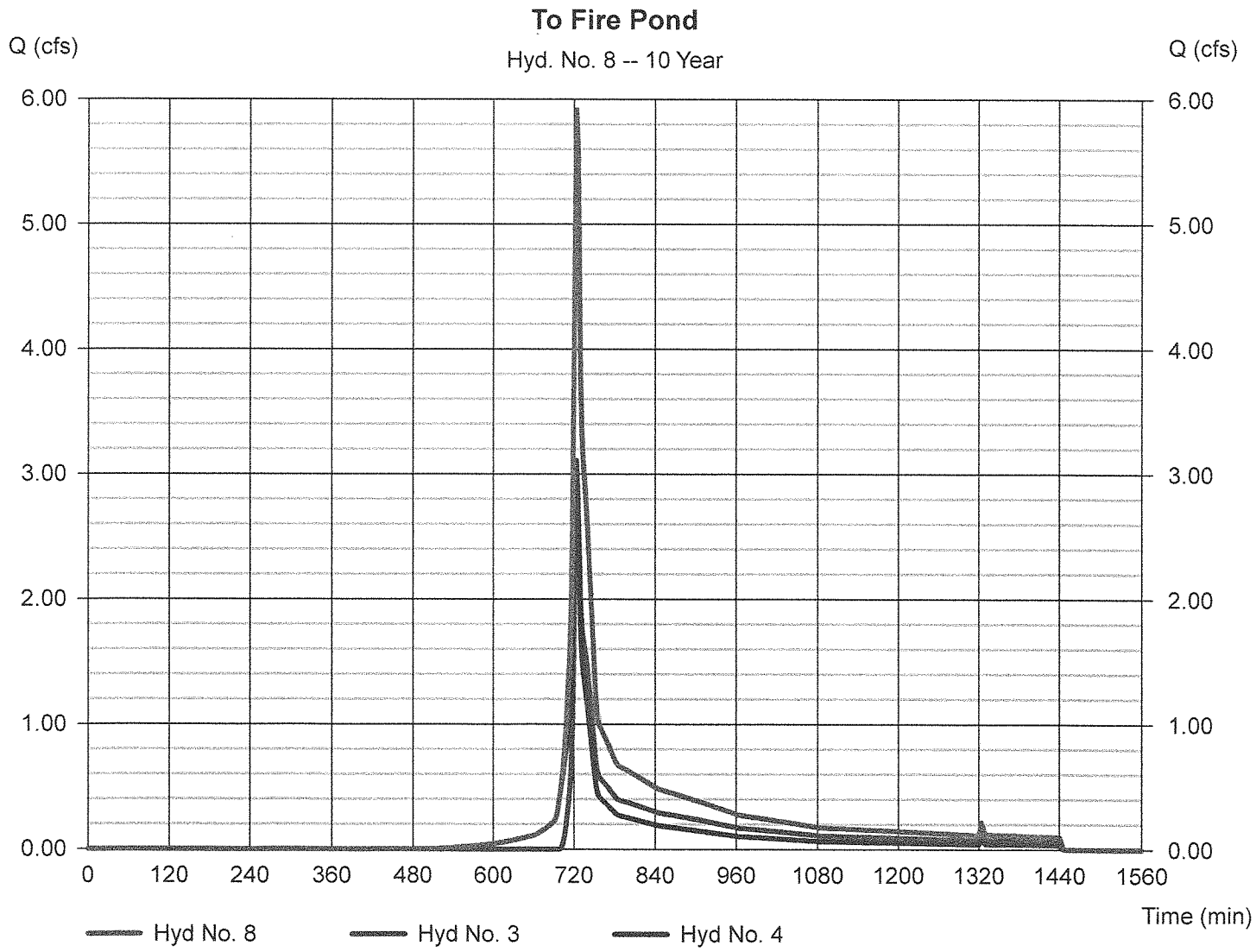
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.2 Tuesday, Feb 4, 2014

Hyd. No. 8

To Fire Pond

Hydrograph type	= Combine	Peak discharge	= 5.916 cfs
Storm frequency	= 10 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 19,791 cuft
Inflow hyds.	= 3, 4	Contrib. drain. area	= 4.600 ac



Inlet Grate Capacity Calculations

Job: SM-72B

Calculated by: WJH
Date: 1/22/2014

LeBARON FOUNDRY, INC. LF248 inlet grate pass area A = 217 sq. in.
1.50694 sq. ft.

Q = (C*A* SQRT(2*g*h))*f

C = orifice coefficient
C = 0.6 square edges
A = inlet area
A = 1.51 sq. ft.
g = gravitational constant
g = 32.2 ft/sec^2
h = head on inlet
h = 0.33 ft. (low points)
0.17 ft. (on slope)
f = clogging factor
f = 0.66

Single Grate
Q (MAX)= 2.75 cfs (LP) low points LF248
Q (MAX)= 1.97 cfs (OS) on slope LF248
Double Grate
Q (MAX)= 5.50 cfs low points LF248
Q (MAX)= 3.95 cfs on slope LF248

*DATA USED IN TABLE TAKEN FROM STORM SEWER DESIGN 10YR.

	TRIBUTARY	TIME OF	10 YR		Q=CiA			single	double
	AREA (AC)	CONC.	INTENSITY	C	Q10	POSITION	Q (MAX)	grate	grate
CB1	0.59	6	4.5	0.86	2.28	LP	2.75	yes	
CB2	0.61	6	4.5	0.65	1.78	LP	2.75	yes	
CB3	0.57	6	4.5	0.7	1.80	LP	2.75	yes	
CB4	1.07	6	4.5	0.78	3.76	LP	5.50		yes

