

**PB# 99-8**

**GUARDIAN SELF STORAGE**

**4-1-4**

99-8

#99-8  
GUARDIAN SELF STORAGE S.P.  
SQUARE HILL ROAD (HAZEN)

*Approved 8-19-99*

DATE April 9, 1999 RECEIPT 039158RECEIVED FROM R & R Partnership

Address \_\_\_\_\_

One hundred and 00/100 - DOLLARS \$ 100<sup>00</sup>/100FOR Planning Board Application Fee  
#99-8

ACCOUNT		HOW PAID	
BEGINNING BALANCE		CASH	#000133
AMOUNT PAID		CHECK	100 00
BALANCE DUE		MONEY ORDER	

Town Clerk  
BY Dorothy J. HansenDATE April 8, 1999 RECEIPT 99-8 NUMBERRECEIVED FROM R & R PartnershipAddress 80 Washington St., Suite 100, Poughkeepsie, N.Y. 12601Seven Hundred - Fifty 00/100 - DOLLARS \$ 750.00FOR Site Plan Escrow

ACCOUNT		HOW PAID	
BEGINNING BALANCE	750 -	CASH	
AMOUNT PAID	750 -	CHECK	#000132
BALANCE DUE	-0 -	MONEY ORDER	

BY A. Zappalo  
Theresa Mann, SecretaryDATE 8/24/99 RECEIPT 134262RECEIVED FROM R & R Partnership

Address \_\_\_\_\_

One Hundred - 00/100 - DOLLARS \$ 100<sup>00</sup>FOR P.B. #99-8  
Approval Fee

ACCOUNT		HOW PAID	
BEGINNING BALANCE		CASH	
AMOUNT PAID		CHECK	X
BALANCE DUE		MONEY ORDER	

Town Clerk  
BY Dorothy Hansen

Additional Receipts in file.

Wilson Jones - C

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ACCOUNT		HOW PAID	
BEGINNING BALANCE		CASH	#200133
AMOUNT PAID		CHECK	100.00
BALANCE DUE		MONEY ORDER	

TOWN CLERK  
BY Dorothy H. Hansen

Wilson Jones - Carbonless - S162-W/C.L. Duplicate - S164-W/C.L. Triplicate

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DATE April 8, 1999 RECEIPT NUMBER 99-8

RECEIVED FROM B & R Partnership

Address 80 Washington St., Suite 100, Poughkeepsie, N.Y. 12501  
Seven Hundred - Fifty 00/100 DOLLARS \$ 750.00

FOR Site Plan Escrow

ACCOUNT		HOW PAID	
BEGINNING BALANCE	750 -	CASH	
AMOUNT PAID	750 -	CHECK	#000132
BALANCE DUE	-0 -	MONEY ORDER	

BY J. Zappalo  
Myra Mann, Secretary

Wilson Jones - Carbonless - S165-NCR Duplicate - S167-N/C.L. Triplicate

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DATE 8/24/99 RECEIPT NUMBER 134262

RECEIVED FROM R & R Partnership

Address One Hundred - 80/100 DOLLARS \$ 100.00

FOR P.B. #99-8  
Approval Fee

Town Clerk

ACCOUNT		HOW PAID	
BEGINNING BALANCE		CASH	
AMOUNT PAID		CHECK	X
BALANCE DUE		MONEY ORDER	

BY Dorothy Hansen

Additional Receipts in file.

Have final report + plans  
to Mark - 7/9/99.

PLANNING BOARD  
TOWN OF NEW WINDSOR

AS OF: 08/24/1999

PAGE: 1

LISTING OF PLANNING BOARD FEES  
ESCROW

FOR PROJECT NUMBER: 99-8  
NAME: GUARDIAN SELF STORAGE SITE PLAN  
APPLICANT: REDL, HERBERT PROPERTIES

--DATE--	DESCRIPTION-----	TRANS	--AMT-CHG	-AMT-PAID	--BAL-DUE
04/08/1999	REC. CK. #000132	PAID		750.00	
04/14/1999	P.B. ATTY. FEE	CHG	35.00		
04/14/1999	P.B. MINUTES	CHG	58.50		
06/09/1999	P.B. ATTY. FEE	CHG	35.00		
06/09/1999	P.B. MINUTES	CHG	58.50		
08/20/1999	P.B. ENGINEER FEE	CHG	790.00		
08/23/1999	REC. CK. #000200	PAID		227.00	
		TOTAL:	977.00	977.00	0.00

PLANNING BOARD  
TOWN OF NEW WINDSOR

AS OF: 08/24/1999

PAGE: 1

LISTING OF PLANNING BOARD FEES  
4% FEE

FOR PROJECT NUMBER: 99-8  
NAME: GUARDIAN SELF STORAGE SITE PLAN  
APPLICANT: REDL, HERBERT PROPERTIES

--DATE--	DESCRIPTION-----	TRANS	--AMT-CHG	-AMT-PAID	--BAL-DUE
08/20/1999	2%OF \$160,959.00	INSPEC F	CHG	3219.18	
08/23/1999	REC. CK. #000202		PAID	3219.18	
		TOTAL:	3219.18	3219.18	0.00



8/23/99  
99-8

SITE PLAN FEES - TOWN OF NEW WINDSOR  
(INCLUDING SPECIAL PERMIT)

APPLICATION FEE:.....\$ 100.00

\*\*\*\*\*

ESCROW:

SITE PLANS (\$750.00 - \$2,000.00).....\$ \_\_\_\_\_

MULTI-FAMILY SITE PLANS:

\_\_\_\_\_ UNITS @ \$100.00 PER UNIT (UP TO 40 UNITS)....\$ \_\_\_\_\_

\_\_\_\_\_ UNITS @ \$25.00 PER UNIT (AFTER 40 UNITS).....\$ \_\_\_\_\_

TOTAL ESCROW PAID:.....\$ \_\_\_\_\_

\*\*\*\*\*

PLAN REVIEW FEE: (EXCEPT MULTI-FAMILY) \$ 100.00 (1)

PLAN REVIEW FEE (MULTI-FAMILY): A. \$100.00  
PLUS \$25.00/UNIT B. \_\_\_\_\_

TOTAL OF A & B: \$ \_\_\_\_\_

RECREATION FEE: (MULTI-FAMILY)

\$500.00 PER UNIT

\_\_\_\_\_ @ \$500.00 EA. EQUALS: \$ \_\_\_\_\_  
NUMBER OF UNITS

SITE IMPROVEMENT COST ESTIMATE: \$ \_\_\_\_\_

2% OF COST ESTIMATE \$ 160,959.00 EQUALS \$ 3219.18 (2)

TOTAL ESCROW PAID:.....\$ 750.00

TO BE DEDUCTED FROM ESCROW: 977.00

RETURN TO APPLICANT: \$ \_\_\_\_\_

ADDITIONAL DUE: \$ 227.00 (3)

PLANNING BOARD  
TOWN OF NEW WINDSOR

AS OF: 08/27/1999

PAGE: 1

LISTING OF PLANNING BOARD ACTIONS

STAGE:

STATUS [Open, Withd]  
A [Disap, Appr]

FOR PROJECT NUMBER: 99-8

NAME: GUARDIAN SELF STORAGE SITE PLAN  
APPLICANT: REDL, HERBERT PROPERTIES

--DATE--	MEETING-PURPOSE-----	ACTION-TAKEN-----
08/19/1999	PLANS STAMPED	APPROVED
06/09/1999	P.B. APPEARANCE . APPROVED CONDITIONALLY: MARK'S COMMENTS - DRAINAGE - . RESPONSE FROM CITY OF NEWBURGH	LA:ND WVE PH APP CON
05/24/1999	Z.B.A. APPEARANCE	GRANTED VARIANCES
04/14/1999	P.B. APPEARANCE	REFER TO ZBA
02/08/1999	WORK SESSION APPEARANCE	SUBMIT

PLANNING BOARD  
TOWN OF NEW WINDSOR

AS OF: 08/27/1999

PAGE: 1

LISTING OF PLANNING BOARD AGENCY APPROVALS

FOR PROJECT NUMBER: 99-8

NAME: GUARDIAN SELF STORAGE SITE PLAN  
APPLICANT: REDL, HERBERT PROPERTIES

	DATE-SENT	AGENCY-----	DATE-RECD	RESPONSE-----
REV1	06/04/1999	MUNICIPAL HIGHWAY	/ /	
REV1	06/04/1999	MUNICIPAL WATER	06/07/1999	APPROVED
REV1	06/04/1999	MUNICIPAL SEWER	06/11/1999	APPROVED
REV1	06/04/1999	MUNICIPAL FIRE	/ /	
ORIG	04/09/1999	MUNICIPAL HIGHWAY	04/12/1999	APPROVED
ORIG	04/09/1999	MUNICIPAL WATER	04/12/1999	APPROVED
ORIG	04/09/1999	MUNICIPAL SEWER	04/23/1999	DISAPPROVED
		. SEWER LATERAL CANNOT TIE INTO EXISTING SEWER MANHOLE.		
		. CONNECTION MUST BE MADE ON THE MAIN USING APPROVED SADDLE.		
ORIG	04/09/1999	MUNICIPAL FIRE	04/12/1999	APPROVED

PLANNING BOARD  
TOWN OF NEW WINDSOR

AS OF: 08/27/1999

PAGE: 1

LISTING OF PLANNING BOARD SEQRA ACTIONS

FOR PROJECT NUMBER: 99-8

NAME: GUARDIAN SELF STORAGE SITE PLAN  
APPLICANT: REDL, HERBERT PROPERTIES

	DATE-SENT	ACTION-----	DATE-RECD	RESPONSE-----
ORIG	04/08/1999	EAF SUBMITTED	/ /	WITH APPLICATION
ORIG	04/08/1999	CIRCULATE TO INVOLVED AGENCIES	/ /	
ORIG	04/08/1999	LEAD AGENCY DECLARED	06/09/1999	TOOK LEAD AGENCY
ORIG	04/08/1999	DECLARATION (POS/NEG)	06/09/1999	DECL. NEG DEC
ORIG	04/08/1999	SCHEDULE PUBLIC HEARING	/ /	
ORIG	04/08/1999	PUBLIC HEARING HELD	/ /	
ORIG	04/08/1999	WAIVE PUBLIC HEARING	06/09/1999	WAIVE PH
ORIG	04/08/1999	AGRICULTURAL NOTICES	/ /	



**McGOEY, HAUSER and EDSALL  
CONSULTING ENGINEERS P.C.**

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WILLIAM J. HAUSER, P.E.  
MARK J. EDSALL, P.E.  
JAMES M. FARR, P.E.

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Milford, Pennsylvania 18337  
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e-mail: mhepa@ptd.net

**MEMORANDUM**  
**19 August 1999**

**TO: MYRA MASON, P.B. SECRETARY**

**FROM: MARK J. EDSALL, P.E., PLANNING BOARD ENGINEER**

**SUBJECT: GUARDIAN SELF-STORAGE SITE PLAN (P.B. # 99-8)**

A handwritten signature in black ink, appearing to read 'MJE', is written over the 'FROM' line of the memorandum.

I have reviewed the site improvement cost estimate for the subject project, with a total amount of \$160,959.00

It is my opinion that this amount is acceptable.

Myra081999.doc

\$ 3219.18

CHRONOLOGICAL JOB STATUS REPORT

JOB: 87-56

NEW WINDSOR PLANNING BOARD (Chargeable to Applicant)

CLIENT: NEWWIN - TOWN OF NEW WINDSOR

TASK: 99- 8

FOR WORK DONE PRIOR TO: 08/19/99

										-----DOLLARS-----		
TASK-NO	REC	--DATE--	TRAN	EMPL	ACT	DESCRIPTION-----	RATE	HRS.	TIME	EXP.	BILLED	BALANCE
99-8	146941	/ /	TIME	MJF	MC		0.00	0.00	0.00			
99-8	141713	02/18/99	TIME	MJE	WS	REDL-MINI STORAGE	75.00	0.40	30.00			
99-8	141717	02/18/99	TIME	MJE	MC	REDL IC/IRAVIS	75.00	0.30	22.50			
99-8	142048	02/26/99	TIME	MJF	MC	RFDI FFNCF W/CHAZFN	75.00	0.40	30.00			
99-8	146935	04/13/99	TIME	MJE	MC	GUARDIAN STORAGE	75.00	0.50	37.50			
99-8	145460	04/14/99	TIME	MJE	MM	GUARDIAN DISAP>ZBA	75.00	0.10	7.50			
99-8	145827	04/14/99	TIME	MCK	CI	GUARDIAN STORAGE TRC	28.00	0.50	14.00			
99-8	147445	04/21/99	TIME	MJE	WS	GUARDIAN	75.00	0.40	30.00			
99-8	147440	04/23/99	TIME	MJE	MC	ZBA REFERRAL GUARDIA	75.00	0.50	37.50			
									-----			
									209.00			
99-8	148932	05/18/99				BILL 99-508					-209.00	
											-----	
											-209.00	
99-8	150628	06/02/99	TIME	MJE	WS	GUARDIAN S/P	75.00	0.40	30.00			
99-8	151589	06/08/99	TIME	MJE	MC	GUARDIAN STORAGE	75.00	0.60	45.00			
99-8	151131	06/09/99	TIME	MCK	CL	GUARDIAN TRC	28.00	0.50	14.00			
99-8	151134	06/09/99	TIME	MCK	CL	GUARD/LIR TO HAUSER	28.00	0.50	14.00			
99-8	151136	06/09/99	TIME	MCK	CI	G/DRATNAGF RVW COMMS	28.00	0.50	14.00			
99-8	151594	06/09/99	TIME	MJE	MC	GUARDIAN STORAGE	75.00	0.10	7.50			
99-8	151824	06/09/99	TIME	MJE	MM	Guardian Cond S/P AP	75.00	0.10	7.50			
99-8	153336	07/02/99	TIME	MJF	MC	GUARDIAN W/PJH	75.00	0.40	30.00			
99-8	155732	07/07/99	TIME	PJH	MR	GARDIAN SELF/RVW	75.00	2.00	150.00			
99-8	155733	07/26/99	TIME	PJH	MR	GARDIAN SLLI/RVW	75.00	2.00	150.00			
99-8	155731	07/30/99	TIME	PSR	CI	GARDIAN SELF/TRC	28.00	0.50	14.00			
99-8	156997	08/11/99	TIME	MJE	MC	GUARDIAN W/MM	75.00	0.30	22.50			
99-8	157438	08/19/99	TIME	SCN	MC	RLVILW COST LSI	45.00	1.00	45.00			
99-8	157439	08/19/99	TIME	MJF	MC	Closeout	75.00	0.50	37.50			
									-----			
									581.00			
99-8	156648	08/11/99				BILL 99-775					-476.00	
											-----	
											476.00	
									=====			
TASK TOTAL									790.00	0.00	-685.00	105.00
											-----	
GRAND TOTAL									790.00	0.00	-685.00	105.00



.NEW WINDSOR LABOR AND MATERIALS  
AS OF 8/12/99

Blacktop	108,600 sq. ft. @ \$43.00 per ton	\$58,373.00
Landscaping	7 trees @ \$100.00	700.00
	37 shrubs @ \$25.00	925.00
	36 flowering plants @ \$10.00	360.00
	180 ground cover plants @ \$1.25	225.00
	Repair stone wall	3,000.00
Drainage	14 catch basins @ \$300.00	4,200.00
	1706 linear ft of pipe @ \$21.00(ave.)	35,826.00
	Riprap apron and flairs	3,700.00
Curbing & Sidewalks	1000 sq. ft. of sidewalk @ \$5.00	5,000.00
	100 sq. ft. of curbing @ \$14.00	1,400.00
Fencing	2,200 linear ft. @ \$10.00	22,000.00
	160 linear ft. decorative fence @ \$20.00	3,200.00
	2 gates—1 @ \$3,600 & 1 @ \$2,400	6,000.00
	13 brick pillars @ \$550.00	7,150.00
	69 wall lights @ \$100.00	6,900.00
	10 coach lights @ \$200.00	<u>2,000.00</u>
	<b>Total</b>	<b>\$160,959.00</b>



## NEW WINDSOR BUILDING COSTS

*Square Hill Road*

As of 8/11/99

Blacktop	\$73,000
Landscaping	10,000
Drainage	12,450
Curbing & Sidewalk	3,700
Fencing	22,000
Fencing - Decorative	3,200
Gates	6,000
Brick Piers	2,500
Lighting	6,900
Coach Lights	2,000
Signs	7,200
	<hr/>
<b>TOTAL</b>	<b>\$148,950</b>

(GSSINW Building Costs)

80 Washington Street • Suite 309 • Poughkeepsie, NY 12601 • Phone 914-471-6000 • Fax 914-471-6336

RESULTS OF **B. MEETING OF:** June 2, 1999

**PROJECT:** Guardian Self Storage **P.B.#** 99-8

**LEAD AGENCY:**

**NEGATIVE DEC:**

1. AUTHORIZE COORD LETTER: Y\_\_ N\_\_  
2. TAKE LEAD AGENCY: Y  N\_\_

M) S S) LU VOTE: A 5 N 0  
CARRIED: YES  NO\_\_

M) S S) A VOTE: A 5 N 0  
CARRIED: YES  NO\_\_

WAIVE PUBLIC HEARING: M) LU S) S VOTE: A 5 N 0 WAIVED: Y  N\_\_

SCHEDULE P.H. Y\_\_ N

SEND TO O.C. PLANNING: Y\_\_

SEND TO DEPT. OF TRANSPORTATION: Y\_\_

REFER TO Z.B.A.: M) \_\_ S) \_\_ VOTE: A \_\_ N\_\_

RETURN TO WORK SHOP: YES\_\_ NO\_\_

**APPROVAL:**

M) \_\_ S) \_\_ VOTE: A \_\_ N\_\_ APPROVED: \_\_\_\_\_  
M) S S) LU VOTE: A 5 N 0 APPROVED CONDITIONALLY: 6-9-99

NEED NEW PLANS: Y\_\_ N\_\_

**DISCUSSION/APPROVAL CONDITIONS:**

<i>Address comments</i>
<i>Drainage</i>
<i>Need response from City of Newb.</i>



McGOEY, HAUSER and EDSALL  
CONSULTING ENGINEERS P.C.

RICHARD D. McGOEY, P.E.  
WILLIAM J. HAUSER, P.E.  
MARK J. EDSALL, P.E.  
JAMES M. FARR, P.E.

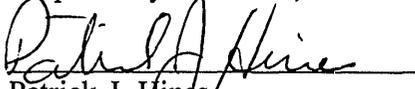
- Main Office**  
45 Quassaick Ave. (Route 9W)  
New Windsor, New York 12553  
(914) 562-8640
- Branch Office**  
507 Broad Street  
Milford, Pennsylvania 18337  
(570) 296-2765

**TOWN OF NEW WINDSOR  
PLANNING BOARD  
DRAINAGE REVIEW COMMENTS**

**REVIEW NAME:** GUARDIAN SELF STORAGE SITE PLAN  
**PROJECT LOCATION:** SQUARE HILL ROAD (a/k/a LINER ROAD)  
SECTION 4-BLOCK 1-LOT 4  
**PROJECT NUMBER:** 99-8  
**DATE:** 9 JUNE 1999

1. The Applicant is asked to address the creation of the point discharge at the immediate property line with the neighboring property. The effects of this point discharge should be evaluated with regard to impact on the adjoining property.
2. The detention pond, as designed, will contain 4.4 feet of water below the discharge of the outlet control structure. No method of discharge for this water is provided. The Town of New Windsor Policy requires detention ponds drain between storm events. The capacity of the first flush treatment would be significantly diminished if existing water was contained in the pond prior to the storm event. A low flow outlet of some sort should be provided in order to provide for draining of the pond between storm events.
3. A section of rip-rap slope protection is identified on the plan sheets, however, a catch basin could be provided at the location of the rip-rap slope protection discharging to the detention pond inlet. This would eliminate the need for over land flow in this area and would allow for the installation of curbing as depicted on the site.
4. The exact extent of the curbing on the site should be depicted. The entire site would require curbing in order to convey stormwater runoff to the proposed catch basins.

Respectfully submitted,

  
Patrick J. Hines  
Senior Engineer

PJHmk

A:GUAR-DR.mk



**McGOEY, HAUSER and EDSALL  
CONSULTING ENGINEERS P.C.**

RICHARD D. McGOEY, P.E.  
WILLIAM J. HAUSER, P.E.  
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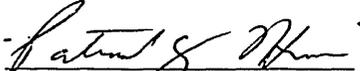
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**TOWN OF NEW WINDSOR  
PLANNING BOARD  
REVIEW COMMENTS**

**REVIEW NAME:** Guardian Self Storage  
**PROJECT LOCATION:** SECTION 4 -BLOCK 1 -LOT 4  
**APPLICANT'S REPRESENTATIVE:** Chazen Company  
**PROJECT NUMBER:**  
**DATE:** 29 July 1999

1. The applicant's representative has provided a revised change analysis and site plan which incorporates each of the comments in our 9 June 1999 review letter. The detention pond facility has been redesigned in order to provide for a positive outlet for draining during or between storm events. In addition, curbing has been identified on the site in order to control storm water run-off to the closed pipe drainage system proposed. Based on the above this office takes no exception to the drainage aspects of the project that is proposed.

Respectfully submitted,

  
Patrick J. Hines  
Senior Engineer

a:guardian.pr



McGOEY, HAUSER and EDSALL  
CONSULTING ENGINEERS P.C.

RICHARD D. McGOEY, P.E.  
WILLIAM J. HAUSER, P.E.  
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**TOWN OF NEW WINDSOR  
PLANNING BOARD  
REVIEW COMMENTS**

**REVIEW NAME:** GUARDIAN SELF STORAGE SITE PLAN  
**PROJECT LOCATION:** SQUARE HILL ROAD (a/k/a LINER ROAD)  
SECTION 4-BLOCK 1-LOT 4  
**PROJECT NUMBER:** 99-8  
**DATE:** 9 JUNE 1999  
**DESCRIPTION:** THE APPLICATION PROPOSES THE DEVELOPMENT OF THE 6 + ACRE SITE WITH MULTIPLE BUILDINGS AS A SELF-STORAGE FACILITY. THE PLAN WAS PREVIOUSLY REVIEWED AT THE 14 APRIL 1999 PLANNING BOARD MEETING.

1. At the 14 April 1999 Planning Board meeting, the Board identified bulk values which required interpretations and/or variances relative to this site plan. It is my understanding that the Applicant has appeared before the Zoning Board of Appeals and has received the necessary variances. On Drawing C-2, a "Variance Table" has been provided to indicate the variances and determination.
2. I have reviewed the revised plan submitted for this meeting. In general, I believe the plans are responsive to the previous engineering comments and the comments of the Board. Some minor corrections or clarifications are necessary, as following:
  - a. The Board should be aware that the Applicant intends to construct asphalt curbs at the site. The Board should verify that this construction method for curbing is acceptable. The plan should be made more clear as to the limits of the interior curbing.
  - b. The plan includes curbing at the entrance to the site off the Town road. The curbing for this entrance must be concrete curbing, in conformance with the Town Street Specifications.
  - c. The plan should identify and provide a detail for the handicapped ramp at the office area.

**TOWN OF NEW WINDSOR  
PLANNING BOARD  
REVIEW COMMENTS  
PAGE 2**

**REVIEW NAME:** GUARDIAN SELF STORAGE SITE PLAN  
**PROJECT LOCATION:** SQUARE HILL ROAD (a/k/a LINER ROAD)  
SECTION 4-BLOCK 1-LOT 4  
**PROJECT NUMBER:** 99-8  
**DATE:** 9 JUNE 1999

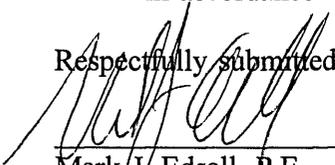
- d. The bulk table should delete the word "minimum" relative to the proposed storage unit height.
  - e. Additional explanation should be provided as to the purpose of the "rip-rap slope protection" depicted on Sheet C-3. Further, explain why this is only provided in the limited area shown.
  - f. On Detail Sheet C-4, the water connection detail would appear to be non-relevant for the details of this site construction.
  - g. On Detail Sheet C-5, a detail for the concrete curbing of the site entrance should be provided.
  - h. On detail Sheet C-5, the "permanent pavement repair" should note that same is applicable for Town roadway pavement replacement. The detail should also be revised to indicate 12" NYSDOT Item #4.
  - i. The plan should include an approval box on the drawings, as per the general requirements noted in the application package.
3. The Applicant has submitted a Stormwater Management Report for the site. Comments regarding this report have been prepared separately and are included herewith.
4. The Planning Board may wish to assume the position of **Lead Agency** under the SEQRA process.
5. The Planning Board should determine, for the record, if a **Public Hearing** will be necessary for his **Site Plan**, per its discretionary judgement under Paragraph 48-19.C of the Town Zoning Local Law.

**TOWN OF NEW WINDSOR  
PLANNING BOARD  
REVIEW COMMENTS  
PAGE 3**

**REVIEW NAME:** GUARDIAN SELF STORAGE SITE PLAN  
**PROJECT LOCATION:** SQUARE HILL ROAD (a/k/a LINER ROAD)  
SECTION 4-BLOCK 1-LOT 4  
**PROJECT NUMBER:** 99-8  
**DATE:** 9 JUNE 1999

6. The Planning Board may wish to make a **determination** regarding the type action this project should be classified under SEQRA and make a determination regarding environmental significance.
  
7. The Planning Board should require that a **bond** estimate be submitted for this **Site Plan** in accordance with Paragraph A(1)(g) of Chapter 19 of the Town Code.

Respectfully submitted,



---

Mark J. Edsall, P.E.  
Planning Board Engineer

MJEmk

A:GUARD2.mk

REGULAR ITEMS:GUARDIAN SELF-STORAGE SITE PLAN (99-8) LINER ROAD

Mr. Richard Chazen and Ms. Cory Daniels appeared before the board for this proposal.

MR. CHAZEN: Good evening. Once again, I'm Richard Chazen of Chazen Engineering. With me is Cory Daniels with Guardian Self Storage. Just to refresh the board's memory, we were here about a month ago. We're proposing about 70,000 square feet of self-storage on a 6.08 acre parcel on the Liner Road, Square Hill Road, however you know it. The last time we were here, the board pointed out a number of variances that would be required before you could take any action. We have in fact been to the Zoning Board of Appeals and we received all the variances we requested. They were for front yard for buildings 8 and 9, as well as our office to permit it to be closer to the roadway than what we had than was required. We also got an interpretation that front yard requirements would not apply to these three buildings, you may recall we have an unusual shaped property, the board felt that this need not be a front yard.

MR. PETRO: Zoning Board felt that way.

MR. CHAZEN: And finally, we received a variance to have an eight foot fence instead of the 6 foot, which is permitted in the ordinance. So we're done with the Zoning Board, to the best of our knowledge. We've also made a few minor revisions to these plans from what you have seen last month in accordance with the town engineer's comments, they involved the point of connection to the sewer line that's been revised. We had to come out to a manhole, we're now coming into the main line. We had also proposed a well for our water supply and it was pointed out that the municipal water's available. We can access that showing connection to the municipal water system. There was also an issue as to whether or not these buildings need to be sprinklered. You heard Mr. Shaw, that's not applicable here. The final revision is we're now showing ten parking spaces, four in front of our office

building and another six spaces within the site to comply with the requirements of your ordinance. That is a quick overview of where we're at we'd be happy to answer any questions you might have. The one other thing, Mr. Chairman, you asked us for a photometric plan and there was some concern about the lighting. We have provided that to you.

MR. LUCAS: Was there also a question of sewer and water?

MR. CHAZEN: The question was we were showing connection to municipal sewer but not to water. We have now shown the connection to water.

MR. LANDER: I see you have asphalt curb coming around the building, I think it's well concrete curbing, you have concrete curbing on the entranceway coming out of Square Hill Road?

MR. PETRO: They have to.

MR. CHAZEN: Yes, we have concrete curbing, you can see the end of the curb is really there.

MR. LANDER: I saw asphalt curb on the inside, that's why.

MR. PETRO: I think it's adequate for inside, Ron, for the interior.

MR. ARGENIO: We had a vote on this 12 months ago, this board was split right down the middle.

MR. PETRO: About the curbing.

MR. ARGENIO: I can tell you what site it was, Route 207 across the street from your property.

MR. LUCAS: Right, but the argument I was kind of in favor of only because both of you said that structure wise, you had no problem with it as far as maintenance.

MR. ARGENIO: As I remember it, Mr. Lander and I were in favor of concrete.

MR. LUCAS: You were in favor of concrete, but the argument wasn't made why concrete was stronger.

MR. LANDER: I think aesthetically, just for sheer continuity of the curb coming in, we have the entrances out of concrete curb, then we stop and pick up asphalt curb in the front, I don't think it's pleasing to the eye that way, especially it's right out in front. If it's the rear of the building, that's one thing. Here, I don't think there's as much traffic as that on 207 where everybody will see it and on the inside of this project, I don't really have a problem.

MR. PETRO: Keep in mind the 207 project also we did that because the State is widening the road within two years and they are going to rip it all out.

MR. LANDER: I'll believe that when I see it.

MR. ARGENIO: I agree.

MR. LANDER: They said the same thing to Fritz Katz, we're going to do this, put your curb in, then it was many years down the road, wasn't just a couple years.

MR. ARGENIO: I agree with most of what Mr. Lander just stated that it's not as high a traffic area as 207.

MR. STENT: Mr. Chairman, Route 207 is really I think irrelevant to the property we're talking about right now.

MR. LANDER: That's true, I don't know how we got on this subject.

MR. STENT: I don't think we should be on it, we're on Square Hill, we're not on 207.

MR. LUCAS: Pretty close, though.

MR. LANDER: Yeah, we can throw a rock. So, we're going to have concrete curb coming in and pick up with asphalt.

MR. CHAZEN: Just as a clarification, we have only shown asphalt curbing in the areas of the site where we need it to channelize our drainage to the retention facility. Frankly, in other facilities such as this the less curb, the better, it's a problem following it just gets in the way.

MR. PETRO: It's not required curbing in that.

MR. CHAZEN: We're just showing it where we need it for channelization of drainage, so there's asphalt curb along this section here, so we can get our water into our detention pond, there's some asphalt curbing here to stop water from flowing onto adjoining property and there's asphalt curbing picks up again here to channelize water into our catch basins, it's simply to supplement our drainage.

MR. EDSALL: Can I just ask so I can make sure I understand the limits of curb? Am I understanding that from the west side of the entrance where it says end of curb it runs continuous to the left on the plan along the whole perimeter until it starts to come up on the north side where it again says end of curb, the whole bottom end more or less?

MR. CHAZEN: Yes.

MR. EDSALL: You have an end of curb there.

MR. CHAZEN: This is all curbing, curbing, all the way around the house and then the curbing ends right here.

MR. EDSALL: There's another mark of end of curb.

MR. CHAZEN: Then the curbing picks up again, do you see where I am along the bottom so we can channelize into that catch basin on the back side, the curbing starts here, comes all the way up around the corner and then stops and there's no curbing proposed along the back or the east side here because we don't need it.

MR. EDSALL: You're looking purely for containment of the storm water on the sheet flow off the parking lot?

MR. CHAZEN: Correct.

MR. EDSALL: The opening to the north of building 9 you're looking to just have that run into the basin?

MR. CHAZEN: Channelize the water.

MR. EDSALL: That answers some of our questions that we weren't quite sure on. I'll just indicate that I have no problem with the approach that they are using. I just wasn't clear on where it started and stopped. Now we understand and the riprap may have to be extended further down into the basin. Really now it just shows a thin strip but it may have to be run down a slope a ways but I don't have any problem with the layout.

MR. PETRO: Let's go over the riprap which is on your comments, Mark, just touch on that, please.

MR. EDSALL: Well, they just did explain the purpose of the riprap as being where the outlet, there's storm water that's directed by the curbs along the perimeter. So I now understand what their intent was. My only comment at this point it may have to be extended a little bit further down into the basin so it doesn't erode immediately below the riprap. But I believe it's an appropriate design. We had some other drainage comments when and if you want to go over them.

MR. PETRO: You want to continue?

MR. EDSALL: There's a separate memo that dealt with drainage comments and really, if you look at the entire memo, there's really two issues. One, as we understand the pond, it currently would hold 4.4 feet of water below the discharge line. There's no low level outlet which means that in fact, after a storm event, the pond wouldn't drain, which I don't believe is in accordance with this board's general guidelines for detention basins. So we need to make sure that the pond, once we get the final design completely evacuates at the conclusion of the storm event after a certain period of time. That's one issue. And the second issue is we have a concern about making the storm water collecting and discharging it as a point discharge. It's somewhat

to the south of a pond that apparently is on the neighbor's property, but I'm not quite sure that we're able to collect and discharge at a single point that close to the property line. But I want the board to be aware of it and there's dissipaters where it can be dispersed over a wider period or wider area of the property line. But again, I want the board to be aware of it and if you concur that it's a concern, we might be able to work out an arrangement with the applicant.

MR. PETRO: Somebody give me a motion for number 4.

MR. STENT: Make a motion we declare ourselves lead agency.

MR. ARGENIO: Second it.

MR. PETRO: Motion has been made and seconded that the New Windsor Planning Board take lead agency under the SEQRA process for the Guardian Self-Storage site plan on Square Hill Road. Is there any further discussion from the board members? If not, roll call.

ROLL CALL

MR. ARGENIO	AYE
MR. STENT	AYE
MR. LANDER	AYE
MR. LUCAS	AYE
MR. PETRO	AYE

MR. PETRO: Mr. Chazen, you had a public hearing at the Zoning Board, I'm sure?

MR. CHAZEN: That's correct. In fact, I believe only the adjoiner who's at the end of Square Hill Road was in attendance and had no comment.

MR. PETRO: You had one in attendance?

MR. CHAZEN: And there was no comment.

MR. LUCAS: Move we waive public hearing.

MR. PETRO: This is use by right, too, right, Mark?

MR. EDSALL: Yes.

MR. PETRO: Motion is on the floor. Is there a second?

MR. STENT: Second it.

MR. PETRO: Motion's been made and seconded that the New Windsor Planning Board waive the public hearing for Guardian Self-Storage site plan on Square Hill Road. Any further discussion from the board members? If not, roll call.

ROLL CALL

MR. ARGENIO	AYE
MR. STENT	AYE
MR. LANDER	AYE
MR. LUCAS	AYE
MR. PETRO	AYE

MR. PETRO: I think we can go right to a negative dec on this, I don't think there's any impact at all.

MR. EDSALL: I think, Mr. Chairman, you have to reach a conclusion about the drainage before you're able to make a negative dec.

MR. LUCAS: This has no affect within 500 feet of Washington Lake which is the watershed.

MR. EDSALL: It has been forwarded to the City of Newburgh. We have not received a response yet. I really didn't anticipate that they would have anything to say but as a courtesy we did refer it.

MR. LUCAS: But it's on the other side of the road.

MR. EDSALL: Yes, and it's not as if they are discharging in a manner which would direct it towards the reservoir.

MR. LUCAS: Your big issue is the drainage of the pond?

MR. EDSALL: Two issues, one, it's against this board's

general policy to have a basin that holds water. You look for the basin to be completely evacuated at the period ending of the storm unless we're misunderstanding the design, this basin will hold roughly four feet of water. Second issue being a question as to whether or not rather than discharge from a single point whether or not it should be dissipated from a discharge channel along--

MR. CHAZEN: If I may, I know we discussed the discharge last time and I think I told my staff to change this to more or less along flat discharge along that northerly boundary, westerly boundary, we have no problem doing that, apparently something didn't get done in the shuffle here but--

MR. PETRO: Are you creating this from scratch, the pond or is it he can existing part of it.

MR. CHAZEN: There's a low area in this corner of the site however we're creating a formal pond for water quality and to limit runoff.

MR. ARGENIO: Mr. Chazen, to add to the comment about your staff, I don't think Mark was exclusively referring to the method of disposal. I think he was also referring to the fact that the outflow inverter is four feet above the bottom of the pond.

MR. CHAZEN: I understand both of Mark's comments. I think what was supposed to have been done this whole side of this thing was supposed to be almost a long weir so we didn't have a point of discharge onto the adjoining property and I think somebody started to change the grading yet left the discharge point in there, that's why it doesn't make sense. I'm sure it's physically possible to do what Mark's asking for and I don't think it's going to be a significant change.

MR. PETRO: He's going to have to go back with it, design the detention pond so Mark can review it and there's a host of other technical comments that Mark has there, you're going to have to clarify.

MR. EDSALL: I don't see any of the other comments as

being monumental to correct, so I would think that one more correction of the plan should take care of all of them.

MR. PETRO: The curbing in front, the concrete curbing.

MR. CHAZEN: It will be done.

MR. EDSALL: And I think that was as we discussed only going to be a, from a radius at the entrance in the town road right-of-way into the point where the gates are so it wouldn't go any further than the area by the gate.

MS. DANIELS: We have concrete at all the facilities, that is just our normal protocol.

MR. EDSALL: I don't think it was clear on the plan with you, I know that's what they indicated all along that's the type of quality entrance they want to have.

MR. STENT: I have no other questions, Mr. Chairman.

MR. PETRO: Anything else? Were you looking for final approval?

MR. CHAZEN: Certainly hoping that outstanding issues could be revolved with Mark.

MR. PETRO: Getting a building permit soon?

MS. DANIELS: Tonight, is that too soon?

MR. EDSALL: Mr. Chairman, on this one as with the previous application I believe there's no issues here that are beyond what normally would be a technical correction so I can work with the applicant, I would ask that you just add the one comment that you ask, make it subject to also getting some type of a response from the City of Newburgh, I think we should at least before we close out the file we should have something from them.

MR. PETRO: Once again--

MR. STENT: How can we handle that? I agree with you no problem with you working it out, how are we going to handle the negative dec?

MR. EDSALL: Well, they are not an involved agency, so technically, you don't have to wait to hear from them.

MR. STENT: I'm talking about us declaring negative dec.

MR. EDSALL: Under SEQRA, if they were an involved agency, you could not make a negative dec without hearing from them. In this case, they are just an interested agency who happens to have a reservoir in a different direction than the drainage flow and as a courtesy, you have sent it over and happens to be nearby if you believe based on your understanding of the site that in fact there's no environmental impact, you can reach a negative dec and I think Andy would agree with you, you can at least before we stamp the plan as a courtesy to our neighboring municipality who always renders us the same courtesy look to get some response back.

MR. PETRO: We're not doing a negative dec subject to.

MR. EDSALL: Making a neg dec and just looking to have them say yeah, sure, there's no problem and I can assist in getting that response in a timely fashion.

MR. STENT: And you would take care of the drainage problem that we have?

MR. EDSALL: I'm sure that Mr. Chazen will have that fixed quick, right, and we can review it.

MS. DANIELS: Tomorrow.

MR. PETRO: Motion? \*

MR. STENT: Make a motion we declare negative dec.

MR. LUCAS: Second it.

MR. PETRO: Motion has been made and seconded that the New Windsor Planning Board grant negative dec under the

SEQRA process for the Guardian Self-Storage site plan on Square Hill Road. Is there any further discussion? If not, roll call.

ROLL CALL

MR. ARGENIO	AYE
MR. STENT	AYE
MR. LANDER	AYE
MR. LUCAS	AYE
MR. PETRO	AYE

MR. STENT: That being the case.

MR. PETRO: We've had the attorney tell us it's okay, we've had the engineer tell us it's okay and basically, the pond would work the way it is, it's just that we don't allow standing water so he's going to amend it, correct?

MR. CHAZEN: Correct, if we can't, well, if we can't, we'll come back, obviously, Mark's not going to sign off on it.

MR. STENT: I move we grant final approval to the Guardian Self-Storage site plan on a Square Hill Road subject to what Mark read in before.

MR. ARGENIO: Subject to the two pages of comments.

MR. LUCAS: Second it.

MR. PETRO: Motion has been made and seconded that the New Windsor Planning Board grant final approval with the subject-to's that have been read in previously regarding the Guardian Self-Storage site plan on Square Hill Road. Is there any further discussion from the board members? I'm making a comment the reason I'm laughing a little bit we're bending over backwards to move this along and give final approval. When I go before a board, it takes about six months longer than this because they don't normally do this, a lot of subject-to's here, we're going to rely on the engineer who's excellent here to make sure it happens. If it doesn't happen, we're going to have recourse through

the building department.

MR. ARGENIO: Mr. Chairman?

MR. PETRO: We're moving along a little quickly.

MR. ARGENIO: I'm assuming something and I shouldn't assume, I didn't hear you mention fire approval, do they have the same that the other self storage has relative to the 5,000 square foot?

MR. BABCOCK: Yes.

MR. CHAZEN: We did meet with the fire inspector.

MR. PETRO: We have highway approval on 4/12/99, and fire approval on 4/12/99.

MR. EDSALL: Jim, just for Mr. Argenio's benefit, during the workshop, the applicant worked very cooperatively with us in getting a layout and providing aisles that met Bob Rogers' requirements. So they in fact did take some buildings and shorten them up and widen some access aisles, that was all worked out earlier on in the process.

MR. PETRO: With all that, is there any further discussion from the board members? If not, roll call.

ROLL CALL

MR. ARGENIO	AYE
MR. STENT	AYE
MR. LANDER	AYE
MR. LUCAS	AYE
MR. PETRO	AYE

MS. DANIELS: I have one question for the board. If I may, I appreciate everything you have done tonight, I truly do, would I be able to clear any of the property, it's very, very wooded? Can I get some guys to start clearing or am I jumping the gun too fast?

MR. PETRO: We don't formally have any problem in reality, you have Planning Board approval, subject to

some minor changes in compliance, so unless some of the other boards board members has a problem with that.

MR. ARGENIO: I defer, I don't have any problem, I defer to Mike Babcock.

MR. BABCOCK: I have no objection as long as it's--

MS. DANIELS: I didn't want to go on the property until I asked everyone.

MR. PETRO: Well, it's true that once you're before a planning board, it's illegal to clear your land. If you want to clear land before your planning board meeting, you can cut every tree off. You follow me?

MS. DANIELS: During the planning board process.

MR. PETRO: During the process, once you start the process, that's state law.

MR. EDSALL: No, it's in your local law.

MR. CHAZEN: Also, it's under SEQRA until you do a SEQRA determination, you technically can't alter the property.

MR. PETRO: Obviously, you can clear it any time you want, but once you're through the process, so you're correct in asking and you have permission from the board and the building inspector so your answer is yes.

MS. DANIELS: Thank you.

MR. CHAZEN: Thank you very much.

*Dutchess County Office:*

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June 28, 1999

Mr. James Petro, Jr. Planning Board Chairman  
Town of New Windsor  
555 Union Avenue  
New Windsor, New York 12553-6196

*Re: Guardian Self Storage, Liner Road  
Job # 89915.00*

Dear Chairman Petro:

Enclosed are 10 copies of the following revised documents: Sheet No. C-1: Existing Conditions, Sheet No. C-2: Site and Landscape Plan, Sheet No. C-3: Grading and Utility Plan, Sheet No. C-4: Site Details, Sheet No. C-5: Site Details, Sheet No. C-6: Erosion Control, Landscape and Lighting Details, and Sheet No. C-7: Photometric Plan and Stormwater Management Report. These drawings have been revised to address the comments made by the Planning Board, the Town Engineer as well as the Town Sewer Department. Our responses to the comments are as follows:

1. No Response required
- 2.a. Curbing has been noted on the plans as "End of Curb" with a double line weight as the symbol for the curbing.
- 2.b. Concrete curbing and a detail have been provided on the plans.
- 2.c. The plan has identified the proposed handicapped ramp and provided a detail.
- 2.d. The word "minimum" has been removed from the bulk table.
- 2.e. The rip-rap slope in question has been removed from the plan. Curbing has been shown in this vicinity.

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*Chazen Engineering & Land Surveying Co., P.C.  
EnviroPlan Associates, Inc.*

THE  
**Chazen**  
COMPANIES

*Chazen Environmental Services, Inc.  
TelePlan Associates, Inc.*

2.f. The water connection detail in question has been removed from the plans and the correct detail has been shown.

2.g. A detail for concrete curbing has been shown on the detail sheet.

2.h. The permanent pavement repair detail has been revised to reflect 12" depth of NYSDOT Item #4.

2.i. The approval box has been placed on each drawing as per the Town of New Windsor requirements.

3. The response to the comments on the Stormwater Management Report has been answered separately.

If there are any questions please do not hesitate to call.

Very truly yours:



Eileen M. Travis, LA

cc: Richard Chazen, P.E.  
Jeff Kane, Director  
Herbert Redl

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June 28, 1999

Patrick J. Hines, Senior Engineer  
McGoey, Hauser, and Edsall, P.C  
45 Quassaick Avenue  
New Windsor, NY 12553

Re: *Town of New Windsor P.B. Drainage Review Comments*  
*Guardian Self Storage*  
*Job # 89915*

Dear Mr. Hines:

In response to your June 9, 1999 letter, concerning the drainage at Guardian Self Storage in the Town of New Windsor, The Chazen Companies has prepared the following responses:

1. *The Applicant is asked to address the creation of the point discharge at the immediate property line with the neighboring property. The effects of this point discharge should be evaluated with regard to impact on the adjoining property.*

To avoid creating a point discharge from the detention area, a flow dissipator was placed on the west side of the discharge from the detention area in order to dissipate the flow before it reaches the property line.

2. *The detention pond, as designed, will contain 4.4 feet of water below the discharge of the outlet control structure. No method of discharge of this water is provided. The Town of New Windsor Policy requires detention ponds drain between storm events. The capacity of the first flush treatment would be significantly diminished if existing water was contained in the pond prior to storm event. A flow outlet of some sort should be provided in order to provide for draining of the pond between storm events.*

The bottom of the basin was raised from elevation 340 to 344.5 and the basin was reconfigured. An exfiltration system was added to provide for draining of the pond between storm events.

3. *A section of rip-rap slope protection is identified on the plan sheets, however, a catch basin could be provided at the location of the rip-rap slope protection discharging to the detention pond inlet. This would eliminate the need for over land flow in this area and would allow for the installation of curbing as depicted on the site.*

The section of rip-rap slope protection on the west side of the site was removed. The curbing was extended to the building and run-off will be conveyed to catch basin 13.

4. *The exact extent of the curbing on the site should be depicted. The entire site would require curbing in order to convey stormwater runoff to the proposed catch basins.*

The limits of curbing are identified throughout the site. Curbing has been omitted in areas where the proposed grades were above the proposed pavement elevations. Thus, the curbing would be in effective in the collection of stormwater in these areas.

If you should have any questions, please do not hesitate to call.

Very truly yours,



Eileen Travis  
Project Manager

cc: Richard Chazen, P.E.  
Jeff Kane, Director  
Herbert Redl



McGOEY, HAUSER and EDSALL  
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PLANNING BOARD WORK SESSION  
RECORD OF APPEARANCE

TOWN/VILLAGE OF New Windsor P/B # 99-8

WORK SESSION DATE: 2 JUNE 99 APPLICANT RESUB. REQUIRED: New plan

REAPPEARANCE AT W/S REQUESTED: No

PROJECT NAME: Guardia Self Storage

PROJECT STATUS: NEW \_\_\_\_\_ OLD X

REPRESENTATIVE PRESENT: \_\_\_\_\_

MUNIC REPS PRESENT: BLDG INSP. \_\_\_\_\_  
FIRE INSP. Rich  
ENGINEER X  
PLANNER \_\_\_\_\_  
P/E CHMN. \_\_\_\_\_  
OTHER (Specify) \_\_\_\_\_

ITEMS TO BE ADDRESSED ON RESUBMITTAL:

- = put 2BA decisions
- = prep dedication for 25'
- = 10 parking spaces needed for new bulk
- = bulk OK
- = will probably want sign bt variance later
- = they are to get us lighting plans (at least)

CLOSING STATUS

- \_\_\_\_\_ Set for agenda
- X possible agenda item
- \_\_\_\_\_ Discussion item for agenda
- \_\_\_\_\_ ZBA referral on agenda

pbwsform 10MJE98

ROSCINO/GUARDIAN STORAGE

MR. NUGENT: Request for variance to allow 8 ft. fence and interpretation and/or area variance for front yard setbacks for a self-storage operation on n/s of Square Hill Road in a C zone. Is there anyone in the audience? Would you like to sign this please?

MR. TORLEY: Just so we have your name for the record.

Ms. Eileen Travis from Chazen Engineering and Ms. Cory Daniels appeared before the board for this proposal.

MS. BARNHART: For the record, I sent out 10 addressed envelopes containing the notice on April 30, 1999.

MS. DANIELS: I'm Cory Daniels.

