Town of Manlius
Planning Board Agenda
January 11, 2021
6:30PM

1. Zoom Meeting Instructions

   Documents:

   ZOOM PLANNING BOARD MEETING INSTRUCTIONS JANUARY 11, 2021.PDF

2. Pledge Of Allegiance

3. Approval Of Minutes - December 14 And December 28, 2020

4. Organizational Meeting

   Documents:

   2021 ORGANIZATIONAL MEETING.PDF

5. CNY Premiere Homes, INC. - 7115 East Genesee Street, Fayetteville, NY 130660- Public Hearing - Site Plan And Accessory Use Permit - 7115 East Genesee Street, Fayetteville, NY 13066 - Tax Map # 085.-08-10.0

   Documents:

   7115 EAST GENESEE STREET - COVER PAGE.PDF
   7115 EAST GENESEE STREET - DEMOLITION PLAN.PDF
   7115 EAST GENESEE STREET - EXTERIOR ELEVATIONS.PDF
   7115 EAST GENESEE STREET - NOTES AND GENERAL INFORMATION.PDF
   7115 EAST GENESEE STREET - PLANNING BOARD APPLICATION.PDF
   7115 EAST GENESEE STREET - PROPOSED FLOOR PLANS.PDF
   7115 EAST GENESEE STREET - PROPOSED SITE PLAN AND EXISTING PLANS.PDF
   7115 EAST GENESEE STREET - SURVEY.PDF
   7115 EAST GENSESS STREET - ACCESSORY USE PERMIT APPLICATION.PDF
   OCPB REFERRAL - ZELLER - REAL ESTATE OFFICE - 7115 E. GENESEE STREET.PDF

6. Brolex Properties - 5912 North Burdick Street, East Syracuse, NY 13057 -12-Lot Subdivision & Site Plan- Freeman Estates - 7430 Highbridge Road, Fayetteville, NY 13066 Tax Map #101.-02-02.1

   Documents:

   7430 HIGHBRIDGE ROAD - FREEMAN ESTATES HOUSING (1).PDF
   7430 HIGHBRIDGE ROAD - SWPPP REPORT FREEMAN ESTATES HOUSING 12-17-2020.PDF

7. Woodland Hills Subdivision (Hoag Lane), 201 Solar Street, Syracuse, NY 13204 Continued Site Plan - 21-Lot Subdivision - 5290-5320 Hoag Lane, Fayetteville, NY 13066 Tax Map # 104.-01-39.2

8. Wildcat Renewables, LLC - 879 Sanchez Street, San Francisco, CA 94114 - Initial Presentation - Special Permit And Site Plan - Solar Array - 7390 Kirkville Road East, East Syracuse, NY 13057 - Tax Map # 055.-01-10.1

Documents:

7390 KIRKVILLE ROAD - SITE PLAN SET.PDF
7390 KIRKVILLE SUP APPLICATION-COMPILED.PDF

9. Other Business

10. Adjournment

Town of
MANLIUS
New York

January 11, 2021

Virtual Planning Board Meeting

Instructions to attend the January 11, 2021 virtual Planning Board meeting:

The easiest way to join is to go to our website www.TownOfManlius.org and click on the link that is located on the homepage. You can also watch on our Facebook page by searching for "Town of Manlius"

Enter the meeting url web address as listed below:

https://us02web.zoom.us/j/81052793736?

Password to join when prompted:

Password: 772650

Enter your email address and name and join the meeting!

Join by telephone by dialing the number below:

1-(929) -436-2866

When prompted to enter the Webinar ID, use the number below followed by #

Webinar ID: 810 5279 3736

Press # again to skip the personal id and enter the password below followed by #

Password: 772650

2021 Town of Manlius Planning Board Organizational Meeting

The Town Board appointed Joseph Lupia Chairman of the Planning Board for a period of 1 year.

Appointment of Baldwin, Sutphen and Frateschi Law Firm as Attorney for the Planning Board. **(Need a Motion)**

Appointment of Miller Engineering as the Planning Board Engineer. **(Need a Motion)**

Appointment of Lisa Beeman as the Planning Board Clerk. **(Need a motion)**

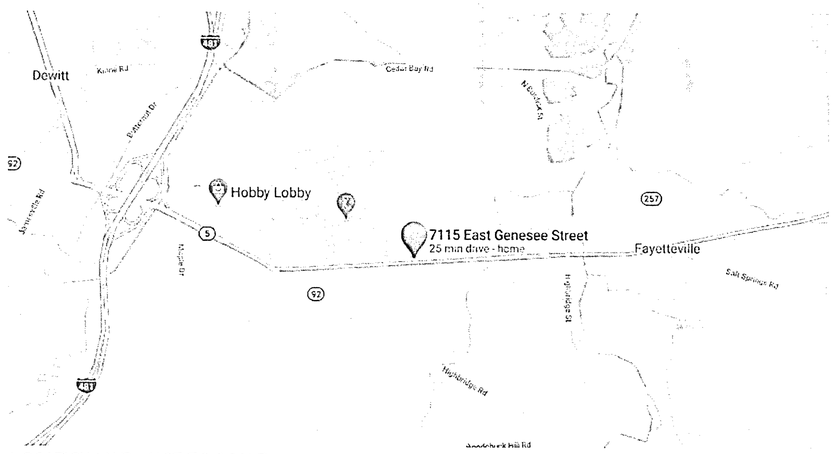
The Planning Board 2021 Meeting Schedule, which states that the Board will meet on the 2nd and 4th Mondays of the Month at 6:30 PM and the Board approved the Application Filing Deadline Schedule is as follows: **(Need a Motion)**

Planning Board Meeting Schedule for 2021	
Meeting Date	**Filing Deadline**
January 11, 2021	December 30, 2020
January 25, 2021	January 14, 2021
February 8, 2021	January 28, 2021
February 22, 2021	February 11, 2021
March 8, 2021	February 25, 2021
March 22, 2021	March 11, 2021
April 12, 2021	April 1, 2021
April 26, 2021	April 15, 2021
May 10, 2021	April 29, 2021
May 24, 2021	May 13, 2021
June 14, 2021	June 3, 2021
June 28, 2021	June 17, 2016
July 12, 2021	July 1, 2016
July 26, 2021	June 15, 2021
August 9, 2021	July 29, 2021
August 23, 2021	August 5, 2021
September 13, 2021	September 1, 2021
September 27, 2021	September 15, 2021
October 11, 2021	No Meeting (Columbus Day)
October 25, 2021	October 14, 2021
November 8, 2021	October 28, 2021
November 22, 2021	November 10, 2021
December 13, 2021	December 2, 2021
December 27, 2021	December 16, 2021

OAK TREE REAL ESTATE OFFICE

7115 EAST GENESEE ST.
FAYETTEVILLE, NY 13066

11/19/2020



LOCATION MAP - NOT TO SCALE

1 / C-0 3D View 1
SCALE: NOT TO SCALE

BUILDING OWNER

JOHN C. ZELLER
OAK TREE REAL ESTATE
CNY PREMIER HOMES, INC
7115 EAST GENESEE ST.
FAYETTEVILLE, NY 13066-1264

DESIGNERS

ZAUSMER-FRISCH SCRUTON & AGGARWAL
DESIGNERS / BUILDERS

CRAIG POLHAMUS, ARCHITECT

ZAUSMER-FRISCH SCRUTON & AGGARWAL

DESIGNERS/BUILDERS
219 BURNET AVE.
SYRACUSE, NY 13203
315-475-8404

WWW.ZAUSMERFRISCH.COM

REGISTERED ARCHITECT
CRAIG POLHAMUS
022575
STATE OF NEW YORK

DRAWING INDEX

C-0	COVER SHEET
C-1	NOTES AND GENERAL INFO
L-1	SITE PLAN
D-1	DEMOLITION PLANS
A-1	PROPOSED FLOOR PLANS
A-2	EXTERIOR ELEVATIONS

No.	Date	Revision Description

Revisions + Issuances

Date 11-19-2020	Scale
Project Number 20053	Drawn by Author

SHEET NUMBER
C-0

REVISION NUMBER

No.	Date	No.	Date

THE ARCHITECT CERTIFIES THAT THIS PROJECT HAS BEEN DESIGNED BY ME OR UNDER MY SUPERVISION, IN ACCORDANCE WITH THE NEW YORK STATE BUILDING CODE, FIRE CODE AND PROPERTY MAINTENANCE CODE, THE NEW YORK STATE ENERGY CONSERVATION CONSTRUCTION CODE ALL DATED 2010, AND APPLICABLE FEDERAL, STATE AND LOCAL LAWS, CODES, AND REGULATIONS. TO THE BEST OF MY KNOWLEDGE AND BELIEF THESE CONSTRUCTION DOCUMENTS ARE IN COMPLIANCE THEREWITH.

REGISTERED ARCHITECT
019723
NY. REG. NO. DATE

IT IS A VIOLATION FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT TO ALTER ANY ITEM ON THIS DOCUMENT IN ANY WAY. ANY LICENSEE WHO ALTERS THIS DOCUMENT IS REQUIRED BY LAW TO AFFIX HIS OR HER SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS OR HER SIGNATURE AND A SPECIFIC DESCRIPTION OF THE ALTERATIONS

ZAUSMER-FRISCH SCRUTON & AGGARWAL
DESIGNERS / BUILDERS

219 BURNET AVENUE / SYRACUSE / NEW YORK 13203
TEL: (315) 475-8404 / FAX: (315) 475-8400 / E-MAIL: info@zausmerfrisch.com

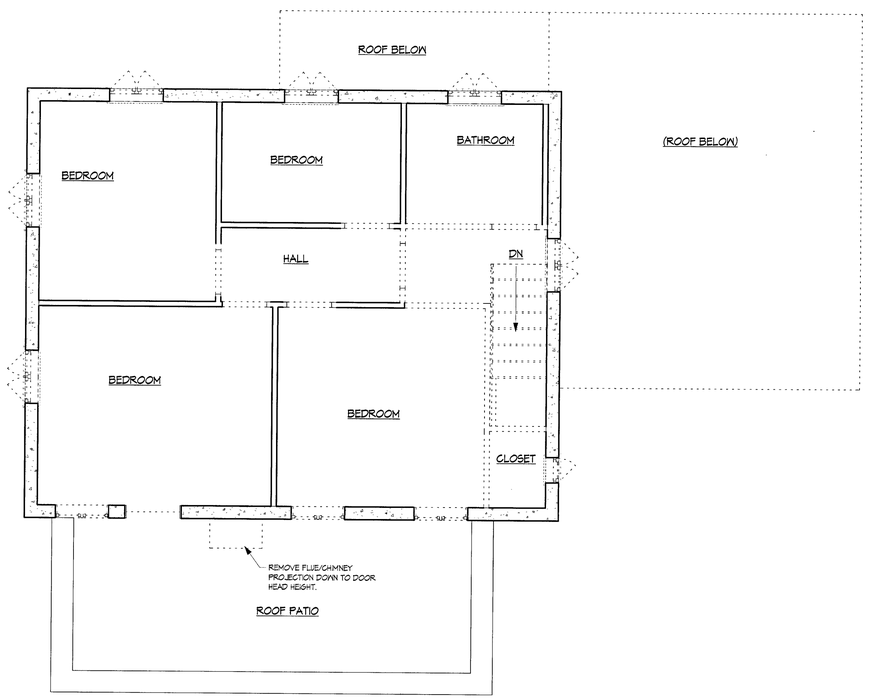
RECEIVED
NOV 3 0 2020
By

DEMOLITION NOTES:

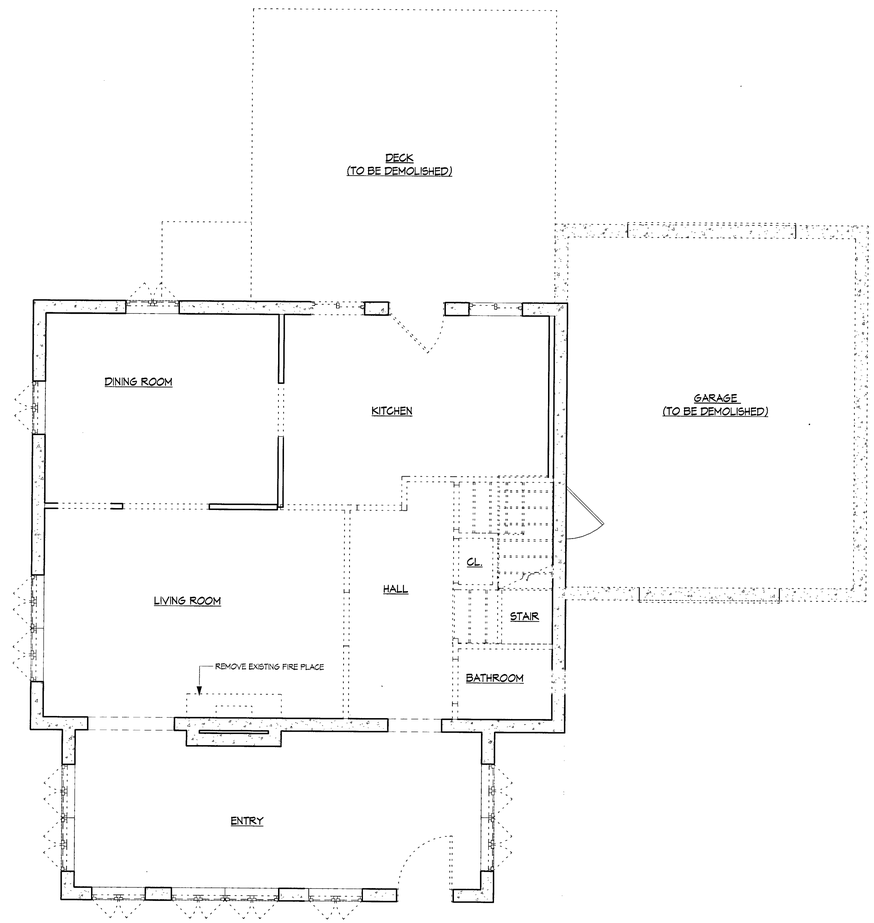
1. ALL WINDOWS TO BE REMOVED AND REPLACED WITH NEW.

WALL KEY:

- EXISTING WALLS
- PROPOSED WALLS
- DEMOLISHED WALLS



2 / D-1 DEMO Second Floor Plan
SCALE: 1/4" = 1'-0"



1 / D-1 DEMO First Floor Plan
SCALE: 1/4" = 1'-0"

ZAUSMER·FRISCH
SCRUTON & AGGARWAL
DESIGNERS / BUILDERS
210 DURGY LANE, SYRACUSE, NEW YORK 13208
TEL (315) 478-5000 / FAX (315) 478-5010 / E-MAIL: fzscom@aol.com

PROJECT
OAK TREE REAL ESTATE OFFICE
7115 EAST GENESEE ST.
FAYETTEVILLE, NY 13066

TITLE
DEMOLITION

REGISTERED ARCHITECT CRAIG POLHAMUS STATE OF NEW YORK 020575

THE ARCHITECT CERTIFIES THAT THIS PROJECT HAS BEEN DESIGNED BY ME OR UNDER MY SUPERVISION, IN ACCORDANCE WITH THE NEW YORK STATE BUILDING CODE, FIRE CODE AND PROPERTY MAINTENANCE CODE, THE NEW YORK STATE ENERGY CONSERVATION CONSTRUCTION CODE ALL DATED 2015, AND APPLICABLE FEDERAL, STATE AND LOCAL LAWS, CODES, AND REGULATIONS. TO THE BEST OF MY KNOWLEDGE AND BELIEF THESE CONSTRUCTION DOCUMENTS ARE IN COMPLIANCE THEREWITH.

REGISTERED ARCHITECT
020575
NY. REG. NO. DATE

IT IS A VIOLATION FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT TO ALTER ANY ITEM ON THIS DOCUMENT IN ANY WAY. ANY LICENSEE WHO ALTERS THIS DOCUMENT IS REQUIRED BY LAW TO AFFIX HIS OR HER SEAL AND THE NOTATION "ALTERED BY" FOLLOWD BY HIS OR HER SIGNATURE AND A SPECIFIC DESCRIPTION OF THE ALTERATIONS

© COPYRIGHT CRAIG POLHAMUS ARCHITECT, 2020

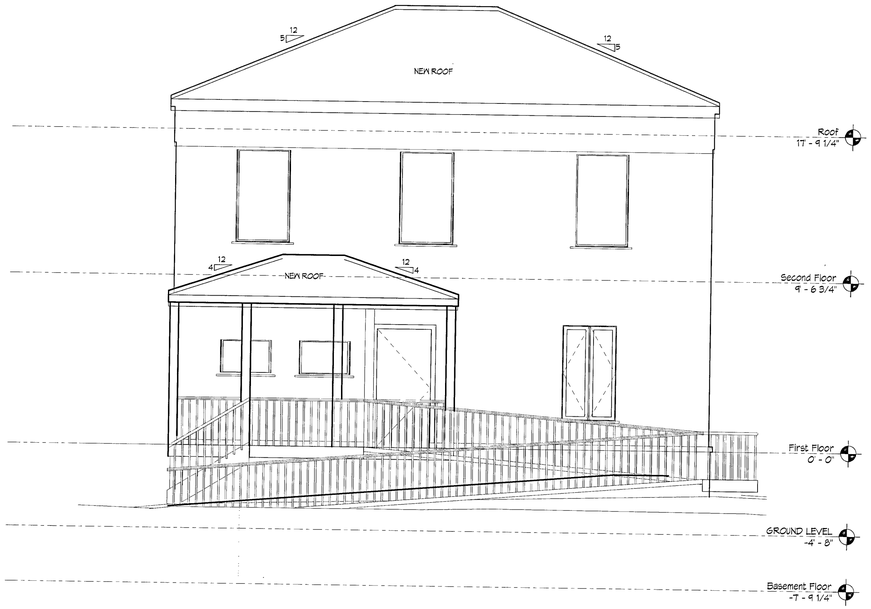
Date	Scale
11-19-2020	1/4" = 1'-0"
Project Number	Drawn by
20053	Author

SHEET NUMBER
D-1

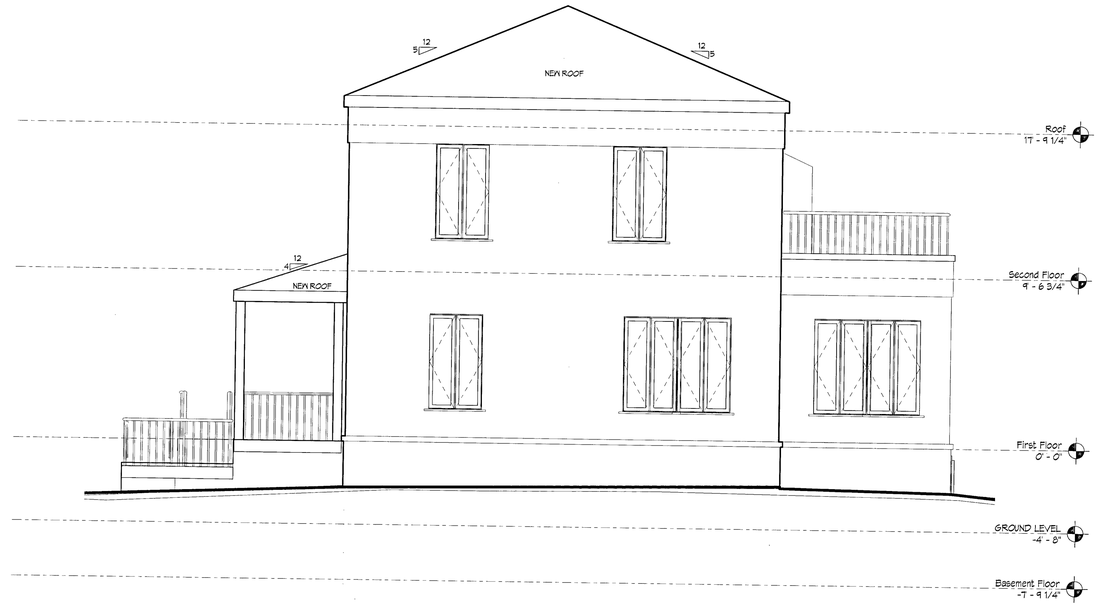
REVISION

No.	Date	Revision Description

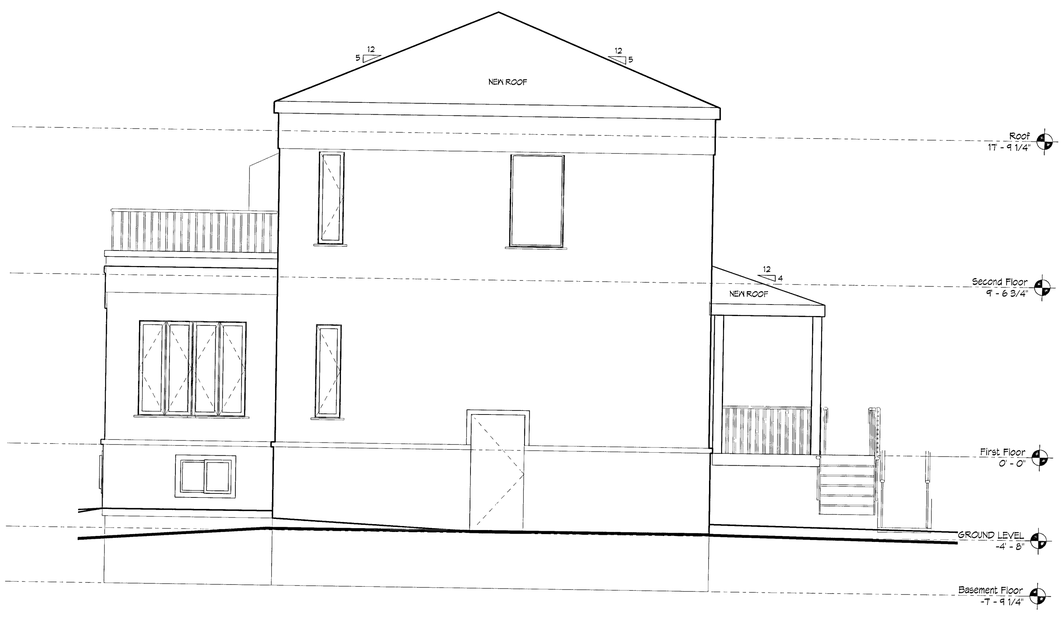
10/01/20



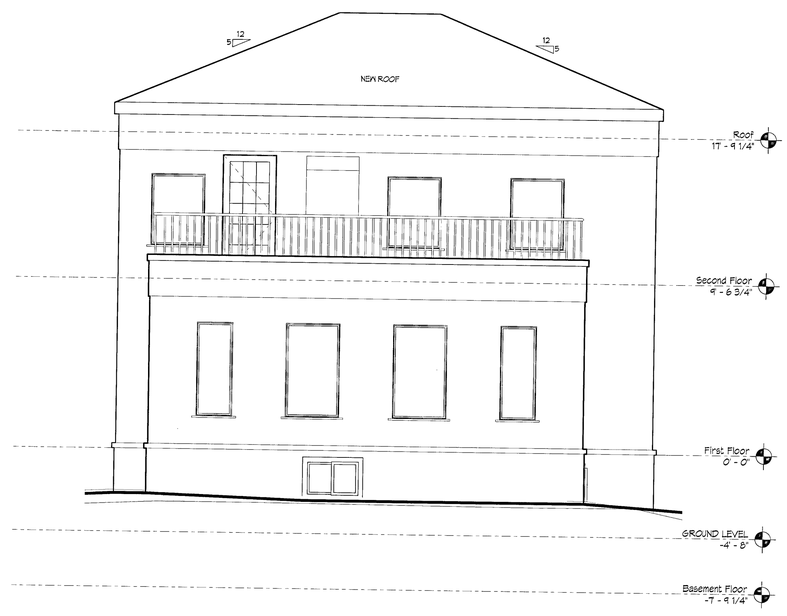
4 / A-2 Elevation 4 - a
SCALE: 1/4" = 1'-0"



2 / A-2 Elevation 2 - a
SCALE: 1/4" = 1'-0"



3 / A-2 Elevation 3 - a
SCALE: 1/4" = 1'-0"



1 / A-2 Elevation 1 - a
SCALE: 1/4" = 1'-0"

ZAUSMER-FRISCH
SCRUTON & AGGARWAL
DESIGNERS / BUILDERS
210 BOG NET AVENUE / STARDUST / NEW YORK 13208
TEL (315) 476-8300 / FAX (315) 476-8301 / E-MAIL: dss@zausmerfrisch.com

PROJECT
OAK TREE REAL ESTATE OFFICE
7115 EAST GENESEE ST.
FAYETTEVILLE, NY 13066

TITLE
EXTERIOR ELEVATIONS

REGISTERED ARCHITECT
CRAIG POLHAMUS
020575
STATE OF NEW YORK

THE ARCHITECT CERTIFIES THAT THIS PROJECT HAS BEEN DESIGNED BY ME OR UNDER MY SUPERVISION, IN ACCORDANCE WITH THE NEW YORK STATE BUILDING CODE, FIRE CODE AND PROPERTY MAINTENANCE CODE, THE NEW YORK STATE ENERGY CONSERVATION CONSTRUCTION CODE ALL DATED 2015, AND APPLICABLE FEDERAL, STATE AND LOCAL LAWS, CODES, AND REGULATIONS. TO THE BEST OF MY KNOWLEDGE AND BELIEF THESE CONSTRUCTION DOCUMENTS ARE IN COMPLIANCE THEREWITH.

REGISTERED ARCHITECT
020575
NY. REG. NO. DATE

IT IS A VIOLATION FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT TO ALTER ANY ITEM ON THIS DOCUMENT IN ANY WAY. ANY LICENSEE WHO ALTERS THIS DOCUMENT IS REQUIRED BY LAW TO AFFIX HIS OR HER SEAL AND THE NOTATION "ALTERED BY" FOLLOWD BY HIS OR HER SIGNATURE AND A SPECIFIC DESCRIPTION OF THE ALTERATIONS

© COPYRIGHT CRAIG POLHAMUS ARCHITECT, 2020

Date	Scale
11-19-2020	1/4" = 1'-0"
Project Number 20053	Drawn by mc

SHEET NUMBER
A-2

REVISION

No.	Date	Revision Description

10/05/20

COMMON ABBREVIATIONS

ABV	ABOVE
AFF	ABOVE FINISH FLOOR
ACC	ACCESS
ACFL	ACCESS FLOOR
AP	ACCESS PANEL
AC	ACOUSTICAL
ACT	ACOUSTICAL TILE
ADD	ADDENDUM
ADH	ADHESIVE
ADJ	ADJACENT
AGG	AGGREGATE
A/C	AIR CONDITIONING
ALT	ALTERNATE
AL	ALUMINUM
AB	ANCHOR BOLT
APX	APPROXIMATE
ARCH	ARCHITECTURAL
AD	AREA DRAIN
ASPH	ASPHALT
BSMT	BASEMENT
BRG	BEARING
BPL	BEARING PLATE
BM	BENCH MARK
BEL	BELOW
BET	BETWEEN
BEW	BOTTOM, EACH WAY
BVL	BEVELED
BIT	BITUMINOUS
BLK	BLOCK
BLKG	BLOCKING
BD	BOARD
BW	BOTH WAYS
BOT	BOTTOM
BRK	BRICK
BRZ	BRONZE
BLDG	BUILDING
CAB	CABINET
CPT	CARPET(ED)
CSMT	CASEMENT
CI	CAST IRON
CST	CAST STONE
CB	CATCH BASIN
CK	CAULK(ING)
CLG	CEILING
CHT	CEILING HEIGHT
CEM	CEMENT
CT	CERAMIC TILE
CHAM	CHAMFER
CIR	CIRCLE
CIRC	CIRCUMFERENCE
CLR	CLEAR(ANCE)
COL	COLUMN
CONC	CONCRETE
CMU	CONCRETE MASONRY UNIT
CONST	CONSTRUCTION
CONT	CONTINUOUS OR CONTINUE
CLL	CONTRACT LIMIT LINE
CJ	CEILING JOIST
CJT	CONTROL JOINT
CORR	CORRUGATED
CRS	COURSE(S)
DBL	DOUBLE
DL	DEAD LOAD
DEMO	DEMOLISH OR DEMOLITION
DTL	DETAIL
DIAG	DIAGONAL
DIAM	DIAMETER
DR	DOOR
DH	DOUBLE HUNG
DS	DOWNSPOUT
D	DRAIN
DW	DISHWASHER
DWR	DRAWER
DWG	DRAWING

E	EAST
ELEC	ELECTRIC(AL)
E.I.F.S.	EXTERIOR INSULATION FINISHING SYSTEM
EL	ELEVATION
EMER	EMERGENCY
EPDM	ETHYLENE PROPYLENE DIENE MONOMER
EQ	EQUAL
EQP	EQUIPMENT
EW	EACH WAY
EVIF	EXISTING DIMENSION, VERIFY IN FIELD
EXH	EXHAUST
EXG	EXISTING
EXT	EXTERIOR
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FF	FACTORY FINISH
FN	FENCE
FGL	FIBERGLASS
FIN	FINISH(ED)
FFE	FINISHED FLOOR ELEVATION
FFL	FINISHED FLOOR LINE
FA	FIRE ALARM
FBRK	FIRE BRICK
FE	FIRE EXTINGUISHER
FPL	FIRE PLACE
FP	FIRE PROOF
FLG	FLASHING
FLR	FLOOR(ING)
FD	FLOOR DRAIN
FLUR	FLUORESCENT
FJT	FLUSH JOINT
F.S.	FLUORESCENT STRIP
FTG	FOOTING
FND	FOUNDATION
FR	FRAME(D), (ING)
FUR	FURRED OR FURRING
GA	GAUGE, GAGE
GV	GALVANIZED
GL	GLASS, GLAZING
GLB	GLASS BLOCK
GB	GRAB BAR
GD	GRADE, GRADING
GRN	GRANITE
GVL	GRAVEL
GPDW	GYPSUM DRYWALL
HDW	HARDWARE
HWD	HARDWOOD
HDR	HEADER
HTG	HEATING
HVAC	HEATING/VENTILATING/AIR CONDITIONING
HT	HEIGHT
HC	HOLLOW CORE
HM	HOLLOW METAL
HK	HOOK(S)
HOR	HORIZONTAL
HB	HOSE BIBS
HWH	HOT WATER HEATER
ID	INSIDE DIAMETER
INS	INSULATE(D) OR INSULATION
INT	INTERIOR
INV	INVERT
IP	IRON PIPE
JT	JOINT
JST	JOIST
KIT	KITCHEN
LBL	LABEL
LAM	LAMINATE(D)
LAV	LAVATORY
LH	LEFT HAND
L	LENGTH
LVR	LOUVERAD

MH	MANHOLE
MFR	MANUFACTURE OR MANUFACTURER
MRB	MARBLE
MO	MASONRY OPENING
MAX	MAXIMUM
MECH	MECHANIC(AL)
MC	MEDICINE CABINET
MET	METAL
MTFR	METAL FURRING
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MLD	MOLDING, MOULDING
MULL	MULLION
NOM	NOMINAL
N	NORTH
NTS	NOT TO SCALE
OC	ON CENTER(S)
OPG	OPENING
OD	OUTSIDE DIAMETER
OH	OVERHEAD
P.C.	PULL CHAIN
PAR	PARALLEL
PNT	PAINT(ED)
PVMT	PAVEMENT
PERF	PERFORATE(D)
PG	PLATE GLASS
PWD	PLYWOOD
PVC	POLYVINYL CHLORIDE
PCF	POUNDS PER CUBIC FOOT
PFL	POUNDS PER LINEAL FOOT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PFB	PREFABRICATE(D)
PL	PROPERTY LINE
QT	QUARRY TILE
RBT	RABBET, REBATE
RAD	RADIUS
RL	RAIL(ING)
REFR	REFRIGERATOR
REG	REGISTER
REM	REMOVE
RA	RETURN AIR
ROW	RIGHT OF WAY
R	RISER
RD	ROOF DRAIN
RFH	ROOF HATCH
RFG	ROOFING
RM	ROOM
RS	RECESSED SCONCE
RO	ROUGH OPENING
SFGL	SAFETY GLASS
SCH	SCHEDULE
SCN	SCREEN
SEC	SECTION
SHR	SHOWER
SHTH	SHEATHING
SH	SHELF, SHELVING
SIM	SIMILAR
SKY	SKYLIGHT
SC	SOLID CORE
S	SOUTH
SPK	SPEAKER
SPEC	SPECIFICATION(S)
SQ	SQUARE
ST	STEEL
STO	STORAGE
SD	STORM DRAIN
STR	STRUCTURAL
SYS	SYSTEM

TEL	TELEPHONE
TV	TELEVISION
TEM	TEMPERED
THK	THICK(NESS)
THR	THRESHOLD
TPD	TOILET PAPER DISPENSER
TOL	TOLERANCE
T&G	TONGUE & GROOVE
TSL	TOP OF SLAB
TST	TOP OF STEEL
TW	TOP OF WALL
TB	TOWEL BAR
TR	TRANSOM
TRK	TRACK
T	TREADS
TYP	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VEST	VESTIBULE
VERT	VERTICAL
VIN	VINYL
WC	WATER CLOSET
WP	WATERPROOFING
WWF	WELDED WIRE MESH
W	WEST
WN	WINDOW
WO	WITHOUT
WD	WOOD
W/D	WASHER/DRYER

SYMBOLS:

c	CHANNEL
d	PENNY
⊥	PERPENDICULAR
ϕ	ROUND

OVERALL DEMOLITION AND PATCHING NOTES:

THESE NOTES REFER TO THE GENERAL CONTRACTOR UNLESS OTHERWISE NOTED.

1. Refer to all trades specific demolition notes and coordinate between trades and drawings for related work, as indicated on drawings, specifications, details and schedules.

2. The Contractor shall provide all labor and materials required to complete the demolition removals and/or reuse of all items shown on the drawings.

3. All work demolished shall be removed from the premises on a daily basis; except for items to be reused or returned to the Owner or as otherwise directed.

4. If during the course of the demolition work, any hazardous materials is encountered, including but not limited to asbestos, lead paint, PCB's , etc., the Contractor shall immediately cease work and notify the Architect immediately in writing. The Contractor shall insure that barriers preclude the migration of hazardous material dust, fibers, or debris. The Contractor shall also post warning signs and shall not resume work until hazardous conditions have been treated in accordance with all local regulations.

5. Where walls have been removed General Contractor to patch to match existing adjacent undamaged finishes at floors, walls, and ceiling and prepare surface to accept new finishes as scheduled.
Where new work abuts existing work, new paint scheduled finish shall not only apply to new work but to existing work if required to provide for proper blend of wall finish. Terminate painting work to a natural break line where there would be no noticeable difference between the existing paint finish and the new finish.

6. All existing interior walls to remain are to be patched, caulked, primed and painted (unless otherwise noted)

7. Noted existing and new surfaces are to be prepared to receive new finishes including finish patching of new and existing holes, voids, cracks, cleaning or surfaces as per manufacturer's instructions, etc. Tooth-in where patching structural tile, brick or block (unless otherwise detailed or noted).

8. At all times that work is in progress, dust tight partitions (fire retardant) shall be installed around the work area. Maintain egress corridors and fire ratings. Coordinate extent and locations of these partitions w/ Owner. Construction partitions & doors to be painted & vinyl base on exposed public side.

9. Work shall not interfere with legal fire exists. All corridors and fire exit stairs shall be maintained at all times.

10. Cover and protect existing and/or new smoke detectors (no plastic) during construction.

11. Where interior partitions are to be removed and not replaced, Contractor is responsible for providing a level transition between the 2 adjacent floors. In no case shall a slope be greater than 1/16" per foot pitch. Patch floors and walls to match existing construction.

12. All existing finishes, work, equipment and structure to remain are to be protected from damage. All existing surfaces, work, equipment and structure to remain which are damaged or removed due to demo or new work shall be repaired and patched with matching construction and finishes.

13. Remove all abandoned utility connections and other miscellaneous items including, but not limited to, clocks, speakers, telephones, toilet accessories, tackboards, pegboards, shelving and brackets attached to walls, floors or structure not indicated to remain or to be removed by Owner.
Consult Owner for disposal or storage of miscellaneous items above.

14. All existing removed fireproofing materials are to be patched to match existing, by Contractor. Maintain existing firerating and UL approved fireproofing materials.

15. Remove existing exposed or accessible wireways and conduits from termination back to panel. Remove mechanical system distribution and electrical fixtures not required in new construction refer to drawings for any additional specific notes.

VERIFICATION OF EXISTING CONDITIONS
PRIOR TO CONSTRUCTION.

THESE DRAWINGS REPRESENT A DIMENSION CONTROL PLAN OF EXISTING CONDITIONS AND ARE PROVIDED TO THE OWNER FOR GENERAL PLANNING PURPOSES ONLY. THE ARCHITECT DOES NOT WARRANT DRAWINGS TO BE 100 % ACCURATE. EXISTING CONDITIONS SHOULD BE VERIFIED BY CONTRACTOR AT TIME OF DEMOLITION & RECONSTRUCTION. CONTRACTOR TO NOTIFY ARCHITECT OF ANY VARIATIONS/DISCREPANCIES

OVERALL GENERAL NOTES:

THESE NOTES REFER TO GENERAL CONTRACTOR UNLESS OTHERWISE NOTED.
ALL WORK SHALL COMPLY WITH ALL APPLICABLE BUILDING CODES AND ENERGY CODES.

SITE / BUILDING RELATED NOTES:

L1. General Contractor shall coordinate w/ Owner site access, material storage, dumpster location, parking and security.

L2. General Contractor shall erect Signs, Construction Barricades, etc. to maintain a safe working environment.

L3. Each prime sub-contractor is responsible for obtaining and paying for required permits and scheduling all required inspections.

L4. Coordinate with Owner all utility interruptions and/or connections. All associated utility companies shall be contacted prior to any subsurface digging and/or required actions.

L5. All work shall be performed in accordance with the State Building Code / Energy Code and all other local and labor laws having jurisdiction.

L6. General Contractor shall be responsible for bracing and shoring of structure as required throughout the entire construction period. contractor shall verify all conditions and dimensions prior to beginning work and shall notify the owner / Architect of any discrepancy.

L7. Contractor shall be responsible for any variation or deviations from the plans without written confirmation from the architect.

L8. General Contractor shall dispose of all construction debris and/or demolition materials in a lawful and timely manor

DRAWING RELATED NOTES:

A1. Follow written dimensions on drawings and details. Questions concerning dimensions are to be directed to the Architect. "Do Not Scale Drawing".
Field verify all existing dimensions.
Existing Dimensions shown are +/-.

A2. All architectural dimensions are to finish face of studs/ CMU for new work and face of GWB at existing construction; unless otherwise indicated.

A3. Refer to all drawings and details for partition types and locations.

A4. All studs, furring, and LGMF to be 16" o.c. unless otherwise noted.

A5. Use type X GWB for all partitions.

A6. All new door frames shall be located 4" from the face of metal stud of adjacent wall, unless otherwise noted. Provide double 20 ga. studs at jambs.

GENERAL SAFETY NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL REQUIRED BARRIERS, BARRICADES, SHORING, BRACING, TEMPORARY ENCLOSURES, ETC. TO PROTECT WORKMAN AND MEMBERS OF THE GENERAL PUBLIC FROM HARM, AND TO PROTECT THIS BUILDING AND ADJACENT PROPERTIES.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS WITH REGARDS TO THE ELEVATED HEIGHTS ASSOCIATED WITH THIS PROJECT AND ALL HEAVY REMOVALS REQUIRED AT ELEVATED AND NON-ELEVATED HEIGHTS TO PROTECT PROPERTY AND PERSONS.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE HEALTH AND SAFETY OF WORKERS AT THE CONSTRUCTION SITE. O.S.H.A. REGULATIONS SHALL BE IN EFFECT AND FOLLOWED.

4. REMOVE ALL CONSTRUCTION AND DEMOLITION DEBRIS FROM JOB SITE DAILY. MAKE JOB PREMISES CLEAN AT COMPLETION OF PROJECT.

5. ALL EXITS SHALL BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY AND WITHOUT SPECIAL KNOWLEDGE OR EFFORT.

ENGINEERING CONSULTANTS:

1. ENGINEER(S) & CONSULTANTS SHALL COORDINATE THEIR DESIGN WITH THE ARCHITECTURAL CONTRACT DOCUMENTS. THEY SHALL BE RESPONSIBLE FOR THE DESIGN, LAYOUT, DOCUMENTATION & "STAMPING" OF THEIR CONTRACT DOCUMENTS. THE ENGINEERS SHALL BE LICENSED TO PRACTICE IN THE STATE OF NEW YORK AND CARRY CURRENT PROFESSIONAL ERRORS & OMISSIONS INSURANCE. THE DOCUMENTS SHALL COMPLY WITH APPLICABLE CODES TO THEIR RESPECTIVE TRADE (IE- STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING, SPRINKLER, FIRE ALARM & ETC.)
2. M.E.P. CONSULTANT(S) SHALL COORDINATE THEIR RESPECTIVE SYSTEMS WITH THE OTHER TRADES TO MINIMIZE CONFLICTS WITH THE HVAC, PLUMBING ELECTRICAL AND SPRINKLERS.

OWNER / ARCHITECT CONTRACT LIABILITY:

1. CONTRACT: TERMS OF THE OWNER ARCHITECT AIA B-141 AGREEMENT SHALL APPLY TO THE SCOPE OF WORK DESCRIBED IN THESE CONTRACT DOCUMENTS.

2. THE OWNER REALIZES THAT THE DESIGN/ CONSTRUCTION PROCESS IS FLUID AND CHANGE CAN BE INITIATED BY THE OWNER, TENANT, CONSULTANTS, CONTRACTOR, SUB-CONTRACTORS, SUPPLIERS, ARCHITECT, ETC.. THE DESIGN TEAM WILL ATTEMPT TO IDENTIFY AND COORDINATE ALL CHANGE ORDERS, ALTERATIONS, CLARIFICATIONS, REVISIONS, SUBSTITUTIONS, ETC.. THE DESIGN TEAM RECOMMENDS THE OWNER CARRY A 'DESIGN' CONTINGENCY IN THE CONSTRUCTION BUDGET TO COVER AN ERROR OR OMISSION BY THE DESIGN TEAM.

3. TO THE FULLEST EXTENT PERMITTED BY LAW, AND NOT WITHSTANDING ANY OTHER PROVISION OF THE AGREEMENT, THE TOTAL LIABILITY, IN THE AGGREGATE, OF THE CONSULTANT AND THE CONSULTANT'S OFFICERS, DIRECTORS, PARTNERS, EMPLOYEES AND SUB CONSULTANTS, AND ANY OF THEM, TO THE CLIENT AND ANYONE CLAIMING BY AND THROUGH THE CLIENT, FOR ANY AND ALL CLAIMS, LOSSES, COSTS OR DAMAGES, INCLUDING ATTORNEY'S FEES AND COSTS AND EXPERT-WITNESS FEES AND COSTS OF ANY NATURE WHATSOEVER OR CLAIMS EXPENSES RESULTING FROM OR IN ANY WAY RELATED TO THE PROJECT OR THE AGREEMENT FROM ANY CAUSE OR CAUSES SHALL NOT EXCEED THE TOTAL COMPENSATION RECEIVED BY THE CONSULTANT UNDER THIS AGREEMENT, OR THE TOTAL AMOUNT OF $100,000.00, WHICHEVER IS LESS. IT IS INTENDED THAT THIS LIMITATION APPLY TO ANY AND ALL LIABILITY OR CAUSE OF ACTION HOWEVER ALLEGED OR ARISING, UNLESS OTHERWISE PROHIBITED BY LAW.

CONSTRUCTION ADMINISTRATION:

1. SHOP DRAWINGS: SUB CONTRACTORS/ FABRICATORS MUST SEND SHOP DRAWINGS TO THE ARCHITECT FOR DISPERSION TO RESPECTIVE CONSULTANTS.

2. SHOP DRAWINGS SHOULD INCLUDE BUT NOT BE LIMITED TO, FRAMING, MISC. STEEL FABRICATIONS, WINDOWS, STORE FRONTS, LIGHTING, DOOR HARDWARE & ETC.

3. STEEL SHOP DRAWING REVIEW SHALL BE SENT TO THE LICENSED STRUCTURAL ENGINEER, AND THE ARCHITECT FOR REVIEW PRIOR TO FABRICATION.

TYPICAL LIMITING HEIGHTS FOR STUDS (INTERIOR USE ONLY)
L/240 (1 LAYER GW.B. EACH SIDE)

STUDS SIZE	25 GA.	22 GA.	20 GA.	CHASE WALLS	BASED ON 25 GA.. STUDS	
1-5/8" STUDS	9'-6"	---	---	---	PROVIDE VERTICAL CROSS BRACING 2-1/2" STL. STUDS AT 4'-0" O.C. MAX. W/ 3/8" PAN HEAD FRAMING SCREWS. INSUL. AT RATED WALLS / JOINTS.	NOTE: 1. CEILING JOISTSAND PRIMARY SOFFIT FRAMING SHALL BE 3 5/8" 25 GA. MINIMUM FOORDINATE WITH MANUFACTURER FOR STUD SIZES AND GAUGE FOR EACH SPECIFIC AREA AND SPAN. 2. PROVIDE 20 GA. STUDS AT ALL INTERIOR DOOR JAMBS.
2-1/2" STUDS	12'-6"	13'-0"	13'-10"	17'-6"		
3-5/8" STUDS	16'-0"	17'-3"	17'-11"	22'-9"		
4" STUDS	17'-3"	18'-6"	19'-2"			
5" STUDS	20'-0"	25'-3"	26'-1"			

GENERAL NOTES:

1. NOT USED
2. ALL RATED PARTITIONS TO RECEIVE FIRESTOPPING AT METAL DECK FLUTES, TYPICAL. (WHERE APPLICABLE)
3. METAL STUD FRAMING SHALL BE 16" O.C. UNLESS NOTED OTHERWISE.
4. ALL PARTITIONS THAT EXTEND TO UNDERSIDE OF DECK SHALL RECEIVE DEFLECTION TRACK. (1" DEFLECTION TYPICAL)

INTERIOR STUD INFORMATION

SCALE: 1 1/2" = 1'-0"

NYS CODE REVIEW EXISTING BUILDING CODE 2015 SUMMARY:

EXISTING 2 STORY TYPE III B CONSTRUCTION - 1,840; SQ.FT.
OCCUPANCY:
EXISTING R-3 (RESIDENCE)
PROPOSED: "B" (REAL ESTATE OFFICE)

EXISTING EGRESS COMPLIES W/ CODE

BLD'G IS H/C ACCESSIBLE AS MAIN REAR ENTRY WILL HAVE A RAMP TO GRADE AND FIRST FLOOR TOILET RM WILL BE H/C ACCESSIBLE.

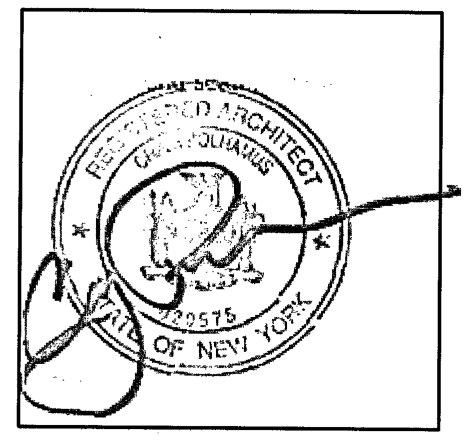
EXISTING BUILDING DOES NOT HAVE OR REQUIRE A SPRINKLER SYSTEM PER SECTION 903.2.7.

LEVEL 2 ALTERATION
COMPLY W/ CHAPTERS 7, 8, & 10 OF EXISTING BUILDING CODE 2015.
ALL NEW WORK COMPLIES W/ APPLICABLE CODE SECTIONS

ZAUSMER · FRISCH SCRUTON & AGGARWAL
DESIGNERS / BUILDERS
219 BURNET AVENUE / SYRACUSE / NEW YORK 13203
TEL (315) 475-8404 / FAX (315) 475-8470 / E-MAIL zfsa@zausmerfrisch.com

PROJECT
OAK TREE REAL ESTATE OFFICE
7115 EAST GENESEE ST.
FAYETTEVILLE, NY 13066

TITLE
NOTES AND GENERAL INFO



THE ARCHITECT CERTIFIES THAT THIS PROJECT HAS BEEN DESIGNED BY ME OR UNDER MY SUPERVISION, IN ACCORDANCE WITH THE NEW YORK STATE BUILDING CODE, FIRE CODE AND PROPERTY MAINTENANCE CODE, THE NEW YORK STATE ENERGY CONSERVATION CONSTRUCTION CODE ALL DATED 2015, AND APPLICABLE FEDERAL, STATE AND LOCAL LAWS, CODES, AND REGULATIONS. TO THE BEST OF MY KNOWLEDGE AND BELIEF THESE CONSTRUCTION DOCUMENTS ARE IN COMPLIANCE THEREWITH.

REGISTERED ARCHITECT
020575
NY. REG. NO. DATE

IT IS A VIOLATION FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT TO ALTER ANY ITEM ON THIS DOCUMENT IN ANY WAY. ANY LICENSEE WHO ALTERS THIS DOCUMENT IS REQUIRED BY LAW TO AFFIX HIS OR HER SEAL AND THE NOTATION "ALTERED BY" FOLLOWD BY HIS OR HER SIGNATURE AND A SPECIFIC DESCRIPTION OF THE ALTERATIONS

© COPYRIGHT CRAIG POLHAMUS ARCHITECT, 2020

Date	Scale
11-19-2020	As indicated
Project Number	Drawn by
20053	Author

SHEET NUMBER
C-1

REVISION

No.	Date	Revision Description

07/13/20

Expected Fee: _____

oaktreej2@gmail.com

TOWN OF MANLIUS
PLANNING DEPARTMENT
INITIAL APPEARANCE APPLICATION

DATE: 11/30/2020

Name of Project: Oak Tree Real Estate Office

Applicant must submit 12 copies of all site plans, surveys, and supporting data with the final application before a planning board meeting can be scheduled.

Location of Project: 7115 E. Genesee St., Fayetteville, NY, 13066

Type of Project:

○ Division of Land ○ Subdivision ○ Accessory Use ○ Zone Change ○ Site Review ○ Other _____

Developer: John C. Zellar Phone: 3157279177

Address: 7115 E. Genesee St., Fayetteville, NY Zip: 13066

Tax Map Number(#)/s: 085.-08-10.0

Present Zoning: RM Desired Zoning: _____

Total Acreage: .55 acres (Lots 419+420) Total Number of Lots: 2

Property Owner/s: CNY Premiere Homes, Inc. Phone: 3157279177

Address: 7115 E. Genesee St., Fayetteville, NY Zip: 13066

Tax Map#(s): 085.-08-10.0 Owner's Signature: J. C. Zellar

Printed Name: John C. Zellar

Property Owner/s: _____ Phone: _____

Address: _____ Zip: _____

Tax Map#(s): _____ Owner's Signature: _____

Printed Name: _____

Use next page for additional known property owners' information

Planning Board Meeting Date Assignment: _____

Fee: _____ Paid: _____ Per: ○ Credit/Debit Card ○ Check ○ Cash

Planning Board - Initial

RECEIVED
NOV 30 2020
By _____

617.20
Appendix B
Short Environmental Assessment Form

Instructions for Completing

Part 1 - Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 - Project and Sponsor Information

Name of Action or Project: Oak Tree Real Estate / Office

Project Location (describe, and attach a location map): 7115 East Genesee St., Fayetteville, NY 13066

Brief Description of Proposed Action: General building renovation, see plans

Name of Applicant or Sponsor:	Telephone: 315 7279177
John C. Zellar	E-Mail: oaktreejz@gmail.com

Address: 7115 East Genesee St.

City/PO:	State:	Zip Code:
Fayetteville	NY	13066

	NO	YES
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.	☒	☐
2. Does the proposed action require a permit, approval or funding from any other governmental Agency? If Yes, list agency(s) name and permit or approval:	☒	☐

3.a. Total acreage of the site of the proposed action? .55 acres
b. Total acreage to be physically disturbed? .046 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? .82 acres

4. Check all land uses that occur on, adjoining and near the proposed action.
☐ Urban ☐ Rural (non-agriculture) ☐ Industrial ☐ Commercial ☒ Residential (suburban)
☐ Forest ☐ Agriculture ☐ Aquatic ☒ Other (specify): Professional office
☐ Parkland

RECEIVED
NOV 30 2020
By

	NO	YES	N/A
5. Is the proposed action, a. A permitted use under the zoning regulations?	☐	☒	☐
b. Consistent with the adopted comprehensive plan?	☐	☐	☐

	NO	YES
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	☐	☒
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area? If Yes, identify: _____	☒	☐
8. a. Will the proposed action result in a substantial increase in traffic above present levels?	☒	☐
b. Are public transportation service(s) available at or near the site of the proposed action?	☐	☒
c. Are any pedestrian accommodations or bicycle routes available on or near site of the proposed action?	☒	☐
9. Does the proposed action meet or exceed the state energy code requirements? If the proposed action will exceed requirements, describe design features and technologies: _____	☐	☐
10. Will the proposed action connect to an existing public/private water supply? If No, describe method for providing potable water: _____	☐	☒
11. Will the proposed action connect to existing wastewater utilities? If No, describe method for providing wastewater treatment: _____	☐	☒
12. a. Does the site contain a structure that is listed on either the State or National Register of Historic Places?	☒	☐
b. Is the proposed action located in an archeological sensitive area?	☒	☐
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency?	☒	☐
b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody? If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres: _____	☒	☐

14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply:
☐ Shoreline ☐ Forest ☐ Agricultural/grasslands ☐ Early mid-successional
☐ Wetland ☐ Urban ☒ Suburban

	NO	YES
15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered?	☒	☐
16. Is the project site located in the 100 year flood plain?	☒	☐
17. Will the proposed action create storm water discharge, either from point or non-point sources? If Yes, a. Will storm water discharges flow to adjacent properties? ☒ NO ☐ YES	☒	☐
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)? ☐ NO ☒ YES If Yes, briefly describe: Runoff		

RECEIVED
NOV 30 2020
By _____

	NO	YES
18. Does the proposed action include construction or other activities that result in the impoundment of water or other liquids (e.g. retention pond, waste lagoon, dam)? If Yes, explain purpose and size:	☒	☐
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility? If Yes, describe:	☒	☐
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste? If Yes, describe:	☒	☐

I AFFIRM THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Applicant/sponsor name: [illegible] Date: 11/30/20

Signature:

STOP

Part 2 - Impact Assessment. The Lead Agency is responsible for the completion of Part 2. Answer all of the following questions in Part 2 using the information contained in Part 1 and other materials submitted by the project sponsor or otherwise available to the reviewer. When answering the questions the reviewer should be guided by the concept "Have my responses been reasonable considering the scale and context of the proposed action?"

	No, or small impact may occur	Moderate to large impact may occur
1. Will the proposed action create a material conflict with an adopted land use plan or zoning regulations?	☐	☐
2. Will the proposed action result in a change in the use or intensity of use of land?	☐	☐
3. Will the proposed action impair the character or quality of the existing community?	☐	☐
4. Will the proposed action have an impact on the environmental characteristics that caused the establishment of a Critical Environmental Area (CEA)?	☐	☐
5. Will the proposed action result in an adverse change in the existing level of traffic or affect existing infrastructure for mass transit, biking or walkway?	☐	☐
6. Will the proposed action cause an increase in the use of energy and it fails to incorporate reasonably available energy conservation or renewable energy opportunities?	☐	☐
7. Will the proposed action impact existing: a. public / private water supplies?	☐	☐
b. public / private wastewater treatment utilities?	☐	☐
8. Will the proposed action impair the character or quality of important historic, archaeological, architectural or aesthetic resources?	☐	☐
9. Will the proposed action result in an adverse change to natural resources (e.g., wetlands, waterbodies, groundwater, air quality, flora and fauna)?	☐	☐

RECEIVED
NOV 30 2020
By

	No, or small impact may occur	Moderate to large impact may occur
10. Will the proposed action result in an increase in the potential for erosion, flooding or drainage problems?	☐	☐
11. Will the proposed action create a hazard to environmental resources or human health?	☐	☐

Part 3 - Determination of significance. The Lead Agency is responsible for the completion of Part 3. For every question in Part 2 that was answered "moderate to large impact may occur", or if there is a need to explain why a particular element of the proposed action may or will not result in a significant adverse environmental impact, please complete Part 3. Part 3 should, in sufficient detail, identify the impact, including any measures or design elements that have been included by the project sponsor to avoid or reduce impacts. Part 3 should also explain how the lead agency determined that the impact may or will not be significant. Each potential impact should be assessed considering its setting, probability of occurring, duration, irreversibility, geographic scope and magnitude. Also consider the potential for short-term, long-term and cumulative impacts.

☐ Check this box if you have determined, based on the information and analysis above, and any supporting documentation, that the proposed action may result in one or more potentially large or significant adverse impacts and an environmental impact statement is required.

☐ Check this box if you have determined, based on the information and analysis above, and any supporting documentation, that the proposed action will not result in any significant adverse environmental impacts.

Name of Lead Agency	Date
Print or Type Name of Responsible Officer in Lead Agency	Title of Responsible Officer
Signature of Responsible Officer in Lead Agency	Signature of Preparer (if different from Responsible Officer)

PRINT

RECEIVED
NOV 30 2020
By

TOWN OF MANLIUS

DISCLOSURE AFFIDAVIT

This affidavit is a part of and must be completed and attached to every application, petition, request submitted for a *site plan, variance, amendment, change of zoning, approval of a plat, exemption from a plat or official map, license* or *permit.*

STATE OF NEW YORK)
) SS:
COUNTY OF ONONDAGA)

I. John C. Zellar, being duly sworn, deposes and says that (s) he is:

Corporation officer
(applicant, petitioner, corporation officer, property owner, *etc.)*

II. That deponent has read and is familiar with the provisions of the General Municipal Law, Section 809 which states:

A. Every application, petition or request submitted for a site plan, variance, amendment, change of zoning, approval of a plat, exemption from a plat or official map, license or permit, pursuant to the provisions or any ordinance, local law, rule or regulation constituting the zoning and planning regulations of a municipality shall state the name, residence and the nature and extent of the interest of any state officer or any officer or employee of such municipality is a part, in the person, partnership or association making such application, petition or request (hereinafter called the applicant) to the extent known to such applicant.

B. For the purpose of this action an officer or employee shall be deemed to have an interest in the applicant when (s)he, his/her spouse, or their brothers, sisters, parents, children, grandchildren, or the spouse of any of them:

1) is the applicant, or
2) is an officer, director, partner or employee of the applicant, or
3) legally or beneficially owns or controls stock of a corporate applicant or is a member of a partnership or association applicant, or
4) is a party to an agreement with such an applicant, express or implied, whereby (s) he may receive any payment or other benefit, whether or not for services rendered, or contingent upon the favorable approval of such application, petition or request.

C. Ownership of less than five percent (5%) of the stock of a corporation whose stock is listed on the New York or American Stock Exchanges shall not constitute an interest for the purposes of this section.

D. A person who knowingly and intentionally violates this section shall be guilty of a misdemeanor.

RECEIVED
NOV 30 2020
By

CORPORATE ACKNOWLEDGEMENT

STATE OF NEW YORK)
) SS:
COUNTY OF ONONDAGA)

John C. Zellar, being duly sworn, deposes and says the s(he) is the President of CNY Premiere Homes, Inc. corporation named in the within Application/Petition, that s(he) has read the foregoing affidavit and knows the contents thereof; that the same is true of s(he) own knowledge, except as to those matters therein stated to be alleged upon information and belief, and as to those matters s(he) believes it to be true.

Applicant Signature

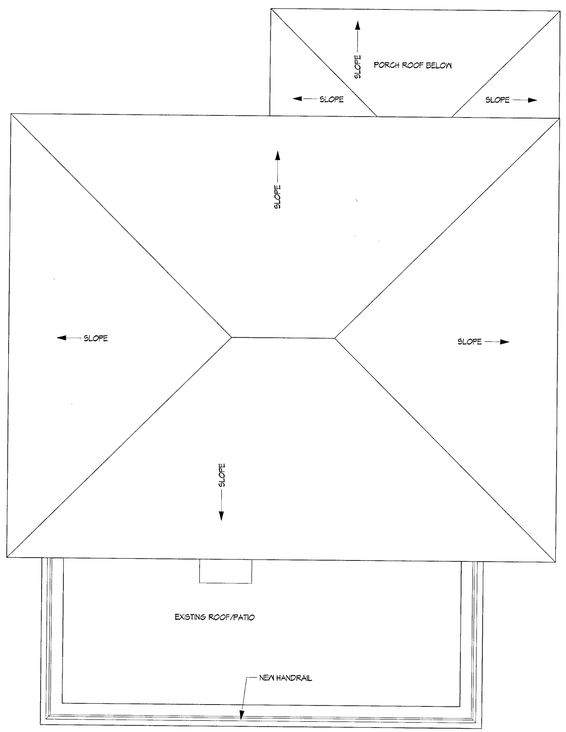
Subscribed to me before this day 30th
Of November, 2020

Notary Public

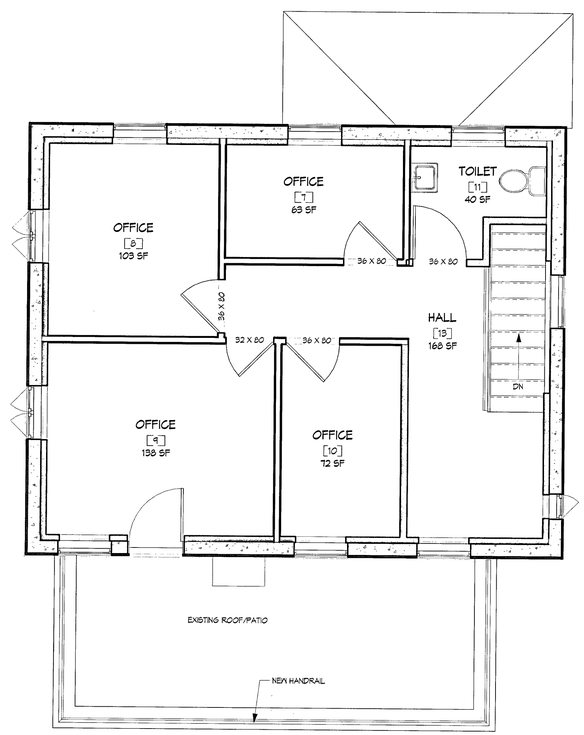
Allison A. Weber
Notary Public, State of New York
No. 01WE6191206
Qualified in Onondaga County
Commission Expires August 04, 2024

06/29/16 LB

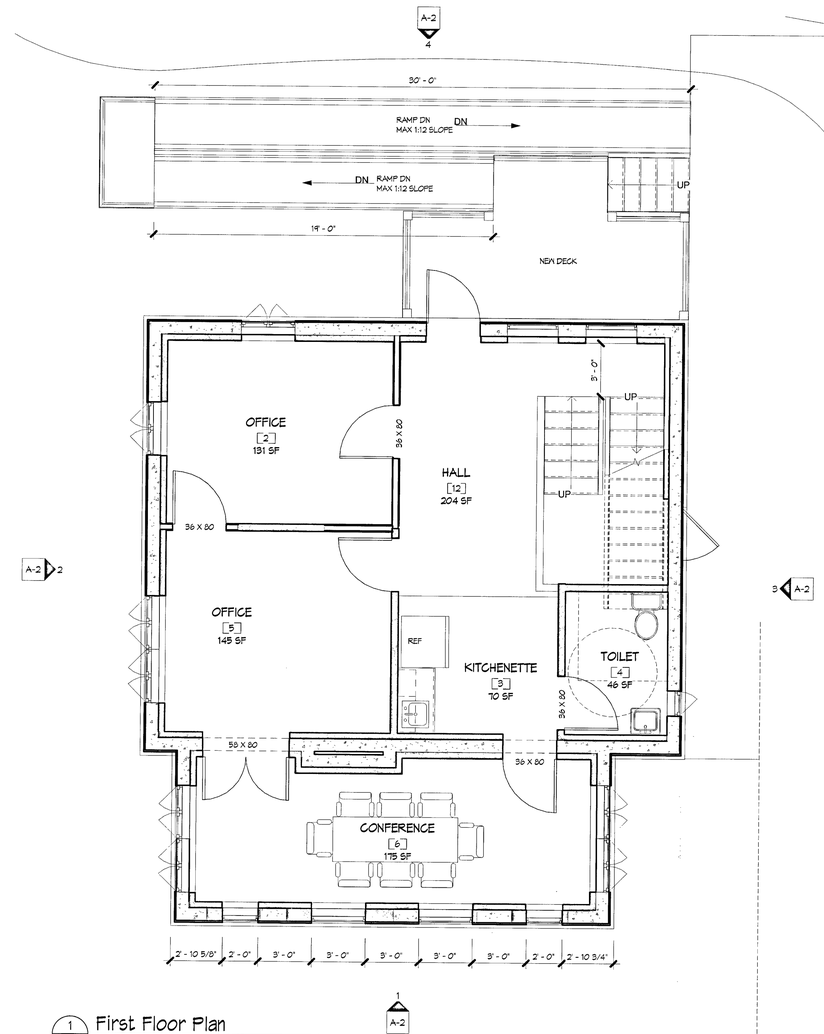
RECEIVED
NOV 30 2020
By



3 A-1 Roof Plan
SCALE: 1/4" = 1'-0"



2 A-1 Second Floor Plan
SCALE: 1/4" = 1'-0"



1 A-1 First Floor Plan
SCALE: 1/4" = 1'-0"

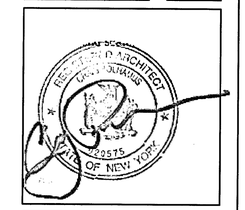
WALL KEY:

- EXISTING WALLS
- PROPOSED WALLS
- DEMOLISHED WALLS

ZAUSMER·FRISCH
SCRUTON & ACCARDVAL
DESIGNERS / BUILDERS
210 BORDER AVENUE / SYRACUSE / NEW YORK 13204
TEL: 315.476.6001 / FAX: 315.476.6170 / TRADE: www.zausmer.com

PROJECT
OAK TREE REAL ESTATE OFFICE
7115 EAST GENESEE ST.
FAYETTEVILLE, NY 13066

TITLE
PROPOSED FLOOR PLANS



THE ARCHITECT CERTIFIES THAT THIS PROJECT HAS BEEN DESIGNED BY ME OR UNDER MY SUPERVISION, IN ACCORDANCE WITH THE NEW YORK STATE BUILDING CODE, FIRE CODE AND PROPERTY MAINTENANCE CODE, THE NEW YORK STATE ENERGY CONSERVATION CONSTRUCTION CODE ALL DATED 2015, AND APPLICABLE FEDERAL, STATE AND LOCAL LAWS, CODES, AND REGULATIONS. TO THE BEST OF MY KNOWLEDGE AND BELIEF THESE CONSTRUCTION DOCUMENTS ARE IN COMPLIANCE THEREWITH.

REGISTERED ARCHITECT
020575
NY. REG. NO. DATE

IT IS A VIOLATION FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT TO ALTER ANY ITEM ON THIS DOCUMENT IN ANY WAY. ANY LICENSEE WHO ALTERS THIS DOCUMENT IS REQUIRED BY LAW TO AFFIX HIS OR HER SEAL AND THE NOTATION "ALTERED BY" FOLLOWD BY HIS OR HER SIGNATURE AND A SPECIFIC DESCRIPTION OF THE ALTERATIONS

© COPYRIGHT CRAIG POLHAMUS ARCHITECT, 2020

Date	Scale
11-19-2020	1/4" = 1'-0"
Project Number	Drawn by
20053	MC

SHEET NUMBER
A-1

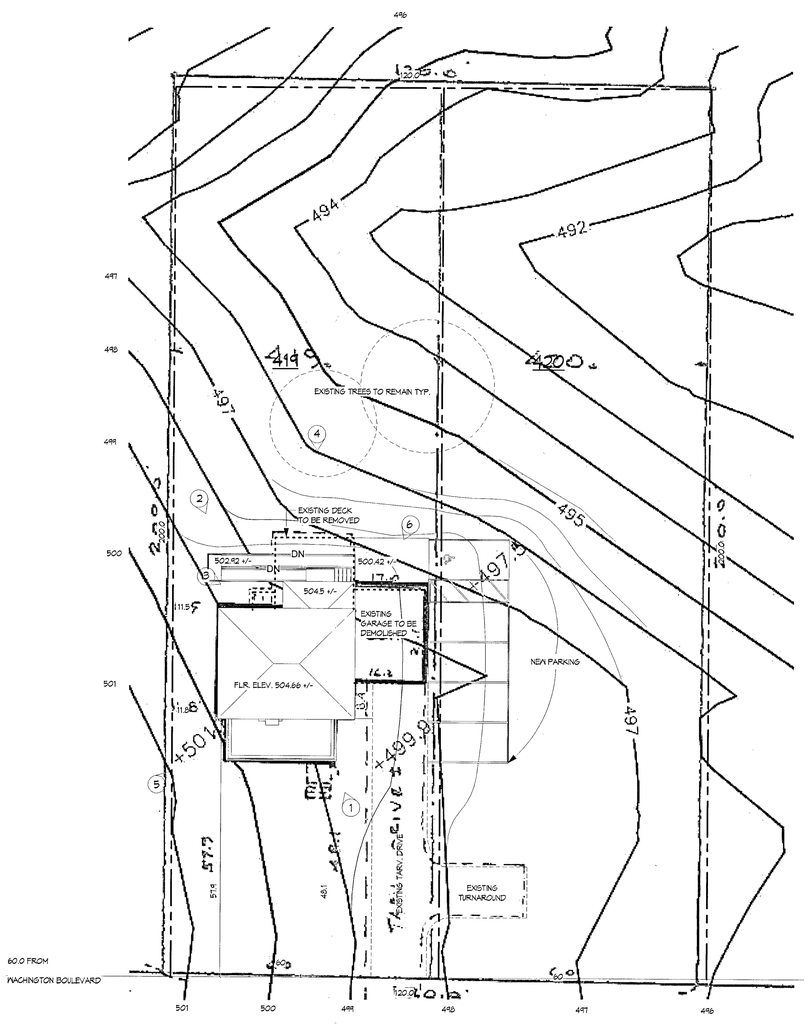
REVISION

No.	Date	Revision Description

09/30/20

SITE PLAN INFORMATION OBTAINED FROM A SURVEY DATED 9-2-1964 AND RECERTIFIED ON 5-8-2020 BY COTTRELL LAND SURVEYS, P.C.

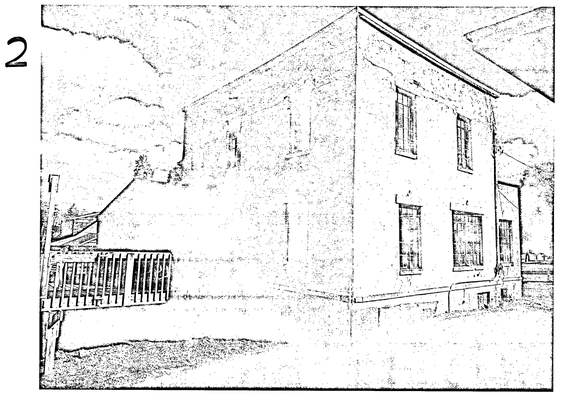
SITE PLAN INFORMATION OBTAINED FROM A CONTOUR PLAN BASED ON GEO-REFERENCED BUILDING AND NAVB88 DATUM BY COTTRELL LAND SURVEYS, P.C.



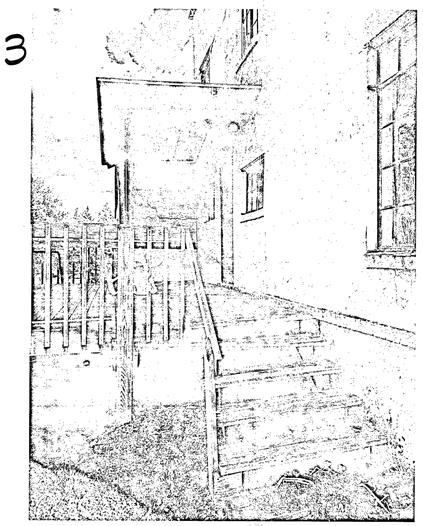
1 L-1 Site Plan
SCALE: 1/16" = 1'-0"

1

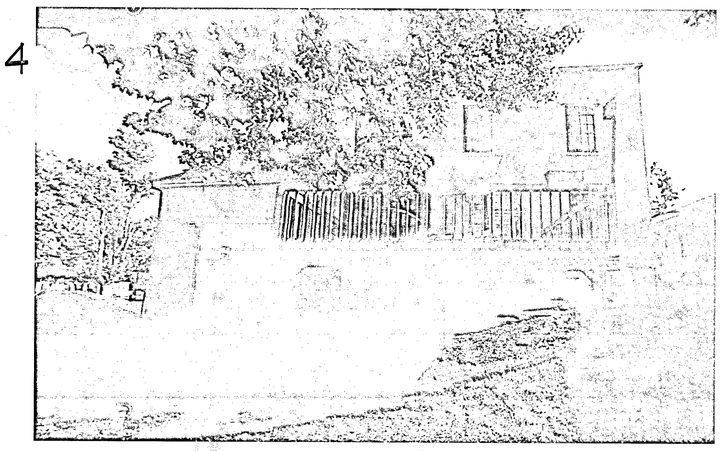
2



3

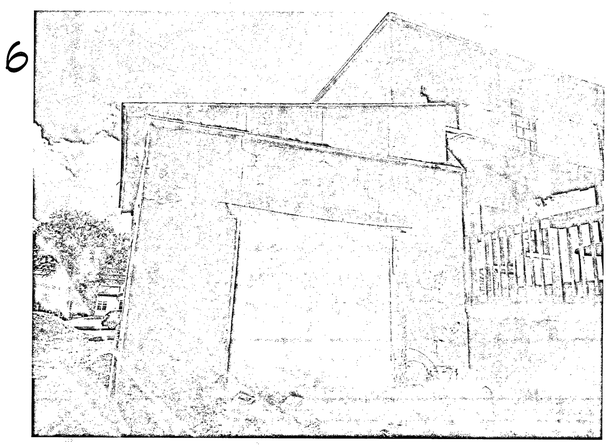


4



5

6



ZAUSMER·FRISCH SCRUTON & AGGARWAL
DESIGNERS / BUILDERS
210 BURNET AVENUE / SYRACUSE / NEW YORK 13203
TEL (315) 478-6300 / FAX (315) 478-6301 / E-MAIL: zfsa@zausmer.com

PROJECT
OAK TREE REAL ESTATE OFFICE
7115 EAST GENESEE ST.
FAYETTEVILLE, NY 13066

TITLE
PROPOSED SITE PLAN AND EXISTING PHOTOS

REGISTERED ARCHITECT
CRAIG POLHAMUS
020575
STATE OF NEW YORK

THE ARCHITECT CERTIFIES THAT THIS PROJECT HAS BEEN DESIGNED BY ME OR UNDER MY SUPERVISION, IN ACCORDANCE WITH THE NEW YORK STATE BUILDING CODE, FIRE CODE AND PROPERTY MAINTENANCE CODE, THE NEW YORK STATE ENERGY CONSERVATION CONSTRUCTION CODE ALL DATED 2015, AND APPLICABLE FEDERAL, STATE AND LOCAL LAWS, CODES, AND REGULATIONS. TO THE BEST OF MY KNOWLEDGE AND BELIEF THESE CONSTRUCTION DOCUMENTS ARE IN COMPLIANCE THEREWITH.

REGISTERED ARCHITECT
020575
NY. REG. NO. DATE

IT IS A VIOLATION FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT TO ALTER ANY ITEM ON THIS DOCUMENT IN ANY WAY. ANY LICENSEE WHO ALTERS THIS DOCUMENT IS REQUIRED BY LAW TO AFFIX HIS OR HER SEAL AND THE NOTATION "ALTERED BY" FOLLOWD BY HIS OR HER SIGNATURE AND A SPECIFIC DESCRIPTION OF THE ALTERATIONS

© COPYRIGHT CRAIG POLHAMUS ARCHITECT, 2020

Date	Scale
11-19-2020	1/16" = 1'-0"
Project Number	Drawn by
20053	MC

SHEET NUMBER
L-1

REVISION

No.	Date	Revision Description

09/30/20

"NO CHANGE" AFFIDAVITS ISSUED ON THIS MAP VOID THE CERTIFICATION, INFRINGE ON COPYRIGHT AND REPRESENT UNLICENSED SURVEY PRACTICE!

COPYRIGHT © 1990-
BY COTTRELL LAND SURVEYORS, P.C.
ALL RIGHTS RESERVED
COPIES WITHOUT THE EMBOSSED SEAL ARE UNAUTHORIZED AND HAVE BEEN ALTERED.

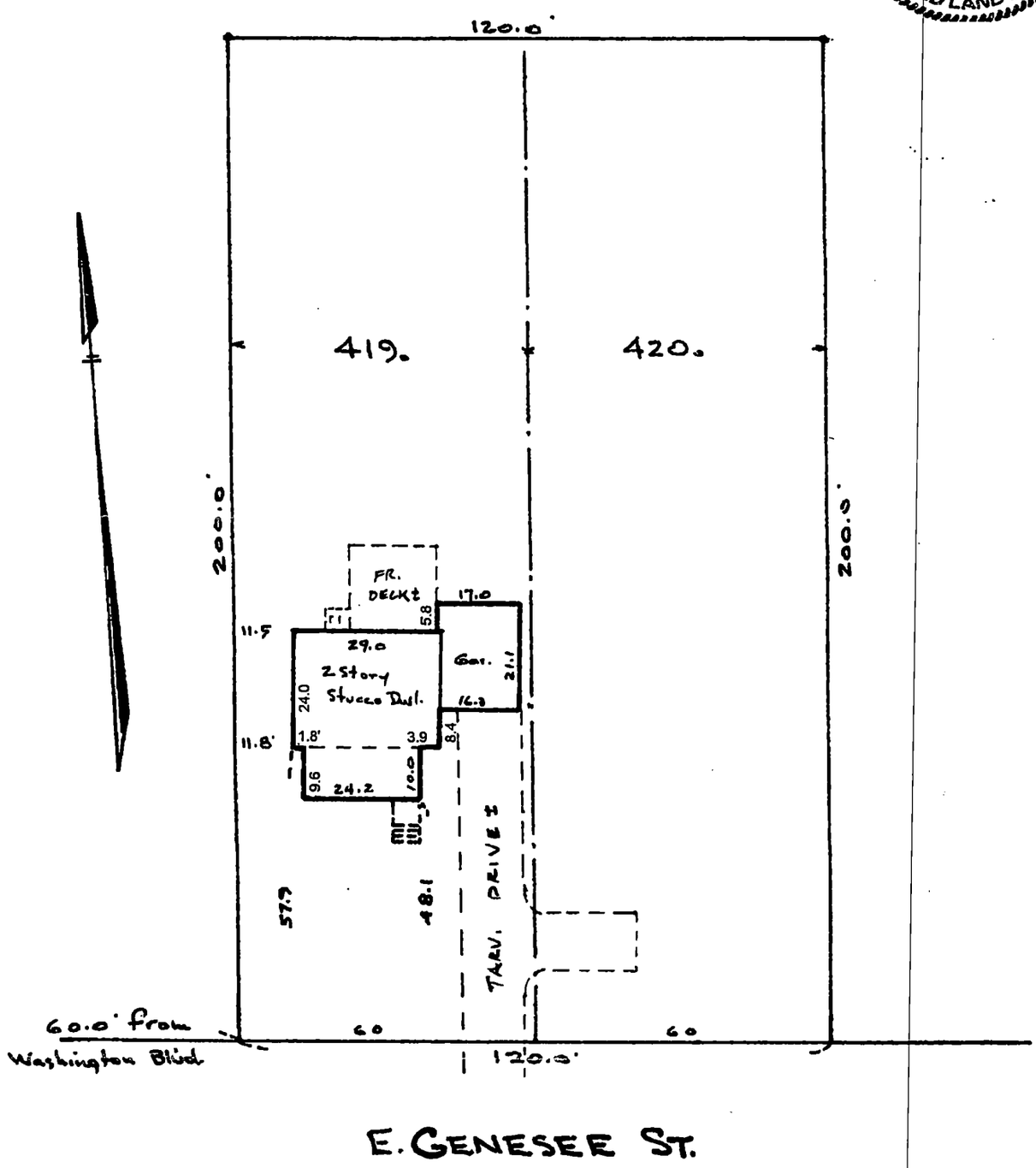
USERS: THIS MAP IS NOT USABLE NOR CERTIFICATIONS EXTENDABLE FOR UNSPECIFIED PURPOSES OR FOR SUBSEQUENT TRANSACTIONS EXCEPT BY THE WRITTEN CONSENT OF OR BY SURVEY UPDATE BY THE UNDERSIGNED ONLY.

FOR CONVEYANCE AND/OR MORTGAGE PURPOSES ONLY OCCURRING WITHIN ONE YEAR OF THE LATEST CERTIFICATION DATE ONLY.

THE UNDERSIGNED HEREBY CERTIFIES THAT THIS MAP WAS MADE FROM AN ACTUAL SURVEY ON 9-02-1964. MAPS WITHOUT THE SIGNER'S EMBOSSED SEAL ARE UNCERTIFIED COPIES ASSUMED TO CONTAIN UNAUTHORIZED ALTERATIONS.

RECERTIFIED ON: MAY 8, 2020

STATE OF NEW YORK
GARY ENSIGN COTTRELL
049310
REGISTERED LAND SURVEYOR



SURVEYORS: *REFERENCE TO, USE OF OR RELIANCE ON THIS MAP WITHOUT THE WRITTEN CONSENT FOR WHATEVER PURPOSE VIOLATES MY COPYRIGHT AND ABSOLVES ME OF ANY LIABILITY FOR LATENT OMISSIONS AND ERRORS AND OF ANY RESPONSIBILITY FOR RESULTANT DAMAGES.*

No. 7115 EAST GENESEE STREET

LOTS 419, 420 ~ SUNRISE TERRACE

TOWN OF MANLIUS ~ ONON. CO., N.Y.

Scale 1" = 30'

Sept. 2, 1964

COTTRELL LAND SURVEYORS, PC
7308 STATE ROUTE 173, MANLIUS, NY 13104
(315) 682-8121 WWW.COTTRELLSURVEYORS.COM

154-121

RECEIVED
NOV 30 2020
By

GENESEE EAST $7115 L419,420 SUNRISE TERRACE MAN64 (ADD) @19640902LOC @20200508UP.TIF

TOWN OF MANLIUS
ACCESSORY USE PERMIT
APPLICATION

PERMIT FEE:_____
DATE COLLECTED: _____

Tax Map Number 085-08-10.0

155-29A – "All permitted accessory uses requiring an Accessory Use Permit from the Town Planning Board **shall have a site plan review** and recommendation before such use shall be permitted. **A public hearing shall be at the discretion of the Planning Board.** The application shall be submitted by the owner of the subject property ..."

Please include

- Owner Name: CNY Premiere Homes, Inc. Phone 3157279177
- Address: (Permit Location) 7115 E. Genesee St., Fayetteville, NY, 13066
- Requested permitted use: (type of business of operation, brief description of operation)
  Real Estate Sales
- Location within building: (basement, 1st floor, 2nd floor, garage)
  1st floor
- Approximate square footage of floor area of entire structure: 1,500 ft
- Approximate Sq. footage of floor area to be utilized: 900 ft
  (Maximum of 25% or 500 square feet allowed)
- Hours of operation: 8am-5pm Days of operation: Mon-Fri.
- Operator's Name: Oak Tree Real Estate
- What provisions are made for parking: See site plan
- Number of employees: Ø
- Average number of customer/clients to visit the property daily: 1
- Site plan drawing of the property or survey indicating where the structure is located along with driveway location (length and width), additional parking, dimension of parking areas, landscaping, and sign location. A floor plan of the building is also required, showing the entire building and the area to be utilized with this permit.
- Optional indication of approval from adjacent neighbors.

If approved, the Town will prepare an Accessory Use Permit Resolution including conditions and time period, to be signed by the applicant and the Town.

Sign request must be on a separate application and in conformance with the Town of Manlius Sign Ordinance, 155-25.

RECEIVED
NOV 30 2020
By_____

Rev 1/10

Onondaga County Planning Board

GML 239 Referral Notice

Referring Municipality/Board: Town of Manlius Planning Board

Referral Contact: Lisa Beeman

Contact Email/Phone: lbeeman@townofmanlius.org/ 315-637-8619

Type of Referral: ☒ General Municipal Law §239 Review ☐ Informal Review ☐ 3-Mile Limit Review

1. Project Applicant: John Zellar / Oak Tree Real Estate **2. Site Address:** 7115 East Genesee Street 13066

3. Tax ID Number(s): 085.-08-10.0 **4. Total Acres:** .55

5. Current Zoning: RM **6. Current Land Use:** _____

7. Project Description: Turn current house into a real estate office

Please indicate the existing AND proposed water and wastewater service. The notes field is available to provide further details which may better describe the proposed conditions, particularly for projects with multiple lots/structures.

Water Service *Provider:* _____

8a. Existing: ☒ Municipal ☐ Individual Well ☐ None

8b. Proposed: ☐ New or Additional Municipal Connection ☐ New or Additional Individual Well ☒ No Change

Wastewater Service *Provider:* _____

9a. Existing: ☒ Municipal Sanitary Sewer ☐ Individual Septic System ☐ None

9b. Proposed: ☐ New or Additional Municipal Connection ☐ New or Additional Individual Septic System ☒ No Change

Notes: _____

10. ☒ **OCPB Jurisdiction (c**heck ALL that apply and specify)

☐ **Text Adoption/Amendment** -or- ☒ **Site is located within 500 feet of:**

- ☐ a municipal boundary: _____
- ☒ a state or county thruway/highway/roadway: State Route 92
- ☐ an existing or proposed state or county park/recreation area: _____
- ☐ an existing or proposed county-owned stream or drainage channel: _____
- ☐ a parcel containing a state or county-owned building/institution: _____
- ☐ a farm operation located in a New York State Agricultural District (include Ag Data Statement pursuant to AML §305-a)

Referred Action(s)

If referring multiple actions related to the same project, identify the referring municipal board if different from above.

11. ☐ **Text Adoption** -or- ☐ **Text Amendment** **Referring Board:** _____

(Includes: adoption of and amendments to comprehensive plans, local laws, zoning ordinances, subdivision regulations)

Please enclose a document with changes tracked OR the existing and proposed text with a summary of the proposed change(s).

Summary of the proposed additions/changes: _____

12. ☐ **Zone Change** (Includes map amendments) **Referring Board:**

Proposed Zoning District: _____ Number of Acres Affected: _____

Purpose and Proposed Use: _____

13. ☒ **Site Plan** -or- ☐ **Project Site Review** **Referring Board:** Town of Manlius Planning Board

Proposed Use/Improvements: Turn current into Real Estate Office

14. ☐ **Special Permit** **Referring Board:**

Section of local zoning code that requires a special permit for this use: _____

Purpose: _____

15. ☐ **Preliminary Subdivision** -or- ☐ **Final Subdivision** **Referring Board:**

Name of Subdivision: _____

Number of Proposed Lots and Use Type (residential and/or commercial): _____

Is this a cluster subdivision pursuant to Section 278 of the New York State Town Law? ☐ Yes ☐ No

16. ☐ **Use Variance** **Referring Board:**

Section(s) of local zoning code to which the variance is being sought: _____

Describe how the proposed project varies from the above code section: _____

17. ☐ **Area Variance** **Referring Board:**

Section(s) of local zoning code to which the variance is being sought: _____

Describe how the proposed project varies from the above code section: _____

18. ☐ **Other Authorization** **Referring Board:**

Indicate the referable action and provide any other applicable details: _____

SEQR Information

Action (check one):

☐ Type I
☐ Type II
☐ Unlisted Action

Determination of Significance (if known):

☐ Positive Declaration – Draft EIS Required
☐ Conditional Negative Declaration (for Unlisted Actions only)
☐ Negative Declaration
☐ No Finding (Type II Actions only)

Lead Agency (if known): _____ **Date Lead Agency Assigned:** _____

In order for a referral to be considered complete, *the Type of Action must be classified, and the appropriate EAF (Short or Long EAF) must be filled out as required under SEQR*, except in the case of Type II Actions which do not require an EAF. If the municipality possesses or will be requiring additional materials in order to make a determination under SEQR, or if a determination has been made, those materials are also required for the referral to be considered complete.

Attachments

☒ Survey ☐ Subdivision Plat ☒ EAF/Related Materials ☐ Laws/Texts
☒ Site Plan ☒ Local Application Form ☐ Ag Data Statement ☐ Other _____

This referral, as required by NYS GML §239 l, m & n, includes all materials required by and submitted to the referring body as an application on the proposed action, including all materials required by the referring body in order to make its determination of significance pursuant to SEQRA.

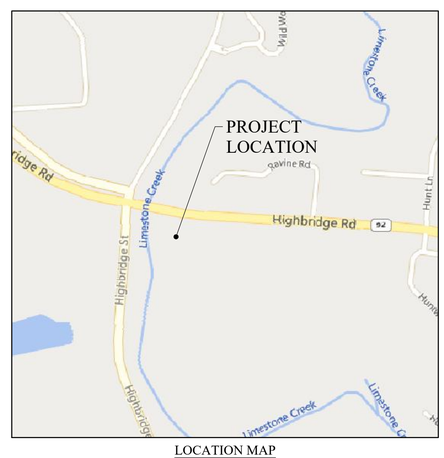
Lisa Beeman/ Clerk	315-637-8619	12-15-2020
Name/Title of Person Completing This Form	*Phone/Email*	*Transmittal Date*

FREEMAN ESTATES HOUSING

7430 HIGHBRIDGE ROAD

TOWN OF MANLIUS

SITE DEVELOPMENT PLANS



LOCATION MAP
NOT TO SCALE

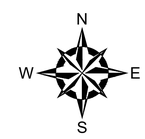


TABLE OF CONTENTS:

GA001	COVER SHEET (1 OF 11)
GA002	NOTES AND LEGEND SHEET (2 OF 11)
CA100	EXISTING FEATURES & DEMOLITION PLAN (3 OF 11)
CA110	SITE PLAN (4 OF 11)
CA120	GRADING & EROSION CONTROL PLAN (5 OF 11)
CA130	UTILITY PLAN (6 OF 11)
CA140	LANDSCAPING PLAN (7 OF 11)
CA500	DETAILS - EROSION CONTROL (8 OF 11)
CA501	DETAILS - PAVING (9 OF 11)
CA502	DETAILS - STORM (10 OF 11)
CA503	DETAILS - SANITARY (11 OF 11)

FREEMAN ESTATES HOUSING
7430 HIGHBRIDGE ROAD
TOWN OF MANLIUS
COUNTY OF ONONDAGA, STATE OF NEW YORK

GZA GeoEnvironmental of NY
Engineers and Scientists
www.gza.com

DECEMBER 15, 2020

GA001 - COVER SHEET
SHEET 1 OF 11

© 2020 - GZA GeoEnvironmental, Inc. GZA-J:\31.0180\49.00 FREEMAN ESTATES SUBDIVISION\DESIGN\31.0180\49.00 FREEMAN ESTATES HOUSING.DWG GA001 DECEMBER 16, 2020 8:04PM COREY.MCWILLIAMS

SITE DATA

1. OWNER: BROLEX PROPERTIES, LLC
   5912 NORTH BURDICK STREET
   EAST SYRACUSE, NEW YORK 13057
2. TAX ID #: 101.-02-02.1
3. PARCEL SIZE: 22.17± ACRES (3.5± ACRES DISTURBANCE)
4. ZONING CLASSIFICATION: RESIDENTIAL (R-3)
5. BUILDING SETBACK REQUIREMENTS: FRONT: 30'
   SIDE: 15'
   REAR: 25'

PROJECT INFORMATION

THIS PROJECT CONSISTS OF CLEARING OF LAND FOR THE PROPOSED CONSTRUCTION OF TWELVE (12) PATIO HOMES WITH ASSOCIATED UTILITIES, STORMWATER FACILITIES AND DRIVEWAYS. THE ESTIMATED TIME FOR COMPLETION IS WITHIN ONE (1) YEAR OF RECEIVING ALL NECESSARY PERMITS AND APPROVALS.

SURVEY DATA

FIELD SURVEY WAS COMPLETED BY CT MALE IN JUNE 2020.

NOTE:
THE LOCATION, SIZES, AND ELEVATIONS OF EXISTING UTILITIES ARE BASED ON INFORMATION COMPILED BY THE SURVEYOR AND ENGINEER FROM FIELD WORK, RECORD DRAWINGS AND INFORMATION FURNISHED BY VARIOUS UTILITY COMPANIES WITH FIELD EDITING WHERE NECESSARY AND POSSIBLE. THE ACCURACY OF THIS INFORMATION IS NOT GUARANTEED AND SHALL BE VERIFIED BY THE CONTRACTOR.

CONSTRUCTION SEQUENCE

1. MOBILIZE ALL NECESSARY EQUIPMENT, PERSONNEL AND MATERIAL TO THE SITE. PROCEED WITH INSTALLATION OF EROSION & SEDIMENT CONTROL PRACTICES INCLUDING STABILIZED CONSTRUCTION ENTRANCE. EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE IN PLACE PRIOR TO BEGINNING ANY EARTHWORK OPERATIONS. SCHEDULE AND CONDUCT SITE WALK TO INSPECT SEDIMENT AND EROSION CONTROL MEASURES WITH ENGINEER. MODIFY SEDIMENT AND EROSION CONTROL MEASURES AS NEEDED.
2. PROTECT EXISTING INSTRUMENTS, STRUCTURES, VEGETATION AND UTILITIES TO REMAIN.
3. INSTALL SILT FENCE, STABILIZED CONSTRUCTION ENTRANCE AND ANY OTHER PERTINENT EROSION AND SEDIMENT CONTROL MEASURES.
4. PERFORM CLEARING & GRUBBING OPERATIONS.
5. MASS EARTHWORK OPERATIONS.
6. INSTALL STORMWATER, SANITARY SEWER, AND OTHER UTILITIES. INSTALL FILTER DROP INLET PROTECTION AT ALL DRAINAGE INLETS.
7. CONSTRUCTION OF ROADWAYS. INSTALL SILT FENCING BEHIND ASPHALT CURBING.
8. FINAL GRADING.
9. PERMANENT STABILIZATION WITH TOPSOIL, SEED AND MULCH AS SPECIFIED.
10. INSTALLATION OF LANDSCAPING.
11. IN ADDITION TO THESE MEASURES, THE CONTRACTOR SHALL COMPLY WITH WHATEVER ADDITIONAL MEASURES MAY BE REQUIRED AS ORDERED BY THE VILLAGE OF MINOA.
12. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES MUST REMAIN IN PLACE UNTIL 80% GERMINATION OF THE SITE HAS BEEN ESTABLISHED. CONTACT ENGINEER TO SCHEDULE FINAL INSPECTION.

SANITARY SEWER NOTES:

APPLICABLE DETAILS AND NOTES PERTAIN TO THIS PROJECT UNLESS OTHERWISE NOTED:

1. SANITARY SEWER MAIN PIPE SHALL BE 8" ASTM D-3034 SDR-35 PVC WITH RUBBER RING GASKETS UNLESS OTHERWISE NOTED.
2. SANITARY SEWER LATERALS TO BE SDR-35 PVC WITH RUBBER RING GASKET, UNLESS OTHERWISE NOTED.
3. ALL SANITARY SEWER STRUCTURES, TEMPORARY STUBBED ENDS AND LATERAL ENDS SHALL BE MARKED WITH 2X4'S EXTENDING 3' ABOVE FINISHED GRADE WITH TOPS PAINTED GREEN.
4. EACH LOT TO HAVE 1 SANITARY SEWER LATERAL INSTALLED FROM THE MAIN TO R.O.W. LINE AT A MIN. SLOPE OF 1%. LATERALS TO BE LOCATED 5 FEET DOWNSTREAM FROM THE CENTER OF THE LOT UNLESS OTHERWISE SHOWN OR NOTED.
5. COMPACTION OF ALL BACKFILLED MATERIALS REQUIRED IN AREAS UNDER PROPOSED PAVEMENT.
6. LINING MATERIAL TO BE N.Y.S.D.O.T. ITEM NO. 304.05 TYPE 4 R.O.C. OR R.O.B.
7. LEAKAGE AND DEFLECTION TESTS REQUIRED ON ALL SEWER MAINS IN ACCORDANCE WITH LOCAL REGULATIONS.
8. SANITARY SEWERS SHALL BE TESTED AFTER THE INSTALLATION OF WATER MAINS AND SERVICES. EXFILTRATION TEST SHALL BE PERFORMED ON ALL SANITARY MANHOLES.
9. CONTRACTOR SHALL RECORD AND PROVIDE ENGINEER WITH AS-BUILT LOCATIONS AND DEPTHS OF ALL SANITARY SEWER LATERAL ENDS AND MANHOLE RIMS & INVERTS.
10. SEWERS SHALL BE LAID AT LEAST 10' (3.0 m) HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATERMAIN. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE. IN CASES WHERE IT IS NOT PRACTICAL TO MAINTAIN A 10' SEPARATION, THE APPROPRIATE REVIEWING AGENCY MAY ALLOW DEVIATION ON A CASE BY CASE BASIS, IF SUPPORTED BY DATA FROM THE DESIGN ENGINEER. SUCH DEVIATION MAY ALLOW INSTALLATION OF THE SEWER CLOSER TO A WATERMAIN, PROVIDED THE WATERMAIN IS IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER AND THE ELEVATION OF THE BOTTOM OF THE WATERMAIN IS AT LEAST 18" (46 cm) ABOVE THE TOP OF SEWER. SEWERS CROSSING WATERMAINS SHALL BE LAID TO PROVIDE MINIMUM VERTICAL DISTANCE OF 18" (46 CM) BETWEEN THE OUTSIDE OF THE WATERMAIN AND THE OUTSIDE OF THE SEWER. THIS SHALL BE THE CASE WHEN THE WATERMAIN IS ABOVE OR BELOW THE SEWER. THE CROSSING SHALL BE ARRANGED SO THE JOINTS OF THE SEWER PIPE WILL BE EQUIDISTANT FROM AND AS FAR AWAY FROM THE WATERMAIN JOINTS AS POSSIBLE. WHERE THE WATERMAIN CROSSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO PREVENT DAMAGE TO THE WATERMAIN.

WATERMAIN NOTES

ALL WATERMAINS SHALL HAVE A MINIMUM 5.0' OF COVER FROM THE TOP OF THE MAIN TO FINISHED GRADE. THE CONTRACTOR SHALL CHECK ALL CUT STAKED BEFORE TRENCHING TO INSURE THAT ALL INSTALLED WATERMAINS WILL HAVE THE REQUIRED COVER.

Know what's below.
Call before you dig.

GENERAL NOTES

1. THE CONTRACTOR SHALL MAKE ALL NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN ALL NECESSARY CONSTRUCTION PERMITS. THE CONTRACTOR SHALL PAY ALL FEES AND POST ALL BONDS ASSOCIATED WITH WITH THE SAME, AND COORDINATE WITH THE ENGINEER AND ARCHITECT AS REQUIRED.
2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR JOB SITE SAFETY AND ALL CONSTRUCTION MEANS AND METHODS.
3. ANY ALTERATIONS TO THESE DRAWINGS MADE IN THE FIELD DURING CONSTRUCTION SHALL BE RECORDED BY THE CONTRACTOR ON RECORD DOCUMENTS.
4. THE CONTRACTOR'S PROFESSIONAL LAND SURVEYOR SHALL CHECK ALL HORIZONTAL AND VERTICAL CONTROLS PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL PROMPTLY BE BROUGHT TO THE ATTENTION OF THE ENGINEER. CONTRACTOR IS TO SUBMIT A QUALIFICATIONS PACKAGE OF SURVEYOR TO ENGINEER FOR APPROVAL.
5. THE CONTRACTOR SHALL LIMIT OPERATIONS TO THE AREAS DESIGNATED ON THE CONTRACT DOCUMENTS.
6. ALL DAMAGE TO PRIVATE PROPERTY OR UTILITIES (UNDER OR ABOVE GROUND) SHALL BE RESTORED TO ORIGINAL CONDITION AT NO COST TO THE OWNER.
7. SAFE AND CONTINUOUS THROUGH TRAFFIC, INGRESS AND EGRESS FOR ADJACENT OWNERS DRIVEWAYS, SERVICE ROADS, PUBLIC STREETS, AND SIDEWALKS SHALL BE MAINTAINED THROUGHOUT THE PERIOD OF CONSTRUCTION.
8. STREET DRAINAGE, SWALES, DITCHES, AND OTHER EXISTING DRAINAGE FACILITIES SHALL BE PROTECTED AND MAINTAINED IN ADEQUATE WORKING CONDITION DURING CONSTRUCTION. THE CONTRACTOR SHALL RESTORE ANY OF SUCH FACILITIES THAT ARE DAMAGED DURING CONSTRUCTION.
9. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS NOT TO DISTURB AND/ OR DAMAGE PROPERTY CORNERS (IRON PINS, HUBS, ETC.). ANY DISTURBED OR DAMAGED PROPERTY CORNERS SHALL BE REPLACED BY THE CONTRACTOR'S LICENSED SURVEYOR AT THE CONTRACTOR'S EXPENSE.
10. ALL EXISTING UTILITIES SUCH AS ELECTRIC, GAS MAINS, AND TELEPHONE SHALL BE STAKED OUT BY THE UTILITY COMPANY PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY NEW YORK DIG SAFELY (1-800-962-7962) 72 HOURS, (3 WORKING DAYS) PRIOR TO CONSTRUCTION AND NOTIFY UTILITY COMPANIES FOR STAKEOUT.
11. IN AREAS WHERE THE CONTRACTOR IS EXCAVATING NEAR ANY UTILITY POLES, THE CONTRACTOR SHALL BRACE AND/ OR HOLD IN PLACE UNTIL THE EXCAVATED AREA IS BACKFILLED AND COMPACTED.
12. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE DEWATERING SYSTEM THAT WILL DRAW DOWN AND HAVE CONTROL ON THE GROUNDWATER TABLE AT ALL TIMES DURING CONSTRUCTION IF NECESSARY.
13. THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER DISPOSAL OF ALL REMOVED VEGETATION, SOIL AND OTHER DISTURBED AREAS.
14. THE CONTRACTOR SHALL CONDUCT ACTIVITIES IN THE VICINITY OF TREES AND BUSHES WITH CARE. ANY TREE REMOVAL SHALL BE LIMITED TO THE DIRECT PATH OF CONSTRUCTION.
15. THE CONTRACTOR SHALL OBSERVE O.S.H.A. AND OTHER APPLICABLE SAFETY REQUIREMENTS. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR CONSTRUCTION SAFETY AT ALL TIMES.
16. FOR DRAWING LEGIBILITY, ALL EXISTING TOPOGRAPHIC FEATURES, EXISTING UTILITIES, PROPERTY BOUNDARIES, EASEMENTS, ETC. MAY NOT BE SHOWN ON ALL DRAWINGS. REFER TO REFERENCED DRAWINGS AND OTHER DRAWINGS IN THIS SET FOR ADDITIONAL INFORMATION.
17. CONTRACTOR SHALL REPORT SIGNIFICANT CONFLICTS OR DISCREPANCIES TO THE OWNER AND ENGINEER BEFORE PROCEEDING WITH ANY PORTION OF SITE WORK WHICH MAY BE AFFECTED SO THAT PROPER ADJUSTMENTS CAN BE MADE IF NECESSARY.
18. UNDERGROUND UTILITIES WERE COMPILED FROM AVAILABLE RECORD PLANS OF UTILITY COMPANIES AND PUBLIC AGENCIES, ARE APPROXIMATE AND ASSUMED. BEFORE COMMENCING SITE WORK IN ANY AREA, CONTACT "DIG SAFE" AT 1-888-344-7233 AND THE OWNER TO ACCURATELY LOCATE UNDERGROUND UTILITIES. ANY DAMAGE TO EXISTING UTILITIES OR STRUCTURES SHALL BE THE CONTRACTORS RESPONSIBILITY. NO EXCAVATION SHALL BE DONE UNTIL UTILITY COMPANIES AND THE OWNER ARE PROPERLY NOTIFIED IN ADVANCE.
19. ALL SITE WORK SHALL MEET OR EXCEED THE SITE WORK SPECIFICATIONS TO BE PREPARED FOR THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS DO NOT CONFLICT WITH ANY KNOWN EXISTING OR OTHER PROPOSED IMPROVEMENTS. IF ANY CONFLICTS ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER PRIOR TO INSTALLATION OF ANY PORTION OF THE SITE WORK WHICH WOULD BE AFFECTED.
20. ALL WORK PERFORMED AND ALL MATERIALS SHALL CONFORM WITH THE LINES, GRADES AND OTHER SPECIFIC REQUIREMENTS OR SPECIFICATIONS FOR THE PROJECT AS SHOWN ON THE PLANS.
21. THE CONTRACTOR SHALL VERIFY EXISTING GRADES IN THE FIELD AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT AS REQUIRED. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE OWNER AND ENGINEER FOR RESOLUTION.
22. INSTALL ALL UTILITIES (INCLUDING CONCRETE PADS) PER UTILITY COMPANY STANDARDS.
23. CONTRACTOR SHALL PROTECT ALL UNDERGROUND DRAINAGE, SEWER AND UTILITY FACILITIES FROM EXCESSIVE VEHICULAR LOADS DURING CONSTRUCTION. ANY DAMAGE TO THESE FACILITIES RESULTING FROM CONSTRUCTION LOADS WILL BE RESTORED TO ORIGINAL CONDITION.
24. CONTRACTOR TO PROVIDE VILLAGE ENGINEER WITH RIMS AND INVERTS OF ALL INSTALLED SANITARY SEWER MANHOLES AND DRAINAGE STRUCTURES ALONG WITH LOCATIONS AND INVERTS OF ALL SEWER LATERAL ENDS AND SUMP PUMP/ ROOF DRAIN CONNECTIONS. VILLAGE ENGINEER WILL USE INFORMATION TO CREATE RECORD DRAWINGS.

EROSION CONTROL NOTES

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE TEMPORARY SOIL EROSION CONTROL AND WATER POLLUTION CONTROL.
2. THE CONTRACTOR SHALL CONTROL SURFACE RUNOFF WHICH MAY CONTAIN SUSPENDED SOLIDS FROM ONTO EXISTING PAVEMENT SERVICES IN USE. THIS SHALL BE ACCOMPLISHED BY STAKED BALES OF STRAW OR DIVERSION CHANNELS TO SEDIMENTATION BASINS.
3. THE CONTRACTOR SHALL COMPLY WITH ALL PROVISIONS OF THE N.Y.S. DEPARTMENT OF ENVIRONMENTAL CONSERVATION SPDES GENERAL PERMIT, WATER QUALITY CERTIFICATION AND/ OR FRESH WATER WETLANDS PERMIT AND/ OR ARMY CORPS OF ENGINEERS PERMIT (IF APPLICABLE).
4. DURING CONSTRUCTION, NO WET OR FRESH CONCRETE OR LEACHATE SHALL BE ALLOWED TO ESCAPE INTO THE WATERS OF THE UNITED STATES, NOR SHALL WASHINGS FROM CONCRETE TRUCKS, MIXERS, OR OTHER DEVICES BE ALLOWED TO ENTER ANY WETLAND OR WATERS. A CONCRETE WASHOUT SHALL BE USED.
5. ALL AREAS OF SOIL DISTURBANCE RESULTING FROM THIS PROJECT SHALL BE SEEDED WITH AN APPROPRIATE PERENNIAL GRASS SEED AND MULCHED WITH STRAW WITHIN ONE WEEK OF FINAL GRADING. MULCH SHALL BE MAINTAINED UNTIL A SUITABLE VEGETATIVE COVER IS ESTABLISHED.
6. PERIODIC CLEANING, INSPECTION AND REPLACEMENT OF TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL DEVICES SHALL BE NECESSARY.
7. ALL CONTROLS SHALL BE PLACED PRIOR TO STARTING EARTHWORK OPERATIONS AND SHALL REMAIN IN PLACE UNTIL THE NEW SLOPES ARE STABILIZED WITH SEEDING AND/ OR SLOPE PROTECTION.
8. WHERE SILT FENCE IS USED IN AREAS OF CONCENTRATED FLOW, THE ENGINEER IN CHARGE MAY CALL FOR BACKING THE FENCE WITH STRAW BALES.
9. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MAY BE REQUIRED DUE TO VARIATIONS IN SITE CONDITIONS.
10. IF THERE IS SOME REASON THAT CUT OR FILL CANNOT BE BROUGHT TO FINAL GRADE AND MUST REMAIN UNCOMPLETED FOR A PERIOD OF TIME, IT SHALL BE TEMPORARILY SEEDED AND MULCHED WITHIN 7 DAYS.

20. REQUIRED INSPECTIONS SHALL OCCUR AND AS OUTLINED WITHIN THE SWPPP AND GENERAL SPDES PERMIT (ONE (1) INSPECTION PER SEVEN (7) DAYS SHALL BE COMPLETED).

MAINTENANCE AND REPAIR OF EROSION AND SEDIMENT POLLUTION CONTROL FACILITIES

1. PROPER MAINTENANCE AND REPAIR OF EROSION AND SEDIMENT CONTROL FACILITIES ARE NECESSARY TO THE EFFECTIVENESS OF THE EROSION AND SEDIMENT POLLUTION CONTROL FACILITIES.
2. DISTURBED GROUND SURFACES SHALL BE SPRINKLED WITH WATER, AS NEEDED, TO LIMIT THE FORMATION AND MIGRATION OF AIRBORNE DUST.
3. OPERATIONAL MEASURES SHALL BE EMPLOYED DURING CONSTRUCTION TO PREVENT THE SPILLS OF FUELS AND LUBRICANTS. IF A SPILL OCCURS, IT SHALL BE CONTROLLED IMMEDIATELY TO PREVENT ITS ENTRY INTO OFF-SITE AREAS INCLUDING ADJACENT STORM WATER FACILITIES.
4. ANY TEMPORARY EROSION CONTROL FACILITY SHALL REMAIN FUNCTIONAL UNTIL VEGETATIVE COVER IS SUFFICIENTLY ESTABLISHED WITHIN THE RESPECTIVE TRIBUTARY DRAINAGE AREA.
5. ANY DEBRIS ACCUMULATED IN EROSION AND SEDIMENT CONTROL SHALL BE REMOVED AND PROPERLY DISPOSED. THESE FACILITIES SHALL BE CHECKED DAILY AND AFTER RAINFALL EVENTS, AND REALIGNED AS NEEDED. SEDIMENT SHALL BE REMOVED WHEN IT REACHES THE FOLLOWING DEPTHS:

   SILT FENCE: 1/2 HEIGHT
   STONE CHECKDAMS: 1/2 HEIGHT
   INLET/ OUTLET PROTECTION: 1 INCH

NOTE: DISTURBED AREAS SHALL BE CONSIDERED PERMANENTLY STABILIZED WHEN A MINIMUM COVER OF 80% HAS BEEN ESTABLISHED.

EROSION & SEDIMENT POLLUTION CONTROL NOTES

1. EROSION & SEDIMENT POLLUTION CONTROL FACILITIES AND PRACTICES, UTILIZED IN CONSTRUCTION OF THE PROJECT, SHALL BE CONSISTENT WITH THE LATEST EDITIONS OF THE NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL, NEW YORK STATE STORMWATER MANAGEMENT DESIGN MANUAL, AND THE NEW YORK STATE SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES.
2. NATURAL VEGETATION SHALL BE RETAINED, PROTECTED, AND SUPPLEMENTED AS FEASIBLE PRIOR TO AND DURING CONSTRUCTION.
3. CUT AND FILL SLOPES SHALL BE BROUGHT TO FINAL PROPOSED GRADES AS SOON AS POSSIBLE IN THE CONSTRUCTION SEQUENCE, AND SEEDED AND MULCHED.
4. EROSION AND SEDIMENT POLLUTION CONTROL FACILITIES (CHECK DAMS, SILT FENCING, STABILIZED CONSTRUCTION ENTRANCES, SEDIMENT TRAPS, AND OTHER ACCEPTABLE IMPLEMENTED FACILITIES), SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION UNTIL COMPLETE SITE STABILIZATION.
5. GRADE ALL AREAS TO DRAIN.
6. HEAVY CONSTRUCTION EQUIPMENT SHALL BE KEPT AS CLOSE TO THE WORK AREA AS PRACTICAL TO MINIMIZE DISTURBANCE OF SOIL ALREADY STABILIZED OR UNDISTURBED.
7. TOPSOIL AND OTHER SOIL REMOVED DURING CONSTRUCTION SHALL BE STOCKPILED IN A SUITABLE LOCATION CLEAR FROM ANY STORMATWATER DRAINAGE COURSES. STOCKPILES SHALL BE STABILIZED TO PREVENT EROSION.
8. VEGETATIVE STABILIZATION SHALL BE PERIODICALLY INSPECTED FOR SUFFICIENT GROWTH AND PROGRESS. AREAS NOT RESPONDING SHALL BE PROMPTLY RESEEDED AND REMULCHED AS SOON AS POSSIBLE. AREAS SHOWING SIGNS OF EROSION PRIOR TO STABILIZATION SHALL BE GRADED, RESEEDED, AND REMULCHED AS SOON AS POSSIBLE. SOD OR EROSION CONTROL FABRIC SHALL BE UTILIZED WHERE ADEQUATE STABILIZATION IS NOT OCCURRING.
9. ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED BEGINNING EARTH MOVING ACTIVITIES, OR IN THEIR PROPER SEQUENCE, AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
10. A STABILIZED CONSTRUCTION ENTRANCE PAD WITH CLEAN STONE WILL BE PLACED AT ALL CONSTRUCTION DRIVEWAYS IMMEDIATELY AFTER INITIAL SITE DISTURBANCE.
11. ANY DISTURBED AREAS THAT WILL LEFT EXPOSED FOR MORE THAN 5 DAYS, AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL 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, AT A RATE OF 2.0 TONS PER ACRE, ACCORDING TO STANDARDS.
12. PERMANENT VEGETATION TO BE SEEDED ON ALL EXPOSED AREAS WITHIN FIVE (5) DAYS AFTER FINAL GRADING. MULCH TO BE USED AS NECESSARY FOR PROTECTION UNTIL SEEDING IS ESTABLISHED.
13. THE APPLICATION OF TOPSOIL, SEEDING, AND MULCHING FOR DISTURBED AREAS SHALL BE CONSISTENT WITH THE STANDARD GENERAL PRACTICES FOR CONSTRUCTION.
14. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES UNTIL ALL AREAS HAVE BEEN PERMANENTLY STABILIZED.
15. ANY SEDIMENT TRACKED ONTO PUBLIC RIGHT-OF-WAYS SHALL BE CLEANED IMMEDIATELY.
16. ALL DEBRIS GENERATED DURING SITE PREPARATION ACTIVITIES SHALL BE LEGALLY DISPOSED OF OFF SITE.
17. ADDITIONAL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED AS CONDITIONS WARRANT OR AS DIRECTED BY THE OWNER OR OWNER'S REPRESENTATIVE.
18. SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED ON A DAILY BASIS DURING CONSTRUCTION TO ENSURE THEIR CONTINUED FUNCTION.
19. DUST SHALL BE CONTROLLED BY SPRINKLING OR OTHER APPROVED METHODS AS NECESSARY, OR AS DIRECTED BY THE OWNER OR OWNER'S REPRESENTATIVE.
20. REQUIRED INSPECTIONS SHALL OCCUR AS OUTLINED WITHIN THE SWPPP AND SPDES PERMIT.

DRAINAGE SYSTEM NOTES:

1. CATCH BASINS AND MANHOLE DIAMETERS SHALL BE AS FOLLOWS:

LARGEST PIPE SIZE IN STRUCTURE	INSIDE DIAMETER OF STRUCTURE
UP TO 24"	4'
25" TO 36"	5'
LARGER THAN 36"	SPECIAL STRUCTURE

2. STORM SEWER PIPE SHALL BE ADS N-12 POLYETHYLENE UNLESS OTHERWISE NOTED. PIPE SHALL HAVE BANDED JOINTS AND RUBBER GASKETS.
3. LINING MATERIALS AND SPECIAL BACKFILL TO BE N.Y.S.D.O.T. ITEM NO. 304.05 TYPE 4 R.O.C. OR R.O.B..
4. GRANULAR FILTER MATERIAL TO BE (NYS DOT SECTION 605-2.02 TYPE 1) MEETING THE FOLLOWING GRADATIONS:

% PASSING BY WEIGHT	SIEVE SIZE
100	1-1/2"
30-100	1"
0-30	1/4"
0-10	NO.-10
0-5	NO.-20

5. RIP-RAP TO BE HARD, DURABLE, ANGULAR IN SHAPE, AND A MINIMUM OF 1 FT. THICK, AND MEETING THE FOLLOWING GRADATIONS:

PERCENT OF TOTAL WEIGHT SMALLER THAN GIVEN SIZE	WEIGHT OF STONE
100	100 LB.
80	60 LB.
50	25 LB.
<10	2 LB.

6. AL DRAINAGE STRUCTURES, INLETS, OUTLETS AND TEMPORARY PIPE ENDS SHALL BE MARKED WITH 2 x 4'S EXTENDING 3' ABOVE FINISHED GRADE. THE TOP 1' SHALL BE PAINTED SILVER.
7. CHANNEL SLOPE TO BE GRASS LINED UNLESS OTHERWISE SHOWN OR DIRECTED.
8. ALL BRICK USED TO RAISE THE CATCH BASIN FRAME AND GRATES TO BE RED NO. 1, 8000 PSI.
9. COMPACTION OF ALL BACKFILL MATERIALS REQUIRED IN AREAS UNDER PROPOSED PAVEMENT. COMPACT IN 8" LIFTS TO 95% DENSITY.
10. CONTRACTOR SHALL RECORD AND PROVIDE VILLAGE ENGINEER WITH ASBUILT LOCATIONS AND ELEVATIONS OF ALL CATCH BASIN RIMS AND INVERTS, INLET AND OUTLET PIPE INVERTS, AND SUMP PUMP/ ROOF DRAIN DRAIN CONNECTIONS.

NEW YORK STATE DOT SPECIFICATIONS

GENERAL NOTES:

1. THE CONTRACTOR MUST NOTIFY THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 3 ENGINEER, AT (315) 435-3176, THREE (3) WORKING DAYS PRIOR TO WORKING IN THE RIGHT-OF-WAY.
2. THE CONTRACTOR MUST NOTIFY DIG SAFELY NEW YORK THREE (3) WORK DAYS PRIOR TO DIGGING, DRILLING OR BLASTING AT 1-800-962-7962 FOR A UTILITY STAKE OUT.
3. ALL WORK CONTEMPLATED AND MATERIALS USED WITHIN THE STATE RIGHT-OF-WAY MUST COMPLY WITH THE LATEST VERSION OF THE NYSDOT STANDARD SPECIFICATIONS AND ALL CURRENT ADDENDAS, ALONG WITH ANY APPROPRIATE CURRENT NYSDOT STANDARD SHEETS.
4. NO NIGHT WORK WILL BE ALLOWED UNLESS PRIOR APPROVAL IS GIVEN BY THE NYSDOT. ADDITIONAL WORK ZONE TRAFFIC CONTROL WILL BE REQUIRED INCLUDING THE ADDITION OF REFLECTIVE MATERIALS AND LIGHTING.
5. STOP SIGNS SHALL BE (R1-1) ON BREAK-AWAY POSTS.
6. STOP LINES SHALL BE NYSDOT ITEM NO. 685.11.
7. ALL LAWN AREAS DISTURBED WITHIN R.O.W. SHALL RECEIVE TOPSOIL, SEED AND STRAW. NYSDOT ITEM NO. 610.1402.
8. A UTILITY PERMIT IS REQUIRED FOR ANY UTILITY WORK WITHIN THE NYSDOT RIGHT-OF-WAY.
9. HAZARDOUS WASTE NOTIFICATION - THE PERMITTEE ACCEPTS THE RIGHT-OF-WAY OF THE STATE HIGHWAY IN ITS 'AS IS' CONDITION. THE DOT MAKES NO REPRESENTATION AS TO THE ABSENCE OF UNDERGROUND TANKS, STRUCTURES, FEATURES OR SIMILAR IMPEDIMENTS TO THE COMPLETION OF THE WORK PERMITTED HEREUNDER, SHOULD PERMITTEE FIND SOME PREVIOUSLY UNKNOWN UNDERGROUND OBLIGATION TO CURE, REMOVE, REMEDY OR OTHERWISE DEAL WITH SUCH UNDERGROUND TANKS, STRUCTURE, FEATURE OR IMPEDIMENT IF SUCH IS DONE IN A MANNER WHICH MEETS ACCEPTABLE ENGINEERING PRACTICE IS PRE-APPROVED BY THE DOT. SHOULD PERMITTEE DETERMINE THAT SUCH UNFORESEEN UNDERGROUND IMPEDIMENT RENDERS PERMITTEE'S WORK AS AUTHORIZED BY THIS PERMIT UNFEASIBLE, PERMITTEE SHALL HAVE THE OPTION OF RESTORING THE HIGHWAY TO ITS ORIGINAL CONDITION AND NOT PERFOMING SUCH WORK.

WORK ZONE TRAFFIC CONTROL:
THE CONTRACT SHALL ADHERE TO THE FOLLOWING STANDARD SHEETS:
619-11, 619-20, 619-30, 619-60

LEGEND

- EXISTING BUILDING
- PROPERTY LINE
- EXISTING ASPHALT
- TREE LINE, EVERGREEN TREE, DECIDUOUS TREE, SHRUB
- GUARD RAIL
- RIGHT-OF-WAY LINE
- 100 EXISTING CONTOUR
- 100 PROPOSED CONTOUR
- S.F. SILT FENCE
- L.O.D. PROPOSED LIMIT OF DISTURBANCE
- C.F.S. COMPOST FILTER SOCK
- O.C.F. ORANGE CONSTRUCTION FENCE
- SWALE/ DITCH, FLOW ARROW, CHECK DAM
- ROCK WALL
- BARBED WIRE FENCE
- OH OVERHEAD UTILITIES, UTILITY POLE
- D DRAINAGE PIPE, CATCH BASIN, END SECTION
- S SANITARY PIPE, MANHOLE
- FM FORCEMAIN
- PROPOSED BUILDING
- G GV GM GAS LINE/ VALVE/ METER
- T TELCO H.H. TELCO VAULT TELCO LINE/ PEDESTAL/ HANDHOLE/ MANHOLE/ VAULT
- EM E ELEC. H.H. ELEC. VAULT TRANS ELEC METER/ LINE/ HANDHOLE/ MANHOLE/ VAULT/ TRANSFORMER
- HYD WV W WATER LINE/ HYDRANT/ VALVE/ WELL/ VAULT
- C CABLE H.H. CABLE VAULT CABLE/ PEDESTAL/ HANDHOLE/ VAULT
- F FIBER H.H. FIBER VAULT FIBER PEDESTAL/ HANDHOLE/ VAULT
- U.G. UNDERGROUND UTILITIES
- E & T ELECTRIC & TELEPHONE
- SETBACK
- C.O. TR MH CLEANOUT, TRAFFIC MANHOLE, MANHOLE
- ONLY TRAFFIC CONTROL PAVEMENT MARKINGS
- TRAFFIC LIGHT TRAFFIC LIGHT/ HANDICAP PARKING SYMBOL
- INLET PROTECTION
- LIGHT POLE/ WALL PACK
- MB MAILBOX, POST, BOLLARD
- BORE/ TEST PIT, DIRECTIONAL FLOW ARROW, FLAGGING
- SIGN

PERMITTING ONLY
NOT FOR CONSTRUCTION

NO.	ISSUE/DESCRIPTION	BY	DATE

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL OF NY (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW. UNAUTHORIZED ALTERATION IS PROHIBITED

STATE OF NEW YORK · BART A. KLETTKE · LICENSED PROFESSIONAL ENGINEER · NO. 069423

FREEMAN ESTATES HOUSING
7430 HIGHBRIDGE ROAD
TOWN OF MANLIUS, STATE OF NEW YORK

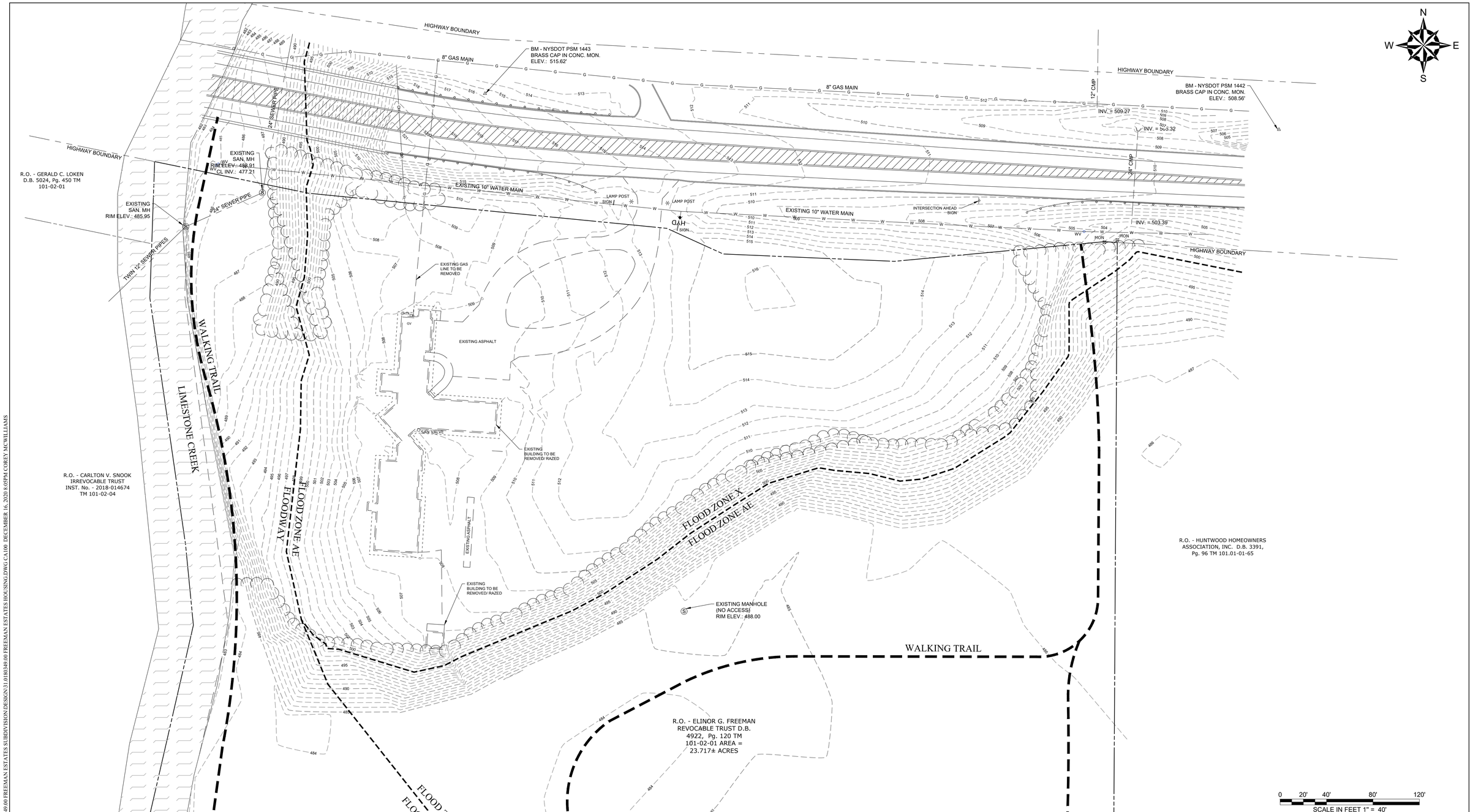
NOTES & LEGEND SHEET

PREPARED BY: GZA GeoEnvironmental of NY, Engineers and Scientists, www.gza.com

PREPARED FOR: BROLEX PROPERTIES, LLC, 5912 NORTH BURDICK STREET, EAST SYRACUSE, NY 13057

PROJ MGR: E.K.R.	REVIEWED BY: J.F.F.	CHECKED BY: C.J.M.	DWG
DESIGNED BY: E.K.R.	DRAWN BY: E.K.R.	SCALE: AS NOTED	GA002
DATE: DEC. 15, 2020	PROJECT NO. 31.0180349.00	REVISION NO.	SHEET NO. 2 OF 11

© 2020 - GZA GeoEnvironmental, Inc. GZA-J:\31.0180349.00 FREEMAN ESTATES SUBDIVISION\DESIGN\31.0180349.00 FREEMAN ESTATES HOUSING.DWG GA002 DECEMBER 16, 2020 8:04PM COREY MCWILLIAMS



© 2020 - GZA GeoEnvironmental, Inc. GZA-J:\31\0180349.00\FREEMAN ESTATES SUBDIVISION\DESIGN\31.0180349.00 FREEMAN ESTATES HOUSING.DWG CA100 DECEMBER 16, 2020 8:05PM COREY MCWILLIAMS

Know what's below.
Call before you dig.

PERMITTING ONLY
NOT FOR CONSTRUCTION

NO.	ISSUE/DESCRIPTION	BY	DATE

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL OF NY (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW. UNAUTHORIZED ALTERATION IS PROHIBITED

STATE OF NEW YORK
BART A. KLEY
069423
Licensed Professional Engineer

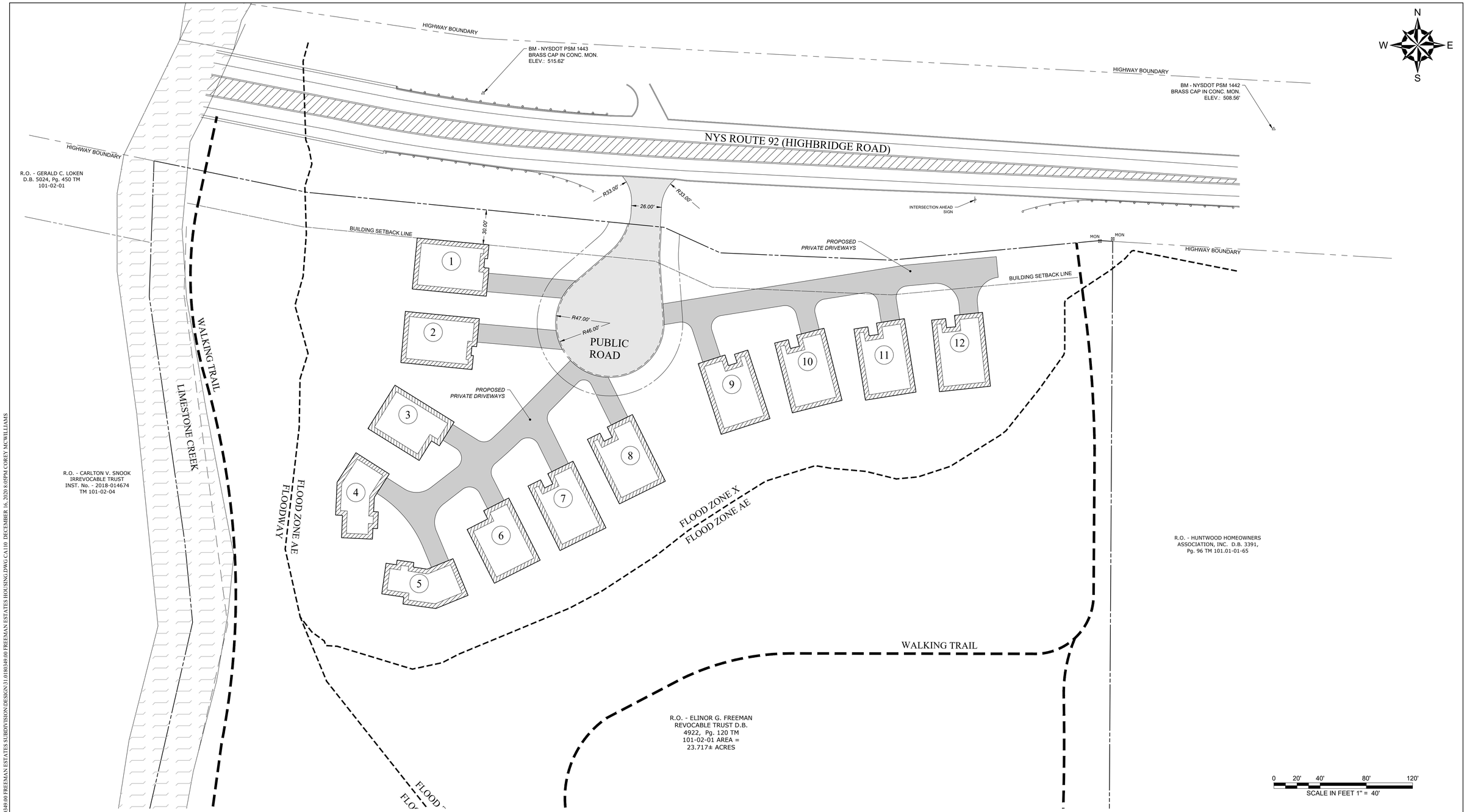
FREEMAN ESTATES HOUSING
7430 HIGHBRIDGE ROAD
TOWN OF MANLIUS, STATE OF NEW YORK

EXISTING FEATURES AND DEMOLITION PLAN

PREPARED BY:
GZA GeoEnvironmental of NY
Engineers and Scientists
www.gza.com

PREPARED FOR:
BROLEX PROPERTIES, LLC
5912 NORTH BURDICK STREET
EAST SYRACUSE, NY 13057

PROJ MGR: E.K.R.	REVIEWED BY: J.F.F.	CHECKED BY: C.J.M.	DWG
DESIGNED BY: E.K.R.	DRAWN BY: E.K.R.	SCALE: AS NOTED	CA100
DATE: DEC. 15, 2020	PROJECT NO. 31.0180349.00	REVISION NO.	SHEET NO. 3 OF 11



© 2020 - GZA GeoEnvironmental, Inc. GZA-J:\31.0180349.00\FREEMAN ESTATES SUBDIVISION\DESIGN\31.0180349.00 FREEMAN ESTATES HOUSING.DWG CA110 DECEMBER 16, 2020 8:05PM COREY MCWILLIAMS

811
Know what's below.
Call before you dig.

PERMITTING ONLY
NOT FOR CONSTRUCTION

NO.	ISSUE/DESCRIPTION	BY	DATE

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL OF NY (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW. UNAUTHORIZED ALTERATION IS PROHIBITED

STATE OF NEW YORK
BARTA. KLETT
069423
Licensed Professional Engineer

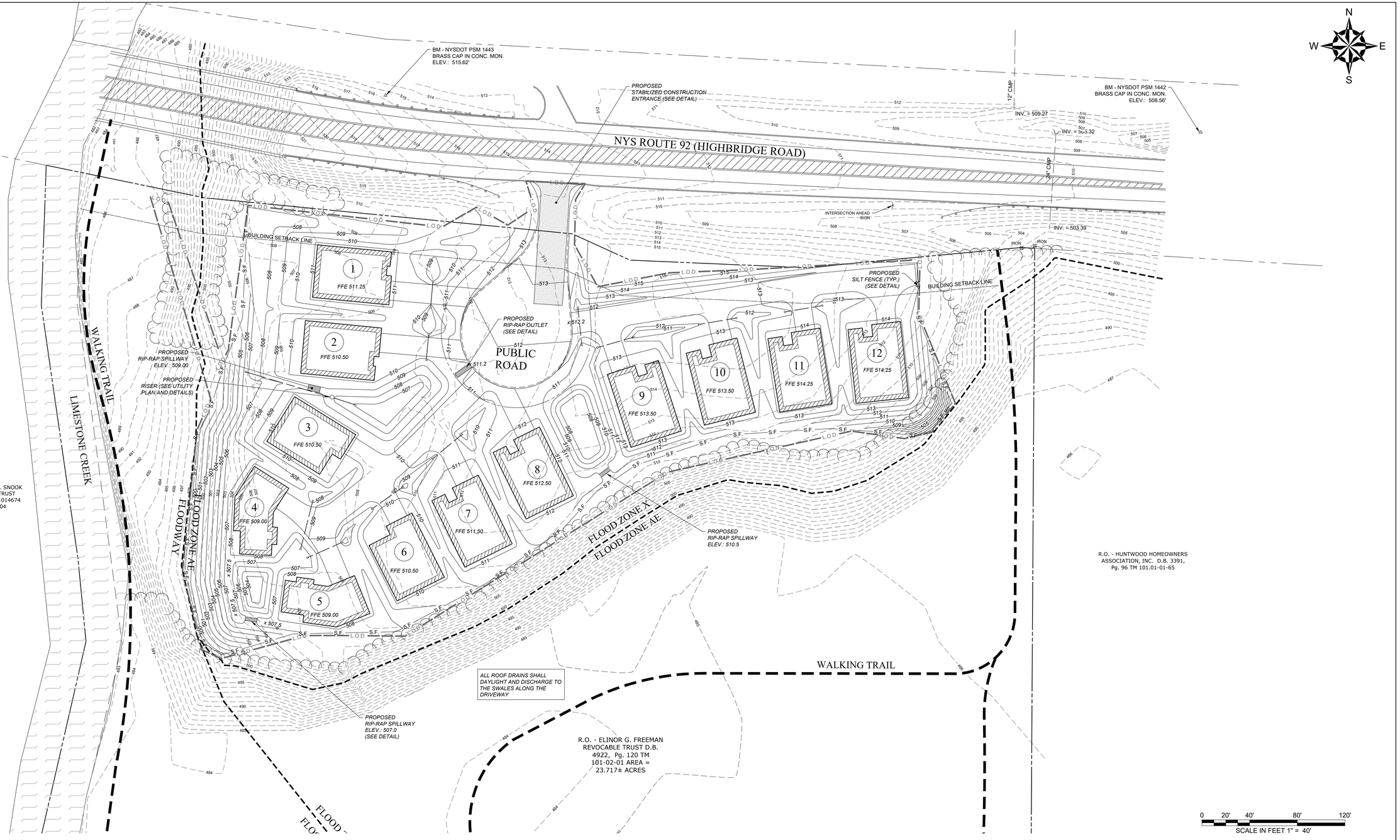
FREEMAN ESTATES HOUSING
7430 HIGHBRIDGE ROAD
TOWN OF MANLIUS, STATE OF NEW YORK

OVERALL SITE PLAN

PREPARED BY:
GZA GeoEnvironmental of NY
Engineers and Scientists
www.gza.com

PREPARED FOR:
BROLEX PROPERTIES, LLC
5912 NORTH BURDICK STREET
EAST SYRACUSE, NY 13057

PROJ MGR: E.K.R.	REVIEWED BY: J.F.F.	CHECKED BY: C.J.M.	DWG
DESIGNED BY: E.K.R.	DRAWN BY: E.K.R.	SCALE: AS NOTED	CA110
DATE: DEC. 15, 2020	PROJECT NO. 31.0180349.00	REVISION NO.	SHEET NO. 4 OF 11



© 2020 - GZA GeoEnvironmental, Inc. GZA-J:\31\0180349.00\FREEMAN ESTATES SUBDIVISION\DESIGN\31.0180349.00 FREEMAN ESTATES HOUSING.DWG CA120 DECEMBER 16, 2020 8:05PM COREY MCWILLIAMS

811
Know what's below.
Call before you dig.

PERMITTING ONLY
NOT FOR CONSTRUCTION

NO.	ISSUE/DESCRIPTION	BY	DATE

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL OF NY (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW. UNAUTHORIZED ALTERATION IS PROHIBITED

STATE OF NEW YORK
BARTA-KLETT
069423
Licensed Professional Engineer

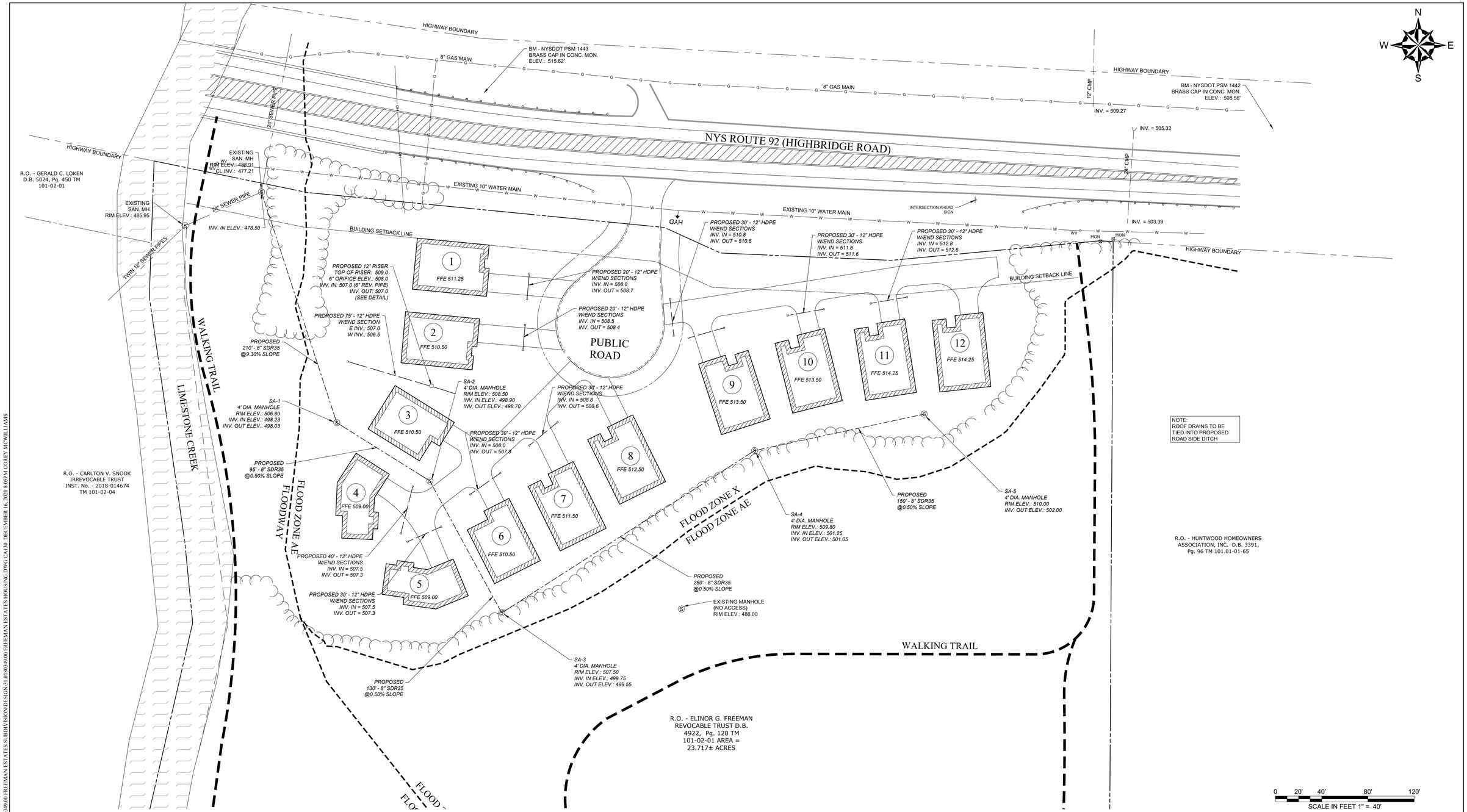
FREEMAN ESTATES HOUSING
7430 HIGHBRIDGE ROAD
TOWN OF MANLIUS, STATE OF NEW YORK

GRADING & EROSION CONTROL PLAN

PREPARED BY:
GZA GeoEnvironmental of NY
Engineers and Scientists
www.gza.com

PREPARED FOR:
BROLEX PROPERTIES, LLC
5912 NORTH BURDICK STREET
EAST SYRACUSE, NY 13057

PROJ MGR: E.K.R.	REVIEWED BY: J.F.F.	CHECKED BY: C.J.M.	DWG
DESIGNED BY: E.K.R.	DRAWN BY: E.K.R.	SCALE: AS NOTED	CA120
DATE: DEC. 15, 2020	PROJECT NO. 31.0180349.00	REVISION NO.	SHEET NO. 5 OF 11



Know what's below. Call before you dig.

PERMITTING ONLY
NOT FOR CONSTRUCTION

NO.	ISSUE/DESCRIPTION	BY	DATE

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL OF NY (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW. UNAUTHORIZED ALTERATION IS PROHIBITED

STATE OF NEW YORK · BARTA. KLETT · 069423 · Licensed Professional Engineer

FREEMAN ESTATES HOUSING
7430 HIGHBRIDGE ROAD
TOWN OF MANLIUS, STATE OF NEW YORK

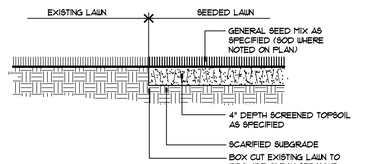
UTILITY PLAN

PREPARED BY:
GZA GeoEnvironmental of NY
Engineers and Scientists
www.gza.com

PREPARED FOR:
BROLEX PROPERTIES, LLC
5912 NORTH BURDICK STREET
EAST SYRACUSE, NY 13057

PROJ MGR: E.K.R.	REVIEWED BY: J.F.F.	CHECKED BY: C.J.M.	DWG
DESIGNED BY: E.K.R.	DRAWN BY: E.K.R.	SCALE: AS NOTED	CA130
DATE: DEC. 15, 2020	PROJECT NO. 31.0180349.00	REVISION NO.	SHEET NO. 6 OF 11

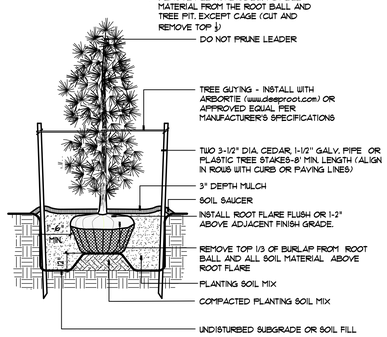
© 2020 - GZA GeoEnvironmental, Inc. GZA-J:\31\0180349.00\FREEMAN ESTATES SUBDIVISION\DESIGN\31.0180349.00 FREEMAN ESTATES HOUSING.DWG CA130 DECEMBER 16, 2020 8:05PM COREY MCWILLIAMS



SECTION

3 / L-1 SEEDED LAWN

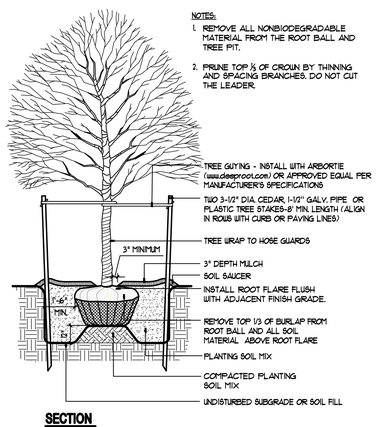
NOT TO SCALE — FOR SLOPES LESS THAN 1V:4H AS INDICATED ON PLANS — **32-9200-01A**



SECTION

2 / L-1 EVERGREEN PLANTING

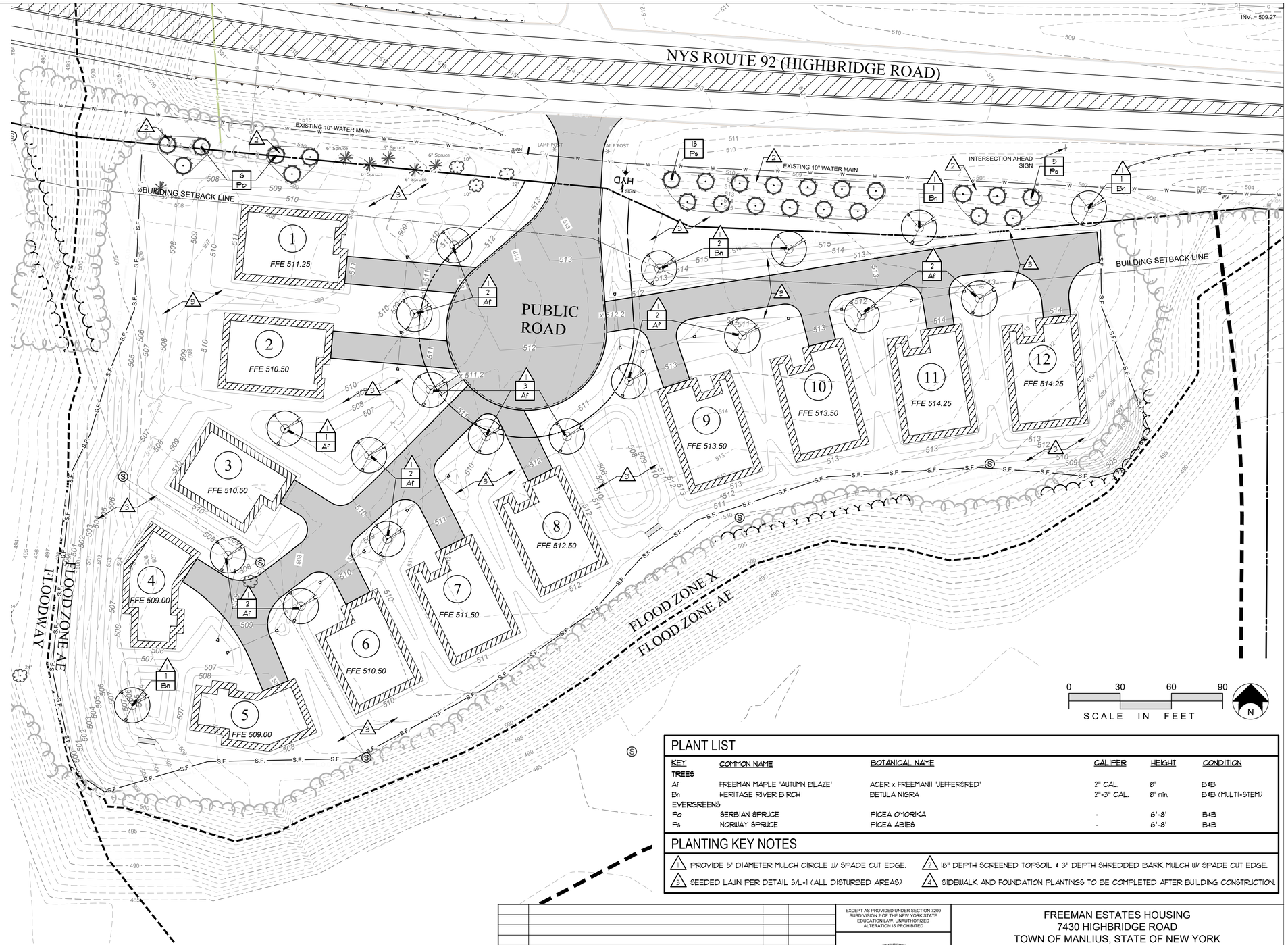
NOT TO SCALE — **32-9300-03**



SECTION

1 / L-1 TREE PLANTING

NOT TO SCALE — **32-9300-01**



PLANT LIST

KEY	COMMON NAME	BOTANICAL NAME	CALIPER	HEIGHT	CONDITION
TREES					
Af	FREEMAN MAPLE 'AUTUMN BLAZE'	ACER x FREEMANII 'JEFFERSRED'	2" CAL.	8'	B&B
Bn	HERITAGE RIVER BIRCH	BETULA NIGRA	2"-3" CAL.	8' min.	B&B (MULTI-STEM)
EVERGREENS					
Po	SERBIAN SPRUCE	PICEA OMORIKA	-	6'-8'	B&B
Ps	NORWAY SPRUCE	PICEA ABIES	-	6'-8'	B&B

PLANTING KEY NOTES

1. PROVIDE 5' DIAMETER MULCH CIRCLE W/ SPADE CUT EDGE.
2. 18" DEPTH SCREENED TOPSOIL & 3" DEPTH SHREDDED BARK MULCH W/ SPADE CUT EDGE.
3. SEEDED LAWN PER DETAIL 3/L-1 (ALL DISTURBED AREAS)
4. SIDEWALK AND FOUNDATION PLANTINGS TO BE COMPLETED AFTER BUILDING CONSTRUCTION.

PERMITTING ONLY
NOT FOR CONSTRUCTION

NO.	ISSUE/DESCRIPTION	BY	DATE

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL OF NY (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW, UNAUTHORIZED ALTERATION IS PROHIBITED

STATE OF NEW YORK — BART A. KLETTKE — LICENSED Professional Engineer — 069423

FREEMAN ESTATES HOUSING
7430 HIGHBRIDGE ROAD
TOWN OF MANLIUS, STATE OF NEW YORK

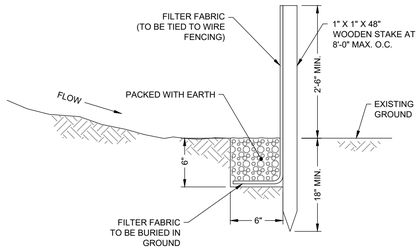
LANDSCAPING PLAN

PREPARED BY: GZA GeoEnvironmental of NY, Engineers and Scientists, www.gza.com

PREPARED FOR: BROLEX PROPERTIES, LLC, 5912 NORTH BURDICK STREET, EAST SYRACUSE, NY 13057

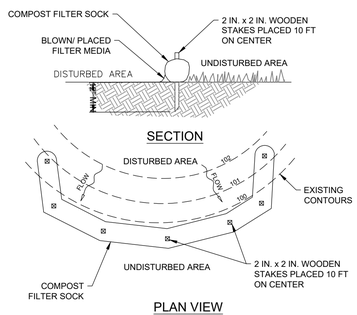
PROJ MGR: E.K.R.	REVIEWED BY: J.F.F.	CHECKED BY: C.J.M.	DWG GA002
DESIGNED BY: E.K.R.	DRAWN BY: E.K.R.	SCALE: AS NOTED	
DATE: DEC. 15, 2020	PROJECT NO. 31.0180349.00	REVISION NO.	SHEET NO. 7 OF 11

© 2020 GZA GeoEnvironmental, Inc. GZA-D:\00-PROJECTS\30962-J1-FREEMAN ESTATES\CADD\GZA-PLANTING PLAN\BORDER TO KFA.DWG 22 X 34 BORDER DECEMBER 16, 2020 3:59PM NATHAN.LAPIERRE



SILT FENCE DETAIL

NOT TO SCALE

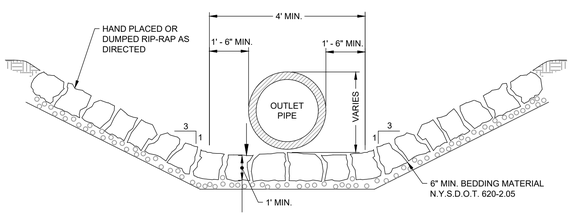


NOTES:

1. SOCK FABRIC SHALL MEET STANDARDS AND SPECIFICATIONS OUTLINED IN NYSDEC STORMWATER MANUAL.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING ELEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
5. COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OF REPLACED WITHIN 24 HOURS OF INSPECTION.
6. BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

COMPOST FILTER SOCK

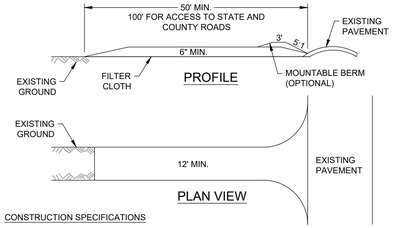
NOT TO SCALE



RIP-RAP DITCH FROM OUTLET PIPE DETAIL

NOT TO SCALE

Know what's **below.**
Call before you dig.

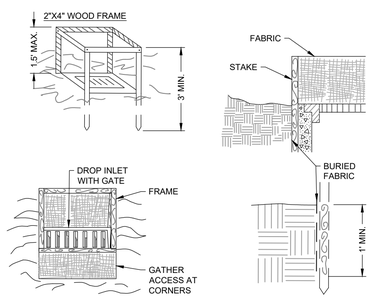


CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN FIFTY (50) FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A THIRTY (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 TRACKED 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 TRACKING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN EVENT.

STABILIZED CONSTRUCTION ENTRANCE

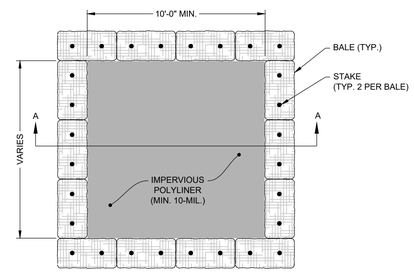
NOT TO SCALE



1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVERFLOW STABILITY.
7. MAXIMUM DRAINAGE AREA 1 ACRE.

FILTER FABRIC INLET PROTECTION

NOT TO SCALE

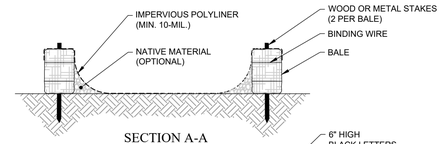


PLAN VIEW

NOT TO SCALE

CONCRETE WASHOUT AREA

(TYP. "ABOVE GRADE" WITH BALES)

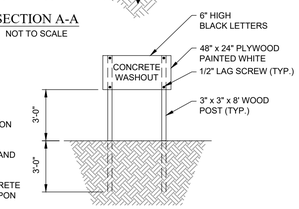


SECTION A-A

NOT TO SCALE

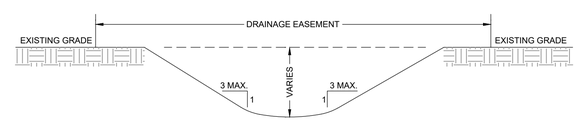
NOTES:

1. NUMBER OF BALES MAY VARY DEPENDING ON SITE CONDITIONS.
2. KEEP AS FAR FROM DRAINAGE CHANNELS AND WETLAND AREAS AS PRACTICAL.
3. SUMPS TO BE CLEANED AND WASTE CONCRETE REMOVED AND PROPERLY DISPOSED OF UPON COMPLETION OF WORK.



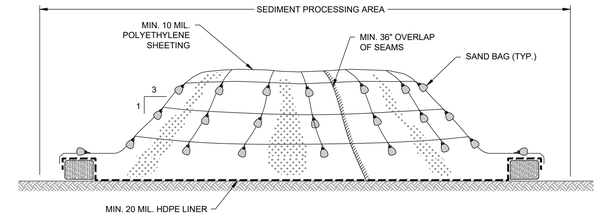
CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT)

NOT TO SCALE



TYPICAL SWALE OR CHANNEL DETAIL

NOT TO SCALE



NOTES:

1. STOCKPILES SHALL BE PLACED ON MINIMUM 20 MIL HDPE LINER.
2. STOCKPILES SHALL BE COVERED WITH MINIMUM 10 MIL POLYETHYLENE SHEETING WHENEVER LOADING, STABILIZATION, OR PLACEMENT IS NOT OCCURING.
3. STOCKPILE AREAS SHALL BE SUBJECT TO DUST / ODOR CONTROLS WHENEVER LOADING, STABILIZATION, OR PLACEMENT IS OCCURING AND AS DIRECTED BY ENGINEER. STOCKPILES SHALL BE COVERED WITH POLYETHYLENE WHEN THESE ACTIVITIES ARE NOT BEING PERFORMED.
4. SHEETING COVERING STOCKPILE SHALL BE MAINTAINED TIGHTLY IN PLACE BY USING SAND BAGS ON ROPES WITH A MAXIMUM 10'-0" GRID SPACING IN ALL DIMENSIONS.
5. MINIMUM 36" OVERLAP OF ALL SEAMS REQUIRED.
6. STOCKPILE SIDE SLOPES SHALL BE NO STEEPER THAN 3 (HORIZONTAL) TO 1 (VERTICAL).
7. CONTRACTOR SHALL PLACE STRAW BALE BERMS AS SHOWN ON THE DETAIL ABOVE AROUND STOCKPILES GENERATED OUTSIDE OF THE SEDIMENT PROCESSING AREA. STRAW BALE BERMS, AS SHOWN ON THE DETAIL, ARE NOT REQUIRED FOR STOCKPILES IN THE SEDIMENT PROCESSING AREA.

TYPICAL STOCKPILE DETAIL

NOT TO SCALE

SOIL EXCAVATION AND BACKFILL RECOMMENDATIONS

EXCAVATIONS:

1. MAXIMUM ALLOWABLE SLOPES FOR EXCAVATIONS LESS THAN 20 FEET DEEP SHALL BE DONE IN ACCORDANCE WITH OSHA REGULATIONS, OR ANY APPLICABLE STATE AND OR LOCAL REGULATIONS.
2. SLOPING, BENCHING OR OTHER METHODS OF EXCAVATION SUPPORT FOR EXCAVATIONS GREATER THAN 20 FEET DEEP MUST BE DESIGNED BY A PROFESSIONAL ENGINEER.
3. CONTRACTOR SHALL ORGANIZE THE WORK IN A MANNER THAT EXCAVATIONS ARE OPEN FOR THE SHORTEST PRACTICAL TIME.
4. EXCAVATED OR IMPORTED BACKFILL MATERIALS SHOULD NOT BE STOCKPILED ADJACENT TO OPEN CUT EXCAVATIONS WITHIN A MINIMUM HORIZONTAL DISTANCE EQUAL TO THREE TIMES ITS DEPTH OR GREATER AS NECESSARY FOR SLOPE STABILITY AND ADJACENT TO THE SIDES OF SHEETED AND BRACED EXCAVATIONS WITHIN A MINIMUM HORIZONTAL DISTANCE EQUAL TO THE DEPTH OF THE EXCAVATION UNLESS THE EXCAVATION SUPPORT SYSTEM IS PROPERLY DESIGNED AND CONSTRUCTED FOR THE LOADS. STOCKPILING MATERIAL OVER EXISTING OR CONSTRUCTED UTILITIES MAY INDUCE SETTLEMENT BENEATH THEM AND SHOULD NOT BE PERMITTED.

BACKFILL RECOMMENDATIONS:

5. ORDINARY FILL (I.E. SUITABLE SOIL FROM EXCAVATION OPERATIONS) MAY BE USED FOR BACKFILL, PROVIDED THE MATERIAL IS STABLE, CAN BE COMPACTED TO THE REQUIRED DENSITY AS DESCRIBED BELOW. ORDINARY FILL SHOULD CONSIST OF SUITABLE ON-SITE SOIL, FREE OF ORGANICS, DELETERIOUS MATERIALS, ICE, SNOW, AND WASTE OF ANY KIND.
6. REPRESENTATIVE SAMPLES OF ALL FILLS AND BACKFILLS FOR USE ON THE PROJECT SHOULD BE TESTED USING MODIFIED PROCTOR METHOD (ASTM D1557) TO DETERMINE MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT. THE MAXIMUM PARTICLE SIZE SHOULD BE NO GREATER THAN TWO-THIRDS OF THE LIFT THICKNESS. WATER CONTENT BY WEIGHT DURING COMPACTION SHOULD NOT EXCEED ±3 PERCENT OF OPTIMUM MOISTURE AS DETERMINED BY ASTM 1557.
7. IN STRUCTURAL AREAS (BENEATH HOMES, ROADS AND UTILITIES) FOR SOIL FILL SUBGRADE INTERVALS BELOW 3 FEET BELOW STRUCTURE, FILL LOOSE LIFT THICKNESSES SHALL BE NO GREATER THAN 12 INCHES. FOR FILL INTERVALS LESS THAN 3 FEET BELOW STRUCTURE (EXCLUDING SUBBASE STONE REQUIREMENTS), LOOSE LIFT THICKNESSES SHALL BE NO GREATER THAN 8 INCHES THICK. ALL LIFTS SHALL BE COMPACTED WITH A VIBRATORY SHEEPSFOOT COMPACTOR. FIELD COMPACTION SHOULD BE MEASURED PRIOR TO PLACING SUBSEQUENT LIFTS. SOIL SHALL BE COMPACTED TO A MINIMUM 90 PERCENT OF THE MAXIMUM DRY DENSITY FOR SOILS PLACED BELOW 3 FEET BELOW STRUCTURE, AND 95 PERCENT OF THE MAXIMUM DRY DENSITY FOR SOILS PLACED WITHIN 3 FEET BELOW THE STRUCTURE. COMPACTION OF BACKFILLED MATERIAL WITHIN THE ROADWAY WILL BE REQUIRED.
8. ROAD SUBBASE STONE SHALL BE COMPACTED TO A MINIMUM 95 PERCENT OF THE MAXIMUM DRY DENSITY.
9. IN NON-STRUCTURAL AREAS, SOIL FILL SHALL BE PLACED IN MAXIMUM 12-INCH THICK LOOSE LIFTS AND COMPACTED TO A STABLE MATRIX WITH A VIBRATORY SHEEPSFOOT COMPACTOR.
10. IN STRUCTURAL AREAS NOT REQUIRING FILL, THE EXPOSED SUBGRADES SHALL BE PROOF-COMPACTED WITH MULTIPLE PASSES OF A SHEEPSFOOT VIBRATORY COMPACTOR IN STATIC MODE PRIOR TO PLACEMENT OF CONCRETE FOR FOOTINGS OR ROAD SUBBASE STONE. WEAK OR SOFT SPOTS IDENTIFIED DURING PROOF COMPACTION SHALL BE EXCAVATED AND REPLACED WITH COMPACTED FILL. PROOF-ROLLING AND COMPACTION MAY BE WAIVED OR MODIFIED IF, WITH THE PROJECT AND TOWN ENGINEER'S CONCURRENCE, IT IS DETERMINED THAT THIS WILL DISTURB AN OTHERWISE SUITABLE SUBGRADE BASED ON OBSERVED FILED CONDITIONS.

TEMPORARY SEEDING REQUIREMENTS

1. SEEDING:
   - A. APPLY LAWN MIX AT A RATE (SEE SPECIFICATIONS)
   - B. APPLY SEED WITH A MECHANICAL SEEDER. OPTIMUM SETTING IN ONE INCH (EXCEPT SANDY SOILS, 2 INCHES).
   - C. WHERE FEASIBLE, EXCEPT WHERE EITHER A CULTIPAKER TYPE SEEDER OR HYDRO-SEEDER IS USED, THE SEED BED SHALL BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A ROLLER, OR LIGHT DRAG. SEEDING OPERATIONS SHOULD BE ON THE CONTOUR.
2. MULCHING:
   - A. MULCH MATERIALS SHALL BE UN-ROTTED HAY OR STRAW AT A RATE OF 2.0 TO 3.0 TONS PER ACRE, OR 70 TO 90 POUNDS PER 1,000 SQUARE FEET. MULCH SHOULD NOT BE GROUND OR CHOPPED TO SHORT PIECES.
   - B. SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THAT APPROXIMATELY 75 PERCENT TO 95 PERCENT OF THE SOIL SURFACE WILL BE COVERED.
   - C. MULCH ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER.