DESIGN STORM: 10 YEAR
DATE: 02/04/14
DONE BY: WJH
FILE: 72B-RATIONAL METHOD.wb3

STORM SEWER DESIGN

(PVC)"n"= 0.010
(Cast Iron)"n"= 0.011
(ADS)"n"= 0.012

PROJECT: SM-72B
LOCATIOIACTON, MA

FROM	TO	LENGTH (FT)	TRIBUTARY AREA INCR. (ACRES)	TRIBUTARY AREA TOTAL (ACRES)	TIME OF FLOW TO UPPER END (MIN)	TIME OF FLOW TIME IN SECTION (MIN)	RUNOFF COEFF. "C"	RAINFALL INTENSITY (IN/HR)	"Q" TOTAL RUNOFF (CFS)	SLOPE of PIPE (FT/FT)	DIAM (IN)	MANN. "n"	CAPACITY FULL (CFS)	VELOCITY FULL (FPS)	DESIGN FLOW VELOCITY (FPS)	DESIGN FLOW VELOCITY HEAD (FT)	DESIGN FLOW DEPTH OF FLOW (FT)	DESIGN FLOW TOTAL ENERGY HEAD (FT)	MANHOLE INVERT DROP (FT)	FALL IN PIPE (FT)	DRAIN INV. ELEVATION UPPER END	DRAIN INV. ELEVATION LOWER END
CB-1	DMH-1	17	0.00	0.59	6	0.04	0.86	4.5	2.29	0.020	12	0.012	5.45	6.94	6.64	0.68	0.45	1.14		0.34	97.00	96.66
DMH-1	Basin	33	0.00	0.59	6	0.06	0.86	4.5	2.29	0.047	12	0.012	8.38	10.67	9.09	1.28	0.36	1.64		1.56	96.56	95.00
CB-2	DMH-2	135	0.61	0.61	6	0.61	0.65	4.5	1.76	0.005	12	0.012	2.73	3.48	3.70	0.21	0.58	0.80		0.68	96.88	96.20
DMH-2	DMH-3	318	0.00	0.61	6	1.44	0.65	4.5	1.76	0.005	12	0.012	2.72	3.47	3.69	0.21	0.59	0.80		1.59	96.20	94.61
CB-3	DMH-3	179	0.57	0.57	6	0.81	0.70	4.5	1.77	0.005	12	0.012	2.73	3.48	3.70	0.21	0.59	0.80		0.90	96.76	95.86
DMH-2	Fire Pond	128	0.00	1.17	6	0.49	0.67	4.5	3.53	0.005	15	0.012	4.94	4.03	4.38	0.30	0.78	1.08		0.64	94.61	93.97
CB-4	Fire Pond	51	0.00	1.07	6	0.13	0.78	4.5	3.74	0.015	12	0.012	4.70	5.99	6.65	0.69	0.67	1.36		0.76	95.26	94.50

Infiltration Trench Calculation

Project: 848 Main Street by: WJH Date: 8/27/2013

Location: Acton, MA checked: Date:

Area of Roof: 39890 S.F.
10 yr Storm Event: 4.5 inches

Driveway runoff volume to be infiltrated

39890 S.F. x 4.5 IN = 14959 FT^3

Infiltration trench sizing

Length: 336 ft
Width: 2 ft
Depth: 1 ft
40% voids with gravel

Volume provided: L' x W' x D' X 40%
336 x 2 x 1 x 40 % = 269 FT^3

Infiltration
Total area +Infiltration (8.27 in/hr (Rawls # for Sand)) x 24 hours
672 + 672 * 8.27*24 = 22230 ft^3 per 24 hours

269 FT^3 + 22230 FT^3 = 22499 FT^3

22499 FT^3 > 14959 FT^3 O.K.

3.6 Water Balance Calculations

Water Balance Calculations

SM-72B

Project: 848 Main Street By WJH Date 01/22/14

Location: Acton, MA Checked GD Date

Pre-development recharge

CN= 67.8
From Figure 1, infiltration= 17.60 in./year
Drainage Area= 363,092 s.f.

Recharge= 363,092 x 17.60 /12 in/ft = 532,535 c.f./year

Pre Sewage flow (No change - Not included)

Post-development recharge

CN= 73.4
From Figure 1, infiltration= 16.80 in./year
Drainage Area= 363,092 s.f.

Recharge= 363,092 x 16.80 /12 in/ft = 508,329 c.f./year

Post Sewage flow (No change - Not included)

Stormwater Recharge from calculations (sheet 2)= 101,387 cf/year

TOTAL = 609,716 cf/year

Post-Development Vs. Pre-Development

609,716 cf/year	>	532,535 cf/year	OK

Overall CN Calculations

SM-72B

Project: 848 Main Street

By WJH

Date 01/22/14

Location: Acton, MA

Checked GD

Date

Pre-development CN

suubcatchment	Area (acres)	CN	Product
1	1.75	65.1	113.925
2	1.07	97.9	104.753
3	3.43	54.7	187.621
4	2.08	76.1	158.288
	8.33		564.587
Overall CN:	67.8		

Post-development CN

suubcatchment	Area (acres)	CN	Product
1	1.75	72.5	126.875
2	1.07	97.9	104.753
3	3.43	57.9	198.597
4	1.17	78.5	91.845
Infiltration Trench	0.91	98.0	89.18
	8.33		611.25
Overall CN:	73.4		

INFILTRATION OF ROOF RUNOFF:

Area of roof being infiltrated for 100 year storm: 39,890 sf

Runoff from Roofs (CN=98): 30.5 in/year

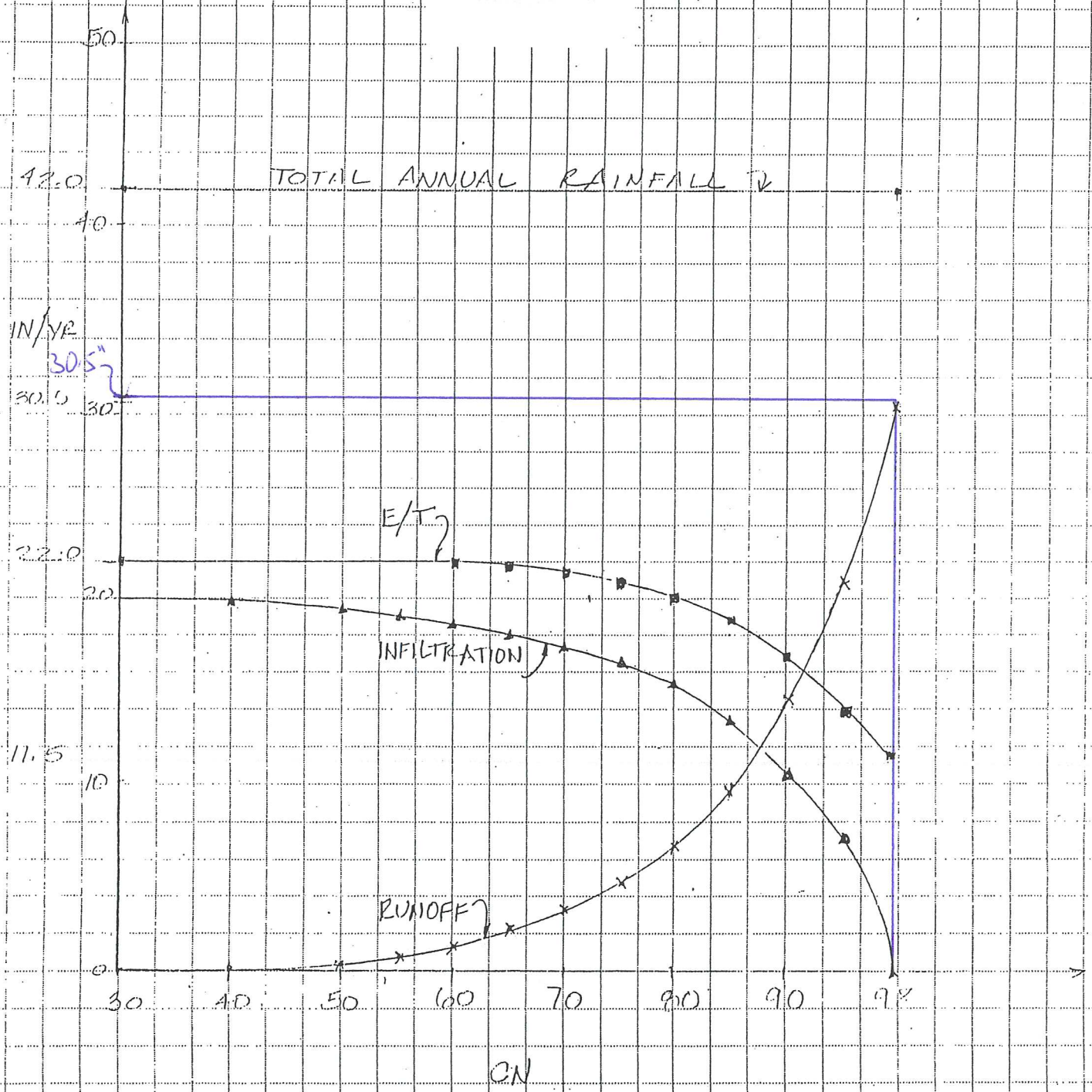
Total Runoff from roofs being infiltrated: 101,387 cf/year