MS. TRAVIS: Eileen Travis from Chazen Engineering. What we're proposing here is a, we have already been in front of the Planning Board, we'll be back in front of them again. We're going to construct some self-storage facilities, approximately 75,000 square feet and approximately 875 square feet is the office building out front, there's 10 separate buildings. It's located off of Route 300 on Liner Road and we're requesting two variances, one is for the fence, we're proposing an eight foot high fence around the perimeter of the property, on the front side, we're proposing at the building entrance we're proposing brick pillars and decorative gate and remainder will be chain link fencing with black coated vinyl and the reason why we're requesting a variance is because security is a major part of this business. If the facility does not look secure, then people will not rent the units. Also 8 feet is the height that they found to keep people from actually coming over the units or over the--

MS. DANIELS: It's an industry standard.

MS. TRAVIS: And it's a discouraging height for people. The second variance that we're asking for is a front yard variance. Currently, we meet the side and rear yard variances, we're requesting a variance from that because when we went in front of the Planning Board in

the initial meeting, they had requested that we dedicate 25 feet from the property line for right-of-way and then that created the variance needed because our buildings are set back 60 feet from the property line and now they are not 60 feet from the property line because they want to have 25 feet.

MS. DANIELS: The property line is in the center of the road.

MS. TRAVIS: The existing property line is in the center of the road.

MR. REIS: It looks very tight ingress egress, I can't tell what kind of, how many feet do you have there between the building and your--

MR. NUGENT: The opening?

MS. TRAVIS: This is approximately 50 feet throat of the opening right here and we had submitted with the application a plan noting and drawn on the turning templates for a WB-40 truck, which is a semi-tractor trailer truck and it made all the curves throughout and the fire department is satisfied with the curves and mark Edsall is satisfied with the turning radii.

MR. REIS: Who am I to ask? Doesn't look like there's enough room.

MS. TRAVIS: Typically, when I lay out the units, I want to make sure the bigger trucks can get around because that's a part of what they rent.

MR. REIS: Thank you.

MR. TORLEY: I see there's, do you meet the front yard requirements or I don't know if it's front or side yard to the back of the residential structure, what's the distance there?

MS. TRAVIS: This was discussed last time at the meeting, I wasn't at this meeting last time and--

MR. BABCOCK: Mr. Chairman, at the beginning, I had

said that there's a possibility for interpretation from this board, whether they need a front yard setback variance for the buildings behind the property line and that night, the board determined that that was not a front yard, for the record, yeah.

MR. REIS: Is that a single family dwelling that's in the middle there?

MS. TRAVIS: Yes.

MR. TORLEY: There's an additional single family dwelling probably adjacent.

MS. CHAZEN: It's not the adjacent, it's another parcel over, Wal-Mart owns all the way up to this roadway in the back, they have a large L-shaped parcel, so they are our adjoiner here. Also, in regards to the fence and of our other adjoiner, they have eight foot high fencing all the way around their perimeter, obviously safety is an issue with them as well.

MR. REIS: That's chain link?

MS. CHAZEN: It's not coated, we're proposing vinyl coating on the chain link fencing.

MR. TORLEY: At your preliminary you were talking about putting not chain link.

MS. DANIELS: We do an aluminum decorative, very similar to what's in New Windsor, Wappingers and Fishkill, all the facilities have it, it looks nice.

MS. TRAVIS: It's brick piers with lights.

MR. TORLEY: What do you use to wrap around, is that going to be chain link?

MS. TRAVIS: Yeah, that's the most functional in the area.

MR. TORLEY: You're putting an eight foot chain link by somebody's house and a fancy one by the road that gets five cars a day?

MS. DANIELS: You can jump the pretty fence, that's why, we look to keep it where it's more of an issue. Because I just, I showed the difference and this is quite wooded back here as well and I--

MS. CHAZEN: We're concerned because there's a large stretch of woods between Route 300 and Square Hill Road that the visibility into the site obviously is very good at this point, looking at the office building, but once you get passed this site, it's screened by the existing vegetation on that side of the road.

MR. TORLEY: My point I know you cannot see that from the main road, that's not my point. Question is you're looking for eight foot high fence going behind somebody's house, now eight foot chain link fence is not exactly an attractive sight.

MS. DANIELS: Is this this gentleman here, is that your house?

MR. KONING: No, I'm at the end of the road. What kind of lighting, is this going to be lit like a circus, lit up all the time?

MS. DANIELS: You're welcome to drive through the other facility, it has to have some kind of lighting. I don't want kids in there at night. I don't want problems at night.

MR. KONING: It's pretty quiet.

MS. TRAVIS: We've laid out the lighting such that there's no casting of light over the property lines. We just finished it today.

Other man: It's going to be towards, the in and out is going to be towards the end of the road?

MS. DANIELS: It's over here. The only thing you have, they asked us to put an emergency access gate, we never use those, I'm just being honest with you up front, this is really the gate our customers would use. We're proposing to do the first four buildings in Phase 1. I

have to handle getting those rented before I move onto this area, I don't want to annoy you, I want to work with you. We worked with Pat.

MR. TORLEY: Now, the lighting that you're referring to?

MS. TRAVIS: They are all wall mounted fixtures. Here's a typical fixture, you can see that it's downward cast, it's really not an up light at all.

MS. BARNHART: May I say something? They are my neighbors, they are not directly in the back of my house, but they are on the next parcel in the back and all I see at night are yellow lights. It's very dim, it really doesn't annoy me at all.

MS. CHAZEN: The other facility in town.

MS. BARNHART: Right, it's on Windsor Highway.

MR. NUGENT: Do you happen to know the name of the person that lives in that house?

MR. KONING: David Nunnally.

MS. DANIELS: We met with him again last week, so meetings are continuing moving forward, nothing's being decided, nothing's been done.

MR. NUGENT: He's not objected to this thing going on?

MS. DANIELS: He's not here so--

MR. TORLEY: She cannot speak for what he would or would not say because he's not here. I want to make sure that it wasn't your lot adjacent to this.

MR. KONING: I'm all the way at the end, I've got Wal-Mart in between, which is nice.

MS. TRAVIS: That's wood and that will stay that way, we think.

MR. KONING: That's wetlands.

MS. TRAVIS: Yes, in the back, there's a very nice pond back there.

MR. TORLEY: That's where you're going to be putting your runoff?

MS. TRAVIS: No, we have a proposed storm water detention pond right here and we're, you know, we're not going to increase the flow off the site, pre equals post.

MR. KONING: Actually going to be water?

MS. TRAVIS: It's like a little holding pond. It let's it out slowly so the peak discharge will not exceed the existing peak discharge.

MR. TORLEY: Mike, we have no regulations about whether there's a pond out there?

MS. TRAVIS: It's not a pond, it's not standing water.

MR. BABCOCK: No, it only holds water when it first rains.

MR. TORLEY: They are trying to address the drainage problem, I want to make sure we weren't causing some other code violation.

MR. BABCOCK: Not at all.

MR. KONING: Other pond we're talking about is the one on Wal-Mart's property, there's a huge pond there.

MR. KRIEGER: So, I think one of the things that you should be aware of is if the Zoning Board grants the requested variance that's not the end of their application process. They then have to appear in front of the Planning Board where all the questions of lighting and drainage so forth will be decided in some detail. So this is not the last time it will be looked at nor are they looked at nearly as deeply here as they will be, that's really a Planning Board function that is as they well know a whole other process.

MR. KONING: I just wanted to see where the entrance was and what--

MR. NUGENT: Would you like to speak on the record so that they can take your comments?

MR. KONING: Yes, just saying I wanted to see where the entrance and the exits were and what kind of lighting they had.

MR. BABCOCK: Would you state your name?

MR. KONING: Frank Koning, K-O-N-I-N-G, 52 Liner Road, New Windsor.

MR. TORLEY: Do you have a position on whether you're in favor or opposed to this?

MR. KONING: Doesn't bother me, I mean, I'd like it to stay woods, but everything moves forward.

MR. KRIEGER: Would it be fair to say it means you're not opposed to it?

MR. KONING: No.

MS. TRAVIS: That's a photometric plan, it's a computer generated plan which depicts the light levels that are proposed in numbers and generally, you'd want things to be safely lit at approximately .5 and you don't want any casting of light off your property line so that's sort of the goal of the program and it helps you achieve that by plugging in different light elements in the program and allowing you to select different wattages and different types of lenses.

MR. REIS: What does .5 mean?

MS. TRAVIS: Point 5 is foot candles, it's a measurement of light and I'm not an electrical engineer, but it's a measurement of light that's a minimum standard for illuminating an area safely at night where you can, you know, readily see your keys, readily, you know, open a lock, read any literature if you had to read something, safe movement around parking

lots, typically, that's standard.

MR. TORLEY: Foot candle is the light you'd see on paper from a candle held a foot away, so it's a fair amount of light for nighttime.

MS. DANIELS: Compared to a car dealership we're nothing.

MS. CHAZEN: Or one of the Mobil Marts.

MR. REIS: It's minimal.

MS. TRAVIS: Yes, it's very minimal, so in certain respects, right under the fixture such as like you have here, it's much brighter than when you're several feet away. So they have rings of illumination that changes as you move away from a fixture so this is typically represented by numbers and what you want to do is make sure that all the pavement areas and all the access areas are adequately lit and that's what we do here with this and certainly seems to work well and you can see that there's very little overcast going onto the neighbor's property. Point 01 is extremely minimal.

MR. TORLEY: Less than a full moon.

MS. TRAVIS: Yeah.

MR. TORLEY: One question getting back to the fencing on the mover's side, they already have a fence, you're going to have two fences next to each other, what's going to happen there?

MS. CHAZEN: Well, yes, and it's entirely within their property line so I--

MR. TORLEY: How far apart are the two fences going to be?

MS. TRAVIS: This is approximately, about eight feet apart.

MR. BABCOCK: When they are off their line possibly a foot to two foot, she would have to cross to use their

fence, cross their property line for that two foot to connect to it and nobody wants that done. That's why we're seeing all the double fencing all the time. If the fence is right on the property line, they can both share it but once they set it in couple foot, she would have to go across his property line in the front and rear at least two foot to get to his fence with her fence.

MR. TORLEY: I think we all prefer not to have row after row of fences.

MS. DANIELS: That's really Mike's call, that's really up to Mike, that's really not my decision.

MR. BABCOCK: Well, if you can come up with something with Liner and you don't have to put that fence up, that's fine with me.

MS. DANIELS: It's worth a phone call.

MR. TORLEY: Do they have an eight foot fence?

MR. BABCOCK: Yes.

MS. DANIELS: I'll see what he says.

MR. TORLEY: Eight foot chain link is going to run a fairly amount of money.

MS. DANIELS: I don't disagree, I know it's, I think it's a good idea, I don't know if he's going to agree.

MR. TORLEY: That won't affect the rest of the variance.

MR. NUGENT: That has no bearing on this. Have enough?

MR. KRIEGER: Yes.

MR. NUGENT: I'll accept a motion.

MR. TORLEY: Do you have to close the public hearing first?

MR. NUGENT: I never opened it.

MR. TORLEY: I move we grant Guardian Storage their requested variances for fence and front yard.

MR. REIS: Second it.

ROLL CALL

MR. REIS	AYE
MR. TORLEY	AYE
MR. NUGENT	AYE

MR. REIS: Motion to adjourn.

MR. TORLEY: Second it.

ROLL CALL

MR. REIS	AYE
MR. TORLEY	AYE
MR. NUGENT	AYE

Respectfully Submitted By:



5/26/99

Frances Roth  
Stenographer



1763

# TOWN OF NEW WINDSOR

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## OFFICE OF THE FIRE INSPECTOR

April 17, 1997

Bureau of Fire Prevention

**Subject: 15 April 1997 Minutes of Meeting**

The meeting of the Bureau of Fire Prevention was called to order by Chairman Steve Weinheim at 7:10 p.m.

Members in Attendance:

Steve Weinheim; Chairman	Paul Decker
Thomas Prendergast	William Farrenkopf
Thomas Van Zandt	

Members Absent:

Lawrence Rossini  
Steve Sager  
John Staples

Others Present:

William Hildreth; L.S.  
Robert Rodgers; Fire Inspector

Mr. Hildreth was representing Mr. Herbert H. Redl, owner of Guardian Self Storage, 149 Windsor Highway, New Windsor, New York 12553. The property is known on the tax rolls as Section 9 Block 1 Lot 25.3.

Mr. Hildreth indicated that Mr. Redl was planning on erecting an 11,025 square foot storage building which would be subdivided into compartments for individuals to store personal belongings. Mr. Redl was seeking relief from the 5,000 square foot local required sprinkler system.

Mr. Hildreth presented site plans as well as a lease agreement to the Bureau members.

Mr. Hildreth was thanked for his presentation and excused from the meeting.

After some discussion the following resolution was adopted:

Whereas, Herbert H. Redl was represented by Mr. William Hildreth, L.S., and

Whereas, there are plans to build an 11,025 square foot storage building, and

Whereas, the building construction type is to be type 2b non-combustible construction, and

Whereas, the building is compartmentized into smaller storage rooms by the same type of construction, and

Whereas, the building will be a maximum height of one (1) story, and

Whereas, there will be no human or animal living within the structure, and

Whereas, the building classification will be a C4.1.

Now therefore Be It Resolved that Mr. Herbert H. Redl be allowed to construct the metal storage building without the need for a sprinkler system, and that any further development will require the installation of a fire hydrant centrally located on the property.

Motion by William Farrenkopf, second Thomas Prendergast that the above resolution be adopted. All aye's 5-0

With no further business before the Bureau a motion by Thomas Van Zandt, second Paul Decker to adjourn the meeting at 7:45 p.m.

Respectfully submitted,



Donna Hamel; Secretary

cc: Mr. William Hildreth; L.S.  
New Windsor Planning Board

MR. SHAW: So what we have tried to do is address those issues which the board felt important in order to have as complete an application as possible for the public hearing, Mr. Chairman, that's my pitch for the project and if you wish, you can open up to the public.

MR. PETRO: I'm looking at the septic design on page 3 of 7.

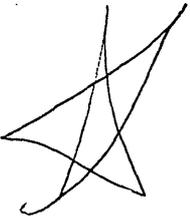
(Whereupon, Mr. Krieger entered the room.)

MR. PETRO: I don't see a well plotted, do you have one plotted?

MR. SHAW: Yes, the well is located in this proximity.

MR. LANDER: Can you tell me if these storage units being they are over 9,000 square feet, some of them, they need to be sprinklered?

MR. SHAW: We broached that subject last month, I believe, and there was a determination made.



MR. EDSALL: Bureau of Fire Prevention Control wrestled with the issue over sprinklering these mini storage buildings and they determined in general that the type of use and with the separations they provide that sprinklering was not required so that was a global decision that was made, so it applies to all of them.

MR. LANDER: Thank you.

MR. PETRO: What's the percolation right there in that spot?

MR. SHAW: We haven't completed that yet, percolation rate, I have shown it on the plans, that's not a permit that's issued by this board. It's a permit that's issued by your building inspector, but we have, we haven't completed the subsurface testing, but that's where the system will go.

MR. PETRO: Obviously, if the percolation is not good enough, you have to design a different kind of system,

ROSCINO/GUARDIAN STORAGE

MR. NUGENT: Request for variance to allow 8 ft. fence and interpretation and/or area variance for front yard setbacks for a self-storage operation on n/s of Square Hill Road in a C zone.

Mr. Richard Chazen, Cory Daniels and Allen Daniels appeared before the board for this proposal.

MR. CHAZEN: My name is Richard Chazen, I'm with the Chazen Engineering and Land Surveying Company and with me are Cory Daniels and Allen Daniels, who are with Guardian Self Storage. The board I'm sure is familiar with the Guardian facility that's already in town on Route 32, what we're doing is proposing a second facility, this one would be located on Square Hill Road, Square Hill Road is right off Union Avenue, this is Square Hill Road, some of you know it as Liner Road. It seems to have two names. The facility is on the top up here, Wal-Mart would be behind us and the Thruway would be to the west of the property. This site is about 6 acres, a little over 6 acres and we're proposing to construct 71,000 square foot of self storage units on this location. The entry to the site would be in this location, small office buildings with parking, two controlled access gates with key pads to go into the property. You can see we have 9 buildings here total, chain link fence around the entire perimeter of the property, a more decorative fence with piers and and iron fence across the front, some landscaping, resetting the stone wall and that's about how it's going to lay out.

MR. NUGENT: What's the little jog?

MR. CHAZEN: One of the reasons we're here, there's a single-family house which is the only other use on the road right in the middle of our property. This site is zoned C and we're an A6 use, a service use, so this is a permitted use in the zone. We're here for two reasons, the first involves fence height, your ordinance I believe says that the maximum height of a fence in the front yard is 4 foot and the maximum height of a fence on the side yard and the rear yard is

six feet, we're proposing an eight foot high fence around the entire property. That fence is necessary for security purposes, it's important. What we're selling here is security, to attract people to come, they need to know that they are safe and secure. The other reason we're here is we're seeking a front yard variance. The buildings that I see, the yellow highlighted line around 1, 2, 3, 4, 5 and a little piece of this one do not meet the 60 foot front yard requirement of your zoning ordinance. Our property line at the present time is in the center of Square Hill Road. You can see it going right along the center of the road there and when we laid this plan out, we measured our 60 foot from our property line and situated the, when we appeared before the planning board two weeks ago, the planning board requested that we dedicate 25 feet from center line to the town so that the road would be fully within a town road right-of-way. With that dedication, we will not meet the full 60 yard setback, so we need front yard variances for these. In addition, we were never quite sure because of the unusual configuration of the property whether this was in fact the front yard. We now believe it is a front yard, so the variance we're requesting would also affect these three buildings.

MR. BABCOCK: Mr. Chazen, just for the record, can you just tell us the number of the buildings that you are talking about when you keep saying these two buildings if we're not looking at the plan you're pointing to, there's no reference to what you're talking about.

MR. CHAZEN: The buildings that we need front yard variances are the proposed office building which is a 35 x 25 building on the easterly edge of the property, that one does not have a number, next would be building number 4, building number 5, building number 6, building number 8 and building number 9, those are the ones that are affected.

MR. BABCOCK: Thank you, just for the record, I know which buildings they are, but--

MR. CHAZEN: No problem, but that's the essence of our application. We'd be happy to answer any questions you

might have.

MR. NUGENT: Are all the front yard setbacks in the 25 foot less, in other words, 25 from 60, is that what you did?

MR. CHAZEN: That's what we did with these three, that's what we did with the office building, building number 8 and 9, as you can see, with the 25 foot dedication, this front yard would be 39 feet wherein 60 is required so we'd need 21 foot. This building is also 39 feet, so we'd need 39 feet of relief, the office building would end up being 36 feet from the front yard where 60 is required. These three buildings 4, 5 and 6 in the case of 4, this corner of it would be 32 feet away, building number 5 would be a 35 foot front yard, building number 6 would be a 44 foot front yard, so for the most part, we're within that 25 foot.

MR. KANE: We're only--

MR. BABCOCK: If you look at the paperwork that we sent down, it says interpretation possibly we're not sure cause of the outlay, the layout of this lot, whether that really is a front yard or not.

MR. KANE: You say you have two front yards, you have the guy that has a single family home and another front yard in front of that makes no sense.

MR. TORLEY: It's a side yard.

MR. CHAZEN: We'd be happy to call it a side yard in which case we'd amend our application and we'd only need three buildings affected.

MR. KANE: We're here for common sense, it's not fronting the road and we already have a frontage on the road, it can't be, Mr. Chairman, and my suggestion we consider that interpretation on that part of the plan.

MR. TORLEY: That again has to be part of the public hearing.

MR. KANE: Agreed.

MR. TORLEY: I'd like to ask you, to have you address the fence problem, your other facility, do you have an eight foot fence?

MS. DANIELS: Yes, it's a security, it's a safety issue.

MR. TORLEY: Forgive me, you said you had another one in the Town of New Windsor?

MS. DANIELS: We're next to Duffer's.

MR. TORLEY: That has eight foot fences?

MS. DANIELS: Yes, it does.

MR. TORLEY: I don't recall a variance for that.

MS. BARNHART: They have it, but not in the front.

MS. DANIELS: We have a decorative, it's attractive looking.

MR. CHAZEN: We're requesting a similar type fence across the front here.

MR. TORLEY: Again, when was that, I don't recall a variance request for that other one.

MS. BARNHART: Yes, they have it.

MR. TORLEY: For eight foot fence in the front, eight foot around the back?

MS. BARNHART: I would have to check.

MR. KANE: We'll, we're not here for that, let's stay on course here.

MR. CHAZEN: In total, how many facilities do you have?

MS. DANIELS: Eight facilities.

MR. CHAZEN: Every facility has an eight foot fence?

MS. DANIELS: Yes, you don't want people jumping over.

MR. NUGENT: Is the entire site lighted?

MR. CHAZEN: We're proposing to put wall packs on the buildings and the planning board has in fact asked us to do that, to provide them with photometrics but yes, there are wall packs on all the buildings for security.

MR. NUGENT: Ultimately at night you're not even going to see the fence, and from the road

MR. CHAZEN: Yes, interestingly, the only part of this facility that you really see from 300 is the office building, the rest of this site I would say our front yard is frankly over here and you can't see the rest of this facility with the exception of the one existing office on the street. So be it night or be it day for that matter, I don't think anybody is going to see it, we back up on Wal-Mart, the detention pond is over here and the Thruway is over here.

MR. TORLEY: The wrought iron fence is around the front of the property, what are you going to put as it wraps around the private home?

MR. CHAZEN: Proposed as chain link as it comes around the jog in the front.

MR. TORLEY: So that one family existing frame dwelling is now going to be looking at an eight foot chain link fence?

MR. CHAZEN: That's what we're proposing.

MR. NUGENT: Have they approved?

MS. DANIELS: We have had informal meetings, yes, nothing's become of it but--

MR. NUGENT: But they know what you're doing?

MS. DANIELS: Absolutely.

MR. NUGENT: Basically, if I understand this correctly, all we're looking for is a variance for an eight foot fence?

MR. BABCOCK: You have front yard.

MS. BARNHART: But the interpretation is out.

MR. KANE: That's part of the public hearing, the interpretation for the little jog area for those two buildings right there, the rest they need the frontage on for the one, two and the main.

MS. DANIELS: And the office is important for us, can I speak, only because we're kind of hidden, we're not on Union Avenue and it's, you know, it's a business, someone has to be able to find me.

MR. BABCOCK: The other point is, Mr. Chairman, is that the town would like them to dedicate 25 feet of their property so we can own the road that we should own, should have owned already and therefore, by making them move their property line back 25 feet to give that property to the Town of New Windsor, they lose the 25 foot.

MR. NUGENT: We're forcing them into that.

MR. CHAZEN: We also have an elevation with us as you can see this is what you're going to see from the road, a gabled end and no doors on it so--

MR. TORLEY: No doors on the road facing?

MS. DANIELS: No, we don't, nothing facing the street.

MR. TORLEY: Mr. Chairman, entertain a motion?

MR. NUGENT: Yes.

MR. TORLEY: I move we set up Roscino/Guardian Storage.

MS. OWEN: Second it.

ROLL CALL

MS. OWEN	AYE
MR. TORLEY	AYE
MR. KANE	AYE
MR. NUGENT	AYE

MR. CHAZEN: What meeting would that public hearing take place at?

MR. NUGENT: When you get the information back.

MS. BARNHART: Did you request a list from the assessor's office?

MR. CHAZEN: Thank you very much.



**McGOEY, HAUSER and EDSALL**  
**CONSULTING ENGINEERS P.C.**

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**TOWN OF NEW WINDSOR  
 PLANNING BOARD  
 REVIEW COMMENTS**

**REVIEW NAME:** GUARDIAN SELF STORAGE SITE PLAN  
**PROJECT LOCATION:** SQUARE HILL ROAD (a/k/a LINER ROAD)  
 SECTION 4-BLOCK 1-LOT 4  
**PROJECT NUMBER:** 99-8  
**DATE:** 14 APRIL 1999  
**DESCRIPTION:** THE APPLICATION PROPOSES THE DEVELOPMENT OF THE SIX (6) + ACRE SITE WITH MULTIPLE BUILDINGS AS A SELF-STORAGE FACILITY. THE PLAN WAS REVIEWED ON A CONCEPT BASIS ONLY.

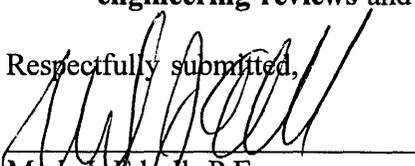
1. The property is located within the C (Design Shopping) Zoning District of the Town. The proposed use has been classified as A-4, Service Establishment.  
  
 The "required" bulk information shown on the plan is correct for the zone and use group. The "proposed" values are further discussed in the next comment.
2. The Applicant has prepared a plan which shows proposed bulk values based on setbacks to the deed line in the center of Square Hill Road, a Town road. The plan also references the 25' wide area "proposed for dedication to the Town of New Windsor", but does not measure the setbacks from that line (which is the customary methodology). The Board should discuss this and, as they deem appropriate, seek input from their consultants and the Town Building Inspector.
3. I have performed a preliminary review of the plans as submitted and have the following additional comments:
  - a. On Sheet C-2, the site plan, the height of all fences should be indicated.
  - b. Stormwater management calculations should be submitted for the proposed detention basin. The report should also reference the pre-development direction of flow and provide commentary on the discharge location from the basin and the adjoining property and its development and condition.

**TOWN OF NEW WINDSOR  
PLANNING BOARD  
REVIEW COMMENTS  
PAGE 2**

**REVIEW NAME:** GUARDIAN SELF STORAGE SITE PLAN  
**PROJECT LOCATION:** SQUARE HILL ROAD (a/k/a LINER ROAD)  
SECTION 4-BLOCK 1-LOT 4  
**PROJECT NUMBER:** 99-8  
**DATE:** 14 APRIL 1999

- c. The Applicant should note that the required minimum parking dimension for spaces in the Town is 9' x 19'. The plan (Drawing C-2) is correct, but the detail on Drawing C-5 requires correction.
  - d. It is assumed that the southern parking space is a handicapped space, although this should be made more clear on the plan and a complete detail should be provided with the site detail drawings.
  - e. The plan depicts a pavement section with a total asphalt thickness of 2.5". Given the potential for regular truck traffic in this area, I question if this is adequate. The Board may wish to comment additionally.
  - f. An appropriate handicapped sidewalk ramp must be provided for the handicapped space.
  - g. The Board should determine if they will require a complete lighting plan for the project, with isolux curves.
4. The Planning Board may wish to assume the position of **Lead Agency** under the SEQRA process.
5. The Planning Board should determine, for the record, if a **Public Hearing** will be necessary for his **Site Plan**, per its discretionary judgement under Paragraph 48-19.C of the Town Zoning Local Law.
6. At such time that the Planning Board has made further review of this application, **further engineering reviews** and comments will be made, as deemed necessary by the Board.

Respectfully submitted,

  
\_\_\_\_\_  
Mark J. Edsall, P.E.  
Planning Board Engineer  
MJEmk  
A:GUARD.mk

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June 3, 1999

Mr. James Petro, Jr. Planning Board Chairman  
Town of New Windsor  
555 Union Avenue  
New Windsor, New York 12553-6196

Re: *Guardian Self Storage, Liner Road*  
*Job # 89915.00*

Dear Chairman Petro:

Enclosed are 10 copies of the following documents: Sheet No. C-1: Existing Conditions, Sheet No. C-2: Site and Landscape Plan, Sheet No. C-3: Grading and Utility Plan, Sheet No. C-4: Site Details, Sheet No. C-5: Site Details, Sheet No. C-6: Erosion Control, Landscape and Lighting Details, and Sheet No. C-7: Photometric Plan. These drawings have been revised to address the comments made by the Planning Board, the Town Engineer as well as the Town Sewer Department. Our responses to the comments are as follows:

1. Town Sanitary Superintendent dated 4/23/99 states "Sewer lateral cannot tie into existing sewer manhole. Connection must be made on the main using approved saddle." Drawing C-3: Grading and Utility Plan has been revised to show the new sanitary lateral connecting to the existing sanitary main. Additionally, a note was added to clarify that the connection shall be made with an approved saddle.
2. The property designation has been correctly identified as A-6 Mini Warehouses and the bulk information in regards to the setbacks, maximum height and required parking have all been corrected.
3. Front Yard Variances have been granted from the Town of New Windsor ZBA, at the May 24, 1999 meeting. Additionally, a table referring to the granted variances has been added to the site plan.
4. The height of all fences has been noted on the plans.

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Chazen Engineering & Land Surveying Co., P.C.  
EnviroPlan Associates, Inc.

THE  
*Chazen*  
COMPANIES

Chazen Environmental Services, Inc.  
TelePlan Associates, Inc.

5. A drainage report was submitted May 21, 1999 for review by Mark Edsall, Town Engineer.
6. The parking dimensions have been corrected to all depict a 9' by 19' parking space.
7. A handicapped space has been designated on the plan with a standard symbol as well as a striped loading zone.
8. The pavement thickness will be 2.5 inches for the initial base course. Through operating several of these storage facilities in the Hudson Valley the applicant has found that if a top course is placed during construction it quickly disintegrates from the wear and tear of construction equipment. Typically, the top course of pavement will not be installed until the final building in a Phase is completed.
9. A complete lighting plan for the project has been completed and is a part of this package.

We are asking to be placed on the June 9<sup>th</sup> Planning Board agenda. If there are any questions please do not hesitate to call.

Very truly yours:



Eileen M. Travis, LA

cc: Richard Chazen, P.E.  
Jeff Kane, Director  
Herbert Redl

**ZONING BOARD OF APPEALS  
REGULAR SESSION  
MAY 24, 1999**

**AGENDA:**

**7:30 P.M. - ROLL CALL**

**MOTION TO ACCEPT MINUTES OF THE 04/26 AND 05/10/99  
MEETING IF AVAILABLE.**

**PRELIMINARY MEETING:**

*SET UP FOR P/H* **1. GATTO, GINA - Request for variation of Section 48-14A(4) of the Supplemental Yard Regulations to allow existing garage to project closer to road than principal structure at 651 Twin Arch Road in an R-1 zone. (55-1-21.2).**

*SET UP FOR P/H* **2. LIBRIZZI, JAMES - Request for 4 ft. side yard variance for existing shed located at 15 St. Josephs Place in an R-4 zone. (23-4-5).**

*SET UP FOR P/H* **3. WOLF, ZEV - Request for 8 ft. maximum bldg. height and permission to vary Section 48-14A(4) of Supp. Yarad Regs. to construct a three-car garage at 1861 Little Britain Road in an R-1 zone. (51-1-64).**

*SET UP FOR P/H* **4. JMR ASSOCIATES LLC - Request for 14 ft. 6 in. side yard variance for proposed canopy at Walden Savings Bank (BNY) at Squire Village located at 213 Quassaick Avenue in an NC zone. (23-1-53.11).**

**PUBLIC HEARING:**

*APPROVED* **5. FIORITI, GERALD - Request for variation of Section 48-14A(4) of the Supp. Yard Regs. to permit construction of two-car garage nearer to the street than principal structure at 11 Oak Hill Drive in an R-1 zone. (52-1-73).**

*APPROVED* **6. ROSCINO/GUARDIAN STORAGE - Request for variance to allow 8 ft. fence and Interpretation and/or area variance for front yard setbacks for a self-storage operation on n/s of Square Hill Road in a C zone. (4-1-4).**

**Pat - 563-4630 (o) or 562-7107 (h)**

OFFICE OF THE PLANNING BOARD - TOWN OF NEW WINDSOR  
ORANGE COUNTY, NY

# 1 ZBA 4-26-99  
SET UP FOR P/H

# 2 ZBA 5-24-99

APPROVED

NOTICE OF DISAPPROVAL OF SITE PLAN OR SUBDIVISION APPLICATION

PLANNING BOARD FILE NUMBER: 99-8

DATE: 23 APR '99

APPLICANT: HERBERT REAL PROPERTIES  
80 WASHINGTON ST SUITE 310  
POUGHKEEPSIE NY 12601

PLEASE TAKE NOTICE THAT YOUR APPLICATION DATED 4-2-99

FOR (~~SUBDIVISION~~ - SITE PLAN) \_\_\_\_\_

LOCATED AT NORTH SIDE SQUARE HILL RD APPROX.

40 FT. WEST OF RT 300 ZONE C

DESCRIPTION OF EXISTING SITE: SEC: 4 BLOCK: 1 LOT: 4

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

IS DISAPPROVED ON THE FOLLOWING GROUNDS: \_\_\_\_\_

- 1) VARIANCE(S) REQUIRED FOR FENCE HEIGHT
- 2) INTERPRETATION AND VARIANCE IF NECESSARY FOR FRONT YARD SETBACKS.

  
 MARK J. BABCOCK P.E. FOR  
 MICHAEL BABCOCK,  
 BUILDING INSPECTOR

\*\*\*\*\*

<u>REQUIREMENTS</u>	<u>PROPOSED OR AVAILABLE</u>	<u>VARIANCE REQUEST</u>
ZONE <u>C</u> USE <u>A-4</u>		
MIN. LOT AREA	<u>40 000 SF</u>	<u>264 844 SF</u>
MIN. LOT WIDTH	<u>200 FT</u>	<u>526 FT</u>
REQ'D FRONT YD	<u>60 FT</u>	<u>INTERPRETATION NEEDED</u>
REQ'D SIDE YD.	<u>30 FT</u>	<u>MIN-40 FT.</u>
REQ'D TOTAL SIDE YD.	<u>70 FT</u>	<u>MIN-96 FT</u>
REQ'D REAR YD.	<u>30 FT.</u>	<u>53 FT</u>
REQ'D FRONTAGE	<u>N/A</u>	<u>558 FT</u>
MAX. BLDG. HT. <u>12"FT NLL = 30 FT</u>	<u>13.3 FT</u>	<u>—</u>
FLOOR AREA RATIO	<u>0.5</u>	<u>1.268</u>
MIN. LIVABLE AREA	<u>N/A</u>	<u>—</u>
DEV. COVERAGE	<u>N/A %</u>	<u>— %</u>
O/S PARKING SPACES	<u>4</u>	<u>4</u>

APPLICANT IS TO PLEASE CONTACT THE ZONING BOARD SECRETARY AT: (914-563-4630) TO MAKE AN APPOINTMENT WITH THE ZONING BOARD OF APPEALS.

CC: Z.B.A., APPLICANT, P.B. ENGINEER, P.B. FILE

GUARDIAN SELF STORAGE SITE PLAN (99-8) SQUARE HILL ROAD

Mr. Richard Chazen and Mr. John Lawrence appeared before the board for this proposal.

MR. CHAZEN: I'm Richard Chazen from Chazen Engineering. With me is John Lawrence with Guardian Self Storage. Guardian is proposing a second facility in the Town of New Windsor. There's an existing one on Route 32, I'm sure you're all familiar with it. This facility is proposed to be located on Square Hill Road. I understand that's also known as Liner Road. The Arnoff Storage facility is on the top of the hill. This is Union Avenue out in front coming into Square Hill Road, I think this is Wal-Mart property to the north and the Thruway would be to the west of us. This parcel is approximately 6.1 acres in size, it is in your zone C, and we believe we're in a A4 use, a service establishment. We're proposing to construct approximately 71,000 square feet of self storage facilities in nine buildings, as you can see on the site plan here. There would be a small office 35 x 25 at the entry into the facility, double key pad controlled access gate to permit users to come and go as they choose, usually given the code and activate it themselves. You can see the building layout, there are various sizes with varying size units within each building and you can see the aisle width which we think is more than adequate to provide good circulation through this facility. The entire perimeter would be fenced for security purposes, again, eight foot high chain link being proposed. However, along the front of the property on Square Hill Road, we have a much more decorative fence, it's an iron fence on brick piers, I think we have given you a detail of that fence.

MR. PETRO: You'd need a variance at eight foot.

MR. CHAZEN: Correct, we understand six is the maximum allowed and we intend to make application to the zoning board for a variance to get the extra two foot. The entry to the facility we have shown some landscaping here, some junipers and crab apples and some perennials. We're also proposing to rebuild the existing stone wall that's in that location now that

would make an attractive entryway and we are proposing signage right in the corner of the property here, a 64 square foot illuminated sign. As far as utilities go, flip this over, there's an existing sanitary sewer line on Square Hill Road, the office will be manned during the day, we'll have facilities, sewage into the town system. There is no water, unfortunately, on Square Hill Road so we're proposing on-site well to provide potable water in the building. Storm water drainage would all be, this all kind of flows to the south where the water would be collected in a series of catch basins and piped into a proposed detention facility in the southwest corner of the property which would provide storm water quality and limit our discharges to at or below present conditions. As far as the appearance of the units themselves, we have an elevation here, this is the proposed office building which would be situated right here, and I think for the most part, the only thing you'll see is probably the ends of these units and we have shown you a little elevation of what they would look like.

MR. LUCAS: You'll be able to see any of it from Union Avenue, other than probably not much.

MR. LAWRENCE: Might see the roof of the office.

MR. CHAZEN: One of the reasons we're putting our sign in this location is to obviously try to get some exposure from Union Avenue.

MR. LANDER: One story frame dwelling, that's a residence?

MR. CHAZEN: That's an existing residence.

MR. PETRO: What other variances would be required?

MR. CHAZEN: I believe the only variance we require is the fence.

MR. PETRO: So, I think tonight what we need to do conceptually look at this and get him to the zoning board. Mark?

MR. EDSALL: One item which you should look at is my comment 2 and dealing with the methodology in which they measure their setbacks.

MR. PETRO: Why don't you go over it. Go ahead.

MR. EDSALL: The plan as far as I understand it and I can, subject to correction from the applicants, the measurements to the building setbacks are done to the deed line which just happens to be in Square Hill Road in the center of the road or near to the center of paved roadway, rather than measured at the 25 foot right-of-way line as it may be. That is not the method, customary method in which the setbacks are measured. Normally, it's measured from the road right-of-way or the limits of the road by use if there's no formal dedication. Now, in this particular case, looks as if they are anticipating for the road taking the 25 foot strip and dedicating it but the measurements to the buildings for setback really should occur from the 25 foot line.

MR. PETRO: Once we do that, will there be any zoning problems? Will they still have the necessary, what is it, 40 foot in this zone?

MR. EDSALL: I don't believe in all cases they meet the zoning, obviously, we don't have those measurements shown, so I don't know.

MR. PETRO: We have one of 66 foot but you have to deduct 25.

MR. BABCOCK: It's 60 foot required, Mr. Chairman.

MR. PETRO: You're not going to make it.

MR. EDSALL: Clearly going to be short for some of the buildings.

MR. CHAZEN: I'm guessing looks like the office building and the ends of these two units.

MR. EDSALL: It's not a serious problem. If you're going to zoning, you should include that.

MR. EDSALL: All depends what the board feels.

MR. LUCAS: Is that a dedicated road?

MR. EDSALL: That's why I made the comment if it's a road by use, if it's a road by use, it may not have been, there may not have been deeded dedications, but notwithstanding that, I don't know, don't know that the board normally measures setbacks to the center line of traveled ways.

MR. LANDER: Usually because the property line is not in the center of the road.

MR. BABCOCK: They are going to dedicate that 25 foot to the town which we would ask them to do.

MR. PETRO: That is where it should be measured from, sounds kind of cut and dry.

MR. EDSALL: What you need to do is decide if you believe that you want to make comment to the Zoning Board that you feel that a lesser than 60 setback is appropriate from a site plan review standpoint.

MR. PETRO: He can apply for the variance that's required for the front yard setback or he can shrink the buildings, the first two, and the office building, but being the applicant's not going to want to give up any rental of space, so I would apply, you're going there anyway, not being held up, apply for the variance.

MR. LANDER: So, you would have to deed 25 foot to the Town of New Windsor.

MR. CHAZEN: That's not a problem.

MR. PETRO: Show the new dimensions on the plan to the new front yard line, you'll need all the zoning information, all the variances required, variances received. Mark, do you think we covered that?

MR. EDSALL: Sorry, I was just discussing the route of

the road and potential for any widening with Mr. Babcock. I didn't hear your question.

MR. PETRO: I think we have covered that with the front yard. The only thing I question again if you notice that the lot that's created here in the center I guess the land that they don't own you'll see the other storage buildings are very close to that, that's also really the front yard, so you're going to have to maybe calculate those also as front yard setbacks.

MR. EDSALL: That would be a side yard setback to the side of the houses.

MR. PETRO: No, the ones in the back.

MR. EDSALL: Okay.

MR. PETRO: Really that's their front yard, it's the rear of the house but it's the front of their property.

MR. EDSALL: The other issue that comes to mind is when they go to the ZBA finding out if they need any height variances.

MR. PETRO: You're going to need one there, I can tell you that, I can tell you by how close that is, that's for sure.

MR. LANDER: Where are you going to measure?

MR. PETRO: From the property line to the house.

MR. CHAZEN: We look to you for some direction.

MR. PETRO: I think it's really--

MR. CHAZEN: We'll include that in our variance application, if for an interpretation if this is a front yard.

MR. PETRO: If that is not a front yard, tell me what it is. I realize it's the rear yard of the houses, but it's the front yard of your property, right, how can anybody disagree with that?

MR. LANDER: It's what's the rear yard setback.

MR. ARGENIO: To the north.

MR. LANDER: Is it 60 feet?

MR. CHAZEN: Sixty feet is required for a front yard.

MR. LANDER: What's rear yard?

MR. CHAZEN: Thirty feet.

MR. PETRO: Mark hits on another thing, I think there you better check the other ones when you do all your calculations, get the height requirement, how much is it per foot?

MR. EDSALL: Four inches but I understand that the town board just adopted new regulations so--

MR. BABCOCK: I don't have them with me, Jim, I think it's 12 inches now.

MR. PETRO: Check that because it's relief just adopted.

MR. BABCOCK: I don't know that for a fact, every zone is a little bit different but this is a PI zone?

MR. CHAZEN: This is zone C.

MR. BABCOCK: I think this did go to 12 inches.

MR. PETRO: Just going to reduce your variance, looks like three of the building will be affected.

MR. CHAZEN: We'll recalculate it and verify.

MR. PETRO: Mark, you don't disagree, we have to treat that as front yard?

MR. EDSALL: I think so, Ron.

MR. LUCAS: What's behind?

MR. CHAZEN: This is Wal-Mart, they have a very large pond back in here.

MR. STENT: Maybe you should try and address some of the remarks that Mark had before he comes back here, address those remarks.

MR. PETRO: Look at the storm water.

MR. LANDER: Can you tell me where the storm water is going to end up?

MR. CHAZEN: We have not done the storm water report yet. We know you're going to want one but we're collecting all the storm water in this location and proposing just to sheet it off-site hopefully at a rate below what's currently coming off the site.

MR. LANDER: Because you do have the City of Newburgh's water supply right on the other side of Union Avenue Washington Lake.

MR. CHAZEN: If quality is your issue, the storm water detention pond would be sized to meet first flush requirements, make sure we have enough volume here to hold that first inch or two inches.

MR. PETRO: That's going to be built with inlet outlet?

MR. CHAZEN: Yeah, I'm not quite sure what kind of discharge structure we'll have, we need to work on that. But yes, it will be a regular detention pond.

MR. LANDER: Do they have to send a letter to the City of Newburgh?

MR. PETRO: Five hundred feet.

MR. LNADER: To the City of Newburgh Water Supply?

MR. LUCAS: They are more than 500 feet.

MR. LANDER: Whether they are 500 or 1,000 feet, all depends where the water ends up. It's going to cross

the street, believe me.

MR. ARGENIO: I don't think so.

MR. STENT: That's not going to go across the street, it's going to go off to the pond or come down to the--

MR. CHAZEN: I believe our water will discharge into the pond that was built by Wal-Mart, so I think you'll actually have a double detention situation here.

MR. LANDER: All right.

MR. EDSALL: We can refer it to the City Engineering Department and let them at least be aware of it, we'll take care of that.

MR. PETRO: Give them 30 days to reply.

MR. EDSALL: I'll give Hauser a week.

MR. LANDER: One reason I bring that up when Arnoff came here for their project, we had them send to them and they are only up the road a little ways, still we sent a letter to the City of Newburgh.

MR. PETRO: Let's go to letter E with the 2.5 inches of asphalt you're going to get a lot of traffic in there, is that 1 1/2?

MR. LAWRENCE: No, we put down 2 1/2 inches of course binder then after five, six years we go back and put a top down.

MR. LANDER: That's going to be flush?

MR. LAWRENCE: Yes.

MR. LANDER: They do the aisle widths, there are 28 and 30 feet, I've seen them 20 feet, Mr. Chairman, so they are fairly wide.

MR. CHAZEN: Often people are renting trucks for the first time and we try to give them as much maneuvering room as possible.

MR. PETRO: So you've got 2 1/2 exactly that they are using.

MR. LANDER: 2 1/2 dense binder and then come back and put a top at a later date.

MR. EDSALL: I'd feel comfortable if they are putting 2 1/2 inches of dense binder to start out with, that's a good approach, other than 2 1/2 inch compacted.

MR. LAWRENCE: Our compacted finish is 2 1/2 inch, we don't finish until about five years later.

MR. CHAZEN: For detail.

MR. PETRO: This is open at night also, people can go in any time, is it 24 hour service?

MR. LAWRENCE: Yes, if they have the code.

MR. PETRO: You need to do a lighting plan.

MR. CHAZEN: Photometric plan?

MR. PETRO: I think so because it's really a public place.

MR. CHAZEN: All the lighting is wall packs on buildings, but we can generate.

MR. PETRO: Obviously, they are so close, I don't know how you couldn't help but light everything up.

MR. ARGENIO: The one on 32 is not unsightly, it's clean, I'm not a customer of yours, there's nothing unsightly about it when you drive down 32.

MR. LAWRENCE: Thank you.

MR. STENT: Motion for approval.

MR. PETRO: Conceptually, does anybody have anything else they want to add to this before we go to zoning board?

MR. BABCOCK: I see that they have a proposed well location, state law says that if you are within 500 feet, your property's within 500 feet of a town water line on a commercial operation, you have to hook up to the town water.

MR. PETRO: We're within 500 feet.

MR. BABCOCK: It appears to me that it is.

MR. LANDER: Where is that water line, Mike?

MR. BABCOCK: On Union Avenue.

MR. LAWRENCE: Is there a chance we can get a variance or some waiver on that law only because we have one toilet and one person in that space and there's no one else down that road that I believe would ever use a main so we put a main for one toilet, tear up an awful lot of town road for just that.

MR. EDSALL: Probably run a service, but you'd need a service to meet the State law's requirements.

MR. LAWRENCE: Just seems like a lot of work to go through for one small office with one toilet and hand wash sink.

MR. PETRO: Bring up another subject, why would these buildings not need to be sprinklered over 5,000 feet?

MR. BABCOCK: They do.

MR. EDSALL: They need a waiver for that.

MR. CHAZEN: That's a local law?

MR. BABCOCK: Yes.

MR. PETRO: New Windsor, 5,000 feet.

MR. EDSALL: You should check cause Mike just was discussing the fact that Arnoff is sprinklered so there must be a main that runs up there, I would doubt that

it is a private main.

MR. CHAZEN: There's a hydrant here but I'm not quite sure.

MR. EDALL: I suggest that you get ahold of the water department and seek their input on where you can best connect.

MR. CHAZEN: What's the process for seeking waiver on the sprinkler requirement?

MR. EDSALL: Bureau of Fire Prevention Control.

MR. BABCOCK: Right, Bob Rogers.

MR. LUCAS: Is it 5,000 or less?

MR. PETRO: No, it's 5,000.

MR. CHAZEN: Mr. Rogers who I met with in your workshop?

MR. EDSALL: Same fellow at the workshop.

MR. PETRO: Well, the reason I was saying he was talking about just going with the well, he's not going to be able to do that if it needs to be sprinklered. So he's going to have to find a way to get in with Arnoff, it would become a moot point if it has to be sprinklered and you're going to build and the well's useless anyway.

MR. LUCAS: His other option is to take the building and cut it in half.

MR. PETRO: That's correct, he can make a couple separations and they can explain that to you, say that you have a long building there that's 8,400 feet, you leave a 30 foot separation in the center, I don't know if it's 30, might be 10 or 20, we've done that a couple times, but I can tell that you also that if you weigh out your costs of the sprinkler system and losing that square footage that you would buy leaving a couple slits, you might be--

MR. CHAZEN: It would have to be a dry system, these are not heated units.

MR. PETRO: You're talking about a serious--

MR. LAWRENCE: It's not cost effective.

MR. PETRO: Kind of lean to what I am telling you because I think the fire inspector, they've had storage buildings here.