PERMANENT SEED REQUIREMENTS

1. SEEDBED PREPARATION:
   - A. APPLY LIMESTONE (EQUIVALENT TO 50 PERCENT (50%) CALCIUM PLUS MAGNESIUM OXIDES) AT A RATE PF 90 POUNDS PER 1,000 SQUARE FEET. APPLY FERTILIZER AT A RATE OF 600 POUNDS PER ACRE OR 14 POUNDS PER 1,000 SQUARE FEET USING 10-20-10 OR EQUIVALENT.
   - B. WORK LIME AND FERTILIZER INTO SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC. SPRINGTOOTH HARROW OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM SEEDBED IS PREPARED.
   - C. REMOVE ALL ROCKS AND DEBRIS FROM SOIL SURFACE.
   - D. INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACT, THE AREA MUST BE RE-TILLED AS ABOVE.
2. SEEDING:
   - A. PERMANENT SEEDING SHALL BE ERNST SOLAR FARM SEED MIX.
   - B. APPLY SEED WITH MECHANICAL SEEDER. OPTIMUM SEEDING DEPTH IS ONE INCH (EXCEPT SANDY SOILS, 2 INCHES).
   - C. WHERE FEASIBLE, EXCEPT WHERE EITHER A CULTIPAKER TYPE SEEDER OR HYDRO-SEEDER IS USED, THE SEEDBED SHALL BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A ROLLER, OR LIGHT DRAG. SEEDING OPERATIONS SHOULD BE ON THE CONTOUR.
3. MULCHING:
   - A. MULCH MATERIALS SHALL BE UN-ROTTED HAY OR STRAW AT A RATE OF 2.0 TO 3.0 TONS PER ACRE, OR 70 TO 90 POUNDS PER 1,000 SQUARE FEET. MULCH SHOULD NOT BE GROUND OR CHOPPED TO SHORT PIECES.
   - B. SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THAT APPROXIMATELY 75 PERCENT TO 95 PERCENT OF THE SOIL SURFACE WILL BE COVERED.
   - C. MULCH ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER.

PERMITTING ONLY
NOT FOR CONSTRUCTION

NO.	ISSUE/DESCRIPTION	BY	DATE

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL OF NY (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW. UNAUTHORIZED ALTERATION IS PROHIBITED

STATE OF NEW YORK · BARTA. KLETT · 069423 · Licensed Professional Engineer

FREEMAN ESTATES HOUSING
7430 HIGHBRIDGE ROAD
TOWN OF MANLIUS, STATE OF NEW YORK

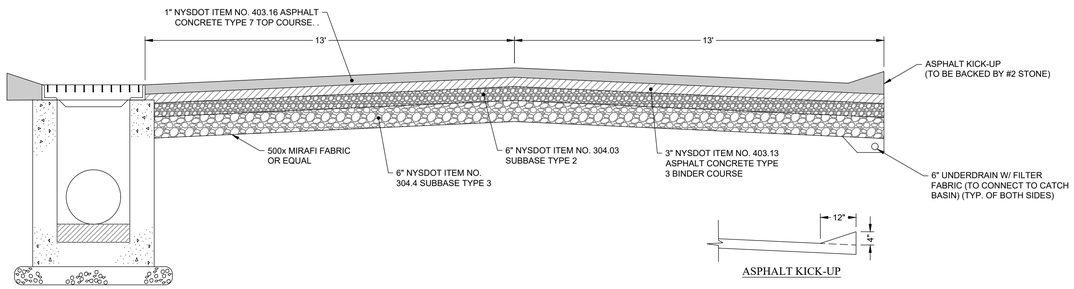
DETAIL SHEET (EROSION CONTROL)

PREPARED BY: **GZA**GeoEnvironmental of NY Engineers and Scientists, www.gza.com

PREPARED FOR: BROLEX PROPERTIES, LLC, 5912 NORTH BURDICK STREET, EAST SYRACUSE, NY 13057

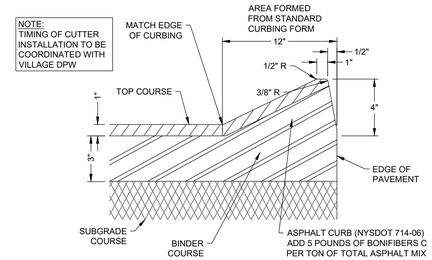
PROJ MGR: E.K.R.	REVIEWED BY: J.F.F.	CHECKED BY: C.J.M.	DWG
DESIGNED BY: E.K.R.	DRAWN BY: E.K.R.	SCALE: AS NOTED	CA500
DATE: DEC. 15, 2020	PROJECT NO. 31.0180349.00	REVISION NO.	SHEET NO. 8 OF 11

© 2020 - GZA GeoEnvironmental, Inc. GZA-J:\31\0180349.00\FREEMAN ESTATES SUBDIVISION\DESIGN\31.0180349.00 FREEMAN ESTATES HOUSING.DWG CA500 DECEMBER 16, 2020 8:05PM COREY MCWILLIAMS



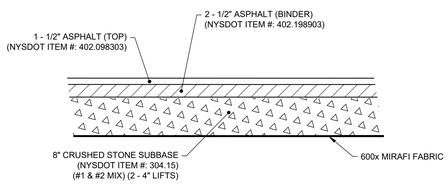
TYPICAL ROAD CROSS-SECTION (OUTSIDE OF NYSDOT RIGHT-OF-WAY)

NOT TO SCALE



ASPHALT CURB DETAIL

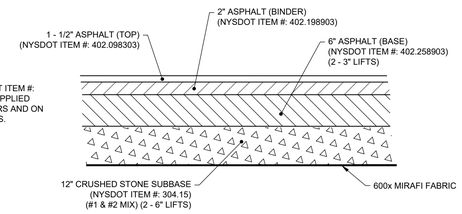
NOT TO SCALE



PAVEMENT SECTION WITHIN NYSDOT RIGHT-OF-WAY

NOT TO SCALE

NOTE:
TACK COAT (NYSDOT ITEM #: 407.0102) MUST BE APPLIED BETWEEN ALL LAYERS AND ON VERTICAL SURFACES.



SHOULDER SECTION WITHIN NYSDOT RIGHT-OF-WAY

NOT TO SCALE

© 2020 - GZA GeoEnvironmental, Inc. GZA-J:\31.0180349.00\FREEMAN ESTATES SUBDIVISION\DESIGN\31.0180349.00 FREEMAN ESTATES HOUSING.DWG CA501 DECEMBER 16, 2020 8:05PM COREY MCWILLIAMS

811 Know what's below. Call before you dig.

PERMITTING ONLY
NOT FOR CONSTRUCTION

NO.	ISSUE/DESCRIPTION	BY	DATE

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL OF NY (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW. UNAUTHORIZED ALTERATION IS PROHIBITED

STATE OF NEW YORK · BART A. KLETT · 069423 · Licensed Professional Engineer

FREEMAN ESTATES HOUSING
7430 HIGHBRIDGE ROAD
TOWN OF MANLIUS, STATE OF NEW YORK

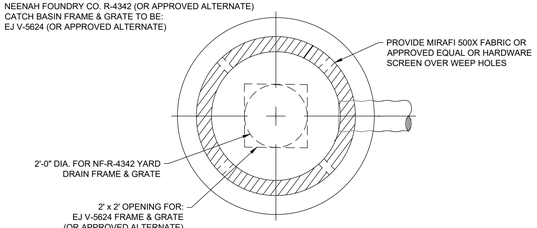
DETAIL SHEET (PAVING)

PREPARED BY:
GZA GeoEnvironmental of NY
Engineers and Scientists
www.gza.com

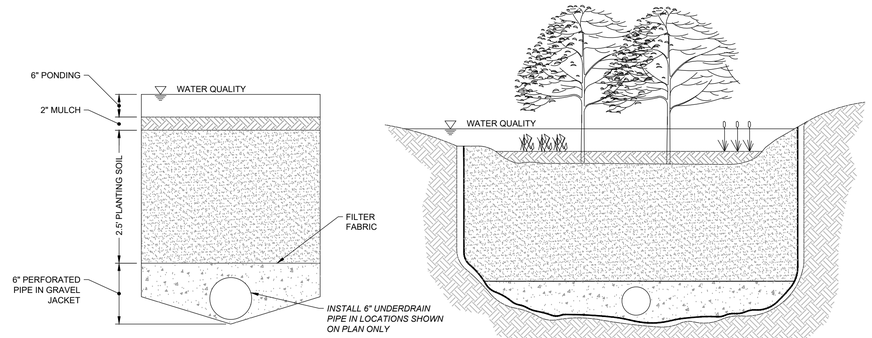
PREPARED FOR:
BROLEX PROPERTIES, LLC
5912 NORTH BURDICK STREET
EAST SYRACUSE, NY 13057

PROJ MGR: E.K.R.	REVIEWED BY: J.F.F.	CHECKED BY: C.J.M.	DWG
DESIGNED BY: E.K.R.	DRAWN BY: E.K.R.	SCALE: AS NOTED	CA501
DATE: DEC. 15, 2020	PROJECT NO. 31.0180349.00	REVISION NO.	SHEET NO. 9 OF 11

NOTE:
YARD DRAIN FRAME AND GRATE TO BE:
NEENAH FOUNDRY CO. R-4342 (OR APPROVED ALTERNATE)
CATCH BASIN FRAME & GRATE TO BE:
EJ V-5624 (OR APPROVED ALTERNATE)



PLAN SECTION
NOT TO SCALE

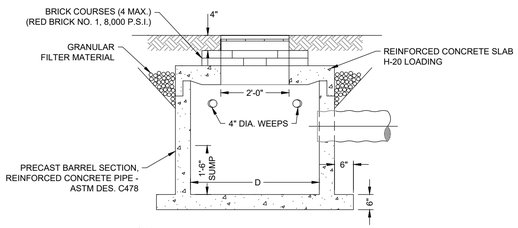


TYPICAL SECTION

PROFILE

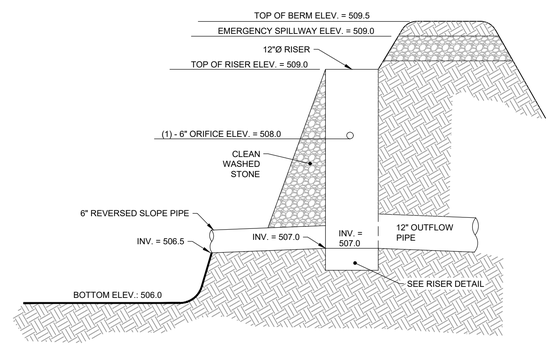
NOTES:
1. GRASS COVER AND LANDSCAPE PLANTINGS SHALL BE CAPABLE OF WITHSTANDING FREQUENT PERIODS OF INUNDATION AND DROUGHT.
2. (1) TREE PER 100 SQUARE FEET IS RECOMMENDED.

BIORETENTION FACILITY DETAIL
NOT TO SCALE

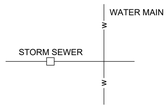


NOTE:
INLET MANHOLE IS SIMILAR TO CATCH BASIN EXCEPT NO SUMP. INLET MANHOLES ARE TO HAVE CONCRETE BENCH WALLS AND TROUGHS SIMILAR TO STANDARD MANHOLES.

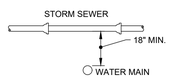
STANDARD PRECAST CONCRETE CATCH BASIN
NOT TO SCALE



STORMWATER BASIN OUTLET CONTROL STRUCTURE
NOT TO SCALE

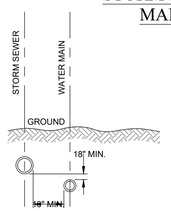


PLAN

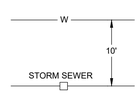


SECTION

STORM SEWER & WATER MAIN CROSSING

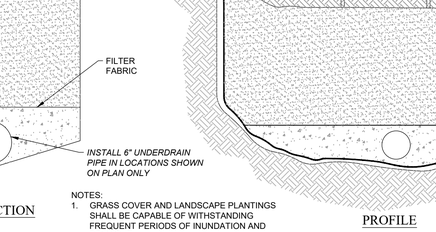


VERTICAL SEPARATION SECTION



HORIZONTAL SEPARATION PLAN

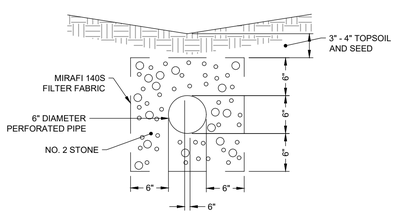
RELATION OF STORM SEWERS TO WATER MAINS
NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

1. THE CONCRETE BASE SHALL BE POURED IN SUCH A MANNER TO INSURE THAT THE CONCRETE FILLS THE BOTTOM OF THE RISER TO THE INVERT OF THE OUTLET PIPE TO PREVENT THE RISER FROM THE BREAKING AWAY FROM THE BASE.
2. WITH ALUMINUM OR ALUMINIZED PIPE, THE EMBEDDED SECTION MUST BE PAINTED WITH CHROMATE OR EQUIVALENT.
3. RISER BASE MAY BE SIZED AS COMPUTED USING FLOTATION WITH A FACTOR OF SAFETY OF 1.2.

RISER DETAIL
NOT TO SCALE



TYPICAL YARD UNDERDRAIN DETAIL
NOT TO SCALE

811
Know what's below.
Call before you dig.

PERMITTING ONLY
NOT FOR CONSTRUCTION

NO.	ISSUE/DESCRIPTION	BY	DATE

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL OF NY (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW. UNAUTHORIZED ALTERATION IS PROHIBITED

STATE OF NEW YORK · BART A. KLETT · 069423 · Licensed Professional Engineer

FREEMAN ESTATES HOUSING
7430 HIGHBRIDGE ROAD
TOWN OF MANLIUS, STATE OF NEW YORK

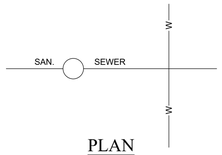
DETAIL SHEET (STORM)

PREPARED BY:
GZA GeoEnvironmental of NY
Engineers and Scientists
www.gza.com

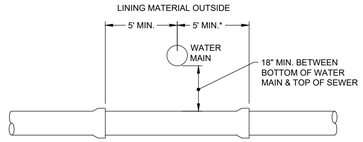
PREPARED FOR:
BROLEX PROPERTIES, LLC
5912 NORTH BURDICK STREET
EAST SYRACUSE, NY 13057

PROJ MGR: E.K.R.	REVIEWED BY: J.F.F.	CHECKED BY: C.J.M.	DWG
DESIGNED BY: E.K.R.	DRAWN BY: E.K.R.	SCALE: AS NOTED	CA502
DATE: DEC. 15, 2020	PROJECT NO. 31.0180349.00	REVISION NO.	SHEET NO. 10 OF 11

© 2020 - GZA GeoEnvironmental, Inc. GZA-J:\31\0180349.00\FREEMAN ESTATES SUBDIVISION\DESIGN\31.0180349.00 FREEMAN ESTATES HOUSING.DWG CA502 DECEMBER 16, 2020 8:05PM COREY MCWILLIAMS

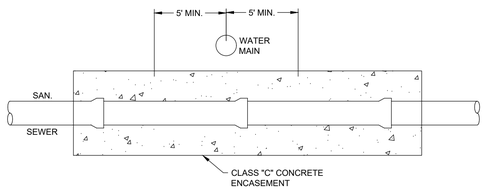


PLAN



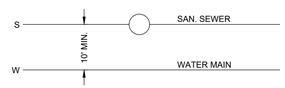
SECTION

*NOTE:
IF DISTANCE FROM WATER MAIN TO SEWER JOINT IS LESS THAN 5' MIN., THEN ALL SEWER JOINTS WITHIN 10' MUST BE ENCASED IN CONCRETE. (CONCRETE MUST BE LAID UP TO NEXT BELL OR COLLAR BEYOND THE 5' MIN.)

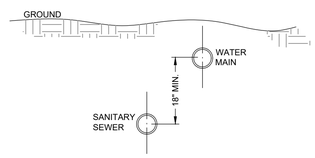


SANITARY SEWER & WATER MAIN CROSSING

NOT TO SCALE



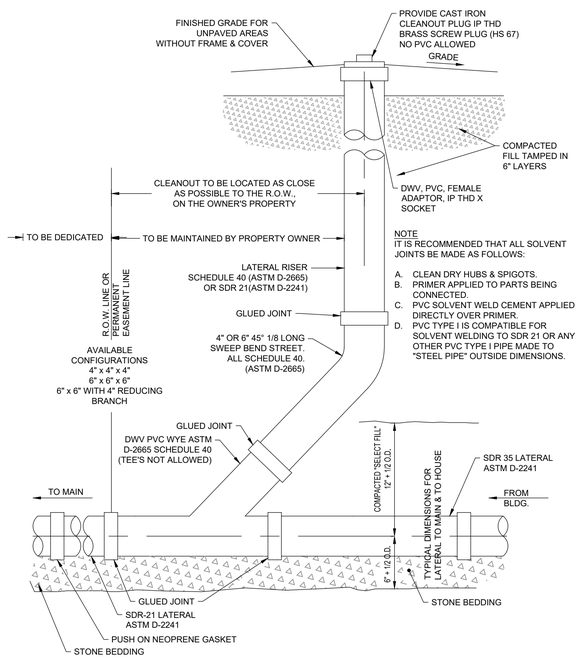
HORIZONTAL SEPARATION PLAN



VERTICAL SEPARATION PLAN

RELATION OF SANITARY SEWER TO WATER MAINS

NOT TO SCALE



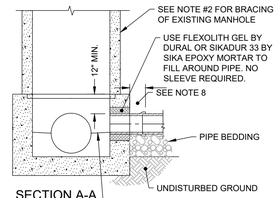
NOTE
IT IS RECOMMENDED THAT ALL SOLVENT JOINTS BE MADE AS FOLLOWS:

A. CLEAN DRY HUBS & SPIGOTS.
B. PRIMER APPLIED TO PARTS BEING CONNECTED.
C. PVC SOLVENT WELD CEMENT APPLIED DIRECTLY OVER PRIMER.
D. PVC TYPE I IS COMPATIBLE FOR SOLVENT WELDING TO SDR 21 OR ANY OTHER PVC TYPE I PIPE MADE TO "STEEL PIPE" OUTSIDE DIMENSIONS.

4" OR 6" P.V.C. CLEANOUT DETAIL FOR LATERAL CONNECTION

NOT TO SCALE

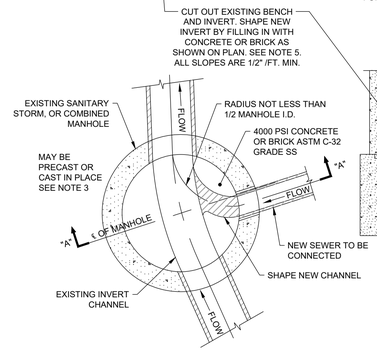
SPECIAL NOTE:
STORM SEWERS SHALL NOT BE CONNECTED TO SANITARY SEWERS.



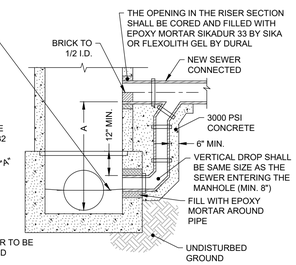
SECTION A-A

NOTES:

1. THE CROWN OF THE NEW SEWER SHALL NOT BE CONSTRUCTED LOWER THAN THE CROWN OF THE EXISTING MAIN SEWER. THE INVERT OF THE NEW SEWER SHALL BE CONSTRUCTED AT LEAST 3" ABOVE THE EXISTING MAIN SEWER INVERT.
2. EXISTING MANHOLE STRUCTURE SHALL BE SUFFICIENTLY BRACED AND PROTECTED TO PREVENT ANY SHIFTING OR DAMAGE TO THE MANHOLE.
3. THE EXISTING MANHOLE BASE MAY BE ROUND OR SQUARE, DEPENDING ON THE TIME THE MANHOLE WAS CONSTRUCTED.
4. GENERALLY A DROP CONNECTION SHALL BE PROVIDED WHEN DIM. A EXCEEDS 2' IN A SANITARY MANHOLE AND 5' IN A STORM SEWER.
5. CONTRACTOR MUST COAT ALL DISTURBED AREAS OF MANHOLE WITH 2 COATS OF SIKAGARD NO. 62 FOR INTERIOR OF BASE AND 2 COATS OF SUPER SERVICE BLACK FOR ALL OTHER SURFACES.
6. STUB AT MANHOLE SHALL NOT EXCEED 100 DEGREES ALIGNMENT ENTERING AGAINST UPSTREAM SEWER.
7. STUBS 4' MAX. R.C.P. & D.I.P., 1' MAX. ALL OTHER PIPE MATERIALS, FROM OUTSIDE FACE.
8. CORED OPENINGS IN MANHOLE RISER SECTIONS SHALL BE NO LESS THAN 6" FROM A RISER JOINT.
9. CONTRACTOR MAY CORE BORE OR DRILL A NEW OPENING IF REQUIRED. NO IMPACT DEVICES WILL BE ALLOWED TO BE USED FOR MAKING NEW HOLES IN EXISTING MANHOLES OR CHAMBERS.



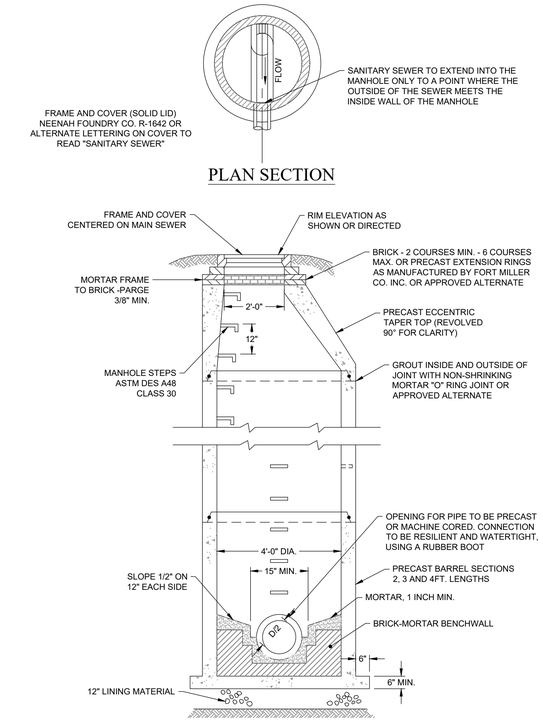
SECTIONAL PLAN



SECTION A-A
(FOR OUTSIDE DROP CONNECTION)

SEWER CONNECTIONS TO EXISTING MANHOLE

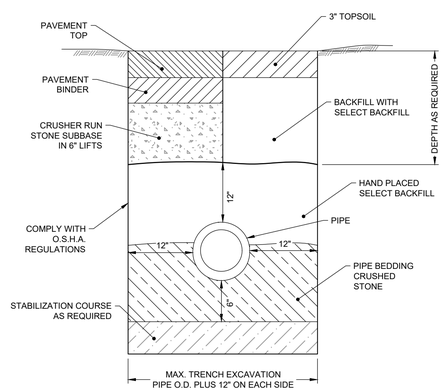
NOT TO SCALE



STANDARD PRECAST SANITARY SEWER MANHOLE

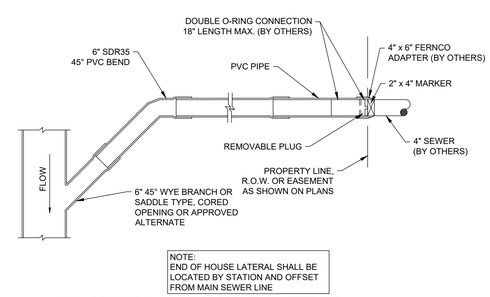
NOT TO SCALE

FOR SEWERS 8 THRU 12 INCHES IN DIAMETER



TYPICAL PIPE TRENCH DETAIL

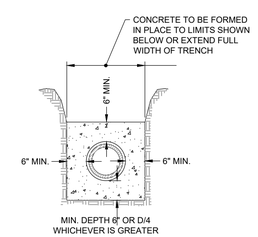
NOT TO SCALE



NOTE:
END OF HOUSE LATERAL SHALL BE LOCATED BY STATION AND OFFSET FROM MAIN SEWER LINE

STANDARD PVC HOUSE LATERAL

NOT TO SCALE



TYPICAL ENCASEMENT DETAIL

NOT TO SCALE

PERMITTING ONLY
NOT FOR CONSTRUCTION

811
Know what's below.
Call before you dig.

NO.	ISSUE/DESCRIPTION	BY	DATE

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL OF NY (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW. UNAUTHORIZED ALTERATION IS PROHIBITED

STATE OF NEW YORK
BART A. KLETTI
069423
Licensed Professional Engineer

FREEMAN ESTATES HOUSING
7430 HIGHBRIDGE ROAD
TOWN OF MANLIUS, STATE OF NEW YORK

DETAIL SHEET (SANITARY)

PREPARED BY:
GZA GeoEnvironmental of NY
Engineers and Scientists
www.gza.com

PREPARED FOR:
BROLEX PROPERTIES, LLC
5912 NORTH BURDICK STREET
EAST SYRACUSE, NY 13057

PROJ MGR: E.K.R.	REVIEWED BY: J.F.F.	CHECKED BY: C.J.M.	DWG
DESIGNED BY: E.K.R.	DRAWN BY: E.K.R.	SCALE: AS NOTED	CA503
DATE: DEC. 15, 2020	PROJECT NO. 31.0180349.00	REVISION NO.	SHEET NO. 11 OF 11

© 2020 - GZA GeoEnvironmental, Inc. GZA-J:\31.0180349.00 FREEMAN ESTATES SUBDIVISION\DESIGN\31.0180349.00 FREEMAN ESTATES HOUSING.DWG CA503 DECEMBER 16, 2020 8:05PM COREY MCWILLIAMS

STORMWATER POLLUTION PREVENTION PLAN FOR COMPLIANCE WITH NYSDEC GENERAL PERMIT GP-0-20-001 FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

LOCATION:

Freeman Estates Housing
Town of Manlius,
Onondaga County

Owner:

Brolex Properties, LLC
5912 North Burdick Street
East Syracuse, New York 13057

Prepared by:

December 2020

TABLE OF CONTENTS

NOTICE TO OWNER, CONTRACTORS, SUBCONTRACTORS IV
1.0 OVERVIEW 6
1.1 PROJECT DESCRIPTION AND SITE LOCATION 6
1.2 WETLANDS AND WATERBODIES 6
1.3 CULTURAL RESOURCES 6
1.4 RARE AND ENDANGERED SPECIES 6
1.5 DESCRIPTION OF PROPOSED WORK 6
1.6 DESCRIPTION OF SOILS 7
2.0 EXISTING CONDITIONS 7
2.1 DURATION OF CONSTRUCTION ACTIVITY 8
3.0 DEVELOPED CONDITIONS 8
3.1 ROUTED OUTFLOWS 9
3.2 SUMMARY OF PEAK FLOW RATES 10
4.0 WATER QUALITY, CHANNEL PROTECTION AND RUNOFF REDUCTION VOLUME 10
5.0 STORMWATER MANAGEMENT PLANNING 11
5.1 TECHNICAL JUSTIFICATION FOR RUNOFF REDUCTION REQUIREMENTS (PER NYS SWDM CH. 5) 11
5.2 PLANNING PRACTICES FOR REDUCTION OF IMPERVIOUS COVER 12
5.3 TECHNIQUES FOR RUNOFF REDUCTION 12
5.4 DURATION OF CONSTRUCTION ACTIVITY 13
6.0 POLLUTION PREVENTION CONTROL MEASURES 13
6.1 ONSITE CONSTRUCTION MATERIAL STORAGE 13
6.2 GOOD HOUSEKEEPING BMP'S 17
7.0 EROSION AND SEDIMENTATION CONTROL PLAN AND BEST MANAGAMENT PRACTICES 18
7.2 TEMPORARY AND PERMAMENT EROSION CONTROL MEASURES 20
7.3 LOCATION OF EROSION CONTROL MEASURES 21
7.4 IMPLEMENTATION SCHEDULE 21
7.5 PERMANENT WATER QUALITY AND QUANTITY CONTROLS 21
7.6 MAINTENANCE AND INSPECTION SCHEDULE 22
7.7 IMPLEMENTATION OF RESPONSIBILITY 23
7.8 CORRECTIVE ACTIONS 23
8.0 CONCLUSION 24

ATTACHMENT A PROJECT CONTACT INFORMATION & SWPPP MEETING SIGN-IN SHEET 25
ATTACHMENT B LOCATION MAP 26
ATTACHMENT C NATIONAL WETLANDS INVENTORY MAP 27
ATTACHMENT D NYSDEC ENVIRONMENTAL RESOURCE MAP 28
ATTACHMENT E CULTURAL RESOURCE INFORMATION SYSTEM MAP (CRIS) 29
ATTACHMENT F NATIONAL RESOURCES CONSERVATION SERVICE (NRCS) SOIL MAPPING 30
ATTACHMENT G EXISTING DRAINAGE AREA MAP 31
ATTACHMENT H EXISTING DRAINAGE AREA CALCULATIONS AND HYDROGRAPHS 32
ATTACHMENT I DEVELOPED DRAINAGE AREA MAP 33
ATTACHMENT J DEVELOPED DRAINAGE AREA CALCULATIONS AND HYDROGRAPHS 34
ATTACHMENT K WQV, RRV, AND CPV CALCULATIONS 35
ATTACHMENT L SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES (GP-0-20-001) 36
ATTACHMENT M NOTICE OF INTENT (NOI) 37
ATTACHMENT N SAMPLE INPECTION FORM/ INSPECTION REPORTS 38
ATTACHMENT O NYSSEC GUIDANCE FOR EROSION AND SEDIMENT CONTROL PRACTICE INSTALLATION 39
ATTACHMENT P GENERAL AND SUBCONTRACTOR SIGNATURE PAGE 40
ATTACHMENT Q AGENCY CONSULTATION AND PERMITS 41
ATTACHMENT R GRADING, EROSION & SEDIMENT CONTROL PLAN & DETAIL SHEETS 42
ATTACHMENT S AMENDMENTS TO THE SWPPP 43
ATTACHMENT T NOTICE OF TERMINATION 45

NOTICE TO OWNER, CONTRACTORS, SUBCONTRACTORS

This Stormwater Pollution Prevention Plan (SWPPP) is a necessary component for obtaining authorization for construction activities under New York's State Pollution Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities (GP-0-20-001). Construction activities disturbing one or more acres[1] of land are required to obtain a SPDES permit; such projects that comply with the condition of GP-0-20-001 are eligible for authorization under that General Permit. The SPDES is implemented by the New York State Department of Environmental Conservation (NYSDEC) in accordance with Section 402 of the Federal Clean Water Act (CWA) and Article 17 of the New York State Environmental Conservation Law (ECL), and 6 NYCRR Part 750. This document has been prepared in accordance with the GP-0-20-001, Parts III and IV, which are specific to the SWPPP and Inspection and Maintenance Requirements, respectively.

It is expected that erosion and sediment control measures and Best Management Practices (BMPs) specified in this SWPPP and in project plans will be amended and supplemented as construction proceeds. GP-0-20-001 requires that such amendments be recorded and incorporated into the SWPPP; therefore, the SWPPP is a living document which requires consistent maintenance and incorporation of additional information by responsible parties.

In accordance with the General Conditions of GP-0-20-001, parties responsible for compliance with GP-0-20-001 and the SWPPP are:

Owner or Operator: means the person, persons, or legal entity that owns or leases the property on which the construction activity is occurring and/or an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications. The *owner or operator* must comply with all conditions of GP-0-20-001.

The owner or operator shall ensure that the provisions of the SWPPP are implemented from the commencement of construction activity until all areas of disturbance have achieved final stabilization and the Notice of Termination (NOT) has been submitted to the Department in accordance with Part V of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4.

Contractor(s) and Sub-Contractor(s): The party or parties identified by the Owner or Operator which will be responsible for installing, constructing, repairing, replacing, inspecting, and maintaining the erosion and sediment control practices required in the SWPPP and, if applicable, the party or parties that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP.

Each Contractor and Sub-Contractor shall designate one or more "trained contractors" from their company who will be responsible for implementation of the SWPPP and identifying and implementing appropriate amendments and supplements to controls and BMPs identified in the SWPPP. Trained

[1] Under some circumstances, construction activities disturbing less than one acre of land may also be required to obtain a SPDES permit, and may be eligible for authorization under GP-0-20-001. See GP-0-20-001at: http://www.dec.ny.gov/docs/water_pdf/gp020001.pdf

contractors shall meet training requirements and perform SWPPP duties in accordance with Part III.A.6 of GP-0-20-001.

Prior to initiation of construction activities, authorized representatives of all contractor and sub-contractor companies identified above shall sign a copy of the certification statement presented in **Attachment P**.

In accordance with the GP-0-20-001, the owner or operator must comply with all conditions of GP-0-20-001. All Contractors and Sub-Contractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the CWA and the ECL and is grounds for an enforcement action against the owner or operator and/or the Contractor/Sub-Contractor; permit revocation, suspension, or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Town of Manlius may order an immediate stop to all construction activity at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the owner or operator.

A copy of the SWPPP, Notice of Intent (NOI) and NOI acknowledgement letter shall be maintained on site in accordance with GP-0-20-001 Part II.C.2. The SWPPP, including changes and SWPPP documentation (i.e. inspection reports, corrective action reports) shall be maintained a minimum of five years after final stabilization of all disturbed areas.

At a minimum, and in accordance with GP-0-20-001, documented site inspections conducted at least once every seven (7) calendar will be performed by a qualified inspector to ensure all required erosion and sediment control measures are in place, properly positioned, and in good condition. These inspections will be continual for the duration of the construction phase, or until earth-disturbing construction activities have been discontinued and all disturbed areas have been permanently stabilized.

This SWPPP is meant to address the general requirements of GP-0-20-001 and to present a framework for the owner or operator and contractor(s) and sub-contractor(s) to utilize for compliance. If unanticipated site conditions warrant additional methods of control, the Contractor, in consultation with the project SWPPP Inspector, shall implement those measures in accordance with NYS Standards and Specifications referenced above. GZA GeoEnvironmental of New York (GZA) assumes no responsibility for permit compliance by the applicable parties.

1.0 OVERVIEW

This Stormwater Pollution Prevention Plan (SWPPP) was prepared on behalf of Brolex Properties, LLC by GZA GeoEnvironmental of New York (GZA) for the proposed residential development on Highbridge Road (NYS Route 92) ("Project"). This report details the onsite erosion and sediment control plans designed in accordance with NYSDEC criteria set forth in the "Standards and Specifications for Erosion and Sediment Control", July 2016. The design criteria used for this analysis is based on the "New York State Department of Environmental Conservation's Phase II Stormwater Rules" and the "New York State Stormwater Management Design Manual" (Design Manual), dated January 2015, in association with "SPDES General Permit for Stormwater Discharges from Construction Activity", dated January 29, 2020 (GP-0-20-001).

1.1 PROJECT DESCRIPTION AND SITE LOCATION

The Project site is located on the south side of New York State Route 92 (Highbridge Road), just east of Sweet Road (Highbridge Street) and Limestone Creek in the Town of Manlius, in Onondaga County New York. The Town of Manlius is listed as an MS4.

1.2 WETLANDS AND WATERBODIES

A review of the New York State Department of Environmental Conservation (NYSDEC) Environmental Resource mapping application, indicates that the Project Site is not within a DEC Freshwater Wetland (FWW) or the 100' buffer. The tax parcel is bounded on the western edge by Limestone Creek, a class C stream.

A review of the United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps indicate that no wetlands are on Site. Limestone Creek is mapped by the NWI as a riverine perennial system with an unconsolidated bottom (R2UBH).

1.3 CULTURAL RESOURCES

According to the Cultural Resource Information System mapper, the Site falls within an archeologically sensitive area. The Site was submitted to the State Historic Preservation Office as project number 20PR01417. At the time of this submission it has been assumed that no cultural resources will be impacted by the proposed project.

1.4 RARE AND ENDANGERED SPECIES

A review of the NYSDEC Environmental Resource Mapper indicates that the Site is located within the vicinity of bats listed as endangered or threatened. According to the New York Nature Explorer endangered or threatened bats are not present in the Town of Manlius.

1.5 DESCRIPTION OF PROPOSED WORK

The project consists of clearing land for the proposed construction of twelve (12) residential buildings with associated utilities, driveways, and stormwater management facilities. The estimated time for completion is within one year of receiving all necessary permits and approvals.

The proposed project consists of approximately 3.5 acre of disturbance. Project disturbance on site will be the result of rutting from tracked or rubber wheeled vehicles, vegetation clearing where necessary, earthwork/grading activities, and the installation of erosion control measures. Silt fence and/or compost filter socks and a stabilized construction entrances shall be installed where erosion or disturbance is occurring and is a direct cause of the project. A stabilized construction entrance shall be installed only when sediment tracking is occurring within the public rights-of-way. See **Attachment R** for the stabilized entrance location (if necessary). Brush mowing will be performed only as necessary in areas where right-of-way maintenance has not been recently performed.

1.6 DESCRIPTION OF SOILS

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey 2.0, the predominant soils present onsite are classified as Hydrological Soil Group (HSG) Type A, B, C, and B/D. The soils within the area of disturbance are HSG Type A. The soils within the parcel boundary are listed as the Hamlin silt loam (Hb), Honeoye silt loam (HnB), Palmyra gravelly loam (PgB), Teel silt loam (Te), and Wayland soils complex (Wn) Series.

Refer to **Attachment F** for additional soil information and NRCS soil map for the site vicinity.

2.0 EXISTING CONDITIONS

The existing Project Site consists of a residential/commercial lot including a residential/commercial building, two (2) sheds, an asphalt loop driveway, grass landscaping and mature trees. The site is surrounded by a wooded area on a slope leading down to a FEMA Zone AE floodplain with mature trees, dense underbrush and some scrub/shrub areas. Limestone Creek runs north and south on the west side of the parcel boundary.

Stormwater from the Project Site ultimately flows offsite via overland flow to the south and west. Stormwater flowing to the west discharges directly into Limestone Creek. Stormwater flowing to the south enters the FEMA Zone AE floodplain which discharges into Limestone creek to the west.

The existing drainage areas to be analyzed in this report are the areas that will be affected by the proposed construction activities. Three drainage areas totaling approximately 7.23± acres were determined to be hydrologically impacted by the construction of the proposed development.

Drainage area (E-1) consists of 4.81± acres and was calculated to have a time of concentration (Tc) of 14.4 minutes and a curve number (CN) of 55. This area is mostly comprised of grass landscaping, roof area, asphalt paving, woods, and woods/brush floodplain. Runoff from this drainage area generally flows from east to west via overland flow into Limestone Creek.

Drainage area (E-2) consists of 2.32± acres and was calculated to have a time of concentration (Tc) of 14.1 minutes and a curve number (CN) of 44. This area is mostly comprised of grass landscaping, woods, and woods/brush floodplain. Runoff from this drainage area generally flows from north to south via overland flow into the FEMA Zone AE floodplain.

Drainage area (O-1) consists of 0.1± acres and was calculated to have a time of concentration (Tc) of 7.5 minutes and a curve number (CN) of 39. This small offsite area is comprised of grass landscaping. Runoff from this drainage area generally flows offsite to the north into the New York State Route 92 (Highbridge Road) right of way.

Please refer to **Attachment G** Existing Drainage Area Map for details. Table 1 provides a summary of predeveloped peak flow rates.

TABLE 1 – PRE-DEVELOPED PEAK FLOW RATES (7.23± Acres)

Area Designation	Q_1 (cfs)	Q_2 (cfs)	Q_{10} (cfs)	Q_{100} (cfs)
E-1 (4.81 acres)	0.01	0.03	0.88	7.44
E-2 (2.32 acres)	0.00	0.00	0.01	1.07
O-1 (0.1 acres)	0.00	0.00	0.00	0.02
Total = 7.23 acres	0.01	0.03	0.89	8.51

All supporting data and calculations used to derive these results can be found in **Attachment H.**

2.1 DURATION OF CONSTRUCTION ACTIVITY

Construction activities are scheduled to begin Winter/Spring 2021 and be completed within one year.

3.0 DEVELOPED CONDITIONS

The developed drainage area is comprised of the same 7.23-acre drainage area as existing conditions. The proposed overall drainage area is divided up into five (5) sub areas. The Developed Drainage Area Map can be found in **Attachment I**.

The first drainage area (D-1) consists of 0.77 acres. This area includes the asphalt entrance and cul-de-sac and two (2) of the proposed housing units (buildings '1' and '2'). This area also includes the asphalt driveways for each building, as well as a bioretention basin. Runoff from this drainage area generally flows from northeast to southwest from the asphalt cul-de-sac, through a curb cut, into a bioretention area, and discharges to the west towards Limestone Creek. This drainage area is routed to Limestone Creek in the HydroCAD model via Reach-1. The runoff area has a curve number CN=68 and a time of concentration of 5.0 minutes.

The second drainage area (D-2) consists of 0.85 acres. This area includes six (6) of the proposed housing units (buildings '3' through '8'). This area also includes the asphalt driveways for each building, as well as a bioretention basin. Runoff from this drainage area generally flows from northeast to southwest from the south side of the asphalt cul-de-sac, into a bioretention area, and discharges to the southwest towards

the FEMA Zone AE floodplain. This drainage area is routed to Limestone Creek in the HydroCAD model via Reach-2. This runoff area has a curve number CN=75 and a time of concentration of 5.0 minutes.

The third drainage area (D-3) consists of 0.99 acres. This area includes four (4) of the proposed housing units (buildings '9' through '12'). This area also includes the asphalt driveways for each building, as well as a bioretention basin. Runoff from this drainage area generally flows from north to south, into a bioretention area, and discharges to the south towards the FEMA Zone AE floodplain. This drainage area is routed to Limestone Creek in the HydroCAD model via Reach-3 and Reach-4. This runoff area has a curve number CN=62 and a time of concentration of 5.0 minutes.

The fourth drainage area (BYPASS-1) consists of 3.01 acres. This area consists of the western portion of the existing wooded slope and a portion of the FEMA Zone AE floodplain. Runoff from this area is downstream of the proposed development (thus bypass) and flows overland to the south and west into the FEMA Zone AE floodplain, and discharges into Limestone Creek. This runoff area has a curve number CN=56 and a time of concentration of 19.0 minutes.

The fifth drainage area (BYPASS-2) consists of 1.61 acres. This area consists of the eastern portion of the existing wooded slope and a portion of the FEMA Zone AE floodplain. Runoff from this area is downstream of the proposed development (thus bypass) and flows overland to the south and west into the FEMA Zone AE floodplain, and discharges into Limestone Creek. This drainage area is routed to Limestone Creek in the HydroCAD model via Reach-4. This runoff area has a curve number CN=47 and a time of concentration of 18.2 minutes.

Table 2 summarizes the post-developed peak flow rates for the drainage areas prior to detention.

TABLE 2 - DEVELOPED PEAK FLOW RATES (7.23 ± Acres)

Area Designation	Q_1 (cfs)	Q_2 (cfs)	Q_{10} (cfs)	Q_{100} (cfs)
D-1 (0.77 acres)	0.18	0.37	1.13	3.36
D-2 (0.85 acres)	0.55	0.85	1.90	4.67
D-3 (0.99 acres)	0.02	0.14	0.88	3.38
BYPASS-1 (3.01 acres)	0.01	0.03	0.57	4.28
BYPASS-2 (1.61 acres)	0.00	0.00	0.02	1.00
Total = 7.23 acres	0.76	1.39	4.50	16.69

All supporting data and calculations used to derive the post-developed peak flow rates can be found in **Attachment J**.

3.1 ROUTED OUTFLOWS

The three (3) proposed bioretention areas are designed to accommodate the proposed development to reduce the developed peak flow rates to less than the existing rates. The flows from the development will flow to a bioretention area in each drainage area (D-1, D-2, D-3) via overland flow and underground

drainage piping. The bioretention area in drainage area D-1 includes a standpipe outlet structure with and orifice to restrict flows below those of pre-developed conditions while ensuring positive drainage due to lose proximity the building '2' and '3'. An emergency spillway is also included in the D-1 bioretention area at the west side of the basin. Discharge from the bioretention area, including the emergency spillway, will be directed west through drainage area BYPASS-1 towards Limestone Creek via Reach-1 in the HydroCAD model. The bioretention area in drainage area D-2 includes a spillway at the south side of the basin. The spillway will restrict flows below those of pre-developed conditions. Discharge from the bioretention area will be directed south and west through drainage area BYPASS-1 towards Limestone Creek via Reach-2 in the HydroCAD model. The bioretention area in drainage area D-3 includes a spillway at the south side of the basin. The spillway will restrict flows below those of pre-developed conditions. Discharge from the bioretention area will be directed south and west through drainage area BYPASS-2 towards Limestone Creek via Reach-3 and Reach-4 in the HydroCAD model. The "Reach" node feature is used to accurately detail the connection of the drainage areas as depicted on the Developed Drainage Area Map, **Attachment I**.

3.2 SUMMARY OF PEAK FLOW RATES

Table 3 compares the existing vs. developed peak flow rates for the overall development after routing.

TABLE 3 - EXISTING VS. DEVELOPED PEAK FLOW RATES (OVERALL 7.23± ACRES)

Storm Frequency	$Q_{Existing}$ (cfs)	$Q_{Developed}$ (cfs)	% Change
1	0.01	0.01	0%
2	0.03	0.03	0%
10	0.89	0.57	-35.9%
100	8.51	7.41	-12.9%

These results show a reduction in overall peak rate discharge from the site is achieved.

4.0 WATER QUALITY, CHANNEL PROTECTION AND RUNOFF REDUCTION VOLUME

In keeping with the goals of the NYSDEC Stormwater Pollution Prevention Control and SPDES General Permit GP-0-20-001 associated with long term development, in order to meet pollutant removal goals, Runoff Reduction and Source Control practices have been implemented to provide the required Runoff Reduction volume (RRv). Water Quality volume (WQv) and Stream Channel Protection volume (CPv) have been fully reduced by RRv standard practices. This is being provided by the three (3) bioretention areas in each of the drainage areas (D-1, D-2, D-3). Table 4 below shows the required and provided Water Quality, Channel Protection, and Runoff reduction volumes for the development.

TABLE 4 - WATER QUALITY, CHANNEL PROTECTION, AND RUNOFF REDUCTION VOLUME

Water Quality		***Channel Protection***		***Runoff Reduction***	
WQv Req'd	**WQv Provided**	**CPv Req'd**	**CPv Provided**	**Min RRv Req'd**	**RRv Provided**
(ac-ft)	*(ac-ft)*	*(ac-ft)*	*(ac-ft)*	*(ac-ft)*	*(ac-ft)*
0.11	0.22	0.03	Fully Reduced by RRv	0.056	0.17

5.0 STORMWATER MANAGEMENT PLANNING

The NYS Stormwater Design Manual has created a five-step planning process for addressing stormwater management in new developments. This process is intended to guide the designer through steps that maintain pre-construction hydrologic conditions of the site.

The five steps include:

1. Site planning to preserve natural features and reduce impervious cover;
2. Calculations of the water quality volume for the site;
3. Incorporation of green infrastructure techniques and standard SMP's with Runoff Reduction Volume (RRv) capacity;
4. Use of standard SMP's where applicable, to treat the portion of Water Quality volume not addressed by green infrastructure techniques and standard SMP's with RRv capacity; and
5. Design of volume and peak rate control practices where required.

The five-step process has been applied to the site as follows:

1. As best as possible, the site has been developed in the less sensitive areas of the subject property;
2. Calculations for Water Quality volume can be found in **Attachment K**;
3. Green Infrastructure Planning practices have been incorporated into the design of the project. Reduction of clearing and grading, and soil restoration are two examples of planning practices used in this development;
4. Bioretention areas have been designed to treat the required Water Quality volume for the development (see **attachment I**); and
5. The bioretention areas have also been designed to control the balance of the peak flows (see **attachment J**).

5.1 TECHNICAL JUSTIFICATION FOR RUNOFF REDUCTION REQUIREMENTS (PER NYS SWDM CH. 5)

- **Preservation of Undisturbed Areas:** Undisturbed areas will be conserved during and after construction.

- **Preservation of Buffers:** All buffers will be conserved during and after construction.
- **Reduction of Clearing and Grading:** Clearing and grading limits shall be the minimum necessary to build the cul-de-sac, driveways, foundations, utilities and stormwater management facilities.
- **Locating Development in Less Sensitive Areas:** The development has been located in areas that will create the least impact to sensitive areas.
- **Open Space Design:** Open space design techniques have been utilized to the greatest extent practical.
- **Soil Restoration:** Deep ripping and decompaction will be done in grass areas; where practical, following construction. Soil amendments (profile or approved equal) will be added to the hydro seed mix.

5.2 PLANNING PRACTICES FOR REDUCTION OF IMPERVIOUS COVER

- **Roadway Reduction:** Minimum roadway widths and lengths have been utilized. The proposed width is the minimum necessary to allow fire apparatus to the proposed development.
- **Sidewalk Reduction:** N/A.
- **Driveway Reduction:** Driveway lengths and widths have been minimized as much as possible. The proposed width is the minimum necessary to allow fire apparatus to the proposed development.
- **Cul-de-sac Reduction:** The proposed geometry is the minimum necessary to allow fire apparatus to the proposed development.
- **Building Footprint Reduction:** The proposed building footprints depicted within the project plans are believed to the minimum sizes to provide adequate housing.
- **Parking Reduction:** N/A.

5.3 TECHNIQUES FOR RUNOFF REDUCTION

- **Conservation of Natural Areas:** Undisturbed areas will be conserved during and after construction, these areas will not be placed into a permanent easement.
- **Sheet flow to Riparian Buffers or Filter Strips:** Stormwater flows will be treated through stormwater management areas and grass filter strips prior to discharging offsite.
- **Vegetated swale:** Proposed storm sewers and vegetated swales are proposed to convey runoff to the stormwater management facilities.
- **Tree planting:** Trees will be planted in accordance with the landscaping plan.
- **Rooftop disconnection:** The roof leaders from each building will daylight to bioretention area in each drainage area.
- **Stream Daylighting:** N/A.
- **Rain Gardens:** Rain gardens are not practical in this development due to size of the project. Bioretention facilities are proposed.

- **Green Roofs:** Green roofs will not be used to treat runoff from the proposed buildings. Rooftop runoff will be directed to the bioretention areas.
- **Stormwater planters:** Stormwater planters are not proposed to treat runoff from the proposed buildings due to space limitations/ constraints.
- **Rain Barrels/ Cisterns:** Rain barrels/ cisterns will not be used to treat stormwater runoff from the proposed buildings. Infrequent use of the collection system by the property owner could cause unintended discharge of the collected water.
- **Porous Pavement:** Porous pavement will not be used to treat runoff.

5.4 DURATION OF CONSTRUCTION ACTIVITY

Earth moving activities including the construction of the cul-de-sac, driveways, utilities, building foundations, and stormwater management facilities, to begin after all necessary local and state approvals have been granted and to be completed within 1 year.

6.0 POLLUTION PREVENTION CONTROL MEASURES

Temporary stabilization practices for this site include siltation fence, Compost Filter Socks, check dams and a stabilized construction entrance where necessary. See drawings “Erosion and Sediment Control Plans” and “NYSSESC Guidance for Erosion and Sediment Control Practice Installation” for additional Erosion and Sediment Control Details and Notes.

6.1 ONSITE CONSTRUCTION MATERIAL STORAGE

Adequate supplies of spill kit materials and equipment shall be kept in the hazardous material storage area and any on-site fueling and maintenance areas. Spill kit equipment and materials shall include, but not be limited to spill pads, absorbent booms, brooms, dust pans, mops, rags, gloves, goggles, Speedi-Dri, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.

Should a spill occur, the National Grid Environmental Engineer identified in **Attachment A** must be notified to ensure proper reporting and clean up. The Environmental Engineer will proceed as appropriate in accordance with National Grid Environmental Policies and NYSDEC notification requirements.

All site work shall be performed in accordance with Title 29 of the Federal Regulations, Part 1926 Safety Health Regulations for Construction (OSHA). In addition, the site Sub-Contractor shall follow all material management practices that will reduce the risk of exposure of any material to stormwater runoff. The site subcontractor shall adhere to all the following construction practices regarding material storage:

- All materials shall be stored in an orderly manner with their appropriate manufacture’s labels and storage recommendations visible, and where possible, spillable materials will be stored under a roof or in a storage container;
- Materials should not be mixed with one another unless recommended by the manufacturer. All materials, mixed or not mixed, shall be sealed properly when not being used;

- Contractor and Sub-Contractor shall follow manufacturer's storage recommendations for proper storage of all materials and a regular inspection shall be made.
- Every vehicle shall be checked for leakage regularly and stored in the designated area. Any containers used to store petroleum or other liquids for vehicles shall be stored in proper containers and in a place protected from spilling or mixing with other liquids and placed in secondary containment.
- Contractor and/or Sub-Contractor shall provide proper storage for fertilizers, herbicides, pesticides, and paints with manufacturer's labels and storage recommendations visible. All fertilizers, herbicides, pesticides, and paints shall be applied using the minimum amount recommended by the manufacturer.

In addition to the standard management practices to be followed above, the site Contractor and Subcontractor shall also follow the following spill clean-up procedures:

- Spills of petroleum, toxins, or other hazardous materials will be reported to the New York State health Department and NYSDEC.
- Manufacturer's recommended methods of spill cleanup will be clearly posted and site personnel will be made aware of the procedures and location of clean up supplies.
- Materials and equipment necessary for cleanup will kept in a material storage area onsite to be identified by the site Contractor and/or Subcontractor.
- Equipment and materials will include, but not limited to brooms, dust pans, mops, rags, gloves, goggles, Speedi-Dri, sand, sawdust, and trash containers.
- Spills will be cleaned up immediately upon discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from and contact with the spilled substance.
- A spill report will be completed and filed on site.
- Follow manufacturers' recommendations for proper use and disposal of materials.
- Perform fueling of roadway vehicles and barges under the supervision of Contractor and Sub-Contractor personnel and keep a spill kit nearby and easily accessible.
- Work applied fertilizer into the soil to limit exposure to storm water and store partially used bags of fertilizer in sealable plastic bins.
- Use drip pans or absorbents under and around leaky vehicles.
- Potential pollutants of concern based on the proposed construction activities are indicated in the tables below. With BMPs, erosion and sedimentation controls, good housekeeping, careful material storage, and preventive maintenance, the pollution potential from these constituents will be reduced. Storm water BMPs will provide for continued sediment trapping and removal, as well as the uptake of some dissolved pollutants by vegetation.

POTENTIAL POLLUTION AREAS

AREA/ACTIVITY	POTENTIAL POLLUTANTS	POTENTIAL PROBLEM/SOLUTION
Cleared and graded areas	Sediment, fertilizer	Erosion of soils from cleared and graded areas have the potential to discharge to wetlands. Sediment and erosion controls to address. Fertilizer use shall be minimized.
Portable toilets	Sewage	Accidental spills of contents. Portable toilets shall be maintained and emptied as needed. Spills/leaks shall be reported to owner of unit(s).
Fuel tanks	Fuel oil, gasoline, and other fuels	Accidental spills. Follow procedures for spill prevention and response as detailed in Section 4.4.
Staging areas	Sediment, fuel oil, gasoline, asphalt, concrete, vehicle fluids, paints, solvents, pesticides, fertilizer, plaster, cleaning solvents, glue, adhesives, curing compounds, wood preservatives, antifreeze/coolant, hydraulic oil/fluids, etc.	Accidental releases/spills. To be addressed by good housekeeping and careful material storage, handling, and disposal, as detailed in Section 4.4. Spill prevention kits shall be provided by the Contractor or Sub-Contractor.
Waste containers	Construction demolition debris, trash	Accidental releases of contents. To be addressed by good housekeeping practices in Section 4.4. Any contents released shall be collected to avoid entrance into wetlands/ water bodies or transport off-site.
Chemical storage areas	Asphalt, concrete, vehicle fluids, paints, solvents, pesticides, fertilizer, plaster, cleaning solvents, glue, adhesives, curing compounds, wood preservatives, antifreeze/coolant, hydraulic oil/fluids, etc.	Generally, storage of excess chemicals on-site shall not be permitted. To be addressed by good housekeeping and careful material storage, handling, and disposal, as detailed in Section 4.4.

AREA/ACTIVITY	POTENTIAL POLLUTANTS	POTENTIAL PROBLEM/SOLUTION
Dewatering operations	Sediment	Erosion of soils and turbid water from dewatering operations have the potential to discharge to wetlands. Discharge from dewatering operations, if necessary, will be passed through appropriate measures to remove suspended sediment and reduce turbidity to required levels prior to discharge to wetlands and/or surface waterbodies.

6.1.1 Application of Fertilizers Containing Nitrogen and Phosphorus

Discharges of fertilizers containing nitrogen or phosphorus shall be minimized as follows:

- Apply at a rate and in amounts consistent with manufacturers' specifications;
- Apply at the appropriate time of year for the site's location and to coincide as closely as possible to the period of maximum vegetation uptake and growth;
- Avoid applying before heavy rains that could wash away the fertilizer;
- Never apply to frozen ground;
- Never apply to stormwater conveyance channels that contain flowing water; and
- Follow all federal, state, tribal, and local requirements regarding fertilizer application.

Reasons for departures from the manufacturers' specifications and these guidelines shall be documented in the SWPPP. **Attachment S** includes a form for this purpose.

6.1.2 Vehicle/Equipment Maintenance Area

Discharges of fuels, oils, or other chemicals used in vehicle equipment operation and maintenance are prohibited.

A representative of the Contractor will be present with a spill kit immediately accessible during any on-site re-fueling activities.

The spill kit will be kept in a visible and accessible location. Examples of typical items, which should be included in a spill kit, are provided in this document. Spills or contaminated surfaces shall be cleaned up immediately, using dry clean up measures where possible, and the source of the spill shall be eliminated. Surfaces shall not be cleaned by hosing the area down.

Recycled oil and oily wastes shall be disposed in accordance with all federal, state, tribal, and local requirements. If applicable, the Operator shall comply with the Spill Prevention Control and Countermeasures (SPCC) requirements in 40 CFR 112 and Section 311 of the Clean Water Act.

6.2 GOOD HOUSEKEEPING BMP'S

6.2.1 Storage, Handling, and Disposal of Construction Products, Materials, and Wastes:

Pesticides, Herbicides, Insecticides, Fertilizers, and Landscape Materials: Products shall be stored within a locked container/trailer, covered by plastic sheeting, temporary roofs, or other suitable means to prevent the products from being contacted by rainwater; or an effective means of preventing the discharge of pollutants from areas used to store products shall be provided. Comply with all application and disposal requirements included on the registered pesticide, herbicide, insecticide, and fertilizer label.

Diesel Fuel, Oil, Hydraulic Fluids, Petroleum Products, and Other Chemicals: Chemicals shall be stored in watertight containers, which shall be kept in a locked container/trailer, covered by plastic sheeting, temporary roofs, or other suitable means to prevent the products from being contacted by rainwater. These chemicals shall not be stored within 100' of an environmentally sensitive area (i.e. wetlands or streams). If cover is not provided, then secondary containment (e.g., spill berms, decks, spill containment pallets) shall be used, and spill kits shall be readily accessible. Spills shall be cleaned up immediately in accordance with the Contractor-submitted Spill Prevention and Response Plan in Section 3.4 of this SWPPP.

Hazardous or Toxic Wastes: In general, hazardous or toxic wastes containing paints, solvents, petroleum-based products, wood preservatives, additives, curing compounds, and acids are not anticipated to be used at the site and shall not be stored overnight on-site. If such wastes are present, they shall be separated from construction and domestic waste and stored in sealed containers constructed of suitable materials to prevent leakage and corrosion and labeled in accordance with applicable Resource Conservation and Recovery Act (RCRA) requirements and all other federal, state, tribal, and local requirements. Containers shall be stored under cover or within appropriately sized secondary containment and spill kits shall be readily available. Comply with the manufacturer's recommended disposal method and all federal, state, tribal, and local disposal requirements.

Spills of hazardous or toxic wastes shall be cleaned up immediately in accordance with the Spill Prevention and Response Plan in Section 3.4.6 of this SWPPP. For additional information and procedures for addressing hazardous or toxic wastes, refer to the Contractor-submitted site-specific Health and Safety Plan.

Construction and Domestic Waste: All waste materials shall be collected and stored in a manner that will prevent materials from entering watercourses, wetlands, or other offsite areas. Waste containers of sufficient size and number to contain wastes shall be provided. Wastes shall be placed in designated waste containers daily. Material shall be regularly collected and disposed of off-site in a manner consistent with all federal, state, and local regulations. Waste materials for this project may consist of earthen materials, granular materials, vegetative debris, and any surplus non-toxic and non-hazardous materials.

Sanitary Waste: During construction, all sanitary waste shall be collected in portable sanitary units, which shall be positioned so that they are secure and will not be tipped or knocked over. These units shall be emptied as necessary by a qualified contractor and disposed of in accordance with all State and local regulations.

6.2.2 Discharge of Solid Materials to Waters of the U.S.

All waters of the U.S. (as defined at 40 CFR Section 122.2) located on site or adjacent shall be protected from discharge of solid materials, except those as authorized by a permit issued under Section 404 of the CWA; the permit is included in **Attachment L**. Solid materials may include solid waste, building materials, fill, sewage, sediment, or any other solid substance. Structural BMPs located upgradient of waters of the U.S., such as silt fence and compost filter tubes; straw bales, sediment basins, deep sump catch basins, and floating containment booms may act to trap or block solid materials from entering waters of the U.S. Proper waste disposal and sanitary waste collection shall also mitigate the discharge of solid materials to waters of the U.S. The Contractor or Sub-Contractor is responsible for preventing any discharge of solid materials to waters of the U.S.

7.0 EROSION AND SEDIMENTATION CONTROL PLAN AND BEST MANAGAMENT PRACTICES

Erosion and sedimentation control measures to be implemented during the construction phase of this project include a stabilized construction entrance to prevent vehicle tracking in public rights-of-way and silt fence and/or compost filters which will be placed to trap and pool stormwater runoff to allow settlement of sediment before the runoff is allowed to flow downgradient of the controls and exit the work area. In addition, in areas with existing rills or other signs of concentrated flow and erosion, or such that develop during construction, or of other areas where high runoff velocities or high sediment loads may be expected, the silt fence and compost filters are to be maintained or replaced frequently or bolstered or replaced with additional measures as determined during the initial inspection or periodic field inspections.

In addition, it will be the responsibility of the Contractor or Sub-Contractor to implement additional temporary erosion and sedimentation control measures as conditions warrant during the construction period. Such additional measure may include, but not be limited to grading, erosion control matting, plastic coverings, mulching, temporary seeding, riprap, check dams, cross tracking of slopes, sedimentation basins, filtration dams, siltation sumps, silt fences, construction entrances, and other items as necessary to contain sediment and other deleterious material produced from excavation and filling, water control, dewatering, and related contract operations.

7.1.1 Management of Stockpiled Sediment or Soil

Any stockpiles or land clearing debris composed, in whole or in part, of sediment or soil, shall be managed as follows:

- Locate the piles outside of any natural buffers and physically separated from other stormwater controls;

- Protect from contact with stormwater (including run-on) using a temporary perimeter sediment barrier;
- Where practicable, provide cover or appropriate temporary stabilization to avoid direct contact with precipitation or to minimize sediment discharge;
- Do not hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any surface water, storm drain inlet, or stormwater conveyance (unless connected to a sediment basin, sediment trap, or similarly effective control); and
- Contain and securely protect from wind, as feasible.

7.1.2 Preservation of Topsoil

Native topsoil shall be preserved for re-use on the site, unless infeasible.

7.1.3 Soil Compaction by Traffic

In areas of the site where final vegetative stabilization will occur, vehicle and equipment use shall be restricted to avoid unintended soil compaction. Should unintended compaction occur in these areas, techniques to re-condition the soils to support vegetative growth shall be applied prior to seeding or planting areas.

7.1.4 Dewatering

The discharge of turbid groundwater or accumulated stormwater that is removed from excavations, trenches, foundations, vaults, or other similar points of accumulation is prohibited, unless such waters are first effectively managed by appropriate controls, including, but not limited to, sediment basins or traps, sediment socks, dewatering tanks, tube settlers, weir tanks, or filtration systems that are designed to remove sediment. The following minimum discharge requirements must also be met:

- Do not discharge visible floating solids or foam;
- Use an oil-water separator or suitable filtration device that is designed to remove oil, grease, or other products if dewatering water is found to contain these materials;
- Infiltrate dewatering water within vegetated, upland areas to the extent feasible;
- Velocity dissipation devices (e.g., check dams, riprap, grouted riprap) shall be used to provide a non-erosive flow velocity at any outlet where dewatering water is discharged;
- Backwash water shall be disposed off-site in accordance will all federal, state, and local requirements, or returned to the beginning of the treatment practice; and
- Filter media used in dewatering devices shall be replaced and/or cleaned in accordance with the manufacturer's specifications, ineffective operating condition, or as directed by the Resident Engineer.

7.1.5 Off-Site Vehicle Tracking and Dust Control

Vehicles shall be inspected for mud, dirt, and debris prior to exiting the site and precautions shall be taken as necessary to prevent tracking of excess materials from the site. Vehicle use shall be restricted to

properly-designated exit points. Anti-tracking pads or turf mats shall be installed to provide sediment removal prior to vehicle exit. Additional controls to remove sediment from vehicle tires, such as wheel washing, rumble strips, and rattle plates shall be used when necessary.

Where sediment track-out has occurred, the deposited sediment must be removed by the end of the same workday by sweeping, shoveling, or vacuuming. Hosing or sweeping sediment into any surface water, storm drain structure, or stormwater conveyance is prohibited, unless the storm drains or stormwater conveyance is connected to a sediment basin, sediment trap, or other sediment control.

Dump trucks hauling material to or from the construction site shall be covered with a tarpaulin. Several materials may be used for dust control, including but not limited to temporary mulch, spray on adhesives such as latex emulsions or resin in water sprayed onto mineral soil, sprinkling water, crushed stone, or wind barrier in the form of sediment fence or snow fence. Dust control and management procedures are discussed in the project Health and Safety plan.

7.2 TEMPORARY AND PERMAMENT EROSION CONTROL MEASURES

All erosion and sediment control measures were designed in accordance with the New York State Standards and Specifications for Erosion and Sediment Control. The site Contractor and Sub-Contractor shall adhere to all erosion and sediment control measures shown on the Storm Water Pollution and Prevention Plan. The following construction sequence must be followed to control any pollutants leaving the construction site.

- Mobilize all necessary equipment, personnel and material to the site. Proceed with Installation of Erosion & Sediment Control Practices including stabilized construction entrance. Erosion and Sediment Control Practices shall be in place prior to beginning any earthwork operations. Schedule and conduct site walk to inspect sediment and erosion control measures with Engineer. Modify sediment and erosion control measures as needed;
- Protect existing instruments, structures, vegetation, wetlands, waterbodies and utilities to remain;
- Perform grading activities and associated drainage improvements;
- Installation of cross culverts and check dams within swales;
- Installation of stormwater mitigation areas including bioretention areas;
- Final grading;
- Permanent stabilization with topsoil, seed and mulch as specified;
- In addition to these measures, the contractor shall comply with whatever additional measures may be required as ordered by the Town of Manlius;
- Provide on-going maintenance and monitoring of newly vegetated and restored areas as per the contract documents; and
- Demobilize from the job site. Remove all temporary structures, trash, debris, and other material from the site. Remove temporary controls and signage. Remove temporary sediment and erosion controls where appropriate once 80% germination has been reached for the entire site. Notify Engineer of final stabilization. Schedule and conduct site walk to inspect site with Engineer.

These activities shall be performed in such a manner that all components of activities will be completed and stabilized with vegetation and compacted stone base on the road proceeding to the next section.

The following permanent stabilization procedures shall be implemented:

- Disturbed portions of the site where construction activities have been completed shall be stabilized with topsoil, permanent seed and covered with straw no later than 14 days after the last construction activity has occurred. Soil amendments shall be added where required; and
- All disturbed areas shall be restored in accordance with Chapter 5, Table 5.3 of the 2015 New York State Stormwater management Design Manual.

7.3 LOCATION OF EROSION CONTROL MEASURES

See Erosion & Sediment Control Plans and NYSSESC Guidance for Erosion & Sediment Control Practice Installation for location, size, lengths and specifications of erosion control measures (**Attachment O & Attachment R**).

7.4 IMPLEMENTATION SCHEDULE

Stabilization measures shall initiate as soon as practicable in portion of the site where construction activities have temporarily or permanently ceased, however, in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. This requirement does not apply in the following instances:

- Where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently ceased is precluded by snow cover or frozen ground conditions, stabilization measures shall be initiated as soon as practicable. Temporary stabilization with straw tracked into the disturbed areas is required.

The onsite construction supervisor shall visually inspect all erosion control measures daily. Any measure that is damaged or becomes inoperative shall be replaced immediately. All erosion/ sediment control measures must remain in place and properly inspected and operable until all disturbed areas have been seeded and germination has been obtained.

7.5 PERMANENT WATER QUALITY AND QUANTITY CONTROLS

Bioretention areas will be constructed per the New York State Stormwater Management Design Manual and the New York Standards and Specifications for Erosion and Sediment Control. Vegetated swales designed as part of the Project will have a depth of 18 inches, provide positive drainage, side slopes that are 3:1, and a bottom width of 4 feet. Swales that have slopes greater than 4% shall be lined with filter blanket to stabilize bottoms and side slopes. Stone check dams will be used as need to maintain appropriate flow velocities in accordance with standards in the New York Standards and Specifications for Erosion and Sediment Control.

7.6 MAINTENANCE AND INSPECTION SCHEDULE

A qualified site supervisor shall assess the site prior to construction beginning and certify in an inspection report that all erosion and sediment control facilities have been completely and properly installed and functional. Once construction begins, an inspection shall be done every seven (7) days. The following should be included in the inspector's report following each visit:

- On a site map, indicate the extent of all disturbed site areas and drainage pathways. Indicate site areas that are expected to undergo initial disturbance or significant site work within the next 14-day period;
- On a site plan, indicate areas that have had temporary or permanent stabilization;
- On a site plan, indicate areas that have not had active site work within the past 14 days;
- All erosion and sediment controls shall be inspected and the approximate percent remaining of silt storage capacity (in the sediment trap basins) shall be reported in the inspection report on a weekly basis;
- Inspection of erosion and sediment control practices and any maintenance requirements should be recorded. Depths of sediment should be measured, and effectiveness should be recorded;
- If any methods of erosion or sediment control are found to be inadequate, a recommendation should be made that would bring all facilities to standards set forth by the NYSDEC;
- When installation of a new erosion/sediment control or a significant repair is needed, work must be completed and operational by no later than seven (7) calendar days from the time of the inspection, or prior to the time of predicated a significant storm event. If this timeframe is infeasible, the reason and the anticipated procedures shall also be documented;
- Repair or replacement of erosion control measures will be at the discretion of the inspector or the Owner or Operator. Determination of the extent of the repair will be made based on the performance of the erosion control measure and the cause of the failure. Failure, repair or replacement, and discussion/decisions shall be documented, with pre and post repair and replacement photographs, in the inspection report;
- An onsite logbook shall be maintained, and weekly inspections should be kept updated and available for permitting authorities upon request. Prior to construction, the site supervisor shall certify in the site logbook that the SWPPP prepared in Accordance with stormwater permit GP-0-15-002 meets all Federal, and State erosion and sediment control requirements; and
- Prior to filing the Notice of Termination or the end of the permit, the site supervisor shall perform a final site inspection. The site supervisor shall report that 80% germination has been completed. The report should also state that all erosion and sediment control methods have been removed.

7.6.1 Temporary Suspension of Work

If soil disturbance activities are temporarily suspended (e.g., winter shutdown), inspections must be continued every 30 days. Weekly inspections shall resume when earthwork activities resume.

7.7 IMPLEMENTATION OF RESPONSIBILITY

Each Contractor(s) and Sub-Contractor(s) shall be responsible for implementing the SWPPP temporary practices, structures and controls. The owner shall be responsible for implementing all permanent operation and maintenance practices and procedures. All Contractor(s) and Sub Contractor(s) and owner shall sign the certification statement. Any new Contractor(s) or Sub-Contractor(s) must likewise be added to the certification. The signed certification can be found in **Attachment P.**

7.8 CORRECTIVE ACTIONS

Corrective actions include actions taken to repair, modify, or replace any stormwater control used at the site, clean up and properly dispose of spills, releases, or other deposits, or remedy a permit violation.

Within one business day of discovery of a condition requiring a corrective, the qualified inspector shall notify the Owner or Operator, Contractor(s), and Sub-Contractor(s) and the corrective actions shall commence, and the corrective action shall be completed within a reasonable timeframe.

7.8.1 Revisions to Stormwater Pollution Prevention Plan

The SWPPP and Sediment and Erosion Control Plan must be amended in response to the following conditions:

- Whenever new operators become active in construction activities on the site;
- Changes are made to the construction plans, stormwater control measures, pollution prevention measures, or other activities at the site that are no longer reflected accurately in the SWPPP;
- Changes are made in response to corrective actions;
- To reflect areas on the site where operational control has been transferred (and the date of transfer) since initiating permit coverage;
- If inspections or investigations by site staff or reviewing/inspecting officials determine that SWPPP modifications are necessary for compliance with GP-0-20-001;
- To reflect any revisions to applicable federal, state, tribal, or local requirements that affect the stormwater control measures implemented at the site;
- If a change in chemical treatment systems or chemically-enhanced stormwater controls is made, including use of a different treatment chemical, dosage rate, or area of application; and
- Where NYSDEC determines that it is necessary to impose additional requirements on the site discharge(s). In this case, a copy of any correspondence describing such requirements and a description of the stormwater control measures that will be used to meet such requirements must be included in the SWPPP.

Changes to the SWPPP and Sediment and Erosion Control Plan shall be implemented within 14 calendar days following the occurrence of the conditions as stated above.

Records showing the date, name of the person authorizing the change, and a brief summary of the change must be maintained with the SWPPP. Hand-written notes and drawings are suitable for this purpose. See **Attachment S** for the SWPPP Amendment Logbook.

All other responsible parties who may be impacted by a change in the SWPPP must be notified.

8.0 CONCLUSION

Erosion and Sediment Control Measures, design and construction criteria conform with the "New York State Department of Environmental Conservation's Phase II Stormwater Rules" and the "New York State Stormwater Management Design Manual", date January 2015 in association with "SPDES General Permit for Stormwater Discharges from Construction Activity", dated January 29, 2020 (GP-0-20-001).

Routine maintenance procedures should be initiated immediately after the need for maintenance is recognized and completed by the close of the next workday. Contractor(s) shall utilize good housekeeping practices to minimize the possibilities of spills or leaks of potential pollutants. Hazardous materials shall be handled with the utmost care in accordance with all regulations and the recommendations of the manufacturer.

ATTACHMENT A

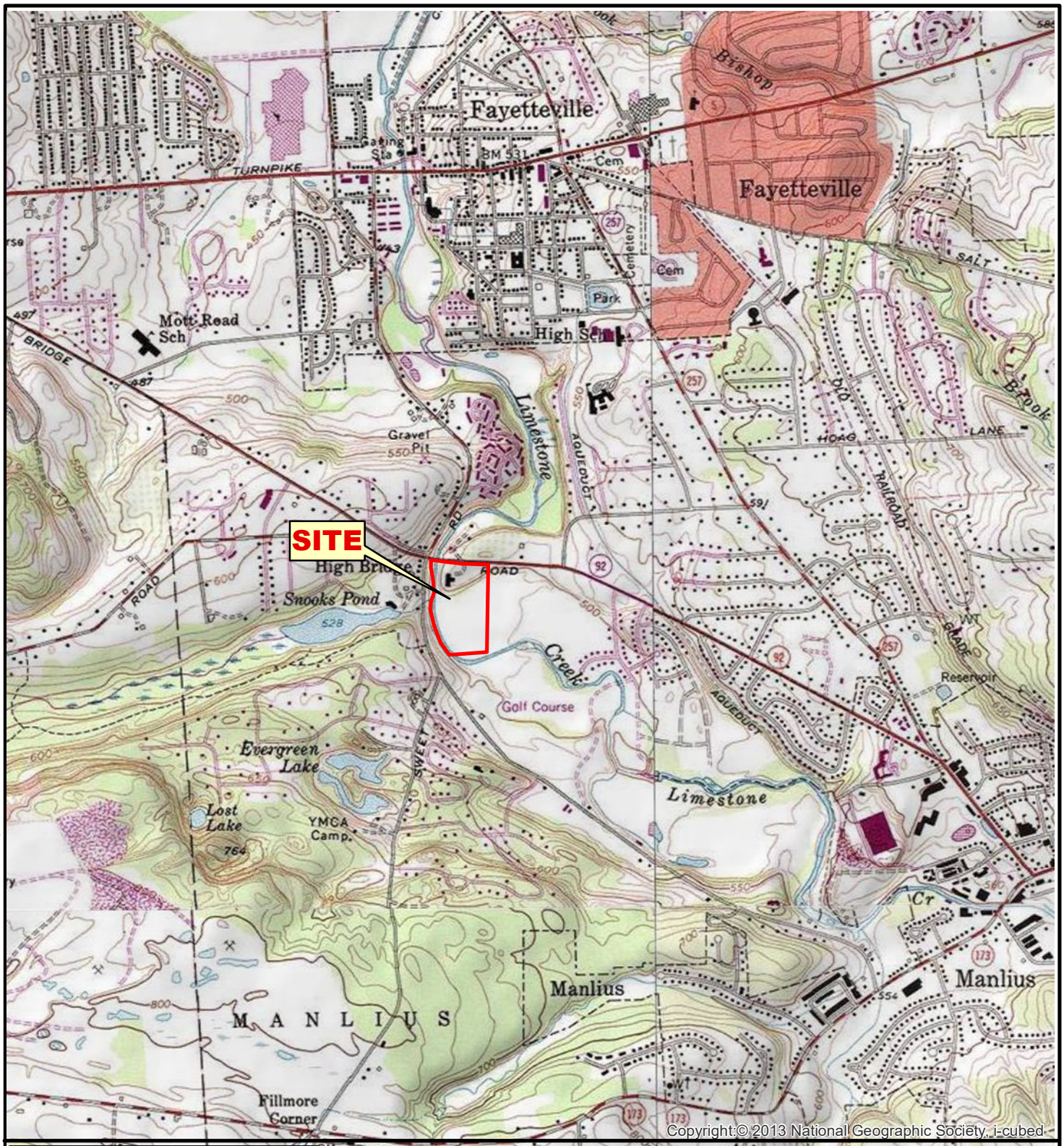
PROJECT CONTACT INFORMATION & SWPPP MEETING SIGN-IN SHEET

The personnel listed below are responsible for compliance with the SWPPP and conditions of GP-0-20-001. Individual responsibilities may include the following:

- SWPPP implementation.
- Maintenance of installed BMPs.
- Inspection and monitoring.
- Identify and address unanticipated erosion, sedimentation, and/or pollution sources that arise during construction.
- Identify and implement modifications that may be necessary to adequate prevent erosion, sedimentation, and pollutant migration.
- Document all activities associated with implementation of this SWPPP and supporting documents.

				Responsibilities	**Weekly Reports Distribution? (Y/N)**
				Notify of any Spills	

ATTACHMENT B
LOCATION MAP



This map presents land cover imagery for the world and detailed topographic maps for the United States. The map includes the National Park Service (NPS) Natural Earth physical map at 1.24km per pixel for the world at small scales, i-cubed eTOPO 1:250,000-scale maps for the contiguous United States at medium scales, and National Geographic TOPO! 1:100,000 and 1:24,000-scale maps (1:250,000 and 1:63,000 in Alaska) for the United States at large scales. The TOPO! maps are seamless, scanned images of United States Geological Survey (USGS) paper topographic maps.

Data Supplied by : esri

N W E S

0 1,000 2,000 4,000 6,000 Feet

PROJ MGR: EKR	REVIEWED BY: EKR	FREEMAN ESTATES HOUSING HIGHBRIDGE STREET TOWN OF MANLIUS, NEW YORK	JOB NO. 31.0180349.00
DESIGNED BY: RMR	DRAWN BY: RMR		
PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com	DATE: DECEMBER 2020	SITE LOCUS	FIGURE NO. 1

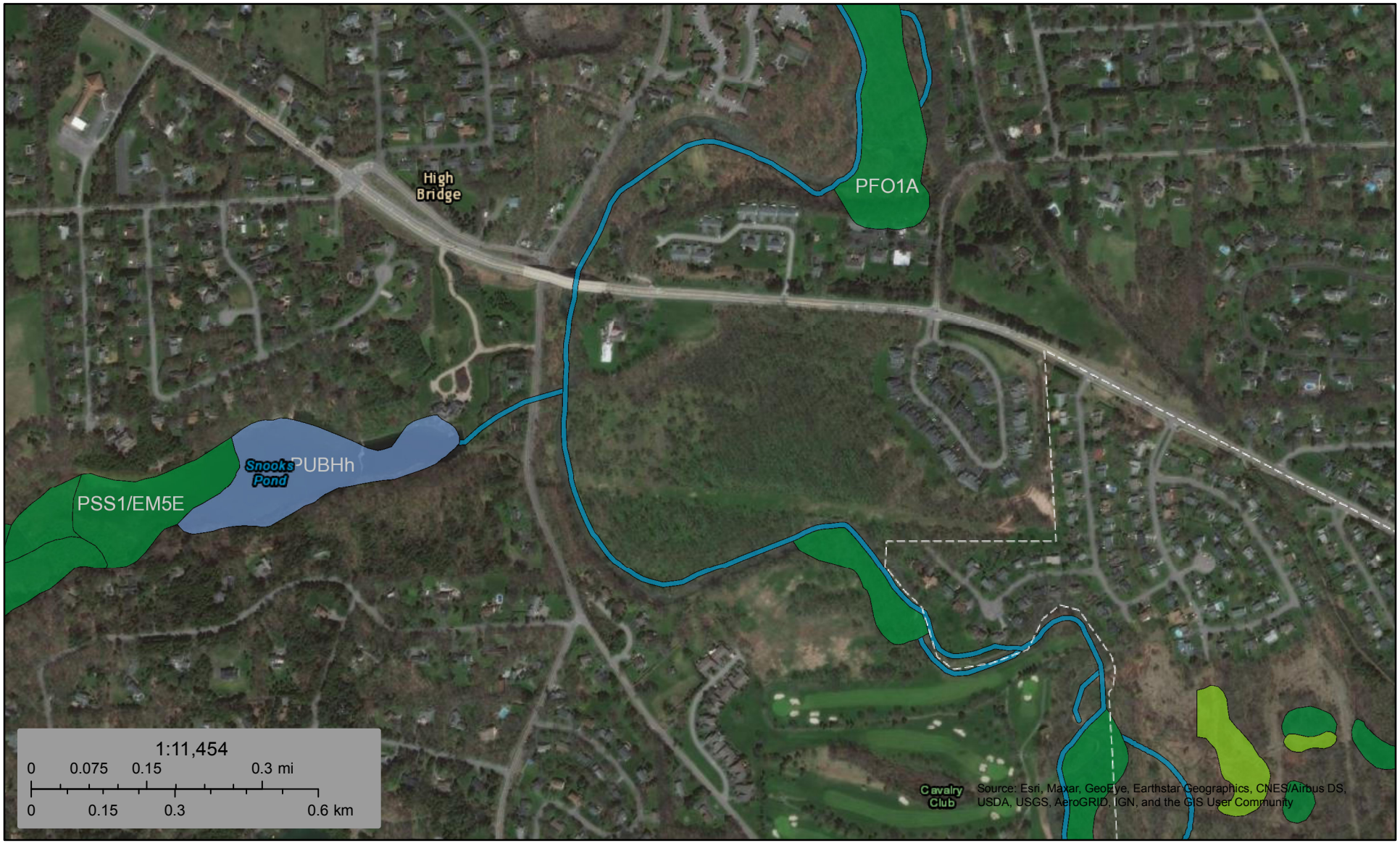
© 2020 GZA GeoEnvironmental, Inc. J:\31.0180349.00 Freeman Estates Subdivision\GIS\Figure_1_Site_Locus.mxd, 12/16/2020, 3:06:23 PM, rachel.radicello

ATTACHMENT C
NATIONAL WETLANDS INVENTORY MAP

U.S. Fish and Wildlife Service

National Wetlands Inventory

Freeman Estates Subdivision



December 16, 2020

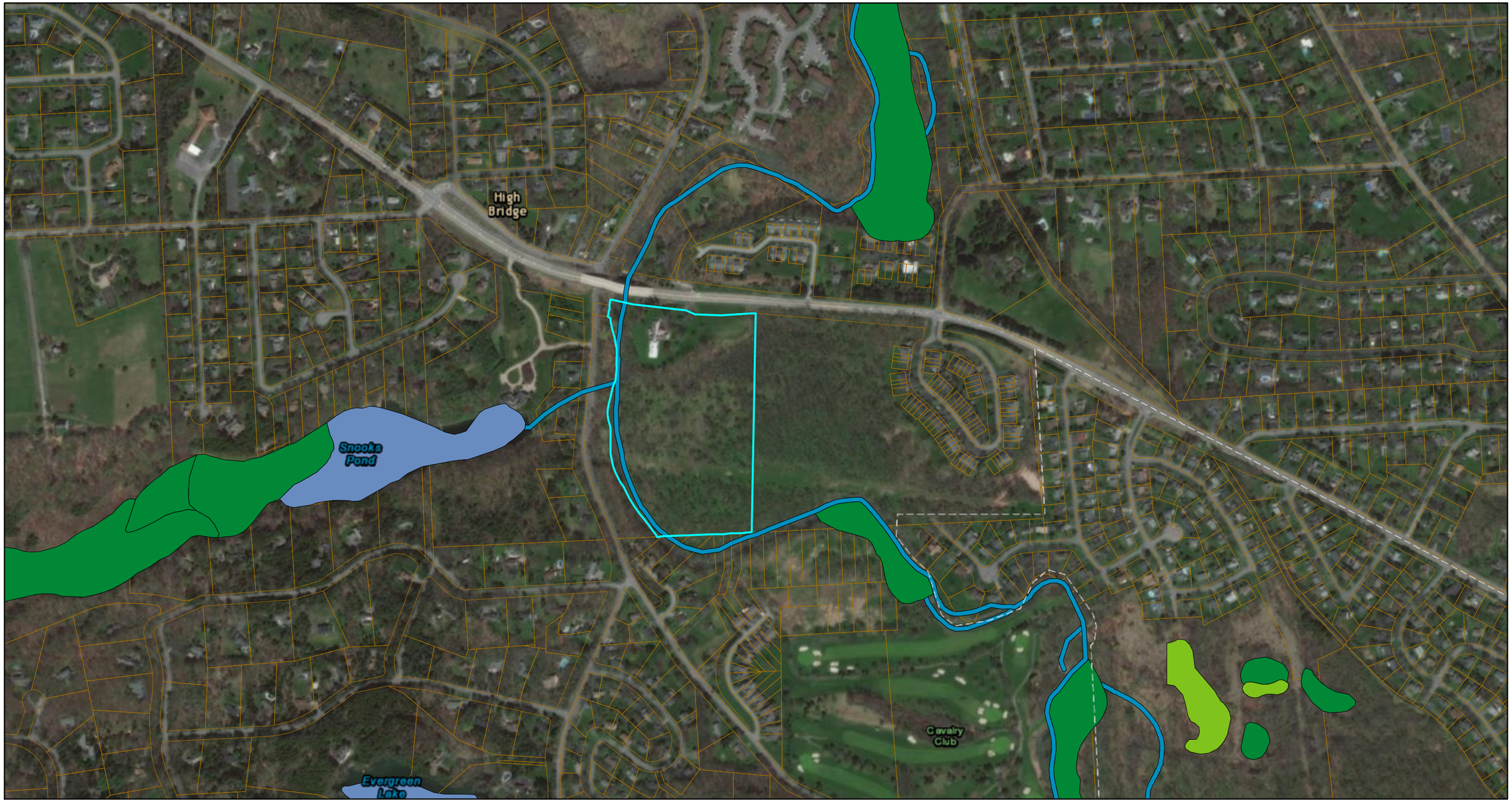
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

Freeman Estates Subdivision



December 16, 2020

1:9,028

0 0.07 0.15 0.3 mi

0 0.13 0.25 0.5 km

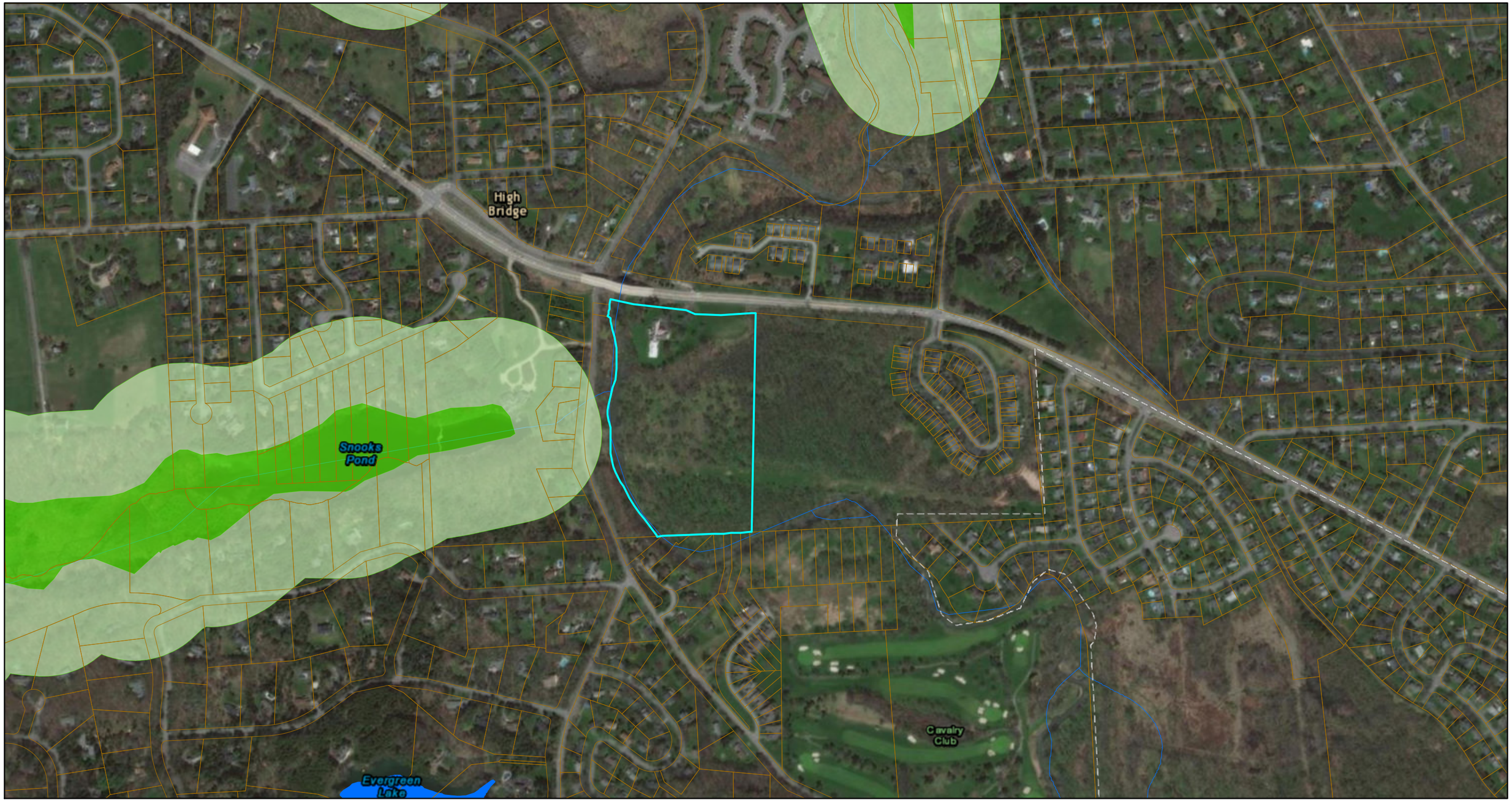
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

NYS Department of Environmental Conservation
Not a legal document

ATTACHMENT D

NYSDEC ENVIRONMENTAL RESOURCE MAP

Freeman Estates Subdivision



December 16, 2020

1:9,028

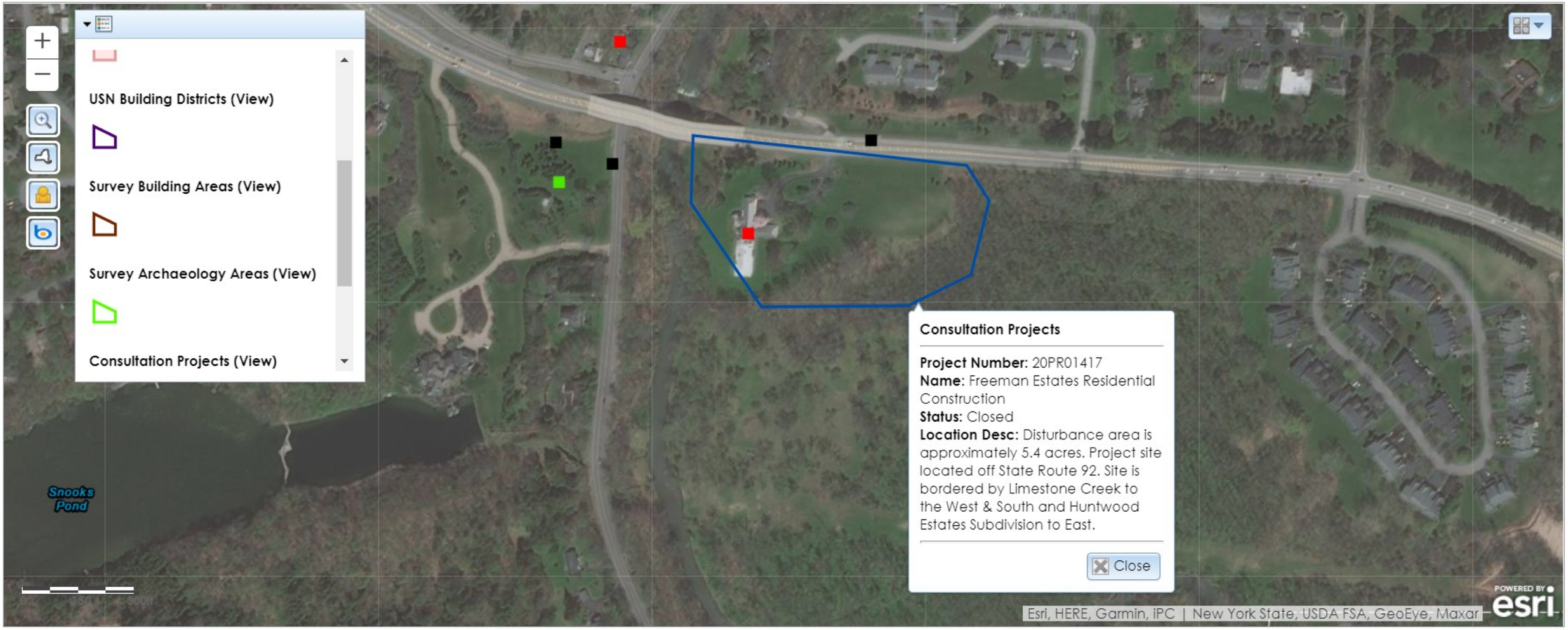
0 0.07 0.15 0.3 mi

0 0.13 0.25 0.5 km

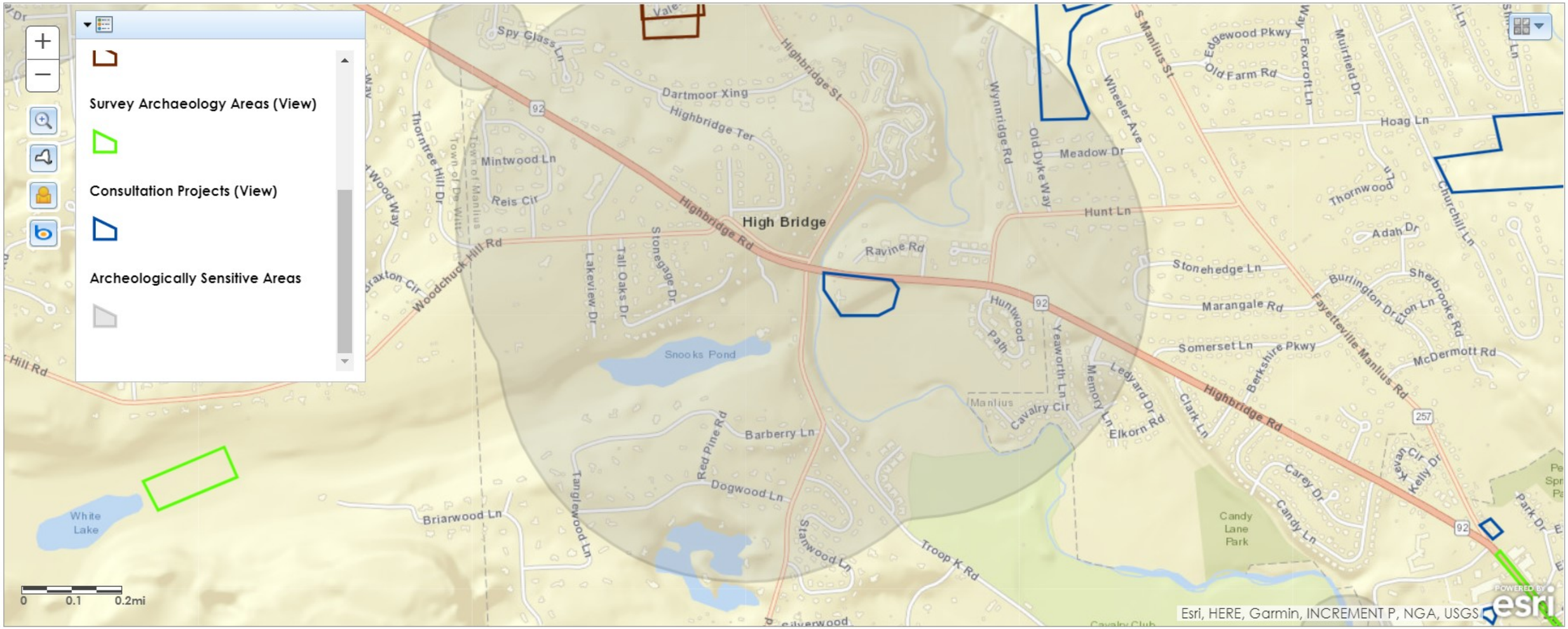
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

NYS Department of Environmental Conservation
Not a legal document

ATTACHMENT E
CULTURAL RESOURCE INFORMATION SYSTEM MAP (CRIS)



© 2020 New York State Office of Parks, Recreation & Historic Preservation. All rights reserved.



© 2020 New York State Office of Parks, Recreation & Historic Preservation. All rights reserved.

ATTACHMENT F
NATIONAL RESOURCES CONSERVATION SERVICE (NRCS) SOIL MAPPING

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 Onondaga County, New York

December 16, 2020

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

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface.....2
How Soil Surveys Are Made.....5
Soil Map.....8
Soil Map.....9
Legend.....10
Map Unit Legend.....11
Map Unit Descriptions.....11
Onondaga County, New York.....13
Hb—Hamlin silt loam.....13
HnB—Honeoye silt loam, 3 to 8 percent slopes.....14
HSC—Honeoye very stony soils, sloping.....16
PgB—Palmyra gravelly loam, 3 to 8 percent slopes.....17
Te—Teel silt loam.....18
W—Water.....20
Wn—Wayland soils complex, 0 to 3 percent slopes, frequently flooded.....20
Soil Information for All Uses.....23
Suitabilities and Limitations for Use.....23
Land Classifications.....23
Hydric Rating by Map Unit.....23
Soil Properties and Qualities.....28
Soil Qualities and Features.....28
Hydrologic Soil Group.....28
Depth to Any Soil Restrictive Layer.....32
Drainage Class.....35
Water Features.....38
Depth to Water Table.....38
References.....43

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.

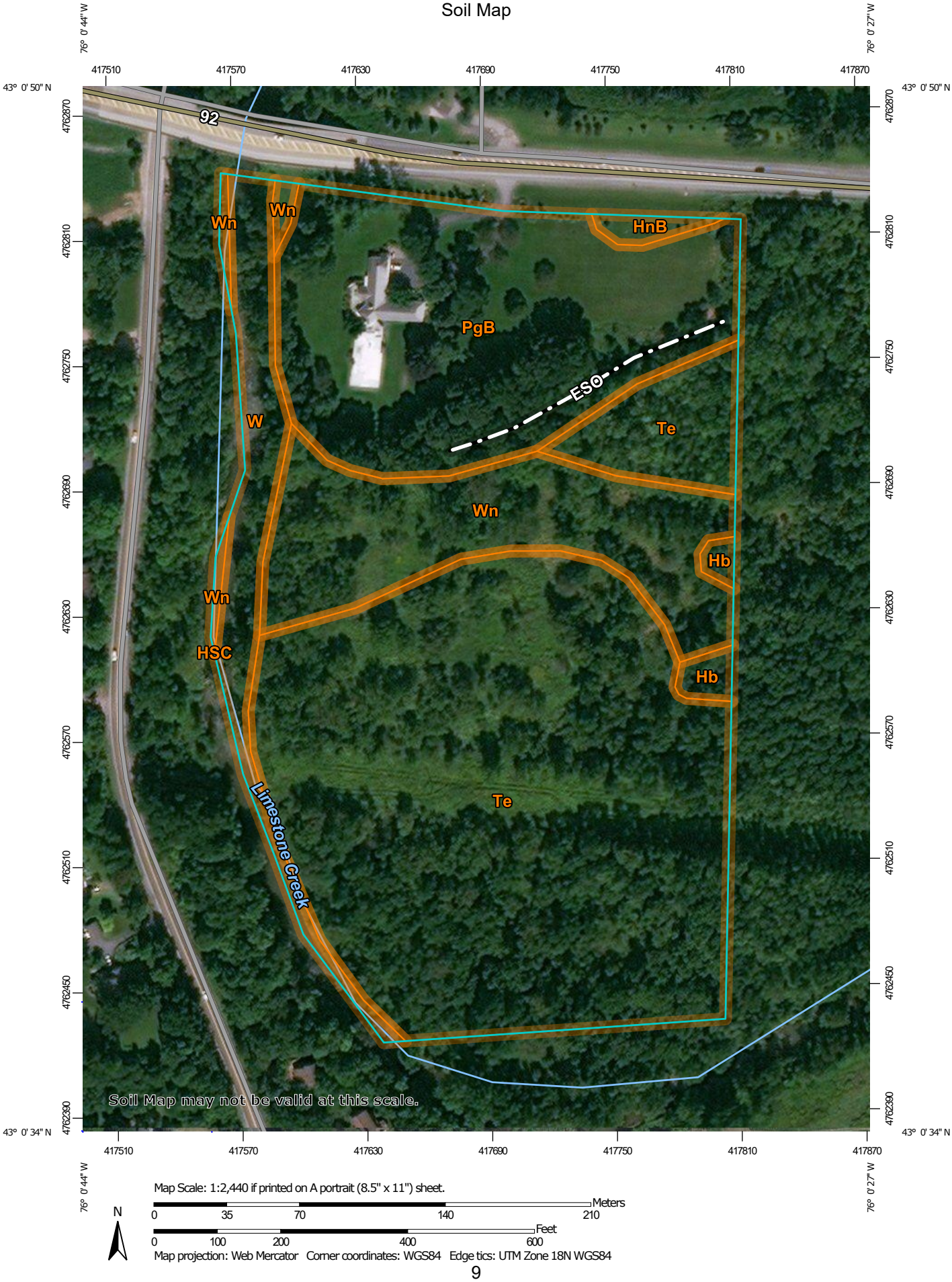
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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.

Custom Soil Resource Report
Soil Map



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 1:20,000.

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: Onondaga County, New York
Survey Area Data: Version 15, Jun 11, 2020

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

Date(s) aerial images were photographed: Jun 18, 2011—Oct 10, 2016

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
Hb	Hamlin silt loam	0.2	0.9%
HnB	Honeoye silt loam, 3 to 8 percent slopes	0.1	0.6%
HSC	Honeoye very stony soils, sloping	0.0	0.0%
PgB	Palmyra gravelly loam, 3 to 8 percent slopes	5.8	25.2%
Te	Teel silt loam	11.9	52.1%
W	Water	1.5	6.5%
Wn	Wayland soils complex, 0 to 3 percent slopes, frequently flooded	3.4	14.7%
Totals for Area of Interest		**22.9**	**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.

Onondaga County, New York

Hb—Hamlin silt loam

Map Unit Setting

National map unit symbol: 9vgz
Elevation: 360 to 1,260 feet
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Hamlin

Setting

Landform: Flood plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Silty alluvium mainly from areas of siltstone, shale, and limestone

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 16 inches: silt loam
H3 - 16 to 41 inches: silt loam
H4 - 41 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 36 to 72 inches
Frequency of flooding: OccasionalNone
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Available water capacity: High (about 11.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Herkimer

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

Teel

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

Howard

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

HnB—Honeoye silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2w3p2
Elevation: 260 to 1,780 feet
Mean annual precipitation: 31 to 57 inches
Mean annual air temperature: 41 to 50 degrees F
Frost-free period: 100 to 190 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Honeoye

Setting

Landform: Drumlins, till plains, ridges
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Calcareous loamy lodgment till derived from limestone, sandstone, and shale

Typical profile

Ap - 0 to 8 inches: silt loam
E - 8 to 10 inches: silt loam
Bt/E - 10 to 14 inches: loam
Bt1 - 14 to 23 inches: loam
Bt2 - 23 to 29 inches: gravelly loam
C - 29 to 79 inches: gravelly loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Available water capacity: Moderate (about 7.6 inches)

Interpretive groups

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

Minor Components

Lima

Percent of map unit: 5 percent
Landform: Drumlins, ridges, till plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Lansing

Percent of map unit: 4 percent
Landform: Drumlins, hills, till plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Appleton

Percent of map unit: 4 percent
Landform: Drumlins, ridges, till plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Wassaic

Percent of map unit: 2 percent
Landform: Benches, ridges, till plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

HSC—Honeoye very stony soils, sloping

Map Unit Setting

National map unit symbol: 9vgv
Elevation: 400 to 1,300 feet
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Honeoye

Setting

Landform: Drumlins, till plains
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till derived from limestone, dolomite, and calcareous shale, and from lesser amounts of sandstone and siltstone

Typical profile

H1 - 0 to 10 inches: silt loam
H2 - 10 to 29 inches: loam
H3 - 29 to 60 inches: gravelly loam

Properties and qualities

Slope: 0 to 25 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water capacity: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Kendaia

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

Conesus

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

Lima

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

Aurora

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

PgB—Palmyra gravelly loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9vkh
Elevation: 380 to 1,410 feet
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Palmyra

Setting

Landform: Deltas, outwash plains, terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy over sandy and gravelly glaciofluvial deposits, derived mainly from limestone and other sedimentary rocks

Typical profile

H1 - 0 to 14 inches: gravelly loam
H2 - 14 to 31 inches: gravelly loam
H3 - 31 to 60 inches: stratified very gravelly sand

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water capacity: Low (about 4.8 inches)

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

Minor Components

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

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

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

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

Te—Teel silt loam

Map Unit Setting
National map unit symbol: 9vkv
Elevation: 600 to 1,800 feet
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Teel and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Teel

Setting

Landform: Flood plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Silty alluvium

Typical profile

H1 - 0 to 10 inches: silt loam
H2 - 10 to 28 inches: silt loam
H3 - 28 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: OccasionalNone
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Available water capacity: High (about 9.1 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

Howard

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

Hamlin

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

Wayland

Percent of map unit: 5 percent
Landform: Flood plains
Hydric soil rating: Yes

Herkimer

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

W—Water

Map Unit Setting

National map unit symbol: 9vl1
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Wn—Wayland soils complex, 0 to 3 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: 2srgv
Elevation: 160 to 1,970 feet
Mean annual precipitation: 31 to 68 inches
Mean annual air temperature: 43 to 52 degrees F
Frost-free period: 105 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Wayland and similar soils: 60 percent
Wayland, very poorly drained, and similar soils: 30 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wayland

Setting

Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty and clayey alluvium derived from interbedded sedimentary rock

Typical profile

A - 0 to 6 inches: silt loam
Bg1 - 6 to 12 inches: silt loam
Bg2 - 12 to 18 inches: silt loam
C1 - 18 to 46 inches: silt loam
C2 - 46 to 72 inches: silty clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
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: About 0 to 6 inches
Frequency of flooding: FrequentNone
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water capacity: Very high (about 12.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F139XY009OH - Wet Floodplain
Hydric soil rating: Yes

Description of Wayland, Very Poorly Drained

Setting

Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Silty and clayey alluvium derived from interbedded sedimentary rock

Typical profile

A - 0 to 6 inches: mucky silt loam
Bg1 - 6 to 12 inches: silt loam
Bg2 - 12 to 18 inches: silt loam
C1 - 18 to 46 inches: silt loam
C2 - 46 to 72 inches: silty clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
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: About 0 inches
Frequency of flooding: FrequentNone
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water capacity: Very high (about 12.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F139XY009OH - Wet Floodplain
Hydric soil rating: Yes

Minor Components

Wakeville

Percent of map unit: 10 percent
Landform: Flood plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Hydric Rating by Map Unit

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Custom Soil Resource Report
Map—Hydric Rating by Map Unit

Map Scale: 1:2,440 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 35 70 140 210

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 Rating Polygons

Hydric (100%)

Hydric (66 to 99%)

Hydric (33 to 65%)

Hydric (1 to 32%)

Not Hydric (0%)

Not rated or not available

Soil Rating Lines

Hydric (100%)

Hydric (66 to 99%)

Hydric (33 to 65%)

Hydric (1 to 32%)

Not Hydric (0%)

Not rated or not available

Soil Rating Points

Hydric (100%)

Hydric (66 to 99%)

Hydric (33 to 65%)

Hydric (1 to 32%)

Not Hydric (0%)

Not rated or not available

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 1:20,000.

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: Onondaga County, New York
Survey Area Data: Version 15, Jun 11, 2020

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

Date(s) aerial images were photographed: Jun 18, 2011—Oct 10, 2016

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.

Table—Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Hb	Hamlin silt loam	0	0.2	0.9%
HnB	Honeoye silt loam, 3 to 8 percent slopes	0	0.1	0.6%
HSC	Honeoye very stony soils, sloping	0	0.0	0.0%
PgB	Palmyra gravelly loam, 3 to 8 percent slopes	0	5.8	25.2%
Te	Teel silt loam	5	11.9	52.1%
W	Water	0	1.5	6.5%
Wn	Wayland soils complex, 0 to 3 percent slopes, frequently flooded	90	3.4	14.7%
Totals for Area of Interest			**22.9**	**100.0%**

Rating Options—Hydric Rating by Map Unit

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at

or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group

Map Scale: 1:2,440 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 35 70 140 210

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 Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

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 1:20,000.

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: Onondaga County, New York
Survey Area Data: Version 15, Jun 11, 2020

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

Date(s) aerial images were photographed: Jun 18, 2011—Oct 10, 2016

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.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Hb	Hamlin silt loam	B	0.2	0.9%
HnB	Honeoye silt loam, 3 to 8 percent slopes	B	0.1	0.6%
HSC	Honeoye very stony soils, sloping	C	0.0	0.0%
PgB	Palmyra gravelly loam, 3 to 8 percent slopes	A	5.8	25.2%
Te	Teel silt loam	B/D	11.9	52.1%
W	Water		1.5	6.5%
Wn	Wayland soils complex, 0 to 3 percent slopes, frequently flooded	B/D	3.4	14.7%
Totals for Area of Interest			**22.9**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

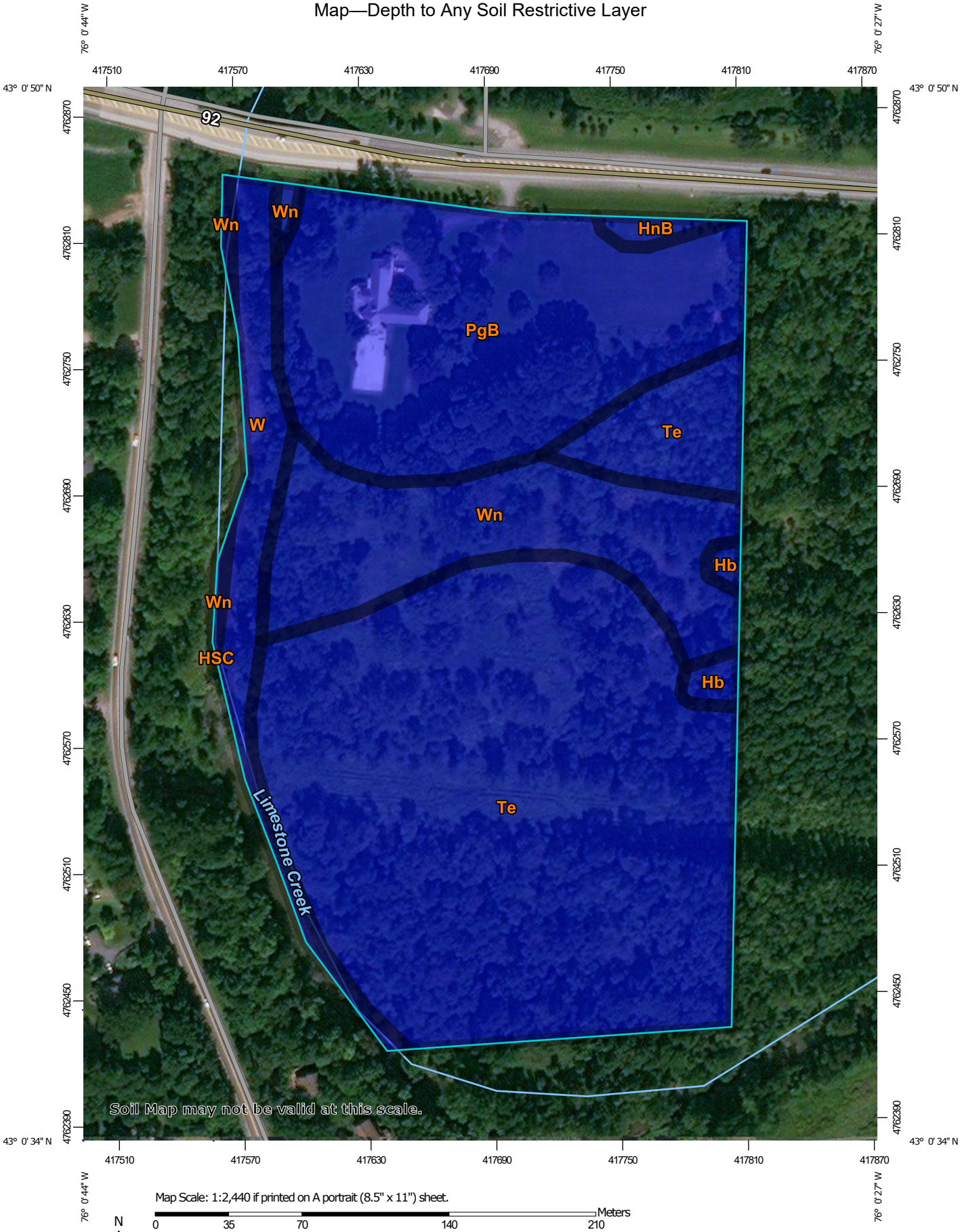
Depth to Any Soil Restrictive Layer

A "restrictive layer" is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers.

This theme presents the depth to any type of restrictive layer that is described for each map unit. If more than one type of restrictive layer is described for an individual soil type, the depth to the shallowest one is presented. If no restrictive layer is described in a map unit, it is represented by the "> 200" depth class.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Custom Soil Resource Report
Map—Depth to Any Soil Restrictive Layer



Map Scale: 1:2,440 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 35 70 140 210

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 Rating Polygons

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

Soil Rating Lines

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

Soil Rating Points

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

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 1:20,000.

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: Onondaga County, New York
Survey Area Data: Version 15, Jun 11, 2020

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

Date(s) aerial images were photographed: Jun 18, 2011—Oct 10, 2016

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.

Table—Depth to Any Soil Restrictive Layer

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
Hb	Hamlin silt loam	>200	0.2	0.9%
HnB	Honeoye silt loam, 3 to 8 percent slopes	>200	0.1	0.6%
HSC	Honeoye very stony soils, sloping	>200	0.0	0.0%
PgB	Palmyra gravelly loam, 3 to 8 percent slopes	>200	5.8	25.2%
Te	Teel silt loam	>200	11.9	52.1%
W	Water	>200	1.5	6.5%
Wn	Wayland soils complex, 0 to 3 percent slopes, frequently flooded	>200	3.4	14.7%
Totals for Area of Interest			**22.9**	**100.0%**

Rating Options—Depth to Any Soil Restrictive Layer

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

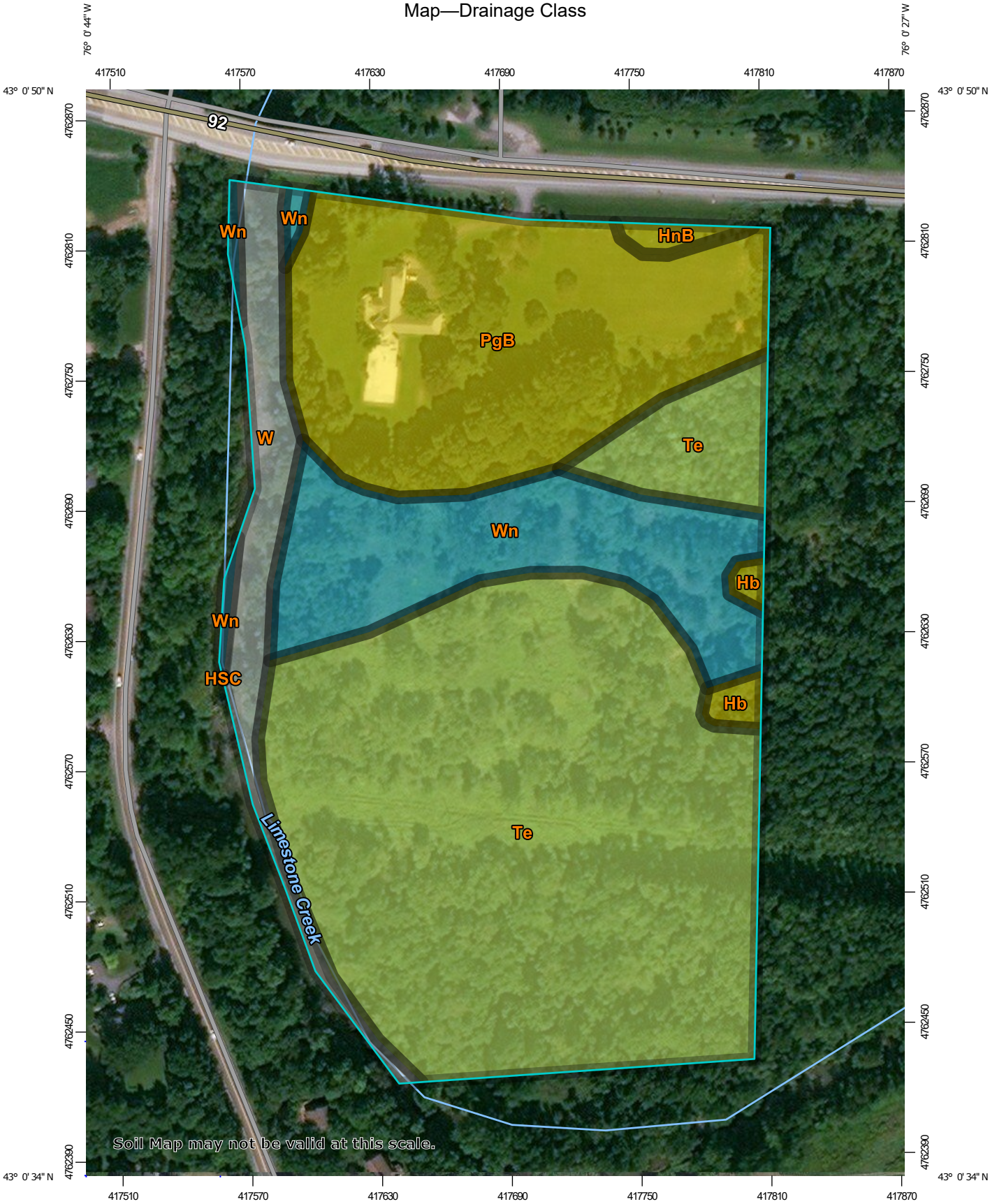
Tie-break Rule: Lower

Interpret Nulls as Zero: No

Drainage Class

"Drainage class (natural)" refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized-excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."

Custom Soil Resource Report
Map—Drainage Class



Map Scale: 1:2,440 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 35 70 140 210

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 Rating Polygons

Excessively drained

Somewhat excessively drained

Well drained

Moderately well drained

Somewhat poorly drained

Poorly drained

Very poorly drained

Subaqueous

Not rated or not available

Soil Rating Lines

Excessively drained

Somewhat excessively drained

Well drained

Moderately well drained

Somewhat poorly drained

Poorly drained

Very poorly drained

Subaqueous

Not rated or not available

Soil Rating Points

Excessively drained

Somewhat excessively drained

Well drained

Moderately well drained

Somewhat poorly drained

Poorly drained

Very poorly drained

Subaqueous

Not rated or not available

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 1:20,000.

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: Onondaga County, New York
Survey Area Data: Version 15, Jun 11, 2020

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

Date(s) aerial images were photographed: Jun 18, 2011—Oct 10, 2016

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.

Table—Drainage Class

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Hb	Hamlin silt loam	Well drained	0.2	0.9%
HnB	Honeoye silt loam, 3 to 8 percent slopes	Well drained	0.1	0.6%
HSC	Honeoye very stony soils, sloping	Well drained	0.0	0.0%
PgB	Palmyra gravelly loam, 3 to 8 percent slopes	Well drained	5.8	25.2%
Te	Teel silt loam	Moderately well drained	11.9	52.1%
W	Water		1.5	6.5%
Wn	Wayland soils complex, 0 to 3 percent slopes, frequently flooded	Poorly drained	3.4	14.7%
Totals for Area of Interest			**22.9**	**100.0%**

Rating Options—Drainage Class

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Water Features

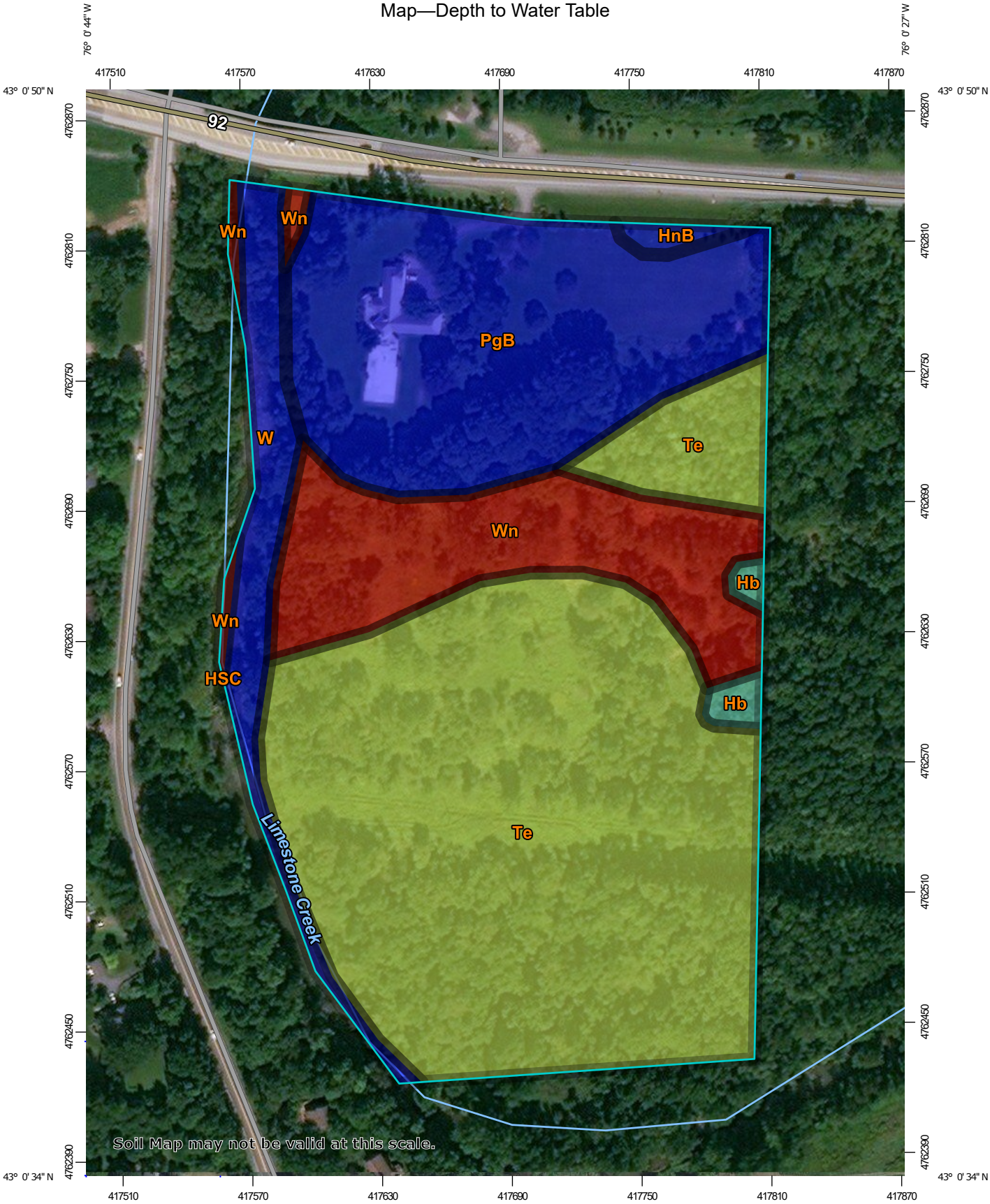
Water Features include ponding frequency, flooding frequency, and depth to water table.

Depth to Water Table

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Custom Soil Resource Report
Map—Depth to Water Table



Map Scale: 1:2,440 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 35 70 140 210

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 Rating Polygons

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

Soil Rating Lines

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

Soil Rating Points

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

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 1:20,000.

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: Onondaga County, New York
Survey Area Data: Version 15, Jun 11, 2020

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

Date(s) aerial images were photographed: Jun 18, 2011—Oct 10, 2016

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.

Table—Depth to Water Table

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
Hb	Hamlin silt loam	137	0.2	0.9%
HnB	Honeoye silt loam, 3 to 8 percent slopes	>200	0.1	0.6%
HSC	Honeoye very stony soils, sloping	76	0.0	0.0%
PgB	Palmyra gravelly loam, 3 to 8 percent slopes	>200	5.8	25.2%
Te	Teel silt loam	54	11.9	52.1%
W	Water	>200	1.5	6.5%
Wn	Wayland soils complex, 0 to 3 percent slopes, frequently flooded	0	3.4	14.7%
Totals for Area of Interest			**22.9**	**100.0%**

Rating Options—Depth to Water Table

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Interpret Nulls as Zero: No

Beginning Month: January

Ending Month: December

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

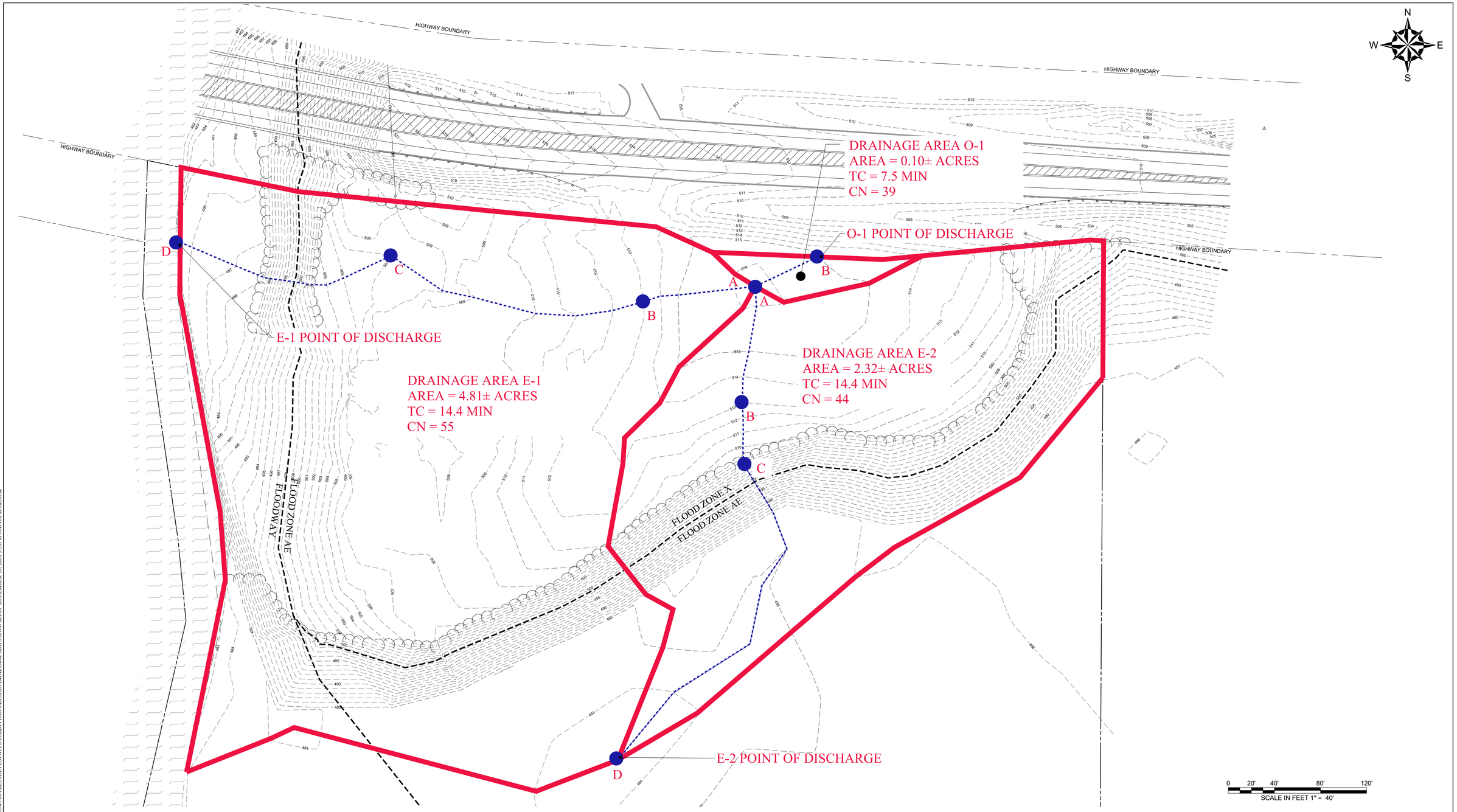
United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

ATTACHMENT G
EXISTING DRAINAGE AREA MAP



© 2020 GZA GeoEnvironmental, Inc. GZA-J:\31\0180349.00 FREEMAN ESTATES SUBDIVISION\DESIGN\DRAINAGE MAPS.DWG DA-01 DECEMBER 16, 2020 3:31PM JORMA SCHLACK

811 Know what's below. Call before you dig.

DRAFT COPY
FOR CLIENT REVIEW

NO.	ISSUE/DESCRIPTION	BY	DATE

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL OF NY (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW, UNAUTHORIZED ALTERATION IS PROHIBITED

STATE OF NEW YORK
BART A. KLETT
069423
Licensed Professional Engineer

FREEMAN ESTATES HOUSING
7430 HIGHBRIDGE ROAD
TOWN OF MANLIUS, STATE OF NEW YORK

EXISTING DRAINAGE AREA MAP

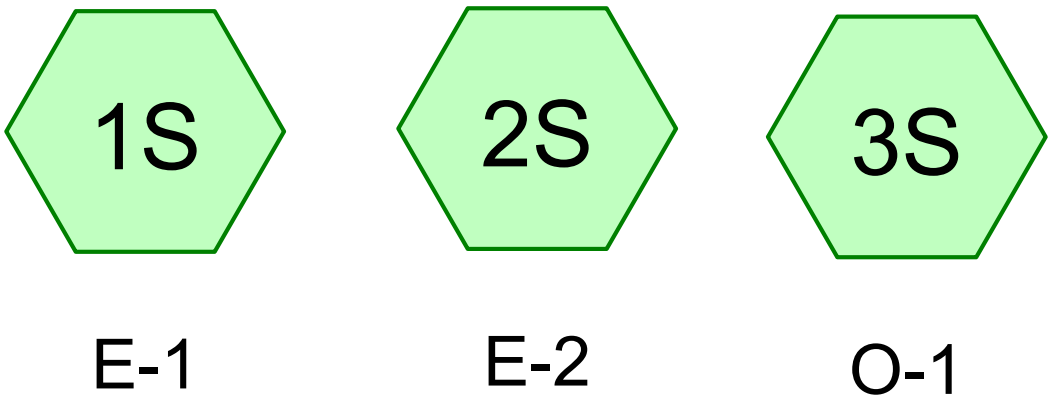
PREPARED BY:
GZA GeoEnvironmental of NY
Engineers and Scientists
www.gza.com

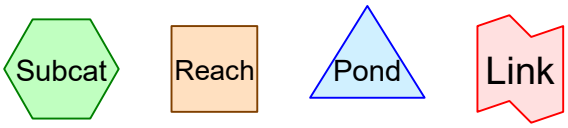
PREPARED FOR:
BROLEX PROPERTIES, LLC
5912 NORTH BURDICK STREET
EAST SYRACUSE, NY 13057

PROJ MGR: E.K.R.	REVIEWED BY: J.F.F.	CHECKED BY: C.J.M.	DWG
DESIGNED BY: E.K.R.	DRAWN BY: E.K.R.	SCALE: AS NOTED	DA-01
DATE: DEC. 16, 2020	PROJECT NO. 31.0180349.00	REVISION NO.	SHEET NO. 1 OF 2

ATTACHMENT H

EXISTING DRAINAGE AREA CALCULATIONS AND HYDROGRAPHS





Routing Diagram for Freeman Estates PreDeveloped
Prepared by GZA GeoEnvironmental, Inc., Printed 12/16/2020
HydroCAD® 10.00-25 s/n 11440 © 2019 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.960	39	>75% Grass cover, Good, HSG A (1S, 2S, 3S)
0.240	98	Paved parking, HSG A (1S)
0.200	98	Roofs, HSG A (1S)
1.860	30	Woods, Good, HSG A (1S, 2S)
1.970	79	Woods/grass comb., Good, HSG D (1S, 2S)
7.230	**51**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
5.260	HSG A	1S, 2S, 3S
0.000	HSG B	
0.000	HSG C	
1.970	HSG D	1S, 2S
0.000	Other	
7.230		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
2.960	0.000	0.000	0.000	0.000	2.960	>75% Grass cover, Good	1S, 2S, 3S
0.240	0.000	0.000	0.000	0.000	0.240	Paved parking	1S
0.200	0.000	0.000	0.000	0.000	0.200	Roofs	1S
1.860	0.000	0.000	0.000	0.000	1.860	Woods, Good	1S, 2S
0.000	0.000	0.000	1.970	0.000	1.970	Woods/grass comb., Good	1S, 2S
5.260	**0.000**	**0.000**	**1.970**	**0.000**	**7.230**	**TOTAL AREA**	

Time span=0.50-32.00 hrs, dt=0.05 hrs, 631 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: E-1 Runoff Area=4.810 ac 9.15% Impervious Runoff Depth=0.02"
Flow Length=529' Tc=14.4 min CN=55 Runoff=0.01 cfs 0.007 af

Subcatchment 2S: E-2 Runoff Area=2.320 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=482' Tc=14.1 min CN=44 Runoff=0.00 cfs 0.000 af

Subcatchment 3S: O-1 Runoff Area=0.100 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=60' Slope=0.0208 '/' Tc=7.5 min CN=39 Runoff=0.00 cfs 0.000 af

Total Runoff Area = 7.230 ac Runoff Volume = 0.007 af Average Runoff Depth = 0.01"
93.91% Pervious = 6.790 ac 6.09% Impervious = 0.440 ac

Summary for Subcatchment 1S: E-1

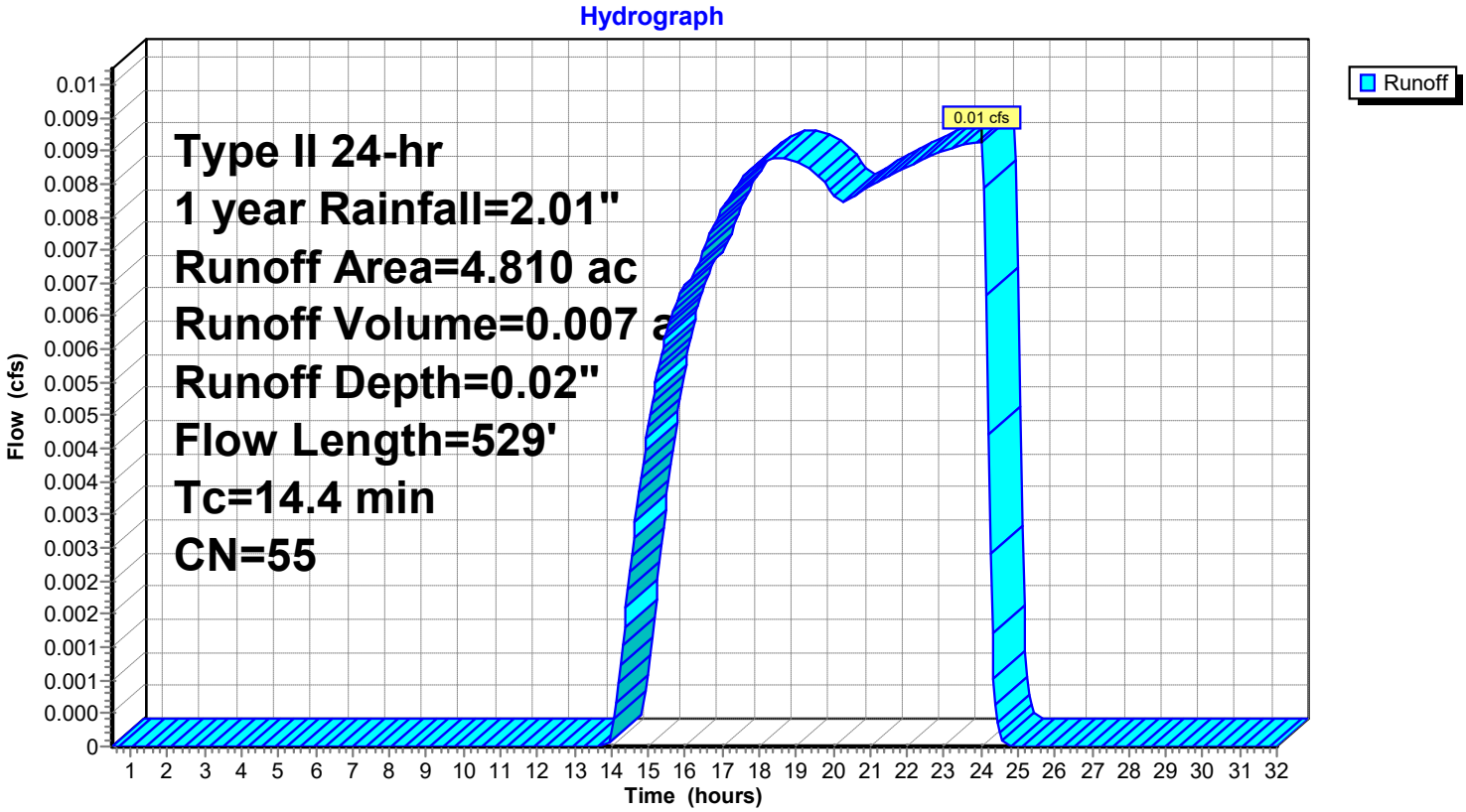
Runoff = 0.01 cfs @ 24.00 hrs, Volume= 0.007 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-32.00 hrs, dt= 0.05 hrs
Type II 24-hr 1 year Rainfall=2.01"

Area (ac)	CN	Description
1.070	30	Woods, Good, HSG A
1.480	79	Woods/grass comb., Good, HSG D
1.820	39	>75% Grass cover, Good, HSG A
0.240	98	Paved parking, HSG A
0.200	98	Roofs, HSG A
4.810	55	Weighted Average
4.370		90.85% Pervious Area
0.440		9.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.0350	0.18		**Sheet Flow, A-B Sheet Flow** Grass: Short n= 0.150 P2= 2.35"
3.5	232	0.0250	1.11		**Shallow Concentrated Flow, B-C Shallow Conc** Short Grass Pasture Kv= 7.0 fps
1.8	197	0.1270	1.78		**Shallow Concentrated Flow, C-D Shallow Conc** Woodland Kv= 5.0 fps
14.4	529	Total			

Subcatchment 1S: E-1



Summary for Subcatchment 2S: E-2

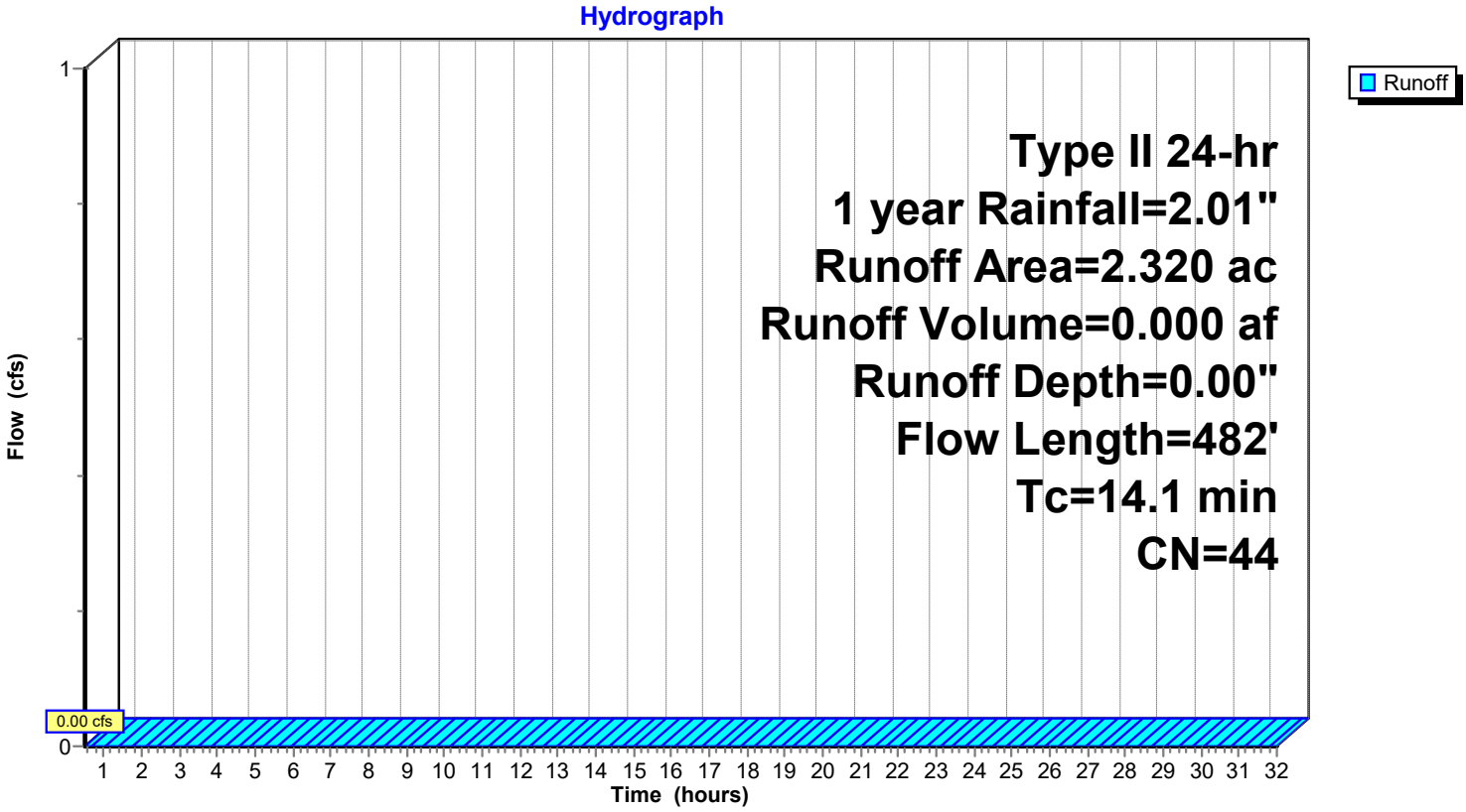
Runoff = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-32.00 hrs, dt= 0.05 hrs
Type II 24-hr 1 year Rainfall=2.01"

Area (ac)	CN	Description
0.790	30	Woods, Good, HSG A
0.490	79	Woods/grass comb., Good, HSG D
1.040	39	>75% Grass cover, Good, HSG A
2.320	44	Weighted Average
2.320		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	100	0.0305	0.17		**Sheet Flow, A-B Sheet Flow** Grass: Short n= 0.150 P2= 2.35"
0.4	55	0.1090	2.31		**Shallow Concentrated Flow, B-C Shallow Conc** Short Grass Pasture Kv= 7.0 fps
4.0	327	0.0730	1.35		**Shallow Concentrated Flow, C-D Shallow Conc** Woodland Kv= 5.0 fps
14.1	482	Total			

Subcatchment 2S: E-2



Summary for Subcatchment 3S: O-1

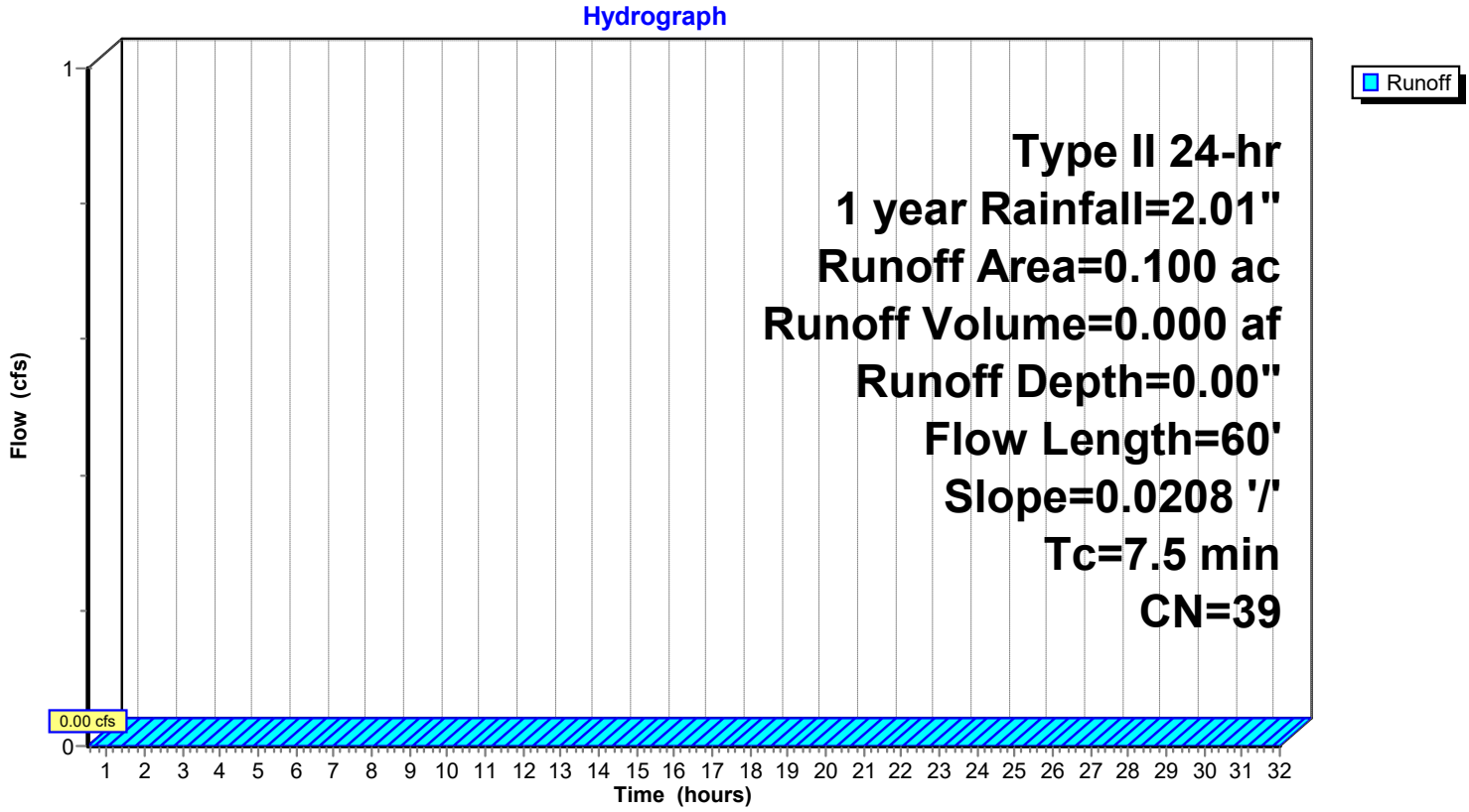
Runoff = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-32.00 hrs, dt= 0.05 hrs
Type II 24-hr 1 year Rainfall=2.01"

Area (ac)	CN	Description
0.100	39	>75% Grass cover, Good, HSG A
0.100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	60	0.0208	0.13		**Sheet Flow, A-B Sheet Flow** Grass: Short n= 0.150 P2= 2.35"

Subcatchment 3S: O-1



Time span=0.50-32.00 hrs, dt=0.05 hrs, 631 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: E-1 Runoff Area=4.810 ac 9.15% Impervious Runoff Depth=0.06"
Flow Length=529' Tc=14.4 min CN=55 Runoff=0.03 cfs 0.023 af

Subcatchment 2S: E-2 Runoff Area=2.320 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=482' Tc=14.1 min CN=44 Runoff=0.00 cfs 0.000 af

Subcatchment 3S: O-1 Runoff Area=0.100 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=60' Slope=0.0208 '/' Tc=7.5 min CN=39 Runoff=0.00 cfs 0.000 af

Total Runoff Area = 7.230 ac Runoff Volume = 0.023 af Average Runoff Depth = 0.04"
93.91% Pervious = 6.790 ac 6.09% Impervious = 0.440 ac

Summary for Subcatchment 1S: E-1

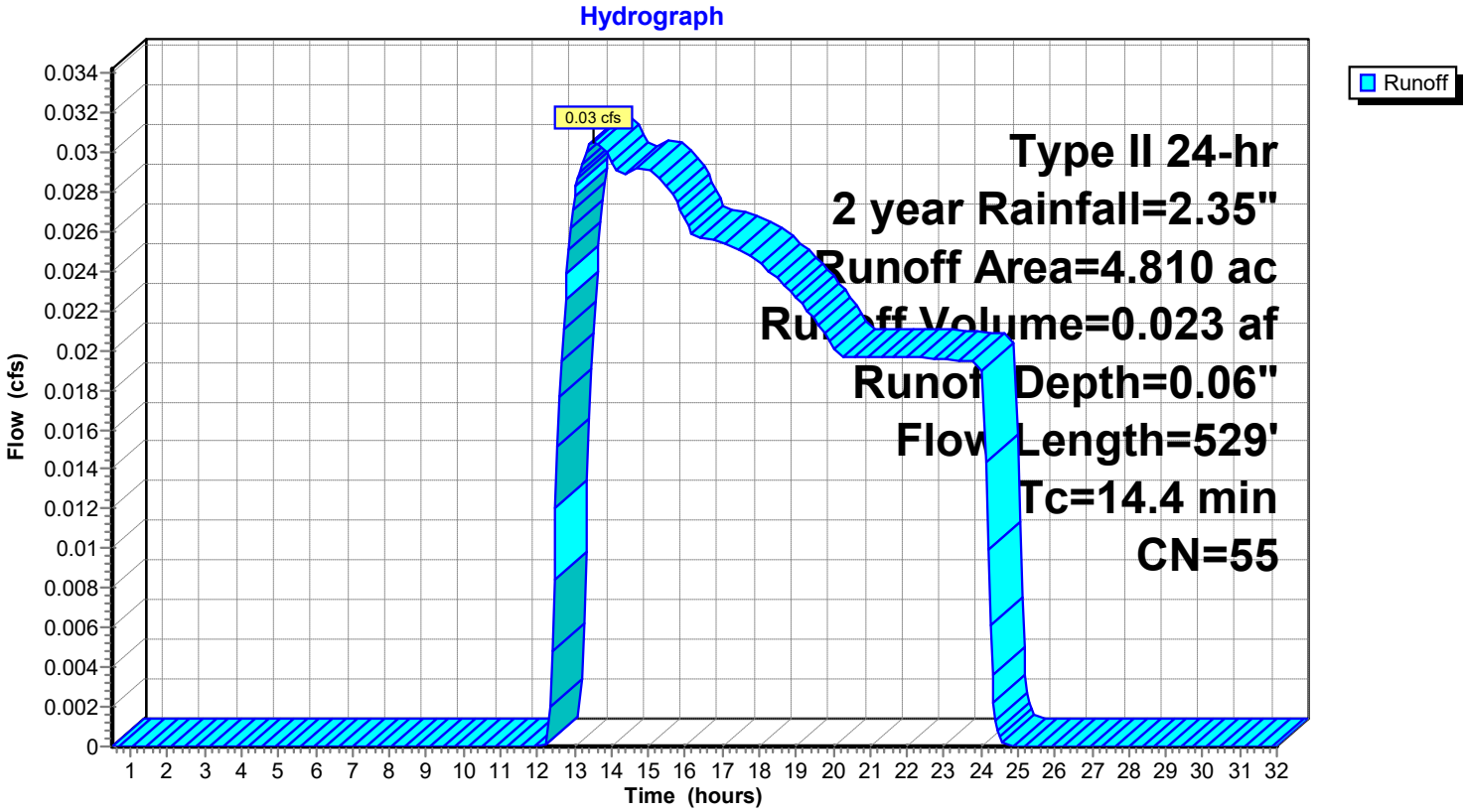
Runoff = 0.03 cfs @ 13.53 hrs, Volume= 0.023 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-32.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 year Rainfall=2.35"

Area (ac)	CN	Description
1.070	30	Woods, Good, HSG A
1.480	79	Woods/grass comb., Good, HSG D
1.820	39	>75% Grass cover, Good, HSG A
0.240	98	Paved parking, HSG A
0.200	98	Roofs, HSG A
4.810	55	Weighted Average
4.370		90.85% Pervious Area
0.440		9.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.0350	0.18		**Sheet Flow, A-B Sheet Flow** Grass: Short n= 0.150 P2= 2.35"
3.5	232	0.0250	1.11		**Shallow Concentrated Flow, B-C Shallow Conc** Short Grass Pasture Kv= 7.0 fps
1.8	197	0.1270	1.78		**Shallow Concentrated Flow, C-D Shallow Conc** Woodland Kv= 5.0 fps
14.4	529	Total			

Subcatchment 1S: E-1



Summary for Subcatchment 2S: E-2

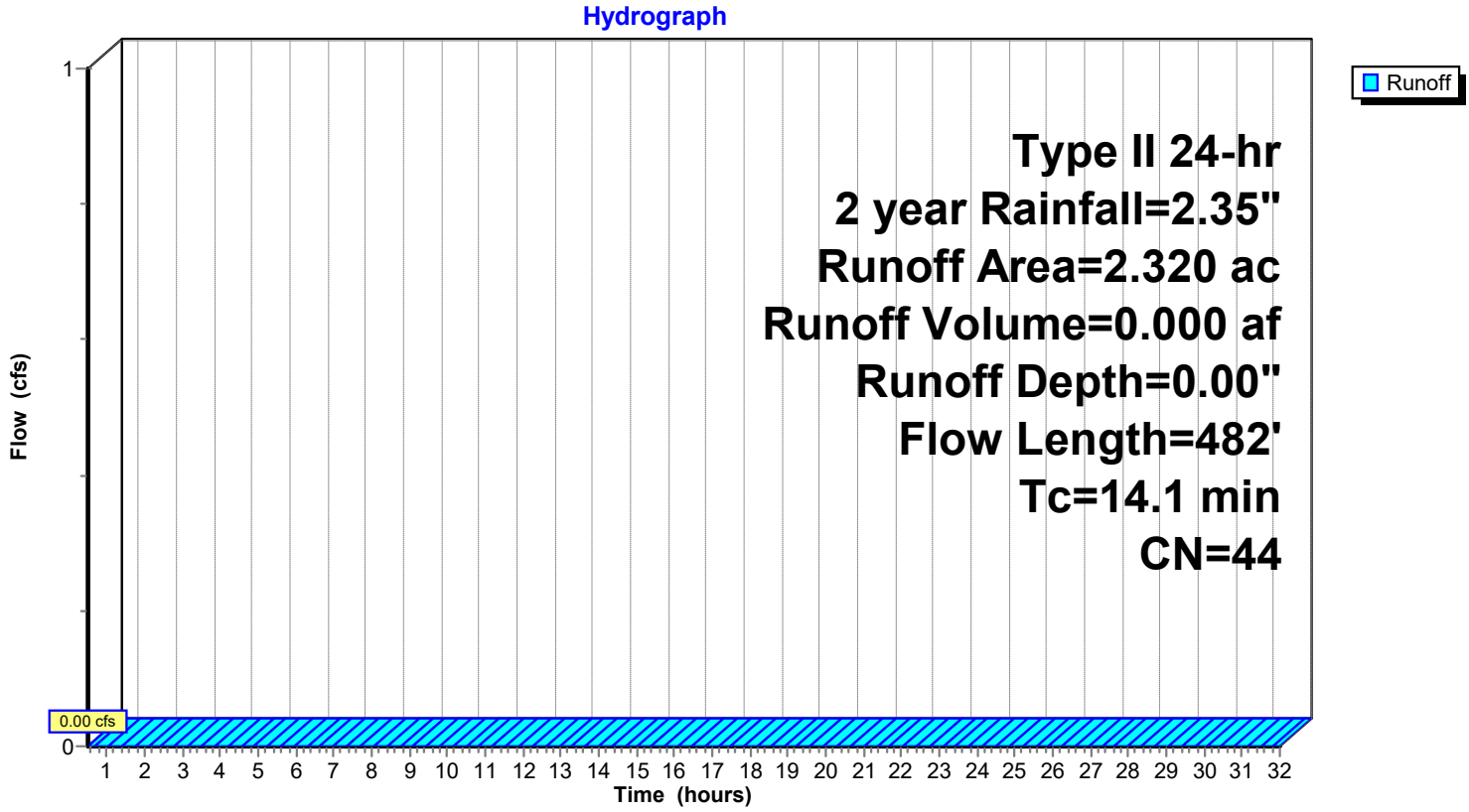
Runoff = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-32.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 year Rainfall=2.35"

Area (ac)	CN	Description
0.790	30	Woods, Good, HSG A
0.490	79	Woods/grass comb., Good, HSG D
1.040	39	>75% Grass cover, Good, HSG A
2.320	44	Weighted Average
2.320		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	100	0.0305	0.17		**Sheet Flow, A-B Sheet Flow** Grass: Short n= 0.150 P2= 2.35"
0.4	55	0.1090	2.31		**Shallow Concentrated Flow, B-C Shallow Conc** Short Grass Pasture Kv= 7.0 fps
4.0	327	0.0730	1.35		**Shallow Concentrated Flow, C-D Shallow Conc** Woodland Kv= 5.0 fps
14.1	482	Total			

Subcatchment 2S: E-2



Summary for Subcatchment 3S: O-1

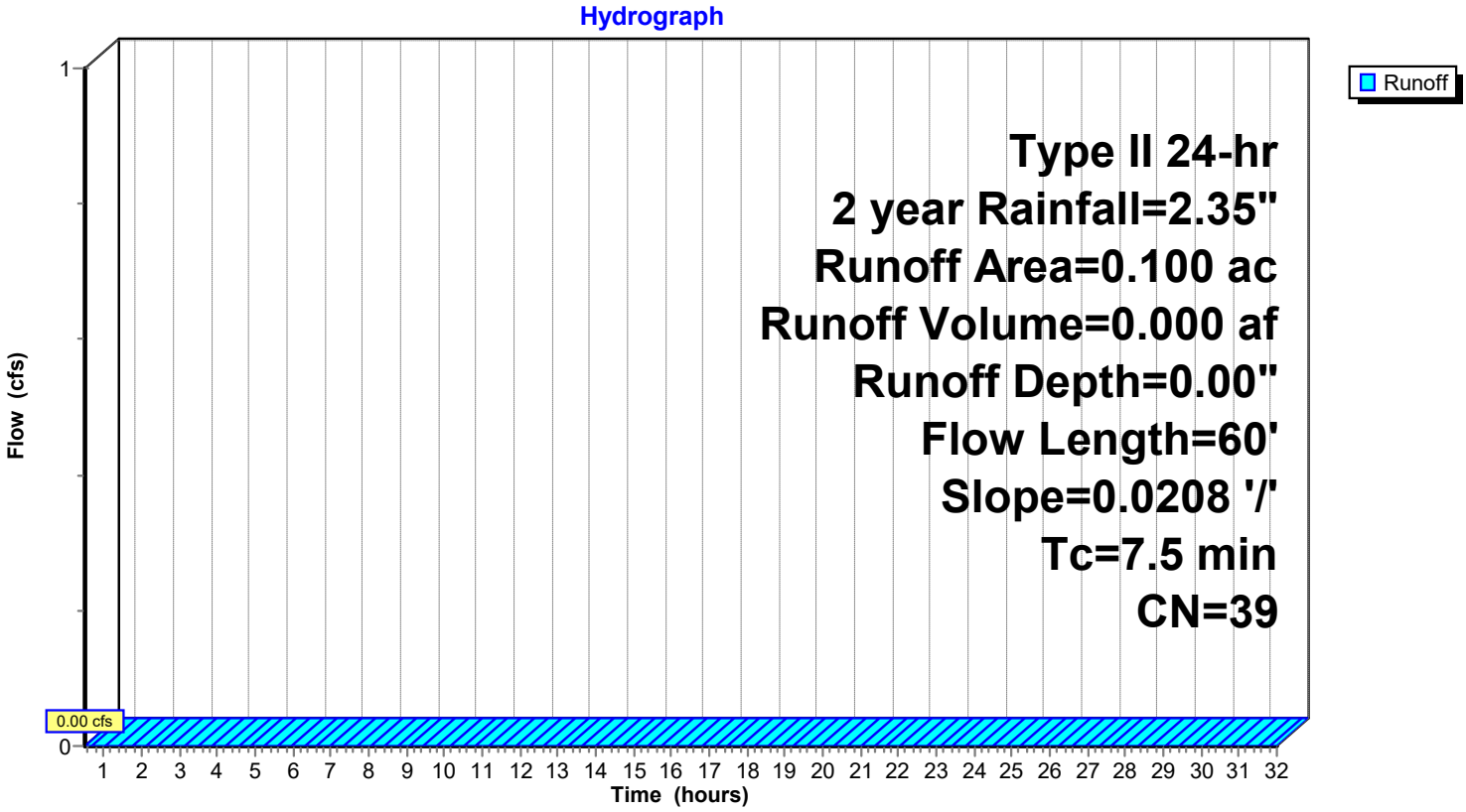
Runoff = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-32.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 year Rainfall=2.35"

Area (ac)	CN	Description
0.100	39	>75% Grass cover, Good, HSG A
0.100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	60	0.0208	0.13		**Sheet Flow, A-B Sheet Flow** Grass: Short n= 0.150 P2= 2.35"

Subcatchment 3S: O-1



Time span=0.50-32.00 hrs, dt=0.05 hrs, 631 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: E-1 Runoff Area=4.810 ac 9.15% Impervious Runoff Depth=0.30"
Flow Length=529' Tc=14.4 min CN=55 Runoff=0.88 cfs 0.121 af

Subcatchment 2S: E-2 Runoff Area=2.320 ac 0.00% Impervious Runoff Depth=0.05"
Flow Length=482' Tc=14.1 min CN=44 Runoff=0.01 cfs 0.010 af

Subcatchment 3S: O-1 Runoff Area=0.100 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=60' Slope=0.0208 '/' Tc=7.5 min CN=39 Runoff=0.00 cfs 0.000 af

Total Runoff Area = 7.230 ac Runoff Volume = 0.131 af Average Runoff Depth = 0.22"
93.91% Pervious = 6.790 ac 6.09% Impervious = 0.440 ac

Summary for Subcatchment 1S: E-1

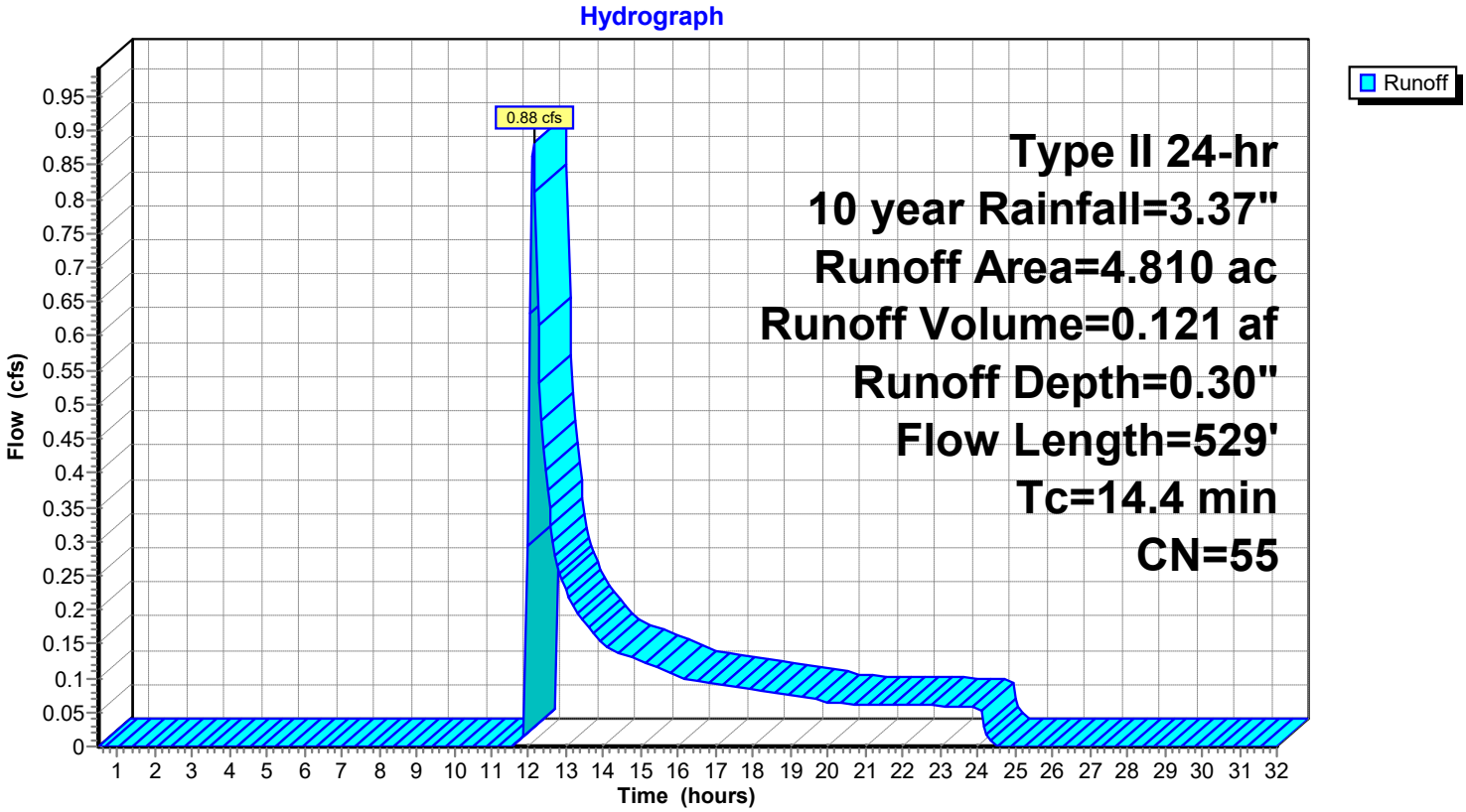
Runoff = 0.88 cfs @ 12.13 hrs, Volume= 0.121 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-32.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=3.37"