Annual Infiltration of Stormwater in Trench: 101,387 cf/year

STAMSKI AND McNARY, INC.
80 Harris Street
ACTON, MASSACHUSETTS 01720
TEL (978) 263-8585
FAX (978) 263-9883

JOB 0072B - 848 MAIN ST - ACTON
SHEET NO. _____ OF _____
CALCULATED BY _____ DATE _____
CHECKED BY _____ DATE _____
SCALE _____

Figure 1



NOTE: GRAPH COMPILED FROM DATA PUBLISHED BY NOAA (1954 - 1958)
(SEE REPORT FROM STAMSKI & MCNARY INC. SUBMITTED TO TOWN OF ACTON ENG. DEPT.)

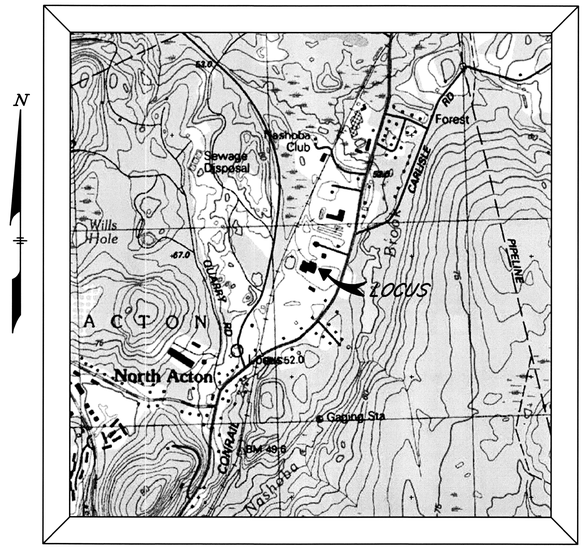
3.7 Plans

SITE PLAN
FOR
ACORN DECK HOUSE CO.
848-852 MAIN STREET
ACTON, MASSACHUSETTS

DATE: FEBRUARY 18, 2014

INDEX

SHEET 1	TITLE SHEET
SHEET 2	EXISTING CONDITIONS PLAN
SHEET 3	GRADING & DRAINAGE PLAN
SHEET 4	LAYOUT PLAN
SHEET 5	CONSTRUCTION DETAILS



LOCUS PLAN

SCALE: 1"=1200'

0 600 1200 2400 4800

RECORD OWNER:

PARCEL 39	848 MAIN STREET NOMINEE TRUST 852 MAIN STREET ACTON, MA 01720
PARCEL 39-1	852 MAIN STREET NOMINEE TRUST 852 MAIN STREET ACTON, MA 01720

APPLICANT:

ACORN DECK HOUSE CO.
852 MAIN STREET
ACTON, MA

ZONING DISTRICT:

SMALL MANUFACTURING (SM)
GROUNDWATER PROTECTION DISTRICT ZONE 3

REFERENCE:

MIDDLESEX REGISTRY OF DEEDS
SOUTH DISTRICT
PARCEL 39 DEED BOOK 53416 PAGE 128
PARCEL 39-1 DEED BOOK 53416 PAGE 125
PLAN No. 1004 OF 2001
PLAN No. 360 OF 1988

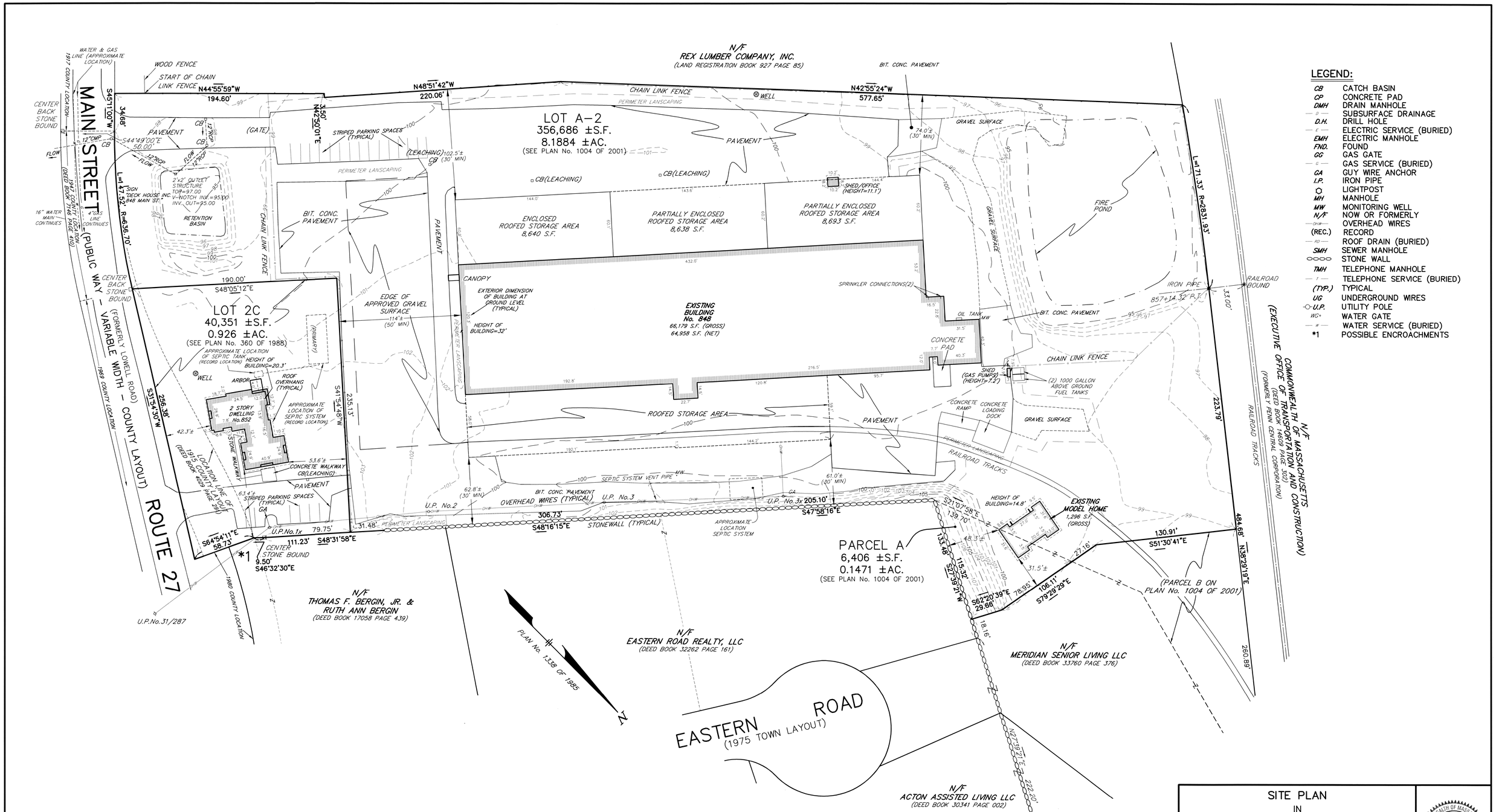
TOWN OF ACTON ASSESSORS MAPS
MAP C-5, PARCELS 39 & 39-1