MR. LAWRENCE: Are there others in the town currently sprinklered of this type with metal frame?

MR. PETRO: Depends on when they were built, I don't know when the law went into effect, but it's been at least ten years.

MR. CHAZEN: You'll probably see ten foot breaks.

MR. BABCOCK: You can ask for a waiver of that.

MR. EDSALL: Pursue that.

MR. BABCOCK: You have to demonstrate why it's a hardship for you.

MR. EDSALL: They may like you to break the buildings with fire walls.

MR. PETRO: Reason we got on that subject because we're discussing the well and I said there's no sense in going with the well if you're going to need water.

MR. LUCAS: Seems like everybody that comes with a building of this size seems to be breaking them down.

MR. PETRO: Because of the cost factor. Town of Newburgh is 2,500 square feet, I know that firsthand. I'd rather let the tenant pay the insurance and I'll keep the 50 grand for the system.

MR. STENT: Motion we approve Guardian Self Storage site plan.

MR. LANDER: Second it.

MR. PETRO: Should take lead agency first please.

MR. LANDER: We're sending them to zoning first.

MR. PETRO: Okay.

MR. EDSALL: You can take care of that when they come back.

MR. PETRO: Then we have a motion and seconded for final approval for the Guardian Self Storage site plan on Square Hill Road. Is there any further discussion from the board members? If not, roll call.

ROLL CALL

MR. ARGENIO	NO
MR. STENT	NO
MR. LANDER	NO
MR. LUCAS	NO
MR. PETRO	NO

MR. PETRO: At this time, you have been referred to the New Windsor zoning Board for proper and necessary variances that you may require. Once you have received those variances, you may then again come here before this board for your further site plan review.

MR. EDSALL: Just so the minutes so we're going to send it over being that we don't know how to fill out the referral form, we're going to fill it out for referral for an interpretation. Once they make an interpretation, how they are going to do measurements, they can decide what variances they need because at this point, we don't know how to fill out a referral.

MR. PETRO: I think our comments should accompany that.

MR. EDSALL: That's why I wanted this in the minutes cause I'm sure they'll read them.

GUARDIAN SELF STORAGE SITE PLAN (99-8) SQUARE HILL ROAD

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MR. PETRO: We have one of 66 foot but you have to deduct 25.

MR. BABCOCK: It's 60 foot required, Mr. Chairman.

MR. PETRO: You're not going to make it.

MR. EDSALL: Clearly going to be short for some of the buildings.

MR. CHAZEN: I'm guessing looks like the office building and the ends of these two units.

MR. EDSALL: It's not a serious problem. If you're going to zoning, you should include that.

MR. EDSALL: All depends what the board feels.

MR. LUCAS: Is that a dedicated road?

MR. EDSALL: That's why I made the comment if it's a road by use, if it's a road by use, it may not have been, there may not have been deeded dedications, but notwithstanding that, I don't know, don't know that the board normally measures setbacks to the center line of traveled ways.

MR. LANDER: Usually because the property line is not in the center of the road.

MR. BABCOCK: They are going to dedicate that 25 foot to the town which we would ask them to do.

MR. PETRO: That is where it should be measured from, sounds kind of cut and dry.

MR. EDSALL: What you need to do is decide if you believe that you want to make comment to the Zoning Board that you feel that a lesser than 60 setback is appropriate from a site plan review standpoint.

MR. PETRO: He can apply for the variance that's required for the front yard setback or he can shrink the buildings, the first two, and the office building, but being the applicant's not going to want to give up any rental of space, so I would apply, you're going there anyway, not being held up, apply for the variance.

MR. LANDER: So, you would have to deed 25 foot to the Town of New Windsor.

MR. CHAZEN: That's not a problem.

MR. PETRO: Show the new dimensions on the plan to the new front yard line, you'll need all the zoning information, all the variances required, variances received. Mark, do you think we covered that?

MR. EDSALL: Sorry, I was just discussing the route of

the road and potential for any widening with Mr. Babcock. I didn't hear your question.

MR. PETRO: I think we have covered that with the front yard. The only thing I question again if you notice that the lot that's created here in the center I guess the land that they don't own you'll see the other storage buildings are very close to that, that's also really the front yard, so you're going to have to maybe calculate those also as front yard setbacks.

MR. EDSALL: That would be a side yard setback to the side of the houses.

MR. PETRO: No, the ones in the back.

MR. EDSALL: Okay.

MR. PETRO: Really that's their front yard, it's the rear of the house but it's the front of their property.

MR. EDSALL: The other issue that comes to mind is when they go to the ZBA finding out if they need any height variances.

MR. PETRO: You're going to need one there, I can tell you that, I can tell you by how close that is, that's for sure.

MR. LANDER: Where are you going to measure?

MR. PETRO: From the property line to the house.

MR. CHAZEN: We look to you for some direction.

MR. PETRO: I think it's really--

MR. CHAZEN: We'll include that in our variance application, if for an interpretation if this is a front yard.

MR. PETRO: If that is not a front yard, tell me what it is. I realize it's the rear yard of the houses, but it's the front yard of your property, right, how can anybody disagree with that?

MR. LANDER: It's what's the rear yard setback.

MR. ARGENIO: To the north.

MR. LANDER: Is it 60 feet?

MR. CHAZEN: Sixty feet is required for a front yard.

MR. LANDER: What's rear yard?

MR. CHAZEN: Thirty feet.

MR. PETRO: Mark hits on another thing, I think there you better check the other ones when you do all your calculations, get the height requirement, how much is it per foot?

MR. EDSALL: Four inches but I understand that the town board just adopted new regulations so--

MR. BABCOCK: I don't have them with me, Jim, I think it's 12 inches now.

MR. PETRO: Check that because it's relief just adopted.

MR. BABCOCK: I don't know that for a fact, every zone is a little bit different but this is a PI zone?

MR. CHAZEN: This is zone C.

MR. BABCOCK: I think this did go to 12 inches.

MR. PETRO: Just going to reduce your variance, looks like three of the building will be affected.

MR. CHAZEN: We'll recalculate it and verify.

MR. PETRO: Mark, you don't disagree, we have to treat that as front yard?

MR. EDSALL: I think so, Ron.

MR. LUCAS: What's behind?

MR. CHAZEN: This is Wal-Mart, they have a very large pond back in here.

MR. STENT: Maybe you should try and address some of the remarks that Mark had before he comes back here, address those remarks.

MR. PETRO: Look at the storm water.

MR. LANDER: Can you tell me where the storm water is going to end up?

MR. CHAZEN: We have not done the storm water report yet. We know you're going to want one but we're collecting all the storm water in this location and proposing just to sheet it off-site hopefully at a rate below what's currently coming off the site.

MR. LANDER: Because you do have the City of Newburgh's water supply right on the other side of Union Avenue Washington Lake.

MR. CHAZEN: If quality is your issue, the storm water detention pond would be sized to meet first flush requirements, make sure we have enough volume here to hold that first inch or two inches.

MR. PETRO: That's going to be built with inlet outlet?

MR. CHAZEN: Yeah, I'm not quite sure what kind of discharge structure we'll have, we need to work on that. But yes, it will be a regular detention pond.

MR. LANDER: Do they have to send a letter to the City of Newburgh?

MR. PETRO: Five hundred feet.

MR. LNADER: To the City of Newburgh Water Supply?

MR. LUCAS: They are more than 500 feet.

MR. LANDER: Whether they are 500 or 1,000 feet, all depends where the water ends up. It's going to cross

the street, believe me.

MR. ARGENIO: I don't think so.

MR. STENT: That's not going to go across the street, it's going to go off to the pond or come down to the--

MR. CHAZEN: I believe our water will discharge into the pond that was built by Wal-Mart, so I think you'll actually have a double detention situation here.

MR. LANDER: All right.

MR. EDSALL: We can refer it to the City Engineering Department and let them at least be aware of it, we'll take care of that.

MR. PETRO: Give them 30 days to reply.

MR. EDSALL: I'll give Hauser a week.

MR. LANDER: One reason I bring that up when Arnoff came here for their project, we had them send to them and they are only up the road a little ways, still we sent a letter to the City of Newburgh.

MR. PETRO: Let's go to letter E with the 2.5 inches of asphalt you're going to get a lot of traffic in there, is that 1 1/2?

MR. LAWRENCE: No, we put down 2 1/2 inches of course binder then after five, six years we go back and put a top down.

MR. LANDER: That's going to be flush?

MR. LAWRENCE: Yes.

MR. LANDER: They do the aisle widths, there are 28 and 30 feet, I've seen them 20 feet, Mr. Chairman, so they are fairly wide.

MR. CHAZEN: Often people are renting trucks for the first time and we try to give them as much maneuvering room as possible.

MR. PETRO: So you've got 2 1/2 exactly that they are using.

MR. LANDER: 2 1/2 dense binder and then come back and put a top at a later date.

MR. EDSALL: I'd feel comfortable if they are putting 2 1/2 inches of dense binder to start out with, that's a good approach, other than 2 1/2 inch compacted.

MR. LAWRENCE: Our compacted finish is 2 1/2 inch, we don't finish until about five years later.

MR. CHAZEN: For detail.

MR. PETRO: This is open at night also, people can go in any time, is it 24 hour service?

MR. LAWRENCE: Yes, if they have the code.

MR. PETRO: You need to do a lighting plan.

MR. CHAZEN: Photometric plan?

MR. PETRO: I think so because it's really a public place.

MR. CHAZEN: All the lighting is wall packs on buildings, but we can generate.

MR. PETRO: Obviously, they are so close, I don't know how you couldn't help but light everything up.

MR. ARGENIO: The one on 32 is not unsightly, it's clean, I'm not a customer of yours, there's nothing unsightly about it when you drive down 32.

MR. LAWRENCE: Thank you.

MR. STENT: Motion for approval.

MR. PETRO: Conceptually, does anybody have anything else they want to add to this before we go to zoning board?

MR. BABCOCK: I see that they have a proposed well location, state law says that if you are within 500 feet, your property's within 500 feet of a town water line on a commercial operation, you have to hook up to the town water.

MR. PETRO: We're within 500 feet.

MR. BABCOCK: It appears to me that it is.

MR. LANDER: Where is that water line, Mike?

MR. BABCOCK: On Union Avenue.

MR. LAWRENCE: Is there a chance we can get a variance or some waiver on that law only because we have one toilet and one person in that space and there's no one else down that road that I believe would ever use a main so we put a main for one toilet, tear up an awful lot of town road for just that.

MR. EDSALL: Probably run a service, but you'd need a service to meet the State law's requirements.

MR. LAWRENCE: Just seems like a lot of work to go through for one small office with one toilet and hand wash sink.

MR. PETRO: Bring up another subject, why would these buildings not need to be sprinklered over 5,000 feet?

MR. BABCOCK: They do.

MR. EDSALL: They need a waiver for that.

MR. CHAZEN: That's a local law?

MR. BABCOCK: Yes.

MR. PETRO: New Windsor, 5,000 feet.

MR. EDSALL: You should check cause Mike just was discussing the fact that Arnoff is sprinklered so there must be a main that runs up there, I would doubt that

it is a private main.

MR. CHAZEN: There's a hydrant here but I'm not quite sure.

MR. EDALL: I suggest that you get ahold of the water department and seek their input on where you can best connect.

MR. CHAZEN: What's the process for seeking waiver on the sprinkler requirement?

MR. EDSALL: Bureau of Fire Prevention Control.

MR. BABCOCK: Right, Bob Rogers.

MR. LUCAS: Is it 5,000 or less?

MR. PETRO: No, it's 5,000.

MR. CHAZEN: Mr. Rogers who I met with in your workshop?

MR. EDSALL: Same fellow at the workshop.

MR. PETRO: Well, the reason I was saying he was talking about just going with the well, he's not going to be able to do that if it needs to be sprinklered. So he's going to have to find a way to get in with Arnoff, it would become a moot point if it has to be sprinklered and you're going to build and the well's useless anyway.

MR. LUCAS: His other option is to take the building and cut it in half.

MR. PETRO: That's correct, he can make a couple separations and they can explain that to you, say that you have a long building there that's 8,400 feet, you leave a 30 foot separation in the center, I don't know if it's 30, might be 10 or 20, we've done that a couple times, but I can tell that you also that if you weigh out your costs of the sprinkler system and losing that square footage that you would buy leaving a couple slits, you might be--

MR. CHAZEN: It would have to be a dry system, these are not heated units.

MR. PETRO: You're talking about a serious--

MR. LAWRENCE: It's not cost effective.

MR. PETRO: Kind of lean to what I am telling you because I think the fire inspector, they've had storage buildings here.

MR. LAWRENCE: Are there others in the town currently sprinklered of this type with metal frame?

MR. PETRO: Depends on when they were built, I don't know when the law went into effect, but it's been at least ten years.

MR. CHAZEN: You'll probably see ten foot breaks.

MR. BABCOCK: You can ask for a waiver of that.

MR. EDSALL: Pursue that.

MR. BABCOCK: You have to demonstrate why it's a hardship for you.

MR. EDSALL: They may like you to break the buildings with fire walls.

MR. PETRO: Reason we got on that subject because we're discussing the well and I said there's no sense in going with the well if you're going to need water.

MR. LUCAS: Seems like everybody that comes with a building of this size seems to be breaking them down.

MR. PETRO: Because of the cost factor. Town of Newburgh is 2,500 square feet, I know that firsthand. I'd rather let the tenant pay the insurance and I'll keep the 50 grand for the system.

MR. STENT: Motion we approve Guardian Self Storage site plan.

MR. LANDER: Second it.

MR. PETRO: Should take lead agency first please.

MR. LANDER: We're sending them to zoning first.

MR. PETRO: Okay.

MR. EDSALL: You can take care of that when they come back.

MR. PETRO: Then we have a motion and seconded for final approval for the Guardian Self Storage site plan on Square Hill Road. Is there any further discussion from the board members? If not, roll call.

ROLL CALL

MR. ARGENIO	NO
MR. STENT	NO
MR. LANDER	NO
MR. LUCAS	NO
MR. PETRO	NO

MR. PETRO: At this time, you have been referred to the New Windsor zoning Board for proper and necessary variances that you may require. Once you have received those variances, you may then again come here before this board for your further site plan review.

MR. EDSALL: Just so the minutes so we're going to send it over being that we don't know how to fill out the referral form, we're going to fill it out for referral for an interpretation. Once they make an interpretation, how they are going to do measurements, they can decide what variances they need because at this point, we don't know how to fill out a referral.

MR. PETRO: I think our comments should accompany that.

MR. EDSALL: That's why I wanted this in the minutes cause I'm sure they'll read them.

ZONING BOARD OF APPEALS

Regular Session

April 26, 1999

REVISED AGENDA:

7:30 p.m. - ROLL CALL

Motion to accept minutes of the 04/12/99 meeting if available.

PRELIMINARY MEETING:

SET UP FOR P/H

1. **PAVLIK, LINDA** - Request for a 10 ft. side yard variance to construct a deck at 99 Moores Hill Road in an R-3 zone. (32-2-20).

SET UP FOR P/H

2. **HEREDIA, MANUEL P.** - Request for a use variance for a two-family conversion from a single-family residence located at 4 Beech Acres Drive. Use not permitted in an R-1 zone. (29-1-58).

SET UP FOR P/H

3. **PIERRI, FRANK** - Request for 11 ft. 6 in. rear yard variance for existing deck and 1 ft. 6 in. side yard variance for existing shed located at 13 Clarkview Rd. in an R-4 zone. (6-3-1).

SET UP FOR P/H

4. **BILA PARTNERS** - Request for 3 ft. 6 in. sign height/10 ft. sign width for south wall; 3 ft. 6 in. sign height/10 ft. sign width for east wall; and 1 ft. 6 in. sign height/10 ft. sign width for west wall of proposed video store at Shop Rite Plaza located in C zone. (65-2-12).

SET UP FOR P/H

5. **ROSCINO/GUARDIAN STORAGE** - Request for variance to allow 8 ft. fence and Interpretation and/or area variance for front yard setbacks for a self-storage operation on n/s of Square Hill Road in a C zone. (4-1-4).

PUBLIC HEARINGS:

APPROVED

6. **BERMAN, DAVID** - Request for 64 sq. ft. sign area variance for free-standing sign at RAL Supply located at 389 Windsor Highway in C zone. (65-2-16.1).

APPROVED

7. **FRANCAN, FRANK** - Request for use variance to all existing single-family residence in a PI zone, plus 6,250 sq. ft. lot area, 12 ft. 5 in. lot width, and 1 ft. 7 in. rear yard variance for residence at 7 Columbus Street in a PI zone. (14-1-10.11).

Pat - 563-4630 (o) or 562-7107 (h)

RESULTS OF MEETING OF: April 1999

PROJECT: Guardian Self Storage P.B.# 99-8

LEAD AGENCY:

NEGATIVE DEC:

1. AUTHORIZE COORD LETTER: Y\_\_ N\_\_  
2. TAKE LEAD AGENCY: Y\_\_ N\_\_

M)\_\_\_ S)\_\_\_ VOTE: A\_\_ N\_\_  
CARRIED: YES\_\_ NO\_\_

M)\_\_\_ S)\_\_\_ VOTE: A\_\_ N\_\_  
CARRIED: YES\_\_ NO\_\_

WAIVE PUBLIC HEARING: M)\_\_\_ S)\_\_\_ VOTE: A\_\_ N\_\_ WAIVED: Y\_\_ N\_\_  
SCHEDULE P.H. Y\_\_ N\_\_

SEND TO O.C. PLANNING: Y\_\_  
SEND TO DEPT. OF TRANSPORTATION: Y\_\_  
REFER TO Z.B.A.: M) S S) N VOTE: A D N 5  
RETURN TO WORK SHOP: YES  NO\_\_

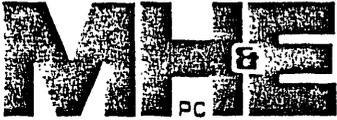
APPROVAL:

M)\_\_\_ S)\_\_\_ VOTE: A\_\_ N\_\_ APPROVED: \_\_\_\_\_  
M)\_\_\_ S)\_\_\_ VOTE: A\_\_ N\_\_ APPROVED CONDITIONALLY: \_\_\_\_\_

NEED NEW PLANS: Y\_\_ N\_\_

DISCUSSION/APPROVAL CONDITIONS:

<i>Correct set back calculations prior to ZBA referral</i>
<i>refer to City of Houl.</i>
<i>Need lighting plan</i>



McGOEY, HAUSER and EDSALL  
CONSULTING ENGINEERS P.C.

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WILLIAM J. HAUSER, P.E.  
MARK J. EDSALL, P.E.  
JAMES M. FARR, P.E.

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45 Quassaick Ave. (Route 9W)  
New Windsor, New York 12553  
(914) 562-8640
- Branch Office  
507 Broad Street  
Milford, Pennsylvania 18337  
(717) 296-2765

PLANNING BOARD WORK SESSION  
RECORD OF APPEARANCE

TOWN/VILLAGE OF New Windsor P/B # 99-8

WORK SESSION DATE: 21 April 99 APPLICANT RESUB. REQUIRED:       

REAPPEARANCE AT W/S REQUESTED: after ZBA

PROJECT NAME: Guardian

PROJECT STATUS: NEW  OLD

REPRESENTATIVE PRESENT: Harb Redd / Kari / Kelly

MUNIC REPS PRESENT: BLDG INSP.   
 FIRE INSP.   
 ENGINEER   
 PLANNER   
 P/B CHMN.   
 OTHER (Specify)       

ITEMS TO BE ADDRESSED ON RESUBMITTAL:

- Bob send memo re sprinklers don't apply
- height
- front yard setback.
- gate emergency access.

*Preparing for ZBA referral.*

CLOSING STATUS

- Set for agenda
- possible agenda item
- Discussion item for agenda
- ZBA referral on agenda

pbwsform 10MJ98







1763

# TOWN OF NEW WINDSOR

555 UNION AVENUE  
NEW WINDSOR, NEW YORK 12553

## NEW WINDSOR PLANNING BOARD REVIEW FORM

TO: FIRE INSPECTOR, D.O.T., WATER, SEWER, HIGHWAY

PLEASE RETURN COMPLETED FORM TO:

MYRA MASON, SECRETARY FOR THE PLANNING BOARD

PLANNING BOARD FILE NUMBER: 99-8

DATE PLAN RECEIVED: RECEIVED JUN 4 1999

The maps and plans for the Site Approval \_\_\_\_\_

Subdivision \_\_\_\_\_ as submitted by

\_\_\_\_\_ for the building or subdivision of

Concession self storage. \_\_\_\_\_ has been

reviewed by me and is approved

~~disapproved~~ \_\_\_\_\_

If disapproved, please list reason \_\_\_\_\_

No town water on line rd.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
HIGHWAY SUPERINTENDENT      DATE

Steve D.D.      6-7-99  
WATER SUPERINTENDENT      DATE

\_\_\_\_\_  
SANITARY SUPERINTENDENT      DATE



1763

# TOWN OF NEW WINDSOR

555 UNION AVENUE  
NEW WINDSOR, NEW YORK 12553

## NEW WINDSOR PLANNING BOARD REVIEW FORM

TO: FIRE INSPECTOR, D.O.T., WATER, SEWER, HIGHWAY

PLEASE RETURN COMPLETED FORM TO:

MYRA MASON, SECRETARY FOR THE PLANNING BOARD

RECEIVED

APR 12 1999

N.W. HIGHWAY DEPT.

PLANNING BOARD FILE NUMBER: 99-8

DATE PLAN RECEIVED: RECEIVED APR 8 - 1999

The maps and plans for the Site Approval

Subdivision \_\_\_\_\_ as submitted by

\_\_\_\_\_ for the building or subdivision of

\_\_\_\_\_ has been

reviewed by me and is approved

disapproved \_\_\_\_\_.

If disapproved, please list reason \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

W. James Sullivan 4/12/99  
HIGHWAY SUPERINTENDENT DATE

\_\_\_\_\_  
WATER SUPERINTENDENT DATE

\_\_\_\_\_  
SANITARY SUPERINTENDENT DATE

**INTER-OFFICE MEMORANDUM**

**TO: Town Planning Board**

**FROM: Town Fire Inspector**

**DATE: April 13, 1999**

**SUBJECT: Guardian Self Storage**

Planning Board Reference Number: PB-99-8

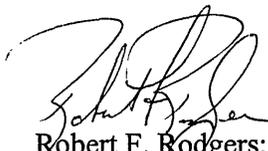
Dated: 8 April 1999

Fire Prevention Reference Number: FPS-99-017

A review of the above referenced subject site plan was conducted on 12 April 1999.

This site plan is acceptable.

Plans Dated: 31 March 1999



Robert F. Rodgers; c.c.a.  
Fire Inspector

RFR/dh



1763

# TOWN OF NEW WINDSOR

555 UNION AVENUE  
NEW WINDSOR, NEW YORK 12553

## NEW WINDSOR PLANNING BOARD REVIEW FORM

TO: FIRE INSPECTOR, D.O.T., WATER, SEWER, HIGHWAY

PLEASE RETURN COMPLETED FORM TO:

MYRA MASON, SECRETARY FOR THE PLANNING BOARD

PLANNING BOARD FILE NUMBER: 99-8

DATE PLAN RECEIVED: RECEIVED APR 8 - 1999

The maps and plans for the Site Approval \_\_\_\_\_

Subdivision \_\_\_\_\_ as submitted by

\_\_\_\_\_ for the building or subdivision of

Guardian Self Storage has been

reviewed by me and is approved ✓

~~disapproved~~

If disapproved, please list reason \_\_\_\_\_

There is no town water in  
this area - (line rd)

HIGHWAY SUPERINTENDENT DATE

Steve D.D.O. - 4-12-99

WATER SUPERINTENDENT DATE

SANITARY SUPERINTENDENT DATE



McGOEY, HAUSER and EDSALL  
CONSULTING ENGINEERS P.C.

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PLANNING BOARD WORK SESSION  
RECORD OF APPEARANCE

1-3

TOWN/VILLAGE OF New Windsor

P/B 99-8

WORK SESSION DATE: 18 Feb 99

APPLICANT RESUB.  
REQUIRED: Full App

REAPPEARANCE AT W/S REQUESTED: No

PROJECT NAME: Redl.

PROJECT STATUS: NEW X OLD \_\_\_\_\_

REPRESENTATIVE PRESENT: Richard Clarke / Eileen Travis / John Lawrence

- MUNIC REPS PRESENT:
- BLDG INSP. \_\_\_\_\_
  - FIRE INSP. X
  - ENGINEER X
  - PLANNER \_\_\_\_\_
  - P/B CHMN. \_\_\_\_\_
  - OTHER (Specify) \_\_\_\_\_

ITEMS TO BE ADDRESSED ON RESUBMITTAL:

- Liver Road - not square till
- next to Arnoff st at 300
- OS, DTD
- FD access for radius
- C zone A-4 need bulk or plan six estab.
- grading plan - ck transition = 2 story unit.
- ck site re outlet of drainage (disc more to rear toward
- short - EAF initially. walnut pond?)
- Viewshed finishes: landscaping @ entrance
- ded 25'
- paving.

CLOSING STATUS

- Set for agenda
- possible agenda item
- Discussion item for agenda
- ZBA referral on agenda

pbwsform 10MJE98



# TOWN OF NEW WINDSOR

555 UNION AVENUE  
NEW WINDSOR, NEW YORK 12553  
Telephone: (914) 563-4615  
Fax: (914) 563-4693

## PLANNING BOARD APPLICATION

### TYPE OF APPLICATION (check appropriate item):

Subdivision \_\_\_ Lot Line Change \_\_\_ Site Plan  Special Permit \_\_\_

Tax Map Designation: Sec. 4 Block 1 Lot 4

1. Name of Project Guardian Self Storage
2. Owner of Record Herbert Redl Properties Phone (914) 471-3388  
Address: 80 Washinton St., Suite 310, Poughkeepsie, NY 12601  
(Street Name & Number) (Post Office) (State) (Zip)
3. Name of Applicant Same as owner. Phone \_\_\_\_\_  
Address: \_\_\_\_\_  
(Street Name & Number) (Post Office) (State) (Zip)
4. Person Preparing Plan The Chazen Companies Phone (914) 454-3980  
Address: P.O. Box 3479, Poughkeepsie, NY 12603  
(Street Name & Number) (Post Office) (State) (Zip)
5. Attorney N.A. Phone \_\_\_\_\_  
Address \_\_\_\_\_  
(Street Name & Number) (Post Office) (State) (Zip)
6. Person to be notified to appear at Planning Board meeting:  
The Chazen Companies (914) 454-3980  
(Name) (Phone)
7. Project Location:  
On the North side of Square Hill Road 40 feet  
(Direction) (Street) (No.)  
West of Route 300  
(Direction) (Street)
8. Project Data: Acreage 6.08 Zone 5 School Dist. Newburgh

9. Is this property within an Agricultural District containing a farm operation or within 500 feet of a farm operation located in an Agricultural District? Yes \_\_\_\_\_ No x

**\*This information can be verified in the Assessor's Office.**

**\*If you answer "yes" to question 9, please complete the attached "Agricultural Data Statement".**

10. Description of Project: (Use, Size, Number of Lots, etc.) Construction of a Self-Storage facility containing nine separate units totaling 75,950 sq. ft., of which 1,000 sq. ft. will serve as an office.

11. Has the Zoning Board of Appeals Granted any Variances for this property? yes \_\_\_\_\_ no X

12. Has a Special Permit previously been granted for this property? yes \_\_\_\_\_ no X

**ACKNOWLEDGMENT:**

IF THIS ACKNOWLEDGMENT IS COMPLETED BY ANYONE OTHER THAN THE PROPERTY OWNER, A SEPARATE NOTARIZED STATEMENT OR PROXY STATEMENT FROM THE OWNER MUST BE SUBMITTED, AT THE TIME OF APPLICATION, AUTHORIZING THIS APPLICATION.

STATE OF NEW YORK)

SS.:

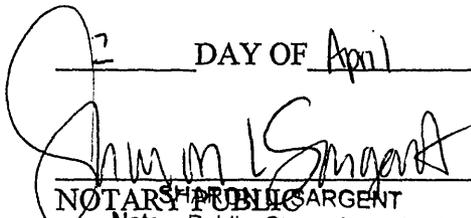
COUNTY OF ORANGE)

THE UNDERSIGNED APPLICANT, BEING DULY SWORN, DEPOSES AND STATES THAT THE INFORMATION, STATEMENTS AND REPRESENTATIONS CONTAINED IN THIS APPLICATION AND SUPPORTING DOCUMENTS AND DRAWINGS ARE TRUE AND ACCURATE TO THE BEST OF HIS/HER KNOWLEDGE AND/OR BELIEF. THE APPLICANT FURTHER ACKNOWLEDGES RESPONSIBILITY TO THE TOWN FOR ALL FEES AND COSTS ASSOCIATED WITH THE REVIEW OF THIS APPLICATION.

SWORN BEFORE ME THIS:

2 DAY OF April 1999

  
\_\_\_\_\_  
APPLICANT'S SIGNATURE

  
\_\_\_\_\_  
NOTARY PUBLIC  
Notary Public, State of New York  
Residing in Dutchess County  
Commission Expires 8/4/99

Herbert Fredl  
Please Print Applicant's Name as Signed

TOWN USE ONLY:  
**RECEIVED** APR 8 - 1999

DATE APPLICATION RECEIVED

**99-8**

APPLICATION NUMBER

**APPLICANT/OWNER PROXY STATEMENT**  
**(for professional representation)**

for submittal to the:  
TOWN OF NEW WINDSOR PLANNING BOARD

Herbert Redl Properties, deposes and says that he resides  
(OWNER)  
at 80 Washinton St., Poughkeepsie in the County of Dutchess  
(OWNER'S ADDRESS)  
and State of New York and that he is the owner of property tax map  
(Sec.        Block        Lot       )  
designation number (Sec. 4 Block 1 Lot 4) which is the premises described in  
the foregoing application and that he authorizes:

\_\_\_\_\_  
(Applicant Name & Address, if different from owner)

The Chazen Companies, P.O. Box 3479, Poughkeepsie, NY 12603  
(Name & Address of Professional Representative of Owner and/or Applicant)

to make the foregoing application as described therein.

Date: 4/2/99

  
Owner's Signature

  
Witness' Signature

\_\_\_\_\_  
Applicant's Signature if different than owner

\_\_\_\_\_  
Representative's Signature

**THIS FORM CANNOT BE WITNESSED BY THE PERSON OR  
REPRESENTATIVE OF THE COMPANY WHO IS BEING AUTHORIZED  
TO REPRESENT THE APPLICANT AND/OR OWNER AT THE MEETINGS.**

**TOWN OF NEW WINDSOR PLANNING BOARD**

**SITE PLAN CHECKLIST**

**ITEM**

1.  Site Plan Title
2.  Applicant's Name(s)
3.  Applicant's Address
4.  Site Plan Preparer's Name
5.  Site Plan Preparer's Address
6.  Drawing Date
7.  Revision Dates
8.  Area Map Inset
9.  Site Designation
10.  Properties within 500' of site
11.  Property Owners (Item #10)
12.  Plot Plan
13.  Scale (1" = 50' or lesser)
14.  Metes and Bounds
15.  Zoning Designation
16.  North Arrow
17.  Abutting Property Owners
18.  Existing Building Locations
19.  Existing Paved Areas
20.  Existing Vegetation
21.  Existing Access & Egress

80-3

PROPOSED IMPROVEMENTS

- 22.  Landscaping
- 23.  Exterior Lighting
- 24.  Screening
- 25.  Access & Egress
- 26.  Parking Areas
- 27.  Loading Areas
- 28.  Paving Details (Items 25 - 27)
- 29.  Curbing Locations
- 30.  Curbing through section
- 31.  Catch Basin Locations
- 32.  Catch Basin Through Section
- 33.  Storm Drainage
- 34.  Refuse Storage
- 35. n/a Other Outdoor Storage
- 36.  Water Supply
- 37.  Sanitary Disposal System
- 38. n/a Fire Hydrants
- 39.  Building Locations
- 40.  Building Setbacks
- 41.  Front Building Elevations
- 42. n/a Divisions of Occupancy
- 43.  Sign Details
- 44.  Bulk Table Inset
- 45.  Property Area (Nearest 100 sq. ft.)
- 46.  Building Coverage (sq. ft.)
- 47.  Building Coverage (% of total area)
- 48.  Pavement Coverage (sq. ft.)
- 49.  Pavement Coverage (% of total area)
- 50.  Open Space (sq. ft.)
- 51.  Open Space (% of total area)
- 52.  No. of parking spaces proposed
- 53.  No. of parking spaces required

REFERRING TO QUESTION 9 ON THE APPLICATION FORM, "IS THIS PROPERTY WITHIN AN AGRICULTURAL DISTRICT CONTAINING A FARM OPERATION OR WITHIN 500 FEET OF A FARM OPERATION LOCATED IN AN AGRICULTURAL DISTRICT, PLEASE NOTE THE FOLLOWING:

- 54. \_\_\_\_\_ Referral to Orange County Planning Dept. is required for all applicants filing AD Statement.
- 55. \_\_\_\_\_ A disclosure Statement, in the form set below, must be inscribed on all subdivision maps prior to the affixing of a stamp of approval, whether or not the Planning Board specifically requires such a statement as a condition of approval.

"Prior to the sale, lease, purchase, or exchange of property on this site which is wholly or partially within or immediately adjacent to or within 500 feet of a farm operation, the purchaser or leaser shall be notified of such farm operation with a copy of the following notification.

It is the policy of this State and this community to conserve, protect and encourage the development and improvement of agricultural land for the production of food, and other products, and also for its natural and ecological value. This notice is to inform prospective residents that the property they are about to acquire lies partially or wholly within an agricultural district or within 500 feet of such a district and that farming activities occur within the district. Such farming activities may include, but not be limited to, activities that cause noise, dust and odors.

This list is provided as a guide only and is for the convenience of the Applicant. The Town of New Windsor Planning Board may require additional notes or revisions prior to granting approval.

**PREPARER'S ACKNOWLEDGMENT:**

THE PLAT FOR THE PROPOSED SITE PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THIS CHECKLIST AND THE TOWN OF NEW WINDSOR ORDINANCES, TO THE BEST OF MY KNOWLEDGE.

BY: Gileen M. Davis, LA 4/2/99  
Licensed Professional Date

RECEIVED APR 8 - 1999

99-8

**SHORT ENVIRONMENTAL ASSESSMENT FORM**

For UNLISTED ACTIONS Only

**PART I - PROJECT INFORMATION** (To be completed by Applicant or Project Sponsor)

1. APPLICANT/SPONSOR Name <i>Herbert Redl Properties</i>	2. PROJECT NAME Project Name <i>Proposed Guardian Self Storage</i>
3. PROJECT LOCATION: Municipality <i>Town of New Windsor</i> County <i>Orange</i>	
4. PRECISE LOCATION (Street address and road intersections, prominent landmarks, etc., or provide map) <i>North side of Square Hill Road 40 ft. west of Route 300, Town of New Windsor, Orange County</i>	
5. IS PROPOSED ACTION: <input checked="" type="checkbox"/> New <input type="checkbox"/> Expansion <input type="checkbox"/> Modification/alteration	
6. DESCRIBE PROJECT BRIEFLY: <i>The Applicant seeks Site Plan approval to construct a Self Storage Facility containing nine separate units totaling 71,075 sq. ft., of which 875 sq. ft. will serve as an office. Further, the Applicant seeks an Area Variance from the Zoning Board of Appeals to erect an 8 ft. fence around the perimeter of the facility for the purpose of security.</i>	
7. AMOUNT OF LAND AFFECTED: Initially: <u>6.08(+/-)</u> acres Ultimately <u>6.08(+/-)</u> acres	
8. WILL PROPOSED ACTION COMPLY WITH EXISTING ZONING OR OTHER EXISTING LAND USE RESTRICTIONS? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If No, describe briefly.	
9. WHAT IS PRESENT LAND USE IN VICINITY OF PROJECT? <input checked="" type="checkbox"/> Residential <input checked="" type="checkbox"/> Industrial <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Agriculture <input type="checkbox"/> Park/Forest/Open space <input type="checkbox"/> Other Describe: <i>Arnoff Warehouse Storage, Walmart Retail Store, Hotel, and Residential Dwelling.</i>	
10. DOES ACTION INVOLVE A PERMIT APPROVAL, OR FUNDING, NOW OR ULTIMATELY FROM ANY OTHER GOVERNMENTAL AGENCY (FEDERAL, STATE, OR LOCAL)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes, list agency name and permit/approval. <i>Town of New Windsor, Planning Board Site Plan Town of New Windsor, Zoning Board of Appeals Area Variance</i>	
11. DOES ANY ASPECT OF THE ACTION HAVE A CURRENTLY VALID PERMIT OR APPROVAL? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, list agency name and permit/approval.	
12. AS A RESULT OF THE PROPOSED ACTION WILL EXISTING PERMIT/APPROVAL REQUIRE MODIFICATION? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
I CERTIFY THAT THE INFORMATION PROVIDED ABOVE IS TRUE TO THE BEST OF MY KNOWLEDGE	
Applicant/sponsor name: <u>Herbert Redl Properties</u> Date: <u>March 31, 1999</u>	
Signature: <u><i>Herbert Redl</i></u> - AGENT FOR APPLICANT	

If the action is in the Coastal Area, and you are a State agency, complete the Coastal Assessment Form before proceeding with this assessment.

OVER

1

99-8

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**PART II – ENVIRONMENTAL ASSESSMENT (To be completed by Agency)**

A. DOES ACTION EXCEED ANY TYPE I THRESHOLD IN 6 NYCRR, PART 617.4? If yes, coordinate the review process and use the FULL EAF.  
 Yes     No

B. WILL ACTION RECEIVE COORDINATED REVIEW AS PROVIDED FOR UNLISTED ACTIONS IN 6 NYCRR, PART 617.6? If No, a negative declaration may be superceded by another involved agency.  
 Yes     No

C. COULD ACTION RESULT IN ANY ADVERSE EFFECTS ASSOCIATED WITH THE FOLLOWING: (Answers may be handwritten, if legible)

C1. Existing air quality, surface or groundwater quality or quantity, noise levels, existing traffic patterns, solid waste production or disposal, potential for erosion, drainage or flooding problems? Explain briefly:

C2. Aesthetic, agricultural, archaeological, historic or other natural or cultural resources; or community or neighborhood character? Explain briefly:

C3. Vegetation or fauna, fish, shellfish or wildlife species, significant habitats, or threatened or endangered species? Explain briefly:

C4. A community's existing plans or goals as officially adopted, or a change in use or intensity of use of land or other natural resources? Explain briefly:

C5. Growth, subsequent development, or related activities likely to be induced by the proposed action? Explain briefly:

C6. Long term, short term, cumulative, or other effects not identified in C1 – C5? Explain briefly:

C7. Other impacts (including changes in use of either quantity or type of energy)? Explain briefly:

D. WILL THE PROJECT HAVE AN IMPACT ON THE ENVIRONMENTAL CHARACTERISTICS THAT CAUSED THE ESTABLISHMENT OF A CEA?  
 Yes     No

E. IS THERE, OR IS THERE LIKELY TO BE, CONTROVERSY RELATED TO POTENTIAL ADVERSE ENVIRONMENTAL IMPACTS?  
 Yes     No    If Yes, explain briefly:

**PART III – DETERMINATION OF SIGNIFICANCE (To be completed by Agency)**

**INSTRUCTIONS:** For each adverse effect identified above, determine whether it is substantial, large, important or otherwise significant. Each effect should be assessed in connection with its (a) setting (i.e. urban or rural); (b) probability of occurring; (c) duration; (d) irreversibility; (e) geographic scope; and (f) magnitude. If necessary, add attachments or reference supporting materials. Ensure that explanations contain sufficient detail to show that all relevant adverse impacts have been identified and adequately addressed. If question D of Part II was checked yes, the determination and significance must evaluate the potential impact of the proposed action on the environmental characteristics of the CEA.

- Check this box if you have identified one or more potentially large or significant adverse impacts which MAY occur. Then proceed directly to the FULL EAF and/or prepare a positive declaration.
- Check this box if you have determined, based on the information and analysis above and any supporting documentation, that the proposed action WILL NOT result in any significant adverse environmental impacts AND provide on attachments as necessary, the reasons supporting this determination:

\_\_\_\_\_ Name of Lead Agency

\_\_\_\_\_ Print or Type Name of Responsible Officer in Lead Agency

\_\_\_\_\_ Title of Responsible Officer

\_\_\_\_\_ Signature of Responsible Officer in Lead Agency

\_\_\_\_\_ Signature of Preparer (if different from responsible officer)

\_\_\_\_\_ Date

*Stormwater Management Report*  
**Guardian Self-Storage**  
**Square Hill Road**

-----  
**Town of New Windsor**  
**Orange County, New York**

May 21, 1999  
Revised: June 22, 1999

Prepared by:

THE  
*Chazen*  
COMPANIES

The Dutchess County Office  
*The Chazen Companies*  
P.O. Box 3479, 229-B Page Park  
Poughkeepsie, New York 12603

*Dutchess County*  
(914) 454-3980

*Orange County*  
(914) 567-1133

*Capital District*  
(518) 371-0829

*Stormwater Management Report*  
**Guardian Self-Storage  
Square Hill Road**  
-----  
**Town of New Windsor  
Orange County, New York**

May 21, 1999  
Revised: June 22, 1999



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### APPENDICES

1. NYS RAINFALL DATA TABLES
2. SITE SOILS
3. PRE-DEVELOPMENT DRAINAGE
4. POST-DEVELOPMENT DRAINAGE
5. RIP-RAP OUTLET PROTECTION DESIGN
6. WATER QUALITY

## 1.0 PROJECT OVERVIEW

### 1.1 Purpose

This report will evaluate post-development drainage patterns in order to address that post-development flows are less than or approximately equal to pre-development flows. This report will also address that adequate first flush provisions have been implemented.

### 1.2 Location

The Applicant, Herbert Redl, is proposing to construct a new "Guardian" Self Storage Facility containing ten separate buildings and an office. The project is located on the north side of Square Hill Road (a.k.a. Liner Road) 150 feet west of State Route 300, in the Town of New Windsor, Orange County, NY. The total lot size is 6.08(+/-) acres.

## 2.0 ANALYSIS METHODOLOGY

Hydrologic analysis has been performed employing SCS TR-20/55 computer modeling techniques with "HydroCAD™" software. Composite curve numbers were developed for drainage areas with various soils. The design storm used has been the SCS, Type III 25-year event, which has a base rainfall of 6.3 in. The 2, 5, and 10-year storm events utilizing base rainfall values of 3.5, 4.8, and 5.2 inches, respectively were also evaluated. These rainfall values were derived from the New York Guidelines for Urban Erosion and Sediment Control.

## 3.0 STORMWATER MANAGEMENT DESIGN METHODOLOGY

The hydrologic evaluation and subsequent stormwater management design for this project focused on locations where collected stormwater leaves the site, known as stormwater discharge points (SDP). The design intent is to address that post-development flow does not exceed pre-development flow at the SDP or that there is ample capacity to convey the flow at the SDP where post development flows are greater than pre-development flow. There are three SDP's for this site. They are as follows: existing catch basin at the south corner of the site located on the road; existing roadside drainage channel on the south side of the site flowing to the west; and the west side of the site.

#### 4.0 SOIL CONDITIONS

The hydrologic soil characteristics of the site watershed are derived from both the USDA Table 7.1 and Orange County, New York Soil Survey. A site soils map is included in Appendix 2. In general, the major soil types in the watershed are as follows:

SYMBOL	NAME	HYDROLOGIC GROUP
Ab	Alden Silt Loam	D
MdB	Mardin Gravelly Silt Loam	C

#### 5.0 PRE-DEVELOPMENT CONDITIONS

The contributing pre-development watershed areas can be broken down into three subcatchment areas labeled 100, 200, and 300 (see Appendix 3). Subcatchment 100 is made up of 1.88 acres of on-site and off-site drainage areas located on the eastern portion of the site. The on-site drainage areas consist of woods and brush. The off-site drainage consists of a gravel parking lot, lawn, and asphalt road. Runoff from Subcatchment 100 travels overland, via sheet and shallow concentrated flow, to an existing off-site catch basin located near the southeast corner of the site.

Subcatchment 200 is made up of 1.11 acres of on-site and off-site drainage areas located in the center of the site. The on-site drainage areas consist of woods and brush. The off-site drainage areas consist of a gravel driveway, lawn, roofs, and asphalt road. Runoff from Subcatchment 200 travels overland, via sheet and shallow concentrated flow, to an existing roadside channel on the southern portion of the site and discharges at the southwest corner of the site. The discharge is conveyed overland to a pond on the adjacent property.

Subcatchment 300 is made up of 3.85 acres of on-site and off-site drainage areas located on the western portion of the site. The on-site drainage areas consist of woods. The off-site drainage areas consist of a lawn. Runoff from Subcatchment 300 travels overland, via sheet and shallow concentrated flow, across the western property line and to a pond on the adjacent property.

#### 6.0 POST-DEVELOPMENT CONDITIONS

The proposed project will result in an increase in impervious surface on-site, due to new buildings and paved surfaces. A majority of the runoff from the areas of new construction (Subcatchment 3000 and 3050) and some off-site drainage (western and center portion of site) will be collected through a series of catchbasins and

conveyed to a proposed detention area on the southwest corner of the site. The proposed detention pond is designed to both accommodate peak flows and to act as a first flush control. An exfiltration and collection system will be used to prevent standing water. An exfiltration rate of 1 inch per 10 minutes was assumed.

Runoff from the remaining areas of new construction consisting of lawn and meadows (Subcatchment 4000) will flow overland into the pond on the adjacent property and a small area of pavement (Subcatchment 1000) on the southeast corner of the site will flow to the existing catch basin located off-site.

## 7.0 RESULTS SUMMARY

The discharge from the SDP's were evaluated for the 2, 5, 10, and 25-year frequency Type III storm events. Both pre-development and post-development hydrologic computer models are included in Appendices 3 and 4. The result summary information is as follows:

Rainfall Event	Intensity (in / 24 hr)	Pre - Development Flow Rates (cfs)			Post - Development Flow Rates (cfs)				
		Sub 100 SDP # 1	Sub 200 SDP # 2	Sub 300 SDP # 3	Sub 1000 SDP # 1	Sub 2000 SDP # 2	Pond 3000 SDP # 3	Sub 4000 SDP # 3	Pond 3000 + Sub 4000 SDP # 3
2 - yr	3.5	0.91	0.95	2.2	0.21	1.02	0.9	0.73	1.63
5 - yr	4.8	1.66	1.67	4.13	0.32	1.71	2.79	1.36	4.15
10 - yr	5.2	1.9	1.9	4.76	0.35	1.93	3.22	1.57	4.79
25 - yr	6.3	2.59	2.55	6.57	0.44	2.54	4.24	2.15	6.39

### Notes:

- 1) SDP #1 = Existing Catch Basin on South East Corner of Site
- 2) SDP #2 = Existing Roadside Channel on South Side of Site Flowing West
- 3) SDP #3 = Discharge on West Side of Site

## 8.0 CONCLUSION

This revised drainage report has evaluated stormwater flows for pre-development and post-development conditions for the 2, 5, 10, and 25-year frequency Type III storm events. The report has been updated to reflect changes to the proposed detention area from the original drainage report dated May 21, 1999. This includes raising the bottom of the basin from elevation 340 to 344.5 and reconfigure the basin. In addition, the outlet structure was changed from a catchbasin to a 12" diameter CPE, smooth interior pipe. The volume of the detention pond beneath the new outlet is still sufficient to detain the first flush of runoff. However, an exfiltration system was added to provide for draining of the pond between storm

events. To avoid creating a point discharge from the pond, a flow dissipator was placed on the east side of the property to disperse the discharge from the pond.

The post-development hydrologic computer model was recalculated for all storm events modeled. As in the previous stormwater model, the post-development flows SDP's #1 and #3 will be less than or approximately equal to pre-development flows for the 2, 5, 10, and 25 – year storms. Post-development flows for SDP # 2 will still be less than or approximately equal to pre-development flows for the 10 and 25 – year storms, and there will still be an increase in discharge for the 2 and 5 – year storms. However, based on the analysis the existing roadside channel has the capacity to convey the flow.

As previously stated, the proposed on-site stormwater improvements are designed to accommodate a 25-year frequency storm event. Runoff from the new development is conveyed through a properly designed underground storm drainage system and detention basin. The detention pond has been designed both to accommodate a 25-year storm event and to detain the First Flush of pollutants from stormwater runoff. As a result, it can be anticipated that this design provides the best possible method to minimize any impacts from the proposed project.