Area (ac)	CN	Description
1.070	30	Woods, Good, HSG A
1.480	79	Woods/grass comb., Good, HSG D
1.820	39	>75% Grass cover, Good, HSG A
0.240	98	Paved parking, HSG A
0.200	98	Roofs, HSG A
4.810	55	Weighted Average
4.370		90.85% Pervious Area
0.440		9.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.0350	0.18		**Sheet Flow, A-B Sheet Flow** Grass: Short n= 0.150 P2= 2.35"
3.5	232	0.0250	1.11		**Shallow Concentrated Flow, B-C Shallow Conc** Short Grass Pasture Kv= 7.0 fps
1.8	197	0.1270	1.78		**Shallow Concentrated Flow, C-D Shallow Conc** Woodland Kv= 5.0 fps
14.4	529	Total			

Subcatchment 1S: E-1



Summary for Subcatchment 2S: E-2

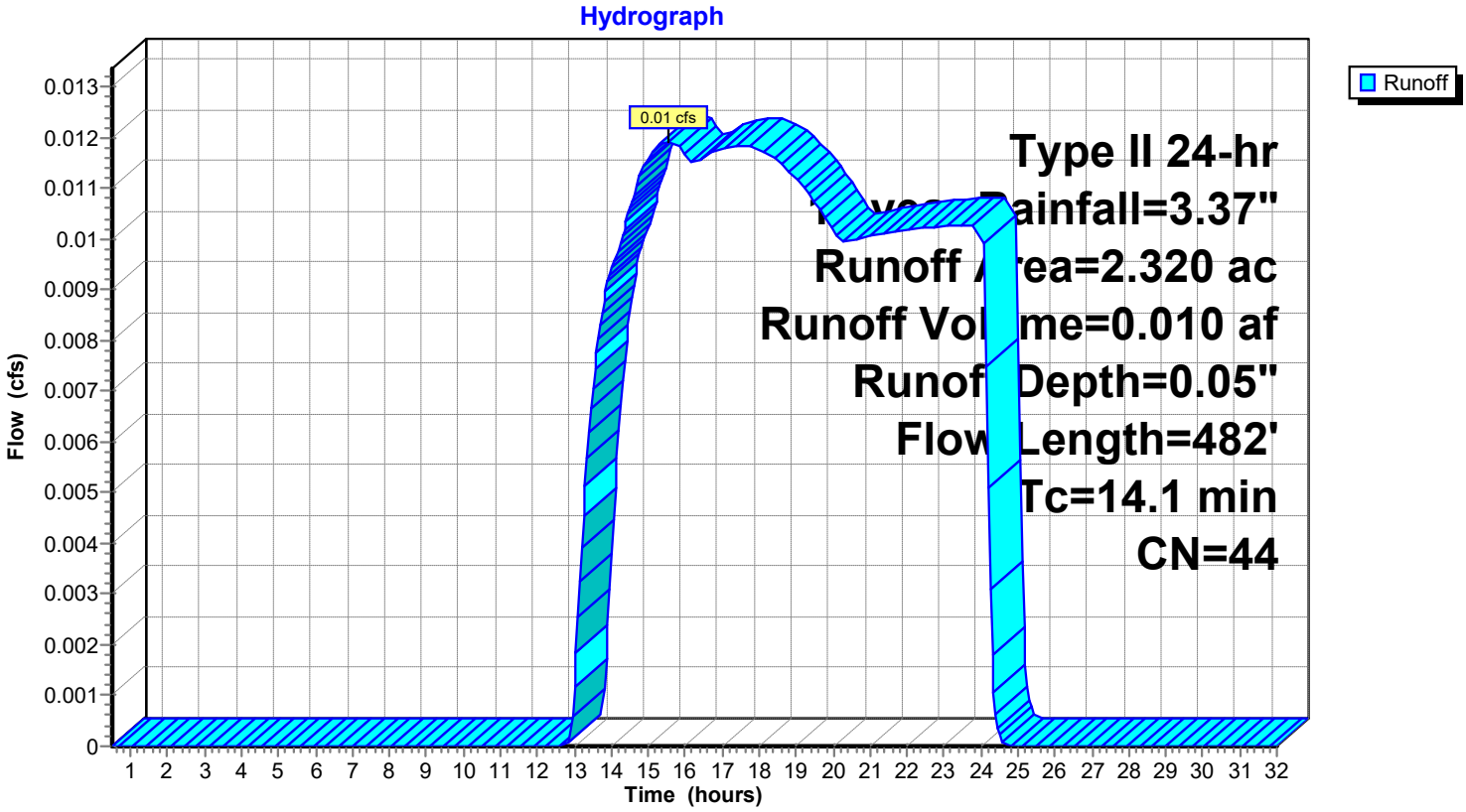
Runoff = 0.01 cfs @ 15.52 hrs, Volume= 0.010 af, Depth= 0.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-32.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=3.37"

Area (ac)	CN	Description
0.790	30	Woods, Good, HSG A
0.490	79	Woods/grass comb., Good, HSG D
1.040	39	>75% Grass cover, Good, HSG A
2.320	44	Weighted Average
2.320		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	100	0.0305	0.17		**Sheet Flow, A-B Sheet Flow** Grass: Short n= 0.150 P2= 2.35"
0.4	55	0.1090	2.31		**Shallow Concentrated Flow, B-C Shallow Conc** Short Grass Pasture Kv= 7.0 fps
4.0	327	0.0730	1.35		**Shallow Concentrated Flow, C-D Shallow Conc** Woodland Kv= 5.0 fps
14.1	482	Total			

Subcatchment 2S: E-2



Summary for Subcatchment 3S: O-1

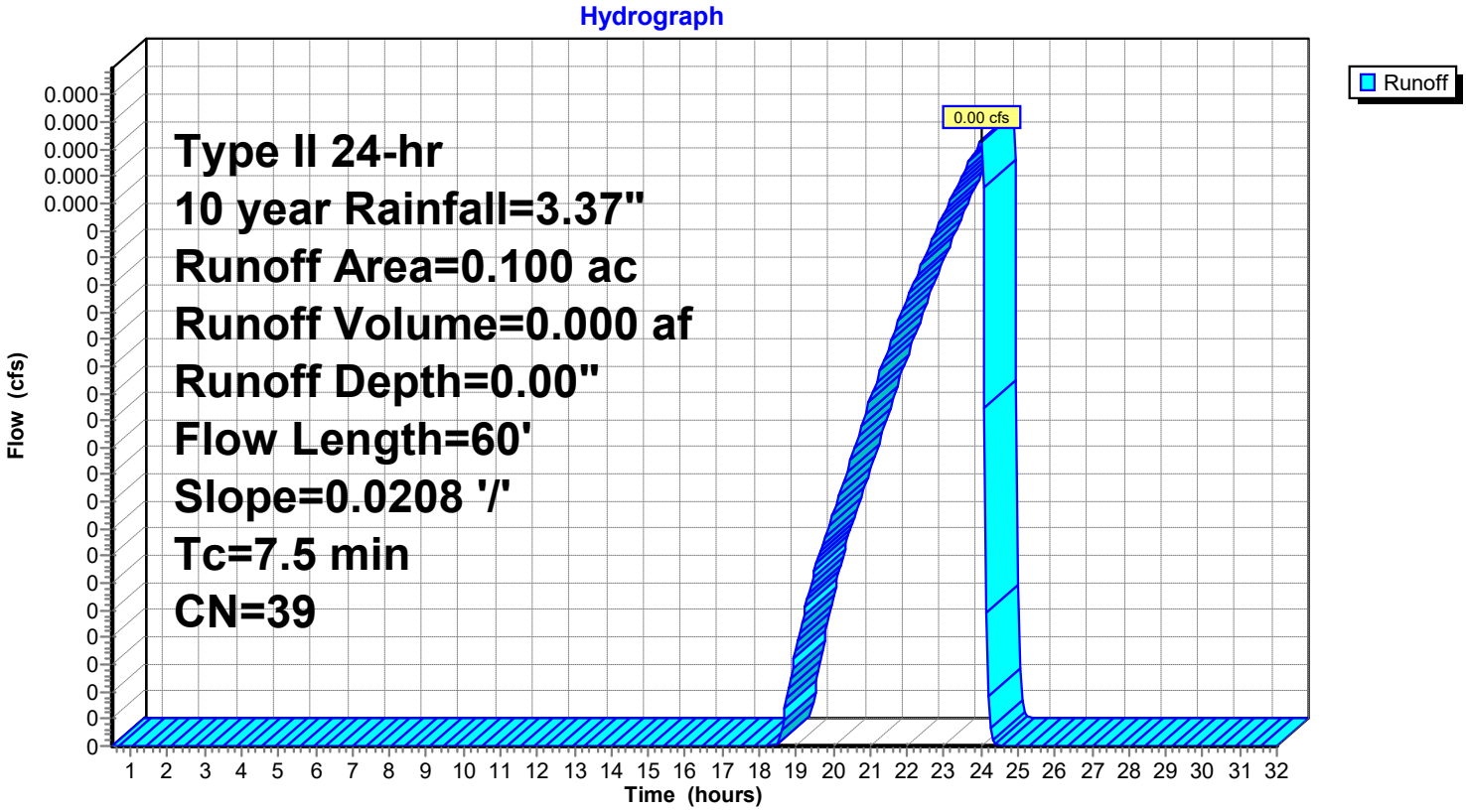
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-32.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=3.37"

Area (ac)	CN	Description
0.100	39	>75% Grass cover, Good, HSG A
0.100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	60	0.0208	0.13		**Sheet Flow, A-B Sheet Flow** Grass: Short n= 0.150 P2= 2.35"

Subcatchment 3S: O-1



Time span=0.50-32.00 hrs, dt=0.05 hrs, 631 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: E-1 Runoff Area=4.810 ac 9.15% Impervious Runoff Depth=1.33"
Flow Length=529' Tc=14.4 min CN=55 Runoff=7.44 cfs 0.532 af

Subcatchment 2S: E-2 Runoff Area=2.320 ac 0.00% Impervious Runoff Depth=0.61"
Flow Length=482' Tc=14.1 min CN=44 Runoff=1.07 cfs 0.118 af

Subcatchment 3S: O-1 Runoff Area=0.100 ac 0.00% Impervious Runoff Depth=0.35"
Flow Length=60' Slope=0.0208 '/' Tc=7.5 min CN=39 Runoff=0.02 cfs 0.003 af

Total Runoff Area = 7.230 ac Runoff Volume = 0.653 af Average Runoff Depth = 1.08"
93.91% Pervious = 6.790 ac 6.09% Impervious = 0.440 ac

Summary for Subcatchment 1S: E-1

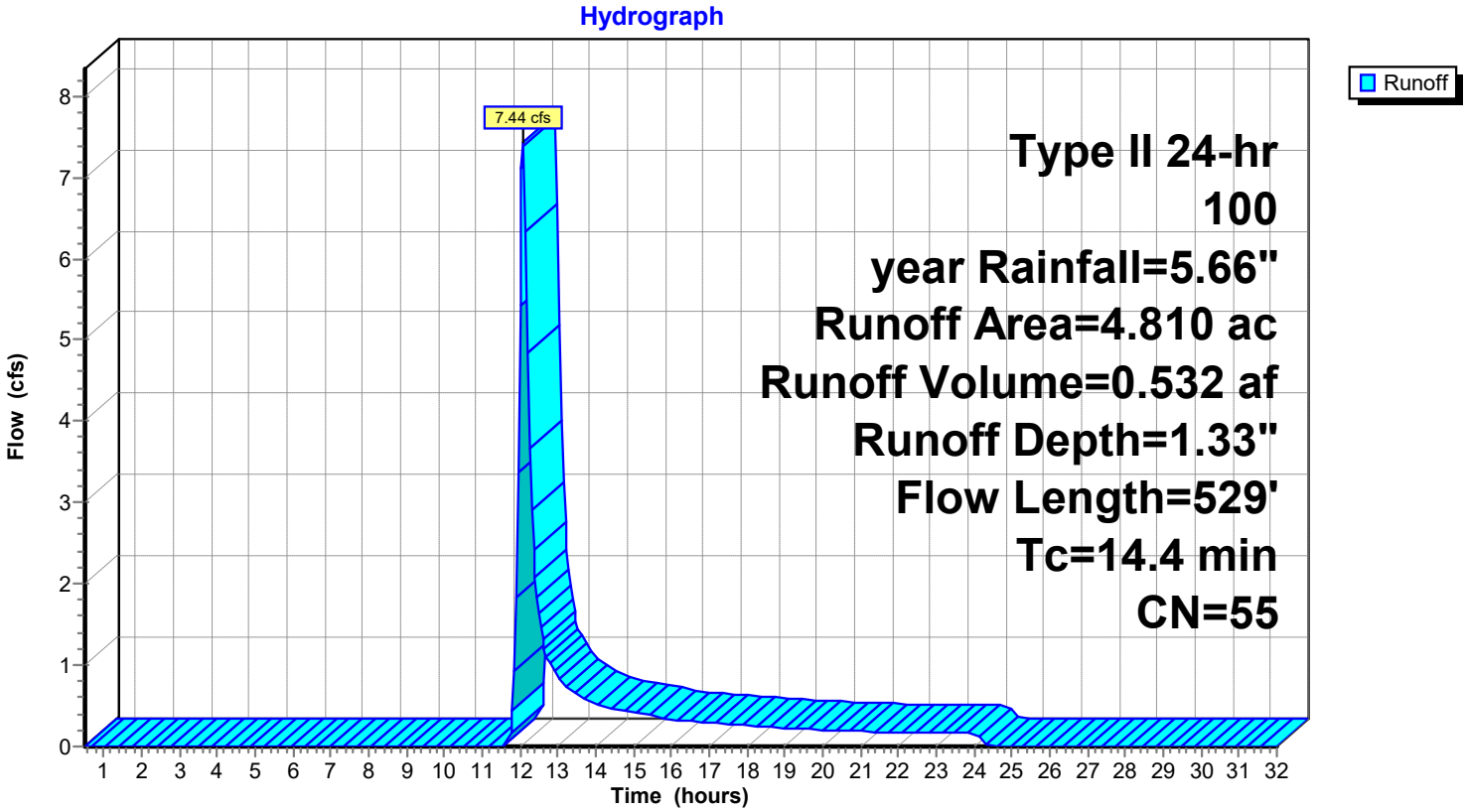
Runoff = 7.44 cfs @ 12.09 hrs, Volume= 0.532 af, Depth= 1.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-32.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 year Rainfall=5.66"

Area (ac)	CN	Description
1.070	30	Woods, Good, HSG A
1.480	79	Woods/grass comb., Good, HSG D
1.820	39	>75% Grass cover, Good, HSG A
0.240	98	Paved parking, HSG A
0.200	98	Roofs, HSG A
4.810	55	Weighted Average
4.370		90.85% Pervious Area
0.440		9.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.0350	0.18		**Sheet Flow, A-B Sheet Flow** Grass: Short n= 0.150 P2= 2.35"
3.5	232	0.0250	1.11		**Shallow Concentrated Flow, B-C Shallow Conc** Short Grass Pasture Kv= 7.0 fps
1.8	197	0.1270	1.78		**Shallow Concentrated Flow, C-D Shallow Conc** Woodland Kv= 5.0 fps
14.4	529	Total			

Subcatchment 1S: E-1



Summary for Subcatchment 2S: E-2

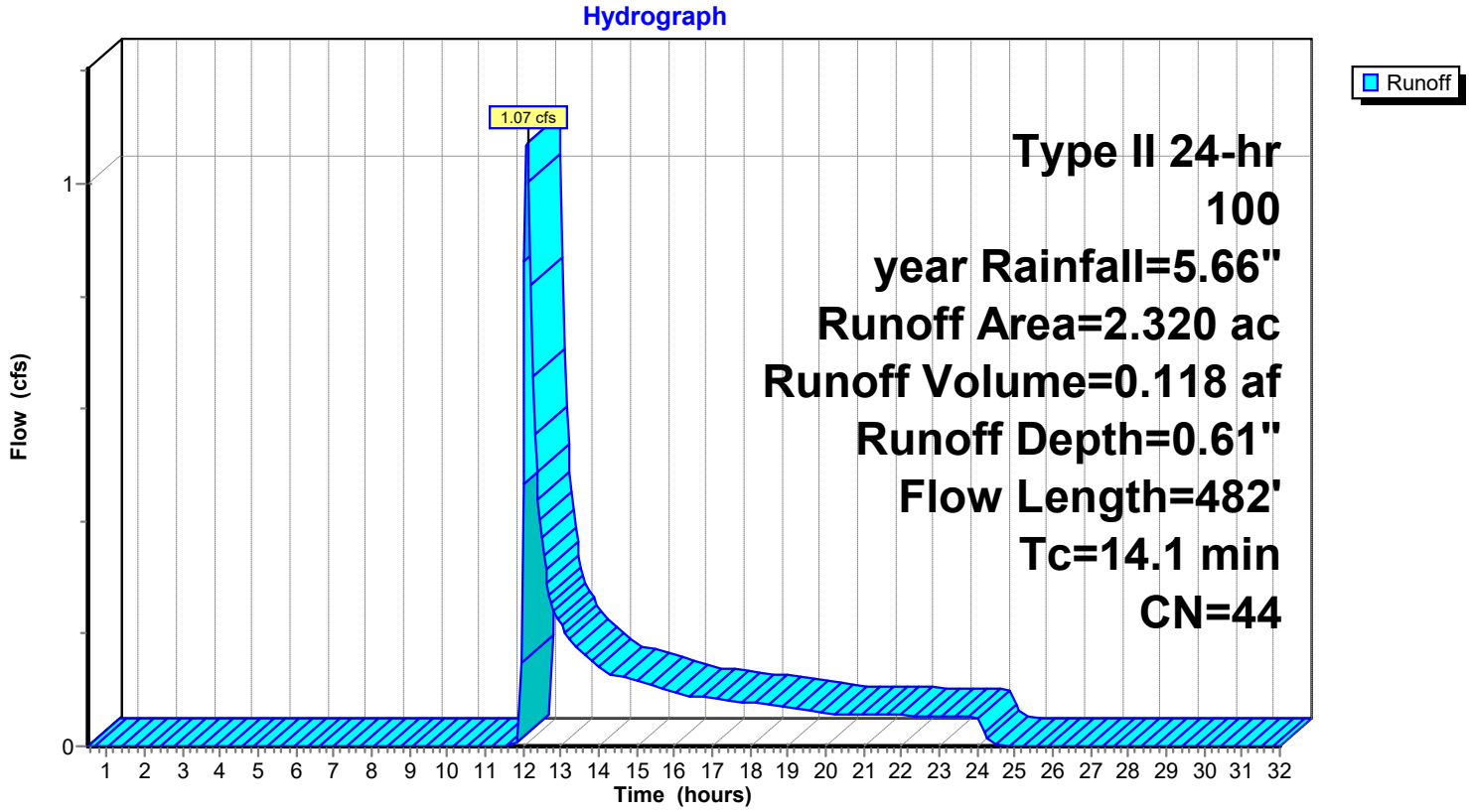
Runoff = 1.07 cfs @ 12.11 hrs, Volume= 0.118 af, Depth= 0.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-32.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 year Rainfall=5.66"

Area (ac)	CN	Description
0.790	30	Woods, Good, HSG A
0.490	79	Woods/grass comb., Good, HSG D
1.040	39	>75% Grass cover, Good, HSG A
2.320	44	Weighted Average
2.320		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	100	0.0305	0.17		**Sheet Flow, A-B Sheet Flow** Grass: Short n= 0.150 P2= 2.35"
0.4	55	0.1090	2.31		**Shallow Concentrated Flow, B-C Shallow Conc** Short Grass Pasture Kv= 7.0 fps
4.0	327	0.0730	1.35		**Shallow Concentrated Flow, C-D Shallow Conc** Woodland Kv= 5.0 fps
14.1	482	Total			

Subcatchment 2S: E-2



Summary for Subcatchment 3S: O-1

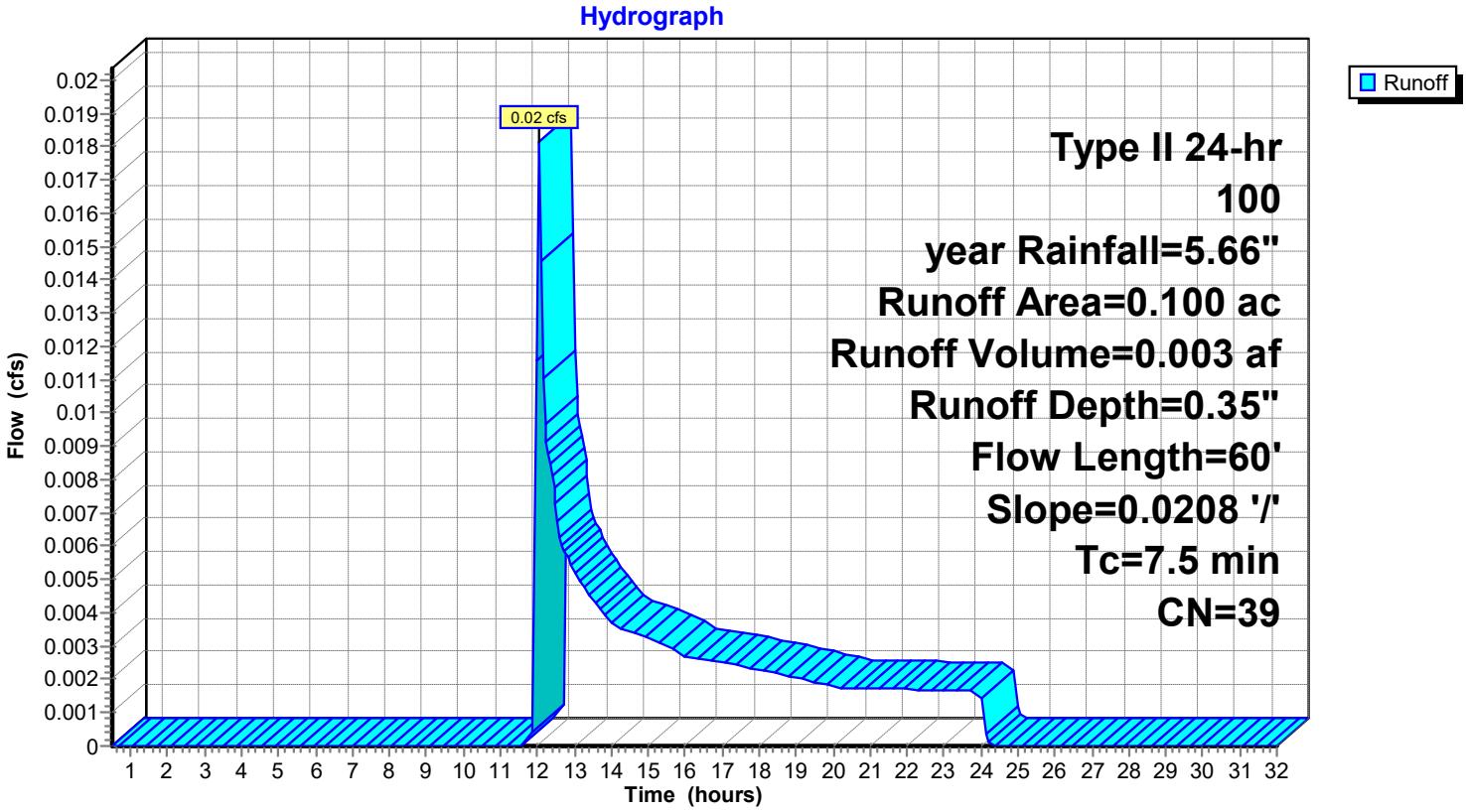
Runoff = 0.02 cfs @ 12.06 hrs, Volume= 0.003 af, Depth= 0.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-32.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 year Rainfall=5.66"

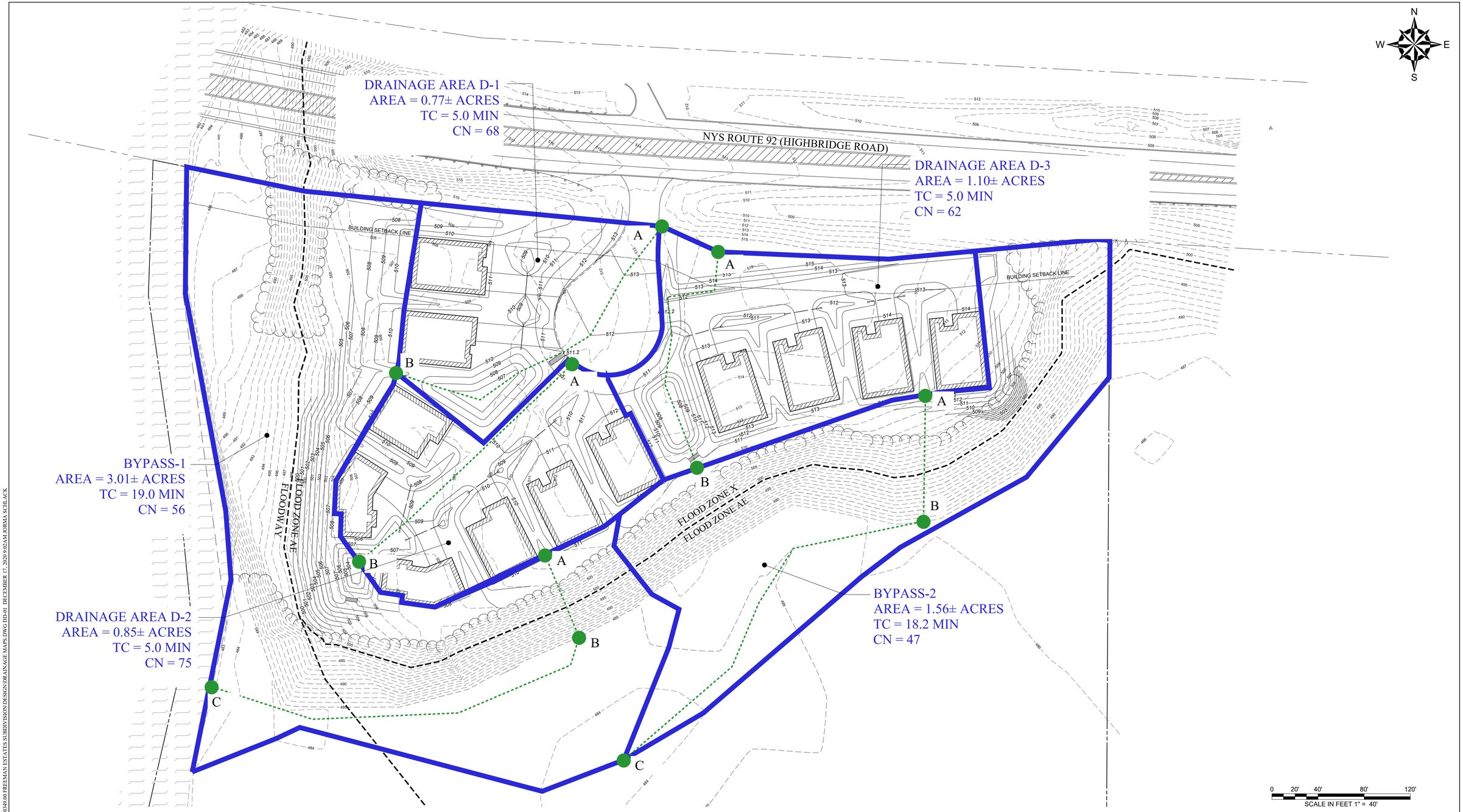
Area (ac)	CN	Description
0.100	39	>75% Grass cover, Good, HSG A
0.100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	60	0.0208	0.13		**Sheet Flow, A-B Sheet Flow** Grass: Short n= 0.150 P2= 2.35"

Subcatchment 3S: O-1



ATTACHMENT I
DEVELOPED DRAINAGE AREA MAP



Know what's below.
Call before you dig.

DRAFT COPY
FOR CLIENT REVIEW

NO.	ISSUE/DESCRIPTION	BY	DATE

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL OF NY (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW. UNAUTHORIZED ALTERATION IS PROHIBITED

STATE OF NEW YORK
BART A. KLEY
LICENSED PROFESSIONAL ENGINEER
No. 069423
Professional Engineer

FREEMAN ESTATES HOUSING
7430 HIGHBRIDGE ROAD
TOWN OF MANLIUS, STATE OF NEW YORK

DEVELOPED DRAINAGE AREA MAP

PREPARED BY:
GZA GeoEnvironmental of NY
Engineers and Scientists
www.gza.com

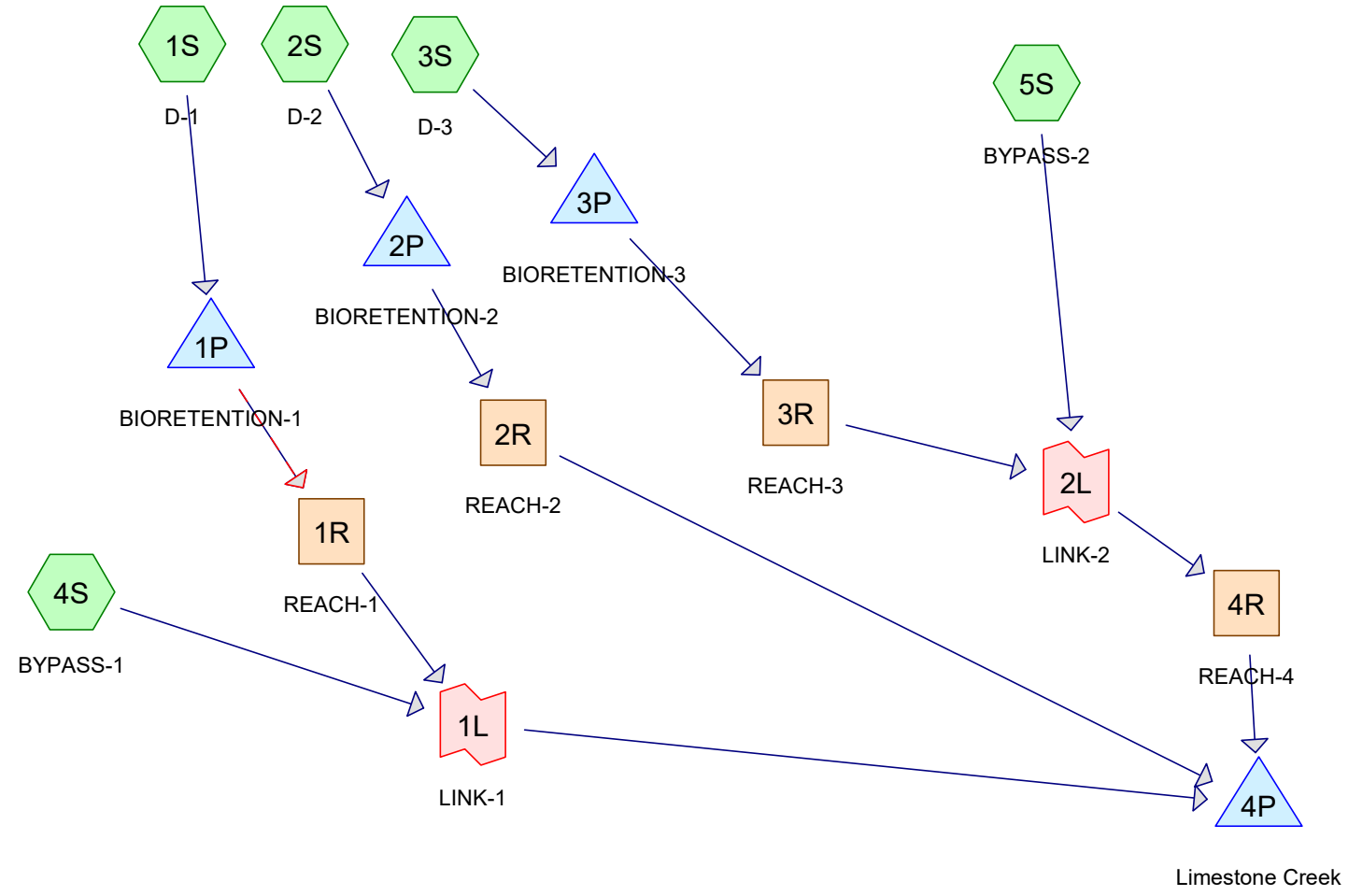
PREPARED FOR:
BROLEX PROPERTIES, LLC
5912 NORTH BURDICK STREET
EAST SYRACUSE, NY 13057

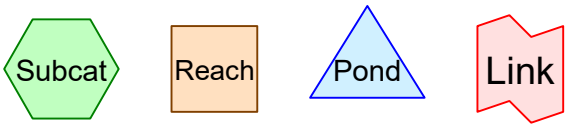
PROJ MGR: E.K.R.	REVIEWED BY: J.F.F.	CHECKED BY: C.J.M.	DWG
DESIGNED BY: E.K.R.	DRAWN BY: E.K.R.	SCALE: AS NOTED	DD-01
DATE: DEC. 16, 2020	PROJECT NO. 31.0180349.00	REVISION NO.	SHEET NO. 2 OF 2

© 2020 - GZA GeoEnvironmental, Inc. GZA-J:\31\0180349.00 FREEMAN ESTATES SUBDIVISION\DESIGN\DRAINAGE MAPS.DWG DD-01 DECEMBER 17, 2020 9:02AM JORMA SCHLACK

ATTACHMENT J

DEVELOPED DRAINAGE AREA CALCULATIONS AND HYDROGRAPHS





Routing Diagram for Freeman Estates Developed
Prepared by GZA GeoEnvironmental, Inc., Printed 12/16/2020
HydroCAD® 10.00-25 s/n 11440 © 2019 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.140	39	>75% Grass cover, Good, HSG A (1S, 2S, 3S, 4S, 5S)
0.560	98	Paved parking, HSG A (1S, 2S, 3S)
0.730	98	Roofs, HSG A (1S, 2S, 3S)
1.830	30	Woods, Good, HSG A (4S, 5S)
1.970	79	Woods/grass comb., Good, HSG D (4S, 5S)
7.230	**58**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
5.260	HSG A	1S, 2S, 3S, 4S, 5S
0.000	HSG B	
0.000	HSG C	
1.970	HSG D	4S, 5S
0.000	Other	
7.230		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
2.140	0.000	0.000	0.000	0.000	2.140	>75% Grass cover, Good	1S, 2S, 3S, 4S, 5S
0.560	0.000	0.000	0.000	0.000	0.560	Paved parking	1S, 2S, 3S
0.730	0.000	0.000	0.000	0.000	0.730	Roofs	1S, 2S, 3S
1.830	0.000	0.000	0.000	0.000	1.830	Woods, Good	4S, 5S
0.000	0.000	0.000	1.970	0.000	1.970	Woods/grass comb., Good	4S, 5S
5.260	**0.000**	**0.000**	**1.970**	**0.000**	**7.230**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1P	507.00	506.60	75.0	0.0053	0.013	12.0	0.0	0.0

Time span=0.50-40.00 hrs, dt=0.03 hrs, 1318 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: D-1 Runoff Area=0.770 ac 49.35% Impervious Runoff Depth=0.20"
Tc=5.0 min CN=68 Runoff=0.18 cfs 0.013 af

Subcatchment 2S: D-2 Runoff Area=0.850 ac 61.18% Impervious Runoff Depth=0.39"
Tc=5.0 min CN=75 Runoff=0.55 cfs 0.027 af

Subcatchment 3S: D-3 Runoff Area=0.990 ac 39.39% Impervious Runoff Depth=0.09"
Tc=5.0 min CN=62 Runoff=0.02 cfs 0.007 af

Subcatchment 4S: BYPASS-1 Runoff Area=3.010 ac 0.00% Impervious Runoff Depth=0.02"
Flow Length=427' Tc=19.0 min CN=56 Runoff=0.01 cfs 0.006 af

Subcatchment 5S: BYPASS-2 Runoff Area=1.610 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=464' Tc=18.2 min CN=47 Runoff=0.00 cfs 0.000 af

Reach 1R: REACH-1 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.150 L=142.0' S=0.1725 '/' Capacity=88.08 cfs Outflow=0.00 cfs 0.000 af

Reach 2R: REACH-2 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.150 L=198.0' S=0.1237 '/' Capacity=74.59 cfs Outflow=0.00 cfs 0.000 af

Reach 3R: REACH-3 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.150 L=307.0' S=0.0847 '/' Capacity=61.71 cfs Outflow=0.00 cfs 0.000 af

Reach 4R: REACH-4 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.150 L=366.0' S=0.0055 '/' Capacity=15.68 cfs Outflow=0.00 cfs 0.000 af

Pond 1P: BIORETENTION-1 Peak Elev=507.15' Storage=115 cf Inflow=0.18 cfs 0.013 af
Discarded=0.02 cfs 0.013 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.013 af

Pond 2P: BIORETENTION-2 Peak Elev=505.33' Storage=585 cf Inflow=0.55 cfs 0.027 af
Discarded=0.02 cfs 0.027 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.027 af

Pond 3P: BIORETENTION-3 Peak Elev=508.02' Storage=17 cf Inflow=0.02 cfs 0.007 af
Discarded=0.01 cfs 0.007 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.007 af

Pond 4P: Limestone Creek Inflow=0.01 cfs 0.006 af
Primary=0.01 cfs 0.006 af

Link 1L: LINK-1 Inflow=0.01 cfs 0.006 af
Primary=0.01 cfs 0.006 af

Link 2L: LINK-2 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 7.230 ac Runoff Volume = 0.053 af Average Runoff Depth = 0.09"
82.16% Pervious = 5.940 ac 17.84% Impervious = 1.290 ac

Summary for Subcatchment 1S: D-1

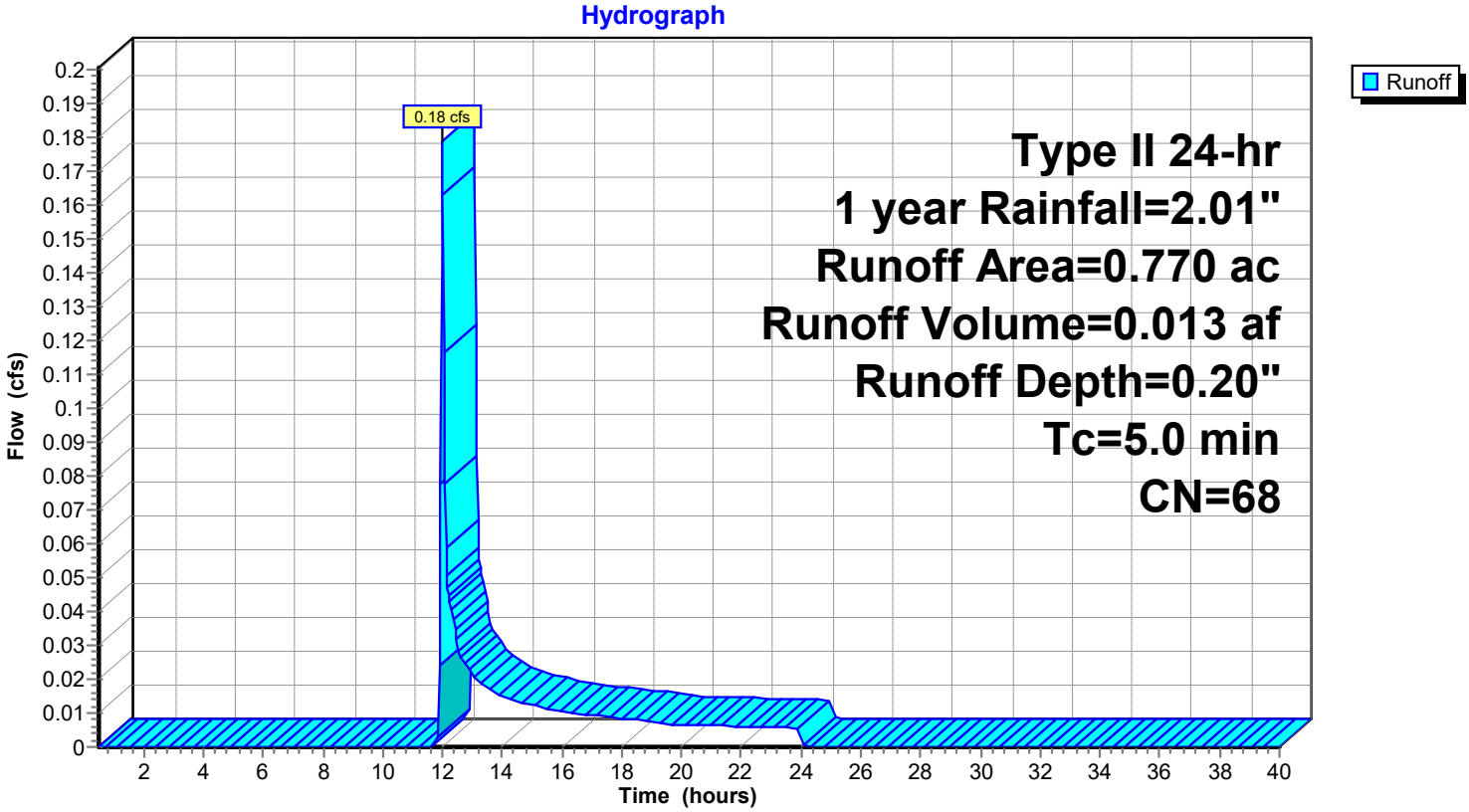
Runoff = 0.18 cfs @ 12.00 hrs, Volume= 0.013 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Type II 24-hr 1 year Rainfall=2.01"

Area (ac)	CN	Description
0.390	39	>75% Grass cover, Good, HSG A
0.250	98	Paved parking, HSG A
0.130	98	Roofs, HSG A
0.770	68	Weighted Average
0.390		50.65% Pervious Area
0.380		49.35% Impervious Area

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

Subcatchment 1S: D-1



Summary for Subcatchment 2S: D-2

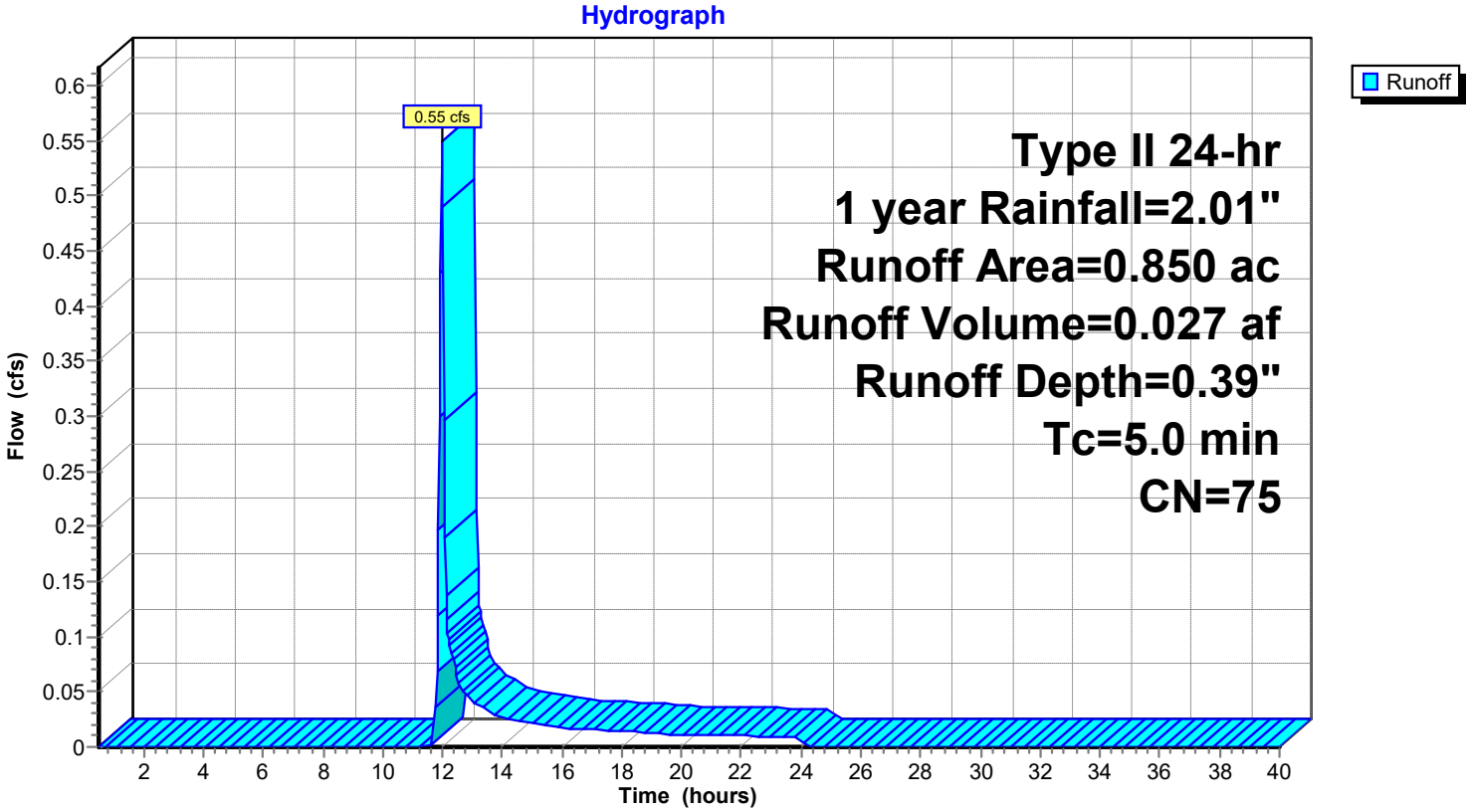
Runoff = 0.55 cfs @ 11.98 hrs, Volume= 0.027 af, Depth= 0.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Type II 24-hr 1 year Rainfall=2.01"

Area (ac)	CN	Description
0.330	39	>75% Grass cover, Good, HSG A
0.170	98	Paved parking, HSG A
0.350	98	Roofs, HSG A
0.850	75	Weighted Average
0.330		38.82% Pervious Area
0.520		61.18% Impervious Area

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

Subcatchment 2S: D-2



Summary for Subcatchment 3S: D-3

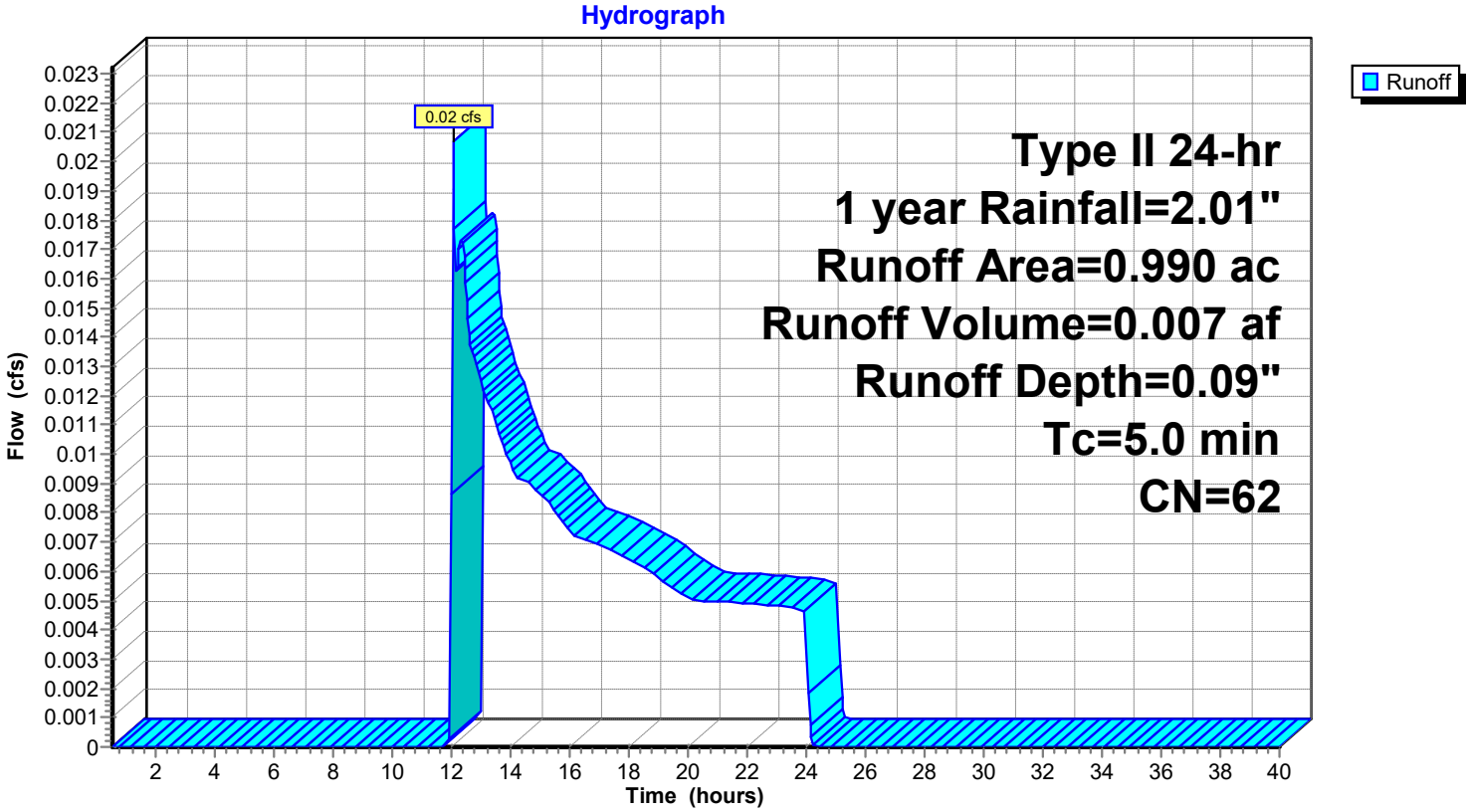
Runoff = 0.02 cfs @ 12.05 hrs, Volume= 0.007 af, Depth= 0.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Type II 24-hr 1 year Rainfall=2.01"

Area (ac)	CN	Description
0.600	39	>75% Grass cover, Good, HSG A
0.140	98	Paved parking, HSG A
0.250	98	Roofs, HSG A
0.990	62	Weighted Average
0.600		60.61% Pervious Area
0.390		39.39% Impervious Area

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

Subcatchment 3S: D-3



Summary for Subcatchment 4S: BYPASS-1

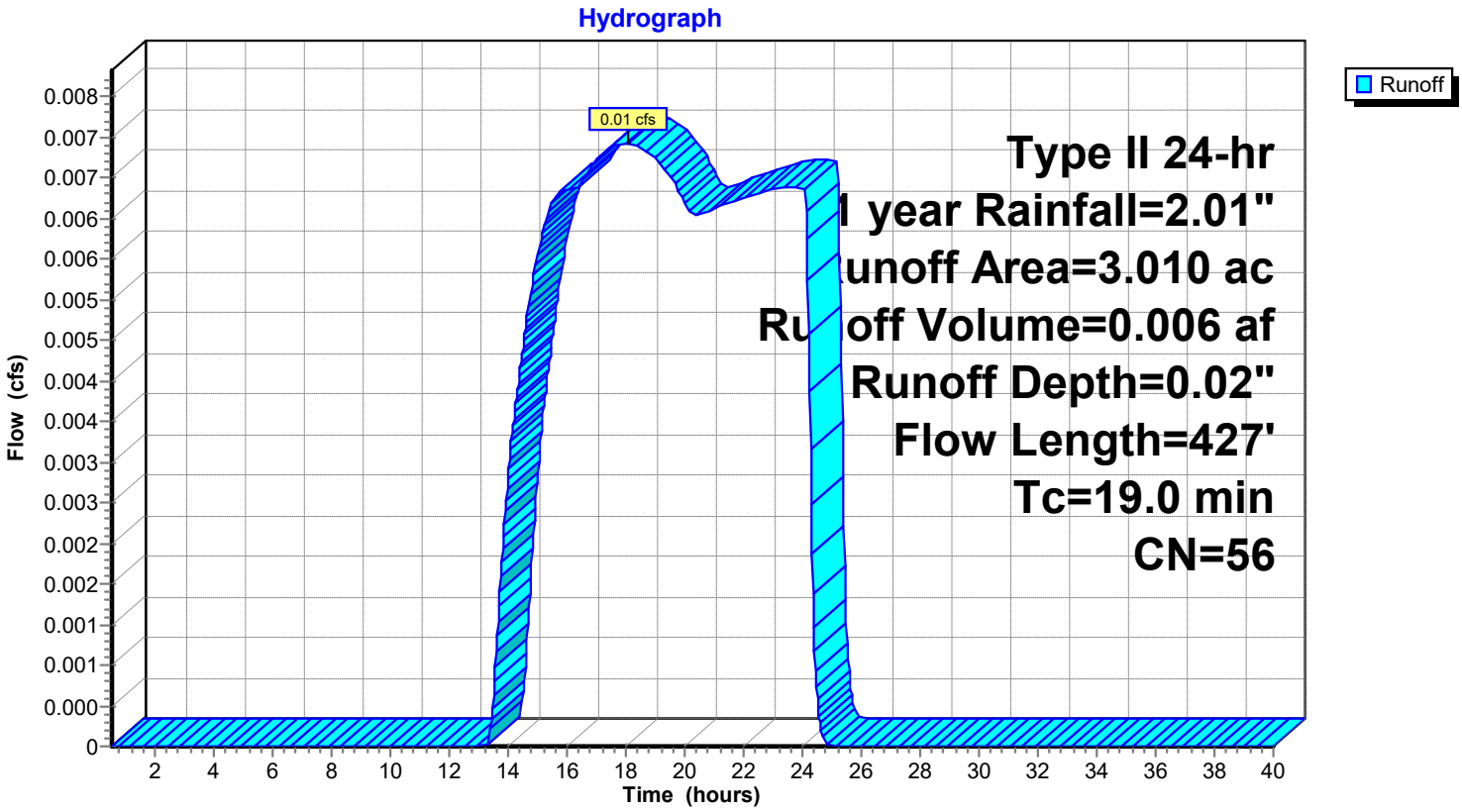
Runoff = 0.01 cfs @ 18.05 hrs, Volume= 0.006 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Type II 24-hr 1 year Rainfall=2.01"

Area (ac)	CN	Description
0.490	39	>75% Grass cover, Good, HSG A
1.040	30	Woods, Good, HSG A
1.480	79	Woods/grass comb., Good, HSG D
3.010	56	Weighted Average
3.010		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	77	0.3200	0.19		**Sheet Flow, A-B SHEET FLOW** Woods: Light underbrush n= 0.400 P2= 2.35"
12.3	350	0.0090	0.47		**Shallow Concentrated Flow, B-C SHALLOW CONC** Woodland Kv= 5.0 fps
19.0	427	Total			

Subcatchment 4S: BYPASS-1



Summary for Subcatchment 5S: BYPASS-2

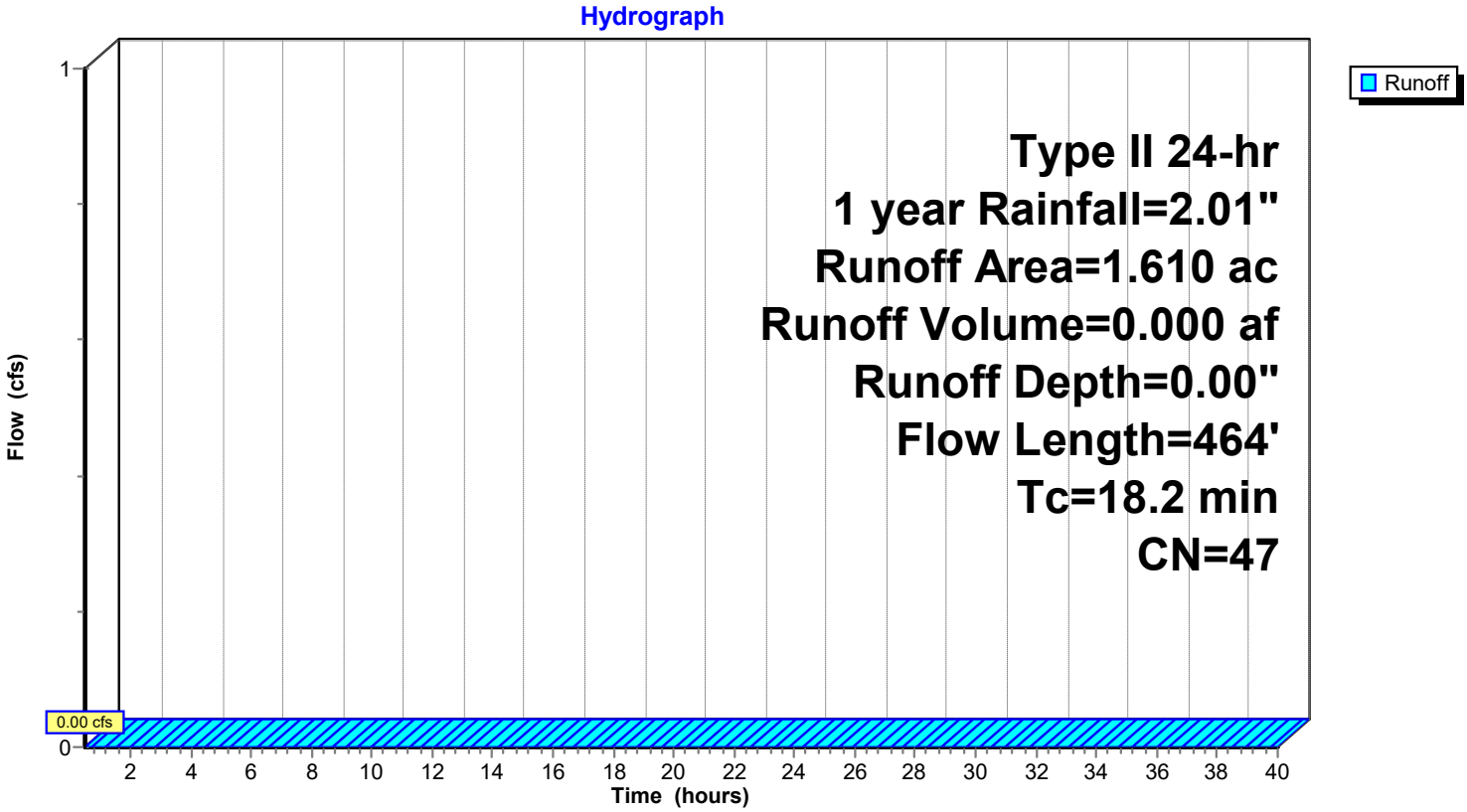
Runoff = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Type II 24-hr 1 year Rainfall=2.01"

Area (ac)	CN	Description
0.790	30	Woods, Good, HSG A
0.490	79	Woods/grass comb., Good, HSG D
0.330	39	>75% Grass cover, Good, HSG A
1.610	47	Weighted Average
1.610		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	100	0.2200	0.17		**Sheet Flow, A-B SHEET FLOW** Woods: Light underbrush n= 0.400 P2= 2.35"
8.6	364	0.0200	0.71		**Shallow Concentrated Flow, B-C SHALL CONC** Woodland Kv= 5.0 fps
18.2	464	Total			

Subcatchment 5S: BYPASS-2



Summary for Reach 1R: REACH-1

Inflow Area = 0.770 ac, 49.35% Impervious, Inflow Depth = 0.00" for 1 year event
Inflow = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

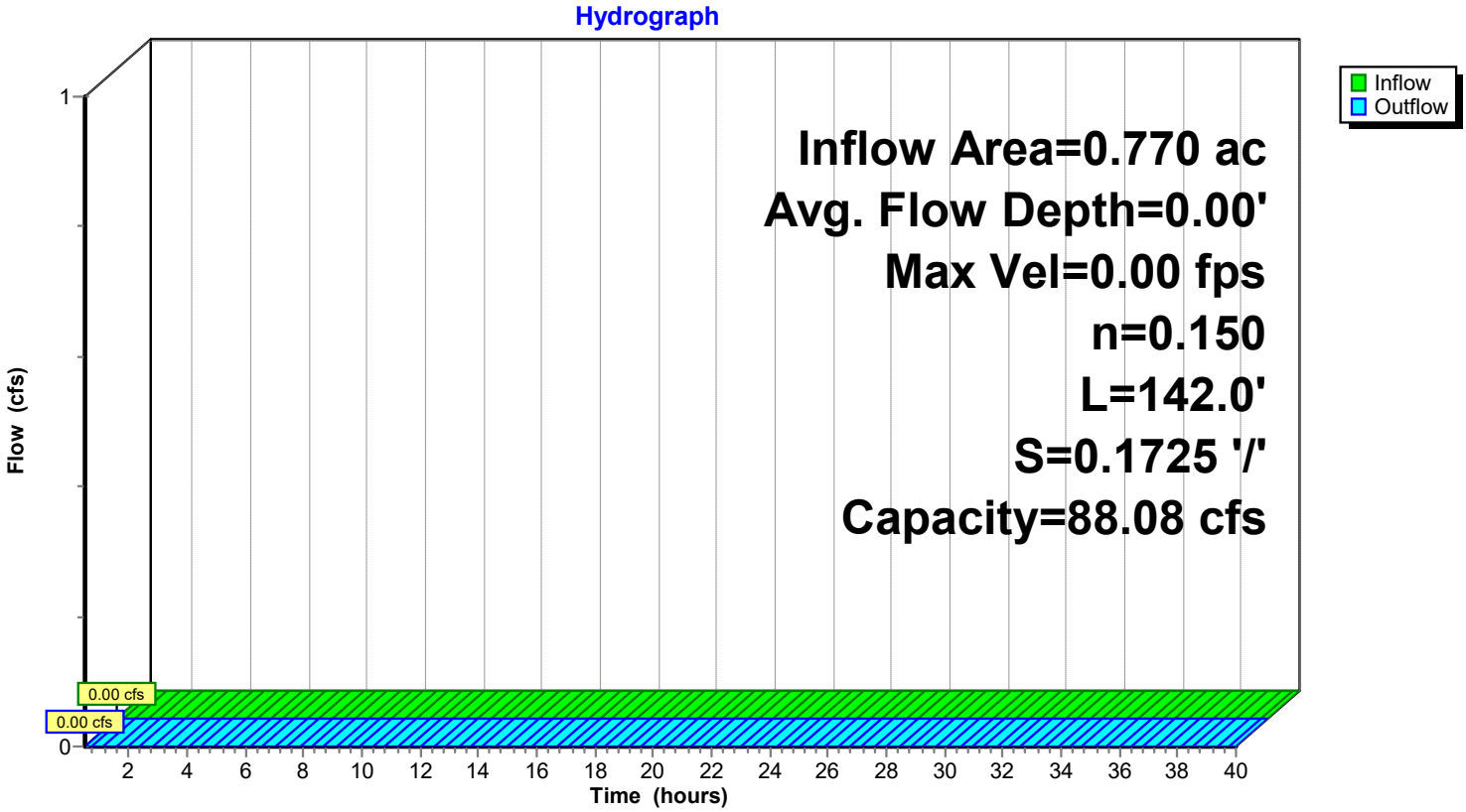
Routing by Stor-Ind+Trans method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.50 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.50' Flow Area= 22.5 sf, Capacity= 88.08 cfs

6.00' x 1.50' deep channel, n= 0.150 Dense willows
Side Slope Z-value= 6.0 '/' Top Width= 24.00'
Length= 142.0' Slope= 0.1725 '/'
Inlet Invert= 506.50', Outlet Invert= 482.00'

‡

Reach 1R: REACH-1



Summary for Reach 2R: REACH-2

Inflow Area = 0.850 ac, 61.18% Impervious, Inflow Depth = 0.00" for 1 year event
Inflow = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

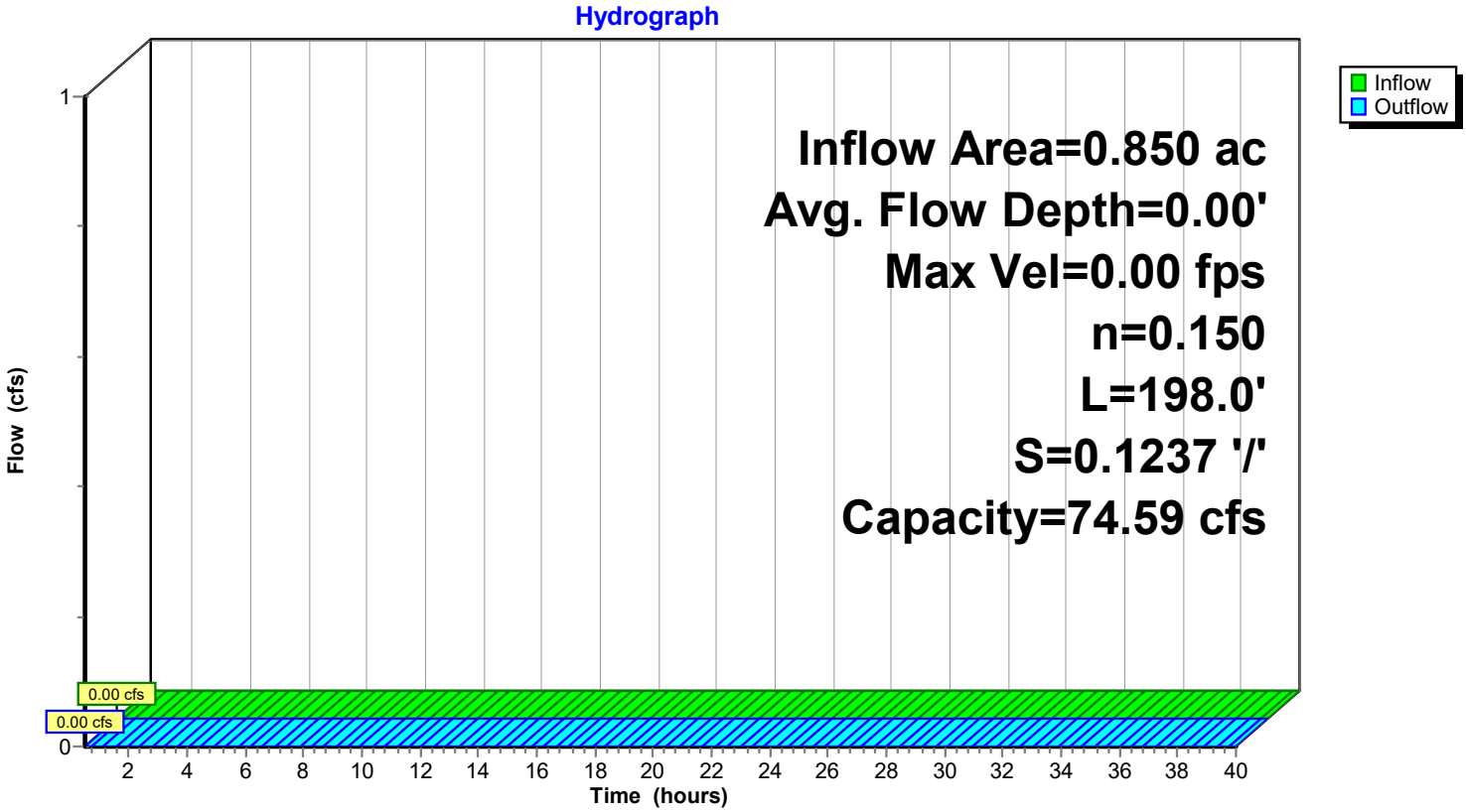
Routing by Stor-Ind+Trans method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.50 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.50' Flow Area= 22.5 sf, Capacity= 74.59 cfs

6.00' x 1.50' deep channel, n= 0.150 Dense willows
Side Slope Z-value= 6.0 '/' Top Width= 24.00'
Length= 198.0' Slope= 0.1237 '/'
Inlet Invert= 506.50', Outlet Invert= 482.00'

‡

Reach 2R: REACH-2



Summary for Reach 3R: REACH-3

Inflow Area = 0.990 ac, 39.39% Impervious, Inflow Depth = 0.00" for 1 year event
Inflow = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

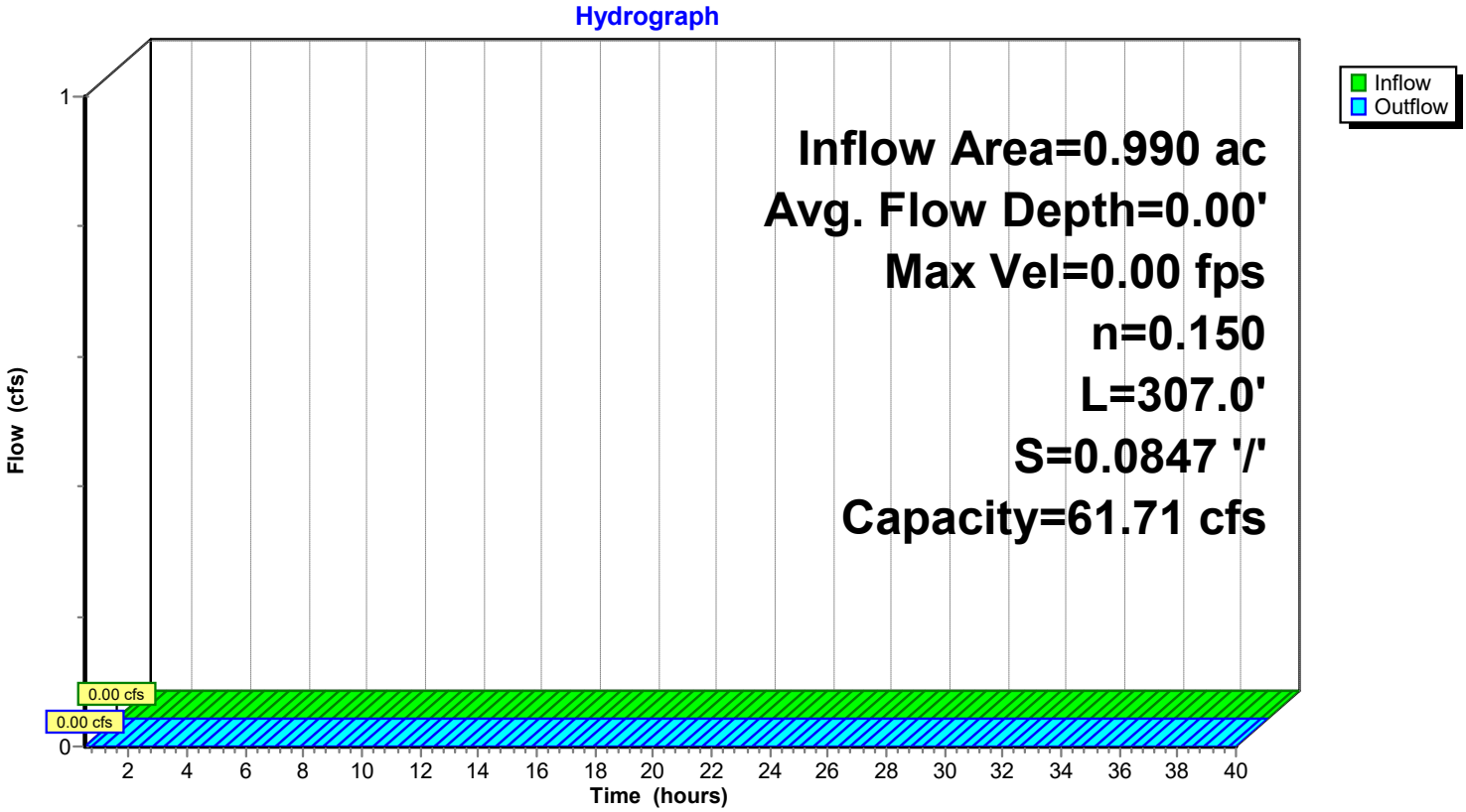
Routing by Stor-Ind+Trans method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.50 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.50' Flow Area= 22.5 sf, Capacity= 61.71 cfs

6.00' x 1.50' deep channel, n= 0.150 Dense willows
Side Slope Z-value= 6.0 '/' Top Width= 24.00'
Length= 307.0' Slope= 0.0847 '/'
Inlet Invert= 510.00', Outlet Invert= 484.00'

‡

Reach 3R: REACH-3



Summary for Reach 4R: REACH-4

Inflow Area = 2.600 ac, 15.00% Impervious, Inflow Depth = 0.00" for 1 year event
Inflow = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

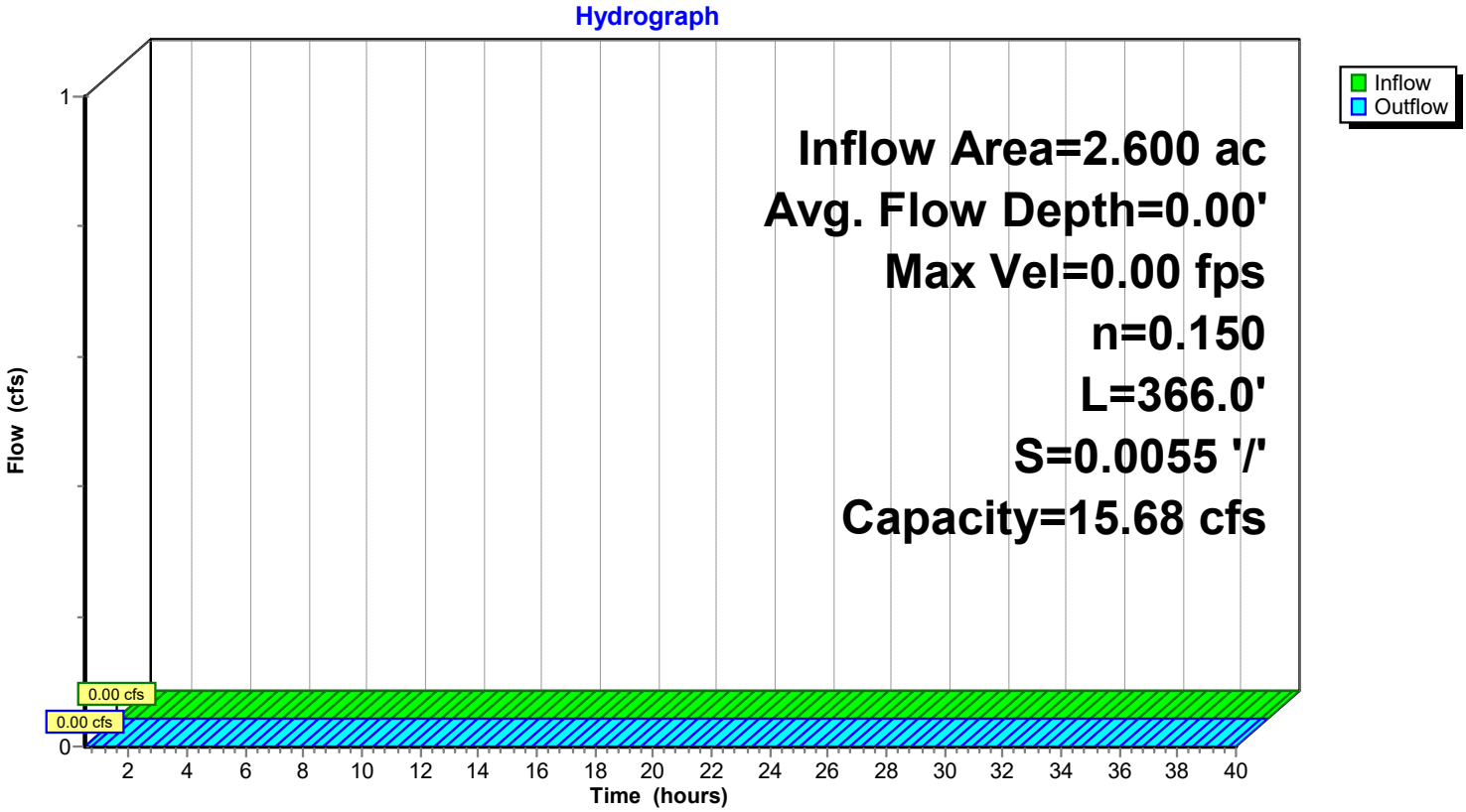
Routing by Stor-Ind+Trans method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.50 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.50' Flow Area= 22.5 sf, Capacity= 15.68 cfs

6.00' x 1.50' deep channel, n= 0.150 Dense willows
Side Slope Z-value= 6.0 '/' Top Width= 24.00'
Length= 366.0' Slope= 0.0055 '/'
Inlet Invert= 484.00', Outlet Invert= 482.00'

‡

Reach 4R: REACH-4



Summary for Pond 1P: BIORETENTION-1

Inflow Area = 0.770 ac, 49.35% Impervious, Inflow Depth = 0.20" for 1 year event
Inflow = 0.18 cfs @ 12.00 hrs, Volume= 0.013 af
Outflow = 0.02 cfs @ 13.14 hrs, Volume= 0.013 af, Atten= 89%, Lag= 68.8 min
Discarded = 0.02 cfs @ 13.14 hrs, Volume= 0.013 af
Primary = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af
Secondary = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Peak Elev= 507.15' @ 13.14 hrs Surf.Area= 851 sf Storage= 115 cf

Plug-Flow detention time= 53.0 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 52.8 min (990.4 - 937.6)

Volume	Invert	Avail.Storage	Storage Description
#1	507.00'	5,870 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
507.00	690	0	0
508.00	1,766	1,228	1,228
509.00	3,487	2,627	3,855
509.50	4,575	2,016	5,870

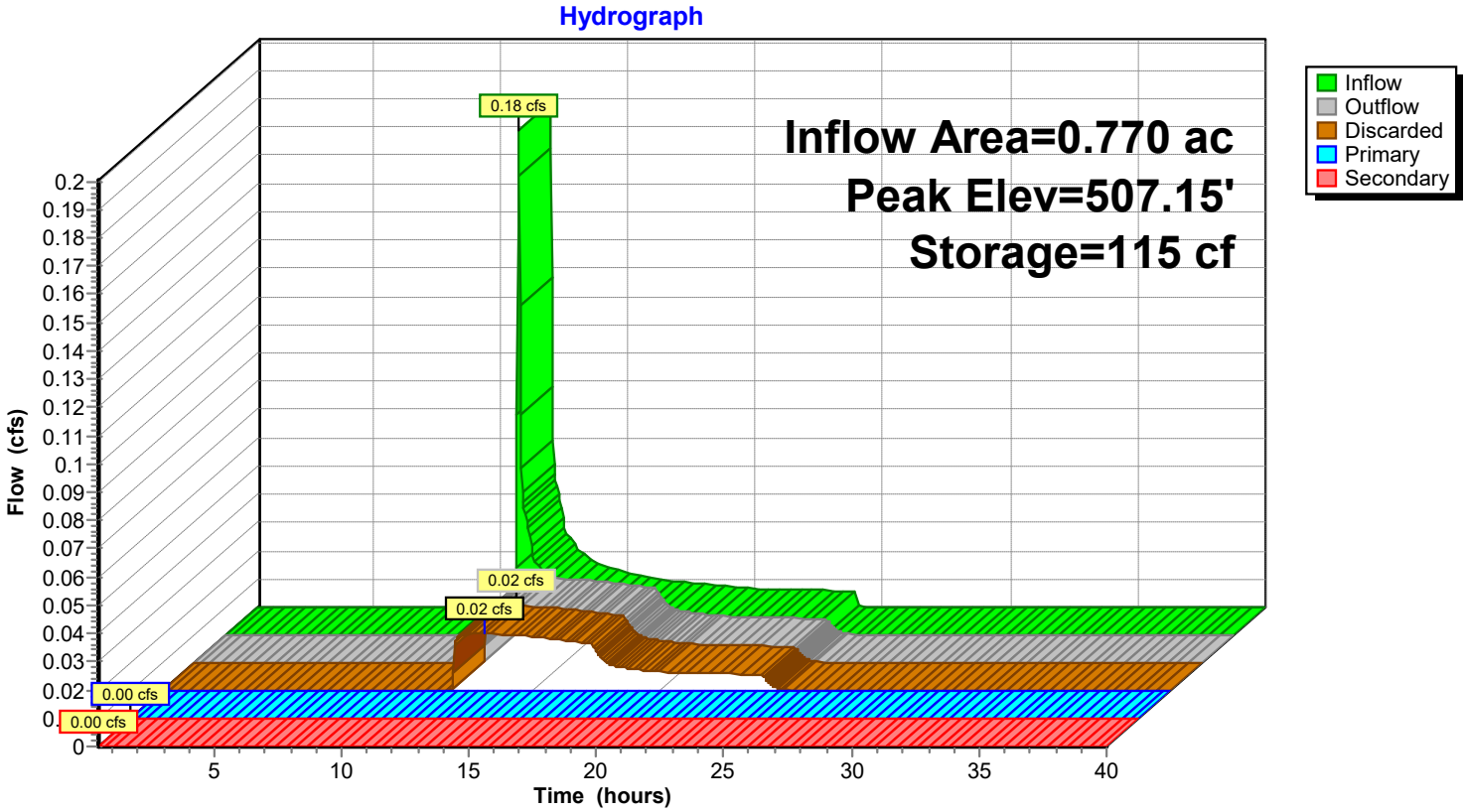
Device	Routing	Invert	Outlet Devices
#1	Secondary	509.00'	**10.0' long x 0.50' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s) 2.0' Crest Height
#2	Primary	507.00'	**12.0" Round Culvert** L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 507.00' / 506.60' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	508.00'	**6.0" Vert. Orifice/Grate** C= 0.600
#4	Discarded	507.00'	**1.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 502.00'

Discarded OutFlow Max=0.02 cfs @ 13.14 hrs HW=507.15' (Free Discharge)
└─**4=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.50 hrs HW=507.00' (Free Discharge)
└─**2=Culvert** (Controls 0.00 cfs)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.50 hrs HW=507.00' (Free Discharge)
└─**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: BIORETENTION-1



Summary for Pond 2P: BIORETENTION-2

Inflow Area = 0.850 ac, 61.18% Impervious, Inflow Depth = 0.39" for 1 year event
Inflow = 0.55 cfs @ 11.98 hrs, Volume= 0.027 af
Outflow = 0.02 cfs @ 15.82 hrs, Volume= 0.027 af, Atten= 97%, Lag= 230.4 min
Discarded = 0.02 cfs @ 15.82 hrs, Volume= 0.027 af
Primary = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Peak Elev= 505.33' @ 15.82 hrs Surf.Area= 687 sf Storage= 585 cf

Plug-Flow detention time= 430.8 min calculated for 0.027 af (100% of inflow)
Center-of-Mass det. time= 430.7 min (1,321.2 - 890.5)

Volume	Invert	Avail.Storage	Storage Description
#1	504.00'	3,927 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

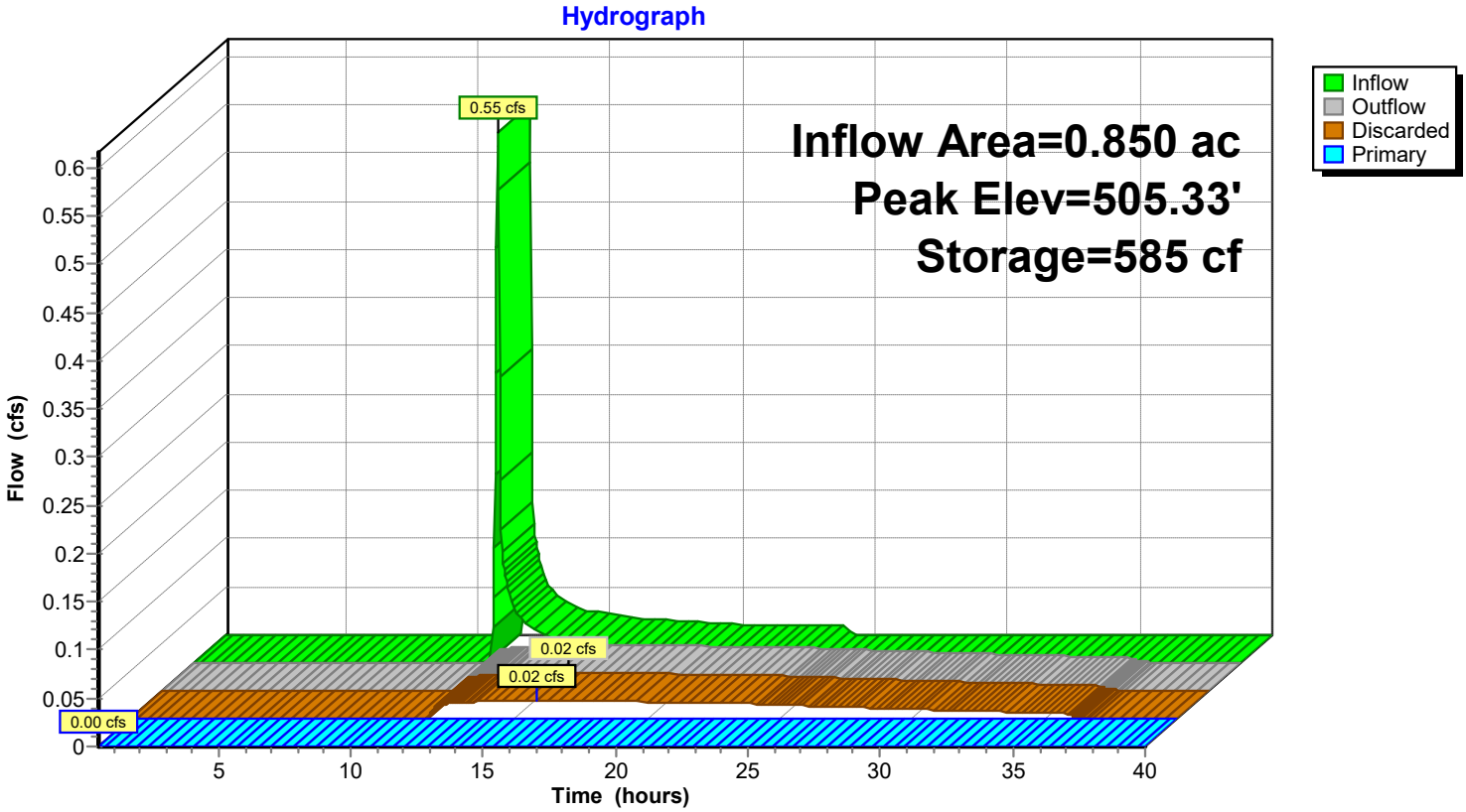
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
504.00	225	0	0
505.00	540	383	383
506.00	987	764	1,146
507.00	2,158	1,573	2,719
507.50	2,677	1,209	3,927

Device	Routing	Invert	Outlet Devices
#1	Discarded	504.00'	**1.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 499.00'
#2	Primary	507.00'	**10.0' long x 0.50' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s) 3.0' Crest Height

Discarded OutFlow Max=0.02 cfs @ 15.82 hrs HW=505.33' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.50 hrs HW=504.00' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: BIORETENTION-2



Summary for Pond 3P: BIORETENTION-3

Inflow Area = 0.990 ac, 39.39% Impervious, Inflow Depth = 0.09" for 1 year event
Inflow = 0.02 cfs @ 12.05 hrs, Volume= 0.007 af
Outflow = 0.01 cfs @ 12.78 hrs, Volume= 0.007 af, Atten= 36%, Lag= 43.8 min
Discarded = 0.01 cfs @ 12.78 hrs, Volume= 0.007 af
Primary = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Peak Elev= 508.02' @ 12.78 hrs Surf.Area= 1,014 sf Storage= 17 cf

Plug-Flow detention time= 21.5 min calculated for 0.007 af (100% of inflow)
Center-of-Mass det. time= 21.3 min (1,026.8 - 1,005.5)

Volume	Invert	Avail.Storage	Storage Description
#1	508.00'	6,376 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

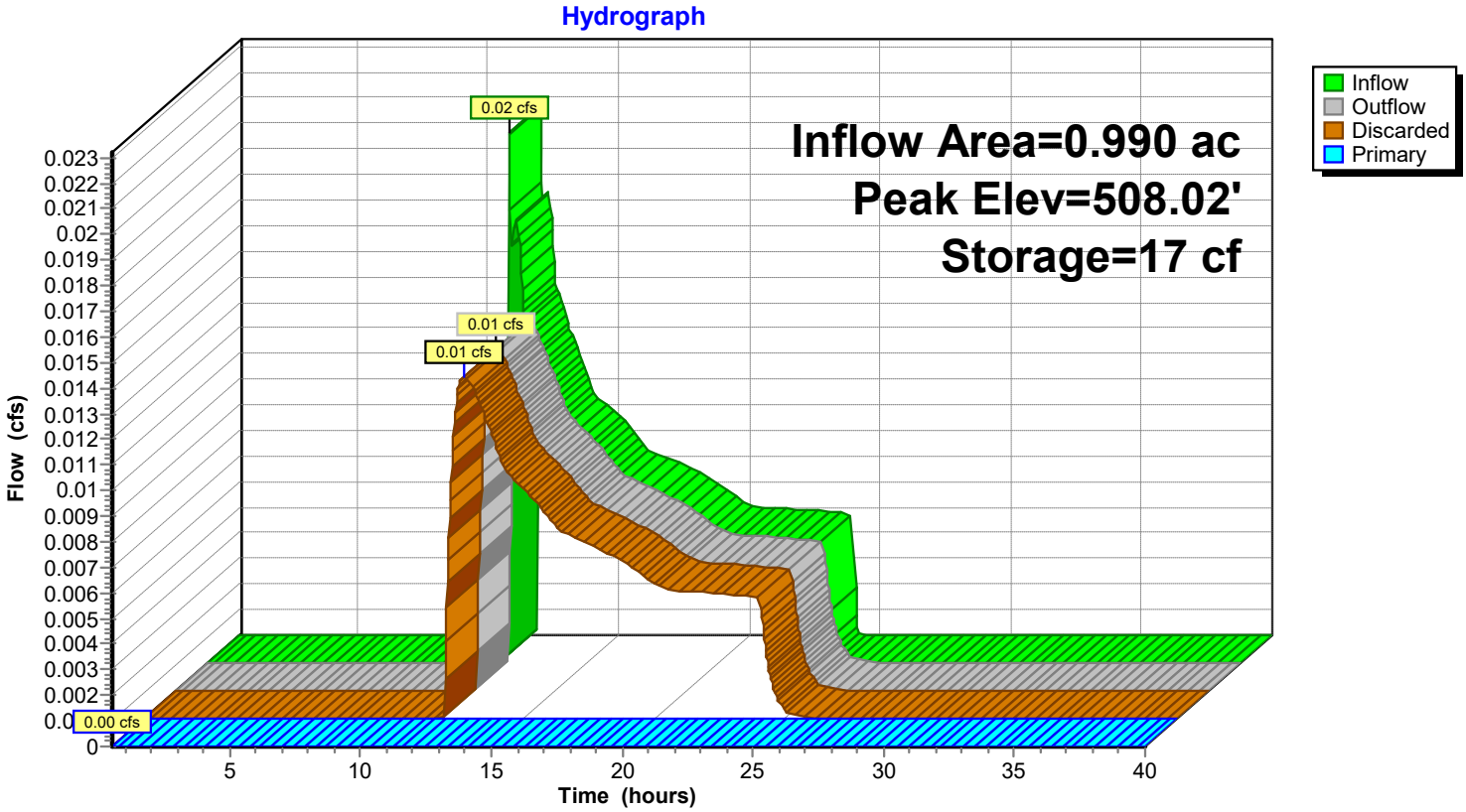
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
508.00	1,004	0	0
509.00	1,594	1,299	1,299
510.00	2,284	1,939	3,238
511.00	3,991	3,138	6,376

Device	Routing	Invert	Outlet Devices
#1	Discarded	508.00'	**1.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 503.00'
#2	Primary	510.50'	**10.0' long x 0.50' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s) 2.5' Crest Height

Discarded OutFlow Max=0.02 cfs @ 12.78 hrs HW=508.02' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.50 hrs HW=508.00' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: BIORETENTION-3

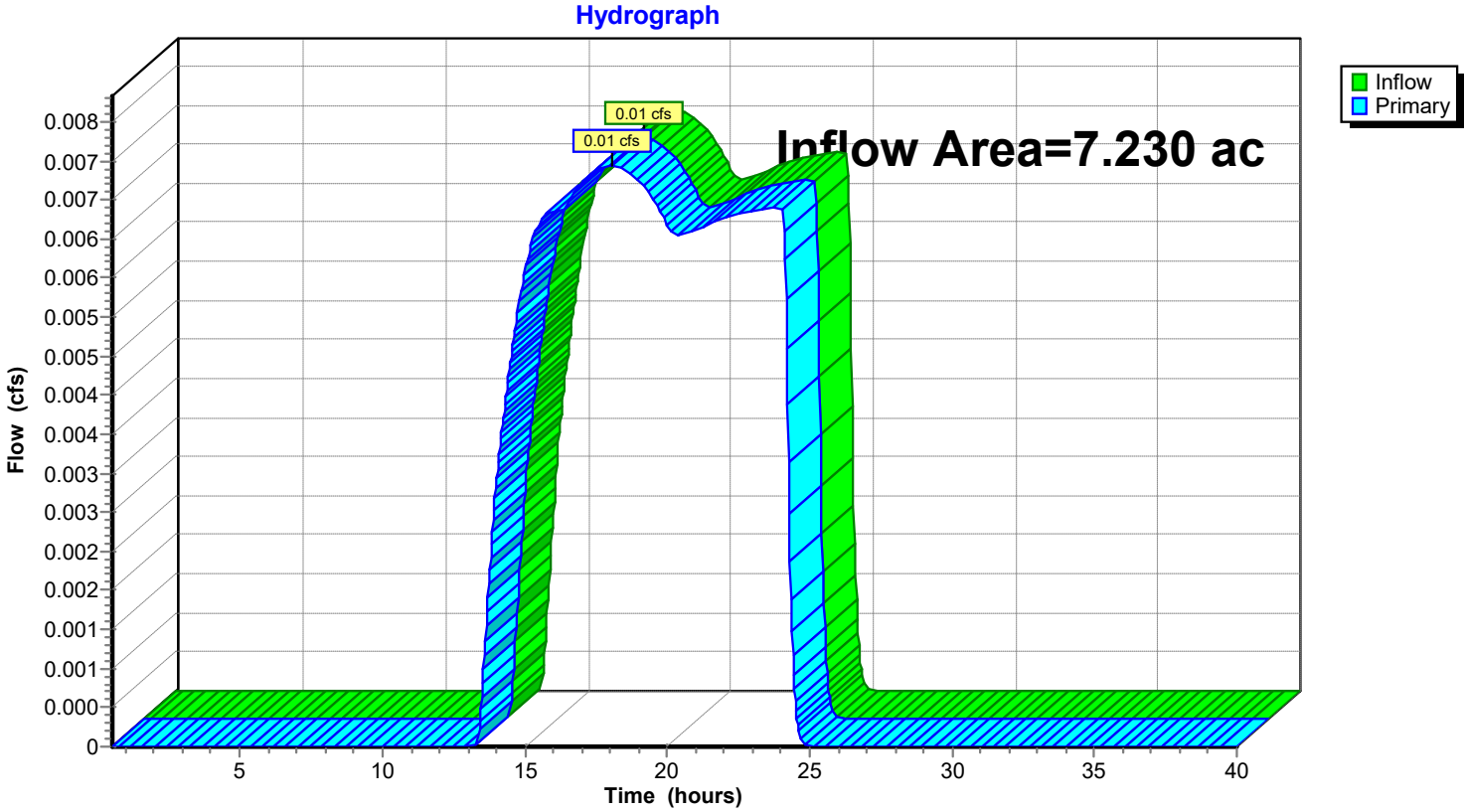


Summary for Pond 4P: Limestone Creek

Inflow Area = 7.230 ac, 17.84% Impervious, Inflow Depth = 0.01" for 1 year event
Inflow = 0.01 cfs @ 18.05 hrs, Volume= 0.006 af
Primary = 0.01 cfs @ 18.05 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs

Pond 4P: Limestone Creek

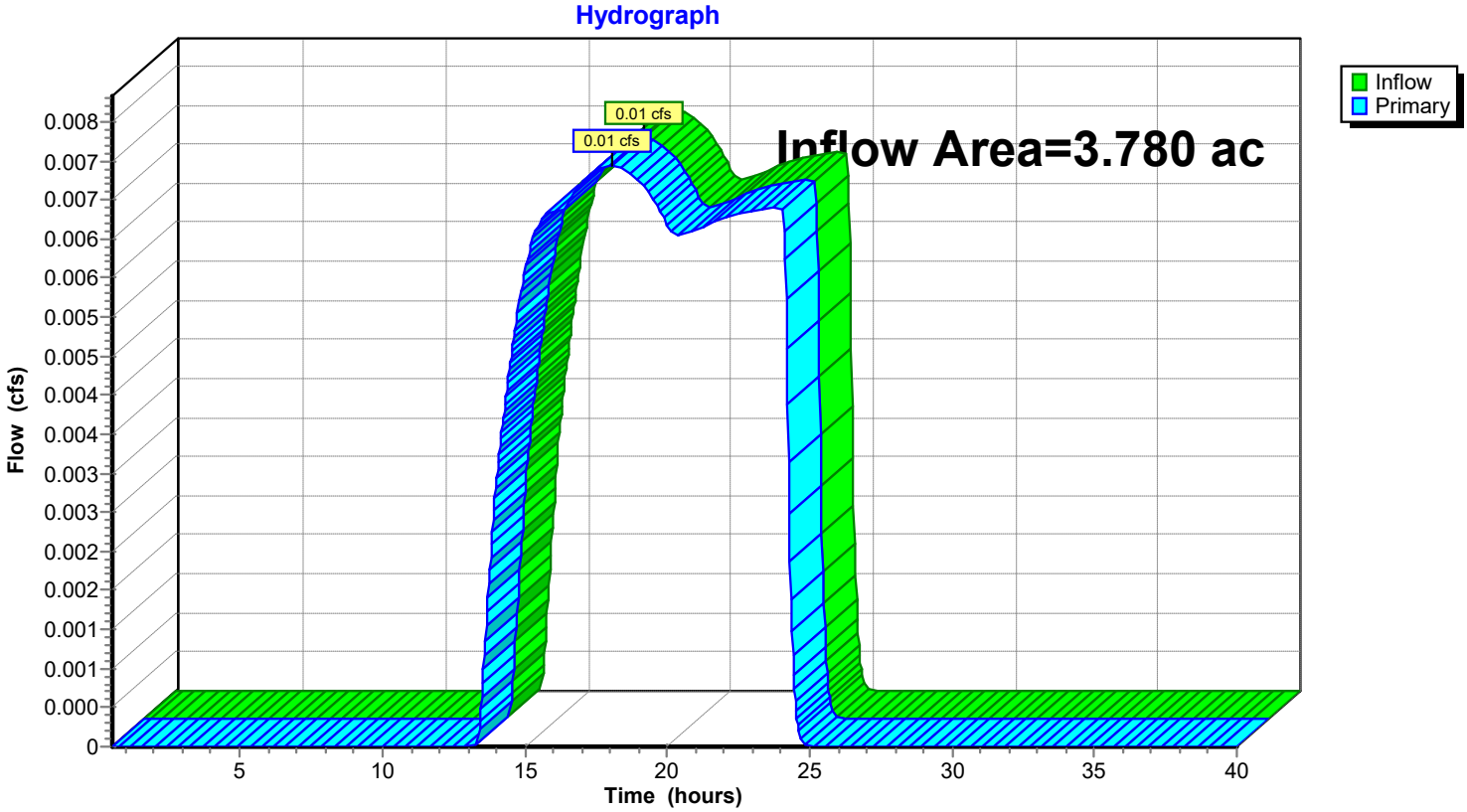


Summary for Link 1L: LINK-1

Inflow Area = 3.780 ac, 10.05% Impervious, Inflow Depth = 0.02" for 1 year event
Inflow = 0.01 cfs @ 18.05 hrs, Volume= 0.006 af
Primary = 0.01 cfs @ 18.05 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs

Link 1L: LINK-1

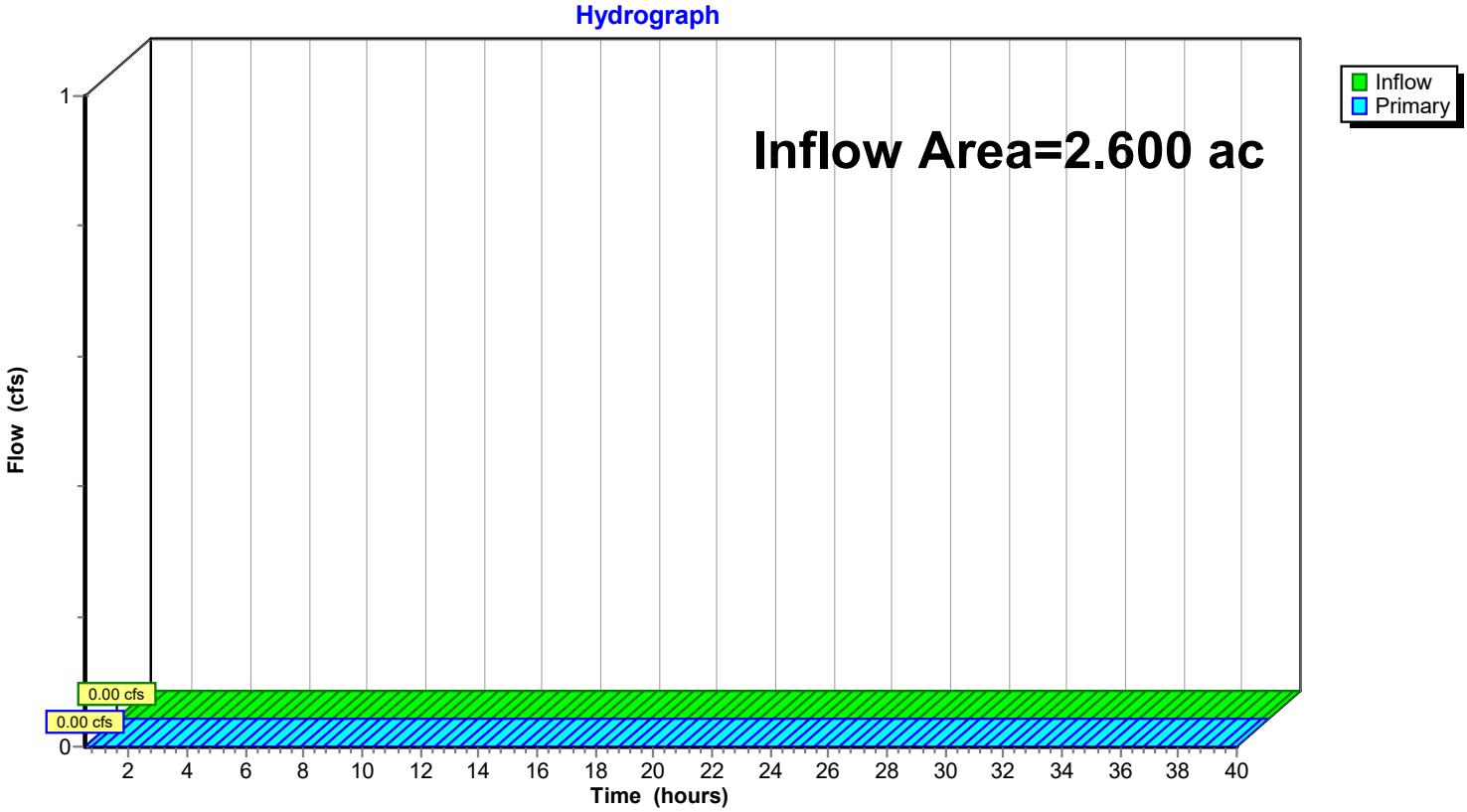


Summary for Link 2L: LINK-2

Inflow Area = 2.600 ac, 15.00% Impervious, Inflow Depth = 0.00" for 1 year event
Inflow = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs

Link 2L: LINK-2



Time span=0.50-40.00 hrs, dt=0.03 hrs, 1318 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: D-1 Runoff Area=0.770 ac 49.35% Impervious Runoff Depth=0.32"
Tc=5.0 min CN=68 Runoff=0.37 cfs 0.021 af

Subcatchment 2S: D-2 Runoff Area=0.850 ac 61.18% Impervious Runoff Depth=0.56"
Tc=5.0 min CN=75 Runoff=0.85 cfs 0.040 af

Subcatchment 3S: D-3 Runoff Area=0.990 ac 39.39% Impervious Runoff Depth=0.17"
Tc=5.0 min CN=62 Runoff=0.14 cfs 0.014 af

Subcatchment 4S: BYPASS-1 Runoff Area=3.010 ac 0.00% Impervious Runoff Depth=0.07"
Flow Length=427' Tc=19.0 min CN=56 Runoff=0.03 cfs 0.018 af

Subcatchment 5S: BYPASS-2 Runoff Area=1.610 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=464' Tc=18.2 min CN=47 Runoff=0.00 cfs 0.000 af

Reach 1R: REACH-1 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.150 L=142.0' S=0.1725 '/' Capacity=88.08 cfs Outflow=0.00 cfs 0.000 af

Reach 2R: REACH-2 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.150 L=198.0' S=0.1237 '/' Capacity=74.59 cfs Outflow=0.00 cfs 0.000 af

Reach 3R: REACH-3 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.150 L=307.0' S=0.0847 '/' Capacity=61.71 cfs Outflow=0.00 cfs 0.000 af

Reach 4R: REACH-4 Avg. Flow Depth=0.00' Max Vel=0.04 fps Inflow=0.00 cfs 0.000 af
n=0.150 L=366.0' S=0.0055 '/' Capacity=15.68 cfs Outflow=0.00 cfs 0.000 af

Pond 1P: BIORETENTION-1 Peak Elev=507.33' Storage=287 cf Inflow=0.37 cfs 0.021 af
Discarded=0.03 cfs 0.021 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.021 af

Pond 2P: BIORETENTION-2 Peak Elev=505.77' Storage=931 cf Inflow=0.85 cfs 0.040 af
Discarded=0.02 cfs 0.040 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.040 af

Pond 3P: BIORETENTION-3 Peak Elev=508.09' Storage=88 cf Inflow=0.14 cfs 0.014 af
Discarded=0.02 cfs 0.014 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.014 af

Pond 4P: Limestone Creek Inflow=0.03 cfs 0.018 af
Primary=0.03 cfs 0.018 af

Link 1L: LINK-1 Inflow=0.03 cfs 0.018 af
Primary=0.03 cfs 0.018 af

Link 2L: LINK-2 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 7.230 ac Runoff Volume = 0.093 af Average Runoff Depth = 0.15"
82.16% Pervious = 5.940 ac 17.84% Impervious = 1.290 ac

Summary for Subcatchment 1S: D-1

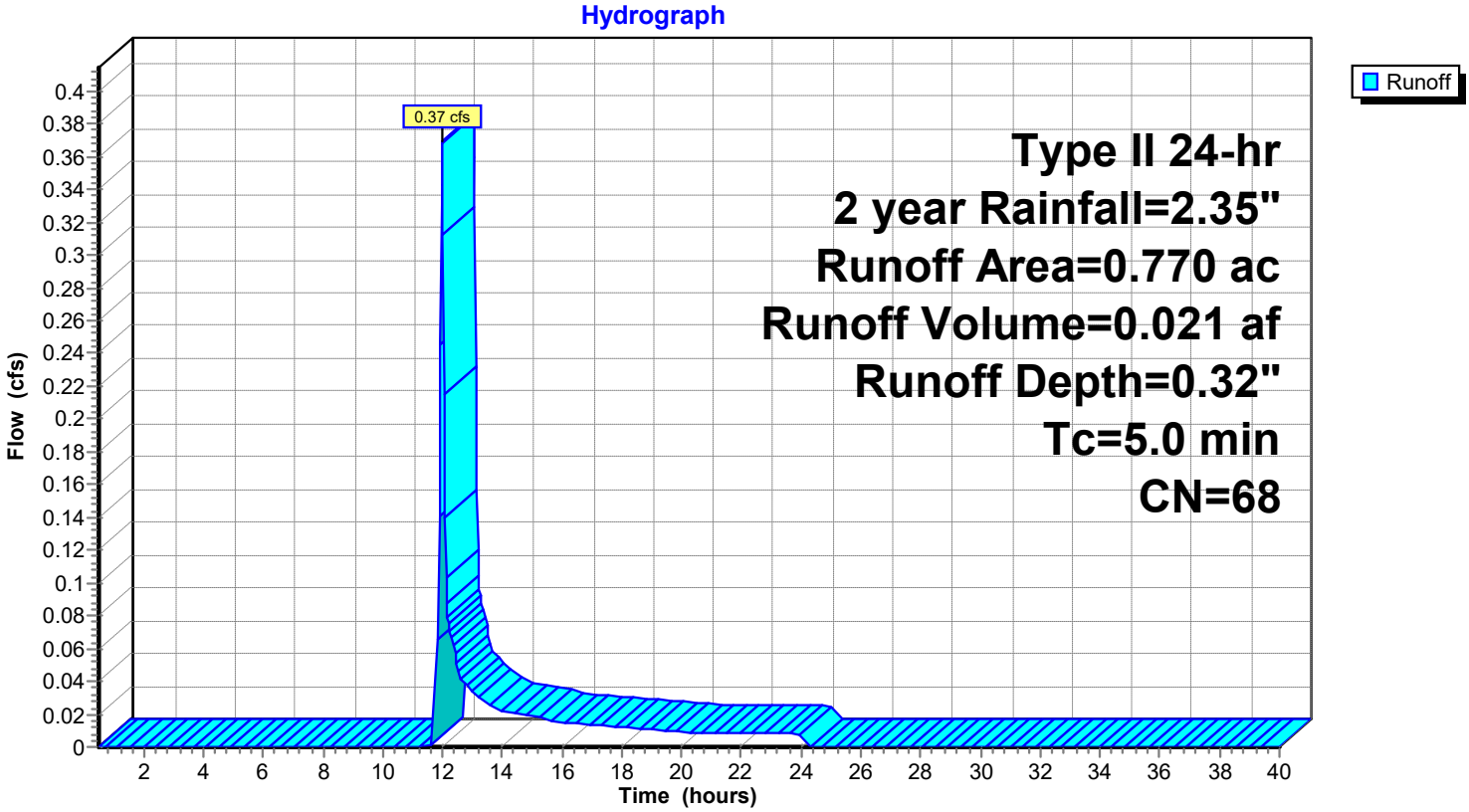
Runoff = 0.37 cfs @ 11.98 hrs, Volume= 0.021 af, Depth= 0.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Type II 24-hr 2 year Rainfall=2.35"

Area (ac)	CN	Description
0.390	39	>75% Grass cover, Good, HSG A
0.250	98	Paved parking, HSG A
0.130	98	Roofs, HSG A
0.770	68	Weighted Average
0.390		50.65% Pervious Area
0.380		49.35% Impervious Area

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

Subcatchment 1S: D-1



Summary for Subcatchment 2S: D-2

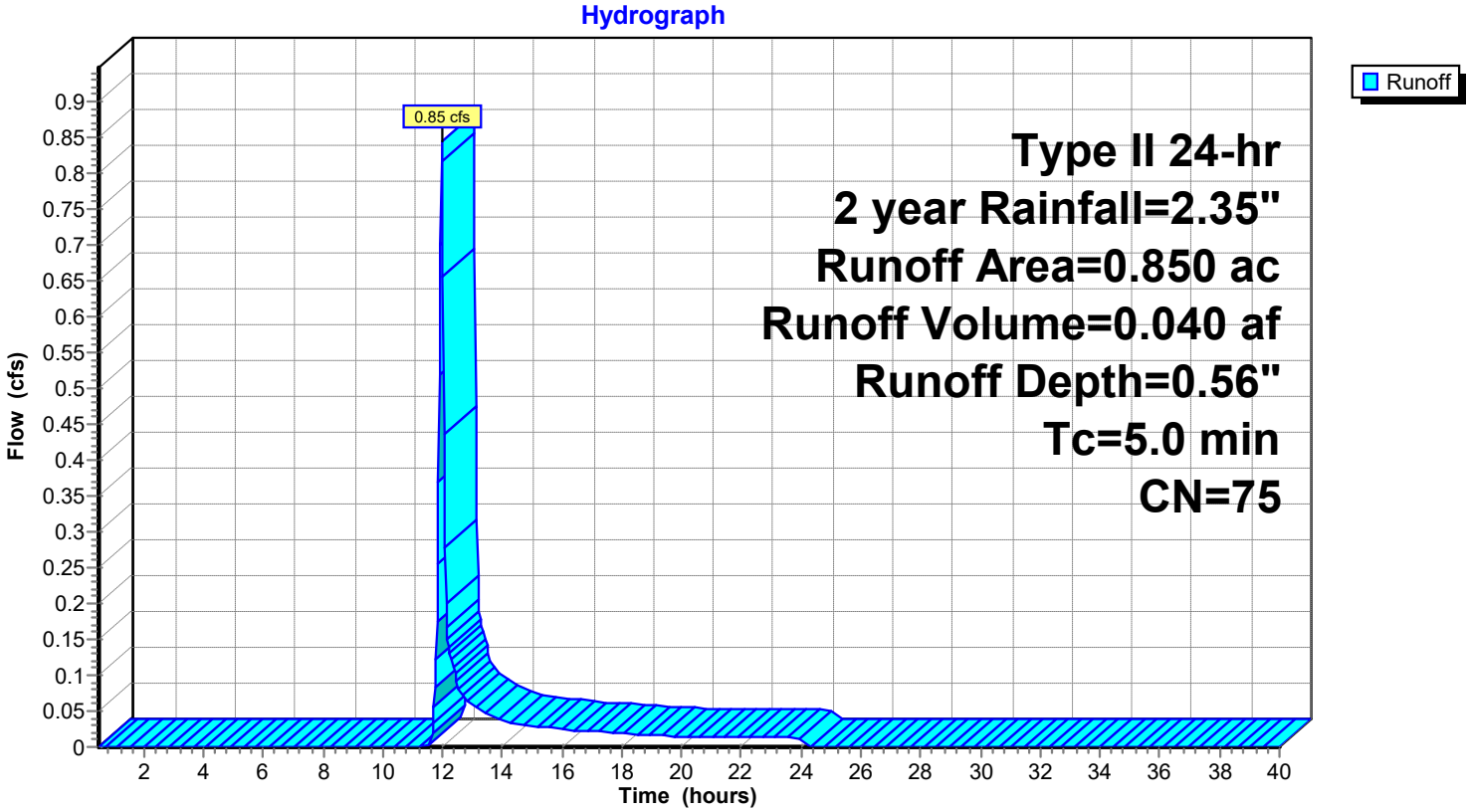
Runoff = 0.85 cfs @ 11.97 hrs, Volume= 0.040 af, Depth= 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Type II 24-hr 2 year Rainfall=2.35"

Area (ac)	CN	Description
0.330	39	>75% Grass cover, Good, HSG A
0.170	98	Paved parking, HSG A
0.350	98	Roofs, HSG A
0.850	75	Weighted Average
0.330		38.82% Pervious Area
0.520		61.18% Impervious Area

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

Subcatchment 2S: D-2



Summary for Subcatchment 3S: D-3

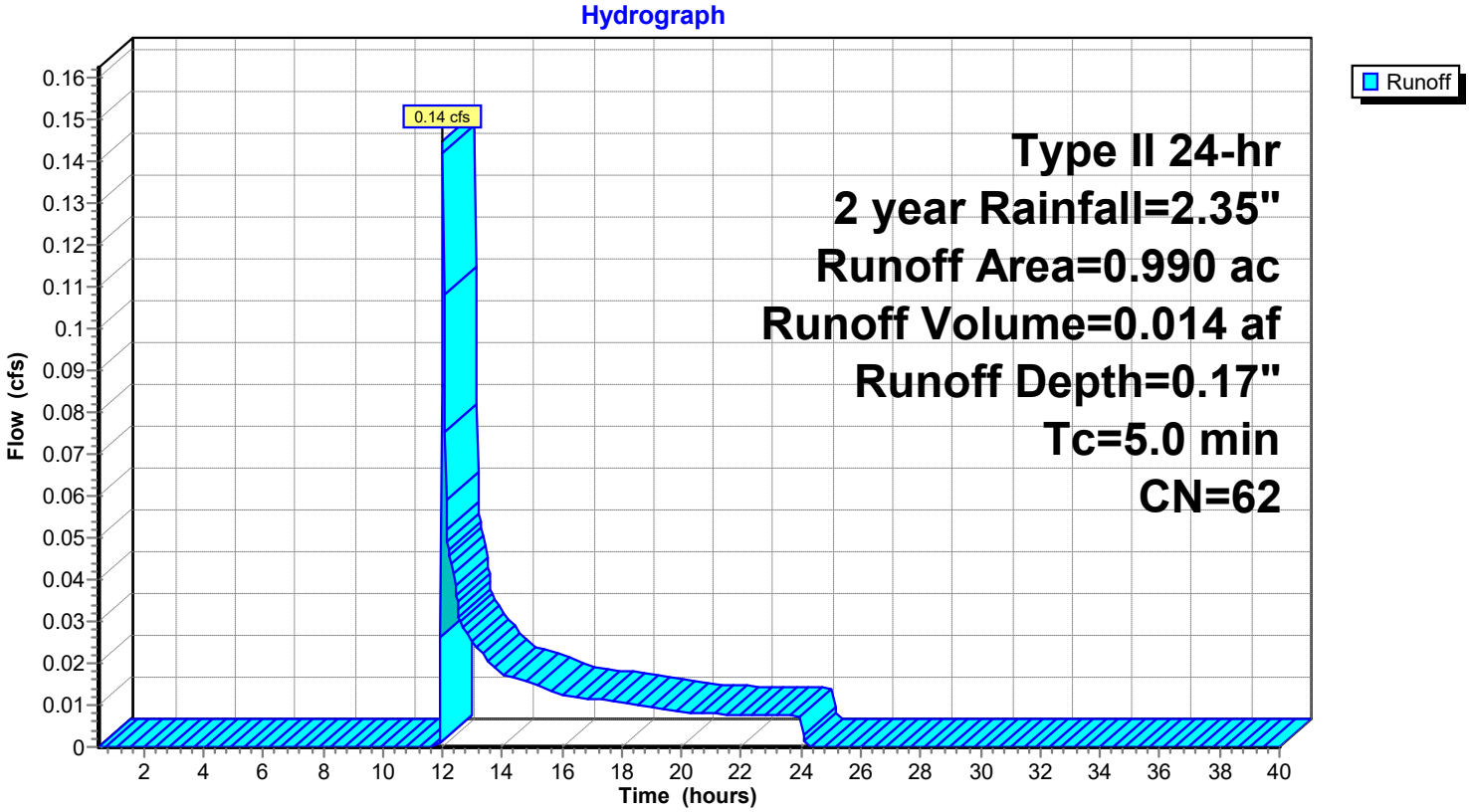
Runoff = 0.14 cfs @ 12.01 hrs, Volume= 0.014 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Type II 24-hr 2 year Rainfall=2.35"

Area (ac)	CN	Description
0.600	39	>75% Grass cover, Good, HSG A
0.140	98	Paved parking, HSG A
0.250	98	Roofs, HSG A
0.990	62	Weighted Average
0.600		60.61% Pervious Area
0.390		39.39% Impervious Area

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

Subcatchment 3S: D-3



Summary for Subcatchment 4S: BYPASS-1

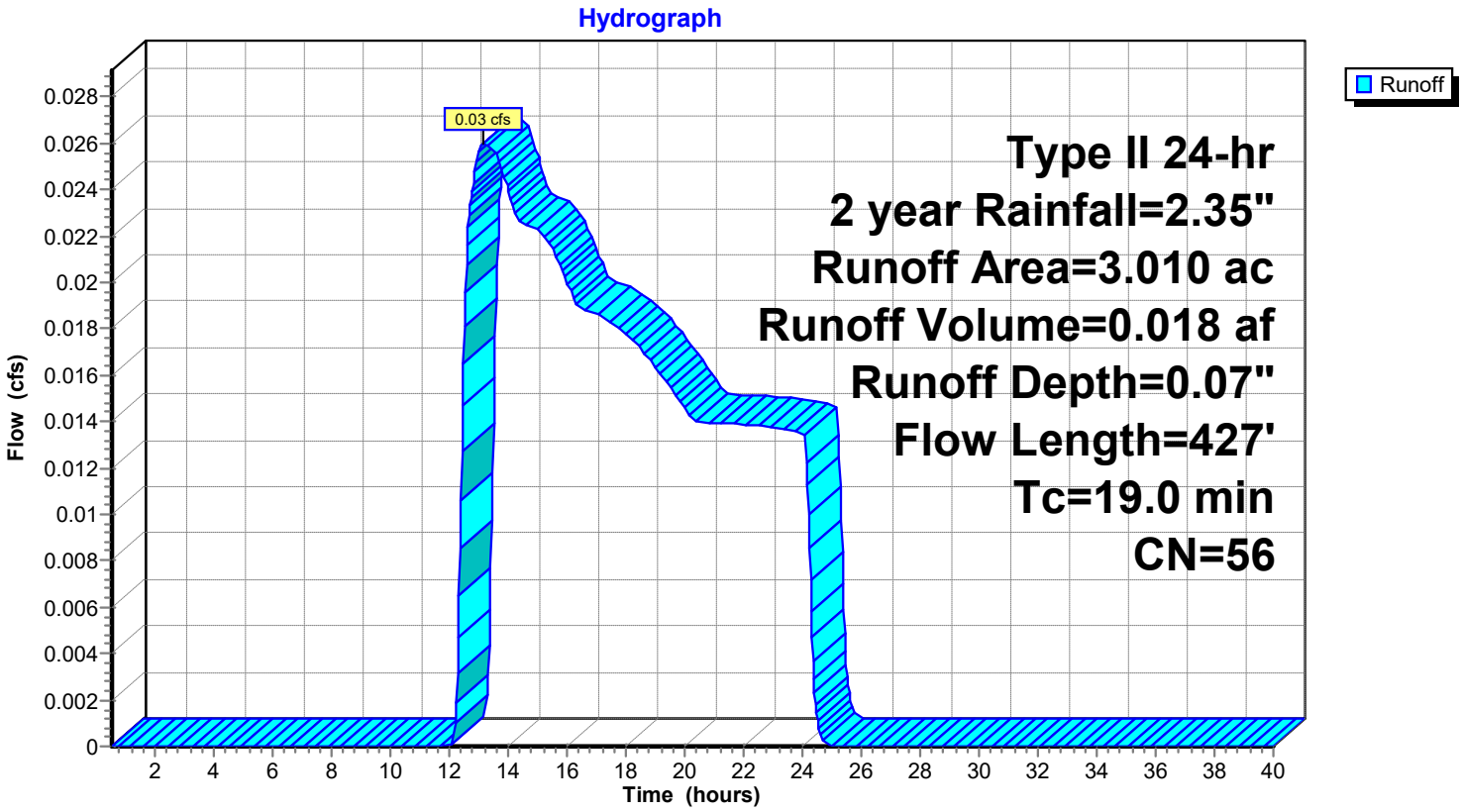
Runoff = 0.03 cfs @ 13.11 hrs, Volume= 0.018 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Type II 24-hr 2 year Rainfall=2.35"

Area (ac)	CN	Description
0.490	39	>75% Grass cover, Good, HSG A
1.040	30	Woods, Good, HSG A
1.480	79	Woods/grass comb., Good, HSG D
3.010	56	Weighted Average
3.010		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	77	0.3200	0.19		**Sheet Flow, A-B SHEET FLOW** Woods: Light underbrush n= 0.400 P2= 2.35"
12.3	350	0.0090	0.47		**Shallow Concentrated Flow, B-C SHALLOW CONC** Woodland Kv= 5.0 fps
19.0	427	Total			

Subcatchment 4S: BYPASS-1



Summary for Subcatchment 5S: BYPASS-2

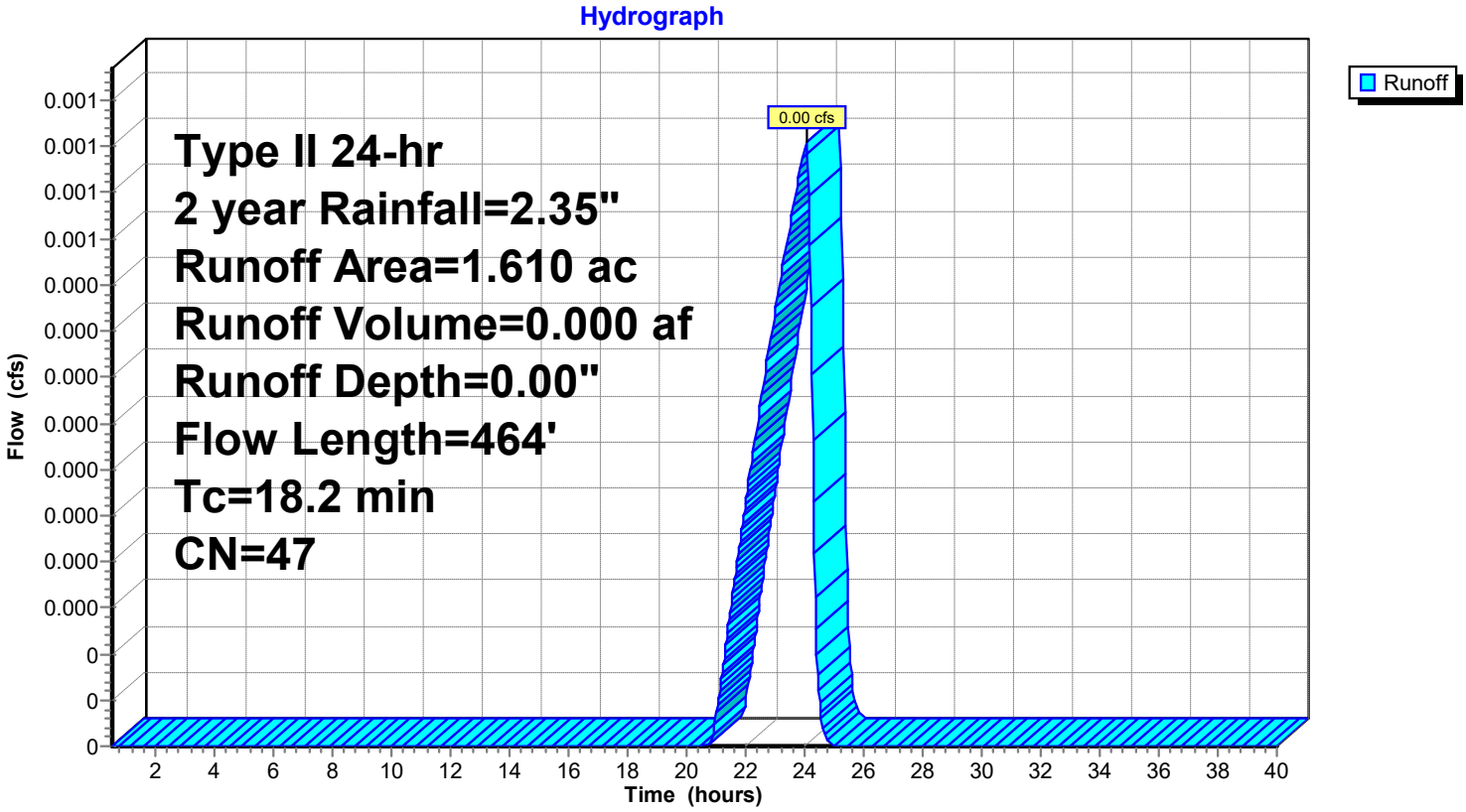
Runoff = 0.00 cfs @ 24.04 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Type II 24-hr 2 year Rainfall=2.35"

Area (ac)	CN	Description
0.790	30	Woods, Good, HSG A
0.490	79	Woods/grass comb., Good, HSG D
0.330	39	>75% Grass cover, Good, HSG A
1.610	47	Weighted Average
1.610		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	100	0.2200	0.17		**Sheet Flow, A-B SHEET FLOW** Woods: Light underbrush n= 0.400 P2= 2.35"
8.6	364	0.0200	0.71		**Shallow Concentrated Flow, B-C SHALL CONC** Woodland Kv= 5.0 fps
18.2	464	Total			

Subcatchment 5S: BYPASS-2



Summary for Reach 1R: REACH-1

Inflow Area = 0.770 ac, 49.35% Impervious, Inflow Depth = 0.00" for 2 year event
Inflow = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

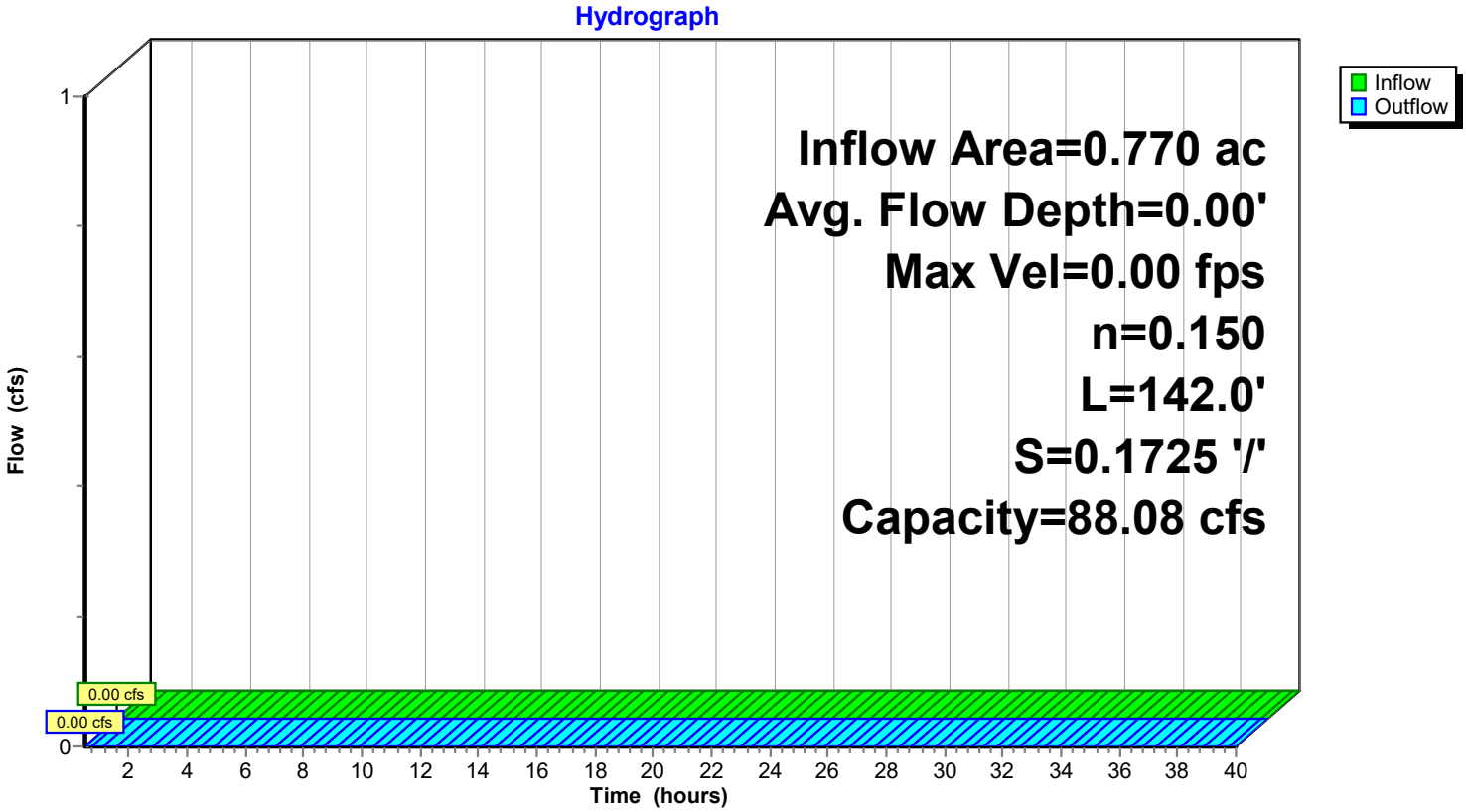
Routing by Stor-Ind+Trans method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.50 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.50' Flow Area= 22.5 sf, Capacity= 88.08 cfs

6.00' x 1.50' deep channel, n= 0.150 Dense willows
Side Slope Z-value= 6.0 '/' Top Width= 24.00'
Length= 142.0' Slope= 0.1725 '/'
Inlet Invert= 506.50', Outlet Invert= 482.00'

‡

Reach 1R: REACH-1



Summary for Reach 2R: REACH-2

Inflow Area = 0.850 ac, 61.18% Impervious, Inflow Depth = 0.00" for 2 year event
Inflow = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

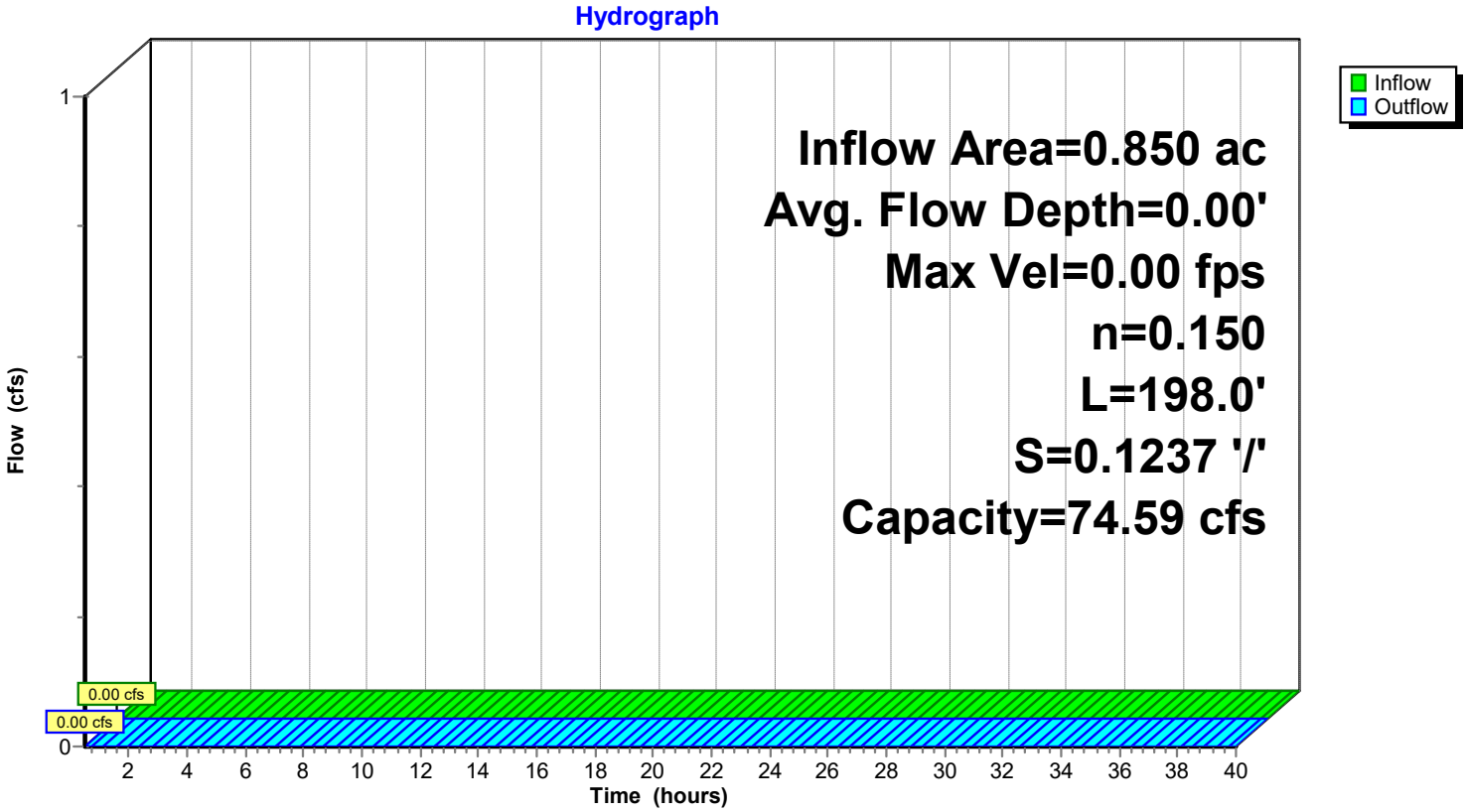
Routing by Stor-Ind+Trans method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.50 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.50' Flow Area= 22.5 sf, Capacity= 74.59 cfs

6.00' x 1.50' deep channel, n= 0.150 Dense willows
Side Slope Z-value= 6.0 '/' Top Width= 24.00'
Length= 198.0' Slope= 0.1237 '/'
Inlet Invert= 506.50', Outlet Invert= 482.00'

‡

Reach 2R: REACH-2



Summary for Reach 3R: REACH-3

Inflow Area = 0.990 ac, 39.39% Impervious, Inflow Depth = 0.00" for 2 year event
Inflow = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

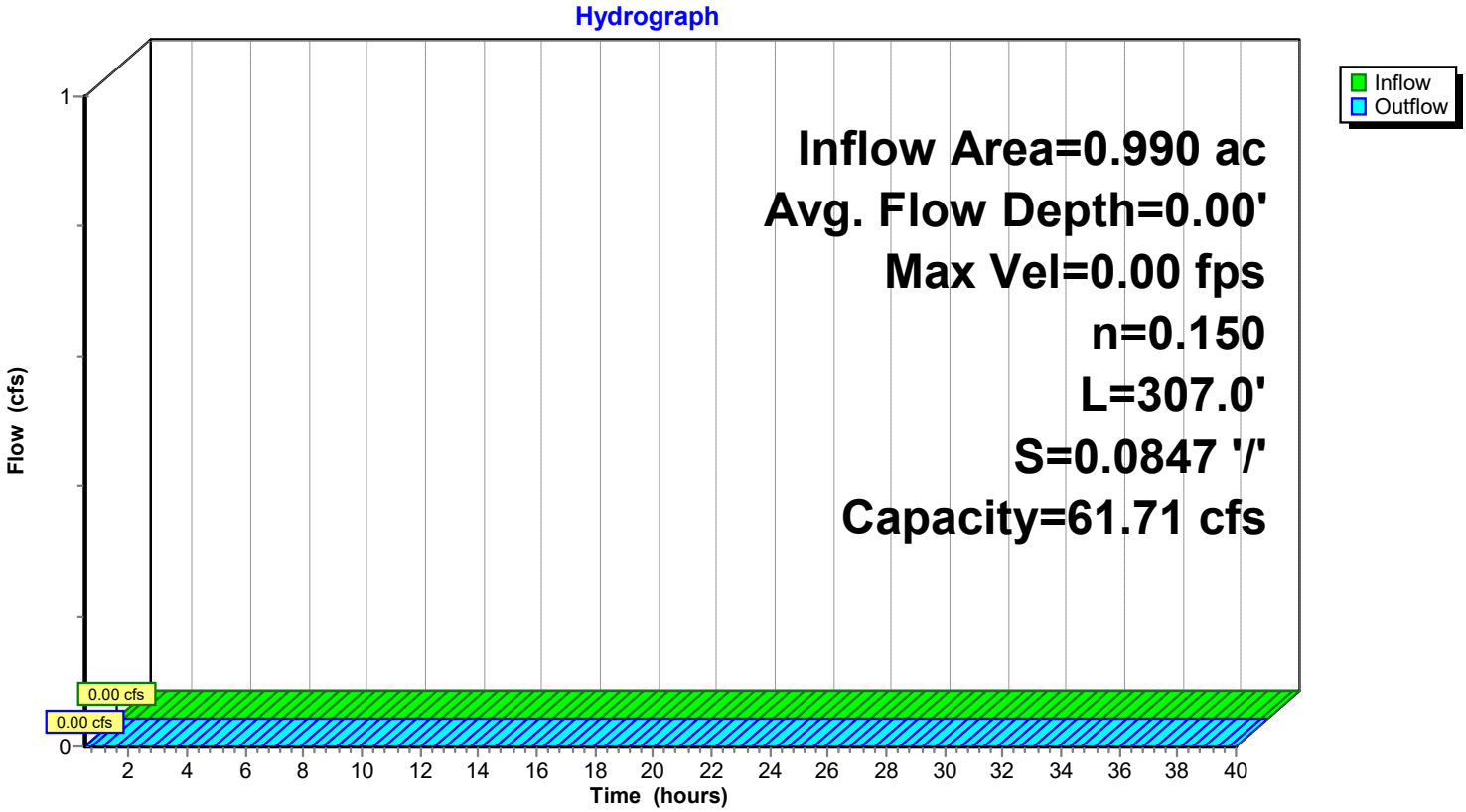
Routing by Stor-Ind+Trans method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.50 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.50' Flow Area= 22.5 sf, Capacity= 61.71 cfs

6.00' x 1.50' deep channel, n= 0.150 Dense willows
Side Slope Z-value= 6.0 '/' Top Width= 24.00'
Length= 307.0' Slope= 0.0847 '/'
Inlet Invert= 510.00', Outlet Invert= 484.00'

‡

Reach 3R: REACH-3



Summary for Reach 4R: REACH-4

Inflow Area = 2.600 ac, 15.00% Impervious, Inflow Depth = 0.00" for 2 year event
Inflow = 0.00 cfs @ 24.04 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 26.56 hrs, Volume= 0.000 af, Atten= 48%, Lag= 151.2 min

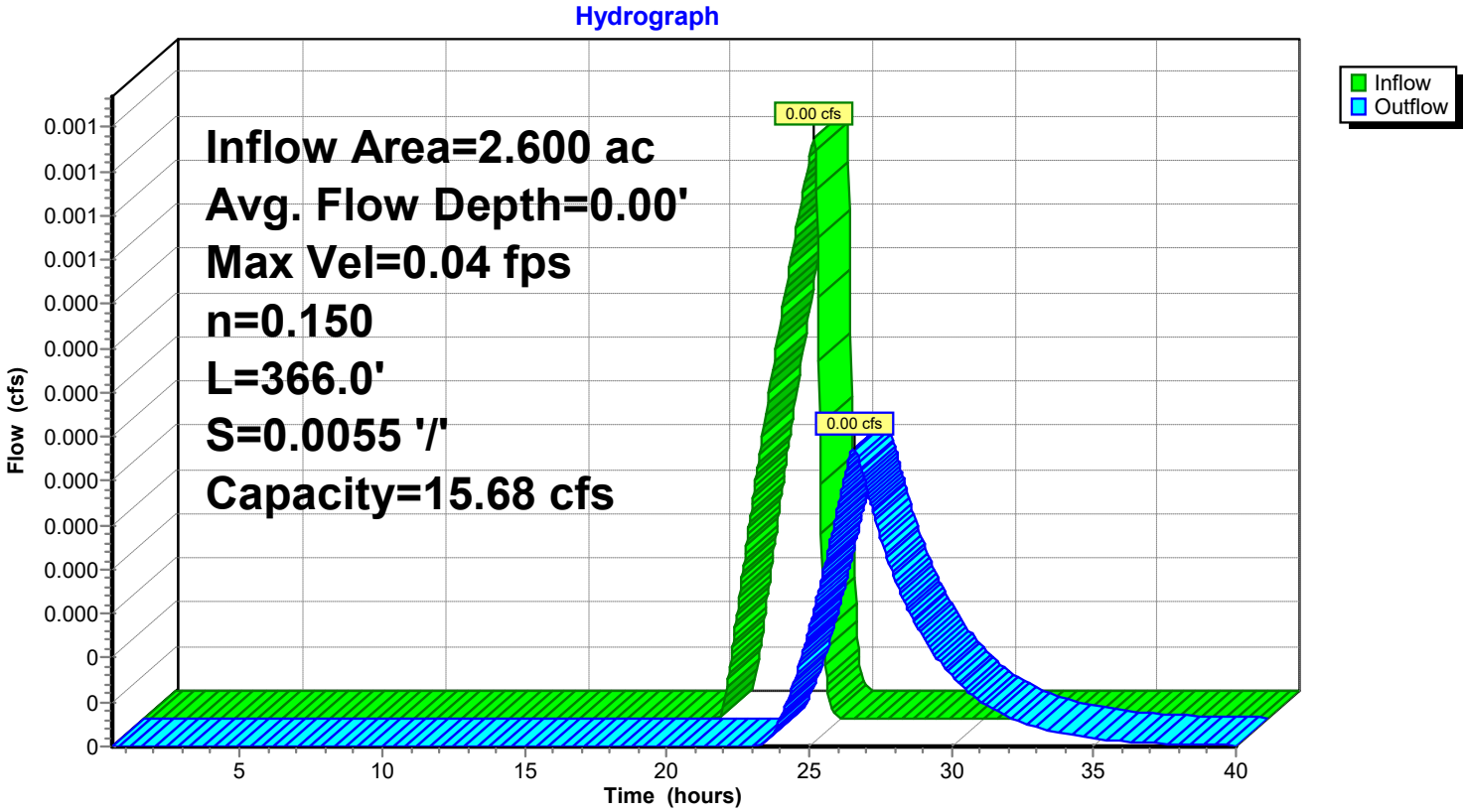
Routing by Stor-Ind+Trans method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Max. Velocity= 0.04 fps, Min. Travel Time= 138.3 min
Avg. Velocity = 0.04 fps, Avg. Travel Time= 138.3 min

Peak Storage= 3 cf @ 24.26 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.50' Flow Area= 22.5 sf, Capacity= 15.68 cfs

6.00' x 1.50' deep channel, n= 0.150 Dense willows
Side Slope Z-value= 6.0 '/' Top Width= 24.00'
Length= 366.0' Slope= 0.0055 '/'
Inlet Invert= 484.00', Outlet Invert= 482.00'

‡

Reach 4R: REACH-4



Summary for Pond 1P: BIORETENTION-1

Inflow Area = 0.770 ac, 49.35% Impervious, Inflow Depth = 0.32" for 2 year event
Inflow = 0.37 cfs @ 11.98 hrs, Volume= 0.021 af
Outflow = 0.03 cfs @ 13.65 hrs, Volume= 0.021 af, Atten= 93%, Lag= 99.6 min
Discarded = 0.03 cfs @ 13.65 hrs, Volume= 0.021 af
Primary = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af
Secondary = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Peak Elev= 507.33' @ 13.65 hrs Surf.Area= 1,046 sf Storage= 287 cf

Plug-Flow detention time= 125.3 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 125.2 min (1,038.0 - 912.7)

Volume	Invert	Avail.Storage	Storage Description
#1	507.00'	5,870 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
507.00	690	0	0
508.00	1,766	1,228	1,228
509.00	3,487	2,627	3,855
509.50	4,575	2,016	5,870

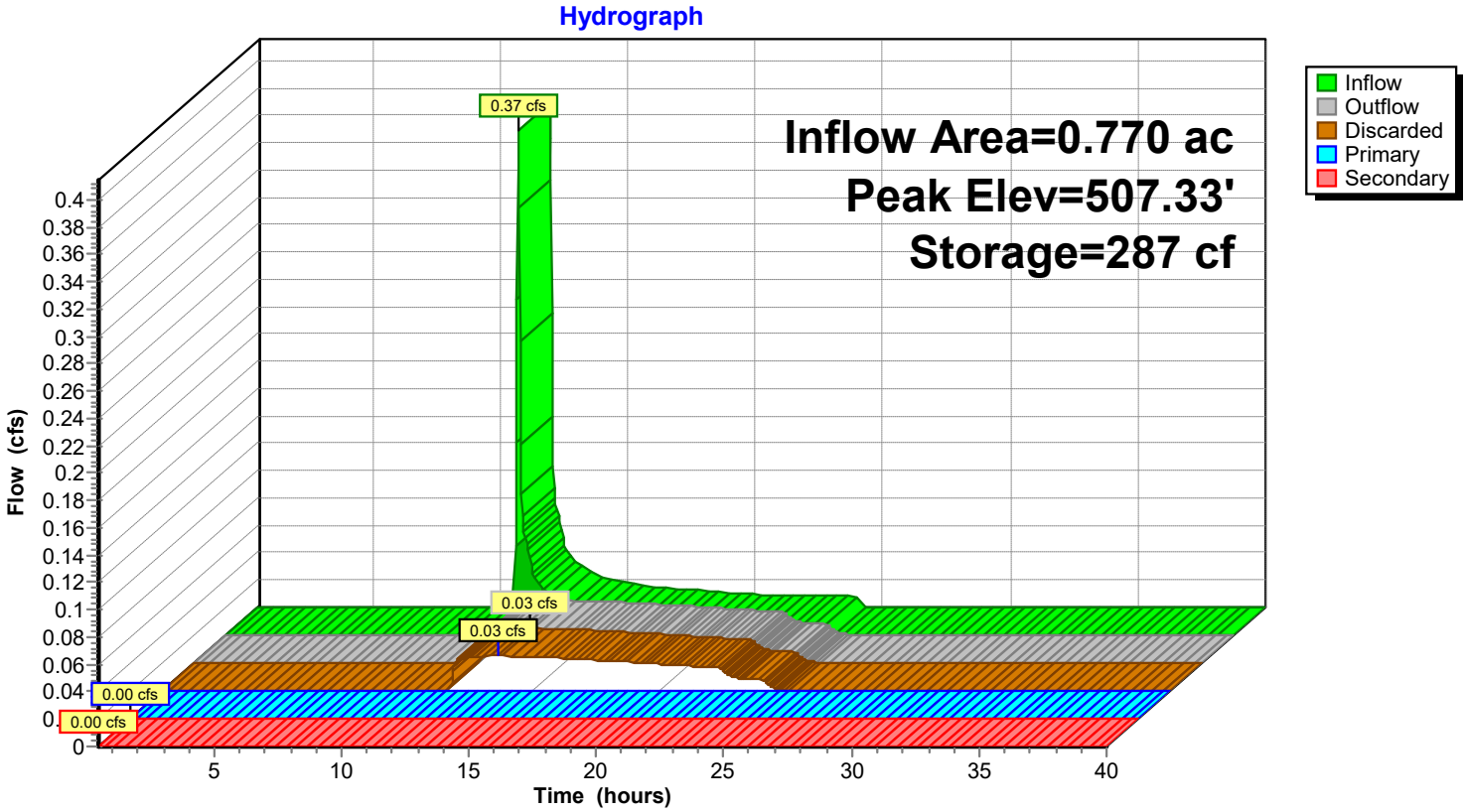
Device	Routing	Invert	Outlet Devices
#1	Secondary	509.00'	**10.0' long x 0.50' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s) 2.0' Crest Height
#2	Primary	507.00'	**12.0" Round Culvert** L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 507.00' / 506.60' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	508.00'	**6.0" Vert. Orifice/Grate** C= 0.600
#4	Discarded	507.00'	**1.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 502.00'

Discarded OutFlow Max=0.03 cfs @ 13.65 hrs HW=507.33' (Free Discharge)
└─**4=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.50 hrs HW=507.00' (Free Discharge)
└─**2=Culvert** (Controls 0.00 cfs)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.50 hrs HW=507.00' (Free Discharge)
└─**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: BIORETENTION-1



Summary for Pond 2P: BIORETENTION-2

Inflow Area = 0.850 ac, 61.18% Impervious, Inflow Depth = 0.56" for 2 year event
Inflow = 0.85 cfs @ 11.97 hrs, Volume= 0.040 af
Outflow = 0.02 cfs @ 15.91 hrs, Volume= 0.040 af, Atten= 97%, Lag= 236.2 min
Discarded = 0.02 cfs @ 15.91 hrs, Volume= 0.040 af
Primary = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Peak Elev= 505.77' @ 15.91 hrs Surf.Area= 884 sf Storage= 931 cf

Plug-Flow detention time= 514.6 min calculated for 0.040 af (99% of inflow)
Center-of-Mass det. time= 510.2 min (1,386.5 - 876.3)

Volume	Invert	Avail.Storage	Storage Description
#1	504.00'	3,927 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

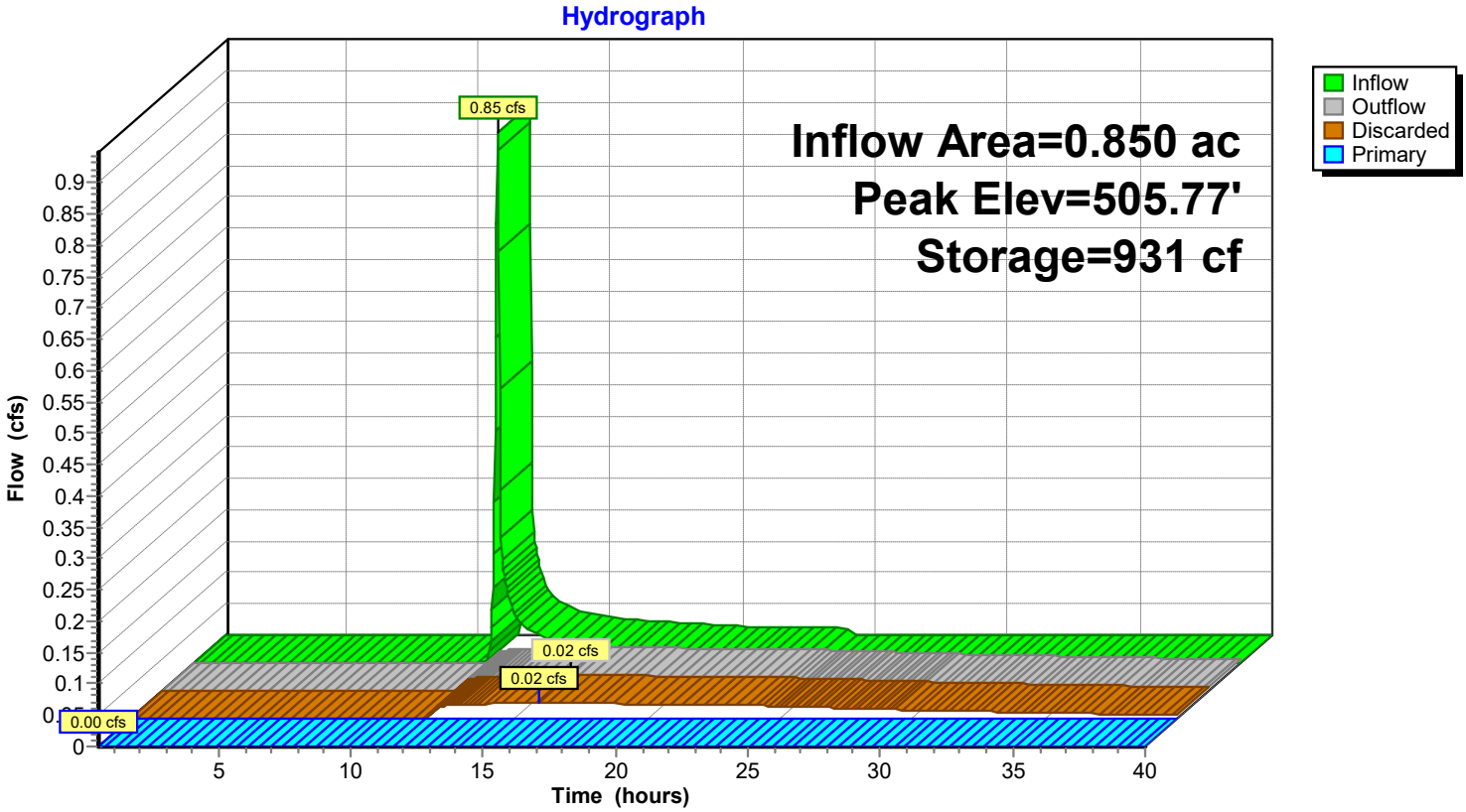
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
504.00	225	0	0
505.00	540	383	383
506.00	987	764	1,146
507.00	2,158	1,573	2,719
507.50	2,677	1,209	3,927

Device	Routing	Invert	Outlet Devices
#1	Discarded	504.00'	**1.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 499.00'
#2	Primary	507.00'	**10.0' long x 0.50' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s) 3.0' Crest Height

Discarded OutFlow Max=0.02 cfs @ 15.91 hrs HW=505.77' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.50 hrs HW=504.00' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: BIORETENTION-2



Summary for Pond 3P: BIORETENTION-3

Inflow Area = 0.990 ac, 39.39% Impervious, Inflow Depth = 0.17" for 2 year event
Inflow = 0.14 cfs @ 12.01 hrs, Volume= 0.014 af
Outflow = 0.02 cfs @ 13.02 hrs, Volume= 0.014 af, Atten= 83%, Lag= 60.7 min
Discarded = 0.02 cfs @ 13.02 hrs, Volume= 0.014 af
Primary = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Peak Elev= 508.09' @ 13.02 hrs Surf.Area= 1,054 sf Storage= 88 cf

Plug-Flow detention time= 33.5 min calculated for 0.014 af (100% of inflow)
Center-of-Mass det. time= 33.5 min (993.7 - 960.2)

Volume	Invert	Avail.Storage	Storage Description
#1	508.00'	6,376 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

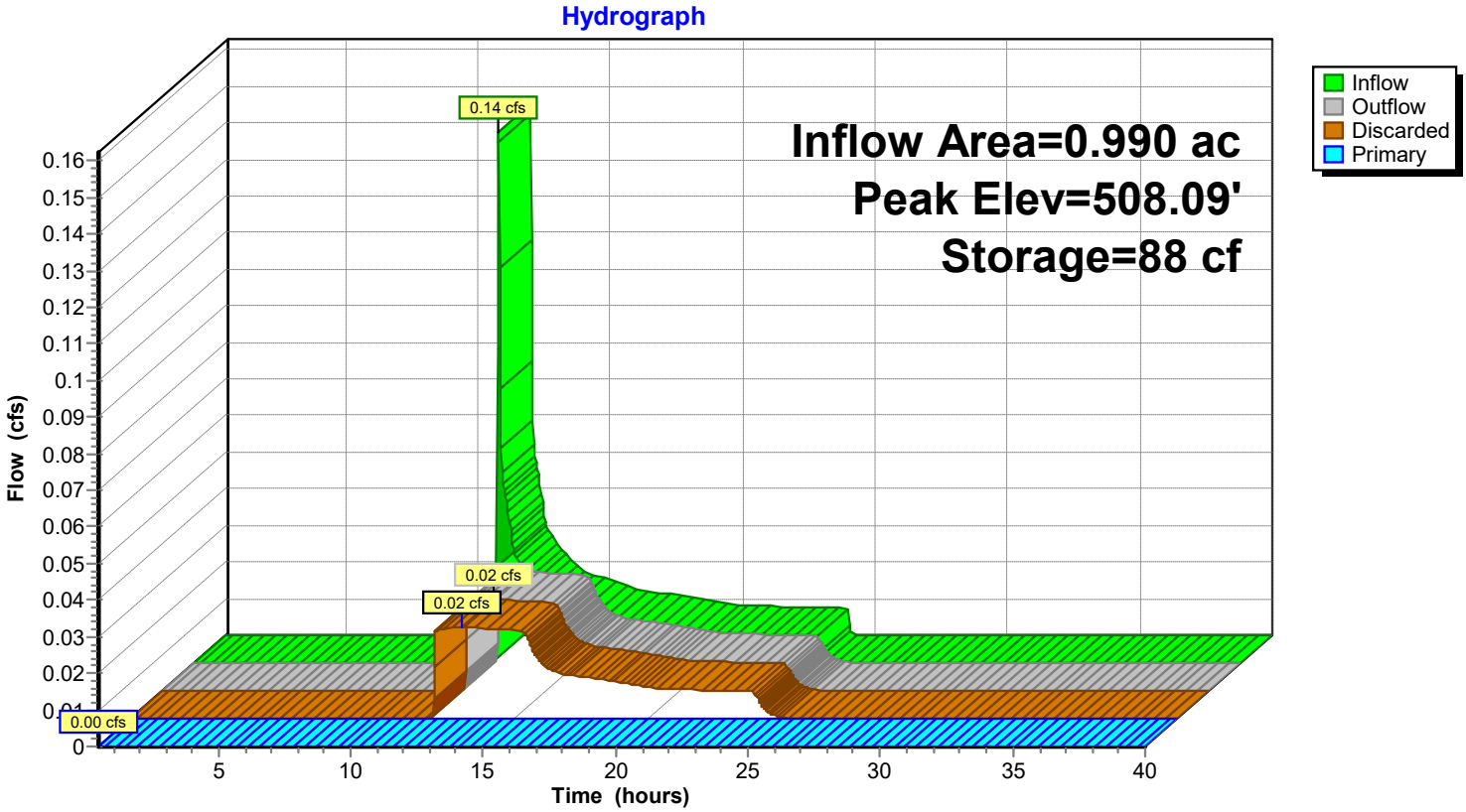
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
508.00	1,004	0	0
509.00	1,594	1,299	1,299
510.00	2,284	1,939	3,238
511.00	3,991	3,138	6,376

Device	Routing	Invert	Outlet Devices
#1	Discarded	508.00'	**1.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 503.00'
#2	Primary	510.50'	**10.0' long x 0.50' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s) 2.5' Crest Height

Discarded OutFlow Max=0.02 cfs @ 13.02 hrs HW=508.09' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.50 hrs HW=508.00' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: BIORETENTION-3

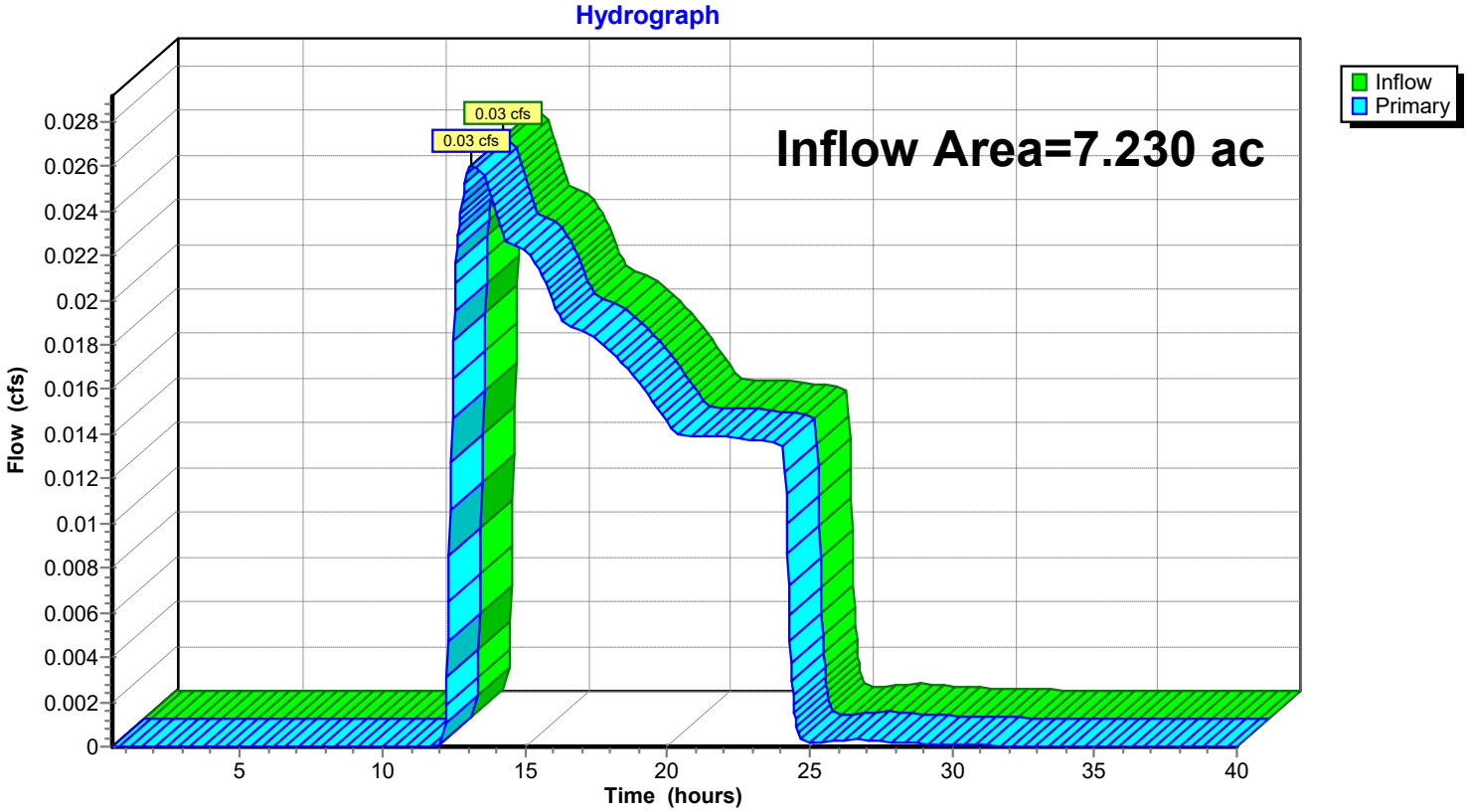


Summary for Pond 4P: Limestone Creek

Inflow Area = 7.230 ac, 17.84% Impervious, Inflow Depth = 0.03" for 2 year event
Inflow = 0.03 cfs @ 13.11 hrs, Volume= 0.018 af
Primary = 0.03 cfs @ 13.11 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs

Pond 4P: Limestone Creek

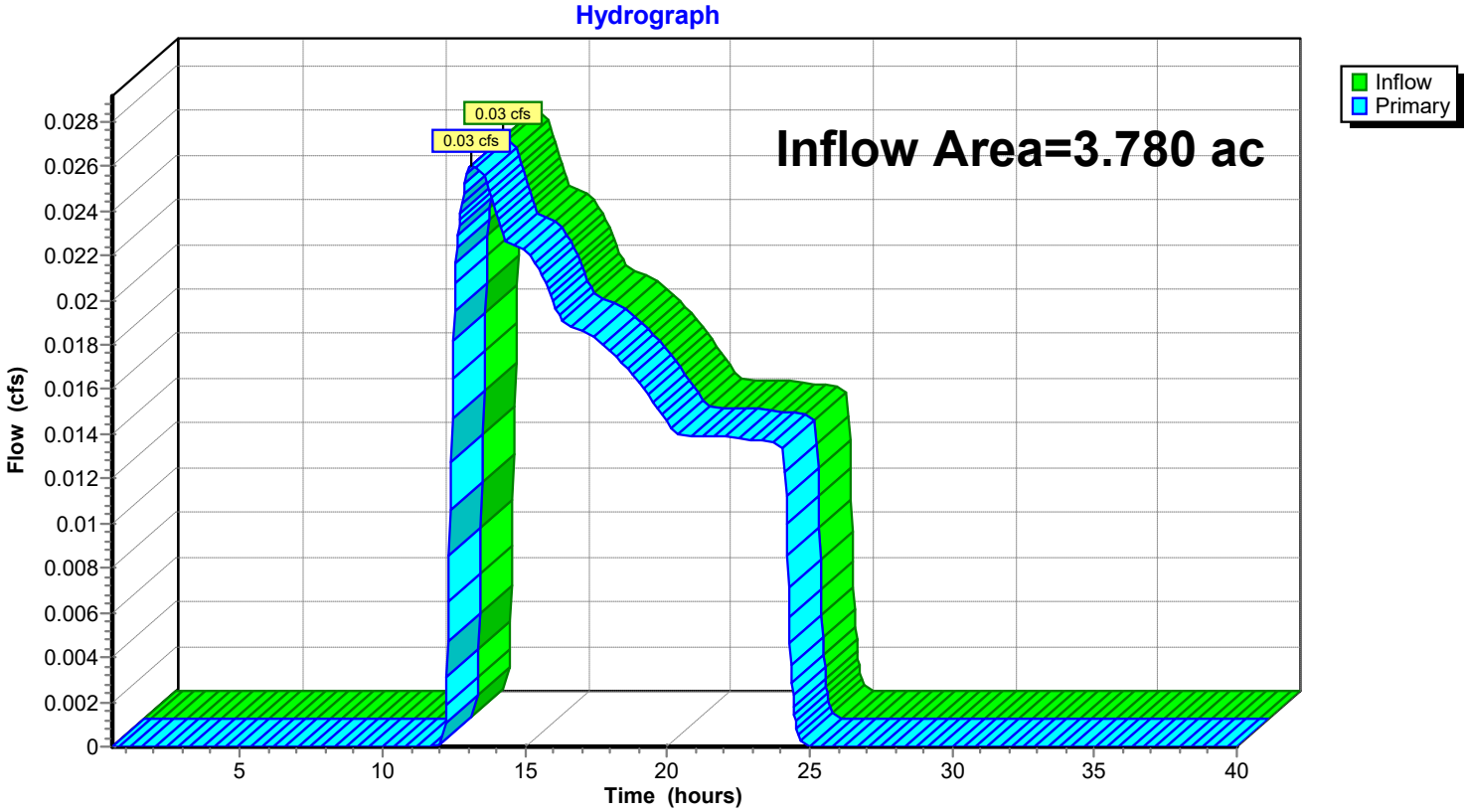


Summary for Link 1L: LINK-1

Inflow Area = 3.780 ac, 10.05% Impervious, Inflow Depth = 0.06" for 2 year event
Inflow = 0.03 cfs @ 13.11 hrs, Volume= 0.018 af
Primary = 0.03 cfs @ 13.11 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs

