VILLAGE OF DOBBS FERRY BOARD OF TRUSTEES AGENDA

MEETING DATE: AUGUST 11, 2020
AGENDA ITEM SECTION: PUBLIC HEARING
AGENDA ITEM NO. : 1
AGENDA ITEM: CONTINUATION OF PUBLIC HEARING TO CONSIDER THE APPLICATION OF 115 BROADWAY/ST. CABRINI TO ADD A NEW PARKING LOT ON THEIR PROPERTY
ITEM BACKUP DOCUMENTATION: 1. LETTER DATED AUGUST 3, 2020 FROM MR. RALPH PERAGINE, P.E. TO MAYOR VINCENT ROSSILLO AND THE BOARD OF TRUSTEES 2. 115 BROADWAY – PLANS 3. 115 BROADWAY – STORMWATER MANAGEMENT REPORT

Provident
design engineering
7 Skyline Drive, Hawthorne, NY 10532
Tel: (914) 592-4040 www.pderesults.com

August 3, 2020

Mayor Vincent Rossillo
and Members of the Village Board of Trustees
Village of Dobbs Ferry
112 Main Street
Dobbs Ferry, NY 10522

RE: Cabrini of Westchester – Application for Site Plan Approval – Parking Lot (25 Spaces)
115 Broadway, Dobbs Ferry, New York

Mayor Vincent Rossillo and Members of the Village Board of Trustees:

We are pleased to submit ten (10) copies of the attached information in support Cabrini of Westchester (the "Applicant") application for Site Plan Approval. The Drawings and Stormwater Management Report have been revised per the Board of Trustees Special Meeting that was held on 7/27/2020.

A. Site Plan Approval Drawings

Drawings prepared by Provident Design Engineering, PLLC				
Dwg. No.	Title	Sheet	Rev #	Date
C-10	Overall Site Plan	1	4	8/3/2020
C-101	Site Plan (North Lot)	2	4	8/3/2020
C-102	Site Plan (South Lot)	3	1	8/3/2020
C-201	Grading & Drainage Plan	4	3	8/3/2020
C-301	Erosion & Sediment Control Plan	5	4	8/3/2020
C-401	Details	6	3	8/3/2020
C-402	Details	7	3	8/3/2020
C-403	Infiltration Bed Details	8	3	8/3/2020
LP-101	Lighting Plan	9	2	8/3/2020
Drawings prepared by IQ Landscape Architects, P.C.				
L1	Landscape Plan and Details	1	3	8/3/2020

B. Stormwater Management Report dated August 3, 2020.

Please let us know if you need any further information.

Very truly yours,

Provident Design Engineering, PLLC

Ralph P. Peragine, P.E.
Senior Project Manager

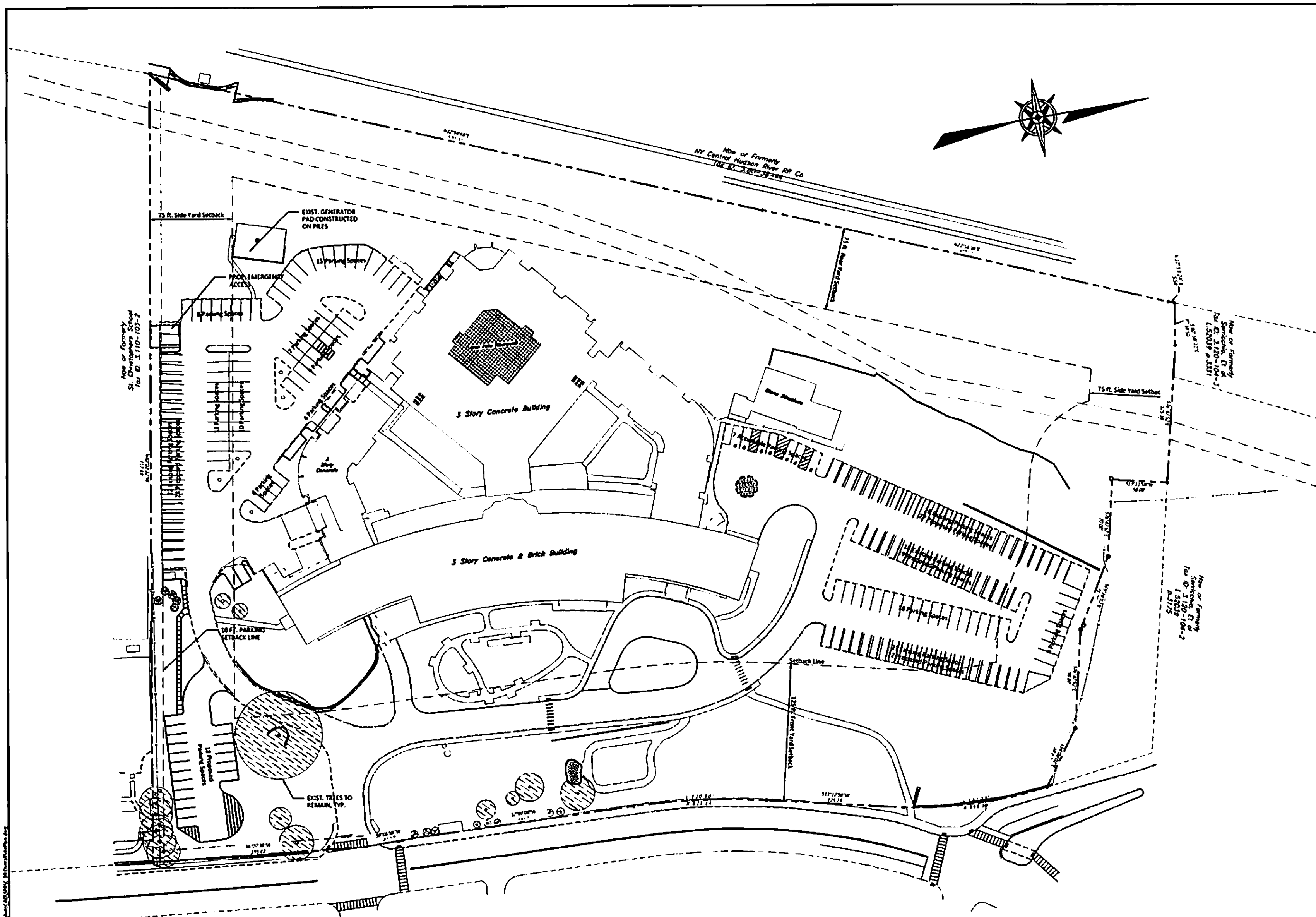
Encs.

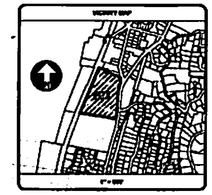
Each w/copy

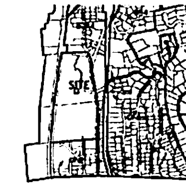
P. Krauskasky – CEO/President Cabrini of Westchester
T. Palmer – Cuddy and Feder

Q:\PROJECTS-18\18-022 Cabrini Westchester\Ltr\VODF BOT Submission 8-3-2020.docx

NO.	REVISION	DATE
1	COORDINATION WITH LANDSCAPE PLANS	5/22/19
2	REVISED PER VILLAGE COMMENTS	[illegible]
3	REVISED PER VILLAGE COMMENTS	[illegible]
4	[illegible]	[illegible]







Dwg. No.	TITLE
C-10	OVERALL SITE PLAN
C-101	SITE PLAN (SOUTH LOT)
C-102	SITE PLAN (NORTH LOT)
C-201	GRADING & DRAINAGE PLAN
C-301	EROSION CONTROL PLAN
C-401	DETAILS - SHEET 1
C-402	DETAILS - SHEET 2
C-403	INFILTRATION BED DETAILS
LP-101	LIGHTING PLAN

40 30 20 10 0 40 80
SCALE IN FEET

Owner/Applicant:
Cabrini of Westchester
115 Broadway
Dobbs Ferry, NY 10522
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Cabrini of Westchester
115 Broadway
Village of Dobbs Ferry, NY
Section 003.120, Block 104, Lot 1

TITLE:
OVERALL SITE PLAN

Seal

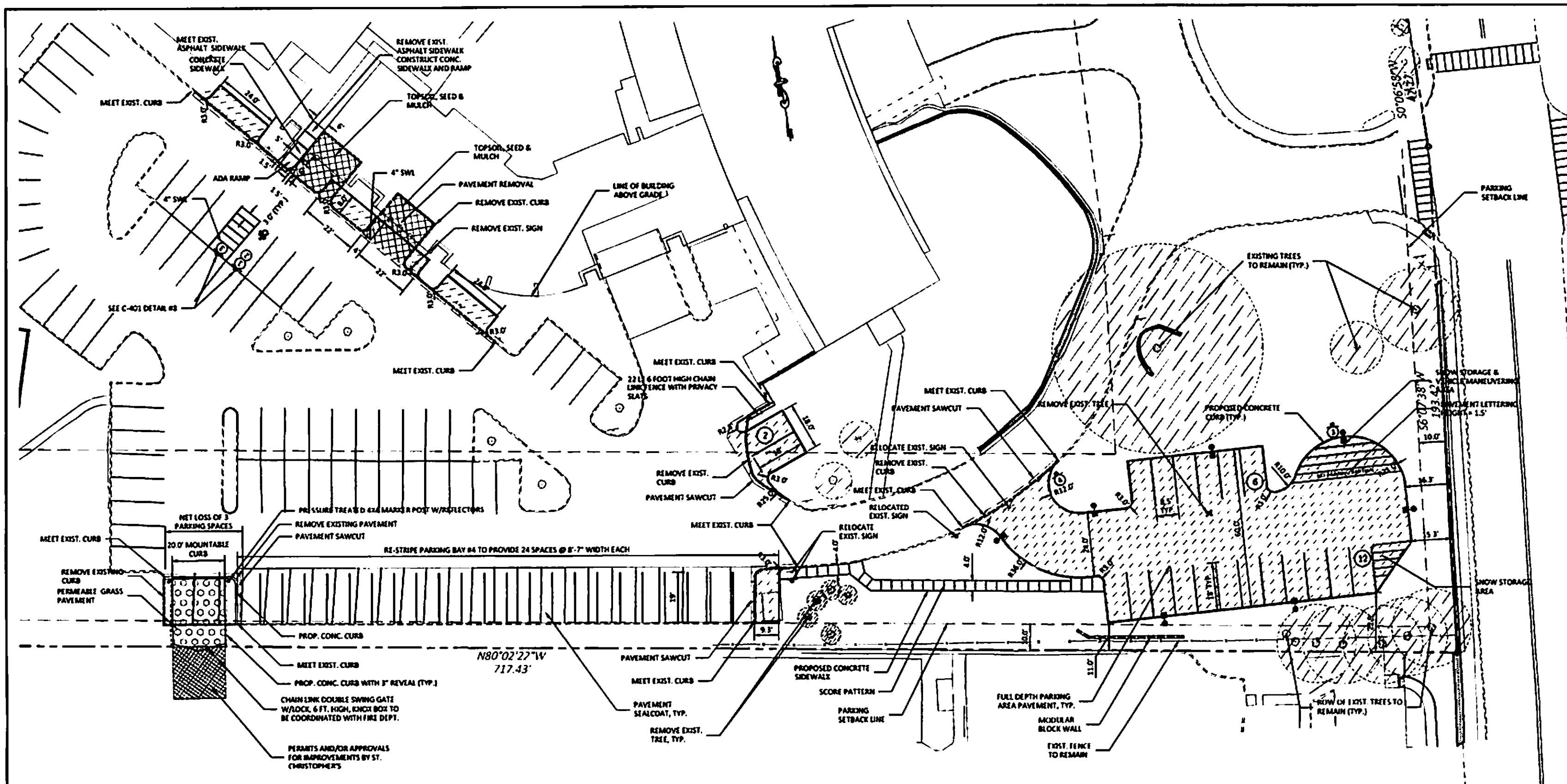
Scale:	1"=40'
Date:	2/1/2019
Drawn By:	KMM
Checked By:	RPP
Project No.:	18-022
Sheet No.:	1 of 9
Dwg. No.:	C-10

VILLAGE OF DOBBS FERRY NOTES:

1. ALL WORK TO CONFORM TO THE SATISFACTION OF THE BUILDING INSPECTOR.
2. PROVIDE RETAINING WALLS ON ALL SLOPES EXCEEDING ONE (1) FOOT VERTICAL ON ONE AND ONE-HALF (1-1/2) FEET HORIZONTAL.
3. THE BUILDER SHALL FURNISH 6" PERFORATED CMP ENCASED-IN STONE WHEREVER DIRECTED BY THE BUILDING INSPECTOR.
4. SWALES TO BE INSTALLED AS DIRECTED BY THE BUILDING INSPECTOR.
5. ALL GRADING TO BE PERFORMED TO CREATE POSITIVE DRAINAGE.
6. ALL DRIVEWAYS SLOPING DOWN TO GARAGES SHALL HAVE A DRAIN INLET WITH A PIPE EXTENDING BEYOND THE REAR OF THE HOUSE TO CARRY RAIN RUN-OFF.
7. ALL DRIVEWAYS SLOPING DOWN SHALL RISE 6" THE FIRST 5' AND THEN SLOPE DOWN.
8. A CODE 53 TO BE CALLED IN.

GENERAL NOTES

1. EXISTING TOPOGRAPHIC AND UTILITY INFORMATION TAKEN FROM SURVEY PREPARED BY TEC LAND SURVEYING, DATED DECEMBER 7, 2018



NO	REVISION	DATE
1	COORDINATION WITH LANDSCAPE PLANS	05/23/19
2	REVISED PER VILLAGE COMMENTS	07/02/19
3	REVISED PER VILLAGE COMMENTS	10/22/19
4	REVISED PER BOT SPECIAL [illegible]	6/3/2020

LAYOUT LEGEND

- PROPOSED CURB
- PROPOSED DROP CURB
- PROPOSED CURB WITH 3" REVEAL
- PROPOSED FENCE LINE
- PROPOSED CONCRETE SIDEWALK
- PARKING AREA PAVEMENT SECTION
- PROPOSED TRAFFIC SIGN LOCATION AND DESIGNATION
- SW (4") SOLID WHITE LINE
- NUMBER OF PARKING STALLS PER BAY LINE
- ADA SYMBOL

DEMOLITION LEGEND

- PAVEMENT SAWCUT LINE
- PAVEMENT REMOVAL
- REMOVE EXISTING TREE
- REMOVE EXISTING SIGN
- REMOVE EXISTING CURB

SCALE IN FEET (20 15 10 5 0 20 40)

VILLAGE OF DOBBS FERRY NOTES:

1. ALL WORK TO CONFORM TO THE SATISFACTION OF THE BUILDING INSPECTOR.
2. PROVIDE RETAINING WALLS ON ALL SLOPES EXCEEDING ONE (1) FOOT VERTICAL ON ONE AND ONE-HALF (1-1/2) FEET HORIZONTAL.
3. THE BUILDER SHALL FURNISH 6" PERFORATED CMP ENCASED-IN STONE WHEREVER DIRECTED BY THE BUILDING INSPECTOR.
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5. ALL GRADING TO BE PERFORMED TO CREATE POSITIVE DRAINAGE.
6. ALL DRIVEWAYS SLOPING DOWN TO GARAGES SHALL HAVE A DRAIN INLET WITH A PIPE EXTENDING BEYOND THE REAR OF THE HOUSE TO CARRY RAIN RUN-OFF.
7. ALL DRIVEWAYS SLOPING DOWN SHALL RISE 6" THE FIRST 5' AND THEN SLOPE DOWN.
8. A CODE 53 TO BE CALLED IN.
9. THE INFILTRATION SYSTEM MUST NOT BE CONNECTED UNTIL CONSTRUCTION IS COMPLETE AND THE CONTRIBUTING AREA IS STABILIZED.
10. THE APPLICANT SHALL NOTIFY THE VILLAGE BUILDING INSPECTOR AT LEAST 48 HOURS BEFORE ANY OF THE FOLLOWING AS REQUIRED BY THE STORMWATER MANAGEMENT OFFICER
    - START OF CONSTRUCTION
    - INSTALLATION OF SEDIMENT AND EROSION CONTROL MEASURES
    - COMPLETION OF SITE CLEARING
    - COMPLETION OF ROUGH GRADING
    - INSTALLATION OF STORMWATER MANAGEMENT FACILITIES
    - COMPLETION OF FINAL GRADING
    - CLOSE OF THE CONSTRUCTION SEASON
    - COMPLETION OF FINAL LANDSCAPING
    - SUCCESSFUL ESTABLISHMENT OF LANDSCAPING IN PUBLIC AREAS
11. THE BUILDING INSPECTOR OR VILLAGE ENGINEER MAY REQUIRE ADDITIONAL EROSION CONTROL MEASURES IF DEEMED APPROPRIATE TO MITIGATE UNFORESEEN SILTATION AND EROSION OF DISTURBED SOILS.
    - "AS-BUILT" DRAWINGS OF THE SITE IMPROVEMENTS SHALL BE SUBMITTED TO THE VILLAGE ENGINEER FOR REVIEW PRIOR TO OBTAINING CERTIFICATE OF OCCUPANCY.
    - INFILTRATION SYSTEM ACCESS PORTS SHALL BE SHOWN ON THE "AS-BUILT".
    - PROPOSED SOIL SLOPES EXCEEDING 1 2 (V H) SHALL BE RIP-RAPPED AND SHALL NOT EXCEED
    - 1: 1 (V:H).
    - FILL IMPORTED TO THE SITE SHALL BE CERTIFIED IN WRITING BY A NEW YORK LICENSED PROFESSIONAL ENGINEER AS CLEAN, NON-CONTAMINATED FILL SUITABLE FOR THE INTENDED USE.
    - BEFORE THE SITE PLANS ARE SIGNED BY THE CHAIRMAN OF THE PLANNING BOARD, THE APPLICANT SHALL BE REQUIRED TO POST A PERFORMANCE BOND OR OTHER TYPE OF ACCEPTABLE MONETARY GUARANTY WHICH SHALL BE IN AN AMOUNT DETERMINED BY THE PLANNING BOARD AND THE VILLAGE ENGINEER IN A FORM SATISFACTORY TO THE VILLAGE ATTORNEY.

GENERAL NOTES:

1. EXISTING TOPOGRAPHIC AND UTILITY INFORMATION TAKEN FROM SURVEY PREPARED BY TEC LAND SURVEYING, DATED DECEMBER 7, 2018.
2. THE CONTRACTOR SHALL FIELD VERIFY THE EXACT SIZE, LOCATION, DEPTH AND INVERT OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF WORK PRIOR TO COMMENCING HIS OPERATIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER FOR RESOLUTION.
3. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES 72 HOURS PRIOR TO THE START OF OPERATIONS AND SHALL COMPLY WITH THE LATEST INDUSTRIAL CODE RULE 53 REGULATIONS.
4. THE CONTRACTOR SHALL INSTALL CONSTRUCTION FENCE TO PROTECT ALL AREAS OUTSIDE OF THE LIMITS OF DISTURBANCE.

TRAFFIC SIGN LEGEND

Plan Legend	MUTCD	Size	Sign Legend
1	R7-8X	12" x 18"	Reserved Parking (Symbol)
2	R7-8P	12" x 9"	Van Accessible
3	NYPI-2	12" x 18"	No Parking Anytime
4	R1-1	24" x 24"	Stop

Notes:

1. Signs shall conform to the National Manual on Uniform Traffic Control Devices for Streets and Highways and the New York State Supplement, latest revision.
2. A minimum of two cross braces shall be provided on all single channel signs having any dimension greater than 24 inches.
3. Signs shall have a mounting height of 7'-0" to the bottom of the sign.
4. Signs shall utilize a channel-type mounting.
5. Signs shall be reflectorized.

Net Lot Area Calculation

					11.70	Acres
Lot Area				=	509,521	S.F.
Slopes Between 15-25% =	45,074	x	25%	=	11,269	S.F.
Slopes 25% and > =	140,966	x	50%	=	70,483	S.F.
Net Lot Area				=	427,770	S.F.
Net Lot Area					9.82	Acres

Zoning Summary Chart
Section 003.120, Block 104, Lot 1
Zoning District: E1 - Educational / Institutional

Code Ref	Description	Permitted/ Required	Existing	Proposed	Total
N/A	Lot Area (acres)	NA	11.697	NC	11.697
	Lot Area (sq. ft.)	NA	508,521	NC	509,521
	Net Lot Area (acres)	9.82	9.82	NC	9.82
	Lot Width (at Setback)	NA	855.2	NC	855.2
	Lot Depth (Average)	NA	570.2	NC	570.2
Table B-10	Building height				
	Maximum stories	4	3	NC	3
	Maximum height (feet)	50	40	NC	40
	Lot coverage				
	Maximum lot coverage by buildings	50%	15.7%	NC	15.7%
	Maximum lot coverage by impervious cover, %	80%	39.9%	1.6%	41.5%
	Maximum lot coverage by impervious cover, s.f.	407,617	203,397	7,935	211,332.00
	Setbacks				
	Minimum front yard setback (feet)	25	178.7	NC	178.7
	Minimum rear yard setback (feet)	25	84.1	NC	84.1
	Minimum side yard setback (each)(feet)	10	114.6	NC	114.6
	Minimum side yard setback (both)(feet)	25	416.0	NC	416.0
300-43 C(4)	Maximum Grade	5%	9%	5%	9%
300-43 C(5)(a)	Side or rear property line, ft.	10	10	10	10
300-43 D(2)	Parking Stalls	9 x 18	NC	8.5 MIN. x 18	8.5 MIN. x 18
300-43 D(3)	Aisle Width, two-way	24 feet	NC	24 feet	24 feet
300-43 E(4)	One tree per 10 Spaces	10 spaces	NC	3 Trees	10 spaces
	Contiguous spaces	12 Spaces Max.	NC	12 Spaces	12 Spaces
Table C-1	No. of Parking Spaces (Sect. 120-2)	Per BOT	190	25	215
BCNY 1106.1	Number of Accessible Parking Spaces	7	7	1	8
BCNY 1106.5	Van Spaces	1 for each 6	2	1	3
BCNY 1106.5	Accessible Aisle Width	8 feet	8 feet	8 feet	8 feet
NA	Number of Beds	N/A	304	NC	304
NA - Not Applicable					
NC - No Change					

Owner/Applicant
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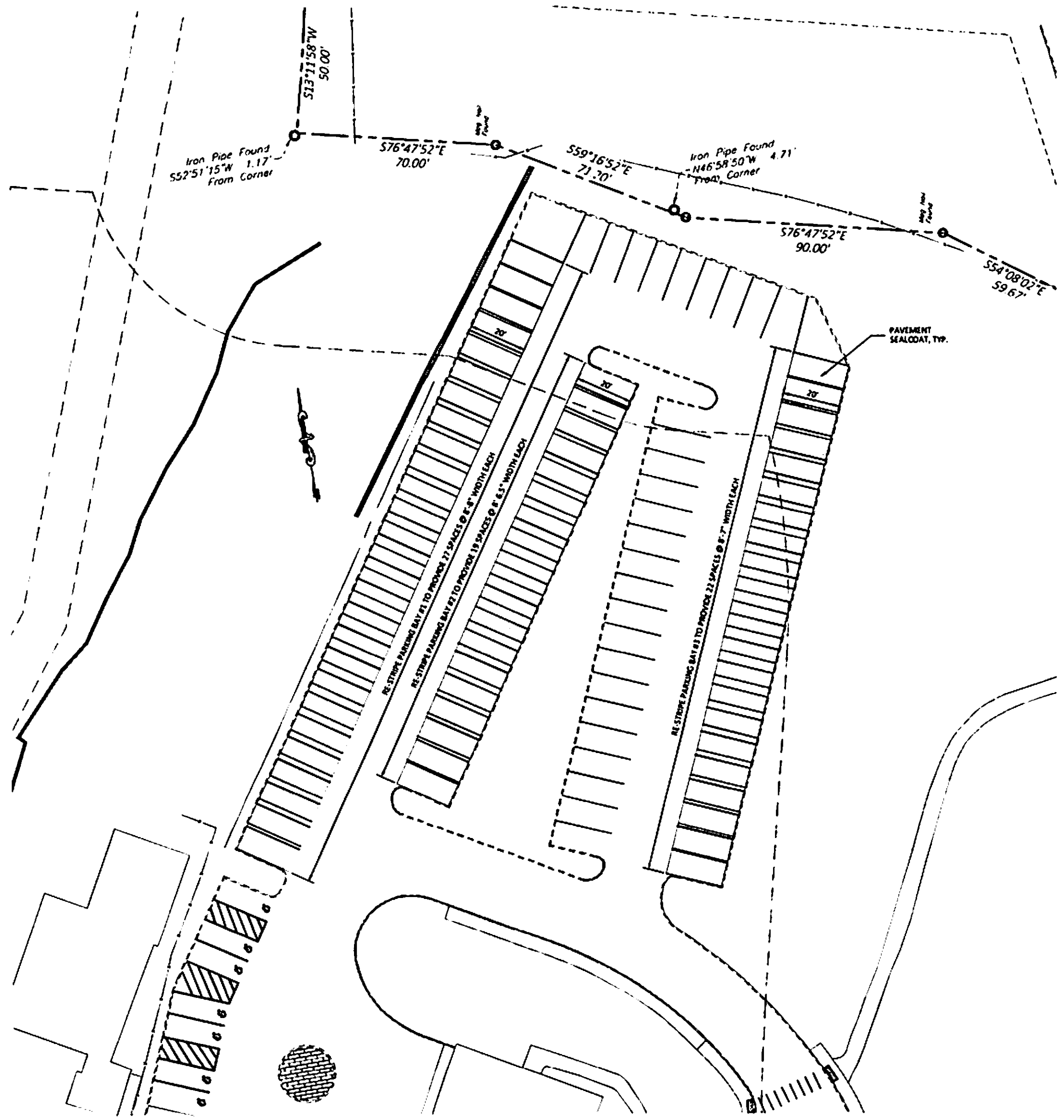
Cabrini of Westchester
115 Broadway
Village of Dobbs Ferry, NY
Section 003.120, Block 104, Lot 1

TITLE

SITE PLAN
(SOUTH LOT)

Seal

Scale:	1"=20'
Date:	2/5/2019
Drawn By:	KMM
Checked By:	RPP
Project No.:	18-022
Sheet No.:	2 of 9
Dwg. No.:	C-101



NO	REVISION	DATE
1	[illegible]	[illegible]

20 15 10 5 0 20 40

SCALE IN FEET

Owner/Applicant

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UNDER NEW YORK STATE EDUCATION LAW ARTICLE 145 (ENGINEERING), SECTION 7209(2), IT IS A VIOLATION OF THIS LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

© PROVIDENT DESIGN ENGINEERING, PLLC

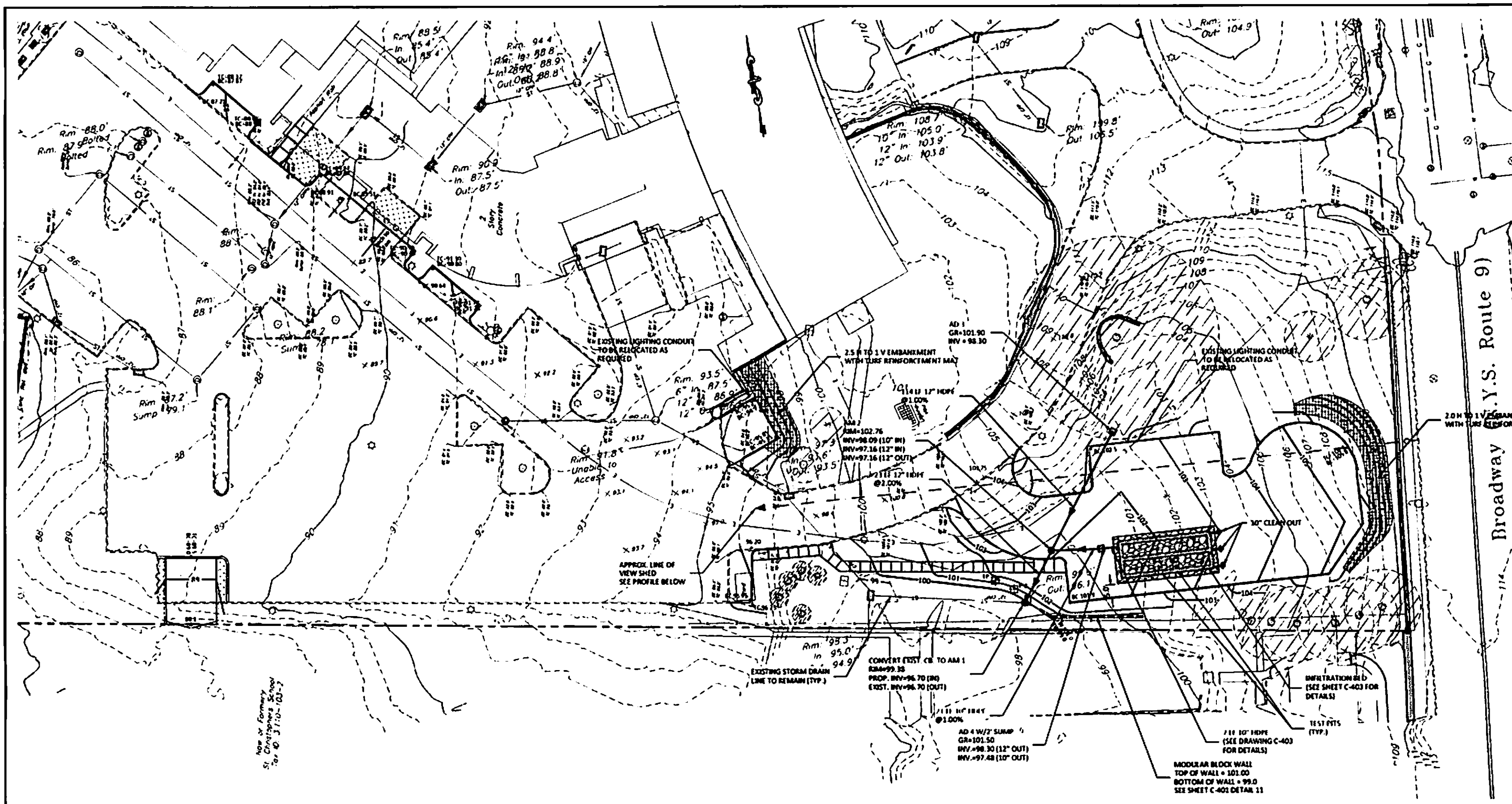
Cabrini of Westchester
115 Broadway
Village of Dobbs Ferry, NY
Section 003.120, Block 104, Lot 1

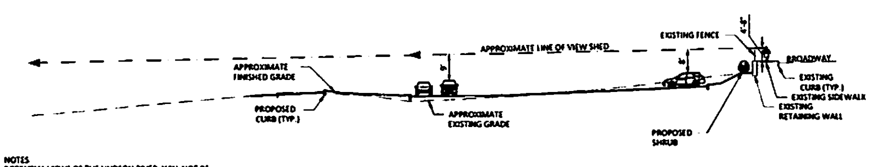
TITLE:

SITE PLAN
(NORTH LOT)

Seal

Scale:	1"=20'
Date:	TBD
Drawn By:	KMM
Checked By:	RPP
Project No.:	18-022
Sheet No.:	3 of 9
Dwg. No.:	C-102





VIEW SHED PROFILE FROM BROADWAY TOWARD HUDSON RIVER

NOTES
POTENTIAL VIEWS OF THE HUDSON RIVER WILL NOT BE OBSTRUCTED POST CONSTRUCTION.

GRADING NOTES

1 LANDSCAPED AREAS AND CURBED ISLANDS SHALL RECEIVE A MINIMUM OF 4" OF TOPSOIL
2 UTILITY STRUCTURE CASTINGS SHALL BE ADJUSTED TO BE FLUSH WITH PROPOSED FINISHED GRADE
3 EARTH EMBANKMENTS SHALL HAVE A SLOPE OF 2.5 HORIZONTAL MINIMUM TO 1 VERTICAL

STORM DRAINS

1. STORM DRAINS SHALL BE CONSTRUCTED OF CORRUGATED POLYETHYLENE PIPE (TYPE S)
2. PRECAST CONCRETE MANHOLES SHALL BE UTILIZED IN THE CONSTRUCTION OF THE STORM DRAINAGE SYSTEM AND SHALL CONFORM TO ASTM C478
3 PRECAST CONCRETE DRAINAGE STRUCTURES SHALL CONFORM TO ASTM C913

Earthwork Volume Calculations		
Item	Description	
1	Cut Volume (cy) =	246
2	Fill Volume (cy) =	252
3	Compaction Factor =	15%
4	Fill Volume Adjustment (cy) (3 times 2) =	38
5	Total Fill Volume (cy) (2 plus 4) =	290
6	Import Volume (cy) (5 less 1) =	44
Topsoil Volume		
Topsoil Export Volume (cy) =		445
Topsoil Stockpile Volume (cy) =		75

TEST PIT DATA TABLE			
TEST DATE	OCTOBER 18, 2018		
DEEP TEST NO.	SURFACE ELEV.	SOIL PROFILE BGS	DESCRIPTION
TP-1	102.0	0 TO 1'	DK BROWN TO BLACK TOPSOIL W/ORGANICS
		1' TO 7'	LT BROWN M-F SAND, W/SILT, MOIST
TP-2	99.6	0 TO 1'	DK BROWN TO BLACK TOPSOIL W/ORGANICS
		1' TO 7'	LT BROWN M-F SAND, W/SILT, MOIST
BGS - BELOW GROUND SURFACE			

INFILTRATION TEST DATA TABLE	
TEST DATE	OCTOBER 19, 2018
TEST NO.	INFILTRATION DESIGN RATE
PT-1	3.30 MIN./INCH
PT-2	3.75 MIN./INCH

NO	REVISION	DATE
1	REVISED PER VILLAGE COMMENTS	[illegible]
2	REVISED PER VILLAGE COMMENTS	[illegible]
3	REVISED PER BOT SPECIAL MTG HELD [illegible]	[illegible]

GRADING & UTILITY LEGEND

- 210 — PROPOSED CONTOUR LINE
- • 210.5 — PROPOSED SPOT ELEVATION
- PROPOSED MANHOLE
- PROPOSED CATCH BASIN (CB)
- PROPOSED DRY WELL
- PROPOSED RETAINING WALL
- TP 1 — TEST PIT LOCATION & DESIGNATION
- 12" ST — PROPOSED STORM DRAIN

20 15 10 5 0 20 40
SCALE IN FEET

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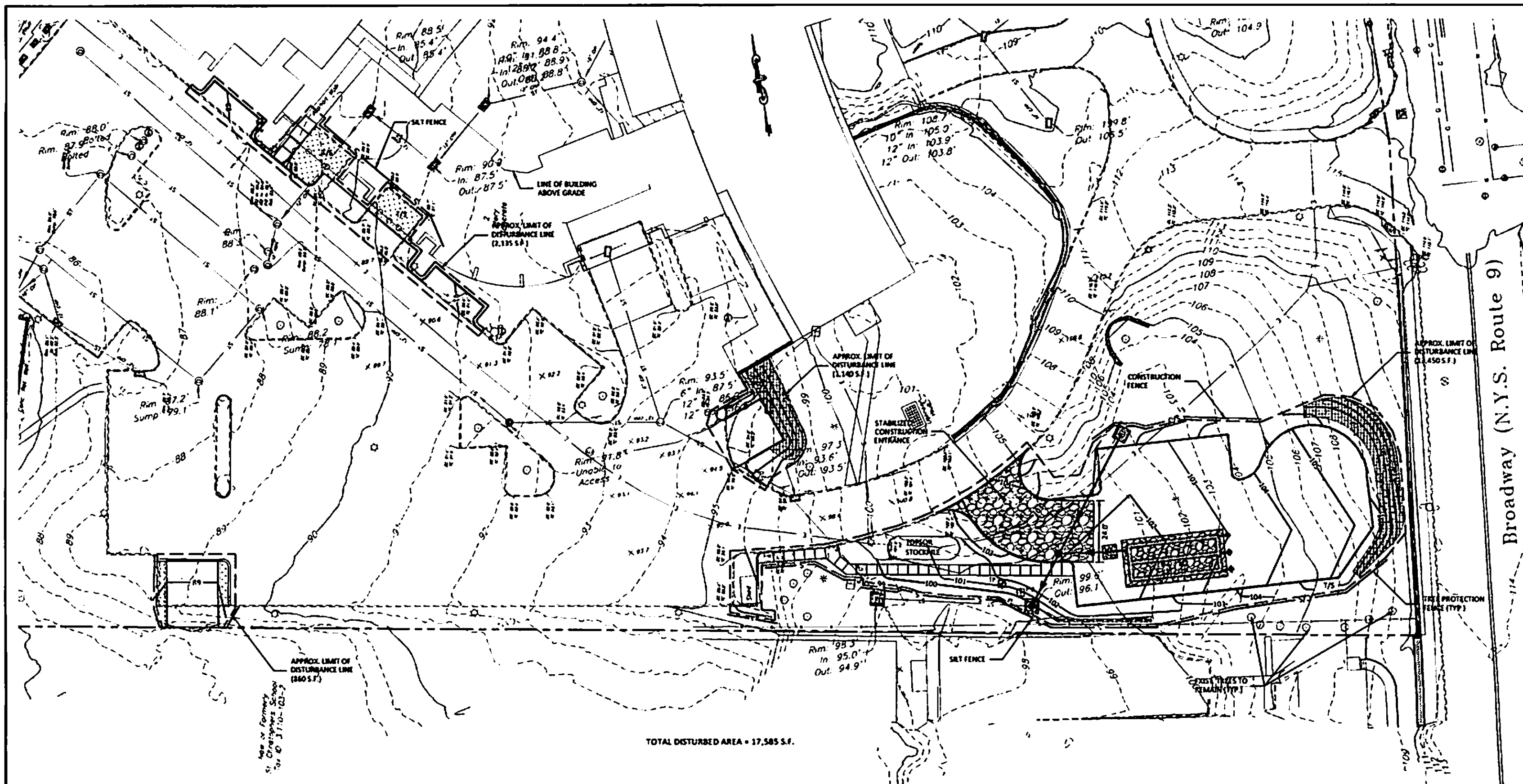
Village of Dobbs Ferry, NY
Section 003.120, Block 104, Lot 1