APPENDIX 1

NYS RAINFALL DATA TABLES

# Exhibit 10.1

## New York Rainfall Maps for Different Rainfall Frequencies

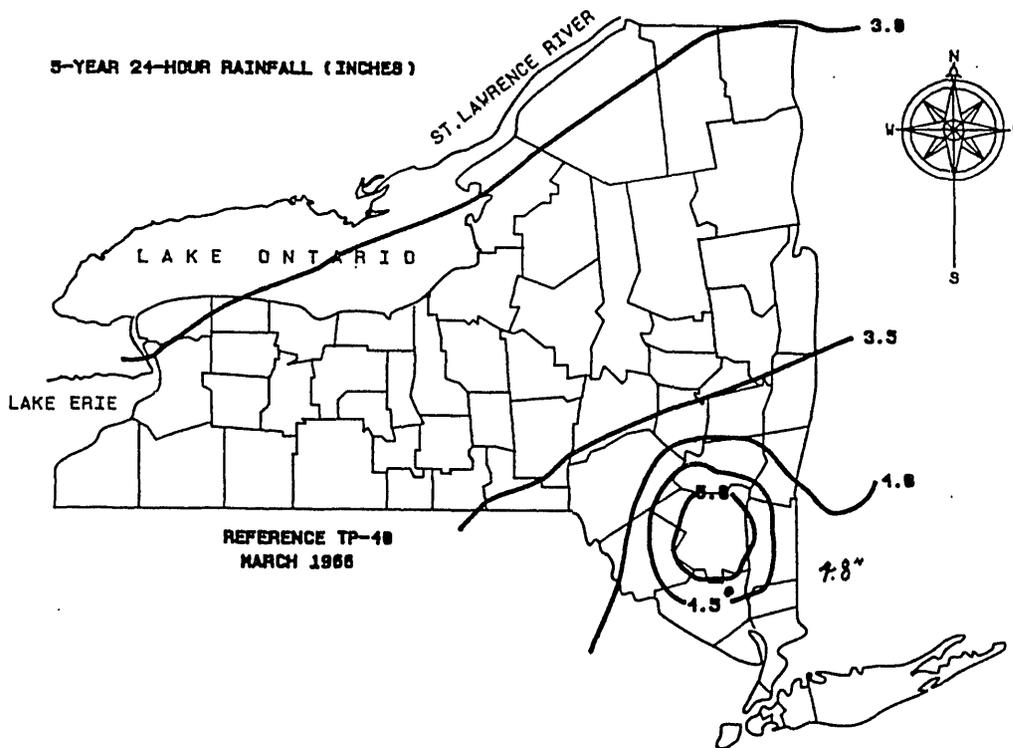
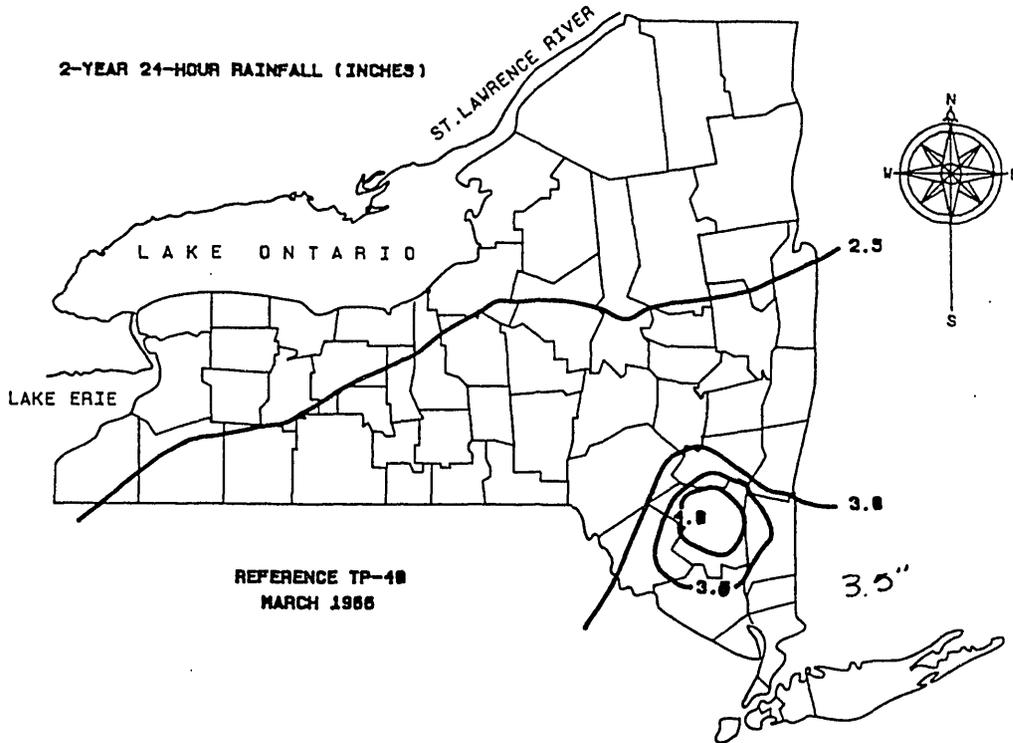
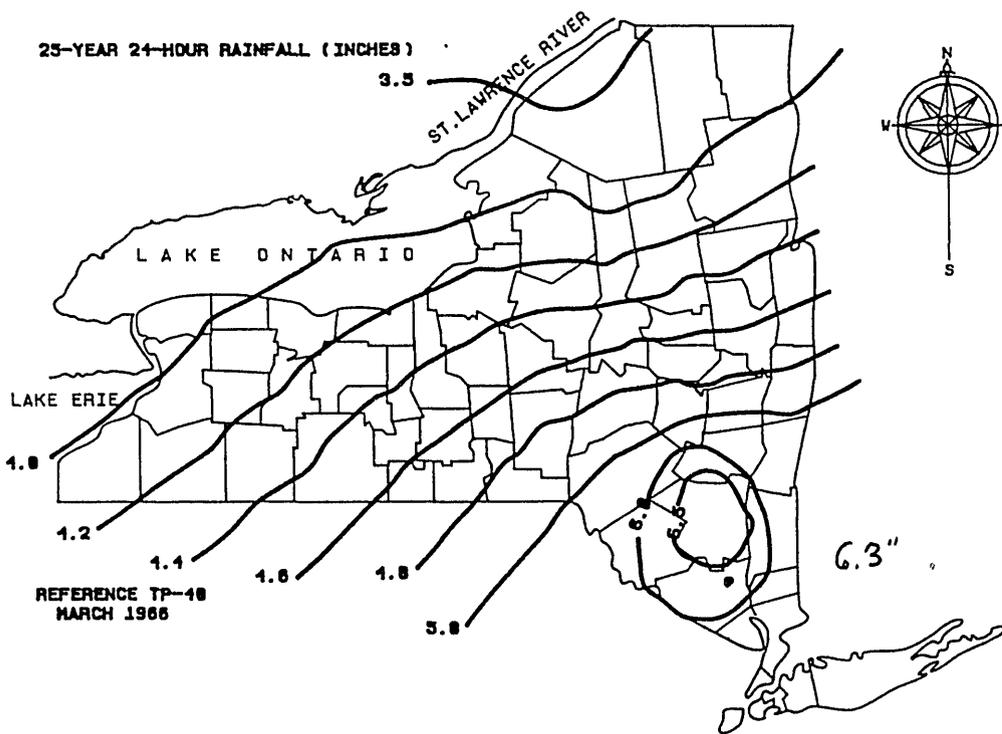
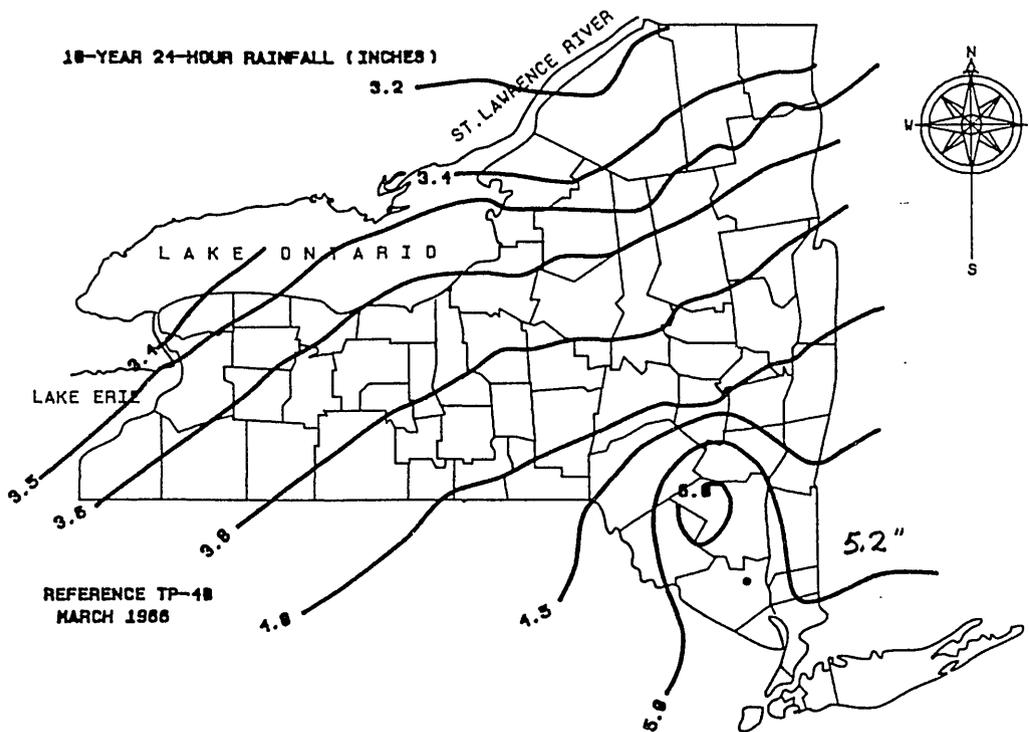


Exhibit 10.1 (cont'd)

New York Rainfall Maps for Different Rainfall Frequencies



APPENDIX 2

SITE SOILS

Survey of

# Orange County, New York

NICHOLAS TORWICK



United States Department of Agriculture, Soil Conservation  
in cooperation with Cornell University Agricultural Experiment Station

## Soil maps for detailed planning

The map units on the detailed soil maps at the back of this survey represent the soils in the survey area. The map unit descriptions in this section, along with the soil maps, can be used to determine the suitability and potential of a soil for specific uses. They also can be used to plan the management needed for those uses. More information on each map unit, or soil, is given under "Use and management of the soils."

Each map unit on the detailed soil maps represents an area on the landscape and consists of one or more soils for which the unit is named.

A symbol identifying the soil precedes the map unit name in the soil descriptions. Each description includes general facts about the soil, a brief description of the soil profile, and a listing of the principal hazards and limitations to be considered in planning management.

This survey has both narrowly defined and broadly defined units. Broadly defined units are more variable in composition than other units but can be interpreted for the expected uses of the soils. They are indicated by symbols in which all letters are capitals. They are also indicated by a footnote on the soil legend at the back of this publication.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer or of the underlying material, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer or of the underlying material. They also can differ in slope, stoniness, salinity, wetness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Mardin gravelly silt loam, 3 to 8 percent slopes, is one of several phases in the Mardin series.

Some map units are made up of two or more major soils. These map units are called soil complexes or undifferentiated groups.

A *soil complex* consists of two or more soils in such an intricate pattern or in such small areas that they cannot be shown separately on the soil maps. The pattern and proportion of the soils are somewhat similar in all areas. Arnot-Lordstown complex, sloping, is an example.

An *undifferentiated group* is made up of two or more soils that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils in a mapped area are not uniform. An area can

be made up of only one of the major soils, or it can be made up of all of them. Otisville and Hoosic soils, steep, is an undifferentiated group in this survey area.

Most map units include small scattered areas of soils other than those for which the map unit is named. Some of these included soils have properties that differ substantially from those of the major soil or soils. Such differences could significantly affect use and management of the soils in the map unit. The included soils are identified in each map unit description. Some small areas of strongly contrasting soils are identified by a special symbol on the soil maps.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Quarries is an example. Miscellaneous areas are shown on the soil maps. Some that are too small to be shown are identified by a special symbol on the soil maps.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables (see "Summary of tables") give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils.

## Soil descriptions

**Ab—Alden silt loam.** This deep, very poorly drained, nearly level soil formed in glacial till deposits derived from shale, sandstone, and some limestone. Local silty colluvial sediment commonly mantles the glacial till deposits. This soil is in low areas and depressions in uplands. The slope ranges from 0 to 3 percent but is mostly less than 2 percent. Areas are mostly round and 5 to 10 acres.

Typically the surface layer is very dark grayish brown silt loam 9 inches thick. The subsoil is 27 inches thick. The upper 10 inches is mottled dark gray heavy silt loam; the middle 9 inches is mottled greenish gray silt loam; and the lower 8 inches is mottled dark grayish brown loam. The substratum is firm, mottled olive brown fine sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of somewhat poorly drained Erie soils on slightly higher rises and in fringe areas, a few spots where the surface layer is mucky, and areas where a large number of stones are on the surface.

In this Alden soil the water table is at or near the surface for prolonged periods. Many areas are ponded for brief periods in spring. Permeability is moderately slow in the subsoil and substratum. Available water capacity is high, and runoff is very slow. Unless this soil is drained, roots are mostly confined to the upper 8 to 14 inches. Natural organic matter content is high. The surface layer and subsoil are 0 to 15 percent gravel fragments. Reaction in the surface layer is slightly acid or neutral.

Most areas are idle and support only the grasses, shrubs, and trees that tolerate wetness (fig. 3).



Figure 3.—Marshy type bunch grass is typical on Alden silt loam.

This soil is not suited to most crops unless drained. Drainage outlets are often difficult to establish because of the low position on the landscape. Where drainage is feasible, many crops can be grown. Minimum tillage, cover crops, tillage at the proper moisture content, and return of crop residue help to maintain high organic levels and promote tilth. Some areas provide good sites for ponds—a source of irrigation water for use on adjacent better drained soils.

Partly drained areas can be used for pasture. Grazing wet periods compacts the soil and destroys desirable grasses.

Suitability for timber production is limited because of wetness. Such species as red maple, white spruce, eastern hemlock, and white cedar are suitable. Equipment limitation, seedling mortality, and windthrow are serious problems. Machine planting of seedlings is generally not feasible because of wetness.

This soil is poorly suited to most urban uses because of prolonged wetness and moderately slow permeability. In urban areas it is often left in natural open-space bor-

ders. Some areas are well suited to the development of wildlife marshes or ponds for recreation.

The capability subclass is IVw.

**AC—Alden extremely stony soils.** These deep, very poorly drained, nearly level soils are in depressions and low areas. They formed in glacial till that is commonly mantled with local silty colluvial material. Stones and boulders more than 10 inches in diameter are less than 5 feet apart on the surface. The surface layer is silt loam or loam. The slope ranges from 0 to 3 percent. Areas are generally round and 5 to 15 acres.

Typically the surface layer is very dark grayish brown silt loam 9 inches thick. The subsoil is 27 inches thick. The upper 10 inches is dark gray heavy silt loam; the middle 9 inches is mottled greenish gray silt loam; and the lower 8 inches is mottled dark grayish brown loam. The substratum is firm, mottled olive brown fine sandy loam to a depth of 60 inches or more.

Included in mapping are several small areas of soils that have no stones on the surface or have fewer stones on the surface than Alden soils. Also included are a few areas of the somewhat poorly drained Erie soils on slight rises and several areas where the surface layer is mucky.

The water table is at or near the surface for prolonged periods. Many areas are ponded for brief periods in spring. Permeability is moderately slow in the subsoil and substratum. Runoff is very slow, and available water capacity is high. In undrained areas, roots are confined to a depth of 8 to 14 inches. Organic matter content is high. The upper part of these soils is 0 to 15 percent gravel fragments. The surface layer is slightly acid or neutral.

Wetness and the large stones on the surface make these soils unsuitable for most crops. The low position on the landscape makes drainage outlets difficult to establish. If drainage and the removal of stones are feasible, the soils are suitable for some crops. If the soils are used for crops, minimum tillage, cover crops, tillage at the proper moisture content, and the return of crop residue are needed to maintain the organic matter content and tilth.

If partial drainage is feasible, these soils can be used for pasture. Grazing when the soils are wet compacts the soil and destroys desirable grasses.

Wetness limits suitability for timber production. Red maple, white spruce, eastern hemlock, and white cedar are suited. Windthrow and high seedling mortality are serious hazards. Wetness and the stones on the surface limit the use of equipment.

These soils are poorly suited to most urban uses because of prolonged wetness, moderately slow permeability, and large stones on the surface. Some areas are suitable for the development of wildlife marshes or ponds for recreation.

The capability subclass is VIIc.

**Allard silt loam, 0 to 3 percent slopes.** This deep, well drained, nearly level soil formed in silty de-

Included with this soil in mapping are small areas of the shallow, somewhat excessively drained to moderately well drained Arnot soils. A few spots of the deep, well drained to moderately well drained Swartswood soils and moderately well drained to somewhat poorly drained Wartsboro soils are also included. Pockets of very poorly drained Alden soils in a few depressions and along drainageways are identified by spot symbols on the soil map. A few included areas are gently sloping. Some are moderately steep.

There is usually no perched water table above the bedrock in spring. Permeability is moderate. Available water capacity is moderate to low, and runoff is rapid. Depth to bedrock ranges from 20 to 40 inches. Roots are restricted. Natural organic matter content is low. The soil is 15 to 35 percent gravel or channery fragments. In undrained areas, the surface layer is very strongly acid to slightly acid.

Most areas are either idle or forested. A few are used for pasture and hay.

This soil can be used for cultivated crops but generally is better suited to hay or pasture. The hazard of erosion, the moderate depth to bedrock, and midsummer droughtiness are limitations for crops. Erosion is a particularly serious hazard on long slopes or in areas bare of plant cover. Channery or gravel fragments are bothersome for some kinds of tillage and cause excessively rapid wear of equipment. The remoteness and poor accessibility of many areas are additional limitations. In cultivated areas, cross-slope tillage, stripcropping, cover crops, minimum tillage, and a high proportion of sod crops in the cropping system reduce erosion and increase organic matter content, which improves available water capacity.

Pasture grasses are suited to this soil, but midsummer droughtiness causes slow growth in some years. Proper stocking, lime and fertilizer, and rotation grazing are needed to maintain pasture seedings.

Suitability for timber production is good to fair. Woods commonly support such species as northern red oak, sugar maple, and white ash. There are few equipment limitations. Channery fragments can be slightly bothersome in machine planting of seedlings. Erosion is generally not a problem, but logging trails should be laid out across the slope to avoid gulying along the trails. Seedlings should be planted early in spring to avoid midsummer droughtiness.

Depth to bedrock and the slope are serious limitations for many urban uses. Deep excavation and the installation of septic tank absorption fields are difficult because of the hardness of the rock. Some areas provide good sites for picnic areas, campsites, and hiking trails, but site selection is important because of slope.

The capability subclass is IIIe.

**Ma—Madalin silt loam.** This deep, poorly drained and very poorly drained, nearly level soil formed in glacial lake deposits of silt and clay. It is on flats and in depres-

sions on lowland lake plains and in small basins in uplands. Areas are commonly round and concave and 5 to 15 acres.

Typically the surface layer is black silt loam 8 inches thick. The subsurface layer is mottled dark gray silt loam 2 inches thick. The subsoil is 28 inches thick. It is greenish gray heavy silty clay loam that is mottled in the upper 7 inches. The substratum to a depth of 60 inches is firm, dark gray silty clay.

Included with this soil in mapping are the somewhat poorly drained Rhinebeck soils on a few slightly higher benches. Also included are a few spots of poorly drained and very poorly drained Canandaigua soils where the clay content is lower than in the Madalin soil. In a few spots the surface layer is gravelly.

The water table is at or near the surface for prolonged periods during the year. Some areas are ponded for brief periods in spring. Permeability is moderately slow in the surface layer, slow in the subsoil, and slow or very slow in the substratum. Available water capacity is high, and runoff is very slow. In undrained areas, roots are mostly confined to the surface layer and upper few inches of the subsoil. The soil is generally gravel free. Natural organic matter content is high. The surface layer is strongly acid to mildly alkaline.

Most areas are idle and support only the grasses, shrubs, and trees that tolerate wetness.

This soil is poorly suited to most crops because of prolonged wetness. Drainage systems are often difficult to install because of lack of suitable outlets and slow water movement through the subsoil. Close spacing of subsurface drains and open ditch drains is required. If this soil is drained and used for cultivated crops, minimum tillage, cover crops, sod crops in the cropping system, and tillage at the proper moisture content are needed to maintain tilth and organic matter content. Tilth is somewhat difficult to maintain because of the high clay content.

If partial drainage is feasible, this soil can be used for pasture. Bedding improves surface drainage. Grazing in wet periods compacts the soil and destroys desirable grasses. Rotation grazing and restricted grazing when the soil is wet prolong the life of pasture seedings.

Wetness limits suitability for timber production. Species such as red maple, white ash, and white spruce, however, will grow on this soil. Windthrow and seedling mortality are major hazards, and the use of equipment is severely limited.

This soil is poorly suited to most urban and recreation uses because of prolonged wetness and slow or very slow permeability. Some areas provide excellent sites for dugout ponds or wildlife marshes. Low strength is a problem in constructing roads and buildings.

The capability subclass is IVw.

**MdB—Mardin gravelly silt loam, 3 to 8 percent slopes.** This deep, moderately well drained, gently sloping soil formed in glacial till deposits derived from sand-

stone, shale, and slate. It has a dense fragipan in the subsoil. It is on broad divides, hilltops, and ridges in uplands. Areas are mostly round and 10 to 15 acres.

Typically the surface layer is dark brown gravelly silt loam 8 inches thick. The upper 7 inches of the subsoil is yellowish brown gravelly silt loam. The next 5 inches is a leached layer of mottled pale brown gravelly silt loam. Extending from 20 to 60 inches is a firm, olive brown channery silt loam fragipan.

Included with this soil in mapping are small areas of the somewhat poorly drained Erie soils in concave spots, on foot slopes, and along drainageways. The well drained Bath soils are included on a few higher knolls and ridges. Spots of the very poorly drained Alden soils in a few depressions are identified by spot symbols on the soil map.

The water table in this Mardin soil is perched above the fragipan early in spring and in other excessively wet periods. Permeability is moderate in the surface layer and upper part of the subsoil and is slow or very slow in the fragipan and substratum. Available water capacity is moderate to low, and runoff is slow to medium. Roots are restricted by the dense fragipan, but a few penetrate along vertical cracks in the pan. Natural organic matter content is low. The surface layer and upper part of the subsoil are 15 to 35 percent gravel fragments. In unlimed areas, the surface layer is extremely acid to slightly acid.

Many areas are farmed. Some are urbanized, idle, or forested.

This soil is suited to cultivated crops, small grain, and hay. Seasonal wetness slightly delays tillage and planting in spring. Random subsurface drains to included wet spots and interceptor drains that divert runoff from higher adjacent soils improve many fields. Erosion is a hazard on long slopes, and gravel fragments are slightly bothersome in planting and harvesting. Because the fragipan restricts root penetration, droughtiness is also a problem in some years. Cross-slope tillage, cover crops, minimum tillage, tillage at the proper moisture content, and sod crops in the cropping system reduce erosion, promote tilth, and increase organic matter content, which improves available water capacity.

This soil is suited to pasture. Grazing in wet periods, however, compacts the soil and destroys desirable grasses. Proper stocking, rotation grazing, restricted grazing in wet periods, and lime and fertilizer are needed to maintain pasture seedings.

Suitability for timber production is fair to good. Woodlots support such trees as sugar maple, northern red oak, and black cherry. Windthrow, high seedling mortality, erosion hazard, and equipment limitation are not major problems.

Seasonal wetness and slow or very slow permeability in the pan are limitations for many urban uses. Carefully designed and installed drains around foundations are needed to overcome the risk of damage from wetness in spring. Some areas are suitable for campsites, picnic areas, and dike ponds. Gravel fragments, however, can be bothersome for some recreation uses.

The capability subclass is llw.

**MdC—Mardin gravelly silt loam, 8 to 15 percent slopes.** This deep, moderately well drained, sloping soil formed in glacial till deposits derived from sandstone, shale, and slate. It commonly receives runoff from higher adjacent soils. It has a dense fragipan in the lower part of the subsoil. It is on valley sides, hillsides, and ridges in uplands. Areas are mostly oval and 10 to 50 acres.

Typically the surface layer is dark brown gravelly silt loam 7 inches thick. The upper 6 inches of the subsoil is yellowish brown gravelly silt loam. The next 5 inches is a leached layer of mottled pale brown gravelly silt loam. Extending from 18 to 60 inches is a firm, olive brown channery silt loam fragipan.

Included with this soil in mapping are small areas of the somewhat poorly drained Erie soils on foot slopes and along drainageways. Also included are well drained Bath soils on a few higher knolls and ridges. A few spots are severely eroded, and in a few areas large stones are on the surface.

The water table is perched above the fragipan early in spring and in other excessively wet periods. Permeability is moderate in the surface layer and upper part of the subsoil and is slow or very slow in the pan and substratum. Available water capacity is moderate to low, and runoff is medium. Roots are restricted by the dense pan, but a few penetrate along vertical cracks in the pan. Natural organic matter content is low. The surface layer and upper part of the subsoil are 15 to 35 percent gravel fragments. In unlimed areas, the surface layer is extremely acid to slightly acid.

Some areas of this soil are used in farming, particularly for pasture. Others are idle or forested. A few are urbanized.

This soil is moderately suited to cultivated crops, small grain, and hay. Erosion is a serious hazard, particularly on long slopes, or in areas bare of plant cover. Seasonal wetness slightly delays tillage in spring. Interceptor drains that divert runoff from higher adjacent soils improve many fields. Gravel fragments are slightly bothersome in planting. Droughtiness is a hazard in some years because of the restricted root zone. Cross-slope tillage, stripcropping, diversion ditches, cover crops, minimum tillage, and sod crops in the cropping system reduce the erosion hazard, promote tilth, and increase organic matter content. Increasing organic matter content improves available water capacity.

This soil is suited to pasture. Grazing in wet periods, however, compacts the soil and destroys desirable grasses. Proper stocking, rotation grazing, restricted grazing in wet periods, and lime and fertilizer are needed to maintain pasture seedings.

Suitability for timber production is fair to good. Woodlots support such species as sugar maple, northern red oak, and black cherry. Windthrow, high seedling mortality, erosion hazard, and equipment limitation are not major problems. Slope and gravel fragments are minor problems for machine planting of seedlings.

TABLE 7.1--HYDROLOGIC GROUPS OF THE SOILS OF THE UNITED STATES

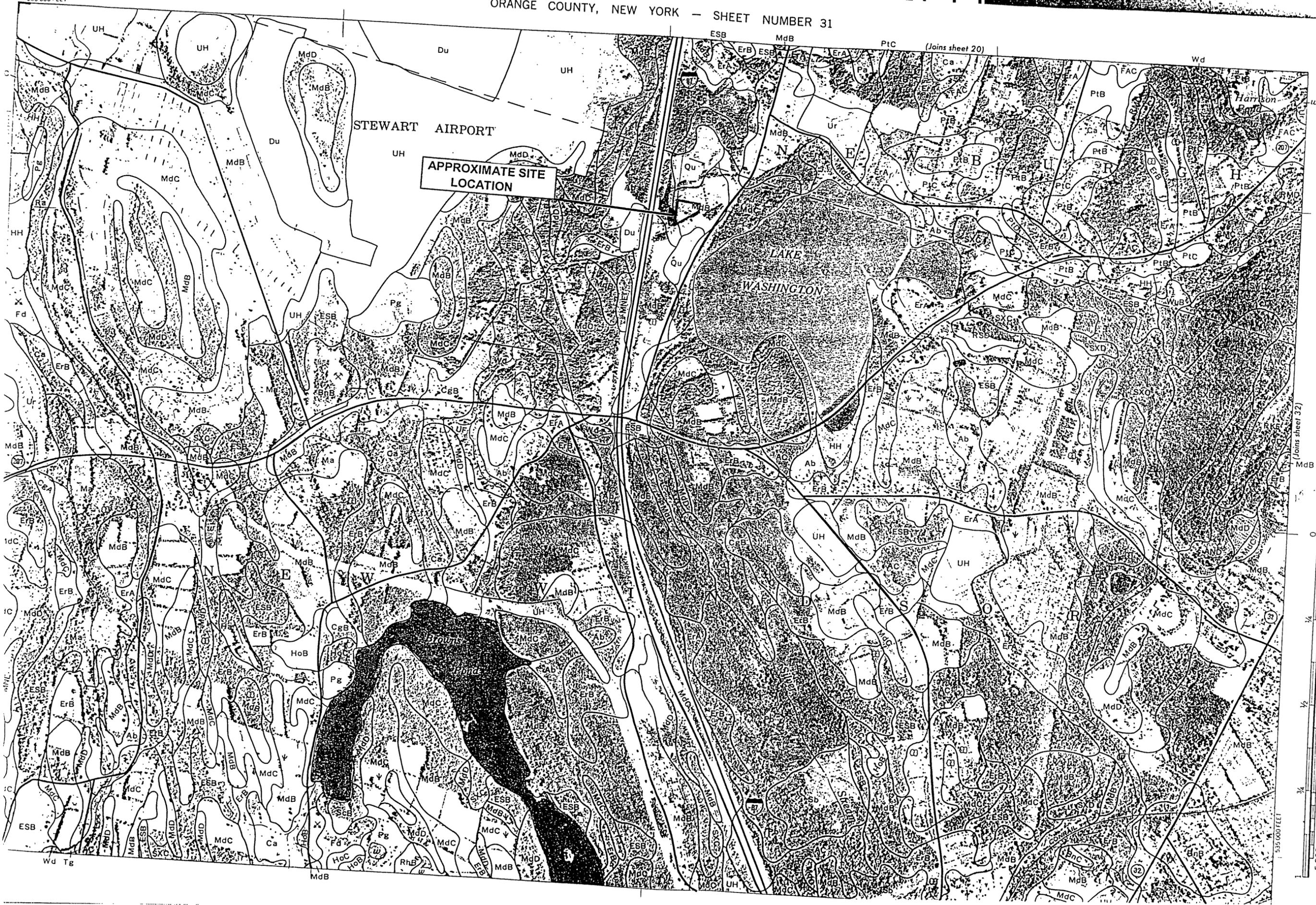
AABAB	D	ADKINS, HARDPAN	B	ALBEE	C	ALPOMA	B	ANDERLY	C
AABERG	D	SUBSTRATUM		ALBEMARLE	B	ALROS	C	ANDERS	C
AASTAD	B	ADKINS, GRAVELLY	B	ALBERTVILLE	B	ALSCO	B	ANDERSON	B
AAZDAHL	B	SUBSTRATUM		ALBINAS	B	ALSPAUGH	C	ANDOK	B
ABAC	D	ADLER	C	ALBION	B	ALSTAD	C	ANDOVER	D
ABAJO	C	ADMAN	D	ALBRIGHTS	C	ALSTONY	B	ANDRADA	D
ABARCA	B	ADOLPH	B/D	ALBUS	B	ALSUP	C	ANDREESON	C
ABBOTT	D	ADOS	C	ALCESTER	B	ALTMONT	D	ANDREGG	B
ABBOTTSTOWN	C	ADRIAN	A/D	ALCOA	B	ALTAVISTA	C	ANDRES	B
ABCAL	D	ADVOKAY	D	ALCONA	D	ALTDORF	D	ANDREWS	C
ABEGG	B	AECET	C	ALCORN	B	ALTHOUSE	B	ANDRY	D
ABELA	B	AENEAS	B	ALCOT	A	ALTICREST	B	ANED	D
ABELL	B	AFTADEN	D	ALCOVA	B	ALTHAR	B	ANETH	B
ABERDEEN	C	AFTON	C/D	ALDA	C	ALTO	C	ANGELICA	B/D
ABERONE	B	AGAIPAH	D	ALDA, SALINE	B/D	ALTOGA	C	ANGELINA	D
ABERT	B	AGAN	D	ALDA, CHANNELED	C	ALTON	A	ANGELO	C
ABES	D	AGAR	D	ALDAX	B	ALTOONA	C	ANGELUS	B
ABGESE	B	AGASSIZ	D	ALDEN	D	ALTURAS	C	ANGIE	D
ABILENE	C	AGATE	D	ALDER	C	ALTUS	B	ANGLE	A
ABIQUA	C	AGATHA	B	ALDERHAND	B	ALTYAN	B	ANGLEN	C
ABO	C	AGAWAH	B	ALDERWOOD	C	ALUF	A	ANGOLA	C
ABOR	D	AGENCY	C	ALDI	D	ALUM	B	ANGORA	B
ABRA	C	AGER	D	ALDINE	D	ALUSA	D	ANGOSTURA	D
ABRA, BEDROCK	B	AGET	B	ALDING	D	ALVARADO	B	ANHALT	B
SUBSTRATUM		AGNAL	D	ALDINO	C	ALVIN	B	ANIAX	D
ABRA, DRY	B	AGNESTON	B	ALEDO	C	ALVIRA	C	ANIMAS	C
ABRAHAM	B	AGNESTON, COBBLY	C	ALEGROS	C	ALVISO	D	ANINTO	D
ABRAZO	D	SUBSTRATUM		ALEKNAGIK	C	ALVOR	D	ANITA	D
ABRAZO, GRAVELLY	C	AGNEW	C	ALEMEDA	C	ALVOR, DRAINED	C	ANKENY	B
ABRAZO, COBBLY	D	AGNOS	D	ALEX	B	ALWILDA	B	ANKLAM	D
ABREU	B	AGUA	B	ALEXANDER	C	ALZADA	D	ANKONA	D
ABSAROOKEE	C	AGUA DULCE	B	ALEXANDRIA	C	ALZOLA	D	ANNABELLA	B
ABSCOTA	A	AGUA FRIA	B	ALFIR	B	ALZADOR	D	ANNANDALE	C
ABSHER	D	AGUADILLA	A	ALFORD	B	ALAGON	D	ANNAV	B
ABSTED	C	AGUALT	B	ALGANSEE	B	ALALIA	B	ANNEMARINE	C
ABSTON	C	AGUEDA	B	ALGARROBO	A	AMALU	D	ANNIS	C
ACACIO	B	AGUILARES	B	ALGERITA	B	AMANA	B	ANNIS, SALINE	B
ACADEMY	C	AGUILITA	B	ALGIERS	C/D	AMANDA	C	ANNIS,	C
ACADIA	D	AGUIRRE	D	ALGOA	C	AMARILLO	B	SALINE-ALKALI	
ACANA	D	AGUSTIN	B	ALGOMA	B/D	AMASA	B	ANNIS, DRAINED	B
ACANOD	C	AHL	C	ALHAMBRA	B	AMBER	B	ANNISOUAM	C
ACASCO	D	AHLSTROM	D	ALHARK	B	AMBI	D	ANNISTON	B
ACEITUNAS	B	AHMEEK	C	ALICE	B	AMBOAT	C	ANNONA	D
ACEL	C	AHOLT	D	ALICEL	E	AMBOY	C	ANCON	C
ACKER	B	AHREN	B	ALICIA	B	AMBRANT	B	ANKA	B
ACKERMAN	A/D	AHRNKLIN	C	ALIDA	B	AMBRAW	B/D	ANDNES	C
ACKERVILLE	C	AHTANUM	D	ALIKCHI	B	AMELIA	B	ANSARI	D
ACKETT	D	AHTANUM, DRAINED	C	ALINE	A	AMENIA	B	ANSEL	B
ACKLEY	B	AHMANNEE	B	ALKO	D	AMENSON	D	ANSELMO	B
ACKMEN	B	AIBONITO	C	ALLAGASH	B	AMERICUS	A	ANSELMO, BEDROCK	A
ACKMORE	B	AIDO	D	ALLAMORE	D	AMERY	B	SUBSTRATUM	
ACKWATER	D	AIKEN	B	ALLANTON	B/D	AMES	C/D	ANSGAR	B/D
ACME	C	AIKMAN	D	ALLARD	B	AMESHA	B	ANSPING	B
ACO	B	AIKMAN, STONY	C	ALLEGHENY	B	AMESMONT	C	ANT FLAT	C
ACOMA	C	AILEY	B	ALLEMANDS	D	AMHERST	D	ANTEL	C
ACORD	C	AINELIUK	B	ALLEN	B	AMISTAD	D	ANTELOPE SPRINGS	C
ACOVE	C	AINAKEA	B	ALLENDALE	B	AMITY	D	ANTERO	C
ACREDALE	D	AINSLEY	B	ALLENS PARK	B	AMHON	B	ANTHO	B
ACREE	C	AINSWORTH	B	ALLENTINE	D	AMOLE	A	ANTHONY	B
ACRELANE	C	AIRPORT	D	ALLENWOOD	B	AMOR	B	ANTIGO	B
ACTON	B	AITS	B	ALLEY	B	AMOS	C	ANTILDON	B
ACUFF	B	AJO	C	ALLHANDS	D	AMOSTOWN	C	ANTIOCH	D
ACUNA	C	AKAKA	A	ALLIANCE	B	AMPAD	C	ANTLER	C
ACY	C	AKAN	B/D	ALLIGATOR	D	AMPHION	C	ANTOINE	B
ADA	C	AKASKA	B	ALLIS	D	AMSDEN	B	ANTONITO	C
ADAIR	C	AKELA	D	ALLISON	B	AMSTERDAM	B	ANTOSA	D
ADAMS	A	AKERCAN	B	ALLITRAL	B	AMTOFT	D	ANTROBUS	B
ADAMSON	B	AKERUE	D	ALLOR	B	AMWELL	C	ANTWERP	C
ADAMSVILLE	C	AKLER	D	ALLOUEZ	B	AMY	D	ANTY	B
ADATON	D	ALADDIN	B	ALMAC	B	ANACAPA	B	ANUNDE	B
ADAVEN	C	ALADSHI	B	ALMAYVILLE	D	ANACOCO	D	ANVIK	B
ADDICKS	D	ALAE	A	ALMENA	C	ANACONDA	B	ANWAY	B
ADDIELOU	B	ALAELOA	B	ALMIRANTE	B	ANAHEIM	C	AOWA	B
ADE	A	ALAGA	A	ALMO	D	ANAHUAC	D	APACHE	D
ADEL	B	ALAKAI	D	ALMONT	D	ANAMITE	D	APAKUIE	A
ADELAIDE	D	ALAMA	B	ALMOTA	C	ANAPRA	B	APALACHEE	B
ADELANTO	B	ALANANCE	B	ALMY	B	ANASAZI	C	APALO	D
ADELINO	B	ALANO	D	ALNITE	D	ANASAZI, NONSTONY	B	APELDORN	A
ADELINO,	C	ALANOGORDO	B	ALO	D	ANASAZI, DRY	B	APISHAPA	C
SALINE-ALKALI		ALAWOSA	D	ALOHA	C	ANATONE	D	APISON	B
ADELPHIA	C	ALANOS	B	ALOMAX	D	ANAVERDE	B	APMAT	B
ADENA	C	ALAPAHA	D	ALONA	B	ANAWALT	D	APHAY	D
ADGER	D	ALAPAI	A	ALONSO	B	ANCHO	B	APOLLO	B
ADILIS	B	ALAZAN	B	ALOVAR	C	ANCHOR POINT	D	APOPKA	A
ADJUNTAS	C	ALBAN	B	ALPENA	A	ANCHORAGE	A	APPANOOSE	D
ADKINS	B	ALBANO	D	ALPHA	B	ANCLOTE	D	APPERSON	C
ADKINS, ALKALI	B	ALBANY	C	ALPIN	A	ANCO	C	APPIAN	B
ADKINS, WET	C	ALBATON	D	ALPON	B	ANDERGEORGE	B		

NOTES: TWO HYDROLOGIC SOIL GROUPS SUCH AS B/C INDICATES THE DRAINED/UNDRAINED SITUATION. MODIFIERS SHOWN, E.G., BEDROCK SUBSTRATUM, REFER TO A SPECIFIC SOIL SERIES PHASE FOUND IN SOIL MAP LEGEND.

TABLE 7.1--HYDROLOGIC GROUPS OF THE SOILS OF THE UNITED STATES

MARSETTA	B	MARYVN	B	MAYODAN	B	MCLAIN	C	MENDON	B
MARCIAL	D	MARY	C	MAYOWORTH	C	MCLAURIN	B	MENDOTA	B
MARCOLA	C	MARYSLAND	B/D	MAYQUEEN	A	MCLEDD	B	MENEFEE	D
MARCONI	C	MASADA	C	MAYSDORF	C	MCLOUGHLIN	B	MENFRO	B
MARCOTT	C	MASARDIS	A	MAYTOWN	B	MCMEEN	C	MENLO	D
MARCUM	C	MASARYK	A	MAYVILLE	A	MCNULLIN	C	MENG	C
MARCUS	B/D	MASCAMP	D	MAYWOOD	D	MCNULLIN, WARM	D	MENOKEN	C
MARCUS, ALKALI,	D	MASCARENAS	C	MAZASKA	C	MCHURDIE	C/D	MENOMINEE	A
WET		MASCHETAH	B	MAZUMA	B	MCMURRAY	B	MENTO	C
MARCUSE	D	MASCOTTE	B/D	MC BETH	B/D	MCNURRAY, DRAINED	D	MENTOR	B
MARCY	D	MASCOTTE,	B	MC CORT	B	MCNARY	B	MENZEL	B
MARDIN	C	DEPRESSIONAL	C	MCAFFEE	C	MCNEAL	B	MEQUON	C
MARENGO	C/D	MASCOTTE,	B/D	MCCALLEN	C	MCNULL	C	MER ROUGE	B
MARESUA	B	OCCASIONALLY		MCCALLISTER	C	MCNULTY	B	MERCEO	D
MARGATE	B/D	FLOODED		MCCALPIN	C	MCPAUL	B	MERCEDES	D
MARGERUM	B	MASET	B	MCBEE	C	MCPHIE	B	MERCER	C
MARGO	B	MASHAM	D	MCBEE, LOAMY	D	MCOUARRIE	D	MERCEY	C
MARIA, DRAINED	B	MASHEL	C	SUBSTRATUM		MCQUEEN	C	MERDEN	D
MARIA, FLOODED	B	MASHULAVILLE	B/D	MCBIGGAM	C	MCRAE	B	MEREDITH	B
MARIA, CLAY	C	MASKELL	B	MCCBRIDE	B	MCRAVEN	C	MERETA	C
SUBSTRATUM		MASON	B	MCCAFFERY	A	MCVEGAS	D	MERGEL	B
MARIANA	C	MASONFORT	D	MCCAIN	C	MCVICKERS	C	MERIDIAN	B
MARIAS	D	MASSANETTA	B	MCCALEB	B	MEAD	D	MERINO	D
MARIAVILLE	D	MASSBACH	B	MCCALL	B	MEADIN	A	MERKEL	B
MARICAO	B	MASSENA	C	MCCALLY	D	MEADLAND	C	MERLIN	D
MARICOPA	B	MASSIE	D	MCCAMMON	C	MEADOWCREEK	C	MERMILL	B/D
MARIETTA	C	MASTERSON	B	MCCANN	B	MEADOWLAKE	C	MERNA	B
MARILLA	C	MATAGORDA	D	MCCAREY	C	MEADOWVILLE	B	MEROS	A
MARIMEL	C	MATAMOROS	C	MCCARRAN	B	MECAN	B	MERRICK	B
MARIMEL, DRAINED	B	MATANUSKA	B	MCCARTHY	B	MECHANICSBURG	B	MERRILL	C
MARINA	B	MATANZAS	B	MCCASH	B	MECKESVILLE	C	MERRILLAN	C
MARINE	C	MATAPEAKE	B	MCCLEARY	C	MECKLENBURG	C	MERRIMAC	A
MARION	D	MATAWAN	C	MCCLEARY	D	MECOSTA	A	MERRITT	B
MARIPOSA	C	MATCHER	A	MCCLELLAN	B	MEDA	B	MERSHON	B
MARISCAL	D	MATFIELD	C	MCCLOUD	C	MEDANO	C	MERTON	B
MARISSA	C	MATHERS	B	MCCLURE	C	MEDANO, FLOODED	D	MERTZ	C
MARKES	D	MATHERTON	B	MCCOIN	D	MEDARY	C	MERWIN	A/D
MARKESAN	B	MATHESON	B	MCCOLL	B	MEDBURN	B	MESA	B
MARKET	D	MATHIAS	B	MCCOLLUM	B	MEDCO	D	MESABA	C
MARKY	A/D	MATHIS	C	MCCONNEL	B	MEDFORD	B	MESCAL	C
MARKHAM	C	MATHISTON	C	MCCOOK	B	MEDFRA	D	MESCALERO	D
MARKLAND	C	MATHON	B	MCCORT	B	MEDICINE	B	MESEI	C
MARKTON	C	MATTOY	C	MCCOY	C	MEDLEY	B	MESGUN	A
MARLA	D	MATTAMUSKEET	D	MCCOYSBURG	D	MEDLIN	B	MESSER	C
MARLAKE	D	MATTAPEX	C	MCCREE	C	MEDONAK	D	MET	B
MARLBORO	B	MATTAPONI	C	MCCRORY	D	MEDORA	B	METAMORA	B
MARLEAN	B	MATUNUCK	D	MCCROSKET	D	MEDWAY	B	METCALF	D
MARLETTE	B	MAU	C	MCCULLOUGH	B	MEEGERD	B	METEA	B
MARLOW	C	MAUDE	B	MCCULLY	C	MEEHAN	B	METH	C
MARLTON	C	MAUGHAN	C	MCCUMBER	B	MEEKS	B	METHIGOSHE	B
MARMARTH	B	MAUKEY	C	MCCUNE	D	MEETEETSE	D	METOLIUS	B
MARNA	D	MAULDIN	D	MCDANIEL	D	MEGALOS	D	METRE	D
MAROSA	B	MAUMEE	A/D	MCOOLE	B	MEGGETT	D	METZ	A
MARPA	C	MAUNABO	C	MCDONALD	C	MEGONOT	C	METZ, SILTY	B
MARQUETTE	A	MAUPIN	C	MCDONALDSVILLE	C/D	MEGUIN	B	SUBSTRATUM	
MARQUEZ	C	MAUREPAS	D	MCDUFF	C	MEHLHORN	C	METZ, FLOODED	A
MARR	B	MAURICE	B	MCELROY	B	MEIKLE	D	METZ, GRAVELLY	B
MARRIOTT	B	MAURY	B	MCEWEN	B	MEISS	D	SUBSTRATUM	
MARSDEN	C	MAUSER	B	MCFADDEN	B	MELAND	B	MEXICO	D
MARSELLLES	B	MAUVAIS	C	MCFAIN	C	MELBOURNE	C	MEXISPRING	D
MARSELL	B	MAVCO	C	MCFARLAND	B	MELBY	C	MEYSTRE	B
MARSHALL	B	HAVERICK	C	MCF Faul	C	MELD	C	MHOON	D
MARSHAN	B/D	MAVIE	B/D	MCGAFFEY	B	MELDER	B	MIAMI	B
MARSHDALE	C	MAVAE	A	MCGARR	A	MELGA	D	MIAMIAN	C
MARSHDALE	D	MAWER	B	MCGARY	C	MELHOMES	D	MICANOPI	C
MARSHDALE, DRAINED	C	MAX	B	MCGEHEE	C	MELITA	A	MICCO	B/D
MARSHDALE, COOL	D	MAXCREEK	B/D	MCGILVERY	B/D	MELLENTHIN	A	MICHELSON	B
MARSHFIELD	B/D	MAXEY	C	MCGINNIS	C	MELLOR	D	MICHIGANME	B
MARSING	B	MAXFIELD	B/D	MCGINTY	B/D	MELLOR, WET	B	MICHIGANME,	C
MART	B	MAXTON	B	MCGIRK	B	MELLOR, DRY	C	MODERATELY WET	
MARTEL	D	MAXVILLE	B	MCGIRK, LOW	B	MELLOTT	D	MICHIGANME, COBBLY	C
MARTELLA	B	MAXWELL	D	PRECIPITATION		MELOCHE	D	MICKEY	D
MARTIN	C	MAY	B	MCGOWAN	B	MELOLAND	C	MIDAS	B
MARTIN PENA	D	MAY DAY	D	MCGRATH	B	MELON	B	MIDCO	A
MARTINECK	D	MAYACAMA	C	MCGREV	B	MELROSE	C	MIDDLE	C
MARTINEZ	D	MAYBERRY	D	MCGUIRE	D	MELTON	B	MIDDLEBURY	B
MARTINI	B	MAYBID	D	MCHENRY	B	MELVILLE	B	MIDDLETOWN	B
MARTINSBURG	B	MAYDOL	B	MCILWAIN	D	MELVIN	D	MIDDLEWOOD	D
MARTINSDALE	B	MAYER	B/D	MCINTOSH	B/D	MEMALDOOSE	B	MIDELIGHT	C
MARTINSON	C	MAYES	D	MCINTYRE	B	MEMPHIS	C	MIDESSA	B
MARTINSVILLE	B	MAYFIELD	B	MCKAMIE	D	MENAHGA	A	MIDFORK	B
MARTINTON	C	MAYFLOWER	C	MCKAY	D	MENARD	B	MIDLAND	D
MARTIS	B	MAYGER	C	MCKENNA	D	MENASHA	D	MIDMONT	C
MARTISCO	B/D	MAYHEW	D	MCKENNA, DRAINED	C	MENBO	C	MIDNIGHT	D
MARTY	B	MAYHEAD	B	MCKENZIE	D	MENDEBOURE	C	MIDD	A
MARVAN	D	MAYMEN	D	MCKINLEY	B	MENDENHALL	D	MIDRAW	D
MARVELL	B	MAYNARD LAKE	A	MCKINNEY	C	MENDI	B	MIDVALE	C
MARVIN	C	MAYO	B	MCKNIGHT	B	MENDOCINO	B	MIDWAY	D

NOTES: TWO HYDROLOGIC SOIL GROUPS SUCH AS B/C INDICATES THE DRAINED/UNDRAINED SITUATION. MODIFIERS SHOWN, E.G., BEDROCK SUBSTRATUM, REFER TO A SPECIFIC SOIL SERIES PHASE FOUND IN SOIL MAP LEGEND.