Link 1L: LINK-1

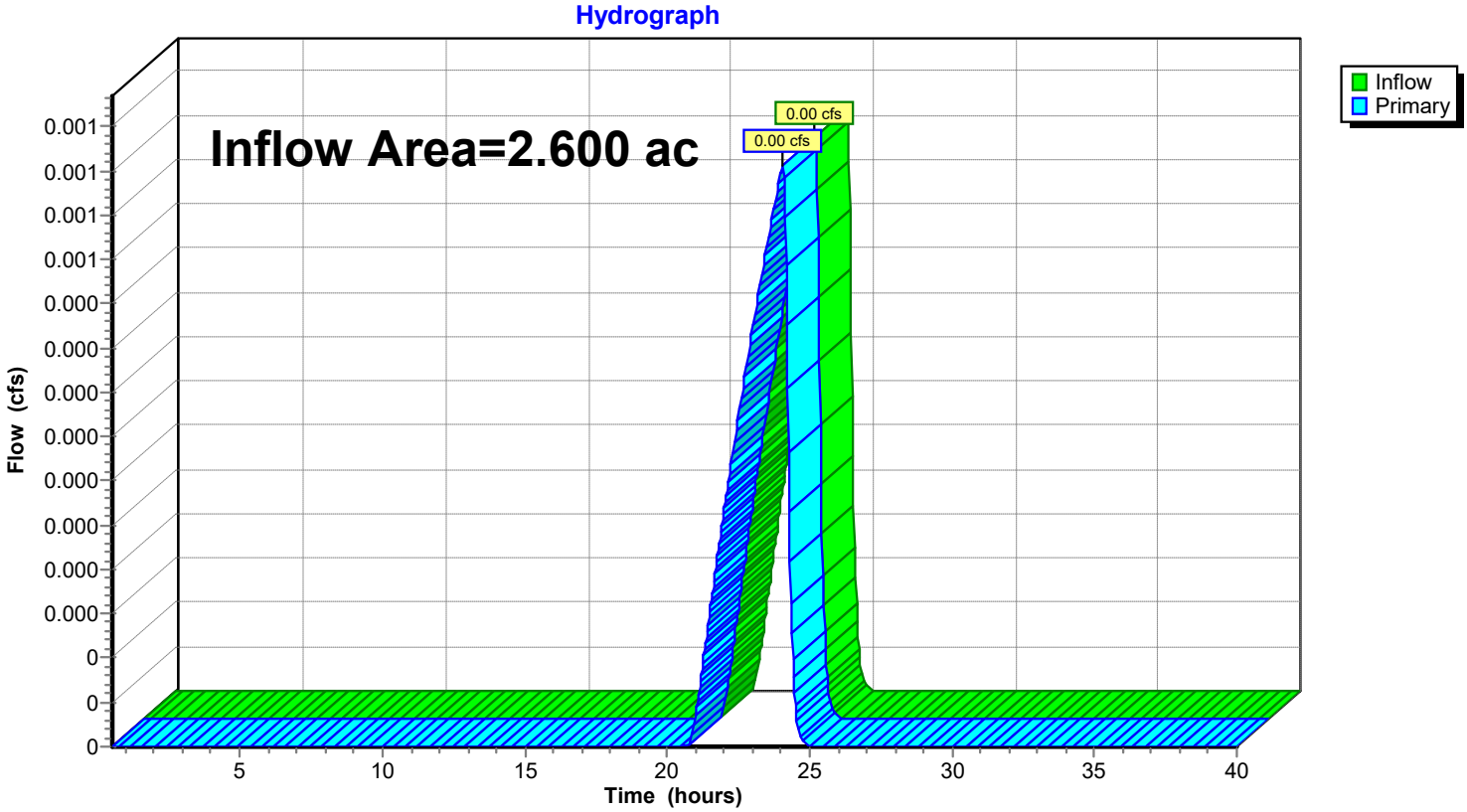


Summary for Link 2L: LINK-2

Inflow Area = 2.600 ac, 15.00% Impervious, Inflow Depth = 0.00" for 2 year event
Inflow = 0.00 cfs @ 24.04 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 24.04 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs

Link 2L: LINK-2



Time span=0.50-40.00 hrs, dt=0.03 hrs, 1318 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: D-1 Runoff Area=0.770 ac 49.35% Impervious Runoff Depth=0.83"
Tc=5.0 min CN=68 Runoff=1.13 cfs 0.053 af

Subcatchment 2S: D-2 Runoff Area=0.850 ac 61.18% Impervious Runoff Depth=1.21"
Tc=5.0 min CN=75 Runoff=1.90 cfs 0.086 af

Subcatchment 3S: D-3 Runoff Area=0.990 ac 39.39% Impervious Runoff Depth=0.56"
Tc=5.0 min CN=62 Runoff=0.88 cfs 0.046 af

Subcatchment 4S: BYPASS-1 Runoff Area=3.010 ac 0.00% Impervious Runoff Depth=0.34"
Flow Length=427' Tc=19.0 min CN=56 Runoff=0.57 cfs 0.084 af

Subcatchment 5S: BYPASS-2 Runoff Area=1.610 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=464' Tc=18.2 min CN=47 Runoff=0.02 cfs 0.013 af

Reach 1R: REACH-1 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.150 L=142.0' S=0.1725 '/' Capacity=88.08 cfs Outflow=0.00 cfs 0.000 af

Reach 2R: REACH-2 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.150 L=198.0' S=0.1237 '/' Capacity=74.59 cfs Outflow=0.00 cfs 0.000 af

Reach 3R: REACH-3 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.150 L=307.0' S=0.0847 '/' Capacity=61.71 cfs Outflow=0.00 cfs 0.000 af

Reach 4R: REACH-4 Avg. Flow Depth=0.03' Max Vel=0.08 fps Inflow=0.02 cfs 0.013 af
n=0.150 L=366.0' S=0.0055 '/' Capacity=15.68 cfs Outflow=0.02 cfs 0.013 af

Pond 1P: BIORETENTION-1 Peak Elev=507.92' Storage=1,088 cf Inflow=1.13 cfs 0.053 af
Discarded=0.04 cfs 0.053 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.053 af

Pond 2P: BIORETENTION-2 Peak Elev=506.72' Storage=2,157 cf Inflow=1.90 cfs 0.086 af
Discarded=0.05 cfs 0.079 af Primary=0.00 cfs 0.000 af Outflow=0.05 cfs 0.079 af

Pond 3P: BIORETENTION-3 Peak Elev=508.70' Storage=852 cf Inflow=0.88 cfs 0.046 af
Discarded=0.04 cfs 0.046 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.046 af

Pond 4P: Limestone Creek Inflow=0.57 cfs 0.097 af
Primary=0.57 cfs 0.097 af

Link 1L: LINK-1 Inflow=0.57 cfs 0.084 af
Primary=0.57 cfs 0.084 af

Link 2L: LINK-2 Inflow=0.02 cfs 0.013 af
Primary=0.02 cfs 0.013 af

Total Runoff Area = 7.230 ac Runoff Volume = 0.282 af Average Runoff Depth = 0.47"
82.16% Pervious = 5.940 ac 17.84% Impervious = 1.290 ac

Summary for Subcatchment 1S: D-1

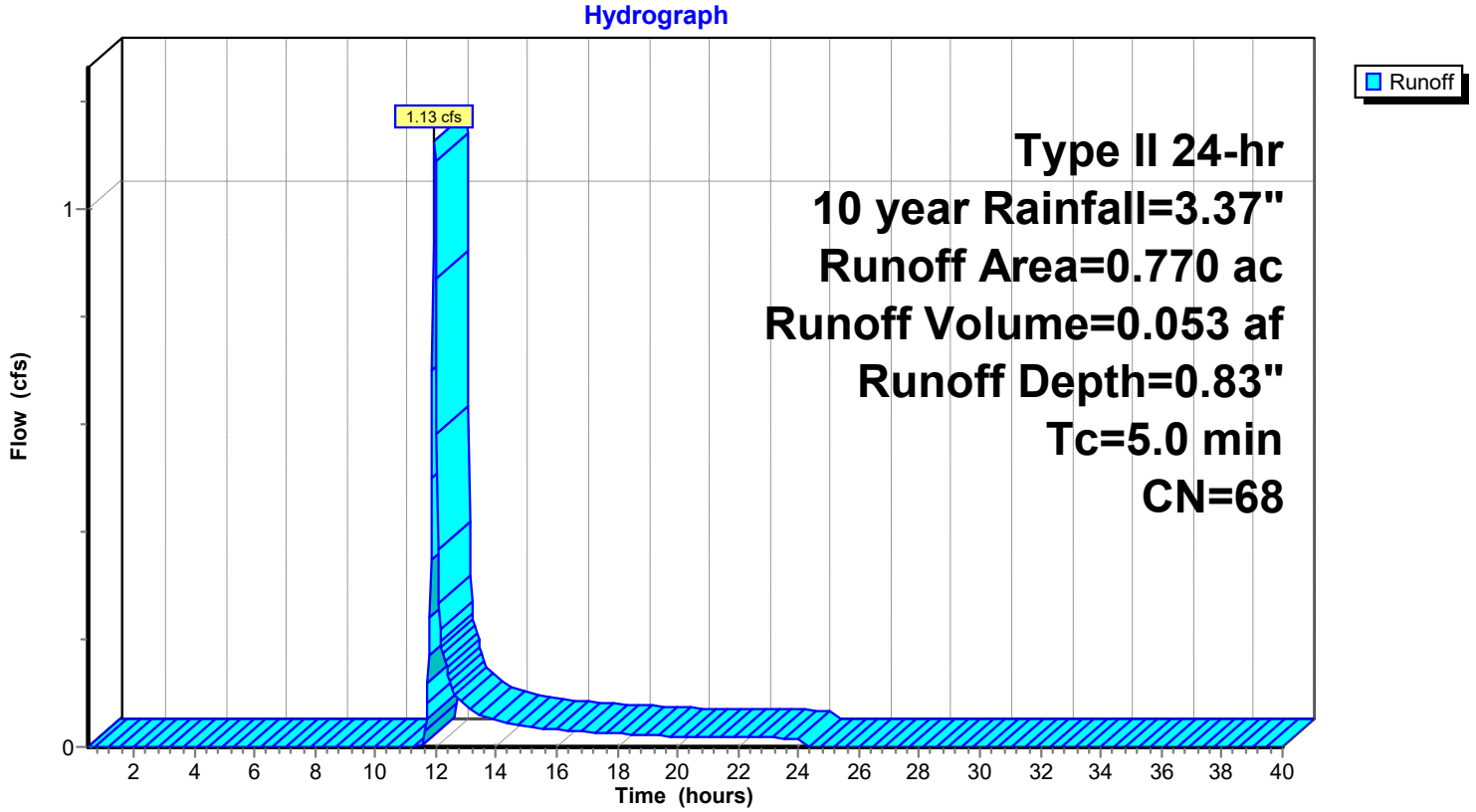
Runoff = 1.13 cfs @ 11.97 hrs, Volume= 0.053 af, Depth= 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Type II 24-hr 10 year Rainfall=3.37"

Area (ac)	CN	Description
0.390	39	>75% Grass cover, Good, HSG A
0.250	98	Paved parking, HSG A
0.130	98	Roofs, HSG A
0.770	68	Weighted Average
0.390		50.65% Pervious Area
0.380		49.35% Impervious Area

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

Subcatchment 1S: D-1



Summary for Subcatchment 2S: D-2

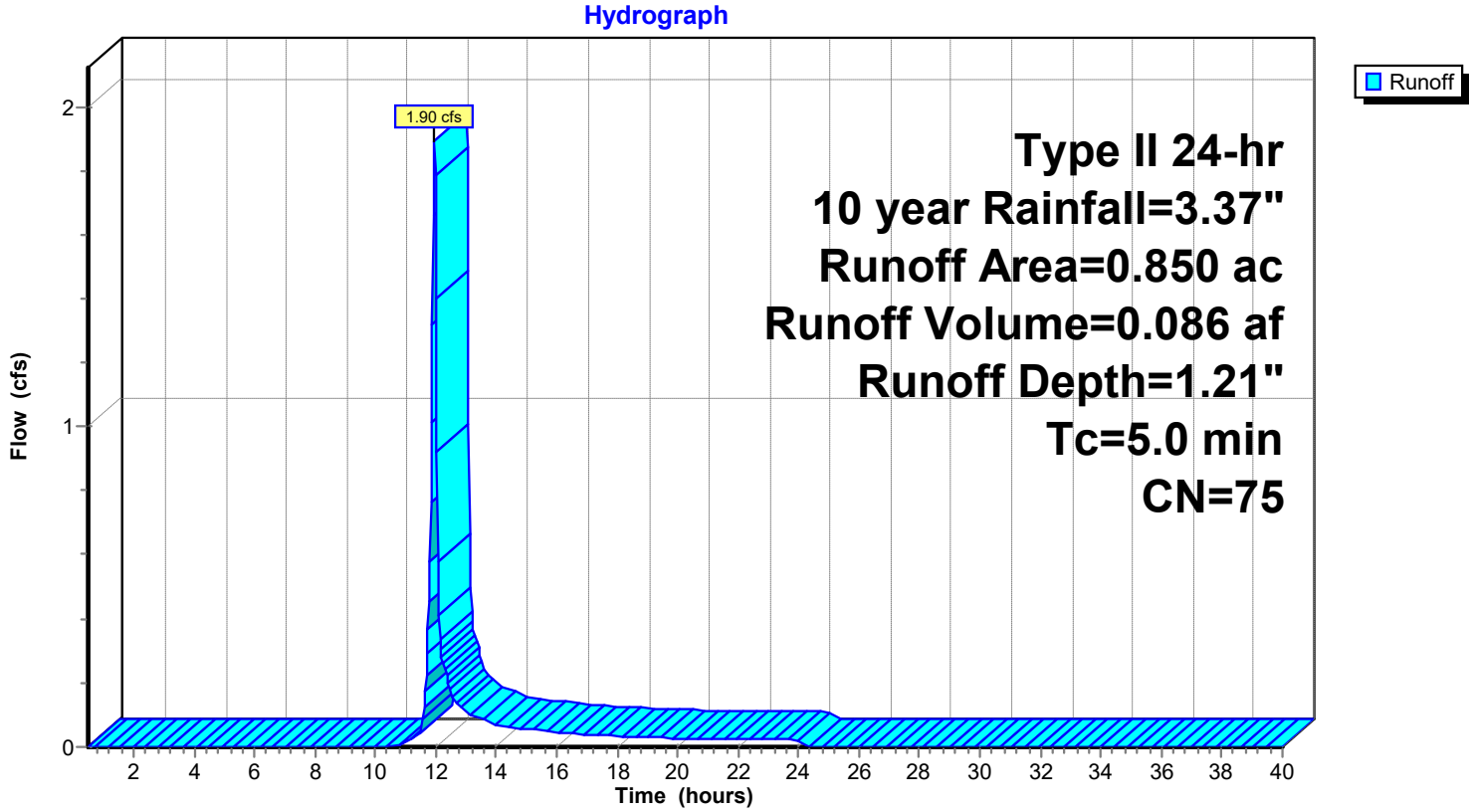
Runoff = 1.90 cfs @ 11.97 hrs, Volume= 0.086 af, Depth= 1.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Type II 24-hr 10 year Rainfall=3.37"

Area (ac)	CN	Description
0.330	39	>75% Grass cover, Good, HSG A
0.170	98	Paved parking, HSG A
0.350	98	Roofs, HSG A
0.850	75	Weighted Average
0.330		38.82% Pervious Area
0.520		61.18% Impervious Area

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

Subcatchment 2S: D-2



Summary for Subcatchment 3S: D-3

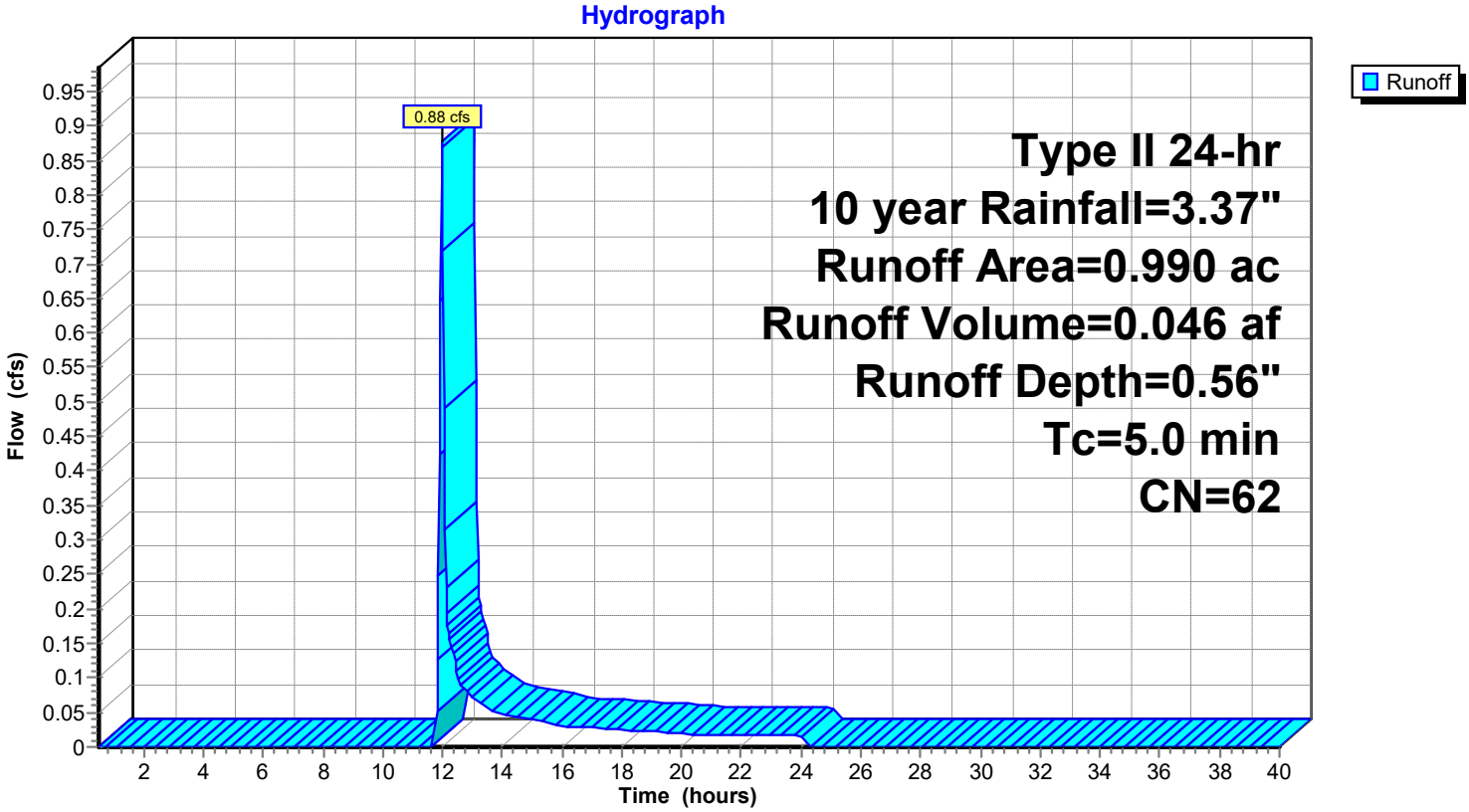
Runoff = 0.88 cfs @ 11.98 hrs, Volume= 0.046 af, Depth= 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Type II 24-hr 10 year Rainfall=3.37"

Area (ac)	CN	Description
0.600	39	>75% Grass cover, Good, HSG A
0.140	98	Paved parking, HSG A
0.250	98	Roofs, HSG A
0.990	62	Weighted Average
0.600		60.61% Pervious Area
0.390		39.39% Impervious Area

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

Subcatchment 3S: D-3



Summary for Subcatchment 4S: BYPASS-1

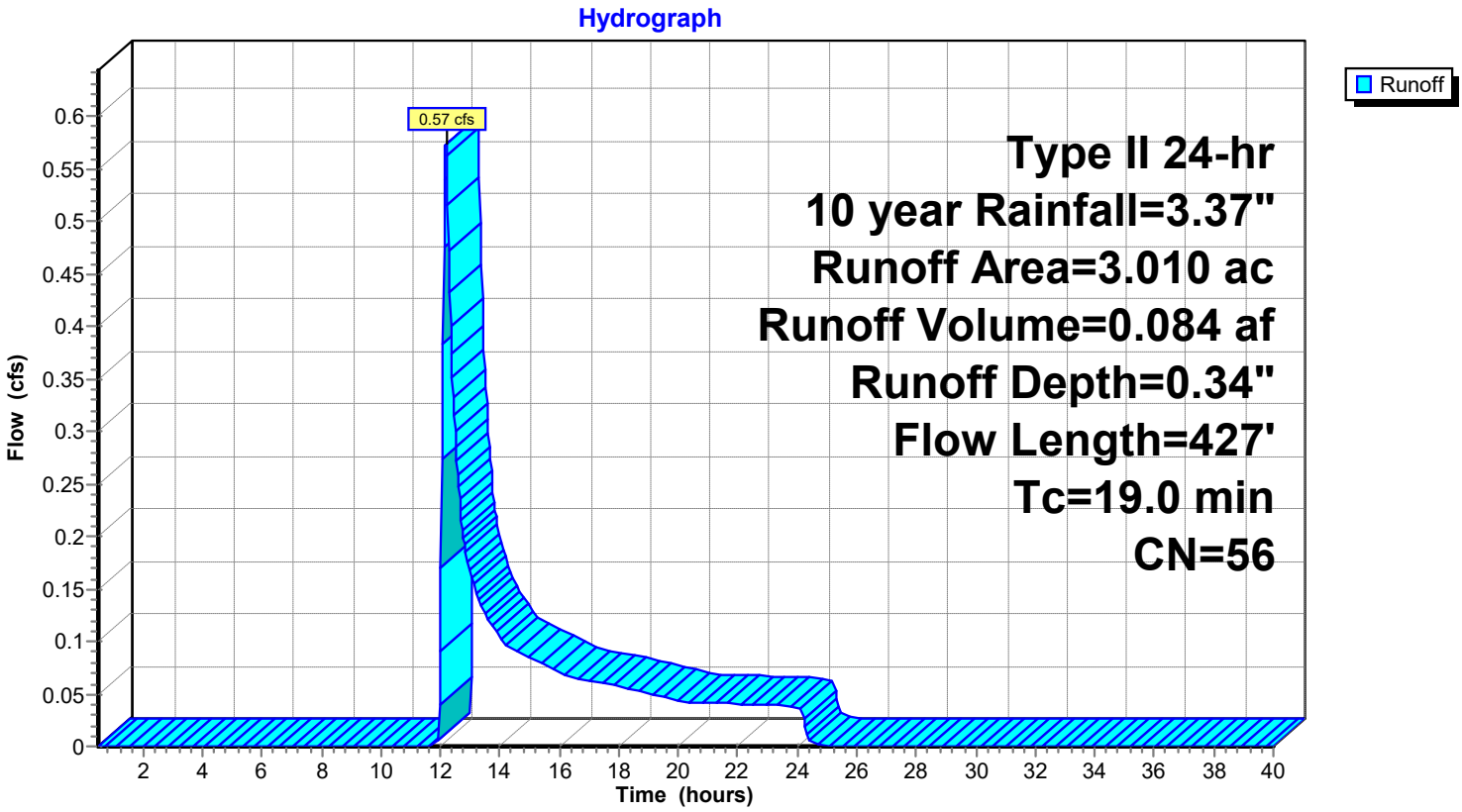
Runoff = 0.57 cfs @ 12.19 hrs, Volume= 0.084 af, Depth= 0.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Type II 24-hr 10 year Rainfall=3.37"

Area (ac)	CN	Description
0.490	39	>75% Grass cover, Good, HSG A
1.040	30	Woods, Good, HSG A
1.480	79	Woods/grass comb., Good, HSG D
3.010	56	Weighted Average
3.010		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	77	0.3200	0.19		**Sheet Flow, A-B SHEET FLOW** Woods: Light underbrush n= 0.400 P2= 2.35"
12.3	350	0.0090	0.47		**Shallow Concentrated Flow, B-C SHALLOW CONC** Woodland Kv= 5.0 fps
19.0	427	Total			

Subcatchment 4S: BYPASS-1



Summary for Subcatchment 5S: BYPASS-2

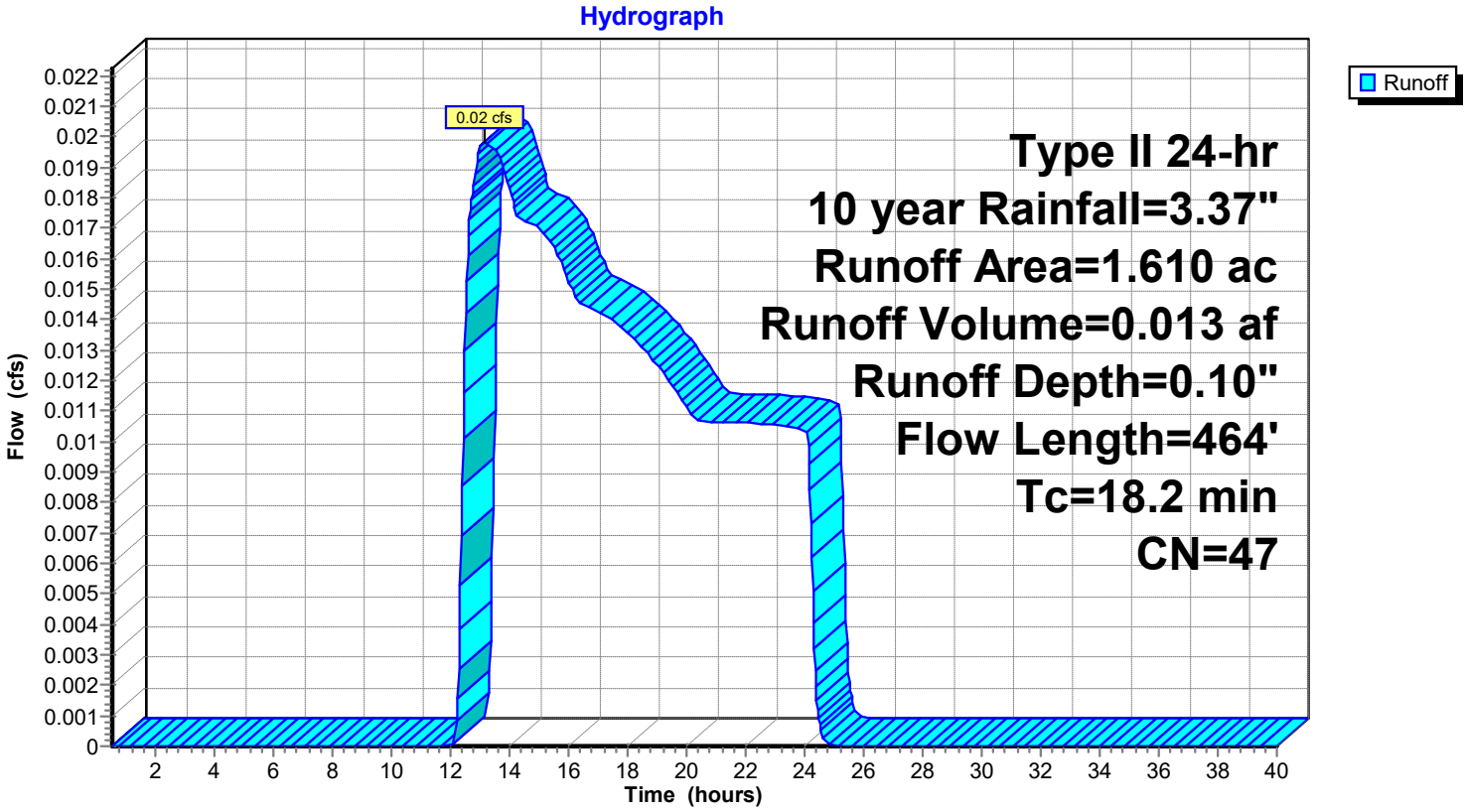
Runoff = 0.02 cfs @ 13.12 hrs, Volume= 0.013 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Type II 24-hr 10 year Rainfall=3.37"

Area (ac)	CN	Description
0.790	30	Woods, Good, HSG A
0.490	79	Woods/grass comb., Good, HSG D
0.330	39	>75% Grass cover, Good, HSG A
1.610	47	Weighted Average
1.610		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	100	0.2200	0.17		**Sheet Flow, A-B SHEET FLOW** Woods: Light underbrush n= 0.400 P2= 2.35"
8.6	364	0.0200	0.71		**Shallow Concentrated Flow, B-C SHALL CONC** Woodland Kv= 5.0 fps
18.2	464	Total			

Subcatchment 5S: BYPASS-2



Summary for Reach 1R: REACH-1

Inflow Area = 0.770 ac, 49.35% Impervious, Inflow Depth = 0.00" for 10 year event
Inflow = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

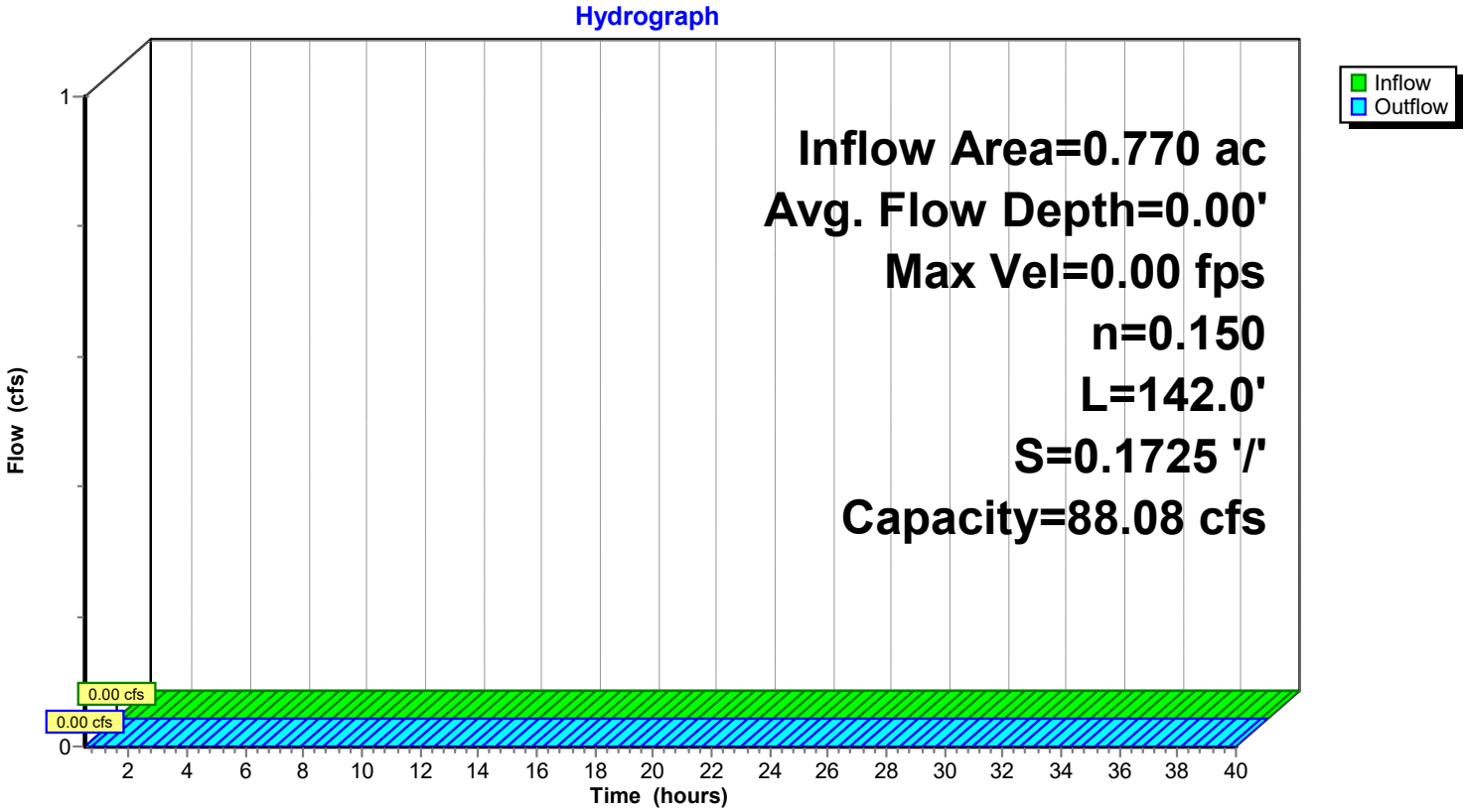
Routing by Stor-Ind+Trans method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.50 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.50' Flow Area= 22.5 sf, Capacity= 88.08 cfs

6.00' x 1.50' deep channel, n= 0.150 Dense willows
Side Slope Z-value= 6.0 '/' Top Width= 24.00'
Length= 142.0' Slope= 0.1725 '/'
Inlet Invert= 506.50', Outlet Invert= 482.00'

‡

Reach 1R: REACH-1



Summary for Reach 2R: REACH-2

Inflow Area = 0.850 ac, 61.18% Impervious, Inflow Depth = 0.00" for 10 year event
Inflow = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

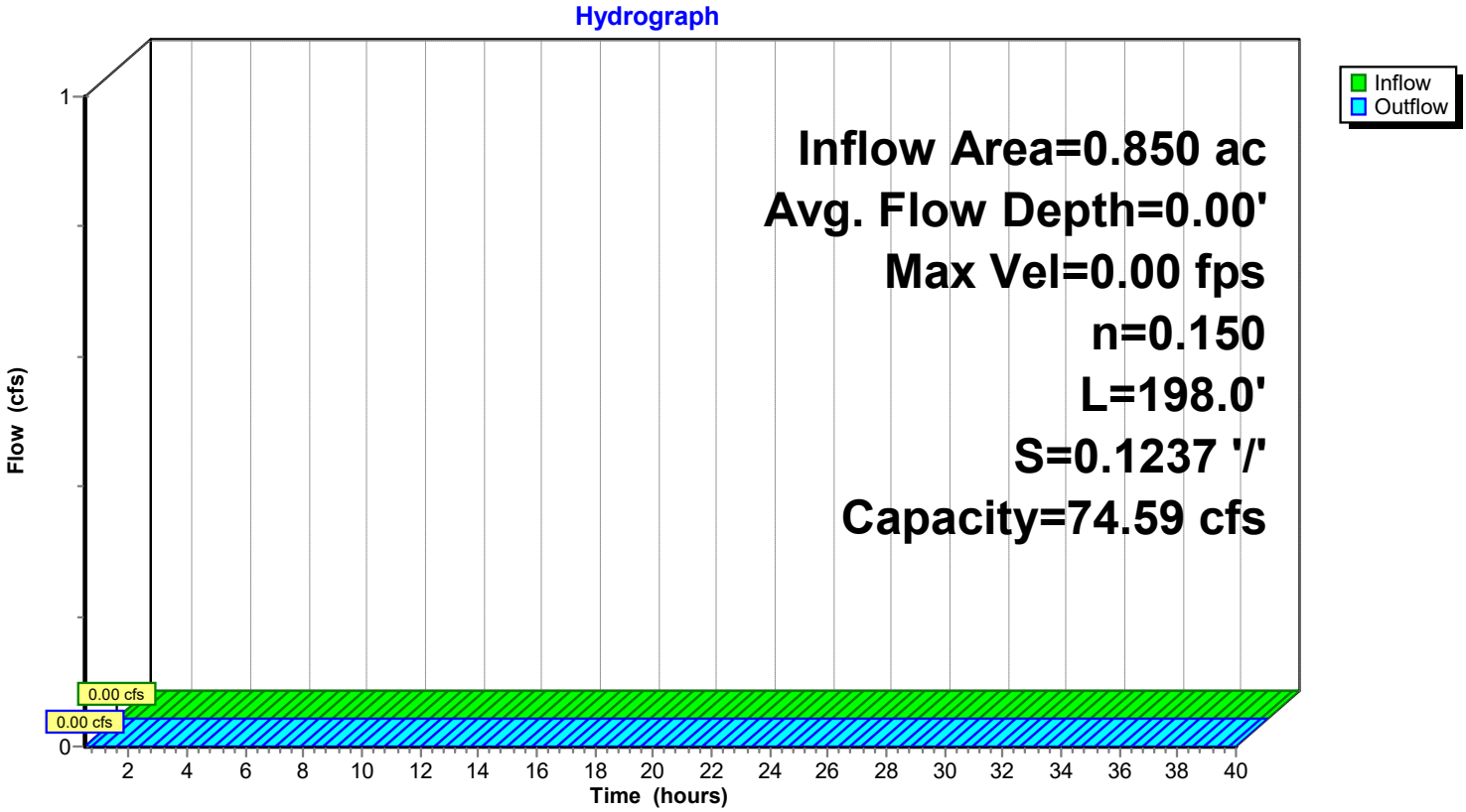
Routing by Stor-Ind+Trans method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.50 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.50' Flow Area= 22.5 sf, Capacity= 74.59 cfs

6.00' x 1.50' deep channel, n= 0.150 Dense willows
Side Slope Z-value= 6.0 '/' Top Width= 24.00'
Length= 198.0' Slope= 0.1237 '/'
Inlet Invert= 506.50', Outlet Invert= 482.00'

‡

Reach 2R: REACH-2



Summary for Reach 3R: REACH-3

Inflow Area = 0.990 ac, 39.39% Impervious, Inflow Depth = 0.00" for 10 year event
Inflow = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

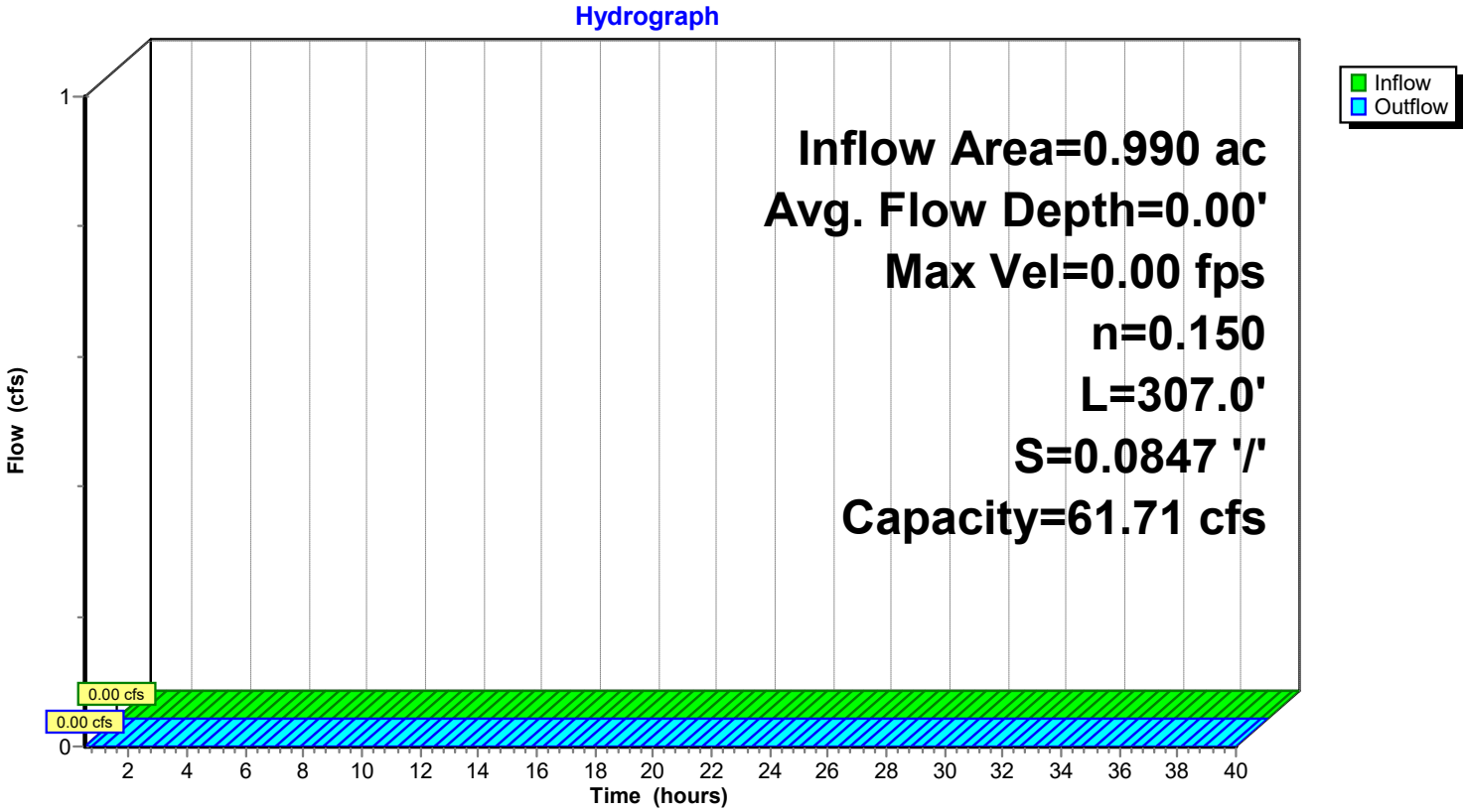
Routing by Stor-Ind+Trans method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.50 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.50' Flow Area= 22.5 sf, Capacity= 61.71 cfs

6.00' x 1.50' deep channel, n= 0.150 Dense willows
Side Slope Z-value= 6.0 '/' Top Width= 24.00'
Length= 307.0' Slope= 0.0847 '/'
Inlet Invert= 510.00', Outlet Invert= 484.00'

‡

Reach 3R: REACH-3



Summary for Reach 4R: REACH-4

Inflow Area = 2.600 ac, 15.00% Impervious, Inflow Depth = 0.06" for 10 year event
Inflow = 0.02 cfs @ 13.12 hrs, Volume= 0.013 af
Outflow = 0.02 cfs @ 16.76 hrs, Volume= 0.013 af, Atten= 17%, Lag= 218.3 min

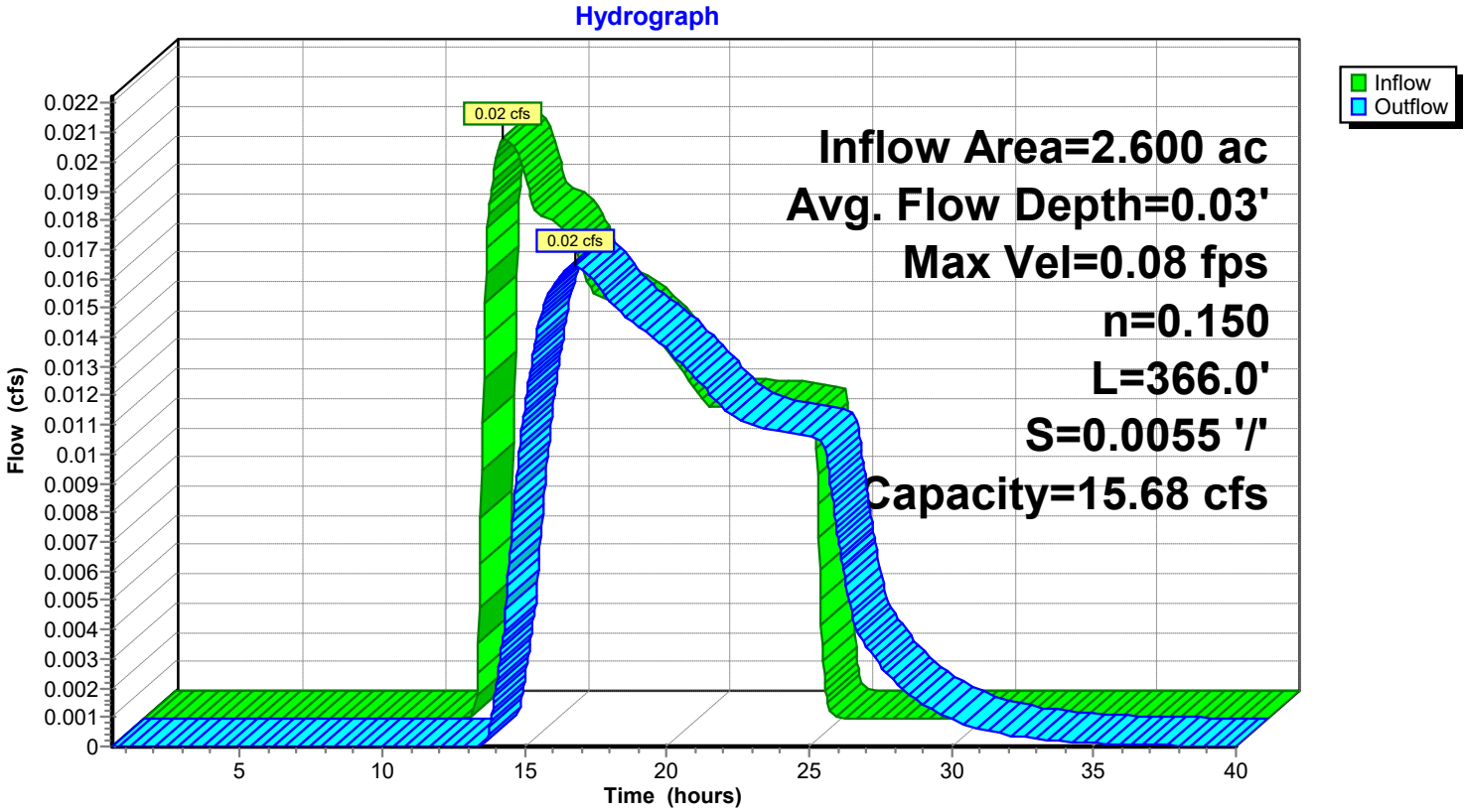
Routing by Stor-Ind+Trans method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Max. Velocity= 0.08 fps, Min. Travel Time= 79.1 min
Avg. Velocity = 0.05 fps, Avg. Travel Time= 111.0 min

Peak Storage= 78 cf @ 15.44 hrs
Average Depth at Peak Storage= 0.03'
Bank-Full Depth= 1.50' Flow Area= 22.5 sf, Capacity= 15.68 cfs

6.00' x 1.50' deep channel, n= 0.150 Dense willows
Side Slope Z-value= 6.0 '/' Top Width= 24.00'
Length= 366.0' Slope= 0.0055 '/'
Inlet Invert= 484.00', Outlet Invert= 482.00'

‡

Reach 4R: REACH-4



Summary for Pond 1P: BIORETENTION-1

Inflow Area = 0.770 ac, 49.35% Impervious, Inflow Depth = 0.83" for 10 year event
Inflow = 1.13 cfs @ 11.97 hrs, Volume= 0.053 af
Outflow = 0.04 cfs @ 14.47 hrs, Volume= 0.053 af, Atten= 96%, Lag= 149.9 min
Discarded = 0.04 cfs @ 14.47 hrs, Volume= 0.053 af
Primary = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af
Secondary = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Peak Elev= 507.92' @ 14.47 hrs Surf.Area= 1,679 sf Storage= 1,088 cf

Plug-Flow detention time= 322.1 min calculated for 0.053 af (100% of inflow)
Center-of-Mass det. time= 322.2 min (1,197.2 - 875.0)

Volume	Invert	Avail.Storage	Storage Description
#1	507.00'	5,870 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
507.00	690	0	0
508.00	1,766	1,228	1,228
509.00	3,487	2,627	3,855
509.50	4,575	2,016	5,870

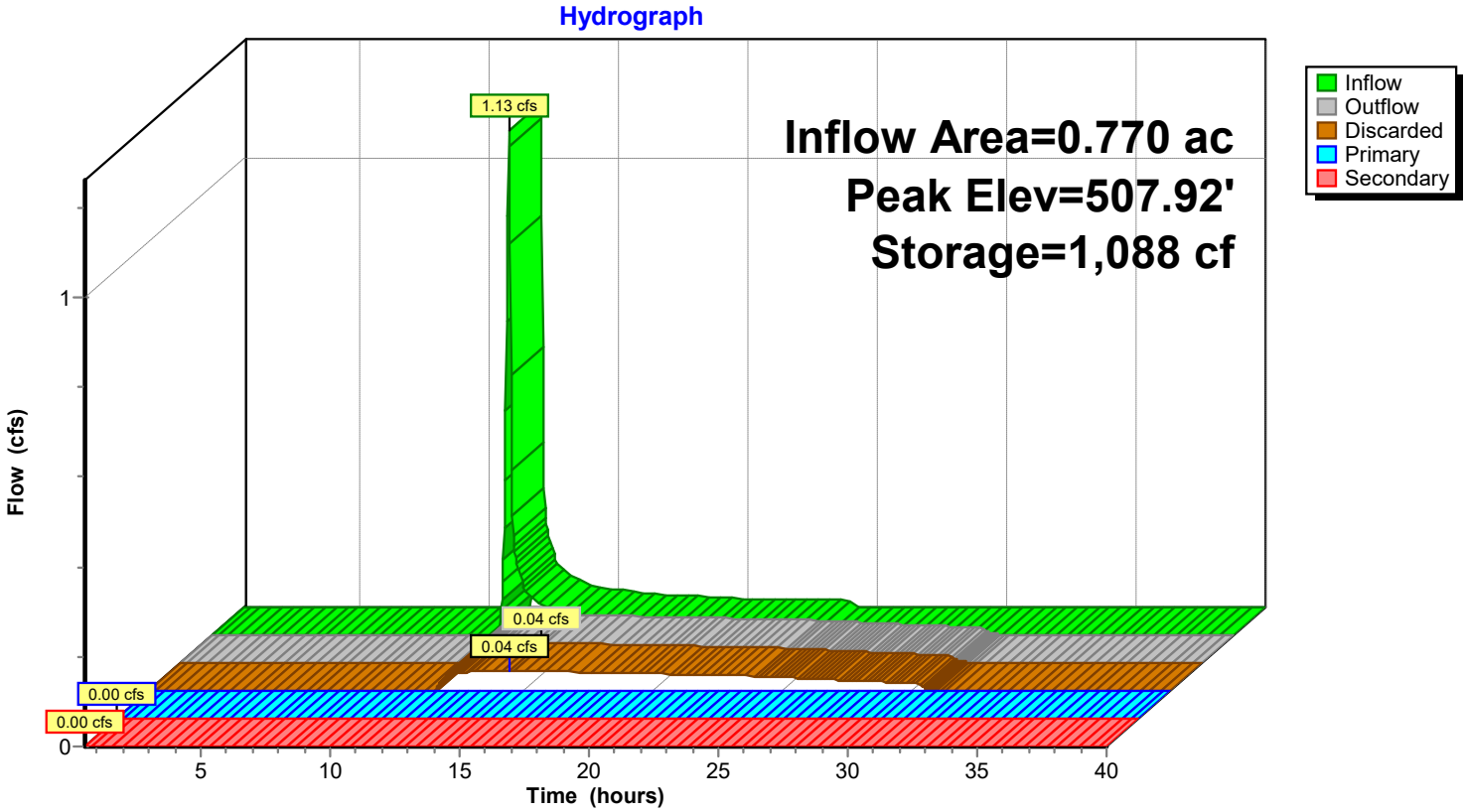
Device	Routing	Invert	Outlet Devices
#1	Secondary	509.00'	**10.0' long x 0.50' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s) 2.0' Crest Height
#2	Primary	507.00'	**12.0" Round Culvert** L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 507.00' / 506.60' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	508.00'	**6.0" Vert. Orifice/Grate** C= 0.600
#4	Discarded	507.00'	**1.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 502.00'

Discarded OutFlow Max=0.04 cfs @ 14.47 hrs HW=507.92' (Free Discharge)
└─**4=Exfiltration** (Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.50 hrs HW=507.00' (Free Discharge)
└─**2=Culvert** (Controls 0.00 cfs)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.50 hrs HW=507.00' (Free Discharge)
└─**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: BIORETENTION-1



Summary for Pond 2P: BIORETENTION-2

Inflow Area = 0.850 ac, 61.18% Impervious, Inflow Depth = 1.21" for 10 year event
Inflow = 1.90 cfs @ 11.97 hrs, Volume= 0.086 af
Outflow = 0.05 cfs @ 15.44 hrs, Volume= 0.079 af, Atten= 97%, Lag= 208.7 min
Discarded = 0.05 cfs @ 15.44 hrs, Volume= 0.079 af
Primary = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Peak Elev= 506.72' @ 15.44 hrs Surf.Area= 1,828 sf Storage= 2,157 cf

Plug-Flow detention time= 560.2 min calculated for 0.079 af (92% of inflow)
Center-of-Mass det. time= 517.8 min (1,369.2 - 851.4)

Volume	Invert	Avail.Storage	Storage Description
#1	504.00'	3,927 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

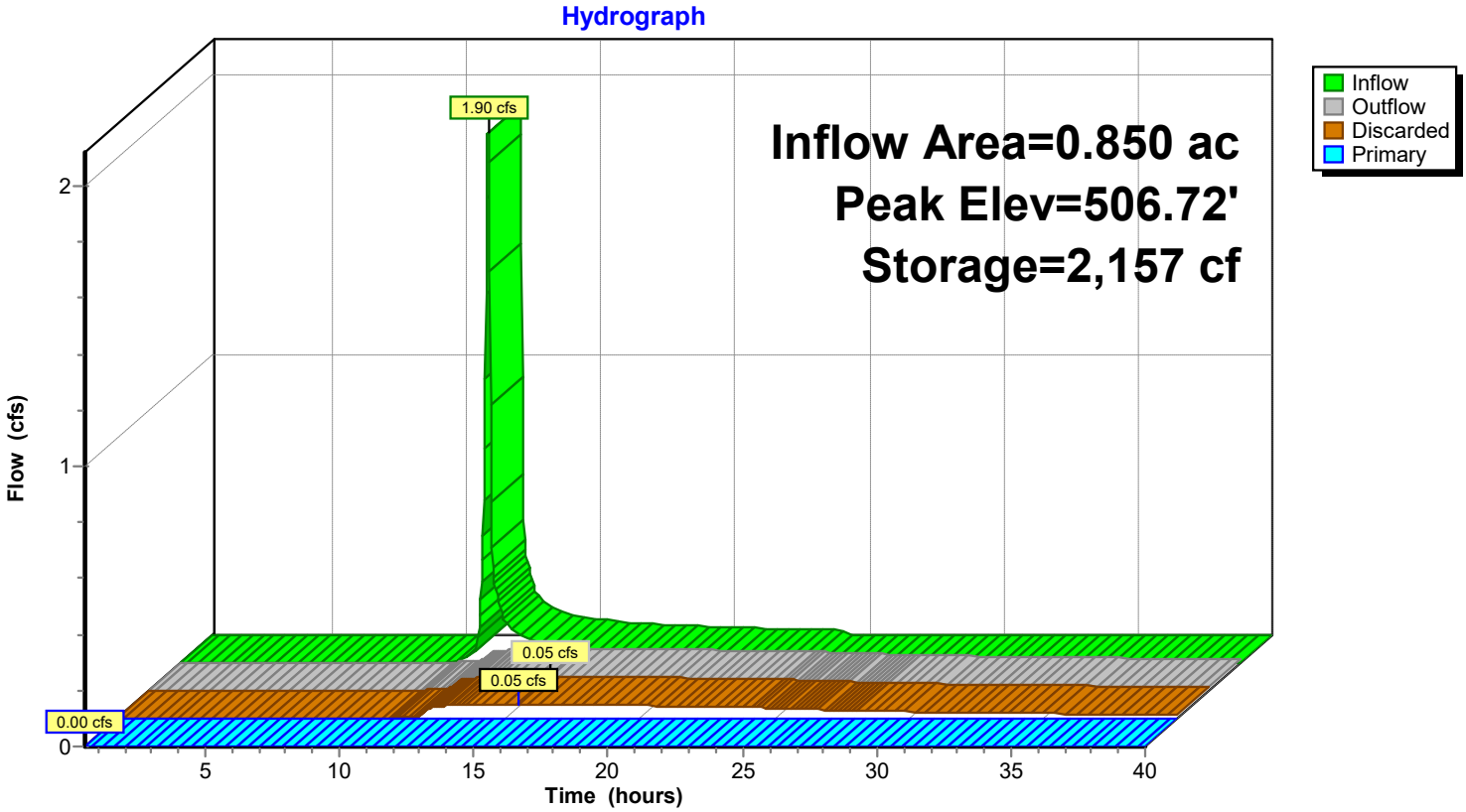
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
504.00	225	0	0
505.00	540	383	383
506.00	987	764	1,146
507.00	2,158	1,573	2,719
507.50	2,677	1,209	3,927

Device	Routing	Invert	Outlet Devices
#1	Discarded	504.00'	**1.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 499.00'
#2	Primary	507.00'	**10.0' long x 0.50' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s) 3.0' Crest Height

Discarded OutFlow Max=0.05 cfs @ 15.44 hrs HW=506.72' (Free Discharge)
└**1=Exfiltration** (Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 0.50 hrs HW=504.00' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: BIORETENTION-2



Summary for Pond 3P: BIORETENTION-3

Inflow Area = 0.990 ac, 39.39% Impervious, Inflow Depth = 0.56" for 10 year event
Inflow = 0.88 cfs @ 11.98 hrs, Volume= 0.046 af
Outflow = 0.04 cfs @ 15.29 hrs, Volume= 0.046 af, Atten= 96%, Lag= 198.4 min
Discarded = 0.04 cfs @ 15.29 hrs, Volume= 0.046 af
Primary = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Peak Elev= 508.70' @ 15.29 hrs Surf.Area= 1,419 sf Storage= 852 cf

Plug-Flow detention time= 292.3 min calculated for 0.046 af (100% of inflow)
Center-of-Mass det. time= 292.3 min (1,192.9 - 900.6)

Volume	Invert	Avail.Storage	Storage Description
#1	508.00'	6,376 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

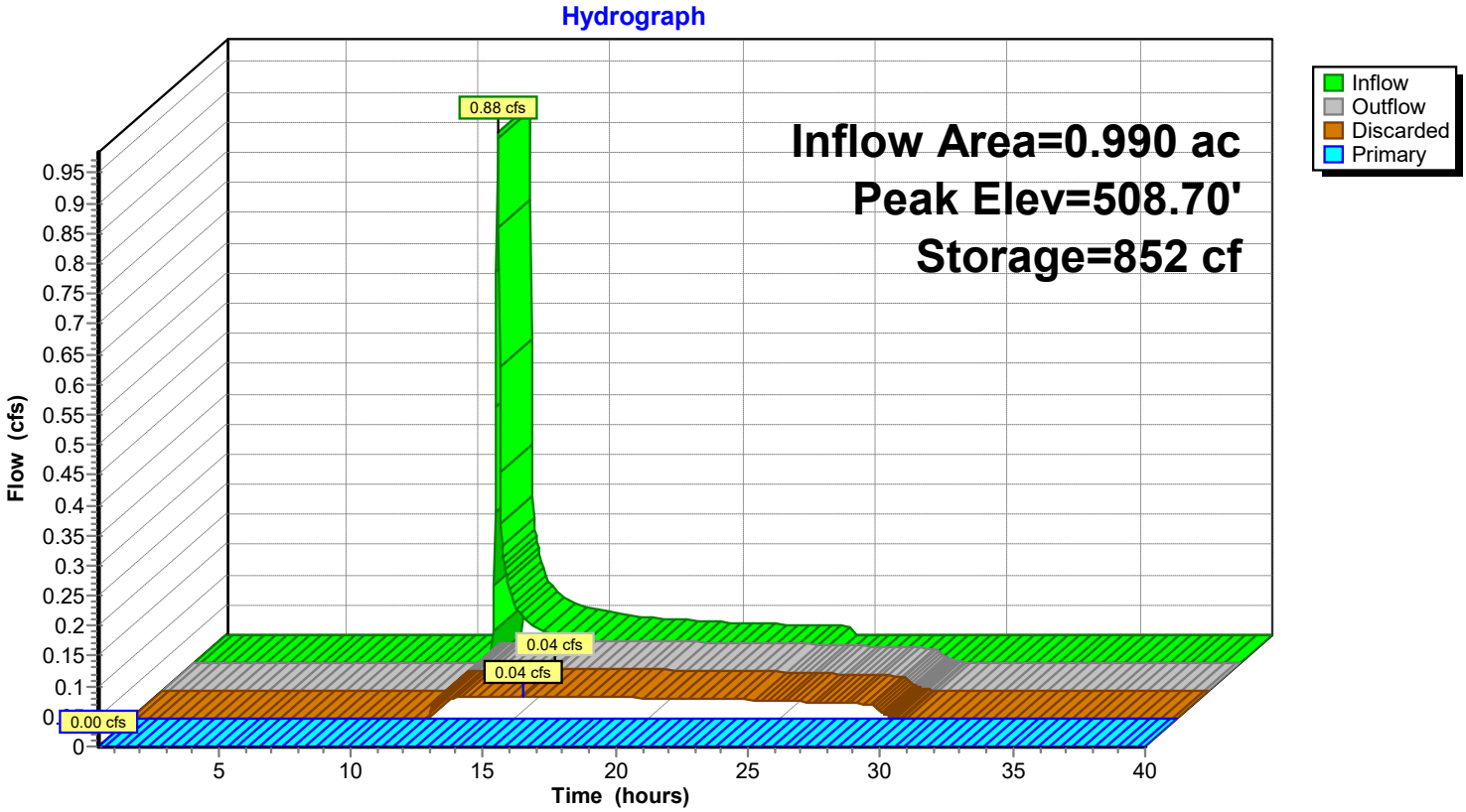
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
508.00	1,004	0	0
509.00	1,594	1,299	1,299
510.00	2,284	1,939	3,238
511.00	3,991	3,138	6,376

Device	Routing	Invert	Outlet Devices
#1	Discarded	508.00'	**1.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 503.00'
#2	Primary	510.50'	**10.0' long x 0.50' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s) 2.5' Crest Height

Discarded OutFlow Max=0.04 cfs @ 15.29 hrs HW=508.70' (Free Discharge)
└**1=Exfiltration** (Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.50 hrs HW=508.00' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: BIORETENTION-3

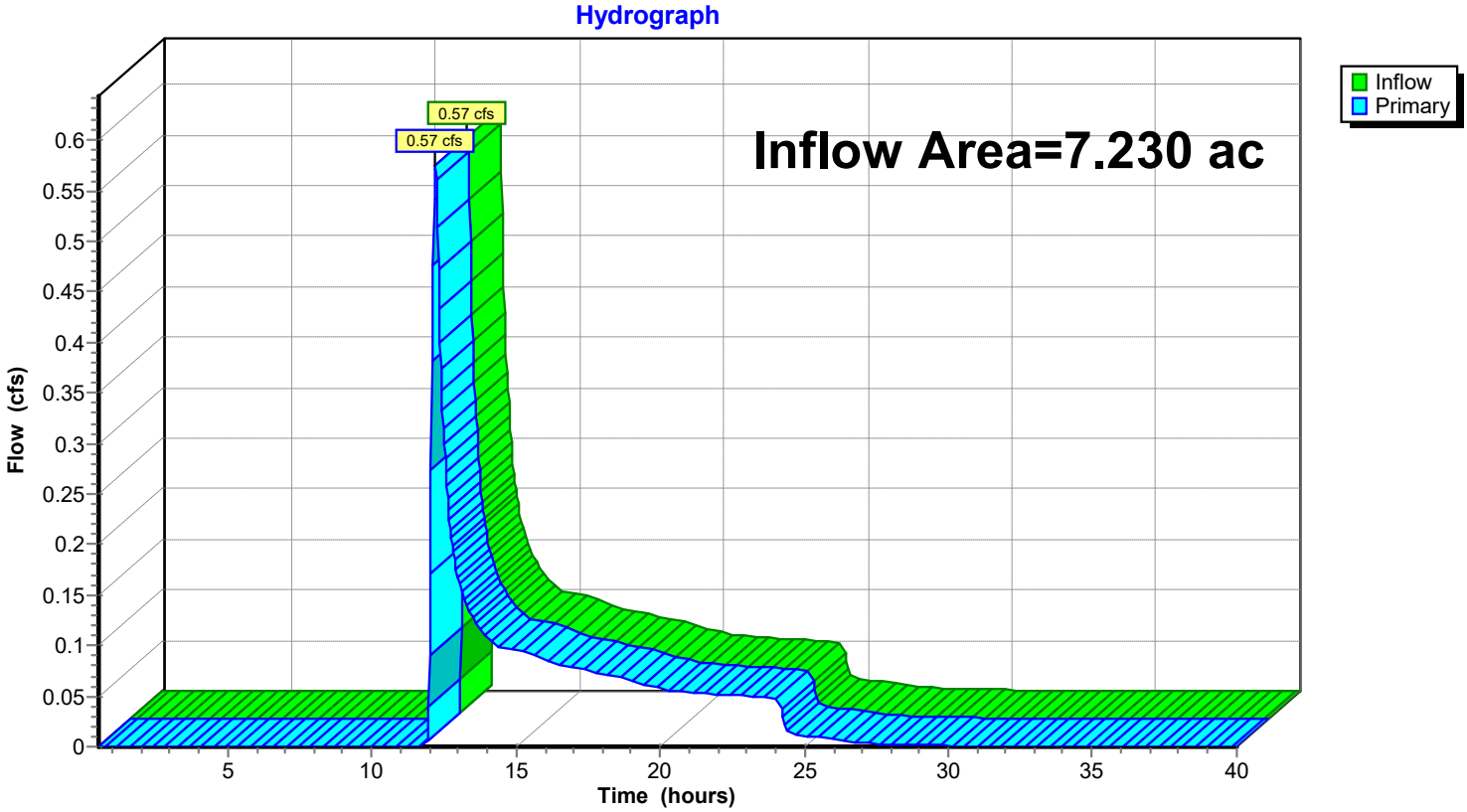


Summary for Pond 4P: Limestone Creek

Inflow Area = 7.230 ac, 17.84% Impervious, Inflow Depth = 0.16" for 10 year event
Inflow = 0.57 cfs @ 12.19 hrs, Volume= 0.097 af
Primary = 0.57 cfs @ 12.19 hrs, Volume= 0.097 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs

Pond 4P: Limestone Creek

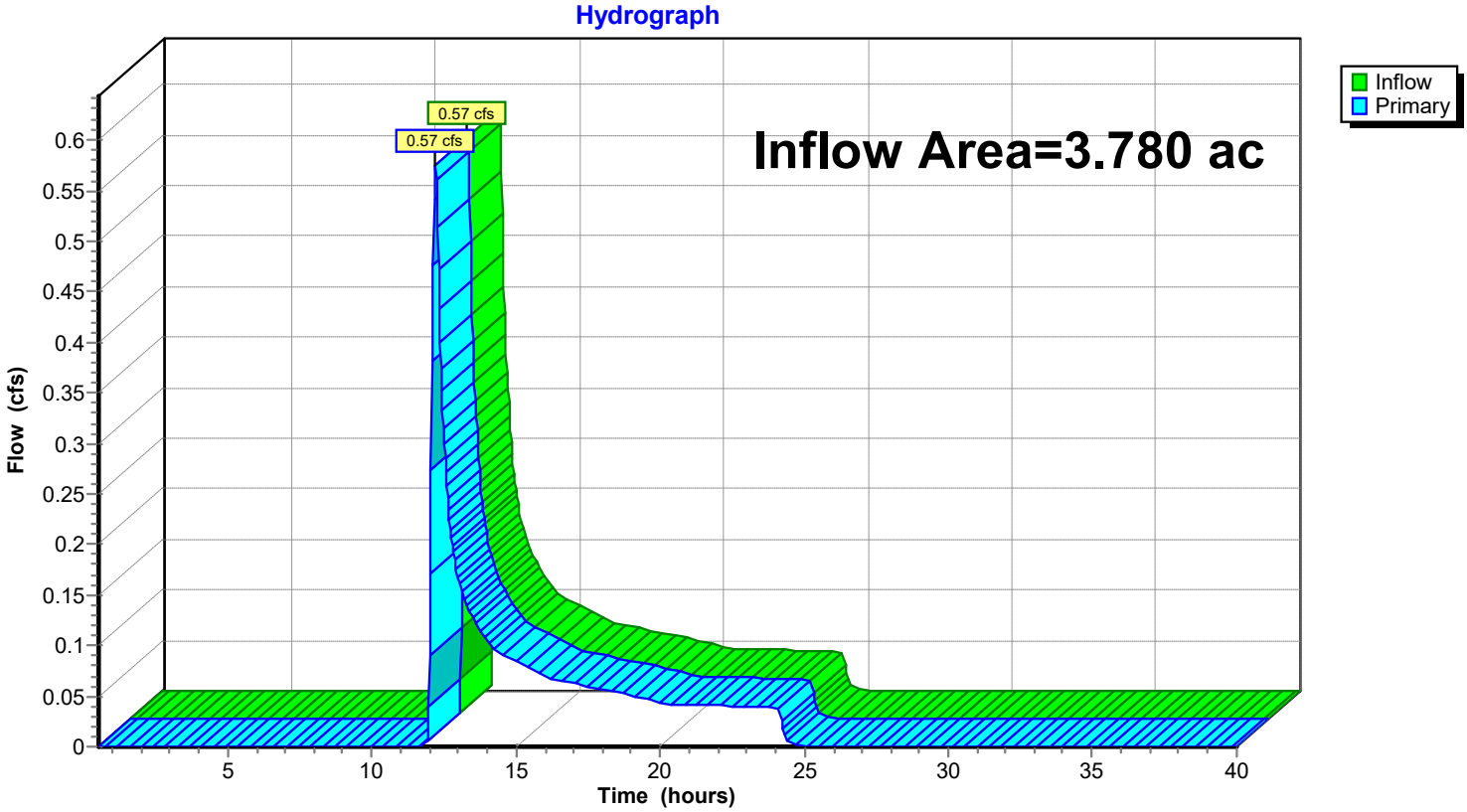


Summary for Link 1L: LINK-1

Inflow Area = 3.780 ac, 10.05% Impervious, Inflow Depth = 0.27" for 10 year event
Inflow = 0.57 cfs @ 12.19 hrs, Volume= 0.084 af
Primary = 0.57 cfs @ 12.19 hrs, Volume= 0.084 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs

Link 1L: LINK-1

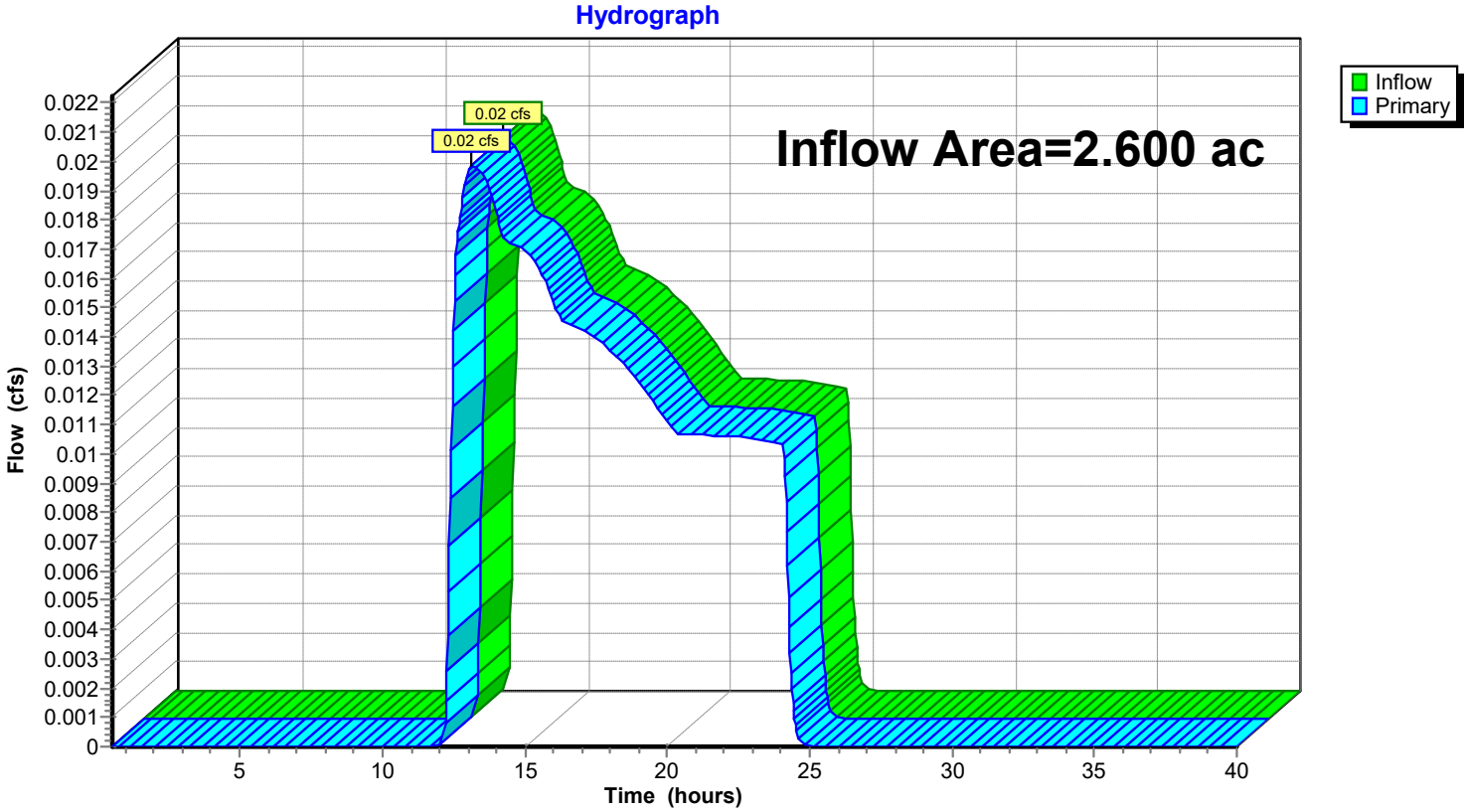


Summary for Link 2L: LINK-2

Inflow Area = 2.600 ac, 15.00% Impervious, Inflow Depth = 0.06" for 10 year event
Inflow = 0.02 cfs @ 13.12 hrs, Volume= 0.013 af
Primary = 0.02 cfs @ 13.12 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs

Link 2L: LINK-2



Time span=0.50-40.00 hrs, dt=0.03 hrs, 1318 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: D-1 Runoff Area=0.770 ac 49.35% Impervious Runoff Depth=2.36"
Tc=5.0 min CN=68 Runoff=3.36 cfs 0.152 af

Subcatchment 2S: D-2 Runoff Area=0.850 ac 61.18% Impervious Runoff Depth=2.99"
Tc=5.0 min CN=75 Runoff=4.67 cfs 0.212 af

Subcatchment 3S: D-3 Runoff Area=0.990 ac 39.39% Impervious Runoff Depth=1.86"
Tc=5.0 min CN=62 Runoff=3.38 cfs 0.154 af

Subcatchment 4S: BYPASS-1 Runoff Area=3.010 ac 0.00% Impervious Runoff Depth=1.40"
Flow Length=427' Tc=19.0 min CN=56 Runoff=4.28 cfs 0.351 af

Subcatchment 5S: BYPASS-2 Runoff Area=1.610 ac 0.00% Impervious Runoff Depth=0.79"
Flow Length=464' Tc=18.2 min CN=47 Runoff=1.00 cfs 0.106 af

Reach 1R: REACH-1 Avg. Flow Depth=0.10' Max Vel=0.83 fps Inflow=0.55 cfs 0.070 af
n=0.150 L=142.0' S=0.1725 '/' Capacity=88.08 cfs Outflow=0.55 cfs 0.070 af

Reach 2R: REACH-2 Avg. Flow Depth=0.29' Max Vel=1.33 fps Inflow=3.54 cfs 0.090 af
n=0.150 L=198.0' S=0.1237 '/' Capacity=74.59 cfs Outflow=2.84 cfs 0.090 af

Reach 3R: REACH-3 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.150 L=307.0' S=0.0847 '/' Capacity=61.71 cfs Outflow=0.00 cfs 0.000 af

Reach 4R: REACH-4 Avg. Flow Depth=0.26' Max Vel=0.26 fps Inflow=1.00 cfs 0.106 af
n=0.150 L=366.0' S=0.0055 '/' Capacity=15.68 cfs Outflow=0.50 cfs 0.106 af

Pond 1P: BIORETENTION-1 Peak Elev=508.59' Storage=2,564 cf Inflow=3.36 cfs 0.152 af
Discarded=0.08 cfs 0.082 af Primary=0.55 cfs 0.070 af Secondary=0.00 cfs 0.000 af Outflow=0.63 cfs 0.152 af

Pond 2P: BIORETENTION-2 Peak Elev=507.23' Storage=3,233 cf Inflow=4.67 cfs 0.212 af
Discarded=0.07 cfs 0.109 af Primary=3.54 cfs 0.090 af Outflow=3.61 cfs 0.199 af

Pond 3P: BIORETENTION-3 Peak Elev=510.28' Storage=3,944 cf Inflow=3.38 cfs 0.154 af
Discarded=0.08 cfs 0.142 af Primary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.142 af

Pond 4P: Limestone Creek Inflow=7.41 cfs 0.617 af
Primary=7.41 cfs 0.617 af

Link 1L: LINK-1 Inflow=4.78 cfs 0.421 af
Primary=4.78 cfs 0.421 af

Link 2L: LINK-2 Inflow=1.00 cfs 0.106 af
Primary=1.00 cfs 0.106 af

Total Runoff Area = 7.230 ac Runoff Volume = 0.974 af Average Runoff Depth = 1.62"
82.16% Pervious = 5.940 ac 17.84% Impervious = 1.290 ac

Summary for Subcatchment 1S: D-1

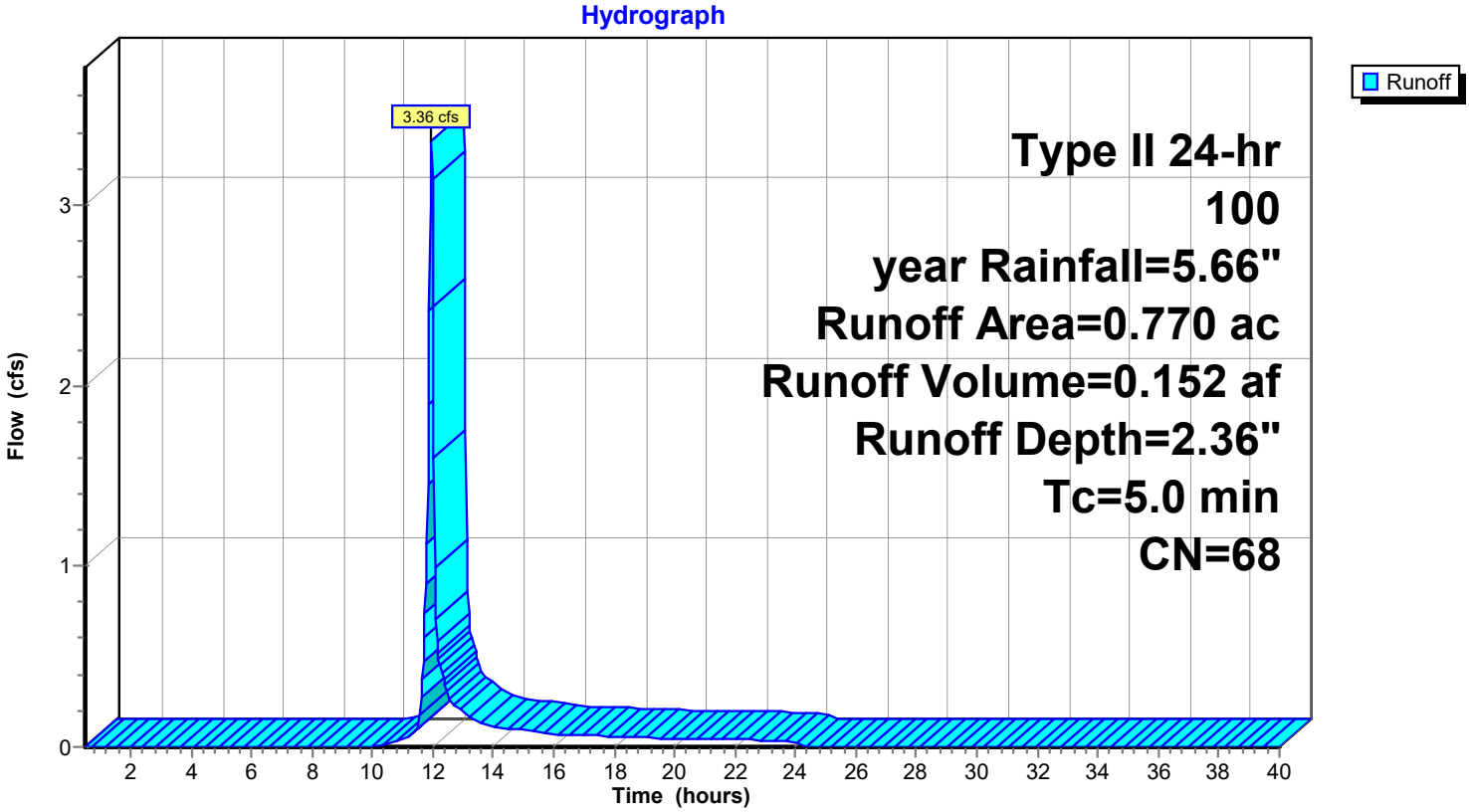
Runoff = 3.36 cfs @ 11.96 hrs, Volume= 0.152 af, Depth= 2.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Type II 24-hr 100 year Rainfall=5.66"

Area (ac)	CN	Description
0.390	39	>75% Grass cover, Good, HSG A
0.250	98	Paved parking, HSG A
0.130	98	Roofs, HSG A
0.770	68	Weighted Average
0.390		50.65% Pervious Area
0.380		49.35% Impervious Area

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

Subcatchment 1S: D-1



Summary for Subcatchment 2S: D-2

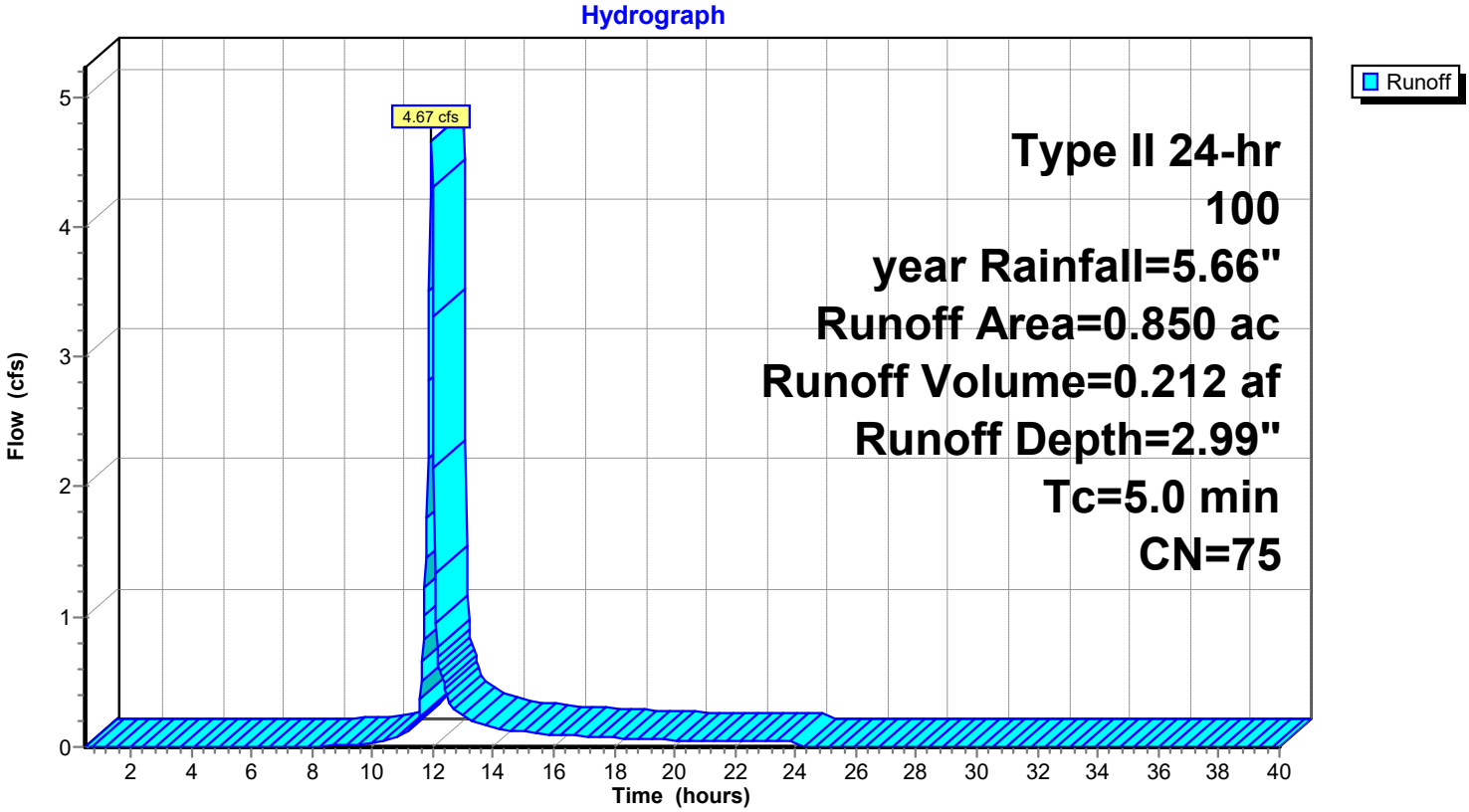
Runoff = 4.67 cfs @ 11.96 hrs, Volume= 0.212 af, Depth= 2.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Type II 24-hr 100 year Rainfall=5.66"

Area (ac)	CN	Description
0.330	39	>75% Grass cover, Good, HSG A
0.170	98	Paved parking, HSG A
0.350	98	Roofs, HSG A
0.850	75	Weighted Average
0.330		38.82% Pervious Area
0.520		61.18% Impervious Area

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

Subcatchment 2S: D-2



Summary for Subcatchment 3S: D-3

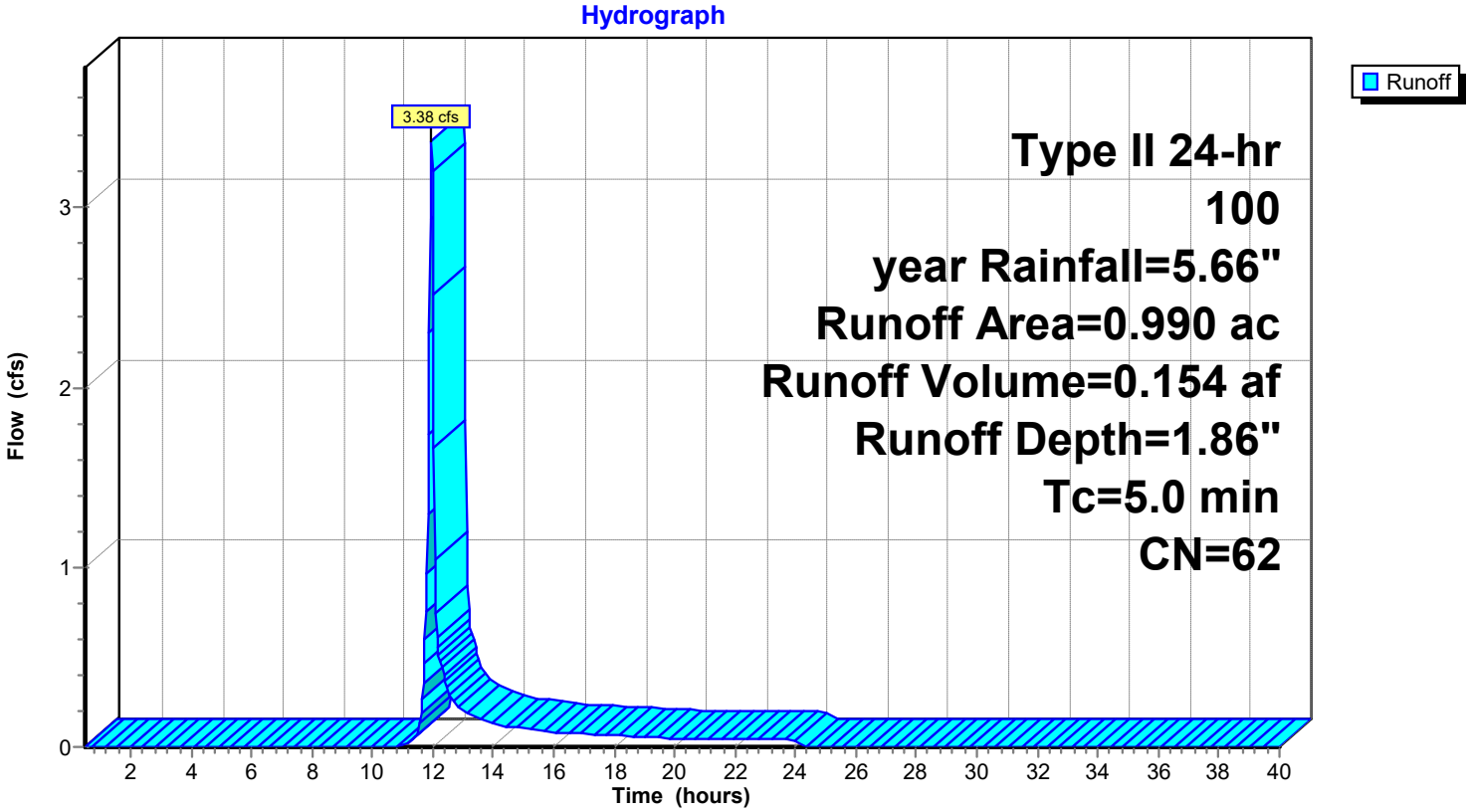
Runoff = 3.38 cfs @ 11.97 hrs, Volume= 0.154 af, Depth= 1.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Type II 24-hr 100 year Rainfall=5.66"

Area (ac)	CN	Description
0.600	39	>75% Grass cover, Good, HSG A
0.140	98	Paved parking, HSG A
0.250	98	Roofs, HSG A
0.990	62	Weighted Average
0.600		60.61% Pervious Area
0.390		39.39% Impervious Area

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

Subcatchment 3S: D-3



Summary for Subcatchment 4S: BYPASS-1

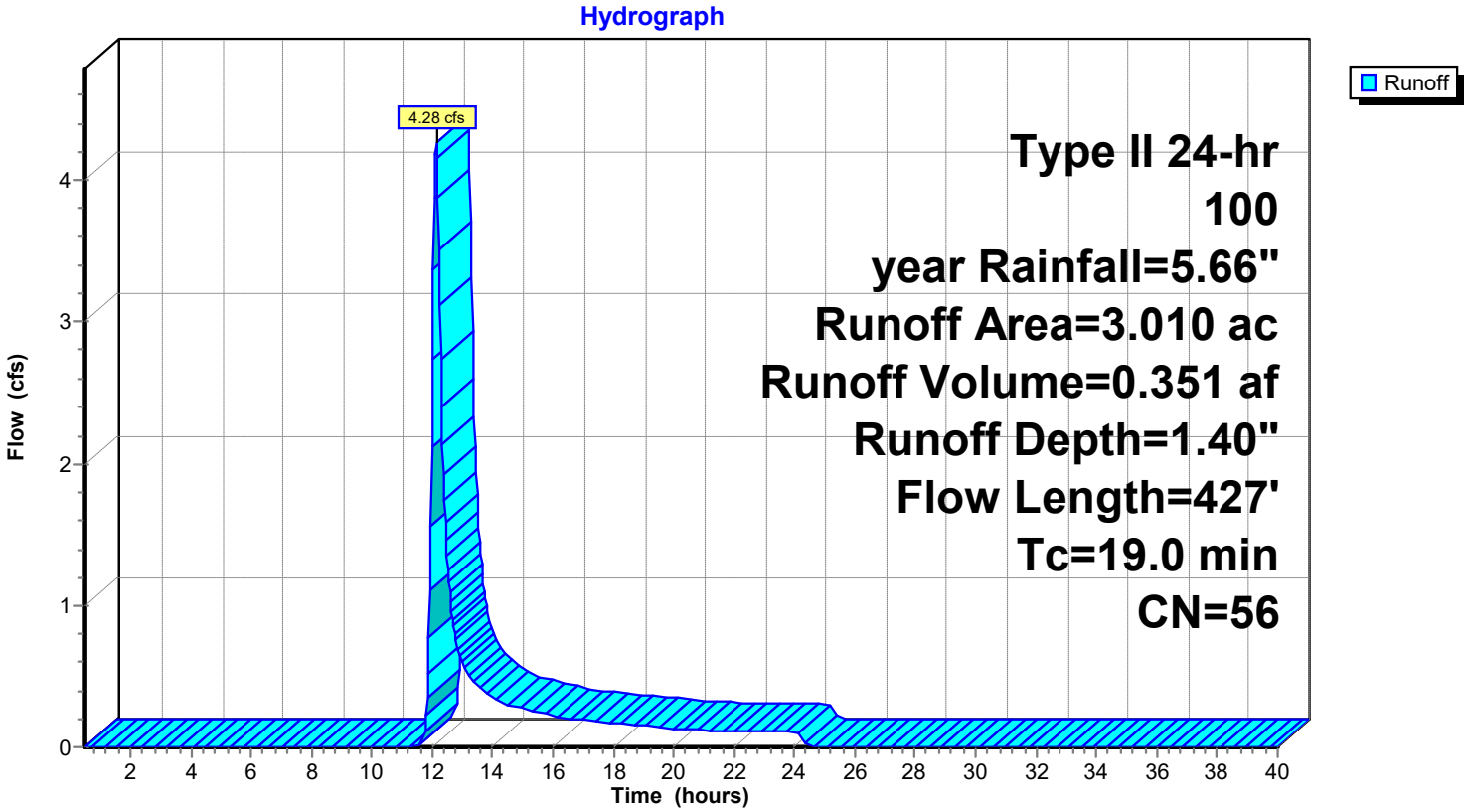
Runoff = 4.28 cfs @ 12.14 hrs, Volume= 0.351 af, Depth= 1.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Type II 24-hr 100 year Rainfall=5.66"

Area (ac)	CN	Description
0.490	39	>75% Grass cover, Good, HSG A
1.040	30	Woods, Good, HSG A
1.480	79	Woods/grass comb., Good, HSG D
3.010	56	Weighted Average
3.010		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	77	0.3200	0.19		**Sheet Flow, A-B SHEET FLOW** Woods: Light underbrush n= 0.400 P2= 2.35"
12.3	350	0.0090	0.47		**Shallow Concentrated Flow, B-C SHALLOW CONC** Woodland Kv= 5.0 fps
19.0	427	Total			

Subcatchment 4S: BYPASS-1



Summary for Subcatchment 5S: BYPASS-2

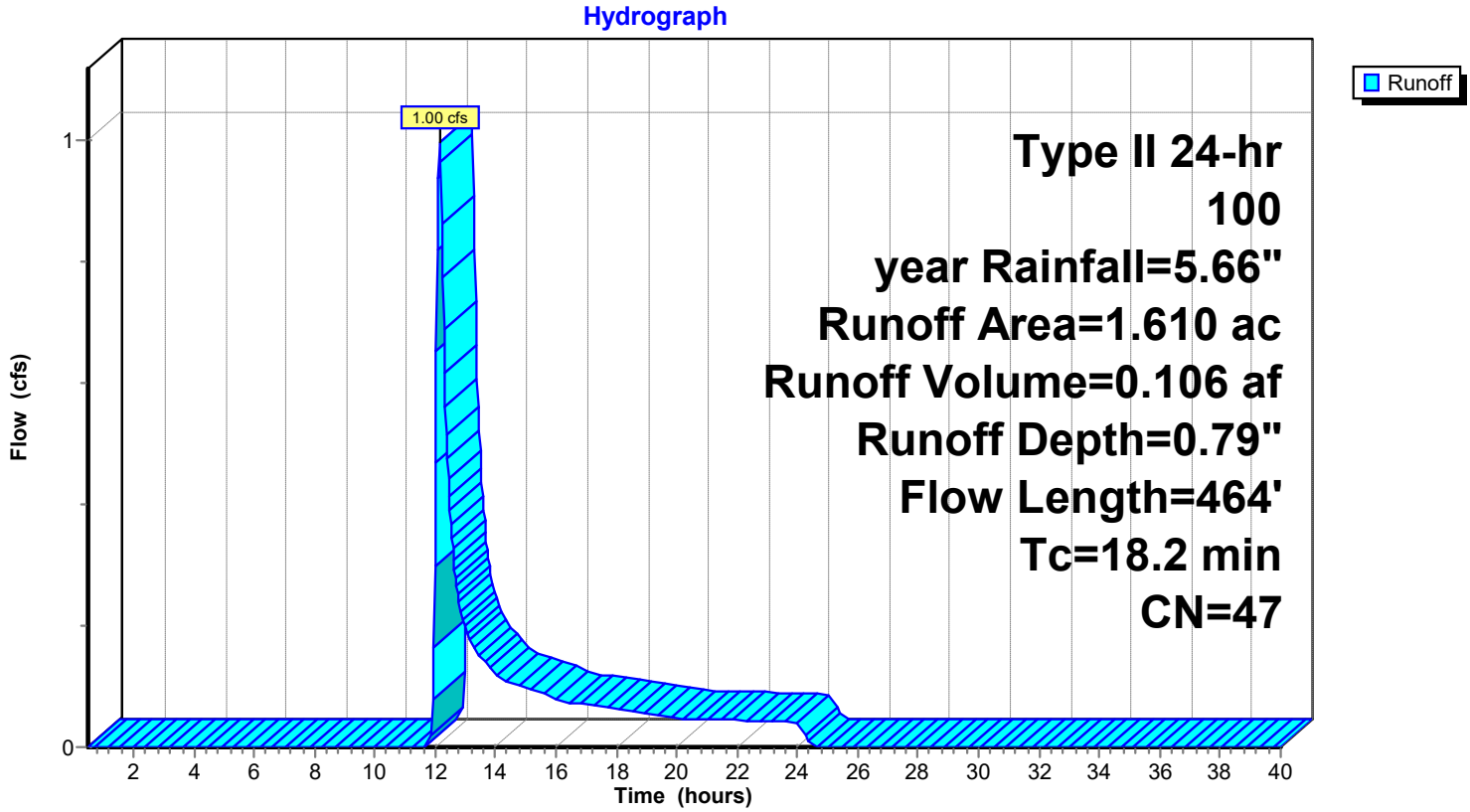
Runoff = 1.00 cfs @ 12.15 hrs, Volume= 0.106 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Type II 24-hr 100 year Rainfall=5.66"

Area (ac)	CN	Description
0.790	30	Woods, Good, HSG A
0.490	79	Woods/grass comb., Good, HSG D
0.330	39	>75% Grass cover, Good, HSG A
1.610	47	Weighted Average
1.610		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	100	0.2200	0.17		**Sheet Flow, A-B SHEET FLOW** Woods: Light underbrush n= 0.400 P2= 2.35"
8.6	364	0.0200	0.71		**Shallow Concentrated Flow, B-C SHALL CONC** Woodland Kv= 5.0 fps
18.2	464	Total			

Subcatchment 5S: BYPASS-2



Summary for Reach 1R: REACH-1

Inflow Area = 0.770 ac, 49.35% Impervious, Inflow Depth = 1.09" for 100 year event
Inflow = 0.55 cfs @ 12.13 hrs, Volume= 0.070 af
Outflow = 0.55 cfs @ 12.24 hrs, Volume= 0.070 af, Atten= 1%, Lag= 6.3 min

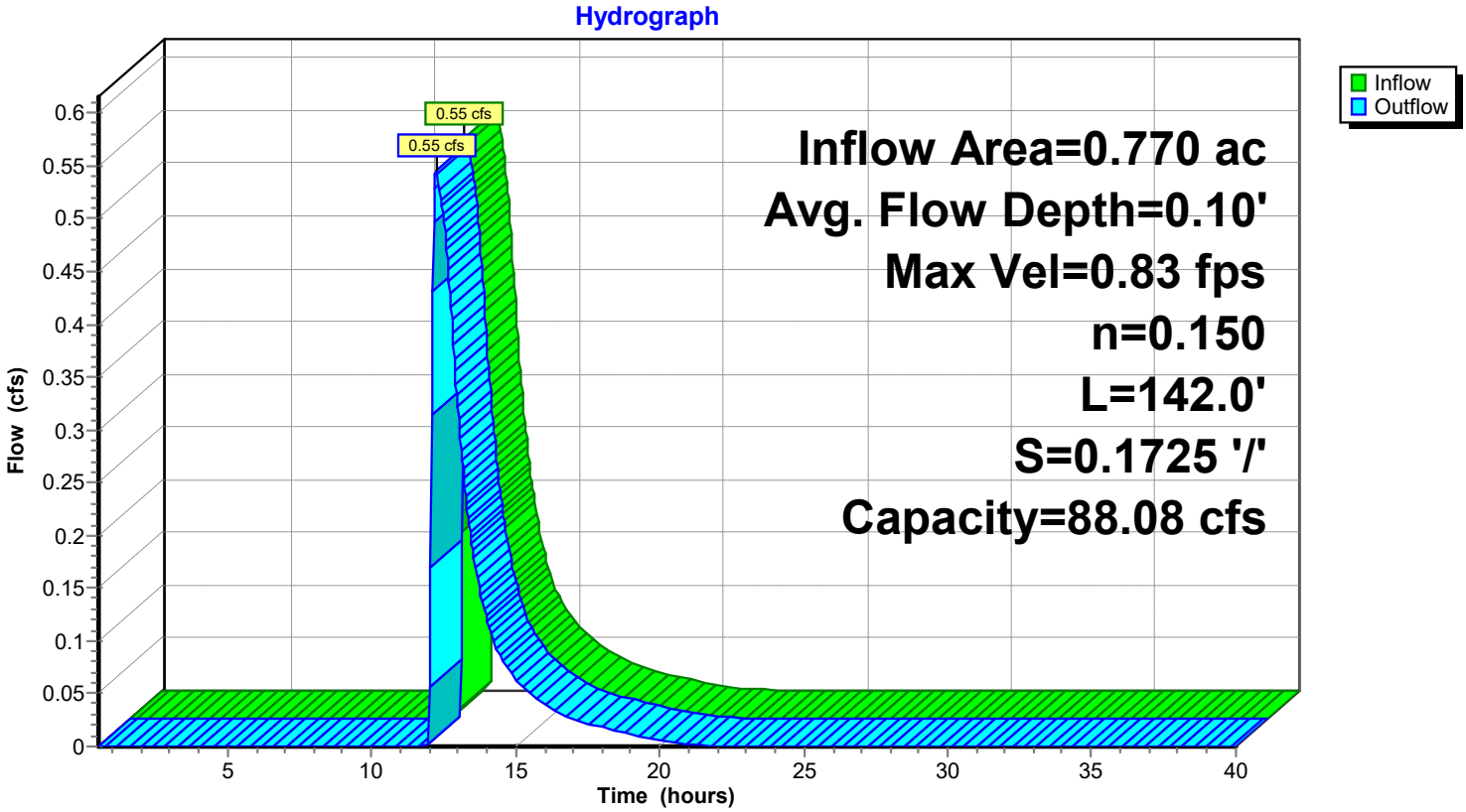
Routing by Stor-Ind+Trans method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Max. Velocity= 0.83 fps, Min. Travel Time= 2.8 min
Avg. Velocity = 0.36 fps, Avg. Travel Time= 6.7 min

Peak Storage= 93 cf @ 12.18 hrs
Average Depth at Peak Storage= 0.10'
Bank-Full Depth= 1.50' Flow Area= 22.5 sf, Capacity= 88.08 cfs

6.00' x 1.50' deep channel, n= 0.150 Dense willows
Side Slope Z-value= 6.0 '/' Top Width= 24.00'
Length= 142.0' Slope= 0.1725 '/'
Inlet Invert= 506.50', Outlet Invert= 482.00'

‡

Reach 1R: REACH-1



Summary for Reach 2R: REACH-2

Inflow Area = 0.850 ac, 61.18% Impervious, Inflow Depth = 1.27" for 100 year event
Inflow = 3.54 cfs @ 12.02 hrs, Volume= 0.090 af
Outflow = 2.84 cfs @ 12.10 hrs, Volume= 0.090 af, Atten= 20%, Lag= 4.7 min

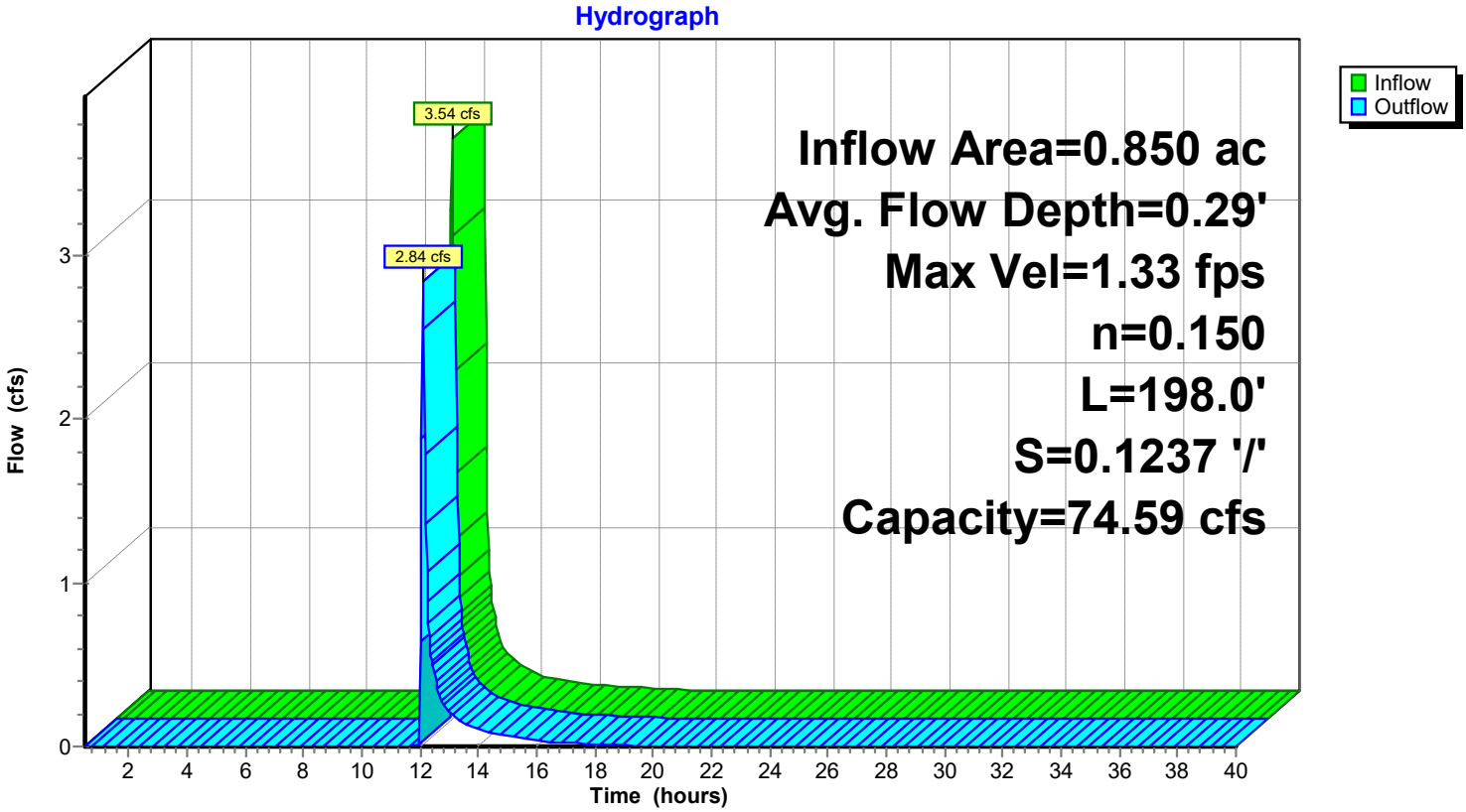
Routing by Stor-Ind+Trans method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Max. Velocity= 1.33 fps, Min. Travel Time= 2.5 min
Avg. Velocity = 0.34 fps, Avg. Travel Time= 9.8 min

Peak Storage= 445 cf @ 12.05 hrs
Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 1.50' Flow Area= 22.5 sf, Capacity= 74.59 cfs

6.00' x 1.50' deep channel, n= 0.150 Dense willows
Side Slope Z-value= 6.0 '/' Top Width= 24.00'
Length= 198.0' Slope= 0.1237 '/'
Inlet Invert= 506.50', Outlet Invert= 482.00'

‡

Reach 2R: REACH-2



Summary for Reach 3R: REACH-3

Inflow Area = 0.990 ac, 39.39% Impervious, Inflow Depth = 0.00" for 100 year event
Inflow = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

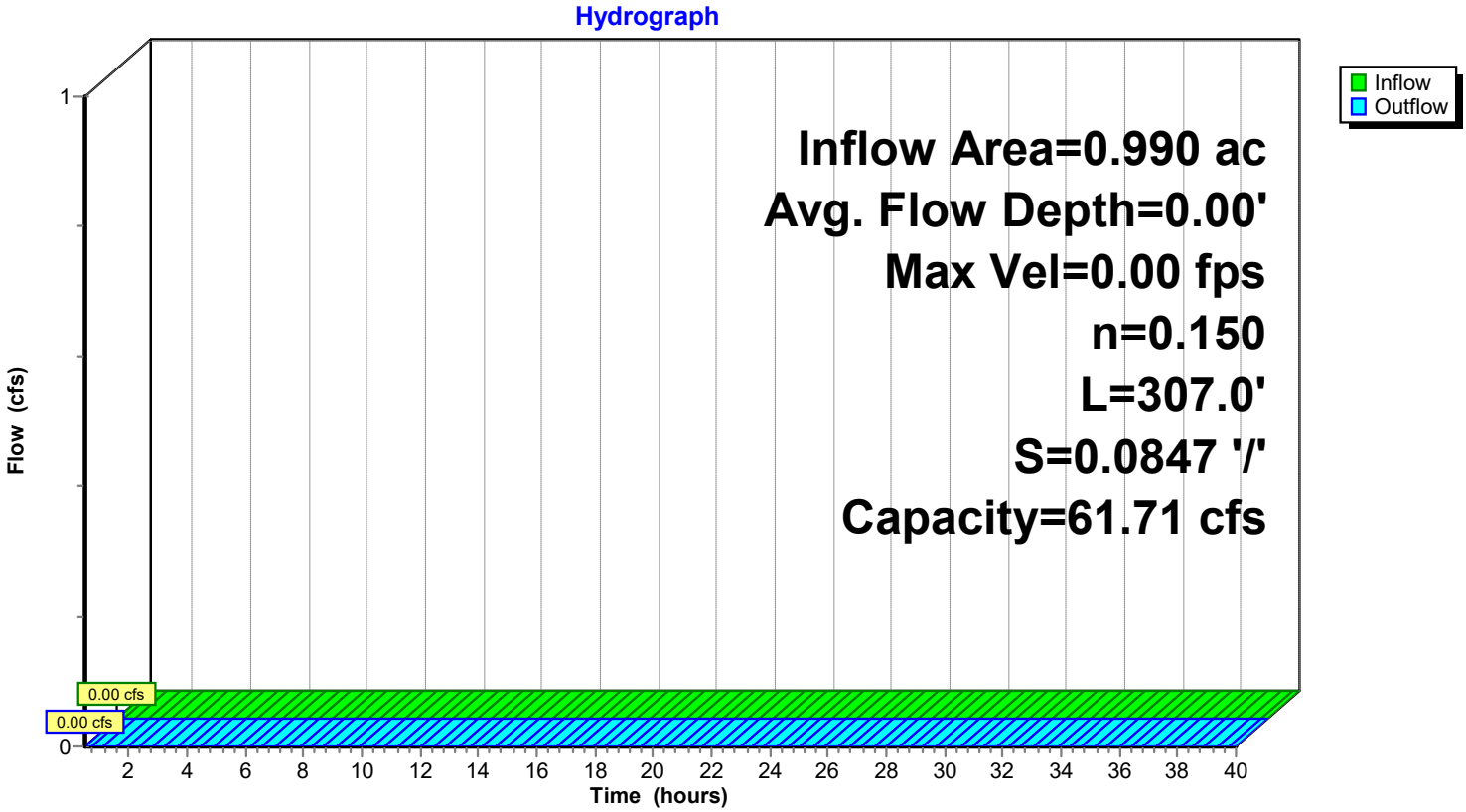
Routing by Stor-Ind+Trans method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.50 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.50' Flow Area= 22.5 sf, Capacity= 61.71 cfs

6.00' x 1.50' deep channel, n= 0.150 Dense willows
Side Slope Z-value= 6.0 '/' Top Width= 24.00'
Length= 307.0' Slope= 0.0847 '/'
Inlet Invert= 510.00', Outlet Invert= 484.00'

‡

Reach 3R: REACH-3



Summary for Reach 4R: REACH-4

Inflow Area = 2.600 ac, 15.00% Impervious, Inflow Depth = 0.49" for 100 year event
Inflow = 1.00 cfs @ 12.15 hrs, Volume= 0.106 af
Outflow = 0.50 cfs @ 12.78 hrs, Volume= 0.106 af, Atten= 50%, Lag= 37.8 min

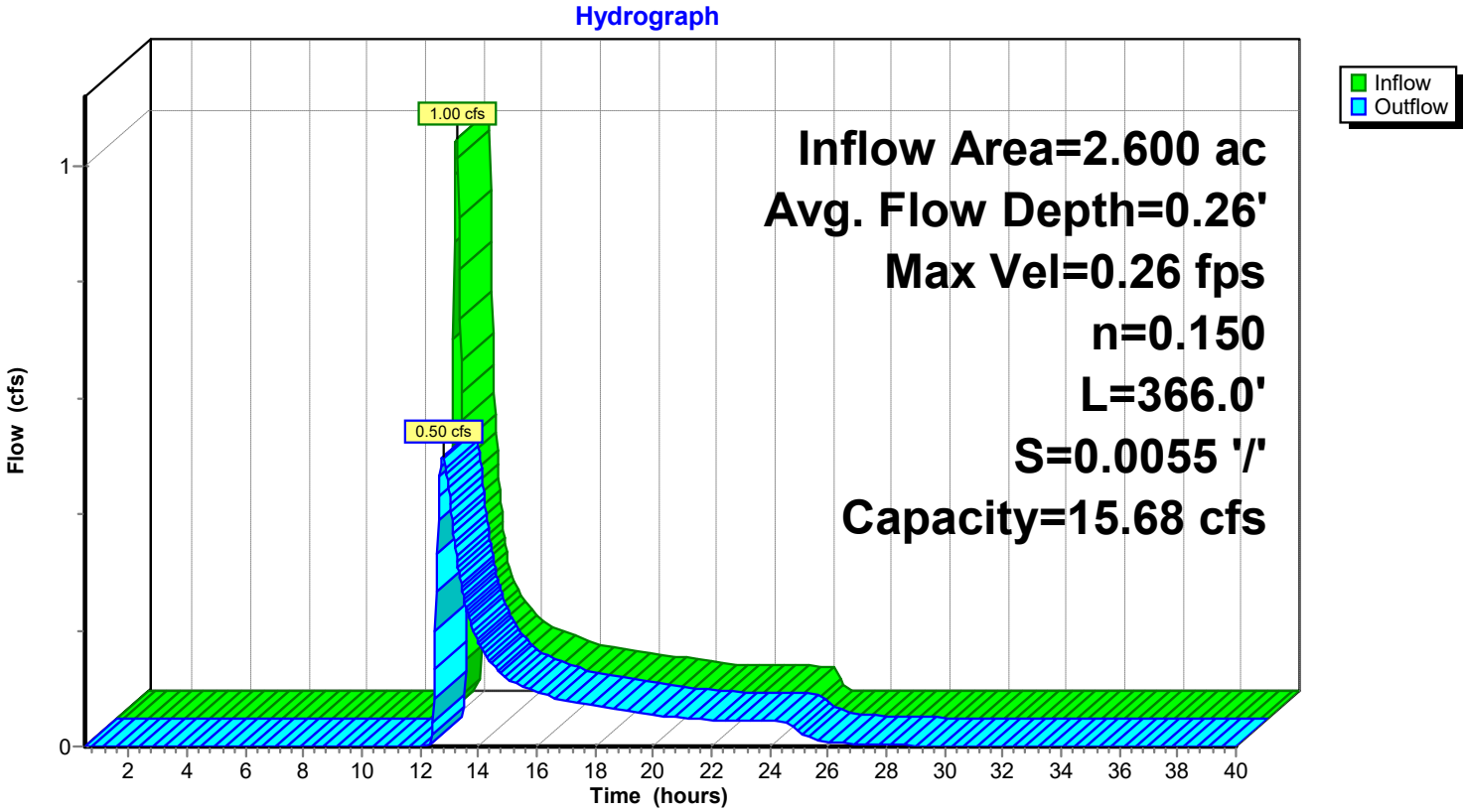
Routing by Stor-Ind+Trans method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Max. Velocity= 0.26 fps, Min. Travel Time= 23.5 min
Avg. Velocity = 0.09 fps, Avg. Travel Time= 69.3 min

Peak Storage= 705 cf @ 12.39 hrs
Average Depth at Peak Storage= 0.26'
Bank-Full Depth= 1.50' Flow Area= 22.5 sf, Capacity= 15.68 cfs

6.00' x 1.50' deep channel, n= 0.150 Dense willows
Side Slope Z-value= 6.0 '/' Top Width= 24.00'
Length= 366.0' Slope= 0.0055 '/'
Inlet Invert= 484.00', Outlet Invert= 482.00'

‡

Reach 4R: REACH-4



Summary for Pond 1P: BIORETENTION-1

Inflow Area = 0.770 ac, 49.35% Impervious, Inflow Depth = 2.36" for 100 year event
Inflow = 3.36 cfs @ 11.96 hrs, Volume= 0.152 af
Outflow = 0.63 cfs @ 12.13 hrs, Volume= 0.152 af, Atten= 81%, Lag= 10.1 min
Discarded = 0.08 cfs @ 12.13 hrs, Volume= 0.082 af
Primary = 0.55 cfs @ 12.13 hrs, Volume= 0.070 af
Secondary = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Peak Elev= 508.59' @ 12.13 hrs Surf.Area= 2,778 sf Storage= 2,564 cf

Plug-Flow detention time= 210.8 min calculated for 0.151 af (100% of inflow)
Center-of-Mass det. time= 211.1 min (1,052.9 - 841.8)

Volume	Invert	Avail.Storage	Storage Description
#1	507.00'	5,870 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
507.00	690	0	0
508.00	1,766	1,228	1,228
509.00	3,487	2,627	3,855
509.50	4,575	2,016	5,870

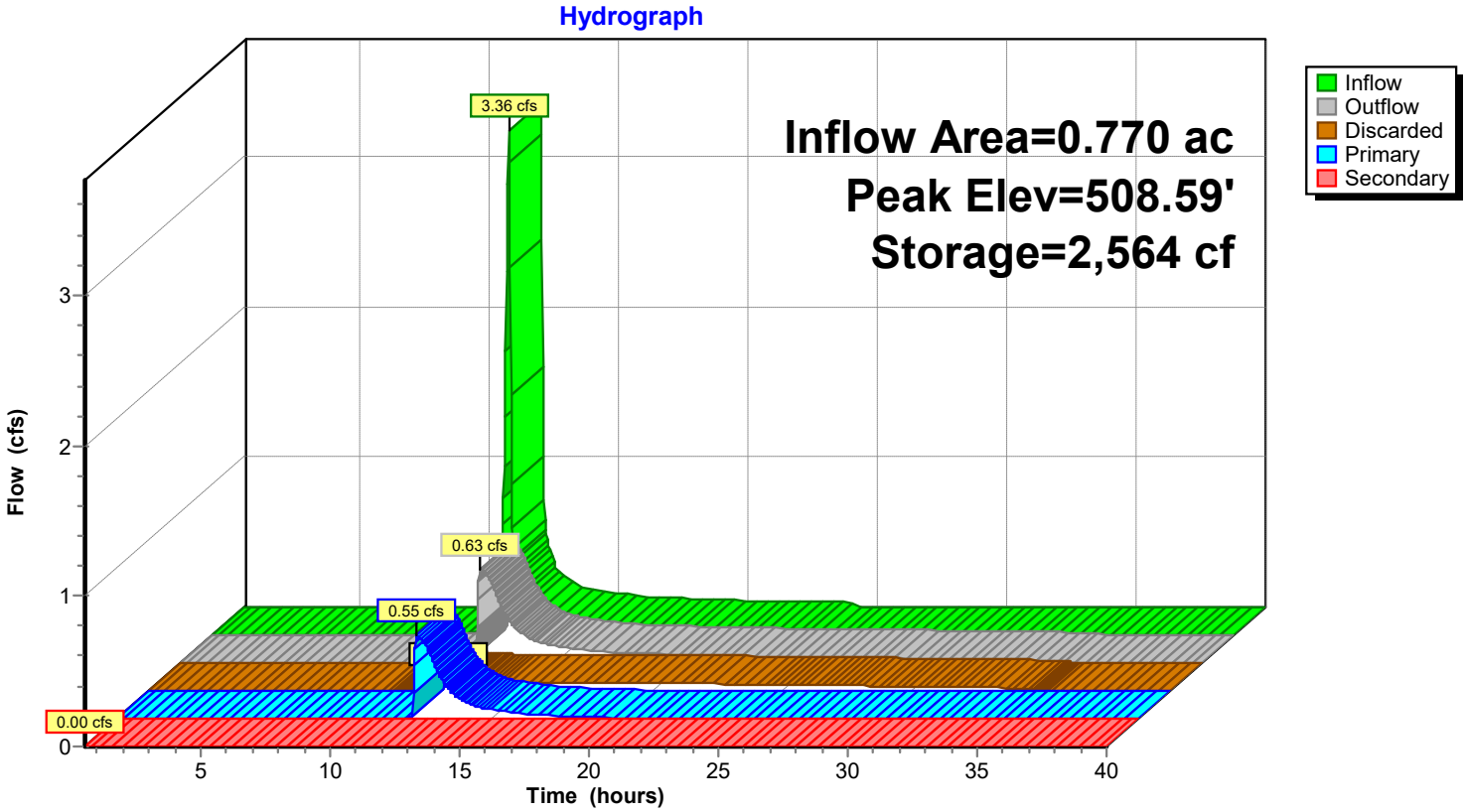
Device	Routing	Invert	Outlet Devices
#1	Secondary	509.00'	**10.0' long x 0.50' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s) 2.0' Crest Height
#2	Primary	507.00'	**12.0" Round Culvert** L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 507.00' / 506.60' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	508.00'	**6.0" Vert. Orifice/Grate** C= 0.600
#4	Discarded	507.00'	**1.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 502.00'

Discarded OutFlow Max=0.08 cfs @ 12.13 hrs HW=508.59' (Free Discharge)
└─**4=Exfiltration** (Controls 0.08 cfs)

Primary OutFlow Max=0.55 cfs @ 12.13 hrs HW=508.59' (Free Discharge)
└─**2=Culvert** (Passes 0.55 cfs of 3.19 cfs potential flow)
  └─**3=Orifice/Grate** (Orifice Controls 0.55 cfs @ 2.80 fps)

Secondary OutFlow Max=0.00 cfs @ 0.50 hrs HW=507.00' (Free Discharge)
└─**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: BIORETENTION-1



Summary for Pond 2P: BIORETENTION-2

Inflow Area = 0.850 ac, 61.18% Impervious, Inflow Depth = 2.99" for 100 year event
Inflow = 4.67 cfs @ 11.96 hrs, Volume= 0.212 af
Outflow = 3.61 cfs @ 12.02 hrs, Volume= 0.199 af, Atten= 23%, Lag= 3.4 min
Discarded = 0.07 cfs @ 12.02 hrs, Volume= 0.109 af
Primary = 3.54 cfs @ 12.02 hrs, Volume= 0.090 af

Routing by Stor-Ind method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Peak Elev= 507.23' @ 12.02 hrs Surf.Area= 2,393 sf Storage= 3,233 cf

Plug-Flow detention time= 314.7 min calculated for 0.199 af (94% of inflow)
Center-of-Mass det. time= 279.8 min (1,104.8 - 825.0)

Volume	Invert	Avail.Storage	Storage Description
#1	504.00'	3,927 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

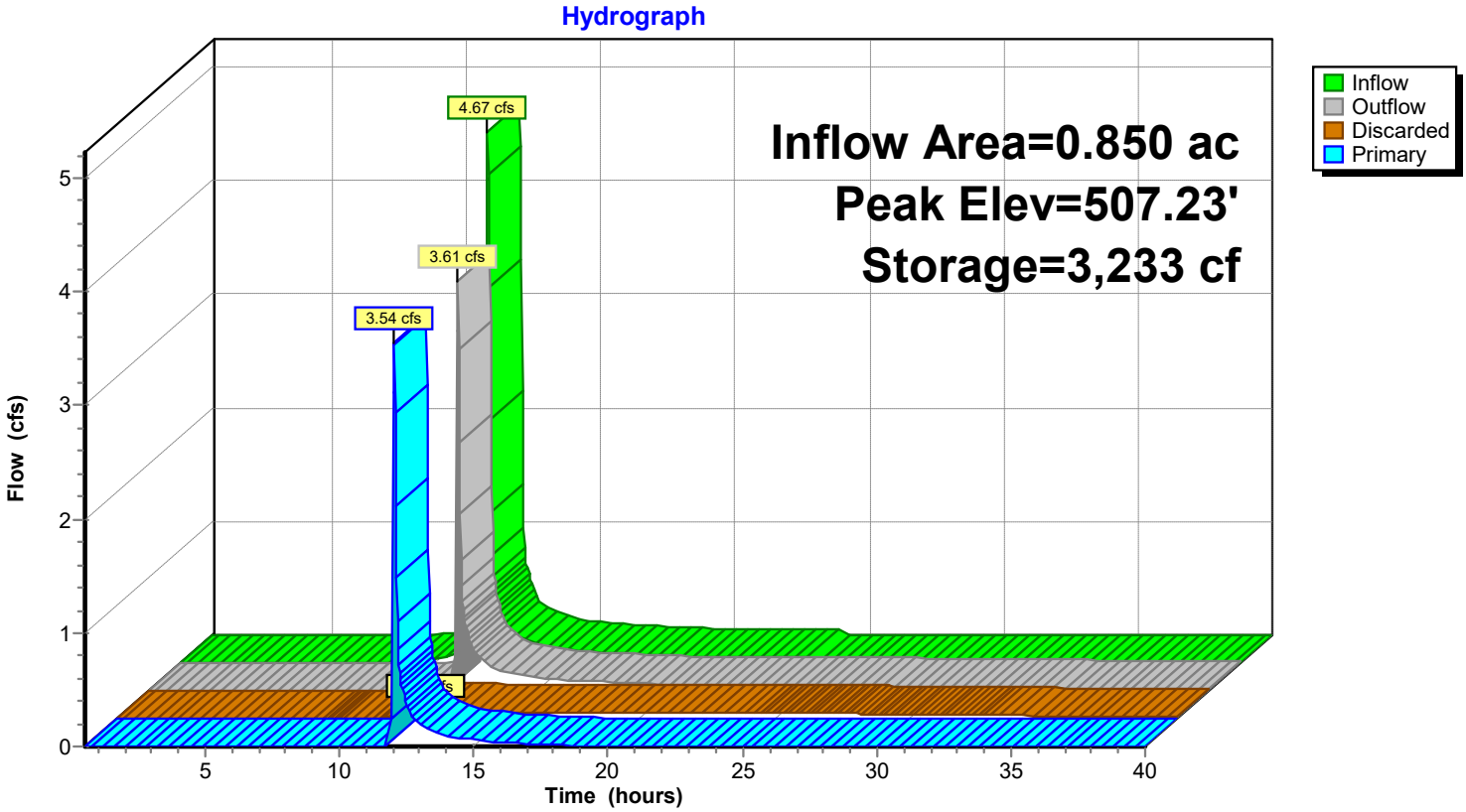
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
504.00	225	0	0
505.00	540	383	383
506.00	987	764	1,146
507.00	2,158	1,573	2,719
507.50	2,677	1,209	3,927

Device	Routing	Invert	Outlet Devices
#1	Discarded	504.00'	**1.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 499.00'
#2	Primary	507.00'	**10.0' long x 0.50' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s) 3.0' Crest Height

Discarded OutFlow Max=0.07 cfs @ 12.02 hrs HW=507.22' (Free Discharge)
└**1=Exfiltration** (Controls 0.07 cfs)

Primary OutFlow Max=3.50 cfs @ 12.02 hrs HW=507.22' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** (Weir Controls 3.50 cfs @ 1.56 fps)

Pond 2P: BIORETENTION-2



Summary for Pond 3P: BIORETENTION-3

Inflow Area = 0.990 ac, 39.39% Impervious, Inflow Depth = 1.86" for 100 year event
Inflow = 3.38 cfs @ 11.97 hrs, Volume= 0.154 af
Outflow = 0.08 cfs @ 16.03 hrs, Volume= 0.142 af, Atten= 98%, Lag= 243.9 min
Discarded = 0.08 cfs @ 16.03 hrs, Volume= 0.142 af
Primary = 0.00 cfs @ 0.50 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs
Peak Elev= 510.28' @ 16.03 hrs Surf.Area= 2,762 sf Storage= 3,944 cf

Plug-Flow detention time= 614.2 min calculated for 0.142 af (92% of inflow)
Center-of-Mass det. time= 572.8 min (1,429.8 - 856.9)

Volume	Invert	Avail.Storage	Storage Description
#1	508.00'	6,376 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

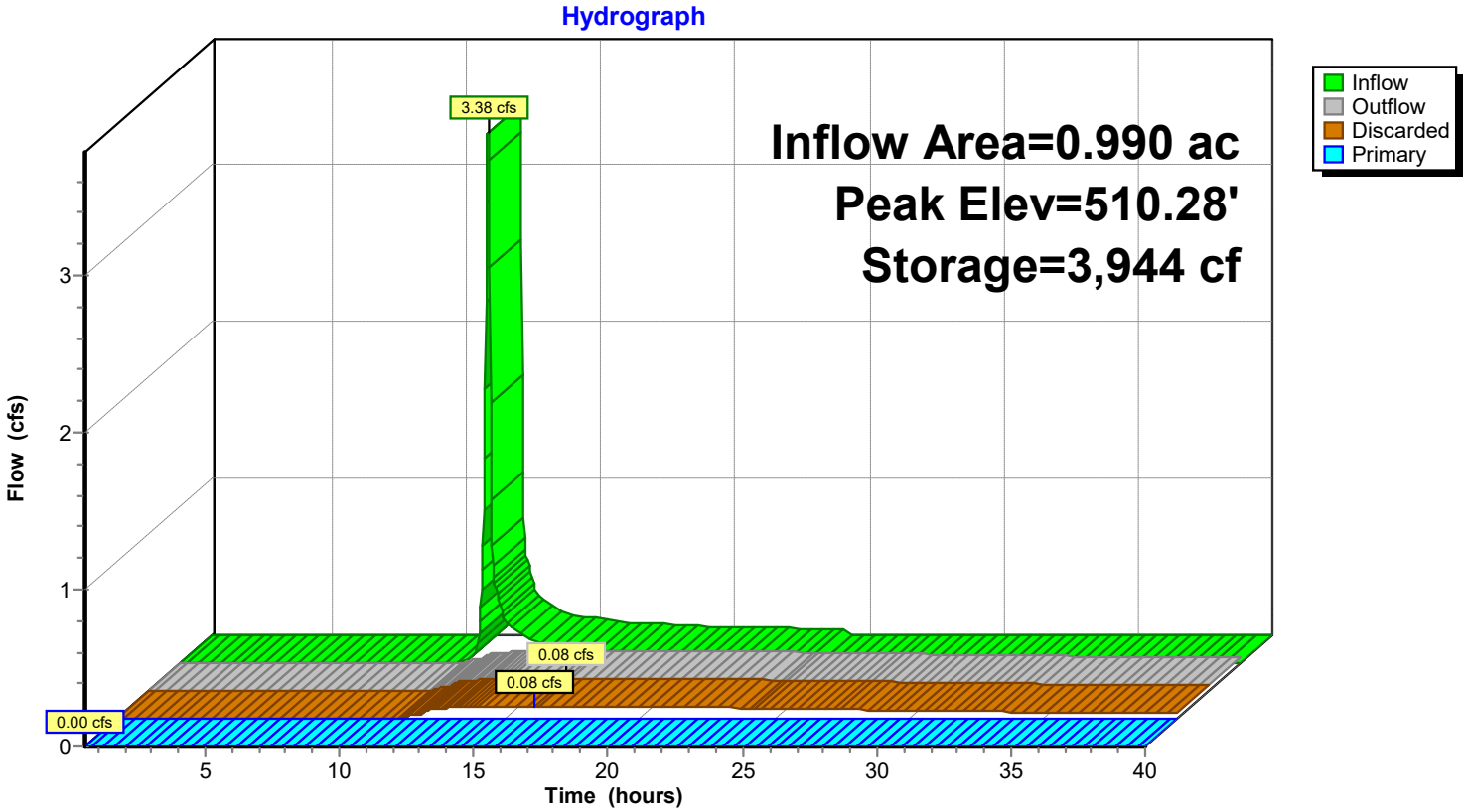
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
508.00	1,004	0	0
509.00	1,594	1,299	1,299
510.00	2,284	1,939	3,238
511.00	3,991	3,138	6,376

Device	Routing	Invert	Outlet Devices
#1	Discarded	508.00'	**1.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 503.00'
#2	Primary	510.50'	**10.0' long x 0.50' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s) 2.5' Crest Height

Discarded OutFlow Max=0.08 cfs @ 16.03 hrs HW=510.28' (Free Discharge)
└**1=Exfiltration** (Controls 0.08 cfs)

Primary OutFlow Max=0.00 cfs @ 0.50 hrs HW=508.00' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: BIORETENTION-3

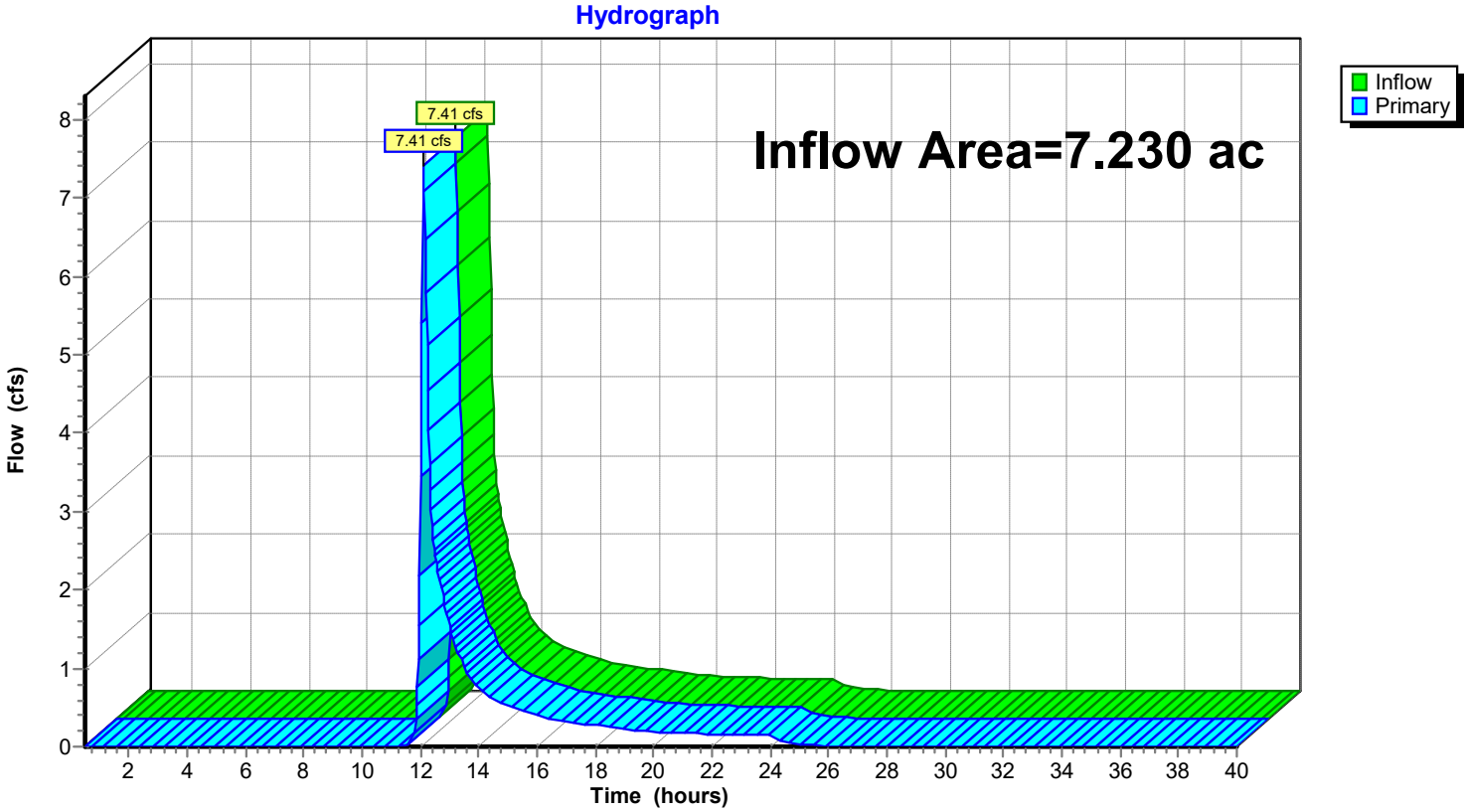


Summary for Pond 4P: Limestone Creek

Inflow Area = 7.230 ac, 17.84% Impervious, Inflow Depth = 1.02" for 100 year event
Inflow = 7.41 cfs @ 12.11 hrs, Volume= 0.617 af
Primary = 7.41 cfs @ 12.11 hrs, Volume= 0.617 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs

Pond 4P: Limestone Creek

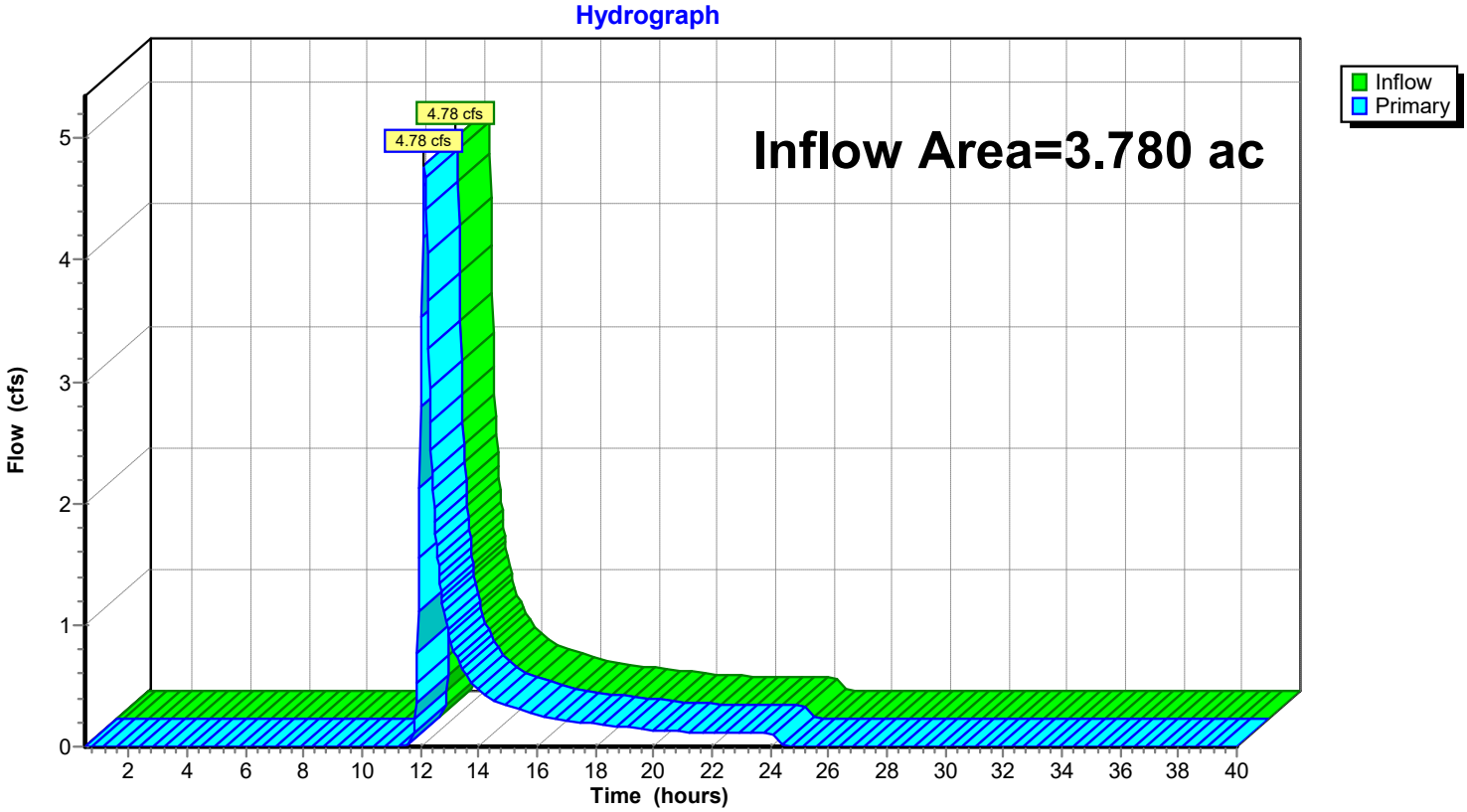


Summary for Link 1L: LINK-1

Inflow Area = 3.780 ac, 10.05% Impervious, Inflow Depth = 1.34" for 100 year event
Inflow = 4.78 cfs @ 12.14 hrs, Volume= 0.421 af
Primary = 4.78 cfs @ 12.14 hrs, Volume= 0.421 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs

Link 1L: LINK-1

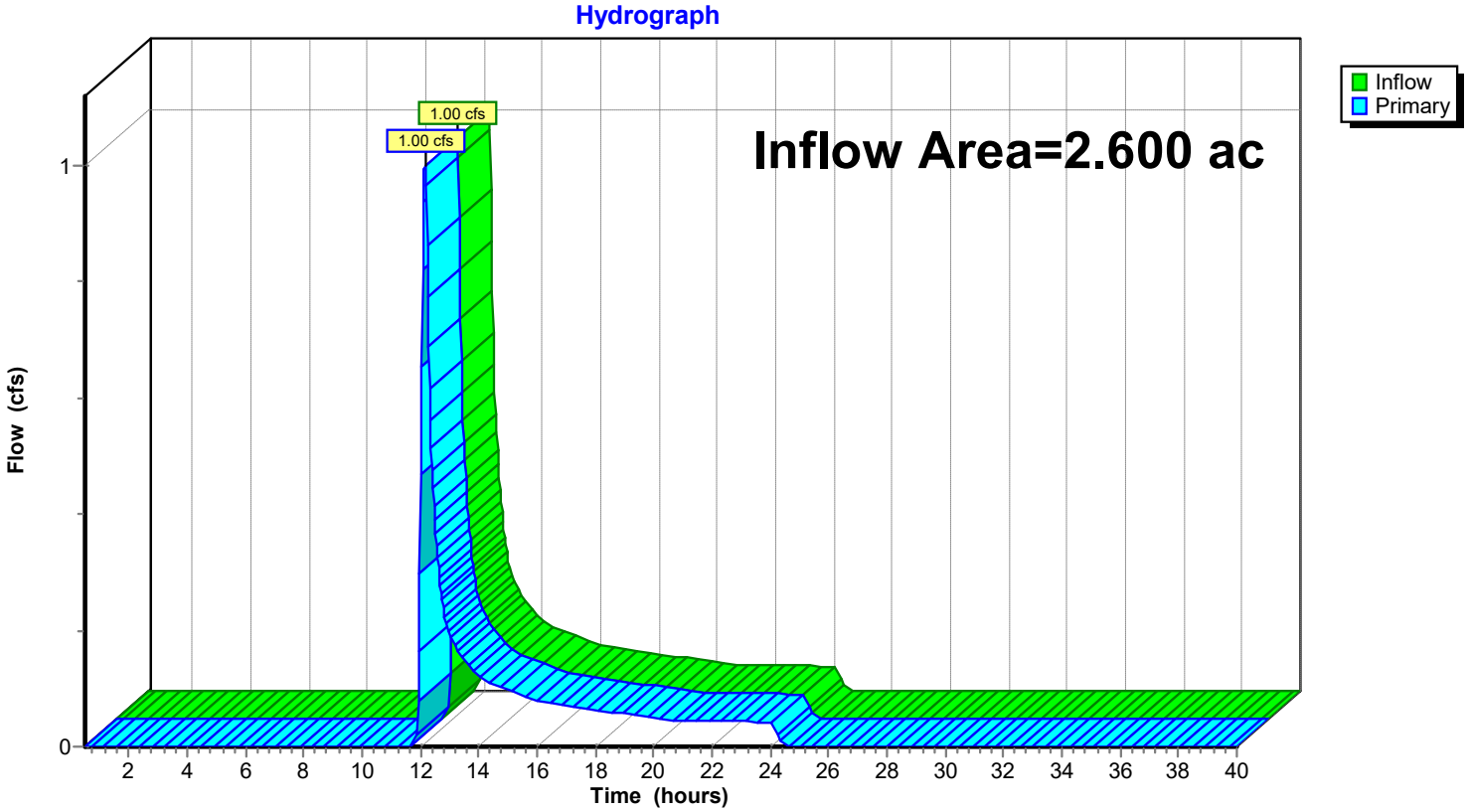


Summary for Link 2L: LINK-2

Inflow Area = 2.600 ac, 15.00% Impervious, Inflow Depth = 0.49" for 100 year event
Inflow = 1.00 cfs @ 12.15 hrs, Volume= 0.106 af
Primary = 1.00 cfs @ 12.15 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-40.01 hrs, dt= 0.03 hrs

Link 2L: LINK-2



ATTACHMENT K
WQV, RRV, AND CPV CALCULATIONS

PROJECT NAME: *FREEMAN ESTATES HOUSING - MANLIUS, NY* **PROJECT NUMBER:** *31.0180349.00*
CALCULATED BY: *JFF* **CHK'D BY:** *EKR* **DATE:** 12/16/2020

Notes: Developed Conditions (+/- acreas)
Soil Types: A & D SOILS

Water Quality Volume:

$$WQ_v: \frac{[(P)(R_v)(A)]}{12}$$

A= 2.61 acres
P= 1
I = 0.50 percent of impervious surface (expressed as a percentage)
R_v^*= 0.50

$$WQ_v: \frac{1.301}{12}$$

* R_v= 0.05 + [0.009(I)(100)]

WQv req'd: 0.11

PROJECT NAME: *FREEMAN ESTATES HOUSING - MANLIUS, NY* **PROJECT NUMBER:** *31.0180349.00*
CALCULATED BY: *JFF* **CHK'D BY:** *EKR* **DATE:** 12/16/2020

Notes: Developed Conditions (+/- acreas)
Soil Types: A & D SOILS

Channel Protection Volume:

$$CP_v: \frac{(V_r)(V_s/V_r)(A)]}{12}$$

$$CP_v: \frac{0.33}{12}$$

CP_v req'd: 0.03 ac-ft

1191 ft^3

A=	2.61	
I_a=	0.90	(I_a=200/CN-2) CN= 69
P=	2.01	(1-yr 24 hr rainfall)
V_r=	0.20	(1-yr cumulative runoff in inches from HydroCAD)
I_a/P=	0.45	
q_u=	450	(Exhibit 4-II in TR-55 manual)
q_o/q_i=	0.04	(Fig. B-1 from NYSSMDM)
V_s/V_r=	$0.683-1.43(qo/qi)+1.64(qo/qi)^2-0.804(qo/qi)^3$	
V_s/V_r=	0.628	

PROJECT NAME: *FREEMAN ESTATES HOUSING - MANLIUS, NY* **PROJECT NUMBER:** *31.0180349.00*
CALCULATED BY: *JFF* **CHK'D BY:** *EKR* **DATE:** 12/16/2020

11. SOURCE CONTROL WQv TREATMENT PRACTICES WORKSHEET - (complete for all applicable practices and soil types).

Standard Practices (used as source control)					**Allowable Runoff Reduction Volume (RRv)**
Infiltration (A soils only) (maximum 1-20 acre DA)					
DA tributary to practice: _____ acre(s)	AI = _____ acre(s)	RV =	WQv = _____ (ac-ft)		90% of WQv = _____ ac-ft A soils only
Bioretention D-1			WQv = 0.032 (ac-ft)		80% of WQv = 0.077 ac-ft A/B soils only OR
DA tributary to practice: 0.77 acre(s)	AI = 0.38 acre(s)	RV = 0.49	WQv Provided = 0.096 (ac-ft)		40% of WQv = ____ ac-ft C/D soils
Bioretention D-2			WQv = 0.043 (ac-ft)		80% of WQv = 0.047 ac-ft A/B soils only OR
DA tributary to practice: 0.85 acre(s)	AI = 0.52 acre(s)	RV = 0.60	WQv Provided = 0.059 (ac-ft)		40% of WQv = ____ ac-ft C/D soils
Bioretention D-3			WQv = 0.033 (ac-ft)		80% of WQv = 0.050 ac-ft A/B soils only OR
DA tributary to practice: 0.77 acre(s)	AI = 0.39 acre(s)	RV = 0.40	WQv Provided = 0.063 (ac-ft)		40% of WQv = ____ ac-ft C/D soils
Dry Swale (maximum 5-acre DA)					40% of WQv = _____ ac-ft A/B soils only OR
DA tributary to practice: ____ acre(s)	AI = ___ acre(s)	RV =	WQv = ___ (ac-ft)		20% of WQv = ____ ac-ft C/D soils

Green Infrastructure Practices

Vegetated open swale (maximum 5-acre DA					20% of WQv = _____ ac-ft A/B soils only OR
DA tributary to practice: _____ acre(s)	AI = _____ acre(s)	RV =	WQv = _____ (ac-ft)		10% of WQv = _____ ac-ft C/D soils
Green Roof					
Roof area = _____ acre(s)		RV = 0.95	WQv = _____ (ac-ft)		100% of WQv = _____ ac-ft
Rain Garden (maximum 1,000 square foot roof)					
Roof area = _____ acre(s)		RV = 0.95	WQv = _____ (ac-ft)		100% of WQv = _____ ac-ft
Stormwater planters (maximum 15,000-s.f. DA					
DA tributary to practice: _____ acre(s)	AI = ___ acre(s)	RV =	WQv = _____ (ac-ft)		100% of WQv = _____ ac-ft
Cisterns/ rain barrels					
Roof area = _____ acre(s)		RV = 0.95	WQv = _____ (ac-ft)		100% of WQv = _____ ac-ft
Porous pavement (A/B soils only)					
DA tributary to practice: _____ acre(s)	AI = _____ acre(s)	RV =	WQv = _____ (ac-ft)		100% of WQv = _____ ac-ft A/B soils only
11a. Subtotal DA tributary to Source Control WQv practices = 2.61 (acres)					
11b. Subtotal Source Control WQv Treatment Volume = 0.22 (ac-ft)					
11c. Subtotal Runoff Reduction Volume (RRv): 0.17					**Subtotal (Rv) RRv = 0.17 (ac-ft)**

STORMWATER MANAGEMENT
PLANNING AND PRACTICE SELECTION WORKSHEET

PROJECT: FREEMAN ESTATES HOUSING - MANLIUS, NY **DATE:** 12/16/2020

Watershed Drainage Area		Impervious Area (Acres)			
DA:	2.61	**AI:**	1.29	**90% Rain: (P)=**	1

PLANNING

1. Plan to preserve, avoid and minimize (underline all concepts utilized):

***** Preserve undisturbed, natural buffer, and critical environment areas

***** Employ open space, conservation, and clustering site design techniques

***** Avoid developing in environmentally sensitive areas: floodplain, steep slopes, habitat, ecosystems, bedrock, wetlands, shorelines, shallow groundwater, impervious soils, unstable soils

WATER QUALITY VOLUME **(before runoff reduction)**

2. Calculate water quality volume (WQv): WQv = (P * A * Rv)/12

Watershed DA (acres)=	2.61
Impervious area (AI) =	1.29
Rv=	0.49

Original WQv (Ac-Ft)=	0.11

3. Minimum RRv requirements (when 100% WQv reduction cannot be achieved)

RRv = (P) * (Rv) * (S) * (AI) / 12

With S = **0.55** for A soils; **0.40** for B soils; **0.30** for C soils; **0.20** for D soils OR Weighted HSG average in DA

S = 0.55 (site is type A & D soils)

Minimum required RRv (Ac-Ft) =	0.056

AREA REDUCTION PRACTICES

4. **Incorporate area reduction practices (*complete for all applicable practices):***

* Conservation of natural areas (min. 10,000 sq. ft.):	Contributing AI (acres) =	Area (Ac.) =	
* Riparian buffers/filter strips (max length: 150ft):	Contributing AI (acres) =	Area (Ac.) =	
* Tree Planting/tree preservation (Max 100 s.f./tree):	Contributing AI (acres) =	Area (Ac.) =	

Total Area Reduction.....	0.000
Total Impervious Area Reduction.....	0.000

5. Subtract total area reduction from DA:

Remaining drainage area: (#2 area - #4 area).....	2.61
Remaining impervious area: (#2 AI - #4 AI).....	1.29

6. Incorporate impervious area disconnection:

Total disconnected impervious area (now considered pervious for RV calcs.) Area (Ac.) = 0

GZA GeoEnvironmental of NY
6296 Fly Road
East Syracuse, New York 13057

7. Recalculate WQv for site area remaining after area reductions and impervious disconnections:

Remaining DA (acres) =	2.61	Remaining AI (acres)=	1.29	Rv=	0.49

Reduced WQv (Ac-ft)……	0.11
Min Runoff Reduction Volume (Ac-ft)……	0.056

SOURCE CONTROL WQv TREATMENT PRACTICES

(From attached worksheet)

8a. Subtotal DA tributary to Source Control treatment practices (Acres)……..	2.61
8b. Subtotal AI tributary to Source Control treatment practices (Acres)……..	1.29
8c. Subtotal Source Control WQv Treatment Volume (Ac-Ft)……	0.22
8d. Subtotal Runoff Reduction Volume (RRv) (Ac-Ft)……	0.17

TOTAL RUNOFF REDUCTION VOLUME (RRv)

9. Total RRv provided (Ac-Ft)……	0.17

10. Is RRv ≥ original WQv ? **Yes:**_____ **No:**__X__ If Yes, skip to #12

11. Is RRv ≥ minimum RRv? **Yes:**___X___ **No:**_____

12. Total drainage area treated with runoff reduction/source control practices (Acres)	2.61

(Area reduction (from #4) + total DA tributary to source control (#8a.)

STANDARD WQv TREATMENT

13. Provide treatment for any remaining untreated watershed DA with standard practices:

Remaining untreated DA = (Watershed DA(#2)) - (Treated DA(#12))(Acres)……	0.00
Remaining impervious area = Total AI (#2)) - Treated AI (#4 + #6 + #8)……..	0.00
Rv for Standard Practice……	0.000
WQv required in a Standard Practice (Ac-Ft)	0.00

Filter Bed Sizing Work Sheet

Project Name: FREEMAN ESTATES HOUSING Project Number: 31.0180349.00

Calculated by: JFF Checked by: EKR Date: 12/16/2020

DETERMINE REQUIRED SIZE OF BIO RETENTION FILTER PER HOUSING UNIT:

Per NYSSWDM: $AF = (WQv)(df) \div [(K)(hf + df)(tf)]$

Where: AF = Required surface area of filter bed (ft^2)

D-1 WQv = 0.032 ac-ft = 1394 ft^3

df = Filter bed depth (ft.) = 2.5ft

K = Coeff. Of permeability of filter media = 0.5 ft/ day

hf = Avg. height of water above filter = 0.5 ft

tf = Filter bed drain time = 2 days

AF = (1394 ft^3)(2.5ft) ÷ [(0.5ft/day)(0.5+2.5ft)(2days)]

Required area = 1162 ft^2

Provided filter area = 3500 ft^2 **(WQv Provided = 0.096 ac-ft)**

D-2 WQv = 0.043 ac-ft = 1873 ft^3

df = Filter bed depth (ft.) = 2.5ft

K = Coeff. Of permeability of filter media = 0.5 ft/ day

hf = Avg. height of water above filter = 0.5 ft

tf = Filter bed drain time = 2 days

AF = (1873 ft^3)(2.5ft) ÷ [(0.5ft/day)(0.5+2.5ft)(2days)]

Required area = 1561 ft^2

Provided filter area = 2150 ft^2 **(WQv Provided = 0.059 ac-ft)**

D-3 WQv = 0.033 ac-ft = 1438 ft^3

df = Filter bed depth (ft.) = 2.5ft

K = Coeff. Of permeability of filter media = 0.5 ft/ day

hf = Avg. height of water above filter = 0.5 ft

tf = Filter bed drain time = 2 days

AF = (1438 ft^3)(2.5ft) ÷ [(0.5ft/day)(0.5+2.5ft)(2days)]

Required area = 1198 ft^2

Provided filter area = 2300 ft^2 **(WQv Provided = 0.063 ac-ft)**

ATTACHMENT L

SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES (GP-0-20-001)

SEE GP-0-20-001AT: HTTP://WWW.DEC.NY.GOV/DOCS/WATER_PDF/GP020001.PDF

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP- 0-20-001

Issued Pursuant to Article 17, Titles 7, 8 and Article 70

of the Environmental Conservation Law

Effective Date: January 29, 2020 | Expiration Date: January 28, 2025

John J. Ferguson

Chief Permit Administrator

1-23-20

Authorized Signature | Date

Address: NYS DEC
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

PREFACE

Pursuant to Section 402 of the Clean Water Act ("CWA"), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System ("NPDES")* permit or by a state permit program. New York administers the approved State Pollutant Discharge Elimination System (SPDES) program with permits issued in accordance with the New York State Environmental Conservation Law (ECL) Article 17, Titles 7, 8 and Article 70.

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of "*construction activity*", as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a *point source* and therefore, pursuant to ECL section 17-0505 and 17-0701, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. The *owner or operator* cannot wait until there is an actual *discharge* from the *construction site* to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

Table of Contents

Part 1. PERMIT COVERAGE AND LIMITATIONS 1
A. Permit Application 1
B. Effluent Limitations Applicable to Discharges from Construction Activities 1
C. Post-construction Stormwater Management Practice Requirements 4
D. Maintaining Water Quality 8
E. Eligibility Under This General Permit 9
F. Activities Which Are Ineligible for Coverage Under This General Permit 9
Part II. PERMIT COVERAGE 12
A. How to Obtain Coverage 12
B. Notice of Intent (NOI) Submittal 13
C. Permit Authorization 13
D. General Requirements For Owners or Operators With Permit Coverage 15
E. Permit Coverage for Discharges Authorized Under GP-0-15-002 17
F. Change of Owner or Operator 17
Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP) 18
A. General SWPPP Requirements 18
B. Required SWPPP Contents 20
C. Required SWPPP Components by Project Type 24
Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS 24
A. General Construction Site Inspection and Maintenance Requirements 24
B. Contractor Maintenance Inspection Requirements 24
C. Qualified Inspector Inspection Requirements 25
Part V. TERMINATION OF PERMIT COVERAGE 29
A. Termination of Permit Coverage 29
Part VI. REPORTING AND RETENTION RECORDS 31
A. Record Retention 31
B. Addresses 31
Part VII. STANDARD PERMIT CONDITIONS 31
A. Duty to Comply 31
B. Continuation of the Expired General Permit 32
C. Enforcement 32
D. Need to Halt or Reduce Activity Not a Defense 32
E. Duty to Mitigate 33
F. Duty to Provide Information 33
G. Other Information 33
H. Signatory Requirements 33
I. Property Rights 35
J. Severability 35

K. Requirement to Obtain Coverage Under an Alternative Permit 35
L. Proper Operation and Maintenance 36
M. Inspection and Entry 36
N. Permit Actions 37
O. Definitions 37
P. Re-Opener Clause 37
Q. Penalties for Falsification of Forms and Reports 37
R. Other Permits 38
APPENDIX A – Acronyms and Definitions 39
Acronyms 39
Definitions 40
APPENDIX B – Required SWPPP Components by Project Type 48
Table 1 48
Table 2 50
APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal 52
APPENDIX D – Watersheds with Lower Disturbance Threshold 58
APPENDIX E – 303(d) Segments Impaired by Construction Related Pollutant(s) 59
APPENDIX F – List of NYS DEC Regional Offices 65

Part 1. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

This permit authorizes stormwater *discharges* to *surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;

2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State.*

3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

B. Effluent Limitations Applicable to Discharges from Construction Activities

*Discharge*s authorized by this permit must achieve, at a minimum, the effluent limitations in Part I.B.1. (a) – (f) of this permit. These limitations represent the degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement and maintain control measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in the *Stormwater Pollution Prevention Plan* (“SWPPP”) the reason(s) for the

deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

a. **Erosion and Sediment Controls.** Design, install and maintain effective erosion and sediment controls to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such controls must be designed, installed and maintained to:

   (i) *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharge*s;

   (ii) Control stormwater *discharge*s, including both peak flowrates and total stormwater volume, to *minimize* channel and *streambank* erosion and scour in the immediate vicinity of the *discharge* points;

   (iii) *Minimize* the amount of soil exposed during *construction activity*;

   (iv) *Minimize* the disturbance of *steep slopes*;

   (v) *Minimize* sediment *discharge*s from the site;

   (vi) Provide and maintain *natural buffer*s around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce *pollutant discharge*s, unless *infeasible*;

   (vii) *Minimize* soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted;

   (viii) Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover; and

   (ix) *Minimize* dust. On areas of exposed soil, *minimize* dust through the appropriate application of water or other dust suppression techniques to control the generation of pollutants that could be discharged from the site.

b. **Soil Stabilization**. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that *directly discharge* to one of the 303(d) segments

listed in Appendix E or is located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. See Appendix A for definition of *Temporarily Ceased*.

c. **Dewatering**. *Discharge*s from *dewatering* activities, including *discharge*s from *dewatering* of trenches and excavations, must be managed by appropriate control measures.

d. **Pollution Prevention Measures**. Design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be designed, installed, implemented and maintained to:

   (i) *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. This applies to washing operations that use clean water only. Soaps, detergents and solvents cannot be used;

   (ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, hazardous and toxic waste, and other materials present on the site to precipitation and to stormwater. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use) ; and

   (iii) Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

e. **Prohibited *Discharges*.** The following *discharge*s are prohibited:

   (i) Wastewater from washout of concrete;

   (ii) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

(iii) Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance;

(iv) Soaps or solvents used in vehicle and equipment washing; and

(v) Toxic or hazardous substances from a spill or other release.

f. Surface Outlets. When discharging from basins and impoundments, the outlets shall be designed, constructed and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion at or below the outlet does not occur.

C. Post-construction Stormwater Management Practice Requirements

1. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must select, design, install, and maintain the practices to meet the *performance criteria* in the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015, using sound engineering judgment. Where post-construction stormwater management practices ("SMPs") are not designed in conformance with the *performance criteria* in the Design Manual, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must design the practices to meet the applicable *sizing criteria* in Part I.C.2.a., b., c. or d. of this permit.

a. Sizing Criteria for New Development

(i) Runoff Reduction Volume ("RRv"): Reduce the total Water Quality Volume ("WQv") by application of RR techniques and standard SMPs with RRv capacity. The total WQv shall be calculated in accordance with the criteria in Section 4.2 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: Construction activities that cannot meet the criteria in Part I.C.2.a.(i) of this permit due to site limitations shall direct runoff from all newly constructed impervious areas to a RR technique or standard SMP with RRv capacity unless infeasible. The specific site limitations that prevent the reduction of 100% of the WQv shall be documented in the SWPPP.

For each impervious area that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered infeasible.

In no case shall the runoff reduction achieved from the newly constructed impervious areas be less than the Minimum RRv as calculated using the criteria in Section 4.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume ("Cpv"): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site discharges directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria ("Qp"): Requires storage to attenuate the post-development 10-year, 24-hour peak discharge rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria ("Qf"): Requires storage to attenuate the post-development 100-year, 24-hour peak discharge rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

b. *Sizing Criteria* for *New Development* in Enhanced Phosphorus Removal Watershed

(i) Runoff Reduction Volume (RRv): Reduce the total Water Quality Volume (WQv) by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24 hour design storm over the post-developed watershed and shall be

calculated in accordance with the criteria in Section 10.3 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.b.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 10.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

c. Sizing Criteria for Redevelopment Activity

(i) Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* shall be addressed by one of the following options. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C of this permit) shall calculate the WQv in accordance with Section 10.3 of the Design Manual. All other *redevelopment activities* shall calculate the WQv in accordance with Section 4.2 of the Design Manual.

(1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or

(2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or

(3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or

(4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

If there is an existing post-construction stormwater management practice located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 – 4 above.

(ii) Channel Protection Volume (Cpv): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iii) *Overbank* Flood Control Criteria (Qp): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iv) Extreme Flood Control Criteria (Qf): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site

d. Sizing Criteria for Combination of Redevelopment Activity and New Development

Construction projects that include both New Development and Redevelopment Activity shall provide post-construction stormwater management controls that meet the sizing criteria calculated as an aggregate of the Sizing Criteria in Part I.C.2.a. or b. of this permit for the New Development portion of the project and Part I.C.2.c of this permit for Redevelopment Activity portion of the project.