TITLE:
GRADING & DRAINAGE PLAN

Seal

Scale:	1"=20'
Date:	2/5/2019
Drawn By:	KMM
Checked By:	RPP
Project No.:	18 022
Sheet No.:	3 of 9
Dwg. No.:	C-201



NO	REVISION	DATE
1	COORDINATION WITH LANDSCAPE PLANS	[illegible]
2	REVISED PER VILLAGE COMMENTS	[illegible]
3	REVISED PER VILLAGE COMMENTS	[illegible]
4	REVISED PER BOH SPECIAL [illegible]	[illegible]

EROSION CONTROL LEGEND

- STABILIZED CONSTRUCTION ENTRANCE
- INLET SEDIMENT BAG
- —S— SILT FENCE/SEDIMENT BARRIER
- —C/S— CONSTRUCTION FENCE
- T/S TOPSOIL / SEED

SCALE IN FEET (20 15 10 5 0 20 40)

NEW YORK SOIL EROSION AND SEDIMENT CONTROL NOTES

1. SOIL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE INSTALLED IN ACCORDANCE WITH NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL, LATEST REVISION AND THE NYSDEC SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITY
2. CONSTRUCTION SHALL BE SEQUENCED IN ACCORDANCE WITH THE CONSTRUCTION SEQUENCE NOTES
3. DISTURBED AREAS THAT ARE LEFT EXPOSED MORE THAN 14 DAYS, AND ARE NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PREVENTS THE ESTABLISHMENT OF A TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR EQUIVALENT MATERIAL. THE SEEDING WILL BE DONE IN ACCORDANCE WITH STANDARDS, AS FOLLOWS:
   A. FERTILIZER: FERTILIZER SHALL BE APPLIED AT THE RATE OF 14 LBS/1000 S.F. OR 600 LBS /ACRE, USING 5-10-10 OR EQUIVALENT.
   B. SEED: ANNUAL RYEGRASS APPLIED AT THE RATE OF 30 LBS /ACRE, OR OTHER SELECT MIXTURE DESCRIBED IN THE STANDARDS
   C. MULCH: SMALL GRAIN STRAW MULCH APPLIED AT A RATE OF 90-LBS/1000 S.F. OR 2 TONS/ACRE, TO BE APPLIED AND ANCHORED ACCORDING TO THE STANDARDS.
4. GRADED AREAS NOT SUBJECT TO FURTHER DISTURBANCE OR CONSTRUCTION TRAFFIC SHALL, WITHIN 10 DAYS OF FINAL GRADING, RECEIVE PERMANENT VEGETATIVE COVER IN COMBINATION WITH SUITABLE MULCH AS FOLLOWS:
   A. FERTILIZER: FERTILIZER APPLIED AT THE RATE OF 20-LBS/1000 S.F. USING 5-10-10 OR EQUIVALENT. SELECT MIXTURE DESCRIBED IN THE STANDARDS.
   B. SEED MIXTURE: TO BE PLANTED BETWEEN APRIL 1 AND MAY 15, OR BETWEEN AUGUST 15 AND OCTOBER 15.
   C. MULCH: SMALL GRAIN STRAW MULCH APPLIED AT A RATE OF 90-LBS/1000 S.F. OR 2 TONS/ACRE, TO BE APPLIED AND ANCHORED ACCORDING THE STANDARDS.
5. CUT OR FILL SLOPES STEEPER THAN 2.5:1 SHALL BE STABILIZED IMMEDIATELY AFTER GRADING
6. PAVED ROADWAYS SHALL BE KEPT CLEAN AT ALL TIMES.
7. THE SITE SHALL AT ALL TIMES BE GRADED AND MAINTAINED SUCH THAT STORMWATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.
8. STORM DRAINAGE OUTLETS SHALL BE STABILIZED, AS REQUIRED, BEFORE THE DISCHARGE POINTS BECOME OPERATIONAL.
9. CONSTRUCTION FENCING SHALL BE USED TO PROTECT EXISTING TREES TO REMAIN, WETLANDS AND OTHER SENSITIVE AREAS.
10. IF FOR ANY REASON THE CONSTRUCTION IS HALTED FOR PROTRACTED PERIODS, THE CONTRACTOR SHALL STABILIZE THE SELECT MATERIAL BY HYDRO-SEED OR OTHER MEANS, TO THE SATISFACTION OF THE ENGINEER FOR ALL AREAS DENUDE OF VEGETATION
11. STORM WATER FROM DISTURBED AREAS MUST BE PASSED THROUGH A SEDIMENT BARRIER OR OTHER CONTROL DEVICE BEFORE BEING DISCHARGE BEYOND DISTURBED AREAS OR DISCHARGED INTO INLETS OR OTHER DRAINAGE SYSTEMS.
12. DUST CONTROL - WATER SHALL BE APPLIED BY SPRINKLER OR WATER TRUCK DURING GRADING OPERATIONS TO MINIMIZE SEDIMENT TRANSPORT AND MAINTAIN ACCEPTABLE AIR QUALITY CONDITIONS. REPETITIVE TREATMENTS SHALL BE DONE AS NEEDED UNTIL GRADES ARE STABILIZED
13. CONTRACTOR SHALL INSPECT THE EFFECTIVENESS AND CONDITION OF EROSION CONTROL DEVICES DURING STORM EVENTS, AFTER EACH RAINFALL OF ONE-HALF (1/2) INCH MAGNITUDE OR GREATER, PRIOR TO WEEKENDS AND PRIOR TO FORECASTED STORM EVENTS.
14. CONTRACTOR SHALL REPAIR OR REPLACE DAMAGED EROSION CONTROL DEVICES IMMEDIATELY, AND IN NO CASE, MORE THAN TWENTY FOUR (24) HOURS AFTER OBSERVING SUCH DEFICIENCIES.
15. CONTRACTOR SHALL BE PREPARED TO IMPLEMENT INTERIM DRAINAGE CONTROLS AND EROSION CONTROL MEASURES AS MAY BE NECESSARY DURING THE COURSE OF CONSTRUCTION
16. CONTRACTOR SHALL MAKE AVAILABLE ONSITE ALL EQUIPMENT, MATERIALS AND LABOR NECESSARY TO EFFECT EMERGENCY EROSION CONTROL AND DRAINAGE IMPROVEMENTS WITHIN TWENTY FOUR (24) HOURS OF ANY IMPENDING EMERGENCY SITUATION
17. SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL FINAL ACCEPTANCE OF THE SITE WORK BY THE OWNER. UPON CERTIFICATION OF FINAL ACCEPTANCE, THE OWNER WILL ASSUME RESPONSIBILITY FOR THE CONTINUED MAINTENANCE OF PERMANENT SOIL EROSION AND SEDIMENTATION CONTROL MEASURES.
18. VILLAGE OF DOBBS FERRY OR THE SITE ENGINEER MAY REQUEST ADDITIONAL MEASURES TO MINIMIZE THE POTENTIAL FOR ONSITE OR OFFSITE EROSION PROBLEMS THAT MAY OCCUR DURING CONSTRUCTION

CONSTRUCTION SEQUENCE (4 MONTHS)

1. STAGING AREA SET-UP. INSTALL SEDIMENT BARRIERS IN DISTURBED AREAS, STABILIZE CONSTRUCTION ACCESS AND ERECT PROTECTIVE FENCING AROUND TREES AND BUFFER AREAS. IMPLEMENT DUST CONTROL MEASURES AS REQUIRED
2. CLEARING AND GRUBBING, TOPSOIL, STRIPPING AND STOCKPILING. INSTALL SEDIMENT BARRIERS IN DISTURBED AREAS. IMPLEMENT DUST CONTROL MEASURES AS REQUIRED.
3. ROUGH GRADING: INSTALL TEMPORARY DIVERSIONS AND STONE OUTLET SEDIMENT TRAPS. ESTABLISH TEMPORARY VEGETATIVE COVER ON DISTURBED AREAS AS REQUIRED AND PERMANENT VEGETATIVE COVER IN AREAS OF NO FURTHER DISTURBANCE. IMPLEMENT DUST CONTROL MEASURES AS REQUIRED.
4. STORM SEWER INSTALLATION: MAINTAIN TEMPORARY DIVERSIONS AND STONE SEDIMENT TRAPS UNTIL STORM INLET SEDIMENT TRAPS ARE ESTABLISHED. INSTALL INLET AND OUTLET PROTECTION AT DRAINS. ESTABLISH TEMPORARY VEGETATIVE COVER IN DISTURBED AREAS AS REQUIRED. ESTABLISH PERMANENT VEGETATIVE COVER IN AREAS OF NO FURTHER DISTURBANCE. IMPLEMENT DUST CONTROL MEASURES AS REQUIRED.
5. GRADING AND CONSTRUCTION, FRINGE AND BUFFER AREA LANDSCAPE INSTALLATION: INSTALL SEDIMENT BARRIERS IN DISTURBED AREAS. ESTABLISH PERMANENT VEGETATIVE COVER IN AREAS OF NO FURTHER DISTURBANCE. IMPLEMENT DUST CONTROL MEASURES AS REQUIRED
6. FINE GRADING: ESTABLISH PERMANENT VEGETATIVE COVER IN AREAS OF NO FURTHER DISTURBANCE. IMPLEMENT DUST CONTROL MEASURES AS REQUIRED.
7. MISCELLANEOUS SITE WORK AND LANDSCAPE INSTALLATION: ESTABLISH PERMANENT VEGETATIVE COVER IN REMAINING DISTURBED AREAS AND IN TEMPORARY VEGETATIVE COVER AREAS. IMPLEMENT DUST CONTROL MEASURES AS REQUIRED.
8. CLEAN-UP: REMOVE SEDIMENT BARRIERS AFTER ESTABLISHMENT OF PERMANENT VEGETATIVE COVER

Owner/Applicant:
Cabrini of Westchester
115 Broadway
Dobbs Ferry, NY 10522
Tel. 914-693-6800
Fax. 914-693-0919

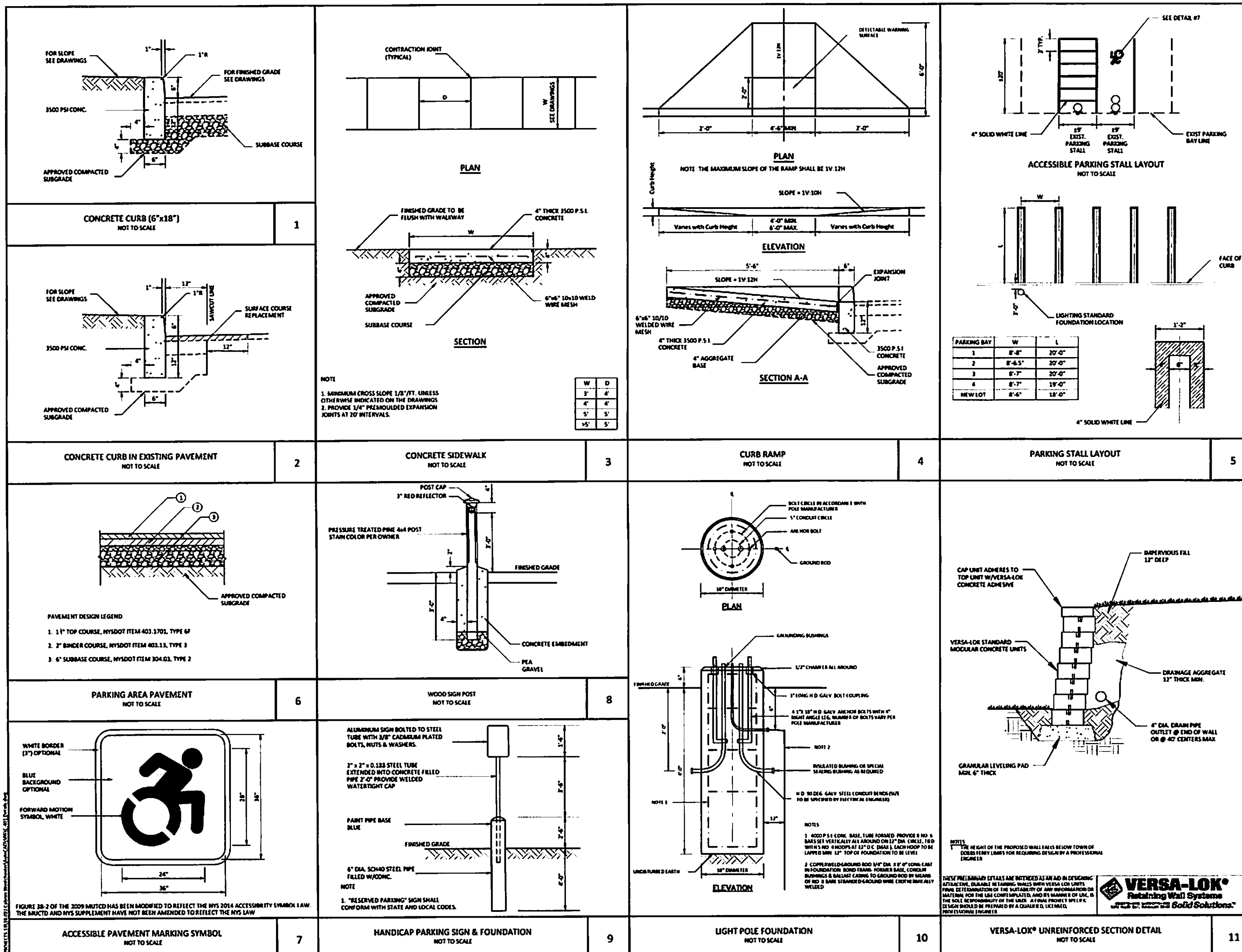
Provident design engineering
7 SKYLINE DRIVE, HAWTHORNE, NEW YORK 10532
TEL (914) 592-4040 WWW.PDERESULTS.COM

Cabrini of Westchester
115 Broadway
Village of Dobbs Ferry, NY
Section 003.120, Block 104, Lot 1

TITLE:

EROSION CONTROL PLAN

Scale:	1"=20'
Date:	2/5/2019
Drawn By:	KMM
Checked By:	RPP
Project No.:	18 022
Sheet No.:	5 of 9
Dwg. No.:	C-301



FOR SLOPE SEE DRAWINGS
FOR FINISHED GRADE SEE DRAWINGS
3500 PSI CONC.
SUBBASE COURSE
APPROVED COMPACTED SUBGRADE
CONCRETE CURB (6"x18")
NOT TO SCALE
1
SURFACE COURSE REPLACEMENT
SAWCUT LINE
CONCRETE CURB IN EXISTING PAVEMENT
NOT TO SCALE
2
CONTRACTION JOINT (TYPICAL)
PLAN
FINISHED GRADE TO BE FLUSH WITH WALKWAY
4" THICK 3500 P.S.I. CONCRETE
6"x6" 10x10 WELD WIRE MESH
SUBBASE COURSE
SECTION
NOTE
1. MINIMUM CROSS SLOPE 1/8"/FT. UNLESS OTHERWISE INDICATED ON THE DRAWINGS
2. PROVIDE 1/4" PREMOULDED EXPANSION JOINTS AT 20' INTERVALS.
CONCRETE SIDEWALK
NOT TO SCALE
3
DETECTABLE WARNING SURFACE
PLAN
NOTE: THE MAXIMUM SLOPE OF THE RAMP SHALL BE 1V:12H
SLOPE = 1V:10H
Varies with Curb Height
4'-0" MIN. 6'-0" MAX.
ELEVATION
SLOPE = 1V:12H
EXPANSION JOINT
6"x6" 10/10 WELDED WIRE MESH
4" THICK 3500 P.S.I. CONCRETE
4" AGGREGATE BASE
SECTION A-A
CURB RAMP
NOT TO SCALE
4
SEE DETAIL #7
4" SOLID WHITE LINE
EXIST. PARKING STALL
EXIST PARKING BAY LINE
ACCESSIBLE PARKING STALL LAYOUT
NOT TO SCALE
FACE OF CURB
LIGHTING STANDARD FOUNDATION LOCATION
PARKING STALL LAYOUT
NOT TO SCALE
5
PAVEMENT DESIGN LEGEND:
1. 1½" TOP COURSE, NYSDOT ITEM 403.1701, TYPE 6F
2. 2" BINDER COURSE, NYSDOT ITEM 403.13, TYPE 3
3. 6" SUBBASE COURSE, NYSDOT ITEM 304.03, TYPE 2
PARKING AREA PAVEMENT
NOT TO SCALE
6
POST CAP
3" RED REFLECTOR
PRESSURE TREATED PINE 4x4 POST STAIN COLOR PER OWNER
FINISHED GRADE
CONCRETE EMBEDMENT
PEA GRAVEL
WOOD SIGN POST
NOT TO SCALE
8
PLAN
ELEVATION
LIGHT POLE FOUNDATION
NOT TO SCALE
10
CAP UNIT ADHERES TO TOP UNIT W/VERSA-LOK CONCRETE ADHESIVE
IMPERVIOUS FILL 12" DEEP
VERSA-LOK STANDARD MODULAR CONCRETE UNITS
DRAINAGE AGGREGATE 12" THICK MIN.
4" DIA. DRAIN PIPE OUTLET @ END OF WALL OR @ 40' CENTERS MAX
GRANULAR LEVELING PAD MIN. 6" THICK
VERSA-LOK® Retaining Wall Systems
VERSA-LOK® UNREINFORCED SECTION DETAIL
NOT TO SCALE
11
WHITE BORDER (3") OPTIONAL
BLUE BACKGROUND OPTIONAL
FORWARD MOTION SYMBOL, WHITE
FIGURE 3B-2 OF THE 2009 MUTCD HAS BEEN MODIFIED TO REFLECT THE NYS 2014 ACCESSIBILITY SYMBOL LAW. THE MUCTD AND NYS SUPPLEMENT HAVE NOT BEEN AMENDED TO REFLECT THE NYS LAW
ACCESSIBLE PAVEMENT MARKING SYMBOL
NOT TO SCALE
7
ALUMINUM SIGN BOLTED TO STEEL TUBE WITH 3/8" CADMIUM PLATED BOLTS, NUTS & WASHERS.
2" x 2" x 0.188 STEEL TUBE EXTENDED INTO CONCRETE FILLED PIPE 2'-0" PROVIDE WELDED WATERTIGHT CAP
PAINT PIPE BASE BLUE
FINISHED GRADE
6" DIA. SCH40 STEEL PIPE FILLED W/CONC.
NOTE
1. "RESERVED PARKING" SIGN SHALL CONFORM WITH STATE AND LOCAL CODES.
HANDICAP PARKING SIGN & FOUNDATION
NOT TO SCALE
9

PARKING BAY	W	L
1	8'-8"	20'-0"
2	8'-6.5"	20'-0"
3	8'-7"	20'-0"
4	8'-7"	19'-0"
NEW LOT	8'-6"	18'-0"

W	D
3'	4'
4'	4'
5'	5'
>5'	5'

NO	REVISION	DATE
1	REVISED PER VILLAGE COMMENTS	07/03/19
2	REVISED PER VILLAGE COMMENTS	10/23/19
3	REVISED PER DOT SPECIAL MTG HELD 7/?/2020	8/3/2020

Owner/Applicant
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TEL (914) 592-4040 WWW.PDEINSIGHTS.COM

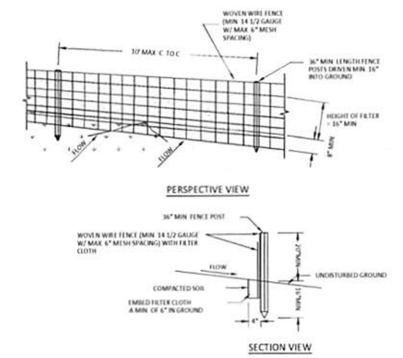
UNDER NEW YORK STATE EDUCATION LAW ARTICLE 145 (ENGINEERING), SECTION 7209 (2), IT IS A VIOLATION OF THIS LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT

Cabrini of Westchester
115 Broadway
Village of Dobbs Ferry, NY
Section 003.120, Block 104, Lot 1

TITLE:
DETAILS

Seal

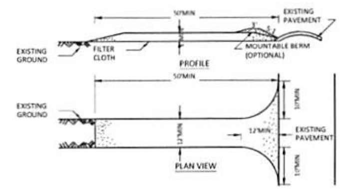
Scale:	NTS
Date:	2/5/2019
Drawn By:	KMM
Checked By:	RPP
Project No.:	18-022
Sheet No.:	6 of 9
Dwg. No.	C-401



CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 12 1/2 GAUGE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

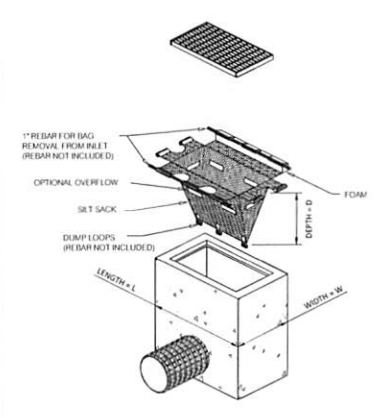
SILT FENCE — NOT TO SCALE — 1

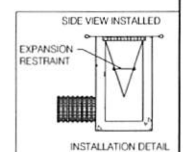


CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 1-4" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

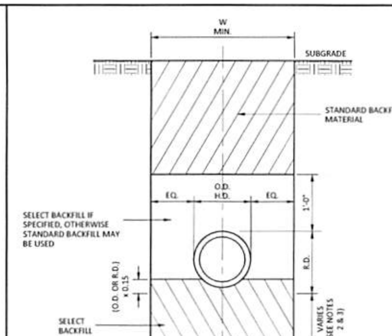
STABILIZED CONSTRUCTION ENTRANCE — NOT TO SCALE — 2





NOTE:
THE SILT SACK WILL BE MANUFACTURED FROM A WOVEN POLYPROPYLENE FABRIC. SEE SPECIFICATIONS.

CATCH BASIN SILT SACK — NOT TO SCALE — 3

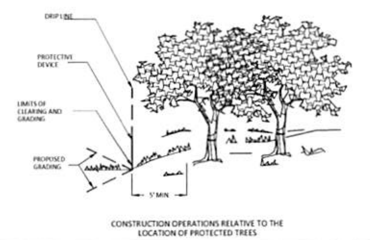


D = INSIDE DIAMETER, SPAN
R.D. = OUTSIDE RISE AT BELL OR BAND
O.D. = OUTSIDE BARREL DIAMETER, SPAN, OR RISE
H.D. = OUTSIDE DIAMETER, SPAN, OR RISE @ BELL OR BAND
W = O.D. +2.0' - CONDUIT 48" OR LESS DIAMETER OR SPAN
W = O.D. +2.5' - CONDUIT GREATER THAN 48" DIAMETER OR SPAN

NOTES:

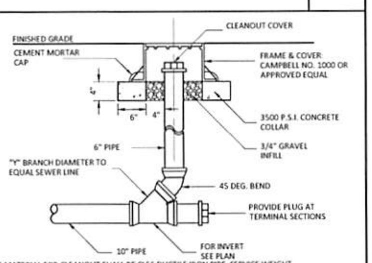
1. FILL SECTION AREA MUST BE GRADED TO 2'-0" MIN. ABOVE TOP OF PIPE BEFORE EXCAVATING TRENCH.
2. WHERE ROCK IS ENCOUNTERED IN TRENCH BOTTOM, UNDERCUT MIN. OF 12" TO MAX OF 24" (1/2" FOR EACH 1 FT. OF COVER ABOVE O.D. OR R.D.)
3. WHERE UNSUITABLE MATERIAL IS ENCOUNTERED IN TRENCH BOTTOM, UNDERCUT AS DIRECTED BY OWNER'S FIELD REPRESENTATIVE.
4. PAYMENT LIMIT IN ROCK NOT TO EXCEED W (MIN.) AND UNDERCUT EQUALS 24 INCHES.

PIPE TRENCH EXCAVATION & BACKFILL — NOT TO SCALE — 4



CONSTRUCTION OPERATIONS RELATIVE TO THE LOCATION OF PROTECTED TREES

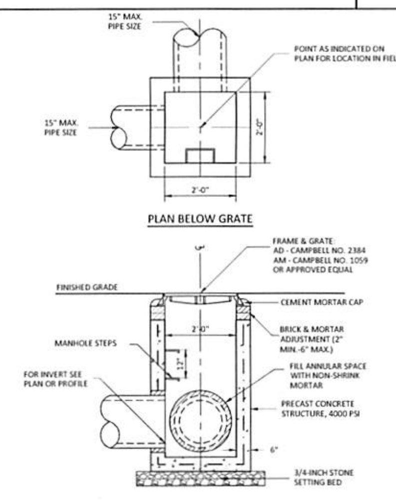
TREE PROTECTION — NOT TO SCALE — 5



NOTE:
1. ALL PIPE MATERIAL FOR CLEANOUT SHALL BE CL56 DUCTILE IRON PIPE, SERVICE WEIGHT CAST IRON PIPE, OR PVC DWV PIPE (SCHEDULE 40).

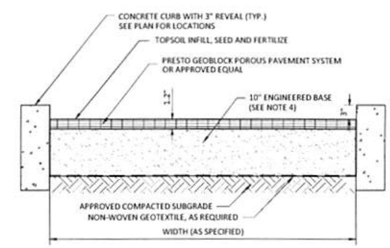
CLEANOUT — NOT TO SCALE — 6

NOT USED — NOT TO SCALE — 7



NOTES:
1. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF EACH INLET FOR THE ENGINEERS APPROVAL PRIOR TO FABRICATION.
2. PRECAST INLETS SHALL BE CERTIFIED AS CONFORMING TO ASTM C913, LATEST REVISION.
3. PRECAST INLETS SHALL BE DESIGNED FOR HS-20 LOADING.
4. MANHOLE STEPS ARE NOT REQUIRED FOR INLET DEPTHS LESS THAN 4 FEET.
5. "KNOCKOUT" TYPE INLET STRUCTURES SHALL NOT BE PERMITTED.

AREA DRAIN (AD)/AREA MANHOLE (AM) — NOT TO SCALE — 8



NOTES:

1. GEOBLOCK UNITS SHALL BE BACKFILLED WITH TOPSOIL TO WITHIN 1/4" OF THE TOP OF THE UNIT.
2. GEOBLOCK UNITS SHALL BE ANCHOR AS INDICATED ABOVE OR IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. ENGINEERED BASE IS A HOMOGENOUS MIXTURE CONSISTING OF OPEN GRADED CRUSHED AGGREGATE HAVING AN AASHTO #5 OR SIMILAR DESIGNATION BLENDED WITH PULVERIZED TOPSOIL AND A VOID COMPONENT GENERALLY CONTAINING AIR AND/OR WATER. THIS HOMOGENOUS MIXTURE WILL PROMOTE VEGETATIVE GROWTH AND PROVIDE REQUIRED STRUCTURAL SUPPORT. THE AGGREGATE PORTION SHALL HAVE A PARTICLE RANGE FORM 9.5 mm TO 25 mm (0.375 TO 1.0 IN) WITH A d50 OF 13 MM (0.5 IN). THE PERCENTAGE VOID SPACE OF THE AGGREGATE PORTION WHEN COMPACTED SHALL BE AT LEAST 30%. THE PULVERIZED TOPSOIL PORTION SHALL EQUAL 33%± OF THE TOTAL VOLUME AND BE ADDED AND BLENDED TO PRODUCE A HOMOGENOUS MIXTURE PRIOR TO PLACEMENT.
4. IF REQUIRED, PROVIDE NON-WOVEN GEOTEXTILE SEPARATION LAYER AND INSTALL IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS INCLUDING OVERLAPS BASED ON SUB GRADE CBR.
5. CONNECT GEOBLOCK® PANELS WITH THE INTERLOCKING OFFSET TAB SO THAT ADJACENT SECTIONS HAVE HORIZONTALLY LEVEL PROFILES.
6. REFER TO THE GEOBLOCK® DESIGN AND CONSTRUCTION OVERVIEW FOR A COMPLETE DESCRIPTION OF THE DESIGN AND CONSTRUCTION METHODS.

GEOBLOCK EMERGENCY ACCESS ROAD — NOT TO SCALE — 9

NO	REVISION	DATE
1	REVISED PER VILLAGE COMMENTS	07/02/19
2	REVISED PER VILLAGE COMMENTS	10/23/19
3	REVISED PER BOT SPECIAL MTG HELD 7/27/2020	8/3/2020

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Dobbs Ferry, NY 10522
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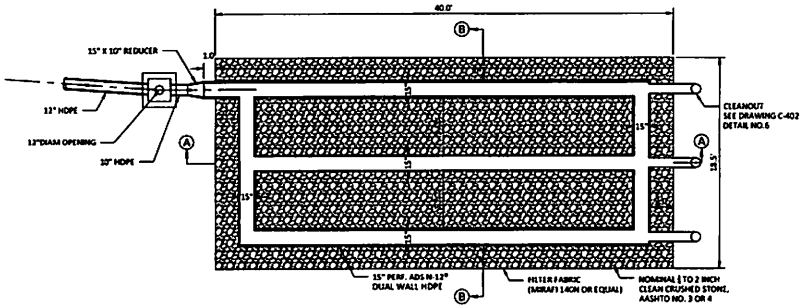
Provident design engineering
7 SKYLINE DRIVE, HAWTHORNE, NEW YORK 10532
TEL (914) 592-4040 WWW.PDERESULTS.COM

Cabrini of Westchester
115 Broadway
Village of Dobbs Ferry, NY
Section 003.120, Block 104, Lot 1

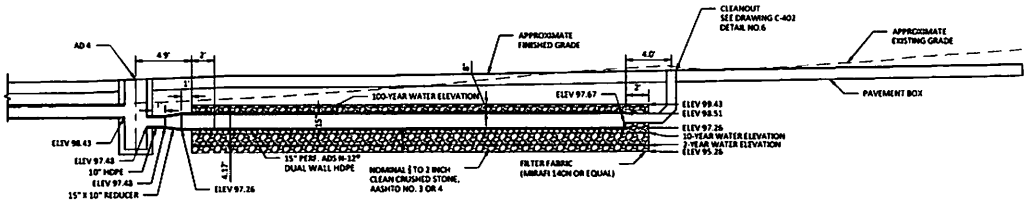
TITLE: DETAILS

Seal: STATE OF NEW YORK — RALPH P. PERAGINE — No. 064262 — LICENSED PROFESSIONAL ENGINEER

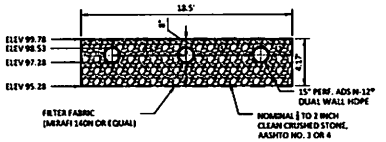
Scale:	NTS
Date:	2/5/2019
Drawn By:	KMM
Checked By:	RPP
Project No.:	18-022
Sheet No.:	7 of 9
Dwg. No.:	C-402



PLAN VIEW



SECTION A-A



SECTION B-B

NO.	REVISION	DATE
1	REVISED PER VILLAGE COMMENTS	07/02/19
2	REVISED PER VILLAGE COMMENTS	10/23/19
3	REVISED PER BOT SPECIAL MTG HELD 11/19/19	01/27/20

5 4 3 2 1 0 5 10
SCALE IN FEET

Owner/Applicant
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115 Broadway
Dobbs Ferry, NY 10522
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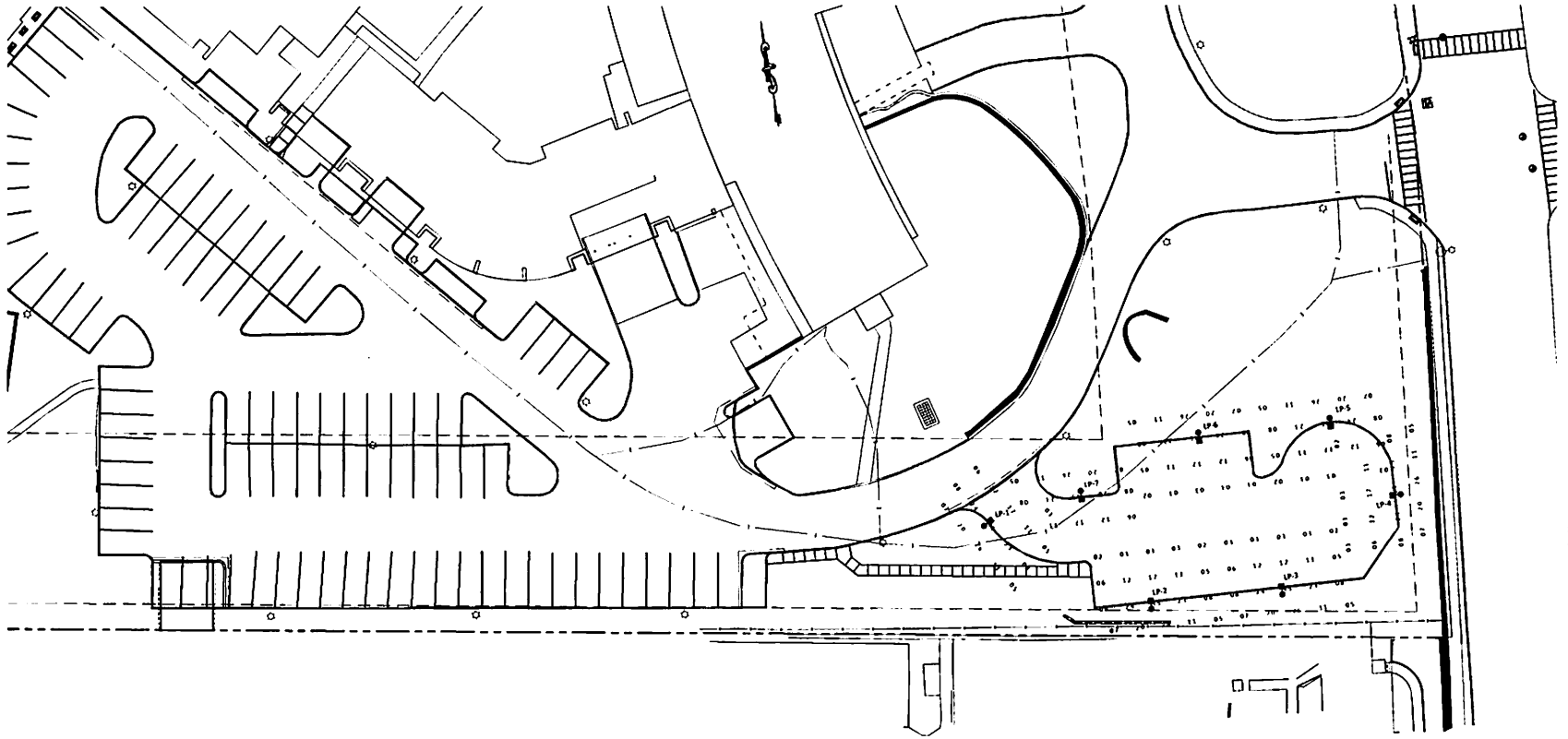
7 SKYLINE DRIVE, HAWTHORNE, NEW YORK 10532
TEL: (914) 592-4060 WWW.PDENGLTD.COM

Cabrini of Westchester
115 Broadway
Village of Dobbs Ferry, NY
Section 003.120, Block 104, Lot 1

TITLE:
INFILTRATION BED DETAILS

Seal

Scale:	1"=5'
Date:	2/5/19
Drawn By:	JLM
Checked By:	KPP
Project No.	18-022
Sheet No.	8 of 9
Dwg. No.	C-403



NO	REVISION	DATE
1	REVISED PER VILLAGE COMMENTS	10/23/19
2	REVISED PER BOT SPECIAL MTG HELD 11/21/2019	11/30/2019

20 15 10 5 0 20 40

SCALE IN FEET

Owner/Applicant

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Dobbs Ferry, NY 10522
Tel 914-693-6800
Fax 914-693-0919

Provident design engineering

7 BEDFORD FARMS, MAHOPAC, NEW YORK 10541
TEL (914) 592-4040 WWW.PDESOLUTIONS.COM

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Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Parking	Illuminance	Fc	1.45	4.8	0.1	14.50	48.00
Property Line	Illuminance	Fc	0.56	2.6	0.0	N.A.	N.A.