COMMONWEALTH OF MASSACHUSETTS
GEORGE DIMAKARAKOS
CIVIL
No. 41281
REGISTERED PROFESSIONAL ENGINEER

ENGINEER/SURVEYOR

STAMSKI AND MCNARY, INC
1000 MAIN STREET
ACTON, MASSACHUSETTS 01720
(978) 263-8585

COMMONWEALTH OF MASSACHUSETTS
JOSEPH MARCH
36384
PROFESSIONAL LAND SURVEYOR



LEGEND:

CB	CATCH BASIN
CP	CONCRETE PAD
DMH	DRAIN MANHOLE
— D —	SUBSURFACE DRAINAGE
D.H.	DRILL HOLE
— E —	ELECTRIC SERVICE (BURIED)
EMH	ELECTRIC MANHOLE
FND.	FOUND
GG	GAS GATE
— G —	GAS SERVICE (BURIED)
GA	GUY WIRE ANCHOR
I.P.	IRON PIPE
	LIGHTPOST
MH	MANHOLE
MW	MONITORING WELL
N/F	NOW OR FORMERLY
— OHW —	OVERHEAD WIRES
(REC.)	RECORD
— RD —	ROOF DRAIN (BURIED)
SMH	SEWER MANHOLE
	STONE WALL
TMH	TELEPHONE MANHOLE
— T —	TELEPHONE SERVICE (BURIED)
(TYP.)	TYPICAL
UG	UNDERGROUND WIRES
U.P.	UTILITY POLE
WG*	WATER GATE
— W —	WATER SERVICE (BURIED)
*1	POSSIBLE ENCROACHMENTS

UTILITY NOTE:

ALL UNDERGROUND UTILITIES SHOWN HERE WERE COMPILED ACCORDING TO AVAILABLE RECORD PLANS FROM VARIOUS UTILITY COMPANIES AND PUBLIC AGENCIES AND ARE APPROXIMATE ONLY. ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD BEFORE DESIGNING, EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORATION OR REPAIRING. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE CONTACTED INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN. SEE CHAPTER 370, ACTS OF 1963 MASS. WE ASSUME NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN. BEFORE PLANNING FUTURE CONNECTIONS THE APPROPRIATE PUBLIC UTILITY ENGINEERING DEPARTMENT MUST BE CONSULTED. DIG SAFE TELEPHONE No. 1–888–344–7233.

LAND USE TABLE

	REQUIRED	LOT A–2/PARCEL A	LOT 2C
LOT AREA	40,000 S.F.	363,091 S.F.	40,351 S.F.
GROSS FLOOR AREA	N/A	67,475 S.F.	4,000 S.F.*
NET FLOOR AREA	N/A	66,629 S.F.	3,579 S.F.*
FLOOR AREA RATIO	0.2	0.184	0.089
PERIMETER LANDSCAPING	N/A	19,499 S.F.	2,637 S.F.
TOTAL IMPERVIOUS	N/A	215,991 S.F.	8,778 S.F.
% IMPERVIOUS	N/A	59.5%	37.2%
OPEN SPACE	35%	127,601 S.F. (35.1%)	25,357 S.F. (62.8%)

* ESTIMATED

SITE PLAN
IN
ACTON, MASSACHUSETTS
(MIDDLESEX COUNTY)

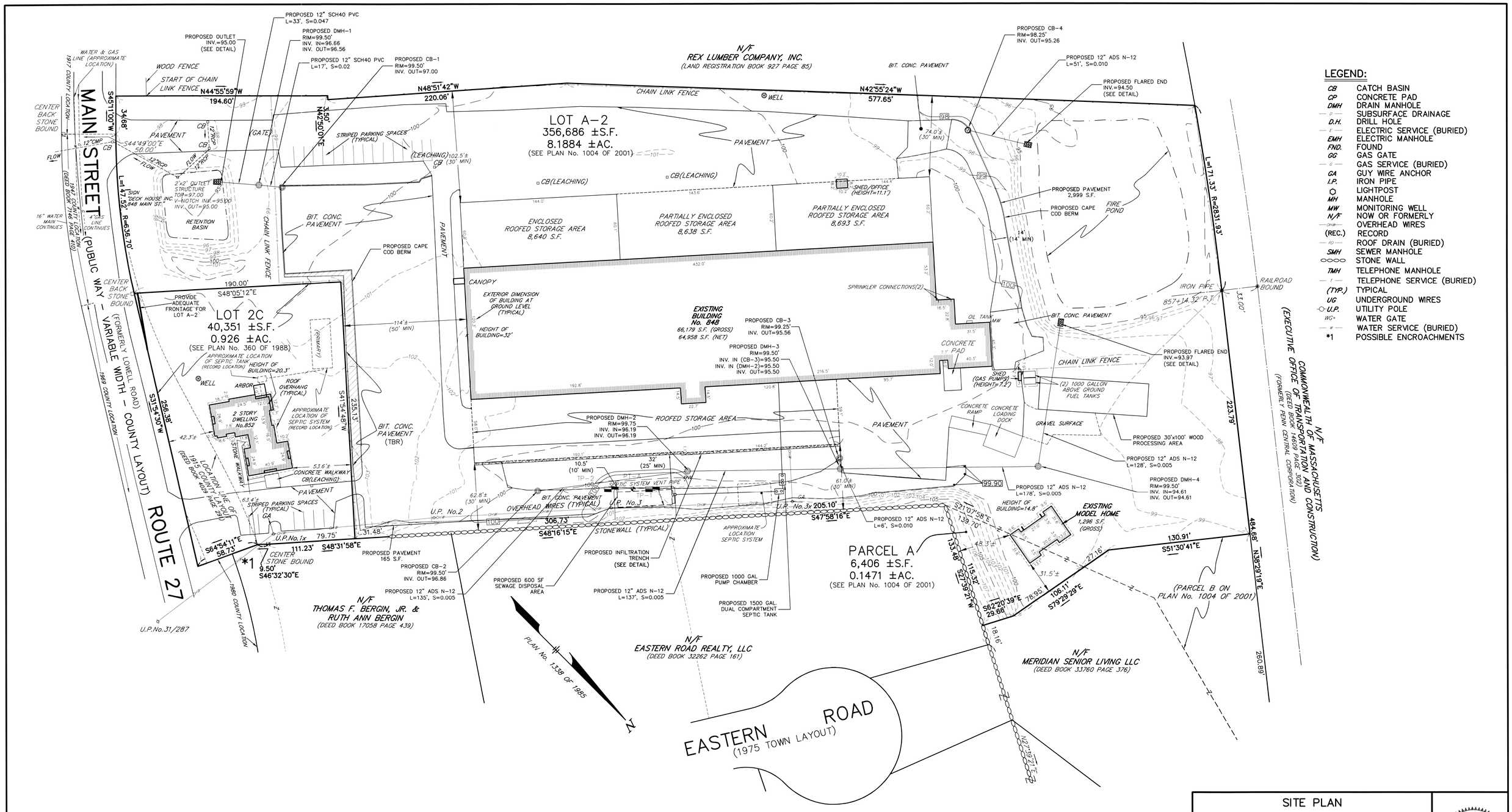
EXISTING CONDITIONS PLAN
FOR: ACORN DECK HOUSE CO.
SCALE: 1"=40' FEBRUARY 18, 2014