D. Maintaining Water Quality

The Department expects that compliance with the conditions of this permit will control *discharge*s necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any discharge to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;

2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and

3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the stormwater *discharge*s authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standards*; the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this general permit and document in accordance with Part IV.C.4. of this general permit. To address the *water quality standard* violation the *owner or operator* may need to provide additional information, include and implement appropriate controls in the SWPPP to correct the problem, or obtain an individual SPDES permit.

If there is evidence indicating that despite compliance with the terms and conditions of this general permit it is demonstrated that the stormwater *discharge*s authorized by this permit are causing or contributing to a violation of *water quality standards*, or if the Department determines that a modification of the permit is necessary to prevent a violation of *water quality standards*, the authorized *discharge*s will no longer be eligible for coverage under this permit. The Department may require the *owner or operator* to obtain an individual SPDES permit to continue discharging.

E. Eligibility Under This General Permit

1. This permit may authorize all *discharges* of stormwater from *construction activity* to *surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph F. of this Part.

2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharge*s; including stormwater runoff, snowmelt runoff, and surface runoff and drainage, from *construction activities*.

3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater discharges are authorized by this permit: those listed in 6 NYCRR 750-1.2(a)(29)(vi), with the following exception: "Discharges from firefighting activities are authorized only when the firefighting activities are emergencies/unplanned"; waters to which other components have not been added that are used to control dust in accordance with the SWPPP; and uncontaminated *discharge*s from *construction site* de-watering operations. All non-stormwater discharges must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.

4. The *owner or operator* must maintain permit eligibility to *discharge* under this permit. Any *discharges* that are not compliant with the eligibility conditions of this permit are not authorized by the permit and the *owner or operator* must either apply for a separate permit to cover those ineligible *discharges* or take steps necessary to make the *discharge* eligible for coverage.

F. Activities Which Are Ineligible for Coverage Under This General Permit

All of the following are **<u>not</u>** authorized by this permit:

1. *Discharge*s after *construction activities* have been completed and the site has undergone *final stabilization*;

2. *Discharge*s that are mixed with sources of non-stormwater other than those expressly authorized under subsection E.3. of this Part and identified in the SWPPP required by this permit;

3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII.K. of this permit;

4. *Construction activities* or *discharges* from *construction activities* that may adversely affect an *endangered or threatened species* unless the *owner or*

operator has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.D.2 of this permit;

5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;

6. *Construction activities* for residential, commercial and institutional projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb one (1) or more acres of land designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

7. *Construction activities* for linear transportation projects and linear utility projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb two (2) or more acres of land designated on the current USDA Soil Survey as Soil Slope Phase "D" (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

8. *Construction activities* that have the potential to affect an *historic property*, unless there is documentation that such impacts have been resolved. The following documentation necessary to demonstrate eligibility with this requirement shall be maintained on site in accordance with Part II.D.2 of this permit and made available to the Department in accordance with Part VII.F of this permit:

   a. Documentation that the *construction activity* is not within an archeologically sensitive area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the *construction site* within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the *construction site* within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant.

      - 1-5 acres of disturbance - 20 feet
      - 5-20 acres of disturbance - 50 feet
      - 20+ acres of disturbance - 100 feet, or

   b. DEC consultation form sent to OPRHP, and copied to the NYS DEC Agency Historic Preservation Officer (APO), and
      (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
      (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
      (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
      (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or

   c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:

(i) No Affect
(ii) No Adverse Affect
(iii) Executed Memorandum of Agreement, or

d. Documentation that:

(i) SHPA Section 14.09 has been completed by NYS DEC or another state agency.

9. *Discharge*s from *construction activities* that are subject to an existing SPDES individual or general permit where a SPDES permit for *construction activity* has been terminated or denied; or where the *owner or operator* has failed to renew an expired individual permit.

Part II. PERMIT COVERAGE

A. How to Obtain Coverage

1. An *owner or operator* of a *construction activity* that is not subject to the requirements of a regulated, traditional land use control MS4 must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed Notice of Intent (NOI) to the Department to be authorized to discharge under this permit.

2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then have the SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the “MS4 SWPPP Acceptance” form signed in accordance with Part VII.H., and then submit that form along with a completed NOI to the Department.

3. The requirement for an *owner or operator* to have its SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.F. (Change of *Owner or Operator*) or where the *owner or operator* of the *construction activity* is the *regulated, traditional land use control MS4* . This exemption does not apply to *construction activities* subject to the New York City Administrative Code.

B. Notice of Intent (NOI) Submittal

1. Prior to December 21, 2020, an owner or operator shall use either the electronic (eNOI) or paper version of the NOI that the Department prepared. Both versions of the NOI are located on the Department's website (http://www.dec.ny.gov/). The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the following address:

   NOTICE OF INTENT
   NYS DEC, Bureau of Water Permits
   625 Broadway, 4th Floor
   Albany, New York 12233-3505

2. Beginning December 21, 2020 and in accordance with EPA's 2015 NPDES Electronic Reporting Rule (40 CFR Part 127), the *owner or operator* must submit the NOI electronically using the *Department's* online NOI.

3. The *owner or operator* shall have the SWPPP preparer sign the "SWPPP Preparer Certification" statement on the NOI prior to submitting the form to the Department.

4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

C. Permit Authorization

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.

2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied <u>all</u> of the following criteria:

   a. project review pursuant to the State Environmental Quality Review Act ("SEQRA") have been satisfied, when SEQRA is applicable. See the Department's website (http://www.dec.ny.gov/) for more information,

   b. where required, all necessary Department permits subject to the *Uniform Procedures Act ("UPA")* (see 6 NYCRR Part 621), or the equivalent from another New York State agency, have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators* of *construction activities* that are required to obtain *UPA* permits

must submit a preliminary SWPPP to the appropriate DEC Permit Administrator at the Regional Office listed in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,

c. the final SWPPP has been prepared, and

d. a complete NOI has been submitted to the Department in accordance with the requirements of this permit.

3. An *owner or operator* that has satisfied the requirements of Part II.C.2 above will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

   a. For *construction activities* that are <u>not</u> subject to the requirements of a *regulated, traditional land use control MS4*:

      (i) Five (5) business days from the date the Department receives a complete electronic version of the NOI (eNOI) for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.; or

      (ii) Sixty (60) business days from the date the Department receives a complete NOI (electronic or paper version) for *construction activities* with a SWPPP that has <u>not</u> been prepared in conformance with the design criteria in technical standard referenced in Part III.B.1. or, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C., the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, or;

      (iii) Ten (10) business days from the date the Department receives a complete paper version of the NOI for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.

b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:

(i) Five (5) business days from the date the Department receives both a complete electronic version of the NOI (eNOI) and signed "*MS4* SWPPP Acceptance" form, or

(ii) Ten (10) business days from the date the Department receives both a complete paper version of the NOI and signed "MS4 SWPPP Acceptance" form.

4. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department. The *owner or operator* shall not *commence construction activity* on the future or additional areas until their authorization to *discharge* under this permit goes into effect in accordance with Part II.C. of this permit.

D. General Requirements For Owners or Operators With Permit Coverage

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination ("NOT") has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4. of this permit.

2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-20-001), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, responsible contractor's or subcontractor's certification statement (see Part III.A.6.), and all documentation necessary to demonstrate eligibility with this permit at the *construction site* until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.

3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land*

use control MS4, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:

a. The *owner or operator* shall have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.

c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

d. The *owner or operator* shall install any additional site-specific practices needed to protect water quality.

e. The *owner or operator* shall include the requirements above in their SWPPP.

4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements or consistent with Part VII.K..

5. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.

6. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the

regulated, traditional land use control MS4 in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *regulated, traditional land use control MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *regulated, traditional land use control MS4* prior to commencing construction of the post-construction stormwater management practice.

E. Permit Coverage for Discharges Authorized Under GP-0-15-002

1. Upon renewal of SPDES General Permit for Stormwater Discharges from *Construction Activity* (Permit No. GP-0-15-002), an *owner or operator* of *a construction activity* with coverage under GP-0-15-002, as of the effective date of GP- 0-20-001, shall be authorized to *discharge* in accordance with GP- 0-20-001, unless otherwise notified by the Department.

   An *owner or operator* may continue to implement the technical/design components of the post-construction stormwater management controls provided that such design was done in conformance with the technical standards in place at the time of initial project authorization. However, they must comply with the other, non-design provisions of GP-0-20-001.

F. Change of Owner or Operator

1. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, <u>in writing,</u> of the requirement to obtain permit coverage by submitting a NOI with the Department. For *construction activities* subject to the requirements of a *regulated, traditional land use control MS4,* the original *owner or operator* must also notify the MS4, in writing, of the change in ownership at least 30 calendar days prior to the change in ownership.

2. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.B.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

3. Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or*

operator was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

1. A SWPPP shall be prepared and implemented by the *owner or operator* of each *construction activity* covered by this permit. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and practices that will be used to meet the effluent limitations in Part I.B. of this permit and where applicable, the post-construction stormwater management practice requirements in Part I.C. of this permit. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*. A copy of the completed, final NOI shall be included in the SWPPP.

2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the *pollutants* in stormwater *discharges* and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.

3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.

4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP, including construction drawings:

    a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;

b. whenever there is a change in design, construction, or operation at the *construction site* that has or could have an effect on the *discharge* of *pollutants*;

c. to address issues or deficiencies identified during an inspection by the *qualified inspector,* the Department or other regulatory authority; and

d. to document the final construction conditions.

5. The Department may notify the *owner or operator* at any time that the SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.D.4. of this permit.

6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor.* The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

   The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

   "I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with

the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharge*s from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the *trained contractor* responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the *construction site*. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.

B. Required SWPPP Contents

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must demonstrate *equivalence* to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:

    a. Background information about the scope of the project, including the location, type and size of project

b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours ; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater *discharge*(s);

c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);

d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity at the site that results in soil disturbance;

e. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;

f. A temporary and permanent soil stabilization plan that meets the requirements of this general permit and the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of *final stabilization*;

g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;

h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;

i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection

schedule shall be in accordance with the requirements in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016;

j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the stormwater *discharges*;

k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the *construction site*; and

l. Identification of any elements of the design that are not in conformance with the design criteria in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. Post-construction stormwater management practice component – The *owner or operator* of any construction project identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the applicable *sizing criteria* in Part I.C.2.a., c. or d. of this permit and the *performance criteria* in the technical standard, New York State Stormwater Management Design Manual dated January 2015

   Where post-construction stormwater management practices are not designed in conformance with the *performance criteria* in the technical standard, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

   The post-construction stormwater management practice component of the SWPPP shall include the following:

   a. Identification of all post-construction stormwater management practices to be constructed as part of the project. Include the dimensions, material specifications and installation details for each post-construction stormwater management practice;

b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;

c. A Stormwater Modeling and Analysis Report that includes:
   (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;

   (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and post-construction stormwater management practices;

   (iii) Results of stormwater modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre and post-development runoff rates and volumes for the different storm events;

   (iv) Summary table, with supporting calculations, which demonstrates that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;

   (v) Identification of any *sizing criteria* that is not required based on the requirements included in Part I.C. of this permit; and

   (vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the Design Manual. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the Design Manual;

d. Soil testing results and locations (test pits, borings);

e. Infiltration test results, when required; and

f. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.

3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the applicable *sizing criteria* in Part I.C.2. b., c. or d. of this permit and the *performance criteria,* Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.f. above.

C. Required SWPPP Components by Project Type

Unless otherwise notified by the Department, *owners or operators* of *construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1 of this permit. *Owners or operators* of the *construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3 of this permit.

Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures) and all post-construction stormwater management practices identified in the SWPPP are inspected and maintained in accordance with Part IV.B. and C. of this permit.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York or protect the public health and safety and/or the environment.

B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity* identified in Tables 1 and 2 of Appendix B shall have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor shall

begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections. The *trained contractor* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of this permit as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. Qualified Inspector Inspection Requirements

The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. and IV.B. of this permit **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:

- licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- New York State Erosion and Sediment Control Certificate Program holder
- Registered Landscape Architect, or
- someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].

1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, with the exception of:

   a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located

in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

d. *construction activities* located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:

   a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.

   b. For construction sites where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part II.D.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

   c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to reducing the frequency of inspections.

d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization,* and all temporary, structural erosion and sediment control measures have been removed*;* and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.B.1 of this permit.

e. For construction sites that directly *discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization,* all points of *discharge* to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site*, and all points of *discharge* from the *construction site*.

4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

a. Date and time of inspection;

b. Name and title of person(s) performing inspection;

c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

d. A description of the condition of the runoff at all points of *discharge* from the *construction site*. This shall include identification of any *discharges* of sediment from the *construction site*. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site* which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;

f. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;

g. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;

i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);

k. Identification and status of all corrective actions that were required by previous inspection; and

l. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of this permit of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the *qualified inspector.* Pursuant to Part II.D.2. of this permit, the inspection reports shall be maintained on site with the SWPPP.

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.B.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.

2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:

   a. Total project completion - All *construction activity* identified in the SWPPP has been completed; <u>and</u> all areas of disturbance have achieved *final stabilization*; <u>and</u> all temporary, structural erosion and sediment control measures have been removed; <u>and</u> all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;

b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;

c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.F. of this permit.

d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.

3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice certification statements on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.

4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the "MS4 Acceptance" statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector*'s final site inspection certification(s) required in Part V.A.3. of this permit.

5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:

   a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,

b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),

c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record,

d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

Part VI. REPORTING AND RETENTION RECORDS

A. Record Retention

The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the Department receives a complete NOT submitted in accordance with Part V. of this general permit.

B. Addresses

With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.B.1 of this permit), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate DOW Water (SPDES) Program contact at the Regional Office listed in Appendix F.

Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water

Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE). *Construction activity* shall not resume until written permission to do so has been received from the RWE.

B. Continuation of the Expired General Permit

This permit expires five (5) years from the effective date. If a new general permit is not issued prior to the expiration of this general permit, an *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit, if it is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, until a new general permit is issued.

C. Enforcement

Failure of the *owner or operator,* its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to $37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

E. Duty to Mitigate

The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

F. Duty to Provide Information

The *owner or operator* shall furnish to the Department, within a reasonable specified time period of a written request, all documentation necessary to demonstrate eligibility and any information to determine compliance with this permit or to determine whether cause exists for modifying or revoking this permit, or suspending or denying coverage under this permit, in accordance with the terms and conditions of this permit. The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

G. Other Information

When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any of the documents required by this permit , or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s) changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or *impervious area*), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department using the contact information in Part II.A. of this permit. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

H. Signatory Requirements

1. All NOIs and NOTs shall be signed as follows:

    a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or

c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

(i) the chief executive officer of the agency, or

(ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field,

superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position) and,

c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.

3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.

4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4,* or by a duly authorized representative of that person.

   It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

I. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

J. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

K. Requirement to Obtain Coverage Under an Alternative Permit

1. The Department may require any owner or operator authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any discharger authorized by a general permit to apply for an individual SPDES permit, it shall notify the discharger in writing that a permit application is required. This notice shall

include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the owner or operator to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from owner or operator receipt of the notification letter, whereby the authorization to discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. When an individual SPDES permit is issued to a discharger authorized to *discharge* under a general SPDES permit for the same *discharge*(s), the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

L. Proper Operation and Maintenance

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

M. Inspection and Entry

The *owner or operator* shall allow an authorized representative of the Department, EPA, applicable county health department, or, in the case of a *construction site* which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the owner’s or operator's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.

4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

N. Permit Actions

This permit may, at any time, be modified, suspended, revoked, or renewed by the Department in accordance with 6 NYCRR Part 621. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

O. Definitions

Definitions of key terms are included in Appendix A of this permit.

P. Re-Opener Clause

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with construction activity covered by this permit, the owner or operator of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.

2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

Q. Penalties for Falsification of Forms and Reports

In accordance with 6NYCRR Part 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.

R. Other Permits

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

APPENDIX A – Acronyms and Definitions

Acronyms

APO – Agency Preservation Officer
BMP – Best Management Practice
CPESC – Certified Professional in Erosion and Sediment Control
Cpv – Channel Protection Volume
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)
DOW – Division of Water
EAF – Environmental Assessment Form
ECL - Environmental Conservation Law
EPA – U. S. Environmental Protection Agency
HSG – Hydrologic Soil Group
MS4 – Municipal Separate Storm Sewer System
NOI – Notice of Intent
NOT – Notice of Termination
NPDES – National Pollutant Discharge Elimination System
OPRHP – Office of Parks, Recreation and Historic Places
Qf – Extreme Flood
Qp – Overbank Flood
RRv – Runoff Reduction Volume
RWE – Regional Water Engineer
SEQR – State Environmental Quality Review
SEQRA - State Environmental Quality Review Act
SHPA – State Historic Preservation Act
SPDES – State Pollutant Discharge Elimination System
SWPPP – Stormwater Pollution Prevention Plan
TMDL – Total Maximum Daily Load
UPA – Uniform Procedures Act
USDA – United States Department of Agriculture
WQv – Water Quality Volume

Definitions

All definitions in this section are solely for the purposes of this permit.

Agricultural Building – a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products; excluding any structure designed, constructed or used, in whole or in part, for human habitation, as a place of employment where agricultural products are processed, treated or packaged, or as a place used by the public.

Agricultural Property –means the land for construction of a barn, *agricultural building*, silo, stockyard, pen or other structural practices identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" prepared by the Department in cooperation with agencies of New York Nonpoint Source Coordinating Committee (dated June 2007).

Alter Hydrology from Pre to Post-Development Conditions - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer - means a sewer that is designed to collect and convey both "sewage" and "stormwater".

Commence (Commencement of) Construction Activities - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for "*Construction Activity(ies)*" also.

Construction Activity(ies) - means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Construction Site – means the land area where *construction activity(ies)* will occur. See definition for "*Commence (Commencement of) Construction Activities"* and "*Larger Common Plan of Development or Sale" also.*

Dewatering – means the act of draining rainwater and/or groundwater from building foundations, vaults or excavations/trenches.

Direct Discharge (to a specific surface waterbody) - means that runoff flows from a *construction site* by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a *construction site* to a separate storm sewer system

and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

Discharge(s) - means any addition of any pollutant to waters of the State through an outlet or *point source*.

Embankment –means an earthen or rock slope that supports a road/highway.

Endangered or Threatened Species – see 6 NYCRR Part 182 of the Department's rules and regulations for definition of terms and requirements.

Environmental Conservation Law (ECL) - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

Equivalent (Equivalence) – means that the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

General SPDES permit - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 and Section 70-0117 of the ECL authorizing a category of discharges.

Groundwater(s) - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

Historic Property – means any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State or National Registers of Historic Places.

Impervious Area (Cover) - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Infeasible – means not technologically possible, or not economically practicable and achievable in light of best industry practices.

Larger Common Plan of Development or Sale - means a contiguous area where multiple separate and distinct *construction activities* are occurring, or will occur, under one plan. The term "plan" in "larger common plan of development or sale" is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that *construction activities* may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same "common plan" is not concurrently being disturbed.

Minimize – means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State*;*
(ii) Designed or used for collecting or conveying stormwater;
(iii) Which is not a *combined sewer*; and
(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

Natural Buffer –means an undisturbed area with natural cover running along a surface water (e.g. wetland, stream, river, lake, etc.).

New Development – means any land disturbance that does not meet the definition of Redevelopment Activity included in this appendix.

New York State Erosion and Sediment Control Certificate Program – a certificate program that establishes and maintains a process to identify and recognize individuals who are capable of developing, designing, inspecting and maintaining erosion and sediment control plans on projects that disturb soils in New York State. The certificate program is administered by the New York State Conservation District Employees Association.

NOI Acknowledgment Letter - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from *construction activity*.

Nonpoint Source - means any source of water pollution or pollutants which is not a discrete conveyance or *point source* permitted pursuant to Title 7 or 8 of Article 17 of the Environmental Conservation Law (see ECL Section 17-1403).

Overbank –means flow events that exceed the capacity of the stream channel and spill out into the adjacent floodplain.

Owner or Operator - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications; and/or an entity that has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions.

Performance Criteria – means the design criteria listed under the "Required Elements" sections in Chapters 5, 6 and 10 of the technical standard, New York State Stormwater Management Design Manual, dated January 2015. It does not include the Sizing Criteria (i.e. WQv, RRv, Cpv, Qp and Qf) in Part I.C.2. of the permit.

Point Source - means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, or landfill leachate collection system from which *pollutants* are or may be discharged.

Pollutant - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq .

Qualified Inspector - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

Redevelopment Activity(ies) – means the disturbance and reconstruction of existing impervious area, including impervious areas that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is authorized to discharge under New York State DEC's

SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or the City of New York's Individual SPDES Permit for their Municipal Separate Storm Sewer Systems (NY-0287890).

Routine Maintenance Activity - means *construction activity* that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that stabilizes the transition between the road shoulder and the ditch or *embankment*,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or *embankment*,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

Site limitations – means site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical site limitations include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of site limitations shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

Sizing Criteria – means the criteria included in Part I.C.2 of the permit that are used to size post-construction stormwater management control practices. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), *Overbank* Flood (Qp), and Extreme Flood (Qf).

State Pollutant Discharge Elimination System (SPDES) - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

Steep Slope – means land area designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%) , or Soil Slope Phase E or F, (regardless of the map unit name), or a combination of the three designations.

Streambank – as used in this permit, means the terrain alongside the bed of a creek or stream. The bank consists of the sides of the channel, between which the flow is confined.

Stormwater Pollution Prevention Plan (SWPPP) – means a project specific report, including construction drawings, that among other things: describes the construction activity(ies), identifies the potential sources of pollution at the *construction site*; describes and shows the stormwater controls that will be used to control the pollutants (i.e. erosion and sediment controls; for many projects, includes post-construction stormwater management controls); and identifies procedures the *owner or operator* will implement to comply with the terms and conditions of the permit. See Part III of the permit for a complete description of the information that must be included in the SWPPP.

Surface Waters of the State - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporarily Ceased – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary Stabilization - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Loads (TMDLs) - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and *nonpoint source*s. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet *water quality standards*, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for *point source* discharges, load allocations (LAs) for *nonpoint source*s, and a margin of safety (MOS).

Trained Contractor - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed

training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* is responsible for the day to day implementation of the SWPPP.

Uniform Procedures Act (UPA) Permit - means a permit required under 6 NYCRR Part 621 of the Environmental Conservation Law (ECL), Article 70.

Water Quality Standard - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

APPENDIX B – Required SWPPP Components by Project Type

Table 1
Construction Activities that Require the Preparation of a SWPPP That Only Includes Erosion and Sediment Controls

The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:

- Single family home not located in one of the watersheds listed in Appendix C or not *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E
- Construction of a barn or other *agricultural building*, silo, stock yard or pen.

The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:

All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects
- Pond construction
- Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an impervious cover
- Cross-country ski trails and walking/hiking trails
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are not part of residential, commercial or institutional development;
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path or walking path.
- Slope stabilization projects
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics

Table 1 (Continued) CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Spoil areas that will be covered with vegetation
- Vegetated open space projects (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) excluding projects that *alter hydrology from pre to post development* conditions,
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established, and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of greater than five acres and construction activities that include the construction or reconstruction of impervious area
- Temporary access roads, median crossovers, detour roads, lanes, or other temporary impervious areas that will be restored to pre-construction conditions once the construction activity is complete

Table 2
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family home that disturbs five (5) or more acres of land
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Breweries, cideries, and wineries, including establishments constructed on agricultural land
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other *agricultural building* (e.g. silo) and structural practices as identified in Table II in the “Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State” that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional development; includes hospitals, prisons, schools and colleges
- Industrial facilities; includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW’s, water treatment plants, and water storage tanks
- Office complexes
- Playgrounds that include the construction or reconstruction of impervious area
- Sports complexes
- Racetracks; includes racetracks with earthen (dirt) surface
- Road construction or reconstruction, including roads constructed as part of the construction activities listed in Table 1

Table 2 (Continued)

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Parking lot construction or reconstruction, including parking lots constructed as part of the construction activities listed in Table 1
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover,* and constructed as part of an over-head electric transmission line project, wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a residential, commercial or institutional development
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a highway construction or reconstruction project
- All other construction activities that include the construction or reconstruction of *impervious area* <u>or</u> *alter the hydrology from pre to post development* conditions, <u>and</u> are not listed in Table 1

APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual ("Design Manual").

- Entire New York City Watershed located east of the Hudson River **-** Figure 1
- Onondaga Lake Watershed **-** Figure 2
- Greenwood Lake Watershed **-**Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

Figure 1 - New York City Watershed East of the Hudson

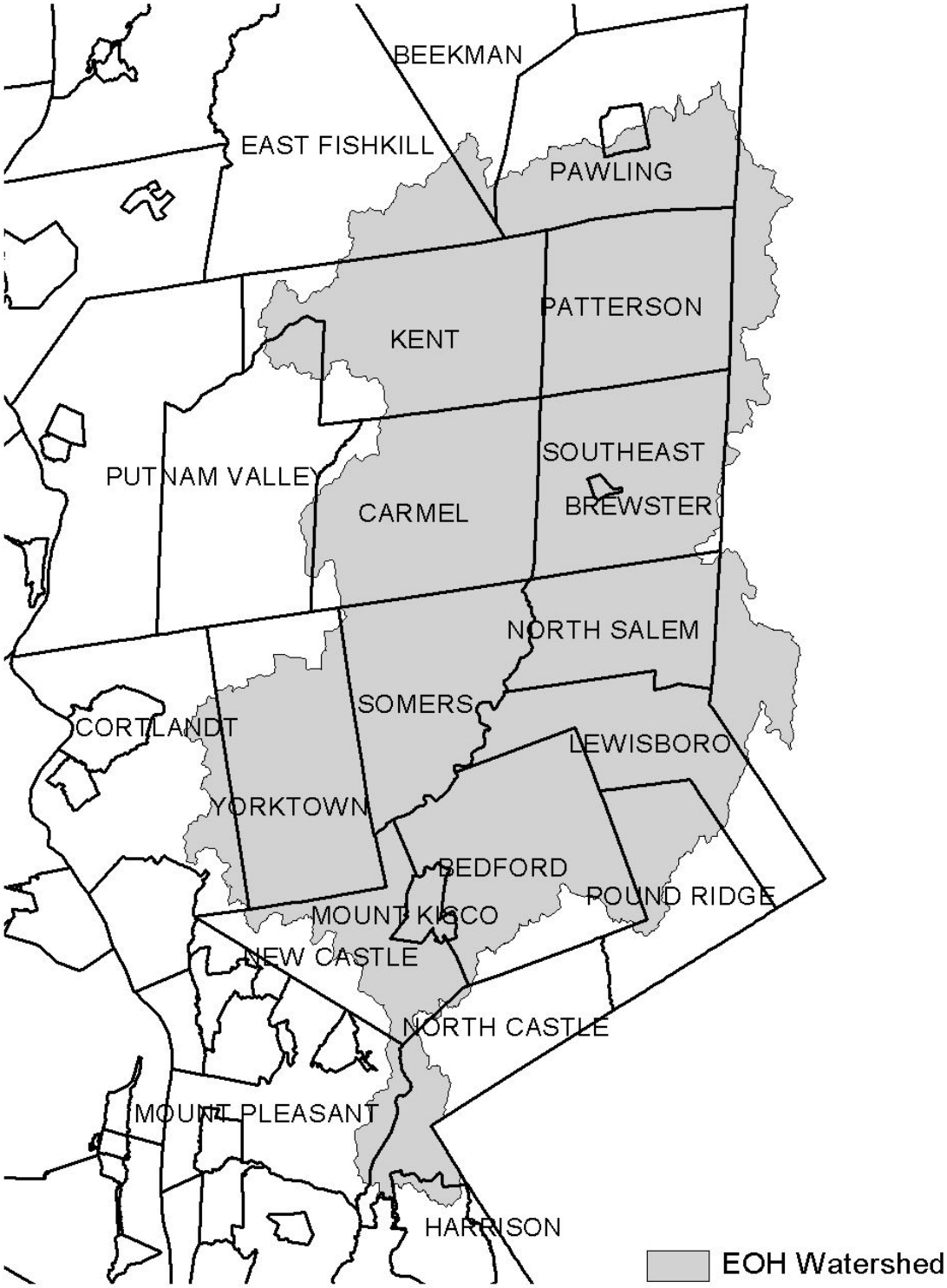


Figure 2 - Onondaga Lake Watershed

Figure 3 - Greenwood Lake Watershed

Figure 4 - Oscawana Lake Watershed

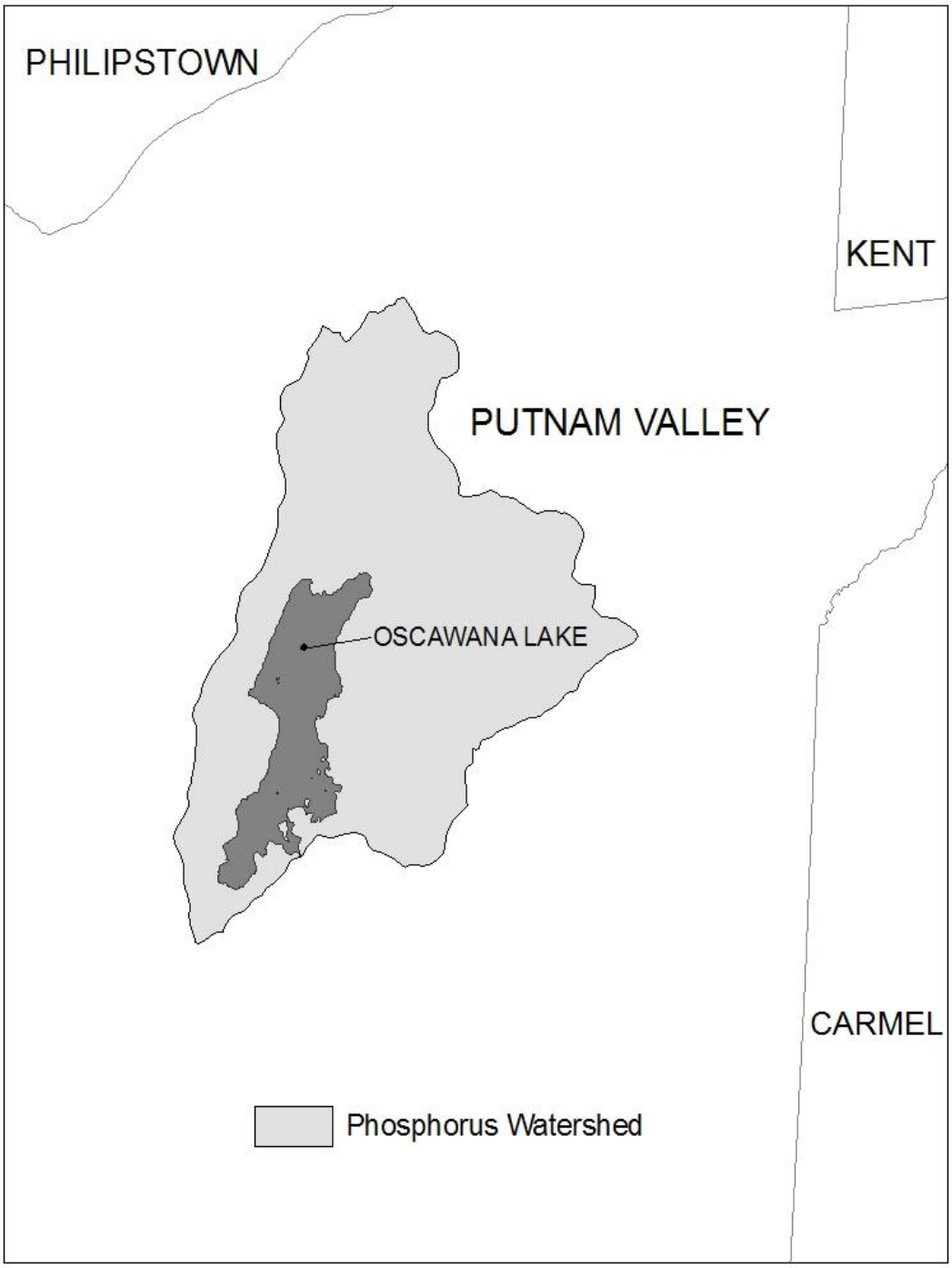
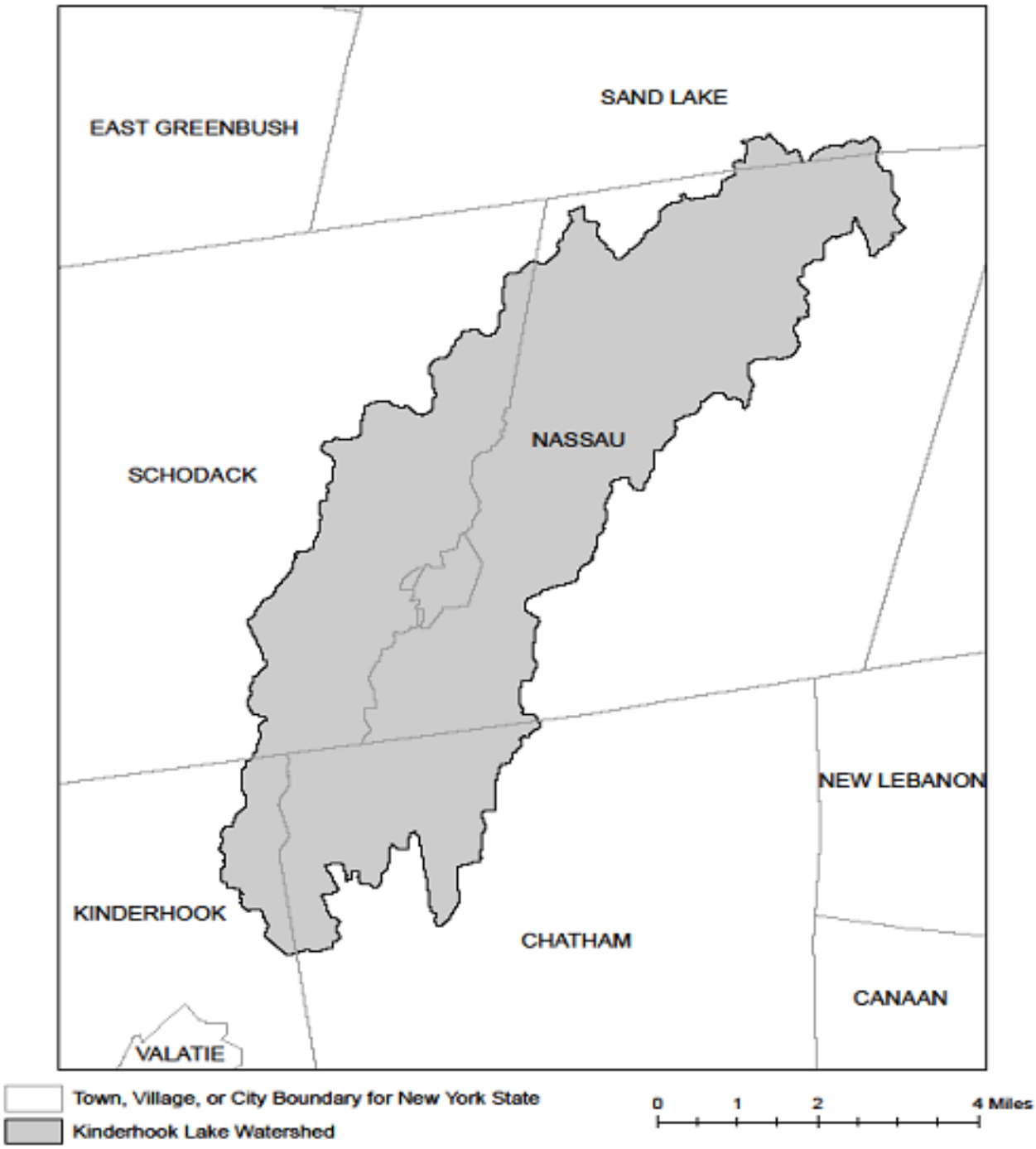


Figure 5 - Kinderhook Lake Watershed



APPENDIX D – Watersheds with Lower Disturbance Threshold

Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.

Entire New York City Watershed that is located east of the Hudson River **-** See Figure 1 in Appendix C

APPENDIX E – 303(d) Segments Impaired by Construction Related Pollutant(s)

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). The list was developed using ”The Final New York State 2016 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy” dated November 2016. *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual (“Design Manual”), dated January 2015.

COUNTY	WATERBODY	POLLUTANT
Albany	Ann Lee (Shakers) Pond, Stump Pond	Nutrients
Albany	Basic Creek Reservoir	Nutrients
Allegany	Amity Lake, Saunders Pond	Nutrients
Bronx	Long Island Sound, Bronx	Nutrients
Bronx	Van Cortlandt Lake	Nutrients
Broome	Fly Pond, Deer Lake, Sky Lake	Nutrients
Broome	Minor Tribs to Lower Susquehanna (north)	Nutrients
Broome	Whitney Point Lake/Reservoir	Nutrients
Cattaraugus	Allegheny River/Reservoir	Nutrients
Cattaraugus	Beaver (Alma) Lake	Nutrients
Cattaraugus	Case Lake	Nutrients
Cattaraugus	Linlyco/Club Pond	Nutrients
Cayuga	Duck Lake	Nutrients
Cayuga	Little Sodus Bay	Nutrients
Chautauqua	Bear Lake	Nutrients
Chautauqua	Chadakoin River and tribs	Nutrients
Chautauqua	Chautauqua Lake, North	Nutrients
Chautauqua	Chautauqua Lake, South	Nutrients
Chautauqua	Findley Lake	Nutrients
Chautauqua	Hulburt/Clymer Pond	Nutrients
Clinton	Great Chazy River, Lower, Main Stem	Silt/Sediment
Clinton	Lake Champlain, Main Lake, Middle	Nutrients
Clinton	Lake Champlain, Main Lake, North	Nutrients
Columbia	Kinderhook Lake	Nutrients
Columbia	Robinson Pond	Nutrients
Cortland	Dean Pond	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Dutchess	Fall Kill and tribs	Nutrients
Dutchess	Hillside Lake	Nutrients
Dutchess	Wappingers Lake	Nutrients
Dutchess	Wappingers Lake	Silt/Sediment
Erie	Beeman Creek and tribs	Nutrients
Erie	Ellicott Creek, Lower, and tribs	Silt/Sediment
Erie	Ellicott Creek, Lower, and tribs	Nutrients
Erie	Green Lake	Nutrients
Erie	Little Sister Creek, Lower, and tribs	Nutrients
Erie	Murder Creek, Lower, and tribs	Nutrients
Erie	Rush Creek and tribs	Nutrients
Erie	Scajaquada Creek, Lower, and tribs	Nutrients
Erie	Scajaquada Creek, Middle, and tribs	Nutrients
Erie	Scajaquada Creek, Upper, and tribs	Nutrients
Erie	South Branch Smoke Cr, Lower, and tribs	Silt/Sediment
Erie	South Branch Smoke Cr, Lower, and tribs	Nutrients
Essex	Lake Champlain, Main Lake, South	Nutrients
Essex	Lake Champlain, South Lake	Nutrients
Essex	Willsboro Bay	Nutrients
Genesee	Bigelow Creek and tribs	Nutrients
Genesee	Black Creek, Middle, and minor tribs	Nutrients
Genesee	Black Creek, Upper, and minor tribs	Nutrients
Genesee	Bowen Brook and tribs	Nutrients
Genesee	LeRoy Reservoir	Nutrients
Genesee	Oak Orchard Cr, Upper, and tribs	Nutrients
Genesee	Tonawanda Creek, Middle, Main Stem	Nutrients
Greene	Schoharie Reservoir	Silt/Sediment
Greene	Sleepy Hollow Lake	Silt/Sediment
Herkimer	Steele Creek tribs	Silt/Sediment
Herkimer	Steele Creek tribs	Nutrients
Jefferson	Moon Lake	Nutrients
Kings	Hendrix Creek	Nutrients
Kings	Prospect Park Lake	Nutrients
Lewis	Mill Creek/South Branch, and tribs	Nutrients
Livingston	Christie Creek and tribs	Nutrients
Livingston	Conesus Lake	Nutrients
Livingston	Mill Creek and minor tribs	Silt/Sediment
Monroe	Black Creek, Lower, and minor tribs	Nutrients
Monroe	Buck Pond	Nutrients
Monroe	Cranberry Pond	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Monroe	Lake Ontario Shoreline, Western	Nutrients
Monroe	Long Pond	Nutrients
Monroe	Mill Creek and tribs	Nutrients
Monroe	Mill Creek/Blue Pond Outlet and tribs	Nutrients
Monroe	Minor Tribs to Irondequoit Bay	Nutrients
Monroe	Rochester Embayment - East	Nutrients
Monroe	Rochester Embayment - West	Nutrients
Monroe	Shipbuilders Creek and tribs	Nutrients
Monroe	Thomas Creek/White Brook and tribs	Nutrients
Nassau	Beaver Lake	Nutrients
Nassau	Camaans Pond	Nutrients
Nassau	East Meadow Brook, Upper, and tribs	Silt/Sediment
Nassau	East Rockaway Channel	Nutrients
Nassau	Grant Park Pond	Nutrients
Nassau	Hempstead Bay	Nutrients
Nassau	Hempstead Lake	Nutrients
Nassau	Hewlett Bay	Nutrients
Nassau	Hog Island Channel	Nutrients
Nassau	Long Island Sound, Nassau County Waters	Nutrients
Nassau	Massapequa Creek and tribs	Nutrients
Nassau	Milburn/Parsonage Creeks, Upp, and tribs	Nutrients
Nassau	Reynolds Channel, west	Nutrients
Nassau	Tidal Tribs to Hempstead Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Silt/Sediment
Nassau	Tribs to Smith/Halls Ponds	Nutrients
Nassau	Woodmere Channel	Nutrients
New York	Harlem Meer	Nutrients
New York	The Lake in Central Park	Nutrients
Niagara	Bergholtz Creek and tribs	Nutrients
Niagara	Hyde Park Lake	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Oneida	Ballou, Nail Creeks and tribs	Nutrients
Onondaga	Harbor Brook, Lower, and tribs	Nutrients
Onondaga	Ley Creek and tribs	Nutrients
Onondaga	Minor Tribs to Onondaga Lake	Nutrients
Onondaga	Ninemile Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Middle, and tribs	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Onondaga	Onondaga Lake, northern end	Nutrients
Onondaga	Onondaga Lake, southern end	Nutrients
Ontario	Great Brook and minor tribs	Silt/Sediment
Ontario	Great Brook and minor tribs	Nutrients
Ontario	Hemlock Lake Outlet and minor tribs	Nutrients
Ontario	Honeoye Lake	Nutrients
Orange	Greenwood Lake	Nutrients
Orange	Monhagen Brook and tribs	Nutrients
Orange	Orange Lake	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Oswego	Lake Neatahwanta	Nutrients
Oswego	Pleasant Lake	Nutrients
Putnam	Bog Brook Reservoir	Nutrients
Putnam	Boyd Corners Reservoir	Nutrients
Putnam	Croton Falls Reservoir	Nutrients
Putnam	Diverting Reservoir	Nutrients
Putnam	East Branch Reservoir	Nutrients
Putnam	Lake Carmel	Nutrients
Putnam	Middle Branch Reservoir	Nutrients
Putnam	Oscawana Lake	Nutrients
Putnam	Palmer Lake	Nutrients
Putnam	West Branch Reservoir	Nutrients
Queens	Bergen Basin	Nutrients
Queens	Flushing Creek/Bay	Nutrients
Queens	Jamaica Bay, Eastern, and tribs (Queens)	Nutrients
Queens	Kissena Lake	Nutrients
Queens	Meadow Lake	Nutrients
Queens	Willow Lake	Nutrients
Rensselaer	Nassau Lake	Nutrients
Rensselaer	Snyders Lake	Nutrients
Richmond	Grasmere Lake/Bradys Pond	Nutrients
Rockland	Congers Lake, Swartout Lake	Nutrients
Rockland	Rockland Lake	Nutrients
Saratoga	Ballston Lake	Nutrients
Saratoga	Dwaas Kill and tribs	Silt/Sediment
Saratoga	Dwaas Kill and tribs	Nutrients
Saratoga	Lake Lonely	Nutrients
Saratoga	Round Lake	Nutrients
Saratoga	Tribs to Lake Lonely	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Schenectady	Collins Lake	Nutrients
Schenectady	Duane Lake	Nutrients
Schenectady	Mariaville Lake	Nutrients
Schoharie	Engleville Pond	Nutrients
Schoharie	Summit Lake	Nutrients
Seneca	Reeder Creek and tribs	Nutrients
St.Lawrence	Black Lake Outlet/Black Lake	Nutrients
St.Lawrence	Fish Creek and minor tribs	Nutrients
Steuben	Smith Pond	Nutrients
Suffolk	Agawam Lake	Nutrients
Suffolk	Big/Little Fresh Ponds	Nutrients
Suffolk	Canaan Lake	Silt/Sediment
Suffolk	Canaan Lake	Nutrients
Suffolk	Flanders Bay, West/Lower Sawmill Creek	Nutrients
Suffolk	Fresh Pond	Nutrients
Suffolk	Great South Bay, East	Nutrients
Suffolk	Great South Bay, Middle	Nutrients
Suffolk	Great South Bay, West	Nutrients
Suffolk	Lake Ronkonkoma	Nutrients
Suffolk	Long Island Sound, Suffolk County, West	Nutrients
Suffolk	Mattituck (Marratooka) Pond	Nutrients
Suffolk	Meetinghouse/Terrys Creeks and tribs	Nutrients
Suffolk	Mill and Seven Ponds	Nutrients
Suffolk	Millers Pond	Nutrients
Suffolk	Moriches Bay, East	Nutrients
Suffolk	Moriches Bay, West	Nutrients
Suffolk	Peconic River, Lower, and tidal tribs	Nutrients
Suffolk	Quantuck Bay	Nutrients
Suffolk	Shinnecock Bay and Inlet	Nutrients
Suffolk	Tidal tribs to West Moriches Bay	Nutrients
Sullivan	Bodine, Montgomery Lakes	Nutrients
Sullivan	Davies Lake	Nutrients
Sullivan	Evens Lake	Nutrients
Sullivan	Pleasure Lake	Nutrients
Tompkins	Cayuga Lake, Southern End	Nutrients
Tompkins	Cayuga Lake, Southern End	Silt/Sediment
Tompkins	Owasco Inlet, Upper, and tribs	Nutrients
Ulster	Ashokan Reservoir	Silt/Sediment
Ulster	Esopus Creek, Upper, and minor tribs	Silt/Sediment
Warren	Hague Brook and tribs	Silt/Sediment

303(d) Segments Impaired by Construction Related Pollutant(s)

Warren	Huddle/Finkle Brooks and tribs	Silt/Sediment
Warren	Indian Brook and tribs	Silt/Sediment
Warren	Lake George	Silt/Sediment
Warren	Tribs to L.George, Village of L George	Silt/Sediment
Washington	Cossayuna Lake	Nutrients
Washington	Lake Champlain, South Bay	Nutrients
Washington	Tribs to L.George, East Shore	Silt/Sediment
Washington	Wood Cr/Champlain Canal and minor tribs	Nutrients
Wayne	Port Bay	Nutrients
Westchester	Amawalk Reservoir	Nutrients
Westchester	Blind Brook, Upper, and tribs	Silt/Sediment
Westchester	Cross River Reservoir	Nutrients
Westchester	Lake Katonah	Nutrients
Westchester	Lake Lincolndale	Nutrients
Westchester	Lake Meahagh	Nutrients
Westchester	Lake Mohegan	Nutrients
Westchester	Lake Shenorock	Nutrients
Westchester	Long Island Sound, Westchester (East)	Nutrients
Westchester	Mamaroneck River, Lower	Silt/Sediment
Westchester	Mamaroneck River, Upper, and minor tribs	Silt/Sediment
Westchester	Muscoot/Upper New Croton Reservoir	Nutrients
Westchester	New Croton Reservoir	Nutrients
Westchester	Peach Lake	Nutrients
Westchester	Reservoir No.1 (Lake Isle)	Nutrients
Westchester	Saw Mill River, Lower, and tribs	Nutrients
Westchester	Saw Mill River, Middle, and tribs	Nutrients
Westchester	Sheldrake River and tribs	Silt/Sediment
Westchester	Sheldrake River and tribs	Nutrients
Westchester	Silver Lake	Nutrients
Westchester	Teatown Lake	Nutrients
Westchester	Titicus Reservoir	Nutrients
Westchester	Truesdale Lake	Nutrients
Westchester	Wallace Pond	Nutrients
Wyoming	Java Lake	Nutrients
Wyoming	Silver Lake	Nutrients

APPENDIX F – List of NYS DEC Regional Offices

Region	Covering the following counties:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) Permit Administrators	DIVISION OF WATER (DOW) Water (SPDES) Program
1	Nassau and Suffolk	50 Circle Road Stony Brook, NY 11790 Tel. (631) 444-0365	50 Circle Road Stony Brook, NY 11790-3409 Tel. (631) 444-0405
2	Bronx, Kings, New York, Queens and Richmond	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4997	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4933
3	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester	21 South Putt Corners Road New Paltz, NY 12561-1696 Tel. (845) 256-3059	100 Hillside Avenue, Suite 1w White Plains, NY 10603 Tel. (914) 428 - 2505
4	Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady and Schoharie	1150 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2069	1130 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2045
5	Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington	1115 State Route 86, Po Box 296 Ray Brook, NY 12977-0296 Tel. (518) 897-1234	232 Golf Course Road Warrensburg, NY 12885-1172 Tel. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROADAVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7070

ATTACHMENT M
NOTICE OF INTENT (NOI)

NOI for coverage under Stormwater General Permit for Construction Activity

Alternate ID Freeman Estates Subdivision **Submission** HP5-20TZ-EX9YA **Revision** 1 **Form Version** 1.28

Review

This step allows you to review the form to confirm the form is populated completely and accurately, prior to certification and submission.

Please note: Any work you perform filling out a form will not be accessible by NYSDEC staff or the public until you actually submit the form in the 'Certify & Submit' step.

OWNER/OPERATOR INFORMATION

Owner/Operator Name (Company/Private Owner/Municipality/Agency/Institution, etc.)
Brolex Properties, LLC

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
Jacobson

Owner/Operator Contact Person First Name
Brandon

Owner/Operator Mailing Address
5912 North Burdick Street

City
East Syracuse

State
NY

Zip
13057

Phone
315-559-0556

Email
brandon@banyanbrokerage.com

Federal Tax ID

None Specified

PROJECT LOCATION

Project/Site Name
Freeman Estates Subdivision

Street Address (Not P.O. Box)
7430 Highbridge Road

Side of Street
South

City/Town/Village (THAT ISSUES BUILDING PERMIT)
Manlius

State
NY

Zip
13066

County
ONONDAGA

DEC Region
7

Name of Nearest Cross Street
Sweet Road

Distance to Nearest Cross Street (Feet)
0

Project In Relation to Cross Street
East

Tax Map Numbers Section-Block-Parcel
101.-02-02.1

Tax Map Numbers
None Specified

1. Coordinates

Provide the Geographic Coordinates for the project site. The two methods are:
- Navigate to the project location on the map (below) and click to place a marker and obtain the XY coordinates.
- The "Find Me" button will provide the lat/long for the person filling out this form. Then pan the map to the correct location and click the map to place a marker and obtain the XY coordinates.

Navigate to your location and click on the map to get the X,Y coordinates

Latitude	Longitude
43.01314900618204	-76.00979418968463

PROJECT DETAILS

2. What is the nature of this project?
New Construction

3. Select the predominant land use for both pre and post development conditions.

Pre-Development Existing Landuse
Forest

Post-Development Future Land Use
Single Family Subdivision (Please answer 3a)

3a. If Single Family Subdivision was selected in question 3, enter the number of subdivision lots.
12

4. In accordance with the larger common plan of development or sale, enter the total project site acreage, the acreage to be disturbed and the future impervious area (acreage)within the disturbed area.

*** ROUND TO THE NEAREST TENTH OF AN ACRE. ***

Total Site Area (acres)
23.72

Total Area to be Disturbed (acres)
3.5

Existing Impervious Area to be Disturbed (acres)
0.44

Future Impervious Area Within Disturbed Area (acres)
1.29

5. Do you plan to disturb more than 5 acres of soil at any one time?
No

---

6. Indicate the percentage (%) of each Hydrologic Soil Group(HSG) at the site.

A (%)
25.2

B (%)
1.5

C (%)
0

D (%)
66.8

7. Is this a phased project?
No

8. Enter the planned start and end dates of the disturbance activities.

Start Date
2/1/2021

End Date
10/29/2021

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.
Limestone Creek

9a. Type of waterbody identified in question 9?
Stream/Creek On Site

Other Waterbody Type Off Site Description
None Specified

9b. If "wetland" was selected in 9A, how was the wetland identified?
None Specified

10. Has the surface waterbody(ies in question 9 been identified as a 303(d) segment in Appendix E of GP-0-20-001?
No

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-20-001?
No

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters?
No

If No, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey?
No

If Yes, what is the acreage to be disturbed?
None Specified

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area?
No

15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)?
Unknown

16. What is the name of the municipality/entity that owns the separate storm sewer system?
None Specified

17. Does any runoff from the site enter a sewer classified as a Combined Sewer?
No

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law?
No

19. Is this property owned by a state authority, state agency, federal government or local government?
No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.)
No

REQUIRED SWPPP COMPONENTS

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)?
Yes

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)?
Yes

If you answered No in question 22, skip question 23 and the Post-construction Criteria and Post-construction SMP Identification sections.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual?
Yes

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:
Professional Engineer (P.E.)

SWPPP Preparer
GZA GeoEnvironmental

Contact Name (Last, Space, First)
Frazee, John

Mailing Address
6296 FLy Road

City
East Syracuse

State
New York

Zip
13057

Phone
3158001800

Email
john.frazee@gza.com

Download SWPPP Preparer Certification Form

Please take the following steps to prepare and upload your preparer certification form:

1) Click on the link below to download a blank certification form
2) The certified SWPPP preparer should sign this form
3) Scan the signed form
4) Upload the scanned document

Download SWPPP Preparer Certification Form

Please upload the SWPPP Preparer Certification

No files uploaded

Comment
None Specified

At least one file is required.

EROSION & SEDIMENT CONTROL CRITERIA

25. Has a construction sequence schedule for the planned management practices been prepared?
Yes

26. Select all of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural
Silt Fence
Stabilized Construction Entrance
Storm Drain Inlet Protection

Biotechnical
None

Vegetative Measures
Seeding
Mulching

Permanent Structural
None

Other
None Specified

POST-CONSTRUCTION CRITERIA

*** IMPORTANT: Completion of Questions 27-39 is not required if response to Question 22 is No.**

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.
Preservation of Undisturbed Area
Preservation of Buffers
Reduction of Clearing and Grading
Locating Development in Less Sensitive Areas
Cul-de-sac Reduction

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).
All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout). (Acre-feet)
0.11

29. Post-construction SMP Identification

Use the Post-construction SMP Identification section to identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity that were used to reduce the Total WQv Required (#28).

Identify the SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use the Post-Construction SMP Identification section to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29. (acre-feet)
0.17

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28)?
Yes

If Yes, go to question 36. If No, go to question 32.

32. Provide the Minimum RRv required based on HSG. [Minimum RRv Required = (P) (0.95) (Ai) / 12, Ai=(s) (Aic)] (acre-feet)
None Specified

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?
None Specified

If Yes, go to question 33.

Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.

If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

33. SMPs

Use the Post-construction SMP Identification section to identify the Standard SMPs and, if applicable, the Alternative SMPs to be used to treat the remaining total WQv (=Total WQv Required in #28 - Total RRv Provided in #30).

Also, provide the total impervious area that contributes runoff to each practice selected.

NOTE: Use the Post-construction SMP Identification section to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question #29. (acre-feet)
None Specified

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).
None Specified

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)?
None Specified

If Yes, go to question 36.

If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv required and provided or select waiver (#36a), if applicable.

CPv Required (acre-feet)
0.03

CPv Provided (acre-feet)
None Specified

36a. The need to provide channel protection has been waived because:
Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (#37a), if applicable.

Overbank Flood Control Criteria (Qp)

Pre-Development (CFS)
0.89

Post-Development (CFS)
0.57

Total Extreme Flood Control Criteria (Qf)

Pre-Development (CFS)
8.51

Post-Development (CFS)
7.41

37a. The need to meet the Qp and Qf criteria has been waived because:
None Specified

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed?
Yes

If Yes, Identify the entity responsible for the long term Operation and Maintenance
OWNER

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). (See question #32a) This space can also be used for other pertinent project information.
None Specified

POST-CONSTRUCTION SMP IDENTIFICATION

Runoff Reduction (RR) Techniques, Standard Stormwater Management Practices (SMPs) and Alternative SMPs

Identify the Post-construction SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

RR Techniques (Area Reduction)

Round to the nearest tenth

Total Contributing Acres for Conservation of Natural Area (RR-1)
None Specified

Total Contributing Impervious Acres for Conservation of Natural Area (RR-1)
None Specified

Total Contributing Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)
None Specified

Total Contributing Impervious Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)
None Specified

Total Contributing Acres for Tree Planting/Tree Pit (RR-3)
None Specified

Total Contributing Impervious Acres for Tree Planting/Tree Pit (RR-3)
None Specified

Total Contributing Acres for Disconnection of Rooftop Runoff (RR-4)

None Specified

RR Techniques (Volume Reduction)

Total Contributing Impervious Acres for Disconnection of Rooftop Runoff (RR-4)
None Specified

Total Contributing Impervious Acres for Vegetated Swale (RR-5)
None Specified

Total Contributing Impervious Acres for Rain Garden (RR-6)
None Specified

Total Contributing Impervious Acres for Stormwater Planter (RR-7)
None Specified

Total Contributing Impervious Acres for Rain Barrel/Cistern (RR-8)
None Specified

Total Contributing Impervious Acres for Porous Pavement (RR-9)
None Specified

Total Contributing Impervious Acres for Green Roof (RR-10)
None Specified

Standard SMPs with RRv Capacity

Total Contributing Impervious Acres for Infiltration Trench (I-1)
None Specified

Total Contributing Impervious Acres for Infiltration Basin (I-2)
None Specified

Total Contributing Impervious Acres for Dry Well (I-3)
None Specified

Total Contributing Impervious Acres for Underground Infiltration System (I-4)
None Specified

Total Contributing Impervious Acres for Bioretention (F-5)
1.29

Total Contributing Impervious Acres for Dry Swale (O-1)
None Specified

Standard SMPs

Total Contributing Impervious Acres for Micropool Extended Detention (P-1)
None Specified

Total Contributing Impervious Acres for Wet Pond (P-2)
None Specified

Total Contributing Impervious Acres for Wet Extended Detention (P-3)
None Specified

Total Contributing Impervious Acres for Multiple Pond System (P-4)
None Specified

Total Contributing Impervious Acres for Pocket Pond (P-5)
None Specified

Total Contributing Impervious Acres for Surface Sand Filter (F-1)
None Specified

Total Contributing Impervious Acres for Underground Sand Filter (F-2)
None Specified

Total Contributing Impervious Acres for Perimeter Sand Filter (F-3)
None Specified

Total Contributing Impervious Acres for Organic Filter (F-4)
None Specified

Total Contributing Impervious Acres for Shallow Wetland (W-1)
None Specified

Total Contributing Impervious Acres for Extended Detention Wetland (W-2)
None Specified

Total Contributing Impervious Acres for Pond/Wetland System (W-3)
None Specified

Total Contributing Impervious Acres for Pocket Wetland (W-4)
None Specified

Total Contributing Impervious Acres for Wet Swale (O-2)
None Specified

Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Total Contributing Impervious Area for Hydrodynamic
None Specified

Total Contributing Impervious Area for Wet Vault
None Specified

Total Contributing Impervious Area for Media Filter
None Specified

"Other" Alternative SMP?
None Specified

Total Contributing Impervious Area for "Other"
None Specified

Provide the name and manufaturer of the alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

Manufacturer of Alternative SMP
None Specified

Name of Alternative SMP
None Specified

OTHER PERMITS

40. Identify other DEC permits, existing and new, that are required for this project/facility.
None

If SPDES Multi-Sector GP, then give permit ID
None Specified

If Other, then identify
None Specified

41. Does this project require a US Army Corps of Engineers Wetland Permit?
No

If "Yes," then indicate Size of Impact, in acres, to the nearest tenth
None Specified

42. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned.
None Specified

MS4 SWPPP ACCEPTANCE

43. Is this project subject to the requirements of a regulated, traditional land use control MS4?
Yes - Please attach the MS4 Acceptance form below

If No, skip question 44

44. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI?
None Specified

MS4 SWPPP Acceptance Form Download

Download form from the link below. Complete, sign, and upload.

MS4 SWPPP Acceptance Form

MS4 Acceptance Form Upload

No files uploaded

Comment
None Specified

OWNER/OPERATOR CERTIFICATION

The owner/operator must download, sign, and upload the certification form in order to complete this application.

Owner/Operator Certification Form Download

Download the certification form by clicking the link below. Complete, sign, scan, and upload the form.

Owner/Operator Certification Form (PDF, 45KB)

Upload Owner/Operator Certification Form

No files uploaded

Comment
None Specified

At least one file is required.

ATTACHMENT N

SAMPLE INPECTION FORM/ INSPECTION REPORTS

Stormwater Construction Site Inspection Report

General Information			
Project Name			
NPDES Tracking No.		**Location**	
Date of Inspection		**Start/End Time**	
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Contact Information			
Inspector's Qualifications	Insert qualifications or add reference to the SWPPP. (See Section 5 of the SWPPP Template)		
Describe present phase of construction			

Type of Inspection:
❑ Regular ❑ Pre-storm event ❑ During storm event ❑ Post-storm event

Weather Information

Has there been a storm event since the last inspection? ❑Yes ❑No
If yes, provide:
Storm Start Date & Time: Storm Duration (hrs): Approximate Amount of Precipitation (in):

Weather at time of this inspection?
❑ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snowing ❑ High Winds
❑ Other: Temperature:

Have any discharges occurred since the last inspection? ❑Yes ❑No
If yes, describe:

Are there any discharges at the time of inspection? ❑Yes ❑No
If yes, describe:

Site-specific BMPs

- *Number the structural and non-structural BMPs identified in your SWPPP on your site map and list them below (add as many BMPs as necessary). Carry a copy of the numbered site map with you during your inspections. This list will ensure that you are inspecting all required BMPs at your site.*
- *Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.*

	BMP	BMP Installed?	BMP Maintenance Required?	Corrective Action Needed and Notes
1		❑Yes ❑No	❑Yes ❑No	
2		❑Yes ❑No	❑Yes ❑No	
3		❑Yes ❑No	❑Yes ❑No	
4		❑Yes ❑No	❑Yes ❑No	
5		❑Yes ❑No	❑Yes ❑No	
6		❑Yes ❑No	❑Yes ❑No	
7		❑Yes ❑No	❑Yes ❑No	
8		❑Yes ❑No	❑Yes ❑No	
9		❑Yes ❑No	❑Yes ❑No	
10		❑Yes ❑No	❑Yes ❑No	
11		❑Yes ❑No	❑Yes ❑No	

	BMP	BMP Installed?	BMP Maintenance Required?	Corrective Action Needed and Notes
12		❑Yes ❑No	❑Yes ❑No	
13		❑Yes ❑No	❑Yes ❑No	
14		❑Yes ❑No	❑Yes ❑No	
15		❑Yes ❑No	❑Yes ❑No	
16		❑Yes ❑No	❑Yes ❑No	
17		❑Yes ❑No	❑Yes ❑No	
18		❑Yes ❑No	❑Yes ❑No	
19		❑Yes ❑No	❑Yes ❑No	
20		❑Yes ❑No	❑Yes ❑No	

Overall Site Issues

Below are some general site issues that should be assessed during inspections. Customize this list as needed for conditions at your site.

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
1	Are all slopes and disturbed areas not actively being worked properly stabilized?	❑Yes ❑No	❑Yes ❑No	
2	Are natural resource areas (e.g., streams, wetlands, mature trees, etc.) protected with barriers or similar BMPs?	❑Yes ❑No	❑Yes ❑No	
3	Are perimeter controls and sediment barriers adequately installed (keyed into substrate) and maintained?	❑Yes ❑No	❑Yes ❑No	
4	Are discharge points and receiving waters free of any sediment deposits?	❑Yes ❑No	❑Yes ❑No	
5	Are storm drain inlets properly protected?	❑Yes ❑No	❑Yes ❑No	
6	Is the construction exit preventing sediment from being tracked into the street?	❑Yes ❑No	❑Yes ❑No	
7	Is trash/litter from work areas collected and placed in covered dumpsters?	❑Yes ❑No	❑Yes ❑No	
8	Are washout facilities (e.g., paint, stucco, concrete) available, clearly marked, and maintained?	❑Yes ❑No	❑Yes ❑No	

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
9	Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	❑Yes ❑No	❑Yes ❑No	
10	Are materials that are potential stormwater contaminants stored inside or under cover?	❑Yes ❑No	❑Yes ❑No	
11	Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled?	❑Yes ❑No	❑Yes ❑No	
12	(Other)	❑Yes ❑No	❑Yes ❑No	

Non-Compliance

Describe any incidents of non-compliance not described above:

CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Print name and title: _____

Signature:_____ **Date:**_____

ATTACHMENT O

NYSSEC GUIDANCE FOR EROSION AND SEDIMENT CONTROL PRACTICE INSTALLATION

STANDARD AND SPECIFICATIONS FOR COMPOST FILTER SOCK

Definition & Scope

A **temporary** sediment control practice composed of a degradable geotextile mesh tube filled with compost filter media to filter sediment and other pollutants associated with construction activity to prevent their migration offsite.

Condition Where Practice Applies

Compost filter socks can be used in many construction site applications where erosion will occur in the form of sheet erosion and there is no concentration of water flowing to the sock. In areas with steep slopes and/or rocky terrain, soil conditions must be such that good continuous contact between the sock and the soil is maintained throughout its length. For use on impervious surfaces such as road pavement or parking areas, proper anchorage must be provided to prevent shifting of the sock or separation of the contact between the sock and the pavement. Compost filter socks are utilized both at the site perimeter as well as within the construction areas. These socks may be filled after placement by blowing compost into the tube pneumatically, or filled at a staging location and moved into its designed location.

Design Criteria

1. Compost filter socks will be placed on the contour with both terminal ends of the sock extended 8 feet upslope at a 45 degree angle to prevent bypass flow.

2. Diameters designed for use shall be 12" – 32" except that 8" diameter socks may be used for residential lots to control areas less than 0.25 acres.

3. The flat dimension of the sock shall be at least 1.5 times the nominal diameter.

4. The **Maximum Slope Length** (in feet) above a compost filter sock shall not exceed the following limits:

Dia. (in.)	Slope %						
	2	5	10	20	25	33	50
8	225*	200	100	50	20	—	—
12	250	225	125	65	50	40	25
18	275	250	150	70	55	45	30
24	350	275	200	130	100	60	35
32	450	325	275	150	120	75	50
* Length in feet							

5. The compost infill shall be well decomposed (matured at least 3 months), weed-free, organic matter. It shall be aerobically composted, possess no objectionable odors, and contain less than 1%, by dry weight, of man-made foreign matter. The physical parameters of the compost shall meet the standards listed in Table 5.2 - Compost Standards Table. **Note: All biosolids compost produced in New York State (or approved for importation) must meet NYS DEC's 6 NYCRR Part 360 (Solid Waste Management Facilities) requirements. The Part 360 requirements are equal to or more stringent than 40 CFR Part 503 which ensure safe standards for pathogen reduction and heavy metals content. When using compost filter socks adjacent to surface water, the compost should have a low nutrient value.**

6. The compost filter sock fabric material shall meet the

7. Compost filter socks shall be anchored in earth with 2" x 2" wooden stakes driven 12" into the soil on 10 foot centers on the centerline of the sock. On uneven terrain, effective ground contact can be enhanced by the placement of a fillet of filter media on the disturbed area side of the compost sock.

8. All specific construction details and material specifications shall appear on the erosion and sediment control constructions drawings when compost filter socks are included in the plan.

Maintenance

1. Traffic shall not be permitted to cross filter socks.

2. Accumulated sediment shall be removed when it reaches half the above ground height of the sock and disposed of in accordance with the plan.

3. Socks shall be inspected weekly and after each runoff event. Damaged socks shall be repaired in the manner required by the manufacturer or replaced within 24 hours of inspection notification.

4. Biodegradable filter socks shall be replaced after 6 months; photodegradable filter socks after 1 year. Polypropylene socks shall be replaced according to the manufacturer's recommendations.

5. Upon stabilization of the area contributory to the sock, stakes shall be removed. The sock may be left in place and vegetated or removed in accordance with the stabilization plan. For removal the mesh can be cut and the compost spread as an additional mulch to act as a soil supplement.

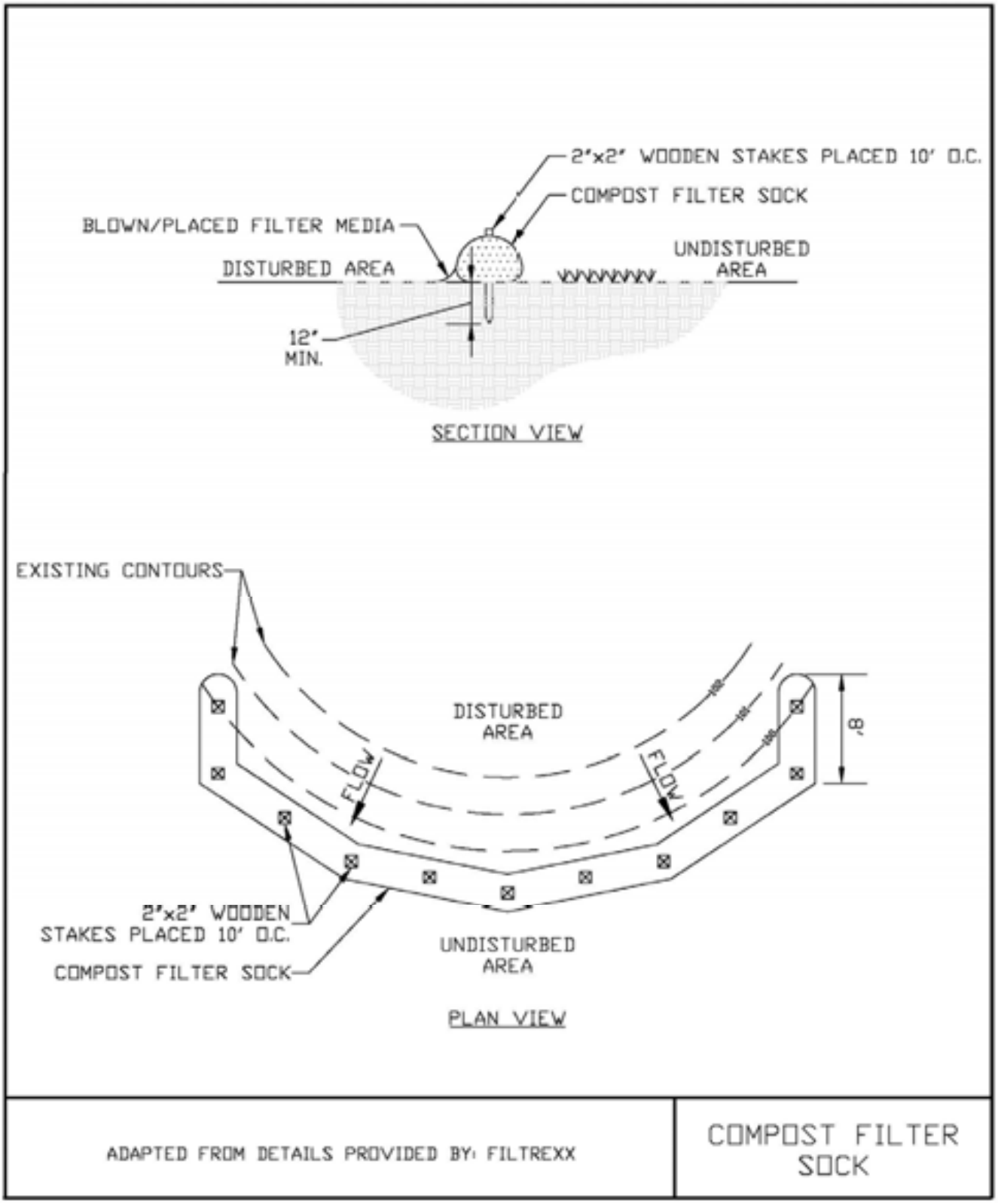
Table 5.1 - Compost Sock Fabric Minimum Specifications Table

Material Type	3 mil HDPE	5 mil HDPE	5 mil HDPE	Multi-Filament Polypropylene (MFPP)	Heavy Duty Multi-Filament Polypropylene (HDMFPP)
Material Characteristics	Photodegradable	Photodegradable	Biodegradable	Photodegradable	Photodegradable
Sock Diameters	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
Mesh Opening	3/8"	3/8"	3/8"	3/8"	1/8"
Tensile Strength		26 psi	26 psi	44 psi	202 psi
Ultraviolet Stability % Original Strength (ASTM G-155)	23% at 1000 hr.	23% at 1000 hr.		100% at 1000 hr.	100% at 1000 hr.
Minimum Functional Longevity	6 months	9 months	6 months	1 year	2 years

Table 5.2 - Compost Standards Table

Organic matter content	25% - 100% (dry weight)
Organic portion	Fibrous and elongated
pH	6.0 – 8.0
Moisture content	30% - 60%
Particle size	100% passing a 1" screen and 10 - 50% passing a 3/8" screen
Soluble salt concentration	5.0 dS/m (mmhos/cm) maximum

Figure 5.2
Compost Filter Sock



STANDARD AND SPECIFICATIONS FOR SILT FENCE

Definition & Scope

A **temporary** barrier of geotextile fabric installed on the contours across a slope used to intercept sediment laden runoff from small drainage areas of disturbed soil by temporarily ponding the sediment laden runoff allowing settling to occur. The maximum period of use is limited by the ultraviolet stability of the fabric (approximately one year).

Conditions Where Practice Applies

A silt fence may be used subject to the following conditions:

1. Maximum allowable slope length and fence length will not exceed the limits shown in the Design Criteria for the specific type of silt fence used ; and
2. Maximum ponding depth of 1.5 feet behind the fence; and
3. Erosion would occur in the form of sheet erosion; and
4. There is no concentration of water flowing to the barrier; and
5. Soil conditions allow for proper keying of fabric, or other anchorage, to prevent blowouts.

Design Criteria

1. Design computations are not required for installations of 1 month or less. Longer installation periods should be designed for expected runoff.
2. All silt fences shall be placed as close to the disturbed area as possible, but at least 10 feet from the toe of a slope steeper than 3H:1V, to allow for maintenance and roll down. The area beyond the fence must be undisturbed or stabilized.
3. The type of silt fence specified for each location on the plan shall not exceed the maximum slope length and maximum fence length requirements shown in the following table:

		Slope Length/Fence Length (ft.)		
Slope	Steepness	Standard	Reinforced	Super
<2%	< 50:1	300/1500	N/A	N/A
2-10%	50:1 to 10:1	125/1000	250/2000	300/2500
10-20%	10:1 to 5:1	100/750	150/1000	200/1000
20-33%	5:1 to 3:1	60/500	80/750	100/1000
33-50%	3:1 to 2:1	40/250	70/350	100/500
>50%	> 2:1	20/125	30/175	50/250

Standard Silt Fence (SF) is fabric rolls stapled to wooden stakes driven 16 inches in the ground.
Reinforced Silt Fence (RSF) is fabric placed against welded wire fabric with anchored steel posts driven 16 inches in the ground.
Super Silt Fence (SSF) is fabric placed against chain link fence as support backing with posts driven 3 feet in the ground.

4. Silt fence shall be removed as soon as the disturbed area has achieved final stabilization.

The silt fence shall be installed in accordance with the appropriate details. Where ends of filter cloth come together, they shall be overlapped, folded and stapled to prevent sediment bypass. Butt joints are not acceptable. A detail of the silt fence shall be shown on the plan. See Figure 5.30 on page 5.56 for Reinforced Silt Fence as an example of details to be provided.

Criteria for Silt Fence Materials

1. Silt Fence Fabric: The fabric shall meet the following specifications unless otherwise approved by the appropriate erosion and sediment control plan approval authority. Such approval shall not constitute statewide acceptance.

Super Silt Fence

Fabric Properties	Minimum Acceptable Value	Test Method
Grab Tensile Strength (lbs)	110	ASTM D 4632
Elongation at Failure (%)	20	ASTM D 4632
Mullen Burst Strength (PSI)	300	ASTM D 3786
Puncture Strength (lbs)	60	ASTM D 4833
Minimum Trapezoidal Tear Strength (lbs)	50	ASTM D 4533
Flow Through Rate (gal/ min/sf)	25	ASTM D 4491
Equivalent Opening Size	40-80	US Std Sieve ASTM D 4751
Minimum UV Residual (%)	70	ASTM D 4355

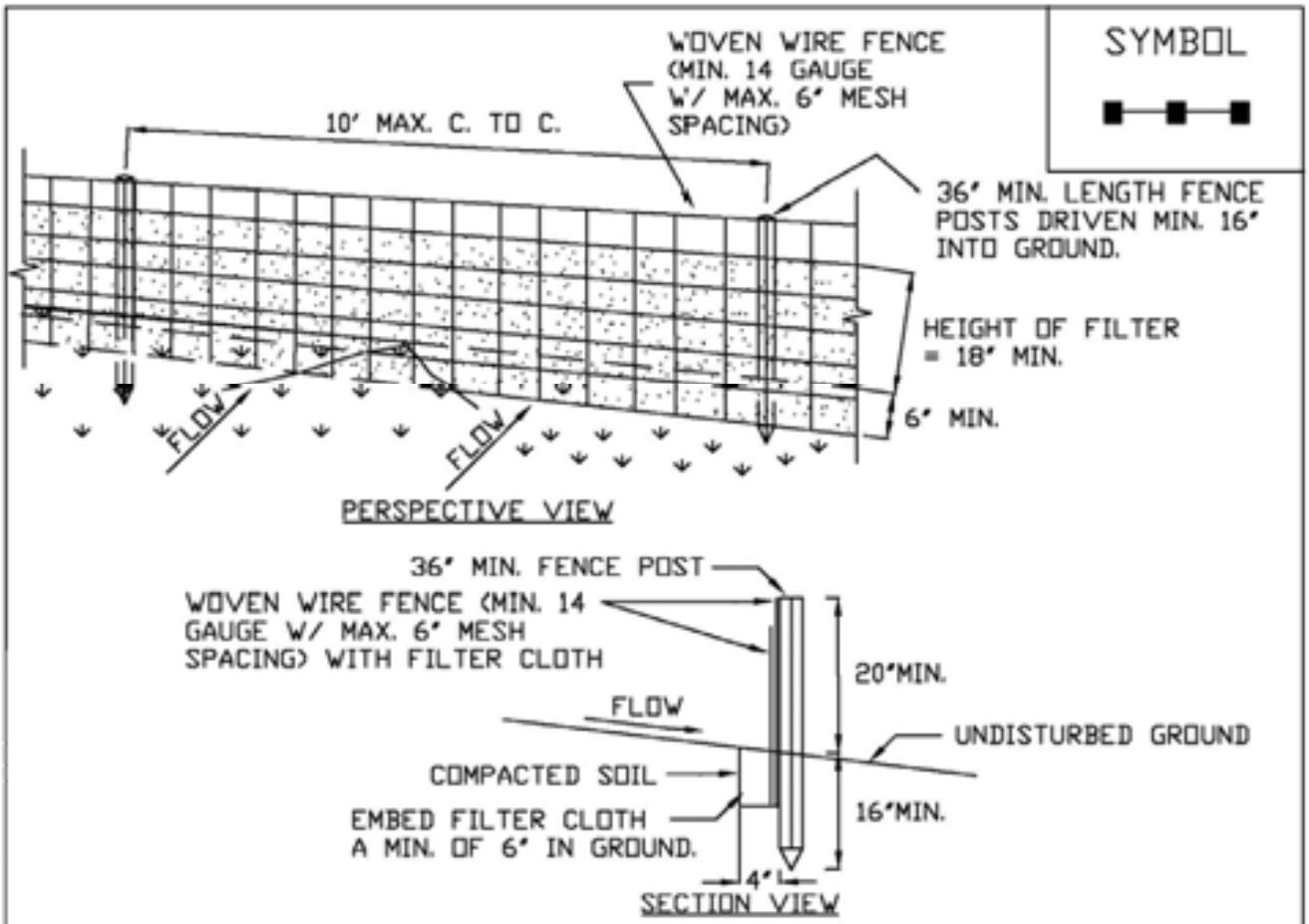
2. Fence Posts (for fabricated units): The length shall be a minimum of 36 inches long. Wood posts will be of sound quality hardwood with a minimum cross sectional area of 3.5 square inches. Steel posts will be standard T and U section weighing not less than 1.00 pound per linear foot. Posts for super silt fence shall be standard chain link fence posts.

3. Wire Fence for reinforced silt fence: Wire fencing shall be a minimum 14 gage with a maximum 6 in. mesh opening, or as approved.

4. Prefabricated silt fence is acceptable as long as all material specifications are met.

Reinforced Silt Fence

Figure 5.30
Reinforced Silt Fence



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 FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 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 MEET THE MINIMUM REQUIREMENTS SHOWN.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

REINFORCED SILT FENCE

STANDARD AND SPECIFICATIONS FOR STORM DRAIN INLET PROTECTION

Definition & Scope

A **temporary** barrier with low permeability, installed around inlets in the form of a fence, berm or excavation around an opening, detaining water and thereby reducing the sediment content of sediment laden water by settling thus preventing heavily sediment laden water from entering a storm drain system.

Conditions Where Practice Applies

This practice shall be used where the drainage area to an inlet is disturbed, it is not possible to temporarily divert the storm drain outfall into a trapping device, and watertight blocking of inlets is not advisable. **It is not to be used in place of sediment trapping devices.** This practice shall be used with an upstream buffer strip if placed at a storm drain inlet on a paved surface. It may be used in conjunction with storm drain diversion to help prevent siltation of pipes installed with low slope angle.

Types of Storm Drain Inlet Practices

There are five (5) specific types of storm drain inlet protection practices that vary according to their function, location, drainage area, and availability of materials:

I. Excavated Drop Inlet Protection
II. Fabric Drop Inlet Protection
III. Stone & Block Drop Inlet Protection
IV. Paved Surface Inlet Protection
V. Manufactured Insert Inlet Protection

Design Criteria

Drainage Area – The drainage area for storm drain inlets shall not exceed one acre. Erosion control/temporary stabilization measures must be implemented on the disturbed drainage area tributary to the inlet. The crest elevations of these practices shall provide storage and minimize bypass flow.

Type I – Excavated Drop Inlet Protection

This practice is generally used during initial overlot grading after the storm drain trunk line is installed.

Limit the drainage area to the inlet device to 1 acre. Excavated side slopes shall be no steeper than 2:1. The minimum depth shall be 1 foot and the maximum depth 2 feet as measured from the crest of the inlet structure. Shape the excavated basin to fit conditions with the longest dimension oriented toward the longest inflow area to provide maximum trap efficiency. The capacity of the excavated basin should be established to contain 900 cubic feet per acre of disturbed area. Weep holes, protected by fabric and stone, should be provided for draining the temporary pool.

Inspect and clean the excavated basin after every storm. Sediment should be removed when 50 percent of the storage volume is achieved This material should be incorporated into the site in a stabilized manner.

Type II – Fabric Drop Inlet Protection

This practice is generally used during final elevation grading phases after the storm drain system is completed.

Limit the drainage area to 1 acre per inlet device. Land area slope immediately surrounding this device should not exceed 1 percent. The maximum height of the fabric above the inlet crest shall not exceed 1.5 feet unless reinforced.

The top of the barrier should be maintained to allow overflow to drop into the drop inlet and not bypass the inlet to

unprotected lower areas. Support stakes for fabric shall be a minimum of 3 feet long, spaced a maximum 3 feet apart. They should be driven close to the inlet so any overflow drops into the inlet and not on the unprotected soil. Improved performance and sediment storage volume can be obtained by excavating the area.

Inspect the fabric barrier after each rain event and make repairs as needed. Remove sediment from the pool area as necessary with care not to undercut or damage the filter fabric. Upon stabilization of the drainage area, remove all materials and unstable sediment and dispose of properly. Bring the adjacent area of the drop inlet to grade, smooth and compact and stabilize in the appropriate manner to the site.

Type III – Stone and Block Drop Inlet Protection

This practice is generally used during the initial and intermediate overlot grading of a construction site.

Limit the drainage area to 1 acre at the drop inlet. The stone barrier should have a minimum height of 1 foot and a maximum height of 2 feet. Do not use mortar. The height should be limited to prevent excess ponding and bypass flow.

Recess the first course of blocks at least 2 inches below the crest opening of the storm drain for lateral support. Subsequent courses can be supported laterally if needed by placing a 2x4 inch wood stud through the block openings perpendicular to the course. The bottom row should have a few blocks oriented so flow can drain through the block to dewater the basin area.

The stone should be placed just below the top of the blocks on slopes of 2:1 or flatter. Place hardware cloth of wire mesh with ½ inch openings over all block openings to hold stone in place.

As an optional design, the concrete blocks may be omitted and the entire structure constructed of stone, ringing the outlet ("doughnut"). The stone should be kept at a 3:1 slope toward the inlet to keep it from being washed into the inlet. A level area 1 foot wide and four inches below the crest will further prevent wash. Stone on the slope toward the inlet should be at least 3 inches in size for stability and 1 inch or smaller away from the inlet to control flow rate. The elevation of the top of the stone crest must be maintained 6 inches lower than the ground elevation down slope from the inlet to ensure that all storm flows pass over the stone into the storm drain and not past the structure. Temporary diking should be used as necessary to prevent bypass flow.

The barrier should be inspected after each rain event and repairs made where needed. Remove sediment as necessary to provide for accurate storage volume for subsequent rains. Upon stabilization of contributing drainage area, remove all materials and any unstable soil and dispose of properly.

Bring the disturbed area to proper grade, smooth, compact and stabilize in a manner appropriate to the site.

Type IV – Paved Surface Inlet Protection

This practice is generally used after pavement construction has been done while final grading and soil stabilization is occurring. These practices should be used with upstream buffer strips in linear construction applications, and with temporary surface stabilization for overlot areas, to reduce the sediment load at the practice. This practice includes sand bags, compost filter socks, geo-tubes filled with ballast, and manufactured surface barriers. Pea gravel can also be used in conjunction with these practices to improve performance. When the inlet is not at a low point, and is offset from the pavement or gutter line, protection should be selected and installed so that flows are not diverted around the inlet.

The drainage area should be limited to 1 acre at the drain inlet. All practices will be placed at the inlet perimeter or beyond to maximize the flow capacity of the inlet. Practices shall be weighted, braced, tied, or otherwise anchored to prevent movement or shifting of location on paved surfaces. Traffic safety shall be integrated with the use of this practice. All practices should be marked with traffic safety cones as appropriate. Structure height shall not cause flooding or by-pass flow that would cause additional erosion.

The structure should be inspected after every storm event. Any sediment should be removed and disposed of on the site. Any broken or damaged components should be replaced. Check all materials for proper anchorage and secure as necessary.

Type V - Manufactured Insert Inlet Protection

The drainage area shall be limited to 1 acre at the drain inlet. All inserts will be installed and anchored in accordance with the manufacturers recommendations and design details. The fabric portion of the structure will equal or exceed the performance standard for the silt fence fabric. The inserts will be installed to preserve a minimum of 50 percent of the open, unobstructed design flow area of the storm drain inlet opening to maintain capacity for storm events.

Figure 5.31
Excavated Drop Inlet Protection

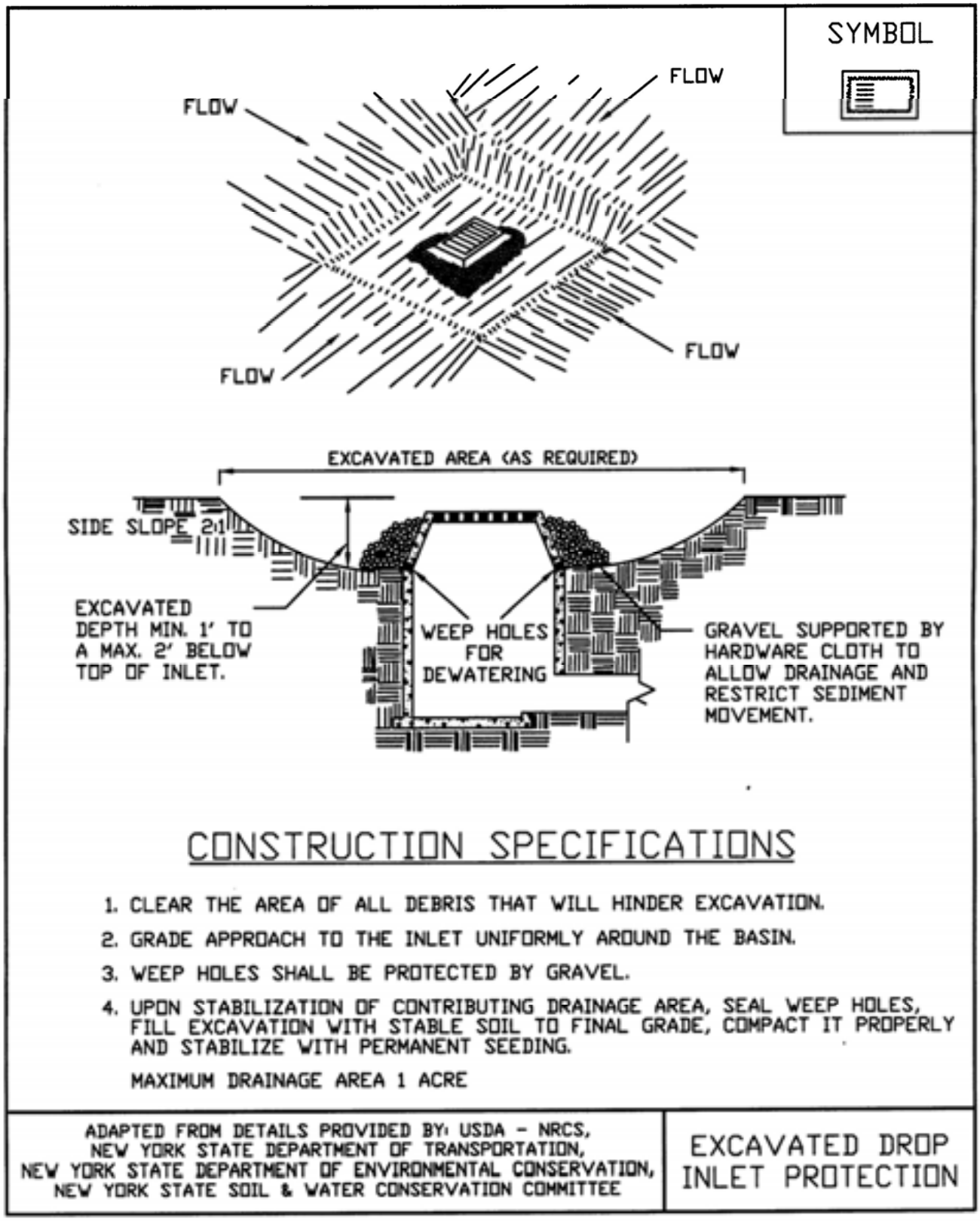


Figure 5.32
Fabric Drop Inlet Protection

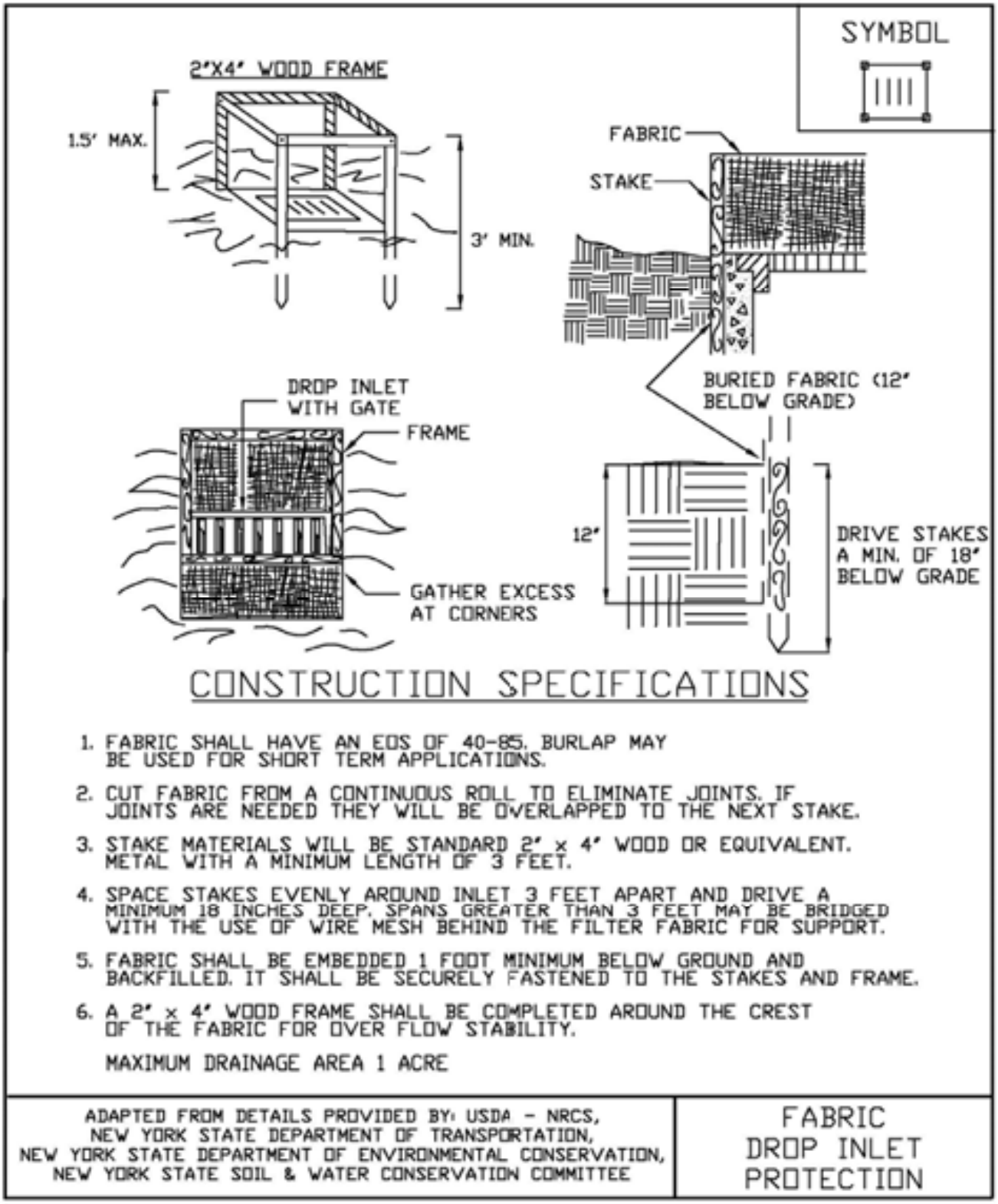
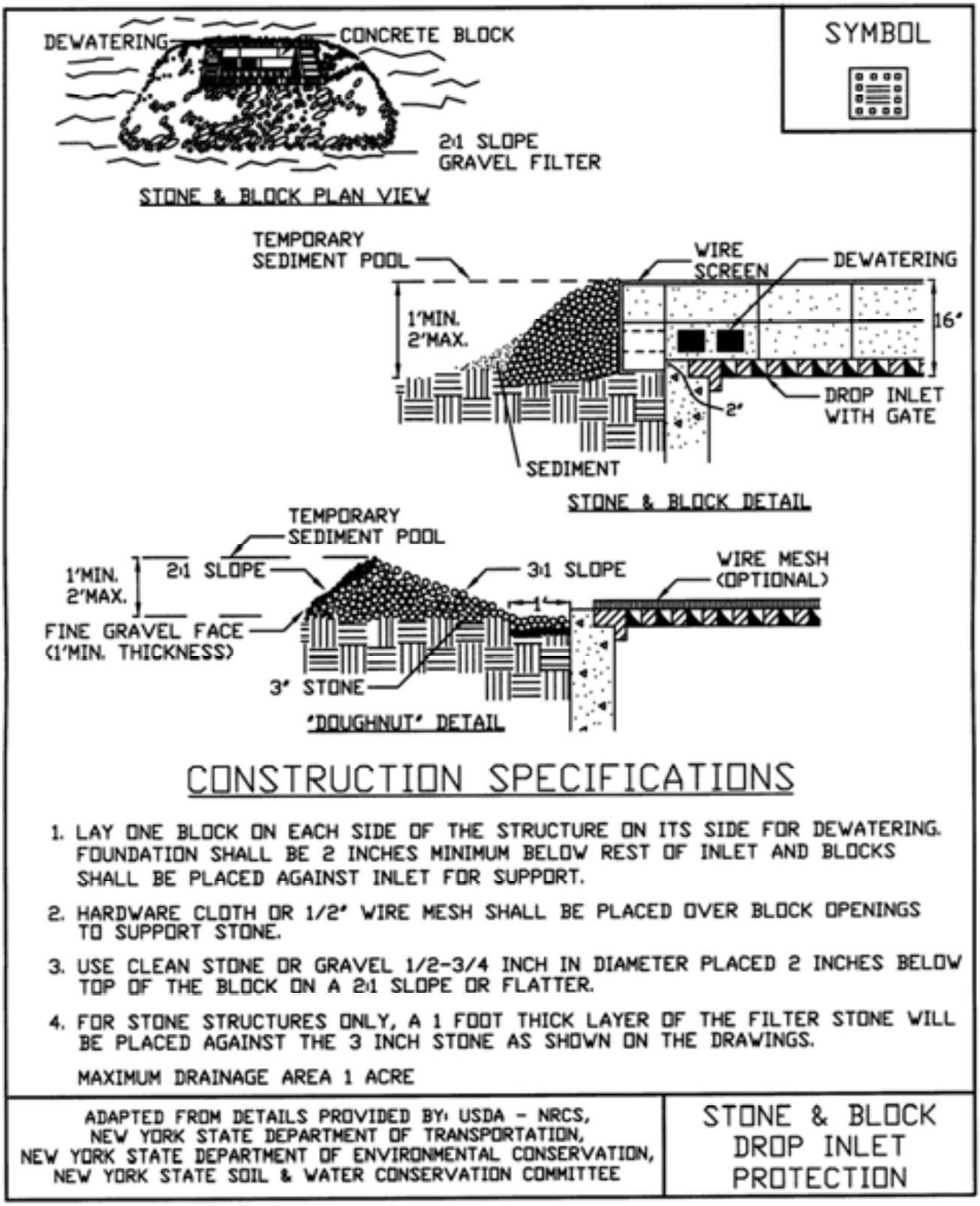


Figure 5.33
Stone & Block Drop Inlet Protection



STANDARD AND SPECIFICATIONS FOR CHECK DAM

Definition & Scope

Small barriers or dams constructed of stone, bagged sand or gravel, or other durable materials across a drainageway to reduce erosion in a drainage channel by reducing the velocity of flow in the channel.

Conditions Where Practice Applies

This practice is used as a **temporary** and, in some cases, a **permanent** measure to limit erosion by reducing velocities in open channels that are degrading or subject to erosion or where permanent stabilization is impractical due to short period of usefulness and time constraints of construction.

Design Criteria

Drainage Area: Maximum drainage area above the check dam shall not exceed two (2) acres.

Height: Not greater than 2 feet. Center shall be maintained 9 inches lower than abutments at natural ground elevation.

Side Slopes: Shall be 2:1 or flatter.

Spacing: The check dams shall be spaced as necessary in the channel so that the crest of the downstream dam is at the elevation of the toe of the upstream dam. This spacing is equal to the height of the check dam divided by the channel slope.

Therefore:

$$S = \frac{h}{s}$$

Where: S = spacing interval (ft.)
h = height of check dam (ft.)
s = channel slope (ft./ft.)

Example:

For a channel with a 4% slope and 2 ft. high stone check dams, they are spaced as follows:

$$S = \frac{2\ \text{ft}}{0.04\ \frac{\text{ft}}{\text{ft}}} = 50\ \text{ft}$$

For stone check dams: Use a well graded stone matrix 2 to 9 inches in size (NYS – DOT Light Stone Fill meets these requirements).

The overflow of the check dams will be stabilized to resist erosion that might be caused by the check dam. See Figure 3.1 on page 3.3 for details.

Check dams should be anchored in the channel by a cutoff trench 1.5 ft. wide and 0.5 ft. deep and lined with filter fabric to prevent soil migration.

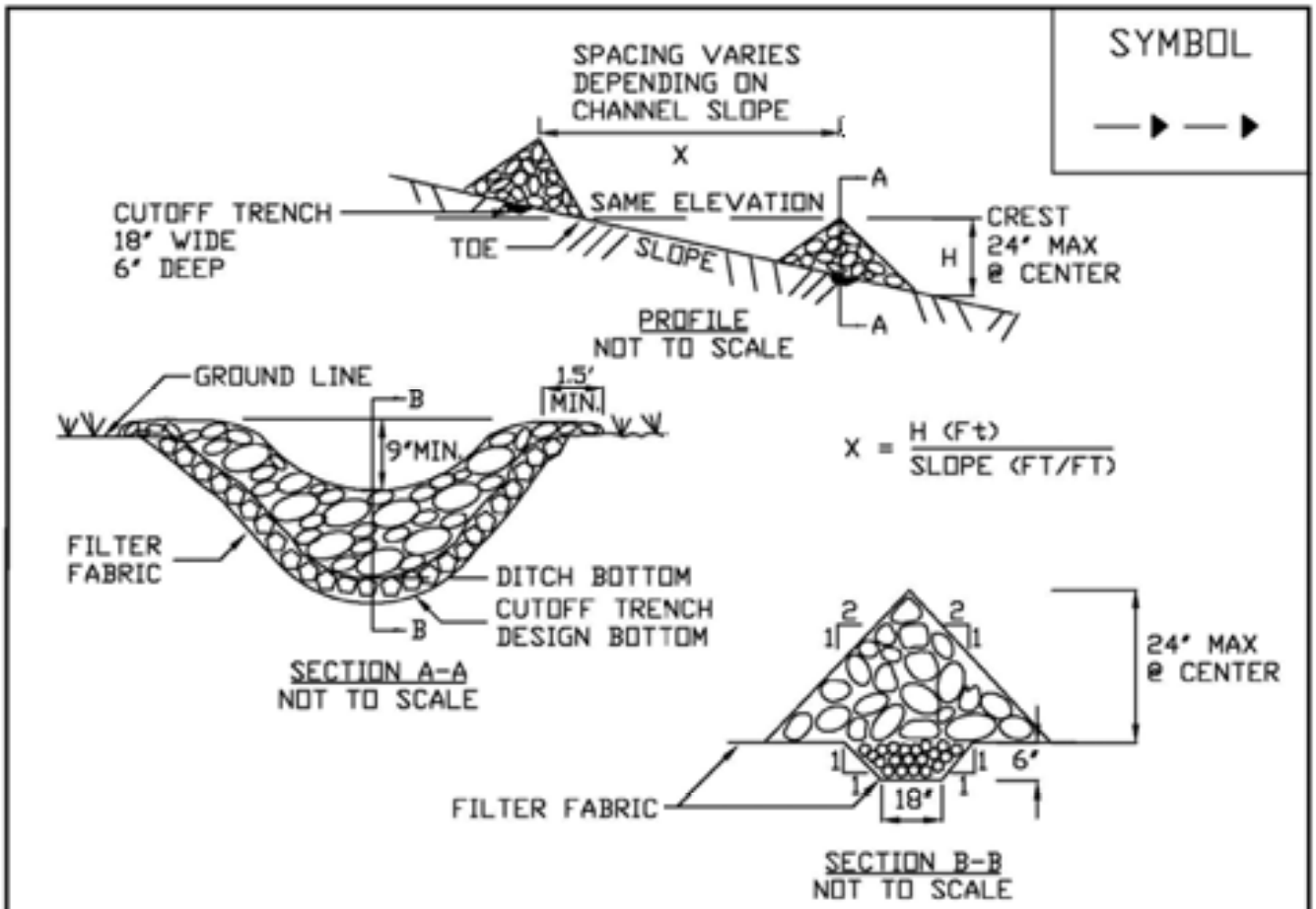
For filter sock or fiber roll check dams: The check dams will be anchored by staking the dam to the earth contact surface. The dam will extend to the top of the bank. The check dam will have a splash apron of NYS DOT #2 crushed stone extending a minimum 3 feet downstream from the dam and 1 foot up the sides of the channel. The compost and materials for a filter sock check dam shall meet the requirements shown in the standard for Compost Filter Sock on page 5.7.

Maintenance

The check dams should be inspected after each runoff event. Correct all damage immediately. If significant erosion has occurred between structures, a liner of stone or other suitable material should be installed in that portion of the channel or additional check dams added.

Remove sediment accumulated behind the dam as needed to allow channel to drain through the stone check dam and prevent large flows from carrying sediment over the dam.

Figure 3.1
Stone Check Dam Detail



CONSTRUCTION SPECIFICATIONS

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN.
2. SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.

MAXIMUM DRAINAGE AREA 2 ACRES.

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE	STONE CHECK DAM

STANDARD AND SPECIFICATIONS FOR STABILIZED CONSTRUCTION ENTRANCE

Definition

A stabilized pad of aggregate underlain with geotextile located at any point where traffic will be entering or leaving a construction site to or from a public right-of-way, street, alley, sidewalk, or parking area.

Purpose

The purpose of stabilized construction entrance is to reduce or eliminate the tracking of sediment onto public rights-of-way or streets.

Conditions Where Practice Applies

A stabilized construction entrance shall be used at all points of construction ingress and egress.

Design Criteria

See Figure 5A.35 on page 5A.76 for details.

Aggregate Size: Use a matrix of 1-4 inch stone, or reclaimed or recycled concrete equivalent.

Thickness: Not less than six (6) inches.

Width: 12-foot minimum but not less than the full width of points where ingress or egress occurs. 24-foot minimum if there is only one access to the site.

Length: As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum would apply).

Geotextile: To be placed over the entire area to be covered with aggregate. Filter cloth will not be required on a single-family residence lot. Piping of surface water under entrance shall be provided as required. If piping is impossible, a mountable berm with 5:1 slopes will be permitted.

Criteria for Geotextile

The geotextile shall be woven or nonwoven fabric consisting only of continuous chain polymeric filaments or yarns of polyester. The fabric shall be inert to commonly encountered chemicals, hydro-carbons, mildew, rot resistant, and conform to the fabric properties as shown:

Fabric Properties[3]	Light Duty[1] Roads Grade Subgrade	Heavy Duty[2] Haul Roads Rough Graded	Test Method
Grab Tensile Strength (lbs)	200	220	ASTM D1682
Elongation at Failure (%)	50	60	ASTM D1682
Mullen Brust Strength (lbs)	190	430	ASTM D3786
Puncture Strength (lbs)	40	125	ASTM D751 modified
Equivalent Opening Size	40-80	40-80	US Std Sieve CW-02215
Aggregate Depth	6	10	--

[1]Light Duty Road: Area sites that have been graded to subgrade and where most travel would be single axle vehicles and an occasional multi-axle truck. Acceptable materials are Trevira Spunbond 1115, Mirafi 100X, Typar 3401, or equivalent.

[2]Heavy Duty Road: Area sites with only rough grading, and where most travel would be multi-axle vehicles. Acceptable materials are Trevira Spunbond 1135, Mirafi 600X, or equivalent.

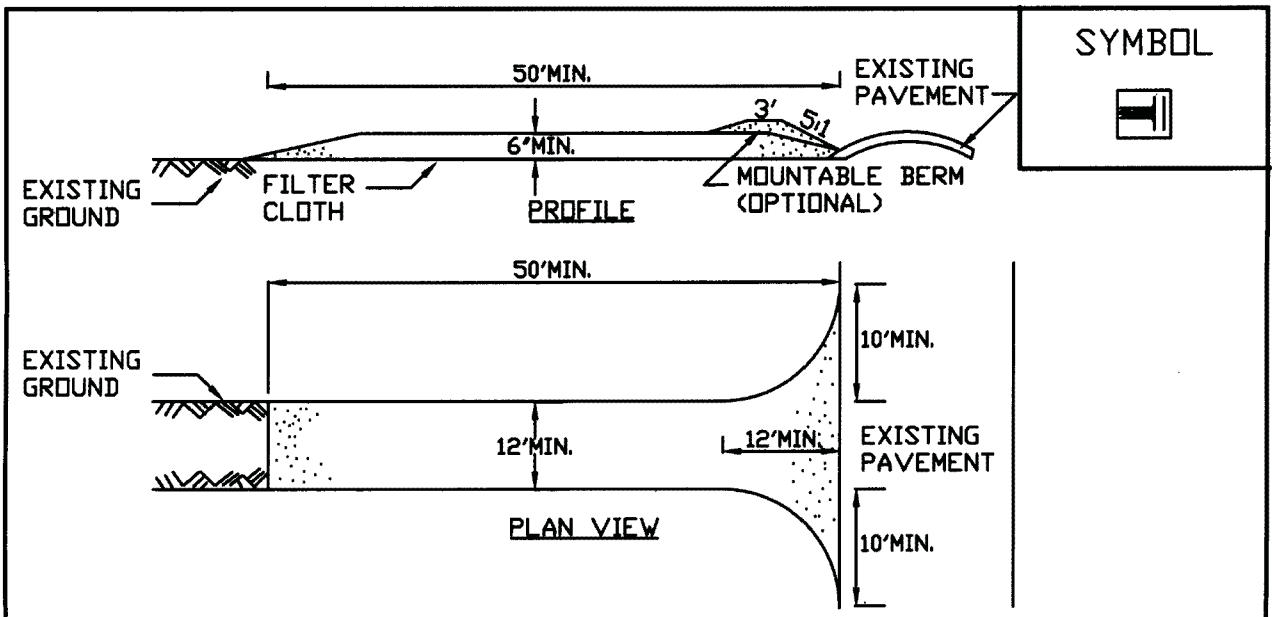
[3]Fabrics not meeting these specifications may be used only when design procedure and supporting documentation are supplied to determine aggregate depth and fabric strength.

Maintenance

The entrance shall be maintained in a condition which will prevent tracking of sediment onto public rights-of-way or streets. This may require periodic top dressing with additional aggregate. All sediment spilled, dropped, or washed onto public rights-of-way must be removed immediately.

When necessary, wheels must be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device. All sediment shall be prevented from entering storm drains, ditches, or watercourses.

Figure 5A.35
Stabilized Construction Entrance



CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 1-4 INCH 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. GEOTEXTILE - 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 BENEATH 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.

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE	STABILIZED CONSTRUCTION ENTRANCE

ATTACHMENT P

GENERAL AND SUBCONTRACTOR SIGNATURE PAGE

Contractor's Certification

"I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations.

Company: _____

Address: _____

_____

Phone: _____

Name: _____

Title: _____

Phone: _____

Date: _____

Qualified Inspector (if different than above)

Name: _____

Title: _____

Phone: _____

Date: _____

SWPPP elements Contractor is responsible for:

ATTACHMENT Q
AGENCY CONSULTATION AND PERMITS

NYS Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

I. Project Owner/Operator Information	
1. Owner/Operator Name:	Brolex Properties, LLC
2. Contact Person:	Joshua Heintz
3. Street Address:	5912 North Burdick Street
4. City/State/Zip:	East Syracuse, NY 13057
II. Project Site Information	
5. Project/Site Name:	Freeman Estates Housing
6. Street Address:	7430 Highbridge Road
7. City/State/Zip:	Fayetteville, NY 13066
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information	
8. SWPPP Reviewed by:	
9. Title/Position:	
10. Date Final SWPPP Reviewed and Accepted:	
IV. Regulated MS4 Information	
11. Name of MS4:	
12. MS4 SPDES Permit Identification Number: NYR20A	
13. Contact Person:	
14. Street Address:	
15. City/State/Zip:	
16. Telephone Number:	

MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s). Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:

Title/Position:

Signature:

Date:

VI. Additional Information

(NYS DEC - MS4 SWPPP Acceptance Form - January 2015)

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

NOT FOR CONSULTATION

Location

Onondaga County, New York

Local office

New York Ecological Services Field Office

(607) 753-9334
(607) 753-9699

3817 Luker Road
Cortland, NY 13045-9385

http://www.fws.gov/northeast/nyfo/es/section7.htm

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

---

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS

NOT FOR CONSULTATION

Indiana Bat Myotis sodalis There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat Myotis septentrionalis No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Threatened

Reptiles

NAME	STATUS
Eastern Massasauga (=rattlesnake) Sistrurus catenatus No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2202	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

NOT FOR CONSULTATION

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NOT FOR CONSULTATION

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31

Canada Warbler Cardellina canadensis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Cerulean Warbler Dendroica cerulea This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 20 to Jul 20
Golden-winged Warbler Vermivora chrysoptera This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Henslow's Sparrow Ammodramus henslowii This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3941	Breeds May 1 to Aug 31
Lesser Yellowlegs Tringa flavipes This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

NOT FOR CONSULTATION

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that

week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▬)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

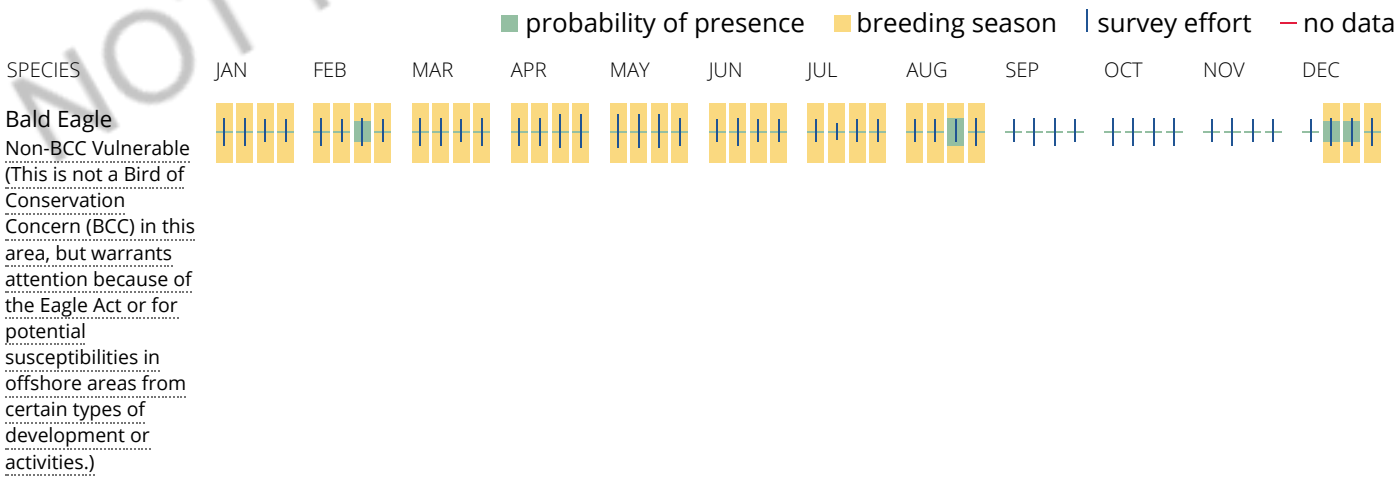
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

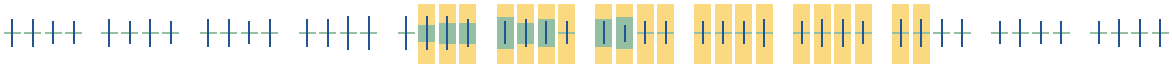
No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

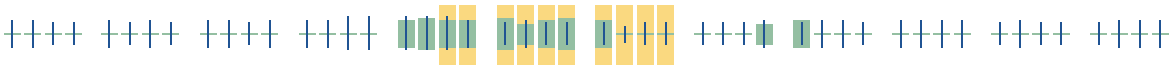
NOT FOR CONSULTATION



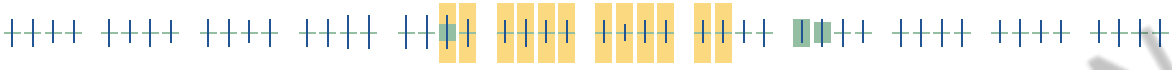
Black-billed Cuckoo
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



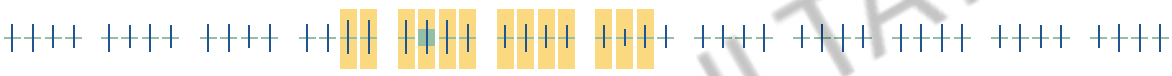
Bobolink
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



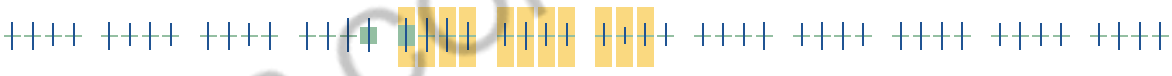
Canada Warbler
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



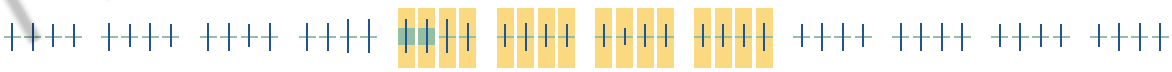
Cerulean Warbler
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Golden-winged Warbler
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

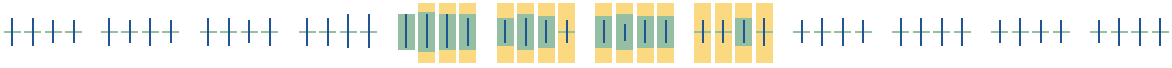


Henslow's Sparrow
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Lesser Yellowlegs
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Wood Thrush
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



NOT FOR CONSULTATION

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

NOT FOR CONSULTATION

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

NOT FOR CONSULTATION

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

RIVERINE

R2UBH

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

NOT FOR CONSULTATION

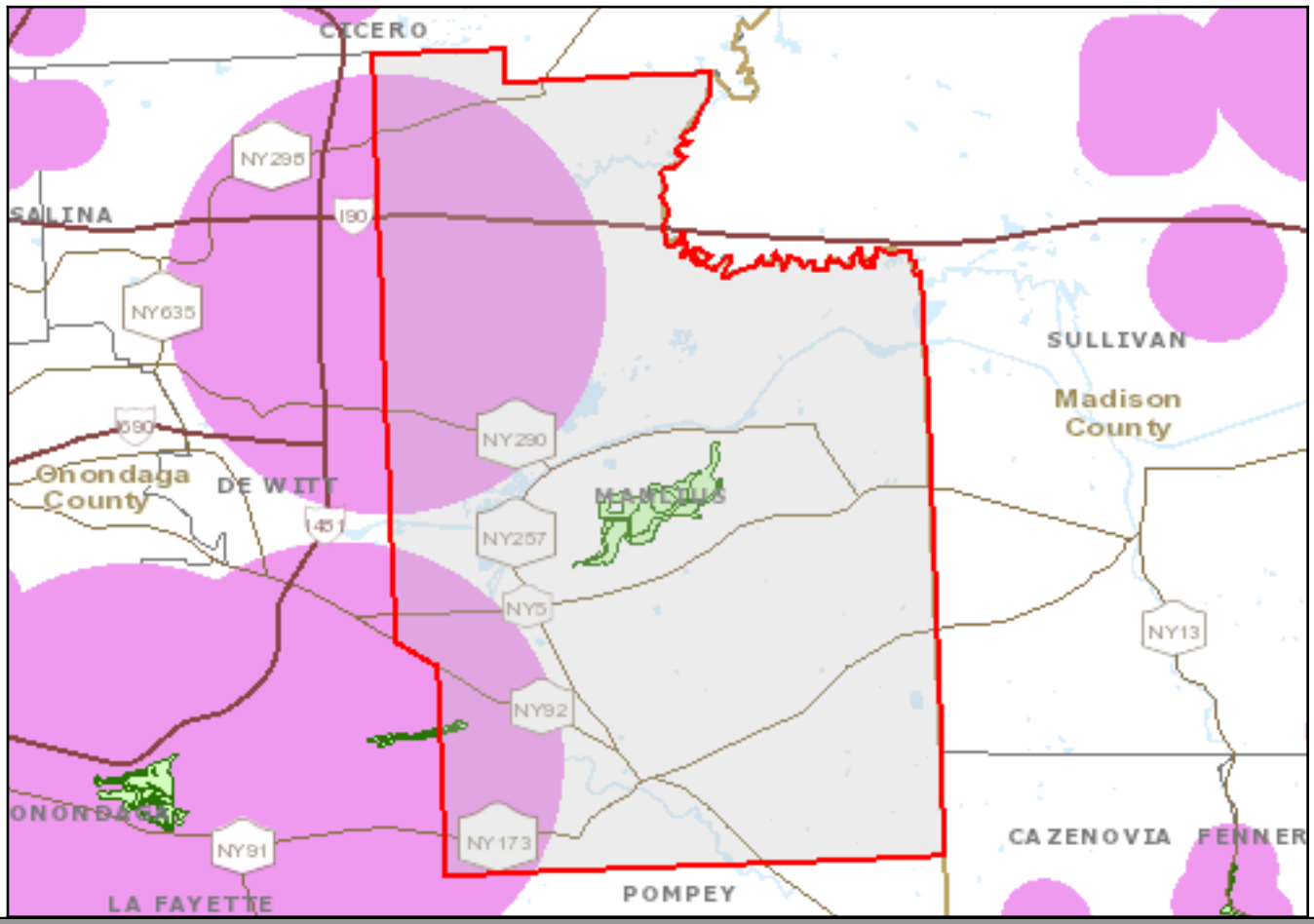
Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

New York Nature Explorer
Town Results Report

Criteria: Town: Manlius



Common Name	Subgroup	Distribution Status	Year Last Documente	Protection Status State	Protection Status Federal	Conservation Rank State	Conservation Rank Global
Town: Manlius							
Plant: Flowering Plants							
Little-leaf Tick Trefoil *Desmodium ciliare*	Other Flowering Plants	Historically Confirmed	1937	Threatened		S2S3	G5
Marsh Arrow Grass *Triglochin palustris*	Other Flowering Plants	Recently Confirmed	1993	Threatened		S2	G5
Nodding Pogonia *Triphora trianthophoros ssp. trianthophoros*	Orchids	Historically Confirmed	1913	Threatened		S2	G3G4T3T4
Northern Wild Comfrey *Andersonglossum boreale*	Other Flowering Plants	Possible but not Confirmed	1907	Endangered		S1S2	G5T4T5

New York Nature Explorer

Common Name	Subgroup	Distribution Status	Year Last Documente	Protection Status		Conservation Rank	
				State	Federal	State	Global
Ohio Goldenrod *Solidago ohioensis*	Asters, Goldenrods and Daisies	Recently Confirmed	1999	Threatened		S2	G4
Pink Wintergreen *Pyrola asarifolia ssp. asarifolia*	Other Flowering Plants	Possible but not Confirmed	1916	Threatened		S2	G5T5
Scorpion-weed *Phacelia dubia var. dubia*	Other Flowering Plants	Extirpated	1975			SX	G5T5
Slender Pondweed *Stuckenia filiformis*	Other Flowering Plants	Historically Confirmed	1988	Endangered		S1	G5
Yellow Giant-hyssop *Agastache nepetoides*	Other Flowering Plants	Historically Confirmed	1916	Threatened		S2S3	G5

Natural Community: Uplands

Maple-Basswood Rich Mesic Forest *Maple-basswood rich mesic forest*	Forested Uplands	Recently Confirmed	2009			S3	G4

Natural Community: Freshwater Nontidal Wetlands

Marl Fen *Marl fen*	Open Peatlands	Recently Confirmed	1999			S1	G1
Northern White Cedar Swamp *Northern white cedar swamp*	Forested Peatlands	Recently Confirmed	1989			S2S3	G4

Natural Community: Lakes and Ponds

Meromictic Lake *Meromictic lake*	Natural Lakes and Ponds	Recently Confirmed	2009			S1S2	G3G4

Note: Restricted plants and animals may also have also been documented in one or more of these Towns or Cities, but are not listed in these results. This application does not provide information at the level of Town or City on state-listed animals and on other sensitive animals and plants. A list of the restricted animals and plants documented in the corresponding county (or counties) can be obtained via the County link(s) on the original Town Search Results page. Any individual plant or animal on this county's restricted list may or may not occur in this particular Town or City.

This list only includes records of rare species and significant natural communities from the databases of the NY Natural Heritage Program. This list is not a definitive statement about the presence or absence of all plants and animals, including rare or state-listed species, or of all significant natural communities. For most areas, comprehensive field surveys have not been conducted, and this list should not be considered a substitute for on-site surveys.

ATTACHMENT R

GRADING, EROSION & SEDIMENT CONTROL PLAN & DETAIL SHEETS

(SEE PLAN SETS)

SITE DATA

1. OWNER: BROLEX PROPERTIES, LLC
   5912 NORTH BURDICK STREET
   EAST SYRACUSE, NEW YORK 13057
2. TAX ID #: 101.-02-02.1
3. PARCEL SIZE: 22.17± ACRES (3.5± ACRES DISTURBANCE)
4. ZONING CLASSIFICATION: RESIDENTIAL (R-3)
5. BUILDING SETBACK REQUIREMENTS: FRONT: 30'
   SIDE: 15'
   REAR: 25'

PROJECT INFORMATION

THIS PROJECT CONSISTS OF CLEARING OF LAND FOR THE PROPOSED CONSTRUCTION OF TWELVE (12) PATIO HOMES WITH ASSOCIATED UTILITIES, STORMWATER FACILITIES AND DRIVEWAYS. THE ESTIMATED TIME FOR COMPLETION IS WITHIN ONE (1) YEAR OF RECEIVING ALL NECESSARY PERMITS AND APPROVALS.

SURVEY DATA

FIELD SURVEY WAS COMPLETED BY CT MALE IN JUNE 2020.

NOTE:
THE LOCATION, SIZES, AND ELEVATIONS OF EXISTING UTILITIES ARE BASED ON INFORMATION COMPILED BY THE SURVEYOR AND ENGINEER FROM FIELD WORK, RECORD DRAWINGS AND INFORMATION FURNISHED BY VARIOUS UTILITY COMPANIES WITH FIELD EDITING WHERE NECESSARY AND POSSIBLE. THE ACCURACY OF THIS INFORMATION IS NOT GUARANTEED AND SHALL BE VERIFIED BY THE CONTRACTOR.

CONSTRUCTION SEQUENCE

1. MOBILIZE ALL NECESSARY EQUIPMENT, PERSONNEL AND MATERIAL TO THE SITE. PROCEED WITH INSTALLATION OF EROSION & SEDIMENT CONTROL PRACTICES INCLUDING STABILIZED CONSTRUCTION ENTRANCE. EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE IN PLACE PRIOR TO BEGINNING ANY EARTHWORK OPERATIONS. SCHEDULE AND CONDUCT SITE WALK TO INSPECT SEDIMENT AND EROSION CONTROL MEASURES WITH ENGINEER. MODIFY SEDIMENT AND EROSION CONTROL MEASURES AS NEEDED.
2. PROTECT EXISTING INSTRUMENTS, STRUCTURES, VEGETATION AND UTILITIES TO REMAIN.
3. INSTALL SILT FENCE, STABILIZED CONSTRUCTION ENTRANCE AND ANY OTHER PERTINENT EROSION AND SEDIMENT CONTROL MEASURES.
4. PERFORM CLEARING & GRUBBING OPERATIONS.
5. MASS EARTHWORK OPERATIONS.
6. INSTALL STORMWATER, SANITARY SEWER, AND OTHER UTILITIES. INSTALL FILTER DROP INLET PROTECTION AT ALL DRAINAGE INLETS.
7. CONSTRUCTION OF ROADWAYS. INSTALL SILT FENCING BEHIND ASPHALT CURBING.
8. FINAL GRADING.
9. PERMANENT STABILIZATION WITH TOPSOIL, SEED AND MULCH AS SPECIFIED.
10. INSTALLATION OF LANDSCAPING.
11. IN ADDITION TO THESE MEASURES, THE CONTRACTOR SHALL COMPLY WITH WHATEVER ADDITIONAL MEASURES MAY BE REQUIRED AS ORDERED BY THE VILLAGE OF MINOA.
12. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES MUST REMAIN IN PLACE UNTIL 80% GERMINATION OF THE SITE HAS BEEN ESTABLISHED. CONTACT ENGINEER TO SCHEDULE FINAL INSPECTION.

SANITARY SEWER NOTES:

APPLICABLE DETAILS AND NOTES PERTAIN TO THIS PROJECT UNLESS OTHERWISE NOTED:

1. SANITARY SEWER MAIN PIPE SHALL BE 8" ASTM D-3034 SDR-35 PVC WITH RUBBER RING GASKETS UNLESS OTHERWISE NOTED.
2. SANITARY SEWER LATERALS TO BE SDR-35 PVC WITH RUBBER RING GASKET, UNLESS OTHERWISE NOTED.
3. ALL SANITARY SEWER STRUCTURES, TEMPORARY STUBBED ENDS AND LATERAL ENDS SHALL BE MARKED WITH 2X4'S EXTENDING 3' ABOVE FINISHED GRADE WITH TOPS PAINTED GREEN.
4. EACH LOT TO HAVE 1 SANITARY SEWER LATERAL INSTALLED FROM THE MAIN TO R.O.W. LINE AT A MIN. SLOPE OF 1%. LATERALS TO BE LOCATED 5 FEET DOWNSTREAM FROM THE CENTER OF THE LOT UNLESS OTHERWISE SHOWN OR NOTED.
5. COMPACTION OF ALL BACKFILLED MATERIALS REQUIRED IN AREAS UNDER PROPOSED PAVEMENT.
6. LINING MATERIAL TO BE N.Y.S.D.O.T. ITEM NO. 304.05 TYPE 4 R.O.C. OR R.O.B.
7. LEAKAGE AND DEFLECTION TESTS REQUIRED ON ALL SEWER MAINS IN ACCORDANCE WITH LOCAL REGULATIONS.
8. SANITARY SEWERS SHALL BE TESTED AFTER THE INSTALLATION OF WATER MAINS AND SERVICES. EXFILTRATION TEST SHALL BE PERFORMED ON ALL SANITARY MANHOLES.
9. CONTRACTOR SHALL RECORD AND PROVIDE ENGINEER WITH AS-BUILT LOCATIONS AND DEPTHS OF ALL SANITARY SEWER LATERAL ENDS AND MANHOLE RIMS & INVERTS.
10. SEWERS SHALL BE LAID AT LEAST 10' (3.0 m) HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATERMAIN. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE. IN CASES WHERE IT IS NOT PRACTICAL TO MAINTAIN A 10' SEPARATION, THE APPROPRIATE REVIEWING AGENCY MAY ALLOW DEVIATION ON A CASE BY CASE BASIS, IF SUPPORTED BY DATA FROM THE DESIGN ENGINEER. SUCH DEVIATION MAY ALLOW INSTALLATION OF THE SEWER CLOSER TO A WATERMAIN, PROVIDED THE WATERMAIN IS IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER AND THE ELEVATION OF THE BOTTOM OF THE WATERMAIN IS AT LEAST 18" (46 cm) ABOVE THE TOP OF SEWER. SEWERS CROSSING WATERMAINS SHALL BE LAID TO PROVIDE MINIMUM VERTICAL DISTANCE OF 18" (46 CM) BETWEEN THE OUTSIDE OF THE WATERMAIN AND THE OUTSIDE OF THE SEWER. THIS SHALL BE THE CASE WHEN THE WATERMAIN IS ABOVE OR BELOW THE SEWER. THE CROSSING SHALL BE ARRANGED SO THE JOINTS OF THE SEWER PIPE WILL BE EQUIDISTANT FROM AND AS FAR AWAY FROM THE WATERMAIN JOINTS AS POSSIBLE. WHERE THE WATERMAIN CROSSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO PREVENT DAMAGE TO THE WATERMAIN.

WATERMAIN NOTES

ALL WATERMAINS SHALL HAVE A MINIMUM 5.0' OF COVER FROM THE TOP OF THE MAIN TO FINISHED GRADE. THE CONTRACTOR SHALL CHECK ALL CUT STAKED BEFORE TRENCHING TO INSURE THAT ALL INSTALLED WATERMAINS WILL HAVE THE REQUIRED COVER.

811®
Know what's below.
Call before you dig.

GENERAL NOTES

1. THE CONTRACTOR SHALL MAKE ALL NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN ALL NECESSARY CONSTRUCTION PERMITS. THE CONTRACTOR SHALL PAY ALL FEES AND POST ALL BONDS ASSOCIATED WITH WITH THE SAME, AND COORDINATE WITH THE ENGINEER AND ARCHITECT AS REQUIRED.
2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR JOB SITE SAFETY AND ALL CONSTRUCTION MEANS AND METHODS.
3. ANY ALTERATIONS TO THESE DRAWINGS MADE IN THE FIELD DURING CONSTRUCTION SHALL BE RECORDED BY THE CONTRACTOR ON RECORD DOCUMENTS.
4. THE CONTRACTOR'S PROFESSIONAL LAND SURVEYOR SHALL CHECK ALL HORIZONTAL AND VERTICAL CONTROLS PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL PROMPTLY BE BROUGHT TO THE ATTENTION OF THE ENGINEER. CONTRACTOR IS TO SUBMIT A QUALIFICATIONS PACKAGE OF SURVEYOR TO ENGINEER FOR APPROVAL.
5. THE CONTRACTOR SHALL LIMIT OPERATIONS TO THE AREAS DESIGNATED ON THE CONTRACT DOCUMENTS.
6. ALL DAMAGE TO PRIVATE PROPERTY OR UTILITIES (UNDER OR ABOVE GROUND) SHALL BE RESTORED TO ORIGINAL CONDITION AT NO COST TO THE OWNER.
7. SAFE AND CONTINUOUS THROUGH TRAFFIC, INGRESS AND EGRESS FOR ADJACENT OWNERS DRIVEWAYS, SERVICE ROADS, PUBLIC STREETS, AND SIDEWALKS SHALL BE MAINTAINED THROUGHOUT THE PERIOD OF CONSTRUCTION.
8. STREET DRAINAGE, SWALES, DITCHES, AND OTHER EXISTING DRAINAGE FACILITIES SHALL BE PROTECTED AND MAINTAINED IN ADEQUATE WORKING CONDITION DURING CONSTRUCTION. THE CONTRACTOR SHALL RESTORE ANY OF SUCH FACILITIES THAT ARE DAMAGED DURING CONSTRUCTION.
9. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS NOT TO DISTURB AND/ OR DAMAGE PROPERTY CORNERS (IRON PINS, HUBS, ETC.). ANY DISTURBED OR DAMAGED PROPERTY CORNERS SHALL BE REPLACED BY THE CONTRACTOR'S LICENSED SURVEYOR AT THE CONTRACTOR'S EXPENSE.
10. ALL EXISTING UTILITIES SUCH AS ELECTRIC, GAS MAINS, AND TELEPHONE SHALL BE STAKED OUT BY THE UTILITY COMPANY PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY NEW YORK DIG SAFELY (1-800-962-7962) 72 HOURS, (3 WORKING DAYS) PRIOR TO CONSTRUCTION AND NOTIFY UTILITY COMPANIES FOR STAKEOUT.
11. IN AREAS WHERE THE CONTRACTOR IS EXCAVATING NEAR ANY UTILITY POLES, THE CONTRACTOR SHALL BRACE AND/ OR HOLD IN PLACE UNTIL THE EXCAVATED AREA IS BACKFILLED AND COMPACTED.
12. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE DEWATERING SYSTEM THAT WILL DRAW DOWN AND HAVE CONTROL ON THE GROUNDWATER TABLE AT ALL TIMES DURING CONSTRUCTION IF NECESSARY.
13. THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER DISPOSAL OF ALL REMOVED VEGETATION, SOIL AND OTHER DISTURBED AREAS.
14. THE CONTRACTOR SHALL CONDUCT ACTIVITIES IN THE VICINITY OF TREES AND BUSHES WITH CARE. ANY TREE REMOVAL SHALL BE LIMITED TO THE DIRECT PATH OF CONSTRUCTION.
15. THE CONTRACTOR SHALL OBSERVE O.S.H.A. AND OTHER APPLICABLE SAFETY REQUIREMENTS. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR CONSTRUCTION SAFETY AT ALL TIMES.
16. FOR DRAWING LEGIBILITY, ALL EXISTING TOPOGRAPHIC FEATURES, EXISTING UTILITIES, PROPERTY BOUNDARIES, EASEMENTS, ETC. MAY NOT BE SHOWN ON ALL DRAWINGS. REFER TO REFERENCED DRAWINGS AND OTHER DRAWINGS IN THIS SET FOR ADDITIONAL INFORMATION.
17. CONTRACTOR SHALL REPORT SIGNIFICANT CONFLICTS OR DISCREPANCIES TO THE OWNER AND ENGINEER BEFORE PROCEEDING WITH ANY PORTION OF SITE WORK WHICH MAY BE AFFECTED SO THAT PROPER ADJUSTMENTS CAN BE MADE IF NECESSARY.
18. UNDERGROUND UTILITIES WERE COMPILED FROM AVAILABLE RECORD PLANS OF UTILITY COMPANIES AND PUBLIC AGENCIES, ARE APPROXIMATE AND ASSUMED. BEFORE COMMENCING SITE WORK IN ANY AREA, CONTACT "DIG SAFE" AT 1-888-344-7233 AND THE OWNER TO ACCURATELY LOCATE UNDERGROUND UTILITIES. ANY DAMAGE TO EXISTING UTILITIES OR STRUCTURES SHALL BE THE CONTRACTORS RESPONSIBILITY. NO EXCAVATION SHALL BE DONE UNTIL UTILITY COMPANIES AND THE OWNER ARE PROPERLY NOTIFIED IN ADVANCE.
19. ALL SITE WORK SHALL MEET OR EXCEED THE SITE WORK SPECIFICATIONS TO BE PREPARED FOR THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS DO NOT CONFLICT WITH ANY KNOWN EXISTING OR OTHER PROPOSED IMPROVEMENTS. IF ANY CONFLICTS ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER PRIOR TO INSTALLATION OF ANY PORTION OF THE SITE WORK WHICH WOULD BE AFFECTED.
20. ALL WORK PERFORMED AND ALL MATERIALS SHALL CONFORM WITH THE LINES, GRADES AND OTHER SPECIFIC REQUIREMENTS OR SPECIFICATIONS FOR THE PROJECT AS SHOWN ON THE PLANS.
21. THE CONTRACTOR SHALL VERIFY EXISTING GRADES IN THE FIELD AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT AS REQUIRED. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE OWNER AND ENGINEER FOR RESOLUTION.
22. INSTALL ALL UTILITIES (INCLUDING CONCRETE PADS) PER UTILITY COMPANY STANDARDS.
23. CONTRACTOR SHALL PROTECT ALL UNDERGROUND DRAINAGE, SEWER AND UTILITY FACILITIES FROM EXCESSIVE VEHICULAR LOADS DURING CONSTRUCTION. ANY DAMAGE TO THESE FACILITIES RESULTING FROM CONSTRUCTION LOADS WILL BE RESTORED TO ORIGINAL CONDITION.
24. CONTRACTOR TO PROVIDE VILLAGE ENGINEER WITH RIMS AND INVERTS OF ALL INSTALLED SANITARY SEWER MANHOLES AND DRAINAGE STRUCTURES ALONG WITH LOCATIONS AND INVERTS OF ALL SEWER LATERAL ENDS AND SUMP PUMP/ ROOF DRAIN CONNECTIONS. VILLAGE ENGINEER WILL USE INFORMATION TO CREATE RECORD DRAWINGS.

EROSION CONTROL NOTES

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE TEMPORARY SOIL EROSION CONTROL AND WATER POLLUTION CONTROL.
2. THE CONTRACTOR SHALL CONTROL SURFACE RUNOFF WHICH MAY CONTAIN SUSPENDED SOLIDS FROM ONTO EXISTING PAVEMENT SERVICES IN USE. THIS SHALL BE ACCOMPLISHED BY STAKED BALES OF STRAW OR DIVERSION CHANNELS TO SEDIMENTATION BASINS.
3. THE CONTRACTOR SHALL COMPLY WITH ALL PROVISIONS OF THE N.Y.S. DEPARTMENT OF ENVIRONMENTAL CONSERVATION SPDES GENERAL PERMIT, WATER QUALITY CERTIFICATION AND/ OR FRESH WATER WETLANDS PERMIT AND/ OR ARMY CORPS OF ENGINEERS PERMIT (IF APPLICABLE).
4. DURING CONSTRUCTION, NO WET OR FRESH CONCRETE OR LEACHATE SHALL BE ALLOWED TO ESCAPE INTO THE WATERS OF THE UNITED STATES, NOR SHALL WASHINGS FROM CONCRETE TRUCKS, MIXERS, OR OTHER DEVICES BE ALLOWED TO ENTER ANY WETLAND OR WATERS. A CONCRETE WASHOUT SHALL BE USED.
5. ALL AREAS OF SOIL DISTURBANCE RESULTING FROM THIS PROJECT SHALL BE SEEDED WITH AN APPROPRIATE PERENNIAL GRASS SEED AND MULCHED WITH STRAW WITHIN ONE WEEK OF FINAL GRADING. MULCH SHALL BE MAINTAINED UNTIL A SUITABLE VEGETATIVE COVER IS ESTABLISHED.
6. PERIODIC CLEANING, INSPECTION AND REPLACEMENT OF TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL DEVICES SHALL BE NECESSARY.
7. ALL CONTROLS SHALL BE PLACED PRIOR TO STARTING EARTHWORK OPERATIONS AND SHALL REMAIN IN PLACE UNTIL THE NEW SLOPES ARE STABILIZED WITH SEEDING AND/ OR SLOPE PROTECTION.
8. WHERE SILT FENCE IS USED IN AREAS OF CONCENTRATED FLOW, THE ENGINEER IN CHARGE MAY CALL FOR BACKING THE FENCE WITH STRAW BALES.
9. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MAY BE REQUIRED DUE TO VARIATIONS IN SITE CONDITIONS.
10. IF THERE IS SOME REASON THAT CUT OR FILL CANNOT BE BROUGHT TO FINAL GRADE AND MUST REMAIN UNCOMPLETED FOR A PERIOD OF TIME, IT SHALL BE TEMPORARILY SEEDED AND MULCHED WITHIN 7 DAYS.
20. REQUIRED INSPECTIONS SHALL OCCUR AND AS OUTLINED WITHIN THE SWPPP AND GENERAL SPDES PERMIT (ONE (1) INSPECTION PER SEVEN (7) DAYS SHALL BE COMPLETED).

MAINTENANCE AND REPAIR OF EROSION AND SEDIMENT POLLUTION CONTROL FACILITIES

1. PROPER MAINTENANCE AND REPAIR OF EROSION AND SEDIMENT CONTROL FACILITIES ARE NECESSARY TO THE EFFECTIVENESS OF THE EROSION AND SEDIMENT POLLUTION CONTROL FACILITIES.
2. DISTURBED GROUND SURFACES SHALL BE SPRINKLED WITH WATER, AS NEEDED, TO LIMIT THE FORMATION AND MIGRATION OF AIRBORNE DUST.
3. OPERATIONAL MEASURES SHALL BE EMPLOYED DURING CONSTRUCTION TO PREVENT THE SPILLS OF FUELS AND LUBRICANTS. IF A SPILL OCCURS, IT SHALL BE CONTROLLED IMMEDIATELY TO PREVENT ITS ENTRY INTO OFF-SITE AREAS INCLUDING ADJACENT STORM WATER FACILITIES.
4. ANY TEMPORARY EROSION CONTROL FACILITY SHALL REMAIN FUNCTIONAL UNTIL VEGETATIVE COVER IS SUFFICIENTLY ESTABLISHED WITHIN THE RESPECTIVE TRIBUTARY DRAINAGE AREA.
5. ANY DEBRIS ACCUMULATED IN EROSION AND SEDIMENT CONTROL SHALL BE REMOVED AND PROPERLY DISPOSED. THESE FACILITIES SHALL BE CHECKED DAILY AND AFTER RAINFALL EVENTS, AND REALIGNED AS NEEDED. SEDIMENT SHALL BE REMOVED WHEN IT REACHES THE FOLLOWING DEPTHS:

   SILT FENCE: 1/2 HEIGHT
   STONE CHECKDAMS: 1/2 HEIGHT
   INLET/ OUTLET PROTECTION: 1 INCH

NOTE: DISTURBED AREAS SHALL BE CONSIDERED PERMANENTLY STABILIZED WHEN A MINIMUM COVER OF 80% HAS BEEN ESTABLISHED.

EROSION & SEDIMENT POLLUTION CONTROL NOTES

1. EROSION & SEDIMENT POLLUTION CONTROL FACILITIES AND PRACTICES, UTILIZED IN CONSTRUCTION OF THE PROJECT, SHALL BE CONSISTENT WITH THE LATEST EDITIONS OF THE NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL, NEW YORK STATE STORMWATER MANAGEMENT DESIGN MANUAL, AND THE NEW YORK STATE SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES.
2. NATURAL VEGETATION SHALL BE RETAINED, PROTECTED, AND SUPPLEMENTED AS FEASIBLE PRIOR TO AND DURING CONSTRUCTION.
3. CUT AND FILL SLOPES SHALL BE BROUGHT TO FINAL PROPOSED GRADES AS SOON AS POSSIBLE IN THE CONSTRUCTION SEQUENCE, AND SEEDED AND MULCHED.
4. EROSION AND SEDIMENT POLLUTION CONTROL FACILITIES (CHECK DAMS, SILT FENCING, STABILIZED CONSTRUCTION ENTRANCES, SEDIMENT TRAPS, AND OTHER ACCEPTABLE IMPLEMENTED FACILITIES), SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION UNTIL COMPLETE SITE STABILIZATION.
5. GRADE ALL AREAS TO DRAIN.
6. HEAVY CONSTRUCTION EQUIPMENT SHALL BE KEPT AS CLOSE TO THE WORK AREA AS PRACTICAL TO MINIMIZE DISTURBANCE OF SOIL ALREADY STABILIZED OR UNDISTURBED.
7. TOPSOIL AND OTHER SOIL REMOVED DURING CONSTRUCTION SHALL BE STOCKPILED IN A SUITABLE LOCATION CLEAR FROM ANY STORMATWATER DRAINAGE COURSES. STOCKPILES SHALL BE STABILIZED TO PREVENT EROSION.
8. VEGETATIVE STABILIZATION SHALL BE PERIODICALLY INSPECTED FOR SUFFICIENT GROWTH AND PROGRESS. AREAS NOT RESPONDING SHALL BE PROMPTLY RESEEDED AND REMULCHED AS SOON AS POSSIBLE. AREAS SHOWING SIGNS OF EROSION PRIOR TO STABILIZATION SHALL BE GRADED, RESEEDED, AND REMULCHED AS SOON AS POSSIBLE. SOD OR EROSION CONTROL FABRIC SHALL BE UTILIZED WHERE ADEQUATE STABILIZATION IS NOT OCCURRING.
9. ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED BEGINNING EARTH MOVING ACTIVITIES, OR IN THEIR PROPER SEQUENCE, AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
10. A STABILIZED CONSTRUCTION ENTRANCE PAD WITH CLEAN STONE WILL BE PLACED AT ALL CONSTRUCTION DRIVEWAYS IMMEDIATELY AFTER INITIAL SITE DISTURBANCE.
11. ANY DISTURBED AREAS THAT WILL LEFT EXPOSED FOR MORE THAN 5 DAYS, AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL 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, AT A RATE OF 2.0 TONS PER ACRE, ACCORDING TO STANDARDS.
12. PERMANENT VEGETATION TO BE SEEDED ON ALL EXPOSED AREAS WITHIN FIVE (5) DAYS AFTER FINAL GRADING. MULCH TO BE USED AS NECESSARY FOR PROTECTION UNTIL SEEDING IS ESTABLISHED.
13. THE APPLICATION OF TOPSOIL, SEEDING, AND MULCHING FOR DISTURBED AREAS SHALL BE CONSISTENT WITH THE STANDARD GENERAL PRACTICES FOR CONSTRUCTION.
14. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES UNTIL ALL AREAS HAVE BEEN PERMANENTLY STABILIZED.
15. ANY SEDIMENT TRACKED ONTO PUBLIC RIGHT-OF-WAYS SHALL BE CLEANED IMMEDIATELY.
16. ALL DEBRIS GENERATED DURING SITE PREPARATION ACTIVITIES SHALL BE LEGALLY DISPOSED OF OFF SITE.
17. ADDITIONAL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED AS CONDITIONS WARRANT OR AS DIRECTED BY THE OWNER OR OWNER'S REPRESENTATIVE.
18. SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED ON A DAILY BASIS DURING CONSTRUCTION TO ENSURE THEIR CONTINUED FUNCTION.
19. DUST SHALL BE CONTROLLED BY SPRINKLING OR OTHER APPROVED METHODS AS NECESSARY, OR AS DIRECTED BY THE OWNER OR OWNER'S REPRESENTATIVE.
20. REQUIRED INSPECTIONS SHALL OCCUR AS OUTLINED WITHIN THE SWPPP AND SPDES PERMIT.

DRAINAGE SYSTEM NOTES:

1. CATCH BASINS AND MANHOLE DIAMETERS SHALL BE AS FOLLOWS:

LARGEST PIPE SIZE IN STRUCTURE	INSIDE DIAMETER OF STRUCTURE
UP TO 24"	4'
25" TO 36"	5'
LARGER THAN 36"	SPECIAL STRUCTURE

2. STORM SEWER PIPE SHALL BE ADS N-12 POLYETHYLENE UNLESS OTHERWISE NOTED. PIPE SHALL HAVE BANDED JOINTS AND RUBBER GASKETS.
3. LINING MATERIALS AND SPECIAL BACKFILL TO BE N.Y.S.D.O.T. ITEM NO. 304.05 TYPE 4 R.O.C. OR R.O.B..
4. GRANULAR FILTER MATERIAL TO BE (NYS DOT SECTION 605-2.02 TYPE 1) MEETING THE FOLLOWING GRADATIONS:

% PASSING BY WEIGHT	SIEVE SIZE
100	1-1/2"
30-100	1"
0-30	1/4"
0-10	NO.-10
0-5	NO.-20

5. RIP-RAP TO BE HARD, DURABLE, ANGULAR IN SHAPE, AND A MINIMUM OF 1 FT. THICK, AND MEETING THE FOLLOWING GRADATIONS:

PERCENT OF TOTAL WEIGHT SMALLER THAN GIVEN SIZE	WEIGHT OF STONE
100	100 LB.
80	60 LB.
50	25 LB.
<10	2 LB.

6. AL DRAINAGE STRUCTURES, INLETS, OUTLETS AND TEMPORARY PIPE ENDS SHALL BE MARKED WITH 2 x 4'S EXTENDING 3' ABOVE FINISHED GRADE. THE TOP 1' SHALL BE PAINTED SILVER.
7. CHANNEL SLOPE TO BE GRASS LINED UNLESS OTHERWISE SHOWN OR DIRECTED.
8. ALL BRICK USED TO RAISE THE CATCH BASIN FRAME AND GRATES TO BE RED NO. 1, 8000 PSI.
9. COMPACTION OF ALL BACKFILL MATERIALS REQUIRED IN AREAS UNDER PROPOSED PAVEMENT. COMPACT IN 8" LIFTS TO 95% DENSITY.
10. CONTRACTOR SHALL RECORD AND PROVIDE VILLAGE ENGINEER WITH ASBUILT LOCATIONS AND ELEVATIONS OF ALL CATCH BASIN RIMS AND INVERTS, INLET AND OUTLET PIPE INVERTS, AND SUMP PUMP/ ROOF DRAIN DRAIN CONNECTIONS.

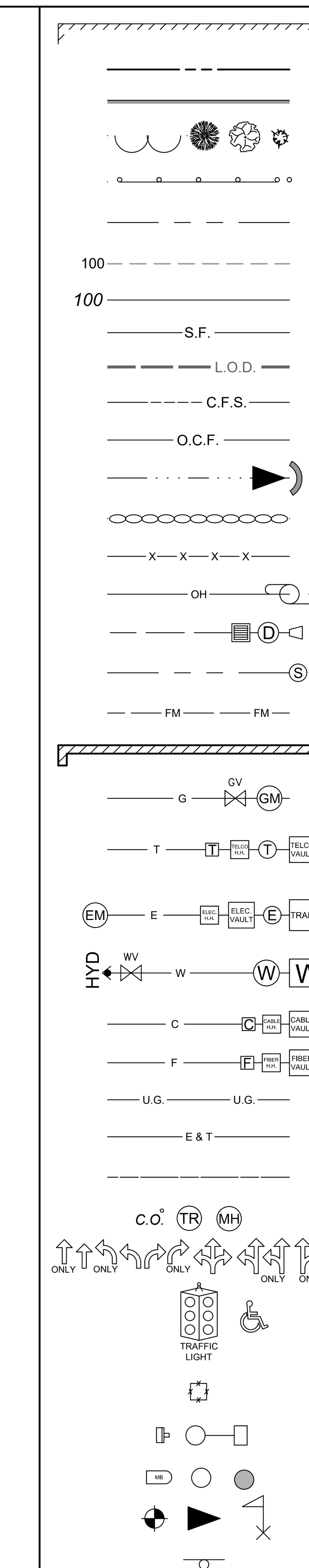
NEW YORK STATE DOT SPECIFICATIONS

GENERAL NOTES:

1. THE CONTRACTOR MUST NOTIFY THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 3 ENGINEER, AT (315) 435-3176, THREE (3) WORKING DAYS PRIOR TO WORKING IN THE RIGHT-OF-WAY.
2. THE CONTRACTOR MUST NOTIFY DIG SAFELY NEW YORK THREE (3) WORK DAYS PRIOR TO DIGGING, DRILLING OR BLASTING AT 1-800-962-7962 FOR A UTILITY STAKE OUT.
3. ALL WORK CONTEMPLATED AND MATERIALS USED WITHIN THE STATE RIGHT-OF-WAY MUST COMPLY WITH THE LATEST VERSION OF THE NYSDOT STANDARD SPECIFICATIONS AND ALL CURRENT ADDENDAS, ALONG WITH ANY APPROPRIATE CURRENT NYSDOT STANDARD SHEETS.
4. NO NIGHT WORK WILL BE ALLOWED UNLESS PRIOR APPROVAL IS GIVEN BY THE NYSDOT. ADDITIONAL WORK ZONE TRAFFIC CONTROL WILL BE REQUIRED INCLUDING THE ADDITION OF REFLECTIVE MATERIALS AND LIGHTING.
5. STOP SIGNS SHALL BE (R1-1) ON BREAK-AWAY POSTS.
6. STOP LINES SHALL BE NYSDOT ITEM NO. 685.11.
7. ALL LAWN AREAS DISTURBED WITHIN R.O.W. SHALL RECEIVE TOPSOIL, SEED AND STRAW. NYSDOT ITEM NO. 610.1402.
8. A UTILITY PERMIT IS REQUIRED FOR ANY UTILITY WORK WITHIN THE NYSDOT RIGHT-OF-WAY.
9. HAZARDOUS WASTE NOTIFICATION - THE PERMITTEE ACCEPTS THE RIGHT-OF-WAY OF THE STATE HIGHWAY IN ITS 'AS IS' CONDITION. THE DOT MAKES NO REPRESENTATION AS TO THE ABSENCE OF UNDERGROUND TANKS, STRUCTURES, FEATURES OR SIMILAR IMPEDIMENTS TO THE COMPLETION OF THE WORK PERMITTED HEREUNDER, SHOULD PERMITTEE FIND SOME PREVIOUSLY UNKNOWN UNDERGROUND OBLIGATION TO CURE, REMOVE, REMEDY OR OTHERWISE DEAL WITH SUCH UNDERGROUND TANKS, STRUCTURE, FEATURE OR IMPEDIMENT IF SUCH IS DONE IN A MANNER WHICH MEETS ACCEPTABLE ENGINEERING PRACTICE IS PRE-APPROVED BY THE DOT. SHOULD PERMITTEE DETERMINE THAT SUCH UNFORESEEN UNDERGROUND IMPEDIMENT RENDERS PERMITTEE'S WORK AS AUTHORIZED BY THIS PERMIT UNFEASIBLE, PERMITTEE SHALL HAVE THE OPTION OF RESTORING THE HIGHWAY TO ITS ORIGINAL CONDITION AND NOT PERFOMING SUCH WORK.

WORK ZONE TRAFFIC CONTROL:
THE CONTRACT SHALL ADHERE TO THE FOLLOWING STANDARD SHEETS:
619-11, 619-20, 619-30, 619-60

LEGEND



- EXISTING BUILDING
- PROPERTY LINE
- EXISTING ASPHALT
- TREE LINE, EVERGREEN TREE, DECIDUOUS TREE, SHRUB
- GUARD RAIL
- RIGHT-OF-WAY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- SILT FENCE
- PROPOSED LIMIT OF DISTURBANCE
- COMPOST FILTER SOCK
- ORANGE CONSTRUCTION FENCE
- SWALE/ DITCH, FLOW ARROW, CHECK DAM
- ROCK WALL
- BARBED WIRE FENCE
- OVERHEAD UTILITIES, UTILITY POLE
- DRAINAGE PIPE, CATCH BASIN, END SECTION
- SANITARY PIPE, MANHOLE
- FORCEMAIN
- PROPOSED BUILDING
- GAS LINE/ VALVE/ METER
- TELCO LINE/ PEDESTAL/ HANDHOLE/ MANHOLE/ VAULT
- ELEC METER/ LINE/ HANDHOLE/ MANHOLE/ VAULT/ TRANSFORMER
- WATER LINE/ HYDRANT/ VALVE/ WELL/ VAULT
- CABLE/ PEDESTAL/ HANDHOLE/ VAULT
- FIBER PEDESTAL/ HANDHOLE/ VAULT
- UNDERGROUND UTILITIES
- ELECTRIC & TELEPHONE
- SETBACK
- CLEANOUT, TRAFFIC MANHOLE, MANHOLE
- TRAFFIC CONTROL PAVEMENT MARKINGS
- TRAFFIC LIGHT/ HANDICAP PARKING SYMBOL
- INLET PROTECTION
- LIGHT POLE/ WALL PACK
- MAILBOX, POST, BOLLARD
- BORE/ TEST PIT, DIRECTIONAL FLOW ARROW, FLAGGING
- SIGN

PERMITTING ONLY
NOT FOR CONSTRUCTION

NO.	ISSUE/DESCRIPTION	BY	DATE

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL OF NY (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW. UNAUTHORIZED ALTERATION IS PROHIBITED

STATE OF NEW YORK · BART A. KLETTKE · LICENSED PROFESSIONAL ENGINEER · NO. 069423

FREEMAN ESTATES HOUSING
7430 HIGHBRIDGE ROAD
TOWN OF MANLIUS, STATE OF NEW YORK

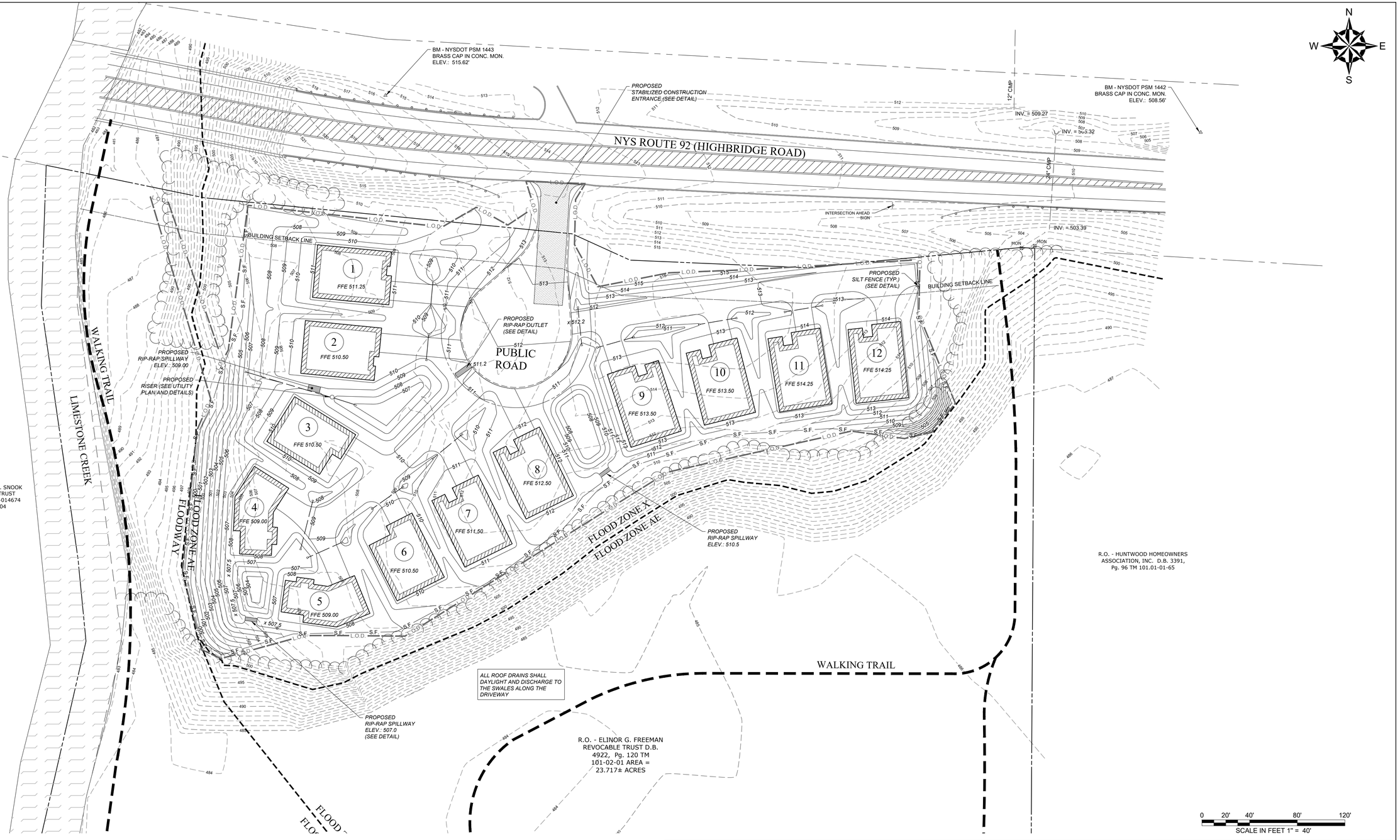
NOTES & LEGEND SHEET

PREPARED BY: GZA GeoEnvironmental of NY, Engineers and Scientists, www.gza.com

PREPARED FOR: BROLEX PROPERTIES, LLC, 5912 NORTH BURDICK STREET, EAST SYRACUSE, NY 13057

PROJ MGR: E.K.R.	REVIEWED BY: J.F.F.	CHECKED BY: C.J.M.	DWG
DESIGNED BY: E.K.R.	DRAWN BY: E.K.R.	SCALE: AS NOTED	GA002
DATE: DEC. 15, 2020	PROJECT NO. 31.0180349.00	REVISION NO.	SHEET NO. 2 OF 11

© 2020 - GZA GeoEnvironmental, Inc. GZA-J:\31.0180349.00 FREEMAN ESTATES SUBDIVISION\DESIGN\31.0180349.00 FREEMAN ESTATES HOUSING.DWG GA002 DECEMBER 16, 2020 8:04PM COREY MCWILLIAMS



© 2020 - GZA GeoEnvironmental, Inc. GZA-J:\31\0180349.00\FREEMAN ESTATES SUBDIVISION\DESIGN\31.0180349.00 FREEMAN ESTATES HOUSING.DWG CA120 DECEMBER 16, 2020 8:05PM COREY MCWILLIAMS

811
Know what's below.
Call before you dig.

PERMITTING ONLY
NOT FOR CONSTRUCTION

NO.	ISSUE/DESCRIPTION	BY	DATE

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL OF NY (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW. UNAUTHORIZED ALTERATION IS PROHIBITED

STATE OF NEW YORK
BARTA-KLETT
069423
Licensed Professional Engineer

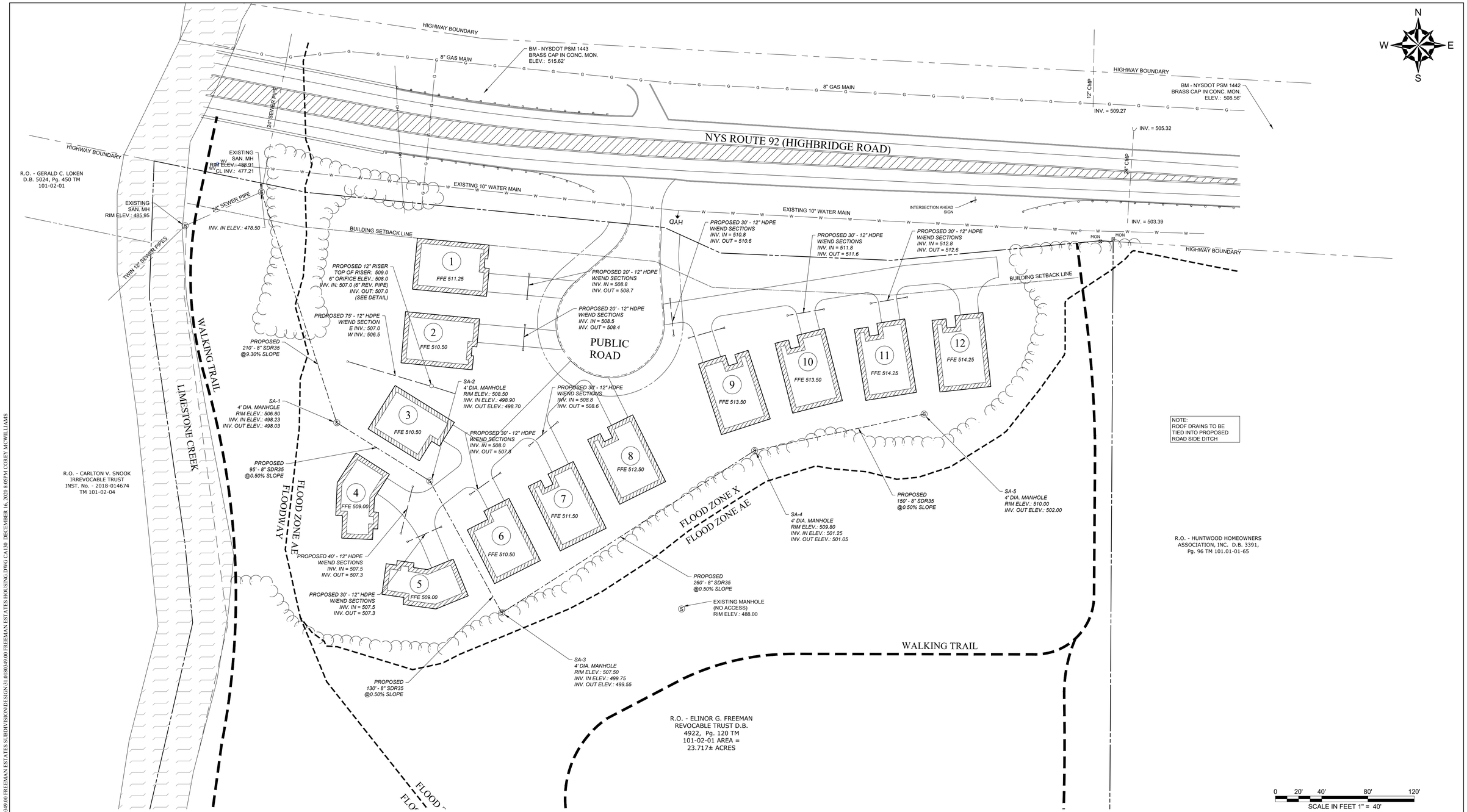
FREEMAN ESTATES HOUSING
7430 HIGHBRIDGE ROAD
TOWN OF MANLIUS, STATE OF NEW YORK

GRADING & EROSION CONTROL PLAN

PREPARED BY:
GZA GeoEnvironmental of NY
Engineers and Scientists
www.gza.com

PREPARED FOR:
BROLEX PROPERTIES, LLC
5912 NORTH BURDICK STREET
EAST SYRACUSE, NY 13057

PROJ MGR: E.K.R.	REVIEWED BY: J.F.F.	CHECKED BY: C.J.M.	DWG
DESIGNED BY: E.K.R.	DRAWN BY: E.K.R.	SCALE: AS NOTED	CA120
DATE: DEC. 15, 2020	PROJECT NO. 31.0180349.00	REVISION NO.	SHEET NO. 5 OF 11



Know what's below. Call before you dig.