Luminaire Schedule					
Symbol	Qty	Label	Lumens	Description	Mtg. Height
▪	9	A1-T3	2618.3	LED-6098A070	12

NOTES

1. LIGHT POLES AND FIXTURES SHALL BE AS MANUFACTURED BY GREEN LUMENS, 6421 CONGRESS AVENUE, SUITE 120, BOCA RATON, FLORIDA 33487, TELE 1-800-458-6367, WWW.GREENLUMENS.COM
2. POLES AND LIGHT FIXTURES SHALL BE WHITE.
3. CUT OFF SHIELDS SHALL BE PROVIDED IN THE FIXTURES LP-1, LP-2 AND LP-3.
4. THE ILLUMINANCE VALUES SHOWN ARE PRELIMINARY ARE SUBJECT TO FINAL DESIGN
5. FINAL LIGHTING DESIGN IS SUBJECT TO A LIGHTING ANALYSIS TO BE PREPARED BY LIGHT EMITTING DESIGN, LLC PO BOX 186, SALERNO, FL 34996, LEDESIGNFL@GMAIL.COM, 772-220-5908

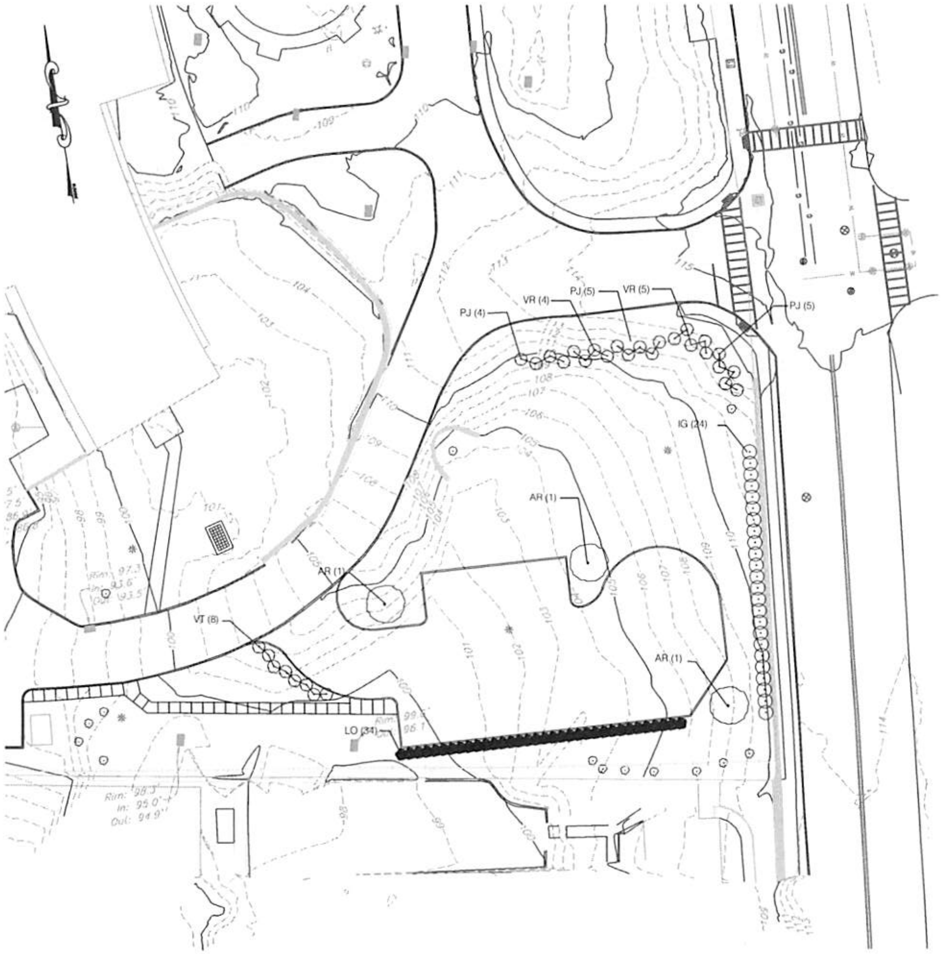
Cabrini of Westchester
115 Broadway
Village of Dobbs Ferry, NY
Section 003.120, Block 104, Lot 1

TITLE

LIGHTING PLAN

Seal

Scale	1"=20'
Date	2/5/2019
Drawn By:	RMM
Checked By:	RPP
Project No.:	18.022
Sheet No.:	9 of 9
Dwg. No.:	LP-101

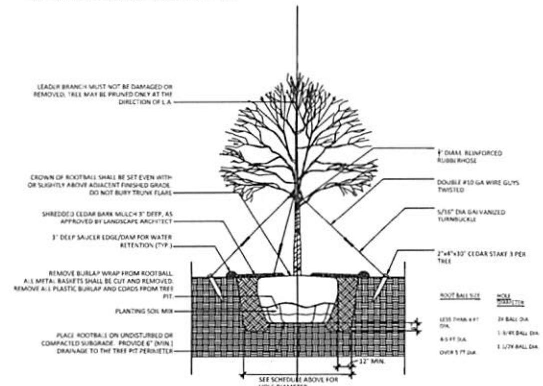


PLANT LIST

QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
TREES					
3	AR	Acer rubrum	Red maple 'October Glory'	2 1/2"-3 CAL	Branching HGT. 6'-0" B4B
SHRUBS					
24	IG	Ilex glabra	Inkberry	3 1/2"-4' HGT.	B4B full to ground
34	LO	Ligustrum ovalifolium	California privet	4'-5' HGT.	B4B full to ground
9	VR	Viburnum x rhytidophylloides 'Alleghany'	Alleghany Viburnum	4'- 4' 1/2" HGT.	B4B full to ground
8	VT	Viburnum tomentosum mariesii	Doublefile viburnum	4'- 4' 1/2" HGT.	B4B full to ground
14	PJ	Pieris japonica 'Mountain Fire'	Andromeda 'Mountain Fire'	3 1/2"-4' HGT.	B4B full to ground

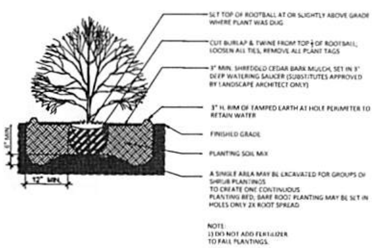
PLANTING NOTES:

1. PROTECT ALL EXISTING VEGETATION TO REMAIN FROM DAMAGE DURING CONSTRUCTION.
2. USE EXTREME CAUTION TO PROTECT UTILITIES.
3. IT IS THE INTENT OF THIS CONTRACT TO AVOID ANY DISTURBANCE TO EXISTING VEGETATION ON THE SITE OTHER THAN THOSE SPECIFICALLY DESIGNATED FOR REMOVAL. ADJUSTMENTS SHALL BE MADE IN THE FIELD AT THE DIRECTION OF THE LANDSCAPE ARCHITECT.
4. ALL PLANT MATERIAL SHALL BE NURSERY GROWN UNLESS OTHERWISE NOTED.
5. PROVIDE QUALITY, SIZE, GENUS, SPECIES, AND VARIETY OF TREES AND SHRUBS INDICATED, COMPLYING WITH APPLICABLE REQUIREMENTS OF ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK."
6. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE LOCATION OF MECHANICAL EQUIPMENT AND UTILITIES EXISTING OR PROPOSED IN THE AREA TO BE PLANTED AND SHALL, WHERE NECESSARY, RELOCATE PLANTS AT THE DIRECTION OF THE LANDSCAPE ARCHITECT.
7. QUANTITIES GIVEN IN THE PLANT LIST ARE FOR REFERENCE ONLY. THE CONTRACTOR SHALL VERIFY ALL QUANTITIES SHOWN ON THE LIST ANS SHALL BE RESPONSIBLE FOR FURNISHING ALL MATERIALS REQUIRED TO COMPLETE THE PLANS.
8. THE CONTRACTOR SHALL VERIFY ALL GRADES, DIMENSIONS, AND EXISTING CONDITIONS AND REPORT ANY DISCREPANCIES TO THE LANDSCAPE ARCHITECT.
9. LOCATIONS OF NEW PLANTS SHALL BE STAKED BY THE CONTRACTOR AND APPROVED BY THE LANDSCAPE ARCHITECT BEFORE PROCEEDING WITH THE WORK.
10. ALL PLANTS SHALL BE SUBJECT TO THE LANDSCAPE ARCHITECT'S INSPECTION AND APPROVAL AT THE NURSERY AND AT THE SITE BEFORE ANY PLANTING WORK IS BEGUN.
11. ALL BEDS AND TREE SAUCERS AND OTHER AREAS NOTED SHALL RECEIVE 3 INCH (MINIMUM) OF APPROVED MULCH (SHREDDED CEDAR).
12. CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIAL FOR ONE YEAR FROM TIME OF LANDSCAPE ARCHITECT'S FINAL WRITTEN APPROVAL.
13. CONTRACTOR TO COORDINATE PLANTING, SEEDING AND TREE WORK WITH OTHER TRADES.
14. CONTRACTOR RESPONSIBLE FOR OBTAINING ALL PERMITS WHERE REQUIRED.
15. CONTRACTOR RESPONSIBLE FOR RESTORING ALL AREAS DISTURBED DUE TO PLANTING OPERATIONS.
16. PERCOLATION TEST: PRIOR TO ANY TREE PLANTING, THE CONTRACTOR SHALL FILL A MINIMUM OF 25% OF THE PLANTING PITS WITH WATER AND OBSERVE THE RATE OF PERCOLATION. IF IN THE OPINION OF THE CONTRACTOR, SLOW PERCOLATION INDICATES A SOIL CONDITION MIGHT ENDANGER THE HEALTH OF MATERIALS TO BE PLANTED, HE SHALL CONTACT THE LANDSCAPE ARCHITECT TO ESTABLISH A MUTUALLY ACCEPTABLE METHOD OF PROVIDING ADEQUATE DRAINAGE. COMPENSATION FOR ANY NECESSARY DRAINAGE PROVISIONS SHALL BE AT A NEGOTIATED PRICE. NO CLAIMS FOR ADDITIONAL COMPENSATION ARISING FROM THE LOSS OF PLANT MATERIAL DUE TO GROUND WATER PROBLEMS WILL BE ACCEPTED UNLESS THIS PROCEDURE IS FOLLOWED.
17. TOP SOIL MIX SHALL INCLUDE:
    - 3 PARTS SCREENED TOPSOIL
    - 1 PART SAND
    - 1 PART HUMUS
    - 5 LBS. SUPERPHOSPHATE PER CU. YD. OF MIX



DECIDUOUS TREE PLANTING–OVER 6" CAL.

Not to Scale



SHRUB PLANTING

Not to Scale

NO.	REVISION	DATE
1	Planning Board Submission	5/23/19
2	Planning Board Submission	10/23/19
3	Revised per BOT Special Mtg Held 7/27/2020	08/3/2020

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Cabrini of Westchester
115 Broadway
Village of Dobbs Ferry, NY
Section 003.120, Block 104, Lot 1

TITLE:
L1 LANDSCAPE PLAN AND DETAILS

Seal

Scale:	1"=20'
Date:	10-21-2019
Drawn By:	
Checked By:	
Project No.:	18-022
Sheet No.:	of
Dwg. No.:	

Provident design engineering

STORMWATER MANAGEMENT REPORT

CABRINI OF WESTCHESTER
PARKING AREA ADDITION
115 BROADWAY
VILLAGE OF DOBBS FERRY, NEW YORK

Applicant/Owner

Cabrini of Westchester
Parking Area Addition
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Village of Dobbs Ferry, New York
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Project No.: 18/22

August 3, 2020

Revision History		
Rev. No.	Date	Description
1	10/23/19	Revised per Village comments
2	8/3/2020	Revised per BOT special meeting held on 7/27/2020

Table of Contents

Appendices

Reference Drawings

Dwg. No.	**Title**
C-10	Overall Site Plan
C-101	Site Plan
C-201	Grading & Drainage Plan
C-301	Erosion Control Plan
C-401	Details - Sheet 1
C-402	Details - Sheet 2
C-403	Infiltration Bed Details

Section I

Project Information

1.1 Project Description

The purpose of this report is to present the Stormwater Management Report (SWR) for the for the Application for site plan approval to construct a new parking area to accommodate a total of 25 parking spaces which includes eighteen (18) parking spaces in the new parking area to be constructed in the southeasterly corner of the property; two (2) new parking spaces to be constructed adjacent to the existing dumpster pad; and five (5) parking spaces gained by re-striping of four of the existing parking bays to a minimum stall width of 8'-6".

This SWR presents the methodology and design for controlling stormwater runoff from the Project in accordance with the applicable provisions of Chapter 262 Stormwater Management and Erosion and Sediment Control of the Village Code.

1.2 Soil Characteristics

A review of the USDA Web Soil Survey indicates that there are three (3) soil types present on the site (Appendix A). Table No. 1 below summarizes the characteristics of these soil types.

Table No. 1
Soil Characteristics

Map Unit	Area (acres)	Soil Names	Depth to Water Table (ft)	Depth to Restrictive feature	Hydrologic Group	Erosion Hazard
KnB	2.67	Knickerbocker fine sandy loam, 2 to 8 percent slopes	>80 inches	>80 inches	A	
RhE	2.93	Riverhead loam, 25 to 50 percent slopes	>80 inches	>80 inches	A	
Ub	6.09	Udorthents, smoothed	18 to 48 inches	40 to 60 inches	B	Variable

Source: Soil Survey of Westchester and Putnam Counties, New York Soil Conservation Service. Natural Resource Conservation Center Web Soil Survey
USDA Web Soil Survey (https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx)

Section 2

Storm Water Management

2.1 Methodology

The measures in this SWR Report have been designed to assure that post-development peak runoff rates will be equal to or less than pre-development peak runoff rates for the 2, 10 and 100-year storm events. These measures have been designed in accordance with the following publications:

- "Urban Hydrology for Small Watersheds" (Technical Release No. 55), published by the United States Department of Agriculture, Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service, SCS), dated June 1986.
- *New York State Storm Water Management Design Manual* (DEC Design Manual), January 2015.

The 24-hour rainfall data value used in the hydrologic analysis and computations is based on the updated isohyetal maps from the Northeast Regional Climate Center (NRCC). Current 24-hour NRCC rainfall precipitation and distribution data were used to compute runoff hydrographs for the 2, 10 and 100-year storm events. The pre and post development runoff rates for the specified storm events were calculated using HydroCAD® Version 10.0 computer software program. HydroCAD® incorporates the methodology used in NRCS TR-20 and TR-55 to compute and route flood hydrographs.

2.2 Subsurface Investigations

Test Pit Excavations

Two (2) test pits were excavated on October 18, 2018 and witnessed by PDE personnel. The test pit locations are shown on Drawing C-201, "Grading and Utility Plan" prepared by PDE. PDE personnel measured the depths of the contrasting soil layers, performed visual inspections of the excavated material at each layer encountered to determine generalized soil classifications, and logged the measurements and observations.

As shown in the photos and on the test pit log sheets provided in Appendix B, bedrock was not encountered at TP-1 or TP-2. Observations revealed a 12-inch-thick layer of topsoil on top of layers of fine to medium brown sands. The test pits were excavated to a depth of 84 inches below existing grade without encountering ground water.

Infiltration Testing

Based on the investigation results discussed above, two (2) soil infiltration tests were set up on October 18, 2018. A 6" PVC casing was placed adjacent to each test pit as shown on PDE Drawing C-201, with the bottom of the casing set within the existing sand layer at a depth of about 6-feet below existing grade. The casing was filled with 24 inches of water, capped and allowed to pre-soak overnight. PDE personnel returned to the residence on October 19, 2018 and found no water in the casing, thereby allowing the infiltration testing to proceed.

The casing was refilled with 24 inches of water and an initial reading was taken. A "final" reading of the water level was taken after a duration of 1 hour. This procedure was repeated two (2) additional times for a total of three (3) observations at each test pit to obtain the infiltration rate. The data sheet of test results provided in Appendix B shows that the existing subsoils possess a consistent infiltration rate of 18 inches per hour (in/hr.) for TP-1 and 16 in/hr. for TP-2 which are much greater than the minimum rate of 0.5 in/hr. required by the standards in the DEC Design Manual for infiltration SMPs.

2.3 Pre-Development Conditions

Under pre-development conditions, one drainage area (EX-DA-1) was identified on the site. The pre-development drainage areas are shown on Figure #2, Pre-Development Drainage Area Map in Appendix A. The drainage area totals 0.58-acres.

One Design Point was identified for the existing drainage area. The Design Point represent the location where the majority of runoff from an area exits the site. The same design points are identified in post-development conditions so that a comparison can be made between the pre and post development conditions. The area drains to an existing inlet connected to the site's storm drain system.

2.4 Post Development Conditions

Under post development conditions the same design point was identified, however the area was divided into four separate drainage areas. Drainage areas PR-DA-1, and PR-DA-4 will direct discharge in to the storm drain system without being detained. The runoff from PR-DA-2 will be collected by the proposed storm drain system and directed to the proposed stormwater management practice (SMP). The runoff from Drainage area PR-DA-3 will discharge toward the southern property line, however this runoff from this area will not negatively impact the adjacent property. The post development drainage areas are shown on Figure #3, Post Development Drainage Area Map in Appendix A.

In order to assure that post-development peak runoff rates will be equal to or less than pre-development peak runoff rates, a SMP is required. Based on the results of the subsurface investigation summarized in Section 2.2 above, it is the professional opinion of PDE that a subsurface infiltration/recharge SMP can be provided to attenuate post-construction runoff associated with the construction of the new parking area.

Runoff from the new parking lot in drainage area PR-DA-2 will be collected by the proposed storm drain system and directed to a subsurface gravel bed with 15-inch perforated pipes for infiltration. Table 2, SMP Summary Table, indicates the inflow, outflow, storage volume, water surface elevation, and freeboard of the SMP for the 2, 10 and 100-year design storms.

Table No. 2 – Stormwater Management Summary Table					
Design Year	Peak Inflow (cfs)	Peak Outflow (cfs)	Volume (ft^3)	Water Surface Elevation (ft.)	Freeboard (ft.)
2	0.65	0.00	166	95.82	3.61
10	1.05	0.00	507	96.97	2.46
100	1.83	0.91	1,245	99.22	0.21

Notes:
(1) Freeboard is the difference between the top of the infiltration bed and the water surface elevation. The top of the infiltration bed is elev. 99.43. (i.e. 99.43 – 98.93 = 0.50)

A summary of the pre-development and post-development runoff rates is presented in Table 3, Peak Discharge Rate Comparison Table. Based on the implementation of the stormwater management measures, the peak runoff rates under the post-development conditions will be less than the peak runoff rates for the pre-development conditions.

Table No. 3 - Peak Discharge Rate Comparison Table			
Design Year Storm Event	24-Hour Rainfall (inches)	Pre-Development Peak Runoff Rate (cfs)	Post-Development Peak Runoff Rate (cfs)
2	3.42	0.25	0.12
10	5.06	0.83	0.38
100	8.90	2.49	1.41

The calculations for pre-development and post-development drainage conditions have been included in Appendix C.

2.5 Erosion & Sediment Control Measures

During construction, the potential for soil erosion and sedimentation will be controlled through the use of temporary soil erosion and sediment control devices and measures. These devices and measures shall be installed and maintained in accordance with the *New York State Standards and Specifications for Erosion and Sediment Control* dated November 2016 ("Blue Book"). The soil erosion and sediment control (E&SC) measures that will be applied to the site during construction are as follows:

- Install E&SC devices and perform construction in accordance with the construction sequence and design notes;
- Retain existing vegetation where feasible and minimize the amount of land disturbance at any one time;
- Trap sediment on-site prior to discharge from the site;
- Stabilize disturbed areas that will not require further earthwork operations within the required periods specified in the Blue Book, and;
- Implement soil restoration to all disturbed and compacted areas that will be remain unpaved, vegetated and/or landscaped in the post-construction condition in accordance with the requirements in Table 4.6 in the Blue Book, prior to final seeding, landscaping, and mulching.

Section 3

Storm Water Management Practice Maintenance

3.1 Long Term Maintenance and Operations

Periodic long-term inspection and maintenance of the Stormwater Management Practices (SMPs) is essential to ensure that the facilities will function as designed. The facility operator, its successors and assigns, shall be responsible for maintaining all onsite SMP components. These components consist of the two drywells and the storm drainage collection system (pipes, drain inlets and manholes).

Comprehensive descriptions of recommended inspection and required maintenance items and intervals for the SMP are provided in the following publications:

- *New York State Stormwater Management Design Manual*, January 2015.
- "Maintenance Program Guidance", NYSDEC.
- "Reducing the Impacts from Stormwater Runoff from New Development", NYSDEC, Second Edition, April 1993, Chapter 7.
- "Controlling Urban Runoff: A Practical Manual for Planning and Designing Urban BMPs", by Thomas R. Schueler, Department of Environmental Programs, Metropolitan Washington Council of Governments (MWCOG), July 1987, Chapters 3, 4, 5 and 9.

These descriptions are applicable to the selected facilities and provide the foundation for an effective facilities maintenance plan. Descriptions of the facility maintenance for this Project are provided in the following paragraphs:

A. Subsurface Stormwater Detention System

Long term preventative maintenance of subsurface storm water detention systems is essential to the continued effectiveness of the system.

Inspections. The water quality facility should be inspected on an annual basis to ensure that the structure operates in the manner originally intended. When possible, inspections should be conducted during wet weather (minimum 1.0" rainfall in 24 hours) to determine if the facility is meeting the targeted detention times. In particular, the outlet structure should be inspected once every six (6) months for evidence of clogging, or conversely, for too rapid a release. Other problems that should be checked for include: subsidence, the accumulation of sediment around the inlet and/or outlet and the adequacy of upstream/downstream storm pipe system. Inspections should be carried out with as-built plans in hand.

Debris and Litter Removal. Debris, leaves, grass clippings and litter may accumulate near the upstream drain inlets, which convey runoff to the facility and should be removed during regular mowing/maintenance operations. Attention should also be paid to debris that may collect at the outlet control orifice and the debris should be removed regularly.

Structural Repairs and Replacement. Repair or replace as necessary inlet/outlet devices that show signs of deterioration, seepage or failure.

Section 4

Summary and Conclusion

Based on the information presented in this report, the implementation of the proposed Storm Water Management Plan for the Project will meet the design objectives stated in this Report.

Respectfully submitted,

Provident Design Engineering, PLLC

Ralph P. Peragine, P.E.
Senior Project Manager
New York PE# 064262

Under New York State Education Law Article 145 (Engineering), Section 7209 (2), it is a violation of this law for any person, unless acting under the direction of a Licensed Professional Engineer, to alter this document.

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APPENDIX A - FIGURES

1. **USDA SOIL SURVEY MAP AND UNIT DESCRIPTION**
2. **PRE-DEVELOPMENT DRAINAGE AREA MAP**
3. **POST-DEVELOPMENT DRAINAGE AREA MAP**

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Westchester County, New York

Cabrini of Westchester

October 5, 2018

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

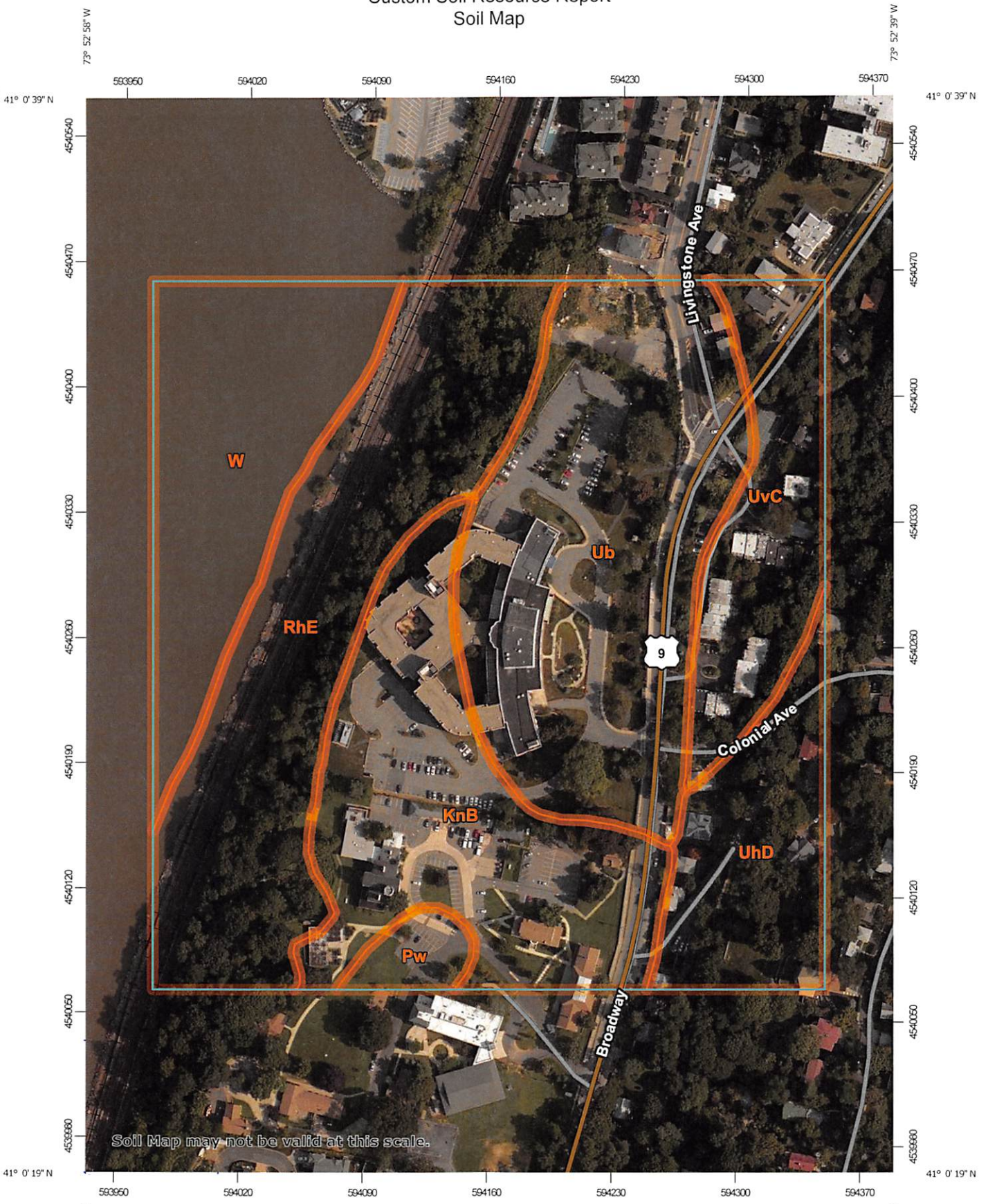
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



Map Scale: 1:2,930 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Westchester County, New York
Survey Area Data: Version 14, Sep 3, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 21, 2014—Aug 27, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
KnB	Knickerbocker fine sandy loam, 2 to 8 percent slopes	6.9	18.6%
Pw	Pompton silt loam, loamy substratum	0.6	1.6%
RhE	Riverhead loam, 25 to 50 percent slopes	8.4	22.5%
Ub	Udorthents, smoothed	9.3	24.9%
UhD	Urban land-Charlton complex, 15 to 25 percent slopes	3.3	8.9%
UvC	Urban land-Riverhead complex, 8 to 15 percent slopes	3.5	9.5%
W	Water	5.2	14.0%
Totals for Area of Interest		**37.2**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not

mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, 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, slope, stoniness, salinity, 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, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas 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 or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Westchester County, New York

KnB—Knickerbocker fine sandy loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: bd8s
Elevation: 100 to 800 feet
Mean annual precipitation: 46 to 50 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 115 to 215 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Knickerbocker and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Knickerbocker

Setting

Landform: Deltas, terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits or deltaic deposits

Typical profile

H1 - 0 to 9 inches: fine sandy loam
H2 - 9 to 19 inches: fine sandy loam
H3 - 19 to 31 inches: loamy fine sand
H4 - 31 to 60 inches: loamy fine sand

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Hinckley

Percent of map unit: 5 percent
Hydric soil rating: No

Riverhead
Percent of map unit: 5 percent
Hydric soil rating: No

Pompton
Percent of map unit: 4 percent
Hydric soil rating: No

Unnamed soils, occasionally flooded
Percent of map unit: 1 percent
Hydric soil rating: No

Pw—Pompton silt loam, loamy substratum

Map Unit Setting
National map unit symbol: bd98
Mean annual precipitation: 46 to 50 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 115 to 215 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Pompton, loamy substratum, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pompton, Loamy Substratum

Setting
Landform: Terraces, valley trains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy over sandy and gravelly glaciofluvial deposits

Typical profile
H1 - 0 to 8 inches: silt loam
H2 - 8 to 26 inches: gravelly fine sandy loam
2C - 26 to 50 inches: very gravelly loamy sand
3C - 50 to 60 inches: gravelly loam

Properties and qualities
Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None

Available water storage in profile: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Hydric soil rating: No

Minor Components

Knickerbocker

Percent of map unit: 3 percent
Hydric soil rating: No

Hinckley

Percent of map unit: 3 percent
Hydric soil rating: No

Riverhead

Percent of map unit: 3 percent
Hydric soil rating: No

Udifluvents

Percent of map unit: 2 percent
Hydric soil rating: No

Fredon

Percent of map unit: 2 percent
Landform: Depressions
Hydric soil rating: Yes

Fluvaquents

Percent of map unit: 2 percent
Landform: Flood plains
Hydric soil rating: Yes

RhE—Riverhead loam, 25 to 50 percent slopes

Map Unit Setting

National map unit symbol: bd9k
Mean annual precipitation: 46 to 50 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 115 to 215 days
Farmland classification: Not prime farmland

Map Unit Composition

Riverhead and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Riverhead

Setting

Landform: Terraces, deltas
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy glaciofluvial deposits overlying stratified sand and gravel

Typical profile

H1 - 0 to 6 inches: loam
H2 - 6 to 25 inches: sandy loam
H3 - 25 to 30 inches: loamy sand
H4 - 30 to 60 inches: loamy sand

Properties and qualities

Slope: 25 to 50 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Pompton

Percent of map unit: 5 percent
Hydric soil rating: No

Charlton

Percent of map unit: 4 percent
Hydric soil rating: No

Knickerbocker

Percent of map unit: 3 percent
Hydric soil rating: No

Hinckley

Percent of map unit: 3 percent
Hydric soil rating: No

Ub—Udorthents, smoothed

Map Unit Setting

National map unit symbol: bd7f
Elevation: 50 to 2,400 feet
Mean annual precipitation: 46 to 50 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 115 to 215 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents, smoothed, and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents, Smoothed

Typical profile

H1 - 0 to 4 inches: gravelly loam
H2 - 4 to 70 inches: very gravelly loam

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 5.95 in/hr)
Depth to water table: About 18 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Low (about 4.6 inches)

Minor Components

Udorthents, wet substratum

Percent of map unit: 5 percent
Hydric soil rating: No

Urban land

Percent of map unit: 5 percent
Hydric soil rating: Unranked

Leicester

Percent of map unit: 2 percent
Hydric soil rating: No

Hollis

Percent of map unit: 2 percent
Hydric soil rating: No

Charlton

Percent of map unit: 2 percent
Hydric soil rating: No

Riverhead

Percent of map unit: 2 percent
Hydric soil rating: No

Sun

Percent of map unit: 2 percent
Landform: Depressions
Hydric soil rating: Yes

UhD—Urban land-Charlton complex, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2wh1n
Elevation: 20 to 470 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 40 percent
Charlton and similar soils: 35 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Typical profile

M - 0 to 10 inches: cemented material

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 0 inches to manufactured layer
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: Unranked

Description of Charlton

Setting

Landform: Ridges, hills, ground moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Parent material: Coarse-loamy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Ap - 0 to 7 inches: fine sandy loam
Bw - 7 to 22 inches: gravelly fine sandy loam
C - 22 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Leicester

Percent of map unit: 8 percent
Landform: Depressions, drainageways, ground moraines, hills
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Concave
Hydric soil rating: Yes

Chatfield

Percent of map unit: 7 percent
Landform: Hills, ridges
Landform position (two-dimensional): Shoulder, summit, backslope
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Udorthents

Percent of map unit: 5 percent

Landform: Ridges
Landform position (three-dimensional): Tread
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Sutton

Percent of map unit: 5 percent
Landform: Hills, ground moraines
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

UvC—Urban land-Riverhead complex, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: bd7x
Mean annual precipitation: 46 to 50 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 115 to 215 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 50 percent
Riverhead and similar soils: 25 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Riverhead

Setting

Landform: Deltas, terraces
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy glaciofluvial deposits overlying stratified sand and gravel

Typical profile

H1 - 0 to 6 inches: loam
H2 - 6 to 25 inches: sandy loam
H3 - 25 to 30 inches: loamy sand
H4 - 30 to 60 inches: loamy sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.4 inches)

Minor Components

Hinckley
Percent of map unit: 5 percent
Hydric soil rating: No

Pompton
Percent of map unit: 5 percent
Hydric soil rating: No

Udorthents
Percent of map unit: 5 percent
Hydric soil rating: No

Knickerbocker
Percent of map unit: 5 percent
Hydric soil rating: No

Charlton
Percent of map unit: 3 percent
Hydric soil rating: No

Fluvaquents
Percent of map unit: 1 percent
Landform: Flood plains
Hydric soil rating: Yes

Udifluvents
Percent of map unit: 1 percent
Hydric soil rating: No

W—Water

Map Unit Setting
National map unit symbol: bd7z
Mean annual precipitation: 46 to 50 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 115 to 215 days
Farmland classification: Not prime farmland

Map Unit Composition
Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Soil Information for All Uses

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Soil Erosion

This folder contains a collection of tabular reports that present soil erosion factors and groupings. The reports (tables) include all selected map units and components for each map unit. Soil erosion factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

RUSLE2 Related Attributes

This report summarizes those soil attributes used by the Revised Universal Soil Loss Equation Version 2 (RUSLE2) for the map units in the selected area. The report includes the map unit symbol, the component name, and the percent of the component in the map unit. Soil property data for each map unit component include the hydrologic soil group, erosion factors Kf for the surface horizon, erosion factor T, and the representative percentage of sand, silt, and clay in the mineral surface horizon. Missing surface data may indicate the presence of an organic surface layer. .

Report—RUSLE2 Related Attributes

Soil properties and interpretations for erosion runoff calculations. The surface mineral horizon properties are displayed. Organic surface horizons are not displayed.