STAMSKI AND MCNARY, INC.
1000 MAIN STREET ACTON, MASSACHUSETTS
ENGINEERING – PLANNING – SURVEYING
0 20 40 80 120 160 FT

(72B–SITE–4.dwg) Main Street SM–72B Sheet 2 of 5

COMMONWEALTH OF MASSACHUSETTS
GEORGE DIMAKARAKOS
CIVIL
No. 41281
REGISTERED PROFESSIONAL ENGINEER

COMMONWEALTH OF MASSACHUSETTS
JOSEPH MARCH
36384
PROFESSIONAL LAND SURVEYOR



LEGEND:

CB	CATCH BASIN
CP	CONCRETE PAD
DMH	DRAIN MANHOLE
— D —	SUBSURFACE DRAINAGE
D.H.	DRILL HOLE
— E —	ELECTRIC SERVICE (BURIED)
EMH	ELECTRIC MANHOLE
FND.	FOUND
GG	GAS GATE
— G —	GAS SERVICE (BURIED)
GA	GUY WIRE ANCHOR
I.P.	IRON PIPE
	LIGHTPOST
MH	MANHOLE
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N/F	NOW OR FORMERLY
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	STONE WALL
TMH	TELEPHONE MANHOLE
— T —	TELEPHONE SERVICE (BURIED)
(TYP.)	TYPICAL
UG	UNDERGROUND WIRES
U.P.	UTILITY POLE
WG*	WATER GATE
— W —	WATER SERVICE (BURIED)
*1	POSSIBLE ENCROACHMENTS

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LAND USE TABLE

(NOT ADJUSTED FOR FRONTAGE SWAP)

	REQUIRED	LOT A–2/PARCEL A	LOT 2C
LOT AREA	40,000 S.F.	363,091 S.F.	40,351 S.F.
GROSS FLOOR AREA	N/A	67,475 S.F.	4,000 S.F.*
NET FLOOR AREA	N/A	66,629 S.F	3,579 S.F.*
FLOOR AREA RATIO	0.2	0.184	0.089
PERIMETER LANDSCAPING	N/A	21,438 S.F.	2,637 S.F.
TOTAL IMPERVIOUS	N/A	214,051 S.F.	8,778 S.F.
% IMPERVIOUS	N/A	58.1%	37.2%
OPEN SPACE	35%	127,163 S.F. (35.0%)	25,357 S.F. (62.8%)

* ESTIMATED

SITE PLAN
IN
ACTON, MASSACHUSETTS
(MIDDLESEX COUNTY)

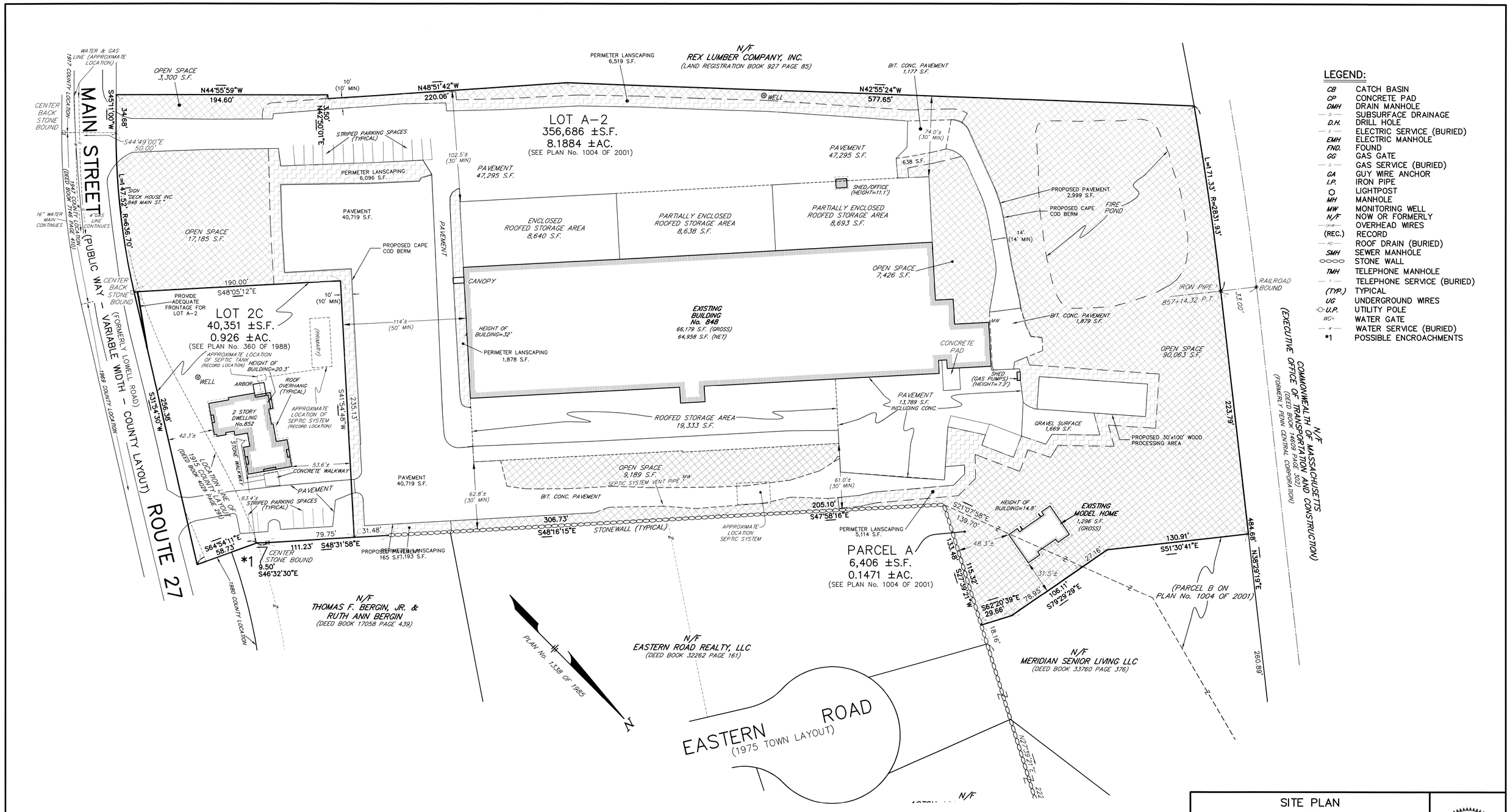
GRADING AND DRAINAGE PLAN
FOR: ACORN DECK HOUSE CO.
SCALE: 1"=40' FEBRUARY 18, 2014