PERMITTING ONLY
NOT FOR CONSTRUCTION

NO.	ISSUE/DESCRIPTION	BY	DATE

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL OF NY (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW. UNAUTHORIZED ALTERATION IS PROHIBITED

STATE OF NEW YORK · BARTA. KLETT · 069423 · Licensed Professional Engineer

FREEMAN ESTATES HOUSING
7430 HIGHBRIDGE ROAD
TOWN OF MANLIUS, STATE OF NEW YORK

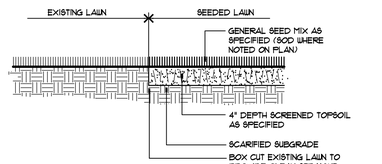
UTILITY PLAN

PREPARED BY:
GZA GeoEnvironmental of NY
Engineers and Scientists
www.gza.com

PREPARED FOR:
BROLEX PROPERTIES, LLC
5912 NORTH BURDICK STREET
EAST SYRACUSE, NY 13057

PROJ MGR: E.K.R.	REVIEWED BY: J.F.F.	CHECKED BY: C.J.M.	DWG
DESIGNED BY: E.K.R.	DRAWN BY: E.K.R.	SCALE: AS NOTED	CA130
DATE: DEC. 15, 2020	PROJECT NO. 31.0180349.00	REVISION NO.	SHEET NO. 6 OF 11

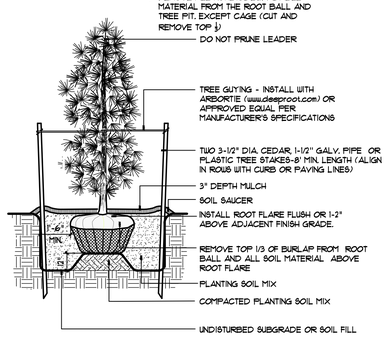
© 2020 - GZA GeoEnvironmental, Inc. GZA-J:\31\0180349.00\FREEMAN ESTATES SUBDIVISION\DESIGN\31.0180349.00 FREEMAN ESTATES HOUSING.DWG CA130 DECEMBER 16, 2020 8:05PM COREY MCWILLIAMS



SECTION

3 / L-1 SEEDED LAWN

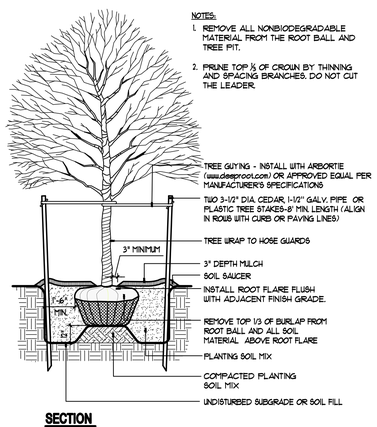
NOT TO SCALE — FOR SLOPES LESS THAN 1V:4H AS INDICATED ON PLANS — **32-9200-01A**



SECTION

2 / L-1 EVERGREEN PLANTING

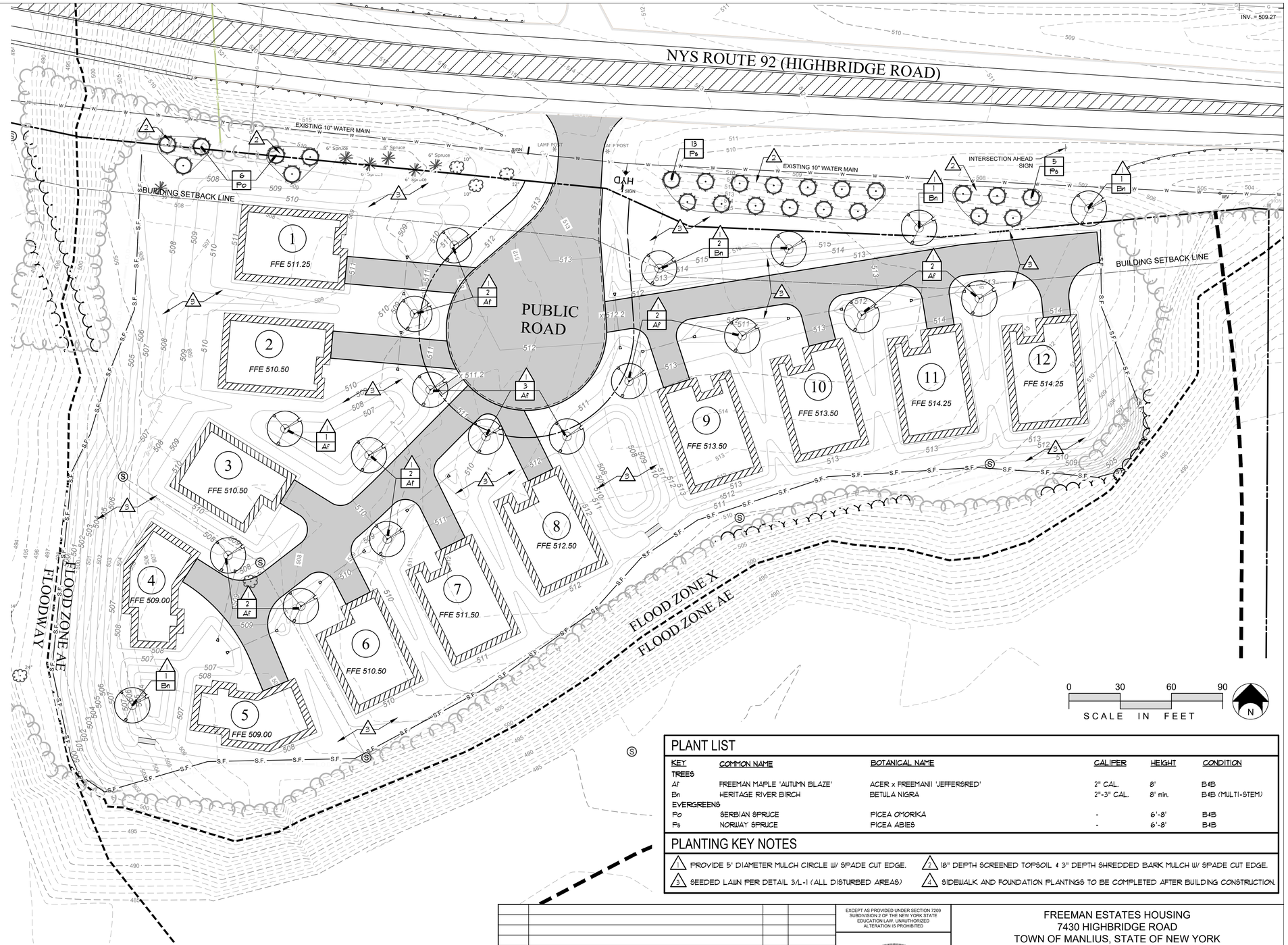
NOT TO SCALE — **32-9300-03**



SECTION

1 / L-1 TREE PLANTING

NOT TO SCALE — **32-9300-01**



PLANT LIST

KEY	COMMON NAME	BOTANICAL NAME	CALIPER	HEIGHT	CONDITION
TREES					
Af	FREEMAN MAPLE 'AUTUMN BLAZE'	ACER x FREEMANII 'JEFFERSRED'	2" CAL.	8'	B&B
Bn	HERITAGE RIVER BIRCH	BETULA NIGRA	2"-3" CAL.	8' min.	B&B (MULTI-STEM)
EVERGREENS					
Po	SERBIAN SPRUCE	PICEA OMORIKA	-	6'-8'	B&B
Ps	NORWAY SPRUCE	PICEA ABIES	-	6'-8'	B&B

PLANTING KEY NOTES

1. PROVIDE 5' DIAMETER MULCH CIRCLE W/ SPADE CUT EDGE.
2. 18" DEPTH SCREENED TOPSOIL & 3" DEPTH SHREDDED BARK MULCH W/ SPADE CUT EDGE.
3. SEEDED LAWN PER DETAIL 3/L-1 (ALL DISTURBED AREAS)
4. SIDEWALK AND FOUNDATION PLANTINGS TO BE COMPLETED AFTER BUILDING CONSTRUCTION.

PERMITTING ONLY
NOT FOR CONSTRUCTION

NO.	ISSUE/DESCRIPTION	BY	DATE

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL OF NY (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW, UNAUTHORIZED ALTERATION IS PROHIBITED

STATE OF NEW YORK — BART A. KLETTKE — LICENSED Professional Engineer — 069423

FREEMAN ESTATES HOUSING
7430 HIGHBRIDGE ROAD
TOWN OF MANLIUS, STATE OF NEW YORK

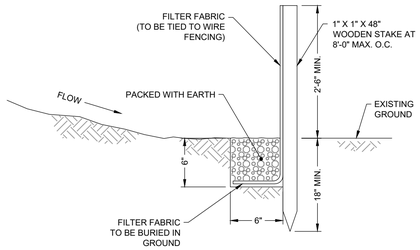
LANDSCAPING PLAN

PREPARED BY: GZA GeoEnvironmental of NY, Engineers and Scientists, www.gza.com

PREPARED FOR: BROLEX PROPERTIES, LLC, 5912 NORTH BURDICK STREET, EAST SYRACUSE, NY 13057

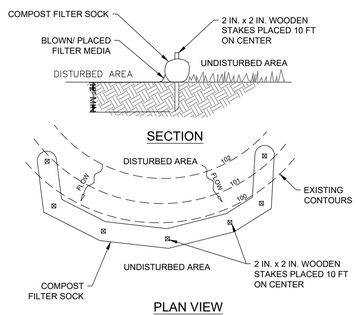
PROJ MGR: E.K.R.	REVIEWED BY: J.F.F.	CHECKED BY: C.J.M.	DWG GA002
DESIGNED BY: E.K.R.	DRAWN BY: E.K.R.	SCALE: AS NOTED	
DATE: DEC. 15, 2020	PROJECT NO. 31.0180349.00	REVISION NO.	SHEET NO. 7 OF 11

© 2020 GZA GeoEnvironmental, Inc. GZA-D:\00-PROJECTS\30962-J1-FREEMAN ESTATES\CADD\GZA-PLANTING PLAN\BORDER TO KFA.DWG 22 X 34 BORDER DECEMBER 16, 2020 3:59PM NATHAN.LAPIERRE



SILT FENCE DETAIL

NOT TO SCALE

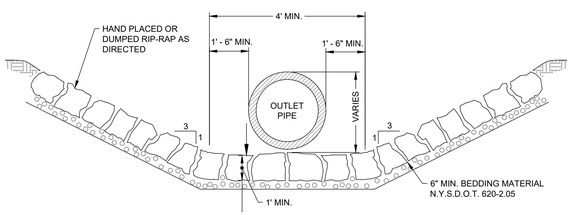


NOTES:

1. SOCK FABRIC SHALL MEET STANDARDS AND SPECIFICATIONS OUTLINED IN NYSDEC STORMWATER MANUAL.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING ELEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
5. COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OF REPLACED WITHIN 24 HOURS OF INSPECTION.
6. BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

COMPOST FILTER SOCK

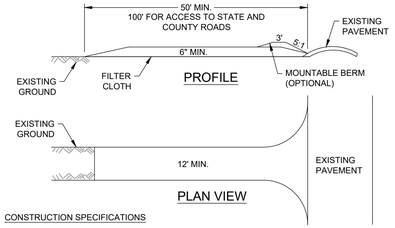
NOT TO SCALE



RIP-RAP DITCH FROM OUTLET PIPE DETAIL

NOT TO SCALE

Know what's **below.**
Call before you dig.

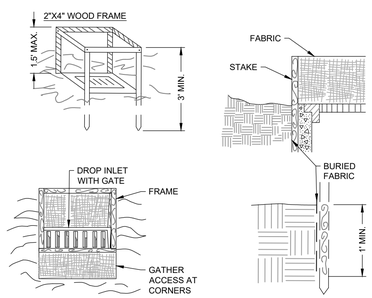


CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN FIFTY (50) FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A THIRTY (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 TRACKED 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 TRACKING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN EVENT.

STABILIZED CONSTRUCTION ENTRANCE

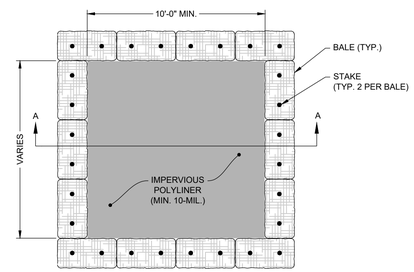
NOT TO SCALE



1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVERFLOW STABILITY.
7. MAXIMUM DRAINAGE AREA 1 ACRE.

FILTER FABRIC INLET PROTECTION

NOT TO SCALE

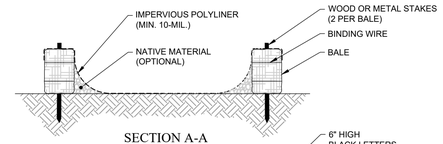


PLAN VIEW

NOT TO SCALE

CONCRETE WASHOUT AREA

(TYP. "ABOVE GRADE" WITH BALES)

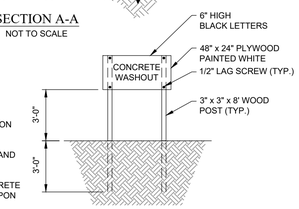


SECTION A-A

NOT TO SCALE

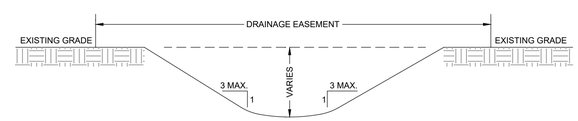
NOTES:

1. NUMBER OF BALES MAY VARY DEPENDING ON SITE CONDITIONS.
2. KEEP AS FAR FROM DRAINAGE CHANNELS AND WETLAND AREAS AS PRACTICAL.
3. SUMPS TO BE CLEANED AND WASTE CONCRETE REMOVED AND PROPERLY DISPOSED OF UPON COMPLETION OF WORK.



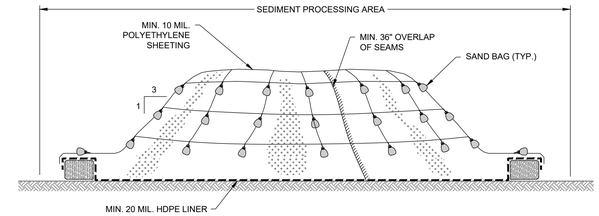
CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT)

NOT TO SCALE



TYPICAL SWALE OR CHANNEL DETAIL

NOT TO SCALE



NOTES:

1. STOCKPILES SHALL BE PLACED ON MINIMUM 20 MIL HDPE LINER.
2. STOCKPILES SHALL BE COVERED WITH MINIMUM 10 MIL POLYETHYLENE SHEETING WHENEVER LOADING, STABILIZATION, OR PLACEMENT IS NOT OCCURING.
3. STOCKPILE AREAS SHALL BE SUBJECT TO DUST / ODOR CONTROLS WHENEVER LOADING, STABILIZATION, OR PLACEMENT IS OCCURING AND AS DIRECTED BY ENGINEER. STOCKPILES SHALL BE COVERED WITH POLYETHYLENE WHEN THESE ACTIVITIES ARE NOT BEING PERFORMED.
4. SHEETING COVERING STOCKPILE SHALL BE MAINTAINED TIGHTLY IN PLACE BY USING SAND BAGS ON ROPES WITH A MAXIMUM 10'-0" GRID SPACING IN ALL DIMENSIONS.
5. MINIMUM 36" OVERLAP OF ALL SEAMS REQUIRED.
6. STOCKPILE SIDE SLOPES SHALL BE NO STEEPER THAN 3 (HORIZONTAL) TO 1 (VERTICAL).
7. CONTRACTOR SHALL PLACE STRAW BALE BERMS AS SHOWN ON THE DETAIL ABOVE AROUND STOCKPILES GENERATED OUTSIDE OF THE SEDIMENT PROCESSING AREA. STRAW BALE BERMS, AS SHOWN ON THE DETAIL, ARE NOT REQUIRED FOR STOCKPILES IN THE SEDIMENT PROCESSING AREA.

TYPICAL STOCKPILE DETAIL

NOT TO SCALE

SOIL EXCAVATION AND BACKFILL RECOMMENDATIONS

EXCAVATIONS:

1. MAXIMUM ALLOWABLE SLOPES FOR EXCAVATIONS LESS THAN 20 FEET DEEP SHALL BE DONE IN ACCORDANCE WITH OSHA REGULATIONS, OR ANY APPLICABLE STATE AND OR LOCAL REGULATIONS.
2. SLOPING, BENCHING OR OTHER METHODS OF EXCAVATION SUPPORT FOR EXCAVATIONS GREATER THAN 20 FEET DEEP MUST BE DESIGNED BY A PROFESSIONAL ENGINEER.
3. CONTRACTOR SHALL ORGANIZE THE WORK IN A MANNER THAT EXCAVATIONS ARE OPEN FOR THE SHORTEST PRACTICAL TIME.
4. EXCAVATED OR IMPORTED BACKFILL MATERIALS SHOULD NOT BE STOCKPILED ADJACENT TO OPEN CUT EXCAVATIONS WITHIN A MINIMUM HORIZONTAL DISTANCE EQUAL TO THREE TIMES ITS DEPTH OR GREATER AS NECESSARY FOR SLOPE STABILITY AND ADJACENT TO THE SIDES OF SHEETED AND BRACED EXCAVATIONS WITHIN A MINIMUM HORIZONTAL DISTANCE EQUAL TO THE DEPTH OF THE EXCAVATION UNLESS THE EXCAVATION SUPPORT SYSTEM IS PROPERLY DESIGNED AND CONSTRUCTED FOR THE LOADS. STOCKPILING MATERIAL OVER EXISTING OR CONSTRUCTED UTILITIES MAY INDUCE SETTLEMENT BENEATH THEM AND SHOULD NOT BE PERMITTED.

BACKFILL RECOMMENDATIONS:

5. ORDINARY FILL (I.E. SUITABLE SOIL FROM EXCAVATION OPERATIONS) MAY BE USED FOR BACKFILL, PROVIDED THE MATERIAL IS STABLE, CAN BE COMPACTED TO THE REQUIRED DENSITY AS DESCRIBED BELOW. ORDINARY FILL SHOULD CONSIST OF SUITABLE ON-SITE SOIL, FREE OF ORGANICS, DELETERIOUS MATERIALS, ICE, SNOW, AND WASTE OF ANY KIND.
6. REPRESENTATIVE SAMPLES OF ALL FILLS AND BACKFILLS FOR USE ON THE PROJECT SHOULD BE TESTED USING MODIFIED PROCTOR METHOD (ASTM D1557) TO DETERMINE MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT. THE MAXIMUM PARTICLE SIZE SHOULD BE NO GREATER THAN TWO-THIRDS OF THE LIFT THICKNESS. WATER CONTENT BY WEIGHT DURING COMPACTION SHOULD NOT EXCEED ±3 PERCENT OF OPTIMUM MOISTURE AS DETERMINED BY ASTM 1557.
7. IN STRUCTURAL AREAS (BENEATH HOMES, ROADS AND UTILITIES) FOR SOIL FILL SUBGRADE INTERVALS BELOW 3 FEET BELOW STRUCTURE, FILL LOOSE LIFT THICKNESSES SHALL BE NO GREATER THAN 12 INCHES. FOR FILL INTERVALS LESS THAN 3 FEET BELOW STRUCTURE (EXCLUDING SUBBASE STONE REQUIREMENTS), LOOSE LIFT THICKNESSES SHALL BE NO GREATER THAN 8 INCHES THICK. ALL LIFTS SHALL BE COMPACTED WITH A VIBRATORY SHEEPSFOOT COMPACTOR. FIELD COMPACTION SHOULD BE MEASURED PRIOR TO PLACING SUBSEQUENT LIFTS. SOIL SHALL BE COMPACTED TO A MINIMUM 90 PERCENT OF THE MAXIMUM DRY DENSITY FOR SOILS PLACED BELOW 3 FEET BELOW STRUCTURE, AND 95 PERCENT OF THE MAXIMUM DRY DENSITY FOR SOILS PLACED WITHIN 3 FEET BELOW THE STRUCTURE. COMPACTION OF BACKFILLED MATERIAL WITHIN THE ROADWAY WILL BE REQUIRED.
8. ROAD SUBBASE STONE SHALL BE COMPACTED TO A MINIMUM 95 PERCENT OF THE MAXIMUM DRY DENSITY.
9. IN NON-STRUCTURAL AREAS, SOIL FILL SHALL BE PLACED IN MAXIMUM 12-INCH THICK LOOSE LIFTS AND COMPACTED TO A STABLE MATRIX WITH A VIBRATORY SHEEPSFOOT COMPACTOR.
10. IN STRUCTURAL AREAS NOT REQUIRING FILL, THE EXPOSED SUBGRADES SHALL BE PROOF-COMPACTED WITH MULTIPLE PASSES OF A SHEEPSFOOT VIBRATORY COMPACTOR IN STATIC MODE PRIOR TO PLACEMENT OF CONCRETE FOR FOOTINGS OR ROAD SUBBASE STONE. WEAK OR SOFT SPOTS IDENTIFIED DURING PROOF COMPACTION SHALL BE EXCAVATED AND REPLACED WITH COMPACTED FILL. PROOF-ROLLING AND COMPACTION MAY BE WAIVED OR MODIFIED IF, WITH THE PROJECT AND TOWN ENGINEER'S CONCURRENCE, IT IS DETERMINED THAT THIS WILL DISTURB AN OTHERWISE SUITABLE SUBGRADE BASED ON OBSERVED FILED CONDITIONS.

TEMPORARY SEEDING REQUIREMENTS

1. SEEDING:
   - A. APPLY LAWN MIX AT A RATE (SEE SPECIFICATIONS)
   - B. APPLY SEED WITH A MECHANICAL SEEDER. OPTIMUM SETTING IN ONE INCH (EXCEPT SANDY SOILS, 2 INCHES).
   - C. WHERE FEASIBLE, EXCEPT WHERE EITHER A CULTIPAKER TYPE SEEDER OR HYDRO-SEEDER IS USED, THE SEED BED SHALL BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A ROLLER, OR LIGHT DRAG. SEEDING OPERATIONS SHOULD BE ON THE CONTOUR.
2. MULCHING:
   - A. MULCH MATERIALS SHALL BE UN-ROTTED HAY OR STRAW AT A RATE OF 2.0 TO 3.0 TONS PER ACRE, OR 70 TO 90 POUNDS PER 1,000 SQUARE FEET. MULCH SHOULD NOT BE GROUND OR CHOPPED TO SHORT PIECES.
   - B. SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THAT APPROXIMATELY 75 PERCENT TO 95 PERCENT OF THE SOIL SURFACE WILL BE COVERED.
   - C. MULCH ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER.

PERMANENT SEED REQUIREMENTS

1. SEEDBED PREPARATION:
   - A. APPLY LIMESTONE (EQUIVALENT TO 50 PERCENT (50%) CALCIUM PLUS MAGNESIUM OXIDES) AT A RATE PF 90 POUNDS PER 1,000 SQUARE FEET. APPLY FERTILIZER AT A RATE OF 600 POUNDS PER ACRE OR 14 POUNDS PER 1,000 SQUARE FEET USING 10-20-10 OR EQUIVALENT.
   - B. WORK LIME AND FERTILIZER INTO SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC. SPRINGTOOTH HARROW OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM SEEDBED IS PREPARED.
   - C. REMOVE ALL ROCKS AND DEBRIS FROM SOIL SURFACE.
   - D. INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACT, THE AREA MUST BE RE-TILLED AS ABOVE.
2. SEEDING:
   - A. PERMANENT SEEDING SHALL BE ERNST SOLAR FARM SEED MIX.
   - B. APPLY SEED WITH MECHANICAL SEEDER. OPTIMUM SEEDING DEPTH IS ONE INCH (EXCEPT SANDY SOILS, 2 INCHES).
   - C. WHERE FEASIBLE, EXCEPT WHERE EITHER A CULTIPAKER TYPE SEEDER OR HYDRO-SEEDER IS USED, THE SEEDBED SHALL BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A ROLLER, OR LIGHT DRAG. SEEDING OPERATIONS SHOULD BE ON THE CONTOUR.
3. MULCHING:
   - A. MULCH MATERIALS SHALL BE UN-ROTTED HAY OR STRAW AT A RATE OF 2.0 TO 3.0 TONS PER ACRE, OR 70 TO 90 POUNDS PER 1,000 SQUARE FEET. MULCH SHOULD NOT BE GROUND OR CHOPPED TO SHORT PIECES.
   - B. SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THAT APPROXIMATELY 75 PERCENT TO 95 PERCENT OF THE SOIL SURFACE WILL BE COVERED.
   - C. MULCH ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER.

PERMITTING ONLY
NOT FOR CONSTRUCTION

NO.	ISSUE/DESCRIPTION	BY	DATE

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL OF NY (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW. UNAUTHORIZED ALTERATION IS PROHIBITED

STATE OF NEW YORK · BARTA. KLETT · 069423 · Licensed Professional Engineer

FREEMAN ESTATES HOUSING
7430 HIGHBRIDGE ROAD
TOWN OF MANLIUS, STATE OF NEW YORK

DETAIL SHEET (EROSION CONTROL)

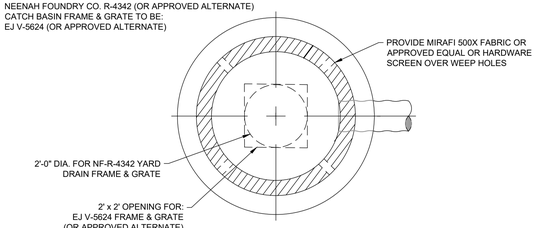
PREPARED BY: **GZA**GeoEnvironmental of NY Engineers and Scientists, www.gza.com

PREPARED FOR: BROLEX PROPERTIES, LLC, 5912 NORTH BURDICK STREET, EAST SYRACUSE, NY 13057

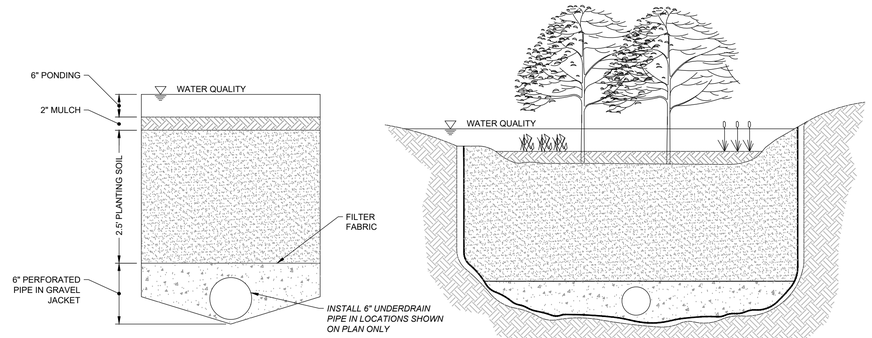
PROJ MGR: E.K.R.	REVIEWED BY: J.F.F.	CHECKED BY: C.J.M.	DWG
DESIGNED BY: E.K.R.	DRAWN BY: E.K.R.	SCALE: AS NOTED	CA500
DATE: DEC. 15, 2020	PROJECT NO. 31.0180349.00	REVISION NO.	SHEET NO. 8 OF 11

© 2020 - GZA GeoEnvironmental, Inc. GZA-J:\31\0180349.00\FREEMAN ESTATES SUBDIVISION\DESIGN\31.0180349.00 FREEMAN ESTATES HOUSING.DWG CA500 DECEMBER 16, 2020 8:05PM COREY MCWILLIAMS

NOTE:
YARD DRAIN FRAME AND GRATE TO BE:
NEENAH FOUNDRY CO. R-4342 (OR APPROVED ALTERNATE)
CATCH BASIN FRAME & GRATE TO BE:
EJ V-5624 (OR APPROVED ALTERNATE)



PLAN SECTION
NOT TO SCALE

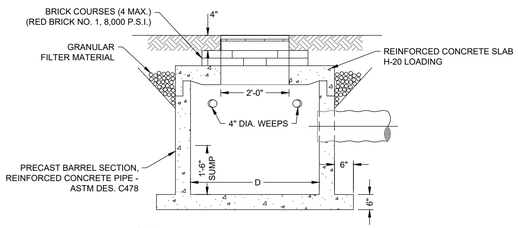


TYPICAL SECTION

PROFILE

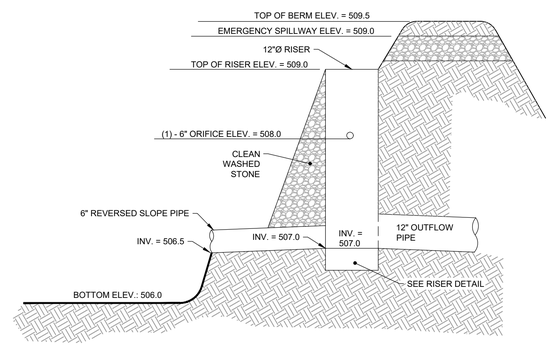
NOTES:
1. GRASS COVER AND LANDSCAPE PLANTINGS SHALL BE CAPABLE OF WITHSTANDING FREQUENT PERIODS OF INUNDATION AND DROUGHT.
2. (1) TREE PER 100 SQUARE FEET IS RECOMMENDED.

BIORETENTION FACILITY DETAIL
NOT TO SCALE

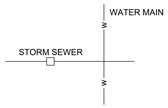


NOTE:
INLET MANHOLE IS SIMILAR TO CATCH BASIN EXCEPT NO SUMP. INLET MANHOLES ARE TO HAVE CONCRETE BENCH WALLS AND TROUGHS SIMILAR TO STANDARD MANHOLES.

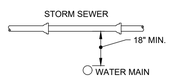
STANDARD PRECAST CONCRETE CATCH BASIN
NOT TO SCALE



STORMWATER BASIN OUTLET CONTROL STRUCTURE
NOT TO SCALE

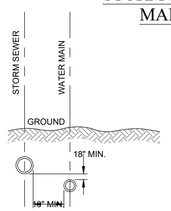


PLAN

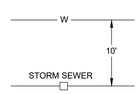


SECTION

STORM SEWER & WATER MAIN CROSSING

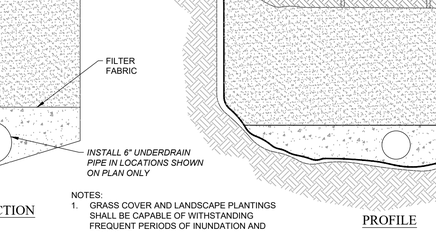


VERTICAL SEPARATION SECTION



HORIZONTAL SEPARATION PLAN

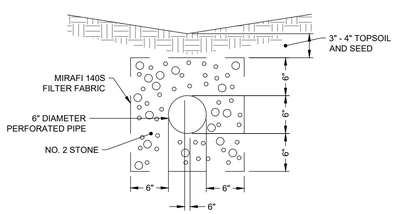
RELATION OF STORM SEWERS TO WATER MAINS
NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

1. THE CONCRETE BASE SHALL BE POURED IN SUCH A MANNER TO INSURE THAT THE CONCRETE FILLS THE BOTTOM OF THE RISER TO THE INVERT OF THE OUTLET PIPE TO PREVENT THE RISER FROM THE BREAKING AWAY FROM THE BASE.
2. WITH ALUMINUM OR ALUMINIZED PIPE, THE EMBEDDED SECTION MUST BE PAINTED WITH CHROMATE OR EQUIVALENT.
3. RISER BASE MAY BE SIZED AS COMPUTED USING FLOTATION WITH A FACTOR OF SAFETY OF 1.2.

RISER DETAIL
NOT TO SCALE



TYPICAL YARD UNDERDRAIN DETAIL
NOT TO SCALE

811
Know what's below.
Call before you dig.

PERMITTING ONLY
NOT FOR CONSTRUCTION

NO.	ISSUE/DESCRIPTION	BY	DATE

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL OF NY (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW. UNAUTHORIZED ALTERATION IS PROHIBITED

STATE OF NEW YORK · BART A. KLETT · 069423 · Licensed Professional Engineer

FREEMAN ESTATES HOUSING
7430 HIGHBRIDGE ROAD
TOWN OF MANLIUS, STATE OF NEW YORK

DETAIL SHEET (STORM)

PREPARED BY:
GZA GeoEnvironmental of NY
Engineers and Scientists
www.gza.com

PREPARED FOR:
BROLEX PROPERTIES, LLC
5912 NORTH BURDICK STREET
EAST SYRACUSE, NY 13057

PROJ MGR: E.K.R.	REVIEWED BY: J.F.F.	CHECKED BY: C.J.M.	DWG
DESIGNED BY: E.K.R.	DRAWN BY: E.K.R.	SCALE: AS NOTED	CA502
DATE: DEC. 15, 2020	PROJECT NO. 31.0180349.00	REVISION NO.	SHEET NO. 10 OF 11

© 2020 - GZA GeoEnvironmental, Inc. GZA-J:\31\0180349.00\FREEMAN ESTATES SUBDIVISION\DESIGN\31.0180349.00 FREEMAN ESTATES HOUSING.DWG CA502 DECEMBER 16, 2020 8:05PM COREY MCWILLIAMS

ATTACHMENT S

AMENDMENTS TO THE SWPPP

This form will be utilized to document any amendments or modifications to the SWPPP that occur during construction.

Name	Date	Sheet Number	Modification	Rationale

ATTACHMENT T
NOTICE OF TERMINATION

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

280 East Broad Street // Suite 200 // Rochester, NY 14604
585.232.5135 / 585.232.4652 fax

www.bergmannpc.com

OWNER: ABDULAH ALEMIC

APPLICANT: RPNY SOLAR 5

RENEWABLE PROPERTIES

7390 KIRKVILLE ROAD
EAST SYRACUSE, NEW YORK 13057

KIRKVILLE ROAD
COMMUNITY SOLAR FARM PROJECT
PRELIMINARY SITE PLAN

PROJECT CONTACT LIST

OWNER:
- ABDULAH ALEMIC
- 6533 MANLIUS ROAD N
KIRKVILLE, NY 13082
- PHONE: 315.580.4113

APPLICANT:
- RPNY SOLAR 5
- 879 SANCHEZ STREET
SAN FRANCISCO, CA 94114
- CONTACT: STEPHANIE LOUCAS
- PHONE: 415-710-3834

STRUCTURAL ENGINEER:
- TBD

ARCHITECT:
- TBD

MECHANICAL ENGINEER:
- TBD

CIVIL ENGINEER:
- BERGMANN
- 280 EAST BROAD STREET
SUITE 200
ROCHESTER, NY 14604
- CONTACT: ROBERT SWITALA
- PHONE: 585.232.5135

ELECTRICAL ENGINEER:
- TBD

DRAWING INDEX

C000	COVER SHEET
C001	GENERAL NOTES
C002	AREA PARCEL PLAN
C003	EXISTING CONDITIONS PLAN
C004	OVERALL SITE PLAN
C005	SITE PLAN
C006	GRADING PLAN
C007	GRADING PLAN DETAILS
C008 - C011	DETAILS I - DETAILS IV

APPROVED BY:
PLANNING BOARD CHAIRMAN
DATE: _____

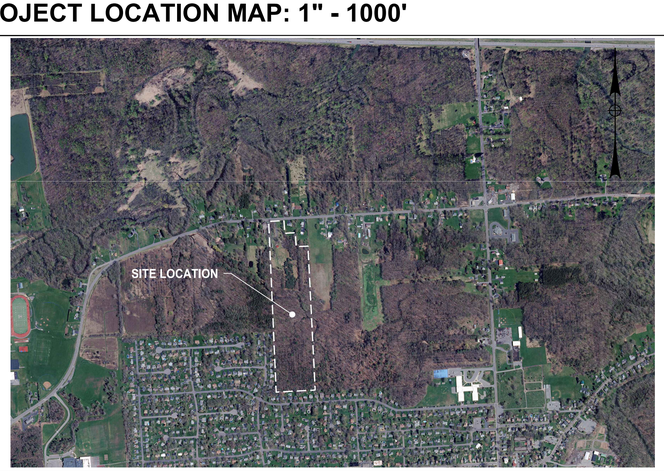
APPROVED BY:
DIRECTOR OF ENGINEERING AND PLANNING
DATE: _____

APPROVED BY:
DIRECTOR OF BUILDING AND FIRE PREVENTION
DATE: _____

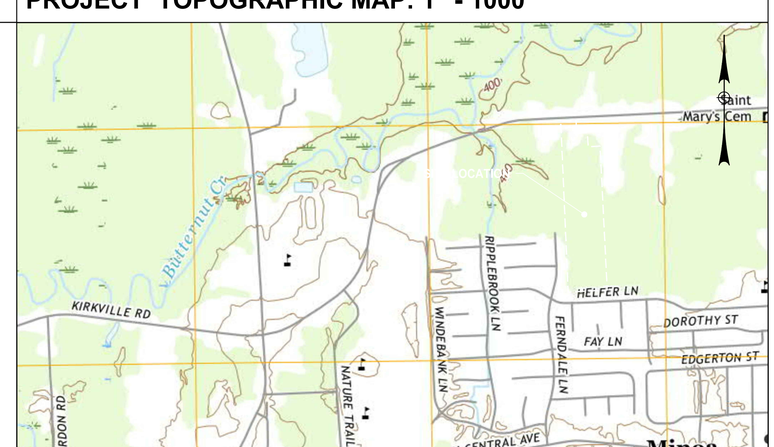
APPROVED BY:
FIRE MARSHAL
DATE: _____

DATE	DESCRIPTION

PROJECT LOCATION MAP: 1" - 1000'



PROJECT TOPOGRAPHIC MAP: 1" - 1000'



STATE OF NEW YORK
ROBERT PAUL SWITALA
LICENSED PROFESSIONAL ENGINEER

PRELIMINARY
12/18/2020
14919.00

01/01/2012 3:50:15 PM

SEQUENCE OF CONSTRUCTION:

1. PRE-CONSTRUCTION MEETING HELD TO INCLUDE PROJECT MANAGER, OPERATOR'S ENGINEER, CONTRACTOR, AND SUB-CONTRACTORS PRIOR TO LAND DISTURBING ACTIVITIES.
2. CONSTRUCT CONSTRUCTION ENTRANCE/EXIT AT LOCATIONS DESIGNATED ON PLANS AS TEMPORARY ACCESS ROADS..
3. INSTALL PERIMETER SILT SOCK.
4. HAVE A QUALIFIED PROFESSIONAL CONDUCT AN ASSESSMENT OF THE SITE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
5. BEGIN CLEARING AND GRUBBING OPERATIONS. CLEARING AND GRUBBING SHALL BE DONE ONLY IN AREAS WHERE EARTHWORK WILL BE PERFORMED AND ONLY IN AREAS WHERE CONSTRUCTION IS PLANNED TO COMMENCE WITHIN 14 DAYS AFTER CLEARING AND GRUBBING.
6. STRIP TOPSOIL AND STOCKPILE IN A LOCATION ACCEPTABLE TO CONSTRUCTION MANAGER. WHEN STOCKPILE IS COMPLETE, INSTALL PERIMETER SILT FENCE, SEED SURFACE WITH 100% PERENNIAL RYEGRASS MIXTURE AT A RATE OF 2-4 LBS. PER 1000 SF. APPLY 90-100 LBS PER 1000 SF OF MULCH.
7. COMMENCE EARTHWORK CUT AND FILLS. THE WORK SHALL BE PROGRESSED TO ALLOW A REASONABLE TRANSFER OF CUT AND FILL EARTH FOR ROUGH GRADING AND EARTH MOVING. THE CONTRACTOR WILL BE GIVEN SOME LATITUDE TO VARY FROM THE FOLLOWING SCHEDULE IN ORDER TO MEET THE FIELD CONDITIONS ENCOUNTERED. CONTRACTOR SHALL REVIEW VARIATIONS TO THE APPROVED PLANS WITH DESIGN ENGINEER AND QUALIFIED PROFESSIONAL PRIOR TO IMPLEMENTATION.
8. AS ROADWAY AND ACCESS DRIVES ARE BROUGHT TO GRADE, THEY WILL BE STABILIZED WITH CRUSHED STONE SUBBASE AT A DEPTH SPECIFIED ON PLANS TO PREVENT EROSION AS SOON AS PRACTICABLE.
9. STABILIZE ALL AREAS AS SOON AS PRACTICABLE, IDLE IN EXCESS OF 7 DAYS AND IN WHICH CONSTRUCTION WILL NOT RECOMMENCE WITHIN 14 DAYS.
10. INSTALL UTILITIES. TRENCH EXCAVATION/BACKFILL AREAS SHOULD BE STABILIZED PROGRESSIVELY AT THE END OF EACH WORKDAY WITH SEED AND STRAW MULCH AT A RATE OF 100% PERENNIAL RYE GRASS AT 2-4 LBS/1000 SF MULCHED AT 90-100 LBS/1000 SF.
11. STABILIZE ALL AREAS IDLE IN EXCESS OF 7 DAYS IN WHICH CONSTRUCTION WILL NOT RECOMMENCE WITHIN 14 DAYS.
12. REHABILITATE ACCESS ROADS TO CONFORM WITH THE LIMITED USE GRAVEL ACCESS ROAD DETAIL AND SPECIFICATIONS.
13. REMOVE TEMPORARY CONSTRUCTION EXITS AND PERIMETER SILT FENCE ONCE SITE HAS ACHIEVED 80% UNIFORM STABILIZATION.

GENERAL NOTES:

1. THE UNDERGROUND STRUCTURES AND UTILITIES SHOWN ON THIS MAP HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORD MAPS, THEY ARE NOT CERTIFIED TO THE ACCURACY OF THEIR LOCATION AND/OR COMPLETENESS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION AND EXTENT OF ALL UNDERGROUND STRUCTURES AND UTILITIES PRIOR TO ANY DIGGING OR CONSTRUCTION ACTIVITIES IN THEIR VICINITY. THE CONTRACTOR SHALL HAVE ALL EXISTING UTILITIES FIELD STAKED BEFORE STARTING WORK BY CALLING 1-800-962-7962.
2. THE CONTRACTOR SHALL PERFORM ALL WORK IN COMPLIANCE WITH TITLE 29 OF FEDERAL REGULATIONS, PART 1926, SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION (OSHA).
3. HIGHWAY DRAINAGE ALONG ALL ROADS AND PRIVATE DRIVES SHALL BE KEPT CLEAN OF MUD, DEBRIS ETC. AT ALL TIMES.
4. THE CONTRACTOR SHALL CONSULT THE DESIGN ENGINEER BEFORE DEVIATING FROM THESE PLANS.
5. IN ALL TRENCH EXCAVATIONS, CONTRACTOR MUST LAY THE TRENCH SIDE SLOPES BACK TO A SAFE SLOPE, USE A TRENCH SHIELD OR PROVIDE SHEETING AND BRACING.
6. IF SUSPICIOUS AND/OR HAZARDOUS MATERIAL IS ENCOUNTERED DURING DEMOLITION/CONSTRUCTION, ALL WORK SHALL STOP AND THE MONROE COUNTY DEPARTMENT OF HEALTH AND THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION SHALL BE NOTIFIED IMMEDIATELY. WORK SHALL NOT RESUME UNTIL THE DEVELOPER HAS OUTLINED APPROPRIATE ACTION FOR DEALING WITH THE WASTE MATERIAL AND THE DEVELOPMENT PLANS ARE MODIFIED AS MAY BE NECESSARY.
7. EXCAVATED WASTE MATERIAL REMOVED FROM THE SITE SHALL BE PLACED AT A LOCATION ACCEPTABLE TO THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION.
8. AREAS DISTURBED OR DAMAGED AS PART OF THIS PROJECTS CONSTRUCTION THAT ARE OUTSIDE OF THE PRIMARY WORK AREA SHALL BE RESTORED, AT THE CONTRACTORS EXPENSE, TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
9. UNLESS COVERED BY THE CONTRACT SPECIFICATIONS OR AS NOTED ON THE PLANS, ALL WORK SHALL CONFORM TO THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS DATED JANUARY 1, 2020 AND ANY SUBSEQUENT APPENDICES.

WASTE/HAZARDOUS MATERIAL PRACTICES:

1. WHENEVER POSSIBLE COVERED TRASH CONTAINERS SHOULD BE USED.
2. DAILY SITE CLEANUP IS REQUIRED TO REDUCE DEBRIS AND POLLUTANTS IN THE ENVIRONMENT.
3. CONTRACTOR SHALL PROVIDE A SAFE STORAGE SPACE FOR ALL PAINTS, STAINS AND SOLVENTS INSIDE A COVERED STORAGE AREA.
4. ALL FUELS, OILS, AND GREASE MUST BE KEPT IN CONTAINERS AT ALL TIMES.

EROSION & SEDIMENT CONTROL NOTES:

1. INSTALL EROSION CONTROL MEASURES AS INDICATED ON THE PLAN PRIOR TO THE START OF ANY EXCAVATION WORK. EROSION CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH THE NEW YORK STATE GUIDELINES FOR URBAN EROSION SEDIMENT CONTROL MANUAL, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, AND THE GOVERNING MUNICIPAL REQUIREMENTS.
2. REMOVE AND STOCKPILE TOPSOIL AS DIRECTED BY THE CONSTRUCTION MANAGER REPLACE TOPSOIL TO A MINIMUM 6" DEPTH WITH TOPSOIL OR AMENDED SOIL. ALL DISTURBED AREAS TO BE SEEDED TO PROMOTE VEGETATION AS SOON AS PRACTICABLE.
3. IF THE SEASONS PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW HAY OR EQUIVALENT AND ANCHORED IN ACCORDANCE WITH THE "STANDARDS", NETTING OR LIQUID MULCH BINDER.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND REMOVAL OF TEMPORARY SEDIMENTATION CONTROLS. EROSION CONTROL MEASURES SHALL NOT BE REMOVED BEFORE 80% UNIFORM VEGETATIVE COVER HAS BEEN ACHIEVED.
5. ALL EROSION CONTROL MEASURES ARE TO BE REPLACED WHENEVER THEY BECOME CLOGGED OR INOPERABLE AND SHALL BE REPLACED AT A MINIMUM OF EVERY 3 MONTHS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION OF TOPSOIL OR AMENDED TO ALL DISTURBED AREAS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN EROSION CONTROL MEASURES AT ALL TIMES.
7. THE CONTRACTOR SHALL DESIGNATE A MEMBER OF HIS/HER FIRM TO BE RESPONSIBLE TO MONITOR EROSION CONTROL, EROSION CONTROL STRUCTURES, TREE PROTECTION AND PRESERVATION THROUGHOUT CONSTRUCTION.
8. ALL DISTURBED AREAS SHALL BE FINISH GRADED TO PROMOTE VEGETATION ON ALL EXPOSED AREAS AS SOON AS PRACTICABLE. STABILIZATION PRACTICES (TEMPORARY/PERMANENT SEEDING, MULCHING, GEOTEXTILES, ETC.) MUST BE IMPLEMENTED WITHIN SEVEN (7) DAYS WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, AND NOT EXPECTED TO RESUME WITHIN FOURTEEN (14) DAYS.
9. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES. ALL CONSTRUCTION DEBRIS AND SEDIMENT SPOILS, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY.
10. DUST SHALL BE CONTROLLED BY WATERING.
11. ADJOINING PROPERTY SHALL BE PROTECTED FROM EXCAVATION AND FILLING OPERATIONS ON THE PROPOSED SITE.
12. SLOPE TRACKING SHALL BE IMPLEMENTED ON ALL SLOPE 1 ON 3 OR GREATER AT THE END OF EACH WORK DAY AND PRIOR TO FINAL SLOPE GRADING AND STABILIZATION.

STORM WATER POLLUTION PREVENTION PLAN NOTES:

1. THE CONTRACTOR SHALL PROVIDE A QUALIFIED INSPECTOR TO INSPECT THE PROJECT AT THE END OF EACH WORK WEEK AND PROVIDE A REPORT AT LEAST ONCE PER WEEK.
2. EROSION CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH THE NEW YORK STATE GUIDELINES FOR URBAN EROSION SEDIMENT CONTROL MANUAL, ONONDAGA COUNTY HEALTH DEPARTMENT, AND THE TOWN OF MANLIUS REQUIREMENTS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE BEST MANAGEMENT PRACTICES (BMP'S) UNTIL GROUND COVER IS ESTABLISHED.
4. REMOVE AND STOCKPILE TOPSOIL AS DIRECTED BY THE CONSTRUCTION MANAGER. REPLACE TOPSOIL TO A MINIMUM 6" DEPTH. ALL DISTURBED AREAS TO BE HYDROSEEDED AS DIRECTED BY THE CONSTRUCTION MANAGER TO PROMOTE VEGETATION AS SOON AS PRACTICABLE.
5. IF THE SEASONS PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW HAY OR EQUIVALENT AND ANCHORED IN ACCORDANCE WITH THE "STANDARDS".
6. CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND REMOVAL OF TEMPORARY SEDIMENTATION CONTROLS. EROSION CONTROL MEASURES SHALL NOT BE REMOVED BEFORE 80% UNIFORM VEGETATION HAS BEEN ACHIEVED.
7. ALL EROSION CONTROL MEASURES ARE TO BE REPLACED WHENEVER THEY BECOME CLOGGED OR INOPERABLE AND SHALL BE REPLACED WHEN THEY HAVE REACHED THE DESIGN LIFE INDICATED IN THE NYS GUIDELINES FOR URBAN EROSION SEDIMENT CONTROL DESIGN MANUAL OR EVERY THREE MONTHS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION OF TOPSOIL TO ALL DISTURBED AREAS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN EROSION CONTROL MEASURES AT ALL TIMES.
9. THE CONTRACTOR SHALL DESIGNATE A MEMBER OF HIS/HER FIRM TO BE RESPONSIBLE TO MONITOR EROSION CONTROL AND EROSION CONTROL STRUCTURES THROUGHOUT CONSTRUCTION.
10. ALL DISTURBED AREAS SHALL BE FINISH GRADED TO PROMOTE VEGETATION ON ALL EXPOSED AREAS AS SOON AS PRACTICABLE. STABILIZATION PRACTICES (TEMPORARY/PERMANENT SEEDING, MULCHING, GEOTEXTILES, ETC.) MUST BE IMPLEMENTED WITHIN SEVEN (7) DAYS WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, AND NOT EXPECTED TO RESUME WITHIN FOURTEEN (14) DAYS.
11. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES. ALL CONSTRUCTION DEBRIS AND SEDIMENT SPOILS, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY.
12. DUST SHALL BE CONTROLLED BY WATERING.
13. ADJOINING PROPERTIES SHALL BE PROTECTED FROM EXCAVATION AND FILLING OPERATIONS ON THE PROPOSED SITE.
14. EROSION CONTROL MEASURES SHOULD BE RELOCATED INWARD AS PERIMETER SLOPE CONSTRUCTION PROGRESSES AND RECONSTRUCTED TO THE NYS STANDARDS & SPECIFICATION AT THE END OF EACH DAY.
15. PERIMETER AREAS SHALL BE TEMPORARILY STABILIZED WITH SEED AND MULCH PROGRESSIVELY AT MINIMUM AT THE END OF EACH WEEK WITH 100% PERENNIAL RYEGRASS MIX AT A RATE OF 2-4 LBS PER 1000 SF AND MULCH 90-100 LBS PER 1000 SF OF WEED FREE STRAW.
16. SLOPE TRACKING SHALL BE IMPLEMENTED ON ALL SLOPE 1 ON 3 OR GREATER AT THE END OF EACH WORK DAY AND PRIOR TO FINAL SLOPE GRADING AND STABILIZATION.

SITE STABILIZATION:

1. WHEN FINAL GRADE IS ACHIEVED DURING NON-GERMINATING MONTHS, THE AREA SHOULD BE MULCHED UNTIL THE BEGINNING OF THE NEXT PLANTING SEASON.
2. MULCHES SHOULD BE APPLIED AT THE RATES SHOWN IN THE MULCH APPLICATION RATES TABLE. VERY LITTLE BARE GROUND SHOULD BE VISIBLE THROUGH THE MULCH.
3. STRAW AND HAY MULCH SHOULD BE ANCHORED OR TACKIFIED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN. A TRACTOR-DRAWN IMPLEMENTS MAY BE USED TO "CRIMP" THE STRAW OR HAY INTO THE SOIL - ABOUT 3 INCHES. THIS METHOD SHOULD BE LIMITED TO SLOPES NO STEEPER THAN 3H:1V. THE MACHINERY SHOULD BE OPERATED ALONG THE CONTOUR. NOTE: CRIMPING OF HAY OR STRAW BY RUNNING OVER IT WITH TRACKED MACHINERY IS NOT RECOMMENDED.
4. BEFORE SEEDING IS APPLIED THE CONTRACTOR SHALL SPREAD SOIL TO PREVENT PONDING AND CONFIRM THAT SOIL WILL SUSTAIN THE SEED GERMINATION AND ESTABLISHMENT OF VEGETATION.
5. GRADED AREAS SHOULD BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREAS AND TO PROVIDE A ROUGHENED SURFACE TO PREVENT TOPSOIL FROM SLIDING DOWN SLOPE. COMPACTED SOILS SHOULD BE SCARIFIED TO A DEPTH OF 6 TO 12 INCHES, ALONG CONTOUR WHEREVER POSSIBLE, PRIOR TO SEEDING.
6. TOPSOIL OR AMENDED SOIL SHOULD BE UNIFORMLY DISTRIBUTED ACROSS THE DISTURBED AREA TO A MINIMUM DEPTH OF 6 INCHES. SPREADING SHOULD BE DONE IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL PREPARATION OR TILLAGE. IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOIL PLACEMENT SHOULD BE CORRECTED IN ORDER TO PREVENT FORMATION OF DEPRESSIONS.
7. TOPSOIL SHOULD NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
8. WHEN USED AS A MULCH REPLACEMENT, THE APPLICATION RATE (THICKNESS) OF THE COMPOST SHOULD BE ½" TO ¾". COMPOST SHOULD BE PLACED EVENLY AND SHOULD PROVIDE 100% SOIL COVERAGE. NO SOIL SHOULD BE VISIBLE.
9. POLYMERIC AND GUM TACKIFIERS MIXED AND APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS MAY BE USED TO TACK MULCH. AVOID APPLICATION DURING RAIN AND ON WINDY DAYS. A 24-HOUR CURING PERIOD AND A SOIL TEMPERATURE HIGHER THAN 45° F ARE TYPICALLY REQUIRED. APPLICATION SHOULD GENERALLY BE HEAVIEST AT EDGES OF SEEDED AREAS AND AT CRESTS OF RIDGES AND BANKS TO PREVENT LOSS BY WIND. THE REMAINDER OF THE AREA SHOULD HAVE BINDER APPLIED UNIFORMLY. BINDERS MAY BE APPLIED AFTER MULCH IS SPREAD OR SPRAYED INTO THE MULCH AS IT IS BEING BLOWN ONTO THE SOIL. APPLYING STRAW AND BINDER TOGETHER IS GENERALLY MORE EFFECTIVE.
10. SYNTHETIC BINDERS, OR CHEMICAL BINDERS, MAY BE USED AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH PROVIDED SUFFICIENT DOCUMENTATION IS PROVIDED TO SHOW THEY ARE NON-TOXIC TO NATIVE PLANT AND ANIMAL SPECIES.
11. MULCH ON SLOPES OF 8% OR STEEPER SHOULD BE HELD IN PLACE WITH NETTING. LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETS MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
12. SHREDDED PAPER HYDROMULCH SHOULD NOT BE USED ON SLOPES STEEPER THAN 5%. WOOD FIBER HYDROMULCH MAY BE APPLIED ON STEEPER SLOPES PROVIDED A TACKIFIER IS USED. THE APPLICATION RATE FOR ANY HYDROMULCH SHOULD BE 2,000 LB/ACRE AT A MINIMUM.
13. LIME, FERTILIZER, SEED, AND MULCH DISTURBED AREAS PER THE EROSION AND SEDIMENT CONTROL PLANS. IN AREAS OF STEEP SLOPES OR OBVIOUS AREAS WHERE POTENTIAL EROSION MAY OCCUR, AN EROSION CONTROL MAT OR FLEXIBLE GROWTH MEDIUM (FGM) SHALL BE USED. FGM SHALL BE APPLIED PER MANUFACTURER SPECIFICATIONS.
14. ONCE A SECTION OF THE ALIGNMENT HAS BEEN STABILIZED, NO CONSTRUCTION TRAFFIC SHALL OCCUR TO REMOVE ANY BMPS UNTIL THE SECTION HAS ACHIEVED 80% PERENNIAL VEGETATIVE COVER. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM 80% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NONVEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING OR OTHER MOVEMENTS.

M:\Renewable Properties, LLC\014919.00 Renewable Properties-RPNY Kirkville Rd\4.0 Dwgs\4.1 Civil\149190C001_General Notes.dwg
12/21/2020 6:38 PM

KIRKVILLE ROAD

COMMUNITY SOLAR FARM PROJECT

7390 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057

RPNY SOLAR 5

RENEWABLE PROPERTIES
879 SANCHEZ STREET
SAN FRANCISCO, CA 94114

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.
280 East Broad Street
Suite 200
Rochester, NY 14604

office: 585.232.5135
fax: 585.232.4652

www.bergmannpc.com

DATE	DESCRIPTION

PRELIMINARY
NOT FOR CONSTRUCTION

STATE OF NEW YORK · ROBERT PAUL SIWIALA · 085487-1 · LICENSED PROFESSIONAL ENGINEER

Copyright © Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C

Project Manager: ECR	Checked By: RPS
Designed By: WD	Drawn By: WD
Date Issued: 12/18/20	Project Number: 14919.00

GENERAL NOTES

Drawing Number:

C001

PROPERTY OWNERS		
#	NAME	SECTION BLOCK LOT (SBL)
1	ROACH BRENDA S	6.-04-33.0
2	JONES KATHRYN H	6.-04-32.0
3	HYDE EUGENE P	6.-04-31.0
4	PIECHOWICZ DAVID M	6.-04-30.0
5	RUPE RANDOL C	6.-04-29.0
6	MARCY ELIZABETH	6.-04-28.0
7	BARFOOT BRIAN P	6.-04-27.0
8	SERAFIN MICHEAL J	6.-04-26.0
9	RUSSO JAMES II	6.-04-25.0
10	LUNENBURG JEAN M	6.-04-23.0
11	BETHKA AMY M	6.-04-22.0
12	YOUNG FAMILY REVOC TRUST, WILLIAM J YOUNG FAMILY REVOC TRUS	6.-04-21.0
13	DURANTINI MELISSA A	6.-04-20.0
14	HILL MATTHEW	6.-04-19.0
15	GEORGE FAMILY TRUST GUY	6.-04-18.0
16	GILCHER PENELOPE L	6.-04-17.0
17	CHABOT YOLANDE	6.-04-16.0
18	FANNETTI MARY E	6.-04-15.0
19	QUICK ANNA M	6.-04-14.0
20	SHERMAN JAMES E	6.-04-13.0
21	CLOBRIDGE LIVING TRUST PAUL G II	6.-04-12.0
22	VENTRESCA DONNA M	6.-04-11.0

0 250 500 750 FT

1" = 250' SCALE BAR

KIRKVILLE ROAD

COMMUNITY SOLAR FARM PROJECT

7390 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057

RPNY SOLAR 5

RENEWABLE PROPERTIES

879 SANCHEZ STREET
SAN FRANCISCO, CA 94114

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.

280 East Broad Street
Suite 200
Rochester, NY 14604

office: 585.232.5135
fax: 585.232.4652

www.bergmannpc.com

DATE	DESCRIPTION

PRELIMINARY
NOT FOR CONSTRUCTION

STATE OF NEW YORK
ROBERT PAUL SWIALA
083487
LICENSED PROFESSIONAL ENGINEER

Copyright © Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C

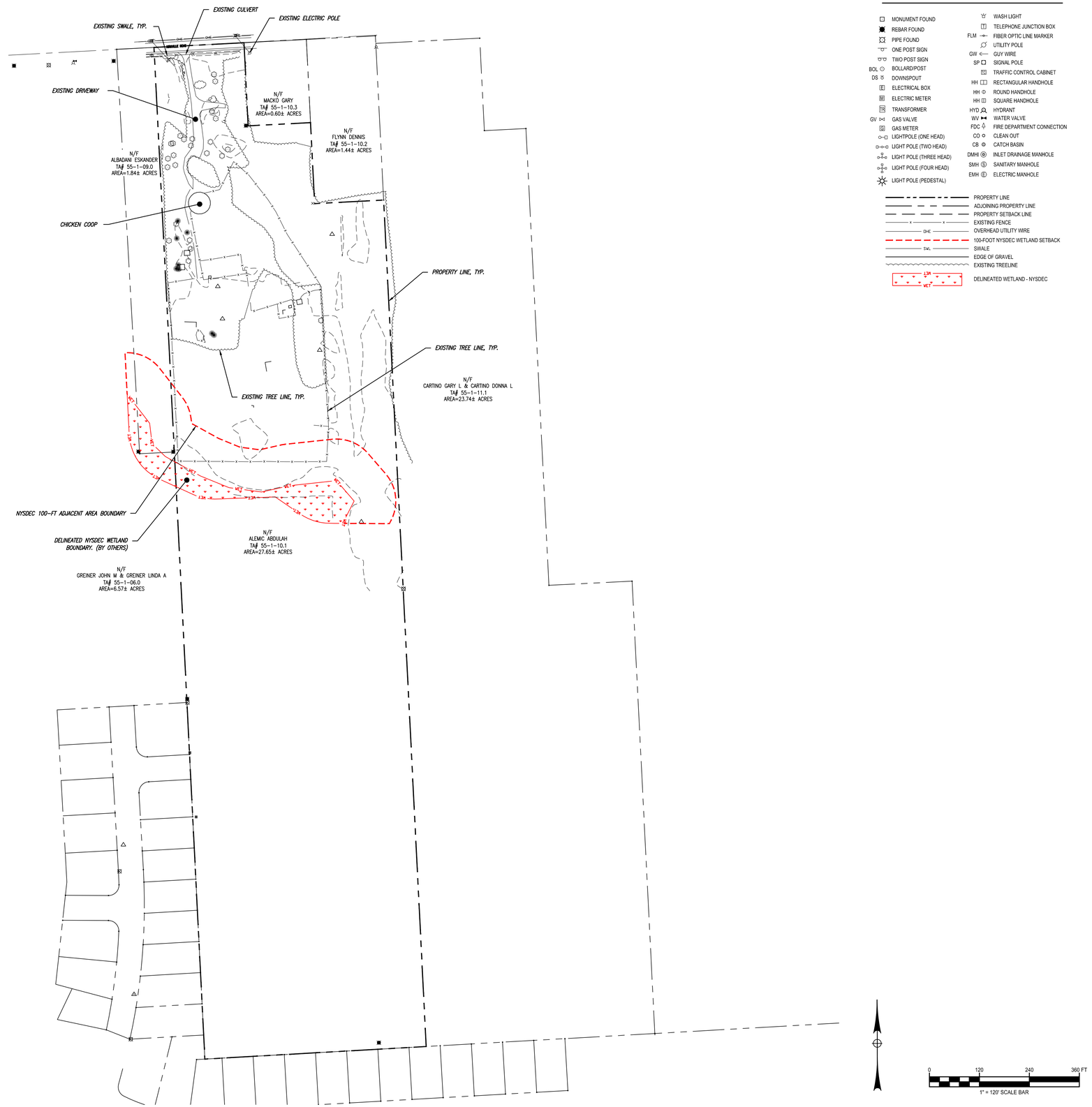
Project Manager: ECR	Checked By: RPS
Designed By: WD	Drawn By: WD
Date Issued: 12/18/20	Project Number: 14919.00

AREA PARCEL PLAN

Drawing Number:

C002

12/21/2020 6:38 PM M:\Renewable Properties, LLC\014919.00 Renewable Properties-RPNY Kirkville Rd\4.0 Dwgs\4.1 Civil\149190OC002_Area Parcel Plan.dwg



LEGEND

- MONUMENT FOUND
- REBAR FOUND
- PIPE FOUND
- ONE POST SIGN
- TWO POST SIGN
- BOL BOLLARD/POST
- DS DOWNSPOUT
- E ELECTRICAL BOX
- M ELECTRIC METER
- TR TRANSFORMER
- GV GAS VALVE
- G GAS METER
- LIGHTPOLE (ONE HEAD)
- LIGHT POLE (TWO HEAD)
- LIGHT POLE (THREE HEAD)
- LIGHT POLE (FOUR HEAD)
- LIGHT POLE (PEDESTAL)
- WASH LIGHT
- T TELEPHONE JUNCTION BOX
- FLM FIBER OPTIC LINE MARKER
- UTILITY POLE
- GW GUY WIRE
- SP SIGNAL POLE
- TRAFFIC CONTROL CABINET
- HH RECTANGULAR HANDHOLE
- HH ROUND HANDHOLE
- HH SQUARE HANDHOLE
- HYD HYDRANT
- WV WATER VALVE
- FDC FIRE DEPARTMENT CONNECTION
- CO CLEAN OUT
- CB CATCH BASIN
- DMH INLET DRAINAGE MANHOLE
- SMH SANITARY MANHOLE
- EMH ELECTRIC MANHOLE
- PROPERTY LINE
- ADJOINING PROPERTY LINE
- PROPERTY SETBACK LINE
- EXISTING FENCE
- OHE OVERHEAD UTILITY WIRE
- 100-FOOT NYSDEC WETLAND SETBACK
- SWL SWALE
- EDGE OF GRAVEL
- EXISTING TREELINE
- L3A L3B L3C L3D L3E L3F L3G L3H L3I L3J L3K L3L L3M L3N L3O L3P L3Q L3R L3S L3T L3U L3V L3W L3X L3Y L3Z MC1 DELINEATED WETLAND - NYSDEC

KIRKVILLE ROAD

COMMUNITY SOLAR FARM PROJECT

7390 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057

RPNY SOLAR 5

RENEWABLE PROPERTIES
879 SANCHEZ STREET
SAN FRANCISCO, CA 94114

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.

280 East Broad Street
Suite 200
Rochester, NY 14604

office: 585.232.5135
fax: 585.232.4652

www.bergmannpc.com

DATE	DESCRIPTION

PRELIMINARY
NOT FOR CONSTRUCTION

STATE OF NEW YORK · HERBERT PAUL SWITALA · 085487-1 · LICENSED PROFESSIONAL ENGINEER

Copyright © Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C

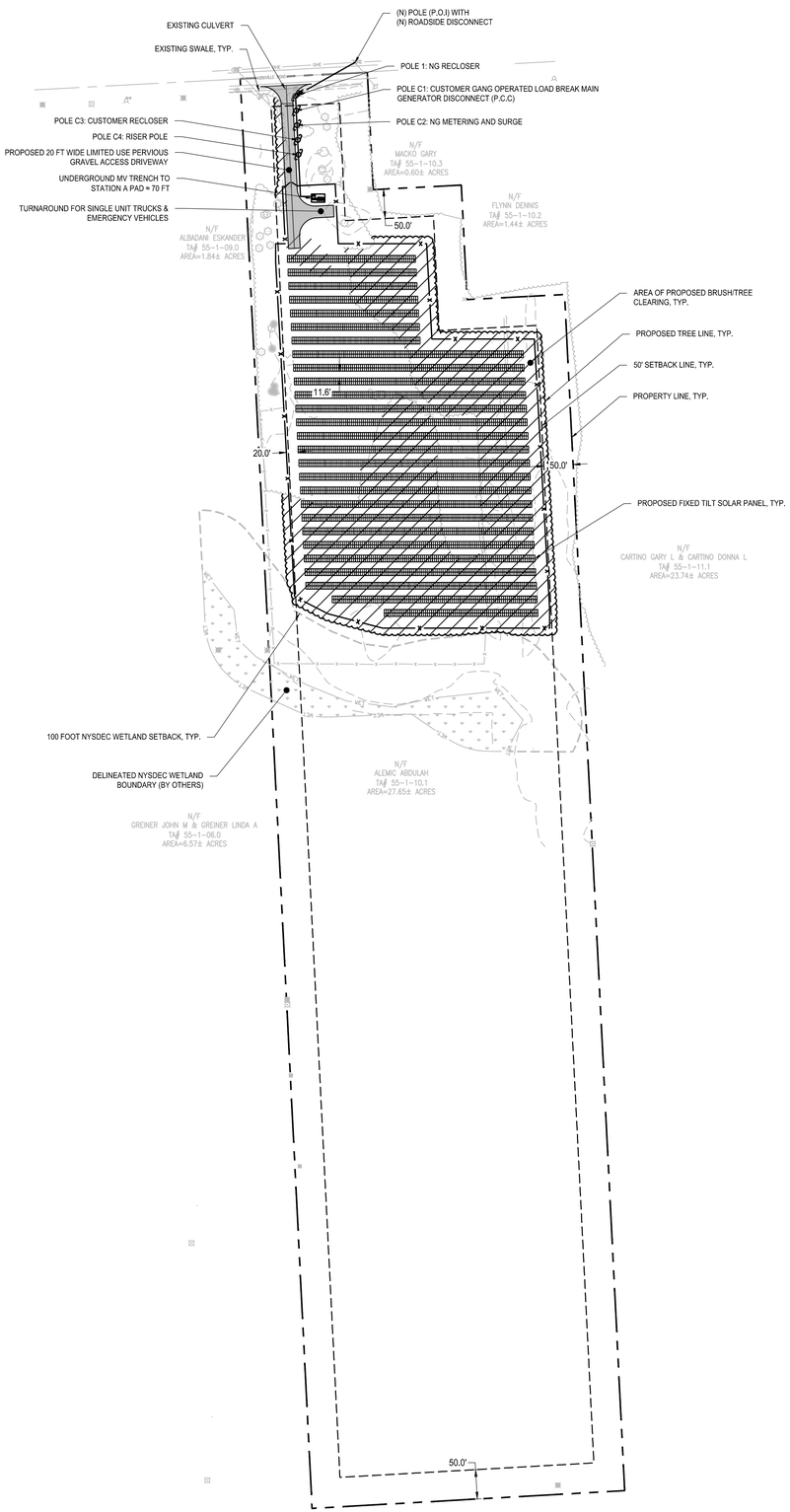
Project Manager:	Checked By:
ECR	RPS
Designed By:	Drawn By:
WD	WD
Date Issued:	Project Number:
12/18/20	14919.00

EXISTING CONDITIONS PLAN

Drawing Number:

C003

12/21/2020 6:38 PM M:\Renewable Properties, LLC\014919.00 Renewable Properties-RPNY Kirkville Rd\4.0 Dwgs\4.1 Civil\14919.00C002_EC.dwg



SITE PLAN DATA TABLE		
SITE IS LOCATED IN THE "R-A" RESTRICTED AGRICULTURAL DISTRICT		
PROPOSED USE: LARGE SCALE PHOTOVOLTAIC ENERGY SYSTEM		
PARCEL 55-1-10.1 TOWN OF MANLIUS COUNTY OF ONONDAGA, STATE OF NEW YORK		
APPLICANT: RPNY SOLAR 5, LLC 879 SANCHEZ STREET SAN FRANCISCO CA, 94114 (415) 710-3834	OWNER(S) OF RECORD: ABDULAH ALEMIC	
PLANS PREPARED BY: BERGMANN 280 EAST BROAD STREET, SUITE 200 ROCHESTER, NY 14604 (585) 232-5135		
DESCRIPTION	REQUIRED	PROPOSED
MIN. LOT SIZE	40,000 SF	1,199,725± SF
MIN. LOT WIDTH	150 FT	216± FT
MIN. SIDE YARD SETBACK	50 FT	65± FT
MIN. FRONT YARD SETBACK	50 FT	304± FT
MIN. REAR YARD SETBACK	50 FT	1,508± FT
MAX. LOT COVERAGE (INCLUDING PANELS)	N/A	N/A

LEGEND

- MONUMENT FOUND
- REBAR FOUND
- PIPE FOUND
- ONE POST SIGN
- TWO POST SIGN
- BOLLARD/POST
- DOWNSPOUT
- BOX ELECTRICAL BOX
- ELECTRIC METER
- TRANSFORMER
- GAS VALVE
- GAS METER
- GV LIGHTPOLE (ONE HEAD)
- LIGHT POLE (TWO HEAD)
- LIGHT POLE (THREE HEAD)
- LIGHT POLE (FOUR HEAD)
- LIGHT POLE (PEDESTAL)
- WASH LIGHT
- TELEPHONE JUNCTION BOX
- FIBER OPTIC LINE MAKER
- UTILITY POLE (EXISTING)
- GW GUY WIRE
- SP SIGNAL POLE
- TRAFFIC CONTROL CABINET
- HH RECTANGULAR HANDHOLE
- HH ROUND HANDHOLE
- HH SQUARE HANDHOLE
- HYD HYDRANT
- WV WATER VALVE
- FDC FIRE DEPARTMENT CONNECTION
- CO CLEAN OUT
- CB CATCH BASIN
- DMH INLET DRAINAGE MANHOLE
- SMH SANITARY MANHOLE
- EMH ELECTRIC MANHOLE
- PROPERTY LINE
- ADJOINING PROPERTY LINE
- PROPERTY SETBACK LINE
- SWL SWALE
- OHE OVERHEAD UTILITY WIRE
- EDGE OF PAVEMENT
- ST EXISTING STORM PIPE
- EDGE OF GRAVEL
- EXISTING TREELINE
- DELINEATED WETLAND - PEM
- TREE CLEARING
- PROPOSED LIMITED USE GRAVEL ACCESS ROAD
- PROPOSED SOLAR PANEL
- PROPOSED UTILITY POLE
- OHE PROPOSED OVERHEAD UTILITY WIRE
- UGE PROPOSED UNDERGROUND UTILITY WIRE
- X PROPOSED FENCE
- PROPOSED TREELINE

SYSTEM SPECIFICATIONS	
KIRKVILLE ROAD	
SYSTEM SIZE DC	2,274.48 kW
SYSTEM SIZE AC	1,625.00 kW
DC/AC RATIO	1.40
MODULE MANUFACTURER	JINKO SOLAR
MODULE MODEL	JKM405M-72H-BDVP
MODULE RATING	405 W
TOTAL MODULE QTY	5,616
MODULES PER STRING	26
TOTAL NO. OF STRINGS	216
INVERTER MODEL	SUNGROW SG125HV
INVERTER RATING	125 kW
INVERTER QTY	13
STEP-UP TRANSFORMER	12kV/600V, 1625kVA
RACKING	FT GROUND MOUNT
TILT ANGLE	25°
INTER-ROW SPACING	14.8'
PITCH	26.9'
GCR	45%
SITE AREA INSIDE FENCE	6.95 AC

0 120 240 360 FT

1" = 120' SCALE BAR

KIRKVILLE ROAD

COMMUNITY SOLAR FARM PROJECT

7390 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057

RPNY SOLAR 5

RENEWABLE PROPERTIES

879 SANCHEZ STREET
SAN FRANCISCO, CA 94114

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.

280 East Broad Street
Suite 200
Rochester, NY 14604

office: 585.232.5135
fax: 585.232.4652

www.bergmannpc.com

DATE	DESCRIPTION

PRELIMINARY
NOT FOR CONSTRUCTION

STATE OF NEW YORK
ROBERT PAUL SWIATLA
093487
LICENSED PROFESSIONAL ENGINEER

Copyright © Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C

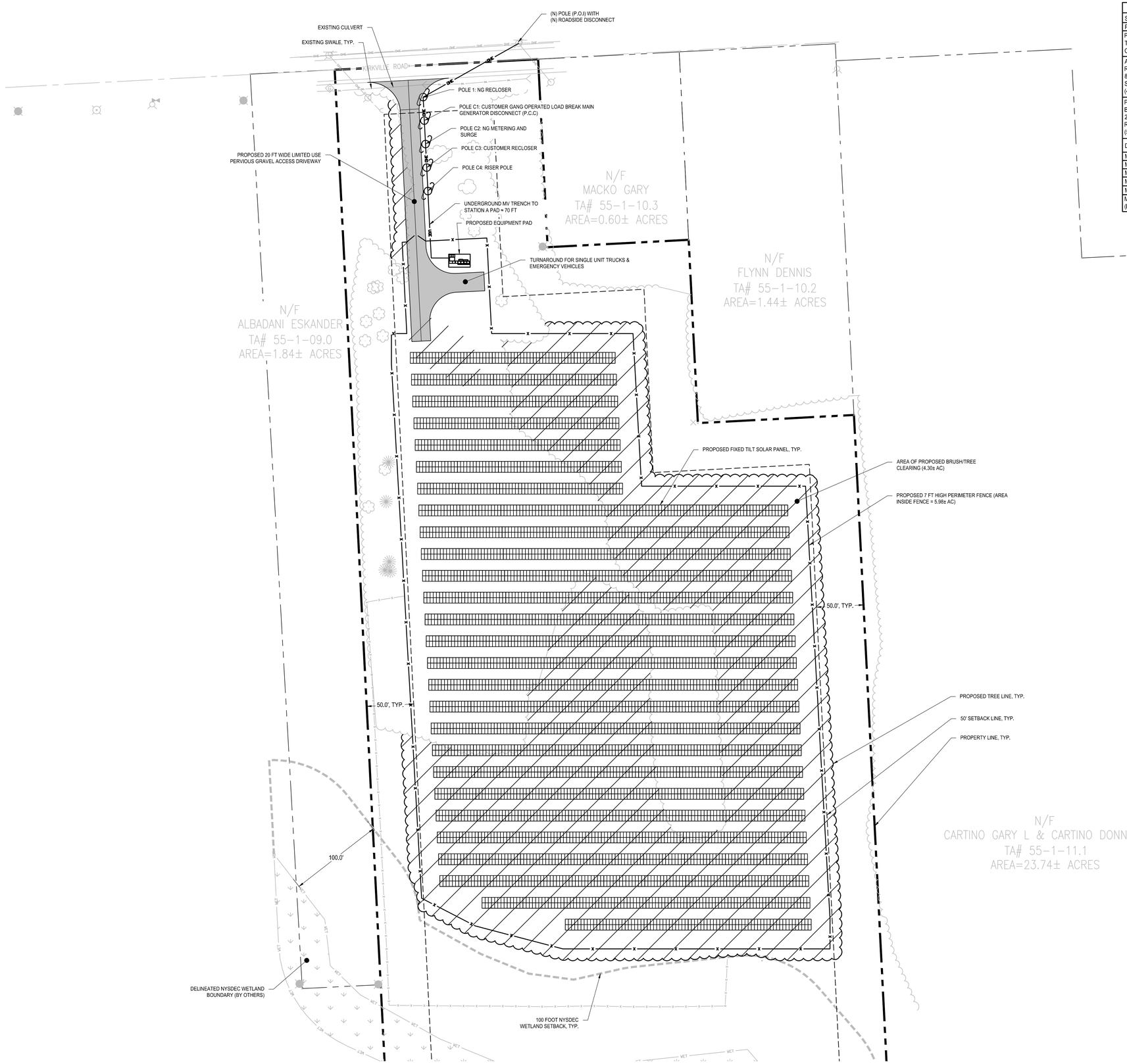
Project Manager: ECR	Checked By: RPS
Designed By: WD	Drawn By: WD
Date Issued: 12/18/20	Project Number: 14919.00

OVERALL SITE PLAN

Drawing Number:

C004

12/21/2020 6:42 PM M:\Renewable Properties, LLC\014919.00 Renewable Properties-RPNY Kirkville Rd\4.0 Dwgs\4.1 Civil\14919.00C003_Overall Site.dwg



SITE PLAN DATA TABLE		
SITE IS LOCATED IN THE "R-A" RESTRICTED AGRICULTURAL DISTRICT		
PROPOSED USE: LARGE SCALE PHOTOVOLTAIC ENERGY SYSTEM		
PARCEL 55-1-10.1 TOWN OF MANLIUS COUNTY OF ONONDAGA, STATE OF NEW YORK		
APPLICANT: RPNY SOLAR 5, LLC 879 SANCHEZ STREET SAN FRANCISCO CA, 94114 (415) 710-3834	OWNER(S) OF RECORD: ABDULAH ALEMIC	
PLANS PREPARED BY: BERGMANN 280 EAST BROAD STREET, SUITE 200 ROCHESTER, NY 14604 (585) 232-5135		
DESCRIPTION	REQUIRED	PROPOSED
MIN. LOT SIZE	40,000 SF	1,199,725± SF
MIN. LOT WIDTH	150 FT	216± FT
MIN. SIDE YARD SETBACK	50 FT	65± FT
MIN. FRONT YARD SETBACK	50 FT	304± FT
MIN. REAR YARD SETBACK	50 FT	1,508± FT
MAX. LOT COVERAGE (INCLUDING PANELS)	N/A	N/A

LEGEND

- MONUMENT FOUND
- REBAR FOUND
- PIPE FOUND
- ONE POST SIGN
- TWO POST SIGN
- BOLLARD/POST
- DOWNSPOUT
- BOX — ELECTRICAL BOX
- DS — ELECTRIC METER
- TRANSFORMER
- GAS VALVE
- GAS METER
- GV — LIGHTPOLE (ONE HEAD)
- LIGHT POLE (TWO HEAD)
- LIGHT POLE (THREE HEAD)
- LIGHT POLE (FOUR HEAD)
- LIGHT POLE (PEDESTAL)
- WASH LIGHT
- TELEPHONE JUNCTION BOX
- FIBER OPTIC LINE MAKER
- UTILITY POLE (EXISTING)
- GW — GUY WIRE
- SP — SIGNAL POLE
- TRAFFIC CONTROL CABINET
- HH — RECTANGULAR HANDHOLE
- HH — ROUND HANDHOLE
- HH — SQUARE HANDHOLE
- HYD — HYDRANT
- WV — WATER VALVE
- FDC — FIRE DEPARTMENT CONNECTION
- CO — CLEAN OUT
- CB — CATCH BASIN
- DMH — INLET DRAINAGE MANHOLE
- SMH — SANITARY MANHOLE
- EMH — ELECTRIC MANHOLE
- PROPERTY LINE
- ADJOINING PROPERTY LINE
- PROPERTY SETBACK LINE
- SWALE
- OHE — OVERHEAD UTILITY WIRE
- EDGE OF PAVEMENT
- ST — EXISTING STORM PIPE
- EDGE OF GRAVEL
- EXISTING TREELINE
- LAR / VET — DELINEATED WETLAND - PEM
- TREE CLEARING
- PROPOSED LIMITED USE GRAVEL ACCESS ROAD
- PROPOSED SOLAR PANEL
- PROPOSED UTILITY POLE
- OHE — PROPOSED OVERHEAD UTILITY WIRE
- UGE — PROPOSED UNDERGROUND UTILITY WIRE
- X — PROPOSED FENCE
- PROPOSED TREELINE

SYSTEM SPECIFICATIONS	
KIRKVILLE ROAD	
SYSTEM SIZE DC	2,274.48 kW
SYSTEM SIZE AC	1,625.00 kW
DC/AC RATIO	1.40
MODULE MANUFACTURER	JINKO SOLAR
MODULE MODEL	JKM405M-72H-BDVP
MODULE RATING	405 W
TOTAL MODULE QTY	5,616
MODULES PER STRING	26
TOTAL NO. OF STRINGS	216
INVERTER MODEL	SUNGROW SG125HV
INVERTER RATING	125 kW
INVERTER QTY	13
STEP-UP TRANSFORMER	12kV/600V, 1625kVA
RACKING	FT GROUND MOUNT
TILT ANGLE	25°
INTER-ROW SPACING	14.8'
PITCH	26.9'
GCR	45%
SITE AREA INSIDE FENCE	6.95 AC

KIRKVILLE ROAD

COMMUNITY SOLAR FARM PROJECT

7390 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057

RPNY SOLAR 5

RENEWABLE PROPERTIES

879 SANCHEZ STREET
SAN FRANCISCO, CA 94114

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.

280 East Broad Street
Suite 200
Rochester, NY 14604

office: 585.232.5135
fax: 585.232.4652

www.bergmannpc.com

DATE	DESCRIPTION

PRELIMINARY
NOT FOR CONSTRUCTION

STATE OF NEW YORK
ROBERT PAUL SWIALA
085487
LICENSED PROFESSIONAL ENGINEER

Copyright © Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C

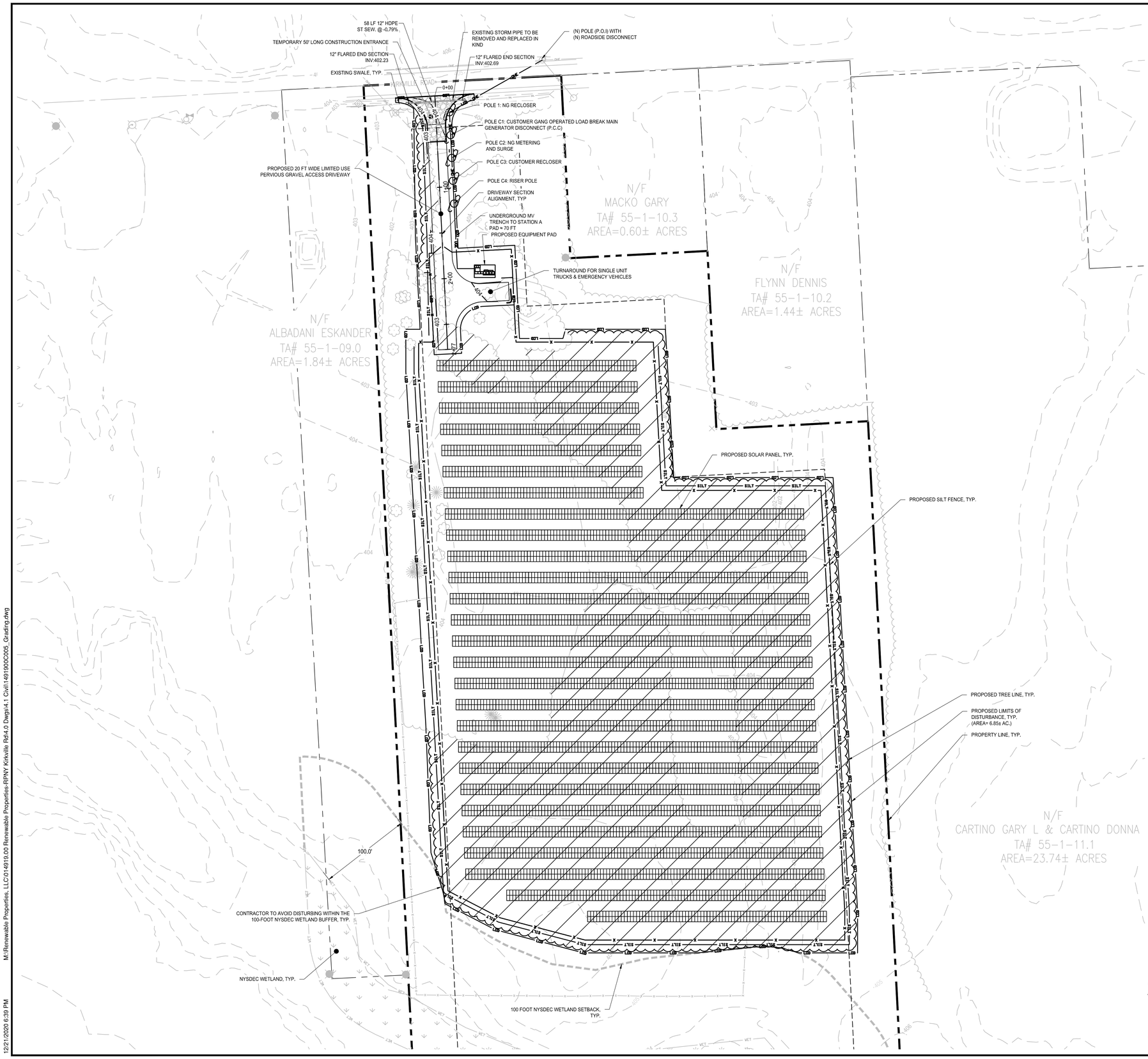
Project Manager: ECR	Checked By: RPS
Designed By: WD	Drawn By: WD
Date Issued: 12/18/20	Project Number: 14919.00

SITE PLAN

Drawing Number:

C005

M:\Renewable Properties, LLC\014919.00 Renewable Properties-RPNY Kirkville Rd\4.0 Dwgs\4.1 Civil\1491900C004_Site.dwg
12/21/2020 6:42 PM



LEGEND

- MONUMENT FOUND
- REBAR FOUND
- PIPE FOUND
- ONE POST SIGN
- TWO POST SIGN
- BOLLARD/POST
- DOWNSPOUT
- BOL ELECTRICAL BOX
- ELECTRIC METER
- TRANSFORMER
- GAS VALVE
- GAS METER
- GJ LIGHTPOLE (ONE HEAD)
- LIGHT POLE (TWO HEAD)
- LIGHT POLE (THREE HEAD)
- LIGHT POLE (FOUR HEAD)
- LIGHT POLE (PEDESTAL)
- WASH LIGHT
- TELEPHONE JUNCTION BOX
- FIBER OPTIC LINE MAKER
- UTILITY POLE (EXISTING)
- GW GUY WIRE
- SP SIGNAL POLE
- TRAFFIC CONTROL CABINET
- RH RECTANGULAR HANDHOLE
- HH ROUND HANDHOLE
- HH SQUARE HANDHOLE
- HYD. HYDRANT
- WV WATER VALVE
- FDC FIRE DEPARTMENT CONNECTION
- CO CLEAN OUT
- CB CATCH BASIN
- DMH INLET DRAINAGE MANHOLE
- SMH SANITARY MANHOLE
- EMH ELECTRIC MANHOLE
- PROPERTY LINE
- ADJOINING PROPERTY LINE
- PROPERTY SETBACK LINE
- SWL SWALE
- OHE OVERHEAD UTILITY WIRE
- EDGE OF PAVEMENT
- ST EXISTING STORM PIPE
- EXISTING TREELINE
- WET DELINEATED WETLAND - PEM
- TREE CLEARING
- TEMPORARY CONSTRUCTION ENTRANCE
- PROPOSED CULVERT
- PROPOSED SOLAR PANEL
- PROPOSED UTILITY POLE
- LOD LIMITS OF DISTURBANCE BOUNDARY
- SILT PROPOSED SILT FENCE
- DRIVEWAY SECTION ALIGNMENT
- UGE PROPOSED UNDERGROUND UTILITY WIRE
- PROPOSED FENCE
- PROPOSED TREELINE

NOTES

1. CONTRACTOR SHALL NOT DISTURB MORE THAN 5 ACRES AT ANY ONE GIVEN TIME.

KIRKVILLE ROAD

COMMUNITY SOLAR FARM PROJECT

7390 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057

RPNY SOLAR 5

RENEWABLE PROPERTIES
879 SANCHEZ STREET
SAN FRANCISCO, CA 94114

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C.
280 East Broad Street
Suite 200
Rochester, NY 14604

office: 585.232.5135
fax: 585.232.4652

www.bergmannpc.com

DATE	DESCRIPTION

PRELIMINARY
NOT FOR CONSTRUCTION

STATE OF NEW YORK · ROBERT PAUL SWIALA · 085487-1 · LICENSED PROFESSIONAL ENGINEER

Copyright © Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C

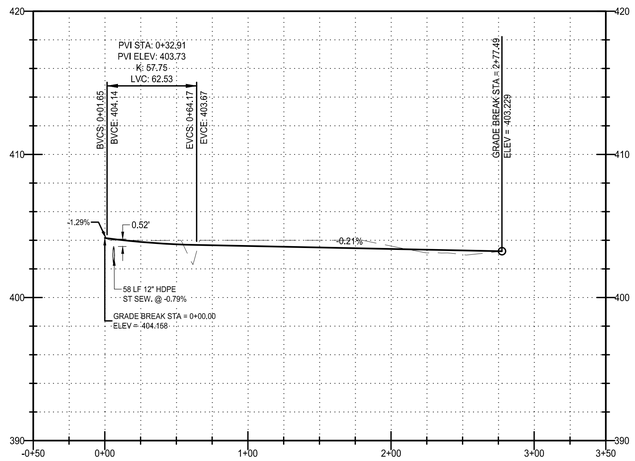
Project Manager: ECR	Checked By: RPS
Designed By: WD	Drawn By: WD
Date Issued: 12/18/20	Project Number: 14919.00

GRADING & EROSION CONTROL PLAN

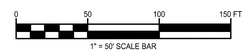
Drawing Number:

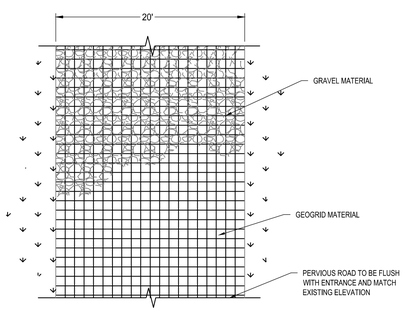
C006

M:\Renewable Properties, LLC\014919.00 Renewable Properties-RPNY Kirkville Rd\4.0 Dwgs\4.1 Civil\149190C005_Grading.dwg
12/21/2020 6:39 PM

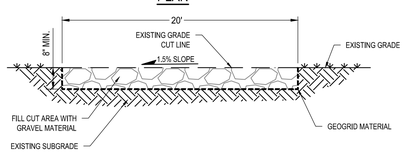


DRIVEWAY SECTION
1"=5' VERTICAL
1"=50' HORIZONTAL





PLAN



LIMITED USE PERVIOUS ACCESS ROAD - 0% TO 10% SLOPES

NO SCALE

GEOGRID MATERIAL NOTES:

1. THE GEOGRID, OR COMPARABLE PRODUCT, IS INTENDED FOR USE IN ALL CONDITIONS. IN ORDER TO ASSIST IN MATERIAL SEPARATION FROM NATIVE SOILS AND PRESERVE ACCESS LOADS.
2. GRAVEL FILL MATERIAL SHALL CONSIST OF 1-4" CLEAN, DURABLE, SHARP ANGLED CRUSHED STONE OF UNIFORM QUALITY, MEETING THE SPECIFICATION OF NYSDOT 703-02, SIZE DESIGNATION 3-5 OF TABLE 703-4. STONE MAY BE PLACED IN FRONT OF AND SPREAD WITH A TRACKED VEHICLE. GRAVEL SHALL NOT BE COMPACTED.
3. GEOGRID SHALL BE MIRAFI BXG110 OR APPROVED EQUAL. GEOGRID SHALL BE DESIGNED BASED ON EXISTING SOIL CONDITIONS AND PROPOSED HAUL ROAD SLOPES.
4. IF MORE THAN ONE ROLL WIDTH IS REQUIRED, ROLLS SHOULD OVERLAP A MINIMUM OF SIX INCHES.
5. REFER TO MANUFACTURER'S SPECIFICATION FOR PROPER TYING AND CONNECTIONS.
6. LIMITED USE PERVIOUS ACCESS ROAD SHALL BE DRESSED AS REQUIRED WITH ONLY 1-4" CRUSHED STONE MEETING NYSDOT 703-02 SPECIFICATIONS.

BASIS OF DESIGN: TENCATE MIRAFI BXG110 GEOGRIDS; 365 SOUTH HOLLAND DRIVE, PENDERGRASS, GA; 800-685-9990 OR 706-693-2226; WWW.MIRAFI.COM

WOVEN GEOTEXTILE MATERIAL NOTES:

1. SPECIFIED GEOTEXTILE WILL ONLY BE UTILIZED IN PLACID SOILS. PLACID SOILS CONSIST OF POORLY DRAINED SOILS COMPOSED OF FINELY TEXTURED PARTICLES AND ARE PRONE TO RUTTING. PLACID SOILS ARE TYPICALLY PRESENT IN LOW-LYING AREAS WITH HYDROLOGIC SOILS GROUP (HSG) OF C OR D OR AS SPECIFIED FROM AN ENVIRONMENTAL SCIENTIST, SOIL SCIENTIST OR GEOTECHNICAL DATA.
2. THE CONCERN OF POTENTIAL REDUCTION OF NATIVE INFILTRATION RATES DUE TO THE GEOTEXTILE MATERIAL WOULD NOT BE A SIGNIFICANT CONCERN IN POORLY DRAINED SOILS WHERE SEGREGATION OF PERVIOUS STONE AND NATIVE MATERIALS IS CRUCIAL FOR LONG TERM OPERATION AND MAINTENANCE.

BASIS OF DESIGN: TENCATE MIRAFI BSI-SERIES WOVEN GEOSYNTHETICS; 365 SOUTH HOLLAND DRIVE, PENDERGRASS, GA; 800-685-9990 OR 706-693-2226; WWW.MIRAFI.COM

GENERAL NOTES:

1. USE OF THIS DETAIL/CRITERION IS LIMITED TO ACCESS ROADS USED ON AN OCCASIONAL BASIS ONLY (I.E. PROVIDE ACCESS FOR MOWING, EQUIPMENT REPAIR OR MAINTENANCE).
2. LIMITED USE PERVIOUS ACCESS ROAD IS LIMITED TO LOW IMPACT IRREGULAR MAINTENANCE ACCESS ASSOCIATED WITH RENEWABLE ENERGY PROJECTS IN NEW YORK STATE.
3. REMOVE STUMPS, ROCKS AND DEBRIS AS NECESSARY, FILL VOIDS TO MATCH EXISTING NATIVE SOILS AND COMPACTION LEVEL.
4. REMOVED TOPSOIL MAY BE SPREAD IN ADJACENT AREAS AS DIRECTED BY THE PROJECT ENGINEER. COMPACT TO THE DEGREE OF THE NATIVE IN SITU SOIL. DO NOT PLACE IN AN AREA THAT IMPEDES STORM WATER DRAINAGE.
5. GRADE ROADWAY, WHERE NECESSARY, TO NATIVE SOILS AND DESIRED ELEVATION. MINOR GRADING FOR CROSS SLOPE CUT AND FILL MAY BE REQUIRED.
6. REMOVE REFUSE SOILS AS DIRECTED BY THE PROJECT ENGINEER. DO NOT PLACE IN AN AREA THAT IMPEDES STORM WATER DRAINAGE.
7. ROADWAY WIDTH TO BE DETERMINED BY CLIENT.
8. THE LIMITED USE PERVIOUS ACCESS ROAD CROSS SLOPE SHALL BE 1.5% IN MOST CASES AND SHOULD NOT EXCEED 6%. THE LONGITUDINAL SLOPE OF THE ACCESS DRIVE SHOULD NOT EXCEED 15%.
9. LIMITED USE PERVIOUS ACCESS ROAD IS NOT INTENDED TO BE UTILIZED FOR CONSTRUCTION WHICH MAY SUBJECT THE ACCESS TO SEDIMENT TRACKING. THIS SPECIFICATION IS TO BE DEVELOPED FOR POST-CONSTRUCTION USE. SOIL RESTORATION PRACTICES MAY BE APPLICABLE TO RESTORE CONSTRUCTION RELATED COMPACTION TO PRE-EXISTING CONDITIONS AND SHOULD BE VERIFIED BY SOIL PENETROMETER READINGS. THE PENETROMETER READINGS SHALL BE COMPARED TO THE RESPECTIVE RECORDED READINGS TAKEN PRIOR TO CONSTRUCTION. EVERY 100 LINEAR FEET ALONG THE PROPOSED ROADWAY.
10. TO ENSURE THAT SOIL IS NOT TRACKED ONTO THE LIMITED USE PERVIOUS ACCESS ROAD, IT SHALL NOT BE USED BY CONSTRUCTION VEHICLES TRANSPORTING SOIL, FILL MATERIAL, ETC. IF THE LIMITED USE PERVIOUS ACCESS IS COMPLETED DURING THE INITIAL PHASES OF CONSTRUCTION AND UTILIZED TO REMOVE SEDIMENT FROM CONSTRUCTION VEHICLES AND EQUIPMENT PRIOR TO ENTERING THE LIMITED USE PERVIOUS ACCESS ROAD FROM ANY LOCATION ON, OR OFF SITE. MAINTENANCE OF THE PERVIOUS ACCESS ROAD WILL BE REQUIRED IF SEDIMENT IS OBSERVED WITHIN THE CLEAN STONE.
11. THE LIMITED USE PERVIOUS ACCESS ROAD SHALL NOT BE CONSTRUCTED OR USED UNTIL ALL AREAS SUBJECT TO RUNOFF ONTO THE PERVIOUS ACCESS HAVE ACHIEVED FINAL STABILIZATION.
12. PROJECTS SHOULD AVOID INSTALLATION OF THE LIMITED USE PERVIOUS ACCESS ROAD IN POORLY DRAINED ARES, HOWEVER IF NO ALTERNATIVE LOCATION IS AVAILABLE, THE PROJECT SHALL UTILIZE WOVEN GEOTEXTILE MATERIAL AS DETAILED IN FOLLOWING NOTES.
13. THE DRAINAGE DITCH IS OFFERED IN THE DETAIL FOR CIRCUMSTANCES WHEN CONCENTRATED FLOW COULD NOT BE AVOIDED . THE INTENTION OF THE DESIGN IS TO MINIMIZE ALTERATIONS TO HYDROLOGY, HOWEVER WHEN DEALING WITH 5%-15% GRADES NOT PARALLEL TO THE CONTOUR, A ROADSIDE DITCH MAY BE REQUIRED. THE NYS STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROLS FOR GRASSED WATERWAYS AND VEGETATED WATERWAYS ARE APPLICABLE FOR SIZING AND STABILIZATION, DIMENSIONS FOR THE GRASSED WATERWAY SPECIFICATION WOULD BE DESIGNED FOR PROJECT SPECIFIC HYDROLOGIC RUNOFF CALCULATIONS, AND A SEPARATE DETAIL FOR THE SPECIFIC GRASSED WATERWAY WOULD BE INCLUDED IN THIS PRACTICE. RUNOFF DISCHARGE WILL BE SUBJECT TO THE OUTLET REQUIREMENTS OF THE REFERENCED STANDARD. INCREASED POST-DEVELOPMENT RUNOFF FROM THE ASSOCIATED ROADSIDE DITCH MAY REQUIRE ADDITIONAL PRACTICES TO ATTENUATE RUNOFF TO PRE-DEVELOPMENT CONDITIONS.
14. IF A ROADSIDE DITCH IS NOT UTILIZED TO CAPTURE RUNOFF FROM THE ACCESS ROAD, THE PERVIOUS ACCESS ROAD WILL HAVE A WELL-ESTABLISHED PERENNIAL VEGETATIVE COVER, WHICH SHALL CONSIST OF UNIFORM VEGETATION (I.E. BUFFER), 20 FEET WIDE AND PARALLEL TO THE DOWN GRADIENT SIDE OF THE ACCESS ROAD. POST-CONSTRICTION OPERATION AND MAINTENANCE PRACTICES WILL MAINTAIN THIS VEGETATIVE COVER TO ENSURE FINAL STABILIZATION FOR THE LIFE OF THE ACCESS ROAD.
15. THE DESIGN PROFESSIONAL MUST ACCOUNT FOR THE LIMITED USED PERVIOUS ACCESS ROAD IN THEIR SITE ASSESSMENT / HYDROLOGY ANALYSIS. IF THE HYDROLOGY ANALYSIS SHOWS THAT THE HYDROLOGY HAS BEEN ALTERED FROM PRE- TO POST-DEVELOPMENT CONDITIONS (SEE APPENDIX A OF GP-0-20-001 FOR THE DEFINITION OF "ALTER THE HYDROLOGY..."), THE DESIGN MUST INCLUDE THE NECESSARY DETENTION/RETENTION PRACTICES TO ATTENUATE THE RATES (10 AND 100 YEAR EVENTS) TO PRE-DEVELOPMENT CONDITIONS.

KIRKVILLE ROAD

COMMUNITY SOLAR FARM PROJECT

7390 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057

RPNY SOLAR 5

RENEWABLE PROPERTIES

879 SANCHEZ STREET
SAN FRANCISCO, CA 94114

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.

280 East Broad Street
Suite 200
Rochester, NY 14604

office: 585.232.5135
fax: 585.232.4652

www.bergmannpc.com

DATE	DESCRIPTION

PRELIMINARY
NOT FOR CONSTRUCTION

STATE OF NEW YORK · ROBERT PAUL SIWIALA · 085487-1 · LICENSED PROFESSIONAL ENGINEER

Copyright © Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C

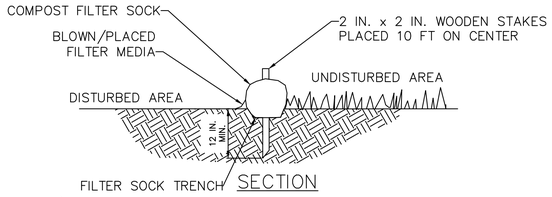
Project Manager: ECR	Checked By: RPS
Designed By: WD	Drawn By: WD
Date Issued: 12/18/20	Project Number: 14919.00

GRADING PLAN DETAILS

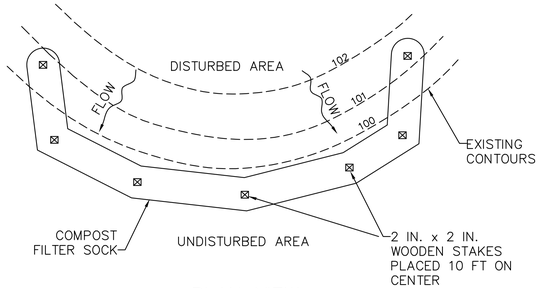
Drawing Number:

C007

12/21/2020 6:39 PM M:\Renewable Properties, LLC\014919.00 Renewable Properties-RPNY Kirkville Rd\4.0 Dwgs\4.1 Civil\14919DC005_Grading.dwg



SECTION



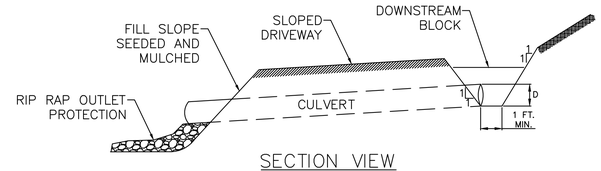
PLAN VIEW

NOTES:

1. SOCK FABRIC AND COMPOST SHALL MEET ALL STATE STANDARDS.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
5. COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
6. BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

18" COMPOST FILTER SOCK

NO SCALE



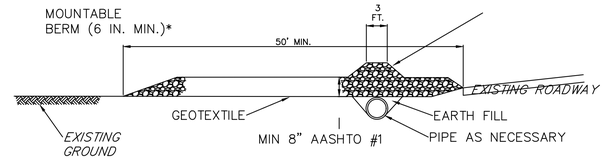
SECTION VIEW

NOTES:

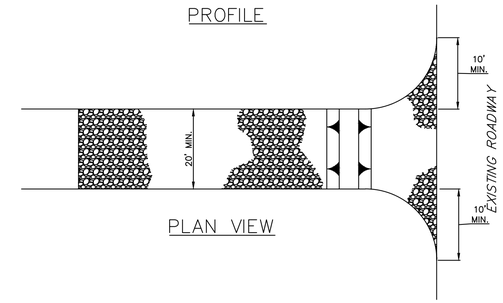
1. CUT AND FILL SLOPES SHALL BE STABILIZED IMMEDIATELY UPON COMPLETION OF DRIVEWAY GRADING. THESE AREAS SHALL BE BLANKETED WHEREVER THEY ARE LOCATED WITHIN 50 FEET OF A SURFACE WATER OR WITHIN 100 FEET OF AN HIGH QUALITY OR EXCEPTIONAL VALUE SURFACE WATER OR WHERE A SUITABLE VEGETATIVE FILTER STRIP DOES NOT EXIST.
2. A TOP DRESSING COMPOSED OF HARD, DURABLE STONE SHALL BE PROVIDED FOR SOILS HAVING LOW STRENGTH.
3. DRIVEWAY DITCHES SHALL BE PROVIDED WITH ADEQUATE PROTECTIVE LINING WHEREVER RUNOFF CANNOT SHEET FLOW AWAY FROM THE DRIVEWAY.
4. DRIVEWAY SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED DRIVEWAYS, DITCHES, OR CROSS DRAINS SHALL BE REPAIRED IMMEDIATELY.

CROSS CULVERT

NO SCALE



PROFILE



PLAN VIEW

* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

1. REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
2. RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
3. MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.
4. MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

STABILIZED CONSTRUCTION ENTRANCE

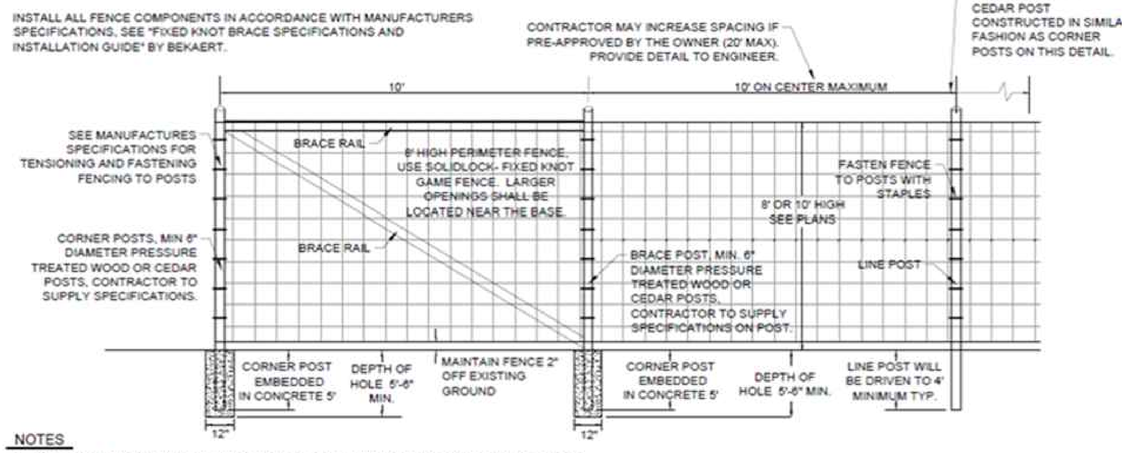
NO SCALE

FENCE MATERIAL:
SOLIDLOCK FIXED KNOT GAME FENCE SPECIFICATION:

- FENCE FABRIC SHALL BE BEKAERT ZA-6" FIXED KNOT GAME FENCE
- 96" OR 120" HIGH (FOR 120" HIGH CONTRACTOR MAY USE TWO SECTIONS FABRIC SECTIONS, SECTIONS MUST BE PERMANENTLY SECURED AT EACH WIRE FABRIC SQUARE ALONG THE WIRE FABRIC JOINT)
- 12.5 GAUGE WIRE
- CLASS 3 GALVANIZED

INSTALL ALL FENCE COMPONENTS IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS, SEE "FIXED KNOT BRACE SPECIFICATIONS AND INSTALLATION GUIDE" BY BEKAERT.

CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO ORDERING AND CONSTRUCTING FENCE.



NOTES

1. ADDITIONAL BRACING MAY BE REQUIRED ON LONGER FENCE RUNS. CONTRACTOR TO ADD ADDITIONAL BRACING WHEN CONTRACTOR OBSERVES CORNER POST DEFLECTION DURING FENCE TENSINOING/FASTENING.
2. FABRIC TO BE FASTENED TO POSTS WITH STAPLES APPROVED BY THE ENGINEER.
3. FENCE SHALL BE INSTALLED WITH 6"x6" OPENINGS AT THE BOTTOM.

PERIMETER FENCE DETAIL

NO SCALE

KIRKVILLE ROAD

COMMUNITY SOLAR FARM PROJECT

7390 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057

RPNY SOLAR 5

RENEWABLE PROPERTIES

879 SANCHEZ STREET
SAN FRANCISCO, CA 94114

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C.
280 East Broad Street
Suite 200
Rochester, NY 14604

office: 585.232.5135
fax: 585.232.4652

www.bergmannpc.com

DATE	DESCRIPTION

PRELIMINARY
NOT FOR CONSTRUCTION

STATE OF NEW YORK · ROBERT PAUL SWITALA · 085487-1 · LICENSED PROFESSIONAL ENGINEER

Copyright © Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C

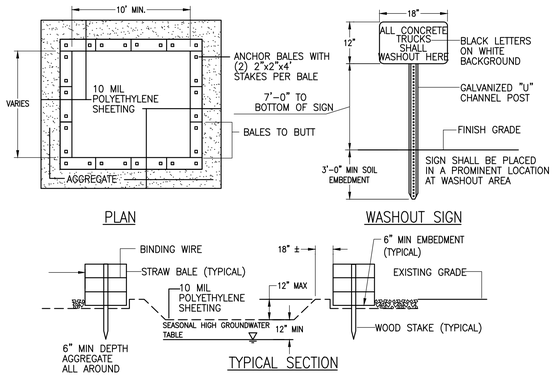
Project Manager: ECR	Checked By: RPS
Designed By: WD	Drawn By: WD
Date Issued: 12/18/20	Project Number: 14919.00

DETAILS I

Drawing Number:

C008

M:\Renewable Properties, LLC\014919.00 Renewable Properties-RPNY Kirkville Rd\4.0 Dwgs\4.1 Civil\14919\0C008-C011_Details.dwg
12/21/2020 6:39 PM

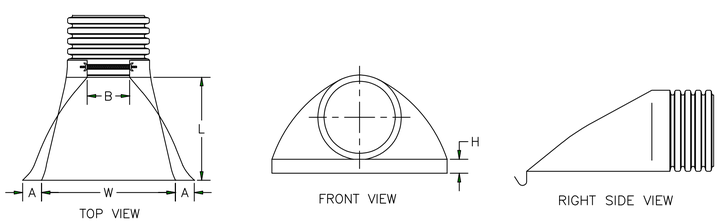


1. CONTAINMENT MUST BE STRUCTURALLY SOUND AND LEAK FREE AND CONTAIN ALL LIQUID WASTES.
2. CONTAINMENT DEVICES MUST BE OF SUFFICIENT QUANTITY OR VOLUME TO COMPLETELY CONTAIN THE LIQUID WASTES GENERATED.
3. WASHOUT MUST BE CLEANED OR NEW FACILITIES CONSTRUCTED AND READY TO USE ONCE WASHOUT IS 75% FULL.
4. WASHOUT AREA(S) SHALL BE INSTALLED IN A LOCATION EASILY ACCESSIBLE BY CONCRETE TRUCKS.
5. ONE OR MORE AREAS MAY BE INSTALLED ON THE CONSTRUCTION SITE AND MAY BE RELOCATED AS CONSTRUCTION PROGRESSES.
6. AT LEAST WEEKLY REMOVE ACCUMULATION OF SAND AND AGGREGATE AND DISPOSE OF PROPERLY.

CONCRETE WASHOUT

NO SCALE

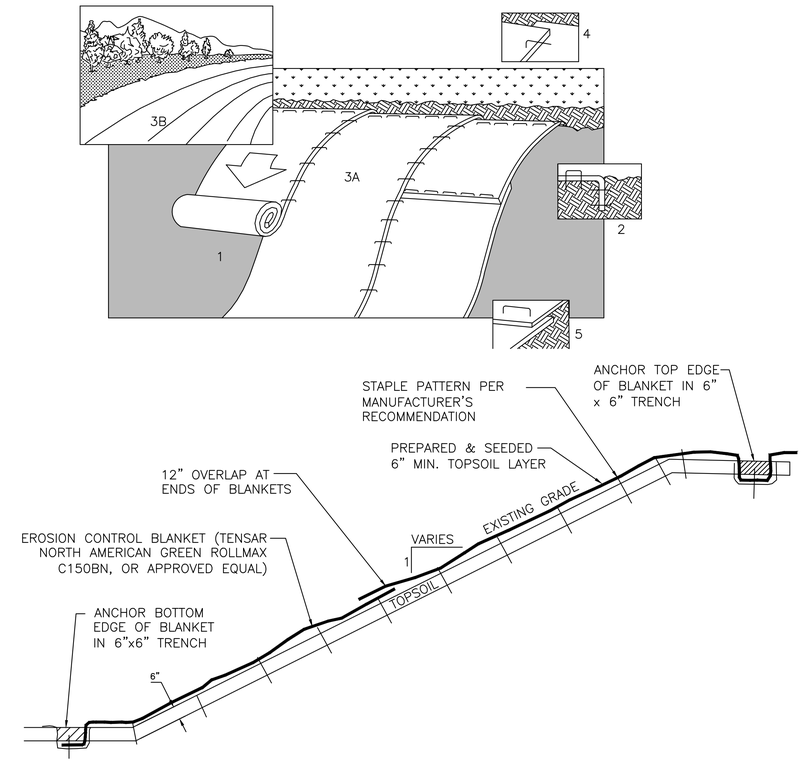
PIPE DIAMETER, in (mm)						
Diameter in (mm)	12 (300)	15 (375)	18 (450)	24 (600)	30 (750)	36 (900)
A in (mm)	6.5 (165)	6.5 (165)	7.5 (191)	7.5 (191)	7.5 (191)	7.5 (191)
B (max) in (mm)	10.0 (254)	10.0 (254)	15.0 (381)	18.0 (475)	22.0 (559)	25.0 (635)
H in (mm)	6.5 (165)	6.5 (165)	6.5 (165)	6.5 (165)	8.6 (218)	8.6 (218)
L in (mm)	25.0 (635)	25.0 (635)	32.0 (813)	36.0 (914)	58.0 (1473)	58.0 (1473)
W in (mm)	29.0 (737)	29.0 (737)	35.0 (889)	45.0 (1143)	63.0 (1600)	63.0 (1600)



NOTES:
1. PRODUCT SHOWN FROM ADS, INC. OF HDPE MEETING ASTM D3350 MINIMUM CELL CLASSIFICATION 213320C
2. AN ALTERNATIVE SUPPLIER CAN BE USED AS LONG AS MINIMUM SPECIFICATIONS ABOVE ARE MET
3. WHEN PROVIDED, METAL THREADED FASTENING ROD SHALL BE STAINLESS STEEL.
4. INVERT OF THE PIPE AND THE END SECTION SHALL BE AT THE SAME ELEVATION

TYPICAL FLARED END SECTION SPECIFICATION

NO SCALE



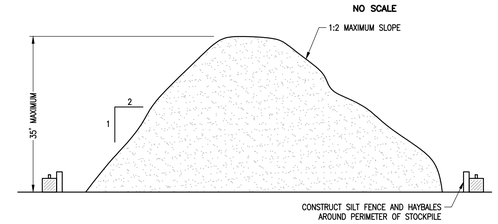
NOTES:

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 12" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.
6. EROSION CONTROL BLANKETS SHALL BE INSTALLED ON ALL 3:1 OR STEEPER SLOPES WITH A MINIMUM OF 6 INCHES OF TOPSOIL.
7. THE USE OF FLEXIBLE GROWTH MEDIUM, BONDED FIBER MATRIX, OR POLYMER STABILIZED FIBER MATRIX, APPLIED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS, IS AN ACCEPTABLE ALTERNATIVE TO THE USE OF EROSION CONTROL BLANKET.

EROSION CONTROL BLANKET

NO SCALE

NO SCALE



NOTES:

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE BE 1V:2H.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH SILT FENCING, THEN STABILIZED WITH VEGETATION OR COVERED.
4. APPLICATION OF SOIL STABILIZATION MEASURES, I.E. SEEDING AND MULCH APPLICATION, SHALL BE COMPLETED WITHIN FOURTEEN (14) DAYS FROM THE DATA SOIL ACTIVITY HAS CEASED.
5. LOCATION OF THE SOIL STOCKPILE TO BE DETERMINED BY CONSTRUCTION MANAGER ON SITE.

STOCK PILE DETAIL

NO SCALE

KIRKVILLE ROAD

COMMUNITY SOLAR FARM PROJECT

7390 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057

RPNY SOLAR 5

RENEWABLE PROPERTIES

879 SANCHEZ STREET
SAN FRANCISCO, CA 94114

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C.
280 East Broad Street
Suite 200
Rochester, NY 14604

office: 585.232.5135
fax: 585.232.4652

www.bergmannpc.com

DATE	DESCRIPTION

PRELIMINARY
NOT FOR CONSTRUCTION

Copyright © Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C

Project Manager: ECR	Checked By: RPS
Designed By: WD	Drawn By: WD
Date Issued: 12/18/20	Project Number: 14919.00

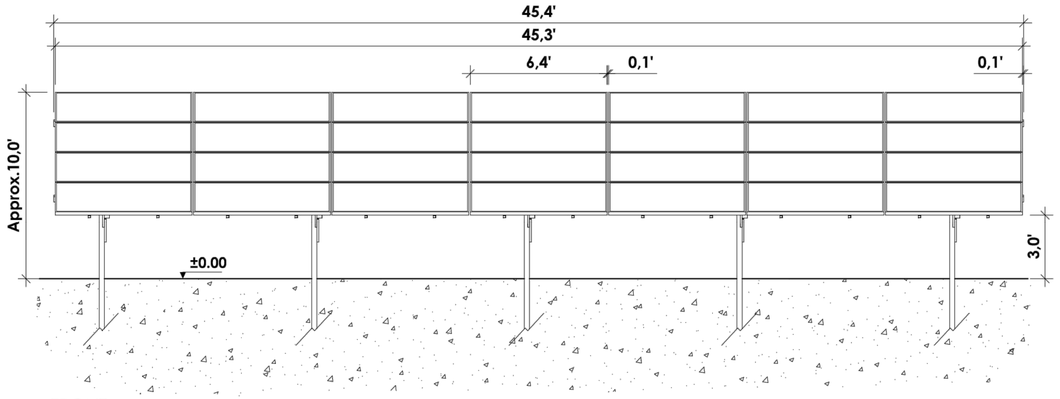
DETAILS II

Drawing Number:

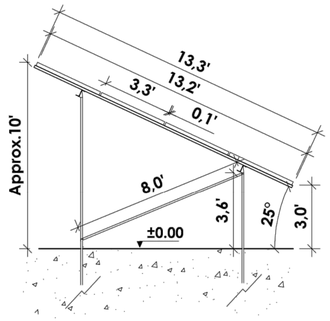
C009

12/21/2020 6:39 PM M:\Renewable Properties, LLC\014919.00 Renewable Properties-RPNY Kirkville Rd\4.0 Dwgs\4.1 Civil\149190C008-C011_Details.dwg

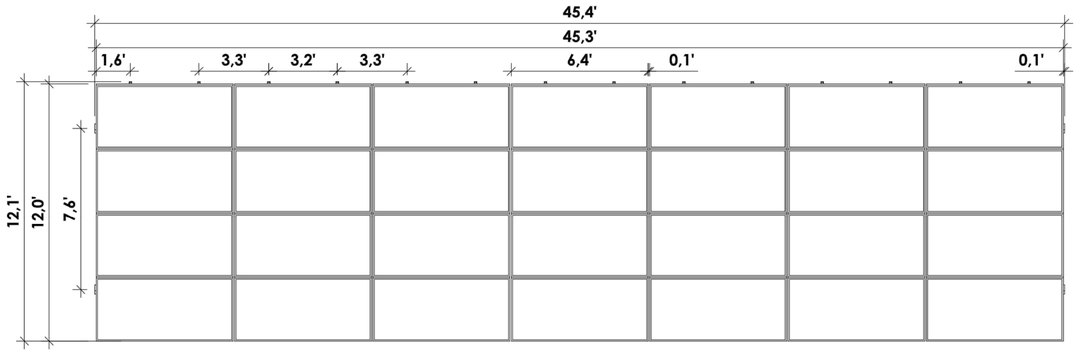
28 MODULES STRUCTURE



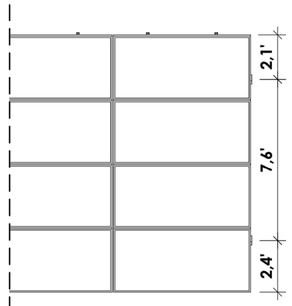
FRONT



LEFT SIDE



PLANT



PV PANEL CLAMPS POSITION

NOTES:

-TYPICAL INSTALLATION DIMENSIONS; MAY BE ADJUSTED TO SUIT FIELD CONDITIONS WITHIN THE TOLERANCES PROVIDED.
-FINAL DESIGN AND ENGINEERING PLANS IN DETAIL WILL BE PERFORMED BY RACKING MANUFACTURER

FEATURES:
- 4 x 7 - 25° - LANDSCAPE
- ETL CLASSIFIED TO UL2703
- CUSTOM ENGINEERED TO EXCEED APPLICABLE ASCE 7-10, IBC, AND UL STANDARDS
- ELECTRICALLY BONDED SYSTEM
- 30 AMP MAXIMUM FUSE RATING

FIXED TILT SOLAR ARRAY DETAIL

NO SCALE

KIRKVILLE ROAD

COMMUNITY SOLAR FARM PROJECT

7390 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057

RPNY SOLAR 5

RENEWABLE PROPERTIES

879 SANCHEZ STREET
SAN FRANCISCO, CA 94114

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.

280 East Broad Street
Suite 200
Rochester, NY 14604

office: 585.232.5135
fax: 585.232.4652

www.bergmannpc.com

DATE	DESCRIPTION

PRELIMINARY
NOT FOR CONSTRUCTION

Copyright © Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C

Project Manager:	Checked By:
ECR	RPS
Designed By:	Drawn By:
WD	WD
Date Issued:	Project Number:
12/18/20	14919.00

DETAILS III

Drawing Number:

C010

12/21/2020 6:39 PM M:\Renewable Properties, LLC\014919.00 Renewable Properties-RPNY Kirkville Rd\4.0 Dwgs\4.1 Civil\1491900C008-C011_Details.dwg

Upland Seed Mix		
Low-Growing Wildflower & Grass Mix - ERNMX #156		
Seeding Rate: 20 lb per acre with a cover crop of grain rye at 30 lb per acre		
SCIENTIFIC NAME	**COMMON NAME**	**% OF MIX**
Festuca ovina	Sheep Fescue, Variety Not Stated	63.60%
Lolium multiflorum (L. perenne var. italicum)	Annual Ryegrass	17%
Linum perenne ssp. lewisii	Perennial Blue Flax	8%
Rudbeckia hirta	Blackeyed Susan, Coastal Plain NC Ecotype	2%
Coreopsis lanceolata	Lanceleaf Coreopsis, Coastal Plain NC Ecotype	2%
Chrysanthemum leucanthemum	Oxeye Daisy	2%
Chrysanthemum maximum	Shasta Daisy	1%
Chamaecrista fasciculata (Cassia f.)	Partridge Pea, PA Ecotype	1%
Papaver rhoeas, Shirley Mix	Corn Poppy/Shirley Mix	1%
Achillea millefolium	Common Yarrow	0.5%
Aster oblongifolius (Symphyotrichum oblongifolium)	Aromatic Aster, PA Ecotype	0.5%
Eupatorium coelestinum (Conoclinium c.)	Mistflower, VA Ecotype	0.5%
Monarda punctata, Coastal Plain SC Ecotype	Spotted Beebalm, Coastal Plain SC Ecotype	0.5%
Asclepias tuberosa	Butterfly Milkweed	0.3%
Pycnanthemum tenuifolium	Slender Mountainmint	0.1%
Company Information		
Ernst Conservation Seeds, Inc.		
Address: 8884 Mercer Pike, Meadville, PA 16335		
Phone: (800) 873-3321		
Web: http://www.ernstseed.com		

*OR APPROVED EQUIVALENT

NOTES:

1. WHEN FINAL GRADE IS ACHIEVED DURING NON–GERMINATING MONTHS, THE AREA SHOULD BE TEMPORARILY STABILIZED UNTIL THE BEGINNING OF THE NEXT PLANTING SEASON.
2. MULCHES SHOULD BE APPLIED AT THE RATES SHOWN IN THE MULCH APPLICATION RATES TABLE. VERY LITTLE BARE GROUND SHOULD BE VISIBLE THROUGH THE MULCH.
3. STRAW AND HAY MULCH SHOULD BE ANCHORED OR TACKIFIED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN.
4. TOPSOIL SHOULD BE UNIFORMLY DISTRIBUTED ACROSS THE DISTURBED AREA TO A DEPTH OF 6 INCHES MINIMUM. SPREADING SHOULD BE DONE IN SUCH A MANNER THAT SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL PREPARATION OR TILLAGE.
5. TOPSOIL SHOULD NOT BE PLACED WHILE THE TOPSOIL OF SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
6. WHEN USED AS A MULCH REPLACEMENT, THE APPLICATION RATE (THICKNESS) OF THE COMPOST SHOULD BE 1/2" TO 3/4". COMPOST SHOULD BE PLACED EVENLY AND SHOULD PROVIDE 100% SOIL COVERAGE. NO SOIL SHOULD BE VISIBLE.
7. PERMANENT STABILIZATION SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF EARTH DISTURBANCE.

SOIL AMENDMENT APPLICATION RATE EQUIVALENTS					
SOIL AMENDMENT		**PER ACRE**	**PER 1,000 SQ. FT.**	**PER 1,000 SQ. YD.**	**NOTES**
PERMANENT SEEDING	AGRICULTURAL LIME	6 TONS	240 LB.	2,480 LB.	OR AS PER SOIL TEST: MAY NOT BE REQUIRED IN AGRICULTURAL FIELDS
	10-10-20 FERTILIZER	1,000 L.B.	25 LB.	210 LB.	
TEMPORARY SEEDING	AGRICULTURAL LIME	1 TON	40 LB.	410 LB.	TYPICALLY NOT REQUIRED FOR TOPSOIL STOCKPILES
	10-10-20 FERTILIZER	500 LB.	12.5 LB.	100 LB.	

COMPOST STANDARDS	
ORGANIC MATTER CONTENT	80% - 100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5 - 8.0
MOISTURE CONTENT	35% - 55%
PARTICLE SIZE	98% PASS THROUGH 1" SCREEN
SOLUBLE SALT CONCENTRATION	5.0 dS/m (mmhos/cm) MAXIMUM

MULCH APPLICATION RATES				
MULCH TYPE	**APPLICATION RATE (MIN.)**			**NOTES**
	PER ACRE	**PER 1,000 SQ. FT.**	**PER 1,000 SQ. YD.**	
STRAW	3 TONS	140 LB.	1,240 LB.	EITHER WHEAT OR OAT STRAW, FREE OF WEEDS, NOT CHOPPED OR FINELY BROKEN
HAY	3 TONS	140 LB.	1,240 LB.	TIMOTHY, MIXED CLOVER AND TIMOTHY, OR OTHER NATIVE FORAGE GRASSES
WOOD CELLULOSE	1,500 LB.	35 LB.	310 LB.	DO NOT USE ALONE IN WINTER, DURING HOT AND DRY WEATHER OR ON STEEP SLOPES (> 3:1)
WOOD	1,000 LB. CELLULOSE	25 LB.	210 LB.	WHEN USED OVER STRAW OR HAY
WOOD CHIPS	4 - 6 TONS	185 - 275 LB.	1,650 - 2,500 LB.	MAY PREVENT GERMINATION OF GRASSES AND LEGUMES

SITE STABILIZATION – SEED MIX

KIRKVILLE ROAD

COMMUNITY SOLAR FARM PROJECT

7390 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057

RPNY SOLAR 5

RENEWABLE PROPERTIES

879 SANCHEZ STREET
SAN FRANCISCO, CA 94114

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C.
280 East Broad Street
Suite 200
Rochester, NY 14604

office: 585.232.5135
fax: 585.232.4652

www.bergmannpc.com

DATE	DESCRIPTION

PRELIMINARY
NOT FOR CONSTRUCTION

Copyright © Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C

Project Manager: ECR
Checked By: RPS
Designed By: WD
Drawn By: WD
Date Issued: 12/18/20
Project Number: 14919.00

DETAILS IV

Drawing Number:

C011

12/21/2020 6:39 PM M:\Renewable Properties, LLC\014919.00 Renewable Properties RPNY Kirkville Rd\4.0 Dwgs\4.1 Civil\14919\0C009-C011_Details.dwg

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Via Hand Delivery
December 23, 2020

Randy Capriotti
Director of Code Enforcement
Town of Manlius, NY
301 Brooklea Drive
Fayetteville, NY 10366

Re: Site Plan and Special Use Permit Application
Proposed RPNY Solar 5, LLC Solar Project– Kirkville Road Solar Project
Kirkville Road Solar Farm
Town of Manlius, Onondaga County, New York

Dear Mr. Capriotti,

This submission serves as an application for Special Use Permit and Site Plan Approval for a proposed solar photovoltaic project ("Kirkville Road Solar Project") on a approximate 7-acre portion of a 27.65-acre parcel of vacant agricultural land located at tax parcel ID: 55-1-10.1 in the Town of Manlius. A prior application package had been submitted for this project on October 14th, 2020 by a previous consultant but had been deemed incomplete per a letter issued by the town on October 21st, 2020. Enclosed please find twelve (12) hard copies and an electronic copy of our submission on a thumb drive for the subject project enclosed, which includes:

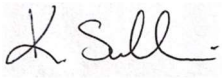
1. RPNY Solar 5, LLC Kirkville Road Town of Manlius Special Permit Application
2. RPNY Solar 5, LLC Kirkville Road Town of Manlius Planning Board Application
3. RPNY Solar 5, LLC Kirkville Road Lease Agreement/ Proof of Ownership
4. RPNY Solar 5, LLC Kirkville Road Utility Agreement
5. RPNY Solar 5, LLC Kirkville Road Exhibit A- Site Plan, Located in Site Plan Set
6. RPNY Solar 5, LLC Kirkville Road Exhibit B- Survey Map, Located in Site Plan Set
7. RPNY Solar 5, LLC Kirkville Road Exhibit C- Legal Description
8. RPNY Solar 5, LLC Kirkville Road Exhibit D- SWPPP
9. RPNY Solar 5, LLC Kirkville Road Exhibit E- Full Environmental Assessment Form (FEAF)
10. RPNY Solar 5, LLC Kirkville Road Exhibit G-Professional Fees Reimbursement Agreement
11. RPNY Solar 5, LLC Kirkville Road Disclosure Affidavit
12. RPNY Solar 5, LLC Kirkville Road Farmland Classification Documentation
13. RPNY Solar 5, LLC Kirkville Road Project Narrative
14. RPNY Solar 5, LLC Kirkville Road Property O&M Plan
15. RPNY Solar 5, LLC Kirkville Road Decommissioning and Removal Plan/ Estimate

A visual impact analysis is not included based on a discussion with the Town Engineer, Doug Miller. He recommended having this discussion with the Planning Board after their initial review. Exhibit F, Freshwater Wetlands Letter, is also not included. A wetland delineation was completed by the previous consultant and delineated wetlands and regulated NYSDEC 100-foot adjacent areas are shown on the enclosed site plan. Since the project is avoiding delineated wetlands under the jurisdiction of NYSDEC and the Corps and 100-ft wetland

adjacent areas regulated by NYSDEC, no permits or letters of permission are required from the Corps and/or NYSDEC.

We respectfully request to be placed on the agenda for the **January 11, 2021 Manlius Planning Board meeting**. A check for review of this Special Use Permit application has already been submitted with the previous application. Should you have any questions or require any additional information, please feel free to contact me at 607-333-3116 or via email at khsullivan@bergmannpc.com .

Sincerely,



Kelly Sullivan
SENIOR PROJECT MANAGER, BERGMANN
Cc: Stephanie Loucas, Brian Madigan, AICP, Erin Takata (RPNY Solar 5, LLC)
Dave Plante, AICP CEP (Bergmann – Rochester, NY)
Robert Switala, PE, CPESC, CPSWQ (Bergmann – Horseheads, NY)

TOWN OF MANLIUS
SPECIAL PERMIT APPLICATION
(Original or Renewal)

DATE: October 7, 2020 Tax Map # 3138890 55.01.10.1

I Stephanie Loucas as applicant relative to property located at

7390 Kirkville Road, East Syracuse, NY 13057

hereby request/apply for issuance/renewal (CIRCLE ONE) of a **SPECIAL PERMIT** from the Town of Manlius Town Board as required by the Town of Manlius Code, submit the following application and documentary evidence and/or information, including comprising the Exhibits in support of this request and certify that it is correct, true and accurate to the best of my/our knowledge and after reasonable due diligence and investigation. I further knowledge and agree that should any such evidence or information be later determined as false or not credible in any material respect, any special permit issued/renewed based thereon may be determined by the Town Board as void from the start or revocable.

Applicant's Signature

A 1. Owner(s) of property: Abdulah Alemic

A 2. Status (Owner, Lessee) of each applicant: Lesee

A 3. Present Zoning of Property: Restricted Agriculture

A.4. Present Use of Property (describe in detail as best as reasonably possible- add additional pages as needed): Single family residential

A5Describe property condition at present: Single family home with outbuildings and large undeveloped open space to south of frontage on Kirkville Road

B 1. Proposed use of property: Single family residence with addition of a small scale community solar project

B 2. Anticipated number of employees, guests, customers on property:
The project will be remotely operated and does not require full time staff for O&M. Regular maintenance items over the life of the system will include washing the dust off the panels at least twice a year and managing vegetation growth.

B 3. Hours of Proposed Operation: The project will generate electricity during daylight hours

dd/2017

B 4. Anticipated Automobile Parking: N/A

B 5. Parking Area Buffer/Screening: N/A

B 6. Anticipated Vehicle Traffic Volume/Flow: The Project will not generate any traffic, and once constructed requires very little ongoing maintenance.

B 7. Proposed Site Lighting: No lighting proposed.

B 8. Anticipated noise sources, known decibel levels: The noise generated by the power conversion devices and transformers is minimal, consisting mostly of low humming and cooling fans.
~ 37dBA when observed from 50 feet away (inside the project area)
Quieter than a cycling refrigerator and only noticeable if standing within the solar array

B 9. Landscape:

a) Existing landscaping: The project area is currently a mix of maintained lawn with trees interspersed

b) Proposed landscaping: n/a

B 10. Proposed Signage: No signage is proposed.

B 11. Level of municipal and other services required to support the proposed activity (i.e., water supply sanitary sewage facilities): The project will not require public water, sewer, or other resources

B 12. Specific Requirements:

	Town Code (District) Requirement:	Proposal:
Parking Spaces	n/a	n/a
Lot Coverage		
Front Yard Setback	50'	50'
Side Yard Setback	50'	50'
Rear Yard Setback	50'	>1,000'
Maximum Height of Building	-	8' (from ground surface to max height of panel)

Expected Fee: _____

TOWN OF MANLIUS
PLANNING DEPARTMENT
INITIAL APPEARANCE APPLICATION

DATE: 10/8/20

Name of Project: Kirkville Road Solar

Applicant must submit 12 copies of all site plans, surveys, and supporting data with the final application before a planning board meeting can be scheduled.

Location of Project: **7390 Kirkville Road East Syracuse, NY 13057**

Type of Project:

◯ Division of Land ◯ Subdivision ◯ Accessory Use ◯ Zone Change ⊗ Site Review ◯ Other _____

Developer: Wildcat Renewables, LLC Phone: 415-449-1528

Address: 879 Sanchez Street, San Francisco, CA Zip: 94114

Tax Map Number(#)/s: 313889 055.01.10.1

Present Zoning: RA Desired Zoning: N/A

Total Acreage: Project: 7 acres, Parcel: 27 acres Total Number of Lots: N/A

Property Owner/s: Abdulah Alemic Phone: 315-560-4113

Address: 6533 N. MANLIUS ROAD, Kirkville, NY Zip: 13082

Tax Map#(s): _____ Owner's Signature: A. Alemic

Printed Name: Abdulah Alemic

Property Owner/s: _____ Phone: _____

Address: _____ Zip: _____

Tax Map#(s): _____ Owner's Signature: _____

Printed Name: _____

Use next page for additional known property owners' information

---

Planning Board Meeting Date Assignment: _____

Fee: _____ Paid: _____ Per: ◯ Credit/Debit Card ◯ Check ◯ Cash

TOWN OF MANLIUS
PLANNING DEPARTMENT
INITIAL APPEARANCE APPLICATION
(continued)

Property Owner/s: _____ Phone: _____

Address: _____ Zip: _____

Tax Map#(s): _____ Owner's Signature: _____

_____ Printed Name: _____

Property Owner/s: _____ Phone: _____

Address: _____ Zip: _____

Tax Map#(s): _____ Owner's Signature: _____

_____ Printed Name: _____

Property Owner/s: _____ Phone: _____

Address: _____ Zip: _____

Tax Map#(s): _____ Owner's Signature: _____

_____ Printed Name: _____

Property Owner/s: _____ Phone: _____

Address: _____ Zip: _____

Tax Map#(s): _____ Owner's Signature: _____

_____ Printed Name: _____

Property Owner/s: _____ Phone: _____

Address: _____ Zip: _____

Tax Map#(s): _____ Owner's Signature: _____

_____ Printed Name: _____

Property Owner/s: _____ Phone: _____

Address: _____ Zip: _____

Tax Map#(s): _____ Owner's Signature: _____

_____ Printed Name: _____

617.20
Appendix B
Short Environmental Assessment Form

Instructions for Completing

Part 1 - Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 - Project and Sponsor Information
Wildcat Renewables, LLC

Name of Action or Project:
Site Plan and Special Use Permit

Project Location (describe, and attach a location map):
7390 Kirkville Road, East Syracuse, NY 13057 (See Exhibit 2.0 of filing for Site Plan)

Brief Description of Proposed Action:
On behalf of Renewable Properties, LLC, Wildcat Renewables, LLC is proposing to construct the "Kirkville Road Solar Project" ("Project"), a small-scale community solar project located on approximately 7-acres of an approximately 27-acre parcel (APN: 313889 055.-01-10.1) in the Town of Manlius. Wildcat Renewables, LLC has entered into a lease agreement with the property owner (Abdulah Alemic) to facilitate the development of this Project. National Grid completed the Coordinated Electric System Interconnect (CESIR) Review in July 2020. The addition of the project will require minor upgrades to the existing distribution system.

Name of Applicant or Sponsor:	Telephone: 415-449-1528
Wildcat Renewables, LLC	E-Mail: stephanie@renewprop.com

Address:
879 Sanchez Street

City/PO:	State:	Zip Code:
San Francisco	CA	94114

	NO	YES
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.	X	
2. Does the proposed action require a permit, approval or funding from any other governmental Agency? If Yes, list agency(s) name and permit or approval: The Project will peruse a Payment in Lieu of Tax (PILOT) agreement and comply with all federal, state and local permitting requirements.		X

3.a. Total acreage of the site of the proposed action? 27 acres
b. Total acreage to be physically disturbed? 7 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 27 acres

4. Check all land uses that occur on, adjoining and near the proposed action.
☐ Urban ☐ Rural (non-agriculture) ☐ Industrial ☐ Commercial ☒ Residential (suburban)
☐ Forest ☐ Agriculture ☐ Aquatic ☐ Other (specify): _____
☐ Parkland

	NO	YES	N/A
5. Is the proposed action,			
a. A permitted use under the zoning regulations?	☐	X	☐
b. Consistent with the adopted comprehensive plan?	☐	X	☐

	NO	YES
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	☐	X
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area? If Yes, identify:	X	☐
8. a. Will the proposed action result in a substantial increase in traffic above present levels?	X	☐
b. Are public transportation service(s) available at or near the site of the proposed action? N/A	☐	☐
c. Are any pedestrian accommodations or bicycle routes available on or near site of the proposed action? N/A	☐	☐
9. Does the proposed action meet or exceed the state energy code requirements? If the proposed action will exceed requirements, describe design features and technologies:	X	☐
10. Will the proposed action connect to an existing public/private water supply? If No, describe method for providing potable water: The project will not use potable water	X	☐
11. Will the proposed action connect to existing wastewater utilities? If No, describe method for providing wastewater treatment: The project will not generate wastewater	X	☐
12. a. Does the site contain a structure that is listed on either the State or National Register of Historic Places?	X	☐
b. Is the proposed action located in an archeological sensitive area?	X	☐
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency?	☐	X
b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody? If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres: No. The project has been designed to avoid potential impacts to State mapped DEC wetlands and buffer areas.	X	☐

14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply:

☐ Shoreline ☐ Forest ☐ Agricultural/grasslands ☒ Early mid-successional

☐ Wetland ☐ Urban ☒ Suburban

	NO	YES
15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered? A site specific biological resource evaluation will be conducted	☐	X
16. Is the project site located in the 100 year flood plain?	X	☐
17. Will the proposed action create storm water discharge, either from point or non-point sources? If Yes, a. Will storm water discharges flow to adjacent properties? ☐ NO ☐ YES	X	☐
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)? ☐ NO ☐ YES If Yes, briefly describe:		

	NO	YES
18. Does the proposed action include construction or other activities that result in the impoundment of water or other liquids (e.g. retention pond, waste lagoon, dam)? If Yes, explain purpose and size:	X	
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility? If Yes, describe:	X	
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste? If Yes, describe: The former Greiner Orchards site is located across from the ESM Central High School, about a quarter of a mile west of the project site. Pesticide usage associated with the orchard resulted in contamination of the site.	X	

I AFFIRM THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Applicant/sponsor name: Stephanie Loucas Date: 10.14.20

Signature: SR

STOP

Part 2 - Impact Assessment. The Lead Agency is responsible for the completion of Part 2. Answer all of the following questions in Part 2 using the information contained in Part 1 and other materials submitted by the project sponsor or otherwise available to the reviewer. When answering the questions the reviewer should be guided by the concept "Have my responses been reasonable considering the scale and context of the proposed action?"

	No, or small impact may occur	Moderate to large impact may occur
1. Will the proposed action create a material conflict with an adopted land use plan or zoning regulations?		
2. Will the proposed action result in a change in the use or intensity of use of land?		
3. Will the proposed action impair the character or quality of the existing community?		
4. Will the proposed action have an impact on the environmental characteristics that caused the establishment of a Critical Environmental Area (CEA)?		
5. Will the proposed action result in an adverse change in the existing level of traffic or affect existing infrastructure for mass transit, biking or walkway?		
6. Will the proposed action cause an increase in the use of energy and it fails to incorporate reasonably available energy conservation or renewable energy opportunities?		
7. Will the proposed action impact existing: a. public / private water supplies?		
b. public / private wastewater treatment utilities?		
8. Will the proposed action impair the character or quality of important historic, archaeological, architectural or aesthetic resources?		
9. Will the proposed action result in an adverse change to natural resources (e.g., wetlands, waterbodies, groundwater, air quality, flora and fauna)?		

	No, or small impact may occur	Moderate to large impact may occur
10. Will the proposed action result in an increase in the potential for erosion, flooding or drainage problems?	☐	☐
11. Will the proposed action create a hazard to environmental resources or human health?	☐	☐

Part 3 - Determination of significance. The Lead Agency is responsible for the completion of Part 3. For every question in Part 2 that was answered "moderate to large impact may occur", or if there is a need to explain why a particular element of the proposed action may or will not result in a significant adverse environmental impact, please complete Part 3. Part 3 should, in sufficient detail, identify the impact, including any measures or design elements that have been included by the project sponsor to avoid or reduce impacts. Part 3 should also explain how the lead agency determined that the impact may or will not be significant. Each potential impact should be assessed considering its setting, probability of occurring, duration, irreversibility, geographic scope and magnitude. Also consider the potential for short-term, long-term and cumulative impacts.

☐ Check this box if you have determined, based on the information and analysis above, and any supporting documentation, that the proposed action may result in one or more potentially large or significant adverse impacts and an environmental impact statement is required.

☐ Check this box if you have determined, based on the information and analysis above, and any supporting documentation, that the proposed action will not result in any significant adverse environmental impacts.

Name of Lead Agency	Date
Print or Type Name of Responsible Officer in Lead Agency	Title of Responsible Officer
Signature of Responsible Officer in Lead Agency	Signature of Preparer (if different from Responsible Officer)

PRINT

COVER SHEET

LEASE AGREEMENT

Effective Date	December [19], 2019	
Lease Commencement Date	The Effective Date	
Lessor	Abdulah Alemic	
Lessee	Wildcat Renewables, LLC	
Property address	7390 Kirkville Road, East Syracuse, NY 13057	
Premises	Approximately 27.65 acres, as may be adjusted pursuant to Section 3(c)	
Rent	[redacted]	
Development Period	Twenty Four (24) months after the Effective Date, as may be extended pursuant to Section 5(b)	
Extended Term	Twenty (20) years commencing upon the earlier of (i) the date the System begins commercial operation; or (ii) the expiration of the Development Period, as may be extended by Section 6	
Extension Exercise Notice Deadline[1]		
Addresses for Notices	Lessee: Wildcat Renewables, LLC c/o Renewable Properties, LLC 879 Sanchez Street San Francisco, CA 94114 Attn: Aaron Halimi	Lessor: Abdulah Alemic 6533 N Manlius Road Kirkville, NY 13082

[1] Parties agree to write in once Extension Exercise Notice is delivered.

LEASE AGREEMENT

This Lease Agreement ("***Lease***") is dated as of the Effective Date and is entered into by and between Lessor and Lessee (each a "***Party***" and together, the "***Parties***").

A. The real property owned by Lessor that is the subject of this Lease including access rights and Easements ("***Premises***") and the property on which the Premises is located, if larger, ("***Property***"), is more particularly described in the attached Exhibit A, as may be adjusted pursuant to Section 3(c) below.

B. Lessee desires to obtain the exclusive right to occupy the Premises and to enjoy all the rights necessary for Lessee to occupy, develop, design, engineer, access, construct, monitor, install, own, maintain and operate the System to be located upon, on and within the Premises as well as all the rights necessary or desirable for Lessee to sell the energy generated by such System and any and all other credits, solar renewable energy credits, and any other environmental financial attributes created as a result of such energy generation.

[redacted]

NOW, THEREFORE, in consideration of the foregoing and the mutual covenants and agreements herein contained, the receipt and sufficiency of which is acknowledged, and intending to be legally bound hereby, Lessee and Lessor hereby agree to the foregoing recitals and as follows:

1. **Definitions**. Capitalized terms not otherwise defined in this Lease or on the Cover Sheet have the meanings assigned to them in Exhibit C.

2. **Development Period**. During the Development Period, and if applicable, the Extended Term, Lessor shall cooperate with (i) the performance of Tests, (ii) the obtaining by Lessee, at Lessee's expense, of all licenses and Permits or authorizations required for Lessee's use of the Premises from all applicable government and/or regulatory entities (collectively, "***Governmental Approvals***") and (iii) the securing by Lessee at Lessee's expense of all other leases, agreement, licenses and Permits or authorizations that relate to other Property or Premises. Lessor agrees to use reasonable efforts in assisting Lessee to acquire necessary utility service at the Premises. In the event that a utility company requires an easement in connection with Lessee's use of the Premises, Lessor shall grant such necessary easement to the utility company, provided that such easement is in a commercially reasonable and recordable form. In connection with the foregoing, Lessee shall reimburse Lessor for all governmental fees and expenses for the Governmental Approvals within thirty (30) days after written demand therefor.

3. **Leased Premises, Use and Related Rights**.

(a) Lessor hereby leases the Premises to Lessee to occupy, develop, design, engineer, construct, access, monitor, install, own, operate and maintain the System for the generation and distribution of electrical power. Lessor hereby also grants to Lessee and the applicable utility company, at all times on a 24-hours-a-day, 7-days-a-week basis, for any purposes reasonably connected with this Lease for a period co-terminus with the Lease, an easement which is irrevocable during the Lease Term for access, ingress, egress, utilities and related rights to the Premises and/or any surrounding or nearby property owned or leased by Lessor, passage through which is necessary or convenient to install, operate or gain access to the System or the Premises (the "***Easements***"). The Easements are generally depicted on Exhibit A attached hereto and incorporated herein. In the event that Lessee or the utility company desires to make such Easements a public record, Lessor shall execute and have notarized a commercially reasonable recordable document to memorialize the Easement, which Lessee may record in the office where real estate records are customarily filed in the jurisdiction of the Premises.

(b) Lessor hereby grants Lessee an easement measured at angles of three hundred sixty (360) degrees horizontally and three hundred sixty (360) degrees vertically from the boundaries of the Leased Premises as necessary to enjoy the rights granted pursuant to Section 3(c).

(c) Lessor hereby grants Lessee an irrevocable easement for the exclusive right and easement to use, convert, maintain and capture the solar energy resources on, over and across the Premises, and for the free and unobstructed insolation and flow of the solar energy resources on, about, over and across the Premises, together with the exclusive right to (i) develop, use, convert, maintain and capture such solar energy resources, (ii) convert the solar energy resources into electrical energy and (iii) derive and keep all credits and income from these activities (subject to the payment of fees to Lessor, as set forth in this Lease).

[redacted]

(e) Lessor hereby grants Lessee the right to use and occupy the Premises for any lawful use, including without limitation, installing and operating one or more solar photovoltaic electric generating systems, designed to produce electricity and deliver such electricity to the electric interconnection point, and all related appurtenances.

[redacted]

(g) Lessee shall have the right to install utilities, at Lessee's expense, and to improve the present utilities on the Property (including, but not limited to, the installation of emergency power generators).

[redacted]

5. **Term and Termination; Removal**.

(a) The Lease Term shall commence on the Lease Commencement Date and terminate on the Expiration Date, as it may be sooner terminated or extended. Notwithstanding anything to the contrary herein, the Expiration Date shall not occur prior to the expiration of any power purchase, energy sales, utility credit purchase or similar agreement entered into by Lessee to sell the products generated by the System.

(b) The Development Period shall commence on the Effective Date and terminate on the date that is twenty-four (24) months thereafter, provided such period may be extended by Lessee for an additional twelve (12) months upon written extension notice by Lessee to Lessor given within the Development Period (the "***Development Period***").

(c) Notwithstanding anything to the contrary herein, Lessee may terminate this Lease immediately upon thirty (30) days written notice to Lessor without penalty or further liability within the Development Period if: (i) Lessee determines that the System cannot be installed and operated according to the investment criteria of Lessee's debt or equity financing sources and the provisions of the applicable power purchase agreement and interconnection agreement, (ii) if Lessee receives unacceptable Test results, (iii) if Lessee does not obtain, maintain or otherwise forfeits or cancels any necessary license, permit or Governmental

Approval, or (iv) in Lessee's sole and absolute discretion. If Lessee determines that the condition of the title to the Premises could delay, interfere with, impair or prevent Lessee's development, operation or financing of the System, Lessee shall notify Lessor of such condition and Lessor shall remove such condition prior to the expiration of the Development Period. If Lessor is unable to remove such condition within such period, Lessee shall have the option upon written notice to Lessor prior to the end of such period, to extend the Development Period for thirty (30) days to allow for Lessor to remove such condition.

[redacted]

7. **System Construction; Lessor Acknowledgment**. Prior to commencement of construction of the System by Lessee, Lessee shall obtain the necessary Permits. Throughout the Lease Term, Lessee shall have the right to construct, operate, maintain, clean, repair, replace and dispose of part or all of the System as Lessee in its discretion determines to be necessary. Lessor acknowledges and understands that the System shall consist of a solar photovoltaic electric generating system, designed to produce electricity and deliver such electricity to the electric interconnection point, including without limitation all of the following: installation equipment; generation facilities, including inverters, fuses, transformers, wiring and output breakers; facilities necessary to connect to the electric interconnection point; protective and associated equipment; and other improvement reasonably necessary for the construction, operation, monitoring and maintenance of the system. Except as may otherwise be specifically agreed upon by the Parties or as expressly set forth herein, Lessee shall be responsible for all costs of design, permitting, construction, installation, operation, maintenance and removal of the System.

8. **Access to Premises**.

(a) Commencing on the Effective Date and throughout the Lease Term, Lessee shall have the exclusive right to enter upon the Property to perform all effort and labor necessary to carry out tests, inspections, surveys and investigations ("***Tests***"), and design, engineer, construct, install, inspect, test, operate, upgrade, repair and maintain the System on the Premises. Lessor shall provide sufficient space for the temporary storage and staging of tools, materials and equipment and for the parking of construction crew vehicles and temporary construction trailers and facilities reasonably necessary during the furnishing, installation, testing, commissioning, deconstruction, disassembly, decommissioning and removal of the System and access for rigging and material handling, and including a temporary, reasonable area for construction

laydown, as further described on Exhibit B or as reasonably designated by Lessor from time to time. Lessor and its authorized representatives shall at all times have access to and the right to observe the installation of the System, subject to compliance with Lessee's safety rules and Applicable Laws, and subject at all times to the sole and absolute discretion of Lessee's construction manager; provided, however, that Lessor shall not interfere with the installation of the System or enter onto, move, adjust, alter, tamper with or otherwise handle any Lessee equipment or any component of the System.

(b) Lessee and Lessee Parties shall at all times conduct themselves in a professional manner at the Premises and shall observe the reasonable requests of Lessor. Lessee shall use reasonable care in entering and exiting the Premises, and in its storage of equipment and materials at the Premises or Property.

(c) Upon termination of the Lease, Lessee shall, at Lessee's sole cost and expense, promptly remove any and all liens, improvements, personal property, equipment, goods, and other property, and all trash, debris, and other refuse from the Premises that is the result of Tests, and shall have no other rights in and to the Premises or Property.

9. **Statutory and Regulatory Compliance**. Lessee, Lessee Parties, Lessor and the Lessor Parties shall each comply with all applicable provisions of all Applicable Laws of the locality in which the Property is located.

[redacted]

11. **Representation and Warranties of the Parties as to Authorization and Enforceability**

Each Party represents and warrants that the execution and delivery by such Party of, and the performance of its obligations under, this Lease have been duly authorized by all necessary action, do not and will not require any further consent or approval of any other Person, and do not contravene any provision of, or constitute a default under any indenture, mortgage or other material agreement binding on such Party or any valid order of any court, or regulatory agency or other body having authority to which such Party is subject. This Lease constitutes a legal and valid obligation of such Party, enforceable against it in accordance with its terms, except as may be

limited by a Bankruptcy Event, reorganization, insolvency, bank moratorium or laws relating to or affecting creditors' rights generally and general principles of equity where such enforceability is considered in a proceeding in equity or at law.

12. **Representations, Warranties and Covenants of the Lessor**

[redacted]

[redacted]

[redacted]

(e) Hazardous Substances. Lessor represents and warrants that there are no Hazardous Substances present on, in or under the Property or Premises in violation of any Applicable Law.

(f) Condition of Premises. Except as otherwise expressly set forth herein Lessee accepts the Premises "as is" without benefit of any improvements or modifications to be made by Lessor. Lessor represents and warrants to Lessee that there are no site conditions at the Property or Premises which would: (i) materially increase the cost of installing the System at the planned locations on the Premises or would materially increase the cost of maintaining the System at the Premises over the cost that would be typical or customary for solar photovoltaic systems substantially similar to the System; or (ii) adversely affect the ability of the System, as designed, to produce electricity once installed, absent conditions beyond Lessor's reasonable control.

(g) Notice of Damage or Emergency. Lessor shall immediately notify Lessee if Lessor becomes aware, through discovery or receipt of notice: (i) of any damage to or loss of the use of the System; (ii) of any event or circumstance that poses an imminent risk to human health, the environment, the System or the Premises; or (iii) of any interruption or material alteration of the energy supply to or from the Premises or the System.

[redacted]

[redacted]

14. **Hazardous Substances**. Neither Party shall introduce or use any Hazardous Substances on, in or under the Premises or Property in violation of any Applicable Law. If a Party becomes aware of any such Hazardous Substances, it shall promptly notify the other Party of the type and location of such Hazardous Substances in writing. Each Party agrees to indemnify, defend and hold harmless the other Party from and against any and all Environmental Claims including, but not limited to, damages, costs, expenses, assessments, penalties, fines, losses, judgments and reasonable attorney fees that such Parties may suffer or incur due to any actions, that relate to or arise from such Party's activities on the Premises, except to the extent directly attributable to the negligent acts or omissions or willful misconduct of the other Party. The indemnifications in this section specifically include, without limitation, costs incurred in connection with any investigation of site conditions or any cleanup, remedial, removal or restoration work required by any governmental authority. Lessor shall be responsible for, and shall promptly conduct any investigation and remediation as required by any Applicable Law, all spills or other releases of any Hazardous Substance not caused solely by Lessee, that have occurred or which may occur on the Property. Lessor agrees to indemnify, defend and hold Lessee harmless from Environmental Claims resulting from actions on the Property not caused by Lessee. This Section 14 shall survive the termination or expiration of this Lease.

15. **Maintenance**. Throughout the Lease Term, any Extension Term and through the Removal and Restoration Date, Lessee shall have the right: (i) to add to, remove or modify the System or any part thereof, and (ii) to perform (or cause to be performed) all tasks necessary or appropriate, as reasonably determined by Lessee, to carry out the activities set forth in this Lease, including, but not limited to, the right to clean, repair, replace and dispose of all or a part of the System as Lessee in its sole discretion determines to be necessary, without prior notice to or consent of Lessor, and all at the sole cost and expense of Lessee. Lessee, at its expense, may use any and all appropriate means of restricting access to the System and Premises, including without limitation, the construction of a fence.

16. **Insurance**.

(a) Generally. Lessor and Lessee shall each maintain the insurance coverages set forth in Exhibit D in full force and effect throughout the Lease Term either through insurance policies, or self-insured programs reasonably acceptable to the other Party. Each Party, upon request, but not more than twice in any twelve (12) month period, shall furnish current certificates evidencing that the coverage required is being maintained.

(b) Waiver of Subrogation. Each Party hereby waives any right of recovery against the other for injury or loss to personal property due to hazards covered by insurance obtained with respect to the Property or Premises, including the improvements and installations thereon.

(c) System Loss. In the event of any harm to the System that, in the reasonable judgment of Lessee, results in total damage, destruction or loss of the System ("***System Loss***"), Lessee shall, within twenty (20) Business Days following the occurrence of such System Loss, notify Lessor whether Lessee is willing, notwithstanding such System Loss, to repair or replace the System and to continue the Lease. In the event that Lessee notifies Lessor that Lessee is not willing to repair or replace the System, (i) this Lease shall terminate automatically effective upon the date of such System Loss, (ii) Lessee shall be entitled to all proceeds of its insurance policies with respect to the System Loss, and (iii) Lessor shall promptly return to Lessee any prepaid but unearned rent.

17. **Taxes**.

AK

[redacted]

18. **Liability and Indemnity**.

[redacted]

[redacted]

(c) This Section 18 shall survive the termination of this Lease.

[redacted]

22. **Defaults and Remedies**.

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

REMAINDER OF PAGE INTENTIONALLY LEFT BLANK – SIGNATURE PAGE FOLLOWS

IN WITNESS WHEREOF, the Parties have executed this Lease as of the Effective Date set forth on the Cover Sheet.

LESSOR:

ABDULAH ALEMIC

By: A. Alemic
Name: Abdulah Alemic
Title: Lessor

LESSEE:

WILDCAT RENEWABLES, LLC

By: Renewable Properties Holdings, LLC, its sole member

By: Renewable Properties, LLC, its sole member

By:
Name: Aaron Halimi
Title: President

EXHIBIT A
DESCRIPTION OF PROPERTY AND PREMISES

Legal description of the Property and Premises
including a parcel map and/or an abstract of survey, if available.

That real property in Onondaga County, New York, City of East Syracuse, located at 7390 Kirkville Road, totaling approximately +/- 27.65 acres, known as Assessor's Parcel Number 313889 055.-01-10.1, described as follows:

[The Parties agree to insert a legal description at a later date as and when provided by a Nationally Recognized Title Company and approved by the Lessee during the Development Period.]

EXHIBIT B
SYSTEM SPECIFICATIONS AND SITE PLAN

[Insert drawing showing the proposed general arrangement of the System on the Premises]

EXHIBIT C
DEFINITIONS

"***Affiliate***" means, as to any Person, any other Person that, directly or indirectly, is in control of, is controlled by or is under common control with such Person or is a director or officer of such Person or of an Affiliate of such Person.

"***Applicable Law***" means, with respect to any Person, any constitutional provision, law, statute, rule, regulation, ordinance, treaty, order, decree, judgment, decision, certificate, holding, injunction, registration, license, franchise, permit, authorization, guideline, Governmental Approval, Environmental Law, consent or requirement of any Governmental Authority having jurisdiction over such Person or its property, enforceable at law or in equity, including the interpretation and administration thereof by such Governmental Authority.

"***Bankruptcy Event***" means with respect to a Party, that either: such Party has (A) applied for or consented to the appointment of, or the taking of possession by, a receiver, custodian, trustee or liquidator of itself or of all or a substantial part of its property; (B) admitted in writing its inability to pay its debts as such debts become due; (C) made a general assignment for the benefit of its creditors; (D) commenced a voluntary case under any bankruptcy law; (E) filed a petition seeking to take advantage of any other law relating to bankruptcy, insolvency, reorganization, winding up, or composition or readjustment of debts; or (F) taken any corporate or other action for the purpose of effecting any of the foregoing; or a proceeding or case has been commenced without the application or consent of such Party in any court of competent jurisdiction seeking (A) its liquidation, reorganization, dissolution or winding-up or the composition or readjustment of debts or, (B) the appointment of a trustee, receiver, custodian, liquidator or the like of such Party under any bankruptcy law, and such proceeding or case has continued undefended, or any order, judgment or decree approving or ordering any of the foregoing shall be entered and continue unstayed and in effect for a period of one hundred eighty (180) days.

"***Business Day***" means any day other than Saturday, Sunday or any other day on which banking institutions in the state where the Property is located are required or authorized by Applicable Law to be closed for business.

"***CRP Contract***" means a Conservation Reserve Program contract affecting the Leased Premises and to which Landowner is a party with the United States Department of Agriculture pursuant to 7 C.F.R. Part 1410, including any amendments or modifications thereto.

"***CRP Program***" means the Conservation Reserve Program or any substantially similar program adopted pursuant to state or federal Law.

"***Environmental Attributes and Incentives***" means any tax credit, renewable energy credit, "REC," emissions, air quality or other environmental attribute, aspect, characteristic, claim, credit, benefit, reduction, offset or allowance, howsoever entitled or designated, directly or indirectly resulting from, attributable to or associated with the generation of energy by a solar renewable energy facility, whether existing as of the date of any Effective Date or thereafter, and whether as a result of any present or future local, state or federal laws or regulations or local, state, national or international voluntary program.