RUSLE2 Related Attributes–Westchester County, New York								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
KnB—Knickerbocker fine sandy loam, 2 to 8 percent slopes								
Knickerbocker	85	—	A	.17	2	64.6	25.4	10.0
Pw—Pompton silt loam, loamy substratum								
Pompton, loamy substratum	85	—	B/D	.37	5	30.7	57.3	12.0
RhE—Riverhead loam, 25 to 50 percent slopes								
Riverhead	85	—	A	.28	3	47.9	40.1	12.0
Ub—Udorthents, smoothed								
Udorthents, smoothed	80	—	B	.32	3	42.1	45.9	12.0
UhD—Urban land-Charlton complex, 15 to 25 percent slopes								
Urban land	40	69	D	—	—	—	—	—
Charlton	35	49	B	.24	5	57.0	34.0	9.0
UvC—Urban land-Riverhead complex, 8 to 15 percent slopes								
Riverhead	25	—	A	.28	3	47.9	40.1	12.0

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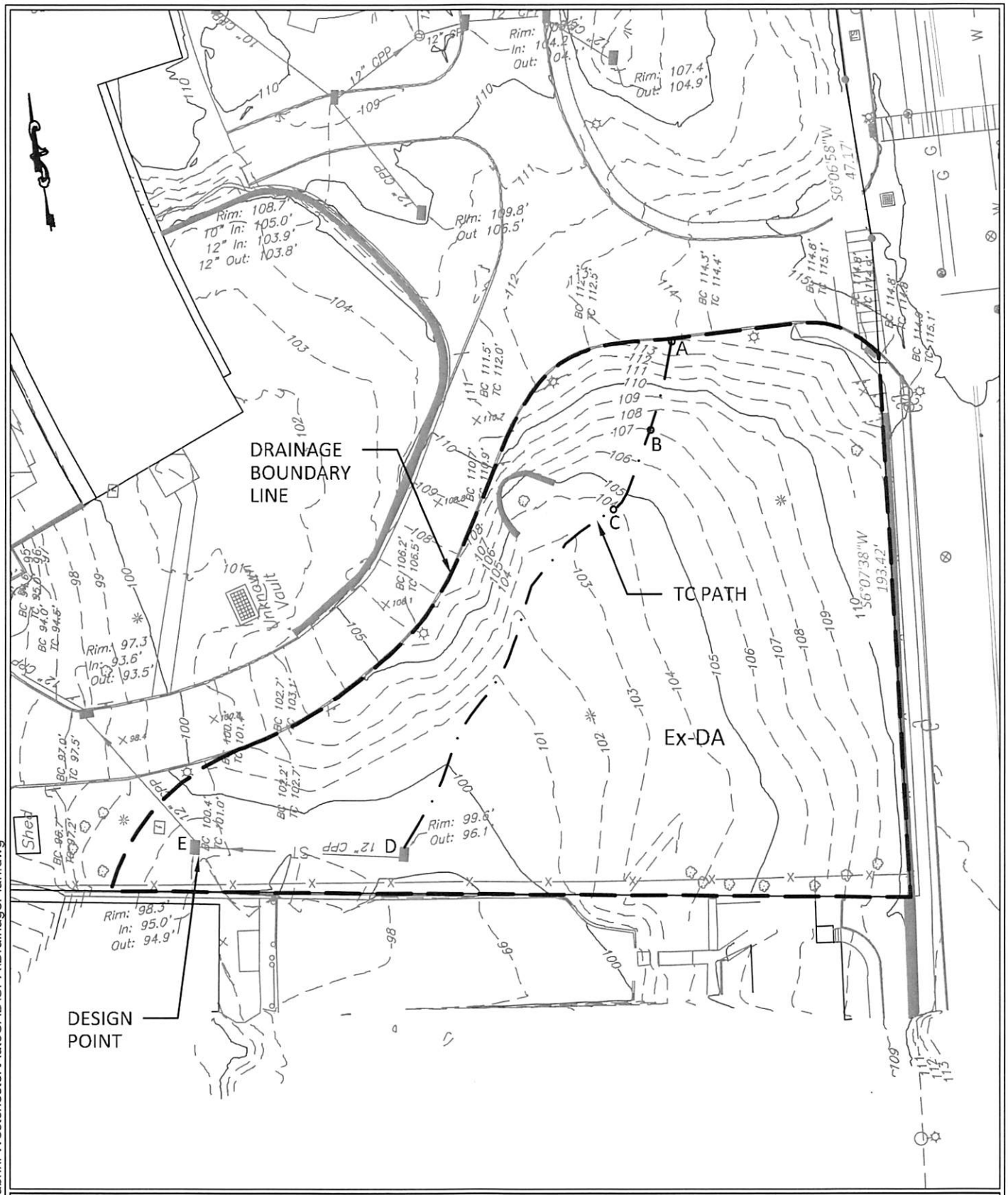

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Provident design engineering

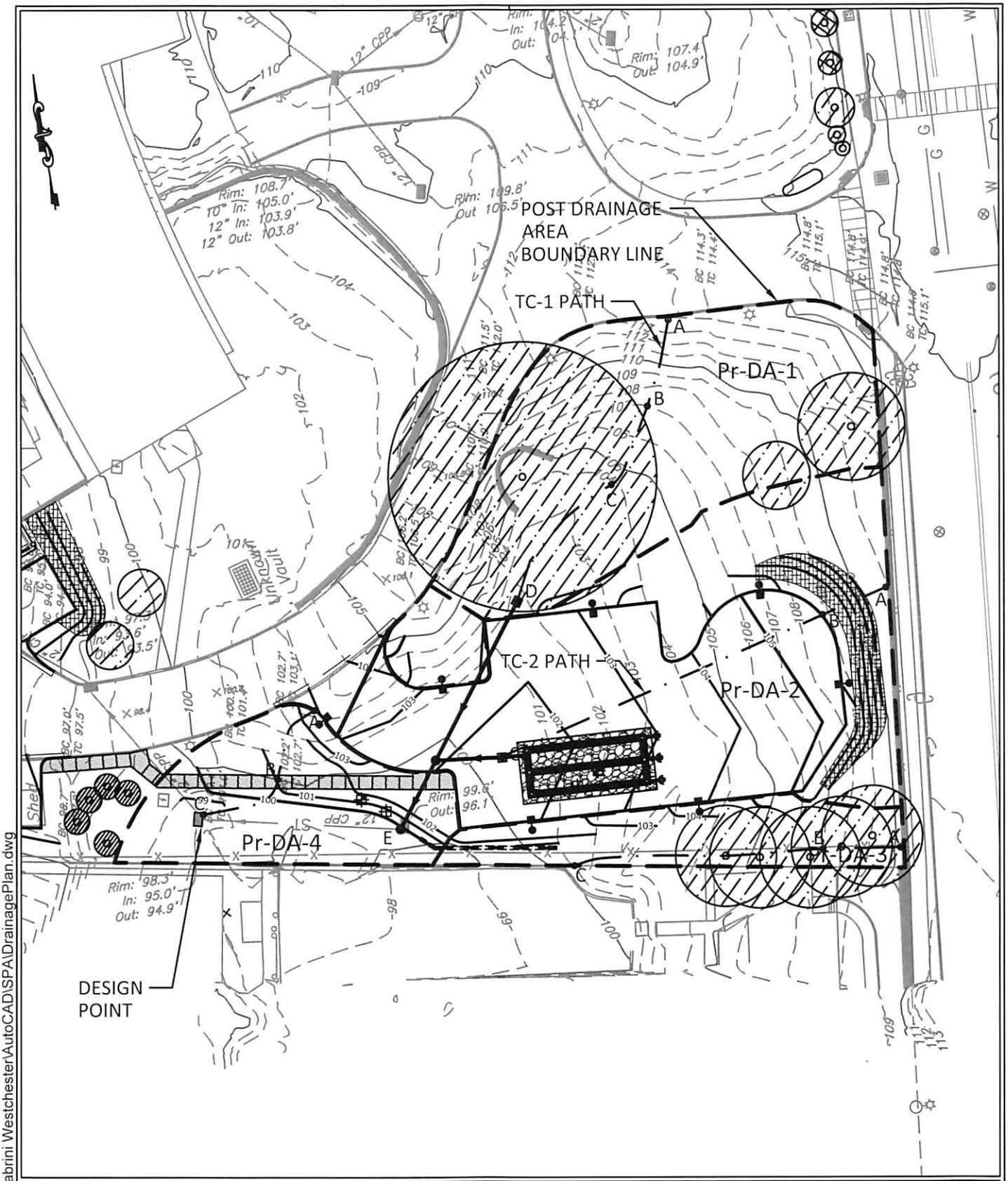
7 SKYLINE DRIVE, HAWTHORNE, NEW YORK 10532
TEL: (914) 592-4040 WWW.PDERESULTS.COM

Pre-Development Drainage Area Map

Cabrini of Westchester
115 Broadway
Village of Dobbs Ferry, NY

Project No. 18-022
Scale: 1"=40'

Figure No. 2



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Post-Development Drainage Area Map

Cabrini of Westcheater
115 Broadway
Village of Dobbs Ferry, NY

Project No. 18-022
Scale: 1"=40'

Figure No. 3

APPENDIX B - SUBSURFACE INVESTIGATION

TEST PIT LOGS

INFILTRATION TESTING DATA SHEETS

Provident design engineering	7 Skyline Drive Hawthorne, New York 10532 Phone 914-592-4040	**TEST PIT LOG**	**TEST PIT: TP- 1** **SHEET: 1 OF 2**

JOB NAME/ CLIENT	PROJECT NO.		
Cabrini of Westchester	18-022		
ADDRESS		**INSPECTOR**	**EXCAVATOR**
115 Broadway, Dobbs Ferry, NY 10522		C. Hanzlik, K. Murphy	Carmine Giuliano
START DATE	**END DATE**	**Depth to Groundwater**	**Depth to Bedrock**
10/18/2018	10/18/2018	N/A	N/A

DEPTH (ft)	USCS SYMBOL	DESCRIPTION OF SOILS (SAA = Same As Above) f - fine m - medium c - coarse lt - light dk - dark tr - trace ltl - little	REMARKS (PID, STAINING, ODORS, ETC.) FP = Free Product N/S = No Staining, N/O = No odors SO = Slight Odor, MO = Moderate Odor STO = Strong Odor
		Dk Brown to Black Topsoil w/organics	N/S, N/O
1.0			
2.0			
3.0			
4.0	SM	Lt Brown m-f SAND, w/silt, moist	N/S, N/O
5.0			
6.0			
7.0		End of Test Pit at 7.0' bgs - backfilled	

Provident design engineering	7 Skyline Drive Hawthorne, New York 10532 Phone 914-592-4040	**TEST PIT LOG**	**TEST PIT: TP- 2** **SHEET: 2 OF 2**

JOB NAME/ CLIENT	**PROJECT NO.**		
Cabrini of Westchester	18-022		
ADDRESS		**INSPECTOR**	**EXCAVATOR**
115 Broadway, Dobbs Ferry, NY 10522		C. Hanzlik, K. Murphy	Carmine Giuliano
START DATE	**END DATE**	**Depth to Groundwater**	**Depth to Bedrock**
10/18/2018	10/18/2018	N/A	N/A

DEPTH (ft)	USCS SYMBOL	**DESCRIPTION OF SOILS** (SAA = Same As Above) f - fine m - medium c - coarse lt - light dk - dark tr - trace ltl - little	**REMARKS** (PID, STAINING, ODORS, ETC.) FP = Free Product N/S = No Staining, N/O = No odors SO = Slight Odor, MO = Moderate Odor STO = Strong Odor
		Dk Brown to Black Topsoil w/organics	N/S, N/O
1.0			
2.0			
3.0			
4.0	SM	Dk Brown m-f SAND, w/silt, moist	N/S, N/O
5.0			
6.0			
7.0		End of Test Pit at 7.0' bgs - backfilled	

TEST PIT DATA TABLE		
TEST DATE	OCTOBER 18, 2018	
DEEP TEST NO.	SOIL PROFILE BGS	DESCRIPTION
TP-1	0 TO 1'	DK BROWN TO BLACK TOPSOIL
	1' TO 7'	LT BROWN M-F SAND, W/SILT, MOIST
TP-2	0 TO 1'	DK BROWN TO BLACK TOPSOIL W/ORGANICS
	1' TO 7'	LT BROWN M-F SAND, W/SILT, MOIST
BGS - BELOW GROUND SURFACE		

INFILTRATION TEST DATA TABLE	
TEST DATE	OCTOBER 19, 2018
TEST NO.	INFILTRATION DESIGN RATE
PT-1	3.30 MIN./INCH
PT-2	3.75 MIN./INCH

Provident Design Engineering, PLLC
DESIGN DATA SHEET – STORMWATER INFILTRATION TESTING

Project Name: Cabrini of Westchester Nursing Home			
Owner: Cabrini of Westchester	Address: 115 Broadway, Dobbs Ferry, NY 10522		
Located at (Street): 115 Broadway Dobbs Ferry, NY	Sec. 0	Block: 0	Lot: 00
(Indicate nearest cross street): N/A			
Municipality: Dobbs Ferry (V)	County: Westchester	Watershed: Hudson River	

Pre-Soak Date: 10.18.2018 **Run Date: 10.19.2018**

CLOCK TIME				INFILTRATION (Test Hole Depth @ 84 inches bgs)			
Run No.	Start	Stop	Elapsed Time (Min.)	Depth to Water from Top of PVC Casing Start Inches	Depth to Water from Top of PVC Casing Stop Inches	Water Level Drop (Inches)	Soil Rate Min/In Drop
HOLE NUMBER – PT-1							
1	10:38A	11:38A	60	72	94(1)	22	2.72
2	11:30A	12:39P	60	72	90	18	3.33
3	12:40P	1:40P	60	72	90	18	3.33
4							
HOLE NUMBER – PT-2							
1	10:50A	11:50A	60	66	88(2)	22	2.72
2	11:50A	12:50P	60	66	83	17	3.53
3	12:50P	1:50P	60	66	82	16	3.75
4							
HOLE NUMBER – ____							
1							
2							
3							
4							
HOLE NUMBER – ____							
1							
2							
3							
4							

Note:
1. Overall depth of PVC casing – 96 inches.
2. Overall depth of PVC casing – 90 inches.

Witnessed by: Ken Murphy - Provident Design Engineering, PLLC (PDE)

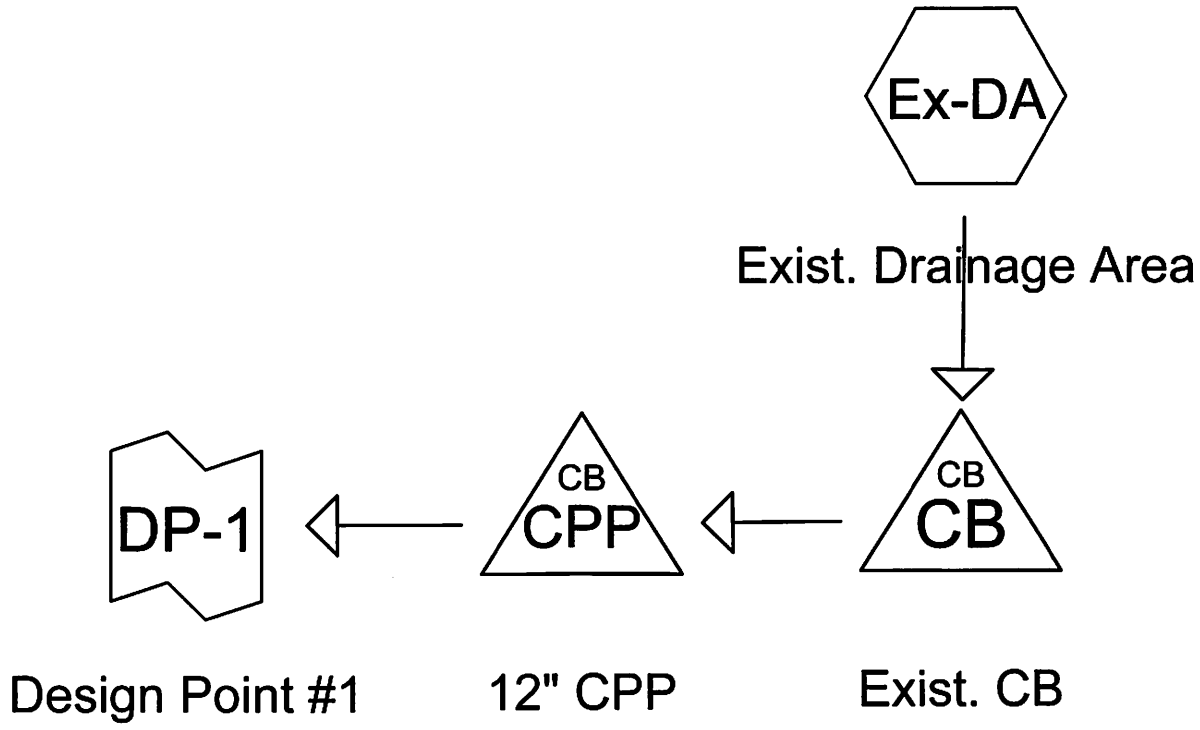
Reviewed by: Ralph P. Peragine, P.E., PDE

APPENDIX C

STORM WATER MANAGEMENT CALCULATIONS

APPENDIX C-1

PRE-DEVELOPMENT CALCULATIONS



Subcat Reach Pond Link

Routing Diagram for Cabrini SWM-PRE-06-19
Prepared by Provident Design Engineering, PLLC, Printed 6/25/2019
HydroCAD® 10.00 s/n 06251 © 2011 HydroCAD Software Solutions LLC

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment Ex-DA: Exist. Drainage Area
Runoff Area=25,166 sf 0.00% Impervious Runoff Depth=0.54"
Flow Length=172' Tc=6.0 min CN=61 Runoff=0.25 cfs 1,127 cf

Pond CB: Exist. CB
Peak Elev=96.35' Inflow=0.25 cfs 1,127 cf
Outflow=0.25 cfs 1,127 cf

Pond CPP: 12" CPP
Peak Elev=96.35' Inflow=0.25 cfs 1,127 cf
12.0" Round Culvert n=0.013 L=59.5' S=0.0202 '/' Outflow=0.25 cfs 1,127 cf

Link DP-1: Design Point #1
Inflow=0.25 cfs 1,127 cf
Primary=0.25 cfs 1,127 cf

Total Runoff Area = 25,166 sf Runoff Volume = 1,127 cf Average Runoff Depth = 0.54"
100.00% Pervious = 25,166 sf 0.00% Impervious = 0 sf

Summary for Subcatchment Ex-DA: Exist. Drainage Area

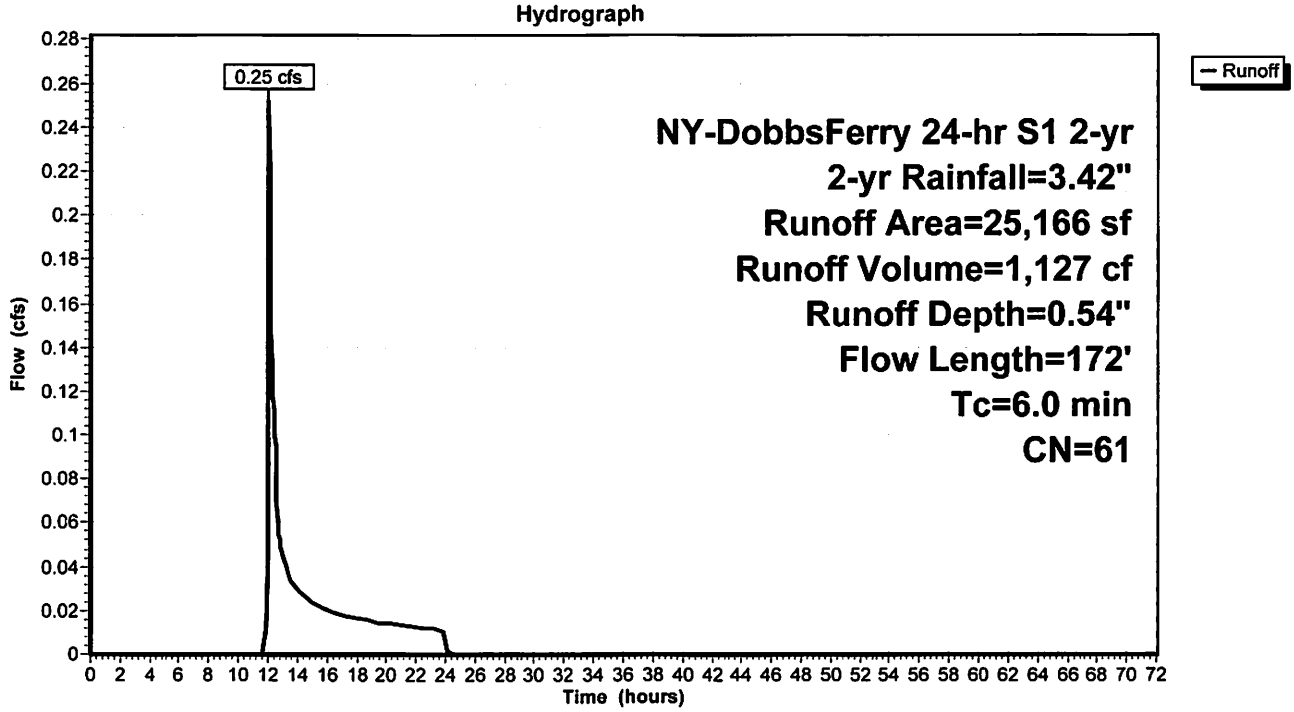
Runoff = 0.25 cfs @ 12.06 hrs, Volume= 1,127 cf, Depth= 0.54"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-DobbsFerry 24-hr S1 2-yr 2-yr Rainfall=3.42"

Area (sf)	CN	Description
25,166	61	>75% Grass cover, Good, HSG B
25,166		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	27	0.2600	0.26		**Sheet Flow, AB**
					Grass: Dense n= 0.240 P2= 3.50"
0.1	26	0.1150	5.09		**Shallow Concentrated Flow, BC**
					Grassed Waterway Kv= 15.0 fps
0.7	119	0.0370	2.89		**Shallow Concentrated Flow, CD**
					Grassed Waterway Kv= 15.0 fps
2.5	172	Total, Increased to minimum Tc = 6.0 min			

Subcatchment Ex-DA: Exist. Drainage Area



Summary for Pond CB: Exist. CB

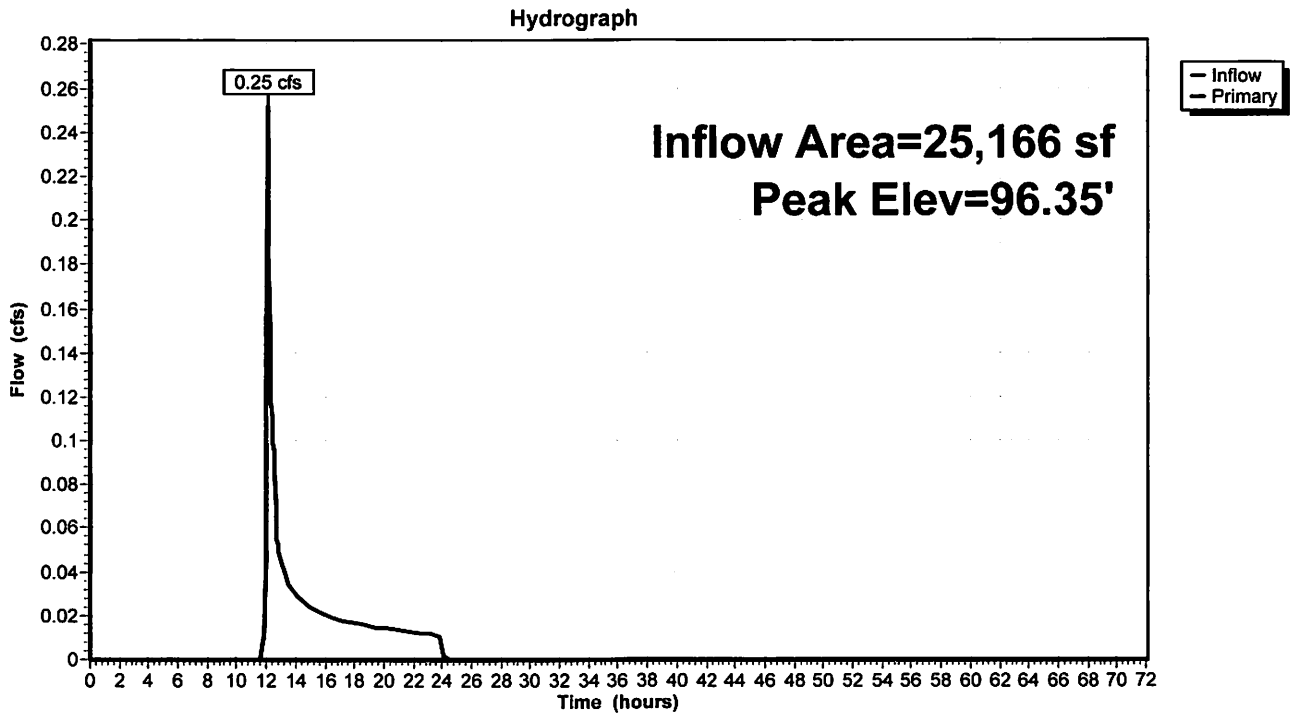
Inflow Area = 25,166 sf, 0.00% Impervious, Inflow Depth = 0.54" for 2-yr event
Inflow = 0.25 cfs @ 12.06 hrs, Volume= 1,127 cf
Outflow = 0.25 cfs @ 12.06 hrs, Volume= 1,127 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.25 cfs @ 12.06 hrs, Volume= 1,127 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 96.35' @ 12.06 hrs
Flood Elev= 99.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	96.10'	**12.0" Round Culvert** L= 59.5' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 96.10' / 94.90' S= 0.0202 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	99.50'	**24.0" x 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.24 cfs @ 12.06 hrs HW=96.34' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 0.24 cfs @ 1.66 fps)
└—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond CB: Exist. CB



Summary for Pond CPP: 12" CPP

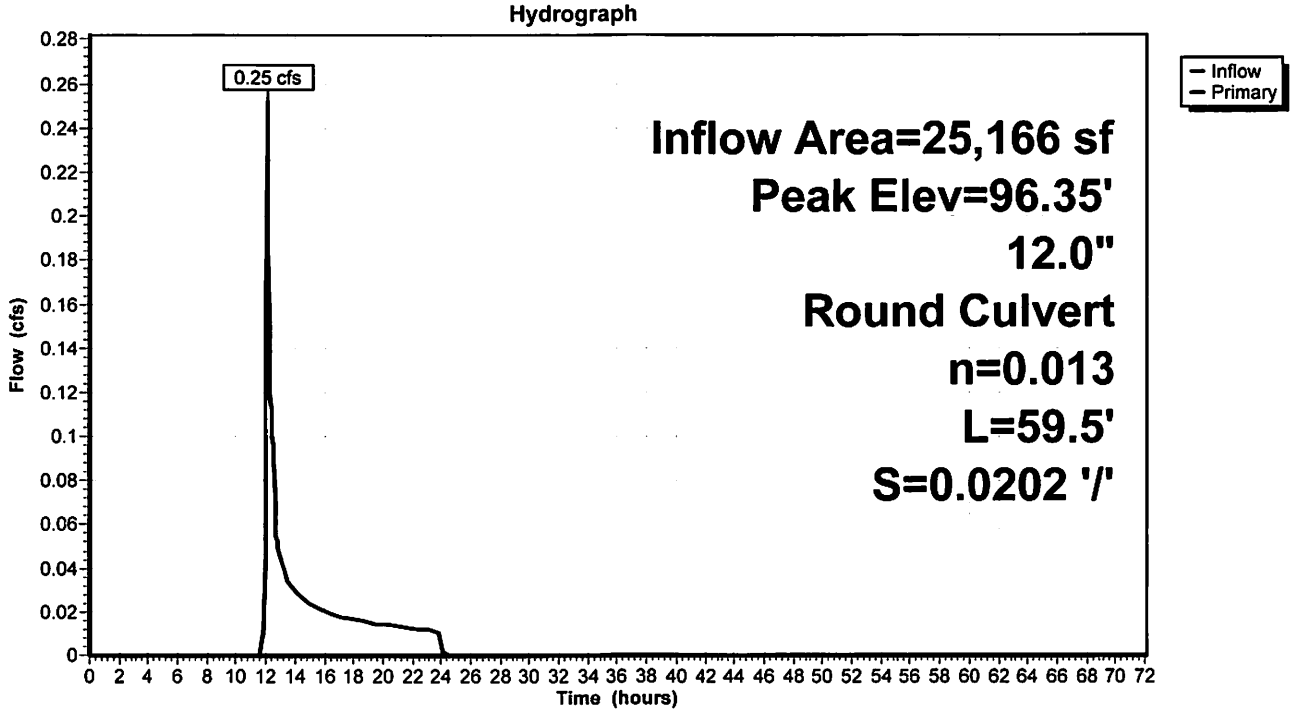
Inflow Area = 25,166 sf, 0.00% Impervious, Inflow Depth = 0.54" for 2-yr event
Inflow = 0.25 cfs @ 12.06 hrs, Volume= 1,127 cf
Outflow = 0.25 cfs @ 12.06 hrs, Volume= 1,127 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.25 cfs @ 12.06 hrs, Volume= 1,127 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 96.35' @ 12.06 hrs
Flood Elev= 98.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	96.10'	**12.0" Round Culvert** L= 59.5' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 96.10' / 94.90' S= 0.0202 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.24 cfs @ 12.06 hrs HW=96.34' (Free Discharge)
1=Culvert (Inlet Controls 0.24 cfs @ 1.66 fps)

Pond CPP: 12" CPP

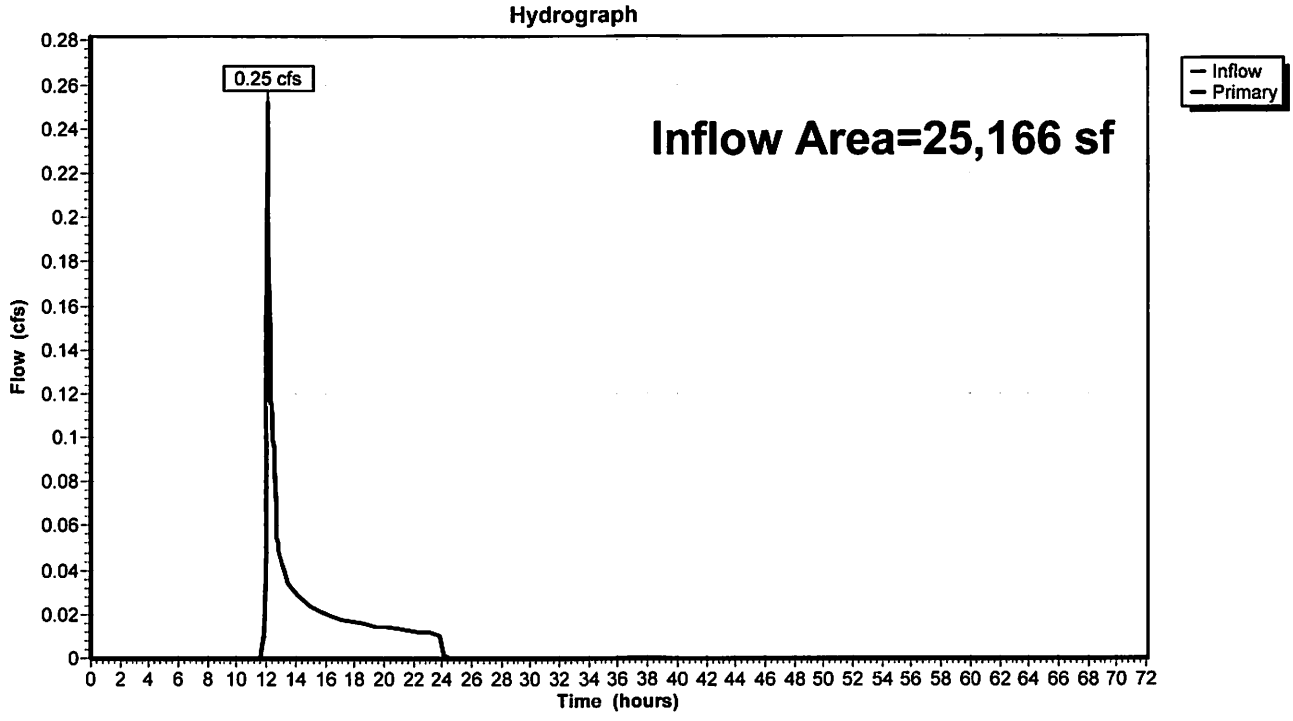


Summary for Link DP-1: Design Point #1

Inflow Area = 25,166 sf, 0.00% Impervious, Inflow Depth = 0.54" for 2-yr event
Inflow = 0.25 cfs @ 12.06 hrs, Volume= 1,127 cf
Primary = 0.25 cfs @ 12.06 hrs, Volume= 1,127 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link DP-1: Design Point #1



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment Ex-DA: Exist. Drainage Area
Runoff Area=25,166 sf 0.00% Impervious Runoff Depth=1.41"
Flow Length=172' Tc=6.0 min CN=61 Runoff=0.83 cfs 2,947 cf

Pond CB: Exist. CB
Peak Elev=96.57' Inflow=0.83 cfs 2,947 cf
Outflow=0.83 cfs 2,947 cf

Pond CPP: 12" CPP
Peak Elev=96.57' Inflow=0.83 cfs 2,947 cf
12.0" Round Culvert n=0.013 L=59.5' S=0.0202 '/' Outflow=0.83 cfs 2,947 cf

Link DP-1: Design Point #1
Inflow=0.83 cfs 2,947 cf
Primary=0.83 cfs 2,947 cf

Total Runoff Area = 25,166 sf Runoff Volume = 2,947 cf Average Runoff Depth = 1.41"
100.00% Pervious = 25,166 sf 0.00% Impervious = 0 sf

Summary for Subcatchment Ex-DA: Exist. Drainage Area

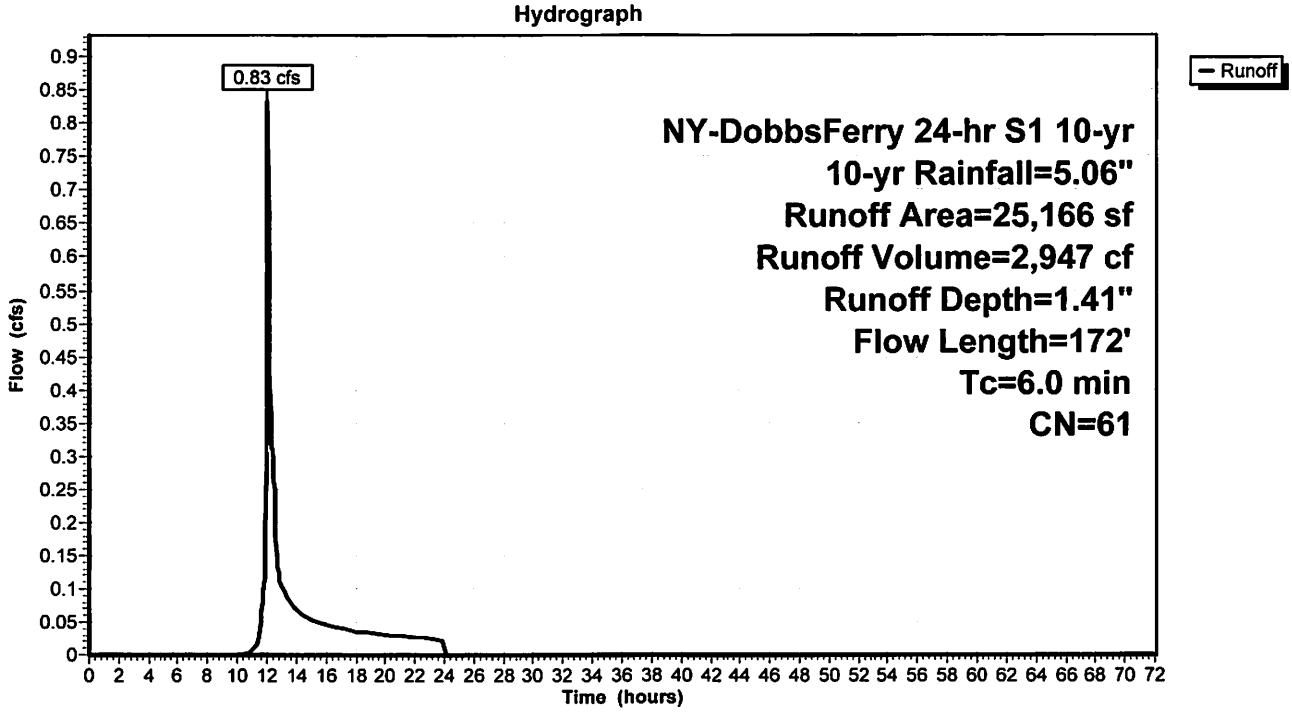
Runoff = 0.83 cfs @ 12.05 hrs, Volume= 2,947 cf, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-DobbsFerry 24-hr S1 10-yr 10-yr Rainfall=5.06"

Area (sf)	CN	Description
25,166	61	>75% Grass cover, Good, HSG B
25,166		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	27	0.2600	0.26		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 3.50"
0.1	26	0.1150	5.09		**Shallow Concentrated Flow, BC** Grassed Waterway Kv= 15.0 fps
0.7	119	0.0370	2.89		**Shallow Concentrated Flow, CD** Grassed Waterway Kv= 15.0 fps
2.5	172	Total, Increased to minimum Tc = 6.0 min			

Subcatchment Ex-DA: Exist. Drainage Area



Summary for Pond CB: Exist. CB

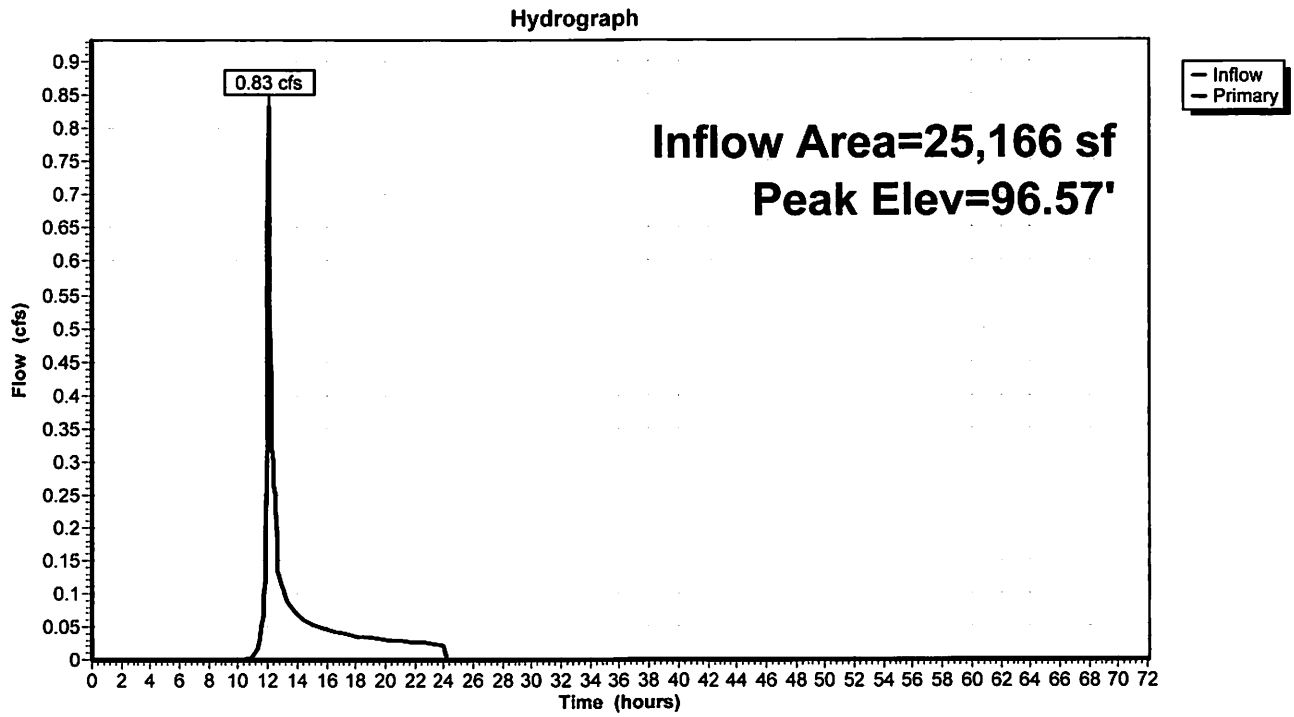
Inflow Area = 25,166 sf, 0.00% Impervious, Inflow Depth = 1.41" for 10-yr event
Inflow = 0.83 cfs @ 12.05 hrs, Volume= 2,947 cf
Outflow = 0.83 cfs @ 12.05 hrs, Volume= 2,947 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.83 cfs @ 12.05 hrs, Volume= 2,947 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 96.57' @ 12.05 hrs
Flood Elev= 99.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	96.10'	**12.0" Round Culvert** L= 59.5' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 96.10' / 94.90' S= 0.0202 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	99.50'	**24.0" x 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.83 cfs @ 12.05 hrs HW=96.56' (Free Discharge)
↑ **1=Culvert** (Inlet Controls 0.83 cfs @ 2.32 fps)
└ **2=Orifice/Grate** (Controls 0.00 cfs)