**APPENDIX 3**

**PRE-DEVELOPMENT DRAINAGE**

Job: Guardian Self Storage - New Windsor  
 Job No.: 89915.00  
 Description: Pre-Development Drainage  
 Prep. By: \_\_\_\_\_ Date: \_\_\_\_\_  
 Check By: \_\_\_\_\_ Date: \_\_\_\_\_

Hydrogeological Description

Soil Type:

- 1) Ab: Alden Silt Loam - deep, very poorly drained, nearly level soil formed in glacial till deposits derived from shale, sandstone, and some limestone. **Soil Group D**
- 2) MdB: Mardin Gravelly Silt Loam - deep, moderately well drained, gently sloping soil formed in glacial till deposits derived from sandstone, shale, and slate. **Soil Group C**

**Subcatchment 100**

*Contributing Areas ( Sheet C-1, Existing Conditions 40 scale)*

Description	Area (in <sup>2</sup> )	Area (ac)	Curve Number			
Woods - Fair, Soil Group C	41.25				1.52	73
Brush - Soil Group C	0.83				0.03	65
Impervious (Pavement and Home)	0.9				0.03	98
Gravel (Off-site) - Soil Group C	5.9				0.22	89
Woods (Off-site) - Fair, Soil Group C	2.17				0.08	73

Total: 1.88

Time of Concentration

- Sheet Flow: Woods (hub) =  $\{(376.4 - 368.36) / 300\} = 0.0268$   
 Shallow Flow: Woods (hub) =  $\{(368.36 - 363.47) / 105\} = 0.0466$   
 Shallow Flow: Brush =  $\{(363.47 - 362.67) / 12\} = 0.0667$   
 Shallow Flow : Pavement =  $\{(362.67 - 362.4) / 55\} = 0.005$

\* Used a velocity factor of woodland to describe shallow flow in brush area.

**Subcatchment 200**

*Contributing Areas ( Sheet C-1, Existing Conditions 40 scale)*

Description	Area (in <sup>2</sup> )	Area (ac)	Curve Number			
Woods - Fair, Soil Group C	3.27	11.9			0.56	73
Woods - Fair, Soil Group D	0.3				0.01	79
Lawn - Soil Group C (Off-site)	0.16	5.01			0.19	74
Gravel - Soil Group C (Off-site)	0.71				0.03	89
Brush - Soil Group C	0.2	0.53	1.75		0.09	65
Brush - Soil Group D	0.68	0.55			0.05	73
Impervious (Pavement and Roof) (Off-site)	0.55	0.41	4.05	0.06	0.19	98

Total: 1.11

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Companies

Time of Concentration

Sheet Flow: Woods (lub) =  $\{(372 - 370) / 55\} = 0.0363$   
Sheet Flow: Woods (lub) =  $\{(370 - 362) / 130\} = 0.062$   
Sheet Flow: Lawn =  $\{(362 - 356.62) / 108\} = 0.0566$   
Shallow Flow: Gravel =  $\{(356.62 - 354.4) / 22\} = 0.10$   
Shallow Flow: Woods =  $\{(354.4 - 348) / 135\} = 0.0474$   
Channel:  $\{(347.1 - 346.36) / 175'\} = 0.004$

\* Used manning's value of pavement for gravel sheet flow.

Channel Description:

- Bare Soil  
- Approximate Dimensions (BW = 2' , SS = 2:1, D = 0.5', n = 0.025 )

Subcatchment 300

*Contributing Areas ( Sheet C-1, Existing Conditions 40 scale)*

Description	Area (in <sup>2</sup> )	Area (ac)	Curve Number			
Woods - Fair, Soil Group C	93.71				3.44	73
Woods - Fair, Soil Group D	0.4	6.74			0.26	79
Lawn - Soil Group C (Off-site)	4.04				0.15	74

Total: 3.85

Time of Concentration

Sheet: Woods (lub) =  $\{(376 - 374) / 97\} = 0.0206$   
Woods (lub) =  $\{(374 - 372) / 57\} = 0.035$   
Woods (lub) =  $\{(372 - 361.45) / 146\} = 0.072$   
Shallow: Woods  $\{(361.45 - 342.92) / 248\} = 0.0747$

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Companies

TYPE III 24-HOUR RAINFALL= 6.30 IN

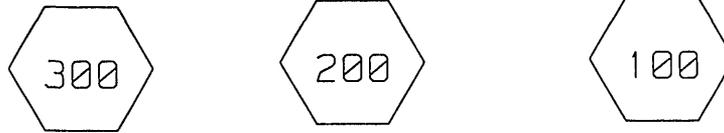
Prepared by Chazen Engineering and Land Surveying, Co., P.C.

30 Apr 99

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WATERSHED ROUTING =====



- SUBCATCHMENT 100 = Eastern Portion On & Off Site ->
- SUBCATCHMENT 200 = Flow Along Roadside Channel ->
- SUBCATCHMENT 300 = Sheet Flow West Side of Site ->

TYPE III 24-HOUR RAINFALL= 6.30 IN

Prepared by Chazen Engineering and Land Surveying, Co., P.C.

30 Apr 99

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SUBCATCHMENT 100

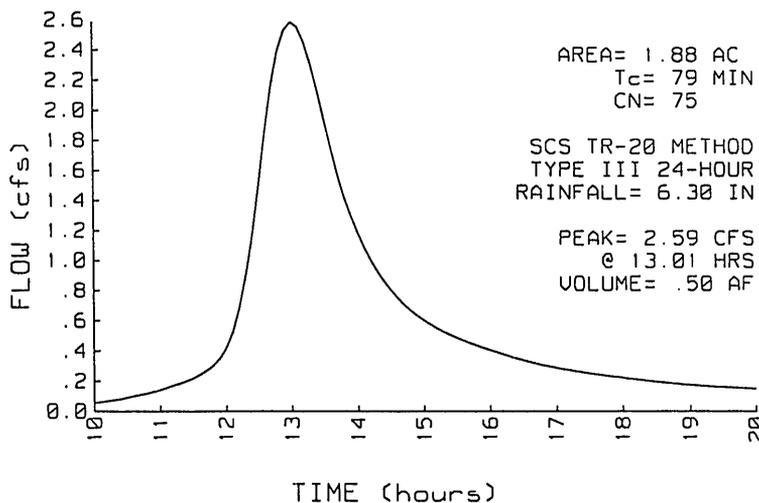
Eastern Portion On & Off Site

PEAK= 2.59 CFS @ 13.01 HRS, VOLUME= .50 AF

ACRES	CN		SCS TR-20 METHOD
1.52	73	Woods, Fair, Soil C	TYPE III 24-HOUR
.03	65	Brush, Good, Soil C	RAINFALL= 6.30 IN
.03	98	Impervious	SPAN= 10-20 HRS, dt=.1 HRS
.22	89	Gravel, Off-Site, Soil C	
.08	73	Woods, Fair, Off-Site, Soil C	
1.88	75		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment 1	76.6
Woods: Dense underbrush	n=.8 L=300' P2=3.5 in s=.0268 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 1	1.6
Woodland	Kv=5 L=105' s=.0466 '/' V=1.08 fps	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 2	.2
Woodland	Kv=5 L=12' s=.0667 '/' V=1.29 fps	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 3	.6
Paved	Kv=20.3282 L=55' s=.005 '/' V=1.44 fps	
Total Length= 472 ft		Total Tc= 79.0

SUBCATCHMENT 100 RUNOFF  
Eastern Portion On & Off Site



TYPE III 24-HOUR RAINFALL= 6.30 IN

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SUBCATCHMENT 200

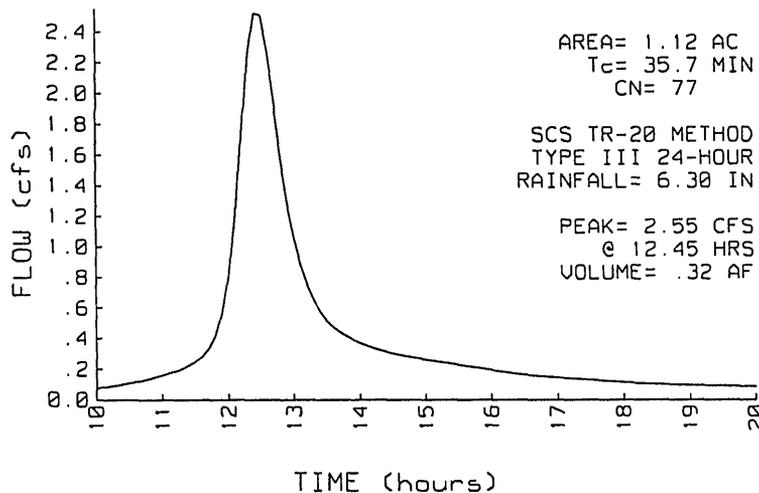
Flow Along Roadside Channel

PEAK= 2.55 CFS @ 12.45 HRS, VOLUME= .32 AF

ACRES	CN		SCS TR-20 METHOD
.56	73	Woods, Fair, Soil C	TYPE III 24-HOUR
.01	79	Woods, Fair, Soil D	RAINFALL= 6.30 IN
.19	74	Lawn, Soil C	SPAN= 10-20 HRS, dt=.1 HRS
.03	89	Gravel, Soil C	
.09	65	Brush, Soil C	
.05	73	Brush, Soil D	
.19	98	Impervious	
1.12	77		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment 1	10.0
Woods: Light underbrush	n=.4 L=55' P2=3.5 in s=.0363 '/'	
TR-55 SHEET FLOW	Segment 2	16.1
Woods: Light underbrush	n=.4 L=130' P2=3.5 in s=.062 '/'	
TR-55 SHEET FLOW	Segment 3	5.9
Grass: Short	n=.15 L=95' P2=3.5 in s=.0566 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 1	.1
Paved	Kv=20.3282 L=22' s=.1 '/' V=6.43 fps	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 2	2.1
Woodland	Kv=5 L=135' s=.0474 '/' V=1.09 fps	
CHANNEL FLOW	Segment 1	1.5
a=1.5 sq-ft	Pw=4.2' r=.357'	
s=.004 '/'	n=.025 V=1.89 fps L=175' Capacity=2.8 cfs	
Total Length= 612 ft		Total Tc= 35.7

SUBCATCHMENT 200 RUNOFF  
Flow Along Roadside Channel



TYPE III 24-HOUR RAINFALL= 6.30 IN

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SUBCATCHMENT 300

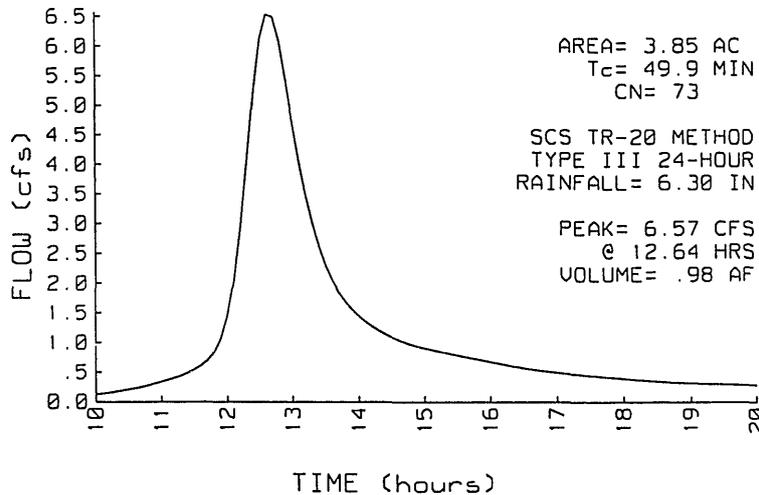
Sheet Flow West Side of Site

PEAK= 6.57 CFS @ 12.64 HRS, VOLUME= .98 AF

ACRES	CN		SCS TR-20 METHOD
3.44	73	Woods, Fair, Soil C	TYPE III 24-HOUR
.26	79	Woods, Fair, Soil D	RAINFALL= 6.30 IN
.15	74	Lawn, Soil C	SPAN= 10-20 HRS, dt=.1 HRS
3.85	73		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment 1	19.8
Woods: Light underbrush n=.4	L=97' P2=3.5 in s=.0206 '/'	
TR-55 SHEET FLOW	Segment 2	10.5
Woods: Light underbrush n=.4	L=57' P2=3.5 in s=.035 '/'	
TR-55 SHEET FLOW	Segment 3	16.6
Woods: Light underbrush n=.4	L=146' P2=3.5 in s=.0723 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 1	3.0
Woodland Kv=5 L=248' s=.0747 '/'	V=1.37 fps	
Total Length= 548 ft		Total Tc= 49.9

SUBCATCHMENT 300 RUNOFF  
Sheet Flow West Side of Site



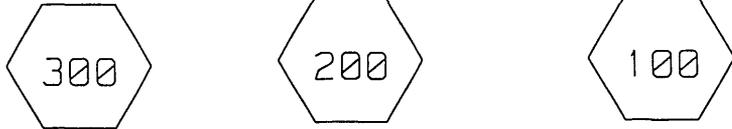
TYPE III 24-HOUR RAINFALL= 5.20 IN

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30 Apr 99

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WATERSHED ROUTING =====



- SUBCATCHMENT 100 = Eastern Portion On & Off Site ->
- SUBCATCHMENT 200 = Flow Along Roadside Channel ->
- SUBCATCHMENT 300 = Sheet Flow West Side of Site ->

TYPE III 24-HOUR RAINFALL= 5.20 IN

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30 Apr 99

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SUBCATCHMENT 100

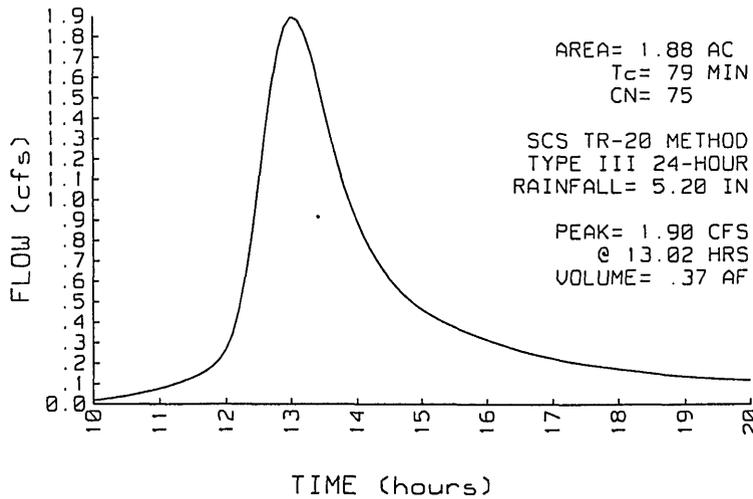
Eastern Portion On & Off Site

PEAK= 1.90 CFS @ 13.02 HRS, VOLUME= .37 AF

ACRES	CN		SCS TR-20 METHOD
1.52	73	Woods, Fair, Soil C	TYPE III 24-HOUR
.03	65	Brush, Good, Soil C	RAINFALL= 5.20 IN
.03	98	Impervious	SPAN= 10-20 HRS, dt=.1 HRS
.22	89	Gravel, Off-Site, Soil C	
.08	73	Woods, Fair, Off-Site, Soil C	
1.88	75		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment 1	76.6
Woods: Dense underbrush	n=.8 L=300' P2=3.5 in s=.0268 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 1	1.6
Woodland	Kv=5 L=105' s=.0466 '/' V=1.08 fps	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 2	.2
Woodland	Kv=5 L=12' s=.0667 '/' V=1.29 fps	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 3	.6
Paved	Kv=20.3282 L=55' s=.005 '/' V=1.44 fps	
Total Length= 472 ft		Total Tc= 79.0

SUBCATCHMENT 100 RUNOFF  
Eastern Portion On & Off Site



TYPE III 24-HOUR RAINFALL= 5.20 IN

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SUBCATCHMENT 200

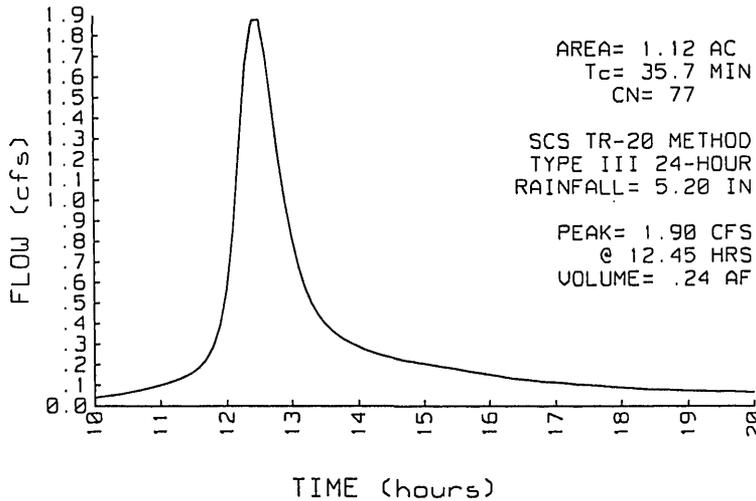
Flow Along Roadside Channel

PEAK= 1.90 CFS @ 12.45 HRS, VOLUME= .24 AF

ACRES	CN		SCS TR-20 METHOD
.56	73	Woods, Fair, Soil C	TYPE III 24-HOUR
.01	79	Woods, Fair, Soil D	RAINFALL= 5.20 IN
.19	74	Lawn, Soil C	SPAN= 10-20 HRS, dt=.1 HRS
.03	89	Gravel, Soil C	
.09	65	Brush, Soil C	
.05	73	Brush, Soil D	
.19	98	Impervious	
1.12	77		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment 1	10.0
Woods: Light underbrush	n=.4 L=55' P2=3.5 in s=.0363 '/'	
TR-55 SHEET FLOW	Segment 2	16.1
Woods: Light underbrush	n=.4 L=130' P2=3.5 in s=.062 '/'	
TR-55 SHEET FLOW	Segment 3	5.9
Grass: Short	n=.15 L=95' P2=3.5 in s=.0566 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 1	.1
Paved	Kv=20.3282 L=22' s=.1 '/' V=6.43 fps	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 2	2.1
Woodland	Kv=5 L=135' s=.0474 '/' V=1.09 fps	
CHANNEL FLOW	Segment 1	1.5
a=1.5 sq-ft	Pw=4.2' r=.357'	
s=.004 '/'	n=.025 V=1.89 fps L=175' Capacity=2.8 cfs	
Total Length= 612 ft		Total Tc= 35.7

SUBCATCHMENT 200 RUNOFF  
Flow Along Roadside Channel



TYPE III 24-HOUR RAINFALL= 5.20 IN

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30 Apr 99

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SUBCATCHMENT 300

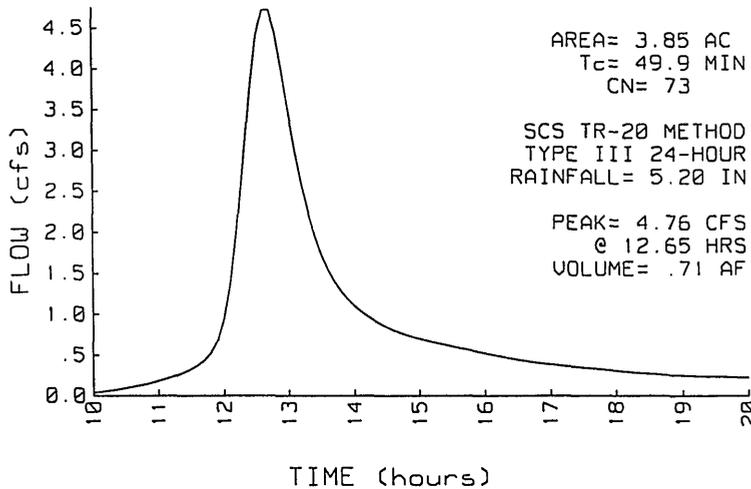
Sheet Flow West Side of Site

PEAK= 4.76 CFS @ 12.65 HRS, VOLUME= .71 AF

ACRES	CN		SCS TR-20 METHOD
3.44	73	Woods, Fair, Soil C	TYPE III 24-HOUR
.26	79	Woods, Fair, Soil D	RAINFALL= 5.20 IN
.15	74	Lawn, Soil C	SPAN= 10-20 HRS, dt=.1 HRS
3.85	73		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment 1	19.8
Woods: Light underbrush n=.4	L=97' P2=3.5 in s=.0206 '/'	
TR-55 SHEET FLOW	Segment 2	10.5
Woods: Light underbrush n=.4	L=57' P2=3.5 in s=.035 '/'	
TR-55 SHEET FLOW	Segment 3	16.6
Woods: Light underbrush n=.4	L=146' P2=3.5 in s=.0723 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 1	3.0
Woodland Kv=5 L=248' s=.0747 '/' V=1.37 fps		
Total Length= 548 ft		Total Tc= 49.9

SUBCATCHMENT 300 RUNOFF  
Sheet Flow West Side of Site



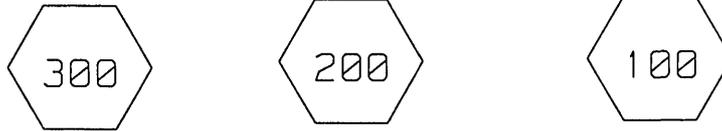
TYPE III 24-HOUR RAINFALL= 4.80 IN

Prepared by Chazen Engineering and Land Surveying, Co., P.C.

30 Apr 99

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WATERSHED ROUTING =====



- SUBCATCHMENT 100 = Eastern Portion On & Off Site ->
- SUBCATCHMENT 200 = Flow Along Roadside Channel ->
- SUBCATCHMENT 300 = Sheet Flow West Side of Site ->

TYPE III 24-HOUR RAINFALL= 4.80 IN

Prepared by Chazen Engineering and Land Surveying, Co., P.C.

30 Apr 99

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SUBCATCHMENT 100

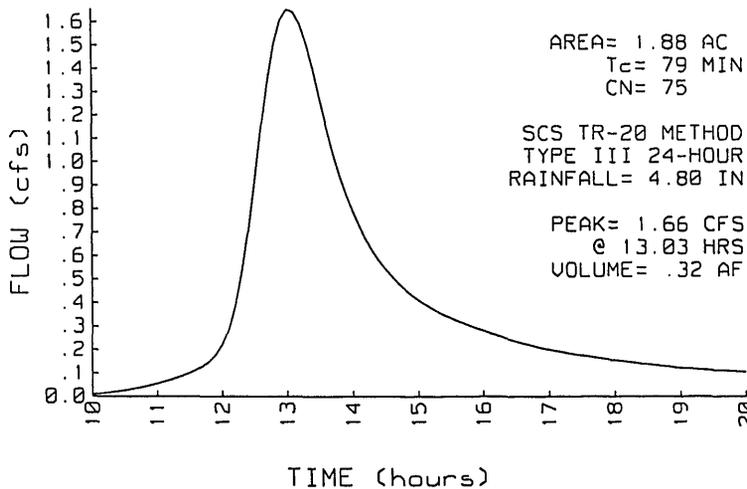
Eastern Portion On & Off Site

PEAK= 1.66 CFS @ 13.03 HRS, VOLUME= .32 AF

ACRES	CN		SCS TR-20 METHOD
1.52	73	Woods, Fair, Soil C	TYPE III 24-HOUR
.03	65	Brush, Good, Soil C	RAINFALL= 4.80 IN
.03	98	Impervious	SPAN= 10-20 HRS, dt=.1 HRS
.22	89	Gravel, Off-Site, Soil C	
.08	73	Woods, Fair, Off-Site, Soil C	
1.88	75		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment 1	76.6
Woods: Dense underbrush	n=.8 L=300' P2=3.5 in s=.0268 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 1	1.6
Woodland	Kv=5 L=105' s=.0466 '/' V=1.08 fps	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 2	.2
Woodland	Kv=5 L=12' s=.0667 '/' V=1.29 fps	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 3	.6
Paved	Kv=20.3282 L=55' s=.005 '/' V=1.44 fps	
Total Length= 472 ft		Total Tc= 79.0

SUBCATCHMENT 100 RUNOFF  
Eastern Portion On & Off Site



TYPE III 24-HOUR RAINFALL= 4.80 IN

Prepared by Chazen Engineering and Land Surveying, Co., P.C.

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SUBCATCHMENT 200

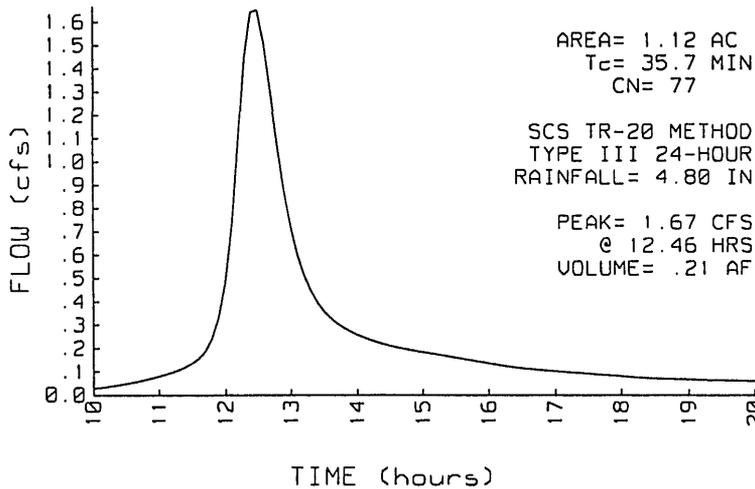
Flow Along Roadside Channel

PEAK= 1.67 CFS @ 12.46 HRS, VOLUME= .21 AF

ACRES	CN		SCS TR-20 METHOD
.56	73	Woods, Fair, Soil C	TYPE III 24-HOUR
.01	79	Woods, Fair, Soil D	RAINFALL= 4.80 IN
.19	74	Lawn, Soil C	SPAN= 10-20 HRS, dt=.1 HRS
.03	89	Gravel, Soil C	
.09	65	Brush, Soil C	
.05	73	Brush, Soil D	
.19	98	Impervious	
1.12	77		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment 1	10.0
Woods: Light underbrush n=.4	L=55' P2=3.5 in s=.0363 '/'	
TR-55 SHEET FLOW	Segment 2	16.1
Woods: Light underbrush n=.4	L=130' P2=3.5 in s=.062 '/'	
TR-55 SHEET FLOW	Segment 3	5.9
Grass: Short n=.15	L=95' P2=3.5 in s=.0566 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 1	.1
Paved Kv=20.3282	L=22' s=.1 '/' V=6.43 fps	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 2	2.1
Woodland Kv=5	L=135' s=.0474 '/' V=1.09 fps	
CHANNEL FLOW	Segment 1	1.5
a=1.5 sq-ft	Pw=4.2' r=.357'	
s=.004 '/'	n=.025 V=1.89 fps L=175' Capacity=2.8 cfs	
Total Length= 612 ft		Total Tc= 35.7

SUBCATCHMENT 200 RUNOFF  
Flow Along Roadside Channel



TYPE III 24-HOUR RAINFALL= 4.80 IN

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30 Apr 99

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SUBCATCHMENT 300

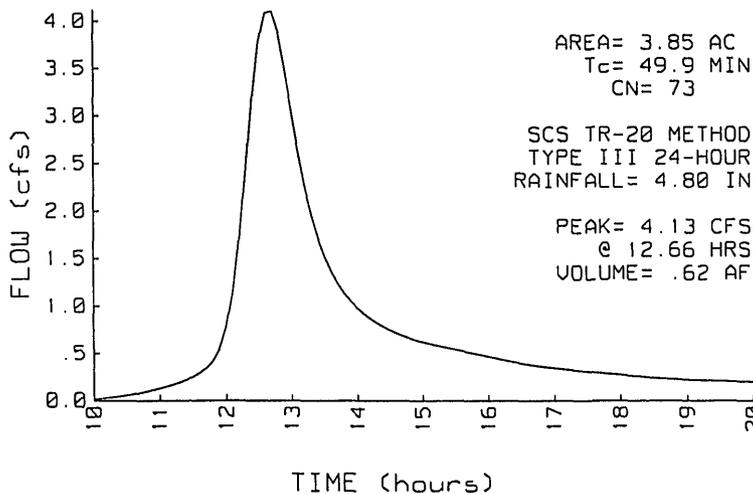
Sheet Flow West Side of Site

PEAK= 4.13 CFS @ 12.66 HRS, VOLUME= .62 AF

ACRES	CN		SCS TR-20 METHOD
3.44	73	Woods, Fair, Soil C	TYPE III 24-HOUR
.26	79	Woods, Fair, Soil D	RAINFALL= 4.80 IN
.15	74	Lawn, Soil C	SPAN= 10-20 HRS, dt=.1 HRS
3.85	73		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment 1	19.8
Woods: Light underbrush	n=.4 L=97' P2=3.5 in s=.0206 '/'	
TR-55 SHEET FLOW	Segment 2	10.5
Woods: Light underbrush	n=.4 L=57' P2=3.5 in s=.035 '/'	
TR-55 SHEET FLOW	Segment 3	16.6
Woods: Light underbrush	n=.4 L=146' P2=3.5 in s=.0723 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 1	3.0
Woodland	Kv=5 L=248' s=.0747 '/' V=1.37 fps	
-----		
Total Length= 548 ft		Total Tc= 49.9

SUBCATCHMENT 300 RUNOFF  
Sheet Flow West Side of Site



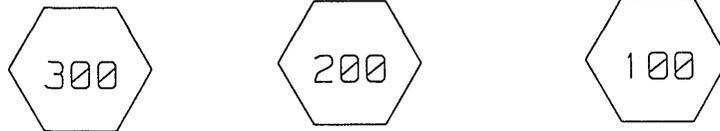
TYPE III 24-HOUR RAINFALL= 3.50 IN

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30 Apr 99

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WATERSHED ROUTING =====



- SUBCATCHMENT 100 = Eastern Portion On & Off Site ->
- SUBCATCHMENT 200 = Flow Along Roadside Channel ->
- SUBCATCHMENT 300 = Sheet Flow West Side of Site ->

TYPE III 24-HOUR RAINFALL= 3.50 IN

Prepared by Chazen Engineering and Land Surveying, Co., P.C.

30 Apr 99

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SUBCATCHMENT 100

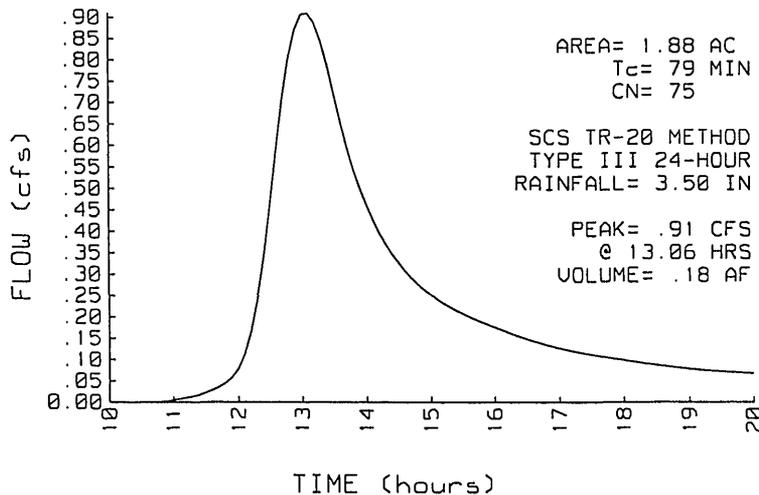
Eastern Portion On & Off Site

PEAK= .91 CFS @ 13.06 HRS, VOLUME= .18 AF

ACRES	CN		SCS TR-20 METHOD
1.52	73	Woods, Fair, Soil C	TYPE III 24-HOUR
.03	65	Brush, Good, Soil C	RAINFALL= 3.50 IN
.03	98	Impervious	SPAN= 10-20 HRS, dt=.1 HRS
.22	89	Gravel, Off-Site, Soil C	
.08	73	Woods, Fair, Off-Site, Soil C	
1.88	75		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment 1	76.6
Woods: Dense underbrush	n=.8 L=300' P2=3.5 in s=.0268 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 1	1.6
Woodland	Kv=5 L=105' s=.0466 '/' V=1.08 fps	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 2	.2
Woodland	Kv=5 L=12' s=.0667 '/' V=1.29 fps	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 3	.6
Paved	Kv=20.3282 L=55' s=.005 '/' V=1.44 fps	
Total Length= 472 ft		Total Tc= 79.0

SUBCATCHMENT 100 RUNOFF  
Eastern Portion On & Off Site



TYPE III 24-HOUR RAINFALL= 3.50 IN

Prepared by Chazen Engineering and Land Surveying, Co., P.C.

30 Apr 99

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SUBCATCHMENT 200

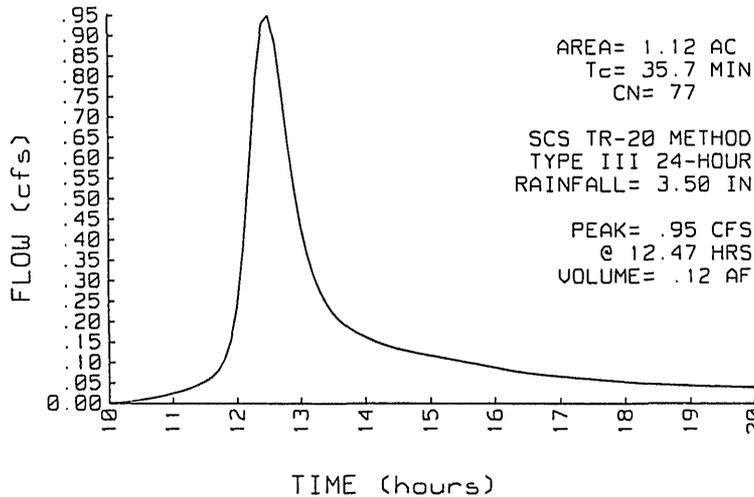
Flow Along Roadside Channel

PEAK= .95 CFS @ 12.47 HRS, VOLUME= .12 AF

ACRES	CN		SCS TR-20 METHOD
.56	73	Woods, Fair, Soil C	TYPE III 24-HOUR
.01	79	Woods, Fair, Soil D	RAINFALL= 3.50 IN
.19	74	Lawn, Soil C	SPAN= 10-20 HRS, dt=.1 HRS
.03	89	Gravel, Soil C	
.09	65	Brush, Soil C	
.05	73	Brush, Soil D	
.19	98	Impervious	
1.12	77		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment 1	10.0
Woods: Light underbrush	n=.4 L=55' P2=3.5 in s=.0363 '/'	.
TR-55 SHEET FLOW	Segment 2	16.1
Woods: Light underbrush	n=.4 L=130' P2=3.5 in s=.062 '/'	
TR-55 SHEET FLOW	Segment 3	5.9
Grass: Short	n=.15 L=95' P2=3.5 in s=.0566 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 1	.1
Paved	Kv=20.3282 L=22' s=.1 '/' V=6.43 fps	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 2	2.1
Woodland	Kv=5 L=135' s=.0474 '/' V=1.09 fps	
CHANNEL FLOW	Segment 1	1.5
a=1.5 sq-ft	Pw=4.2' r=.357'	
s=.004 '/'	n=.025 V=1.89 fps L=175' Capacity=2.8 cfs	
Total Length= 612 ft		Total Tc= 35.7

SUBCATCHMENT 200 RUNOFF  
Flow Along Roadside Channel



TYPE III 24-HOUR RAINFALL= 3.50 IN

Prepared by Chazen Engineering and Land Surveying, Co., P.C.

30 Apr 99

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SUBCATCHMENT 300

Sheet Flow West Side of Site

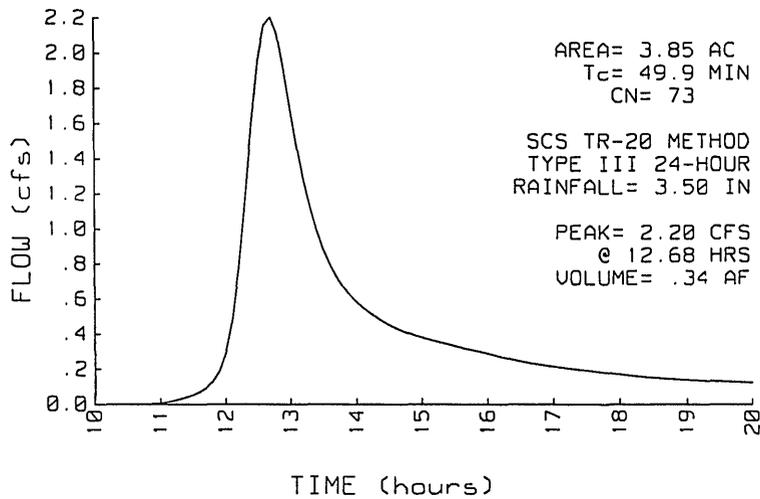
PEAK= 2.20 CFS @ 12.68 HRS, VOLUME= .34 AF

ACRES	CN		SCS TR-20 METHOD
3.44	73	Woods, Fair, Soil C	TYPE III 24-HOUR
.26	79	Woods, Fair, Soil D	RAINFALL= 3.50 IN
.15	74	Lawn, Soil C	SPAN= 10-20 HRS, dt=.1 HRS
3.85	73		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment 1	19.8
Woods: Light underbrush n=.4	L=97' P2=3.5 in s=.0206 '/'	
TR-55 SHEET FLOW	Segment 2	10.5
Woods: Light underbrush n=.4	L=57' P2=3.5 in s=.035 '/'	
TR-55 SHEET FLOW	Segment 3	16.6
Woods: Light underbrush n=.4	L=146' P2=3.5 in s=.0723 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 1	3.0
Woodland Kv=5	L=248' s=.0747 '/' V=1.37 fps	

Total Length= 548 ft Total Tc= 49.9

SUBCATCHMENT 300 RUNOFF  
Sheet Flow West Side of Site



## Table 10.2a - Runoff Curve Numbers for Urban Areas<sup>1</sup>

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

Cover Description	Curve numbers for hydrologic soil group				
Cover type and hydrologic condition	Average percent impervious area <sup>2</sup>	A	B	C	D
<i>Fully developed urban areas (vegetation established)</i>					
Open space (lawns, parks, golf courses, cemeteries, etc) <sup>3</sup> :					
Poor condition (grass cover < 50%).....		68	79	86	89
Fair condition (grass cover 50% to 75%).....		49	69	79	84
Good condition (grass cover > 75%).....		39	61	(74)	(80)
Impervious areas					
Paved: parking lots, roofs, driveways, etc. (excluding right-of-way).....		98	98	98	98
Streets and roads:					
Paved: curbs and storm sewers (excluding right of way).....		98	98	98	98
Paved; open ditches (including right-of-way).....		83	89	92	98
Gravel (including right-of-way).....		76	85	(89)	91
Dirt (including right-of-way).....		72	82	87	89
Western desert urban areas:					
Natural desert landscape (pervious areas only) <sup>4</sup> .....		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with a 1 to 2 inch sand or gravel mulch and basin boarders).....		96	96	96	96
Urban districts:					
Commercial and business..... 85		89	92	94	95
Industrial..... 72		81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)..... 65		77	85	90	92
1/4 acre..... 38		61	75	83	87
1/3 acre..... 30		57	72	81	86
1/2 acre..... 25		54	70	80	85
1 acre..... 20		51	68	79	84
2 acres..... 12		46	65	77	82
<i>Developing urban areas</i>					
Newly graded areas (pervious areas only, no vegetation) <sup>5</sup> .....		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in Table 10.2c).					

<sup>1</sup>Average runoff condition and  $I_a = 0.2S$

<sup>2</sup>The average percent impervious area shown was used to develop composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious area are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using Figure 8.3 or 8.4.

<sup>3</sup>CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.

<sup>4</sup>Composite CN's for natural desert landscaping should be computed using Figure 8.3 or 8.4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

<sup>5</sup>Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 8.3 or 8.4 based on the degree of development (impervious area percentage) and the CN's for newly graded pervious areas.

## Table 10.2c - Runoff Curve Numbers for Other Agricultural Lands<sup>1</sup>

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

Cover description		Curve numbers for hydrologic soil group-			
Cover type	Hydrologic condition	A	B	C	D
Pasture, grassland, or range-continuous forage for grazing. <sup>2</sup>	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow-continuous grass, protected from grazing and generally mowed for hay.		30	58	(71)	(78)
Brush--brush--weed--grass mixture with brush the major element <sup>3</sup>	Poor	48	67	77	83
	Fair	35	56	70	77
	Good	30 <sup>4</sup>	48	(65)	(75)
Woods-grass combination (orchard or tree farm) <sup>5</sup>	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Woods <sup>6</sup>	Poor	45	66	77	83
	Fair	36	60	(73)	(79)
	Good	30	55	73	77
Farmsteads-buildings, lanes, driveways, and surrounding lots.	--	59	74	82	86

<sup>1</sup>Average runoff condition, and  $L_s = 0.2S$ .

<sup>2</sup>Poor: < 50% ground cover or heavily grazed with no mulch.

Fair: 50 to 75% ground cover and not heavily grazed.

Good: > 75% ground cover and lightly or only occasionally grazed..

<sup>3</sup>Poor: < 50% ground cover.

Fair: 50 to 75% ground cover.

Good: > 75% ground cover.

<sup>4</sup>Actual curve number is less than 30; use CN = 30 for runoff computations.

<sup>5</sup>CN's shown were computed for areas with 50% woods and 50% grass (pasture) cover. Other combinations of conditions may be computed from the CN's for woods and pasture.

<sup>6</sup>Poor: Forest litter, small trees, and brush are destroyed by heavy grazing or regular burning.

Fair: Woods are grazed but not burned, and some forest litter covers the soil.

Good: Woods are protected from grazing, and litter and brush adequately cover the soil.