STAMSKI AND MCNARY, INC.
1000 MAIN STREET ACTON, MASSACHUSETTS
ENGINEERING – PLANNING – SURVEYING
0 20 40 80 120 160 FT

(72B–SITE–4.dwg) Main Street SM–72B Sheet 3 of 5

COMMONWEALTH OF MASSACHUSETTS GEORGE DIMAKARAKOS CIVIL No. 41281 REGISTERED PROFESSIONAL ENGINEER

COMMONWEALTH OF MASSACHUSETTS JOSEPH MARCH # 36384 PROFESSIONAL LAND SURVEYOR



LEGEND:

CB	CATCH BASIN
CP	CONCRETE PAD
DMH	DRAIN MANHOLE
— F —	SUBSURFACE DRAINAGE
D.H.	DRILL HOLE
— E —	ELECTRIC SERVICE (BURIED)
EMH	ELECTRIC MANHOLE
FND.	FOUND
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— G —	GAS SERVICE (BURIED)
GA	GUY WIRE ANCHOR
I.P.	IRON PIPE
○	LIGHTPOST
MH	MANHOLE
MW	MONITORING WELL
N/F	NOW OR FORMERLY
— OHW —	OVERHEAD WIRES
(REC.)	RECORD
— RD —	ROOF DRAIN (BURIED)
SMH	SEWER MANHOLE
○○○○	STONE WALL
TMH	TELEPHONE MANHOLE
— T —	TELEPHONE SERVICE (BURIED)
(TYP.)	TYPICAL
UG	UNDERGROUND WIRES
U.P.	UTILITY POLE
WG	WATER GATE
— W —	WATER SERVICE (BURIED)
*1	POSSIBLE ENCROACHMENTS

UTILITY NOTE:

ALL UNDERGROUND UTILITIES SHOWN HERE WERE COMPILED ACCORDING TO AVAILABLE RECORD PLANS FROM VARIOUS UTILITY COMPANIES AND PUBLIC AGENCIES AND ARE APPROXIMATE ONLY. ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD BEFORE DESIGNING, EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORATION OR REPAIRING. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE CONTACTED INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN. SEE CHAPTER 370, ACTS OF 1963 MASS. WE ASSUME NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN. BEFORE PLANNING FUTURE CONNECTIONS THE APPROPRIATE PUBLIC UTILITY ENGINEERING DEPARTMENT MUST BE CONSULTED. DIG SAFE TELEPHONE No. 1-888-344-7233.

SITE PLAN
IN
ACTON, MASSACHUSETTS
(MIDDLESEX COUNTY)

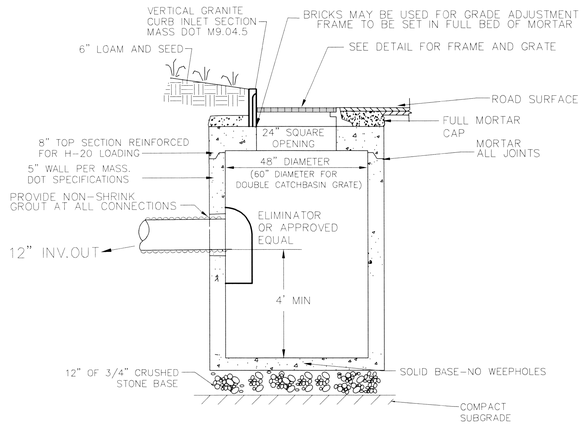
LAYOUT PLAN
FOR: ACORN DECK HOUSE CO.
SCALE: 1"=40' FEBRUARY 18, 2014

STAMSKI AND MCNARY, INC.
1000 MAIN STREET ACTON, MASSACHUSETTS
ENGINEERING - PLANNING - SURVEYING
0 20 40 80 120 160 FT

(72B-SITE-4.dwg) Main Street SM-72B Sheet 4 of 5

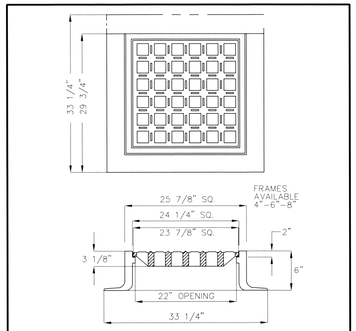
COMMONWEALTH OF MASSACHUSETTS
GEORGE DIMAKARAKOS
CIVIL
No. 41281
REGISTERED PROFESSIONAL ENGINEER

COMMONWEALTH OF MASSACHUSETTS
JOSEPH MARCH
36384
PROFESSIONAL LAND SURVEYOR



PRECAST CATCH BASIN DETAIL

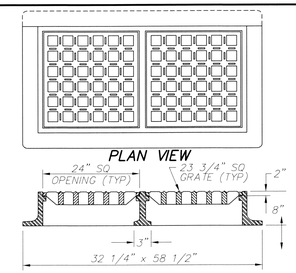
NOT TO SCALE



FULLY MACHINED AND INTERCHANGABLE FRAMES AND COVERS.
HIGH QUALITY MATERIALS AND WORKMANSHIP.
COAL TAR EPOXY PAINTED.
NO ROCK COVERS.
H-20 LOADING RATE
WEIGHT OF GRATE 215 LBS.
FRAME - 4 FLANGES - NO. 295 -- 3 FLANGES NO. 265
LEBARON LF-248-2 OR EQUAL

CATCH BASIN FRAME AND GRATE MASS. STD. DETAIL

NOT TO SCALE



FRAME: LEBARON LV2448-2 GRATE:
LEBARON L24SG1 (USE 2 GRATES)
OR APPROVED EQUALS

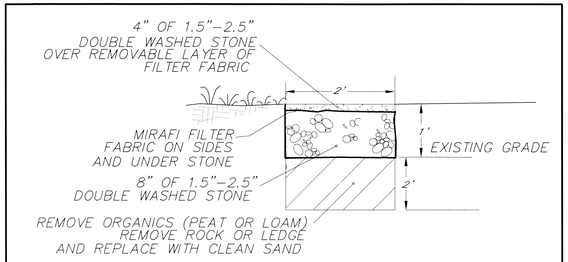
NOTES

FULLY MACHINED AND INTERCHANGABLE FRAMES AND COVERS.
HIGH QUALITY MATERIALS AND WORKMANSHIP.
COAL TAR EPOXY PAINTED.
NO ROCK COVERS.
H-20 LOADING RATE
3 FLANGE FRAMES TO BE USED WITH CURB INLET