Pond CB: Exist. CB



Summary for Pond CPP: 12" CPP

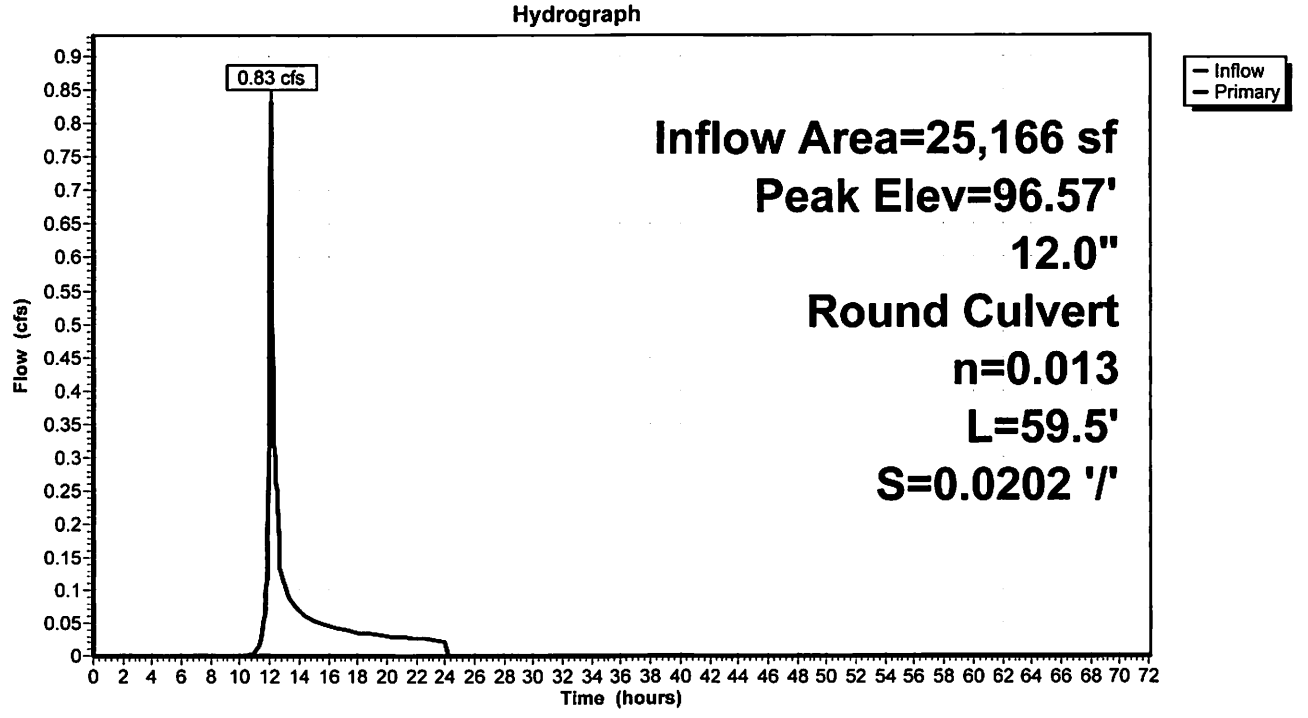
Inflow Area = 25,166 sf, 0.00% Impervious, Inflow Depth = 1.41" for 10-yr event
Inflow = 0.83 cfs @ 12.05 hrs, Volume= 2,947 cf
Outflow = 0.83 cfs @ 12.05 hrs, Volume= 2,947 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.83 cfs @ 12.05 hrs, Volume= 2,947 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 96.57' @ 12.05 hrs
Flood Elev= 98.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	96.10'	**12.0" Round Culvert** L= 59.5' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 96.10' / 94.90' S= 0.0202 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.83 cfs @ 12.05 hrs HW=96.56' (Free Discharge)
1=Culvert (Inlet Controls 0.83 cfs @ 2.32 fps)

Pond CPP: 12" CPP

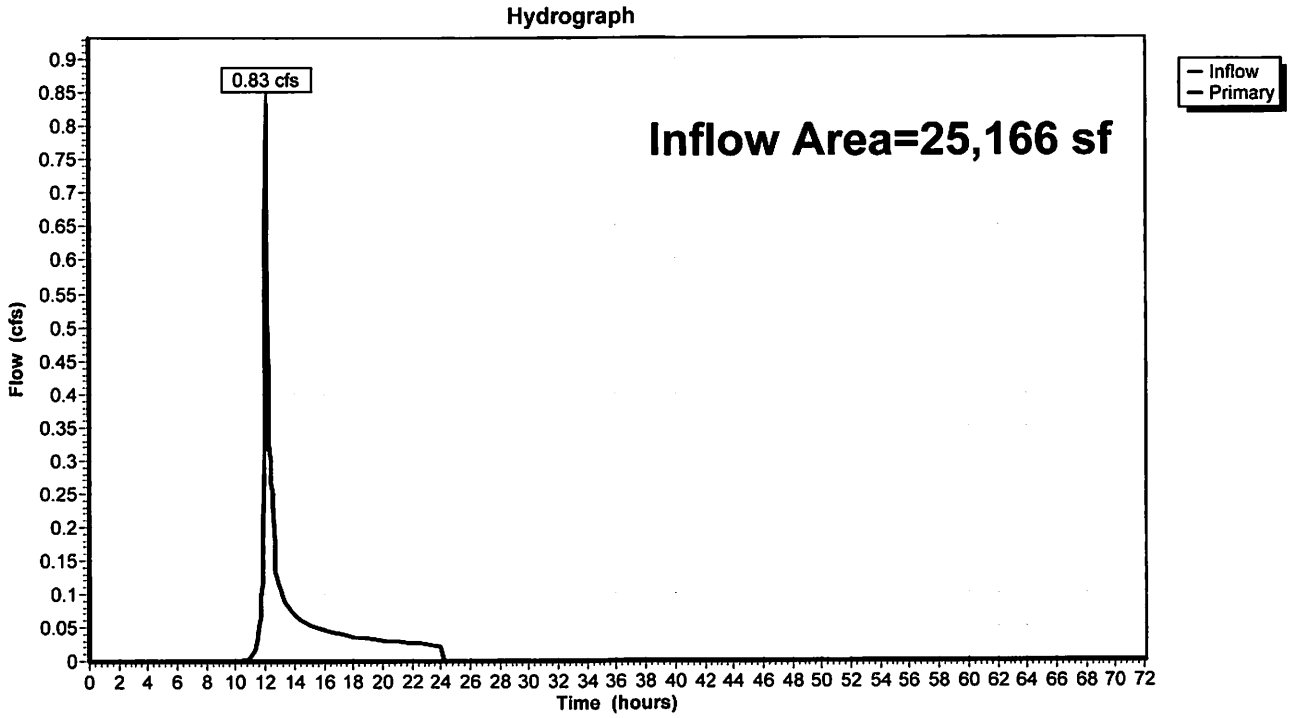


Summary for Link DP-1: Design Point #1

Inflow Area = 25,166 sf, 0.00% Impervious, Inflow Depth = 1.41" for 10-yr event
Inflow = 0.83 cfs @ 12.05 hrs, Volume= 2,947 cf
Primary = 0.83 cfs @ 12.05 hrs, Volume= 2,947 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link DP-1: Design Point #1



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment Ex-DA: Exist. Drainage Area Runoff Area=25,166 sf 0.00% Impervious Runoff Depth=4.14"
Flow Length=172' Tc=6.0 min CN=61 Runoff=2.49 cfs 8,692 cf

Pond CB: Exist. CB Peak Elev=97.03' Inflow=2.49 cfs 8,692 cf
Outflow=2.49 cfs 8,692 cf

Pond CPP: 12" CPP Peak Elev=97.03' Inflow=2.49 cfs 8,692 cf
12.0" Round Culvert n=0.013 L=59.5' S=0.0202 '/' Outflow=2.49 cfs 8,692 cf

Link DP-1: Design Point #1 Inflow=2.49 cfs 8,692 cf
Primary=2.49 cfs 8,692 cf

Total Runoff Area = 25,166 sf Runoff Volume = 8,692 cf Average Runoff Depth = 4.14"
100.00% Pervious = 25,166 sf 0.00% Impervious = 0 sf

Summary for Subcatchment Ex-DA: Exist. Drainage Area

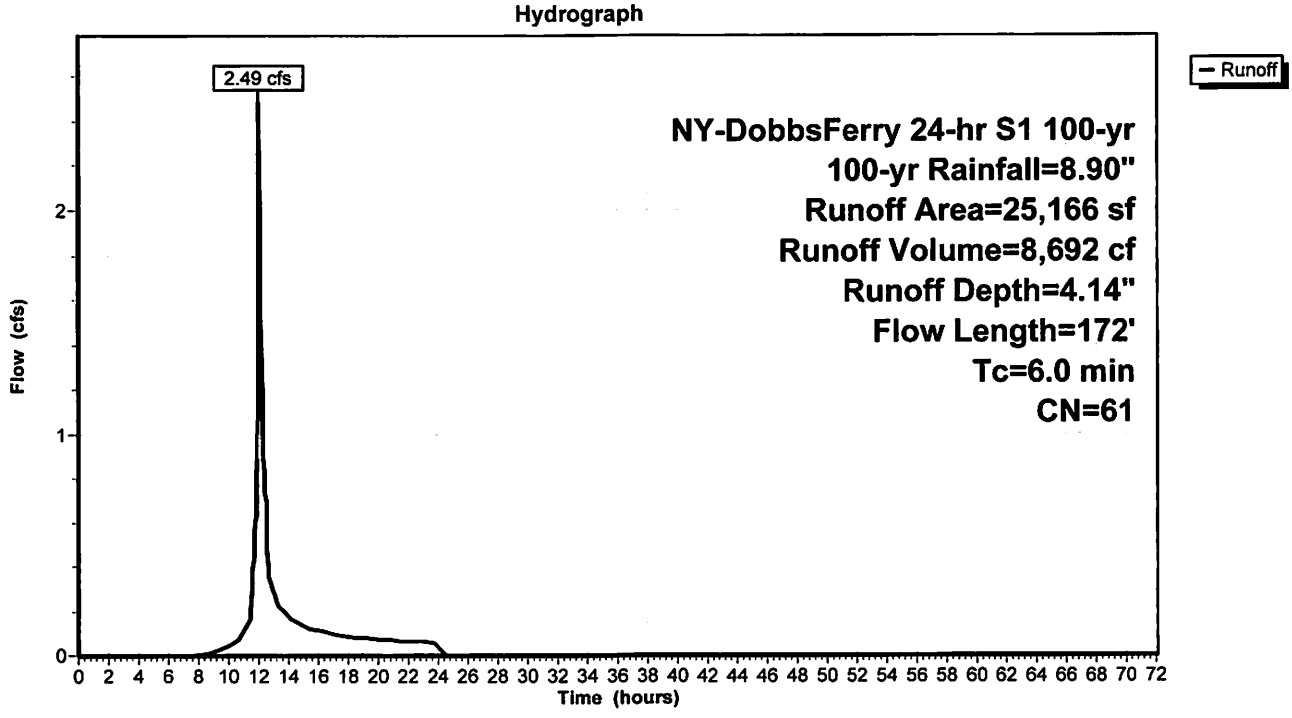
Runoff = 2.49 cfs @ 12.05 hrs, Volume= 8,692 cf, Depth= 4.14"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-DobbsFerry 24-hr S1 100-yr 100-yr Rainfall=8.90"

Area (sf)	CN	Description
25,166	61	>75% Grass cover, Good, HSG B
25,166		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	27	0.2600	0.26		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 3.50"
0.1	26	0.1150	5.09		**Shallow Concentrated Flow, BC** Grassed Waterway Kv= 15.0 fps
0.7	119	0.0370	2.89		**Shallow Concentrated Flow, CD** Grassed Waterway Kv= 15.0 fps
2.5	172	Total, Increased to minimum Tc = 6.0 min			

Subcatchment Ex-DA: Exist. Drainage Area



Summary for Pond CB: Exist. CB

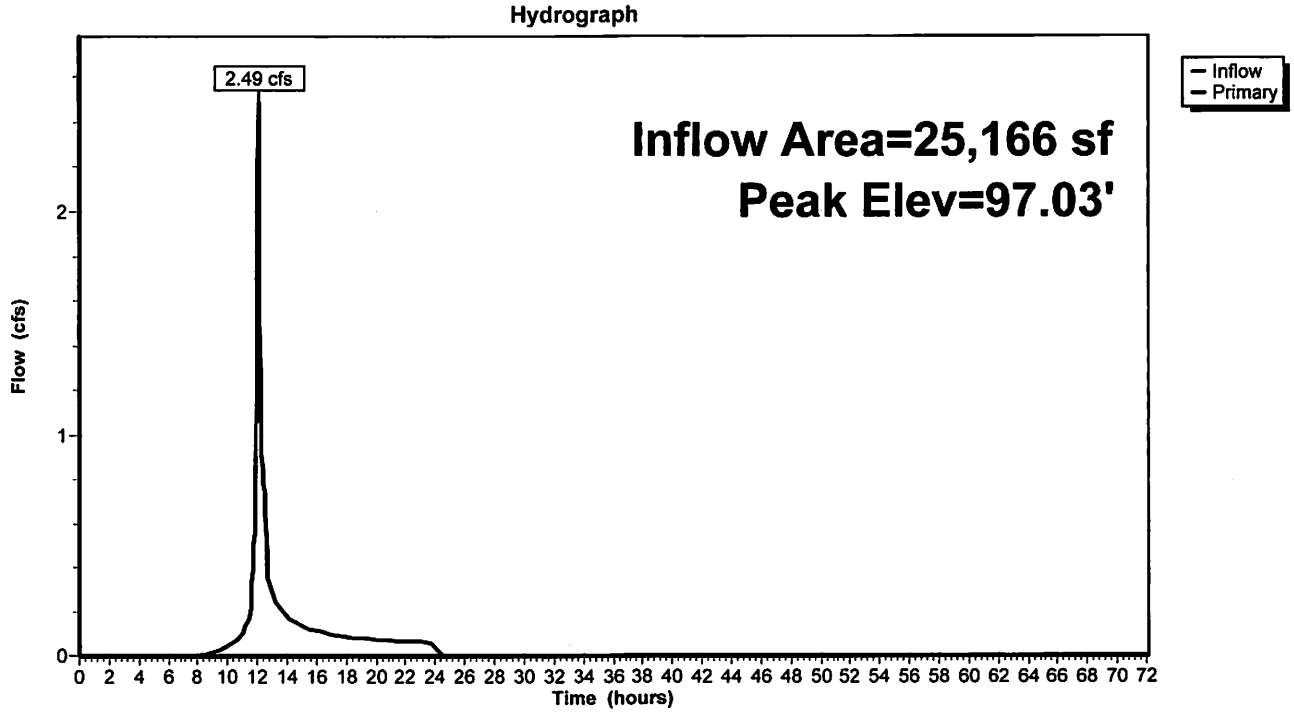
Inflow Area = 25,166 sf, 0.00% Impervious, Inflow Depth = 4.14" for 100-yr event
Inflow = 2.49 cfs @ 12.05 hrs, Volume= 8,692 cf
Outflow = 2.49 cfs @ 12.05 hrs, Volume= 8,692 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.49 cfs @ 12.05 hrs, Volume= 8,692 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 97.03' @ 12.05 hrs
Flood Elev= 99.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	96.10'	**12.0" Round Culvert** L= 59.5' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 96.10' / 94.90' S= 0.0202 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	99.50'	**24.0" x 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.45 cfs @ 12.05 hrs HW=97.01' (Free Discharge)
└**1=Culvert** (Inlet Controls 2.45 cfs @ 3.26 fps)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Pond CB: Exist. CB



Summary for Pond CPP: 12" CPP

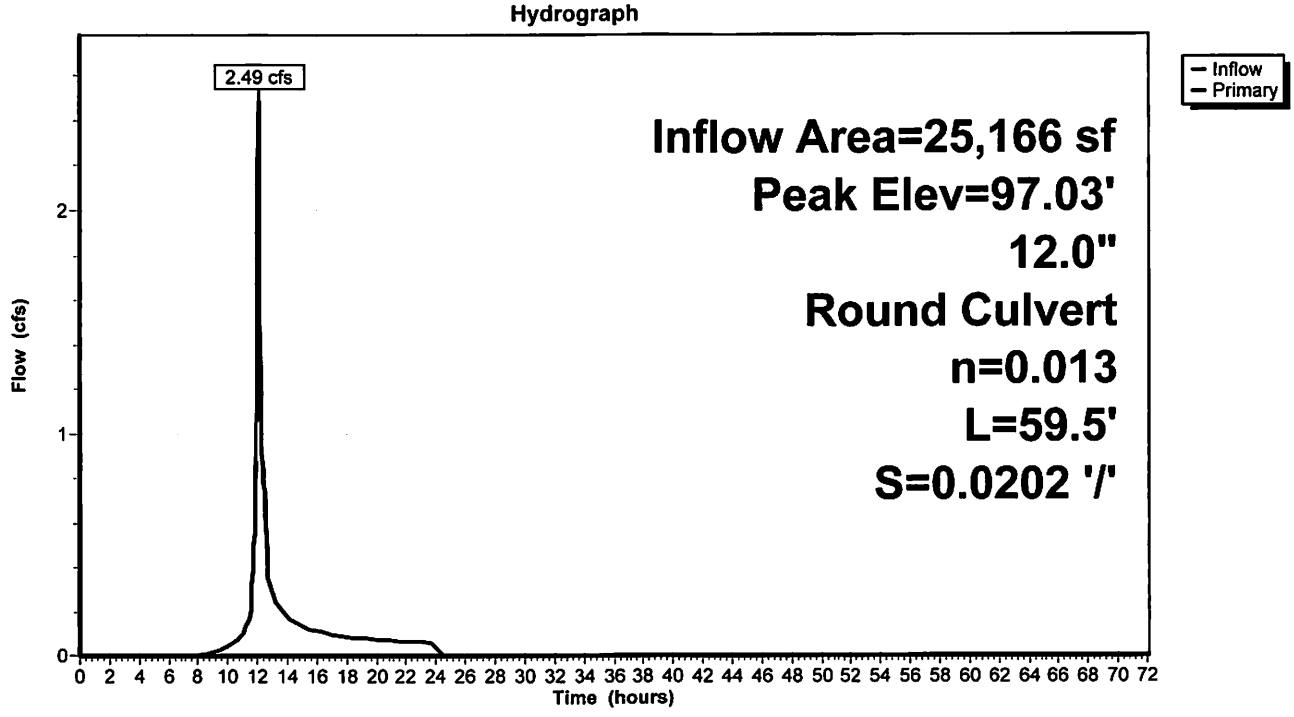
Inflow Area = 25,166 sf, 0.00% Impervious, Inflow Depth = 4.14" for 100-yr event
Inflow = 2.49 cfs @ 12.05 hrs, Volume= 8,692 cf
Outflow = 2.49 cfs @ 12.05 hrs, Volume= 8,692 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.49 cfs @ 12.05 hrs, Volume= 8,692 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 97.03' @ 12.05 hrs
Flood Elev= 98.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	96.10'	**12.0" Round Culvert** L= 59.5' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 96.10' / 94.90' S= 0.0202 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.45 cfs @ 12.05 hrs HW=97.01' (Free Discharge)
1=Culvert (Inlet Controls 2.45 cfs @ 3.26 fps)

Pond CPP: 12" CPP

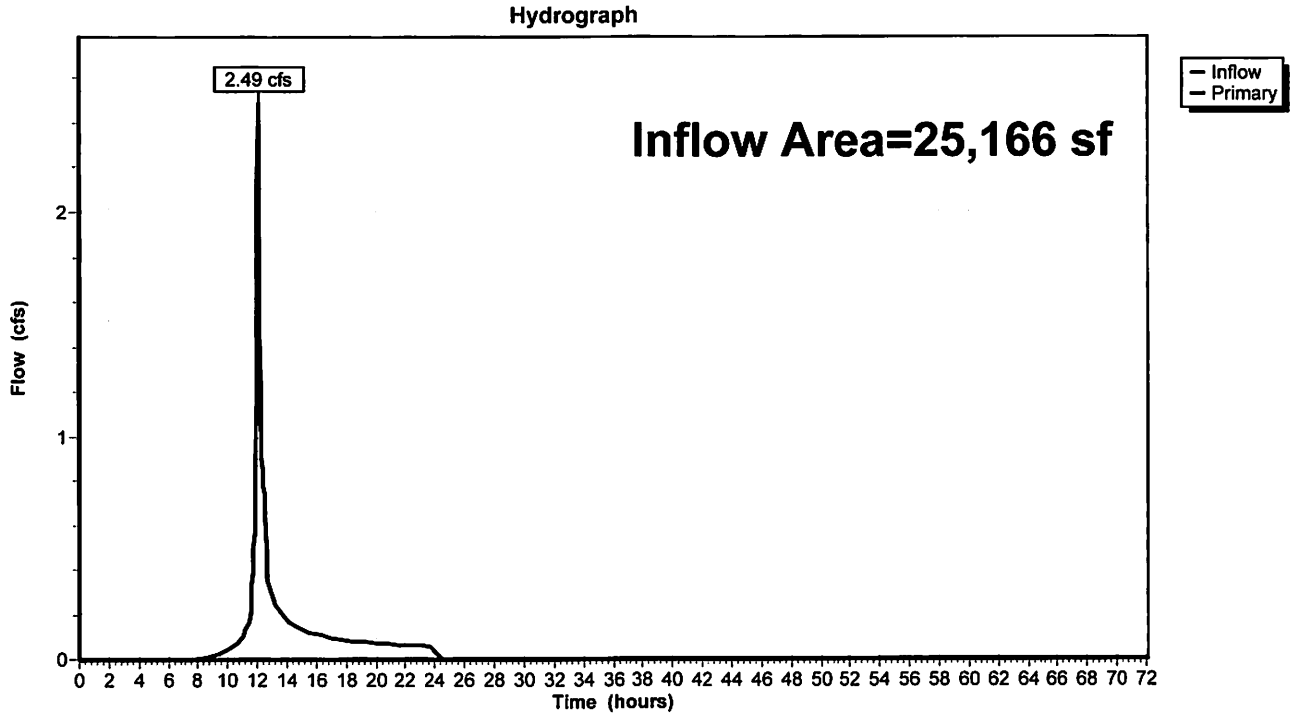


Summary for Link DP-1: Design Point #1

Inflow Area = 25,166 sf, 0.00% Impervious, Inflow Depth = 4.14" for 100-yr event
Inflow = 2.49 cfs @ 12.05 hrs, Volume= 8,692 cf
Primary = 2.49 cfs @ 12.05 hrs, Volume= 8,692 cf, Atten= 0%, Lag= 0.0 min

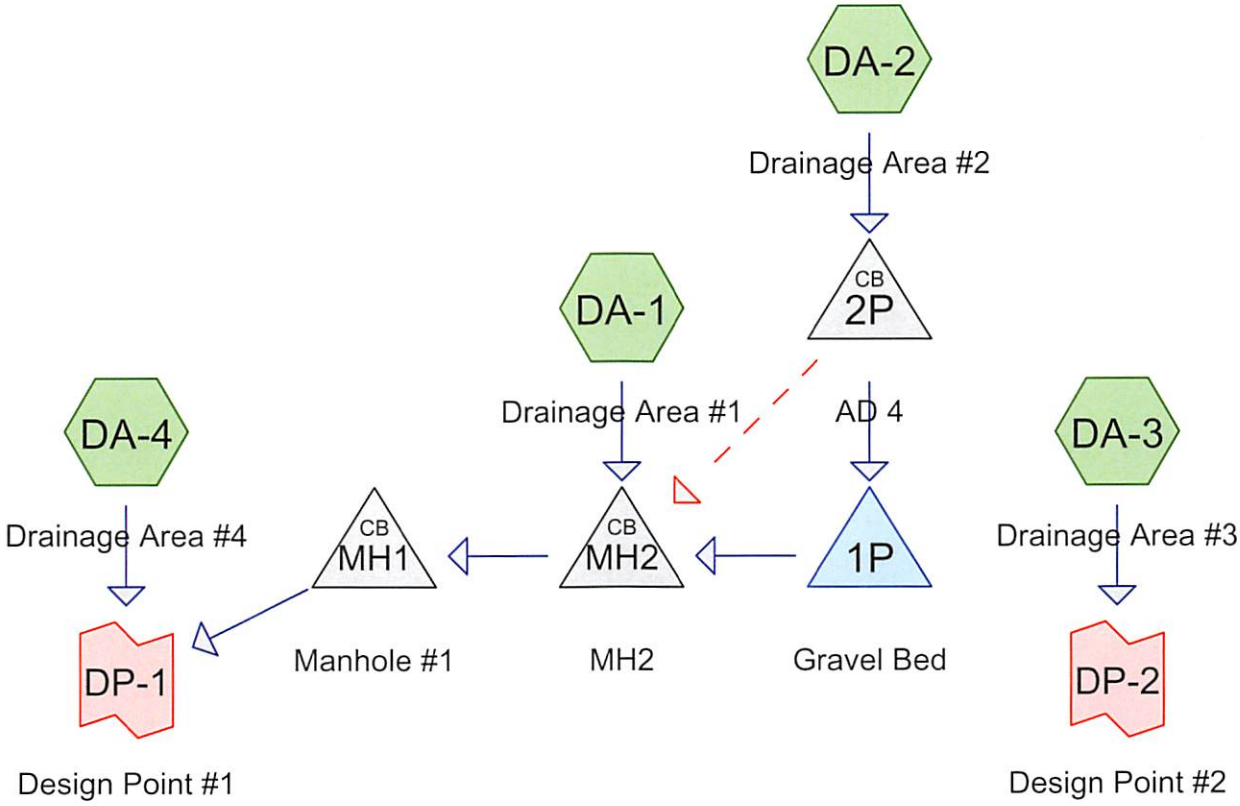
Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link DP-1: Design Point #1



APPENDIX C-2

POST-DEVELOPMENT CALCULATIONS



Subcat Reach Pond Link

Routing Diagram for Cabrini SWM-POST-07-20
Prepared by Provident Design Engineering, PLLC, Printed 7/31/2020

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment DA-1: Drainage Area #1
Runoff Area=7,576 sf 0.00% Impervious Runoff Depth=0.54"
Flow Length=175' Tc=6.0 min CN=61 Runoff=0.08 cfs 339 cf

Subcatchment DA-2: Drainage Area #2
Runoff Area=11,973 sf 62.60% Impervious Runoff Depth=1.87"
Flow Length=149' Tc=6.0 min CN=84 Runoff=0.65 cfs 1,864 cf

Subcatchment DA-3: Drainage Area #3
Runoff Area=2,275 sf 0.00% Impervious Runoff Depth=0.54"
Flow Length=99' Tc=6.0 min CN=61 Runoff=0.02 cfs 102 cf

Subcatchment DA-4: Drainage Area #4
Runoff Area=3,343 sf 10.95% Impervious Runoff Depth=0.62"
Flow Length=51' Tc=6.0 min UI Adjusted CN=63 Runoff=0.04 cfs 173 cf

Pond 1P: Gravel Bed
Peak Elev=95.82' Storage=166 cf Inflow=0.65 cfs 1,864 cf
Outflow=0.27 cfs 1,874 cf

Pond 2P: AD 4
Peak Elev=98.05' Inflow=0.65 cfs 1,864 cf
Primary=0.65 cfs 1,864 cf Secondary=0.00 cfs 0 cf Outflow=0.65 cfs 1,864 cf

Pond MH1: Manhole #1
Peak Elev=96.83' Inflow=0.08 cfs 339 cf
12.0" Round Culvert n=0.013 L=59.5' S=0.0286 '/' Outflow=0.08 cfs 339 cf

Pond MH2: MH2
Peak Elev=97.29' Inflow=0.08 cfs 339 cf
12.0" Round Culvert n=0.013 L=23.0' S=0.0200 '/' Outflow=0.08 cfs 339 cf

Link DP-1: Design Point #1
Inflow=0.12 cfs 512 cf
Primary=0.12 cfs 512 cf

Link DP-2: Design Point #2
Inflow=0.02 cfs 102 cf
Primary=0.02 cfs 102 cf

Total Runoff Area = 25,167 sf Runoff Volume = 2,478 cf Average Runoff Depth = 1.18"
68.76% Pervious = 17,306 sf 31.24% Impervious = 7,861 sf

Summary for Subcatchment DA-1: Drainage Area #1

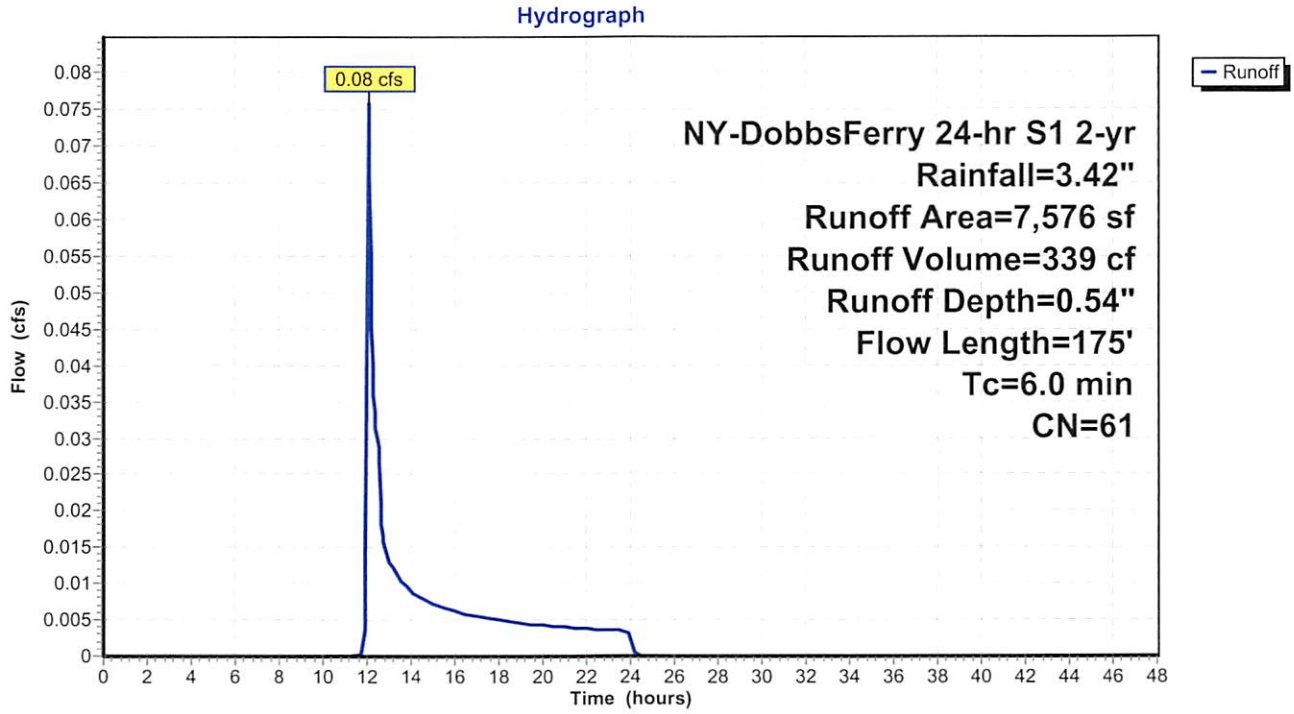
Runoff = 0.08 cfs @ 12.06 hrs, Volume= 339 cf, Depth= 0.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
NY-DobbsFerry 24-hr S1 2-yr Rainfall=3.42"

Area (sf)	CN	Description
7,576	61	>75% Grass cover, Good, HSG B
7,576		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	27	0.2600	0.26		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 3.50"
0.1	26	0.1150	5.09		**Shallow Concentrated Flow, BC** Grassed Waterway Kv= 15.0 fps
0.2	51	0.0540	3.49		**Shallow Concentrated Flow, CD** Grassed Waterway Kv= 15.0 fps
0.1	71	0.0570	14.08	11.06	**Pipe Channel, DE** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.010 PVC, smooth interior
2.1	175	Total, Increased to minimum Tc = 6.0 min			

Subcatchment DA-1: Drainage Area #1



Summary for Subcatchment DA-2: Drainage Area #2

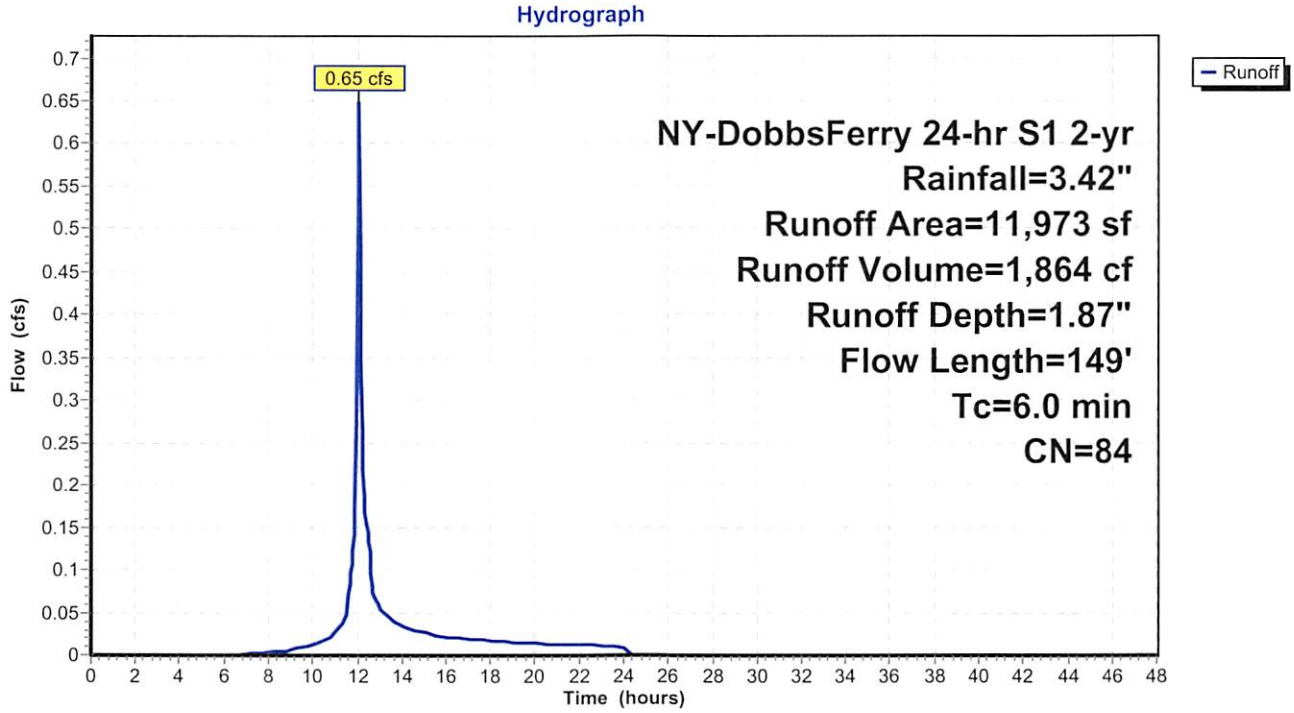
Runoff = 0.65 cfs @ 12.04 hrs, Volume= 1,864 cf, Depth= 1.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
NY-DobbsFerry 24-hr S1 2-yr Rainfall=3.42"

Area (sf)	CN	Description
4,478	61	>75% Grass cover, Good, HSG B
7,495	98	Paved parking, HSG B
11,973	84	Weighted Average
4,478		37.40% Pervious Area
7,495		62.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	21	0.1400	0.19		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 3.50"
0.5	128	0.0500	4.54		**Shallow Concentrated Flow, BC** Paved Kv= 20.3 fps
2.3	149	Total, Increased to minimum Tc = 6.0 min			