VALUES OF THE ROUGHNESS COEFFICIENT  $n$  (continued)

Type of channel and description	Minimum	Normal	Maximum
<b>C. EXCAVATED OR DREDGED</b>			
a. Earth, straight and uniform			
1. Clean, recently completed	0.016	0.018	0.020
2. Clean, after weathering	0.018	0.022	0.025
3. Gravel, uniform section, clean	0.022	0.025	0.030
4. With short grass, few weeds	0.022	0.027	0.033
b. Earth, winding and sluggish			
①. No vegetation	0.023	0.025	0.030
2. Grass, some weeds	0.025	0.030	0.033
3. Dense weeds or aquatic plants in deep channels	0.030	0.035	0.040
4. Earth bottom and rubble sides	0.028	0.030	0.035
5. Stony bottom and weedy banks	0.025	0.035	0.040
6. Cobble bottom and clean sides	0.030	0.040	0.050
c. Dragline-excavated or dredged			
1. No vegetation	0.025	0.028	0.033
2. Light brush on banks	0.035	0.050	0.060
d. Rock cuts			
1. Smooth and uniform	0.025	0.035	0.040
2. Jagged and irregular	0.035	0.040	0.050
e. Channels not maintained, weeds and brush uncut			
1. Dense weeds, high as flow depth	0.050	0.080	0.120
2. Clean bottom, brush on sides	0.040	0.050	0.080
3. Same, highest stage of flow	0.045	0.070	0.110
4. Dense brush, high stage	0.080	0.100	0.140
<b>D. NATURAL STREAMS</b>			
D-1. Minor streams (top width at flood stage < 100 ft)			
a. Streams on plain			
1. Clean, straight, full stage, no rifts or deep pools	0.025	0.030	0.033
2. Same as above, but more stones and weeds	0.030	0.035	0.040
3. Clean, winding, some pools and shoals	0.033	0.040	0.045
4. Same as above, but some weeds and stones	0.035	0.045	0.050
5. Same as above, lower stages, more ineffective slopes and sections	0.040	0.048	0.055
6. Same as 4, but more stones	0.045	0.050	0.060
7. Sluggish reaches, weedy, deep pools	0.050	0.070	0.080
8. Very weedy reaches, deep pools, or floodways with heavy stand of timber and underbrush	0.075	0.100	0.150

VALUES OF THE ROUGHNESS COEFFICIENT  $n$  (continued)

Type of channel and description	Minimum	Normal	Maximum
b. Mountain streams, no vegetation in channel, banks usually steep, trees and brush along banks submerged at high stages			
1. Bottom: gravels, cobbles, and few boulders	0.030	0.040	0.050
2. Bottom: cobbles with large boulders	0.040	0.050	0.070
D-2. Flood plains			
a. Pasture, no brush			
1. Short grass	0.025	0.030	0.035
2. High grass	0.030	0.035	0.050
b. Cultivated areas			
1. No crop	0.020	0.030	0.040
2. Mature row crops	0.025	0.035	0.045
3. Mature field crops	0.030	0.040	0.050
c. Brush			
1. Scattered brush, heavy weeds	0.035	0.050	0.070
2. Light brush and trees, in winter	0.035	0.050	0.060
3. Light brush and trees, in summer	0.040	0.060	0.080
4. Medium to dense brush, in winter	0.045	0.070	0.110
5. Medium to dense brush, in summer	0.070	0.100	0.160
d. Trees			
1. Dense willows, summer, straight	0.110	0.150	0.200
2. Cleared land with tree stumps, no sprouts	0.030	0.040	0.050
3. Same as above, but with heavy growth of sprouts	0.050	0.060	0.080
4. Heavy stand of timber, a few down trees, little undergrowth, flood stage below branches	0.080	0.100	0.120
5. Same as above, but with flood stage reaching branches	0.100	0.120	0.160
D-3. Major streams (top width at flood stage > 100 ft). The $n$ value is less than that for minor streams of similar description, because banks offer less effective resistance.			
a. Regular section with no boulders or brush	0.025	.....	0.060
b. Irregular and rough section	0.035	.....	0.100

**APPENDIX 4**

**POST-DEVELOPMENT DRAINAGE**

Job: Guardian Self Storage - New Windsor  
 Job No.: 89915.00  
 Description: Post-Development Drainage Site Only - Addressing Engineer's Comments  
 Prep. By: \_\_\_\_\_ Date: 6/22/99  
 Check By: \_\_\_\_\_ Date: \_\_\_\_\_

Hydrogeological Description

Soil Type:

- 1) Ab: Alden Silt Loam - deep, very poorly drained, nearly level soil formed in glacial till deposits derived from shale, sandstone, and some limestone. **Soil Group D**
- 2) MdB: Mardin Gravelly Silt Loam - deep, moderately well drained, gently sloping soil formed in glacial till deposits derived from sandstone, shale, and slate. **Soil Group C**

**Subcatchment 1000**

Contributing Areas ( Sheet C-3, Grading and Utility Plan 40 scale)

Description	Area (in <sup>2</sup> )	Area (ac)	Curve Number			
Lawn - Soil Group C	0.57				0.02	74
Brush - Soil Group C	0.33				0.01	65
Woods (Off-site) - Fair, Soil Group C	0.31				0.01	73
Impervious (Pavement and Roofs)	1.95				0.07	98

Time of Concentration

Sheet: Woods, hub -  $\{(376 - 366) / 30\} = 0.33$   
 Woods, hub  $\{(366 - 364) / 35\} = 0.057$   
 Lawn  $\{(364 - 363) / 7\} = 0.143$   
 Pavement  $\{(362.5 - 362.4) / 3\} = 0.033$

**Subcatchment 2000**

Contributing Areas ( Sheet C-3, Grading and Utility Plan 40 scale)

Description	Area (in <sup>2</sup> )	Area (ac)	Curve Number			
Woods - Fair, Soil Group C	2.05				0.08	73
Lawn - Soil Group D	1.06				0.04	80
Lawn - Soil Group C	3.47	0.86			0.16	74
Meadow - Soil Group D	1.2				0.04	78
Meadow - Soil Group C	0.5				0.02	71
Gravel - Soil Group C	0.51				0.02	89
Brush - Soil Group C	0.2	0.53	1.75		0.09	65
Brush - Soil Group D	0.68	0.55			0.05	73
Impervious (Pavement and Roof)	0.55	4.05			0.17	98

0.66

Time of Concentration

Sheet: Woods, lub -  $\{(362 - 359.8) / 30\} = 0.073$   
 Lawn -  $\{(359.8 - 358) / 33\} = 0.0545$   
 Lawn -  $\{(358 - 352) / 49\} = 0.122$   
 Channel: Bare Soil -  $\{(352 - 347.1) / 158\} = 0.031$   
 Channel: Bare Soil  $\{(347.1 - 346.36) / 175'\} = 0.004$

Channel Description:

- Bare Soil
- Approximate Dimensions (BW = 2' , SS = 2:1, D = 0.5', n = 0.025 )

**Subcatchment 3000**

Contributing Areas ( Sheet C-3, Grading and Utility Plan 40 scale)

Description	Area (in <sup>2</sup> )	Area (ac)	Curve Number			
<b>CB - 1</b>						
Impervious	1.38	3.28			0.17	98
Lawn - Soil Group C	3.81				0.14	74
Gravel (Off-site) - Soil Group C	4.66				0.17	89
Woods (Off-site) - Fair, Soil Group C	0.76				0.03	73
<b>CB - 2</b>						
Impervious	3.47	1.62			0.19	98
Lawn - Soil Group C	1.95	0.48			0.09	74
Gravel (Off-site) - Soil Group C	1.24				0.05	89
Woods (Off-site) - Fair, Soil Group C	1.1				0.04	73
<b>CB - 3</b>						
Impervious	3.91	1.38	1.6		0.25	98
Lawn - Soil Group C	1.01				0.04	74
<b>CB - 4</b>						
Impervious	1.62	0.22	0.55	1.9	0.29	98
	3.63					
Lawn - Soil Group C	0.02				0.00	74
<b>CB - 5</b>						
Impervious	0.79	1.06	2.94		0.18	98
Lawn	0.91				0.03	74
<b>CB - 6</b>						
Impervious	1.84	2.44	5.8		0.37	98
Lawn - Soil Group C	0.53				0.02	74
<b>CB - 7</b>						
Impervious	0.64	4.99			0.21	98
<b>CB - 8</b>						
Impervious	1.98	1.99	4.6		0.31	98
Lawn - Soil Group C	0.56				0.02	74
<b>CB - 9</b>						
Impervious	1.98	5.36	2.73		0.37	98
<b>CB - 10</b>						
Impervious	2.06	2.73	3.41		0.30	98
<b>CB - 11</b>						
Lawn - Soil Group C	0.08				0.00	74
Impervious	2.25				0.08	98
<b>CB - 12</b>						
Impervious	2.06	1.93	8.22		0.45	98
Lawn - Soil Group C	1.94				0.07	74
<b>Pond</b>						
Meadow - Soil Group C	12.4				0.46	71
Meadow - Soil Group D	2.35				0.09	78
Impervious	1.22				0.04	98
					4.46	

Time of Concentration

Sheet Flow: Gravel  $\{(380.33 - 378.6) / 30\} = 0.0577$   
 Lawn  $\{(378.6 - 371.5) / 45\} = 0.1577$   
 Shallow Flow: Pavement  $\{(371.0 - 366.7) / 160\} = 0.0269$   
 Circular Channel: 15"  $\{(363.45 - 360.4) / 232\} = 0.013$   
 Circular Channel: 18"  $\{(360.3 - 357.94) / 130\} = 0.018$   
 Circular Channel: 24"  $\{(357.84 - 347) / 426\} = 0.0254$

Pond Volume

Contour	Area in <sup>2</sup>	Area ft <sup>2</sup>
344.5	5.62	8996.00
346	6.86	10976.00
348	8.69	13904.00
350	10.63	17008.00

**Subcatchment 3050**

Contributing Areas ( Sheet C-3, Grading and Utility Plan 40 scale)

Description	Area (in <sup>2</sup> )	Area (ac)	Curve Number			
<b>CB - 13</b>						
Impervious	15.81	1.22	2.44	1.74	0.78	98
Impervious (Off-Site)	0.41				0.02	98
Woods - Fair, Soil Group C	0.68				0.02	73
Lawn - Soil Group C	1.2				0.04	74
Lawn (Off-Site) - Soil Group C	5.8				0.21	74
Gravel (Off-site) - Soil Group C	0.2				0.01	89

1.08

Time of Concentration

Sheet Flow: Woods (lub) -  $\{(364.5 - 362.9) / 14\} = 0.114$   
 Lawn -  $\{(362.9 - 352.5) / 119\} = 0.0873$   
 Shallow Concentrated: Pavement -  $\{(352 - 350.1) / 135\} = 0.014$   
 Circular Channel: 15" P.E.P -  $\{(347.1 - 346.28) / 75\} = 0.0109$

**Subcatchment 4000**

Contributing Areas ( Sheet C-3, Grading and Utility Plan 40 scale)

Description	Area (in <sup>2</sup> )	Area (ac)	Curve Number			
Meadow - Soil Group C	9.31				0.34	71
Lawn - Soil Group C	1.88				0.07	74
Meadow - Soil Group D	3.63				0.13	78

Time of Concentration

Sheet: Meadows -  $\{(358.5 - 342) / 57\} = 0.29$

Summary

Description	Area (ac)	Curve Number
Impervious	3.22	98
Lawn, C	0.41	74
Gravel, C	0.22	89
Woods, C	0.07	73
Meadow, C	0.46	71
Meadow, D	0.09	78

4.46

VALUES OF THE ROUGHNESS COEFFICIENT  $n$  (continued)

Type of channel and description	Minimum	Normal	Maximum
<b>C. EXCAVATED OR DREDGED</b>			
a. Earth, straight and uniform			
1. Clean, recently completed	0.016	0.018	0.020
2. Clean, after weathering	0.018	0.022	0.025
3. Gravel, uniform section, clean	0.022	0.025	0.030
4. With short grass, few weeds	0.022	0.027	0.033
b. Earth, winding and sluggish			
1. No vegetation	0.023	0.025	0.030
2. Grass, some weeds	0.025	0.030	0.033
3. Dense weeds or aquatic plants in deep channels	0.030	0.035	0.040
4. Earth bottom and rubble sides	0.028	0.030	0.035
5. Stony bottom and weedy banks	0.025	0.035	0.040
6. Cobble bottom and clean sides	0.030	0.040	0.050
c. Dragline-excavated or dredged			
1. No vegetation	0.025	0.028	0.033
2. Light brush on banks	0.035	0.050	0.060
d. Rock cuts			
1. Smooth and uniform	0.025	0.035	0.040
2. Jagged and irregular	0.035	0.040	0.050
e. Channels not maintained, weeds and brush uncut			
1. Dense weeds, high as flow depth	0.050	0.080	0.120
2. Clean bottom, brush on sides	0.040	0.050	0.080
3. Same, highest stage of flow	0.045	0.070	0.110
4. Dense brush, high stage	0.080	0.100	0.140
<b>D. NATURAL STREAMS</b>			
D-1. Minor streams (top width at flood stage < 100 ft)			
a. Streams on plain			
1. Clean, straight, full stage, no rifts or deep pools	0.025	0.030	0.033
2. Same as above, but more stones and weeds	0.030	0.035	0.040
3. Clean, winding, some pools and shoals	0.033	0.040	0.045
4. Same as above, but some weeds and stones	0.035	0.045	0.050
5. Same as above, lower stages, more ineffective slopes and sections	0.040	0.048	0.055
6. Same as 4, but more stones	0.045	0.050	0.060
7. Sluggish reaches, weedy, deep pools	0.050	0.070	0.080
8. Very weedy reaches, deep pools, or floodways with heavy stand of timber and underbrush	0.075	0.100	0.150

VALUES OF THE ROUGHNESS COEFFICIENT  $n$  (continued)

Type of channel and description	Minimum	Normal	Maximum
b. Mountain streams, no vegetation in channel, banks usually steep, trees and brush along banks submerged at high stages			
1. Bottom: gravels, cobbles, and few boulders	0.030	0.040	0.050
2. Bottom: cobbles with large boulders	0.040	0.050	0.070
D-2. Flood plains			
a. Pasture, no brush			
1. Short grass	0.025	0.030	0.035
2. High grass	0.030	0.035	0.050
b. Cultivated areas			
1. No crop	0.020	0.030	0.040
2. Mature row crops	0.025	0.035	0.045
3. Mature field crops	0.030	0.040	0.050
c. Brush			
1. Scattered brush, heavy weeds	0.035	0.050	0.070
2. Light brush and trees, in winter	0.035	0.050	0.060
3. Light brush and trees, in summer	0.040	0.060	0.080
4. Medium to dense brush, in winter	0.045	0.070	0.110
5. Medium to dense brush, in summer	0.070	0.100	0.160
d. Trees			
1. Dense willows, summer, straight	0.110	0.150	0.200
2. Cleared land with tree stumps, no sprouts	0.030	0.040	0.050
3. Same as above, but with heavy growth of sprouts	0.050	0.060	0.080
4. Heavy stand of timber, a few down trees, little undergrowth, flood stage below branches	0.080	0.100	0.120
5. Same as above, but with flood stage reaching branches	0.100	0.120	0.160
D-3. Major streams (top width at flood stage > 100 ft). The $n$ value is less than that for minor streams of similar description, because banks offer less effective resistance.			
a. Irregular section with no boulders or brush	0.025	.....	0.060
b. Irregular and rough section	0.035	.....	0.100

Appendix C: Manning's Number Tables (continued)

## Table 10.2a - Runoff Curve Numbers for Urban Areas<sup>1</sup>

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

Cover Description	Curve numbers for hydrologic soil group				
	Average percent impervious area <sup>2</sup>	A	B	C	D
<i>Fully developed urban areas (vegetation established)</i>					
Open space (lawns, parks, golf courses, cemeteries, etc) <sup>3</sup> :					
Poor condition (grass cover < 50%).....		68	79	86	89
Fair condition (grass cover 50% to 75%).....		49	69	79	84
Good condition (grass cover > 75%).....		39	61	(74)	(80)
Impervious areas					
Paved: parking lots, roofs, driveways, etc. (excluding right-of-way).....		98	98	98	98
Streets and roads:					
Paved: curbs and storm sewers (excluding right of way).....		98	98	98	98
Paved; open ditches (including right-of-way).....		83	89	92	98
Gravel (including right-of-way).....		76	85	(89)	91
Dirt (including right-of-way).....		72	82	87	89
Western desert urban areas:					
*Natural desert landscape (pervious areas only) <sup>4</sup> .....		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with a 1 to 2 inch sand or gravel mulch and basin boarders).....		96	96	96	96
Urban districts:					
Commercial and business..... 85		89	92	94	95
Industrial..... 72		81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses]..... 65		77	85	90	92
1/4 acre..... 38		61	75	83	87
1/3 acre..... 30		57	72	81	86
1/2 acre..... 25		54	70	80	85
1 acre..... 20		51	68	79	84
2 acres..... 12		46	65	77	82
<i>Developing urban areas</i>					
Newly graded areas (pervious areas only, no vegetation) <sup>5</sup> .....		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in Table 10.2c).					

<sup>1</sup>Average runoff condition and I<sub>a</sub> = 0.25

<sup>2</sup>The average percent impervious area shown was used to develop composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious area are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using Figure 8.3 or 8.4.

<sup>3</sup>CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.

<sup>4</sup>Composite CN's for natural desert landscaping should be computed using Figure 8.3 or 8.4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

<sup>5</sup>Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 8.3 or 8.4 based on the degree of development (impervious area percentage) and the CN's for newly graded pervious areas.

## Table 10.2c - Runoff Curve Numbers for Other Agricultural Lands<sup>1</sup>

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

Cover description		Curve numbers for hydrologic soil group-			
Cover type	Hydrologic condition	A	B	C	D
Pasture, grassland, or range-continuous forage for grazing. <sup>2</sup>	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow-continuous grass, protected from grazing and generally mowed for hay.		30	58	(71)	(78)
Brush--brush--weed--grass mixture with brush the major element <sup>3</sup>	Poor	48	67	77	83
	Fair	35	56	70	77
	Good	30 <sup>4</sup>	48	(65)	(75)
Woods-grass combination (orchard or tree farm) <sup>5</sup>	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Woods <sup>6</sup>	Poor	45	66	77	83
	Fair	36	60	(73)	79
	Good	30	55	70	77
Farmsteads-buildings, lanes, driveways, and surrounding lots.	--	59	74	82	86

<sup>1</sup>Average runoff condition, and  $L_s = 0.2S$ .

<sup>2</sup>Poor: < 50% ground cover or heavily grazed with no mulch.

Fair: 50 to 75% ground cover and not heavily grazed.

Good: > 75% ground cover and lightly or only occasionally grazed..

<sup>3</sup>Poor: < 50% ground cover.

Fair: 50 to 75% ground cover.

Good: > 75% ground cover.

<sup>4</sup>Actual curve number is less than 30; use CN = 30 for runoff computations.

<sup>5</sup>CN's shown were computed for areas with 50% woods and 50% grass (pasture) cover. Other combinations of conditions may be computed from the CN's for woods and pasture.

<sup>6</sup>Poor: Forest litter, small trees, and brush are destroyed by heavy grazing or regular burning.

Fair: Woods are grazed but not burned, and some forest litter covers the soil.

Good: Woods are protected from grazing, and litter and brush adequately cover the soil.

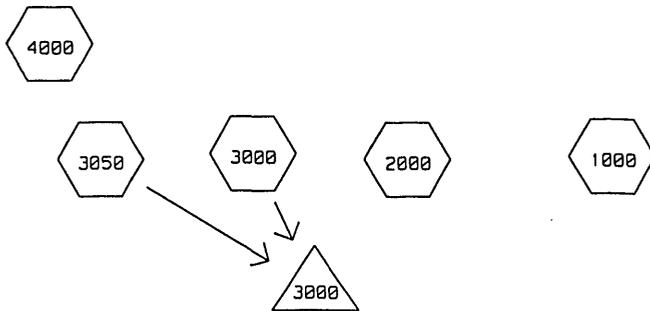
TYPE III 24-HOUR RAINFALL= 6.30 IN

Prepared by Chazen Engineering and Land Surveying, Co., P.C.

22 Jun 99

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WATERSHED ROUTING =====



- SUBCATCHMENT 1000 = Eastern Portion of On and Off-Site ->
- SUBCATCHMENT 2000 = Flow Along Roadside Channel ->
- SUBCATCHMENT 3000 = Site Drainage -> POND 3000
- SUBCATCHMENT 3050 = Catch Basin # 13 -> POND 3000
- SUBCATCHMENT 4000 = Sheet Flow Off-Site Western Portion of Sit ->
- POND 3000 = Pond on East Side of Site ->

TYPE III 24-HOUR RAINFALL= 6.30 IN

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SUBCATCHMENT 1000

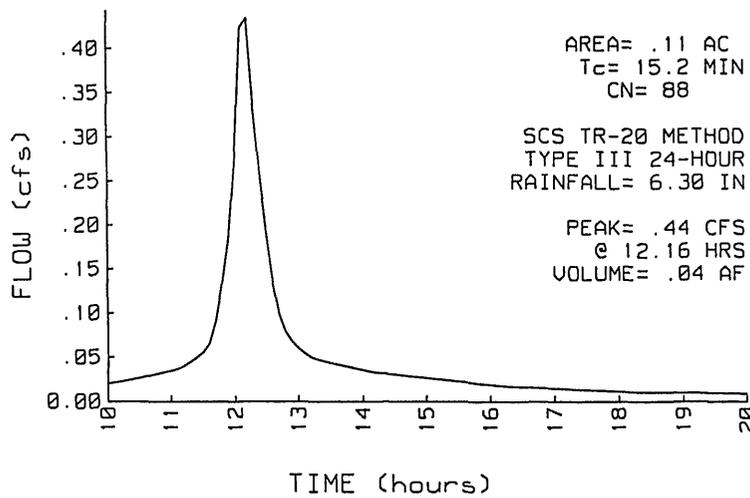
Eastern Portion of On and Off-Site

PEAK= .44 CFS @ 12.16 HRS, VOLUME= .04 AF

ACRES	CN		SCS TR-20 METHOD
.02	74	Lawn, Good, Soil C	TYPE III 24-HOUR
.01	65	Brush, Dense, Soil C	RAINFALL= 6.30 IN
.01	73	Woods, Fair, Off-Site, Soil C	SPAN= 10-20 HRS, dt=.1 HRS
.07	98	Impervious	
.11	88		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment ID:	4.4
Woods: Dense underbrush n=.8	L=30' P2=3.5 in s=.33 '/'	
TR-55 SHEET FLOW	Segment ID:	10.2
Woods: Dense underbrush n=.8	L=35' P2=3.5 in s=.057 '/'	
TR-55 SHEET FLOW	Segment ID:	.5
Grass: Short n=.15	L=7' P2=3.5 in s=.14 '/'	
TR-55 SHEET FLOW	Segment ID:	.1
Smooth surfaces n=.011	L=3' P2=3.5 in s=.033 '/'	
Total Length= 75 ft		Total Tc= 15.2

SUBCATCHMENT 1000 RUNOFF  
Eastern Portion of On and Off-Site



TYPE III 24-HOUR RAINFALL= 6.30 IN

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SUBCATCHMENT 2000

Flow Along Roadside Channel

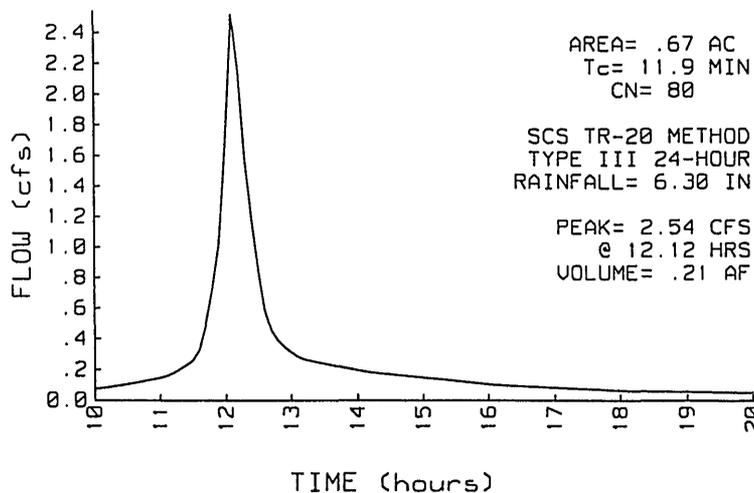
PEAK= 2.54 CFS @ 12.12 HRS, VOLUME= .21 AF

ACRES	CN	
.13	73	Brush, D & Woods, Fair, C
.04	80	Lawn, Soil D
.16	74	Lawn, Soil C
.04	78	Meadow, Soil D
.02	71	Meadow, Soil C
.02	89	Gravel, Soil C
.09	65	Brush, Soil C
.17	98	Impervious
.67	80	

SCS TR-20 METHOD  
 TYPE III 24-HOUR  
 RAINFALL= 6.30 IN  
 SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc, (min)
TR-55 SHEET FLOW	Segment 1	4.7
Woods: Light underbrush	n=.4 L=30' P2=3.5 in s=.073 '/'	
TR-55 SHEET FLOW	Segment 2	2.6
Grass: Short	n=.15 L=33' P2=3.5 in s=.0545 '/'	
TR-55 SHEET FLOW	Segment 3	2.6
Grass: Short	n=.15 L=49' P2=3.5 in s=.122 '/'	
CHANNEL FLOW	Segment 1	.5
a=1.5 sq-ft Pw=4.2' r=.357'		
s=.031 '/' n=.025 V=5.27 fps L=158' Capacity=7.9 cfs		
CHANNEL FLOW	Segment 2	1.5
a=1.5 sq-ft Pw=4.2' r=.357'		
s=.004 '/' n=.025 V=1.89 fps L=175' Capacity=2.8 cfs		
Total Length= 445 ft		Total Tc= 11.9

SUBCATCHMENT 2000 RUNOFF  
 Flow Along Roadside Channel



TYPE III 24-HOUR RAINFALL= 6.30 IN

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SUBCATCHMENT 3000

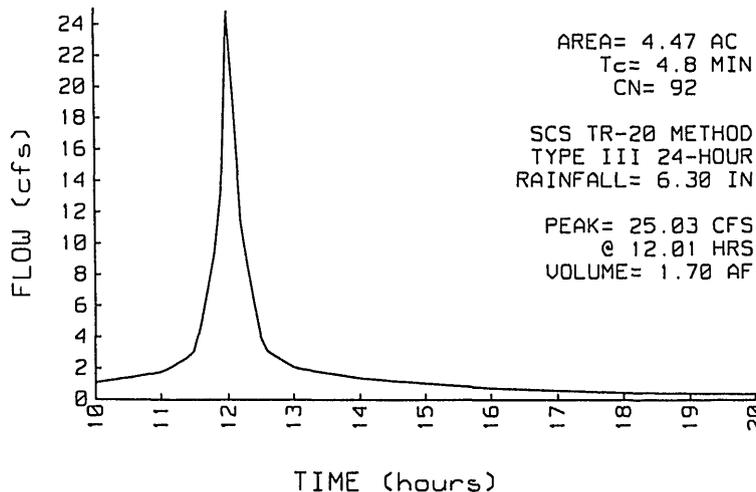
Site Drainage

PEAK= 25.03 CFS @ 12.01 HRS, VOLUME= 1.70 AF

ACRES	CN		SCS TR-20 METHOD
3.22	98	Impervious	TYPE III 24-HOUR
.41	74	Lawn, Soil C	RAINFALL= 6.30 IN
.22	89	Gravel, Soil C	SPAN= 10-20 HRS, dt=.1 HRS
.07	73	Woods, Fair, Soil C	
.46	71	Meadow, Soil C	
.09	78	Meadow, Soil D	
4.47	92		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment 1	.3
Smooth surfaces n=.011 L=30'	P2=3.5 in s=.0577 '/'	
TR-55 SHEET FLOW	Segment 2	2.2
Grass: Short n=.15 L=45'	P2=3.5 in s=.1577 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 1	.8
Paved Kv=20.3282 L=160'	s=.0269 '/' V=3.33 fps	
CIRCULAR CHANNEL	Segment 1 (15")	.6
15" Diameter a=1.23 sq-ft Pw=3.9'	r=.313'	
s=.013 '/' n=.012 V=6.5 fps	L=232' Capacity=8 cfs	
CIRCULAR CHANNEL	Segment 2 (18")	.3
18" Diameter a=1.77 sq-ft Pw=4.7'	r=.375'	
s=.018 '/' n=.012 V=8.64 fps	L=130' Capacity=15.3 cfs	
CIRCULAR CHANNEL	Segment 3 (24")	.6
24" Diameter a=3.14 sq-ft Pw=6.3'	r=.5'	
s=.0254 '/' n=.012 V=12.43 fps	L=426' Capacity=39.1 cfs	
Total Length= 1023 ft		Total Tc= 4.8

SUBCATCHMENT 3000 RUNOFF  
Site Drainage



TYPE III 24-HOUR RAINFALL= 6.30 IN

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SUBCATCHMENT 3050

Catch Basin # 13

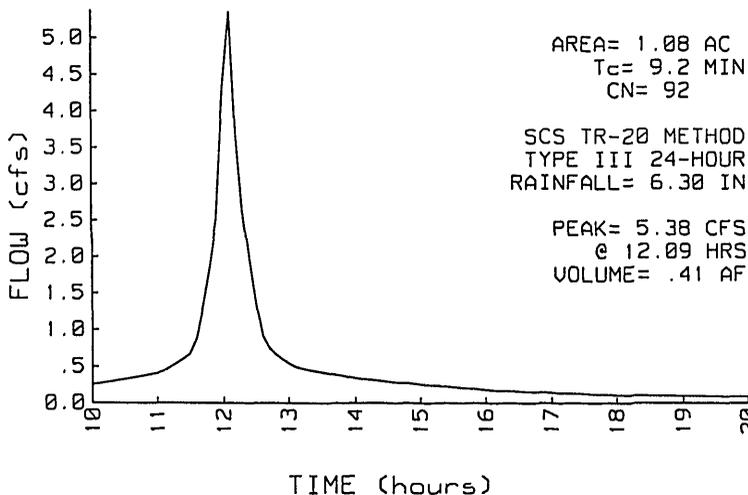
PEAK= 5.38 CFS @ 12.09 HRS, VOLUME= .41 AF

ACRES	CN		SCS TR-20 METHOD
.80	98	Impervious	TYPE III 24-HOUR
.02	73	Woods, Fair, Soil C	RAINFALL= 6.30 IN
.25	74	Lawn, Fair, Soil C	SPAN= 10-20 HRS, dt=.1 HRS
.01	89	Gravel, Soil C	
1.08	92		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment 1	2.1
Woods: Light underbrush	n=.4 L=14' P2=3.5 in s=.114 '/'	
TR-55 SHEET FLOW	Segment 2	6.0
Grass: Short	n=.15 L=119' P2=3.5 in s=.0873 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 1	.9
Paved	Kv=20.3282 L=135' s=.014 '/' V=2.41 fps	
CIRCULAR CHANNEL	Segment 1	.2
15" Diameter	a=1.23 sq-ft Pw=3.9' r=.313'	
s=.0109 '/'	n=.012 V=5.95 fps L=75' Capacity=7.3 cfs	

Total Length= 343 ft Total Tc= 9.2

SUBCATCHMENT 3050 RUNOFF  
Catch Basin # 13



TYPE III 24-HOUR RAINFALL= 6.30 IN

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SUBCATCHMENT 4000

Sheet Flow Off-Site Western Portion of Sit

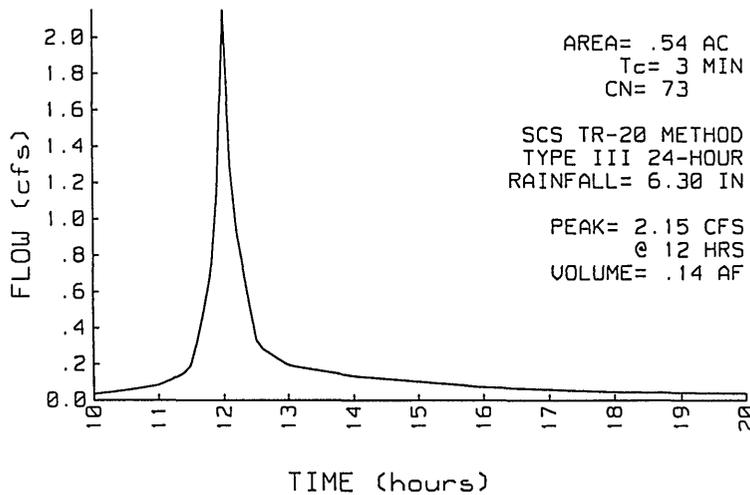
PEAK= 2.15 CFS @ 12.00 HRS, VOLUME= .14 AF

ACRES	CN	
.34	71	Meadow, Soil C
.07	74	Lawn, Soil C
.13	78	Meadow, Soil D
.54	73	

SCS TR-20 METHOD  
 TYPE III 24-HOUR  
 RAINFALL= 6.30 IN  
 SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment 1	3.0
Grass: Dense	n=.24 L=57' P2=3.5 in s=.29 '/'	

SUBCATCHMENT 4000 RUNOFF  
 Sheet Flow Off-Site Western Portion of Sit



TYPE III 24-HOUR RAINFALL= 6.30 IN

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POND 3000

Pond on East Side of Site

Qin = 29.58 CFS @ 12.02 HRS, VOLUME= 2.11 AF  
 Qout= 4.24 CFS @ 12.60 HRS, VOLUME= 1.43 AF, ATTEN= 86%, LAG= 34.9 MIN  
 Qpri= 3.39 CFS @ 12.60 HRS, VOLUME= .97 AF  
 Qsec= .86 CFS @ 12.60 HRS, VOLUME= .45 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)	STOR-IND METHOD
344.5	8996	0	0	PEAK STORAGE = 52365 CF
346.0	10976	14979	14979	PEAK ELEVATION= 348.8 FT
348.0	13904	24880	39859	FLOOD ELEVATION= 350.0 FT
350.0	17008	30912	70771	START ELEVATION= 344.5 FT
				SPAN= 10-20 HRS, dt=.1 HRS
				3 x FINER ROUTING
				Tdet= 169.7 MIN (1.43 AF)

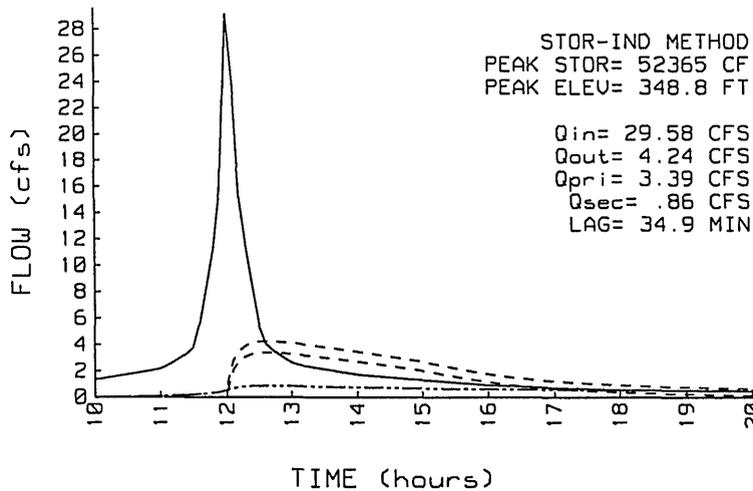
#	ROUTE	INVERT	OUTLET DEVICES
1	P	347.0'	12" CULVERT n=.012 L=45' S=.05'/' Ke=.9 Cc=.9 Cd=.47
2	S	344.5'	EXFILTRATION V= .00833 FPM over (SURFACE AREA - 8996 SF)

Primary Discharge  
 └─1=Culvert

Secondary Discharge  
 └─2=Exfiltration

*Assumed 1"/10' over*  
 $\frac{1''}{10'0''} + \frac{1''}{12''} = 0.00833$

POND 3000 INFLOW & OUTFLOW  
 Pond on East Side of Site



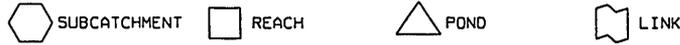
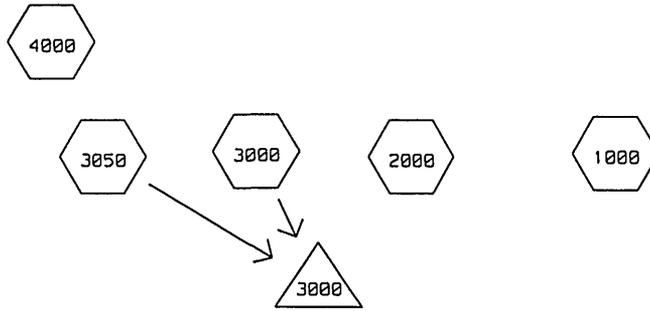
TYPE III 24-HOUR RAINFALL= 5.20 IN

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WATERSHED ROUTING =====



- SUBCATCHMENT 1000 = Eastern Portion of On and Off-Site ->
- SUBCATCHMENT 2000 = Flow Along Roadside Channel ->
- SUBCATCHMENT 3000 = Site Drainage -> POND 3000
- SUBCATCHMENT 3050 = Catch Basin # 13 -> POND 3000
- SUBCATCHMENT 4000 = Sheet Flow Off-Site Western Portion of Sit ->
- POND 3000 = Pond on East Side of Site ->

TYPE III 24-HOUR RAINFALL= 5.20 IN

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SUBCATCHMENT 1000

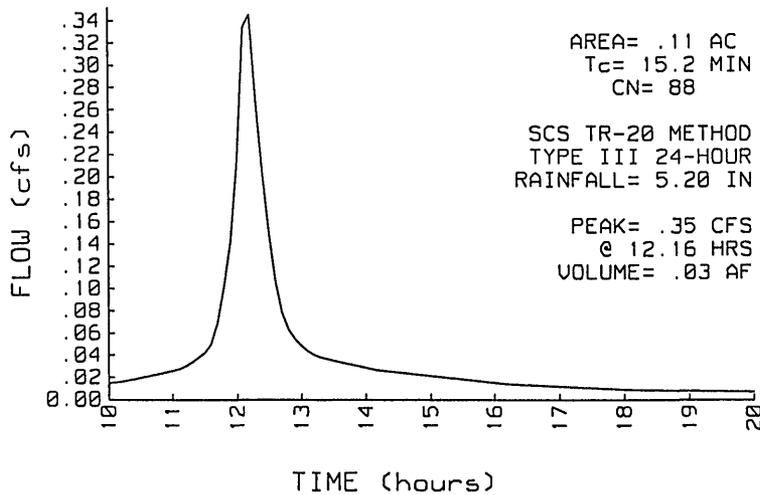
Eastern Portion of On and Off-Site

PEAK= .35 CFS @ 12.16 HRS, VOLUME= .03 AF

ACRES	CN		SCS TR-20 METHOD
.02	74	Lawn, Good, Soil C	TYPE III 24-HOUR
.01	65	Brush, Dense, Soil C	RAINFALL= 5.20 IN
.01	73	Woods, Fair, Off-Site, Soil C	SPAN= 10-20 HRS, dt=.1 HRS
.07	98	Impervious	
.11	88		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment ID:	4.4
Woods: Dense underbrush n=.8	L=30' P2=3.5 in s=.33 '/'	
TR-55 SHEET FLOW	Segment ID:	10.2
Woods: Dense underbrush n=.8	L=35' P2=3.5 in s=.057 '/'	
TR-55 SHEET FLOW	Segment ID:	.5
Grass: Short n=.15	L=7' P2=3.5 in s=.14 '/'	
TR-55 SHEET FLOW	Segment ID:	.1
Smooth surfaces n=.011	L=3' P2=3.5 in s=.033 '/'	
Total Length= 75 ft		Total Tc= 15.2

SUBCATCHMENT 1000 RUNOFF  
Eastern Portion of On and Off-Site



TYPE III 24-HOUR RAINFALL= 5.20 IN

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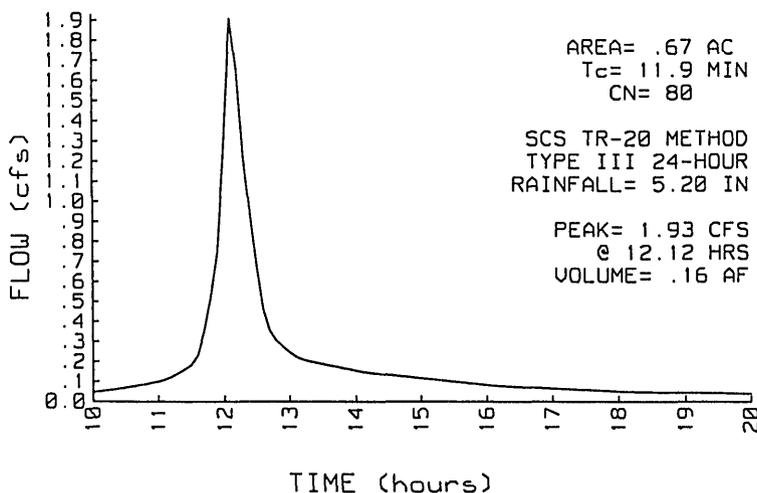
SUBCATCHMENT 2000 Flow Along Roadside Channel

PEAK= 1.93 CFS @ 12.12 HRS, VOLUME= .16 AF

ACRES	CN		SCS TR-20 METHOD
.13	73	Brush, D & Woods, Fair, C	TYPE III 24-HOUR
.04	80	Lawn, Soil D	RAINFALL= 5.20 IN
.16	74	Lawn, Soil C	SPAN= 10-20 HRS, dt=.1 HRS
.04	78	Meadow, Soil D	
.02	71	Meadow, Soil C	
.02	89	Gravel, Soil C	
.09	65	Brush, Soil C	
.17	98	Impervious	
.67	80		

Method	Comment	Tc, (min)
TR-55 SHEET FLOW	Segment 1	4.7
Woods: Light underbrush n=.4	L=30' P2=3.5 in s=.073 '/'	
TR-55 SHEET FLOW	Segment 2	2.6
Grass: Short n=.15	L=33' P2=3.5 in s=.0545 '/'	
TR-55 SHEET FLOW	Segment 3	2.6
Grass: Short n=.15	L=49' P2=3.5 in s=.122 '/'	
CHANNEL FLOW	Segment 1	.5
a=1.5 sq-ft Pw=4.2' r=.357'		
s=.031 '/' n=.025	V=5.27 fps L=158' Capacity=7.9 cfs	
CHANNEL FLOW	Segment 2	1.5
a=1.5 sq-ft Pw=4.2' r=.357'		
s=.004 '/' n=.025	V=1.89 fps L=175' Capacity=2.8 cfs	
Total Length= 445 ft		Total Tc= 11.9

SUBCATCHMENT 2000 RUNOFF  
Flow Along Roadside Channel



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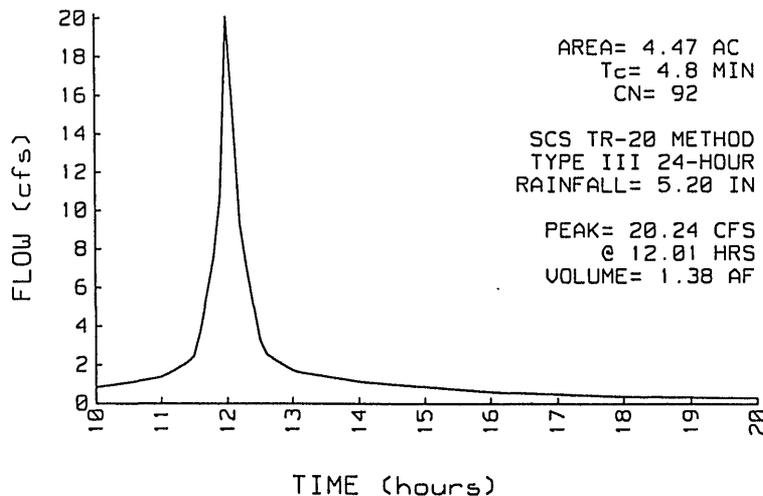
SUBCATCHMENT 3000 Site Drainage

PEAK= 20.24 CFS @ 12.01 HRS, VOLUME= 1.38 AF

ACRES	CN		SCS TR-20 METHOD
3.22	98	Impervious	TYPE III 24-HOUR
.41	74	Lawn, Soil C	RAINFALL= 5.20 IN
.22	89	Gravel, Soil C	SPAN= 10-20 HRS, dt=.1 HRS
.07	73	Woods, Fair, Soil C	
.46	71	Meadow, Soil C	
.09	78	Meadow, Soil D	
4.47	92		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment 1	.3
Smooth surfaces	n=.011 L=30' P2=3.5 in s=.0577 '/'	
TR-55 SHEET FLOW	Segment 2	2.2
Grass: Short	n=.15 L=45' P2=3.5 in s=.1577 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 1	.8
Paved	Kv=20.3282 L=160' s=.0269 '/' V=3.33 fps	
CIRCULAR CHANNEL	Segment 1 (15")	.6
15" Diameter	a=1.23 sq-ft Pw=3.9' r=.313'	
s=.013 '/'	n=.012 V=6.5 fps L=232' Capacity=8 cfs	
CIRCULAR CHANNEL	Segment 2 (18")	.3
18" Diameter	a=1.77 sq-ft Pw=4.7' r=.375'	
s=.018 '/'	n=.012 V=8.64 fps L=130' Capacity=15.3 cfs	
CIRCULAR CHANNEL	Segment 3 (24")	.6
24" Diameter	a=3.14 sq-ft Pw=6.3' r=.5'	
s=.0254 '/'	n=.012 V=12.43 fps L=426' Capacity=39.1 cfs	
Total Length= 1023 ft		Total Tc= 4.8

SUBCATCHMENT 3000 RUNOFF  
Site Drainage



TYPE III 24-HOUR RAINFALL= 5.20 IN

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SUBCATCHMENT 3050

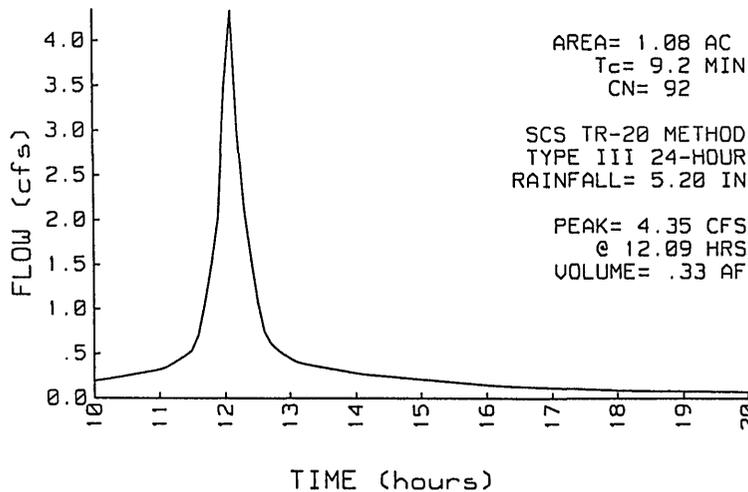
Catch Basin # 13

PEAK= 4.35 CFS @ 12.09 HRS, VOLUME= .33 AF

ACRES	CN		SCS TR-20 METHOD
.80	98	Impervious	TYPE III 24-HOUR
.02	73	Woods, Fair, Soil C	RAINFALL= 5.20 IN
.25	74	Lawn, Fair, Soil C	SPAN= 10-20 HRS, dt=.1 HRS
.01	89	Gravel, Soil C	
1.08	92		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment 1	2.1
Woods: Light underbrush	n=.4 L=14' P2=3.5 in s=.114 '/'	
TR-55 SHEET FLOW	Segment 2	6.0
Grass: Short	n=.15 L=119' P2=3.5 in s=.0873 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 1	.9
Paved	Kv=20.3282 L=135' s=.014 '/' V=2.41 fps	
CIRCULAR CHANNEL	Segment 1	.2
15" Diameter	a=1.23 sq-ft Pw=3.9' r=.313'	
s=.0109 '/'	n=.012 V=5.95 fps L=75' Capacity=7.3 cfs	
Total Length= 343 ft		Total Tc= 9.2

SUBCATCHMENT 3050 RUNOFF  
Catch Basin # 13



TYPE III 24-HOUR RAINFALL= 5.20 IN

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SUBCATCHMENT 4000

Sheet Flow Off-Site Western Portion of Sit

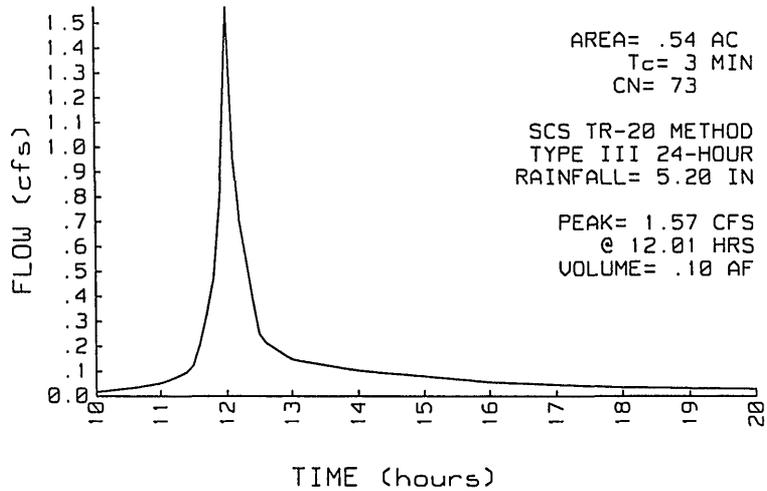
PEAK= 1.57 CFS @ 12.01 HRS, VOLUME= .10 AF

ACRES	CN	
.34	71	Meadow, Soil C
.07	74	Lawn, Soil C
.13	78	Meadow, Soil D
.54	73	

SCS TR-20 METHOD  
 TYPE III 24-HOUR  
 RAINFALL= 5.20 IN  
 SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment 1	3.0
Grass: Dense	n=.24 L=57' P2=3.5 in s=.29 '/'	

SUBCATCHMENT 4000 RUNOFF  
 Sheet Flow Off-Site Western Portion of Sit



TYPE III 24-HOUR RAINFALL= 5.20 IN

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POND 3000

Pond on East Side of Site

Qin = 23.92 CFS @ 12.02 HRS, VOLUME= 1.71 AF  
 Qout= 3.22 CFS @ 12.64 HRS, VOLUME= 1.04 AF, ATTEN= 87%, LAG= 36.9 MIN  
 Qpri= 2.50 CFS @ 12.64 HRS, VOLUME= .63 AF  
 Qsec= .73 CFS @ 12.64 HRS, VOLUME= .41 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)	STOR-IND METHOD
344.5	8996	0	0	PEAK STORAGE = 43114 CF
346.0	10976	14979	14979	PEAK ELEVATION= 348.2 FT
348.0	13904	24880	39859	FLOOD ELEVATION= 350.0 FT
350.0	17008	30912	70771	START ELEVATION= 344.5 FT
				SPAN= 10-20 HRS, dt=.1 HRS
				3 x FINER ROUTING
				Tdet= 175.8 MIN (1.03 AF)

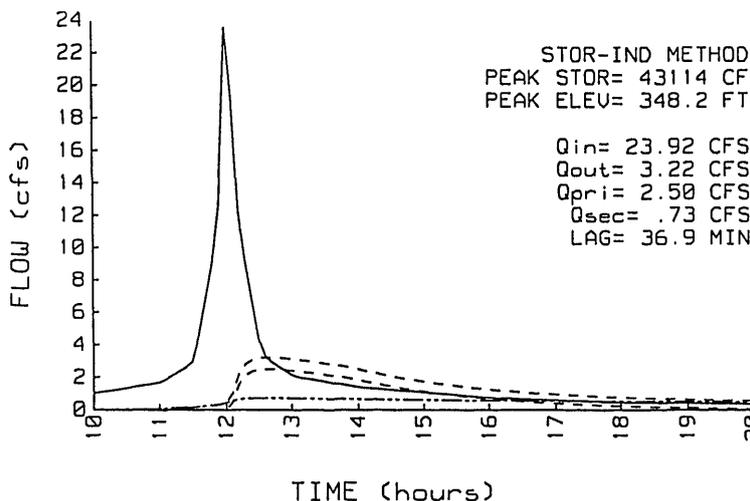
#	ROUTE	INVERT	OUTLET DEVICES
1	P	347.0'	12" CULVERT n=.012 L=45' S=.05'/' Ke=.9 Cc=.9 Cd=.47
2	S	344.5'	EXFILTRATION V= .00833 FPM over (SURFACE AREA - 8996 SF)

Primary Discharge  
 └─1=Culvert

*Assumed 1"/10min*

Secondary Discharge  
 └─2=Exfiltration

POND 3000 INFLOW & OUTFLOW  
 Pond on East Side of Site



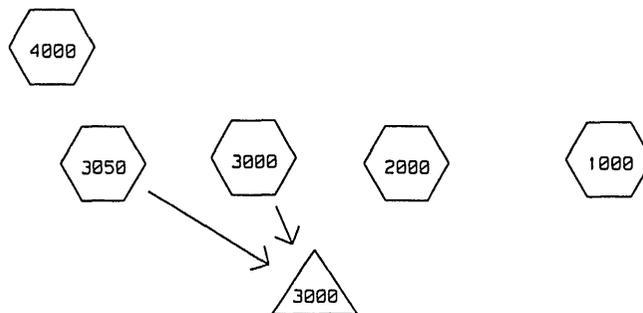
TYPE III 24-HOUR RAINFALL= 4.80 IN

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WATERSHED ROUTING =====



- SUBCATCHMENT 1000 = Eastern Portion of On and Off-Site ->
- SUBCATCHMENT 2000 = Flow Along Roadside Channel ->
- SUBCATCHMENT 3000 = Site Drainage -> POND 3000
- SUBCATCHMENT 3050 = Catch Basin # 13 -> POND 3000
- SUBCATCHMENT 4000 = Sheet Flow Off-Site Western Portion of Sit ->
- POND 3000 = Pond on East Side of Site ->