"***Environmental Claims***" means any and all administrative and judicial actions and rulings, claims, causes of action, demands and liability, including, but not limited to, damages, costs, expenses, assessments, penalties, fines, losses, judgments and reasonable attorney fees that any Party may suffer or incur due to the existence of any Hazardous Substances on the Property or the migration of any

Hazardous Substance to other properties or the release of any Hazardous Substance into the environment, that relate to or arise from such Party's activities on the Property.

"***Environmental Law***" means and includes, without limitation, any present or future federal, state or local law, whether under common law, statute, rule, regulation or otherwise, requirements under Permits or other authorizations issued with respect thereto, and other orders, decrees, judgments, directive or other requirements of any Governmental Authority relating to or imposing liability or standards of conduct, disclosure or notification with regard to the protection of human health, the environment, ecological conditions, Hazardous Substances or any activity involving Hazardous Substances.

"***Expiration Date***" the date on which the Lease Term as such date may be extended in accordance with the Lease, expires or the date on which this Lease is terminated, whichever is earlier.

"***Financing Party***" means, as applicable (i) any Person (or its agent) from whom Lessee (or an Affiliate of Lessee) leases the System or (ii) any Person (or its agent) who has made or will make a loan to or otherwise provide capital to Lessee (or an Affiliate of Lessee) with respect to the System. Lessee shall give Lessor notice of and the contact information for any such Financing Party within one hundred twenty (120) days after the Commencement Date and shall confirm any change in such contact information upon request of Lessor.

"***Force Majeure Event***" means, when used in connection with the performance of a Party's obligations under this Lease, any events or circumstances beyond the affected Party's reasonable control that arise after the Effective Date, to the extent not caused by the acts or omissions of (and are otherwise unavoidable, or beyond the reasonable control of, and could not have been prevented or overcome by the reasonable efforts and diligence of) such Party and which materially and adversely affects such Party's performance of its obligations under this Agreement. To the extent the foregoing requirements are met, Force Majeure Event may include but is not limited to the following: (i) war, riot, acts of a public enemy or other civil disturbance; (ii) acts of God, including but not limited to, earthquakes, tornados, typhoons, lightning, blizzards, hurricanes and landslides; (iii) acts of, or unreasonably excessive failures to act by, any Governmental Authority including changes in Applicable Law after the Effective Date (other than acts of Governmental Authorities in response to a Party's failure to comply with existing Applicable Laws as required in connection with performance under this Agreement); and (iv) strikes, walkouts, lockouts or similar industrial or labor actions or disputes not caused by, specific to employees of, or the result of an unfair labor practice or other unlawful activity by the asserting Party.

"***Governmental Approval***" means any approval, consent, franchise, permit, certificate, resolution, concession, license, or authorization issued by or on behalf of any applicable Governmental Authority.

"***Governmental Authority***" means any federal, state, regional, county, town, city or municipal government, whether domestic or foreign, or any department, agency, bureau or other administrative, regulatory or judicial body of any such government.

"***Hazardous Substances***" means and includes, without limitation any substance, chemical, material or waste: (i) the presence of which causes a nuisance or trespass of any kind under any applicable Environmental Law; (ii) which is regulated by any Governmental Authority; (iii) is likely to create liability under any Environmental Law because of its toxic, flammable, corrosive, reactive, carcinogenic, mutagenic, infectious, radioactive, or other hazardous property or because of its effect on the environment, natural resources or human health and safety, including but not limited to, flammables and explosives, gasoline, petroleum and petroleum products, asbestos containing materials, polychlorinated biphenyls, lead and lead-based paint, radon, radioactive materials, microbial matter, biological toxins, mylotoxins, mold or mold spores or any hazardous or toxic material, substance or waste which is defined

by those or similar terms or is regulated as such by any Governmental Authority; or (iv) which is designated, classified, or regulated as being a hazardous or toxic substance, material, pollutant, waste (or a similar such designation) under any federal, state or local law, regulation or ordinance, including under any Environmental Law.

"***Lease Term***" means the period that commences on the Lease Commencement Date and expires at 11:59 p.m. on the Expiration Date.

"***Lessee Party***" or "***Lessee Parties***" means, individually or collectively, Lessee, its Affiliates and any of their authorized representatives, agents, employees, managers, contractors, architects and engineers, and each of their respective officers, directors, partners, members, managers, agents, employees, representatives and invitees.

"***Lessor Parties***" means, individually or collectively, Lessor, its Affiliates and any of their authorized representatives, agents, employees, managers and each of their respective officers, directors, partners, members, managers, agents, employees, and representatives.

"***Local Electric Utility***" means the local electric distribution owner and operator providing electric distribution services to Lessee and also providing electric distribution and/or transmission interconnection services to Lessee for Lessee's System.

"***Mortgage***" means security interests, including deeds of trusts, in all or in part of the System.

"***Permits***" means all applications, approvals, authorizations, consents, filings, licenses, orders, permits or similar requirements imposed by any Governmental Authority, which are required in order to develop, construct, operate, maintain, improve, refurbish and retire the System or to schedule and deliver the electric energy produced by the System to the Local Electric Utility, including an authorization to construct or a conditional use permit.

"***Person***" means any individual, corporation, partnership, limited liability company, joint venture, estate, trust, unincorporated association, any other person or entity, and any federal, state, county or municipal government or any bureau, department or agency thereof and any fiduciary acting in such capacity on behalf of any of the foregoing.

"***Removal and Restoration Date***" means the date that is one hundred-eighty (180) days after the Expiration Date.

"***System***" means the solar photovoltaic system to be installed and operated at the Premises, as more particularly described and depicted in Exhibit B attached hereto and incorporated herein, together with all energy storage systems, utility lines, electrical production, transmission and distribution facilities, hardware and materials, including without limitation, overhead and underground transmission, distribution or collector lines, circuit breakers, meters, conduit, footings, cabling, wires, overhead and underground control, communications and radio relay systems, interconnection facilities and/or switching facilities, transformers and current inverters, control boxes and computer monitoring equipment systems, structures, features and improvements necessary to produce electric energy at such facility (excluding power to the Property).

EXHIBIT D
INSURANCE

[redacted]

APPENDIX A

NEW YORK STATE STANDARDIZED CONTRACT FOR INTERCONNECTION OF NEW DISTRIBUTED GENERATION UNITS AND/OR ENERGY STORAGE SYSTEMS WITH CAPACITY OF 5 MW OR LESS CONNECTED IN PARALLEL WITH UTILITY DISTRIBUTION SYSTEMS

Interconnection Customer Information:

Name: Wildcat Renewables, LLC.

Address: 7390 Kirkville Rd. East Syracuse, NY 13057

Telephone: 415-480-4217

Fax: _____

Email: erin@renewprop.com

Unit Application/File No.: _____

Utility Information:

Name: Niagara Mohawk Power Corporation .
D/b/a National Grid

Address: 1125 Broadway, Albany, NY 12204

Telephone: 1-800-642-4272

nCAP: https://ngus.force.com/s/

Email: DistributiveGenerationSerivices-NY@NationalGrid.com

Utility Account Number: 8383391006

DEFINITIONS

Delivery Service means the services the Utility may provide to deliver capacity or energy generated by the Interconnection Customer to a buyer to a delivery point(s), including related ancillary services.

Energy Storage System (ESS) means a commercially available mechanical, electrical, or electro-chemical means to store and release electrical energy, and its associated electrical inversion device and control functions that may be stand-alone or paired with a distributed generator at a point of common coupling.

Interconnection Customer means the owner of the Unit.

Interconnection Facilities means the equipment and facilities on the Utility's system necessary to permit operation of the Unit in parallel with the Utility's system.

Premises means the real property where the Unit is located.

SIR means the New York State Standardized Interconnection Requirements for new distributed generation units with a nameplate capacity of 5 MW or less connected in parallel with the Utility's distribution system.

Unit means the distributed generation, stand-alone ESS, or combined generation and ESS facilities approved by the Utility for operation in parallel with the Utility's system. This Agreement relates only to such Unit, but a new agreement shall not be required if the Interconnection Customer makes physical alterations to the Unit that do not result in an increase in its nameplate generating capacity. The nameplate generating capacity or inverter/converter rating of the Unit shall not exceed 5 MW.

Utility means [insert legal name of the interconnecting utility].

I. TERM AND TERMINATION

1.1 Term: This Agreement shall become effective when executed by both Parties and shall continue in effect until terminated.

1.2 Termination: This Agreement may be terminated as follows:

a. The Interconnection Customer may terminate this Agreement at any time, by giving the Utility sixty (60) days' written notice.

b. Failure by the Interconnection Customer to seek final acceptance by the Utility within twelve (12) months after completion of the utility construction process described in the SIR shall automatically terminate this Agreement.

c. Either Party may, by giving the other Party at least sixty (60) days' prior written notice, terminate this Agreement in the event that the other Party is in default of any of the material terms and conditions of this Agreement. The terminating Party shall specify in the notice the basis for the termination and shall provide a reasonable opportunity to cure the default.

d. The Utility may, by giving the Interconnection Customer at least sixty (60) days' prior written notice, terminate this Agreement for cause. The Interconnection Customer's non-compliance with an upgrade to the SIR, unless the Interconnection Customer's installation is "grandfathered," shall constitute good cause.

1.3 Disconnection and Survival of Obligations: Upon termination of this Agreement the Unit will be disconnected from the Utility's electric system. The termination of this Agreement shall not relieve either Party of its liabilities and obligations, owed or continuing at the time of the termination.

1.4 Suspension: This Agreement will be suspended during any period in which the Interconnection Customer is not eligible for Delivery Service from the Utility

II. SCOPE OF AGREEMENT

2.1 Scope of Agreement: This Agreement relates solely to the conditions under which the Utility and the Interconnection Customer agree that the Unit may be interconnected to and operated in parallel with the Utility’s system.

III. Electricity Not Covered: The Utility shall have no duty under this Agreement to account for, pay for, deliver, or return in kind any electricity produced by the Facility and delivered into the Utility’s System unless the system is net metered as described in Public Service Law Section 66-l.

INSTALLATION, OPERATION AND MAINTENANCE OF UNIT

3.1 Compliance with SIR: Subject to the provisions of this Agreement, the Utility shall be required to interconnect the Unit to the Utility's system, for purposes of parallel operation, if the Utility accepts the Unit as in compliance with the SIR. The Interconnection Customer shall have a continuing obligation to maintain and operate the Unit in compliance with the SIR.

3.2 Observation of the Unit - Construction Phase: The Utility may, in its discretion and upon reasonable notice, perform reasonable on-site verifications during the construction of the Unit. Whenever the Utility chooses to exercise its right to perform observations herein it shall specify to the Interconnection Customer its reasons for its decision to perform the observation. For purposes of this paragraph and paragraphs 3.3 through 3.5, the term "on-site verification" shall not include testing of the Unit, and verification tests shall not be required except as provided in paragraphs

3.3 Observation of the Unit - Ten-day Period: The Utility may perform on-site verifications of the Unit and observe the execution of verification testing within a reasonable period of time, not exceeding ten (10) business days after system installation. The Unit will be allowed to commence parallel operation upon satisfactory completion of the verification test. The Interconnection Customer must have complied with and must continue to comply with all contractual and technical requirements.

3.4 Observation of the Unit - Post-Ten-day Period: If the Utility does not perform an on-site verification of the Unit and observe the execution of verification testing within the ten-day period, the Interconnection Customer will send the Utility within five (5) days of the verification testing a written notification certifying that the Unit has been installed and tested in compliance with the SIR, the utility-accepted design and the equipment manufacturer's instructions. The Interconnection Customer may begin to produce energy upon satisfactory completion of the verification test. After receiving the verification test notification, the Utility will either issue to the Interconnection Customer a formal letter of acceptance for interconnection, or may request that the applicant and utility set a date and time to perform an on-site verification of the Unit and make reasonable inquiries of the Interconnection Customer, but only for purposes of determining whether the verification tests were properly performed. The Interconnection Customer shall not be required to perform the verification tests a second time, unless irregularities appear in the verification test report or there are other objective indications that the tests were not properly performed in the first instance.

3.5 Observation of the Unit - Operations: The Utility may perform on-site verification of the operations of the Unit after it commences operations if the Utility has a reasonable basis for doing so based on its responsibility to provide continuous and reliable utility service or as authorized by the provisions of the Utility's Retail Electric Tariff relating to the verification of Interconnection Customer installations generally.

3.6 Costs of Interconnection Facilities: During the term of this Agreement, the Utility shall design, construct and install the Interconnection Facilities. The Interconnection Customer shall be responsible for paying the incremental capital cost of such Interconnection Facilities attributable to the Interconnection Customer's Unit. All costs associated with the operation and

maintenance of the Dedicated Facilities after the Unit first produces energy shall be the responsibility of the Utility.

IV. DISCONNECTION OF THE UNIT

4.1 Emergency Disconnection: The Utility may disconnect the Unit, without prior notice to the Interconnection Customer (a) to eliminate conditions that constitute a potential hazard to Utility personnel or the general public; (b) if pre-emergency or emergency conditions exist on the Utility system; (c) if a hazardous condition relating to the Unit is observed by a Utility inspection; or (d) if the Interconnection Customer has tampered with any protective device. The Utility shall notify the Interconnection Customer of the emergency if circumstances permit. The Interconnection Customer shall notify the Utility promptly when it becomes aware of an emergency condition that affects the Unit that may reasonably be expected to affect the Utility EPS.

4.2 Non-Emergency Disconnection Due to Unit Performance: The Utility may disconnect the Unit, after notice to the responsible party has been provided and a reasonable time to correct, consistent with the conditions, has elapsed, if (a) the Interconnection Customer has failed to make available records of verification tests and maintenance of his protective devices; (b) the Unit system interferes with Utility equipment or equipment belonging to other customers of the Utility; (c) the Unit adversely affects the quality of service of adjoining customers; (d) the ESS does not operate in compliance with the operating parameters and limits described in Attachment 1 to this Agreement.

4.3 Non-Emergency Disconnection for Utility Work: The Utility may disconnect the Unit after notice to Interconnection Customer when necessary for routine maintenance, construction, and repairs on the Utility EPS. The Interconnection Customer may request to reconnect its service prior to the completion of the Utility's work. The Utility shall accommodate such requests, provided that the Interconnection Customer shall be responsible for the costs of the Utility's review and any system modifications required to reconnect the Unit ahead of schedule.

4.4 Disconnection by Interconnection Customer: The Interconnection Customer may disconnect a Unit with an AC nameplate rating above 300 kW upon 18 hours advance notice to the Utility if the planned shutdown will last 8 hours or more. For non-emergency forced outages lasting 8 hours or more, the Interconnection Customer shall notify the Utility within 24 hours of the commencement of the shutdown

4.5 Utility Obligation to Cure Adverse Effect: If, after the Interconnection Customer meets all interconnection requirements, the operations of the Utility are adversely affecting the performance of the Unit or the Customer's premises, the Utility shall immediately take appropriate action to eliminate the adverse effect. If the Utility determines that it needs to upgrade or reconfigure its system, the Interconnection Customer will not be responsible for the cost of new or additional equipment beyond the point of common coupling between the Interconnection Customer and the Utility.

V. ACCESS

5.1 Access to Premises: The Utility shall have access to the disconnect switch of the Unit at all times. At reasonable hours and upon reasonable notice consistent with Section III of this Agreement, or at any time without notice in the event of an emergency (as defined in paragraph 4.1), the Utility shall have access to the Premises.

5.2 Utility and Interconnection Customer Representatives: The Utility shall designate, and shall provide to the Interconnection Customer, the name and telephone number of a representative or representatives who can be reached at all times to allow the Interconnection Customer to report an emergency and obtain the assistance of the Utility. For the purpose of allowing access to the premises, the Interconnection Customer shall provide the Utility with the name and telephone number of a person who is responsible for providing access to the Premises.

5.3 Utility Right to Access Utility-Owned Facilities and Equipment: If necessary for the purposes of this Agreement, the Interconnection Customer shall allow the Utility access to the Utility's equipment and facilities located on the Premises. To the extent that the Interconnection Customer does not own all or any part of the property on which the Utility is required to locate its equipment or facilities to serve the Interconnection Customer under this Agreement, the Interconnection Customer shall secure and provide in favor of the Utility the necessary rights to obtain access to such equipment or facilities, including easements if the circumstances so require.

VI. DISPUTE RESOLUTION

6.1 Good Faith Resolution of Disputes: Each Party agrees to attempt to resolve all disputes arising hereunder promptly, equitably and in a good faith manner.

6.2 Mediation: If a dispute arises under this Agreement, and if it cannot be resolved by the Parties within ten (10) business days after written notice of the dispute, the parties agree to submit the dispute to mediation by a mutually acceptable mediator, in a mutually convenient location in New York State, in accordance with the then current International Institute for Conflict prevention & Resolution Procedure, or to mediation by a mediator provided by the New York Public Service Commission. The Parties agree to participate in good faith in the mediation for a period of up to 90 days. If the Parties are not successful in resolving their disputes through mediation, then the parties may refer the dispute for resolution to the New York Public Service Commission, which shall maintain continuing jurisdiction over this Agreement.

6.3 Escrow: If there are amounts in dispute of more than two thousand dollars ($2,000), the Interconnection Customer shall either place such disputed amounts into an independent escrow account pending final resolution of the dispute in question, or provide to the Utility an appropriate irrevocable standby letter of credit in lieu thereof.

VII. INSURANCE

7.1. Commercial General Liability: The Interconnection Customer shall, at its own expense, procure and maintain throughout the period of this Agreement the following minimum insurance coverage:

7.1.1. Commercial general liability insurance with limits not less than:

7.1.1.1. Five million dollars ($5,000,000) for each occurrence and in the aggregate if the AC Nameplate rating of the Interconnection Customer's Facility is greater than five (5) MWAC;

7.1.1.2. Two million dollars ($2,000,000) for each occurrence and five million dollars ($5,000,000) in the aggregate if the AC Nameplate rating of the Interconnection Customer's Facility is greater than one (1) MWAC and less than or equal to five (5) MWAC;

7.1.1.3. One million dollars ($1,000,000) for each occurrence and in the aggregate if the AC Nameplate rating of the Interconnection Customer's Facility is greater than or equal to 300 (kWAC) and less than or equal to one (1) MWAC

7.1.2. Any combination of general liability and umbrella/excess liability policy limits can be used to satisfy the limit requirements of Section 7.1.1 (a).

7.1.3. The general liability insurance required to be purchased in Section 7.1 (a) may be purchased for the direct benefit of the Utility and shall respond to third party claims asserted against the Utility (hereinafter known as "Owners Protective Liability"). Should this option be chosen, the requirement of Section 7.3(a) will not apply but the Owners Protective Liability policy will be purchased for the direct benefit of the Utility and the Utility will be designated as the primary and "Named Insured" under the policy.

7.2. General Commercial Liability Insurance: The Interconnection Customer is not required to provide general commercial liability insurance for facilities with an AC nameplate rating of 300 kW or less. Due to the risk of incurring damages however, the New York State Public Service Commission ("Commission") recommends that the Interconnection Customer obtain adequate insurance. The inability of the Utility to require the Interconnection Customer to provide general commercial liability insurance coverage for operation of the Unit is not a waiver of any rights the Utility may have to pursue remedies at law against the Interconnection Customer to recover damages

.

7.3. Insurer Requirements and Endorsements: All required insurance shall be written by reputable insurers authorized to conduct business in New York. In addition, all general liability insurance shall, (a) include the Utility as an additional insured; (b) contain a severability of interest clause or cross-liability clause; (c) provide that the Utility shall not incur liability to the insurance carrier for payment of premium for such insurance; and (d) provide for thirty (30) calendar days' written notice to the Utility prior to cancellation or termination of such insurance, with the exception of a ten (10) days' notice in the event of premium non-payment; provided that

to the extent the Interconnection Customer is satisfying the requirements of subpart (d) of this paragraph by means of a presently existing insurance policy, the Interconnection Customer shall only be required to make good faith efforts to satisfy that requirement and will assume the responsibility for notifying the Utility as required above.

7.4. Evidence of Insurance: Evidence of the insurance required shall state that coverage provided is primary and is not in excess to or contributing with any insurance or self-insurance maintained by Interconnecting Customer. Prior to the Utility commencing work on System Modifications, and annually thereafter, the Interconnection Customer shall have its insurer furnish to the Utility certificates of insurance evidencing the insurance coverage required above.

7.4.1 If coverage is on a claims-made basis, the Interconnection Customer agrees that the policy effective date or retroactive date shall be no later than the effective date of this agreement, be continuously maintained throughout the life of this agreement, and remain in place for a minimum of three (3) years following the termination of this agreement or if policies are terminated will purchase a three-year extended reporting period. Evidence of such coverage will be provided on an annual basis.

7.4.2 In the event that an Owners Protective Liability policy is provided, the original policy shall be provided to the Utility.

7.5. Self-Insurance: If the Interconnection Customer has a self-insurance program established in accordance with commercially acceptable risk management practices, the Interconnection Customer may comply with the following in lieu of the above requirements as reasonably approved by the Utility:

7.5.1. The Interconnection Customer shall provide to the Utility, at least thirty (30) calendar days prior to the Date of Initial Operation, evidence of such program to self-insure to a level of coverage equivalent to that required.

7.5.2. If the Interconnection Customer ceases to self-insure to the standards required hereunder, or if the Interconnection Customer is unable to provide continuing evidence of the Interconnection Customer’s financial ability to self-insure, the Interconnection Customer agrees to promptly obtain the coverage required under Section 7.1.

7.6. Utility Obligation to Maintain Insurance: The Utility agrees to maintain general liability insurance or self-insurance consistent with its existing commercial practice. Such insurance or self-insurance shall not exclude coverage for the Utility’s liabilities undertaken pursuant to this Agreement.

7.7. Notification Obligations: The Parties further agree to notify each other whenever an accident or incident occurs resulting in any injuries or damages that are included within the scope of coverage of such insurance, whether or not such coverage is sought.

VIII. LIMITATION OF LIABILITY

8.1 Each Party's liability to the other Party for any loss, cost, claim, injury, liability, or expense, including reasonable attorney's fees, relating to or arising from any act or omission in its performance of this Agreement, shall be limited to the amount of direct damage actually incurred. In no event shall either Party be liable to the other Party for any indirect, special,

consequential, or punitive damages of any kind whatsoever. Nothing herein is meant to limit the liability of a Party to an unaffiliated third-party claimant.

IX. INDEMNITY

9.1 This provision protects each Party from liability incurred to third parties arising from actions taken pursuant to the provisions of this Agreement. Liability under this provision is exempt from the general limitations on liability found in Section 7.

9.2 Each Party (the "Indemnifying Party") shall at all times indemnify, defend, and hold the other Party (the "Indemnified Party") harmless from any and all damages, losses, claims, including claims and actions relating to injury to or death of any person or damage to property, demands, suits, recoveries, costs and expenses, court costs, attorney fees, and all other obligations by or to third parties, to the extent arising out of or resulting from the Indemnifying Party's action or failure to meet its obligations under this Agreement, except in cases of negligence, gross negligence or intentional wrongdoing by the Indemnified Party.

9.3 If a Party is obligated to indemnify and hold the Indemnified Party harmless under this section, the amount owing to the Indemnified Party shall be the amount of such Indemnified Party's actual loss, as adjudicated by the Indemnifying Party's insurance carrier, net of any insurance or other recovery.

9.4 Promptly after receipt by an Indemnified Party of any claim or notice of the commencement of any action or administrative or legal proceeding or investigation as to which the indemnity provided for in this section may apply, the Indemnified Party shall notify the Indemnifying Party of such fact. Any unintentional failure of or delay in such notification shall not affect a Party's indemnification obligation unless such failure or delay is materially prejudicial to the Indemnifying Party.

X. CONSEQUENTIAL DAMAGES

10.1 Other than as expressly provided for in this Agreement or pursuant to the utility tariff, neither Party shall be liable to the other Party under any provision of this Agreement for any losses, damages, costs, or expenses for any special, indirect, incidental, consequential, or punitive damages, including but not limited to loss of profit or revenue, loss of the use of equipment, cost of capital, cost of temporary equipment or services, whether based in whole or in part in contract, in tort, including negligence, strict liability, or any other theory of liability; provided, however, that damages for which a Party may be liable to the other Party under another agreement will not be considered to be special, indirect, incidental, or consequential damages hereunder.

XI. MISCELLANEOUS PROVISIONS

11.1 Beneficiaries: This Agreement is intended solely for the benefit of the Parties hereto, and if a Party is an agent, its principal. Nothing in this Agreement shall be construed to create any duty to, or standard of care with reference to, or any liability to, any other person.

11.2 Severability: If any provision or portion of this Agreement shall for any reason be held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction, such portion or provision shall be deemed separate and independent, and the remainder of this Agreement shall remain in full force and effect.

11.3 Entire Agreement: This Agreement constitutes the entire Agreement between the Parties and supersedes all prior agreements or understandings, whether verbal or written.

11.4 Waiver: No delay or omission in the exercise of any right under this Agreement shall impair any such right or shall be taken, construed or considered as a waiver or relinquishment thereof, but any such right may be exercised from time to time and as often as may be deemed expedient. In the event that any agreement or covenant herein shall be breached and thereafter waived, such waiver shall be limited to the particular breach so waived and shall not be deemed to waive any other breach hereunder.

11.5 Applicable Law: This Agreement shall be governed by and construed in accordance with the law of the State of New York.

11.6 Amendments: This Agreement shall not be amended unless the amendment is in writing and signed by the Utility and the Customer.

11.7 Force Majeure: For purposes of this Agreement, "Force Majeure Event" means any event: (a) that is beyond the reasonable control of the affected Party; and (b) that the affected Party is unable to prevent or provide against by exercising reasonable diligence, including the following events or circumstances, but only to the extent they satisfy the preceding requirements: acts of war, public disorder, insurrection, or rebellion; floods, hurricanes, earthquakes, lightning, storms, and other natural calamities; explosions or fires; strikes, work stoppages, or labor disputes; embargoes; and sabotage. If a Force Majeure Event prevents a Party from fulfilling any obligations under this Agreement, such Party will promptly notify the other Party in writing, and will keep the other Party informed on a continuing basis of the scope and duration of the Force Majeure Event. The affected Party will specify in reasonable detail the circumstances of the Force Majeure Event, its expected duration, and the steps that the affected Party is taking to mitigate the effects of the event on its performance. The affected Party will be entitled to suspend or modify its performance of obligations under this Agreement, other than the obligation to make payments then due or becoming due under this Agreement, but only to the extent that the effect of the Force Majeure Event cannot be mitigated by the use of reasonable efforts. The affected Party will use reasonable efforts to resume its performance as soon as possible.

11.8 Assignment to Corporate Party: At any time during the term, the Interconnection Customer may assign this Agreement to a corporation or other entity with limited liability, provided that the Interconnection Customer obtains the consent of the Utility. Such consent will not be withheld unless the Utility can demonstrate that the corporate entity is not reasonably capable of performing the obligations of the assigning Interconnection Customer under this Agreement.

11.9 Assignment to Individuals: At any time during the term, the Interconnection Customer may assign this Agreement to another person, other than a corporation or other

entity with limited liability, provided that the assignee is the owner, lessee, or is otherwise responsible for the Unit.

11.10 Permits and Approvals: Interconnection Customer shall obtain all environmental and other permits lawfully required by governmental authorities prior to the construction and for the operation of the Unit during the term of this Agreement.

11.11 Limitation of Liability: Neither by inspection, if any, or non-rejection, nor in any other way, does the Utility give any warranty, express or implied, as to the adequacy, safety, or other characteristics of any structures, equipment, wires, appliances or devices owned, installed or maintained by the Interconnection Customer or leased by the Interconnection Customer from third parties, including without limitation the Unit and any structures, equipment, wires, appliances or devices appurtenant thereto.

ACCEPTED AND AGREED:

Interconnection Customer

Signature: _____

Printed Name: Aaron Helmi

Title: Date: 10/8/19

Utility Signature: _____

Printed Name: Title: _____

Date: _____

APPENDIX A

Site Plan

See Site Plan Set

APPENDIX B

Survey Map

Located in Site Plan Set

APPENDIX C

Legal Description

Turning Point Land Surveying

Dick Lighton Jr.
205 Longmeadow Drive
Syracuse, NY 13205
Phone: (315) 492-4121
Fax: (315) 492-4121

7390 Kirkville Road

Part of Lot #34 – Town of Manlius
27.542 Acres

All that tract and/or parcel of land situate in the Town of Manlius, County of Onondaga and State of New York, being a Part of Lot #34 in said Town and being more particularly bounded and described as follows:

Beginning at the intersection of the present centerline of Kirkville Road with the westerly line of lands conveyed to Theodore G. and Deborah L. Uzunoff in Liber of Deeds 4114 at page 210, said point of intersection being the northwesterly corner thereof and in the northerly line of said Lot #34 and the southerly line of Lot #25 in said Town, said point of beginning also being westerly, a distance of 2817.00+/ feet, as measured along said centerline of Kirkville Road, from its intersection with the present centerline of Schepps Corners Road;

Thence S. 00°-49'-13" W., along the westerly line of said lands conveyed to Uzunoff, a distance of 200.00 feet to the southwesterly corner thereof;

Thence S. 89°-17'-04" E., parallel with the said centerline of Kirkville Road and along the southerly line of said Uzunoff's lands, a distance of 150.00 feet to its intersection with the westerly line of lands conveyed to Dennis J. Flynn in Liber of Deeds 3454 at Page 18, said point of intersection being the southeasterly corner of said Uzunoff;

Thence S. 00°-49'-13" W., along the westerly line of said lands conveyed to Flynn, a distance of 194.99 feet to the southwesterly corner thereof:

Thence S. 89°-17'-04" E., along the southerly line of said lands conveyed to Flynn and parallel with the said centerline of Kirkville Road, a distance of 166.00 to a point in the westerly line of lands conveyed to John Cartino in Liber of Deeds 2996 at Page 209;

Thence S. 00°-49'-13" W., along the said westerly line of lands conveyed to Cartino, a distance of 2036.67 feet to its intersection with the northerly line of Section B, "Helfer Estates", according to map thereof filed in the Onondaga County Clerk's Office on March 13, 1968 as Map #4922, said point of intersection also being situate in the northerly line of the Village of Minoa;

Thence N. 89°-33'-37" W., along the northerly line of said Section B and the northerly of Section C, "Helfer Estates", according to said Map

Turning Point Land Surveying

Dick Lighton Jr.
205 Longmeadow Drive
Syracuse, NY 13215
Phone (315) 492-4121
Fax (315) 492-4121

#4922 and the northerly line of said Village of Minoa, a distance of 532.41 feet to its intersection with the easterly line of Lot #107 in said Section C, said point of intersection being an angle point in the said Village line;

Thence N. 00°-49'-13" E., along the said easterly line of Lot #107 and the easterly line of Section F, "Helfer Estates", according to a map thereof filed in the Onondaga County Clerk's Office on June 29, 1971 as Map #5122 and also along an easterly line of said Village of Minoa and the northerly prolongations thereof, a distance of 2434.22 feet to a point in the said centerline of Kirkville Road and the northerly line of said Lot #34, said point being the northeasterly corner of lands conveyed to Connie M. Mulcahy in Liber of Deeds 3149 at Page 83;

Thence S. 89°-17'-04" E., along the said northerly line of Lot #34 and the said centerline of Kirkville Road, a distance of 216.40 feet to the point and place of beginning.

The hereinbefore described parcel of land contains 27.542+/- acres of land and is subject to and together with any and all easements, restrictions and/or rights of way of record.

APPENDIX D

Stormwater Pollution Prevention Plan

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Kirkville Road Solar Project

TOWN OF MANLIUS

STORMWATER POLLUTION PREVENTION PLAN

Town of Manlius
Onondaga County, New York
December 18, 2020

PREPARED FOR:

RPNY SOLAR 5, LLC
879 Sanchez Street
San Francisco, CA 94114

PREPARED BY:

Bergmann

2665 Corning Road
Horseheads, NY 14903

Phone: 607.795.1110

www.bergmannpc.com

Stormwater Pollution Prevention Plan (SWPPP)

KIRKVILLE ROAD SOLAR PROJECT – TOWN OF MANLIUS
INSTRUCTIONS TO OWNER/OPERATOR/OPERATOR'S ENGINEER AND CONTRACTORS

Responsibilities for Compliance with Storm Water Discharge Permit Regulations at Construction Sites

Operator's Engineer's Responsibilities:

1. Prepare the SWPPP using good engineering practices, Best Management Practices, and in compliance with all federal, state and local permit requirements. This preparation shall also include providing a description of the Project as it relates to site ownership and development responsibilities. The Operator's Engineer shall also prepare the SWPPP Ledger for use in the implementation and documentation of the SWPPP at the Project during Construction Activities.
2. Prepare the NOI form for the Operator's signature and forward to Operator for signature; submit the signed form to the appropriate regulatory agency along with any required fees and attachments. SWPPP must be complete prior to NOI submittal.
3. Include a signed NOI in the SWPPP prepared for the Project.
4. Participate at the pre-construction meeting with Contractor and appropriate subcontractors, which should include a review with all parties of the requirements of the SWPPP, if requested by Operator.
5. Review Contractor's SWPPP records on a periodic basis to ensure compliance with requirements for reports and inspection and maintenance logs, if requested by Operator.
6. Certify to Operator the Contractor's compliance with SWPPP record keeping requirements, if requested by Operator.

Operator's Responsibilities:

1. Have an authorized corporate officer sign the NOI and SWPPP Certification Statement.
2. Schedule and conduct a SWPPP Pre-Construction Meeting with the Operator's Engineer, Contractor and appropriate subcontractors, which should include a review with all parties the requirements under the SWPPP.
3. Require the Contractor to implement fully the SWPPP prepared for the site by the Operator's Engineer.
4. Forward a copy of the original permit certificate received from the regulatory agency to the Owner (if different than the operator), the Municipality's Representative, the MS4 (if applicable and if different from the municipality), the Operator's Engineer and the Contractor for inclusion in the SWPPP Ledger and display at the Project.
5. Ensure (through periodic observations by Operator's Engineer) and document that the Contractor is implementing the controls, inspections, maintenance, record-keeping, and all other requirements of the SWPPP.
6. File an appropriately signed Notice of Termination ("NOT") form when site work construction is completed and stabilization is achieved in accordance with the General Permit.
7. Request and receive all SWPPP records from the Contractor and archive those records for a minimum of five (5) years after the NOT is filed.

Contractor's Responsibilities:

1. Sign the SWPPP Contractor's Certification Form in the SWPPP prepared for the Project (Appendix H).
2. Provide subcontractor training and require all subcontractors to sign the Subcontractor's Certification Form in the SWPPP prepared for the Project (Appendix I).
3. Identify a trained individual (i.e. *Trained Contractor*) who will be responsible for implementing the SWPPP and will be on-site during all soil disturbing activities.
4. Implement the Erosion and Sediment Control Plans, and other requirements of the SWPPP.
5. Provide *Trained Contractors*, and documentation of qualifications, for the controls implemented at the Project.
6. Conduct all necessary inspections at the required intervals and prepare and retain written documentation of those inspections and all other written documentation required by the Construction General Permit.
7. Keep a copy of the SWPPP, all NOI's, permit certificates, permit language, Materials Management Process (MMP), inspection records, and other required records on the Project.
8. Post in a prominent place at the Project entrance and inside the job trailer office wall those documents required to be posted under the terms of the Construction General Permit including, the NOI (Appendix D), Letter of Acknowledgement, etc.
9. Update and make changes to the SWPPP and supporting documents (such as the BMPs) as needed and with the approval of the Operator and the Operator's Engineer.
10. Prepare and sign a NOT form when site work construction is completed and stabilization is achieved in accordance with the General Permit.
11. Transfer the SWPPP documents, along with all NOI's, permit certificates, NOT's, and written records required by the Construction General Permit to the Operator for archiving.

Off-site borrow or fill locations

The General Permit applies to construction activities involving soil disturbances of one (1) or more acres. This may require off-site borrow, fill, and material storage sites to be permitted under the NOI and covered by the SWPPP for the construction site, only if the off-site sites are used solely for that one project. If an off-site borrow or fill location or material storage site is operated by a subcontractor for more than one project, the Operator of this multi-use site must obtain a separate NOI. The multi-use site must be covered under its own Project Permit. A Construction General Permit from a state, local, or appropriate governmental agency may have different requirements relating to off-site borrow or excess (waste) locations. The Operator's Engineer must determine any applicable permit requirements for off-site borrow or excess (waste) locations. The requirements must be incorporated into the SWPPP, where applicable. If a separate General Permit coverage is required for these activities, a copy of the coverage must be provided in the SWPPP.

TABLE OF CONTENTS

APPENDIX A: WRITTEN STORM WATER POLLUTION PREVENTION PLAN

Section I: Scope

a. Purpose
b. SPDES Construction General Permit for Storm Water Discharge from Construction Sites
c. Notice of Intent
d. Responsibilities of the Contractor Regarding the Construction General Permit
e. Pre-construction Meeting
f. SWPPP Certification Requirements for the Contractor and Subcontractors
g. SWPPP Location Requirements
h. SWPPP Ledger
i. Inspections and Record Keeping
j. SWPPP Modifications
k. Final Stabilization and Termination of Permit Coverage

Section II: Project Name and Location

Section III: Operator's Name and Address

Section IV: Project Description

Section V: Existing Site Conditions

Section VI: Name of Receiving Waters

Section VII: Description of Soils

Section VIII: Erosion and Sediment Controls

a. Temporary Structural Practices, Permanent Structural Practices, Temporary Stabilization Practices, Permanent Stabilization Practices
b. Sequence of Major Construction Activities
c. Storm Water Management
d. Post Construction Stormwater BMP Operation and Maintenance Plan

Section IX: Other Controls

Section X: Compliance with Other Federal, State and Local Regulations

Section XI: Materials Management Plan

a. Progress Drawing
b. Materials Covered
c. Material Management Practices

d. Spill Prevention and Response Procedures

Section XII - Control of Non-Storm Water Discharges

Section XIII - Historical Properties

Section XIV - Industrial Activities

Section XV – Enhanced Phosphorus Removal Standards

APPENDIX B: SITE LOCATION MAPPING

APPENDIX C: EROSION AND SEDIMENTATION CONTROL PLAN(S) AND DETAILS

APPENDIX D: NOTICE OF INTENT (NOI)

APPENDIX E: NYS DEC SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITY (GP-0-20-001)

APPENDIX E-1: SOLAR PANEL CONSTRUCTION STORMWATER PERMITTING/SWPPP GUIDANCE

APPENDIX F: STORMWATER POLLUTION PREVENTION PLAN CERTIFICATION FORM

APPENDIX G: BLANK NOTICE OF TERMINATION (NOT)

APPENDIX H: GENERAL CONTRACTOR'S CERTIFICATION

APPENDIX I: SUBCONTRACTOR'S CERTIFICATION

APPENDIX J: INSPECTION REPORT

APPENDIX K: STABILIZATION SCHEDULE FORM

APPENDIX L: IMPLEMENTATION SCHEDULE FORM

APPENDIX M: MODIFICATION REPORT

APPENDIX N: FINAL STABILIZATION / NOT CHECKLIST

APPENDIX O: REPORTABLE QUANTITY RELEASE FORM

APPENDIX P: PROJECT RAINFALL LOG

APPENDIX Q: PRE-CONSTRUCTION MEETING ATTENDANCE RECORD

APPENDIX R: STORMWATER MANAGEMENT REPORT

APPENDIX S: HISTORICAL MAPPING AND SUPPORTING DOCUMENTATION

Appendix A

Written Storm Water Pollution Prevention Plan

I. SCOPE

A. PURPOSE:

1. Development and proper implementation of the New York State Department of Environmental Conservation (NYSDEC), State Pollutant Discharge Elimination System (SPDES) Construction General Permit governing stormwater discharges during construction and the National Pollutant Discharge Elimination System (NPDES) Construction General Permit governing storm water discharges during construction, and in accordance with Erosion and Sediment Control practices is critical. The Contractor's participation in this program is mandatory and its non-compliance is subject to various remedies, including without limitation, monetary set-offs, withholding payments; reimbursement for costs, expenses (including reasonable attorney's fees), fines and civil penalties incurred by the Operator. This section provides a descriptive explanation of the Storm Water Pollution Prevention Program and required Contractor participation.

B. SPDES CONSTRUCTION GENERAL PERMIT FOR STORM WATER DISCHARGE FROM CONSTRUCTION SITES:

1. Regulations promulgated by the NYSDEC to regulate the discharge of storm water from Construction Activity on sites where one (1) or more acre of soil is disturbed. One of the ways to comply with these regulations for affected sites is to request coverage under the SPDES General Permit for Stormwater Discharges from Construction Activities (GP-0-20-001). In order to use the Construction General Permit, a Notice of Intent (NOI) form must be completed and mailed to the NYSDEC. Authorization to discharge stormwater under the General Permit will be effective when the owner or operator has satisfied all of the criteria listed in Part II, B of the SPDES General Permit for Construction Activity (GP-0-20-001).

C. NOTICE OF INTENT:

1. The Operator will petition the NYSDEC for stormwater discharges during construction at this site to be covered by the SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-20-001, following completion of this SWPPP. An NOI form will be filed by the Operator. Authorization to discharge stormwater from Construction Activities is effective five (5) or (60) calendar days after the NYSDEC receives the complete NOI.

D. RESPONSIBILITIES OF CONTRACTOR REGARDING THE CONSTRUCTION GENERAL PERMIT:

1. The Contractor shall manage the discharge of stormwater from the site in accordance with the NYSDEC General Permit for Stormwater Discharges from Construction Activities and the following provisions:

   a) The Contractor shall be responsible for conducting the Storm Water Management practices in accordance with the permit.

   b) The Contractor shall be responsible for providing *Trained Contractors* (See GP-0-20-001 for definition) to conduct the inspections required by the SWPPP.

   c) The Contractor shall be responsible for any enforcement action taken or imposed by federal, state, or local agencies, including the cost of fines, construction delays, and remedial actions resulting from the Contractor's failure to comply with the permit provisions.

E. PRE-CONSTRUCTION MEETING:

1. A Pre-Construction SWPPP Meeting shall be mandatory and occur before any land disturbing activities are started. The Certification and Training Program have been developed to stress the importance of the following topics:

   a) Erosion and sediment control for water quality protection

   b) Implementation of Erosion and Sediment Control Plans

   c) The importance to proper installation of erosion and sediment control measures

   d) Regular inspection by Qualified Inspector of erosion and sediment control measures

   e) Diligent maintenance to erosion and sediment control measures

   f) Contemporaneous preparation of accurate and complete records regarding inspection and maintenance of erosion and sediment control measures

   g) Record-keeping for inspections and maintenance activities

F. SWPPP CERTIFICATION REQUIREMENTS FOR THE CONTRACTOR AND SUBCONTRACTOR(S):

1. The SWPPP shall provide forms for both the Contractor and Subcontractor(s) identifying the Company Name, Business Address and Telephone Number along with the Responsible Person for the Contractor and all Subcontractors who will implement the measures identified in the SWPPP. The Contractor shall sign, the Contractor's Certification Statement (Appendix H) and all Subcontractors shall sign the Subcontractor's Certification Statement (Appendix I) verifying they have been instructed on how to comply with and fully understand the requirements of the NYSDEC and SWPPP. These certifications must be signed by a responsible corporate officer or other party meeting the "Signatory Requirements" in Part VII Section H & Part III.A.5. of the NYS DEC SPDES General Permit for Stormwater Runoff from Construction Activity (GP-0-20-001), on behalf of each entity, prior to the beginning of any Construction Activities and shall be filed in the Project's SWPPP.

G. SWPPP LOCATION REQUIREMENTS:

1. The SWPPP Ledger is meant to be a working document that shall be maintained at the site of the Construction Activities at all times throughout the Project, shall be readily available upon request by the Operator's personnel or NYSDEC or any other agency with regulatory authority over storm water issues, and shall be kept on-site until the site complies with the Final Stabilization section of this document. A copy of the General Permit (GP-0-20-001), NOI, NOI Acknowledgment Letter, SWPPP, and inspection reports shall be maintained at the construction site until all disturbed areas have achieved final stabilization and the Notice of Termination has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock; that is accessible during normal working hours to an individual performing a compliance inspection.

H. SWPPP:

1. A minimum of two (2) copies of the SWPPP, in three (3) ring binders shall be provided by the Operator's Engineer. One (1) copy shall be provided for use by the General Contractor and one (1) copy shall be provided as an original.

I. INSPECTIONS AND RECORD-KEEPING: Inspections are required per the General Permit GP-0-20-001 by a qualified inspector.

1. INSPECTOR QUALIFICATIONS:

   a) Inspections must be conducted by a "Qualified" Inspector. "Qualified" is defined as a person knowledgeable in the principles and practices of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact storm water quality and to assess the effectiveness of any sediment and erosion control measures selected to control the quality of storm water discharges from the Construction Activity such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control(CPESC), licensed Landscape Architect. It also means that someone working under the direct supervision of a licensed Professional Engineer, or Landscape Architect, provided that person has training in the principles and practices or erosion and sediment control. Training in the principles and practices of erosion and sediment control means that an individual performing the site inspection has received four (4) hours of training, endorsed by the Department, from a Soil and Water Conservation District, CPESC, Inc. or other department endorsed entity in proper erosion and sediment control principles no later than two (2) years from the date of the current general permit issued. After receiving the initial training, an individual working under the direct supervision of a licensed Professional Engineer or licensed Landscape Architect shall receive four (4) hours of training every three (3) years. Inspections of post construction stormwater management practices that include structural components, such as a dam for impoundment, shall be performed by a licensed Professional Engineer.

2. RAINFALL MONITORING:

   a) A rain gage should be maintained on the site and a record of the rainfall amounts (in tenths of an inch) and dates shall be recorded every 24 hours on the Rain Log (Appendix P).

3. INSPECTOR RESPONSIBILITIES:

   a) The Qualified Inspector shall be trained in all the inspection and maintenance practices necessary for keeping the Erosion and Sediment Controls that are used onsite in good working order. They will also be trained in the completion of, initiation of actions required by, and the filing of the inspection forms. Documentation of Qualified Inspector training will be kept on site with the SWPPP.

4. INSPECTION PROCEDURES:

   a) Inspections must include all areas of the site disturbed by Construction Activities and areas used for storage of materials that are exposed to precipitation. Qualified Inspectors must look for evidence of, or the potential for, pollutants entering the storm water conveyance system. Erosion and Sediment Control measures identified in the SWPPP must be observed to ensure proper operation. Discharge locations must be inspected to ascertain whether Erosion and Sediment Control measures are effective in preventing significant impacts to Waters of the United States, where accessible. Where discharge locations are inaccessible, nearby downstream locations must be inspected to the extent that such inspections are practicable. Locations where vehicles enter or exit the site must be inspected for evidence of off-site tracking. The following inspection and maintenance practices will be used to maintain Erosion and Sediment Controls and stabilization measures:

      (1) All control measures will be inspected at least at the frequency identified in this Section. The minimum inspection frequency shall be once every seven (7) calendar days.

(2) All measures will be maintained in good working order; if repairs or other measures are found to be necessary, they will be initiated within 24 hours of report, and completed within 48 hours of report and documented with photos.

(3) Built up sediment will be removed from silt fence when it has reached 25% of the height of the fence.

(4) Silt fences will be inspected for depth of sediment, tears, etc., to see if the fabric is securely attached to the fence posts, and to see that the fence posts are securely in the ground.

(5) Temporary and permanent seeding and all other stabilization measures will be inspected for bare spots, washouts, and healthy growth.

(6) An Inspection Report (Appendix J) will be completed after each inspection. Copies of the report forms to be completed by the Qualified Inspector(s) are included in this SWPPP. These reports shall be provided to the Town of Macedon within 24 hours of completion.

(7) The Contractor's Superintendent will be responsible for selecting and training the individuals who will be responsible for these inspections, maintenance and repair activities, and filling out inspection and maintenance reports.

(8) Disturbed Areas and materials storage areas will be inspected for evidence of or potential for pollutants entering stormwater systems.

(9) Report to U.S. Environmental Protection Agency, or NYSDEC within 24 hours any noncompliance with the SWPPP that will endanger public health or the environment. Follow up with a written report within five (5) days of the noncompliance event. The following events require 24-hour reporting: a) any unanticipated bypass which exceeds any effluent limitation in the permit, b) any upset which exceeds any effluent limitation in the permit, and c) a violation of a maximum daily discharge limitation for any of the pollutants listed by the EPA in the permit to be reported within 24 hours. The written submission must contain a description of the non-compliance and its cause; the period of non-compliance, including exact dates and times, and if the non-compliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the non-compliance.

(10) Spills or Releases of Hazardous Substances or Oil in excess of reportable quantities (as established under 40 CFR Part 110, 40 CFR Part 117 or 40 CFR Part 302) must be reported.

5. MONITORING:

   a) Contractor shall be required to inspect daily per GP-0-20-001, Part IV.B.1.

6. THIRD PARTY INSPECTIONS:

   a) Where required or requested by the Operator, third party inspections by the design engineer shall be in addition to and shall not replace inspections by the Contractor (Qualified Inspector). The third-party inspector shall complete and sign any inspection report and include a copy of the report in the SWPPP following each inspection.

7. RECORDKEEPING:

   a) It is imperative that documentation of the inspection and maintenance of all erosion and sediment control measures as soon as possible after the inspection and/or maintenance is completed. The inspection reports identify any incidents of non-compliance with the permit conditions. Where a report does not identify any incidents of non-compliance, the report must

contain a certification that the Project is in compliance with the SWPPP and the Construction General Permit or other applicable State Permit. The report must be signed in accordance with the General Permit (GP-0-20-001). These records are used to prove that the required inspection and maintenance were performed and shall be placed in the SWPPP Ledger. In addition to inspection and maintenance reports, records should be kept of the Construction Activities that occur on the site. The Contractor shall retain copies of the SWPPP, all reports and data for a minimum of five (5) years after the project is complete in paper and CD format.

The forms found in this SWPPP shall be used by the Qualified Inspector(s) and/or the *Trained Contractor* (as applicable) to inventory and report the condition of each measure to assist in maintaining the erosion and sediment control measures in good working order. The following list identifies the required Inspection and Maintenance documentation and record keeping that must be maintained by the Contractor under this SWPPP:

Appendix J: Inspection Report

Appendix K: Stabilization Schedule

Appendix L: Implementation Schedule

Appendix M: Modification Report

Appendix N: Final Stabilization/Notice of Termination Checklist

Appendix O: Reportable Quantity Release Form

Appendix P: Project Rainfall Log

These report forms shall become an integral part of the SWPPP and shall be made readily accessible to governmental inspection officials, the Operator's Engineer, and the Operator for review upon request during visits to the Project site. In addition, copies of the reports shall be provided to any of these persons, upon request, via mail or facsimile transmission. Inspection and maintenance report forms are to be maintained by the permittee for five years following the final stabilization of the site.

8. OTHER RECORD KEEPING REQUIREMENTS:

a) The Contractor shall keep the following records related to Construction Activities at the site:

(1) Dates when major grading activities occur and the areas which were graded

(2) Dates and details concerning the installation of structural controls

(3) Dates when Construction Activities cease in an area

(4) Dates when stabilization measures are initiated

(5) Dates when an area is stabilized, either temporarily or permanently

(6) Dates of rainfall and the amount of rainfall

(7) Dates and descriptions of the character and amount of any spills of Hazardous Substances or Oil

(8) Records of reports filed with regulatory agencies if reportable quantities of Hazardous Substances or Oil spilled

J. SWPPP MODIFICATIONS: The inspection report should also identify if any revisions to the SWPPP are warranted due to unexpected conditions. The SWPPP is meant to be a dynamic working guide that is to be kept current and amended whenever:

1. There is a change in design, construction, operation, or maintenance at the construction site that has or could have a significant effect on the discharge of pollutants to the Waters of the United States that has not been previously addressed in the SWPPP. In addition to modifying the SWPPP, the site map may also require an amendment.
2. Inspections or investigations by site staff, or by local, state or federal officials, determine that the discharges the SWPPP is ineffective in eliminating or significantly minimizing pollutants in storm water discharges from the construction site. Modifications that are the result of an inspection must be initiated within 24 hours and completed within 48 hours.
3. Based on the results of an inspection, it must be modified as necessary to include additional or modified BMPs designed to correct problems identified. Revisions to the SWPPP must be completed within seven (7) calendar days following the inspection.
4. There is a release containing a Hazardous Substance or Oil in an amount equal or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117 or 40 CFR Part 302 occurs during a 24-hour period. Revisions to the SWPPP must be completed within seven (7) calendar days of knowledge of the release.

Any such changes to the SWPPP must be made in writing on the Modification Report (Appendix M) within seven (7) days of the date such modification or amendment is made. Changes must also be drawn on the Progress Drawing.

K. FINAL STABILIZATION AND TERMINATION OF PERMIT COVERAGE: A site can be considered finally stabilized when all soil disturbing activities have been completed and:

1. A uniform perennial vegetative cover with a density of 80% for the unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures have been established.
2. The facility no longer discharges storm water associated with Construction Activities.
3. A Notice of Termination (NOT) form filed by the Operator(s) with the NYSDEC. The NOT must be submitted within thirty (30) days of final stabilization.

The Operator's Project Manager must provide a completed copy of the NOT to the Contractor for inclusion in the SWPPP. This filing terminates coverage under the Construction General Permit and terminates the Contractor's responsibility to implement the SWPPP, but the requirements of the SWPPP, including periodic inspections, must be continued until the NOT is filed. Upon achieving this milestone, the Contractor shall also submit "Final Stabilization Certification/Notice of Termination Checklist" (Appendix N).

II. PROJECT NAME AND LOCATION

Kirkville Road Solar Project
Town of Manlius
Onondaga County
76.012320 W, 43.086243N

A general location map (Appendix B) with enough detail to identify the location of the construction site, direction of storm water flow, the receiving waters within one (1) mile of the site, surface waters and Wetlands, storm water discharge locations and other areas as required by *NYSDEC* is included in Appendix B.

III. OPERATOR'S NAME AND ADDRESS

RPNY SOLAR 5, LLC
Stephanie Loucas
879 Sanchez Street
San Francisco, CA 94114

IV. PROJECT DESCRIPTION

This SWPPP is for the Kirkville Road Solar Project installation for RPNY SOLAR 5, LLC. The project is located within the Town of Manlius, Onondaga County, New York. The entire property is approximately 27.65± acres. This SWPPP addresses all of the proposed work to be done at the new Kirkville Road Solar Farm (Appendix C).

The total project disturbance area will not exceed 5.0 acres at any one time. The approximate start of construction is March 2021 with an expected end of construction by August 2021. General soil disturbing activities will include:

- Installation of solar racking
- Panel installation
- Trenching for wiring of panels
- Finalization of connection to the grid
- Vegetation clearing and grubbing
- Construction of entrance driveway
- Final grading

V. EXISTING SITE CONDITIONS

The project site tributary area is approximately 27.65 acres. The topography of the project site ranges from elevations of 400 feet to 407 feet. The site has slopes ranging from 0.1 % to 25.0%. The project site consists of mostly wooded areas with grass/brush and a driveway. The site drains to an existing on-site wetland as well as a roadside swale.

VI. NAME OF RECEIVING WATERS

The site discharges to an existing onsite wetland.

VII. DESCRIPTION OF SOILS

Soil Types within the Subject Area

Symbol	Soil Name	Hydrologic Soil Group
ArB	Arkport very fine sandy loam, 2 to 6 percent slopes	A
ChB	Collamer silt loam, 2 to 6 percent slopes	C/D
GaA	Galen very fine sandy loam, 0 to 2 percent slopes	A/D
MtA	Minoa fine sandy loam, 0 to 2 percent slopes	B/D
NgA	Niagara silt loam, 0 to 2 percent slopes	C/D
WwA	Williamson silt loam, 0 to 2 percent slopes	D

More information pertaining soils can be found in the Soil Map included in the Site and Soils mapping (Appendix B) section of this report.

VIII. EROSION AND SEDIMENT CONTROLS

A. The project will utilize temporary and permanent erosion and sediment control practices to prevent sediment from leaving the project area. A list of the practices anticipated are as follows:

Temporary Structural					
	BMP	Notes		BMP	Notes
☐	Inlet Protection		☐	Brush Barrier	
☐	Outlet Protection		☐	Temporary Stream Crossing	
☐	Perimeter Protection		☐	Pipe Slope Drain	
☒	Stabilized Construction Entrance/Exit		☐	Wind Fence	
☐	Stone Staging Area		☐	Temporary Diversion Channels	
☐	Temporary Sediment Basin		☐	Temporary Diversion Berms	
☐	Temporary Gravel and Riprap Sediment Trap		☐	Other	
☐	Temporary Rock Dam Sediment Trap		☐	Other	
☐	Check Dam		☐	Other	
☒	Sediment Fence		☐	Other	
☒	Temporary Seeding		☐	Other	
☒	Temporary Mulching		☐	Other	
☐	Rolled Erosion Control Product (RECP)		☐	Other	
☐	Slope Tracking (Soil Roughening)		☐	Other	
☐	Watering to Minimize Wind Erosion		☐	Other	
Permanent Stabilization					
	BMP	Notes		BMP	Notes
☐	RECP (3 horizontal to 1 vertical)		☐	Vegetation Protection	
☒	Permanent Seeding		☐	Sod	
☐	Permanent Planting (vegetative landscaping)		☐	Other	
☒	Mulching		☐	Other	

Permanent Structural					
	BMP	Notes		BMP	Notes
☐	Outlet Protection		☐	Stormwater Channel	
☐	Storm Drainage System		☐	Retaining Wall	
☐	Curb		☐	Gradient Terrace	
☐	Stormwater Pond		☐	Stormwater Retention Pond	
☐	Stormwater Infiltration		☐	Stormwater Filtration	
☐	Bio Swale		☐	Bio Retention Basin	
☐	Pervious pavement		☐	Vortsentry VS70	
☐	Other		☐	Other	

B. Sequence of Major Construction Activities

The Contractor will be responsible for implementing the following Erosion and Sediment Control and Storm Water Management control measures. The Contractor may designate these tasks to certain subcontractors as he sees fit, but the ultimate responsibility for implementing these controls and ensuring their proper functioning remains with the Contractor. The order of activities will be as follows:

Construction Sequence

1. Pre-construction meeting held to include project manager, operator's engineer, town representative, contractor, and sub-contractors prior to land disturbing activities.
2. Construct construction entrance/exit at locations designated on plans.
3. Install perimeter silt fence.
4. Have a qualified professional conduct an assessment of the site prior to the commencement of construction.
5. Begin clearing and grubbing operations. Clearing and grubbing operations shall be done only in areas where earth work will be performed and only in areas where construction is planned to commence within fourteen (14) days after clearing and grubbing.
6. Construct gravel driveway. As roadway and access drives are brought to grade, they will be stabilized with crushed stone subbase at a depth specified on plans to prevent erosion as soon as practicable.
7. Strip topsoil and stockpile in a location acceptable to construction manager. When stockpile is complete, install a perimeter silt sock, seed surface with 100% perennial ryegrass mixture at a rate of 2-4 lbs. per 1000 square feet. Apply 90-100 lbs. per 1,000 square feet of mulch.
8. Commence earthwork cut and fills. The work shall be progressed to allow a reasonable transfer of cut and fill earth for rough grading and earth moving. The contractor will be given some latitude to vary from the following schedule in order to meet the field conditions encountered. Contractor shall review variations to SWPPP with Design Engineer and qualified professional prior to implementation.
9. Stabilize all areas as soon as practicable, idle in excess of seven (7) days and in which construction will not commence within fourteen (14) days.

10. Install utilities. Trench excavation/backfill areas should be stabilized progressively at the end of each workday with seed and straw mulch at a rate of 100% perennial ryegrass at 2-4 lbs. per 1,000 square feet mulched at 90-100 lbs. per 1000 square feet.
11. Stabilize all areas idle in excess of seven (7) days in which construction will not commence within fourteen (14) day
12. Remove temporary construction exits and perimeter silt sock once site has achieved 80% uniform stabilization.

C. Storm Water Management

RPNY SOLAR 5, LLC will be responsible for all maintenance of the stormwater management facilities associated with the project.

According to the definition set forth in the SPDES General Permit, altering the hydrology from Pre to Post-Development conditions means that “the post-development peak flow rates has increased by more than 5% of the pre-development condition for the design storm of interest”. The proposed solar farm project is considered as “Land clearing and grading for the purposes of creating vegetated open space, excluding projects that alter hydrology from pre to post-development” in Appendix B of the General Permit. The project will not alter the site’s hydrology from Pre to Post-Development conditions and is therefore classified as a construction activity that requires the preparation of a SWPPP that only includes erosion and sediment controls. Detailed information is included in the Stormwater Management Report (Appendix R).

The gravel driveway on-site is designed using a limited use pervious gravel section approved by the NYSDEC, which classifies as a pervious surface. The project does not propose any increase in impervious area on-site, therefore, stormwater quality treatment is not required.

D. Post Construction Stormwater BMP Operation and Maintenance Plan

An Operations and Maintenance Plan is included to address the inspection, operations and maintenance of all post construction BMPs identified in this plan. The Contractor is responsible for proper installation, maintenance and functioning of all best management practices shown on the drawings until final stabilization is achieved. A copy of the Post Construction Stormwater BMP Operation and Maintenance Plan is included Appendix T of this document.

IX. OTHER CONTROLS

A. Off-Site Vehicle Tracking

1. Dump trucks hauling material from the construction site will be covered with a tarpaulin. The job Contractor's Superintendent will be responsible for seeing that these procedures are followed.
2. Rock construction entrance to be installed as site conditions warrant or at the request of the engineer or inspector.

B. Excavation Spoil Materials

1. Excavation spoil materials may be generated during excavations including, but not limited to roadway and utilities installation. These materials must be properly managed to prevent them from contributing to storm water discharges. The materials generated from the development of this Project will be managed by the following method: Stockpiled on-site, the general site contractor to specify location and provide erosion control for excavated spoil materials or the material shall be hauled off-site and disposed of in an appropriate manner.

C. Dust Control

1. Minimizing wind erosion and controlling dust will be accomplished by one or more of the following methods
   a) Covering 30% or more of the soil surface with a non-erodible material.
   b) Roughening the soil to produce ridges perpendicular to the prevailing wind. Ridges should be about six (6) inches in height.
   c) Frequent watering of excavation and fill areas.
   d) Providing gravel or paving at entrance/exit drives, parking areas and transit paths.

D. Equipment Service Area

1. The Contractor shall identify an area on the Erosion and Sediment Control Plan for equipment cleaning, maintenance and repair. This area shall be protected by a temporary perimeter berm preventing all surface runoff from leaving the area, or equivalent measure, and shall be located no closer than 100' from any Waters of the United States or state, and shall be located no closer than 50' from any storm inlet. External washing of trucks and other construction vehicles must be confined to this area. No engine degreasing or asphalt equipment or tool washing is permitted.

E. Material Stockpiles

1. Stormwater runoff to and from material stockpiles shall be controlled to prevent materials from creating a diversion of surface water to disturbed soils or from entering the surface water. Topsoil stockpiles shall be surrounded with perimeter sediment control measures such as silt fence and be covered with non-erosive material as soon as practicable but no longer than 14 days after completion of the pile. Non-erosive material may include temporary seeding with straw mulch and tackifier, mulch, or other material providing suitable cover.

F. Masonry Mixing Area

1. Non-stormwater discharges into storm drainage systems or waterways containing slurries from concrete or mortar mixing operations shall not be permitted. Masonry mixing areas shall be located a minimum distance of 100 linear feet from drainage ways, inlets and surface waters and all storm water runoff from these areas shall be contained by a berm or other measures. Run-on water to these areas will be diverted to prevent mixing of clean water and water contaminated with concrete slurry.

X. COMPLIANCE WITH OTHER STATE AND LOCAL REGULATIONS

A. At a minimum, the Contractor will obtain copies of any and all local and state regulations which are applicable to Storm Water Management, Erosion and Sediment Control, and pollution minimization at this Project and will comply fully with such regulations. The Contractor will submit written evidence of such compliance if requested by the Operator or any agent of a regulatory body. The Contractor will comply with all conditions of the *NYSDEC* General Permit for Stormwater Discharges from Construction Activities including the conditions related to maintaining the SWPPP and evidence of compliance with the SWPPP at the Project and allowing regulatory personnel access to the Project and to records in order to determine compliance. The Contractor shall also comply with any additional or more stringent requirements imposed by the permit issued by an approved state storm water program, or with permits issued, or requirements imposed by the Town to which the Project discharges storm water. Requirements with which the Contractor must comply include installation of post-construction measures required by the State, County, or City.

XI. MATERIALS MANAGEMENT PLAN

A. Progress Drawing

1. A Progress Drawing consisting of a print of the Erosion and Sediment Control Plans shall be posted inside the job trailer wall. The Progress Drawing will be used to record the locations of the Job Trailer, Sanitary Waste Facilities, Solid Waste Facilities, Fuel Storage Area, Equipment Service Area, and Concrete Washout Pit. Any time any of these facilities are relocated on the site, a new location will be noted on the Progress Drawing and a Modification Report (Appendix M) will be prepared.

B. Materials Covered

1. The following materials or substances are expected to be present onsite during construction:

Concrete/Additives/Wastes	Cleaning solvents
Detergents	Petroleum based products
Paints/Solvents	Pesticides
Acids	Fertilizers
Solid and construction wastes	Sanitary wastes
Soil stabilization additives	

C. Materials Management Practices

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff. The Contractor's Superintendent will be responsible for ensuring that these procedures are followed:

1. Good Housekeeping

The following good housekeeping practices will be followed onsite during construction:

a) An effort will be made to store only enough products required to do the job.

b) All materials stored onsite will be stored in a neat, orderly manner and, if possible, under a roof or in a containment area. At a minimum, all containers will be stored with their lids on when not in use. Drip pans shall be provided under all dispensers.

c) Products will be kept in their original containers with the original manufacturer's label in legible condition.

d) Substances will not be mixed with one another unless recommended by the manufacturer.

e) Whenever possible, all of a product will be used up before disposing of the container.

f) Manufacturer's recommendations for proper use and disposal will be followed.

g) The Contractor’s Superintendent will be responsible for daily inspections to ensure proper use and disposal of materials.

2. Hazardous Substances

These practices will be used to reduce the risks associated with Hazardous Substances. Safety Data Sheets (SDS's) for each product with hazardous properties that is used at the Project will be obtained and used for the proper management of potential wastes that may result from these products. An SDS will be posted in the immediate area where such product is stored and/or used and another copy of each SDS will be maintained in the job trailer at the Project. Each employee who must handle a Hazardous Substance will be instructed on the use of SDS sheets and the specific information in the applicable SDS for the product he/she is using, particularly regarding spill control techniques.

a) Products will be kept in original containers with the original labels in legible condition.

b) Original labels and SDS's will be procured and used for each product.

c) If surplus product must be disposed manufacturer's and local/state/federal required methods for proper disposal must be followed.

3. Hazardous Waste

It is imperative that all Hazardous Waste be properly identified and handled in accordance with all applicable Hazardous Waste Standards, including the storage, transport and disposal of the Hazardous Wastes. There are significant penalties for the improper handling of Hazardous Wastes. It is important that the Site Superintendent seeks appropriate assistance in making the determination of whether a substance or material is a Hazardous Waste. For example, Hazardous Waste may include certain Hazardous Substances, as well as pesticides, paints, paint solvents, cleaning solvents, pesticides, contaminated soils, and other materials, substances or chemicals that have been discarded (or are to be discarded) as being out-of-date, contaminated, or otherwise unusable, and can include the containers for those substances; other materials and substances can also be or become Hazardous Wastes, however. The Contractor's Superintendent is also responsible for ensuring that all site personnel are instructed as to these Hazardous Waste requirements and also that the requirements are being followed.

4. Product Specific Practices

The following product specific practices will be followed on the job site:

a) Petroleum Products

(1) All onsite vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled. Petroleum storage tanks shall be located at minimum 100 linear feet from drainage ways, inlets and surface waters. Maximum total aggregate above ground storage capacity (for the total permit area) shall not exceed 1,320 gallons (which includes both bulk and equipment operational storage volumes in fuel tanks 55 gallons and greater). Total aggregate petroleum storage exceeding 1,320 gallons shall require preparation, certification (using a Professional Engineer or providing a Self-Certified SPCC Plan if applicable) and implementation of a Spill Prevention Control and Countermeasures

(SPCC) Plan. The SPCC Plan must be prepared and fully implemented prior to the commencement of work. The SPCC Plan, if needed, will be furnished by the Contractor. Any petroleum storage tanks stored onsite will be located within a containment area that is designed with an impervious surface between the tank and the ground. The secondary containment must be designed to provide a containment volume that is equal to 110% of the volume of the largest tank. Any mobile petroleum tank shall be parked in a vehicular service area surrounded by a berm that provides a containment volume that is equal to 110% of the volume of the largest tank. Containment must provide sufficient volume to contain expected precipitation and 110% volume of the largest tank. Accumulated rainwater or spills from containment areas are to be promptly pumped into a containment device and disposed of properly by a licensed Hazardous Waste transporter. Drip pans shall be provided for all dispensers. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations. The location of any fuel tanks and/or equipment storage areas must be identified on the PROGRESS DRAWING by the Contractor once the locations have been determined.

b) Fertilizers

(1) Fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked in the soil to limit exposure to storm water. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

c) Paints, Paint Solvents, and Cleaning Solvents

(1) All containers will be tightly sealed and stored when not in use. Excess paint and solvents will not be discharged to the storm sewer system but will be properly disposed of according to manufacturer's instructions or state and federal regulations.

d) Concrete Wastes

(1) Concrete trucks will be allowed to wash out or discharge surplus concrete or drum wash water on the site, but only in specifically designated diked and impervious washouts which have been prepared to prevent contact between the concrete wash and storm water. Waste generated from concrete wash water shall not be allowed to flow into drainage ways, inlets, receiving waters or highway right of ways, or any location other than the designated concrete washout. Waste concrete may be poured into forms to make riprap or other useful concrete products. Proper signage designating the “Concrete Washout” shall be placed near the facility. Concrete Washouts shall be located at minimum 100 linear feet from drainage ways, inlets and surface waters.

(2) The hardened residue from the concrete wash out areas will be disposed of in the same manner as other non-hazardous construction waste materials or may be broken up and used on site as deemed appropriate by the Contractor. Maintenance of the washout is to include removal of hardened concrete. The Facility shall have sufficient volume to contain all the concrete waste resulting from washout and a minimum freeboard of 12 inches. Facility shall not be filled beyond 95% capacity and shall be cleaned out once 75% full unless a new facility is constructed. The Contractor’s Superintendent will be responsible for seeing that these procedures are followed.

(3) Saw-cut Portland Cement Concrete (PCC) slurry shall not be allowed to enter storm drains or Watercourses. Saw-cut residue should not be left on the surface of pavement or be allowed

to flow over and off pavement. Residue from saw-cutting and grinding shall be collected by vacuum and disposed of in the concrete washout facility.

(4) The Project may require the use of multiple concrete wash out areas. These concrete wash out areas are to be made available to all trades and subcontractors working on the Project. The Contractor may designate certain wash out areas for particular trades or subcontractors, but the Contractor is responsible for the management of all concrete washout areas on the Project. All concrete wash out areas will be located in an area where the likelihood of the area contributing to storm water discharges is negligible. If required, additional BMPs must be implemented to prevent concrete wastes from contributing to storm water discharges. The location of concrete wash out area(s) must be identified on the PROGRESS DRAWING by the Contractor once the locations have been determined.

e) Solid and Construction Wastes

(1) All waste materials will be collected and stored in an appropriately covered container and/or securely contained metal dumpster rented from a local waste management company which must be a licensed solid waste management company. The dumpster will comply with all local and state solid waste management regulations.

(2) All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied a minimum of once per week or more often if necessary. Once building construction has commenced, the dumpster will be emptied a minimum of once per week or when 95% full, or more often if necessary, to prevent over-flow and the trash will be hauled to a landfill. No construction waste materials will be buried on site. All personnel will be instructed regarding the correct procedures for waste disposal.

(3) All waste dumpsters and roll-off containers will be located in an area where the likelihood of the containers contributing to storm water discharges is negligible. Solid waste containers shall be located no less than 50 feet from any storm inlet, drainage way, or surface water. If required, additional BMPs must be implemented, such as gravel bags, wattles, dikes, berms, and fences around the base to prevent wastes from contributing to storm water discharges. The location of waste dumpsters and roll-off containers must be identified on the PROGRESS DRAWING by the Contractor once the locations have been determined.

f) Sanitary Wastes

(1) A minimum of one portable sanitary unit will be provided for every ten (10) workers on the site. All sanitary waste will be collected from the portable units a minimum of one time per week by a licensed portable facility provider in complete compliance with local and state regulations.

(2) All sanitary waste units will be located in an area where the likelihood of the unit contributing to storm water discharges is negligible. Additional containment BMPs must be implemented, such as gravel bags or specially designed plastic skid containers around the base, to prevent wastes from contributing to storm water discharges. The location of sanitary waste units must be identified on the PROGRESS DRAWING by the contractor once the locations have been determined.

g) Contaminated Soils

(1) Any contaminated soils (resulting from spills of Hazardous Substances or Oil or discovered during the course of construction) which may result from Construction Activities will be contained and cleaned up in accordance with applicable state and federal regulations.

Contaminated soils not resulting from Construction Activities, or which pre-existed Construction Activities, but which are discovered by virtue of Construction Activities, should be reported in the same manner as spills, but with sufficient information to indicate that the discovery of an existing condition is being reported. If there is a release that occurs by virtue of the discovery of existing contamination, this should be reported as a spill, if it otherwise meets the requirements for a reportable spill.

D. Spill Prevention and Response Procedures

The Contractor will train all personnel in the proper handling and cleanup of spilled Hazardous Substances or Oil. No spilled Hazardous Substances or Oil will be allowed to come in contact with storm water discharges. If such contact occurs, the storm water discharge will be contained on site until appropriate measures in compliance with state and federal regulations are taken to dispose of such contaminated storm water. It shall be the responsibility of the Contractor's Superintendent to be properly trained, and to train all personnel in spill prevention and clean up procedures.

1. In order to prevent or minimize the potential for a spill of Hazardous Substances or Oil to come into contact with storm water, the following steps will be implemented:

   a) All Hazardous Substances or Oil (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, cleaning solvents, additives for soil stabilization, concrete curing compounds and additives, etc.) will be stored in a secure location, with their lids on, preferably under cover, when not in use.

   b) The minimum practical quantity of all such materials will be kept at the Project.

   c) A spill control and containment kit (containing, for example, absorbent materials, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

   d) Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be trained regarding these procedures and the location of the information and cleanup supplies.

   e) It is the Contractors responsibility to ensure that all Hazardous Waste discovered or generated at the Project site is disposed of properly by a licensed hazardous material disposal company. The Contractor is responsible for not exceeding Hazardous Waste storage requirements mandated by the EPA or state and local authority.

2. In the event of a spill of Hazardous Substances or Oil, the following procedures must be followed:

   a) All measures must be taken to contain and abate the spill and to prevent the discharge of the Hazardous Substance or Oil to storm water or off-site. (The spill area must be kept well ventilated and personnel must wear appropriate protective clothing to prevent injury from contact with the Hazardous Substances.

   b) If the release is equal to or in excess of a reportable quantity, the SWPPP must be modified within seven (7) calendar days of knowledge of the discharge to provide a description of the release, the circumstances leading to the release, and the date of the release. The SWPPP must identify measures to prevent the recurrence of such releases and to respond to such releases. The form in Appendix O must be completed in accordance with this requirement.

XII. CONTROL OF NON-STORM WATER DISCHARGES

A. Certain types of discharges are allowable under the NYSDEC General Permit for Stormwater Discharges from Construction Activities, and it is the intent of this SWPPP to allow such discharges. These types of discharges will be allowed under the conditions that no pollutants will be allowed to come in contact with the water prior to or after its discharge. The control measures which have been outlined previously in this SWPPP will be strictly followed to ensure that no contamination of these non-storm water discharges takes place. The following non-storm water discharges are allowed by the NYSDEC and may occur at the Project:

1. Discharges from fire-fighting activities;
2. Fire hydrant flushings;
3. Waters used to wash vehicles where detergents are not used;
4. Water used to control dust;
5. Potable water including uncontaminated water line flushings;
6. Routine external building wash down that does not use detergents;
7. Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used;
8. Uncontaminated air conditioning or compressor condensate;
9. Uncontaminated ground water or spring water;
10. Foundation or footing drains where flows are not contaminated with process materials such as solvents;
11. Uncontaminated excavation dewatering;
12. Landscape irrigation

XIII. HISTORICAL PROPERTIES

A. A review of potential adverse impact to cultural, historic and archaeological resources was conducted. There are no places or properties which are listed or would be eligible for listing on the State or National Register of Historic Places that will be impacted by this construction. The New York State Historic Preservation Office response letter indicating no effect can be found in Appendix S.

XIV. INDUSTRIAL ACTIVITIES

A. There are no discharges planned from industrial activities as part of this project.

XV. ENHANCED PHOSPHORUS REMOVAL STANDARDS

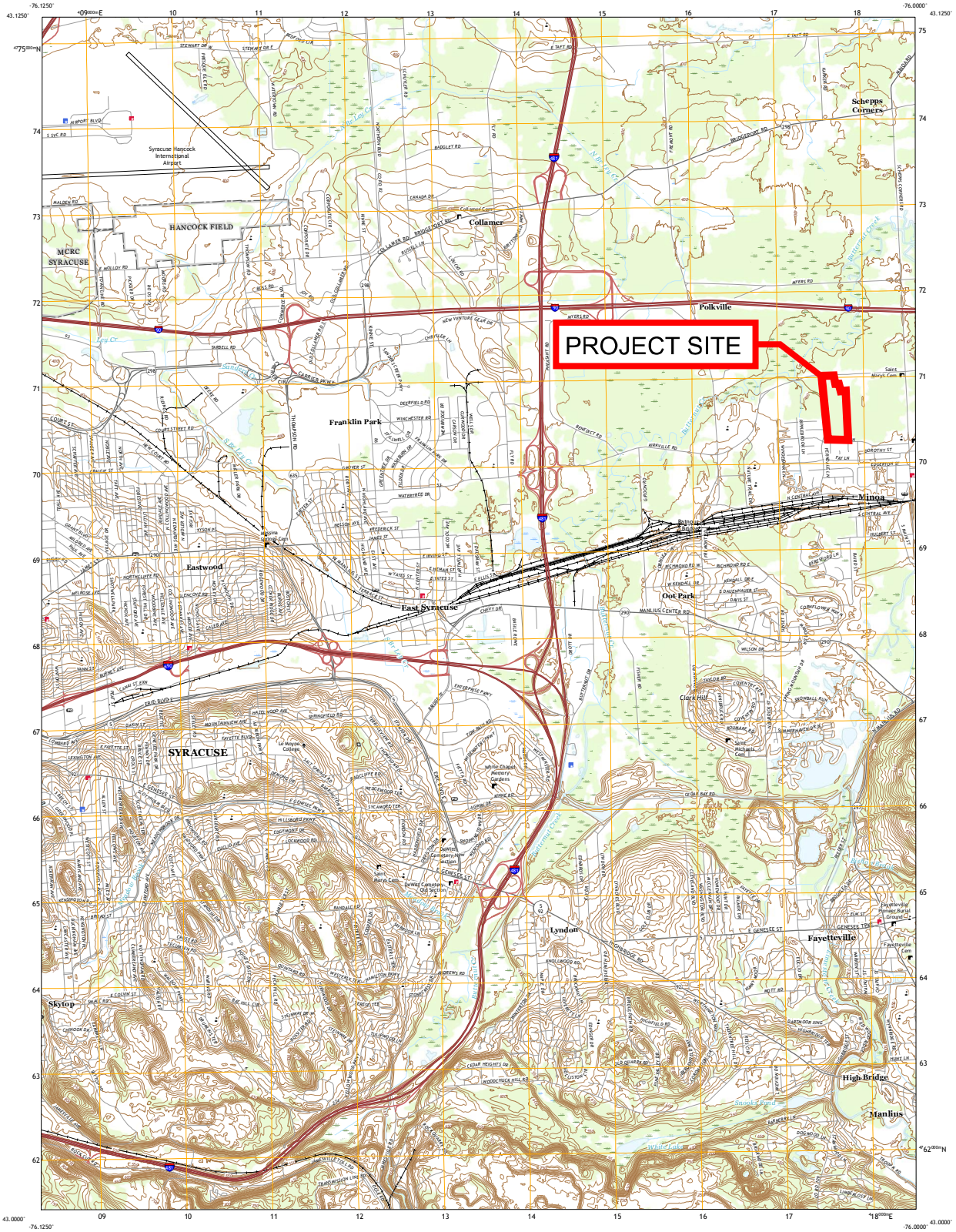
A. This project is not required to provide enhanced phosphorus removal practices

Appendix B
Site Location Mapping

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map US Topo

SYRACUSE EAST QUADRANGLE
NEW YORK - ONONDAGA COUNTY
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and 1 000-meter grid:Universal Transverse Mercator, Zone 18T
This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery	NAIP, August 2017 - December 2017	
Roads	U.S. Census Bureau,	2016
Names	GNIS, 1980 - 2019	
Hydrography	National Hydrography Dataset, 1899 - 2019	
Contours	National Elevation Dataset, 1998 - 2018	
Boundaries	Multiple sources; see metadata file	2017 - 2018
Wetlands	FWS National Wetlands Inventory	1978 - 2009

MN
GN
12°50'
219 MILS
2°46'
13 MILS
UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
VN
Grid Zone Designation
18T

SCALE 1:24 000
KILOMETERS 0.5 0 1 2
METERS 1000 500 0 1000 2000
MILES 0.5 0 1
FEET 1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.18

NEW YORK
QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

1 Brewerton
2 Cicero
3 Cleveland
4 Syracuse West
5 Manlius
6 South Onondaga
7 Jamesville
8 Oran

ADJOINING QUADRANGLES

ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

SYRACUSE EAST, NY
2019

NSN
MAP REF NO. 4350162 342705

Appendix C

Erosion and Sedimentation Control Plan(s) and Details

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

280 East Broad Street // Suite 200 // Rochester, NY 14604
585.232.5135 / 585.232.4652 fax

www.bergmannpc.com

OWNER: ALEMIC ABDULAH

APPLICANT: RPNY SOLAR 5, LLC

RENEWABLE PROPERTIES

7390 KIRKVILLE ROAD
EAST SYRACUSE, NEW YORK 13057

KIRKVILLE ROAD
COMMUNITY SOLAR FARM PROJECT
PRELIMINARY SITE PLAN

PROJECT CONTACT LIST

OWNER:
- **ALEMIC ABDULAH**
- 6533 MANLIUS ROAD N
  KIRKVILLE, NY 13082
- PHONE: 315.580.4113

APPLICANT:
- **RPNY SOLAR 5**
- 879 SANCHEZ STREET
  SAN FRANCISCO, CA 94114
- CONTACT: STEPHANIE LOUCAS
- PHONE: 415-710-3834

STRUCTURAL ENGINEER:
- TBD

ARCHITECT:
- TBD

MECHANICAL ENGINEER:
- TBD

CIVIL ENGINEER:
- **BERGMANN**
- 280 EAST BROAD STREET
  SUITE 200
  ROCHESTER, NY 14604
- CONTACT: ROBERT SWITALA
- PHONE: 585.232.5135

ELECTRICAL ENGINEER:
- TBD

DRAWING INDEX

C000	COVER SHEET
C001	GENERAL NOTES
C002	AREA PARCEL PLAN
C003	EXISTING CONDITIONS PLAN
C004	OVERALL SITE PLAN
C005	SITE PLAN
C006	GRADING PLAN
C007	GRADING PLAN DETAILS
C008 - C011	DETAILS I - DETAILS IV

APPROVED BY:
PLANNING BOARD CHAIRMAN
DATE: _____

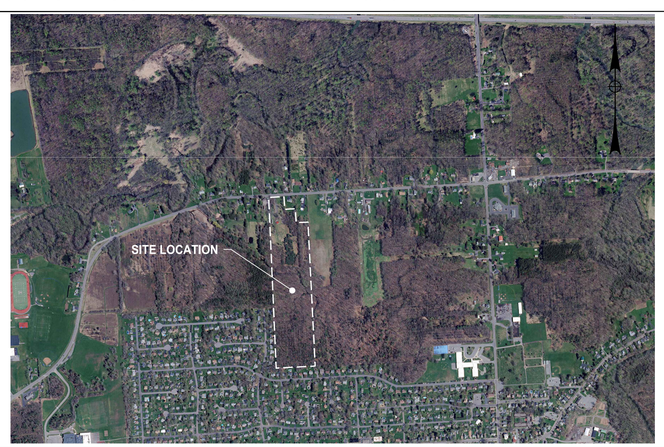
APPROVED BY:
DIRECTOR OF ENGINEERING AND PLANNING
DATE: _____

APPROVED BY:
DIRECTOR OF BUILDING AND FIRE PREVENTION
DATE: _____

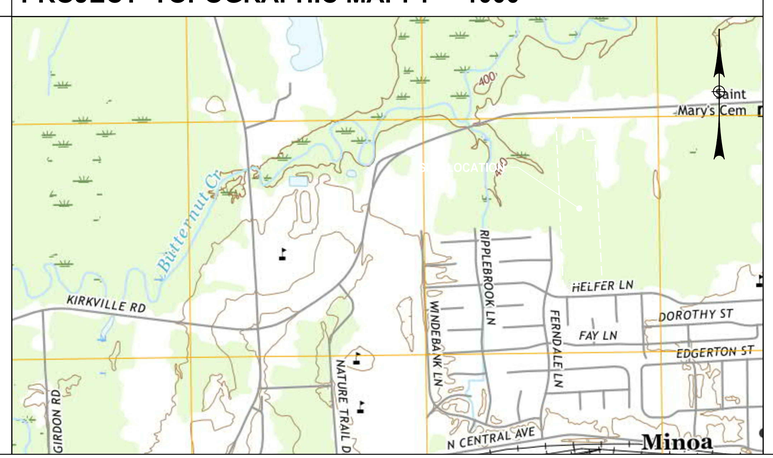
APPROVED BY:
FIRE MARSHAL
DATE: _____

DATE	DESCRIPTION

PROJECT LOCATION MAP: 1" - 1000'



PROJECT TOPOGRAPHIC MAP: 1" - 1000'



STATE OF NEW YORK
ROBERT PAUL SWITALA
LICENSED PROFESSIONAL ENGINEER

PRELIMINARY
12/18/2020
14919.00

01/01/2012 3:50:15 PM

SEQUENCE OF CONSTRUCTION:

1. PRE-CONSTRUCTION MEETING HELD TO INCLUDE PROJECT MANAGER, OPERATOR'S ENGINEER, CONTRACTOR, AND SUB-CONTRACTORS PRIOR TO LAND DISTURBING ACTIVITIES.
2. CONSTRUCT CONSTRUCTION ENTRANCE/EXIT AT LOCATIONS DESIGNATED ON PLANS AS TEMPORARY ACCESS ROADS..
3. INSTALL PERIMETER SILT SOCK.
4. HAVE A QUALIFIED PROFESSIONAL CONDUCT AN ASSESSMENT OF THE SITE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
5. BEGIN CLEARING AND GRUBBING OPERATIONS. CLEARING AND GRUBBING SHALL BE DONE ONLY IN AREAS WHERE EARTHWORK WILL BE PERFORMED AND ONLY IN AREAS WHERE CONSTRUCTION IS PLANNED TO COMMENCE WITHIN 14 DAYS AFTER CLEARING AND GRUBBING.
6. STRIP TOPSOIL AND STOCKPILE IN A LOCATION ACCEPTABLE TO CONSTRUCTION MANAGER. WHEN STOCKPILE IS COMPLETE, INSTALL PERIMETER SILT FENCE, SEED SURFACE WITH 100% PERENNIAL RYEGRASS MIXTURE AT A RATE OF 2-4 LBS. PER 1000 SF. APPLY 90-100 LBS PER 1000 SF OF MULCH.
7. COMMENCE EARTHWORK CUT AND FILLS. THE WORK SHALL BE PROGRESSED TO ALLOW A REASONABLE TRANSFER OF CUT AND FILL EARTH FOR ROUGH GRADING AND EARTH MOVING. THE CONTRACTOR WILL BE GIVEN SOME LATITUDE TO VARY FROM THE FOLLOWING SCHEDULE IN ORDER TO MEET THE FIELD CONDITIONS ENCOUNTERED. CONTRACTOR SHALL REVIEW VARIATIONS TO THE APPROVED PLANS WITH DESIGN ENGINEER AND QUALIFIED PROFESSIONAL PRIOR TO IMPLEMENTATION.
8. AS ROADWAY AND ACCESS DRIVES ARE BROUGHT TO GRADE, THEY WILL BE STABILIZED WITH CRUSHED STONE SUBBASE AT A DEPTH SPECIFIED ON PLANS TO PREVENT EROSION AS SOON AS PRACTICABLE.
9. STABILIZE ALL AREAS AS SOON AS PRACTICABLE, IDLE IN EXCESS OF 7 DAYS AND IN WHICH CONSTRUCTION WILL NOT RECOMMENCE WITHIN 14 DAYS.
10. INSTALL UTILITIES. TRENCH EXCAVATION/BACKFILL AREAS SHOULD BE STABILIZED PROGRESSIVELY AT THE END OF EACH WORKDAY WITH SEED AND STRAW MULCH AT A RATE OF 100% PERENNIAL RYE GRASS AT 2-4 LBS/1000 SF MULCHED AT 90-100 LBS/1000 SF.
11. STABILIZE ALL AREAS IDLE IN EXCESS OF 7 DAYS IN WHICH CONSTRUCTION WILL NOT RECOMMENCE WITHIN 14 DAYS.
12. REHABILITATE ACCESS ROADS TO CONFORM WITH THE LIMITED USE GRAVEL ACCESS ROAD DETAIL AND SPECIFICATIONS.
13. REMOVE TEMPORARY CONSTRUCTION EXITS AND PERIMETER SILT FENCE ONCE SITE HAS ACHIEVED 80% UNIFORM STABILIZATION.

GENERAL NOTES:

1. THE UNDERGROUND STRUCTURES AND UTILITIES SHOWN ON THIS MAP HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORD MAPS, THEY ARE NOT CERTIFIED TO THE ACCURACY OF THEIR LOCATION AND/OR COMPLETENESS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION AND EXTENT OF ALL UNDERGROUND STRUCTURES AND UTILITIES PRIOR TO ANY DIGGING OR CONSTRUCTION ACTIVITIES IN THEIR VICINITY. THE CONTRACTOR SHALL HAVE ALL EXISTING UTILITIES FIELD STAKED BEFORE STARTING WORK BY CALLING 1-800-962-7962.
2. THE CONTRACTOR SHALL PERFORM ALL WORK IN COMPLIANCE WITH TITLE 29 OF FEDERAL REGULATIONS, PART 1926, SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION (OSHA).
3. HIGHWAY DRAINAGE ALONG ALL ROADS AND PRIVATE DRIVES SHALL BE KEPT CLEAN OF MUD, DEBRIS ETC. AT ALL TIMES.
4. THE CONTRACTOR SHALL CONSULT THE DESIGN ENGINEER BEFORE DEVIATING FROM THESE PLANS.
5. IN ALL TRENCH EXCAVATIONS, CONTRACTOR MUST LAY THE TRENCH SIDE SLOPES BACK TO A SAFE SLOPE, USE A TRENCH SHIELD OR PROVIDE SHEETING AND BRACING.
6. IF SUSPICIOUS AND/OR HAZARDOUS MATERIAL IS ENCOUNTERED DURING DEMOLITION/CONSTRUCTION, ALL WORK SHALL STOP AND THE MONROE COUNTY DEPARTMENT OF HEALTH AND THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION SHALL BE NOTIFIED IMMEDIATELY. WORK SHALL NOT RESUME UNTIL THE DEVELOPER HAS OUTLINED APPROPRIATE ACTION FOR DEALING WITH THE WASTE MATERIAL AND THE DEVELOPMENT PLANS ARE MODIFIED AS MAY BE NECESSARY.
7. EXCAVATED WASTE MATERIAL REMOVED FROM THE SITE SHALL BE PLACED AT A LOCATION ACCEPTABLE TO THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION.
8. AREAS DISTURBED OR DAMAGED AS PART OF THIS PROJECTS CONSTRUCTION THAT ARE OUTSIDE OF THE PRIMARY WORK AREA SHALL BE RESTORED, AT THE CONTRACTORS EXPENSE, TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
9. UNLESS COVERED BY THE CONTRACT SPECIFICATIONS OR AS NOTED ON THE PLANS, ALL WORK SHALL CONFORM TO THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS DATED JANUARY 1, 2020 AND ANY SUBSEQUENT APPENDICES.

WASTE/HAZARDOUS MATERIAL PRACTICES:

1. WHENEVER POSSIBLE COVERED TRASH CONTAINERS SHOULD BE USED.
2. DAILY SITE CLEANUP IS REQUIRED TO REDUCE DEBRIS AND POLLUTANTS IN THE ENVIRONMENT.
3. CONTRACTOR SHALL PROVIDE A SAFE STORAGE SPACE FOR ALL PAINTS, STAINS AND SOLVENTS INSIDE A COVERED STORAGE AREA.
4. ALL FUELS, OILS, AND GREASE MUST BE KEPT IN CONTAINERS AT ALL TIMES.

EROSION & SEDIMENT CONTROL NOTES:

1. INSTALL EROSION CONTROL MEASURES AS INDICATED ON THE PLAN PRIOR TO THE START OF ANY EXCAVATION WORK. EROSION CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH THE NEW YORK STATE GUIDELINES FOR URBAN EROSION SEDIMENT CONTROL MANUAL, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, AND THE GOVERNING MUNICIPAL REQUIREMENTS.
2. REMOVE AND STOCKPILE TOPSOIL AS DIRECTED BY THE CONSTRUCTION MANAGER REPLACE TOPSOIL TO A MINIMUM 6" DEPTH WITH TOPSOIL OR AMENDED SOIL. ALL DISTURBED AREAS TO BE SEEDED TO PROMOTE VEGETATION AS SOON AS PRACTICABLE.
3. IF THE SEASONS PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW HAY OR EQUIVALENT AND ANCHORED IN ACCORDANCE WITH THE "STANDARDS", NETTING OR LIQUID MULCH BINDER.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND REMOVAL OF TEMPORARY SEDIMENTATION CONTROLS. EROSION CONTROL MEASURES SHALL NOT BE REMOVED BEFORE 80% UNIFORM VEGETATIVE COVER HAS BEEN ACHIEVED.
5. ALL EROSION CONTROL MEASURES ARE TO BE REPLACED WHENEVER THEY BECOME CLOGGED OR INOPERABLE AND SHALL BE REPLACED AT A MINIMUM OF EVERY 3 MONTHS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION OF TOPSOIL OR AMENDED TO ALL DISTURBED AREAS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN EROSION CONTROL MEASURES AT ALL TIMES.
7. THE CONTRACTOR SHALL DESIGNATE A MEMBER OF HIS/HER FIRM TO BE RESPONSIBLE TO MONITOR EROSION CONTROL, EROSION CONTROL STRUCTURES, TREE PROTECTION AND PRESERVATION THROUGHOUT CONSTRUCTION.
8. ALL DISTURBED AREAS SHALL BE FINISH GRADED TO PROMOTE VEGETATION ON ALL EXPOSED AREAS AS SOON AS PRACTICABLE. STABILIZATION PRACTICES (TEMPORARY/PERMANENT SEEDING, MULCHING, GEOTEXTILES, ETC.) MUST BE IMPLEMENTED WITHIN SEVEN (7) DAYS WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, AND NOT EXPECTED TO RESUME WITHIN FOURTEEN (14) DAYS.
9. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES. ALL CONSTRUCTION DEBRIS AND SEDIMENT SPOILS, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY.
10. DUST SHALL BE CONTROLLED BY WATERING.
11. ADJOINING PROPERTY SHALL BE PROTECTED FROM EXCAVATION AND FILLING OPERATIONS ON THE PROPOSED SITE.
12. SLOPE TRACKING SHALL BE IMPLEMENTED ON ALL SLOPE 1 ON 3 OR GREATER AT THE END OF EACH WORK DAY AND PRIOR TO FINAL SLOPE GRADING AND STABILIZATION.

STORM WATER POLLUTION PREVENTION PLAN NOTES:

1. THE CONTRACTOR SHALL PROVIDE A QUALIFIED INSPECTOR TO INSPECT THE PROJECT AT THE END OF EACH WORK WEEK AND PROVIDE A REPORT AT LEAST ONCE PER WEEK.
2. EROSION CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH THE NEW YORK STATE GUIDELINES FOR URBAN EROSION SEDIMENT CONTROL MANUAL, ONONDAGA COUNTY HEALTH DEPARTMENT, AND THE TOWN OF MANLIUS REQUIREMENTS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE BEST MANAGEMENT PRACTICES (BMP'S) UNTIL GROUND COVER IS ESTABLISHED.
4. REMOVE AND STOCKPILE TOPSOIL AS DIRECTED BY THE CONSTRUCTION MANAGER. REPLACE TOPSOIL TO A MINIMUM 6" DEPTH. ALL DISTURBED AREAS TO BE HYDROSEEDED AS DIRECTED BY THE CONSTRUCTION MANAGER TO PROMOTE VEGETATION AS SOON AS PRACTICABLE.
5. IF THE SEASONS PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW HAY OR EQUIVALENT AND ANCHORED IN ACCORDANCE WITH THE "STANDARDS".
6. CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND REMOVAL OF TEMPORARY SEDIMENTATION CONTROLS. EROSION CONTROL MEASURES SHALL NOT BE REMOVED BEFORE 80% UNIFORM VEGETATION HAS BEEN ACHIEVED.
7. ALL EROSION CONTROL MEASURES ARE TO BE REPLACED WHENEVER THEY BECOME CLOGGED OR INOPERABLE AND SHALL BE REPLACED WHEN THEY HAVE REACHED THE DESIGN LIFE INDICATED IN THE NYS GUIDELINES FOR URBAN EROSION SEDIMENT CONTROL DESIGN MANUAL OR EVERY THREE MONTHS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION OF TOPSOIL TO ALL DISTURBED AREAS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN EROSION CONTROL MEASURES AT ALL TIMES.
9. THE CONTRACTOR SHALL DESIGNATE A MEMBER OF HIS/HER FIRM TO BE RESPONSIBLE TO MONITOR EROSION CONTROL AND EROSION CONTROL STRUCTURES THROUGHOUT CONSTRUCTION.
10. ALL DISTURBED AREAS SHALL BE FINISH GRADED TO PROMOTE VEGETATION ON ALL EXPOSED AREAS AS SOON AS PRACTICABLE. STABILIZATION PRACTICES (TEMPORARY/PERMANENT SEEDING, MULCHING, GEOTEXTILES, ETC.) MUST BE IMPLEMENTED WITHIN SEVEN (7) DAYS WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, AND NOT EXPECTED TO RESUME WITHIN FOURTEEN (14) DAYS.
11. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES. ALL CONSTRUCTION DEBRIS AND SEDIMENT SPOILS, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY.
12. DUST SHALL BE CONTROLLED BY WATERING.
13. ADJOINING PROPERTIES SHALL BE PROTECTED FROM EXCAVATION AND FILLING OPERATIONS ON THE PROPOSED SITE.
14. EROSION CONTROL MEASURES SHOULD BE RELOCATED INWARD AS PERIMETER SLOPE CONSTRUCTION PROGRESSES AND RECONSTRUCTED TO THE NYS STANDARDS & SPECIFICATION AT THE END OF EACH DAY.
15. PERIMETER AREAS SHALL BE TEMPORARILY STABILIZED WITH SEED AND MULCH PROGRESSIVELY AT MINIMUM AT THE END OF EACH WEEK WITH 100% PERENNIAL RYEGRASS MIX AT A RATE OF 2-4 LBS PER 1000 SF AND MULCH 90-100 LBS PER 1000 SF OF WEED FREE STRAW.
16. SLOPE TRACKING SHALL BE IMPLEMENTED ON ALL SLOPE 1 ON 3 OR GREATER AT THE END OF EACH WORK DAY AND PRIOR TO FINAL SLOPE GRADING AND STABILIZATION.

SITE STABILIZATION:

1. WHEN FINAL GRADE IS ACHIEVED DURING NON-GERMINATING MONTHS, THE AREA SHOULD BE MULCHED UNTIL THE BEGINNING OF THE NEXT PLANTING SEASON.
2. MULCHES SHOULD BE APPLIED AT THE RATES SHOWN IN THE MULCH APPLICATION RATES TABLE. VERY LITTLE BARE GROUND SHOULD BE VISIBLE THROUGH THE MULCH.
3. STRAW AND HAY MULCH SHOULD BE ANCHORED OR TACKIFIED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN. A TRACTOR-DRAWN IMPLEMENTS MAY BE USED TO "CRIMP" THE STRAW OR HAY INTO THE SOIL - ABOUT 3 INCHES. THIS METHOD SHOULD BE LIMITED TO SLOPES NO STEEPER THAN 3H:1V. THE MACHINERY SHOULD BE OPERATED ALONG THE CONTOUR. NOTE: CRIMPING OF HAY OR STRAW BY RUNNING OVER IT WITH TRACKED MACHINERY IS NOT RECOMMENDED.
4. BEFORE SEEDING IS APPLIED THE CONTRACTOR SHALL SPREAD SOIL TO PREVENT PONDING AND CONFIRM THAT SOIL WILL SUSTAIN THE SEED GERMINATION AND ESTABLISHMENT OF VEGETATION.
5. GRADED AREAS SHOULD BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREAS AND TO PROVIDE A ROUGHENED SURFACE TO PREVENT TOPSOIL FROM SLIDING DOWN SLOPE. COMPACTED SOILS SHOULD BE SCARIFIED TO A DEPTH OF 6 TO 12 INCHES, ALONG CONTOUR WHEREVER POSSIBLE, PRIOR TO SEEDING.
6. TOPSOIL OR AMENDED SOIL SHOULD BE UNIFORMLY DISTRIBUTED ACROSS THE DISTURBED AREA TO A MINIMUM DEPTH OF 6 INCHES. SPREADING SHOULD BE DONE IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL PREPARATION OR TILLAGE. IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOIL PLACEMENT SHOULD BE CORRECTED IN ORDER TO PREVENT FORMATION OF DEPRESSIONS.
7. TOPSOIL SHOULD NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
8. WHEN USED AS A MULCH REPLACEMENT, THE APPLICATION RATE (THICKNESS) OF THE COMPOST SHOULD BE ½" TO ¾". COMPOST SHOULD BE PLACED EVENLY AND SHOULD PROVIDE 100% SOIL COVERAGE. NO SOIL SHOULD BE VISIBLE.
9. POLYMERIC AND GUM TACKIFIERS MIXED AND APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS MAY BE USED TO TACK MULCH. AVOID APPLICATION DURING RAIN AND ON WINDY DAYS. A 24-HOUR CURING PERIOD AND A SOIL TEMPERATURE HIGHER THAN 45° F ARE TYPICALLY REQUIRED. APPLICATION SHOULD GENERALLY BE HEAVIEST AT EDGES OF SEEDED AREAS AND AT CRESTS OF RIDGES AND BANKS TO PREVENT LOSS BY WIND. THE REMAINDER OF THE AREA SHOULD HAVE BINDER APPLIED UNIFORMLY. BINDERS MAY BE APPLIED AFTER MULCH IS SPREAD OR SPRAYED INTO THE MULCH AS IT IS BEING BLOWN ONTO THE SOIL. APPLYING STRAW AND BINDER TOGETHER IS GENERALLY MORE EFFECTIVE.
10. SYNTHETIC BINDERS, OR CHEMICAL BINDERS, MAY BE USED AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH PROVIDED SUFFICIENT DOCUMENTATION IS PROVIDED TO SHOW THEY ARE NON-TOXIC TO NATIVE PLANT AND ANIMAL SPECIES.
11. MULCH ON SLOPES OF 8% OR STEEPER SHOULD BE HELD IN PLACE WITH NETTING. LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETS MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
12. SHREDDED PAPER HYDROMULCH SHOULD NOT BE USED ON SLOPES STEEPER THAN 5%. WOOD FIBER HYDROMULCH MAY BE APPLIED ON STEEPER SLOPES PROVIDED A TACKIFIER IS USED. THE APPLICATION RATE FOR ANY HYDROMULCH SHOULD BE 2,000 LB/ACRE AT A MINIMUM.
13. LIME, FERTILIZER, SEED, AND MULCH DISTURBED AREAS PER THE EROSION AND SEDIMENT CONTROL PLANS. IN AREAS OF STEEP SLOPES OR OBVIOUS AREAS WHERE POTENTIAL EROSION MAY OCCUR, AN EROSION CONTROL MAT OR FLEXIBLE GROWTH MEDIUM (FGM) SHALL BE USED. FGM SHALL BE APPLIED PER MANUFACTURER SPECIFICATIONS.
14. ONCE A SECTION OF THE ALIGNMENT HAS BEEN STABILIZED, NO CONSTRUCTION TRAFFIC SHALL OCCUR TO REMOVE ANY BMPS UNTIL THE SECTION HAS ACHIEVED 80% PERENNIAL VEGETATIVE COVER. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM 80% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NONVEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING OR OTHER MOVEMENTS.

12/19/2020 10:37 AM M:\Renewable Properties, LLC\014919.00 Renewable Properties-RPNY Kirkville Rd\4.0 Dwgs\4.1 Civil\149190C001_General Notes.dwg

KIRKVILLE ROAD

COMMUNITY SOLAR FARM PROJECT

7390 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057

RPNY SOLAR 5

RENEWABLE PROPERTIES

879 SANCHEZ STREET
SAN FRANCISCO, CA 94114

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.
280 East Broad Street
Suite 200
Rochester, NY 14604

office: 585.232.5135
fax: 585.232.4652

www.bergmannpc.com

DATE	DESCRIPTION

PRELIMINARY
NOT FOR CONSTRUCTION

STATE OF NEW YORK · ROBERT PAUL SIWIALA · 085487-1 · LICENSED PROFESSIONAL ENGINEER

Copyright © Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C

Project Manager: ECR	Checked By: RPS
Designed By: WD	Drawn By: WD
Date Issued: 12/18/20	Project Number: 14919.00

GENERAL NOTES

Drawing Number:

C001

PROPERTY OWNERS		
#	NAME	SECTION BLOCK LOT (SBL)
1	ROACH BRENDA S	6.-04-33.0
2	JONES KATHRYN H	6.-04-32.0
3	HYDE EUGENE P	6.-04-31.0
4	PIECHOWICZ DAVID M	6.-04-30.0
5	RUPE RANDOL C	6.-04-29.0
6	MARCY ELIZABETH	6.-04-28.0
7	BARFOOT BRIAN P	6.-04-27.0
8	SERAFIN MICHEAL J	6.-04-26.0
9	RUSSO JAMES II	6.-04-25.0
10	LUNENBURG JEAN M	6.-04-23.0
11	BETHKA AMY M	6.-04-22.0
12	YOUNG FAMILY REVOC TRUST, WILLIAM J YOUNG FAMILY REVOC TRUS	6.-04-21.0
13	DURANTINI MELISSA A	6.-04-20.0
14	HILL MATTHEW	6.-04-19.0
15	GEORGE FAMILY TRUST GUY	6.-04-18.0
16	GILCHER PENELOPE L	6.-04-17.0
17	CHABOT YOLANDE	6.-04-16.0
18	FANNETTI MARY E	6.-04-15.0
19	QUICK ANNA M	6.-04-14.0
20	SHERMAN JAMES E	6.-04-13.0
21	CLOBRIDGE LIVING TRUST PAUL G II	6.-04-12.0
22	VENTRESCA DONNA M	6.-04-11.0

0 250 500 750 FT

1" = 250' SCALE BAR

KIRKVILLE ROAD

COMMUNITY SOLAR FARM PROJECT

7390 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057

RPNY SOLAR 5

RENEWABLE PROPERTIES

879 SANCHEZ STREET
SAN FRANCISCO, CA 94114

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.

280 East Broad Street
Suite 200
Rochester, NY 14604

office: 585.232.5135
fax: 585.232.4652

www.bergmannpc.com

DATE	DESCRIPTION

PRELIMINARY
NOT FOR CONSTRUCTION

STATE OF NEW YORK
ROBERT PAUL SWIALA
083487
LICENSED PROFESSIONAL ENGINEER

Copyright © Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C

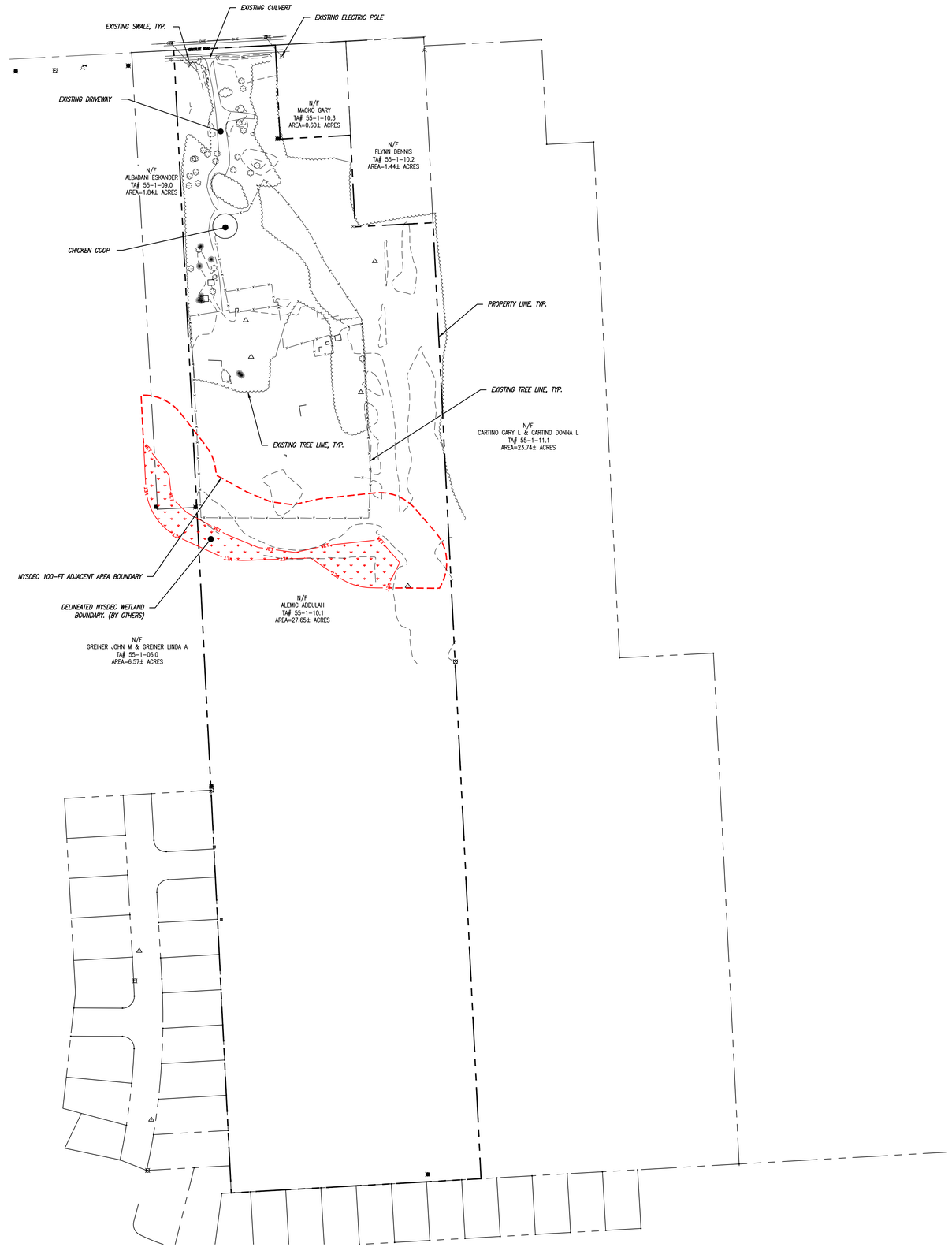
Project Manager:	Checked By:
ECR	RPS
Designed By:	Drawn By:
WD	WD
Date Issued:	Project Number:
12/18/20	14919.00

AREA PARCEL PLAN

Drawing Number:

C002

12/19/2020 10:43 AM M:\Renewable Properties, LLC\014919.00 Renewable Properties-RPNY Kirkville Rd\4.0 Dwgs\4.1 Civil\149190OC002_Area Parcel Plan.dwg



LEGEND

- MONUMENT FOUND
- REBAR FOUND
- PIPE FOUND
- ONE POST SIGN
- TWO POST SIGN
- BOL BOLLARD/POST
- DS DOWNSPOUT
- E ELECTRICAL BOX
- M ELECTRIC METER
- TR TRANSFORMER
- GV GAS VALVE
- G GAS METER
- LIGHTPOLE (ONE HEAD)
- LIGHT POLE (TWO HEAD)
- LIGHT POLE (THREE HEAD)
- LIGHT POLE (FOUR HEAD)
- LIGHT POLE (PEDESTAL)
- WASH LIGHT
- T TELEPHONE JUNCTION BOX
- FLM FIBER OPTIC LINE MARKER
- UTILITY POLE
- GW GUY WIRE
- SP SIGNAL POLE
- TRAFFIC CONTROL CABINET
- HH RECTANGULAR HANDHOLE
- HH ROUND HANDHOLE
- HH SQUARE HANDHOLE
- HYD HYDRANT
- WV WATER VALVE
- FDC FIRE DEPARTMENT CONNECTION
- CO CLEAN OUT
- CB CATCH BASIN
- DMH INLET DRAINAGE MANHOLE
- SMH SANITARY MANHOLE
- EMH ELECTRIC MANHOLE

- PROPERTY LINE
- ADJOINING PROPERTY LINE
- PROPERTY SETBACK LINE
- EXISTING FENCE
- OHE OVERHEAD UTILITY WIRE
- 100-FOOT NYSDEC WETLAND SETBACK
- SWL SWALE
- EDGE OF GRAVEL
- EXISTING TREELINE
- LTM MET DELINEATED WETLAND - NYSDEC

0 120 240 360 FT

1" = 120' SCALE BAR

KIRKVILLE ROAD

COMMUNITY SOLAR FARM PROJECT

7390 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057

RPNY SOLAR 5

RENEWABLE PROPERTIES

879 SANCHEZ STREET
SAN FRANCISCO, CA 94114

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.

280 East Broad Street
Suite 200
Rochester, NY 14604

office: 585.232.5135
fax: 585.232.4652

www.bergmannpc.com

DATE	DESCRIPTION

PRELIMINARY
NOT FOR CONSTRUCTION

STATE OF NEW YORK · HERBERT PAUL SWITALA · 085487-1 · LICENSED PROFESSIONAL ENGINEER

Copyright © Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C

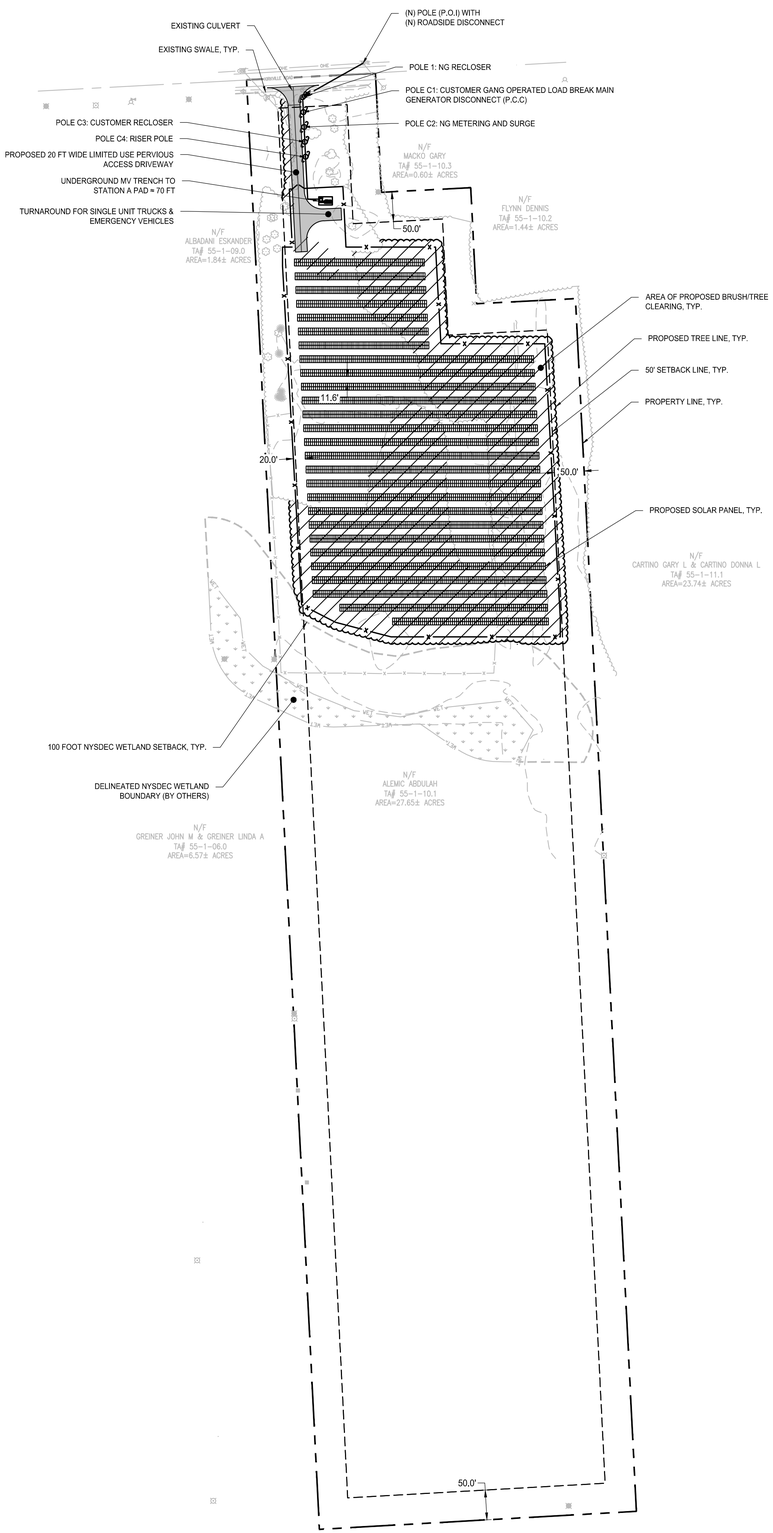
Project Manager:	Checked By:
ECR	RPS
Designed By:	Drawn By:
WD	WD
Date Issued:	Project Number:
12/18/20	14919.00

EXISTING CONDITIONS PLAN

Drawing Number:

C003

12/19/2020 10:44 AM M:\Renewable Properties, LLC\014919.00 Renewable Properties-RPNY Kirkville Rd\4.0 Dwgs\4.1 Civil\14919.00C002_EC.dwg



SITE PLAN DATA TABLE		
SITE IS LOCATED IN THE "R-A" RESTRICTED AGRICULTURAL DISTRICT		
PROPOSED USE: LARGE SCALE PHOTOVOLTAIC ENERGY SYSTEM		
PARCEL 55-1-10.1 TOWN OF MANLIUS COUNTY OF ONONDAGA, STATE OF NEW YORK		
APPLICANT: RPNY SOLAR 5, LLC 879 SANCHEZ STREET SAN FRANCISCO CA, 94114 (415) 710-3834	OWNER(S) OF RECORD: ALEMIC ABDULAH	
PLANS PREPARED BY: BERGMANN 280 EAST BROAD STREET, SUITE 200 ROCHESTER, NY 14604 (585) 232-5135		
DESCRIPTION	REQUIRED	PROPOSED
MIN. LOT SIZE	40,000 SF	1,199,725± SF
MIN. LOT WIDTH	150 FT	216± FT
MIN. SIDE YARD SETBACK	50 FT	65± FT
MIN. FRONT YARD SETBACK	50 FT	304± FT
MIN. REAR YARD SETBACK	50 FT	1,508± FT
MAX. HEIGHT OF PANELS	8 FT	8± FT
MAX. LOT COVERAGE (INCLUDING PANELS)	N/A	N/A

LEGEND

- MONUMENT FOUND
- REBAR FOUND
- PIPE FOUND
- ONE POST SIGN
- TWO POST SIGN
- BOLLARD/POST
- DOWNSPOUT
- BOX ELECTRICAL BOX
- DS ELECTRIC METER
- TRANSFORMER
- GAS VALVE
- GAS METER
- GV LIGHTPOLE (ONE HEAD)
- LIGHT POLE (TWO HEAD)
- LIGHT POLE (THREE HEAD)
- LIGHT POLE (FOUR HEAD)
- LIGHT POLE (PEDESTAL)
- WASH LIGHT
- TELEPHONE JUNCTION BOX
- FIBER OPTIC LINE MAKER
- UTILITY POLE (EXISTING)
- GW GUY WIRE
- SP SIGNAL POLE
- TRAFFIC CONTROL CABINET
- HH RECTANGULAR HANDHOLE
- HH ROUND HANDHOLE
- HH SQUARE HANDHOLE
- HYD HYDRANT
- WV WATER VALVE
- FDC FIRE DEPARTMENT CONNECTION
- CO CLEAN OUT
- CB CATCH BASIN
- DMH INLET DRAINAGE MANHOLE
- SMH SANITARY MANHOLE
- EMH ELECTRIC MANHOLE
- PROPERTY LINE
- ADJOINING PROPERTY LINE
- PROPERTY SETBACK LINE
- SWL SWALE
- OHE OVERHEAD UTILITY WIRE
- EDGE OF PAVEMENT
- ST EXISTING STORM PIPE
- EDGE OF GRAVEL
- EXISTING TREELINE
- WET DELINEATED WETLAND - PEM
- TREE CLEARING
- PROPOSED LIMITED USE GRAVEL ACCESS ROAD
- PROPOSED SOLAR PANEL
- PROPOSED UTILITY POLE
- OHE PROPOSED OVERHEAD UTILITY WIRE
- UGE PROPOSED UNDERGROUND UTILITY WIRE
- X PROPOSED FENCE
- PROPOSED TREELINE

SYSTEM SPECIFICATIONS	
SLAYTON SETTLEMENT ROAD A & B	
	ARRAY A
SYSTEM SIZE DC	2,274.48 kW
SYSTEM SIZE AC	1,625.00 kW
DC/AC RATIO	1.40
MODULE MANUFACTURER	JINKO SOLAR
MODULE MODEL	JKM405M-72H-BDVP
MODULE RATING	405 W
TOTAL MODULE QTY	5,616
MODULES PER STRING	26
TOTAL NO. OF STRINGS	216
INVERTER MODEL	SUNGROW SG125HV
INVERTER RATING	125 kW
INVERTER QTY	13
STEP-UP TRANSFORMER	12kV/600V, 1625kVA
RACKING	FT GROUND MOUNT
TILT ANGLE	25°
INTER-ROW SPACING	14.8'
PITCH	26.9'
GCR	45%
SITE AREA INSIDE FENCE	6.95 AC

0 120 240 360 FT

1" = 120' SCALE BAR

KIRKVILLE ROAD

COMMUNITY SOLAR FARM PROJECT

7390 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057

RPNY SOLAR 5

RENEWABLE PROPERTIES

879 SANCHEZ STREET
SAN FRANCISCO, CA 94114

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.

280 East Broad Street
Suite 200
Rochester, NY 14604

office: 585.232.5135
fax: 585.232.4652

www.bergmannpc.com

DATE	DESCRIPTION

PRELIMINARY
NOT FOR CONSTRUCTION

STATE OF NEW YORK
ROBERT PAUL SWIATLA
093487
LICENSED PROFESSIONAL ENGINEER

Copyright © Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C

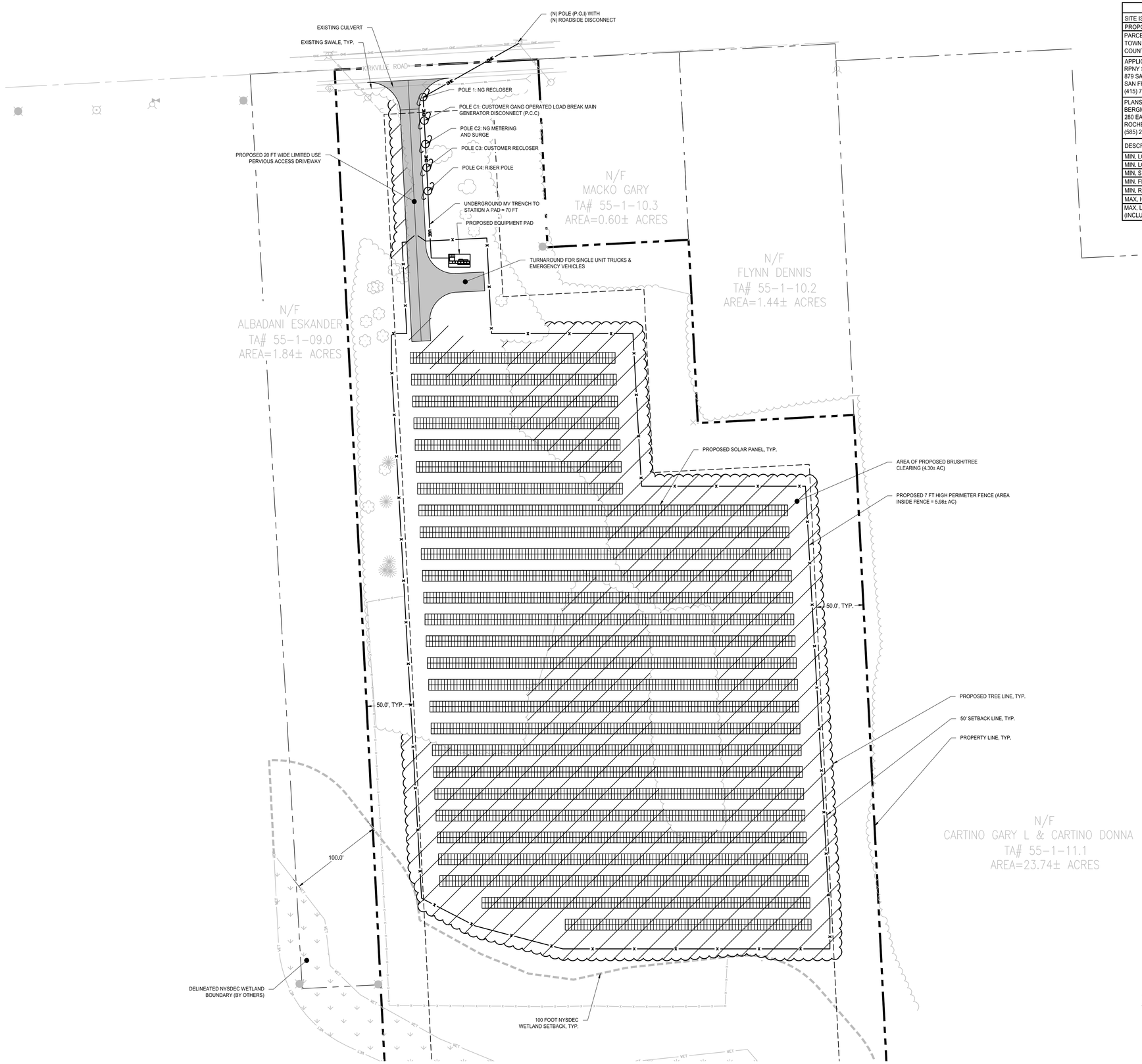
Project Manager: ECR
Checked By: RPS
Designed By: WD
Drawn By: WD
Date Issued: 12/18/20
Project Number: 14919.00

OVERALL SITE PLAN

Drawing Number:

C004

12/19/2020 10:46 AM M:\Renewable Properties, LLC\014919.00 Renewable Properties-RPNY Kirkville Rd\4.0 Dwgs\4.1 Civil\14919.00C003_Overall Site.dwg



SITE PLAN DATA TABLE		
SITE IS LOCATED IN THE "R-A" RESTRICTED AGRICULTURAL DISTRICT		
PROPOSED USE: LARGE SCALE PHOTOVOLTAIC ENERGY SYSTEM		
PARCEL 55-1-10.1 TOWN OF MANLIUS COUNTY OF ONONDAGA, STATE OF NEW YORK		
APPLICANT: RPNY SOLAR 5, LLC 879 SANCHEZ STREET SAN FRANCISCO CA, 94114 (415) 710-3834	OWNER(S) OF RECORD: ALEMIC ABDULAH	
PLANS PREPARED BY: BERGMANN 280 EAST BROAD STREET, SUITE 200 ROCHESTER, NY 14604 (585) 232-5135		
DESCRIPTION	REQUIRED	PROPOSED
MIN. LOT SIZE	40,000 SF	1,199,725± SF
MIN. LOT WIDTH	150 FT	216± FT
MIN. SIDE YARD SETBACK	50 FT	65± FT
MIN. FRONT YARD SETBACK	50 FT	304± FT
MIN. REAR YARD SETBACK	50 FT	1,508± FT
MAX. HEIGHT OF PANELS	8 FT	8± FT
MAX. LOT COVERAGE (INCLUDING PANELS)	N/A	N/A

LEGEND

- MONUMENT FOUND
- REBAR FOUND
- PIPE FOUND
- ONE POST SIGN
- TWO POST SIGN
- BOLLARD/POST
- DOWNSPOUT
- BOX ELECTRICAL BOX
- DS ELECTRIC METER
- TRANSFORMER
- GAS VALVE
- GAS METER
- GV LIGHTPOLE (ONE HEAD)
- LIGHT POLE (TWO HEAD)
- LIGHT POLE (THREE HEAD)
- LIGHT POLE (FOUR HEAD)
- LIGHT POLE (PEDESTAL)
- WASH LIGHT
- TELEPHONE JUNCTION BOX
- FIBER OPTIC LINE MAKER
- UTILITY POLE (EXISTING)
- GW GUY WIRE
- SP SIGNAL POLE
- TRAFFIC CONTROL CABINET
- HH RECTANGULAR HANDHOLE
- HH ROUND HANDHOLE
- HH SQUARE HANDHOLE
- HYD HYDRANT
- WV WATER VALVE
- FDC FIRE DEPARTMENT CONNECTION
- CO CLEAN OUT
- CB CATCH BASIN
- DMH INLET DRAINAGE MANHOLE
- SMH SANITARY MANHOLE
- EMH ELECTRIC MANHOLE
- PROPERTY LINE
- ADJOINING PROPERTY LINE
- PROPERTY SETBACK LINE
- SWALE
- OHE OVERHEAD UTILITY WIRE
- EDGE OF PAVEMENT
- ST EXISTING STORM PIPE
- EDGE OF GRAVEL
- EXISTING TREELINE
- LAR VET DELINEATED WETLAND - PEM
- TREE CLEARING
- PROPOSED LIMITED USE GRAVEL ACCESS ROAD
- PROPOSED SOLAR PANEL
- PROPOSED UTILITY POLE
- OHE PROPOSED OVERHEAD UTILITY WIRE
- UGE PROPOSED UNDERGROUND UTILITY WIRE
- X PROPOSED FENCE
- PROPOSED TREELINE

SYSTEM SPECIFICATIONS	
SLAYTON SETTLEMENT ROAD A & B	
	ARRAY A
SYSTEM SIZE DC	2,274.48 kW
SYSTEM SIZE AC	1,625.00 kW
DC/AC RATIO	1.40
MODULE MANUFACTURER	JINKO SOLAR
MODULE MODEL	JKM405M-72H-BDVP
MODULE RATING	405 W
TOTAL MODULE QTY	5,616
MODULES PER STRING	26
TOTAL NO. OF STRINGS	216
INVERTER MODEL	SUNGROW SG125HV
INVERTER RATING	125 kW
INVERTER QTY	13
STEP-UP TRANSFORMER	12kV/600V, 1625kVA
RACKING	FT GROUND MOUNT
TILT ANGLE	25°
INTER-ROW SPACING	14.8'
PITCH	26.9'
GCR	45%
SITE AREA INSIDE FENCE	6.95 AC

KIRKVILLE ROAD

COMMUNITY SOLAR FARM PROJECT

7390 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057

RPNY SOLAR 5

RENEWABLE PROPERTIES

879 SANCHEZ STREET
SAN FRANCISCO, CA 94114

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C.
280 East Broad Street
Suite 200
Rochester, NY 14604

office: 585.232.5135
fax: 585.232.4652

www.bergmannpc.com

DATE	DESCRIPTION

PRELIMINARY
NOT FOR CONSTRUCTION

STATE OF NEW YORK
ROBERT PAUL SWIALA
085487
LICENSED PROFESSIONAL ENGINEER

Copyright © Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C

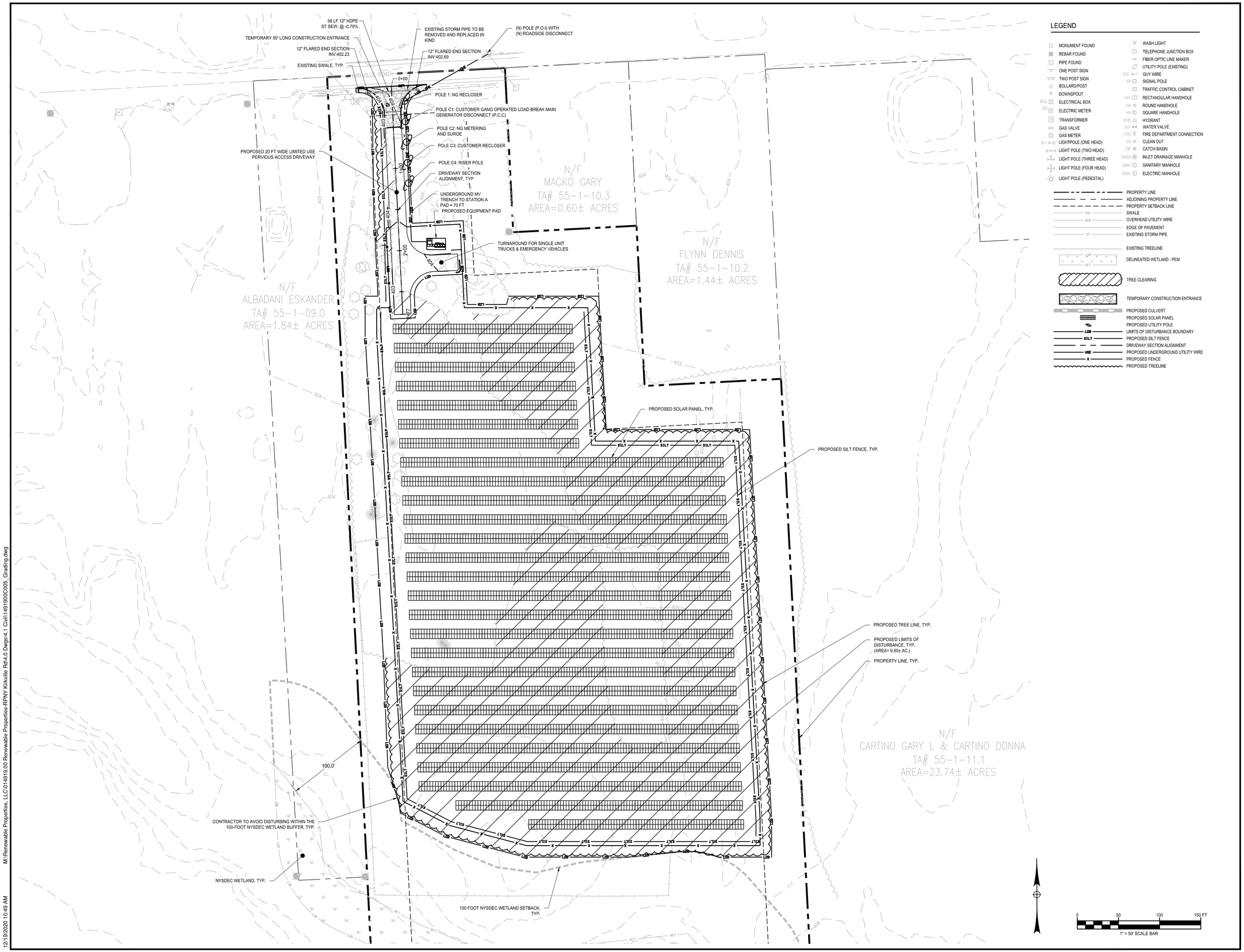
Project Manager: ECR
Checked By: RPS
Designed By: WD
Drawn By: WD
Date Issued: 12/18/20
Project Number: 14919.00

SITE PLAN

Drawing Number:

C005

12/19/2020 10:47 AM M:\Renewable Properties, LLC\014919.00 Renewable Properties-RPNY Kirkville Rd\4.0 Dwgs\4.1 Civil\1491900C004_Site.dwg



LEGEND

- MONUMENT FOUND
- REBAR FOUND
- PIPE FOUND
- ONE POST SIGN
- TWO POST SIGN
- BOLLARD/POST
- DOWNSPOUT
- BOL ELECTRICAL BOX
- DS ELECTRIC METER
- TRANSFORMER
- GAS VALVE
- GAS METER
- GJ LIGHTPOLE (ONE HEAD)
- LIGHT POLE (TWO HEAD)
- LIGHT POLE (THREE HEAD)
- LIGHT POLE (FOUR HEAD)
- LIGHT POLE (PEDESTAL)
- WASH LIGHT
- TELEPHONE JUNCTION BOX
- FIBER OPTIC LINE MAKER
- UTILITY POLE (EXISTING)
- GW GUY WIRE
- SP SIGNAL POLE
- TRAFFIC CONTROL CABINET
- HH RECTANGULAR HANDHOLE
- HH ROUND HANDHOLE
- HH SQUARE HANDHOLE
- HYD. HYDRANT
- WV WATER VALVE
- FDC FIRE DEPARTMENT CONNECTION
- CO CLEAN OUT
- CB CATCH BASIN
- DMH INLET DRAINAGE MANHOLE
- SMH SANITARY MANHOLE
- EMH ELECTRIC MANHOLE
- PROPERTY LINE
- ADJOINING PROPERTY LINE
- PROPERTY SETBACK LINE
- SWL SWALE
- OHE OVERHEAD UTILITY WIRE
- EDGE OF PAVEMENT
- ST EXISTING STORM PIPE
- EXISTING TREELINE
- LIM VET DELINEATED WETLAND - PEM
- TREE CLEARING
- TEMPORARY CONSTRUCTION ENTRANCE
- PROPOSED CULVERT
- PROPOSED SOLAR PANEL
- PROPOSED UTILITY POLE
- LIMITS OF DISTURBANCE BOUNDARY
- SILT PROPOSED SILT FENCE
- DRIVEWAY SECTION ALIGNMENT
- UGE PROPOSED UNDERGROUND UTILITY WIRE
- PROPOSED FENCE
- PROPOSED TREELINE

KIRKVILLE ROAD

COMMUNITY SOLAR FARM PROJECT

7390 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057

RPNY SOLAR 5

RENEWABLE PROPERTIES
879 SANCHEZ STREET
SAN FRANCISCO, CA 94114

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C.
280 East Broad Street
Suite 200
Rochester, NY 14604

office: 585.232.5135
fax: 585.232.4652

www.bergmannpc.com

DATE	DESCRIPTION

PRELIMINARY
NOT FOR CONSTRUCTION

STATE OF NEW YORK ROBERT PAUL SWIALA 085487 LICENSED PROFESSIONAL ENGINEER

Copyright © Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C

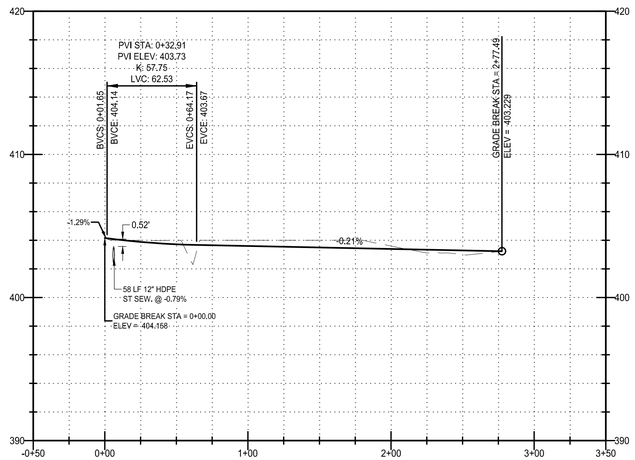
Project Manager: ECR	Checked By: RPS
Designed By: WD	Drawn By: WD
Date Issued: 12/18/20	Project Number: 14919.00

GRADING & EROSION CONTROL PLAN

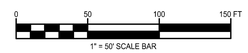
Drawing Number:

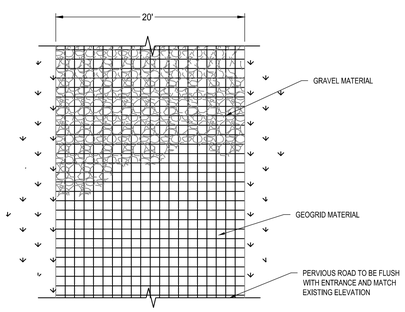
C006

12/19/2020 10:49 AM M:\Renewable Properties, LLC\014919.00 Renewable Properties-RPNY Kirkville Rd\4.0 Dwgs\4.1 Civil\149190C005_Grading.dwg

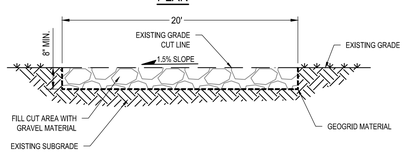


DRIVEWAY SECTION
1"=5' VERTICAL
1"=50' HORIZONTAL





PLAN



LIMITED USE PERVIOUS ACCESS ROAD - 0% TO 10% SLOPES

NO SCALE

GEOGRID MATERIAL NOTES:

1. THE GEOGRID, OR COMPARABLE PRODUCT, IS INTENDED FOR USE IN ALL CONDITIONS. IN ORDER TO ASSIST IN MATERIAL SEPARATION FROM NATIVE SOILS AND PRESERVE ACCESS LOADS.
2. GRAVEL FILL MATERIAL SHALL CONSIST OF 1-4" CLEAN, DURABLE, SHARP ANGLED CRUSHED STONE OF UNIFORM QUALITY, MEETING THE SPECIFICATION OF NYSDOT 703-02, SIZE DESIGNATION 3-5 OF TABLE 703-4. STONE MAY BE PLACED IN FRONT OF AND SPREAD WITH A TRACKED VEHICLE. GRAVEL SHALL NOT BE COMPACTED.
3. GEOGRID SHALL BE MIRAFI BXG110 OR APPROVED EQUAL. GEOGRID SHALL BE DESIGNED BASED ON EXISTING SOIL CONDITIONS AND PROPOSED HAUL ROAD SLOPES.
4. IF MORE THAN ONE ROLL WIDTH IS REQUIRED, ROLLS SHOULD OVERLAP A MINIMUM OF SIX INCHES.
5. REFER TO MANUFACTURER'S SPECIFICATION FOR PROPER TYING AND CONNECTIONS.
6. LIMITED USE PERVIOUS ACCESS ROAD SHALL BE DRESSED AS REQUIRED WITH ONLY 1-4" CRUSHED STONE MEETING NYSDOT 703-02 SPECIFICATIONS.

BASIS OF DESIGN: TENCATE MIRAFI BXG110 GEOGRIDS; 365 SOUTH HOLLAND DRIVE, PENDERGRASS, GA; 800-685-9990 OR 706-693-2226; WWW.MIRAFI.COM

WOVEN GEOTEXTILE MATERIAL NOTES:

1. SPECIFIED GEOTEXTILE WILL ONLY BE UTILIZED IN PLACID SOILS. PLACID SOILS CONSIST OF POORLY DRAINED SOILS COMPOSED OF FINELY TEXTURED PARTICLES AND ARE PRONE TO RUTTING. PLACID SOILS ARE TYPICALLY PRESENT IN LOW-LYING AREAS WITH HYDROLOGIC SOILS GROUP (HSG) OF C OR D OR AS SPECIFIED FROM AN ENVIRONMENTAL SCIENTIST, SOIL SCIENTIST OR GEOTECHNICAL DATA.
2. THE CONCERN OF POTENTIAL REDUCTION OF NATIVE INFILTRATION RATES DIE TO THE GEOTEXTILE MATERIAL WOULD NOT BE A SIGNIFICANT CONCERN IN POORLY DRAINED SOILS WHERE SEGREGATION OF PERVIOUS STONE AND NATIVE MATERIALS IS CRUCIAL FOR LONG TERM OPERATION AND MAINTENANCE.

BASIS OF DESIGN: TENCATE MIRAFI BSI-SERIES WOVEN GEOSYNTHETICS; 365 SOUTH HOLLAND DRIVE, PENDERGRASS, GA; 800-685-9990 OR 706-693-2226; WWW.MIRAFI.COM

GENERAL NOTES:

1. USE OF THIS DETAIL/CRITERION IS LIMITED TO ACCESS ROADS USED ON AN OCCASIONAL BASIS ONLY (I.E. PROVIDE ACCESS FOR MOVING, EQUIPMENT REPAIR OR MAINTENANCE).
2. LIMITED USE PERVIOUS ACCESS ROAD IS LIMITED TO LOW IMPACT IRREGULAR MAINTENANCE ACCESS ASSOCIATED WITH RENEWABLE ENERGY PROJECTS IN NEW YORK STATE.
3. REMOVE STUMPS, ROCKS AND DEBRIS AS NECESSARY, FILL VOIDS TO MATCH EXISTING NATIVE SOILS AND COMPACTION LEVEL.
4. REMOVED TOPSOIL MAY BE SPREAD IN ADJACENT AREAS AS DIRECTED BY THE PROJECT ENGINEER. COMPACT TO THE DEGREE OF THE NATIVE IN SITU SOIL. DO NOT PLACE IN AN AREA THAT IMPEDES STORM WATER DRAINAGE.
5. GRADE ROADWAY, WHERE NECESSARY, TO NATIVE SOILS AND DESIRED ELEVATION. MINOR GRADING FOR CROSS SLOPE CUT AND FILL MAY BE REQUIRED.
6. REMOVE REFUSE SOILS AS DIRECTED BY THE PROJECT ENGINEER. DO NOT PLACE IN AN AREA THAT IMPEDES STORM WATER DRAINAGE.
7. ROADWAY WIDTH TO BE DETERMINED BY CLIENT.
8. THE LIMITED USE PERVIOUS ACCESS ROAD CROSS SLOPE SHALL BE 1.5% IN MOST CASES AND SHOULD NOT EXCEED 6%. THE LONGITUDINAL SLOPE OF THE ACCESS DRIVE SHOULD NOT EXCEED 15%.
9. LIMITED USE PERVIOUS ACCESS ROAD IS NOT INTENDED TO BE UTILIZED FOR CONSTRUCTION WHICH MAY SUBJECT THE ACCESS TO SEDIMENT TRACKING. THIS SPECIFICATION IS TO BE DEVELOPED FOR POST-CONSTRUCTION USE. SOIL RESTORATION PRACTICES MAY BE APPLICABLE TO RESTORE CONSTRUCTION RELATED COMPACTION TO PRE-EXISTING CONDITIONS AND SHOULD BE VERIFIED BY SOIL PENETROMETER READINGS. THE PENETROMETER READINGS SHALL BE COMPARED TO THE RESPECTIVE RECORDED READINGS TAKEN PRIOR TO CONSTRUCTION. EVERY 100 LINEAR FEET ALONG THE PROPOSED ROADWAY.
10. TO ENSURE THAT SOIL IS NOT TRACKED ONTO THE LIMITED USE PERVIOUS ACCESS ROAD, IT SHALL NOT BE USED BY CONSTRUCTION VEHICLES TRANSPORTING SOIL, FILL MATERIAL, ETC. IF THE LIMITED USE PERVIOUS ACCESS IS COMPLETED DURING THE INITIAL PHASES OF CONSTRUCTION AND UTILIZED TO REMOVE SEDIMENT FROM CONSTRUCTION VEHICLES AND EQUIPMENT PRIOR TO ENTERING THE LIMITED USE PERVIOUS ACCESS ROAD FROM ANY LOCATION ON, OR OFF SITE. MAINTENANCE OF THE PERVIOUS ACCESS ROAD WILL BE REQUIRED IF SEDIMENT IS OBSERVED WITHIN THE CLEAN STONE.
11. THE LIMITED USE PERVIOUS ACCESS ROAD SHALL NOT BE CONSTRUCTED OR USED UNTIL ALL AREAS SUBJECT TO RUNOFF ONTO THE PERVIOUS ACCESS HAVE ACHIEVED FINAL STABILIZATION.
12. PROJECTS SHOULD AVOID INSTALLATION OF THE LIMITED USE PERVIOUS ACCESS ROAD IN POORLY DRAINED ARES, HOWEVER IF NO ALTERNATIVE LOCATION IS AVAILABLE, THE PROJECT SHALL UTILIZE WOVEN GEOTEXTILE MATERIAL AS DETAILED IN FOLLOWING NOTES.
13. THE DRAINAGE DITCH IS OFFERED IN THE DETAIL FOR CIRCUMSTANCES WHEN CONCENTRATED FLOW COULD NOT BE AVOIDED . THE INTENTION OF THE DESIGN IS TO MINIMIZE ALTERATIONS TO HYDROLOGY, HOWEVER WHEN DEALING WITH 5%-15% GRADES NOT PARALLEL TO THE CONTOUR, A ROADSIDE DITCH MAY BE REQUIRED. THE NYS STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROLS FOR GRASSED WATERWAYS AND VEGETATED WATERWAYS ARE APPLICABLE FOR SIZING AND STABILIZATION, DIMENSIONS FOR THE GRASSED WATERWAY SPECIFICATION WOULD BE DESIGNED FOR PROJECT SPECIFIC HYDROLOGIC RUNOFF CALCULATIONS, AND A SEPARATE DETAIL FOR THE SPECIFIC GRASSED WATERWAY WOULD BE INCLUDED IN THIS PRACTICE. RUNOFF DISCHARGE WILL BE SUBJECT TO THE OUTLET REQUIREMENTS OF THE REFERENCED STANDARD. INCREASED POST-DEVELOPMENT RUNOFF FROM THE ASSOCIATED ROADSIDE DITCH MAY REQUIRE ADDITIONAL PRACTICES TO ATTENUATE RUNOFF TO PRE-DEVELOPMENT CONDITIONS.
14. IF A ROADSIDE DITCH IS NOT UTILIZED TO CAPTURE RUNOFF FROM THE ACCESS ROAD, THE PERVIOUS ACCESS ROAD WILL HAVE A WELL-ESTABLISHED PERENNIAL VEGETATIVE COVER, WHICH SHALL CONSIST OF UNIFORM VEGETATION (I.E. BUFFER), 20 FEET WIDE AND PARALLEL TO THE DOWN GRADIENT SIDE OF THE ACCESS ROAD. POST-CONSTRICTION OPERATION AND MAINTENANCE PRACTICES WILL MAINTAIN THIS VEGETATIVE COVER TO ENSURE FINAL STABILIZATION FOR THE LIFE OF THE ACCESS ROAD.
15. THE DESIGN PROFESSIONAL MUST ACCOUNT FOR THE LIMITED USED PERVIOUS ACCESS ROAD IN THEIR SITE ASSESSMENT / HYDROLOGY ANALYSIS. IF THE HYDROLOGY ANALYSIS SHOWS THAT THE HYDROLOGY HAS BEEN ALTERED FROM PRE- TO POST-DEVELOPMENT CONDITIONS (SEE APPENDIX A OF GP-0-20-001 FOR THE DEFINITION OF "ALTER THE HYDROLOGY..."), THE DESIGN MUST INCLUDE THE NECESSARY DETENTION/RETENTION PRACTICES TO ATTENUATE THE RATES (10 AND 100 YEAR EVENTS) TO PRE-DEVELOPMENT CONDITIONS.

KIRKVILLE ROAD

COMMUNITY SOLAR FARM PROJECT

7390 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057

RPNY SOLAR 5

RENEWABLE PROPERTIES

879 SANCHEZ STREET
SAN FRANCISCO, CA 94114

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.

280 East Broad Street
Suite 200
Rochester, NY 14604

office: 585.232.5135
fax: 585.232.4652

www.bergmannpc.com

DATE	DESCRIPTION

PRELIMINARY
NOT FOR CONSTRUCTION

STATE OF NEW YORK · ROBERT PAUL SIWIALA · 085487-1 · LICENSED PROFESSIONAL ENGINEER

Copyright © Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C

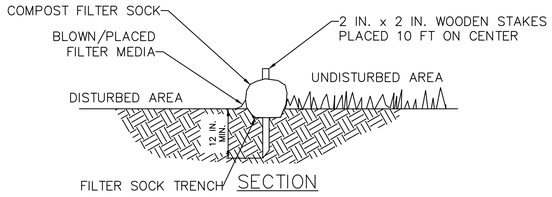
Project Manager: ECR	Checked By: RPS
Designed By: WD	Drawn By: WD
Date Issued: 12/18/20	Project Number: 14919.00

GRADING PLAN DETAILS

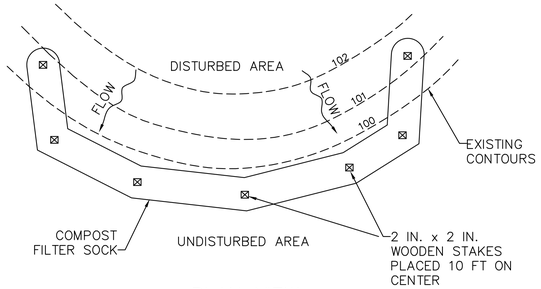
Drawing Number:

C007

12/19/2020 10:49 AM M:\Renewable Properties, LLC\014919.00 Renewable Properties-RPNY Kirkville Rd\4.0 Dwgs\4.1 Civil\14919DC005_Grading.dwg



SECTION



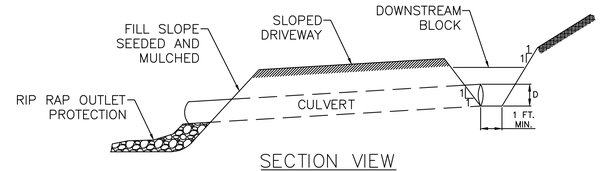
PLAN VIEW

NOTES:

1. SOCK FABRIC AND COMPOST SHALL MEET ALL STATE STANDARDS.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
5. COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
6. BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

18" COMPOST FILTER SOCK

NO SCALE



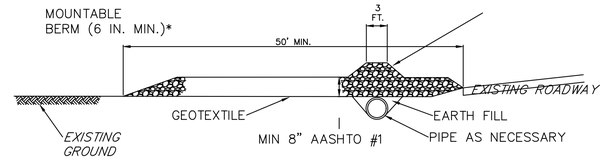
SECTION VIEW

NOTES:

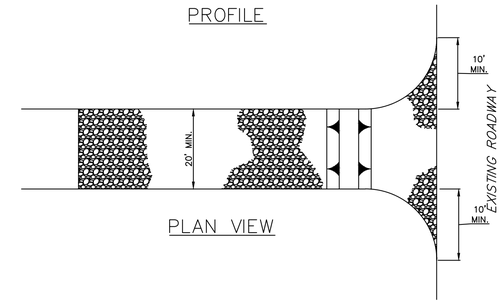
1. CUT AND FILL SLOPES SHALL BE STABILIZED IMMEDIATELY UPON COMPLETION OF DRIVEWAY GRADING. THESE AREAS SHALL BE BLANKETED WHEREVER THEY ARE LOCATED WITHIN 50 FEET OF A SURFACE WATER OR WITHIN 100 FEET OF AN HIGH QUALITY OR EXCEPTIONAL VALUE SURFACE WATER OR WHERE A SUITABLE VEGETATIVE FILTER STRIP DOES NOT EXIST.
2. A TOP DRESSING COMPOSED OF HARD, DURABLE STONE SHALL BE PROVIDED FOR SOILS HAVING LOW STRENGTH.
3. DRIVEWAY DITCHES SHALL BE PROVIDED WITH ADEQUATE PROTECTIVE LINING WHEREVER RUNOFF CANNOT SHEET FLOW AWAY FROM THE DRIVEWAY.
4. DRIVEWAY SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED DRIVEWAYS, DITCHES, OR CROSS DRAINS SHALL BE REPAIRED IMMEDIATELY.

CROSS CULVERT

NO SCALE



PROFILE



PLAN VIEW

* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

1. REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
2. RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
3. MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.
4. MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

STABILIZED CONSTRUCTION ENTRANCE

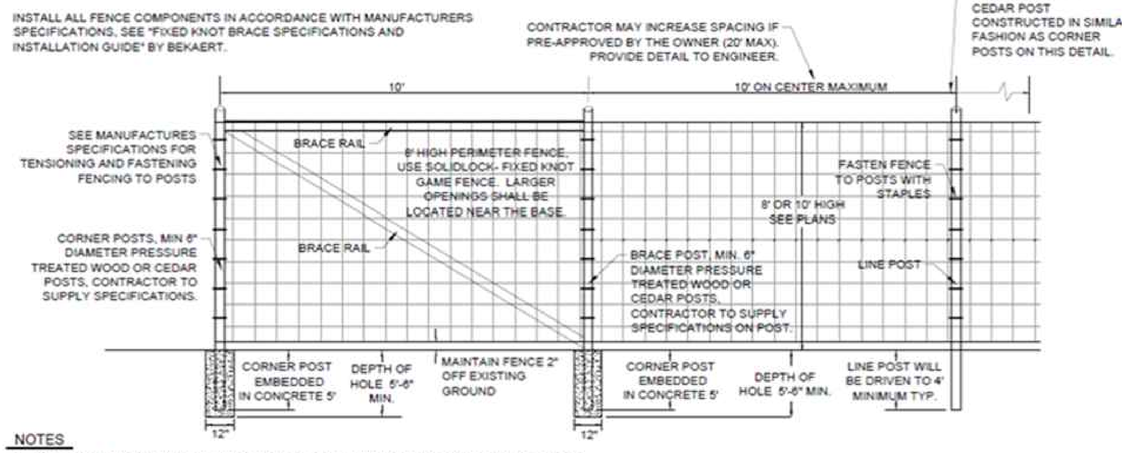
NO SCALE

FENCE MATERIAL:
SOLIDLOCK FIXED KNOT GAME FENCE SPECIFICATION:

- FENCE FABRIC SHALL BE BEKAERT ZA-6" FIXED KNOT GAME FENCE
- 96" OR 120" HIGH (FOR 120" HIGH CONTRACTOR MAY USE TWO SECTIONS FABRIC SECTIONS, SECTIONS MUST BE PERMANENTLY SECURED AT EACH WIRE FABRIC SQUARE ALONG THE WIRE FABRIC JOINT)
- 12.5 GAUGE WIRE
- CLASS 3 GALVANIZED

INSTALL ALL FENCE COMPONENTS IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS, SEE "FIXED KNOT BRACE SPECIFICATIONS AND INSTALLATION GUIDE" BY BEKAERT.

CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO ORDERING AND CONSTRUCTING FENCE.



NOTES

1. ADDITIONAL BRACING MAY BE REQUIRED ON LONGER FENCE RUNS. CONTRACTOR TO ADD ADDITIONAL BRACING WHEN CONTRACTOR OBSERVES CORNER POST DEFLECTION DURING FENCE TENSINOING/FASTENING.
2. FABRIC TO BE FASTENED TO POSTS WITH STAPLES APPROVED BY THE ENGINEER.
3. FENCE SHALL BE INSTALLED WITH 6"x6" OPENINGS AT THE BOTTOM.

PERIMETER FENCE DETAIL

NO SCALE

KIRKVILLE ROAD

COMMUNITY SOLAR FARM PROJECT

7390 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057

RPNY SOLAR 5

RENEWABLE PROPERTIES

879 SANCHEZ STREET
SAN FRANCISCO, CA 94114

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C.
280 East Broad Street
Suite 200
Rochester, NY 14604

office: 585.232.5135
fax: 585.232.4652

www.bergmannpc.com

DATE	DESCRIPTION

PRELIMINARY
NOT FOR CONSTRUCTION

STATE OF NEW YORK · ROBERT PAUL SWITALA · 085487-1 · LICENSED PROFESSIONAL ENGINEER

Copyright © Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C

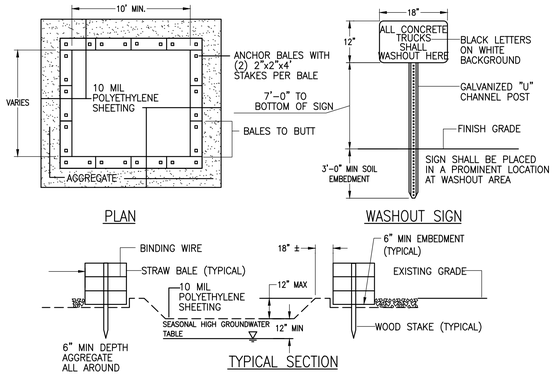
Project Manager: ECR	Checked By: RPS
Designed By: WD	Drawn By: WD
Date Issued: 12/18/20	Project Number: 14919.00

DETAILS I

Drawing Number:

C008

M:\Renewable Properties, LLC\014919.00 Renewable Properties-RPNY Kirkville Rd\4.0 Dwgs\4.1 Civil\14919\0C008-C011_Details.dwg
12/18/2020 10:50 AM

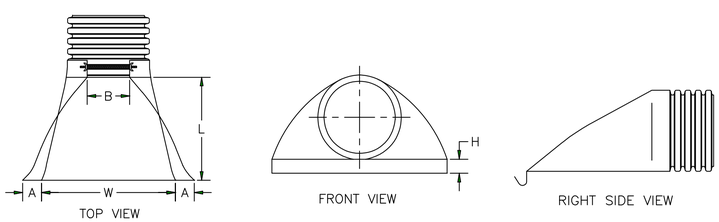


1. CONTAINMENT MUST BE STRUCTURALLY SOUND AND LEAK FREE AND CONTAIN ALL LIQUID WASTES.
2. CONTAINMENT DEVICES MUST BE OF SUFFICIENT QUANTITY OR VOLUME TO COMPLETELY CONTAIN THE LIQUID WASTES GENERATED.
3. WASHOUT MUST BE CLEANED OR NEW FACILITIES CONSTRUCTED AND READY TO USE ONCE WASHOUT IS 75% FULL.
4. WASHOUT AREA(S) SHALL BE INSTALLED IN A LOCATION EASILY ACCESSIBLE BY CONCRETE TRUCKS.
5. ONE OR MORE AREAS MAY BE INSTALLED ON THE CONSTRUCTION SITE AND MAY BE RELOCATED AS CONSTRUCTION PROGRESSES.
6. AT LEAST WEEKLY REMOVE ACCUMULATION OF SAND AND AGGREGATE AND DISPOSE OF PROPERLY.

CONCRETE WASHOUT

NO SCALE

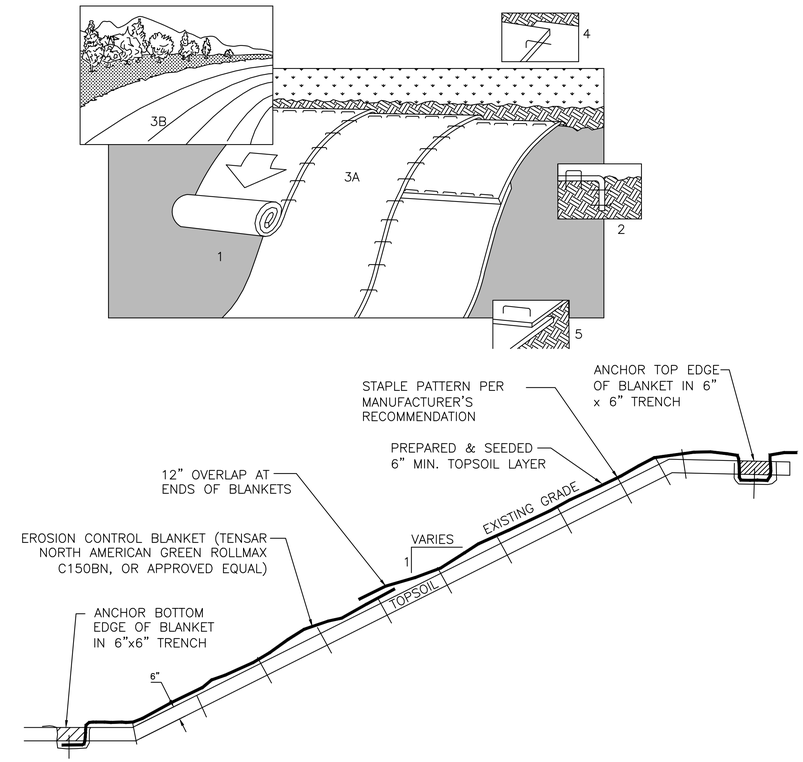
PIPE DIAMETER, in (mm)						
Diameter in (mm)	12 (300)	15 (375)	18 (450)	24 (600)	30 (750)	36 (900)
A in (mm)	6.5 (165)	6.5 (165)	7.5 (191)	7.5 (191)	7.5 (191)	7.5 (191)
B (max) in (mm)	10.0 (254)	10.0 (254)	15.0 (381)	18.0 (475)	22.0 (559)	25.0 (635)
H in (mm)	6.5 (165)	6.5 (165)	6.5 (165)	6.5 (165)	8.6 (218)	8.6 (218)
L in (mm)	25.0 (635)	25.0 (635)	32.0 (813)	36.0 (914)	58.0 (1473)	58.0 (1473)
W in (mm)	29.0 (737)	29.0 (737)	35.0 (889)	45.0 (1143)	63.0 (1600)	63.0 (1600)



NOTES:
1. PRODUCT SHOWN FROM ADS, INC. OF HDPE MEETING ASTM D3350 MINIMUM CELL CLASSIFICATION 213320C
2. AN ALTERNATIVE SUPPLIER CAN BE USED AS LONG AS MINIMUM SPECIFICATIONS ABOVE ARE MET
3. WHEN PROVIDED, METAL THREADED FASTENING ROD SHALL BE STAINLESS STEEL.
4. INVERT OF THE PIPE AND THE END SECTION SHALL BE AT THE SAME ELEVATION

TYPICAL FLARED END SECTION SPECIFICATION

NO SCALE



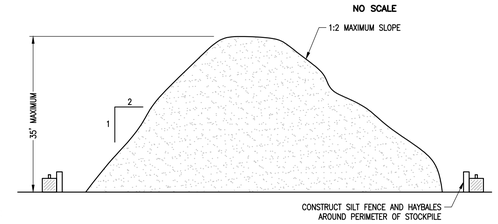
NOTES:

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 12" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.
6. EROSION CONTROL BLANKETS SHALL BE INSTALLED ON ALL 3:1 OR STEEPER SLOPES WITH A MINIMUM OF 6 INCHES OF TOPSOIL.
7. THE USE OF FLEXIBLE GROWTH MEDIUM, BONDED FIBER MATRIX, OR POLYMER STABILIZED FIBER MATRIX, APPLIED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS, IS AN ACCEPTABLE ALTERNATIVE TO THE USE OF EROSION CONTROL BLANKET.