Subcatchment DA-2: Drainage Area #2



Summary for Subcatchment DA-3: Drainage Area #3

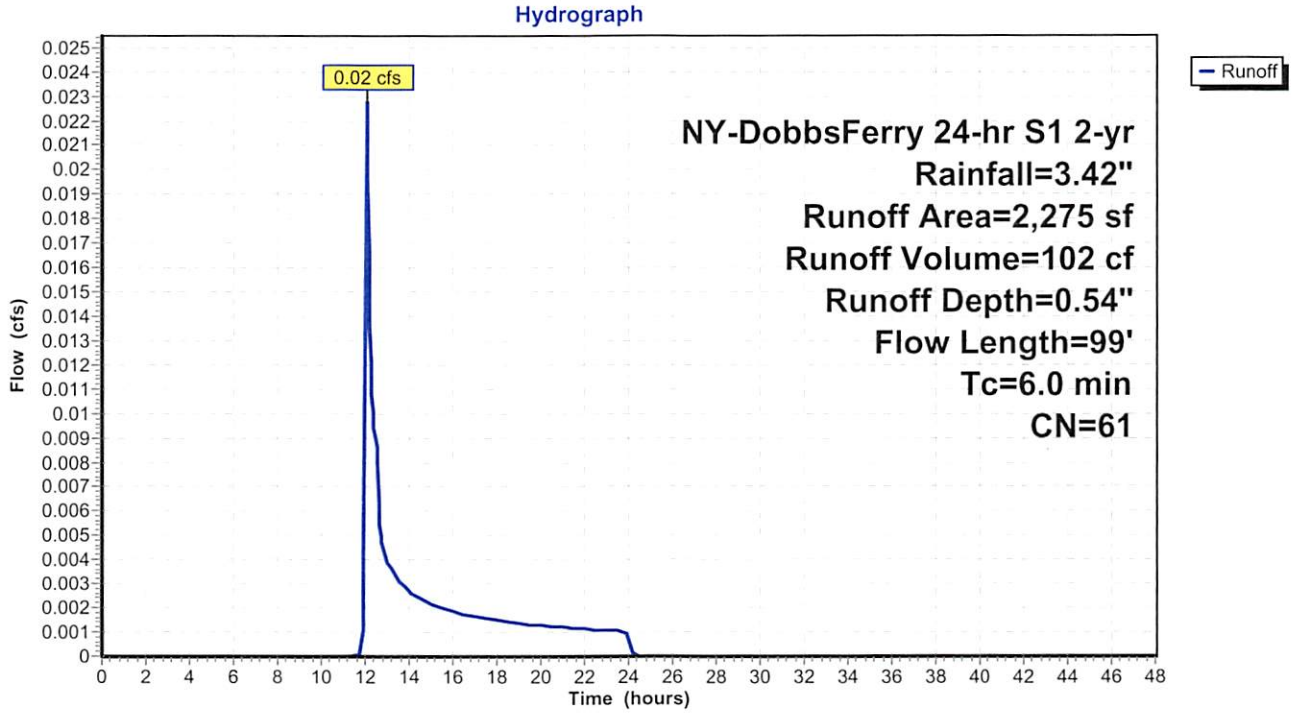
Runoff = 0.02 cfs @ 12.06 hrs, Volume= 102 cf, Depth= 0.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
NY-DobbsFerry 24-hr S1 2-yr Rainfall=3.42"

Area (sf)	CN	Description
2,275	61	>75% Grass cover, Good, HSG B
2,275		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	24	0.1700	0.22		**Sheet Flow, AB**
					Grass: Dense n= 0.240 P2= 3.50"
0.3	75	0.0670	3.88		**Shallow Concentrated Flow, BC**
					Grassed Waterway Kv= 15.0 fps
2.2	99	Total, Increased to minimum Tc = 6.0 min			

Subcatchment DA-3: Drainage Area #3



Summary for Subcatchment DA-4: Drainage Area #4

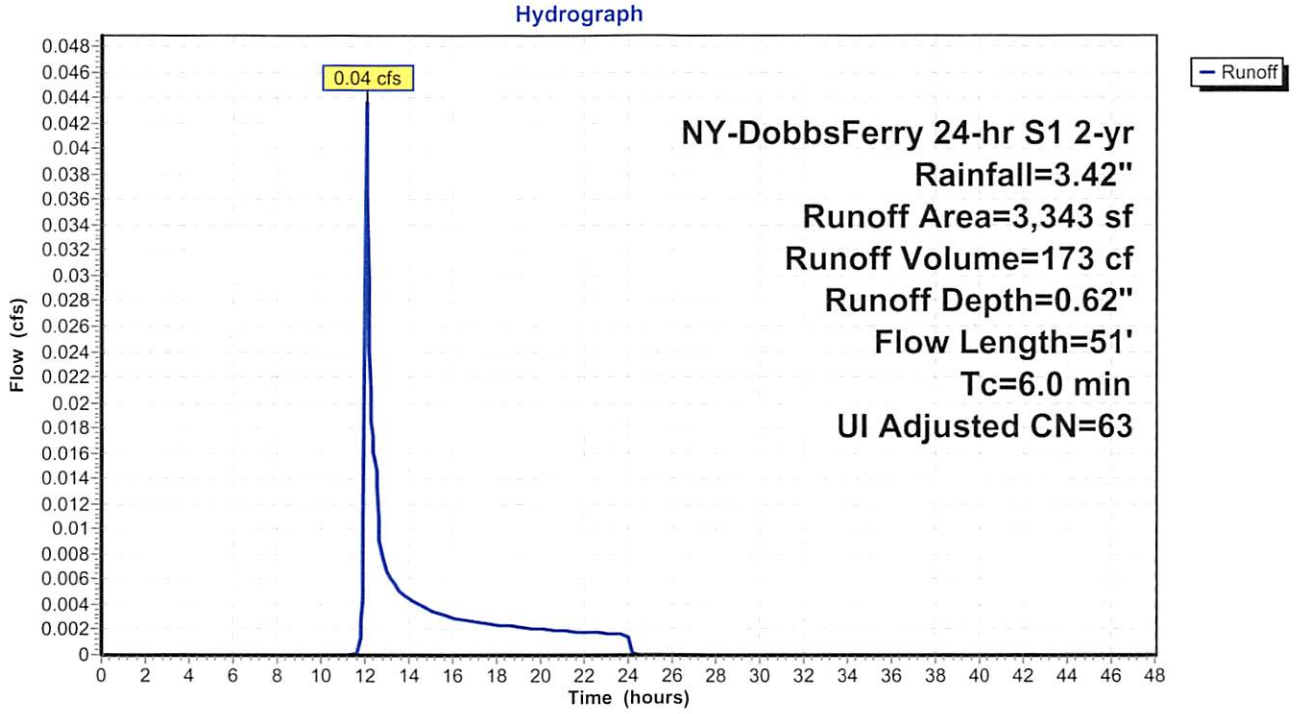
Runoff = 0.04 cfs @ 12.06 hrs, Volume= 173 cf, Depth= 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
NY-DobbsFerry 24-hr S1 2-yr Rainfall=3.42"

Area (sf)	CN	Adj	Description
2,977	61		>75% Grass cover, Good, HSG B
366	98		Unconnected pavement, HSG B
3,343	65	63	Weighted Average, UI Adjusted
2,977			89.05% Pervious Area
366			10.95% Impervious Area
366			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	25	0.1200	0.19		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 3.50"
0.1	26	0.0650	3.82		**Shallow Concentrated Flow, BC** Grassed Waterway Kv= 15.0 fps
2.3	51	Total, Increased to minimum Tc = 6.0 min			

Subcatchment DA-4: Drainage Area #4



Summary for Pond 1P: Gravel Bed

Inflow Area = 11,973 sf, 62.60% Impervious, Inflow Depth = 1.87" for 2-yr event
Inflow = 0.65 cfs @ 12.04 hrs, Volume= 1,864 cf
Outflow = 0.27 cfs @ 12.00 hrs, Volume= 1,874 cf, Atten= 58%, Lag= 0.0 min
Discarded = 0.27 cfs @ 12.00 hrs, Volume= 1,874 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 95.82' @ 12.20 hrs Surf.Area= 740 sf Storage= 166 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 2.3 min (845.6 - 843.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	95.26'	1,151 cf	**18.50'W x 40.00'L x 4.17'H Field A** 3,083 cf Overall - 204 cf Embedded = 2,878 cf x 40.0% Voids
#2A	97.26'	154 cf	**ADS N-12 15"** x 3 Inside #1 Inside= 14.8"W x 14.8"H => 1.20 sf x 20.00'L = 24.0 cf Outside= 18.0"W x 18.0"H => 1.60 sf x 20.00'L = 31.9 cf Row Length Adjustment= +13.00' x 1.20 sf x 3 rows 14.50' Header x 1.20 sf x 2 = 34.8 cf Inside
		1,305 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	95.26'	**16.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.27 cfs @ 12.00 hrs HW=95.35' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.27 cfs)

Pond 1P: Gravel Bed - Chamber Wizard Field A

Chamber Model = ADS N-12 15" (ADS N-12® Pipe)
Inside= 14.8"W x 14.8"H => 1.20 sf x 20.00'L = 24.0 cf
Outside= 18.0"W x 18.0"H => 1.60 sf x 20.00'L = 31.9 cf
Row Length Adjustment= +13.00' x 1.20 sf x 3 rows

18.0" Wide + 60.0" Spacing = 78.0" C-C Row Spacing

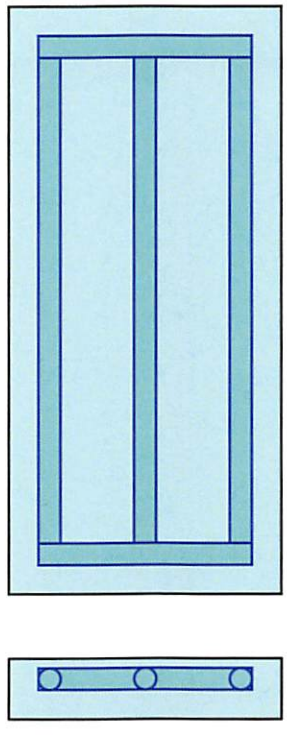
1 Chambers/Row x 20.00' Long +13.00' Row Adjustment +1.50' Header x 2 = 36.00' Row Length +24.0" End Stone x 2 = 40.00' Base Length
3 Rows x 18.0" Wide + 60.0" Spacing x 2 + 24.0" Side Stone x 2 = 18.50' Base Width
24.0" Base + 18.0" Chamber Height + 8.0" Cover = 4.17' Field Height

3 Chambers x 24.0 cf +13.00' Row Adjustment x 1.20 sf x 3 Rows + 14.50' Header x 1.20 sf x 2 = 153.6 cf Chamber Storage
3 Chambers x 31.9 cf +13.00' Row Adjustment x 1.60 sf x 3 Rows + 14.50' Header x 1.60 sf x 2 = 204.3 cf Displacement

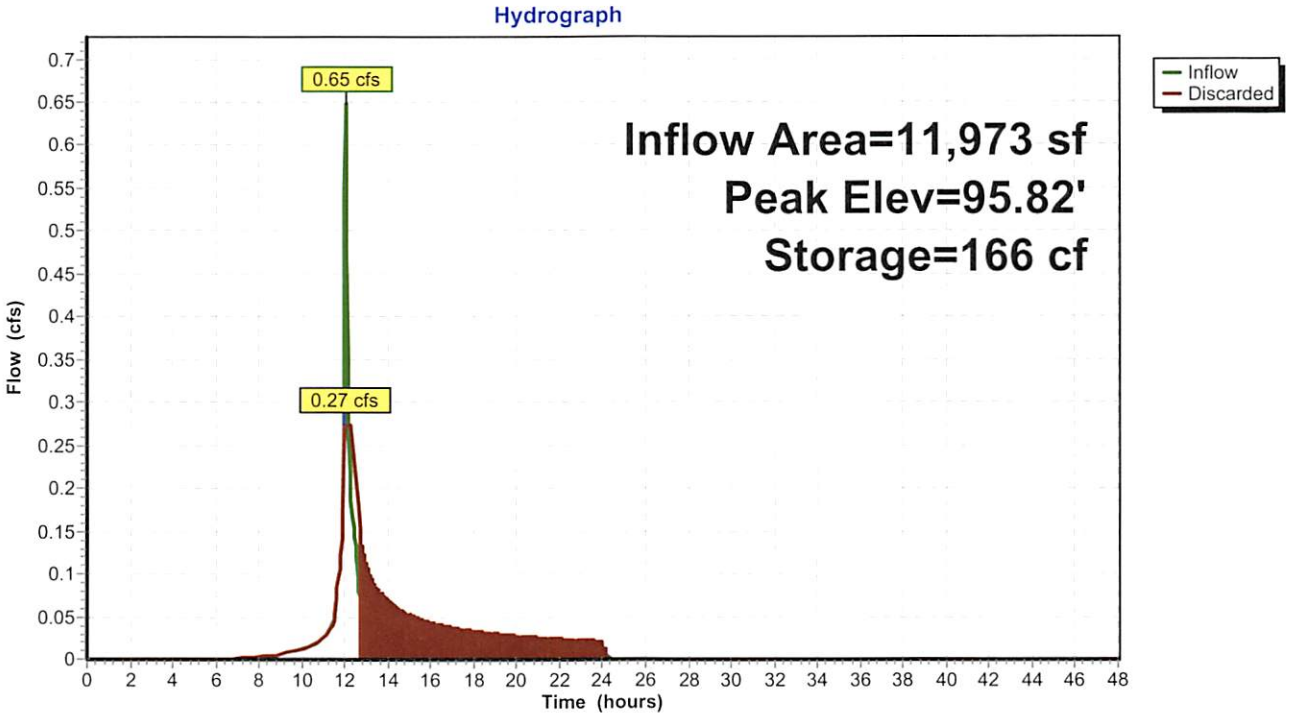
3,082.5 cf Field - 204.3 cf Chambers = 2,878.2 cf Stone x 40.0% Voids = 1,151.3 cf Stone Storage

Chamber Storage + Stone Storage = 1,304.9 cf = 0.03 af
Overall Storage Efficiency = 42.3%
Overall System Size = 40.00' x 18.50' x 4.17'

3 Chambers
114.2 cy Field
106.6 cy Stone



Pond 1P: Gravel Bed



Summary for Pond 2P: AD 4

Inflow Area = 11,973 sf, 62.60% Impervious, Inflow Depth = 1.87" for 2-yr event
Inflow = 0.65 cfs @ 12.04 hrs, Volume= 1,864 cf
Outflow = 0.65 cfs @ 12.04 hrs, Volume= 1,864 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.65 cfs @ 12.04 hrs, Volume= 1,864 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

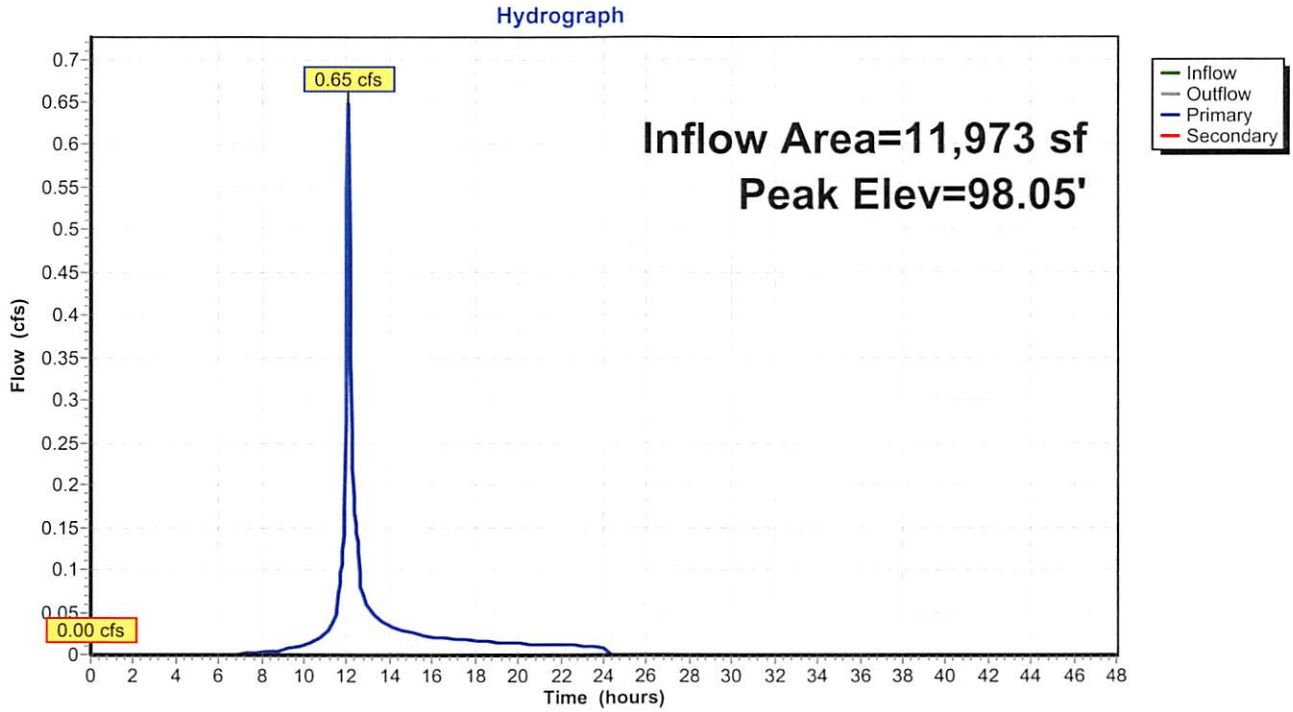
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 98.05' @ 12.04 hrs
Flood Elev= 101.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	97.48'	**10.0" Round Culvert** L= 5.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 97.48' / 97.48' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Secondary	98.43'	**12.0" Round Culvert** L= 21.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 98.43' / 98.22' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.63 cfs @ 12.04 hrs HW=98.04' TW=95.52' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 0.63 cfs @ 2.30 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=97.48' TW=97.16' (Dynamic Tailwater)
└**2=Culvert** (Controls 0.00 cfs)

Pond 2P: AD 4



Summary for Pond MH1: Manhole #1

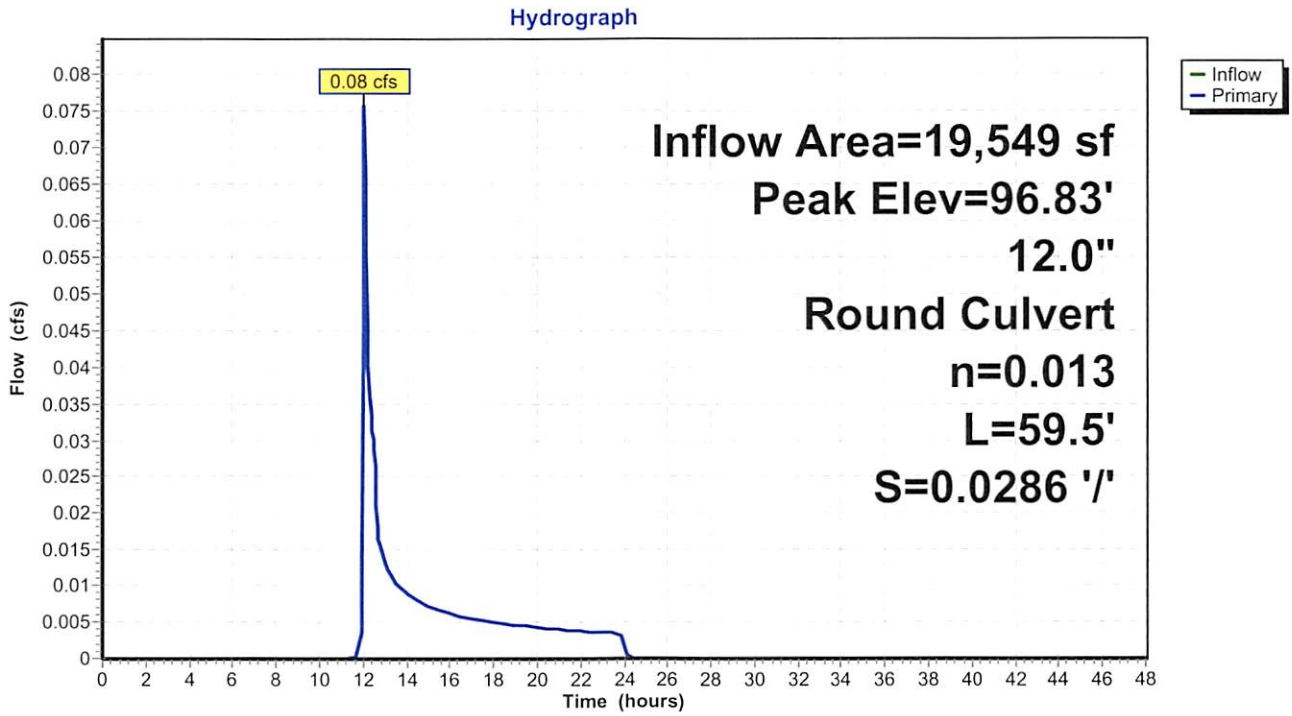
Inflow Area = 19,549 sf, 38.34% Impervious, Inflow Depth = 0.21" for 2-yr event
Inflow = 0.08 cfs @ 12.06 hrs, Volume= 339 cf
Outflow = 0.08 cfs @ 12.06 hrs, Volume= 339 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.08 cfs @ 12.06 hrs, Volume= 339 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 96.83' @ 12.06 hrs
Flood Elev= 101.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	96.70'	**12.0" Round Culvert** L= 59.5' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 96.70' / 95.00' S= 0.0286 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.07 cfs @ 12.06 hrs HW=96.83' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 0.07 cfs @ 1.22 fps)

Pond MH1: Manhole #1



Summary for Pond MH2: MH2

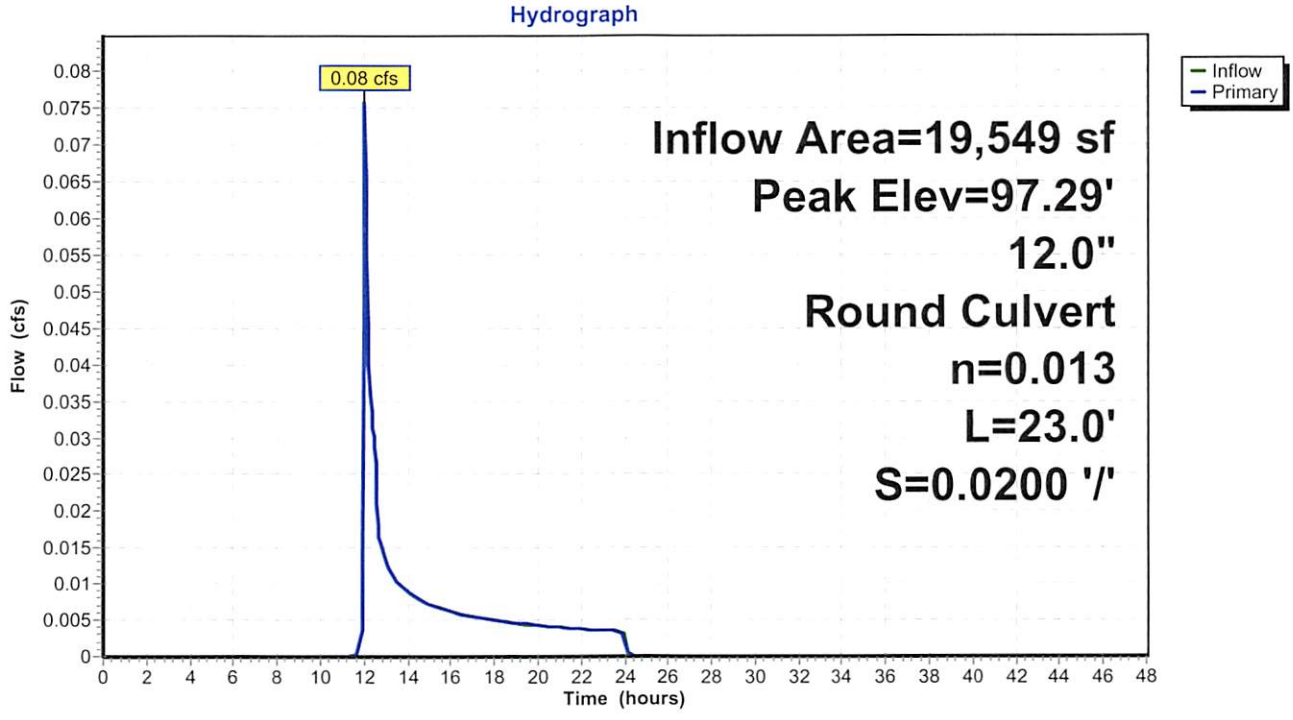
Inflow Area = 19,549 sf, 38.34% Impervious, Inflow Depth = 0.21" for 2-yr event
Inflow = 0.08 cfs @ 12.06 hrs, Volume= 339 cf
Outflow = 0.08 cfs @ 12.06 hrs, Volume= 339 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.08 cfs @ 12.06 hrs, Volume= 339 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 97.29' @ 12.06 hrs
Flood Elev= 102.76'

Device	Routing	Invert	Outlet Devices
#1	Primary	97.16'	**12.0" Round Culvert** L= 23.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 97.16' / 96.70' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.07 cfs @ 12.06 hrs HW=97.29' TW=96.83' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 0.07 cfs @ 1.22 fps)

Pond MH2: MH2

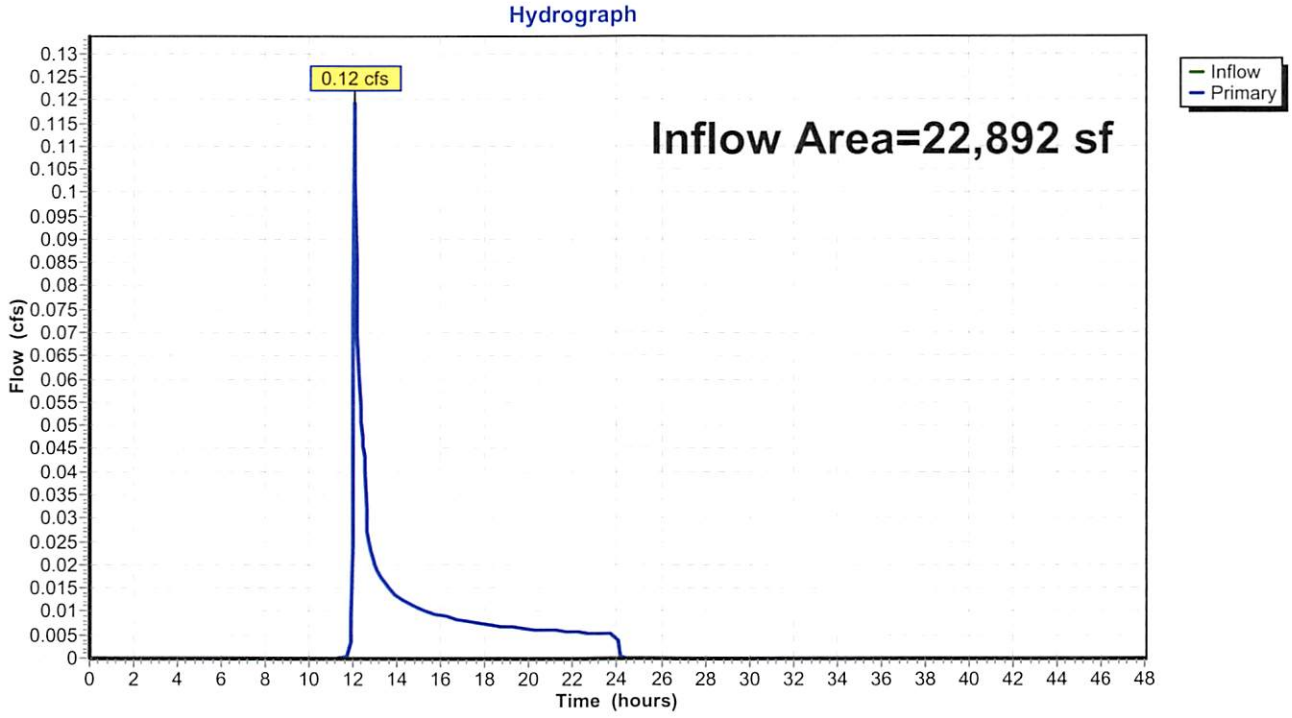


Summary for Link DP-1: Design Point #1

Inflow Area = 22,892 sf, 34.34% Impervious, Inflow Depth = 0.27" for 2-yr event
Inflow = 0.12 cfs @ 12.06 hrs, Volume= 512 cf
Primary = 0.12 cfs @ 12.06 hrs, Volume= 512 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link DP-1: Design Point #1

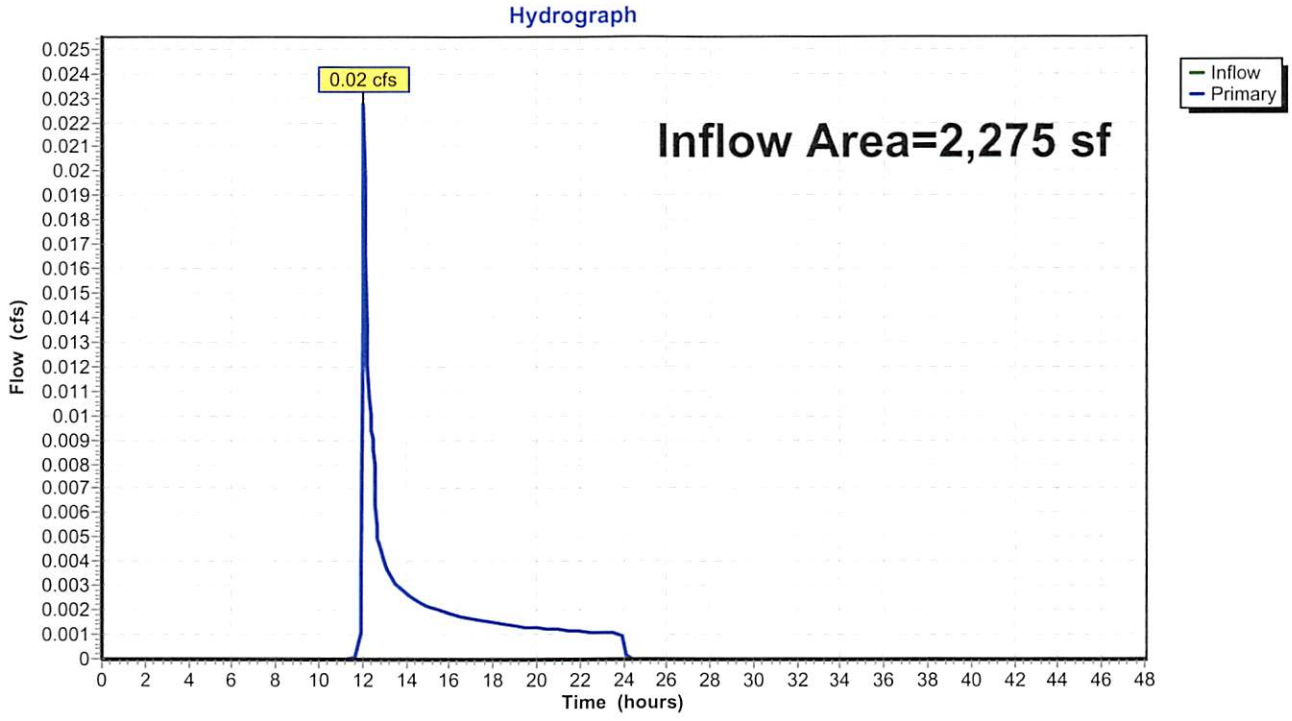


Summary for Link DP-2: Design Point #2

Inflow Area = 2,275 sf, 0.00% Impervious, Inflow Depth = 0.54" for 2-yr event
Inflow = 0.02 cfs @ 12.06 hrs, Volume= 102 cf
Primary = 0.02 cfs @ 12.06 hrs, Volume= 102 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link DP-2: Design Point #2



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment DA-1: Drainage Area #1
Runoff Area=7,576 sf 0.00% Impervious Runoff Depth=1.41"
Flow Length=175' Tc=6.0 min CN=61 Runoff=0.25 cfs 887 cf

Subcatchment DA-2: Drainage Area #2
Runoff Area=11,973 sf 62.60% Impervious Runoff Depth=3.33"
Flow Length=149' Tc=6.0 min CN=84 Runoff=1.05 cfs 3,318 cf

Subcatchment DA-3: Drainage Area #3
Runoff Area=2,275 sf 0.00% Impervious Runoff Depth=1.41"
Flow Length=99' Tc=6.0 min CN=61 Runoff=0.08 cfs 266 cf

Subcatchment DA-4: Drainage Area #4
Runoff Area=3,343 sf 10.95% Impervious Runoff Depth=1.55"
Flow Length=51' Tc=6.0 min UI Adjusted CN=63 Runoff=0.13 cfs 431 cf

Pond 1P: Gravel Bed
Peak Elev=96.97' Storage=507 cf Inflow=1.05 cfs 3,318 cf
Outflow=0.27 cfs 3,334 cf

Pond 2P: AD 4
Peak Elev=98.23' Inflow=1.05 cfs 3,318 cf
Primary=1.05 cfs 3,318 cf Secondary=0.00 cfs 0 cf Outflow=1.05 cfs 3,318 cf

Pond MH1: Manhole #1
Peak Elev=96.94' Inflow=0.25 cfs 887 cf
12.0" Round Culvert n=0.013 L=59.5' S=0.0286 '/' Outflow=0.25 cfs 887 cf

Pond MH2: MH2
Peak Elev=97.40' Inflow=0.25 cfs 887 cf
12.0" Round Culvert n=0.013 L=23.0' S=0.0200 '/' Outflow=0.25 cfs 887 cf

Link DP-1: Design Point #1
Inflow=0.38 cfs 1,318 cf
Primary=0.38 cfs 1,318 cf

Link DP-2: Design Point #2
Inflow=0.08 cfs 266 cf
Primary=0.08 cfs 266 cf

Total Runoff Area = 25,167 sf Runoff Volume = 4,902 cf Average Runoff Depth = 2.34"
68.76% Pervious = 17,306 sf 31.24% Impervious = 7,861 sf

Summary for Subcatchment DA-1: Drainage Area #1

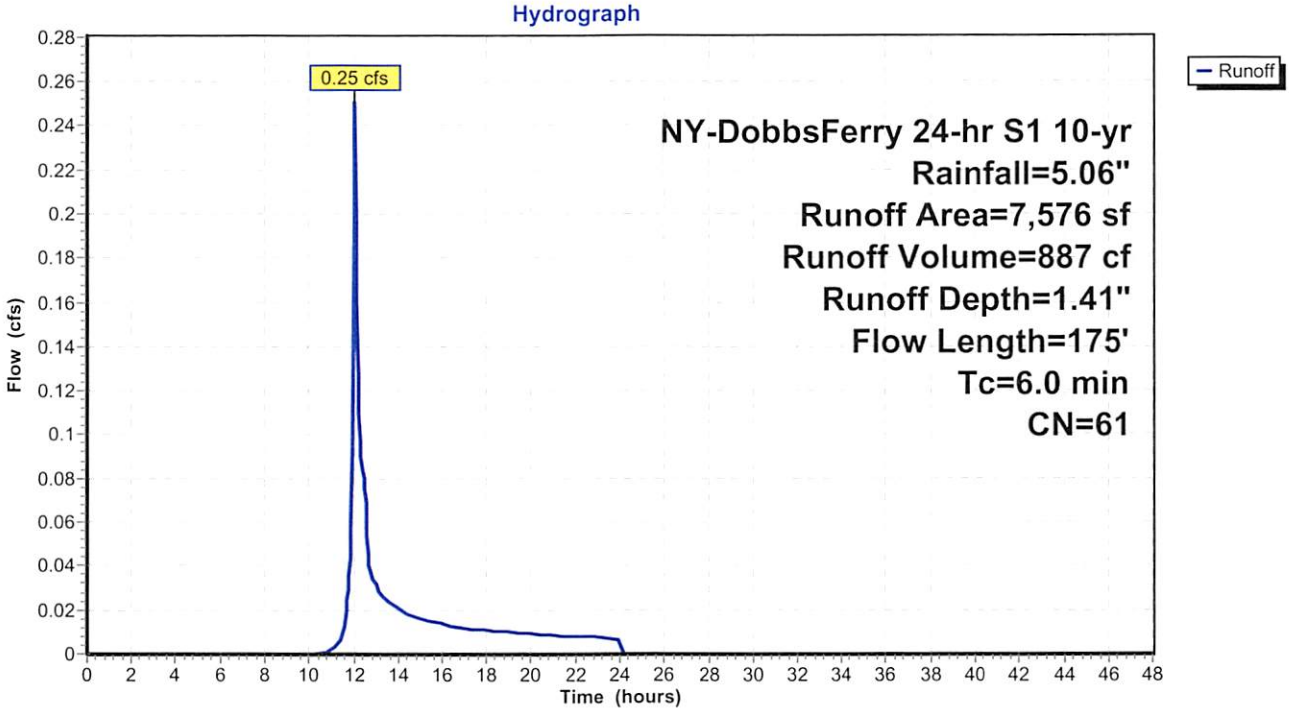
Runoff = 0.25 cfs @ 12.05 hrs, Volume= 887 cf, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
NY-DobbsFerry 24-hr S1 10-yr Rainfall=5.06"

Area (sf)	CN	Description
7,576	61	>75% Grass cover, Good, HSG B
7,576		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	27	0.2600	0.26		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 3.50"
0.1	26	0.1150	5.09		**Shallow Concentrated Flow, BC** Grassed Waterway Kv= 15.0 fps
0.2	51	0.0540	3.49		**Shallow Concentrated Flow, CD** Grassed Waterway Kv= 15.0 fps
0.1	71	0.0570	14.08	11.06	**Pipe Channel, DE** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.010 PVC, smooth interior
2.1	175	Total, Increased to minimum Tc = 6.0 min			