DOUBLE CATCH BASIN (CB-4)

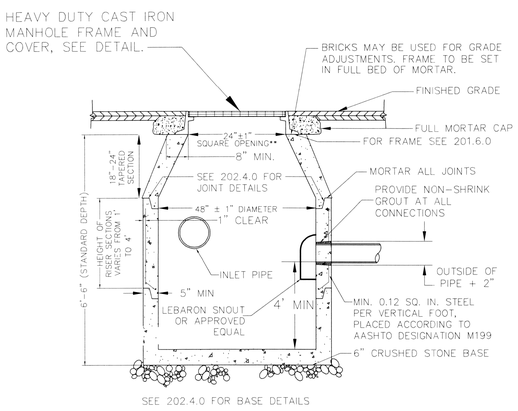
DOUBLE CATCH BASIN FRAME AND GRATE (CB-4)

NOT TO SCALE



INFILTRATION TRENCH DETAIL

NOT TO SCALE

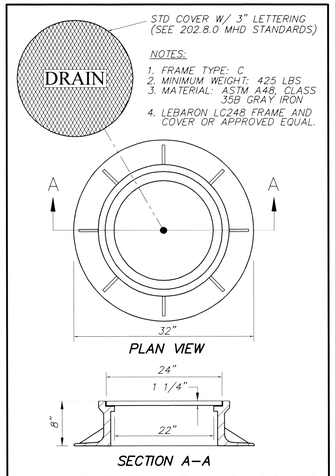


PRECAST CONCRETE MANHOLE DETAIL

NOT TO SCALE

NOTES

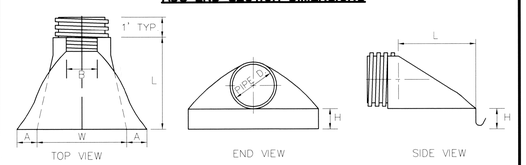
1. MANHOLE TO CONFORM TO MASS. D.P.W. STANDARD 202.4.0.
2. FACE OF PIPE FLUSH OR NOT TO PROJECT MORE THAN 4" FROM FACE OF WALL ALONG CENTERLINE OF PIPE.
3. FOR DESCRIPTION, MATERIALS AND CONSTRUCTION METHOD, SEE SPECIFICATIONS.



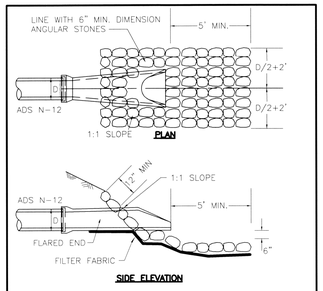
MANHOLE FRAME AND COVER

NOT TO SCALE

ADS END SECTION DIMENSIONS



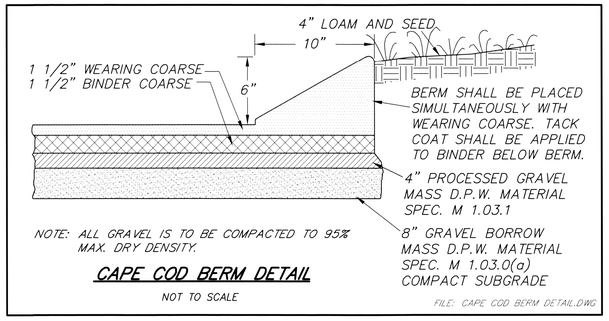
PIPE DIAMETER	DIMENSION (inches)				
	PART NO.	A(1±)	B MAX	H(1±)	L(1/2±)	W(2±)
12" and 15"	1210 NP	6.5	10	6.5	25	29
18"	1810 NP	7.5	15	6.5	32	35
24"	2410 NP	7.5	18	6.5	36	45
36"	3610 NP	10.5	NA	7.0	53	68



NOTE: ALL PIPE ENDS SHALL BE PROVIDED WITH A FLARED END.

PIPE END DETAIL

NOT TO SCALE



NOTE: ALL GRAVEL IS TO BE COMPACTED TO 95% MAX. DRY DENSITY.

CAPE COD BERM DETAIL

NOT TO SCALE

FILE: CAPE COD BERM DETAIL.DWG

SITE PLAN
IN
ACTON, MASSACHUSETTS
(MIDDLESEX COUNTY)