TYPE III 24-HOUR RAINFALL= 4.80 IN

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SUBCATCHMENT 1000

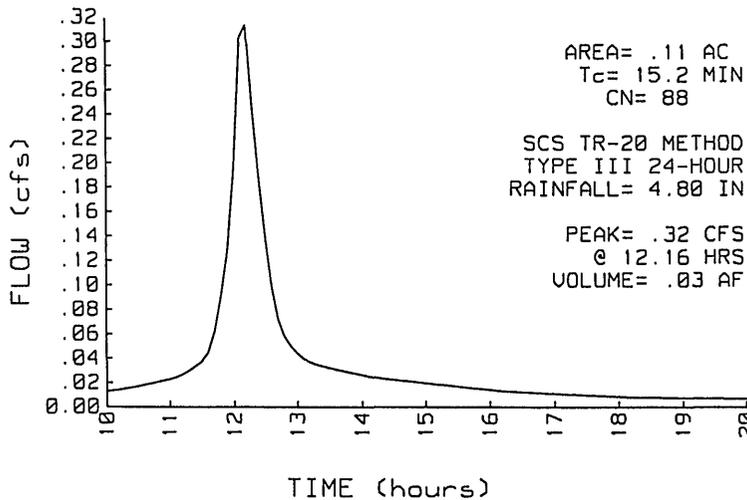
Eastern Portion of On and Off-Site

PEAK= .32 CFS @ 12.16 HRS, VOLUME= .03 AF

ACRES	CN		SCS TR-20 METHOD
.02	74	Lawn, Good, Soil C	TYPE III 24-HOUR
.01	65	Brush, Dense, Soil C	RAINFALL= 4.80 IN
.01	73	Woods, Fair, Off-Site, Soil C	SPAN= 10-20 HRS, dt=.1 HRS
.07	98	Impervious	
.11	88		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment ID:	4.4
Woods: Dense underbrush n=.8	L=30' P2=3.5 in s=.33 '/'	
TR-55 SHEET FLOW	Segment ID:	10.2
Woods: Dense underbrush n=.8	L=35' P2=3.5 in s=.057 '/'	
TR-55 SHEET FLOW	Segment ID:	.5
Grass: Short n=.15	L=7' P2=3.5 in s=.14 '/'	
TR-55 SHEET FLOW	Segment ID:	.1
Smooth surfaces n=.011	L=3' P2=3.5 in s=.033 '/'	
Total Length= 75 ft		Total Tc= 15.2

SUBCATCHMENT 1000 RUNOFF  
Eastern Portion of On and Off-Site



TYPE III 24-HOUR RAINFALL= 4.80 IN

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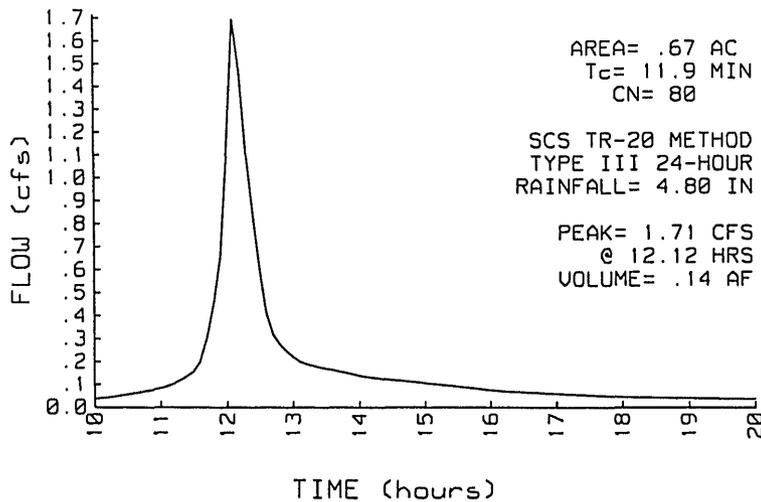
SUBCATCHMENT 2000 Flow Along Roadside Channel

PEAK= 1.71 CFS @ 12.12 HRS, VOLUME= .14 AF

ACRES	CN		SCS TR-20 METHOD
.13	73	Brush, D & Woods, Fair, C	TYPE III 24-HOUR
.04	80	Lawn, Soil D	RAINFALL= 4.80 IN
.16	74	Lawn, Soil C	SPAN= 10-20 HRS, dt=.1 HRS
.04	78	Meadow, Soil D	
.02	71	Meadow, Soil C	
.02	89	Gravel, Soil C	
.09	65	Brush, Soil C	
.17	98	Impervious	
.67	80		

Method	Comment	Tc.(min)
TR-55 SHEET FLOW	Segment 1	4.7
Woods: Light underbrush n=.4 L=30' P2=3.5 in s=.073 '/'		
TR-55 SHEET FLOW	Segment 2	2.6
Grass: Short n=.15 L=33' P2=3.5 in s=.0545 '/'		
TR-55 SHEET FLOW	Segment 3	2.6
Grass: Short n=.15 L=49' P2=3.5 in s=.122 '/'		
CHANNEL FLOW	Segment 1	.5
a=1.5 sq-ft Pw=4.2' r=.357'		
s=.031 '/' n=.025 V=5.27 fps L=158' Capacity=7.9 cfs		
CHANNEL FLOW	Segment 2	1.5
a=1.5 sq-ft Pw=4.2' r=.357'		
s=.004 '/' n=.025 V=1.89 fps L=175' Capacity=2.8 cfs		
Total Length= 445 ft		Total Tc= 11.9

SUBCATCHMENT 2000 RUNOFF  
Flow Along Roadside Channel



TYPE III 24-HOUR RAINFALL= 4.80 IN

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SUBCATCHMENT 3000

Site Drainage

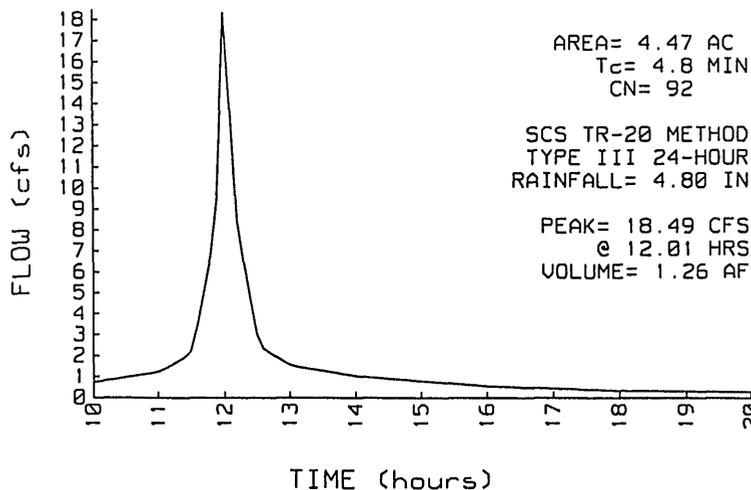
PEAK= 18.49 CFS @ 12.01 HRS, VOLUME= 1.26 AF

ACRES	CN	
3.22	98	Impervious
.41	74	Lawn, Soil C
.22	89	Gravel, Soil C
.07	73	Woods, Fair, Soil C
.46	71	Meadow, Soil C
.09	78	Meadow, Soil D
4.47	92	

SCS TR-20 METHOD  
 TYPE III 24-HOUR  
 RAINFALL= 4.80 IN  
 SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment 1	.3
Smooth surfaces n=.011 L=30'	P2=3.5 in s=.0577 '/'	
TR-55 SHEET FLOW	Segment 2	2.2
Grass: Short n=.15 L=45'	P2=3.5 in s=.1577 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 1	.8
Paved Kv=20.3282 L=160'	s=.0269 '/' V=3.33 fps	
CIRCULAR CHANNEL	Segment 1 (15")	.6
15" Diameter a=1.23 sq-ft Pw=3.9' r=.313'	s=.013 '/' n=.012 V=6.5 fps L=232' Capacity=8 cfs	
CIRCULAR CHANNEL	Segment 2 (18")	.3
18" Diameter a=1.77 sq-ft Pw=4.7' r=.375'	s=.018 '/' n=.012 V=8.64 fps L=130' Capacity=15.3 cfs	
CIRCULAR CHANNEL	Segment 3 (24")	.6
24" Diameter a=3.14 sq-ft Pw=6.3' r=.5'	s=.0254 '/' n=.012 V=12.43 fps L=426' Capacity=39.1 cfs	
Total Length= 1023 ft		Total Tc= 4.8

SUBCATCHMENT 3000 RUNOFF  
 Site Drainage



TYPE III 24-HOUR RAINFALL= 4.80 IN

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SUBCATCHMENT 3050

Catch Basin # 13

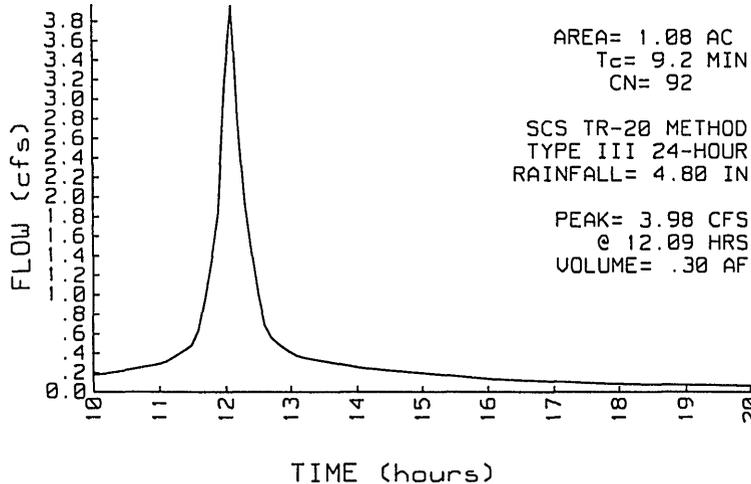
PEAK= 3.98 CFS @ 12.09 HRS, VOLUME= .30 AF

ACRES	CN		SCS TR-20 METHOD
.80	98	Impervious	TYPE III 24-HOUR
.02	73	Woods, Fair, Soil C	RAINFALL= 4.80 IN
.25	74	Lawn, Fair, Soil C	SPAN= 10-20 HRS, dt=.1 HRS
.01	89	Gravel, Soil C	
1.08	92		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment 1	2.1
Woods: Light underbrush	n=.4 L=14' P2=3.5 in s=.114 '/'	
TR-55 SHEET FLOW	Segment 2	6.0
Grass: Short	n=.15 L=119' P2=3.5 in s=.0873 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 1	.9
Paved	Kv=20.3282 L=135' s=.014 '/' V=2.41 fps	
CIRCULAR CHANNEL	Segment 1	.2
15" Diameter	a=1.23 sq-ft Pw=3.9' r=.313'	
s=.0109 '/'	n=.012 V=5.95 fps L=75' Capacity=7.3 cfs	

Total Length= 343 ft Total Tc= 9.2

SUBCATCHMENT 3050 RUNOFF  
Catch Basin # 13



TYPE III 24-HOUR RAINFALL= 4.80 IN

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SUBCATCHMENT 4000

Sheet Flow Off-Site Western Portion of Sit

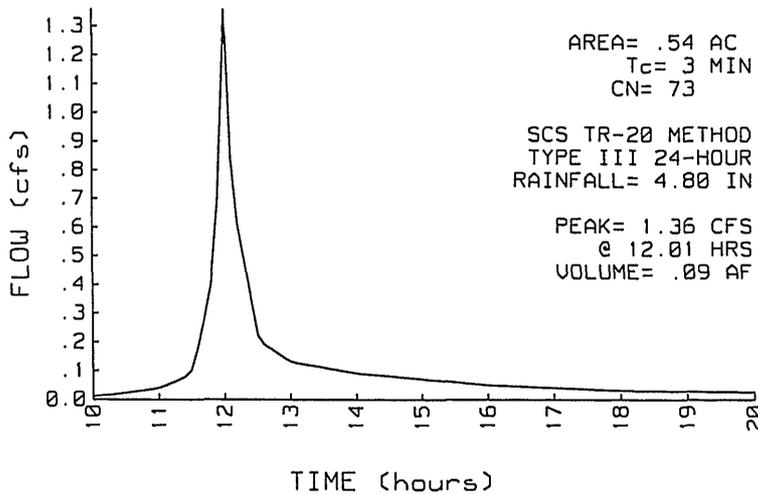
PEAK= 1.36 CFS @ 12.01 HRS, VOLUME= .09 AF

ACRES	CN	
.34	71	Meadow, Soil C
.07	74	Lawn, Soil C
.13	78	Meadow, Soil D
.54	73	

SCS TR-20 METHOD  
 TYPE III 24-HOUR  
 RAINFALL= 4.80 IN  
 SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment 1	3.0
Grass: Dense	n=.24 L=57' P2=3.5 in s=.29 '/'	

SUBCATCHMENT 4000 RUNOFF  
 Sheet Flow Off-Site Western Portion of Sit



TYPE III 24-HOUR RAINFALL= 4.80 IN

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POND 3000

Pond on East Side of Site

Qin = 21.85 CFS @ 12.02 HRS, VOLUME= 1.56 AF  
 Qout= 2.79 CFS @ 12.68 HRS, VOLUME= .90 AF, ATTEN= 87%, LAG= 39.3 MIN  
 Qpri= 2.10 CFS @ 12.68 HRS, VOLUME= .50 AF  
 Qsec= .68 CFS @ 12.68 HRS, VOLUME= .40 AF

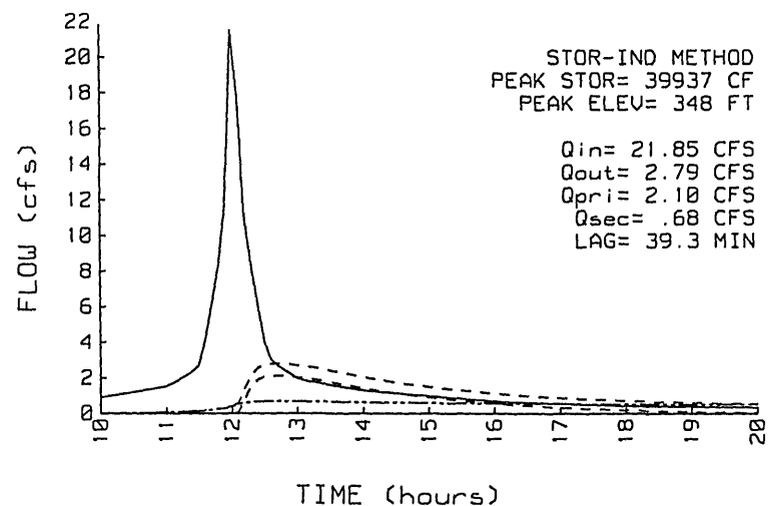
ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)	STOR-IND METHOD
344.5	8996	0	0	PEAK STORAGE = 39937 CF
346.0	10976	14979	14979	PEAK ELEVATION= 348.0 FT
348.0	13904	24880	39859	FLOOD ELEVATION= 350.0 FT
350.0	17008	30912	70771	START ELEVATION= 344.5 FT
				SPAN= 10-20 HRS, dt=.1 HRS
				3 x FINER ROUTING
				Tdet= 183 MIN (.89 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	347.0'	12" CULVERT n=.012 L=45' S=.05'/' Ke=.9 Cc=.9 Cd=.47
2	S	344.5'	EXFILTRATION V= .00833 FPM over (SURFACE AREA - 8996 SF)

Primary Discharge *Assumed 1"/10min*  
 └─1=Culvert

Secondary Discharge  
 └─2=Exfiltration

POND 3000 INFLOW & OUTFLOW  
 Pond on East Side of Site



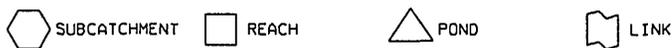
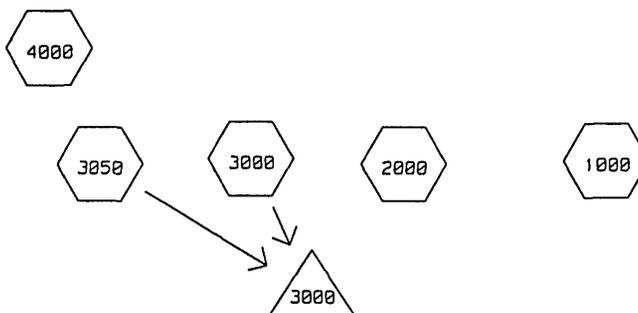
TYPE III 24-HOUR RAINFALL= 3.50 IN

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WATERSHED ROUTING =====



- SUBCATCHMENT 1000 = Eastern Portion of On and Off-Site ->
- SUBCATCHMENT 2000 = Flow Along Roadside Channel ->
- SUBCATCHMENT 3000 = Site Drainage -> POND 3000
- SUBCATCHMENT 3050 = Catch Basin # 13 -> POND 3000
- SUBCATCHMENT 4000 = Sheet Flow Off-Site Western Portion of Site ->
- POND 3000 = Pond on East Side of Site ->

TYPE III 24-HOUR RAINFALL= 3.50 IN

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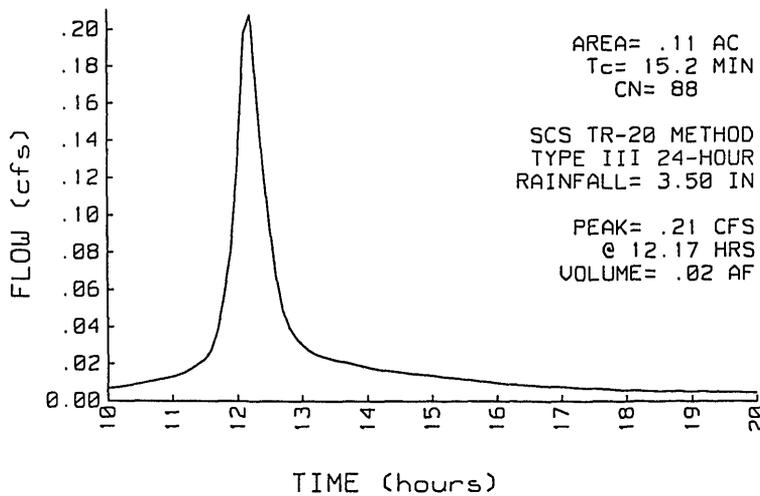
SUBCATCHMENT 1000 Eastern Portion of On and Off-Site

PEAK= .21 CFS @ 12.17 HRS, VOLUME= .02 AF

ACRES	CN		SCS TR-20 METHOD
.02	74	Lawn, Good, Soil C	TYPE III 24-HOUR
.01	65	Brush, Dense, Soil C	RAINFALL= 3.50 IN
.01	73	Woods, Fair, Off-Site, Soil C	SPAN= 10-20 HRS, dt=.1 HRS
.07	98	Impervious	
.11	88		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment ID:	4.4
Woods: Dense underbrush n=.8	L=30' P2=3.5 in s=.33 '/'	
TR-55 SHEET FLOW	Segment ID:	10.2
Woods: Dense underbrush n=.8	L=35' P2=3.5 in s=.057 '/'	
TR-55 SHEET FLOW	Segment ID:	.5
Grass: Short n=.15	L=7' P2=3.5 in s=.14 '/'	
TR-55 SHEET FLOW	Segment ID:	.1
Smooth surfaces n=.011	L=3' P2=3.5 in s=.033 '/'	
Total Length= 75 ft		Total Tc= 15.2

SUBCATCHMENT 1000 RUNOFF  
Eastern Portion of On and Off-Site



TYPE III 24-HOUR RAINFALL= 3.50 IN

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SUBCATCHMENT 2000

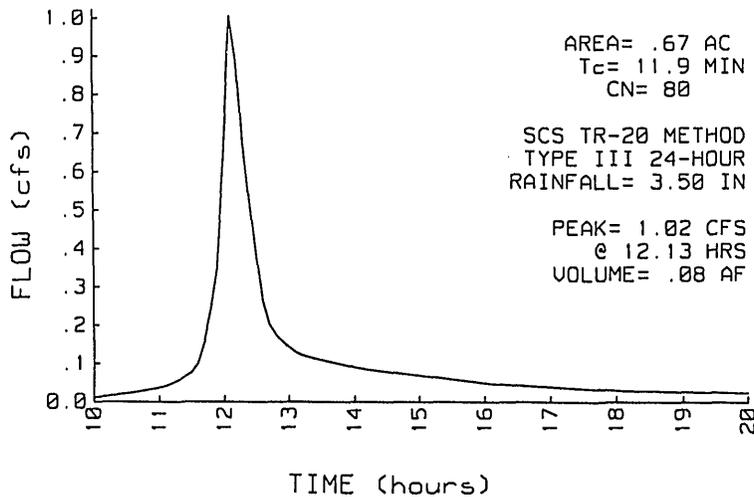
Flow Along Roadside Channel

PEAK= 1.02 CFS @ 12.13 HRS, VOLUME= .08 AF

ACRES	CN		SCS TR-20 METHOD
.13	73	Brush, D & Woods, Fair, C	TYPE III 24-HOUR
.04	80	Lawn, Soil D	RAINFALL= 3.50 IN
.16	74	Lawn, Soil C	SPAN= 10-20 HRS, dt=.1 HRS
.04	78	Meadow, Soil D	
.02	71	Meadow, Soil C	
.02	89	Gravel, Soil C	
.09	65	Brush, Soil C	
.17	98	Impervious	
.67	80		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment 1	4.7
Woods: Light underbrush n=.4	L=30' P2=3.5 in s=.073 '/'	
TR-55 SHEET FLOW	Segment 2	2.6
Grass: Short n=.15	L=33' P2=3.5 in s=.0545 '/'	
TR-55 SHEET FLOW	Segment 3	2.6
Grass: Short n=.15	L=49' P2=3.5 in s=.122 '/'	
CHANNEL FLOW	Segment 1	.5
a=1.5 sq-ft Pw=4.2' r=.357'		
s=.031 '/'	n=.025 V=5.27 fps L=158' Capacity=7.9 cfs	
CHANNEL FLOW	Segment 2	1.5
a=1.5 sq-ft Pw=4.2' r=.357'		
s=.004 '/'	n=.025 V=1.89 fps L=175' Capacity=2.8 cfs	
Total Length= 445 ft		Total Tc= 11.9

SUBCATCHMENT 2000 RUNOFF  
Flow Along Roadside Channel



TYPE III 24-HOUR RAINFALL= 3.50 IN

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SUBCATCHMENT 3000

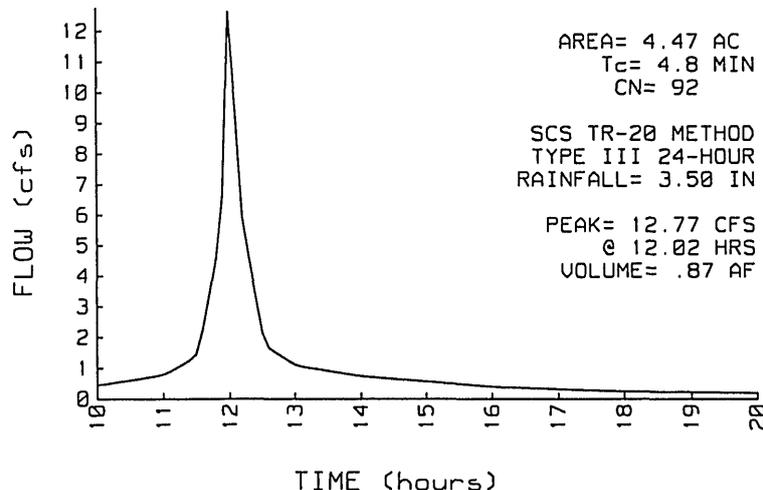
Site Drainage

PEAK= 12.77 CFS @ 12.02 HRS, VOLUME= .87 AF

ACRES	CN		SCS TR-20 METHOD
3.22	98	Impervious	TYPE III 24-HOUR
.41	74	Lawn, Soil C	RAINFALL= 3.50 IN
.22	89	Gravel, Soil C	SPAN= 10-20 HRS, dt=.1 HRS
.07	73	Woods, Fair, Soil C	
.46	71	Meadow, Soil C	
.09	78	Meadow, Soil D	
4.47	92		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment 1	.3
Smooth surfaces	n=.011 L=30' P2=3.5 in s=.0577 '/'	
TR-55 SHEET FLOW	Segment 2	2.2
Grass: Short	n=.15 L=45' P2=3.5 in s=.1577 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 1	.8
Paved	Kv=20.3282 L=160' s=.0269 '/' V=3.33 fps	
CIRCULAR CHANNEL	Segment 1 (15")	.6
15" Diameter	a=1.23 sq-ft Pw=3.9' r=.313'	
s=.013 '/'	n=.012 V=6.5 fps L=232' Capacity=8 cfs	
CIRCULAR CHANNEL	Segment 2 (18")	.3
18" Diameter	a=1.77 sq-ft Pw=4.7' r=.375'	
s=.018 '/'	n=.012 V=8.64 fps L=130' Capacity=15.3 cfs	
CIRCULAR CHANNEL	Segment 3 (24")	.6
24" Diameter	a=3.14 sq-ft Pw=6.3' r=.5'	
s=.0254 '/'	n=.012 V=12.43 fps L=426' Capacity=39.1 cfs	
Total Length= 1023 ft		Total Tc= 4.8

SUBCATCHMENT 3000 RUNOFF  
Site Drainage



TYPE III 24-HOUR RAINFALL= 3.50 IN

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SUBCATCHMENT 3050

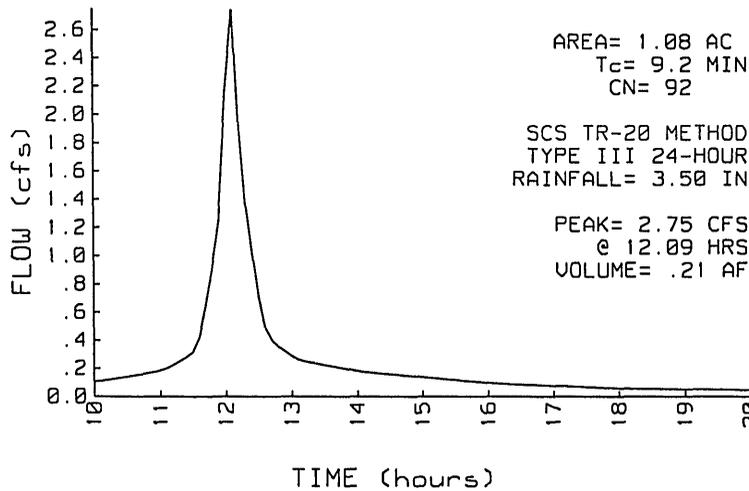
Catch Basin # 13

PEAK= 2.75 CFS @ 12.09 HRS, VOLUME= .21 AF

ACRES	CN		SCS TR-20 METHOD
.80	98	Impervious	TYPE III 24-HOUR
.02	73	Woods, Fair, Soil C	RAINFALL= 3.50 IN
.25	74	Lawn, Fair, Soil C	SPAN= 10-20 HRS, dt=.1 HRS
.01	89	Gravel, Soil C	
1.08	92		

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment 1	2.1
Woods: Light underbrush	n=.4 L=14' P2=3.5 in s=.114 '/'	
TR-55 SHEET FLOW	Segment 2	6.0
Grass: Short	n=.15 L=119' P2=3.5 in s=.0873 '/'	
SHALLOW CONCENTRATED/UPLAND FLOW	Segment 1	.9
Paved	Kv=20.3282 L=135' s=.014 '/' V=2.41 fps	
CIRCULAR CHANNEL	Segment 1	.2
15" Diameter	a=1.23 sq-ft Pw=3.9' r=.313'	
s=.0109 '/'	n=.012 V=5.95 fps L=75' Capacity=7.3 cfs	
Total Length= 343 ft		Total Tc= 9.2

SUBCATCHMENT 3050 RUNOFF  
Catch Basin # 13



TYPE III 24-HOUR RAINFALL= 3.50 IN

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SUBCATCHMENT 4000

Sheet Flow Off-Site Western Portion of Sit

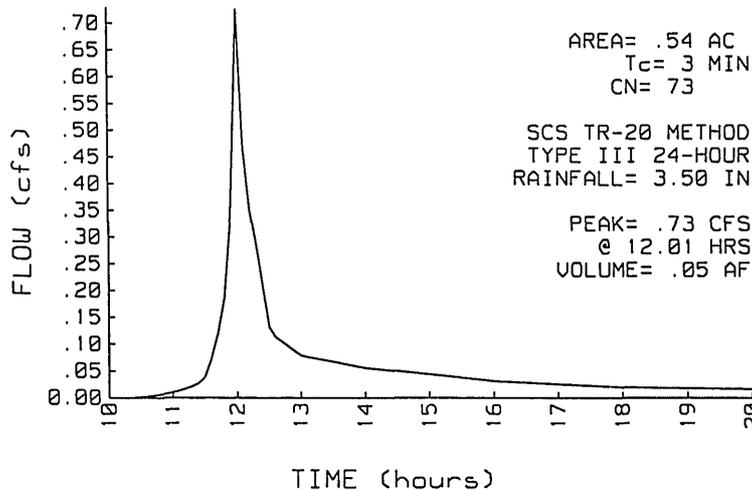
PEAK= .73 CFS @ 12.01 HRS, VOLUME= .05 AF

ACRES	CN	
.34	71	Meadow, Soil C
.07	74	Lawn, Soil C
.13	78	Meadow, Soil D
.54	73	

SCS TR-20 METHOD  
 TYPE III 24-HOUR  
 RAINFALL= 3.50 IN  
 SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	Segment 1	3.0
Grass: Dense	n=.24 L=57' P2=3.5 in s=.29 '/'	

SUBCATCHMENT 4000 RUNOFF  
 Sheet Flow Off-Site Western Portion of Sit



TYPE III 24-HOUR RAINFALL= 3.50 IN

Prepared by Chazen Engineering and Land Surveying, Co., P.C.

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POND 3000

Pond on East Side of Site

Qin = 15.07 CFS @ 12.02 HRS, VOLUME= 1.08 AF  
 Qout= .90 CFS @ 14.07 HRS, VOLUME= .45 AF, ATTEN= 94%, LAG= 122.7 MIN  
 Qpri= .35 CFS @ 14.07 HRS, VOLUME= .10 AF  
 Qsec= .55 CFS @ 14.07 HRS, VOLUME= .35 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)	STOR-IND METHOD
344.5	8996	0	0	PEAK STORAGE = 31547 CF
346.0	10976	14979	14979	PEAK ELEVATION= 347.3 FT
348.0	13904	24880	39859	FLOOD ELEVATION= 350.0 FT
350.0	17008	30912	70771	START ELEVATION= 344.5 FT
				SPAN= 10-20 HRS, dt=.1 HRS.
				3 x FINER ROUTING
				Tdet= 239.1 MIN (.45 AF)

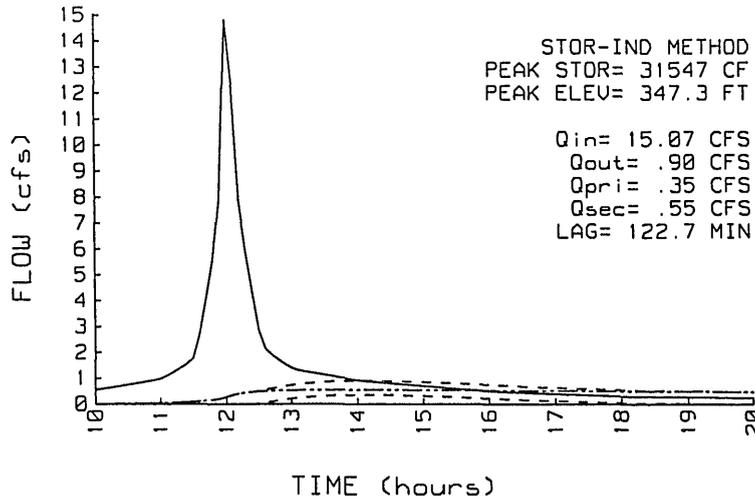
#	ROUTE	INVERT	OUTLET DEVICES
1	P	347.0'	12" CULVERT n=.012 L=45' S=.05'/' Ke=.9 Cc=.9 Cd=.47
2	S	344.5'	EXFILTRATION V= .00833 FPM over (SURFACE AREA - 8996 SF)

Primary Discharge  
 └─1=Culvert

*Assumed 1"/10 min*

Secondary Discharge  
 └─2=Exfiltration

POND 3000 INFLOW & OUTFLOW  
 Pond on East Side of Site



**APPENDIX 5**

**RIP-RAP QUALITY PROTECTION  
DESIGN**

Job: Guardian Self Storage - New Windsor  
 Job No.: 89915.00  
 Description: Rip-Rap Sizing  
 Prep. By: \_\_\_\_\_ Date: \_\_\_\_\_  
 Check By: \_\_\_\_\_ Date: \_\_\_\_\_

**Rip-Rap Calculator For Rock Outlet Protection**

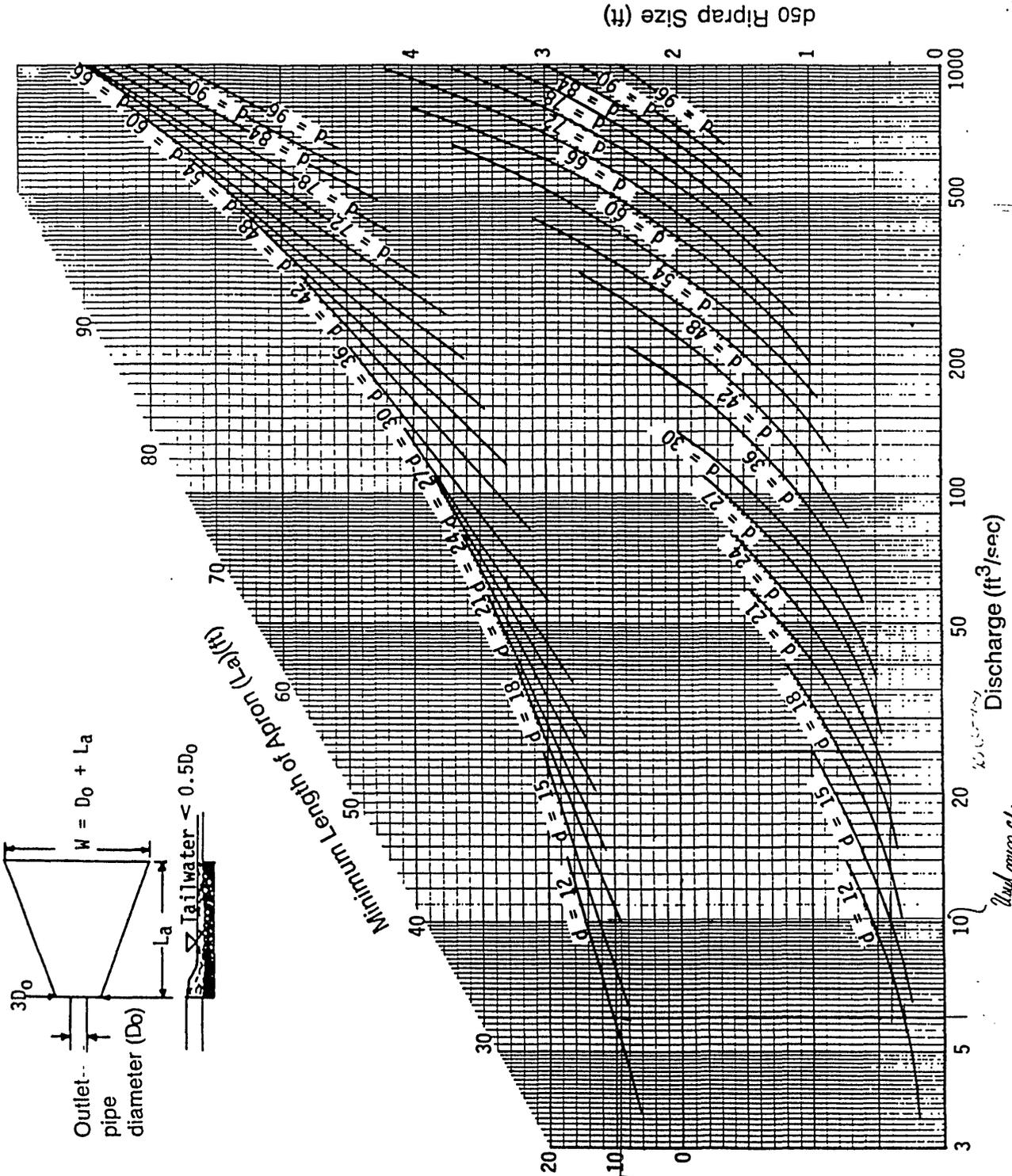
- The purpose of the rock outlet protection is to reduce the depth, velocity, and energy of water, such that flow will not erode the receiving downstream reach.
- The apron length and width shall be determined from Figures 5B.12 and 5B.13 of the New York State Guidelines for Urban Erosion and Sediment Control (NYSGUESC)
- In accordance with NYSGUESC, the minimum thickness of the rip-rap layer shall be 1.5 times the maximum stone diameter for  $d_{50}$  of 15 inches or less; and 1.2 times the maximum stone size for  $d_{50}$  greater than 15 inches.
- $d_{max} = d_{50} * 1.5$
- A filter fabric shall be placed between the stone and underlying soil surface meeting the following requirements: thickness 20-60 mils, grab strength 90 - 120 lbs, and shall conform to ASTM D-1777 and ASTM D-1682.
- Minimum Tailwater Condition: Width = Dia. of Pipe + Length of Apron (Except For Channel, See Note 7)
- Maximum Tailwater Condition: Width = Diameter of Pipe + 0.4 \* Length of Apron

Outlet For Structure	Flow Rate (cfs)	Pipe Dia. (in)	$d_{50}$ (in)	$d_{max}$ (in)	Thickness (in)	Length (ft)	Width (ft)	Condition
Sub 3000: CB-12	25 (approx.)	24	12	18	27	18	9.2	Minimum
Sub 3050: CB-13	6 (approx.)	18	12	18	27	18	8.7	Maximum
Pond	4 (approx.)	18	6	9	13.5	10	11.5	Minimum

Notes:

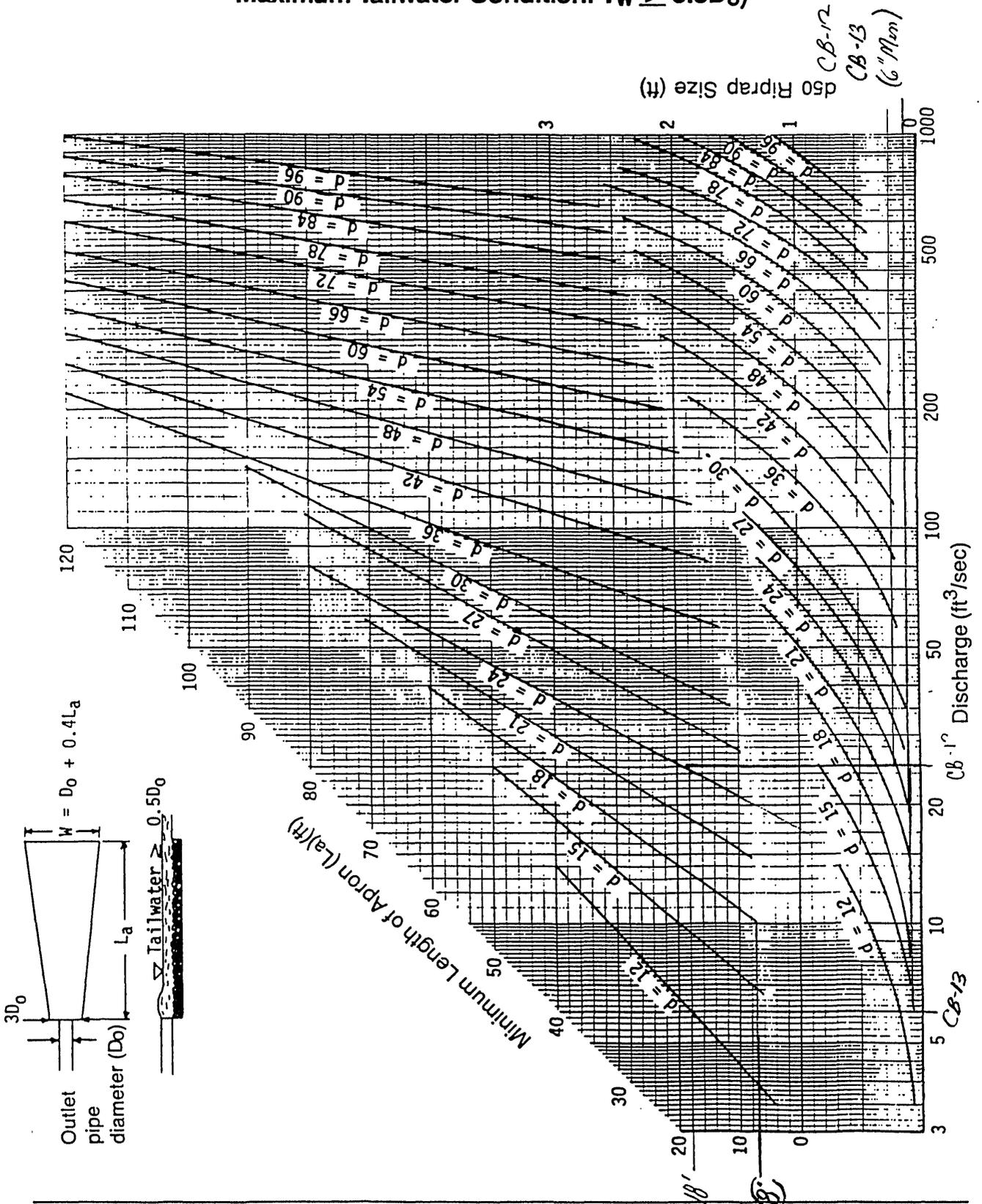
- 1) Minimum  $d_{50} = 6"$ . However, 12" was used for CB's 12 and 13 because discharge to 2:1 sideslopes:
- 2) Minimum sizes and dimensions were chosen for flowrates off the chart.
- 3) Rip-Rap length for CB-13 outlet increased to account for slope.

**Figure 5B.12**  
**Outlet Protection Design - Minimum Tailwater Condition**  
 (Design of Outlet Protection from a Round Pipe Flowing Full,  
 Minimum Tailwater Condition:  $T_w < 0.5D_o$ )



*Use min  $C_{La}$   
 for final design  
 based on 18" Pipe*

**Figure 5B.13**  
**Outlet Protection Design - Maximum Tailwater Condition**  
 (Design of Outlet Protection from a Round Pipe Flowing Full,  
 Maximum Tailwater Condition:  $T_w \geq 0.5D_o$ )



APPENDIX 6  
WATER QUALITY

Job: Guardian Self Storage - New Windsor  
 Job No.: 89915.00  
 Description: Stormwater Quality  
 Prep. By: \_\_\_\_\_ Date: \_\_\_\_\_  
 Check By: \_\_\_\_\_ Date: \_\_\_\_\_

**Stormwater Quality:**

Stormwater Quality will be accomplished by retaining the first 1/2 inch of runoff from the drainage areas flowing to the proposed basin.

Subcatchments Treated For Quality Control	Area (ac)	Area (sf)	Volume (cf)	Sediment Basin Retained in	Storage To Invert Orifice (cf)
3000 & 3050	5.52	240,451	10,019	Pond 3000	27,419

**Notes:**

- 1) A small portion of Subcatchment 1000 (impervious) flows off-site to an existing catch basin.
- 2) Subcatchment 2000 does not consist of on-site drainage, therefore not included.
- 3) Subcatchment 4000 consists of meadows and lawns, therefore not included.
- 4) Inveert of 12" pipe set at 347.0.

TYPE III 24-HOUR RAINFALL= 3.50 IN

Prepared by Chazen Engineering and Land Surveying, Co., P.C.

22 Jun 99

HydroCAD 5.11 000657 (c) 1986-1999 Applied Microcomputer Systems

POND 3000

Pond on East Side of Site

Qin = 15.07 CFS @ 12.02 HRS, VOLUME= 1.08 AF  
 Qout= .90 CFS @ 14.07 HRS, VOLUME= .45 AF, ATTEN= 94%, LAG= 122.7 MIN  
 Qpri= .35 CFS @ 14.07 HRS, VOLUME= .10 AF  
 Qsec= .55 CFS @ 14.07 HRS, VOLUME= .35 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
344.5	8996	0	0
346.0	10976	14979	14979
348.0	13904	24880	39859
350.0	17008	30912	70771

*347.0 @ 21,996*

STOR-IND METHOD  
 PEAK STORAGE = 31547 CF  
 PEAK ELEVATION= 347.3 FT  
 FLOOD ELEVATION= 350.0 FT  
 START ELEVATION= 344.5 FT  
 SPAN= 10-20 HRS, dt=.1 HRS  
 3 x FINER ROUTING  
 Tdet= 239.1 MIN (.45 AF)

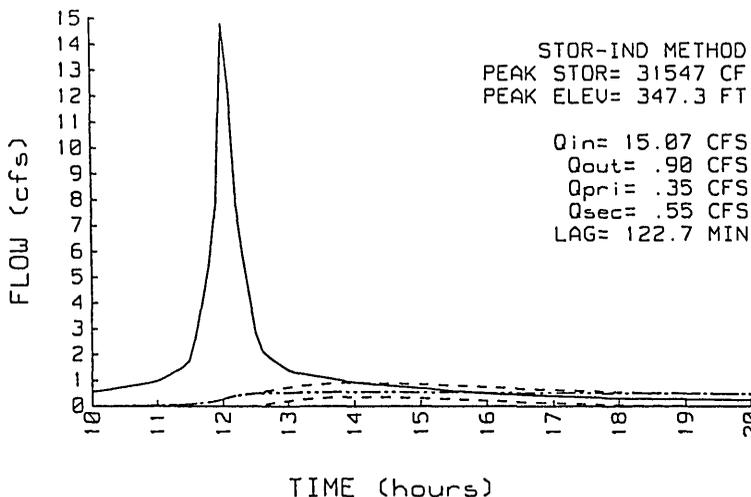
#	ROUTE	INVERT	OUTLET DEVICES
1	P	347.0'	12" CULVERT n=.012 L=45' S=.05'/' Ke=.9 Cc=.9 Cd=.47
2	S	344.5'	EXFILTRATION V= .00833 FPM over (SURFACE AREA - 8996 SF)

Primary Discharge  
 └─1=Culvert

*Assumed 1"/10 min*

Secondary Discharge  
 └─2=Exfiltration

POND 3000 INFLOW & OUTFLOW  
 Pond on East Side of Site



Town of New Windsor

SITE



LOCATION MAP Scale: 1" = 2000'

NOTES:

Unauthorized alteration or addition to a survey map bearing a licensed Land Surveyor's Seal is a violation of Section 7209, Subdivision 2 of the New York State Education Law.

Only copies from the original of this survey marked with an original of the Land Surveyor's inked seal or his embossed seal shall be considered to be valid true copies.

Certifications indicated hereon signify that this survey was prepared in accordance with the existing Code of Practice for Professional Land Surveyors as adopted by the New York State Association of Professional Land Surveyors. Said certifications shall run only to the person so noted. Certifications are not transferable to additional institutions, their successors and/or assigns, or subsequent owners.

Surveyed from record description and as in possession.

Sub-surface structures not visible or readily apparent are not shown and their location and extent are not certified.

Subject to covenants, easements, restrictions, conditions and agreements of record.

Survey subject to any right, title or interest the public may have for highway use.

Subject to whatever rights the public may have to that portion of square Hill Road (aka - Limer Road) shown hereon & referenced to County Highway Abandonment Map No.1 Union Avenue - South Extension (C.R. No.38) dated January 14, 1960.

Topography shown hereon was compiled from a field survey completed November 19, 1998. Datum NGVD 1929, 2' contour interval.