Subcatchment DA-1: Drainage Area #1



Summary for Subcatchment DA-2: Drainage Area #2

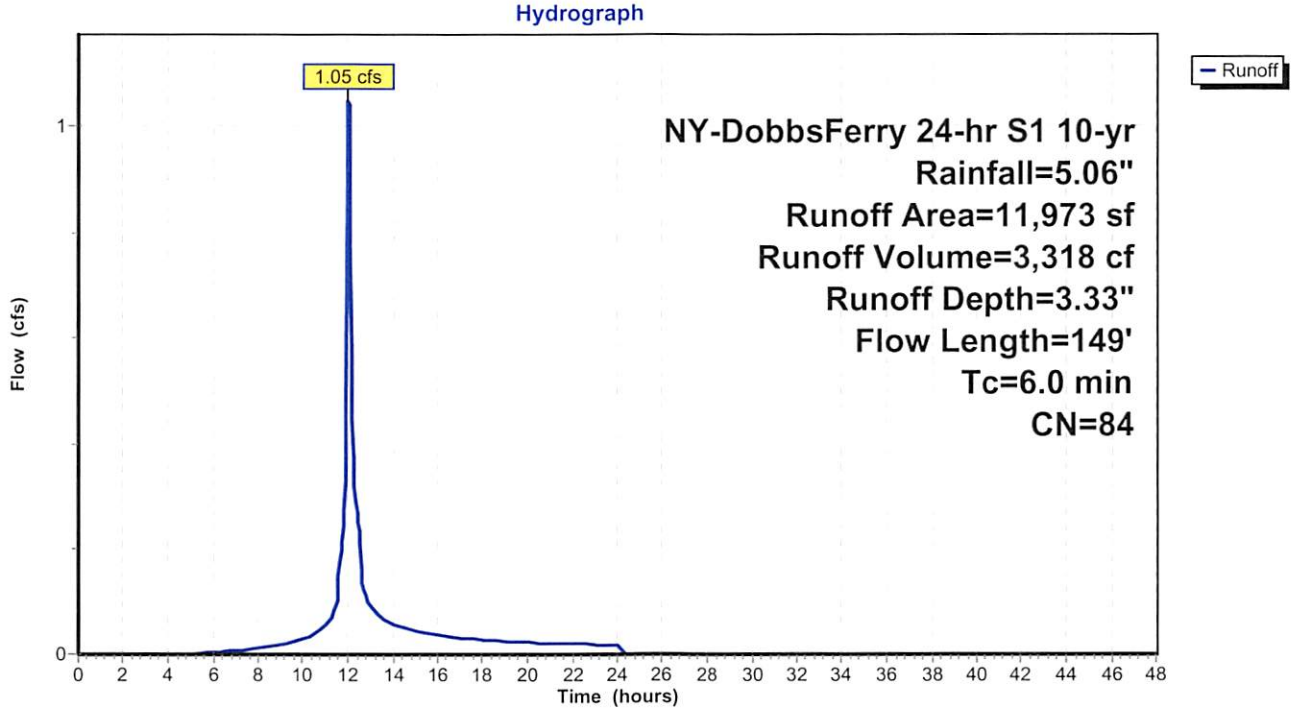
Runoff = 1.05 cfs @ 12.04 hrs, Volume= 3,318 cf, Depth= 3.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
NY-DobbsFerry 24-hr S1 10-yr Rainfall=5.06"

Area (sf)	CN	Description
4,478	61	>75% Grass cover, Good, HSG B
7,495	98	Paved parking, HSG B
11,973	84	Weighted Average
4,478		37.40% Pervious Area
7,495		62.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	21	0.1400	0.19		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 3.50"
0.5	128	0.0500	4.54		**Shallow Concentrated Flow, BC** Paved Kv= 20.3 fps
2.3	149	Total, Increased to minimum Tc = 6.0 min			

Subcatchment DA-2: Drainage Area #2



Summary for Subcatchment DA-3: Drainage Area #3

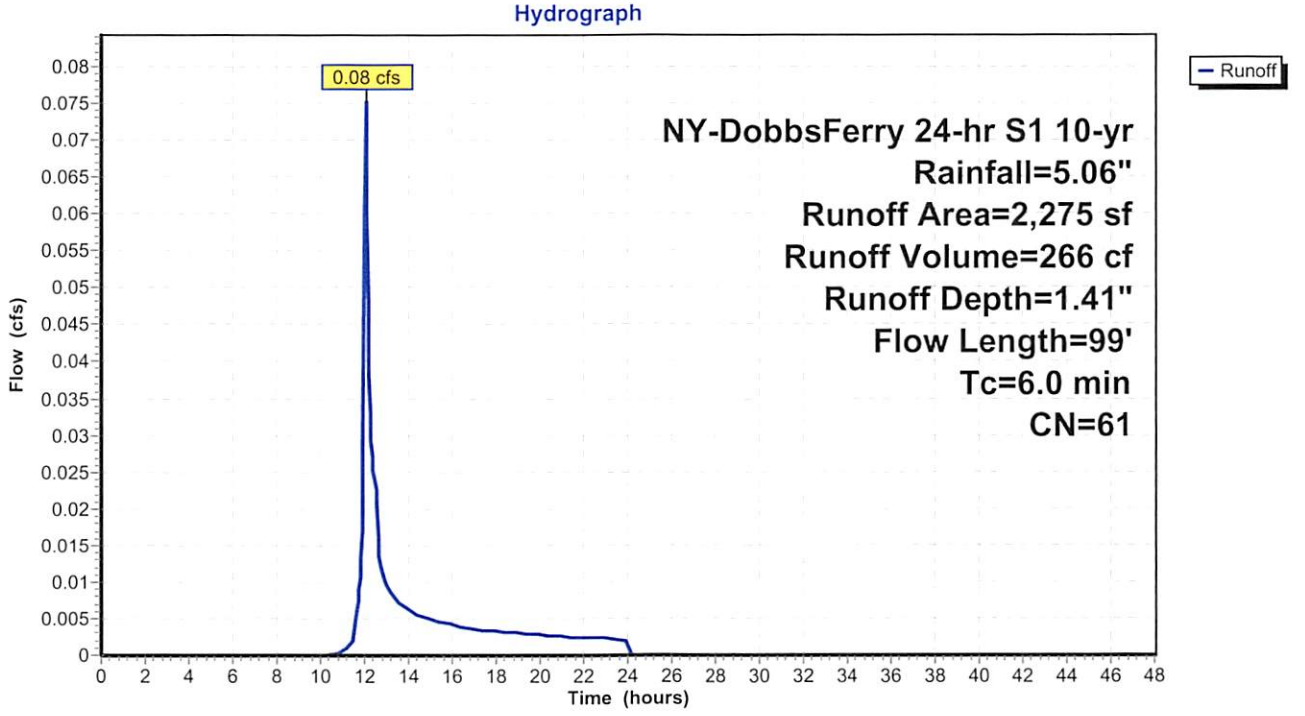
Runoff = 0.08 cfs @ 12.05 hrs, Volume= 266 cf, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
NY-DobbsFerry 24-hr S1 10-yr Rainfall=5.06"

Area (sf)	CN	Description
2,275	61	>75% Grass cover, Good, HSG B
2,275		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	24	0.1700	0.22		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 3.50"
0.3	75	0.0670	3.88		**Shallow Concentrated Flow, BC** Grassed Waterway Kv= 15.0 fps
2.2	99	Total, Increased to minimum Tc = 6.0 min			

Subcatchment DA-3: Drainage Area #3



Summary for Subcatchment DA-4: Drainage Area #4

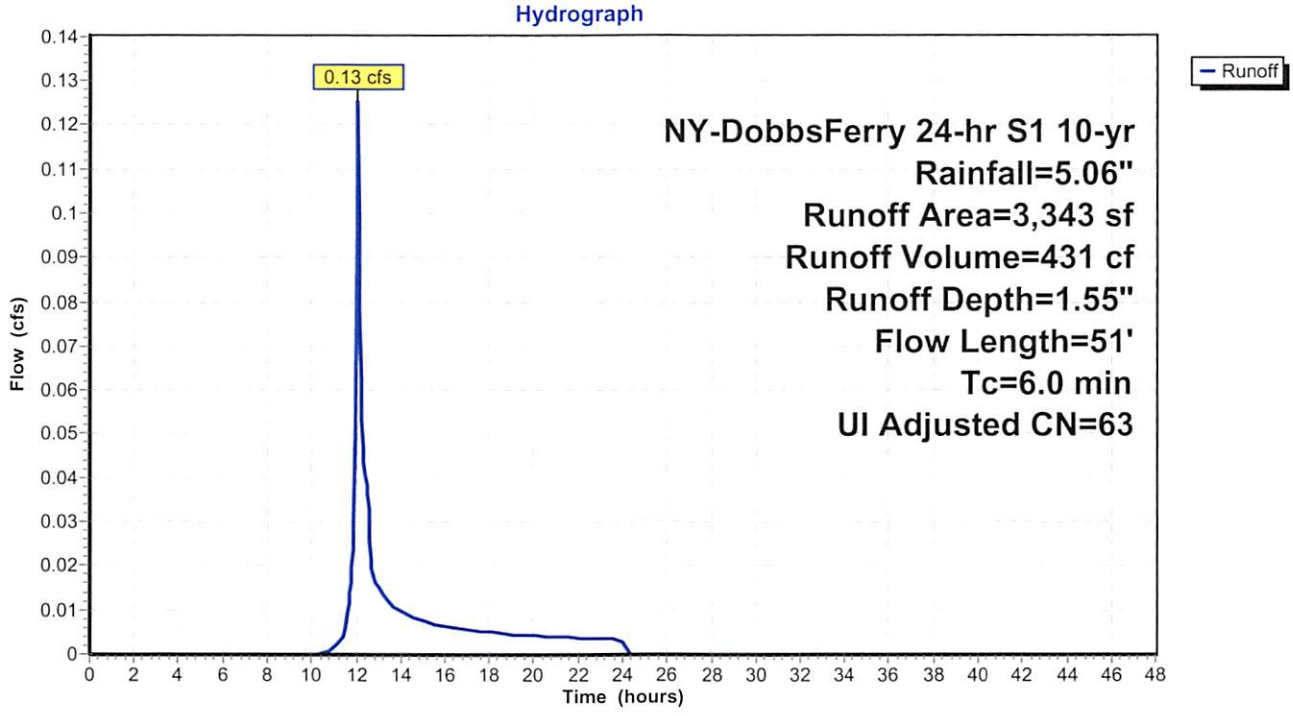
Runoff = 0.13 cfs @ 12.05 hrs, Volume= 431 cf, Depth= 1.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
NY-DobbsFerry 24-hr S1 10-yr Rainfall=5.06"

Area (sf)	CN	Adj	Description
2,977	61		>75% Grass cover, Good, HSG B
366	98		Unconnected pavement, HSG B
3,343	65	63	Weighted Average, UI Adjusted
2,977			89.05% Pervious Area
366			10.95% Impervious Area
366			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	25	0.1200	0.19		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 3.50"
0.1	26	0.0650	3.82		**Shallow Concentrated Flow, BC** Grassed Waterway Kv= 15.0 fps
2.3	51	Total, Increased to minimum Tc = 6.0 min			

Subcatchment DA-4: Drainage Area #4



Summary for Pond 1P: Gravel Bed

Inflow Area = 11,973 sf, 62.60% Impervious, Inflow Depth = 3.33" for 10-yr event
Inflow = 1.05 cfs @ 12.04 hrs, Volume= 3,318 cf
Outflow = 0.27 cfs @ 11.95 hrs, Volume= 3,334 cf, Atten= 74%, Lag= 0.0 min
Discarded = 0.27 cfs @ 11.95 hrs, Volume= 3,334 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 96.97' @ 12.39 hrs Surf.Area= 740 sf Storage= 507 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 8.6 min (832.9 - 824.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	95.26'	1,151 cf	**18.50'W x 40.00'L x 4.17'H Field A** 3,083 cf Overall - 204 cf Embedded = 2,878 cf x 40.0% Voids
#2A	97.26'	154 cf	**ADS N-12 15"** x 3 Inside #1 Inside= 14.8"W x 14.8"H => 1.20 sf x 20.00'L = 24.0 cf Outside= 18.0"W x 18.0"H => 1.60 sf x 20.00'L = 31.9 cf Row Length Adjustment= +13.00' x 1.20 sf x 3 rows 14.50' Header x 1.20 sf x 2 = 34.8 cf Inside
		1,305 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	95.26'	**16.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.27 cfs @ 11.95 hrs HW=95.36' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.27 cfs)

Pond 1P: Gravel Bed - Chamber Wizard Field A

Chamber Model = ADS N-12 15" (ADS N-12® Pipe)
Inside= 14.8"W x 14.8"H => 1.20 sf x 20.00'L = 24.0 cf
Outside= 18.0"W x 18.0"H => 1.60 sf x 20.00'L = 31.9 cf
Row Length Adjustment= +13.00' x 1.20 sf x 3 rows

18.0" Wide + 60.0" Spacing = 78.0" C-C Row Spacing

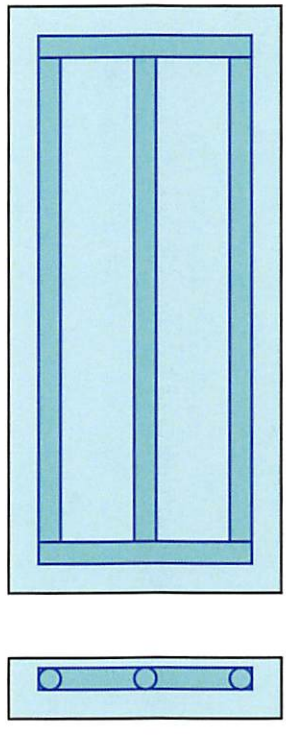
1 Chambers/Row x 20.00' Long +13.00' Row Adjustment +1.50' Header x 2 = 36.00' Row Length +24.0" End Stone x 2 = 40.00' Base Length
3 Rows x 18.0" Wide + 60.0" Spacing x 2 + 24.0" Side Stone x 2 = 18.50' Base Width
24.0" Base + 18.0" Chamber Height + 8.0" Cover = 4.17' Field Height

3 Chambers x 24.0 cf +13.00' Row Adjustment x 1.20 sf x 3 Rows + 14.50' Header x 1.20 sf x 2 = 153.6 cf Chamber Storage
3 Chambers x 31.9 cf +13.00' Row Adjustment x 1.60 sf x 3 Rows + 14.50' Header x 1.60 sf x 2 = 204.3 cf Displacement

3,082.5 cf Field - 204.3 cf Chambers = 2,878.2 cf Stone x 40.0% Voids = 1,151.3 cf Stone Storage

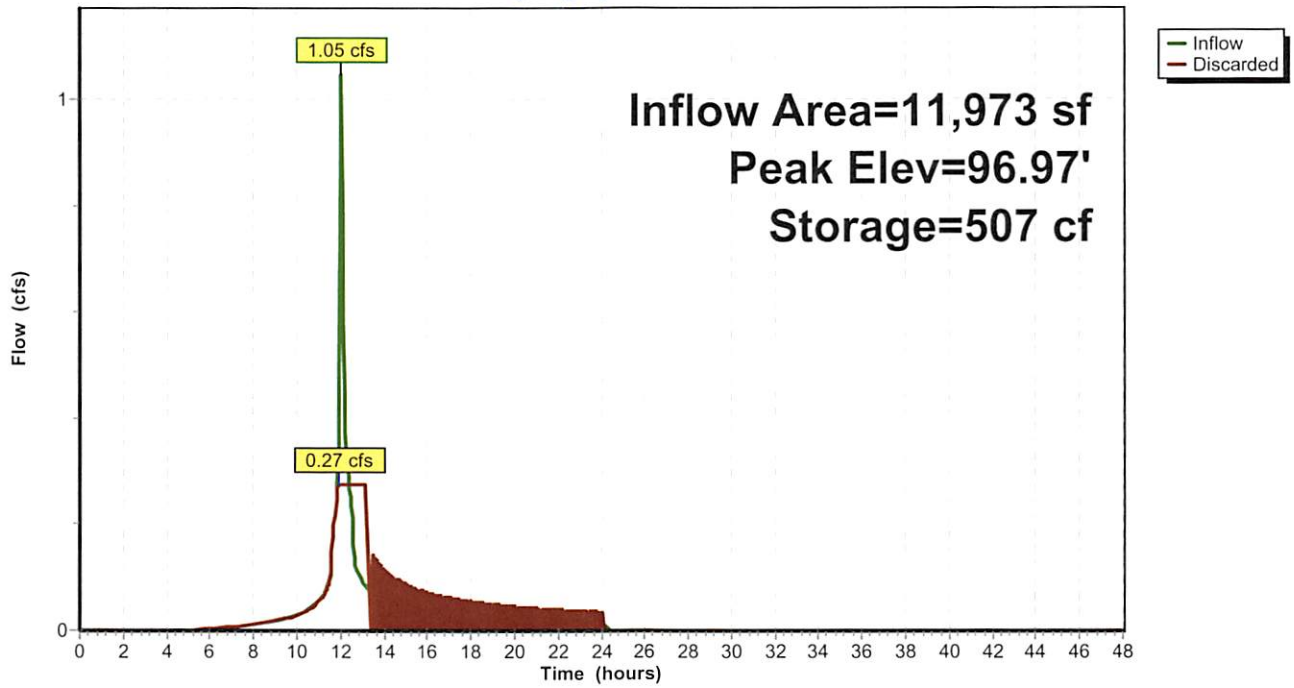
Chamber Storage + Stone Storage = 1,304.9 cf = 0.03 af
Overall Storage Efficiency = 42.3%
Overall System Size = 40.00' x 18.50' x 4.17'

3 Chambers
114.2 cy Field
106.6 cy Stone



Pond 1P: Gravel Bed

Hydrograph



Summary for Pond 2P: AD 4

Inflow Area = 11,973 sf, 62.60% Impervious, Inflow Depth = 3.33" for 10-yr event
Inflow = 1.05 cfs @ 12.04 hrs, Volume= 3,318 cf
Outflow = 1.05 cfs @ 12.04 hrs, Volume= 3,318 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.05 cfs @ 12.04 hrs, Volume= 3,318 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

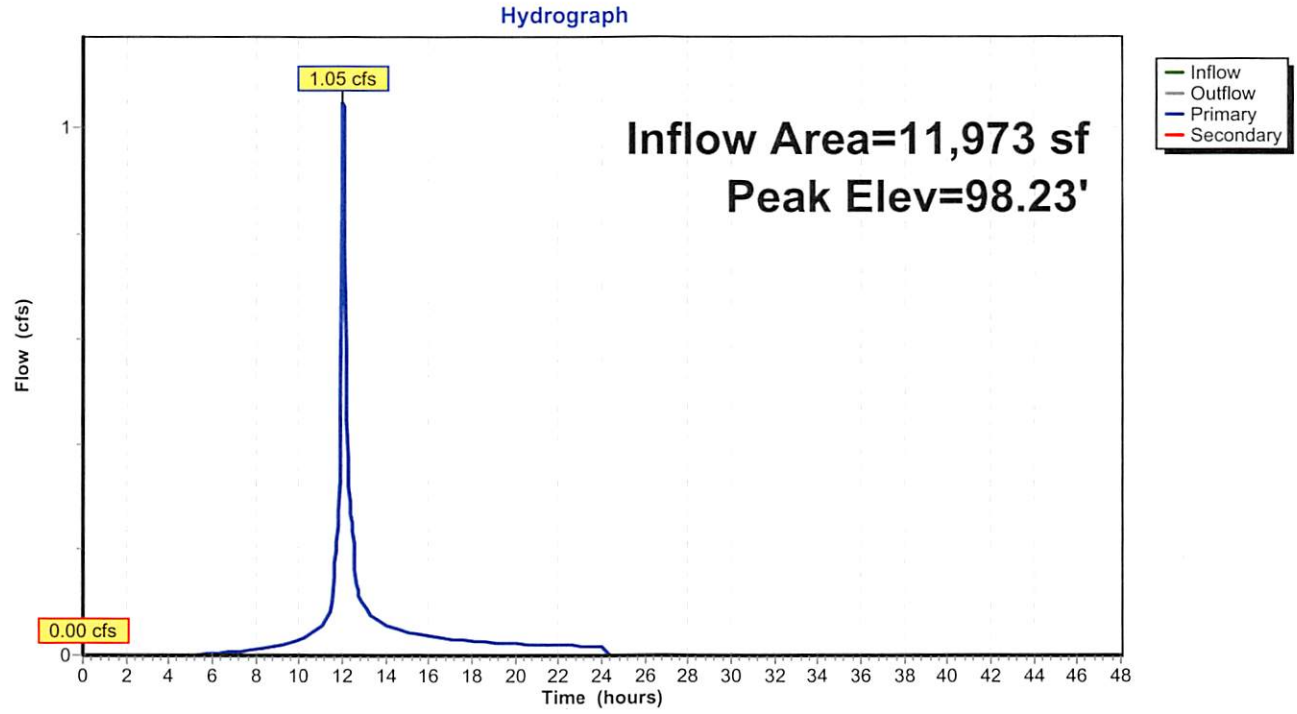
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 98.23' @ 12.04 hrs
Flood Elev= 101.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	97.48'	**10.0" Round Culvert** L= 5.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 97.48' / 97.48' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Secondary	98.43'	**12.0" Round Culvert** L= 21.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 98.43' / 98.22' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.02 cfs @ 12.04 hrs HW=98.21' TW=95.98' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 1.02 cfs @ 2.66 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=97.48' TW=97.16' (Dynamic Tailwater)
└**2=Culvert** (Controls 0.00 cfs)

Pond 2P: AD 4



Summary for Pond MH1: Manhole #1

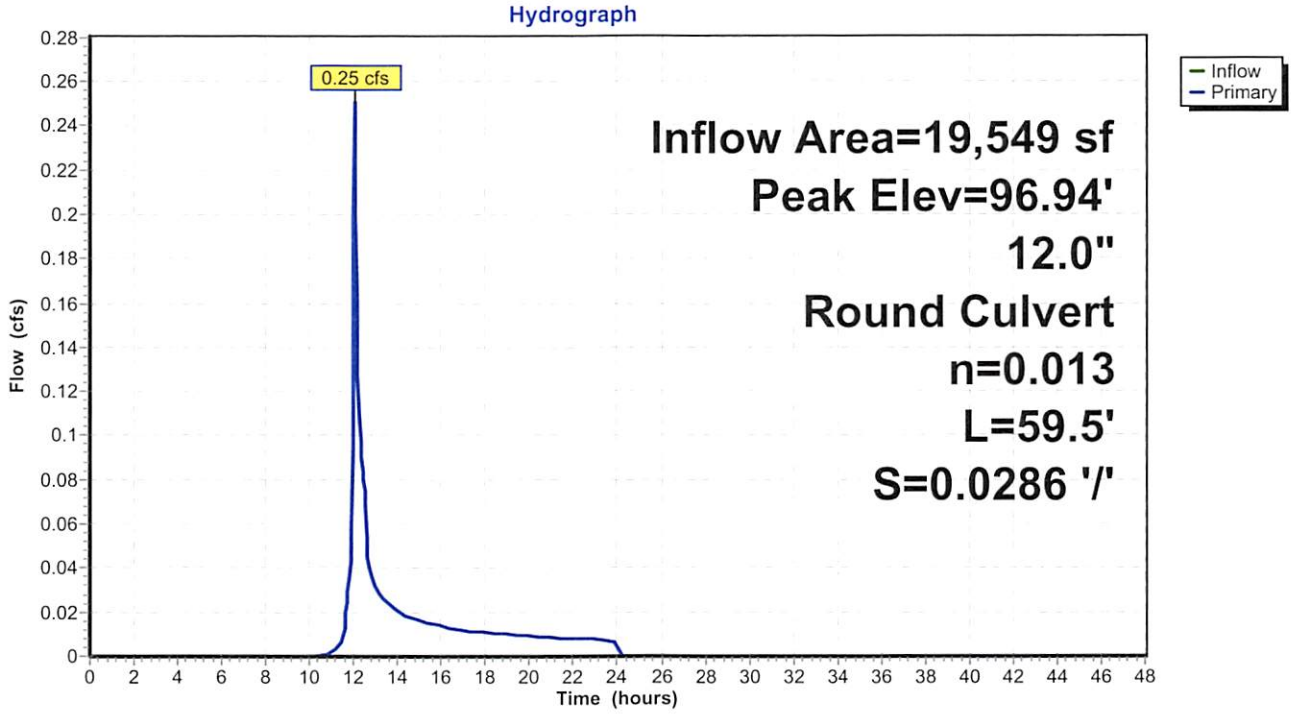
Inflow Area = 19,549 sf, 38.34% Impervious, Inflow Depth = 0.54" for 10-yr event
Inflow = 0.25 cfs @ 12.05 hrs, Volume= 887 cf
Outflow = 0.25 cfs @ 12.05 hrs, Volume= 887 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.25 cfs @ 12.05 hrs, Volume= 887 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 96.94' @ 12.05 hrs
Flood Elev= 101.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	96.70'	**12.0" Round Culvert** L= 59.5' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 96.70' / 95.00' S= 0.0286 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.25 cfs @ 12.05 hrs HW=96.94' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 0.25 cfs @ 1.68 fps)

Pond MH1: Manhole #1



Summary for Pond MH2: MH2

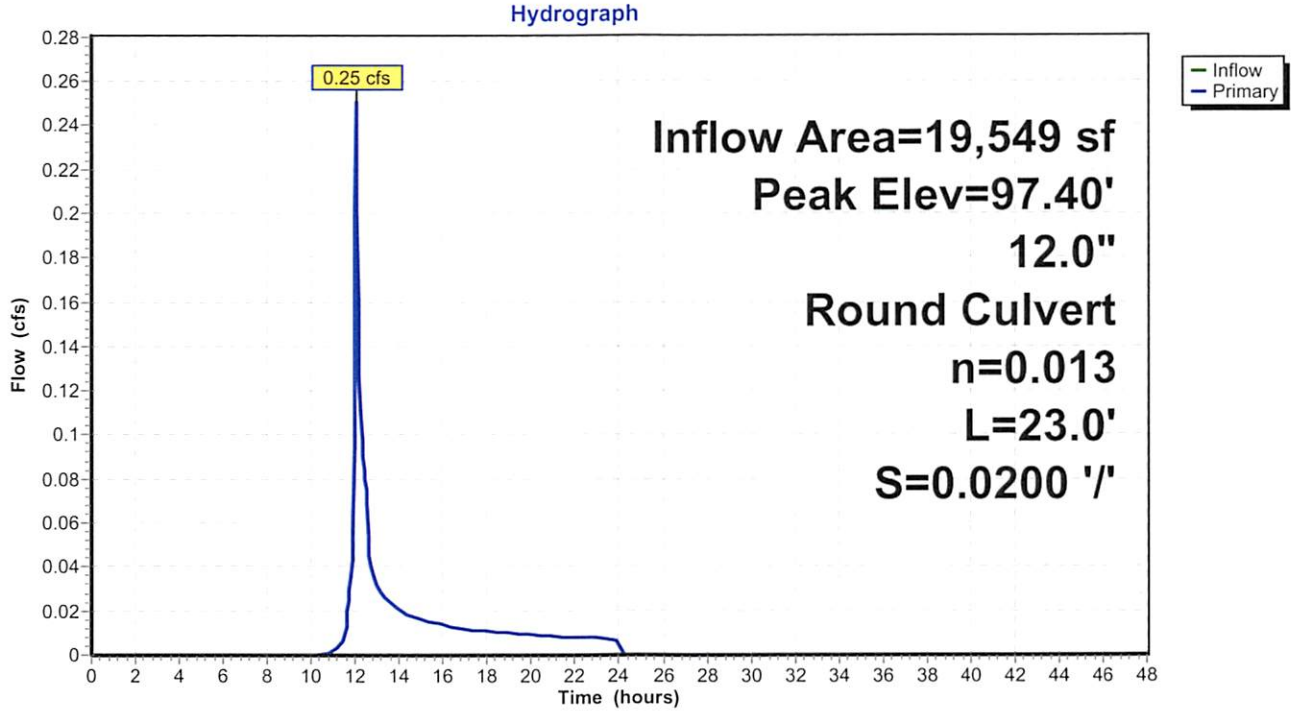
Inflow Area = 19,549 sf, 38.34% Impervious, Inflow Depth = 0.54" for 10-yr event
Inflow = 0.25 cfs @ 12.05 hrs, Volume= 887 cf
Outflow = 0.25 cfs @ 12.05 hrs, Volume= 887 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.25 cfs @ 12.05 hrs, Volume= 887 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 97.40' @ 12.05 hrs
Flood Elev= 102.76'

Device	Routing	Invert	Outlet Devices
#1	Primary	97.16'	**12.0" Round Culvert** L= 23.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 97.16' / 96.70' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.25 cfs @ 12.05 hrs HW=97.40' TW=96.94' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.25 cfs @ 1.68 fps)

Pond MH2: MH2

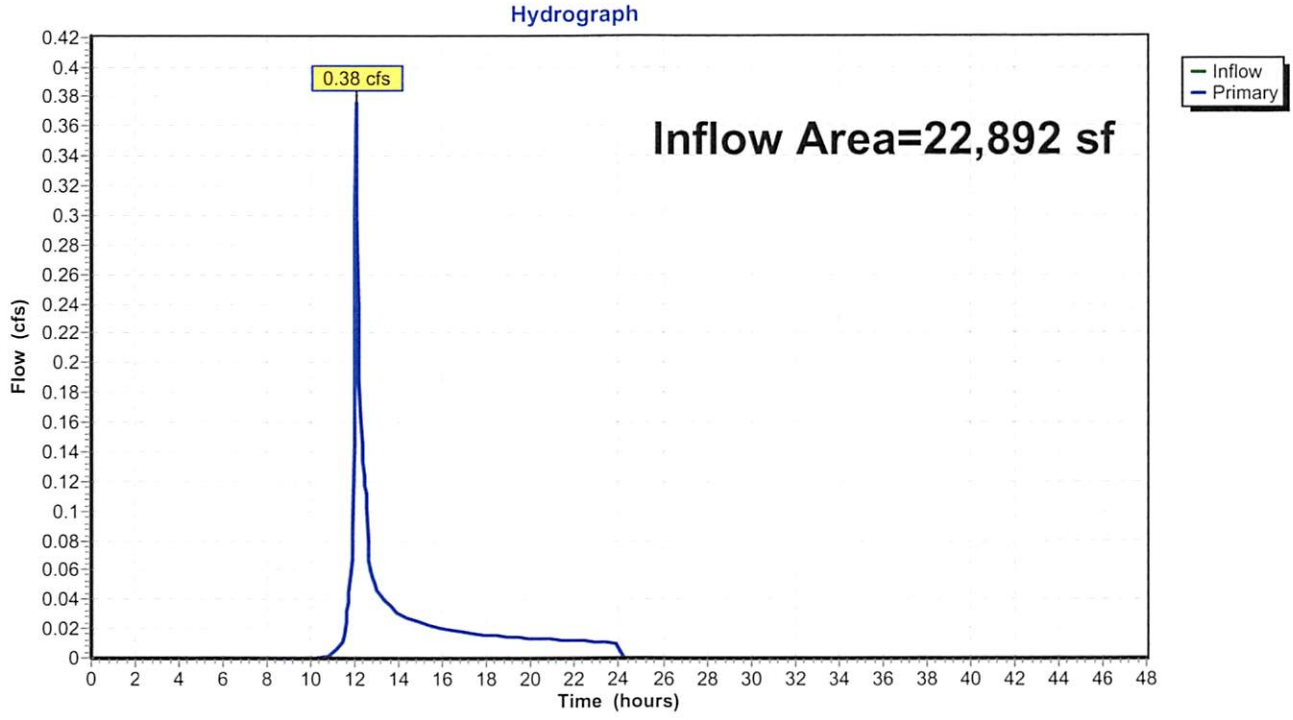


Summary for Link DP-1: Design Point #1

Inflow Area = 22,892 sf, 34.34% Impervious, Inflow Depth = 0.69" for 10-yr event
Inflow = 0.38 cfs @ 12.05 hrs, Volume= 1,318 cf
Primary = 0.38 cfs @ 12.05 hrs, Volume= 1,318 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link DP-1: Design Point #1

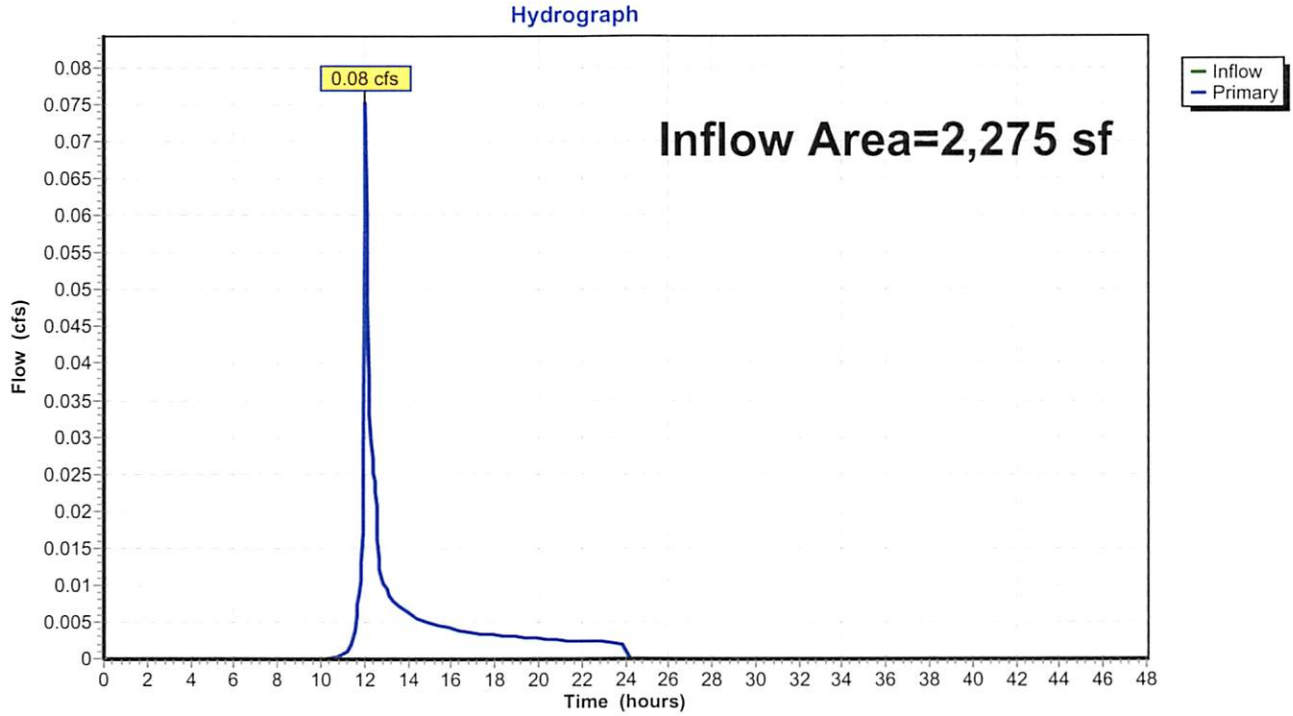


Summary for Link DP-2: Design Point #2

Inflow Area = 2,275 sf, 0.00% Impervious, Inflow Depth = 1.41" for 10-yr event
Inflow = 0.08 cfs @ 12.05 hrs, Volume= 266 cf
Primary = 0.08 cfs @ 12.05 hrs, Volume= 266 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link DP-2: Design Point #2



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment DA-1: Drainage Area #1
Runoff Area=7,576 sf 0.00% Impervious Runoff Depth=4.14"
Flow Length=175' Tc=6.0 min CN=61 Runoff=0.75 cfs 2,617 cf

Subcatchment DA-2: Drainage Area #2
Runoff Area=11,973 sf 62.60% Impervious Runoff Depth=6.96"
Flow Length=149' Tc=6.0 min CN=84 Runoff=1.95 cfs 6,947 cf

Subcatchment DA-3: Drainage Area #3
Runoff Area=2,275 sf 0.00% Impervious Runoff Depth=4.14"
Flow Length=99' Tc=6.0 min CN=61 Runoff=0.22 cfs 786 cf

Subcatchment DA-4: Drainage Area #4
Runoff Area=3,343 sf 10.95% Impervious Runoff Depth=4.39"
Flow Length=51' Tc=6.0 min UI Adjusted CN=63 Runoff=0.35 cfs 1,223 cf

Pond 1P: Gravel Bed
Peak Elev=99.22' Storage=1,245 cf Inflow=1.83 cfs 6,171 cf
Outflow=0.27 cfs 6,186 cf

Pond 2P: AD 4
Peak Elev=98.97' Inflow=1.95 cfs 6,947 cf
Primary=1.83 cfs 6,171 cf Secondary=0.91 cfs 776 cf Outflow=1.95 cfs 6,947 cf

Pond MH1: Manhole #1
Peak Elev=97.29' Inflow=1.25 cfs 3,392 cf
12.0" Round Culvert n=0.013 L=59.5' S=0.0286 '/' Outflow=1.25 cfs 3,392 cf

Pond MH2: MH2
Peak Elev=97.75' Inflow=1.25 cfs 3,392 cf
12.0" Round Culvert n=0.013 L=23.0' S=0.0200 '/' Outflow=1.25 cfs 3,392 cf