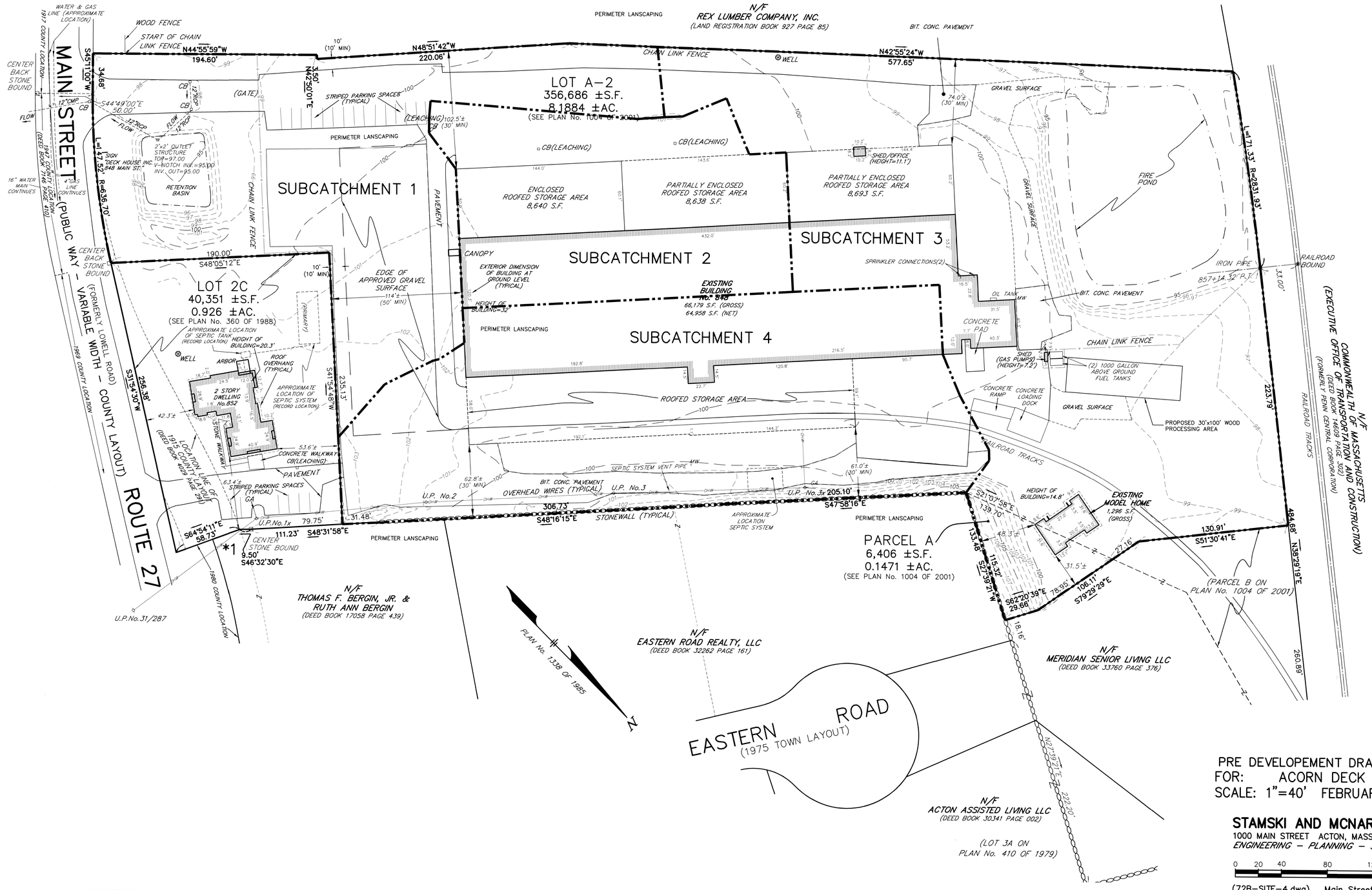
CONSTRUCTION DETAILS
FOR: ACORN DECK HOUSE CO.
SCALE: 1"=40' FEBRUARY 18, 2014

STAMSKI AND MCNARY, INC.
1000 MAIN STREET ACTON, MASSACHUSETTS
ENGINEERING - PLANNING - SURVEYING

0 20 40 80 120 160 FT

(72B-SITE-4.dwg) Main Street SM-72B Sheet 5 of 5

COMMONWEALTH OF MASSACHUSETTS JOSEPH MARCH # 36384 PROFESSIONAL LAND SURVEYOR

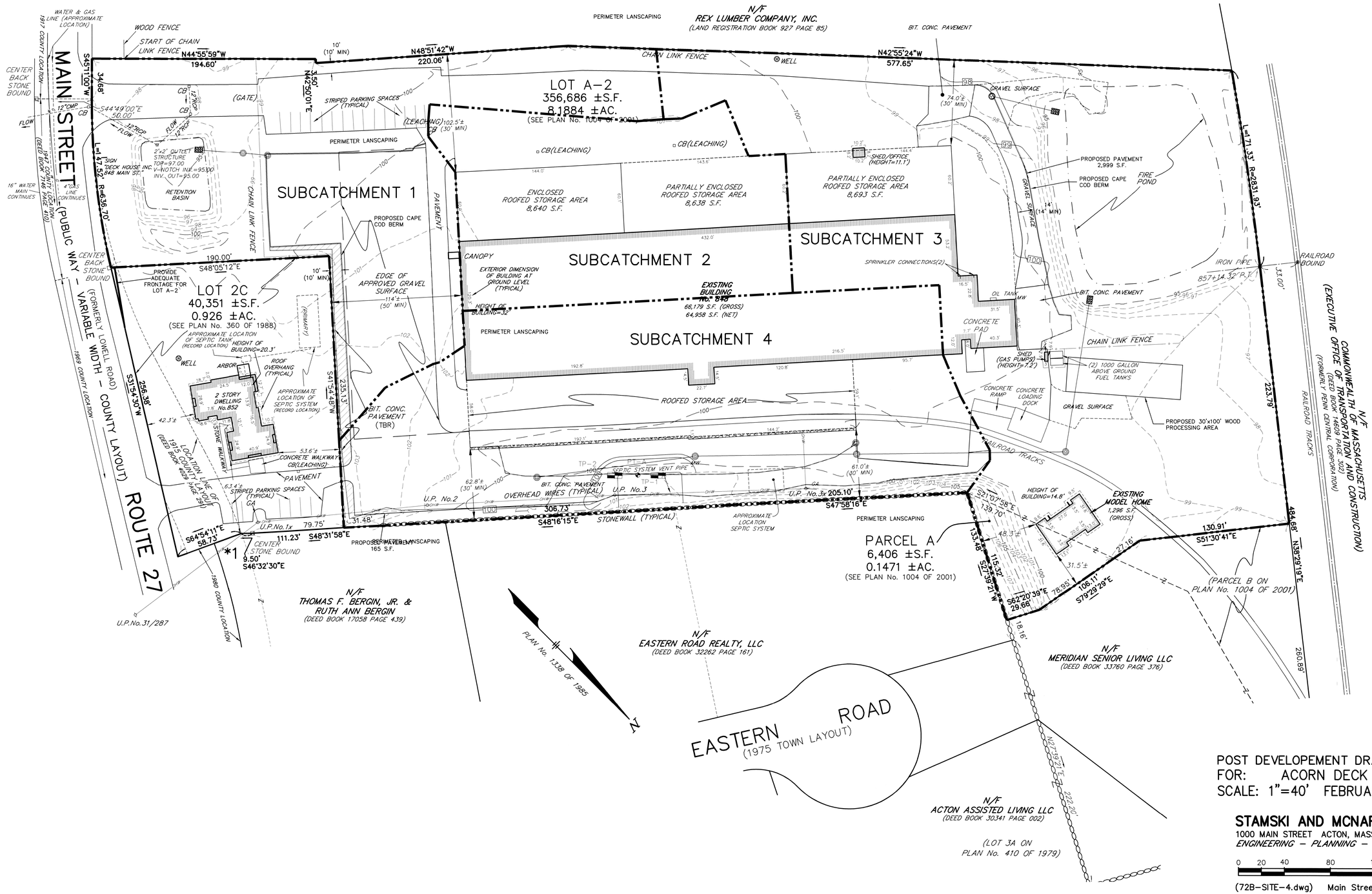


PRE DEVELOPEMENT DRAINAGE MAP
FOR: ACORN DECK HOUSE CO.
SCALE: 1"=40' FEBRUARY 18, 2014

STAMSKI AND MCNARY, INC.
1000 MAIN STREET ACTON, MASSACHUSETTS
ENGINEERING – PLANNING – SURVEYING

0 20 40 80 120 160 FT

(72B–SITE–4.dwg) Main Street SM–72B



POST DEVELOPEMENT DRAINAGE MAP
FOR: ACORN DECK HOUSE CO.
SCALE: 1"=40' FEBRUARY 18, 2014

STAMSKI AND MCNARY, INC.
1000 MAIN STREET ACTON, MASSACHUSETTS
ENGINEERING – PLANNING – SURVEYING

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(72B–SITE–4.dwg) Main Street SM–72B