TAX PARCEL NUMBER:

Town of New Windsor, Orange County, New York  
Section 4 Block 1 Lot 4

DEED REFERENCE:

Dominick Roscino  
C. Judith Roscino  
Deed Liber 3226 Page 229

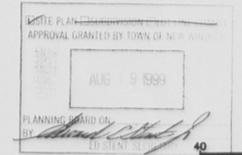
CERTIFICATIONS:

Herbert Redl

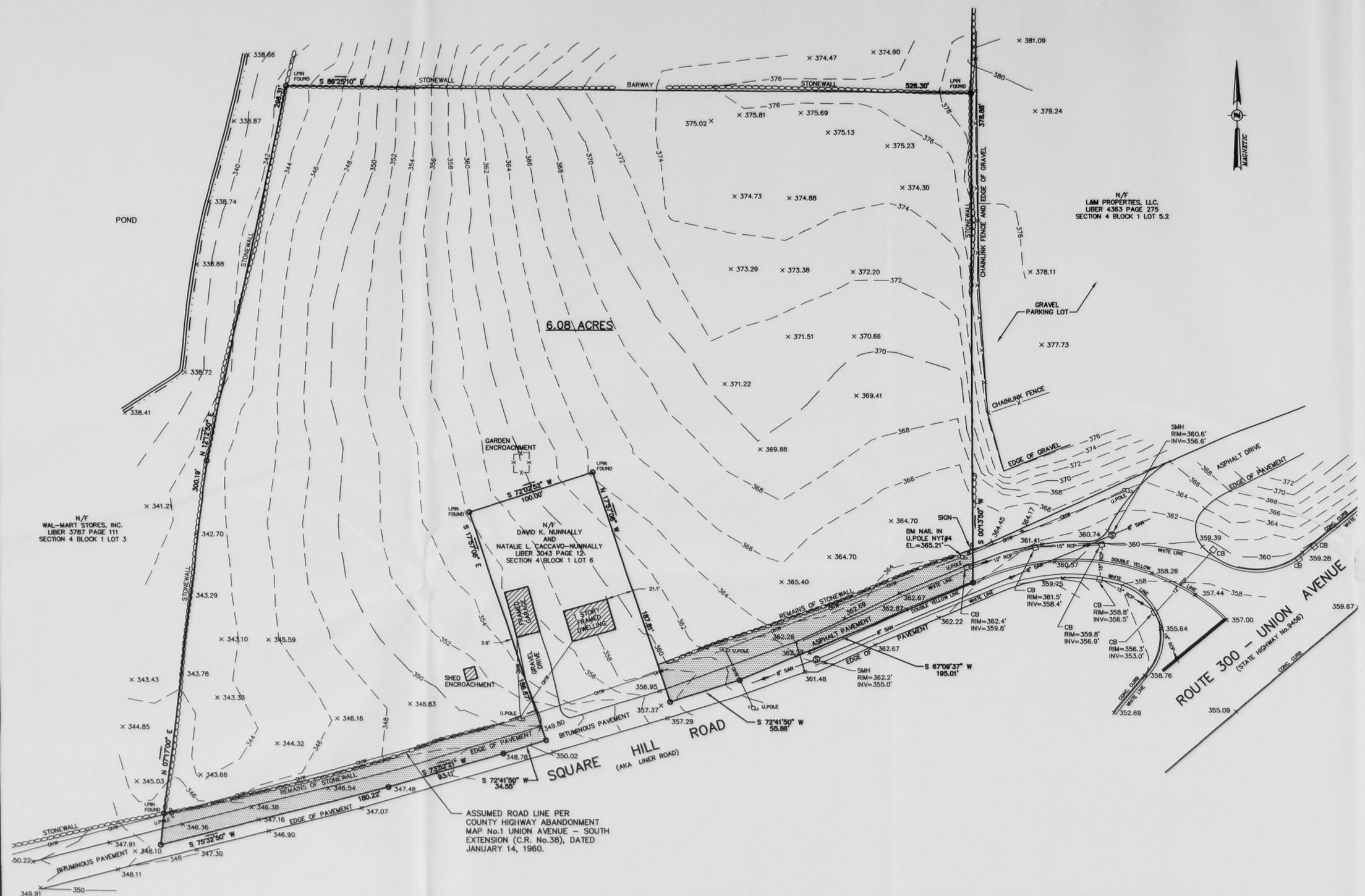
LEGEND:

- NO PHYSICAL BOUNDS
- - - MAJOR CONTOUR
- - - MINOR CONTOUR
- x108.7 SPOT HEIGHT
- x FENCE
- STONE WALL
- OVERHEAD WIRES
- UNDERGROUND SEWER LINE
- UNDERGROUND STORM LINE
- HYDRANT
- CATCH BASIN
- SEWER MANHOLE
- UTILITY POLE
- SIGN

TOWN OF NEW WINDSOR  
STAMP OF APPROVAL



SCALE IN FEET  
1" = 40'



6.08 ACRES

ASSUMED ROAD LINE PER COUNTY HIGHWAY ABANDONMENT MAP No.1 UNION AVENUE - SOUTH EXTENSION (C.R. No.38), DATED JANUARY 14, 1960.

N/F WAL-MART STORES, INC. LIBER 3787 PAGE 111 SECTION 4 BLOCK 1 LOT 3

N/F DAVID K. NUNNALLY AND NATALIE L. D'ACCAVO-NUNNALLY LIBER 3043 PAGE 12 SECTION 4 BLOCK 1 LOT 6

N/F LAM PROPERTIES, LLC. LIBER 4363 PAGE 279 SECTION 4 BLOCK 1 LOT 5.2

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STEVEN J. ALEX, L.S. #50016

**THE Chazen COMPANIES**  
Engineers/Surveyors  
Planners  
Environmental Scientists

**CHAZEN ENGINEERING & LAND SURVEYING CO., P.C.**

Dulhess County Office:  
Mondwetter Road PO Box 3479  
Roughlyns, New York 12553  
Phone: (514) 454-3980

Orange County Office:  
283 Route 176  
Newburgh, New York 12550  
Phone: (514) 567-1133

Capital District Office:  
1407 Route 9, Bldg. 2  
Clifton Park, New York 12065  
Phone: (518) 371-0929

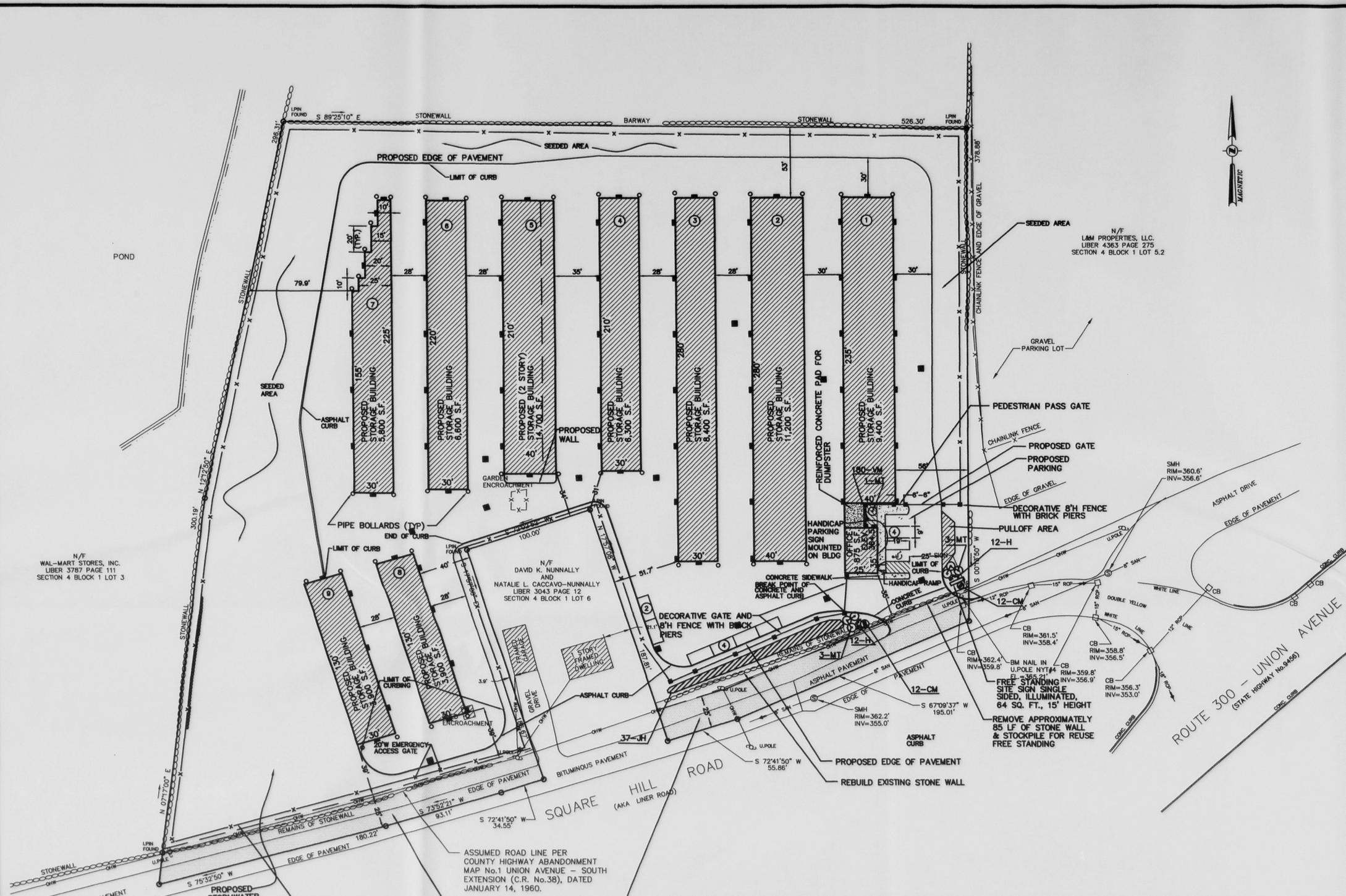
rev.	date	description
3	6/24/99	REV. AS PER PLANNING BOARD COMMENTS
2	6/3/99	REV. AS PER PLANNING BOARD COMMENTS
1	5/20/99	REV. AS PER PLANNING BOARD COMMENTS

GUARDIAN SELF STORAGE

**EXISTING CONDITIONS**

TOWN OF NEW WINDSOR, ORANGE COUNTY, NEW YORK

drawn	checked
D.W.P.	S.J.A.
date	scale
3/19/99	1"=40'
project no.	
89915.00	
sheet no.	
	<b>C-1</b>



VARIANCE TABLE

FRONT YARD VARIANCES	FRONT YARD REQUIRED FRONT YARD SETBACK	FRONT YARD SETBACK PROVIDED	FRONT YARD SETBACK VARIANCE GRANTED
OFFICE	60 FEET	35 FEET	25 FEET
BUILDING 8	60 FEET	39 FEET	21 FEET
BUILDING 9	60 FEET	39 FEET	21 FEET

RECEIVED FRONT YARD VARIANCES FROM THE TOWN OF NEW WINDSOR ZBA, MAY 24, 1999. ALL FRONT YARD VARIANCES ARE BASED ON THE DIMENSIONS TO THE PROPOSED RIGHT-OF-WAY DEDICATION LINE.

2. FRONT YARD DETERMINATION  
 BUILDINGS 3,4,5 AND 6.  
 FRONT YARD VARIANCES WERE NOT REQUIRED FOR THESE BUILDINGS BASED ON THE TOWN OF NEW WINDSOR ZONING BOARD OF APPEALS DETERMINATION THAT IT WAS NOT A FRONT YARD.

3. FENCE HEIGHT VARIANCE  
 RECEIVED A VARIANCE FROM THE TOWN OF NEW WINDSOR ZBA, MAY 24, 1999, WHICH WOULD ALLOW FOR A PROPOSED FENCE HEIGHT OF 8 FEET.

ZONE: C - DESIGN SHOPPING  
 USE: A-6 MINI - WAREHOUSE

ZONING REQUIREMENT	REQUIRED	PROPOSED
Lot Area	40,000 s.f.	6.08 acres or 264,844 (+/-) s.f.
Lot Width	200 feet	526(+/-) feet
Lot Frontage	N.A.	558(+/-) ft.
Yards (Minimum)		
Front	60 ft.	36(+/-) ft.
Sides	30 ft. min./70 ft. total	40/53(+/-) ft.
Rear	30 ft.	53(+/-) ft.
Maximum Height	12 inches per foot of distance to the nearest lot line	height Storage Units=13.3±ft Office =36±ft
Building Area	N.A.	71,075 (+/-) s.f.
Floor Area Ratio	0.5	26.8%
Parking Spaces	10 SPACES	10 parking spaces (PROVIDED)
DEVELOPMENT COVERAGE	N/A	N/A

- LEGEND:
- NO PHYSICAL BOUNDS
  - - - 110 - MAJOR CONTOUR
  - - - MINOR CONTOUR
  - - - SPOT HEIGHT
  - x108.7 - SPOT HEIGHT
  - - - FENCE
  - STONE WALL
  - OVERHEAD WIRES
  - UNDERGROUND SEWER LINE
  - UNDERGROUND STORM LINE
  - HYDRANT
  - CATCH BASIN
  - SEWER MANHOLE
  - UTILITY POLE
  - SIGN

NOTE:  
 1. PIPE SHALL HAVE TWO (2) 1/2" PERFORATIONS @ 120". PERFORATIONS SHALL BE 1' ON CENTER.

TOWN OF NEW WINDSOR  
 STAMP OF APPROVAL

APPROVAL GRANTED BY TOWN OF NEW WINDSOR

DATE: 6/3/99

SCALE IN FEET 1"=40'

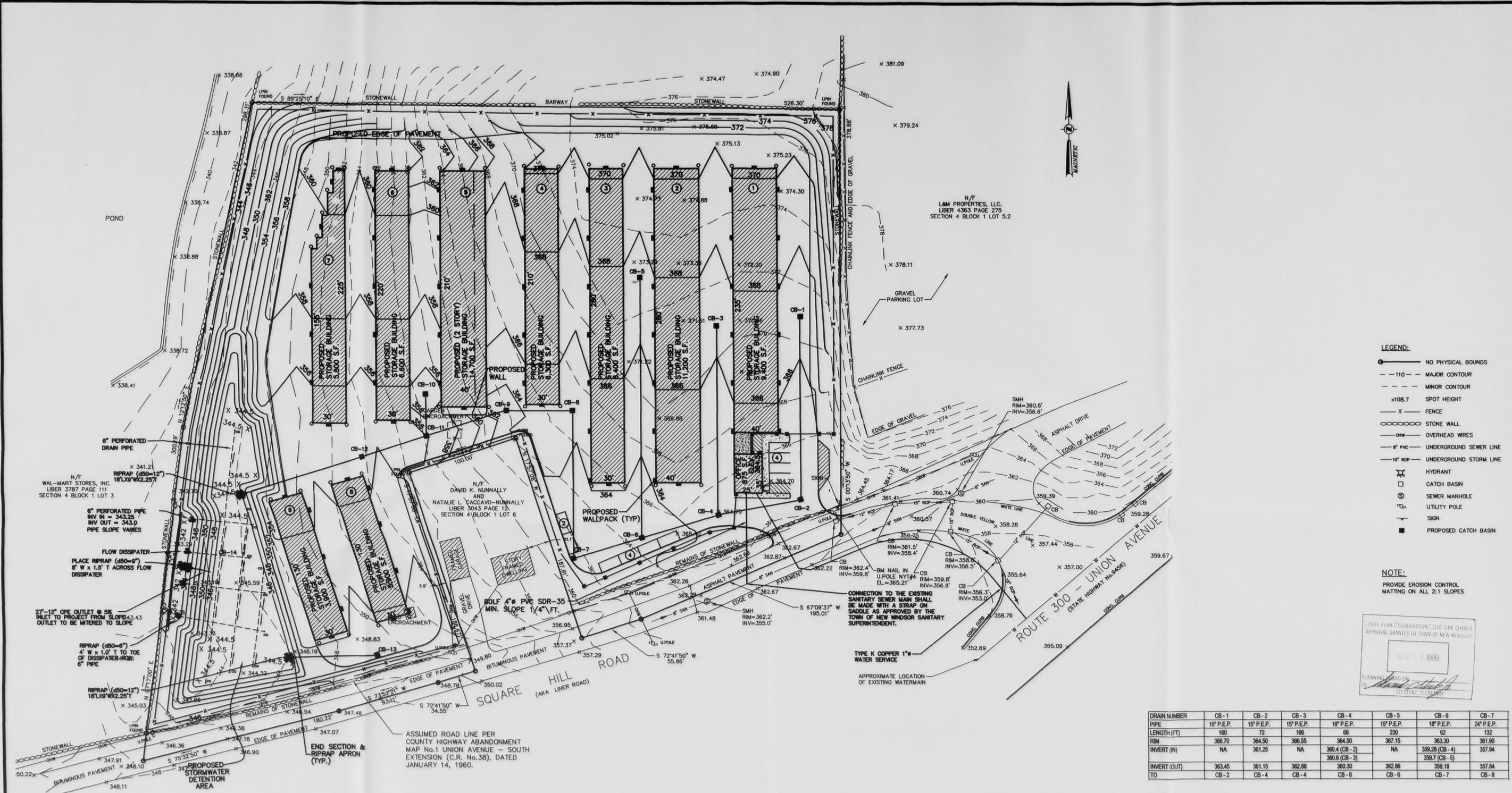
KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	SPACING	REMARKS
MI	7	MALUS THERIFERA 'VAN ESELTIME'	VAN ESELTIME CRABAPPLE	2"-2 1/2" CAL.	B&B	PLANT 20' O.C.	
JH	37	JUNIPERUS HORIZONTALIS PLUMOSA	ANDORRA JUNIPER	18"-24"	5 CALLON	PLANT 4' O.C.	
CM	24	COREOPSIS VERTICILLATA 'MOONBEAM'	MOONBEAM COREOPSIS	TOP SIZE PLANTS	1 GALLON		
H	12	HEMEROCALLIS	AMERICAN MIXED DAYLILIES	TOP SIZE PLANTS	1 GALLON		MIXED COLORS
VM	180	VINC A MINOR	PERIWINKLE	2" POTS		PLANT 12" O.C.	

N/F  
 WAL-MART STORES, INC.  
 LIBER 3787 PAGE 111  
 SECTION 4 BLOCK 1 LOT 3

N/F  
 DAVID K. NUNNALLY  
 AND  
 NATALIE L. CACCAVO-NUNNALLY  
 LIBER 3043 PAGE 12  
 SECTION 4 BLOCK 1 LOT 6

N/F  
 LAM PROPERTIES, LLC.  
 LIBER 4363 PAGE 275  
 SECTION 4 BLOCK 1 LOT 5.2

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 2. 08/27/2001 10:00 AM  
 3. 07/20/2001 10:00 AM  
 4. 07/13/2001 10:00 AM  
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 368. 07/28/1994 10:00 AM  
 369. 07/21/1994 10:00 AM  
 370. 07/14



N/F  
LBM PROPERTIES, LLC.  
LIBER 4363 PAGE 275  
SECTION 4 BLOCK 1 LOT 5.2

- LEGEND:**
- NO PHYSICAL BOUNDS
  - - - 110' MAJOR CONTOUR
  - - - MINOR CONTOUR
  - x 108.7 SPOT HEIGHT
  - x FENCE
  - STONE WALL
  - OHW OVERHEAD WIRES
  - 8" PVC UNDERGROUND SEWER LINE
  - 15" RCP UNDERGROUND STORM LINE
  - HYDRANT
  - CATCH BASIN
  - SEWER MANHOLE
  - UTILITY POLE
  - SIGN
  - PROPOSED CATCH BASIN

**NOTE:**  
PROVIDE EROSION CONTROL MATTING ON ALL 2:1 SLOPES

SITE PLAN (SUBDIVISION) LOT LINE CHANGE  
APPROVAL GRANTED BY TOWN OF NEW WINDSOR  
**AUG 19 1999**  
PLANNING BOARD ON  
BY: [Signature]  
ED. STENT SECRETARY

DRAIN NUMBER	CB-1	CB-2	CB-3	CB-4	CB-5	CB-6	CB-7
PIPE	15" P.E.P.	15" P.E.P.	15" P.E.P.	18" P.E.P.	15" P.E.P.	18" P.E.P.	24" P.E.P.
LENGTH (FT)	160	72	166	68	230	62	132
RIM	368.70	364.50	366.55	364.50	367.15	363.30	361.90
INVERT (IN)	NA	361.25	NA	360.4 (CB-2)	NA	359.28 (CB-4)	357.94
INVERT (OUT)	363.45	361.15	362.88	360.30	362.96	359.18	357.84
TO	CB-2	CB-4	CB-4	CB-6	CB-6	CB-7	CB-8

DRAIN NUMBER	CB-8	CB-9	CB-10	CB-11	CB-12	CB-13
PIPE	24" P.E.P.	24" P.E.P.	15" P.E.P.	24" P.E.P.	24" P.E.P.	15" P.E.P.
LENGTH (FT)	57	72	37	57	106	75
RIM	364.50	362.90	355.56	356.00	354.10	350.1
INVERT (IN)	355.2	353.47	NA	351.3 (CB-9)	349.86	NA
INVERT (OUT)	354.90	353.17	352.26	351.00	349.56	347.1
TO	CB-9	CB-11	CB-11	CB-12	BASIN @ INV = 347.00	BASIN @ INV = 346.28

TOWN OF NEW WINDSOR  
STAMP OF APPROVAL



N. WINDSOR VENTURE CO., INC. 2-9999  
 2007 STATE ST. SUITE 200  
 WINDSOR, NY 12593



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**THE Chazen COMPANIES**  
Engineers/Surveyors  
Planners  
Environmental Scientists

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Poughkeepsie, New York 12563  
Phone: (845) 454-3990

Orange County Office:  
283 Route 178  
Newburgh, New York 12550  
Phone: (845) 567-1133

Capital District Office:  
1457 Route 9, 3rd Fl.  
Clifton Park, New York 12065  
Phone: (518) 371-0929

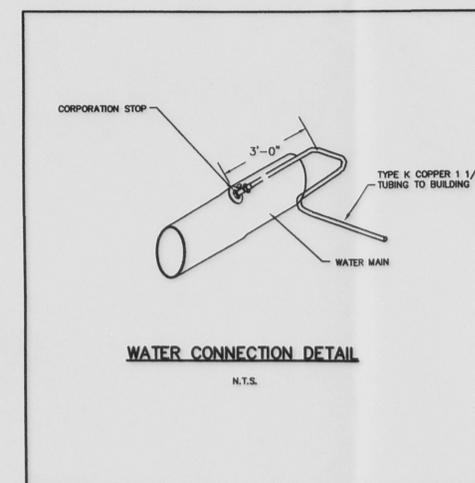
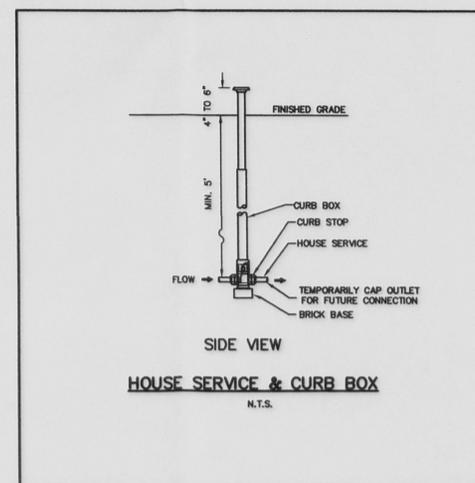
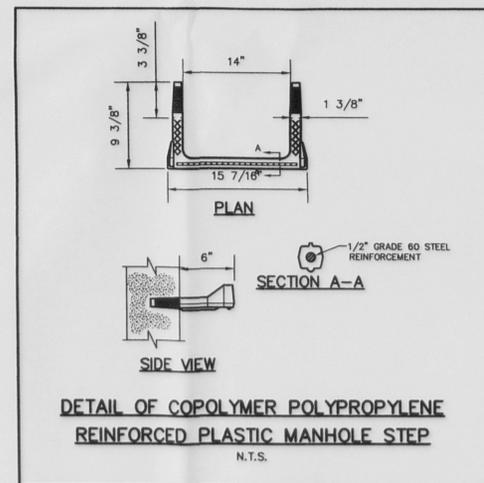
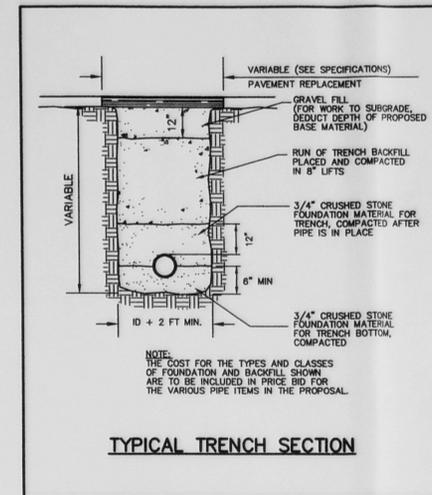
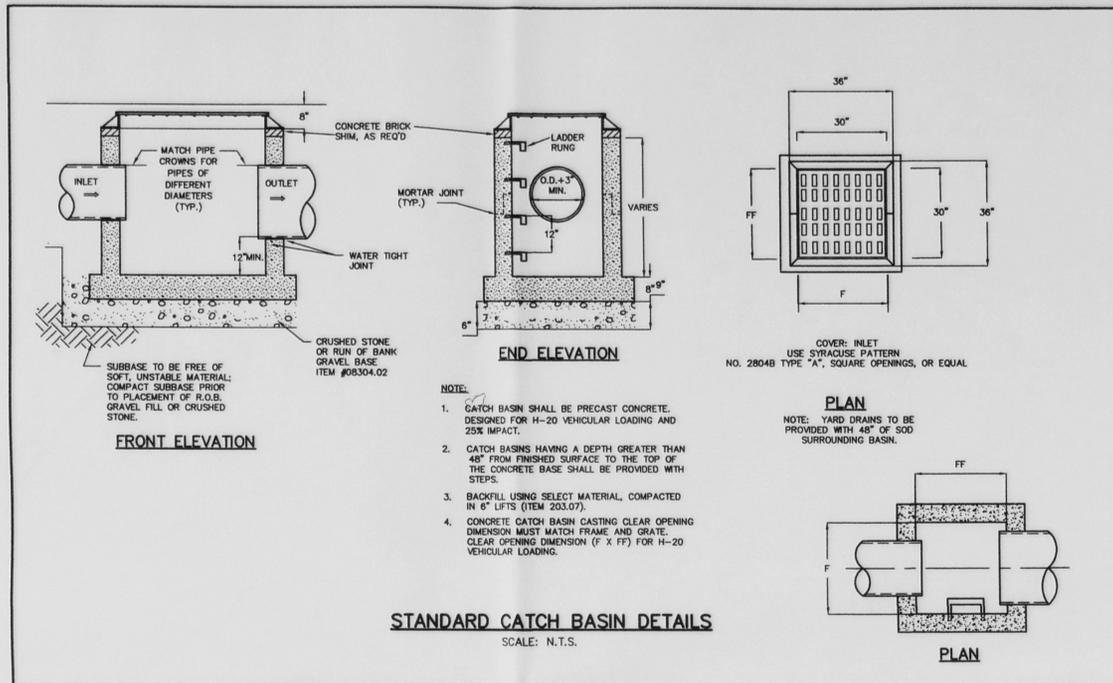
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2	6/3/99	REV. AS PER PLANNING BOARD COMMENTS
1	5/20/99	REV. AS PER PLANNING BOARD COMMENTS

GUARDIAN SELF STORAGE

**GRADING AND UTILITY PLAN**

TOWN OF NEW WINDSOR, ORANGE COUNTY, NEW YORK

drawn D.W.P. checked [Signature]  
date 3/31/99 scale 1"=40'  
project no. 89915.00  
sheet no. C-3



TOWN OF NEW WINDSOR  
STAMP OF APPROVAL

EXISTING PLAN (SUBDIVISION) OR (LINE CHANGE)  
APPROVAL GRANTED BY TOWN OF NEW WINDSOR

AUG 19 1999

ED STEIN

X:\WORKING\ENGINEERING\4-LINE\2007\2007\_11-307 - SANIT. MAIN PLAN



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Planners  
Environmental Scientists

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Poughkeepsie, New York 12603  
Phone: (845) 454-3880

Orange County Office:  
253 Route 176  
Newburgh, New York 12550  
Phone: (845) 567-1133

Capital District Office:  
1407 Route 9, Bldg. 2  
Gilton Park, New York 12065  
Phone: (518) 371-5929

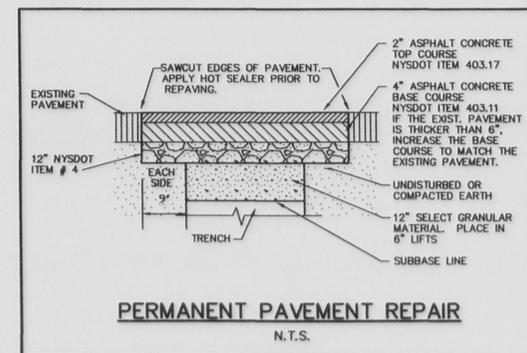
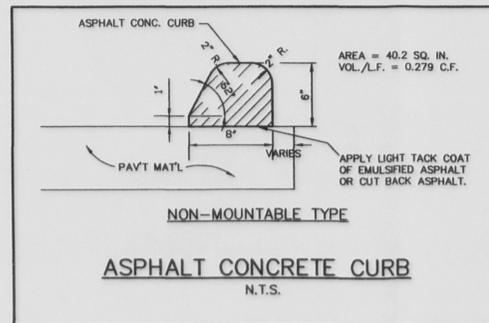
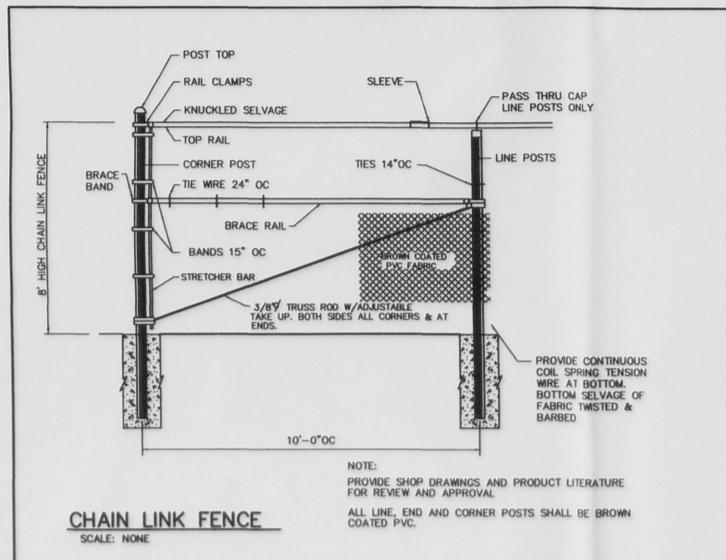
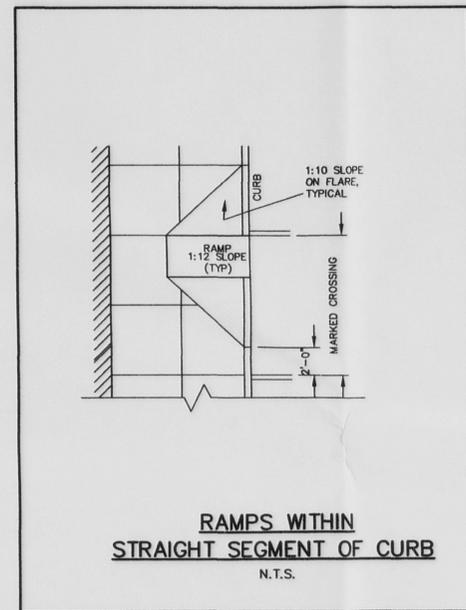
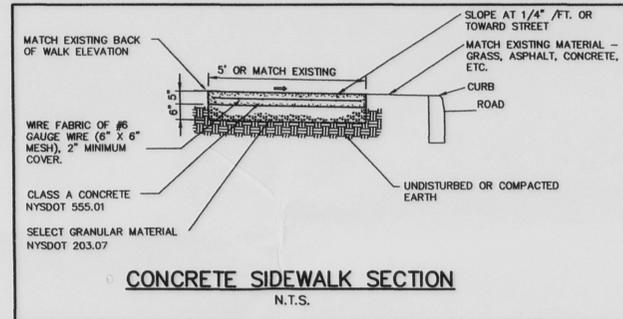
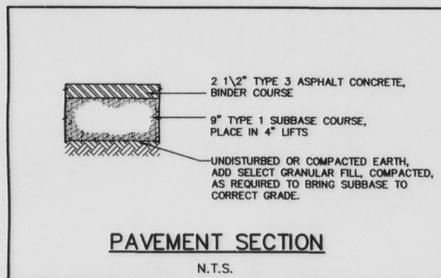
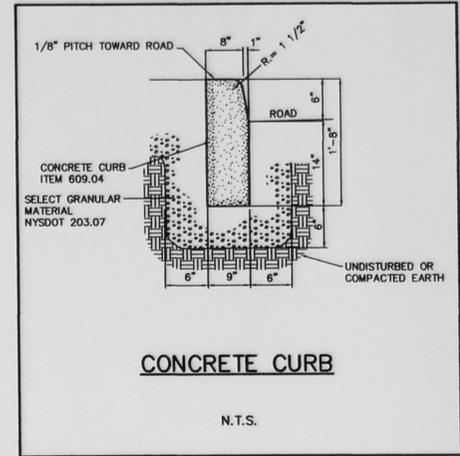
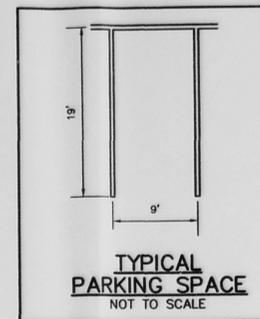
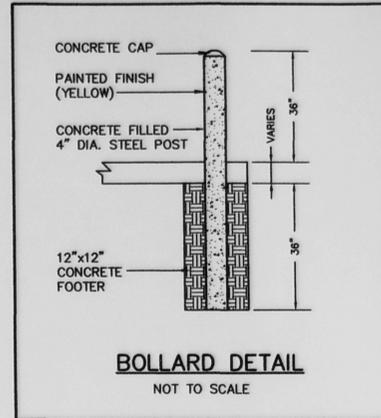
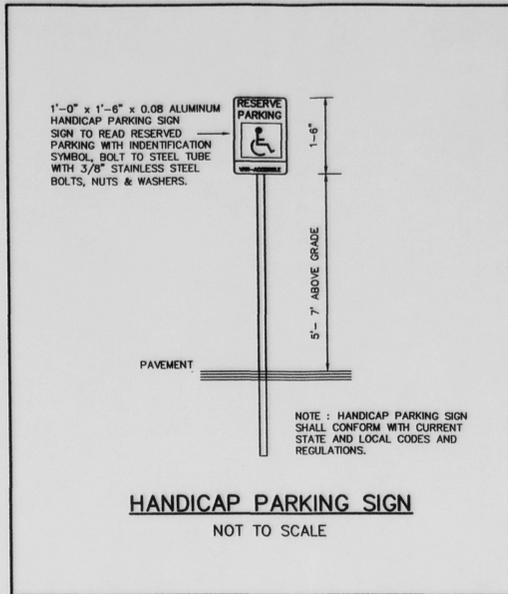
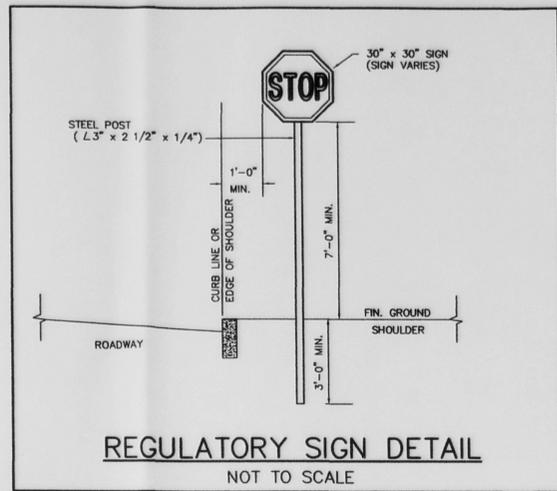
rev.	date	description
3	6/24/99	REV. AS PER PLANNING BOARD COMMENTS
2	6/3/99	REV. AS PER PLANNING BOARD COMMENTS
1	5/20/99	REV. AS PER PLANNING BOARD COMMENTS

GUARDIAN SELF STORAGE

**SITE DETAILS**

TOWN OF NEW WINDSOR, ORANGE COUNTY, NEW YORK

drawn: DWP  
checked: JC  
date: 3/19/99  
scale: AS SHOWN  
project no.: 89915.00  
sheet no.: C-4



TOWN OF NEW WINDSOR  
STAMP OF APPROVAL

SITE PLAN  SUBDIVISION  LOT LINE CHANGE  
APPROVAL GRANTED BY TOWN OF NEW WINDSOR

AUG 19 1999

*[Signature]*  
TOWN CLERK

TOWN OF NEW WINDSOR, NY 12586  
3-11-99 11:00 AM - SHAD, URS PLAN



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THE  
**Chazen**  
COMPANIES  
Engineers/Surveyors  
Planners  
Environmental Scientists

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Orange County Office: 283 Route 176, Newburgh, New York 12550 Phone: (914) 567-1133

Capital District Office: 1407 Route 9, Hwy. 2, Gillen Park, New York 12085 Phone: (518) 571-0929

rev.	date	description
3	6/24/98	REV. AS PER PLANNING BOARD COMMENTS
2	6/3/99	REV. AS PER PLANNING BOARD COMMENTS
1	5/20/99	REV. AS PER PLANNING BOARD COMMENTS

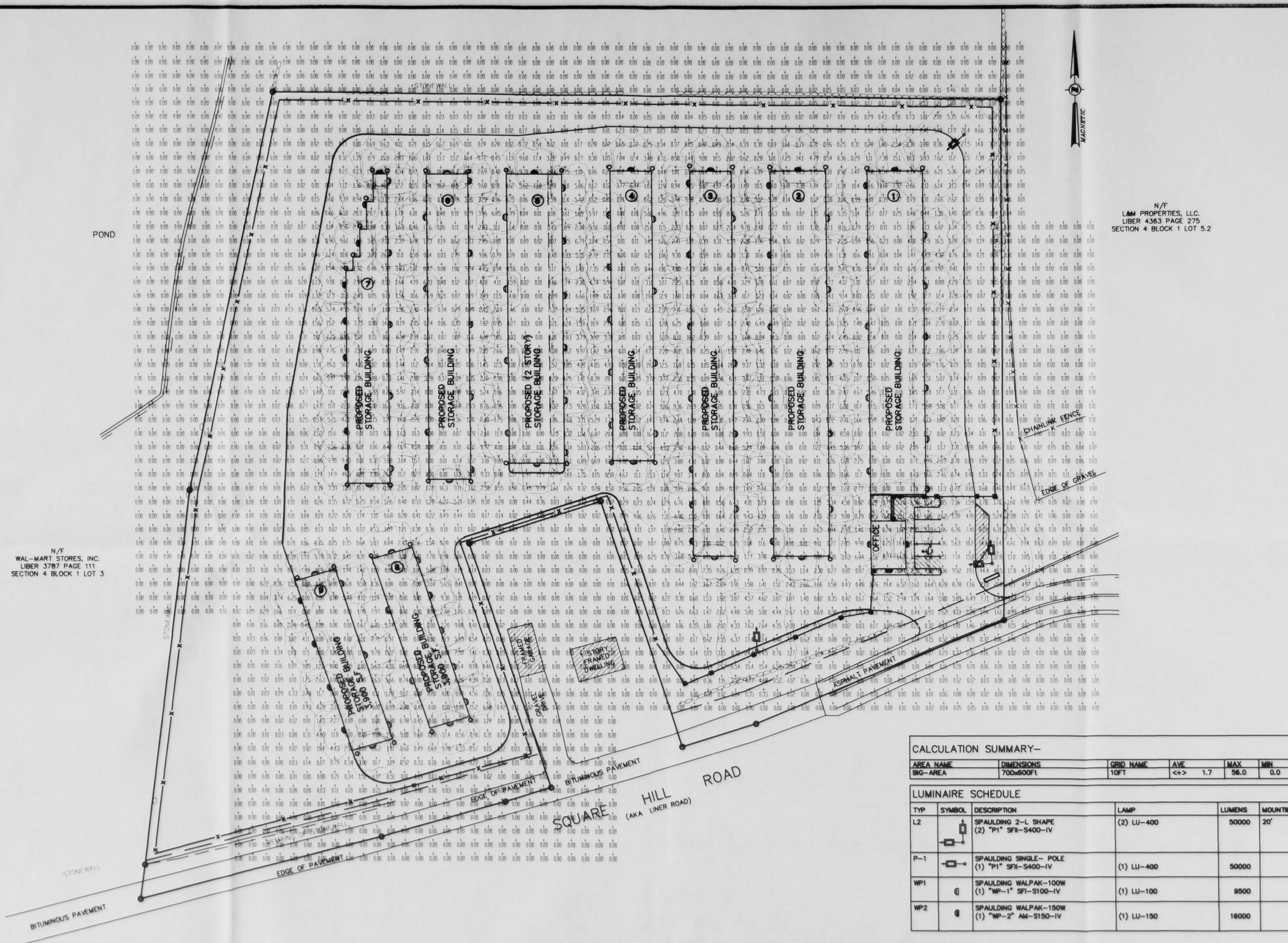
GUARDIAN SELF STORAGE

**SITE DETAILS**

TOWN OF NEW WINDSOR, ORANGE COUNTY, NEW YORK

drawn: DWP checked: TC  
date: 3/19/99 scale: AS SHOWN  
project no.: 89915.00  
sheet no.: C-5





N/F  
L&M PROPERTIES, LLC.  
LIBER 4363 PAGE 275  
SECTION 4 BLOCK 1 LOT 5.2

N/F  
WAL-MART STORES, INC.  
LIBER 3787 PAGE 111  
SECTION 4 BLOCK 1 LOT 3

□ SITE PLAN □ SUBDIVISION □ LOT LINE CHANGE  
APPROVAL GRANTED BY TOWN OF NEW WINDSOR

AUG 9 1999

PLANNING BOARD ON  
BY: *[Signature]*  
CIVIL ENGINEER

**CALCULATION SUMMARY-**

AREA NAME	DIMENSIONS	GRID NAME	AVE	MAX	MIN
BIG-AREA	700x600FT	10FT	<+> 1.7	56.0	0.0

**LUMINAIRE SCHEDULE**

TYP	SYMBOL	DESCRIPTION	LAMP	LUMENS	MOUNTING/BALLAST	LLF	QTY
L2		SPAULDING 2-L SHAPE (2) "P1" SFI-S400-IV	(2) LU-400	50000	20'	0.90	1
P-1		SPAULDING SINGLE- POLE (1) "P1" SFI-S400-IV	(1) LU-400	50000		0.90	2
WP1		SPAULDING WALPAK-100W (1) "WP-1" SFI-S100-IV	(1) LU-100	9500		0.90	86
WP2		SPAULDING WALPAK-150W (1) "WP-2" AM-S150-IV	(1) LU-150	16000		0.90	24



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Orange County Office: 283 Route 170, Newburgh, NY 12550, Phone: (845) 464-1133  
DeWitt County Office: 1407 Route 6, Box 2, Canton, NY 13616, Phone: (315) 371-0829

1	6/25/99	REVISED AS PER PLANNING BOARD COMMENTS
rev.	date	description

GUARDIAN SELF STORAGE  
**PHOTOMETRIC PLAN**  
TOWN OF NEW WINDSOR, ORANGE COUNTY, NEW YORK

Drawn: DEC 9/3/99  
Checked: *[Signature]*  
Scale: 1"=40'  
Project no: 89915.00  
Sheet no: C-7





**NOTES:**

Unauthorized alteration or addition to a survey map bearing a licensed Land Surveyor's Seal is a violation of Section 7209, Subdivision 2 of the New York State Education Law.

Only copies from the original of this survey marked with an original of the Land Surveyor's inked seal or his embossed seal shall be considered to be valid true copies.

Certifications indicated hereon signify that this survey was prepared in accordance with the existing Code of Practice for Professional Land Surveyors as adopted by the New York State Association of Professional Land Surveyors. Said certifications shall run only to the person so noted. Certifications are not transferable to additional institutions, their successors and/or assigns, or subsequent owners.

Surveyed from record description and as in possession.

Sub-surface structures not visible or readily apparent are not shown and their location and extent are not certified.

Subject to covenants, easements, restrictions, conditions and agreements of record.

Survey subject to any right, title or interest the public may have for highway use.

Subject to whatever rights the public may have to that portion of square Hill Road (aka - Liner Road) shown hereon & referenced to County Highway Abandonment Map No. 1 Union Avenue - South Extension (C.R. No. 38) dated January 14, 1960.

Topography shown hereon was compiled from a field survey completed November 19, 1998. Datum NGVD 1929, 2' contour interval.

**TAX PARCEL NUMBER:**  
Town of New Windsor, Orange County, New York  
Section 4 Block 1 Lot 4

**DEED REFERENCE:**  
Dominick Roscino  
C. Judith Roscino  
Deed Liber 3226 Page 229

**CERTIFICATIONS:**  
Herbert Redl

- LEGEND:**
- NO PHYSICAL BOUNDS
  - - - 110 - - - MAJOR CONTOUR
  - - - MINOR CONTOUR
  - x 108.7 SPOT HEIGHT
  - - - FENCE
  - o o o o o STONE WALL
  - OVERHEAD WIRES
  - - - 8" PVC UNDERGROUND SEWER LINE
  - - - 15" RCP UNDERGROUND STORM LINE
  - HYDRANT
  - CATCH BASIN
  - SEWER MANHOLE
  - UTILITY POLE
  - SIGN

- Lawn
- Brush
- Time of Consultation
- Stormwater Discharge Point
- Subcatchment



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I HEREBY CERTIFY THAT THIS SURVEY MAP IS BASED ON AN ACTUAL FIELD SURVEY COMPLETED JULY 24, 1999 AND THAT THIS SURVEY MAP WAS MADE BY ME OR UNDER MY DIRECTION, AND CONFORMS WITH THE MINIMUM STANDARD OF PRACTICE ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS.

STEVEN J. ALEX, L.S. #50016

**THE Chazen COMPANIES**  
Engineers/Surveyors  
Planners  
Environmental Scientists

**CHAZEN ENGINEERING & LAND SURVEYING CO., P.C.**

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Capital District Office: 1407 Route 9, Bldg. 2, Clifton Park, New York 12005, Phone: (518) 371-0929

REV.	DATE	DESCRIPTION

**GUARDIAN SELF STORAGE**

**EXISTING CONDITIONS**

TOWN OF NEW WINDSOR, ORANGE COUNTY, NEW YORK

Drawn	Checked
D.W.P.	S.A.A.
Date	Scale
3/18/99	1"=40'
Project No.	Sheet No.
0815.00	C-1



Mapped, edited, and published by the Geological Survey  
Control by USGS and NOS/NOAA  
Topography by photogrammetric methods from aerial photographs taken 1955-1956. Field checked 1957.  
Selected hydrographic data compiled from NOS chart 282 (1954). This information is not intended for navigational purposes.  
Polyconic projection. 10,000-foot grid based on New York coordinate system, east zone. 1000-meter Universal Transverse Mercator grid ticks, zone 18, shown in blue. 1927 North American Datum. To place on the predicted North American Datum 1983 move the projection lines 6 meters south and 35 meters west as shown by dashed corner ticks.  
Fine red dashed lines indicate selected fence and field lines visible on aerial photographs. This information is unchecked.  
Red tint indicates areas in which only landmark buildings are shown.  
There may be private inholdings within the boundaries of the National or State reservations shown on this map.

SCALE 1:24,000  
CONTOUR INTERVAL 20 FEET  
NATIONAL GEODETIC VERTICAL DATUM OF 1929  
DEPTH CURVES AND SOUNDINGS IN FEET-DATUM IS MEAN LOW WATER  
THE RELATIONSHIP BETWEEN THE TWO DATUMS IS VARIABLE  
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER  
THE MEAN RANGE OF TIDE IS APPROXIMATELY 2.6 FEET

UTM GRID AND 1983 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS FOR SALE BY U.S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092  
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION  
Primary highway, hard surface  
Secondary highway, hard surface  
Unimproved road  
Interstate Route  
U.S. Route  
State Route

Light-duty road, hard or improved surface  
Unimproved road  
Interstate Route  
U.S. Route  
State Route

CORNWALL, N. Y.  
N41225-W74007.5  
1957  
PHOTOREVISED 1981  
DMA 61661 NE-SERIES 9821

Revisions shown in purple and woodland compiled from aerial photographs taken 1976 and other sources. This information not field checked. Map edited 1981.