Link DP-1: Design Point #1
Inflow=1.41 cfs 4,615 cf
Primary=1.41 cfs 4,615 cf

Link DP-2: Design Point #2
Inflow=0.22 cfs 786 cf
Primary=0.22 cfs 786 cf

Total Runoff Area = 25,167 sf Runoff Volume = 11,572 cf Average Runoff Depth = 5.52"
68.76% Pervious = 17,306 sf 31.24% Impervious = 7,861 sf

Summary for Subcatchment DA-1: Drainage Area #1

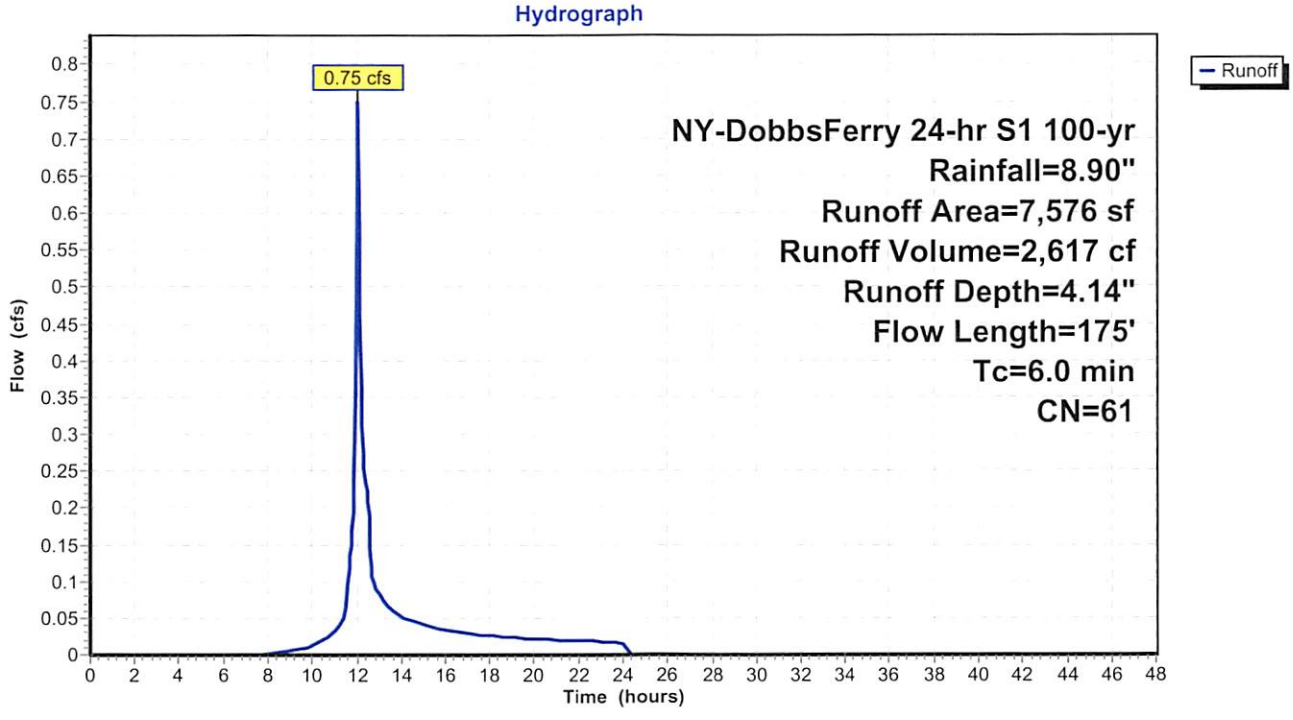
Runoff = 0.75 cfs @ 12.05 hrs, Volume= 2,617 cf, Depth= 4.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
NY-DobbsFerry 24-hr S1 100-yr Rainfall=8.90"

Area (sf)	CN	Description
7,576	61	>75% Grass cover, Good, HSG B
7,576		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	27	0.2600	0.26		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 3.50"
0.1	26	0.1150	5.09		**Shallow Concentrated Flow, BC** Grassed Waterway Kv= 15.0 fps
0.2	51	0.0540	3.49		**Shallow Concentrated Flow, CD** Grassed Waterway Kv= 15.0 fps
0.1	71	0.0570	14.08	11.06	**Pipe Channel, DE** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.010 PVC, smooth interior
2.1	175	Total, Increased to minimum Tc = 6.0 min			

Subcatchment DA-1: Drainage Area #1



Summary for Subcatchment DA-2: Drainage Area #2

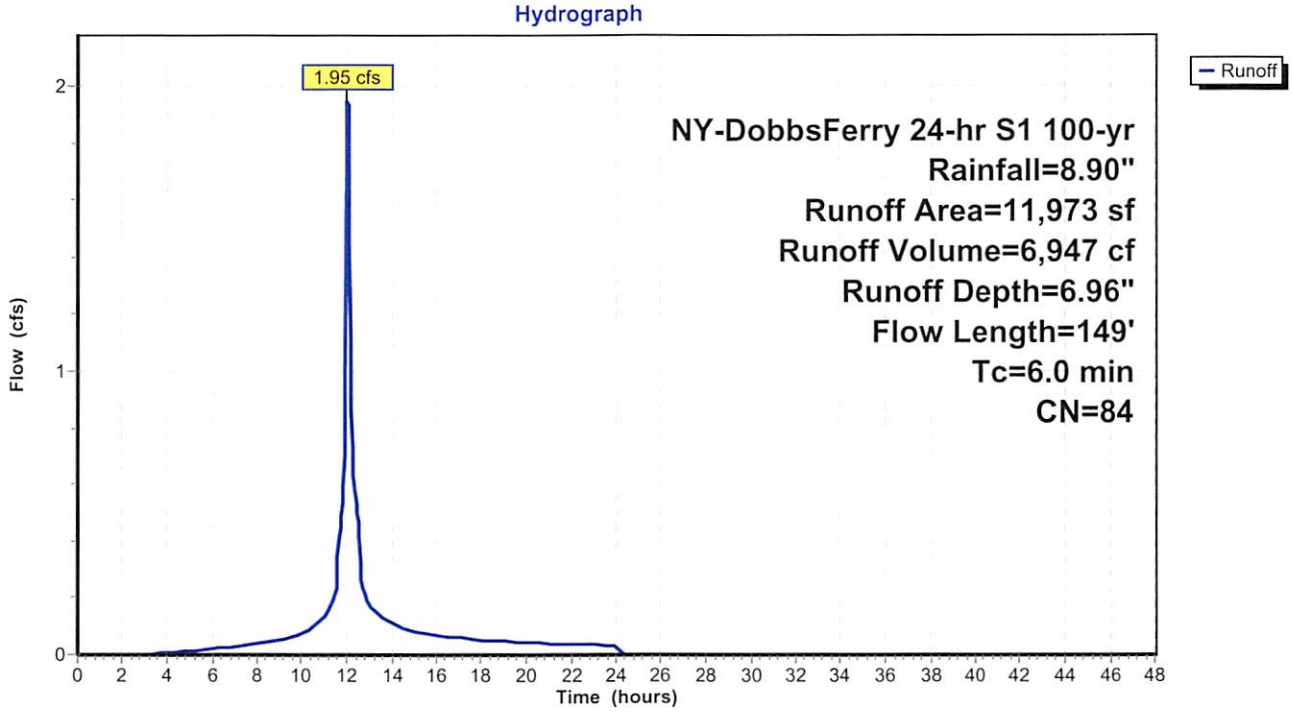
Runoff = 1.95 cfs @ 12.04 hrs, Volume= 6,947 cf, Depth= 6.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
NY-DobbsFerry 24-hr S1 100-yr Rainfall=8.90"

Area (sf)	CN	Description
4,478	61	>75% Grass cover, Good, HSG B
7,495	98	Paved parking, HSG B
11,973	84	Weighted Average
4,478		37.40% Pervious Area
7,495		62.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	21	0.1400	0.19		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 3.50"
0.5	128	0.0500	4.54		**Shallow Concentrated Flow, BC** Paved Kv= 20.3 fps
2.3	149	Total, Increased to minimum Tc = 6.0 min			

Subcatchment DA-2: Drainage Area #2



Summary for Subcatchment DA-3: Drainage Area #3

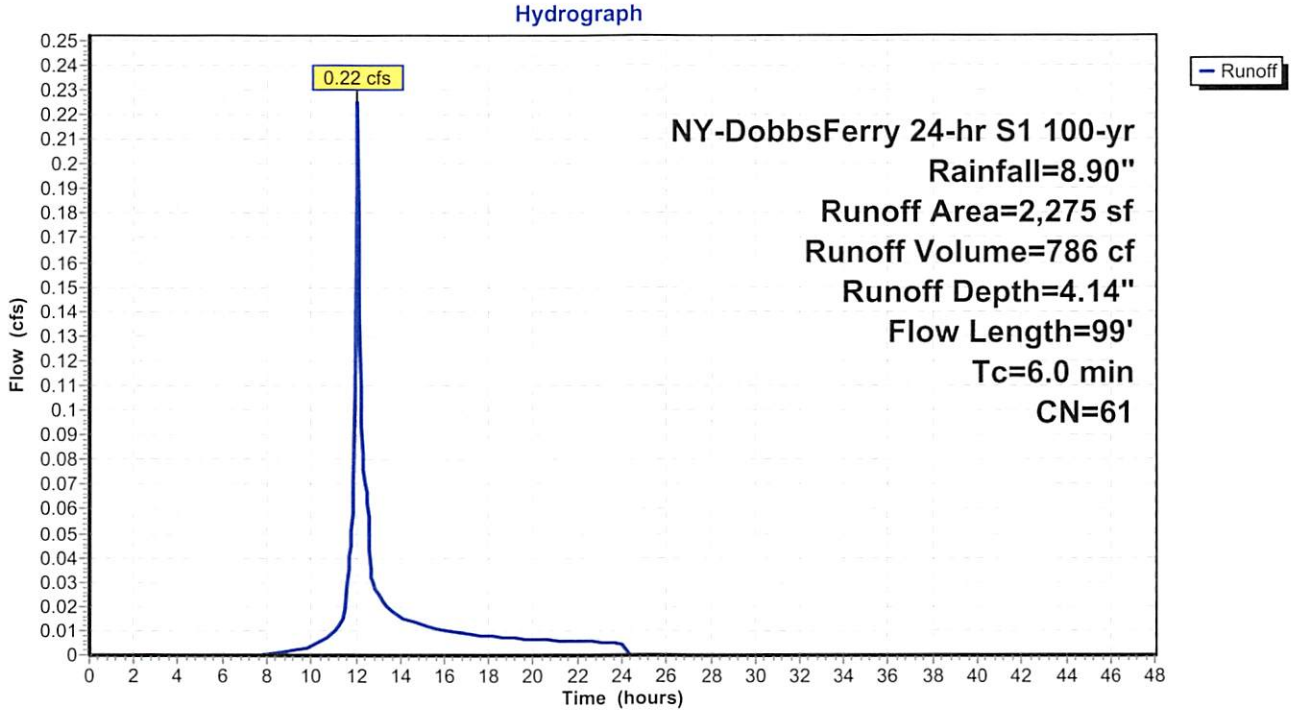
Runoff = 0.22 cfs @ 12.05 hrs, Volume= 786 cf, Depth= 4.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
NY-DobbsFerry 24-hr S1 100-yr Rainfall=8.90"

Area (sf)	CN	Description
2,275	61	>75% Grass cover, Good, HSG B
2,275		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	24	0.1700	0.22		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 3.50"
0.3	75	0.0670	3.88		**Shallow Concentrated Flow, BC** Grassed Waterway Kv= 15.0 fps
2.2	99	Total, Increased to minimum Tc = 6.0 min			

Subcatchment DA-3: Drainage Area #3



Summary for Subcatchment DA-4: Drainage Area #4

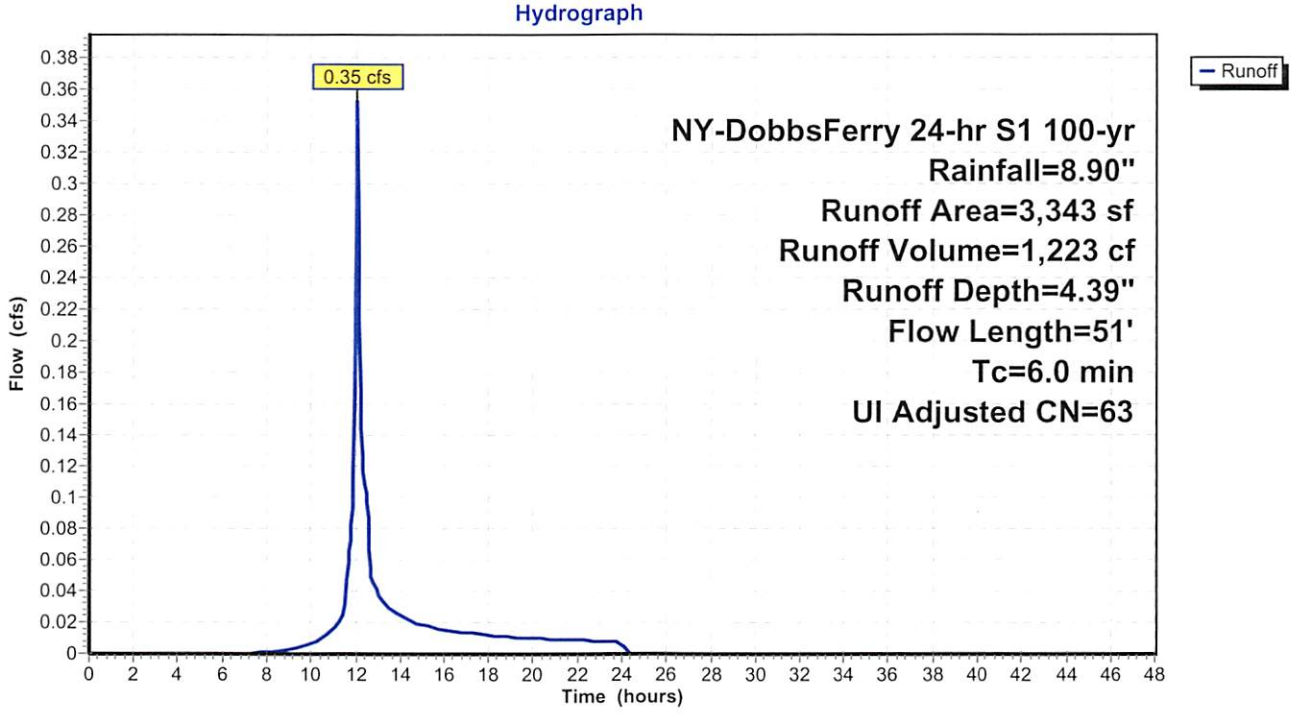
Runoff = 0.35 cfs @ 12.04 hrs, Volume= 1,223 cf, Depth= 4.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
NY-DobbsFerry 24-hr S1 100-yr Rainfall=8.90"

Area (sf)	CN	Adj	Description
2,977	61		>75% Grass cover, Good, HSG B
366	98		Unconnected pavement, HSG B
3,343	65	63	Weighted Average, UI Adjusted
2,977			89.05% Pervious Area
366			10.95% Impervious Area
366			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	25	0.1200	0.19		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 3.50"
0.1	26	0.0650	3.82		**Shallow Concentrated Flow, BC** Grassed Waterway Kv= 15.0 fps
2.3	51	Total, Increased to minimum Tc = 6.0 min			

Subcatchment DA-4: Drainage Area #4



Summary for Pond 1P: Gravel Bed

Inflow Area = 11,973 sf, 62.60% Impervious, Inflow Depth = 6.18" for 100-yr event
Inflow = 1.83 cfs @ 12.04 hrs, Volume= 6,171 cf
Outflow = 0.27 cfs @ 11.65 hrs, Volume= 6,186 cf, Atten= 85%, Lag= 0.0 min
Discarded = 0.27 cfs @ 11.65 hrs, Volume= 6,186 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 99.22' @ 12.19 hrs Surf.Area= 740 sf Storage= 1,245 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 19.7 min (827.0 - 807.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	95.26'	1,151 cf	**18.50'W x 40.00'L x 4.17'H Field A** 3,083 cf Overall - 204 cf Embedded = 2,878 cf x 40.0% Voids
#2A	97.26'	154 cf	**ADS N-12 15"** x 3 Inside #1 Inside= 14.8"W x 14.8"H => 1.20 sf x 20.00'L = 24.0 cf Outside= 18.0"W x 18.0"H => 1.60 sf x 20.00'L = 31.9 cf Row Length Adjustment= +13.00' x 1.20 sf x 3 rows 14.50' Header x 1.20 sf x 2 = 34.8 cf Inside
		1,305 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	95.26'	**16.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.27 cfs @ 11.65 hrs HW=95.34' (Free Discharge)
↳**1=Exfiltration** (Exfiltration Controls 0.27 cfs)

Pond 1P: Gravel Bed - Chamber Wizard Field A

Chamber Model = ADS N-12 15" (ADS N-12® Pipe)
Inside= 14.8"W x 14.8"H => 1.20 sf x 20.00'L = 24.0 cf
Outside= 18.0"W x 18.0"H => 1.60 sf x 20.00'L = 31.9 cf
Row Length Adjustment= +13.00' x 1.20 sf x 3 rows

18.0" Wide + 60.0" Spacing = 78.0" C-C Row Spacing

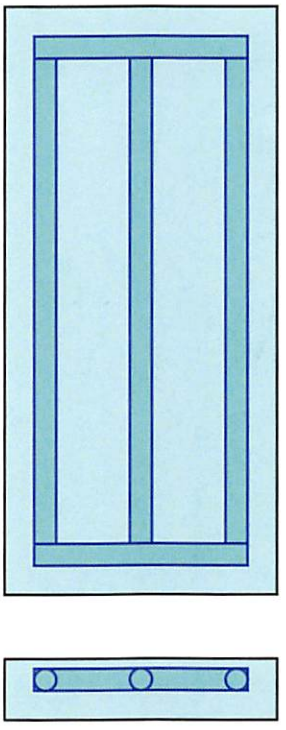
1 Chambers/Row x 20.00' Long +13.00' Row Adjustment +1.50' Header x 2 = 36.00' Row Length +24.0" End Stone x 2 = 40.00' Base Length
3 Rows x 18.0" Wide + 60.0" Spacing x 2 + 24.0" Side Stone x 2 = 18.50' Base Width
24.0" Base + 18.0" Chamber Height + 8.0" Cover = 4.17' Field Height

3 Chambers x 24.0 cf +13.00' Row Adjustment x 1.20 sf x 3 Rows + 14.50' Header x 1.20 sf x 2 = 153.6 cf Chamber Storage
3 Chambers x 31.9 cf +13.00' Row Adjustment x 1.60 sf x 3 Rows + 14.50' Header x 1.60 sf x 2 = 204.3 cf Displacement

3,082.5 cf Field - 204.3 cf Chambers = 2,878.2 cf Stone x 40.0% Voids = 1,151.3 cf Stone Storage

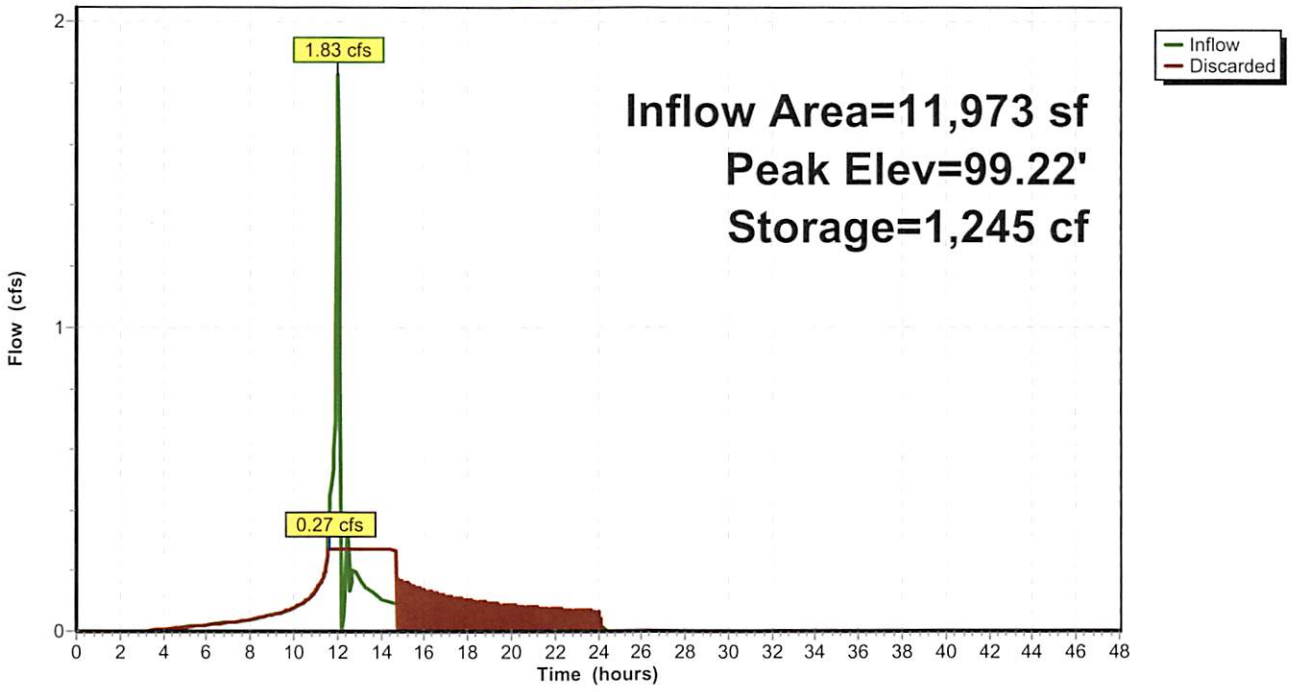
Chamber Storage + Stone Storage = 1,304.9 cf = 0.03 af
Overall Storage Efficiency = 42.3%
Overall System Size = 40.00' x 18.50' x 4.17'

3 Chambers
114.2 cy Field
106.6 cy Stone



Pond 1P: Gravel Bed

Hydrograph



Summary for Pond 2P: AD 4

Inflow Area = 11,973 sf, 62.60% Impervious, Inflow Depth = 6.96" for 100-yr event
Inflow = 1.95 cfs @ 12.04 hrs, Volume= 6,947 cf
Outflow = 1.95 cfs @ 12.04 hrs, Volume= 6,947 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.83 cfs @ 12.04 hrs, Volume= 6,171 cf
Secondary = 0.91 cfs @ 12.22 hrs, Volume= 776 cf

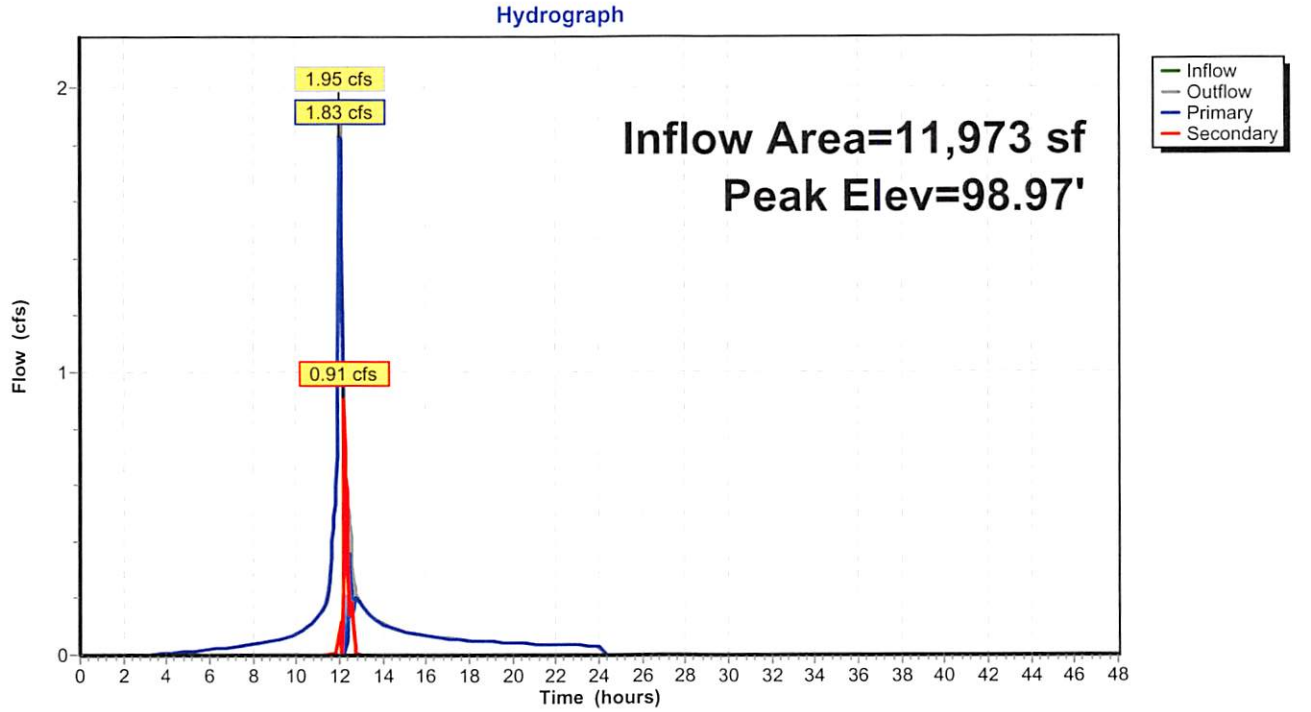
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 98.97' @ 12.22 hrs
Flood Elev= 101.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	97.48'	**10.0" Round Culvert** L= 5.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 97.48' / 97.48' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Secondary	98.43'	**12.0" Round Culvert** L= 21.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 98.43' / 98.22' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.77 cfs @ 12.04 hrs HW=98.59' TW=97.71' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 1.77 cfs @ 3.25 fps)

Secondary OutFlow Max=0.82 cfs @ 12.22 hrs HW=98.93' TW=97.73' (Dynamic Tailwater)
└**2=Culvert** (Barrel Controls 0.82 cfs @ 3.03 fps)

Pond 2P: AD 4



Summary for Pond MH1: Manhole #1

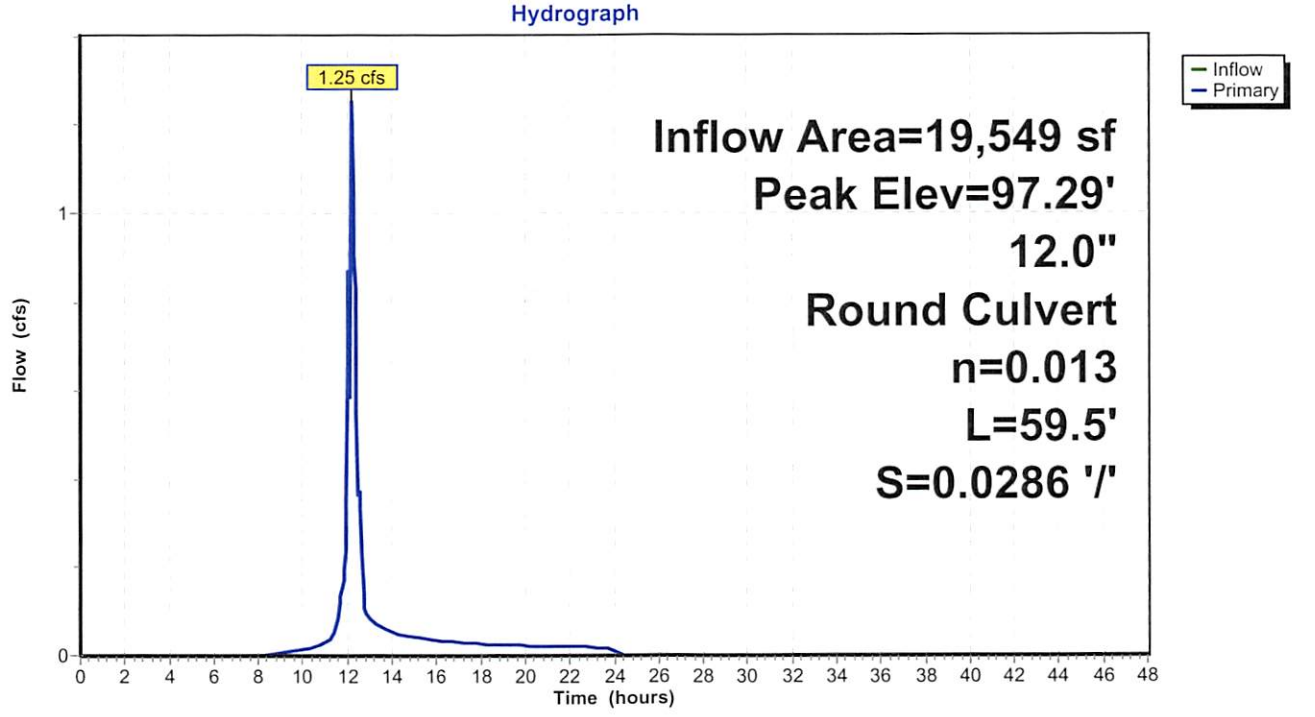
Inflow Area = 19,549 sf, 38.34% Impervious, Inflow Depth = 2.08" for 100-yr event
Inflow = 1.25 cfs @ 12.21 hrs, Volume= 3,392 cf
Outflow = 1.25 cfs @ 12.21 hrs, Volume= 3,392 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.25 cfs @ 12.21 hrs, Volume= 3,392 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 97.29' @ 12.21 hrs
Flood Elev= 101.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	96.70'	**12.0" Round Culvert** L= 59.5' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 96.70' / 95.00' S= 0.0286 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.18 cfs @ 12.21 hrs HW=97.27' TW=0.00' (Dynamic Tailwater)
↳**1=Culvert** (Inlet Controls 1.18 cfs @ 2.57 fps)

Pond MH1: Manhole #1



Summary for Pond MH2: MH2

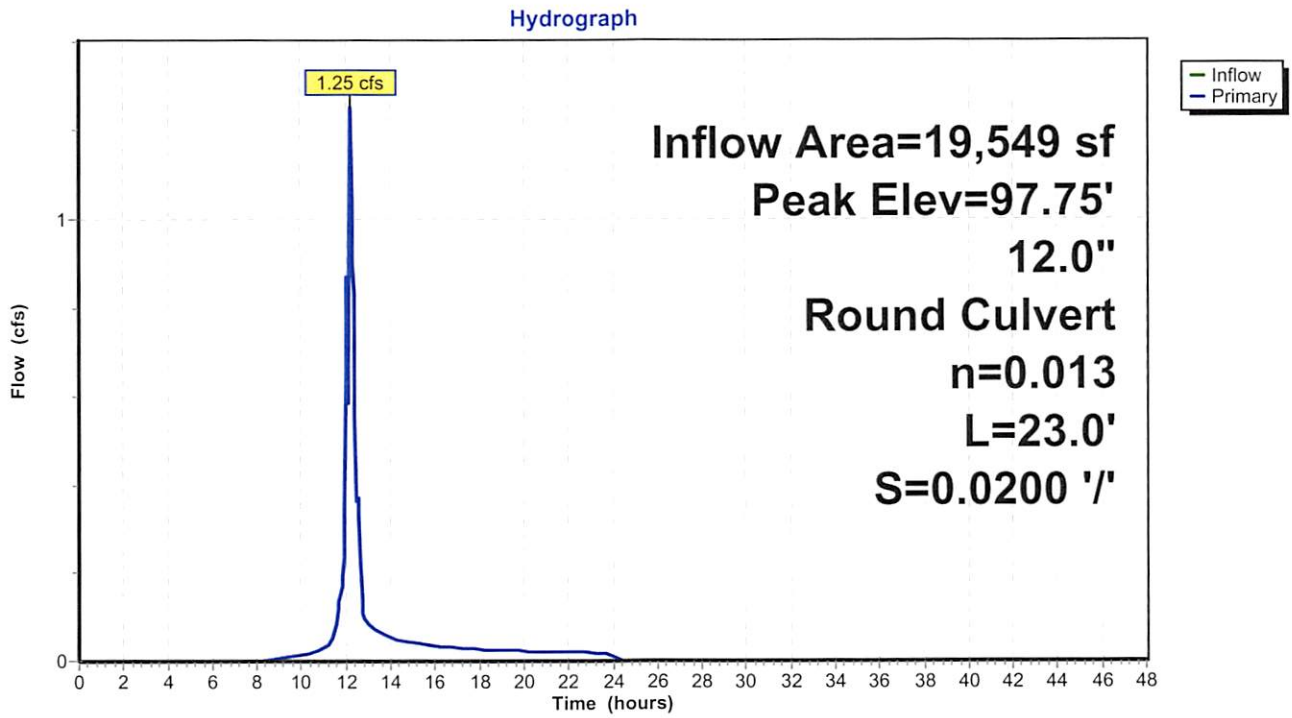
Inflow Area = 19,549 sf, 38.34% Impervious, Inflow Depth = 2.08" for 100-yr event
Inflow = 1.25 cfs @ 12.21 hrs, Volume= 3,392 cf
Outflow = 1.25 cfs @ 12.21 hrs, Volume= 3,392 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.25 cfs @ 12.21 hrs, Volume= 3,392 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 97.75' @ 12.22 hrs
Flood Elev= 102.76'

Device	Routing	Invert	Outlet Devices
#1	Primary	97.16'	**12.0" Round Culvert** L= 23.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 97.16' / 96.70' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.16 cfs @ 12.21 hrs HW=97.73' TW=97.27' (Dynamic Tailwater)
↳**1=Culvert** (Outlet Controls 1.16 cfs @ 3.59 fps)

Pond MH2: MH2

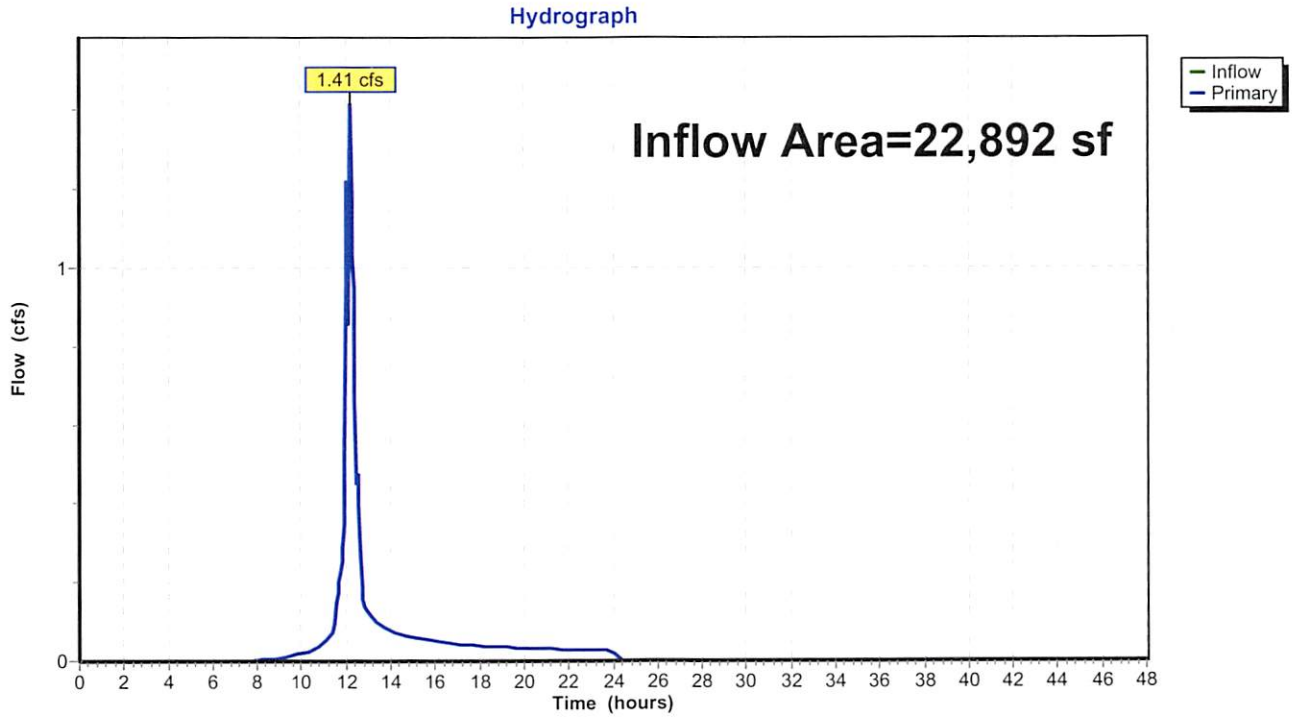


Summary for Link DP-1: Design Point #1

Inflow Area = 22,892 sf, 34.34% Impervious, Inflow Depth = 2.42" for 100-yr event
Inflow = 1.41 cfs @ 12.21 hrs, Volume= 4,615 cf
Primary = 1.41 cfs @ 12.21 hrs, Volume= 4,615 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link DP-1: Design Point #1



Summary for Link DP-2: Design Point #2

Inflow Area = 2,275 sf, 0.00% Impervious, Inflow Depth = 4.14" for 100-yr event
Inflow = 0.22 cfs @ 12.05 hrs, Volume= 786 cf
Primary = 0.22 cfs @ 12.05 hrs, Volume= 786 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link DP-2: Design Point #2