EROSION CONTROL BLANKET

NO SCALE

NO SCALE



NOTES:

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE BE 1V:2H.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH SILT FENCING, THEN STABILIZED WITH VEGETATION OR COVERED.
4. APPLICATION OF SOIL STABILIZATION MEASURES, I.E. SEEDING AND MULCH APPLICATION, SHALL BE COMPLETED WITHIN FOURTEEN (14) DAYS FROM THE DATA SOIL ACTIVITY HAS CEASED.
5. LOCATION OF THE SOIL STOCKPILE TO BE DETERMINED BY CONSTRUCTION MANAGER ON SITE.

STOCK PILE DETAIL

NO SCALE

KIRKVILLE ROAD

COMMUNITY SOLAR FARM PROJECT

7390 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057

RPNY SOLAR 5

RENEWABLE PROPERTIES

879 SANCHEZ STREET
SAN FRANCISCO, CA 94114

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C.
280 East Broad Street
Suite 200
Rochester, NY 14604

office: 585.232.5135
fax: 585.232.4652

www.bergmannpc.com

DATE	DESCRIPTION

PRELIMINARY
NOT FOR CONSTRUCTION

Copyright © Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C

Project Manager: ECR	Checked By: RPS
Designed By: WD	Drawn By: WD
Date Issued: 12/18/20	Project Number: 14919.00

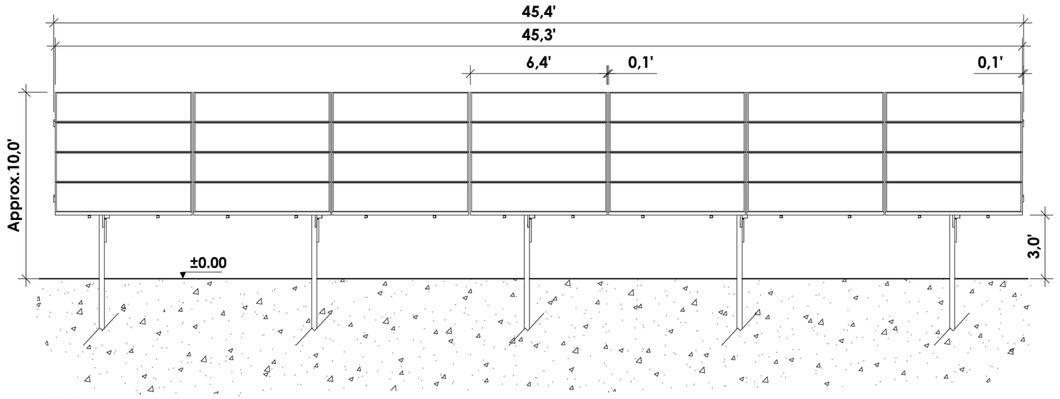
DETAILS II

Drawing Number:

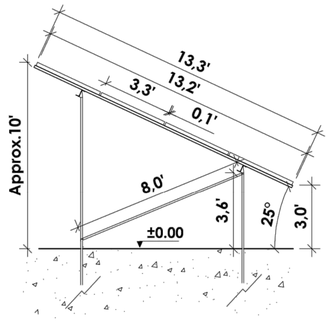
C009

12/19/2020 10:50 AM M:\Renewable Properties, LLC\014919.00 Renewable Properties-RPNY Kirkville Rd\4.0 Dwgs\4.1 Civil\149190C008-C011_Details.dwg

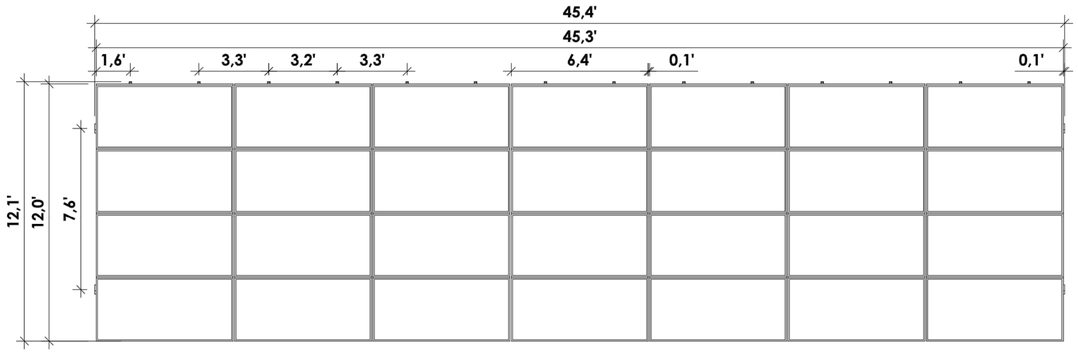
28 MODULES STRUCTURE



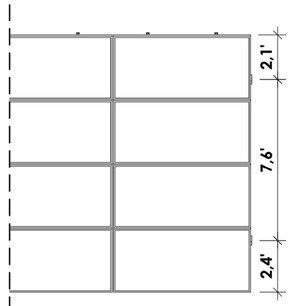
FRONT



LEFT SIDE



PLANT



PV PANEL CLAMPS POSITION

NOTES:

-TYPICAL INSTALLATION DIMENSIONS; MAY BE ADJUSTED TO SUIT FIELD CONDITIONS WITHIN THE TOLERANCES PROVIDED.
-FINAL DESIGN AND ENGINEERING PLANS IN DETAIL WILL BE PERFORMED BY RACKING MANUFACTURER

FEATURES:
- 4 x 7 - 25° - LANDSCAPE
- ETL CLASSIFIED TO UL2703
- CUSTOM ENGINEERED TO EXCEED APPLICABLE ASCE 7-10, IBC, AND UL STANDARDS
- ELECTRICALLY BONDED SYSTEM
- 30 AMP MAXIMUM FUSE RATING

FIXED TILT SOLAR ARRAY DETAIL

NO SCALE

KIRKVILLE ROAD

COMMUNITY SOLAR FARM PROJECT

7390 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057

RPNY SOLAR 5

RENEWABLE PROPERTIES

879 SANCHEZ STREET
SAN FRANCISCO, CA 94114

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.

280 East Broad Street
Suite 200
Rochester, NY 14604

office: 585.232.5135
fax: 585.232.4652

www.bergmannpc.com

DATE	DESCRIPTION

PRELIMINARY
NOT FOR CONSTRUCTION

STATE OF NEW YORK · ROBERT PAUL SMYLA · 085487 · LICENSED PROFESSIONAL ENGINEER

Copyright © Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C

Project Manager: ECR	Checked By: RPS
Designed By: WD	Drawn By: WD
Date Issued: 12/18/20	Project Number: 14919.00

DETAILS III

Drawing Number:

C010

12/19/2020 10:51 AM M:\Renewable Properties, LLC\014919.00 Renewable Properties-RPNY Kirkville Rd\4.0 Dwgs\4.1 Civil\1491900C008-C011_Details.dwg

Upland Seed Mix		
Low-Growing Wildflower & Grass Mix - ERNMX #156		
Seeding Rate: 20 lb per acre with a cover crop of grain rye at 30 lb per acre		
SCIENTIFIC NAME	**COMMON NAME**	**% OF MIX**
Festuca ovina	Sheep Fescue, Variety Not Stated	63.60%
Lolium multiflorum (L. perenne var. italicum)	Annual Ryegrass	17%
Linum perenne ssp. lewisii	Perennial Blue Flax	8%
Rudbeckia hirta	Blackeyed Susan, Coastal Plain NC Ecotype	2%
Coreopsis lanceolata	Lanceleaf Coreopsis, Coastal Plain NC Ecotype	2%
Chrysanthemum leucanthemum	Oxeye Daisy	2%
Chrysanthemum maximum	Shasta Daisy	1%
Chamaecrista fasciculata (Cassia f.)	Partridge Pea, PA Ecotype	1%
Papaver rhoeas, Shirley Mix	Corn Poppy/Shirley Mix	1%
Achillea millefolium	Common Yarrow	0.5%
Aster oblongifolius (Symphyotrichum oblongifolium)	Aromatic Aster, PA Ecotype	0.5%
Eupatorium coelestinum (Conoclinium c.)	Mistflower, VA Ecotype	0.5%
Monarda punctata, Coastal Plain SC Ecotype	Spotted Beebalm, Coastal Plain SC Ecotype	0.5%
Asclepias tuberosa	Butterfly Milkweed	0.3%
Pycnanthemum tenuifolium	Slender Mountainmint	0.1%
Company Information		
Ernst Conservation Seeds, Inc.		
Address: 8884 Mercer Pike, Meadville, PA 16335		
Phone: (800) 873-3321		
Web: http://www.ernstseed.com		

*OR APPROVED EQUIVALENT

Ernst Conservation Seeds
8884 Mercer Pike
Meadville, PA 16335
(800) 873-3321 Fax (814) 336-5191
www.ernstseed.com

Date: December 14, 2020

Fuzz & Buzz Mix - Standard - ERNMX-146

	Botanical Name	**Common Name**	**Price/lb**
26.40 %	*Lolium perenne, 'Crave', Tetraploid*	Perennial Ryegrass, 'Crave', Tetraploid	2.31
25.80 %	*Dactylis glomerata, 'Pennlate'*	Orchardgrass, 'Pennlate'	2.75
18.90 %	*Poa pratensis, 'Troy'*	Kentucky Bluegrass, 'Troy' (pasture type)	3.08
12.00 %	*Festuca elatior x Lolium perenne, Duo*	Festulolium, 'Duo'	1.87
5.70 %	*Trifolium hybridum*	Alsike Clover	3.58
5.70 %	*Trifolium pratense, Medium, Variety Not Stated*	Red Clover, Medium, Variety Not Stated	2.75
1.30 %	*Chrysanthemum leucanthemum*	Oxeye Daisy	30.80
1.30 %	*Cichorium intybus*	Blue Chicory	17.60
1.10 %	*Lotus corniculatus, 'Leo'*	Bird's Foot Trefoil, 'Leo'	5.78
0.90 %	*Coreopsis lanceolata*	Lanceleaf Coreopsis	26.40
0.90 %	*Solidago nemoralis, PA Ecotype*	Gray Goldenrod, PA Ecotype	396.00
100.00 %		**Mix Price/lb Bulk:**	**$6.98**

Seeding Rate: Expect to apply about 26.5 lbs per acre.
Forage & Pasture Sites; Solar Sites

*OR APPROVED EQUIVALENT

NOTES:

1. FUZZ & BUZZ MIX TO BE USED INSIDE THE FENCED AREAS. UPLAND SEED MIX TO BE USED OUTSIDE THE FENCE.

POLLINATOR –SEED MIX

NOTES:

1. WHEN FINAL GRADE IS ACHIEVED DURING NON–GERMINATING MONTHS, THE AREA SHOULD BE TEMPORARILY STABILIZED UNTIL THE BEGINNING OF THE NEXT PLANTING SEASON.
2. MULCHES SHOULD BE APPLIED AT THE RATES SHOWN IN THE MULCH APPLICATION RATES TABLE. VERY LITTLE BARE GROUND SHOULD BE VISIBLE THROUGH THE MULCH.
3. STRAW AND HAY MULCH SHOULD BE ANCHORED OR TACKIFIED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN.
4. TOPSOIL SHOULD BE UNIFORMLY DISTRIBUTED ACROSS THE DISTURBED AREA TO A DEPTH OF 6 INCHES MINIMUM. SPREADING SHOULD BE DONE IN SUCH A MANNER THAT SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL PREPARATION OR TILLAGE.
5. TOPSOIL SHOULD NOT BE PLACED WHILE THE TOPSOIL OF SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
6. WHEN USED AS A MULCH REPLACEMENT, THE APPLICATION RATE (THICKNESS) OF THE COMPOST SHOULD BE 1/2" TO 3/4". COMPOST SHOULD BE PLACED EVENLY AND SHOULD PROVIDE 100% SOIL COVERAGE. NO SOIL SHOULD BE VISIBLE.
7. PERMANENT STABILIZATION SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF EARTH DISTURBANCE.

SOIL AMENDMENT APPLICATION RATE EQUIVALENTS

SOIL AMENDMENT		**PER ACRE**	**PER 1,000 SQ. FT.**	**PER 1,000 SQ. YD.**	**NOTES**
PERMANENT SEEDING	AGRICULTURAL LIME	6 TONS	240 LB.	2,480 LB.	OR AS PER SOIL TEST: MAY NOT BE REQUIRED IN AGRICULTURAL FIELDS
	10-10-20 FERTILIZER	1,000 L.B.	25 LB.	210 LB.	
TEMPORARY SEEDING	AGRICULTURAL LIME	1 TON	40 LB.	410 LB.	TYPICALLY NOT REQUIRED FOR TOPSOIL STOCKPILES
	10-10-20 FERTILIZER	500 LB.	12.5 LB.	100 LB.	

COMPOST STANDARDS

ORGANIC MATTER CONTENT	80% - 100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5 - 8.0
MOISTURE CONTENT	35% - 55%
PARTICLE SIZE	98% PASS THROUGH 1" SCREEN
SOLUBLE SALT CONCENTRATION	5.0 dS/m (mmhos/cm) MAXIMUM

MULCH APPLICATION RATES

MULCH TYPE	**APPLICATION RATE (MIN.)**			**NOTES**
	PER ACRE	**PER 1,000 SQ. FT.**	**PER 1,000 SQ. YD.**	
STRAW	3 TONS	140 LB.	1,240 LB.	EITHER WHEAT OR OAT STRAW, FREE OF WEEDS, NOT CHOPPED OR FINELY BROKEN
HAY	3 TONS	140 LB.	1,240 LB.	TIMOTHY, MIXED CLOVER AND TIMOTHY, OR OTHER NATIVE FORAGE GRASSES
WOOD CELLULOSE	1,500 LB.	35 LB.	310 LB.	DO NOT USE ALONE IN WINTER, DURING HOT AND DRY WEATHER OR ON STEEP SLOPES (> 3:1)
WOOD	1,000 LB. CELLULOSE	25 LB.	210 LB.	WHEN USED OVER STRAW OR HAY
WOOD CHIPS	4 - 6 TONS	185 - 275 LB.	1,650 - 2,500 LB.	MAY PREVENT GERMINATION OF GRASSES AND LEGUMES

SITE STABILIZATION – SEED MIX

KIRKVILLE ROAD

COMMUNITY SOLAR FARM PROJECT

7390 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057

RPNY SOLAR 5

RENEWABLE PROPERTIES

879 SANCHEZ STREET
SAN FRANCISCO, CA 94114

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C.
280 East Broad Street
Suite 200
Rochester, NY 14604

office: 585.232.5135
fax: 585.232.4652

www.bergmannpc.com

DATE	DESCRIPTION

PRELIMINARY
NOT FOR CONSTRUCTION

STATE OF NEW YORK · ROBERT PAUL SWITALA · 085487 · LICENSED PROFESSIONAL ENGINEER

Copyright © Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C

Project Manager: ECR
Checked By: RPS
Designed By: WD
Drawn By: WD
Date Issued: 12/18/20
Project Number: 14919.00

DETAILS IV

Drawing Number:
C011

12/19/2020 10:51 AM M:\Renewable Properties, LLC\014919.00 Renewable Properties-RPNY Kirkville Rd\4.0 Dwgs\4.1 Civil\14919000C009-C011_Details.dwg

Appendix D
Notice of Intent (NOI)

NOI for coverage under Stormwater General Permit for Construction Activity

version 1.28

(Submission #: HP5-2SCA-XHXGF, version 1)

Details

Submission Alias	Kirkville Road_NOI for coverage under Stormwater General Permit for Construction Activity
Originally Started By	Websly Darbouze
Submission ID	HP5-2SCA-XHXGF
Submission Reason	New
Status	Draft

Form Input

Owner/Operator Information

Owner/Operator Name (Company/Private Owner/Municipality/Agency/Institution, etc.)
RPNY Solar 5, LLC

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
Loucas

Owner/Operator Contact Person First Name
Stephanie

Owner/Operator Mailing Address
879 Sanchez Street

City
San Francisco

State
CA

Zip
94114

Phone
415-449-1528

Email
sloucas@renewprop.com

Federal Tax ID
NONE PROVIDED

Project Location

Project/Site Name
Kirkville Road Solar Project

Street Address (Not P.O. Box)
7390 Kirkville Road

Side of Street
South

City/Town/Village (THAT ISSUES BUILDING PERMIT)
Manlius

State
NY

Zip
13057

County
ONONDAGA

DEC Region
7

Name of Nearest Cross Street
Schepps Corners Road

Distance to Nearest Cross Street (Feet)
3000

Project In Relation to Cross Street
West

Tax Map Numbers Section-Block-Parcel
55.-1-10.1

Tax Map Numbers
NONE PROVIDED

1. Coordinates

Provide the Geographic Coordinates for the project site. The two methods are:
- Navigate to the project location on the map (below) and click to place a marker and obtain the XY coordinates.
- The "Find Me" button will provide the lat/long for the person filling out this form. Then pan the map to the correct location and click the map to place a marker and obtain the XY coordinates.

Navigate to your location and click on the map to get the X,Y coordinates
43.084113,-76.011518

Project Details

2. What is the nature of this project?
Redevelopment with no increase in impervious area

3. Select the predominant land use for both pre and post development conditions.

Pre-Development Existing Landuse
Pasture/Open Land

Post-Development Future Land Use
Other: Solar Farm

3a. If Single Family Subdivision was selected in question 3, enter the number of subdivision lots.
NONE PROVIDED

---

4. In accordance with the larger common plan of development or sale, enter the total project site acreage, the acreage to be disturbed and the future impervious area (acreage)within the disturbed area.

*** ROUND TO THE NEAREST TENTH OF AN ACRE. ***

Total Site Area (acres)
27.65

Total Area to be Disturbed (acres)
5.0

Existing Impervious Area to be Disturbed (acres)
0.149

Future Impervious Area Within Disturbed Area (acres)
0

5. Do you plan to disturb more than 5 acres of soil at any one time?
No

---

6. Indicate the percentage (%) of each Hydrologic Soil Group(HSG) at the site.

A (%)
9.5

B (%)
0

C (%)
0

D (%)
90.5

7. Is this a phased project?
No

8. Enter the planned start and end dates of the disturbance activities.

Start Date
3/15/2021

End Date
8/15/2021

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.
On-Site NYSDEC Wetlands

9a. Type of waterbody identified in question 9?
Wetland/State Jurisdiction On Site (Answer 9b)

Other Waterbody Type Off Site Description
NONE PROVIDED

9b. If "wetland" was selected in 9A, how was the wetland identified?
Delineated by Consultant

10. Has the surface waterbody(ies in question 9 been identified as a 303(d) segment in Appendix E of GP-0-20-001?
No

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-20-001?
No

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters?
No

If No, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey?
No

If Yes, what is the acreage to be disturbed?
NONE PROVIDED

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area?
No

15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)?
Yes

16. What is the name of the municipality/entity that owns the separate storm sewer system?
Town of Manlius

17. Does any runoff from the site enter a sewer classified as a Combined Sewer?
No

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law?
No

19. Is this property owned by a state authority, state agency, federal government or local government?
No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.)
No

Required SWPPP Components

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)?
Yes

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)?
No

If you answered No in question 22, skip question 23 and the Post-construction Criteria and Post-construction SMP Identification sections.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual?
Yes

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:
Professional Engineer (P.E.)

SWPPP Preparer
Bergmann

Contact Name (Last, Space, First)
Switala, Robert

Mailing Address
2665 Corning Road

City
Horseheads

State
NY

Zip
14903

Phone
6077951110

Email
rswitala@bergmannpc.com

Download SWPPP Preparer Certification Form
Please take the following steps to prepare and upload your preparer certification form:

1) Click on the link below to download a blank certification form
2) The certified SWPPP preparer should sign this form

3) Scan the signed form
4) Upload the scanned document
Download SWPPP Preparer Certification Form

Please upload the SWPPP Preparer Certification
NONE PROVIDED
Comment
NONE PROVIDED

Erosion & Sediment Control Criteria

25. Has a construction sequence schedule for the planned management practices been prepared?
Yes

26. Select all of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural
Stabilized Construction Entrance
Silt Fence

Biotechnical
None

Vegetative Measures
Mulching
Seeding

Permanent Structural
Land Grading

Other
NONE PROVIDED

Post-Construction Criteria

*** IMPORTANT: Completion of Questions 27-39 is not required if response to Question 22 is No.**

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.
Preservation of Undisturbed Area
Preservation of Buffers
Reduction of Clearing and Grading
Locating Development in Less Sensitive Areas
Roadway Reduction
Sidewalk Reduction
Driveway Reduction
Cul-de-sac Reduction
Building Footprint Reduction
Parking Reduction

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).
All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout). (Acre-feet)
NONE PROVIDED

29. Post-construction SMP Identification
Use the Post-construction SMP Identification section to identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity that were used to reduce the Total WQv Required (#28).

Identify the SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use the Post-Construction SMP Identification section to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29. (acre-feet)
NONE PROVIDED

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28)?
NONE PROVIDED

If Yes, go to question 36. If No, go to question 32.

32. Provide the Minimum RRv required based on HSG. [Minimum RRv Required = (P) (0.95) (Ai) / 12, Ai=(s) (Aic)] (acre-feet)
NONE PROVIDED

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?
NONE PROVIDED

If Yes, go to question 33.
Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.

If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

33. SMPs
Use the Post-construction SMP Identification section to identify the Standard SMPs and, if applicable, the Alternative SMPs to be used to treat the remaining total WQv (=Total WQv Required in #28 - Total RRv Provided in #30).

Also, provide the total impervious area that contributes runoff to each practice selected.

NOTE: Use the Post-construction SMP Identification section to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question #29. (acre-feet)
NONE PROVIDED

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).
NONE PROVIDED

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)?
NONE PROVIDED

If Yes, go to question 36.

If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv required and provided or select waiver (#36a), if applicable.

CPv Required (acre-feet)
NONE PROVIDED

CPv Provided (acre-feet)
NONE PROVIDED

36a. The need to provide channel protection has been waived because:
NONE PROVIDED

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (#37a), if applicable.

Overbank Flood Control Criteria (Qp)

Pre-Development (CFS)
6.95

Post-Development (CFS)
6.07

Total Extreme Flood Control Criteria (Qf)

Pre-Development (CFS)
18.43

Post-Development (CFS)
16.97

37a. The need to meet the Qp and Qf criteria has been waived because:
NONE PROVIDED

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed?
Yes

If Yes, Identify the entity responsible for the long term Operation and Maintenance
RPNY Solar 5, LLC

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). (See question #32a) This space can also be used for other pertinent project information.
Question 22 is marked no above because this projct meets scenario 1 from the April 5, 2018 Guidance from the DEC on "Solar Panel Construction Stormwater Permitting/SWPPP Guidance". Therefore, The SWPPP for this project just addresses erosion and sediments controls.

Post-Construction SMP Identification

Runoff Reduction (RR) Techniques, Standard Stormwater Management Practices (SMPs) and Alternative SMPs
Identify the Post-construction SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

RR Techniques (Area Reduction)

Round to the nearest tenth

Total Contributing Acres for Conservation of Natural Area (RR-1)
NONE PROVIDED

Total Contributing Impervious Acres for Conservation of Natural Area (RR-1)
NONE PROVIDED

Total Contributing Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)
NONE PROVIDED

Total Contributing Impervious Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)
NONE PROVIDED

Total Contributing Acres for Tree Planting/Tree Pit (RR-3)
NONE PROVIDED

Total Contributing Impervious Acres for Tree Planting/Tree Pit (RR-3)
NONE PROVIDED

Total Contributing Acres for Disconnection of Rooftop Runoff (RR-4)
NONE PROVIDED

RR Techniques (Volume Reduction)

Total Contributing Impervious Acres for Disconnection of Rooftop Runoff (RR-4)
NONE PROVIDED

Total Contributing Impervious Acres for Vegetated Swale (RR-5)
NONE PROVIDED

Total Contributing Impervious Acres for Rain Garden (RR-6)
NONE PROVIDED

Total Contributing Impervious Acres for Stormwater Planter (RR-7)
NONE PROVIDED

Total Contributing Impervious Acres for Rain Barrel/Cistern (RR-8)
NONE PROVIDED

Total Contributing Impervious Acres for Porous Pavement (RR-9)
NONE PROVIDED

Total Contributing Impervious Acres for Green Roof (RR-10)
NONE PROVIDED

Standard SMPs with RRv Capacity

Total Contributing Impervious Acres for Infiltration Trench (I-1)
NONE PROVIDED

Total Contributing Impervious Acres for Infiltration Basin (I-2)
NONE PROVIDED

Total Contributing Impervious Acres for Dry Well (I-3)
NONE PROVIDED

Total Contributing Impervious Acres for Underground Infiltration System (I-4)
NONE PROVIDED

Total Contributing Impervious Acres for Bioretention (F-5)
NONE PROVIDED

Total Contributing Impervious Acres for Dry Swale (O-1)
NONE PROVIDED

Standard SMPs

Total Contributing Impervious Acres for Micropool Extended Detention (P-1)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Pond (P-2)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Extended Detention (P-3)
NONE PROVIDED

Total Contributing Impervious Acres for Multiple Pond System (P-4)
NONE PROVIDED

Total Contributing Impervious Acres for Pocket Pond (P-5)
NONE PROVIDED

Total Contributing Impervious Acres for Surface Sand Filter (F-1)
NONE PROVIDED

Total Contributing Impervious Acres for Underground Sand Filter (F-2)
NONE PROVIDED

Total Contributing Impervious Acres for Perimeter Sand Filter (F-3)
NONE PROVIDED

Total Contributing Impervious Acres for Organic Filter (F-4)
NONE PROVIDED

Total Contributing Impervious Acres for Shallow Wetland (W-1)
NONE PROVIDED

Total Contributing Impervious Acres for Extended Detention Wetland (W-2)
NONE PROVIDED

Total Contributing Impervious Acres for Pond/Wetland System (W-3)
NONE PROVIDED

Total Contributing Impervious Acres for Pocket Wetland (W-4)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Swale (O-2)
NONE PROVIDED

Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Total Contributing Impervious Area for Hydrodynamic
NONE PROVIDED

Total Contributing Impervious Area for Wet Vault
NONE PROVIDED

Total Contributing Impervious Area for Media Filter
NONE PROVIDED

"Other" Alternative SMP?
NONE PROVIDED

Total Contributing Impervious Area for "Other"
NONE PROVIDED

Provide the name and manufaturer of the alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

Manufacturer of Alternative SMP
NONE PROVIDED

Name of Alternative SMP
NONE PROVIDED

Other Permits

40. Identify other DEC permits, existing and new, that are required for this project/facility.
None

If SPDES Multi-Sector GP, then give permit ID
NONE PROVIDED

If Other, then identify
NONE PROVIDED

41. Does this project require a US Army Corps of Engineers Wetland Permit?
No

If "Yes," then indicate Size of Impact, in acres, to the nearest tenth
NONE PROVIDED

42. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned.
NONE PROVIDED

MS4 SWPPP Acceptance

43. Is this project subject to the requirements of a regulated, traditional land use control MS4?
Yes - Please attach the MS4 Acceptance form below

If No, skip question 44

44. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI?
NONE PROVIDED

MS4 SWPPP Acceptance Form Download
Download form from the link below. Complete, sign, and upload.
MS4 SWPPP Acceptance Form

MS4 Acceptance Form Upload
NONE PROVIDED
Comment
NONE PROVIDED

Owner/Operator Certification

Owner/Operator Certification Form Download
Download the certification form by clicking the link below. Complete, sign, scan, and upload the form.
Owner/Operator Certification Form (PDF, 45KB)

Upload Owner/Operator Certification Form

NONE PROVIDED
Comment
NONE PROVIDED

Appendix E

NYS DEC SPDES General Permit for Stormwater Discharges from Construction Activity

(GP-0-20-001)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP- 0-20-001

Issued Pursuant to Article 17, Titles 7, 8 and Article 70

of the Environmental Conservation Law

Effective Date: January 29, 2020 | Expiration Date: January 28, 2025

John J. Ferguson

Chief Permit Administrator

1-23-20

Authorized Signature | Date

Address: NYS DEC
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

PREFACE

Pursuant to Section 402 of the Clean Water Act ("CWA"), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System ("NPDES")* permit or by a state permit program. New York administers the approved State Pollutant Discharge Elimination System (SPDES) program with permits issued in accordance with the New York State Environmental Conservation Law (ECL) Article 17, Titles 7, 8 and Article 70.

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of "*construction activity*", as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a *point source* and therefore, pursuant to ECL section 17-0505 and 17-0701, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. The *owner or operator* cannot wait until there is an actual *discharge* from the *construction site* to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

Table of Contents

Part 1. PERMIT COVERAGE AND LIMITATIONS 1
A. Permit Application 1
B. Effluent Limitations Applicable to Discharges from Construction Activities 1
C. Post-construction Stormwater Management Practice Requirements 4
D. Maintaining Water Quality 8
E. Eligibility Under This General Permit 9
F. Activities Which Are Ineligible for Coverage Under This General Permit 9
Part II. PERMIT COVERAGE 12
A. How to Obtain Coverage 12
B. Notice of Intent (NOI) Submittal 13
C. Permit Authorization 13
D. General Requirements For Owners or Operators With Permit Coverage 15
E. Permit Coverage for Discharges Authorized Under GP-0-15-002 17
F. Change of Owner or Operator 17
Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP) 18
A. General SWPPP Requirements 18
B. Required SWPPP Contents 20
C. Required SWPPP Components by Project Type 24
Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS 24
A. General Construction Site Inspection and Maintenance Requirements 24
B. Contractor Maintenance Inspection Requirements 24
C. Qualified Inspector Inspection Requirements 25
Part V. TERMINATION OF PERMIT COVERAGE 29
A. Termination of Permit Coverage 29
Part VI. REPORTING AND RETENTION RECORDS 31
A. Record Retention 31
B. Addresses 31
Part VII. STANDARD PERMIT CONDITIONS 31
A. Duty to Comply 31
B. Continuation of the Expired General Permit 32
C. Enforcement 32
D. Need to Halt or Reduce Activity Not a Defense 32
E. Duty to Mitigate 33
F. Duty to Provide Information 33
G. Other Information 33
H. Signatory Requirements 33
I. Property Rights 35
J. Severability 35

K. Requirement to Obtain Coverage Under an Alternative Permit 35
L. Proper Operation and Maintenance 36
M. Inspection and Entry 36
N. Permit Actions 37
O. Definitions 37
P. Re-Opener Clause 37
Q. Penalties for Falsification of Forms and Reports 37
R. Other Permits 38
APPENDIX A – Acronyms and Definitions 39
Acronyms 39
Definitions 40
APPENDIX B – Required SWPPP Components by Project Type 48
Table 1 48
Table 2 50
APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal 52
APPENDIX D – Watersheds with Lower Disturbance Threshold 58
APPENDIX E – 303(d) Segments Impaired by Construction Related Pollutant(s) 59
APPENDIX F – List of NYS DEC Regional Offices 65

Part 1. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

This permit authorizes stormwater *discharges* to *surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;

2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State.*

3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

B. Effluent Limitations Applicable to Discharges from Construction Activities

*Discharge*s authorized by this permit must achieve, at a minimum, the effluent limitations in Part I.B.1. (a) – (f) of this permit. These limitations represent the degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement and maintain control measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in the *Stormwater Pollution Prevention Plan* (“SWPPP”) the reason(s) for the

deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

a. **Erosion and Sediment Controls.** Design, install and maintain effective erosion and sediment controls to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such controls must be designed, installed and maintained to:

   (i) *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharge*s;

   (ii) Control stormwater *discharge*s, including both peak flowrates and total stormwater volume, to *minimize* channel and *streambank* erosion and scour in the immediate vicinity of the *discharge* points;

   (iii) *Minimize* the amount of soil exposed during *construction activity*;

   (iv) *Minimize* the disturbance of *steep slopes*;

   (v) *Minimize* sediment *discharge*s from the site;

   (vi) Provide and maintain *natural buffer*s around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce *pollutant discharge*s, unless *infeasible*;

   (vii) *Minimize* soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted;

   (viii) Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover; and

   (ix) *Minimize* dust. On areas of exposed soil, *minimize* dust through the appropriate application of water or other dust suppression techniques to control the generation of pollutants that could be discharged from the site.

b. **Soil Stabilization**. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that *directly discharge* to one of the 303(d) segments

listed in Appendix E or is located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. See Appendix A for definition of *Temporarily Ceased*.

c. **Dewatering**. *Discharge*s from *dewatering* activities, including *discharge*s from *dewatering* of trenches and excavations, must be managed by appropriate control measures.

d. **Pollution Prevention Measures**. Design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be designed, installed, implemented and maintained to:

   (i) *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. This applies to washing operations that use clean water only. Soaps, detergents and solvents cannot be used;

   (ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, hazardous and toxic waste, and other materials present on the site to precipitation and to stormwater. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use) ; and

   (iii) Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

e. **Prohibited *Discharges*.** The following *discharge*s are prohibited:

   (i) Wastewater from washout of concrete;

   (ii) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

(iii) Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance;

(iv) Soaps or solvents used in vehicle and equipment washing; and

(v) Toxic or hazardous substances from a spill or other release.

f. Surface Outlets. When discharging from basins and impoundments, the outlets shall be designed, constructed and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion at or below the outlet does not occur.

C. Post-construction Stormwater Management Practice Requirements

1. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must select, design, install, and maintain the practices to meet the *performance criteria* in the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015, using sound engineering judgment. Where post-construction stormwater management practices ("SMPs") are not designed in conformance with the *performance criteria* in the Design Manual, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must design the practices to meet the applicable *sizing criteria* in Part I.C.2.a., b., c. or d. of this permit.

a. Sizing Criteria for New Development

(i) Runoff Reduction Volume ("RRv"): Reduce the total Water Quality Volume ("WQv") by application of RR techniques and standard SMPs with RRv capacity. The total WQv shall be calculated in accordance with the criteria in Section 4.2 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: Construction activities that cannot meet the criteria in Part I.C.2.a.(i) of this permit due to site limitations shall direct runoff from all newly constructed impervious areas to a RR technique or standard SMP with RRv capacity unless infeasible. The specific site limitations that prevent the reduction of 100% of the WQv shall be documented in the SWPPP.

For each impervious area that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered infeasible.

In no case shall the runoff reduction achieved from the newly constructed impervious areas be less than the Minimum RRv as calculated using the criteria in Section 4.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume ("Cpv"): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site discharges directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria ("Qp"): Requires storage to attenuate the post-development 10-year, 24-hour peak discharge rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria ("Qf"): Requires storage to attenuate the post-development 100-year, 24-hour peak discharge rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

b. *Sizing Criteria* for *New Development* in Enhanced Phosphorus Removal Watershed

(i) Runoff Reduction Volume (RRv): Reduce the total Water Quality Volume (WQv) by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24 hour design storm over the post-developed watershed and shall be

calculated in accordance with the criteria in Section 10.3 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.b.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 10.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

c. Sizing Criteria for Redevelopment Activity

(i) Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* shall be addressed by one of the following options. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C of this permit) shall calculate the WQv in accordance with Section 10.3 of the Design Manual. All other *redevelopment activities* shall calculate the WQv in accordance with Section 4.2 of the Design Manual.

(1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or

(2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or

(3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or

(4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

If there is an existing post-construction stormwater management practice located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 – 4 above.

(ii) Channel Protection Volume (Cpv): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iii) *Overbank* Flood Control Criteria (Qp): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iv) Extreme Flood Control Criteria (Qf): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site

d. Sizing Criteria for Combination of Redevelopment Activity and New Development

Construction projects that include both New Development and Redevelopment Activity shall provide post-construction stormwater management controls that meet the sizing criteria calculated as an aggregate of the Sizing Criteria in Part I.C.2.a. or b. of this permit for the New Development portion of the project and Part I.C.2.c of this permit for Redevelopment Activity portion of the project.

D. Maintaining Water Quality

The Department expects that compliance with the conditions of this permit will control *discharge*s necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any discharge to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;

2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and

3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the stormwater *discharge*s authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standards*; the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this general permit and document in accordance with Part IV.C.4. of this general permit. To address the *water quality standard* violation the *owner or operator* may need to provide additional information, include and implement appropriate controls in the SWPPP to correct the problem, or obtain an individual SPDES permit.

If there is evidence indicating that despite compliance with the terms and conditions of this general permit it is demonstrated that the stormwater *discharge*s authorized by this permit are causing or contributing to a violation of *water quality standards*, or if the Department determines that a modification of the permit is necessary to prevent a violation of *water quality standards*, the authorized *discharge*s will no longer be eligible for coverage under this permit. The Department may require the *owner or operator* to obtain an individual SPDES permit to continue discharging.

E. Eligibility Under This General Permit

1. This permit may authorize all *discharges* of stormwater from *construction activity* to *surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph F. of this Part.

2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharge*s; including stormwater runoff, snowmelt runoff, and surface runoff and drainage, from *construction activities*.

3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater discharges are authorized by this permit: those listed in 6 NYCRR 750-1.2(a)(29)(vi), with the following exception: "Discharges from firefighting activities are authorized only when the firefighting activities are emergencies/unplanned"; waters to which other components have not been added that are used to control dust in accordance with the SWPPP; and uncontaminated *discharge*s from *construction site* de-watering operations. All non-stormwater discharges must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.

4. The *owner or operator* must maintain permit eligibility to *discharge* under this permit. Any *discharges* that are not compliant with the eligibility conditions of this permit are not authorized by the permit and the *owner or operator* must either apply for a separate permit to cover those ineligible *discharges* or take steps necessary to make the *discharge* eligible for coverage.

F. Activities Which Are Ineligible for Coverage Under This General Permit

All of the following are **<u>not</u>** authorized by this permit:

1. *Discharge*s after *construction activities* have been completed and the site has undergone *final stabilization*;

2. *Discharge*s that are mixed with sources of non-stormwater other than those expressly authorized under subsection E.3. of this Part and identified in the SWPPP required by this permit;

3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII.K. of this permit;

4. *Construction activities* or *discharges* from *construction activities* that may adversely affect an *endangered or threatened species* unless the *owner or*

operator has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.D.2 of this permit;

5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;

6. *Construction activities* for residential, commercial and institutional projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb one (1) or more acres of land designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

7. *Construction activities* for linear transportation projects and linear utility projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb two (2) or more acres of land designated on the current USDA Soil Survey as Soil Slope Phase "D" (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

8. *Construction activities* that have the potential to affect an *historic property*, unless there is documentation that such impacts have been resolved. The following documentation necessary to demonstrate eligibility with this requirement shall be maintained on site in accordance with Part II.D.2 of this permit and made available to the Department in accordance with Part VII.F of this permit:

   a. Documentation that the *construction activity* is not within an archeologically sensitive area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the *construction site* within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the *construction site* within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant.

      - 1-5 acres of disturbance - 20 feet
      - 5-20 acres of disturbance - 50 feet
      - 20+ acres of disturbance - 100 feet, or

   b. DEC consultation form sent to OPRHP, and copied to the NYS DEC Agency Historic Preservation Officer (APO), and
      (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
      (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
      (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
      (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or

   c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:

(i) No Affect
(ii) No Adverse Affect
(iii) Executed Memorandum of Agreement, or

d. Documentation that:

(i) SHPA Section 14.09 has been completed by NYS DEC or another state agency.

9. *Discharge*s from *construction activities* that are subject to an existing SPDES individual or general permit where a SPDES permit for *construction activity* has been terminated or denied; or where the *owner or operator* has failed to renew an expired individual permit.

Part II. PERMIT COVERAGE

A. How to Obtain Coverage

1. An *owner or operator* of a *construction activity* that is not subject to the requirements of a regulated, traditional land use control MS4 must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed Notice of Intent (NOI) to the Department to be authorized to discharge under this permit.

2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then have the SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the “MS4 SWPPP Acceptance” form signed in accordance with Part VII.H., and then submit that form along with a completed NOI to the Department.

3. The requirement for an *owner or operator* to have its SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.F. (Change of *Owner or Operator*) or where the *owner or operator* of the *construction activity* is the *regulated, traditional land use control MS4* . This exemption does not apply to *construction activities* subject to the New York City Administrative Code.

B. Notice of Intent (NOI) Submittal

1. Prior to December 21, 2020, an owner or operator shall use either the electronic (eNOI) or paper version of the NOI that the Department prepared. Both versions of the NOI are located on the Department's website (http://www.dec.ny.gov/). The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the following address:

   NOTICE OF INTENT
   NYS DEC, Bureau of Water Permits
   625 Broadway, 4th Floor
   Albany, New York 12233-3505

2. Beginning December 21, 2020 and in accordance with EPA's 2015 NPDES Electronic Reporting Rule (40 CFR Part 127), the *owner or operator* must submit the NOI electronically using the *Department's* online NOI.

3. The *owner or operator* shall have the SWPPP preparer sign the "SWPPP Preparer Certification" statement on the NOI prior to submitting the form to the Department.

4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

C. Permit Authorization

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.

2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied <u>all</u> of the following criteria:

   a. project review pursuant to the State Environmental Quality Review Act ("SEQRA") have been satisfied, when SEQRA is applicable. See the Department's website (http://www.dec.ny.gov/) for more information,

   b. where required, all necessary Department permits subject to the *Uniform Procedures Act ("UPA")* (see 6 NYCRR Part 621), or the equivalent from another New York State agency, have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators* of *construction activities* that are required to obtain *UPA* permits

must submit a preliminary SWPPP to the appropriate DEC Permit Administrator at the Regional Office listed in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,

c. the final SWPPP has been prepared, and

d. a complete NOI has been submitted to the Department in accordance with the requirements of this permit.

3. An *owner or operator* that has satisfied the requirements of Part II.C.2 above will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

   a. For *construction activities* that are <u>not</u> subject to the requirements of a *regulated, traditional land use control MS4*:

      (i) Five (5) business days from the date the Department receives a complete electronic version of the NOI (eNOI) for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.; or

      (ii) Sixty (60) business days from the date the Department receives a complete NOI (electronic or paper version) for *construction activities* with a SWPPP that has <u>not</u> been prepared in conformance with the design criteria in technical standard referenced in Part III.B.1. or, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C., the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, or;

      (iii) Ten (10) business days from the date the Department receives a complete paper version of the NOI for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.

b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:

(i) Five (5) business days from the date the Department receives both a complete electronic version of the NOI (eNOI) and signed "*MS4* SWPPP Acceptance" form, or

(ii) Ten (10) business days from the date the Department receives both a complete paper version of the NOI and signed "MS4 SWPPP Acceptance" form.

4. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department. The *owner or operator* shall not *commence construction activity* on the future or additional areas until their authorization to *discharge* under this permit goes into effect in accordance with Part II.C. of this permit.

D. General Requirements For Owners or Operators With Permit Coverage

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination ("NOT") has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4. of this permit.

2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-20-001), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, responsible contractor's or subcontractor's certification statement (see Part III.A.6.), and all documentation necessary to demonstrate eligibility with this permit at the *construction site* until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.

3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land*

use control MS4, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:

a. The *owner or operator* shall have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.

c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

d. The *owner or operator* shall install any additional site-specific practices needed to protect water quality.

e. The *owner or operator* shall include the requirements above in their SWPPP.

4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements or consistent with Part VII.K..

5. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.

6. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the

regulated, traditional land use control MS4 in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *regulated, traditional land use control MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *regulated, traditional land use control MS4* prior to commencing construction of the post-construction stormwater management practice.

E. Permit Coverage for Discharges Authorized Under GP-0-15-002

1. Upon renewal of SPDES General Permit for Stormwater Discharges from *Construction Activity* (Permit No. GP-0-15-002), an *owner or operator* of *a construction activity* with coverage under GP-0-15-002, as of the effective date of GP- 0-20-001, shall be authorized to *discharge* in accordance with GP- 0-20-001, unless otherwise notified by the Department.

   An *owner or operator* may continue to implement the technical/design components of the post-construction stormwater management controls provided that such design was done in conformance with the technical standards in place at the time of initial project authorization. However, they must comply with the other, non-design provisions of GP-0-20-001.

F. Change of Owner or Operator

1. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, <u>in writing,</u> of the requirement to obtain permit coverage by submitting a NOI with the Department. For *construction activities* subject to the requirements of a *regulated, traditional land use control MS4,* the original *owner or operator* must also notify the MS4, in writing, of the change in ownership at least 30 calendar days prior to the change in ownership.

2. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.B.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

3. Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or*

operator was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

1. A SWPPP shall be prepared and implemented by the *owner or operator* of each *construction activity* covered by this permit. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and practices that will be used to meet the effluent limitations in Part I.B. of this permit and where applicable, the post-construction stormwater management practice requirements in Part I.C. of this permit. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*. A copy of the completed, final NOI shall be included in the SWPPP.

2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the *pollutants* in stormwater *discharges* and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.

3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.

4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP, including construction drawings:

    a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;

b. whenever there is a change in design, construction, or operation at the *construction site* that has or could have an effect on the *discharge* of *pollutants*;

c. to address issues or deficiencies identified during an inspection by the *qualified inspector,* the Department or other regulatory authority; and

d. to document the final construction conditions.

5. The Department may notify the *owner or operator* at any time that the SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.D.4. of this permit.

6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor.* The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

   The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

   "I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with

the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharge*s from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the *trained contractor* responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the *construction site*. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.

B. Required SWPPP Contents

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must demonstrate *equivalence* to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:

    a. Background information about the scope of the project, including the location, type and size of project

b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours ; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater *discharge*(s);

c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);

d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity at the site that results in soil disturbance;

e. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;

f. A temporary and permanent soil stabilization plan that meets the requirements of this general permit and the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of *final stabilization*;

g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;

h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;

i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection

schedule shall be in accordance with the requirements in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016;

j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the stormwater *discharges*;

k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the *construction site*; and

l. Identification of any elements of the design that are not in conformance with the design criteria in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. Post-construction stormwater management practice component – The *owner or operator* of any construction project identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the applicable *sizing criteria* in Part I.C.2.a., c. or d. of this permit and the *performance criteria* in the technical standard, New York State Stormwater Management Design Manual dated January 2015

   Where post-construction stormwater management practices are not designed in conformance with the *performance criteria* in the technical standard, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

   The post-construction stormwater management practice component of the SWPPP shall include the following:

   a. Identification of all post-construction stormwater management practices to be constructed as part of the project. Include the dimensions, material specifications and installation details for each post-construction stormwater management practice;

b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;

c. A Stormwater Modeling and Analysis Report that includes:
   (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;

   (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and post-construction stormwater management practices;

   (iii) Results of stormwater modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre and post-development runoff rates and volumes for the different storm events;

   (iv) Summary table, with supporting calculations, which demonstrates that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;

   (v) Identification of any *sizing criteria* that is not required based on the requirements included in Part I.C. of this permit; and

   (vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the Design Manual. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the Design Manual;

d. Soil testing results and locations (test pits, borings);

e. Infiltration test results, when required; and

f. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.

3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the applicable *sizing criteria* in Part I.C.2. b., c. or d. of this permit and the *performance criteria,* Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.f. above.

C. Required SWPPP Components by Project Type

Unless otherwise notified by the Department, *owners or operators* of *construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1 of this permit. *Owners or operators* of the *construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3 of this permit.

Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures) and all post-construction stormwater management practices identified in the SWPPP are inspected and maintained in accordance with Part IV.B. and C. of this permit.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York or protect the public health and safety and/or the environment.

B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity* identified in Tables 1 and 2 of Appendix B shall have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor shall

begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections. The *trained contractor* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of this permit as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. Qualified Inspector Inspection Requirements

The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. and IV.B. of this permit **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:

- licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- New York State Erosion and Sediment Control Certificate Program holder
- Registered Landscape Architect, or
- someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].

1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, with the exception of:

   a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located

in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

d. *construction activities* located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:

   a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.

   b. For construction sites where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part II.D.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

   c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to reducing the frequency of inspections.

d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization,* and all temporary, structural erosion and sediment control measures have been removed*;* and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.B.1 of this permit.

e. For construction sites that directly *discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization,* all points of *discharge* to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site*, and all points of *discharge* from the *construction site*.

4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

a. Date and time of inspection;

b. Name and title of person(s) performing inspection;

c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

d. A description of the condition of the runoff at all points of *discharge* from the *construction site*. This shall include identification of any *discharges* of sediment from the *construction site*. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site* which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;

f. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;

g. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;

i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);

k. Identification and status of all corrective actions that were required by previous inspection; and

l. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of this permit of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the *qualified inspector.* Pursuant to Part II.D.2. of this permit, the inspection reports shall be maintained on site with the SWPPP.

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.B.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.

2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:

   a. Total project completion - All *construction activity* identified in the SWPPP has been completed; <u>and</u> all areas of disturbance have achieved *final stabilization*; <u>and</u> all temporary, structural erosion and sediment control measures have been removed; <u>and</u> all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;

b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;

c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.F. of this permit.

d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.

3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice certification statements on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.

4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the "MS4 Acceptance" statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector*'s final site inspection certification(s) required in Part V.A.3. of this permit.

5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:

   a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,

b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),

c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record,

d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

Part VI. REPORTING AND RETENTION RECORDS

A. Record Retention

The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the Department receives a complete NOT submitted in accordance with Part V. of this general permit.

B. Addresses

With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.B.1 of this permit), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate DOW Water (SPDES) Program contact at the Regional Office listed in Appendix F.

Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water

Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE). *Construction activity* shall not resume until written permission to do so has been received from the RWE.

B. Continuation of the Expired General Permit

This permit expires five (5) years from the effective date. If a new general permit is not issued prior to the expiration of this general permit, an *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit, if it is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, until a new general permit is issued.

C. Enforcement

Failure of the *owner or operator,* its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to $37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

E. Duty to Mitigate

The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

F. Duty to Provide Information

The *owner or operator* shall furnish to the Department, within a reasonable specified time period of a written request, all documentation necessary to demonstrate eligibility and any information to determine compliance with this permit or to determine whether cause exists for modifying or revoking this permit, or suspending or denying coverage under this permit, in accordance with the terms and conditions of this permit. The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

G. Other Information

When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any of the documents required by this permit , or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s) changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or *impervious area*), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department using the contact information in Part II.A. of this permit. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

H. Signatory Requirements

1. All NOIs and NOTs shall be signed as follows:

    a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or

c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

(i) the chief executive officer of the agency, or

(ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field,

superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position) and,

c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.

3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.

4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4,* or by a duly authorized representative of that person.

   It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

I. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

J. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

K. Requirement to Obtain Coverage Under an Alternative Permit

1. The Department may require any owner or operator authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any discharger authorized by a general permit to apply for an individual SPDES permit, it shall notify the discharger in writing that a permit application is required. This notice shall

include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the owner or operator to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from owner or operator receipt of the notification letter, whereby the authorization to discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. When an individual SPDES permit is issued to a discharger authorized to *discharge* under a general SPDES permit for the same *discharge*(s), the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

L. Proper Operation and Maintenance

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

M. Inspection and Entry

The *owner or operator* shall allow an authorized representative of the Department, EPA, applicable county health department, or, in the case of a *construction site* which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the owner’s or operator's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.

4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

N. Permit Actions

This permit may, at any time, be modified, suspended, revoked, or renewed by the Department in accordance with 6 NYCRR Part 621. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

O. Definitions

Definitions of key terms are included in Appendix A of this permit.

P. Re-Opener Clause

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with construction activity covered by this permit, the owner or operator of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.

2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

Q. Penalties for Falsification of Forms and Reports

In accordance with 6NYCRR Part 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.

R. Other Permits

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

APPENDIX A – Acronyms and Definitions

Acronyms

APO – Agency Preservation Officer
BMP – Best Management Practice
CPESC – Certified Professional in Erosion and Sediment Control
Cpv – Channel Protection Volume
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)
DOW – Division of Water
EAF – Environmental Assessment Form
ECL - Environmental Conservation Law
EPA – U. S. Environmental Protection Agency
HSG – Hydrologic Soil Group
MS4 – Municipal Separate Storm Sewer System
NOI – Notice of Intent
NOT – Notice of Termination
NPDES – National Pollutant Discharge Elimination System
OPRHP – Office of Parks, Recreation and Historic Places
Qf – Extreme Flood
Qp – Overbank Flood
RRv – Runoff Reduction Volume
RWE – Regional Water Engineer
SEQR – State Environmental Quality Review
SEQRA - State Environmental Quality Review Act
SHPA – State Historic Preservation Act
SPDES – State Pollutant Discharge Elimination System
SWPPP – Stormwater Pollution Prevention Plan
TMDL – Total Maximum Daily Load
UPA – Uniform Procedures Act
USDA – United States Department of Agriculture
WQv – Water Quality Volume

Definitions

All definitions in this section are solely for the purposes of this permit.

Agricultural Building – a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products; excluding any structure designed, constructed or used, in whole or in part, for human habitation, as a place of employment where agricultural products are processed, treated or packaged, or as a place used by the public.

Agricultural Property –means the land for construction of a barn, *agricultural building*, silo, stockyard, pen or other structural practices identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" prepared by the Department in cooperation with agencies of New York Nonpoint Source Coordinating Committee (dated June 2007).

Alter Hydrology from Pre to Post-Development Conditions - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer - means a sewer that is designed to collect and convey both "sewage" and "stormwater".

Commence (Commencement of) Construction Activities - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for "*Construction Activity(ies)*" also.

Construction Activity(ies) - means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Construction Site – means the land area where *construction activity(ies)* will occur. See definition for "*Commence (Commencement of) Construction Activities"* and "*Larger Common Plan of Development or Sale" also.*

Dewatering – means the act of draining rainwater and/or groundwater from building foundations, vaults or excavations/trenches.

Direct Discharge (to a specific surface waterbody) - means that runoff flows from a *construction site* by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a *construction site* to a separate storm sewer system

and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

Discharge(s) - means any addition of any pollutant to waters of the State through an outlet or *point source*.

Embankment –means an earthen or rock slope that supports a road/highway.

Endangered or Threatened Species – see 6 NYCRR Part 182 of the Department's rules and regulations for definition of terms and requirements.

Environmental Conservation Law (ECL) - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

Equivalent (Equivalence) – means that the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

General SPDES permit - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 and Section 70-0117 of the ECL authorizing a category of discharges.

Groundwater(s) - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

Historic Property – means any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State or National Registers of Historic Places.

Impervious Area (Cover) - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Infeasible – means not technologically possible, or not economically practicable and achievable in light of best industry practices.

Larger Common Plan of Development or Sale - means a contiguous area where multiple separate and distinct *construction activities* are occurring, or will occur, under one plan. The term "plan" in "larger common plan of development or sale" is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that *construction activities* may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same "common plan" is not concurrently being disturbed.

Minimize – means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State*;*
(ii) Designed or used for collecting or conveying stormwater;
(iii) Which is not a *combined sewer*; and
(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

Natural Buffer –means an undisturbed area with natural cover running along a surface water (e.g. wetland, stream, river, lake, etc.).

New Development – means any land disturbance that does not meet the definition of Redevelopment Activity included in this appendix.

New York State Erosion and Sediment Control Certificate Program – a certificate program that establishes and maintains a process to identify and recognize individuals who are capable of developing, designing, inspecting and maintaining erosion and sediment control plans on projects that disturb soils in New York State. The certificate program is administered by the New York State Conservation District Employees Association.

NOI Acknowledgment Letter - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from *construction activity*.

Nonpoint Source - means any source of water pollution or pollutants which is not a discrete conveyance or *point source* permitted pursuant to Title 7 or 8 of Article 17 of the Environmental Conservation Law (see ECL Section 17-1403).

Overbank –means flow events that exceed the capacity of the stream channel and spill out into the adjacent floodplain.

Owner or Operator - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications; and/or an entity that has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions.

Performance Criteria – means the design criteria listed under the "Required Elements" sections in Chapters 5, 6 and 10 of the technical standard, New York State Stormwater Management Design Manual, dated January 2015. It does not include the Sizing Criteria (i.e. WQv, RRv, Cpv, Qp and Qf) in Part I.C.2. of the permit.

Point Source - means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, or landfill leachate collection system from which *pollutants* are or may be discharged.

Pollutant - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq .

Qualified Inspector - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

Redevelopment Activity(ies) – means the disturbance and reconstruction of existing impervious area, including impervious areas that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is authorized to discharge under New York State DEC's

SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or the City of New York's Individual SPDES Permit for their Municipal Separate Storm Sewer Systems (NY-0287890).

Routine Maintenance Activity - means *construction activity* that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that stabilizes the transition between the road shoulder and the ditch or *embankment*,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or *embankment*,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

Site limitations – means site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical site limitations include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of site limitations shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

Sizing Criteria – means the criteria included in Part I.C.2 of the permit that are used to size post-construction stormwater management control practices. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), *Overbank* Flood (Qp), and Extreme Flood (Qf).

State Pollutant Discharge Elimination System (SPDES) - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

Steep Slope – means land area designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%) , or Soil Slope Phase E or F, (regardless of the map unit name), or a combination of the three designations.

Streambank – as used in this permit, means the terrain alongside the bed of a creek or stream. The bank consists of the sides of the channel, between which the flow is confined.

Stormwater Pollution Prevention Plan (SWPPP) – means a project specific report, including construction drawings, that among other things: describes the construction activity(ies), identifies the potential sources of pollution at the *construction site*; describes and shows the stormwater controls that will be used to control the pollutants (i.e. erosion and sediment controls; for many projects, includes post-construction stormwater management controls); and identifies procedures the *owner or operator* will implement to comply with the terms and conditions of the permit. See Part III of the permit for a complete description of the information that must be included in the SWPPP.

Surface Waters of the State - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporarily Ceased – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary Stabilization - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Loads (TMDLs) - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and *nonpoint source*s. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet *water quality standards*, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for *point source* discharges, load allocations (LAs) for *nonpoint source*s, and a margin of safety (MOS).

Trained Contractor - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed

training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* is responsible for the day to day implementation of the SWPPP.

Uniform Procedures Act (UPA) Permit - means a permit required under 6 NYCRR Part 621 of the Environmental Conservation Law (ECL), Article 70.

Water Quality Standard - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

APPENDIX B – Required SWPPP Components by Project Type

Table 1
Construction Activities that Require the Preparation of a SWPPP That Only Includes Erosion and Sediment Controls

The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:

- Single family home not located in one of the watersheds listed in Appendix C or not *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E
- Construction of a barn or other *agricultural building*, silo, stock yard or pen.

The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:

All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects
- Pond construction
- Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an impervious cover
- Cross-country ski trails and walking/hiking trails
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are not part of residential, commercial or institutional development;
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path or walking path.
- Slope stabilization projects
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics

Table 1 (Continued) CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Spoil areas that will be covered with vegetation
- Vegetated open space projects (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) excluding projects that *alter hydrology from pre to post development* conditions,
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established, and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of greater than five acres and construction activities that include the construction or reconstruction of impervious area
- Temporary access roads, median crossovers, detour roads, lanes, or other temporary impervious areas that will be restored to pre-construction conditions once the construction activity is complete

Table 2
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family home that disturbs five (5) or more acres of land
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Breweries, cideries, and wineries, including establishments constructed on agricultural land
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other *agricultural building* (e.g. silo) and structural practices as identified in Table II in the “Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State” that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional development; includes hospitals, prisons, schools and colleges
- Industrial facilities; includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW’s, water treatment plants, and water storage tanks
- Office complexes
- Playgrounds that include the construction or reconstruction of impervious area
- Sports complexes
- Racetracks; includes racetracks with earthen (dirt) surface
- Road construction or reconstruction, including roads constructed as part of the construction activities listed in Table 1

Table 2 (Continued)

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Parking lot construction or reconstruction, including parking lots constructed as part of the construction activities listed in Table 1
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover,* and constructed as part of an over-head electric transmission line project, wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a residential, commercial or institutional development
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a highway construction or reconstruction project
- All other construction activities that include the construction or reconstruction of *impervious area* <u>or</u> *alter the hydrology from pre to post development* conditions, <u>and</u> are not listed in Table 1

APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual ("Design Manual").

- Entire New York City Watershed located east of the Hudson River **-** Figure 1
- Onondaga Lake Watershed **-** Figure 2
- Greenwood Lake Watershed **-**Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

Figure 1 - New York City Watershed East of the Hudson

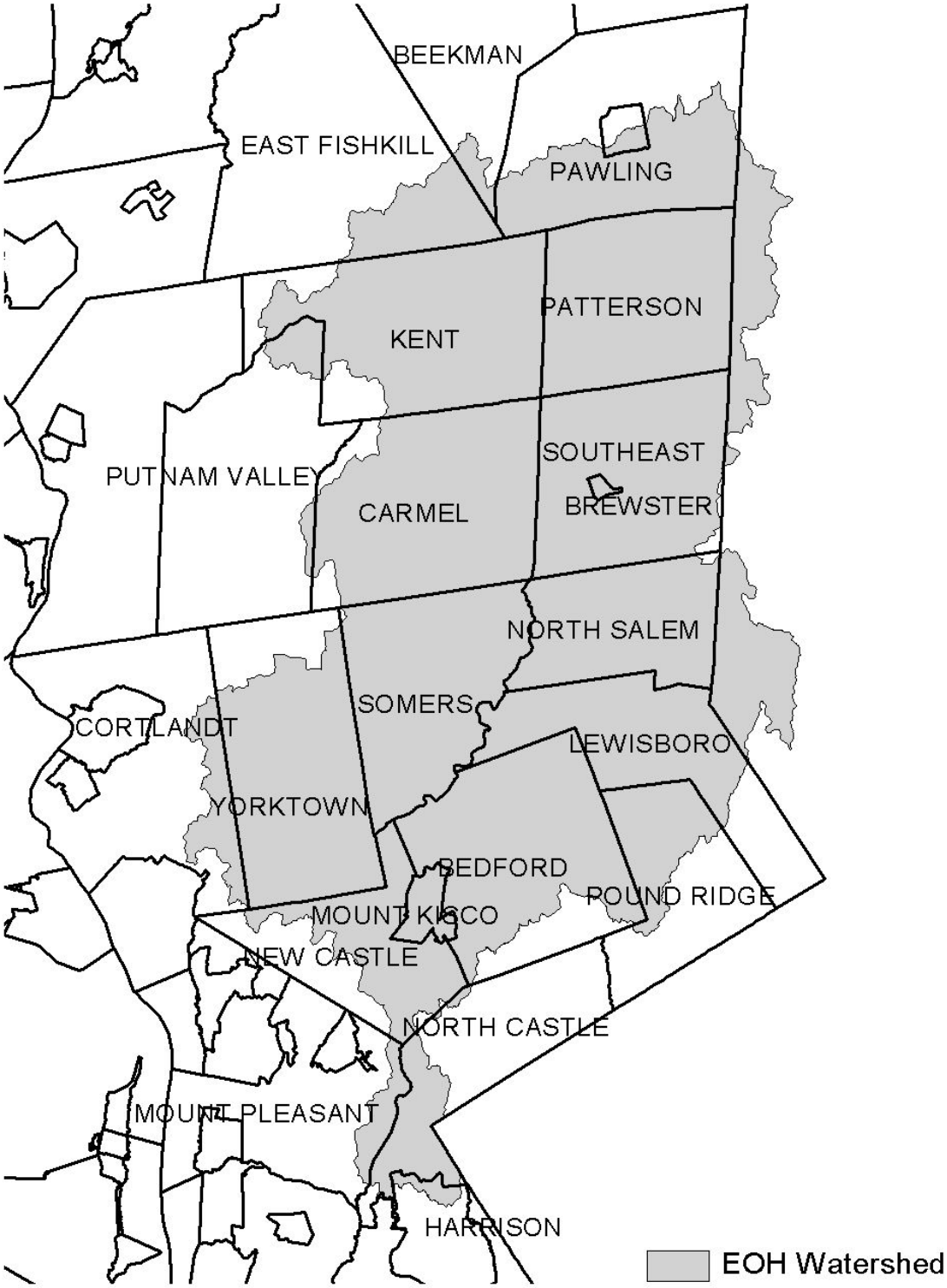


Figure 2 - Onondaga Lake Watershed

Figure 3 - Greenwood Lake Watershed

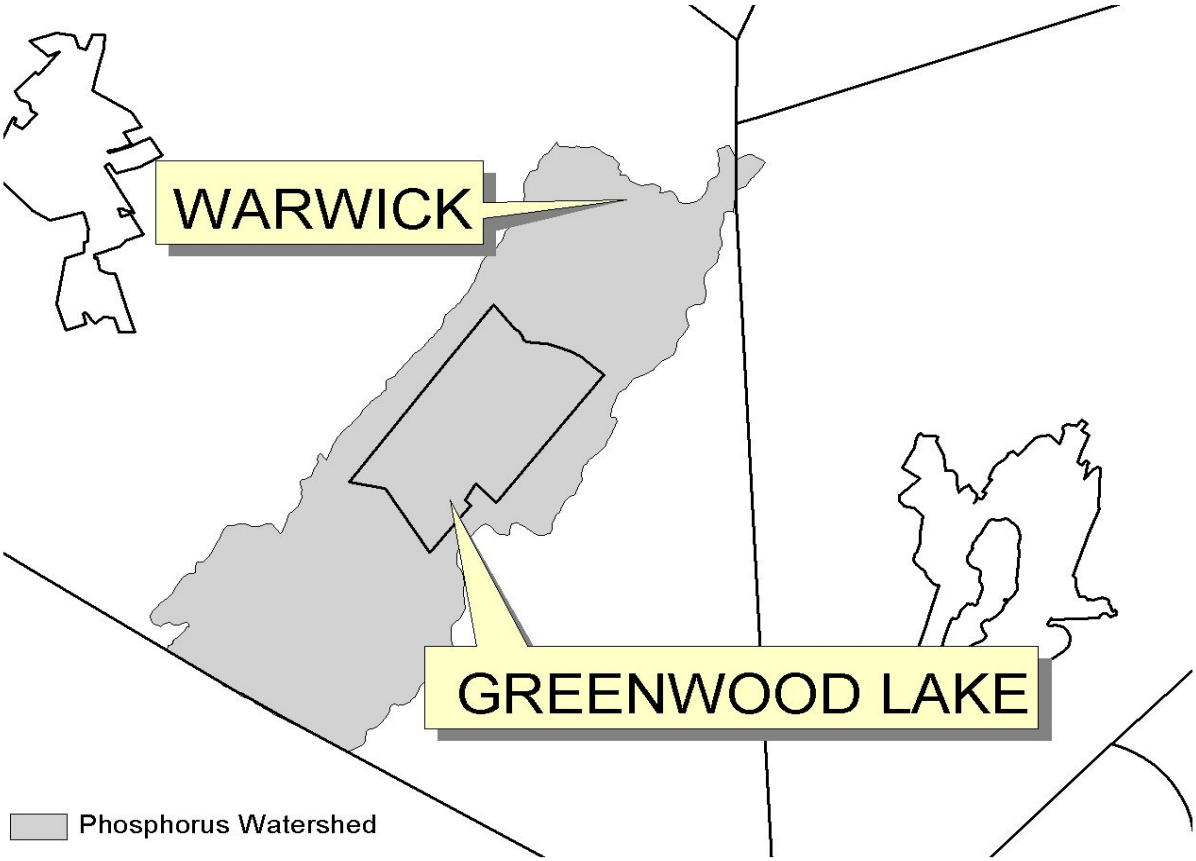


Figure 4 - Oscawana Lake Watershed

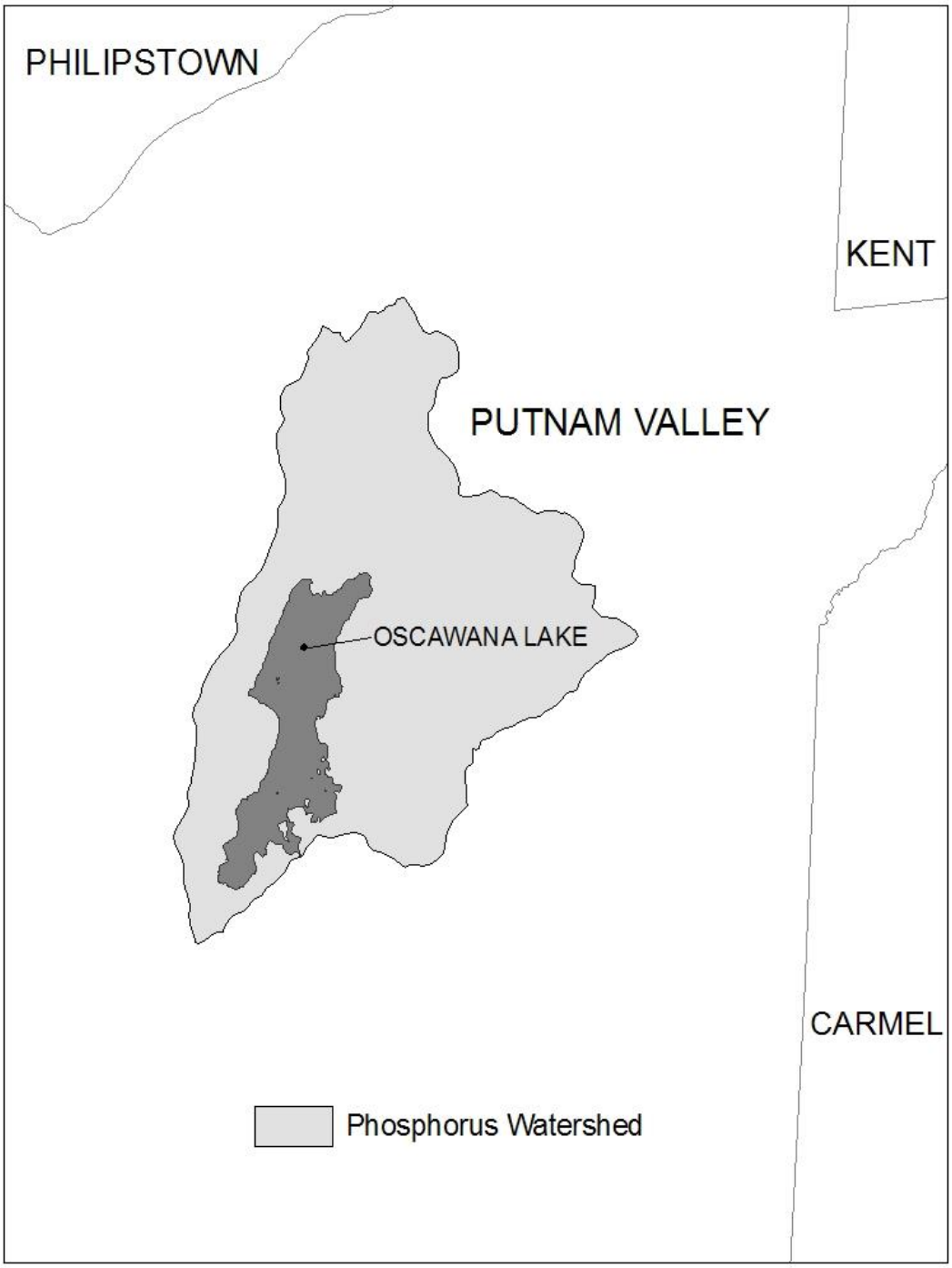
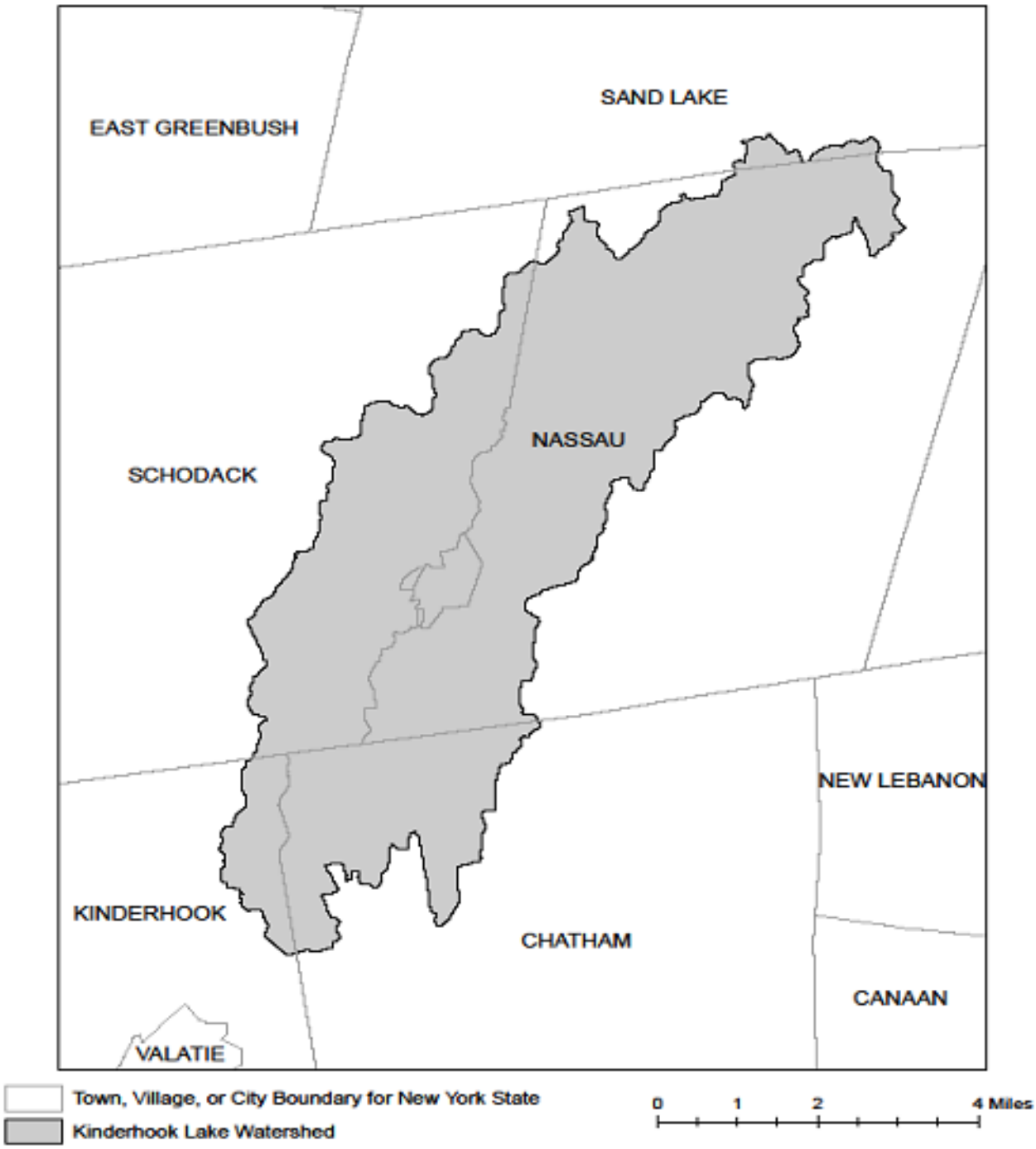


Figure 5 - Kinderhook Lake Watershed



APPENDIX D – Watersheds with Lower Disturbance Threshold

Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.

Entire New York City Watershed that is located east of the Hudson River **-** See Figure 1 in Appendix C

APPENDIX E – 303(d) Segments Impaired by Construction Related Pollutant(s)

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). The list was developed using ”The Final New York State 2016 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy” dated November 2016. *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual (“Design Manual”), dated January 2015.

COUNTY	WATERBODY	POLLUTANT
Albany	Ann Lee (Shakers) Pond, Stump Pond	Nutrients
Albany	Basic Creek Reservoir	Nutrients
Allegany	Amity Lake, Saunders Pond	Nutrients
Bronx	Long Island Sound, Bronx	Nutrients
Bronx	Van Cortlandt Lake	Nutrients
Broome	Fly Pond, Deer Lake, Sky Lake	Nutrients
Broome	Minor Tribs to Lower Susquehanna (north)	Nutrients
Broome	Whitney Point Lake/Reservoir	Nutrients
Cattaraugus	Allegheny River/Reservoir	Nutrients
Cattaraugus	Beaver (Alma) Lake	Nutrients
Cattaraugus	Case Lake	Nutrients
Cattaraugus	Linlyco/Club Pond	Nutrients
Cayuga	Duck Lake	Nutrients
Cayuga	Little Sodus Bay	Nutrients
Chautauqua	Bear Lake	Nutrients
Chautauqua	Chadakoin River and tribs	Nutrients
Chautauqua	Chautauqua Lake, North	Nutrients
Chautauqua	Chautauqua Lake, South	Nutrients
Chautauqua	Findley Lake	Nutrients
Chautauqua	Hulburt/Clymer Pond	Nutrients
Clinton	Great Chazy River, Lower, Main Stem	Silt/Sediment
Clinton	Lake Champlain, Main Lake, Middle	Nutrients
Clinton	Lake Champlain, Main Lake, North	Nutrients
Columbia	Kinderhook Lake	Nutrients
Columbia	Robinson Pond	Nutrients
Cortland	Dean Pond	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Dutchess	Fall Kill and tribs	Nutrients
Dutchess	Hillside Lake	Nutrients
Dutchess	Wappingers Lake	Nutrients
Dutchess	Wappingers Lake	Silt/Sediment
Erie	Beeman Creek and tribs	Nutrients
Erie	Ellicott Creek, Lower, and tribs	Silt/Sediment
Erie	Ellicott Creek, Lower, and tribs	Nutrients
Erie	Green Lake	Nutrients
Erie	Little Sister Creek, Lower, and tribs	Nutrients
Erie	Murder Creek, Lower, and tribs	Nutrients
Erie	Rush Creek and tribs	Nutrients
Erie	Scajaquada Creek, Lower, and tribs	Nutrients
Erie	Scajaquada Creek, Middle, and tribs	Nutrients
Erie	Scajaquada Creek, Upper, and tribs	Nutrients
Erie	South Branch Smoke Cr, Lower, and tribs	Silt/Sediment
Erie	South Branch Smoke Cr, Lower, and tribs	Nutrients
Essex	Lake Champlain, Main Lake, South	Nutrients
Essex	Lake Champlain, South Lake	Nutrients
Essex	Willsboro Bay	Nutrients
Genesee	Bigelow Creek and tribs	Nutrients
Genesee	Black Creek, Middle, and minor tribs	Nutrients
Genesee	Black Creek, Upper, and minor tribs	Nutrients
Genesee	Bowen Brook and tribs	Nutrients
Genesee	LeRoy Reservoir	Nutrients
Genesee	Oak Orchard Cr, Upper, and tribs	Nutrients
Genesee	Tonawanda Creek, Middle, Main Stem	Nutrients
Greene	Schoharie Reservoir	Silt/Sediment
Greene	Sleepy Hollow Lake	Silt/Sediment
Herkimer	Steele Creek tribs	Silt/Sediment
Herkimer	Steele Creek tribs	Nutrients
Jefferson	Moon Lake	Nutrients
Kings	Hendrix Creek	Nutrients
Kings	Prospect Park Lake	Nutrients
Lewis	Mill Creek/South Branch, and tribs	Nutrients
Livingston	Christie Creek and tribs	Nutrients
Livingston	Conesus Lake	Nutrients
Livingston	Mill Creek and minor tribs	Silt/Sediment
Monroe	Black Creek, Lower, and minor tribs	Nutrients
Monroe	Buck Pond	Nutrients
Monroe	Cranberry Pond	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Monroe	Lake Ontario Shoreline, Western	Nutrients
Monroe	Long Pond	Nutrients
Monroe	Mill Creek and tribs	Nutrients
Monroe	Mill Creek/Blue Pond Outlet and tribs	Nutrients
Monroe	Minor Tribs to Irondequoit Bay	Nutrients
Monroe	Rochester Embayment - East	Nutrients
Monroe	Rochester Embayment - West	Nutrients
Monroe	Shipbuilders Creek and tribs	Nutrients
Monroe	Thomas Creek/White Brook and tribs	Nutrients
Nassau	Beaver Lake	Nutrients
Nassau	Camaans Pond	Nutrients
Nassau	East Meadow Brook, Upper, and tribs	Silt/Sediment
Nassau	East Rockaway Channel	Nutrients
Nassau	Grant Park Pond	Nutrients
Nassau	Hempstead Bay	Nutrients
Nassau	Hempstead Lake	Nutrients
Nassau	Hewlett Bay	Nutrients
Nassau	Hog Island Channel	Nutrients
Nassau	Long Island Sound, Nassau County Waters	Nutrients
Nassau	Massapequa Creek and tribs	Nutrients
Nassau	Milburn/Parsonage Creeks, Upp, and tribs	Nutrients
Nassau	Reynolds Channel, west	Nutrients
Nassau	Tidal Tribs to Hempstead Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Silt/Sediment
Nassau	Tribs to Smith/Halls Ponds	Nutrients
Nassau	Woodmere Channel	Nutrients
New York	Harlem Meer	Nutrients
New York	The Lake in Central Park	Nutrients
Niagara	Bergholtz Creek and tribs	Nutrients
Niagara	Hyde Park Lake	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Oneida	Ballou, Nail Creeks and tribs	Nutrients
Onondaga	Harbor Brook, Lower, and tribs	Nutrients
Onondaga	Ley Creek and tribs	Nutrients
Onondaga	Minor Tribs to Onondaga Lake	Nutrients
Onondaga	Ninemile Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Middle, and tribs	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Onondaga	Onondaga Lake, northern end	Nutrients
Onondaga	Onondaga Lake, southern end	Nutrients
Ontario	Great Brook and minor tribs	Silt/Sediment
Ontario	Great Brook and minor tribs	Nutrients
Ontario	Hemlock Lake Outlet and minor tribs	Nutrients
Ontario	Honeoye Lake	Nutrients
Orange	Greenwood Lake	Nutrients
Orange	Monhagen Brook and tribs	Nutrients
Orange	Orange Lake	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Oswego	Lake Neatahwanta	Nutrients
Oswego	Pleasant Lake	Nutrients
Putnam	Bog Brook Reservoir	Nutrients
Putnam	Boyd Corners Reservoir	Nutrients
Putnam	Croton Falls Reservoir	Nutrients
Putnam	Diverting Reservoir	Nutrients
Putnam	East Branch Reservoir	Nutrients
Putnam	Lake Carmel	Nutrients
Putnam	Middle Branch Reservoir	Nutrients
Putnam	Oscawana Lake	Nutrients
Putnam	Palmer Lake	Nutrients
Putnam	West Branch Reservoir	Nutrients
Queens	Bergen Basin	Nutrients
Queens	Flushing Creek/Bay	Nutrients
Queens	Jamaica Bay, Eastern, and tribs (Queens)	Nutrients
Queens	Kissena Lake	Nutrients
Queens	Meadow Lake	Nutrients
Queens	Willow Lake	Nutrients
Rensselaer	Nassau Lake	Nutrients
Rensselaer	Snyders Lake	Nutrients
Richmond	Grasmere Lake/Bradys Pond	Nutrients
Rockland	Congers Lake, Swartout Lake	Nutrients
Rockland	Rockland Lake	Nutrients
Saratoga	Ballston Lake	Nutrients
Saratoga	Dwaas Kill and tribs	Silt/Sediment
Saratoga	Dwaas Kill and tribs	Nutrients
Saratoga	Lake Lonely	Nutrients
Saratoga	Round Lake	Nutrients
Saratoga	Tribs to Lake Lonely	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Schenectady	Collins Lake	Nutrients
Schenectady	Duane Lake	Nutrients
Schenectady	Mariaville Lake	Nutrients
Schoharie	Engleville Pond	Nutrients
Schoharie	Summit Lake	Nutrients
Seneca	Reeder Creek and tribs	Nutrients
St.Lawrence	Black Lake Outlet/Black Lake	Nutrients
St.Lawrence	Fish Creek and minor tribs	Nutrients
Steuben	Smith Pond	Nutrients
Suffolk	Agawam Lake	Nutrients
Suffolk	Big/Little Fresh Ponds	Nutrients
Suffolk	Canaan Lake	Silt/Sediment
Suffolk	Canaan Lake	Nutrients
Suffolk	Flanders Bay, West/Lower Sawmill Creek	Nutrients
Suffolk	Fresh Pond	Nutrients
Suffolk	Great South Bay, East	Nutrients
Suffolk	Great South Bay, Middle	Nutrients
Suffolk	Great South Bay, West	Nutrients
Suffolk	Lake Ronkonkoma	Nutrients
Suffolk	Long Island Sound, Suffolk County, West	Nutrients
Suffolk	Mattituck (Marratooka) Pond	Nutrients
Suffolk	Meetinghouse/Terrys Creeks and tribs	Nutrients
Suffolk	Mill and Seven Ponds	Nutrients
Suffolk	Millers Pond	Nutrients
Suffolk	Moriches Bay, East	Nutrients
Suffolk	Moriches Bay, West	Nutrients
Suffolk	Peconic River, Lower, and tidal tribs	Nutrients
Suffolk	Quantuck Bay	Nutrients
Suffolk	Shinnecock Bay and Inlet	Nutrients
Suffolk	Tidal tribs to West Moriches Bay	Nutrients
Sullivan	Bodine, Montgomery Lakes	Nutrients
Sullivan	Davies Lake	Nutrients
Sullivan	Evens Lake	Nutrients
Sullivan	Pleasure Lake	Nutrients
Tompkins	Cayuga Lake, Southern End	Nutrients
Tompkins	Cayuga Lake, Southern End	Silt/Sediment
Tompkins	Owasco Inlet, Upper, and tribs	Nutrients
Ulster	Ashokan Reservoir	Silt/Sediment
Ulster	Esopus Creek, Upper, and minor tribs	Silt/Sediment
Warren	Hague Brook and tribs	Silt/Sediment

303(d) Segments Impaired by Construction Related Pollutant(s)

Warren	Huddle/Finkle Brooks and tribs	Silt/Sediment
Warren	Indian Brook and tribs	Silt/Sediment
Warren	Lake George	Silt/Sediment
Warren	Tribs to L.George, Village of L George	Silt/Sediment
Washington	Cossayuna Lake	Nutrients
Washington	Lake Champlain, South Bay	Nutrients
Washington	Tribs to L.George, East Shore	Silt/Sediment
Washington	Wood Cr/Champlain Canal and minor tribs	Nutrients
Wayne	Port Bay	Nutrients
Westchester	Amawalk Reservoir	Nutrients
Westchester	Blind Brook, Upper, and tribs	Silt/Sediment
Westchester	Cross River Reservoir	Nutrients
Westchester	Lake Katonah	Nutrients
Westchester	Lake Lincolndale	Nutrients
Westchester	Lake Meahagh	Nutrients
Westchester	Lake Mohegan	Nutrients
Westchester	Lake Shenorock	Nutrients
Westchester	Long Island Sound, Westchester (East)	Nutrients
Westchester	Mamaroneck River, Lower	Silt/Sediment
Westchester	Mamaroneck River, Upper, and minor tribs	Silt/Sediment
Westchester	Muscoot/Upper New Croton Reservoir	Nutrients
Westchester	New Croton Reservoir	Nutrients
Westchester	Peach Lake	Nutrients
Westchester	Reservoir No.1 (Lake Isle)	Nutrients
Westchester	Saw Mill River, Lower, and tribs	Nutrients
Westchester	Saw Mill River, Middle, and tribs	Nutrients
Westchester	Sheldrake River and tribs	Silt/Sediment
Westchester	Sheldrake River and tribs	Nutrients
Westchester	Silver Lake	Nutrients
Westchester	Teatown Lake	Nutrients
Westchester	Titicus Reservoir	Nutrients
Westchester	Truesdale Lake	Nutrients
Westchester	Wallace Pond	Nutrients
Wyoming	Java Lake	Nutrients
Wyoming	Silver Lake	Nutrients

APPENDIX F – List of NYS DEC Regional Offices

Region	Covering the following counties:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) Permit Administrators	DIVISION OF WATER (DOW) Water (SPDES) Program
1	Nassau and Suffolk	50 Circle Road Stony Brook, NY 11790 Tel. (631) 444-0365	50 Circle Road Stony Brook, NY 11790-3409 Tel. (631) 444-0405
2	Bronx, Kings, New York, Queens and Richmond	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4997	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4933
3	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester	21 South Putt Corners Road New Paltz, NY 12561-1696 Tel. (845) 256-3059	100 Hillside Avenue, Suite 1w White Plains, NY 10603 Tel. (914) 428 - 2505
4	Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady and Schoharie	1150 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2069	1130 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2045
5	Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington	1115 State Route 86, Po Box 296 Ray Brook, NY 12977-0296 Tel. (518) 897-1234	232 Golf Course Road Warrensburg, NY 12885-1172 Tel. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROADAVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7070

Appendix E-1

Solar Panel Construction Stormwater Permitting/SWPPP Guidance

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Water, Bureau of Water Permits
625 Broadway, Albany, New York 12233-3505
P: (518) 402-8111 | F: (518) 402-9029
www.dec.ny.gov

M E M O R A N D U M

TO: Regional Water Engineers

FROM: Robert Wither, Chief, South Permit Section

SUBJECT: Solar Panel Construction Stormwater Permitting/SWPPP Guidance

DATE: April 5, 2018

Issue

The Department is seeing an increase in the number of solar panel construction projects across New York State. This has resulted in an increase in the number of questions on Construction General Permit (CGP) and Stormwater Pollution Prevention Plan (SWPPP) requirements from design professionals because the current CGP (GP-0-15-002) does not include a specific reference to the SWPPP requirements for solar panel projects in Tables 1 and 2 of Appendix B. To address this issue, the Division of Water (DOW) has developed the following guidance on CGP/SWPPP requirements for the different types of solar panel projects.

Scenario 1

The DOW considers solar panel projects designed and constructed in accordance with the following criteria to be a "*Land clearing and grading for the purposes of creating vegetated open space (i.e. recreational parks, lawns, meadows, fields)*" type project as listed in Table 1, Appendix B of the CGP. Therefore, the SWPPP for this type of project will typically just need to address erosion and sediment controls.

1. Solar panels are constructed on post or rack systems and elevated off the ground surface,
2. The panels are spaced apart so that rain water can flow off the down gradient side of the panel and continue as sheet flow across the ground surface*,
3. For solar panels constructed on slopes, the individual rows of solar panels are generally installed along the contour so rain water sheet flows down slope*,
4. The ground surface below the panels consist of a well-established vegetative cover (see "Final Stabilization" definition in Appendix A of the CGP),
5. The project does not include the construction of any traditional impervious areas (i.e. buildings, substation pads, gravel access roads or parking areas, etc.),
6. Construction of the solar panels will not alter the hydrology from pre-to post development conditions (see Appendix A of the CGP, for definition of "Alter the hydrology…"). Note: The design professional shall perform the necessary site assessment/hydrology analysis to make this determination.

*Refer to Maryland's "Stormwater Design Guidance- Solar Panel Installations" attached for guidance on panel installation.
**See notes below for additional criteria.

Scenario 2

If the design and construction of the solar panels meets all the criteria above, except for item 6, the project will fall under the "*All other construction activities that include the construction or reconstruction of impervious area or alter the hydrology from pre-to post development conditions, and are not listed in Table 1*" project type as listed in Table 2, Appendix B of the CGP. Therefore, the SWPPP for this type of project must address post-construction stormwater practices designed in accordance with the sizing criteria in Chapter 4 of the NYS Stormwater Management Design Manual, dated January 2015 (Note: Chapter 10 for projects in NYC EOH Watershed). The Water Quality Volume (WQv)/Runoff Reduction Volume (RRv) sizing criteria can be addressed by designing and constructing the solar panels in accordance with the criteria in items 1 – 4 above, however, the quantity control sizing criteria (Cpv, Qp and Qf) from Chapter 4 (or 10) of the Design Manual must still be addressed, unless one of the waiver criteria from Chapter 4 can be applied. **See notes below for additional criteria.

**** Notes**

- Item 1: For solar panel projects where the panels are mounted directly to the ground (i.e. no space below panel to allow for infiltration of runoff), the SWPPP must address post-construction stormwater management controls designed in accordance with the sizing criteria in Chapter 4 of the NYS Stormwater Management Design Manual, dated January 2015 (Note: Chapter 10 for projects in NYC EOH Watershed).

- Item 5: For solar panel projects that include the construction of traditional impervious areas (i.e. buildings, substation pads, gravel access roads or parking areas, etc.), the SWPPP must address post-construction stormwater management controls for those areas of the project. This applies to both Scenario 1 and 2 above.

cc: Carol Lamb-Lafay, BWP
Dave Gasper, BWP

Stormwater Design Guidance – Solar Panel Installations

Revisions to Maryland's stormwater management regulations in 2010 require that environmental site design (ESD) be used to the maximum extent practicable (MEP) to mimic natural hydrology, reduce runoff to reflect forested wooded conditions, and minimize the impact of land development on water resources. This applies to any residential, commercial, industrial, or institutional development where more than 5,000 square feet of land area is disturbed. Consequently, stormwater management must be addressed even when permeable features like solar panel installations exceed 5,000 square feet of land disturbance.

Depending on local soil conditions and proposed imperviousness, the amount of rainfall that stormwater requirements are based on varies from 1.0 to 2.6 inches. However, addressing stormwater management does not mean that structural or micro-scale practices must be constructed to capture and treat large volumes of runoff. Using nonstructural techniques like disconnecting impervious cover reduces runoff by promoting overland filtering and infiltration. Commonly used with smaller or narrower impervious areas like driveways or open roads, the Disconnection of Non-Rooftop Runoff technique (see pp. 5.61 to 5.65 of the **2000 Maryland Stormwater Design Manual**[1]) is a low cost alternative for treating runoff in situations like rows of solar panels.

When non-rooftop disconnection is used to treat runoff, the following factors should be considered:

- The vegetated area receiving runoff must be equal to or greater in length than the disconnected surface (e.g., width of the row of solar panels)
- Runoff must sheet flow onto and across vegetated areas to maintain the disconnection
- Disconnections should be located on gradual slopes (≤ 5%) to maintain sheetflow. Level spreaders, terraces, or berms may be used to maintain sheetflow conditions if the average slope is steeper than 5%. However, installations on slopes greater than 10% will require an engineered plan that ensures adequate treatment and the safe and non-erosive conveyance of runoff to the property line or downstream stormwater management practice.
- Disconnecting impervious surfaces works best in undisturbed soils. To minimize disturbance and compaction, construction vehicles and equipment should avoid areas used for disconnection during installation of the solar panels.
- Groundcover vegetation must be maintained in good condition in those areas receiving disconnected runoff. Typically this maintenance is no different than other lawn or landscaped areas. However, areas receiving runoff should be protected (e.g., planting shrubs or trees along the perimeter) from future compaction.

Depending on the layout and number of panels installed, the disconnection of non-rooftop runoff technique may address some or all of the stormwater management requirements for an individual project. Where the imperviousness is high or there is other infrastructure (e.g., access roads, transformers), additional runoff may need to be treated. In these situations, other ESD techniques or micro-scale practices may be needed to provide stormwater management for these features.

Example 1 – Using Non-Rooftop Disconnection Where the Average Slope ≤ 5%

Several rows of solar panels will be installed in an existing meadow. The soils within the meadow are hydrologic soil group (HSG) B and the average slope does not exceed 5%. Each row of panels is 10 feet wide and the distance between rows is 20 feet. The rows of solar panels will be installed according to Figure 1 below. In this scenario, the disconnection length is the same as the distance between rows (20 feet) and is greater than the width of each row (10 feet). Therefore, each row of panels is adequately disconnected and the runoff from 1.0 inch of rainfall is treated.

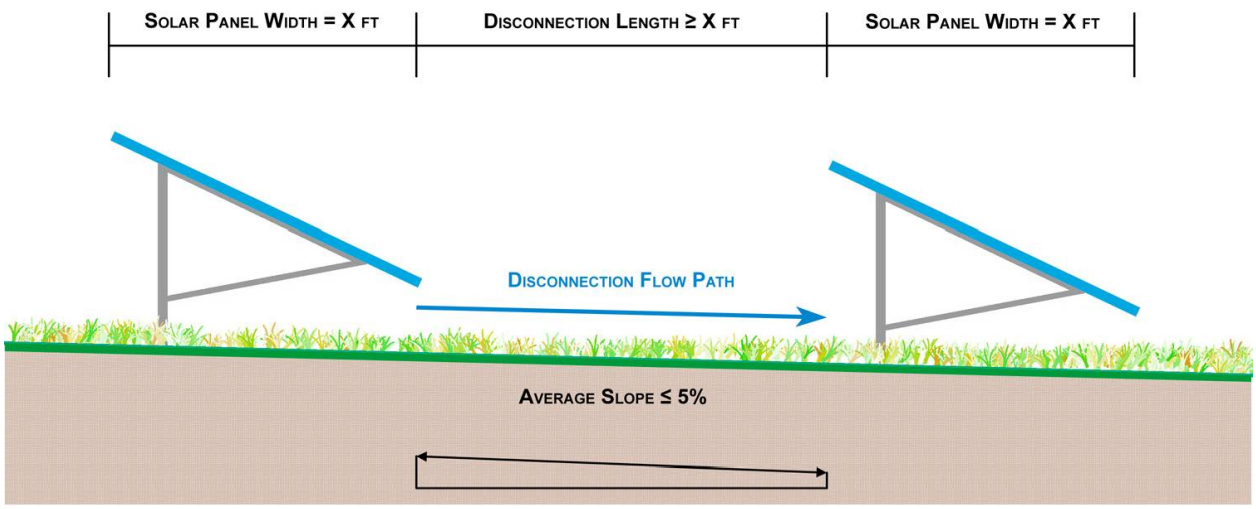


Figure 1. Typical Installation - Slope ≤ 5%

Example 2 – Using Non-Rooftop Disconnection Where the Average Slope ≥ 5% but ≤ 10%

Several rows of solar panels will be installed in an existing meadow. The soils within the meadow are hydrologic soil group (HSG) B and the average slope is greater than 5% but less than 10%. Each row of panels is 10 feet wide and the distance between rows is 20 feet. The rows of solar panels will be installed as shown in Figure 2 below. The disconnection length is the same as the distance between rows (20 feet) and is greater than the width of each row (10 feet). However, in this example, a level spreader (typically 1 to 2-foot wide and 1 foot deep) has been located at the drip edge of each row of panels to dissipate energy and maintain sheetflow.

Discussion

To meet State and local stormwater management requirements, ESD must be used to the MEP to reduce runoff to reflect forested conditions. While all reasonable options for implementing ESD must be investigated, minimally, the runoff from 1 inch of rainfall must be treated. In each of the examples above, there may be additional opportunities to implement ESD techniques or practices and reduce runoff that should be explored. However, simply disconnecting the runoff from the solar panel arrays captures and treats the runoff from 1.0 inch of rainfall. Where imperviousness is low and soil conditions less optimal (e.g., HSG C or D), this may be sufficient to completely address stormwater management requirements. In more dense applications or in sandy soils, additional stormwater management may be required.

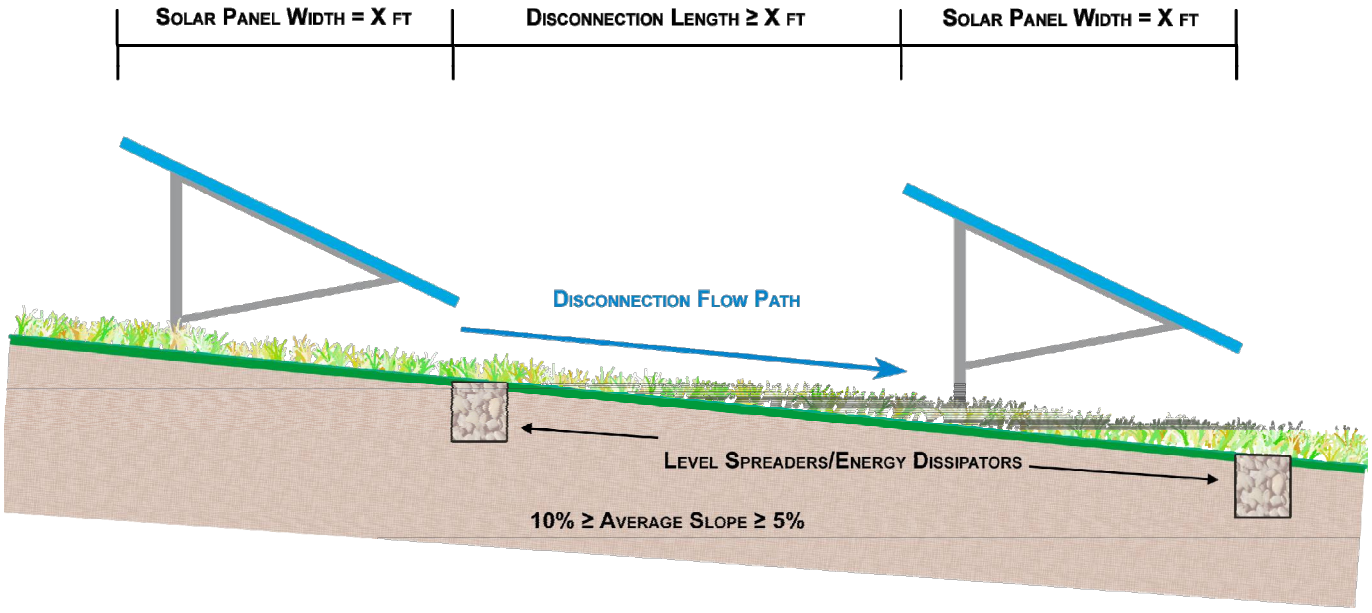


Figure 2. Typical Installation – Slope ≥ 5% but ≤ 10%

Conclusion

The primary purpose of Maryland's stormwater management program is to mimic natural hydrologic runoff characteristics and minimize the impact of land development on water resources. Any land development project that exceeds 5,000 square feet of disturbance, including solar panel projects, must address stormwater management. However, for solar panels, stormwater management may be provided in a cost-effective manner by disconnecting each row of panels and directing runoff over the vegetated areas between the individual rows.

Resources

[1] 2000 Maryland Stormwater Design Manual, Volumes I and II, MDE, October 2000 (http://www.mde.state.md.us/programs/Water/StormwaterManagementProgram/MarylandStormwaterDesignManual/Pages/Programs/WaterPrograms/SedimentandStormwater/stormwater_design/index.aspx)

Appendix F

Stormwater Pollution Prevention Plan Certification

Appendix G
Notice of Termination (NOT)

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505
(NOTE: Submit completed form to address above)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity

Please indicate your permit identification number: NYR ___ ___ ___ ___ ___ ___

I. Owner or Operator Information

1. Owner/Operator Name:

2. Street Address:

3. City/State/Zip:

4. Contact Person:	4a.Telephone:

4b. Contact Person E-Mail:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/Zip:

8. County:

III. Reason for Termination

9a. □ All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP. ***Date final stabilization completed** (month/year): _____

9b. □ Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR ___ ___ ___ ___ ___ ___
(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c. □ Other (Explain on Page 2)

IV. Final Site Information:

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices? □ yes □ no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed? □ yes □ no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?

_____

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit? □ yes □ no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

□ Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.

□ Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).

□ For post-construction stormwater management practices that are privately owned, a mechanism is in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the owner or operator's deed of record.

□ For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university or hospital), government agency or authority, or public utility; policy and procedures are in place that ensures operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

10f. Provide the total area of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area? _____ (acres)

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? □ yes □ no

(If Yes, complete section VI - "MS4 Acceptance" statement

V. Additional Information/Explanation:

(Use this section to answer questions 9c. and 10b., if applicable)

VI. MS4 Acceptance - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative (Note: Not required when 9b. is checked -transfer of coverage)

I have determined that it is acceptable for the owner or operator of the construction project identified in question 5 to submit the Notice of Termination at this time.

Printed Name:

Title/Position:

Signature:	Date:

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued	
VII. Qualified Inspector Certification - Final Stabilization:	
I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.	
Printed Name:	
Title/Position:	
Signature:	Date:
VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):	
I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.	
Printed Name:	
Title/Position:	
Signature:	Date:
IX. Owner or Operator Certification	
I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.	
Printed Name:	
Title/Position:	
Signature:	Date:

(NYS DEC Notice of Termination - January 2015)

Appendix H
General Contractor's Certification

STORM WATER POLLUTION PREVENTION PLAN
CONTRACTOR'S CERTIFICATION

CONSTRUCTION SITE –
KIRKVILLE ROAD SOLAR PROJECT
TOWN OF MANLIUS
ONONDAGA COUNTY, NEW YORK
STORMWATER POLLUTION PREVENTION PLAN

CONTRACTOR'S CERTIFICATION*:*

"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings. "

Name: _____
(Print)

Signature: _____

Title: _____

Company Name: _____

Address: _____

Telephone Number: _____

Date: _____

Scope of Services: _____

Date: _____

Received by: _____
[Name]

Appendix I
Subcontractor's Certification

STORM WATER POLLUTION PREVENTION PLAN
SUBCONTRACTOR'S CERTIFICATION

CONSTRUCTION SITE –
KIRKVILLE ROAD SOLAR PROJECT
TOWN OF MANLIUS
ONONDAGA COUNTY, NEW YORK
STORMWATER POLLUTION PREVENTION PLAN

SUBCONTRACTOR'S CERTIFICATION:

"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings. "

Name: _____
(Print)

Signature: _____

Title: _____

Company Name: _____

Address: _____

Telephone Number: _____

Date: _____

Scope of Services: _____

Date: _____

Received by: _____
[Name]

Appendix J
Inspection Form/Report

STORMWATER POLLUTION PREVENTION PLAN

CONSTRUCTION SITE –
KIRKVILLE ROAD SOLAR PROJECT
TOWN OF MANLIUS
ONONDAGA COUNTY, NEW YORK
STORMWATER POLLUTION PREVENTION PLAN

Inspections/reports must be completed a minimum of once every seven calendar days.

Inspection Type: ☐ **Routine (every 7 calendar days)** ☐ **Other _____**

Date: _____ **Week Ending:** _____

Weather/Storm Event Information:

Storm Start Time: _____ **Storm Duration:** _____

Approximate Amount of Rainfall (inches): _____

Based on the results of the inspection, necessary control modifications shall be implemented within seven (7) calendar days. These reports shall be kept on file as part of the Storm Water Pollution Prevention Plan for at least five (5) years from the date of completion and submission of the Final Stabilization Certification/Termination Checklist and Notice of Termination. A copy of the SWPPP shall be kept at the site at all times during construction.

Practices in need of repair:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Item not corrected from previous inspection:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Name of Inspector:_____**Title of Inspector: :**_____

Inspector's Signature: _____

Compliance Certification

I certify that, based on no incidents of non-compliance identified during the inspection, the site is in compliance with the SWPPP and the Construction General Permit.

Name of Duly Authorized Representative (Printed): _____

Signature of Duly Authorized Representative: _____

Date: _____

***Note: Only to be signed when the site is in full compliance with the SWPPP and the Construction General Permit.**

II. CONSTRUCTION DURATION INSPECTIONS

a. Directions:
Inspection Forms will be filled out during the entire construction phase of the project.
Required Elements:

(1) On a site map, indicate the extent of all disturbed site areas and drainage pathways. Indicate site areas that are expected to undergo initial disturbance or significant site work within the next 14-day period;

(2) Indicate on a site map all areas of the site that have undergone temporary or permanent stabilization;

(3) Indicate all disturbed site areas that have not undergone active site work during the previous 14-day period;

Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of sediment storage volume (for example, 10 percent, 20 percent, 50 percent);

(5) Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier or diversion systems (earthen berms or silt fencing) and containment systems (sediment basins and sediment traps). Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching. Document any excessive deposition of sediment or ponding water along barrier or diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass water; and

(6) Immediately report to the Operator any deficiencies that are identified with the implementation of the SWPPP.

SITE PLAN/SKETCH

Qualified Inspector (print name)	**Qualified Inspector Signature**	**Date of Inspection**

The above signed acknowledges that, to the best of his/her knowledge, all information provided on the forms is accurate and complete.

CONSTRUCTION DURATION INSPECTIONS

Maintaining Water Quality

Yes No NA
[ ] [ ] [ ] Is there an increase in turbidity causing a substantial visible contrast to natural conditions?
[ ] [ ] [ ] Is there residue from oil and floating substances, visible oil film, or globules or grease?
[ ] [ ] [ ] All disturbance is within the limits of the approved plans.
[ ] [ ] [ ] Have receiving lake/bay, stream, and/or wetland been impacted by silt from project?

Housekeeping
1. General Site Conditions
Yes No NA
[ ] [ ] [ ] Is construction site litter and debris appropriately managed?
[ ] [ ] [ ] Are facilities and equipment necessary for implementation of erosion and sediment control in working order and/or properly maintained?
[ ] [ ] [ ] Is construction impacting the adjacent property?
[ ] [ ] [ ] Is dust adequately controlled?

2. Temporary Stream Crossing
Yes No NA
[ ] [ ] [ ] Maximum diameter pipes necessary to span creek without dredging are installed.
[ ] [ ] [ ] Installed non-woven geotextile fabric beneath approaches.
[ ] [ ] [ ] Is fill composed of aggregate (no earth or soil)?
[ ] [ ] [ ] Rock on approaches is clean enough to remove mud from vehicles & prevent sediment from entering stream during high flow.

Runoff Control Practices

1. Excavation Dewatering
Yes No NA
[ ] [ ] [ ] Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan.
[ ] [ ] [ ] Clean water from upstream pool is being pumped to the downstream pool.
[ ] [ ] [ ] Sediment laden water from work area is being discharged to a silt-trapping device.
[ ] [ ] [ ] Constructed upstream berm with one-foot minimum freeboard.

2. Level Spreader
Yes No NA
[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Constructed on undisturbed soil, not on fill, receiving only clear, non-sediment laden flow.
[ ] [ ] [ ] Flow sheets out of level spreader without erosion on downstream edge.

3. Interceptor Dikes and Swales
Yes No NA
[ ] [ ] [ ] Installed per plan with minimum side slopes 2H:1V or flatter.
[ ] [ ] [ ] Stabilized by geotextile fabric, seed, or mulch with no erosion occurring.
[ ] [ ] [ ] Sediment-laden runoff directed to sediment trapping structure

4. Stone Check Dam
Yes No NA

[ ] [ ] [ ] Is channel stable? (flow is not eroding soil underneath or around the structure).
[ ] [ ] [ ] Check is in good condition (rocks in place and no permanent pools behind the structure).
[ ] [ ] [ ] Has accumulated sediment been removed?.

5. Rock Outlet Protection
Yes No NA
[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Installed concurrently with pipe installation.

Soil Stabilization
1. Topsoil and Spoil Stockpiles
Yes No NA
[ ] [ ] [ ] Stockpiles are stabilized with vegetation and/or mulch.
[ ] [ ] [ ] Sediment control is installed at the toe of the slope.

2. Revegetation
Yes No NA
[ ] [ ] [ ] Temporary seedings and mulch have been applied to idle areas.
[ ] [ ] [ ] 4 inches minimum of topsoil has been applied under permanent seedings

Sediment Control
1. Stabilized Construction Entrance
Yes No NA
[ ] [ ] [ ] Stone is clean enough to effectively remove mud from vehicles.
[ ] [ ] [ ] Installed per standards and specifications?
[ ] [ ] [ ] Does all traffic use the stabilized entrance to enter and leave site?
[ ] [ ] [ ] Is adequate drainage provided to prevent ponding at entrance?

2. Silt Fence
Yes No NA
[ ] [ ] [ ] Installed on Contour, 10 feet from toe of slope (not across conveyance channels).
[ ] [ ] [ ] Joints constructed by wrapping the two ends together for continuous support.
[ ] [ ] [ ] Fabric buried 6 inches minimum.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.
Sediment accumulation is ___% of design capacity.

3. Storm Drain Inlet Protection (Use for Stone & Block; Filter Fabric; Curb; or, Excavated practices)
Yes No NA
[ ] [ ] [ ] Installed concrete blocks lengthwise so open ends face outward, not upward.
[ ] [ ] [ ] Placed wire screen between No. 3 crushed stone and concrete blocks.
[ ] [ ] [ ] Drainage area is 1acre or less.
[ ] [ ] [ ] Excavated area is 900 cubic feet.
[ ] [ ] [ ] Excavated side slopes should be 2:1.
[ ] [ ] [ ] 2” x 4” frame is constructed and structurally sound.
[ ] [ ] [ ] Posts 3-foot maximum spacing between posts.
[ ] [ ] [ ] Fabric is embedded 1 to 1.5 feet below ground and secured to frame/posts with staples at max 8-inch spacing.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.
Sediment accumulation ___% of design capacity.

4. Temporary Sediment Trap
Yes No NA
[ ] [ ] [ ] Outlet structure is constructed per the approved plan or drawing.
[ ] [ ] [ ] Geotextile fabric has been placed beneath rock fill.
Sediment accumulation is ___% of design capacity.

5. Temporary Sediment Basin
Yes No NA
[ ] [ ] [ ] Basin and outlet structure constructed per the approved plan.
[ ] [ ] [ ] Basin side slopes are stabilized with seed/mulch.
[ ] [ ] [ ] Drainage structure flushed and basin surface restored upon removal of sediment basin facility.
Sediment accumulation is ___% of design capacity.

Miscellaneous
1. Site Photos
Yes No NA
[ ] [ ] [ ] Site photos have been included with the report that depicts properly installed practices and identified deficiencies needing corrective action. If no, please state why below.

_____
_____
_____
_____
_____
_____

<u>Note</u>: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site specific design.
Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.

Appendix K
Stabilization Form

STORM WATER POLLUTION PREVENTION PLAN

Stabilization Schedule for Major Grading Activities

PROPOSED KIRKVILLE ROAD SOLAR PROJECT – TOWN OF MANLIUS, NY

			Note: When these activities cease and if activities cease for more than 14 days these columns need to be completed.					
Major Site Construction Activity Areas	**Begin Date**	**Completion Date**	**Temporary Cease Date**	**Resume Date**	**Begin Date for Stabilization Temporary**	**Begin Date for Stabilization Permanent**	**Type of Stabilization (List measures used such as stone, seeding, mulch, landscaping, etc…)**	**Contractor Responsible for Work**
Temp. Gravel Const. Entrance								
Install Temporary Infrastructure (Staging area, fence, etc.)								
Mass Grading, Access Drives Construction								
Access Drives Constructed								
Mount and Install Racking Posts								
Install Panels, Inverters and utilities								
Install Permanent Post construction stormwater management pratices								
Pervious Areas Stabilized								

Appendix L
Implementation Form

STORM WATER POLLUTION PREVENTION PLAN
IMPLEMENTATION SCHEDULE

CONSTRUCTION SITE –
KIRKVILLE ROAD SOLAR PROJECT
TOWN OF MANLIUS
ONONDAGA COUNTY, NEW YORK
STORMWATER POLLUTION PREVENTION PLAN

***To be completed prior to initiation of construction by the contractor.**

The Contractor will be responsible for implementing all Erosion and Sediment Control and Storm Water Management control structures. The Contractor may designate these tasks to certain subcontractors as they see fit, but the ultimate responsibility for implementing these controls and ensuring their proper functioning remains with the Contractor.

Construction Activity	*Proposed Initiation Date	*Proposed Completion Date	Actual Initiation Date	Actual Completion Date	Contractor Responsible for Implementation
Preconstruction Meeting					
Temporary Construction Access					
Material laydown / staging area prep					
Install inlet protection					
Install perimeter protection					
Stabilize all areas					
Remove inlet protection					
Final inspection					

Appendix M
Modification Log/Report Form

STORM WATER POLLUTION PREVENTION PLAN
MODIFICATION LOG

CONSTRUCTION SITE –
KIRKVILLE ROAD SOLAR PROJECT
TOWN OF MANLIUS
ONONDAGA COUNTY, NEW YORK
STORMWATER POLLUTION PREVENTION PLAN

CHANGES REQUIRED FOR STORM WATER POLLUTION PREVENTION PLAN

The SWPPP must be amended whenever there is a change in design, construction, operation, or maintenance at the construction site that has a significant effect on the discharge of pollutants to the Waters of the United States that has not been previously addressed in the SWPPP, if inspections or investigations by site staff, local, state or federal officials determine that discharges are causing water quality exceedances or the SWPPP is ineffective in eliminating or significantly minimizing pollutants in storm water discharges from the construction site, or based on the results of an inspection, or there is a release containing a Hazardous Substance or Oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302 occurs during a 24 hour period, the SWPPP must be modified to include additional or modified BMPs designed to correct identified problems. Revisions to the SWPPP must be completed within seven (7) calendar days following the inspection. Modifications that are the result of inspections shall be initialed within 24 hours and completed within 48 hours. All modifications are to be referenced on both the forms and on a Progress Drawing.

MODIFICATION LOG

MODIFICATION NUMBER*	DATE	BRIEF DESCRIPTION	PROJECT MANAGER REVIEW

***Modification Log Number to correspond with Modification Report Number**

STORM WATER POLLUTION PREVENTION PLAN
MODIFICATION REPORT

CONSTRUCTION SITE –
KIRKVILLE ROAD SOLAR PROJECT
TOWN OF MANLIUS
ONONDAGA COUNTY, NEW YORK
STORMWATER POLLUTION PREVENTION PLAN

NUMBER _____ **DATE _____**

TO:
ADDRESS:

TELEPHONE:
FACSIMILE:
SENT VIA: ☐ **Facsimile** ☐ **Courier** ☐ **US Mail**

INSPECTOR: _____ **_____**
(Print Name) **(Inspector Signature)**

QUALIFICATIONS OF INSPECTOR: _____

CHANGES REQUIRED TO THE STORMWATER POLLUTION PREVENTION PLAN:
_____
_____
_____
_____
_____
_____
_____
_____

REASONS FOR CHANGES:
_____
_____
_____
_____
_____
_____
_____

TO BE PERFORMED BY: _____ **ON OR BEFORE: _____**

Project Manager: **_____**

Other Operator: _____

Appendix N

Final Stabilization Form/Termination Checklist

STORM WATER POLLUTION PREVENTION PLAN

FINAL STABILIZATION CERTIFICATION /NOTICE OF TERMINATION CHECKLIST

CONSTRUCTION SITE –
KIRKVILLE ROAD SOLAR PROJECT
TOWN OF MANLIUS
ONONDAGA COUNTY, NEW YORK
STORMWATER POLLUTION PREVENTION PLAN

1. ☐ **All soil disturbing activities are complete and the facility no longer discharges storm water associated with Construction Activities.**

2. ☐ **Temporary Erosion and Sediment Control Measures have been removed or will be removed at the appropriate time.**

3. ☐ **All areas of the Construction Site not otherwise covered by a permanent pavement or structure have been stabilized with a uniform perennial vegetative cover with a density of 80% or equivalent measures have been employed.**

CONTRACTOR'S CERTIFICATION*:*

"I certify under penalty of law that all storm water discharges associated with Construction Activity from the identified project that are authorized by the NPDES Construction General Permit have been eliminated and that all disturbed areas and soils at the construction site have achieved Final Stabilization and all temporary erosion and sediment control measures have been remove in addition all permanent stormwater structures have been constructed as described in the SWPPP"

Company Name: _____

Name (Print):_____

Signature: _____

Title: _____

Date: _____

Date: _____

Received by: _____
[Name]

Appendix O
Reportable Quantity Release Form

STORM WATER POLLUTION PREVENTION PLAN
REPORTABLE QUANTITY RELEASE FORM

CONSTRUCTION SITE –
KIRKVILLE ROAD SOLAR PROJECT
TOWN OF MANLIUS
ONONDAGA COUNTY, NEW YORK
STORMWATER POLLUTION PREVENTION PLAN

The discharges of Hazardous Substances or Oil in storm water discharges from construction sites must be prevented or minimized in accordance with the SWPPP. Where a release containing a Hazardous Substance or Oil in an amount equal to or in excess of a reportable quantity established under 40CFR Part 110, 40CFR Part 117 and 40CFR Part 302 occurs, the following steps must be taken:

1. **All measures must be taken to contain and abate the spill and to prevent the discharge of Hazardous Substances or Oil to storm water or off-site.**

2. **Contact the Project Manager or Operator's Engineer immediately upon knowledge of release.**

3. **If a release is equal to or in excess of a reportable quantity, the SWPPP must be modified within seven (7) calendar days of knowledge of the discharge to provide a description of the release, the circumstances leading to the release, and the date of the release. The plans must identify measures to prevent the recurrence of such releases and to respond to such releases**

Date of Spill	Material Spilled	Approximate Quantity of Spill (in gallons)	Agency(s) Notified	Date of Notification	SWPPP Revision Date

Appendix P
Project Rainfall Log

YEAR:

PROPOSED KIRKVILLE ROAD SOLAR PROJECT
TOWN OF MANLIUS, NEW YORK
STORM WATER POLLUTION PREVENTION PLAN
PROJECT RAINFALL LOG

Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Day												
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
PM Initials												

Note: Rainfall amounts are to be based on a 24-hour rainfall event, instead of a cumulative total of rainfall over several days.

Appendix Q
Pre-Construction Meeting Forms

STORM WATER POLLUTION PREVENTION PLAN
PRE-CONSTRUCTION MEETING AGENDA AND ATTENDANCE RECORD

PROPOSED KIRKVILLE ROAD SOLAR PROJECT
TOWN OF MANLIUS, NEW YORK
STORM WATER POLLUTION PREVENTION PLAN

Topic	Discussed	Further action or Information Required (Yes or No)
Overview of SPDES Permit Program		
General Discussion of SWPPP and Records Retention Requirements		
Phasing of Project		
Review of Erosion and Sediment Control Plans (to include all temporary and permanent structural and stabilization measures)		
Locating solid waste containers, portable toilets, concrete washout areas, fueling areas and tank storage area on Progress Drawing		
Posting the Progress Drawing (marked on the Erosion and Sediment Control Plans) at job trailer		
Posting requirements for the Notice of Intent (NOI), Must be posted at Project entrance and inside job trailer wall.		
Allowable non-storm water discharges and handling procedures		
Materials management to include proper material storage, etc.		
Signatory Authorization Delegation		
Contractor's Certification		
Subcontractor's Certification		
Inspection form and required inspection timeframe		
Stabilization schedule		
Implementation schedule		
Modification report and modifying plans		
Final stabilization		
Reportable quantity release procedures		
Rain gage requirement and rainfall logs		
State specific requirements		
Import/Export – Fill and Spoil Materials		
SWPPP accessibility to regulatory officials		
Inspections – assisting and cooperating with regulatory officials – inspection reports and notices of violation (any response must be coordinated through Project Manager)		

Attendance Roster **Date: _____**

Name	Company	Telephone Number	Signature

Attendance Roster (continued)

Name	Company	Telephone Number	Signature

Items which require further action or additional information: _____
_____
_____

Additional items discussed (not addressed above): _____
_____
_____
_____
_____
_____
_____

***This completed form must be included in both the Project Manager's and Construction Site SWPPP Ledger.**

Appendix R
Stormwater Management Report

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Kirkville Road Solar Project

TOWN OF MANLIUS

STORMWATER MANAGEMENT REPORT

Town of Manlius
Onondaga County, New York
December 18, 2020

PREPARED FOR:

RPNY SOLAR 5, LLC
879 Sanchez Street
San Francisco, CA 94114

PREPARED BY:

Bergmann

2665 Corning Road
Horseheads, NY 14903

Phone: 607.795.1110

www.bergmannpc.com

Table of Contents

Section *Page*

Title Page i
Table of Contents 1

Section I: General Information 2
A. PROJECT DESCRIPTION 2
B. SOIL CLASSIFICATION 2

Section II: Hydrology 3
A. METHODOLOGY 3
B. EXISTING CONDITIONS 3
C. PROPOSED CONDITIONS 4

Section III: Stormwater Management & SPDES Phase II Requirements 5
A. WATER QUALITY VOLUME 5
B. CHANNEL PROTECTION VOLUME 6
C. RUNOFF REDUCTION VOLUME 6
D. OVERBANK FLOOD 6
E. EXTREME STORM 6

Section IV: Summary of Findings 7
A. SUMMARY OF RESULTS 7
B. CONCLUSION 8

Appendix R-1 – Existing Conditions Drainage Map and HydroCAD Report
Appendix R-2 – Proposed Conditions Drainage Map and HydroCAD Report
Appendix R-3 – NRCS Soils Report

Section I General Information

A. PROJECT DESCRIPTION

The proposed Kirkville Road Solar Project is located within the Town of Manlius, Onondaga County, New York. The project consists of a gravel driveway, perimeter fence and solar arrays with appurtenant utilities. The proposed solar project will be constructed on parcel 55.-1-10.1. The site is proposed to be developed in a phased approach, with the full development covering a total of 27.65± acres, no more than 5 acres will be disturbed at any given time.

B. SOIL CLASSIFICATION

According to the Natural Resources Conservation Service website (NRCS), there are three (3) mapped soil units identified on the project property. Williamson silt loam is the dominant soil type and is located on approximately 57% of the project area. These soils have a low infiltration rate when thoroughly wet. These consist chiefly of soils with a layer that impedes downward movement of water and soils with moderately fine to fine texture. These soils have a low rate of water transmission.

The complete list of soils found on the project site is identified in the table below.

Table I
Soil Summary

Symbol	Soil Name	Hydrologic Soil Group
ArB	Arkport very fine sandy loam, 2 to 6 percent slopes	A
ChB	Collamer silt loam, 2 to 6 percent slopes	C/D
GaA	Galen very fine sandy loam, 0 to 2 percent slopes	A/D
MtA	Minoa fine sandy loam, 0 to 2 percent slopes	B/D
NgA	Niagara silt loam, 0 to 2 percent slopes	C/D
WwA	Williamson silt loam, 0 to 2 percent slopes	D

Section II Hydrology

A. METHODOLOGY

Stormwater runoff rates discharged from the site under the existing conditions provide the basis on which to compare the impacts of the proposed site improvements. The areas draining to each analysis point are delineated using topographic survey maps and grading plans. HydroCAD 10.0 by HydroCAD Software Solutions LLC was used to model the existing and proposed condition.

The parameters required to calculate stormwater runoff are area, curve number, and time of concentration. Each drainage area is evaluated using the guidelines described in USDA Soil Conservation Service's TR-55 to determine the curve number and time of concentration.

The runoff curve number (CN) is based on a weighted average of ground cover and soil type. The underlying soil types are described in county soil maps. Site and grading plans and survey maps outline existing and proposed ground cover. CN values for specific locations are determined from the tables presented in TR-55.

Time of concentration (Tc) represents the amount of time it takes for runoff to travel from the hydraulically most distant point of the watershed to the point of analysis. Surface roughness, slope, channel shape and flow patterns are the factors that affect the time of concentration. Stormwater runoff flows through the drainage area as sheet flow, shallow concentrated flow, open channel flow, or concentrated flow (such as in storm sewers). The sum of the travel times over the various surfaces within the assumed flow path for a specific drainage area determines that area's time of concentration. The figures and formulas in TR-55 are employed to compute travel times for sheet flow and shallow concentrated flow.

B. EXISTING CONDITIONS

Though the project area has been identified as 27.65± acres, the drainage areas analyzed comprises of 11.305 acres. This drainage area is further categorized into three areas with site runoff conveyed via sheet flow and shallow concentrated flow. The parcel to be developed consists of agricultural fields, wetlands, a driveway, and wooded areas.

Table II
Existing Conditions Summary

Drainage Area	Description	Size (ac)	Composite Cn	Tc (min)
DA-A	This area consists of a gravel driveway, grass and woods. This area drains to the northwest via sheet flow, shallow concentrated flow and ultimately discharges to Design point #1 (DP-1).	2.330	82	48.7
DA-B	This area consists of grass and woods. This area drains to the northeast via sheet flow, shallow concentrated flow and ultimately discharges to Design point #2 (DP-2).	5.291	79	57.8

DA-C	This area consists of grass, woods and wetlands. This area drains to the west via sheet and shallow concentrated flow and ultimately discharges to Design point #3 (DP-3).	3.684	55	61.9

C. PROPOSED CONDITIONS

The proposed drainage area comprises a total of 11.305 acres. In the proposed (post-development) condition, the site will be comprised of three drainage areas that represents all of the site runoff. Each area will drain via sheet flow and shallow concentrated flow to their designated design points as it does in the pre-development conditions.

Table III
Proposed Conditions Summary

Drainage Area	Description	Size (ac)	Composite Cn	Tc (min)
DA-1	This area consists of the proposed driveway, grass, woods and panels. This area drains to the northwest via sheet flow, shallow concentrated flow and ultimately discharges to Design point #1 (DP-1).	2.330	78	48.7
DA-2	This area consists of meadow, woods and some panels. This area drains to the northeast via sheet flow, shallow concentrated flow and ultimately discharges to Design point #2 (DP-2).	5.291	77	53.8
DA-3	This area consists of meadow, woods, wetlands and some panels. This area drains to the west via sheet and shallow concentrated flow and ultimately discharges to Design point #3 (DP-3).	3.684	50	62.8

Section III Stormwater Management & SPDES Phase II Requirements

State Pollutant Discharge Elimination System (SPDES)

Since the subject site will have land disturbance of more than 1-acre a State Pollutant Discharge Elimination System (SPDES) permit will be completed as part of the project. A Storm Water Pollution Prevention Plan (SWPPP) will be developed in accordance with the EPA Phase II regulations. The SWPPP will be for the most part modeled on the New York State DEC Guidelines and will meet the following criteria as the principle objectives contained in an approved SWPPP.

1) Reduction or elimination of erosion and sediment loading to water-bodies during construction activities.
2) Control the impact of storm water runoff on the water quality of the receiving waters.
3) Control the increase volume and peak runoff rate of runoff during and after construction.
4) Maintenance of storm water controls during and after completion of construction.

The aforementioned objectives will be accomplished by incorporating the several of the design criteria outlined within the Technical Guidelines provided by New York State Department of Environmental Conservation, Stormwater Management Design Manual and summarized below.

A. WATER QUALITY VOLUME

The New York State Department of Environmental Conservation, Stormwater Management Design Manual was used to determine the water quality criteria. Specifically, the unified storm water sizing criteria was followed for water quality to meet the State of New York pollutant goals. The water quantity volume is intended to improve water quality by capturing and treating 90% of the average annual storm water runoff volume.

The following equation is given within the design manual for calculating the water quality storage volume.

$$WQ_v = \frac{(P)\,(R_v)(A)}{12}$$

where:

WQ_v = water quality volume (acre-ft)
P = 90% Rainfall Event Number (1" was used per ICW Guidelines)
R_v = 0.05 + 0.009 (I) , where I is percent of impervious cover
A = site area (acres)

The proposed project is using a limited use pervious gravel section for the design of the gravel driveway. This driveway section is considered a pervious surface. The existing gravel driveway on site will be removed and replaced by the limited use pervious gravel driveway. The impervious area associated with the equipment pads is negligible and therefore, water quality treatment is not required.

B. CHANNEL PROTECTION VOLUME

The proposed project is using a limited use pervious gravel section for the design of the gravel driveway. This driveway section is considered a pervious surface. The proposed design will not alter the hydrology from pre to post-development conditions and therefore, the need to provide the total channel protection storage volume is not required. In the event that channel protection is required, the New York State Department of Environmental Conservation, Stormwater Management Design Manual will be used to determine the water quantity criteria. Specifically, mitigating the 10-year and 100-year post-development runoff rates to the predevelopment runoff rates and providing the 24-hour extended detention for the 1-year storm event.

C. RUNOFF REDUCTION VOLUME

The Runoff Reduction Volume (RRv) is not required because the project will not alter the hydrology from pre to post-development conditions.

D. OVERBANK FLOOD

Overbank Flood protection is provided by controlling the peak discharge from the 10-year storm to 10-year predevelopment rates. This requirement is being satisfied as the proposed development peak flow rate from the 10-year storm shows a decrease of the pre-development peak flow rate.

E. EXTREME STORM

Extreme Storm protection is provided by controlling the peak discharge from the 100-year storm to 100-year predevelopment rates. This requirement is being satisfied as the proposed development peak flow rate from the 100-year storm shows a decrease of the pre-development peak flow rate.

Section IV Summary of Findings

A. Summary of Results

The following tables shows a summary of comparison pre-development and post-development flow rates. The values account for the full development of the site in all phases.

Table IV – Existing and Proposed Peak Discharge for the 1-year Storm (cfs)

Existing Drainage Area Proposed Drainage Area	1-year Design Storm Discharge	
	Existing	Proposed
Drainage Area A (DA-A) Drainage Area 1 (DA-1)	0.88	0.60
Drainage Area B (DA-B) Drainage Area 2 (DA-2)	1.34	1.14
Drainage Area C (DA-C) Drainage Area 3 (DA-3)	0.01	0.00

Table V – Existing and Proposed Peak Discharge for the 10-year Storm (cfs)

Existing Drainage Area Proposed Drainage Area	10-year Design Storm Discharge	
	Existing	Proposed
Drainage Area A (DA-A) Drainage Area 1 (DA-1)	2.44	1.99
Drainage Area B (DA-B) Drainage Area 2 (DA-2)	4.21	3.98
Drainage Area C (DA-C) Drainage Area 3 (DA-3)	0.30	0.10

Table VI – Existing and Proposed Peak Discharge for the 100-year Storm (cfs)

Existing Drainage Area Proposed Drainage Area	100-year Design Storm Discharge	
	Existing	Proposed
Drainage Area A (DA-A) Drainage Area 1 (DA-1)	5.63	5.05
Drainage Area B (DA-B) Drainage Area 2 (DA-2)	10.44	10.36
Drainage Area C (DA-C) Drainage Area 3 (DA-3)	2.36	1.56

As depicted in the above tables, the peak discharge from the site for each of the design storms will increase by less than 5% or decrease after this project is constructed and the stormwater management plan is implemented. Therefore, the proposed project does not alter the hydrology of the site from pre to post-development conditions.

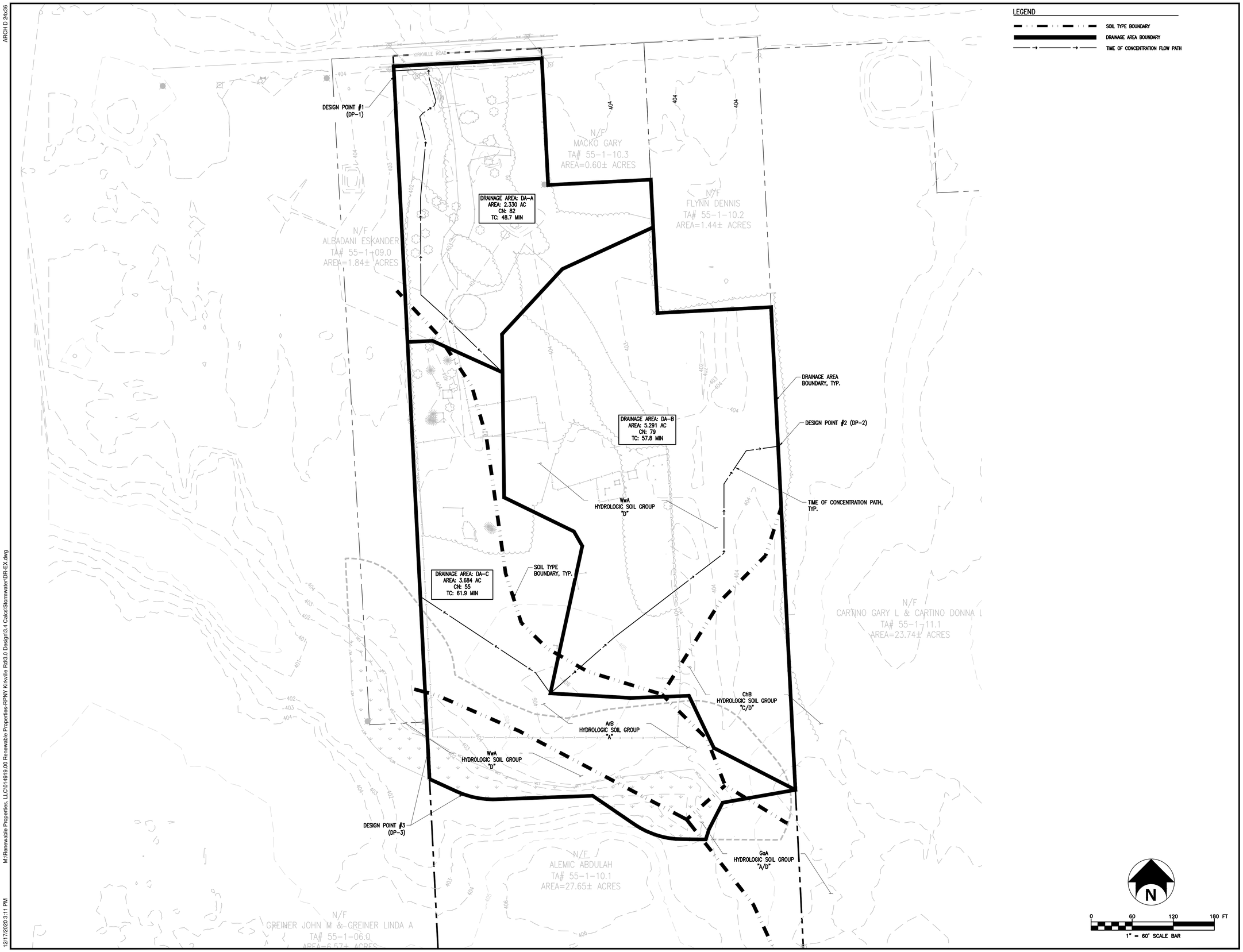
B. Conclusion

Based on the calculations attached in the appendices of this report, the proposed stormwater runoff will increase by less than 5% or decrease for all the design storms under proposed conditions. Since the water creates additional impervious surfaces (gravel driveway and equipment pads) Water quality treatment has been provided using a dry swale.

Appendix R-1

Existing Conditions Drainage Map And HydroCAD Report

ARCH D 24x36



KIRKVILLE ROAD SOLAR PROJECT

7390 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057

RENEWABLE PROPERTIES

RPNY SOLAR 5, LLC

879 SANCHEZ STREET
SAN FRANCISCO, CA 94114

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C.
2665 Corning Road
Horseheads, NY 14903

office: 607.795.1110
fax: 607.795.1444

www.bergmannpc.com

DATE	DESCRIPTION

PRELIMINARY
NOT FOR CONSTRUCTION

Copyright © Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C

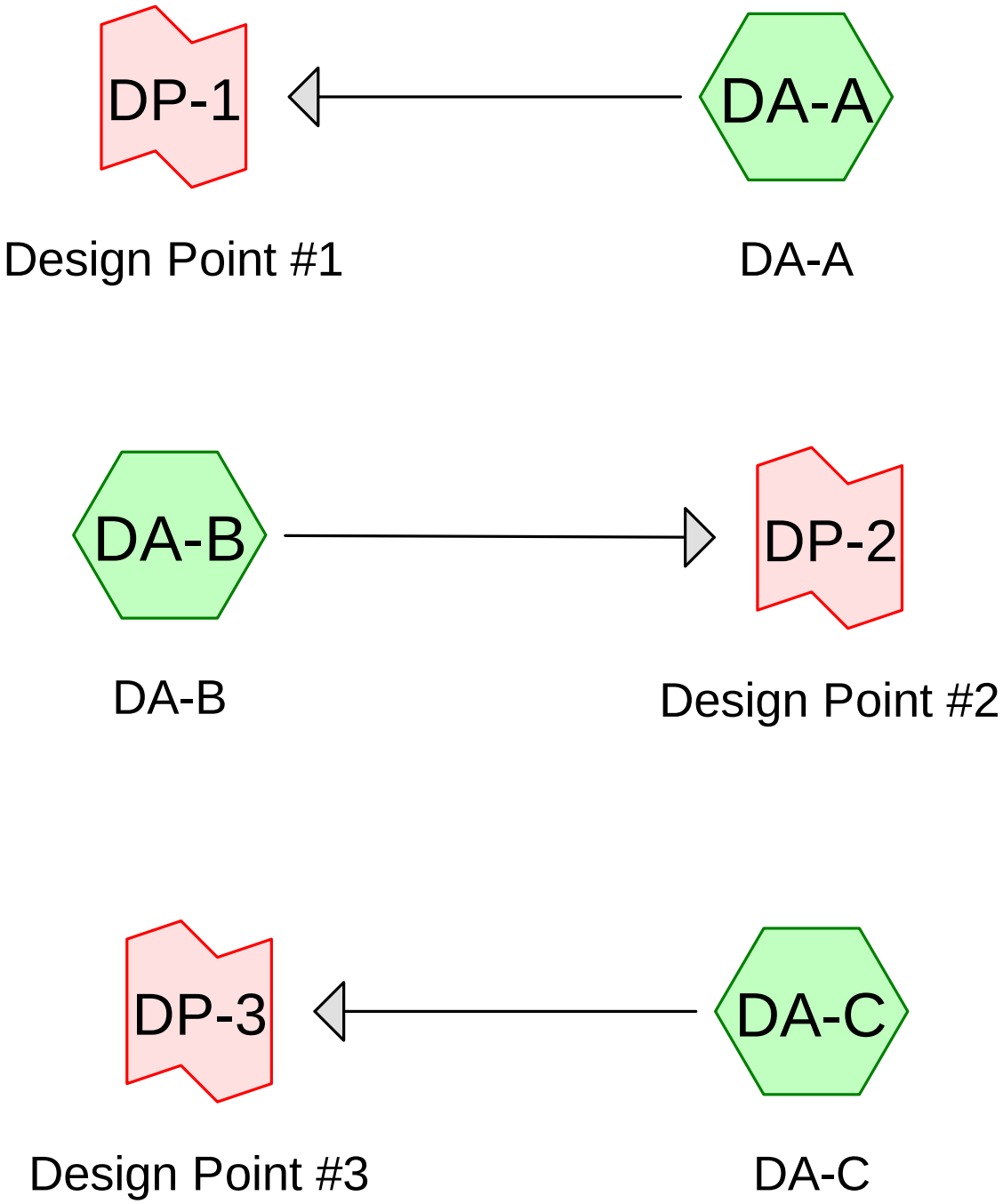
DJP	RPS
Project Manager:	Checked By:
WD	WD
Designed By:	Drawn By:
Date Issued:	Project Number:

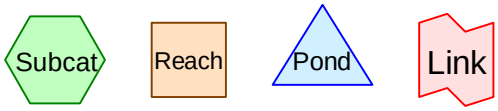
EXISTING CONDITIONS DRAINAGE MAP

Drawing Number:

DR-EX

12/17/2020 3:11 PM M:\Renewable Properties, LLC\014919.00 Renewable Properties-RPNY Kirkville Rd\3.0 Design\3.4 Calcs\Stormwater\DR-EX.dwg





Routing Diagram for DR-EX
Prepared by Bergmann Associates, Printed 12/17/2020
HydroCAD® 10.00-24 s/n 05288 © 2018 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.690	49	50-75% Grass cover, Fair, HSG A (DA-A, DA-C)
2.499	84	50-75% Grass cover, Fair, HSG D (DA-A, DA-B, DA-C)
0.149	96	Gravel surface, HSG D (DA-A)
1.724	36	Woods, Fair, HSG A (DA-B, DA-C)
6.243	79	Woods, Fair, HSG D (DA-A, DA-B, DA-C)

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
2.414	HSG A	DA-A, DA-B, DA-C
0.000	HSG B	
0.000	HSG C	
8.891	HSG D	DA-A, DA-B, DA-C
0.000	Other	

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.690	0.000	0.000	2.499	0.000	3.189	50-75% Grass cover, Fair	DA-A, DA-B, DA-C
0.000	0.000	0.000	0.149	0.000	0.149	Gravel surface	DA-A
1.724	0.000	0.000	6.243	0.000	7.967	Woods, Fair	DA-A, DA-B, DA-C

Summary for Subcatchment DA-A: DA-A

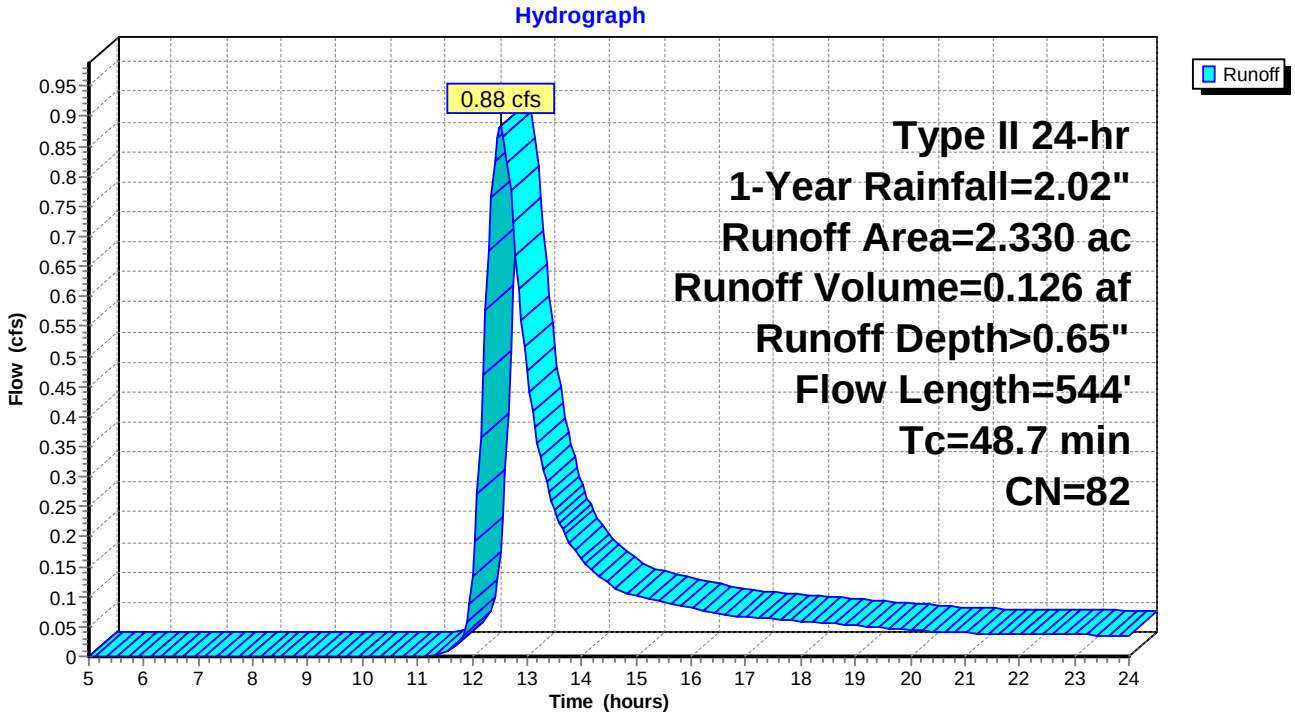
Runoff = 0.88 cfs @ 12.51 hrs, Volume= 0.126 af, Depth> 0.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.02"

Area (ac)	CN	Description
1.264	84	50-75% Grass cover, Fair, HSG D
0.031	49	50-75% Grass cover, Fair, HSG A
0.886	79	Woods, Fair, HSG D
0.149	96	Gravel surface, HSG D
2.330	82	Weighted Average
2.330		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.0	150	0.0045	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.87"
8.5	164	0.0021	0.32		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.2	230	0.0029	0.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
48.7	544	Total			

Subcatchment DA-A: DA-A



Summary for Subcatchment DA-B: DA-B

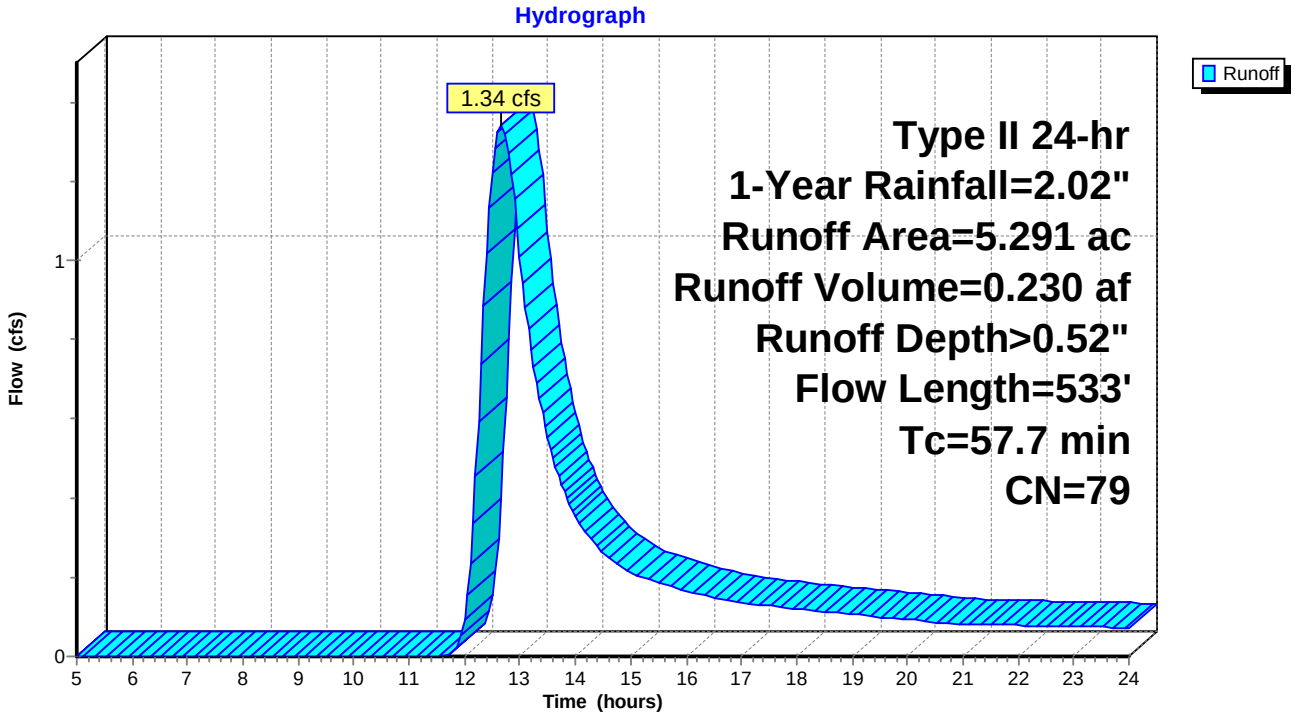
Runoff = 1.34 cfs @ 12.66 hrs, Volume= 0.230 af, Depth> 0.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.02"

Area (ac)	CN	Description
1.001	84	50-75% Grass cover, Fair, HSG D
4.185	79	Woods, Fair, HSG D
0.105	36	Woods, Fair, HSG A
5.291	79	Weighted Average
5.291		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.4	150	0.0129	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.87"
1.4	32	0.0031	0.39		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	54	0.0268	1.15		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
18.1	297	0.0030	0.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
57.7	533	Total			

Subcatchment DA-B: DA-B



Summary for Subcatchment DA-C: DA-C

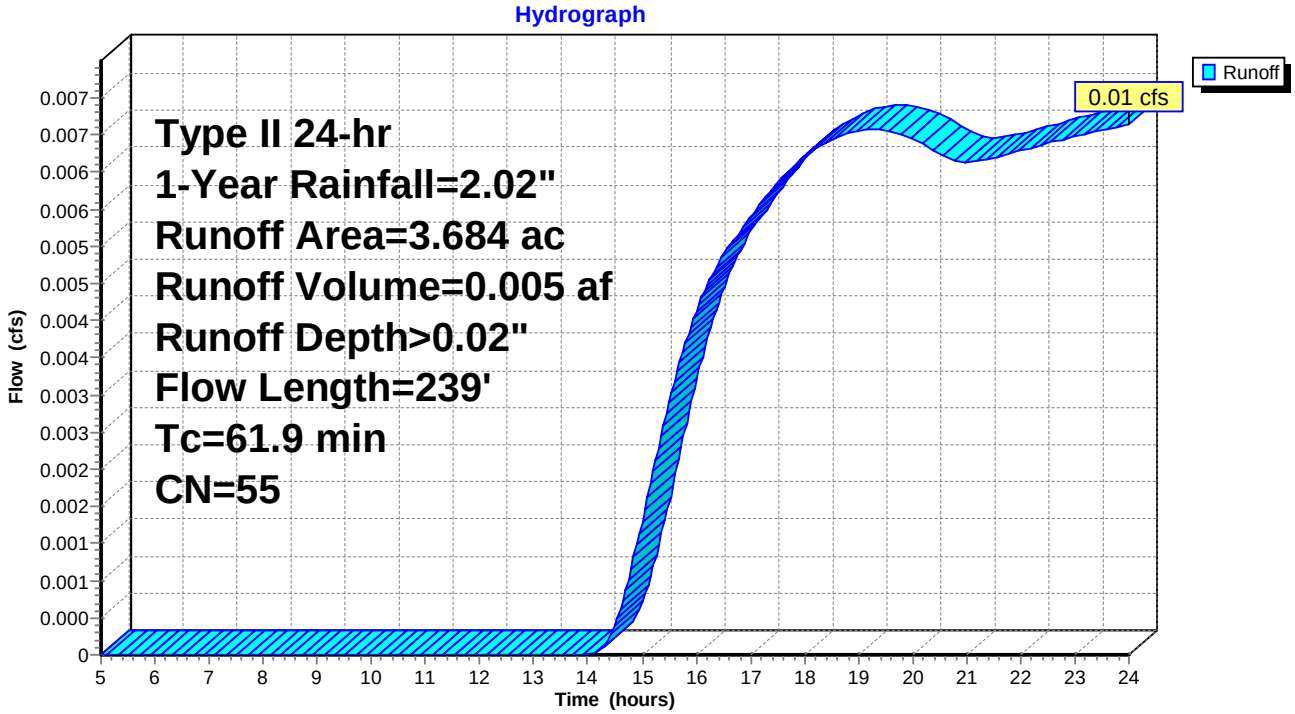
Runoff = 0.01 cfs @ 24.00 hrs, Volume= 0.005 af, Depth> 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.02"

Area (ac)	CN	Description
0.659	49	50-75% Grass cover, Fair, HSG A
0.234	84	50-75% Grass cover, Fair, HSG D
1.172	79	Woods, Fair, HSG D
1.619	36	Woods, Fair, HSG A
3.684	55	Weighted Average
3.684		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
59.7	150	0.0040	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.87"
2.2	89	0.0180	0.67		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
61.9	239	Total			

Subcatchment DA-C: DA-C

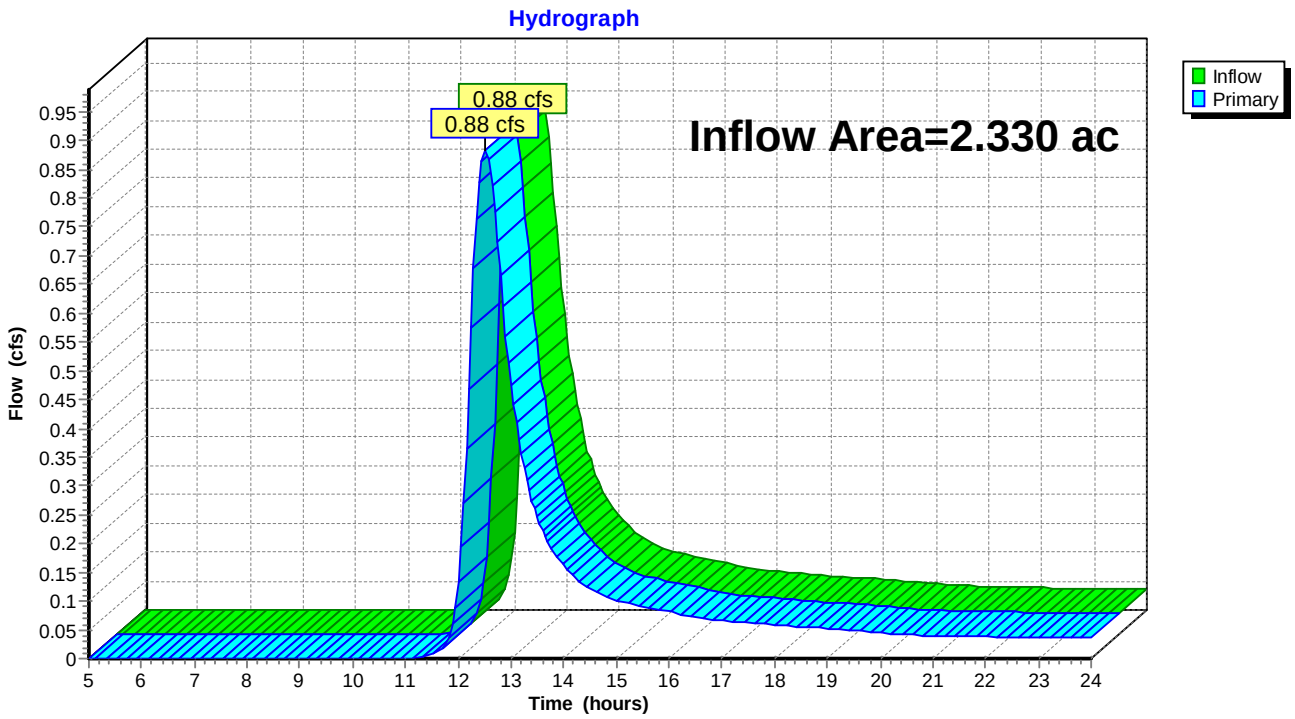


Summary for Link DP-1: Design Point #1

Inflow Area = 2.330 ac, 0.00% Impervious, Inflow Depth > 0.65" for 1-Year event
Inflow = 0.88 cfs @ 12.51 hrs, Volume= 0.126 af
Primary = 0.88 cfs @ 12.51 hrs, Volume= 0.126 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Link DP-1: Design Point #1

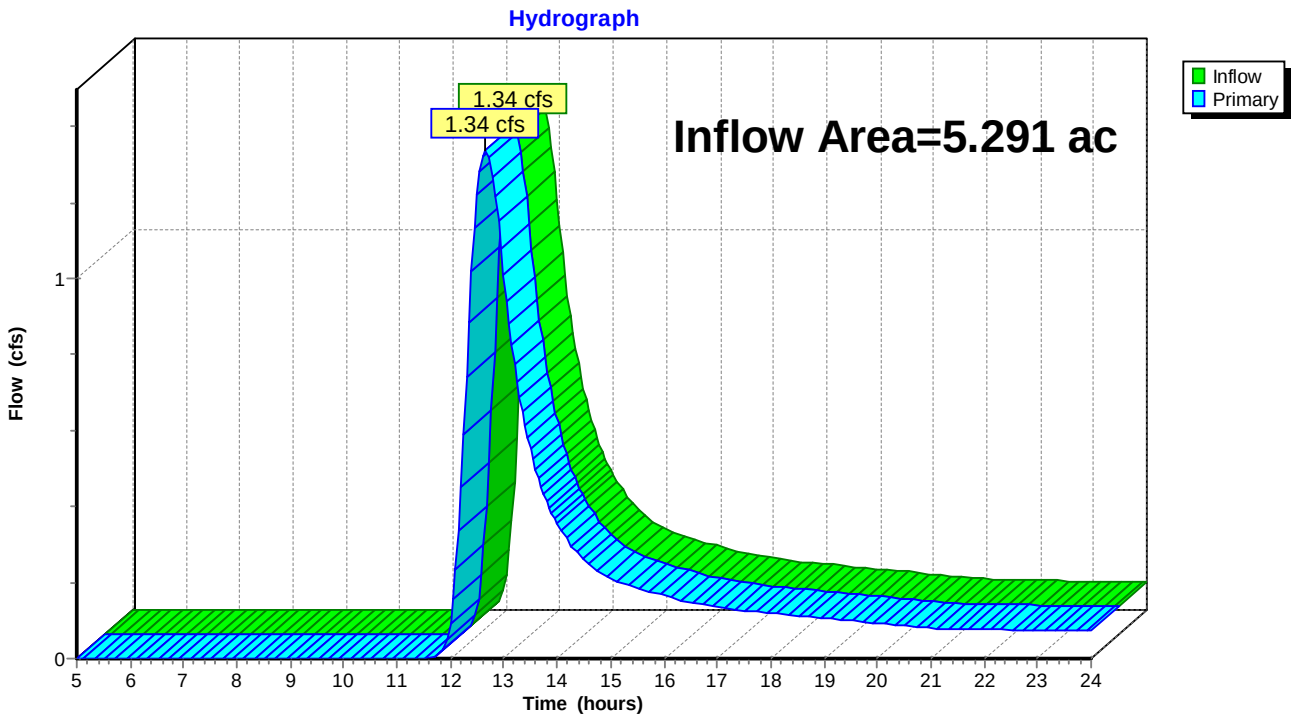


Summary for Link DP-2: Design Point #2

Inflow Area = 5.291 ac, 0.00% Impervious, Inflow Depth > 0.52" for 1-Year event
Inflow = 1.34 cfs @ 12.66 hrs, Volume= 0.230 af
Primary = 1.34 cfs @ 12.66 hrs, Volume= 0.230 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Link DP-2: Design Point #2

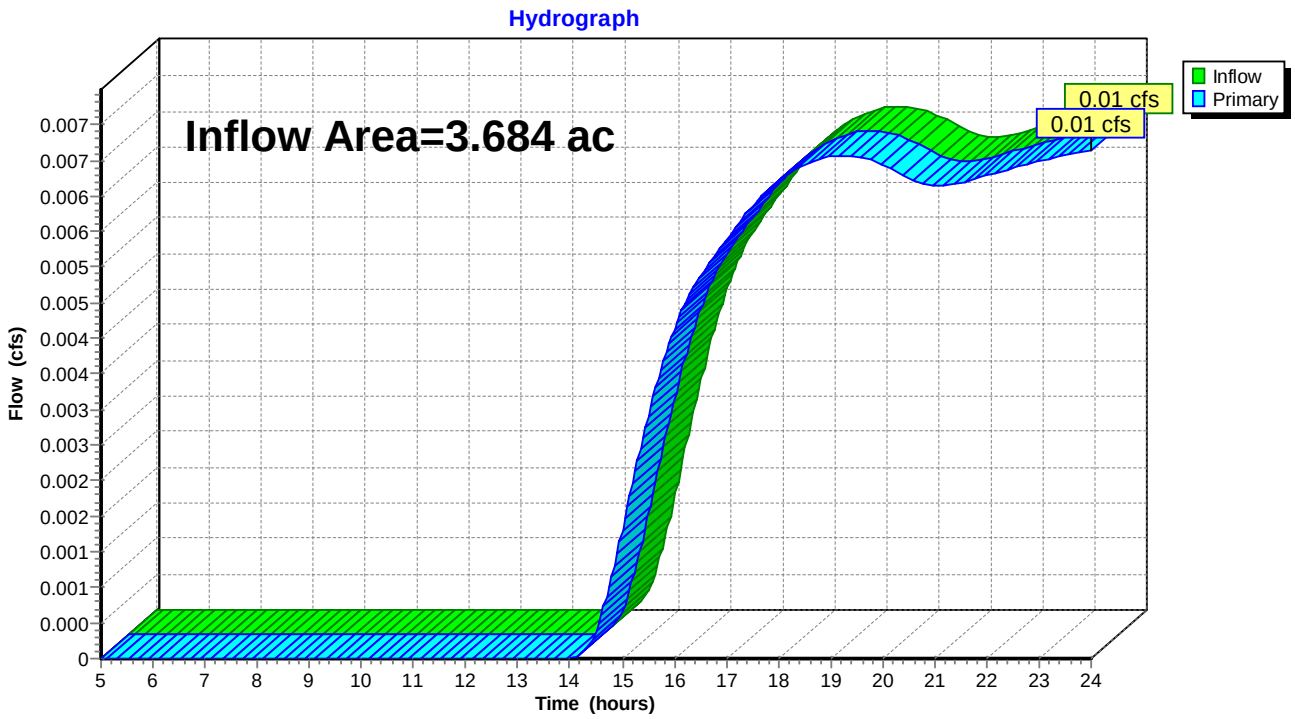


Summary for Link DP-3: Design Point #3

Inflow Area = 3.684 ac, 0.00% Impervious, Inflow Depth > 0.02" for 1-Year event
Inflow = 0.01 cfs @ 24.00 hrs, Volume= 0.005 af
Primary = 0.01 cfs @ 24.00 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Link DP-3: Design Point #3



Summary for Subcatchment DA-A: DA-A

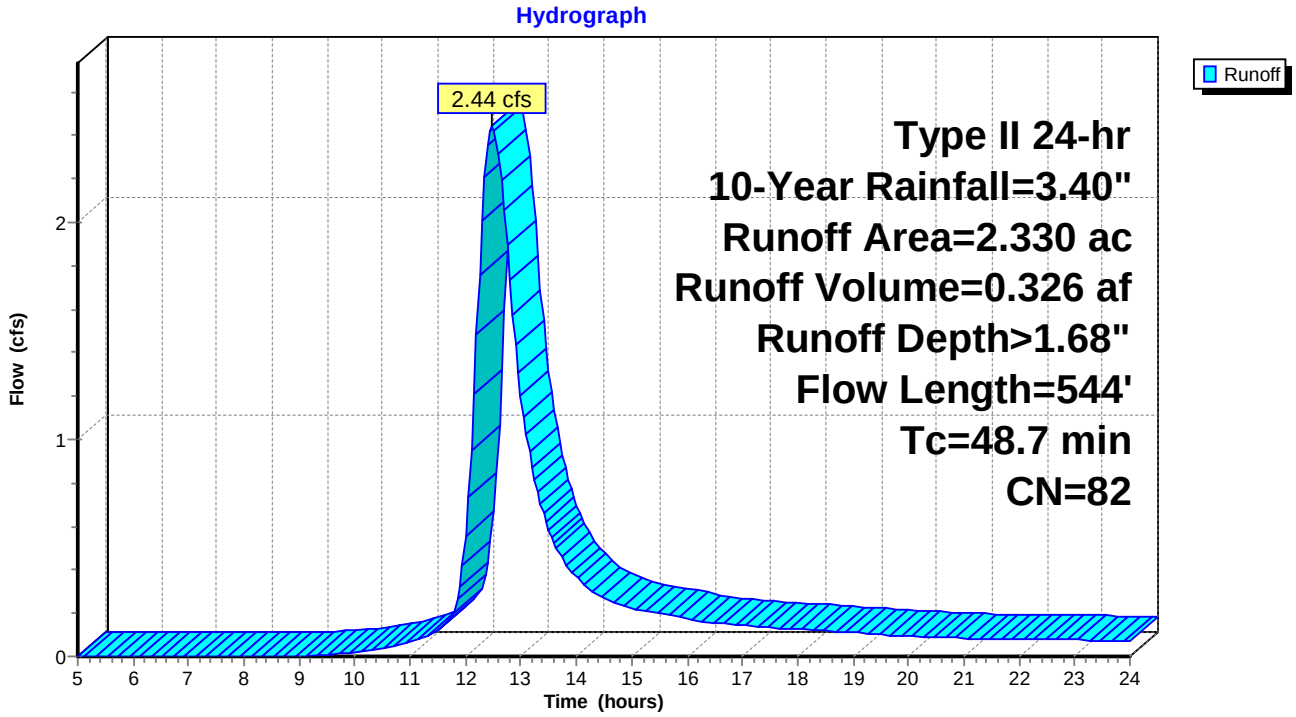
Runoff = 2.44 cfs @ 12.49 hrs, Volume= 0.326 af, Depth> 1.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.40"

Area (ac)	CN	Description
1.264	84	50-75% Grass cover, Fair, HSG D
0.031	49	50-75% Grass cover, Fair, HSG A
0.886	79	Woods, Fair, HSG D
0.149	96	Gravel surface, HSG D
2.330	82	Weighted Average
2.330		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.0	150	0.0045	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.87"
8.5	164	0.0021	0.32		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.2	230	0.0029	0.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
48.7	544	Total			

Subcatchment DA-A: DA-A



Summary for Subcatchment DA-B: DA-B

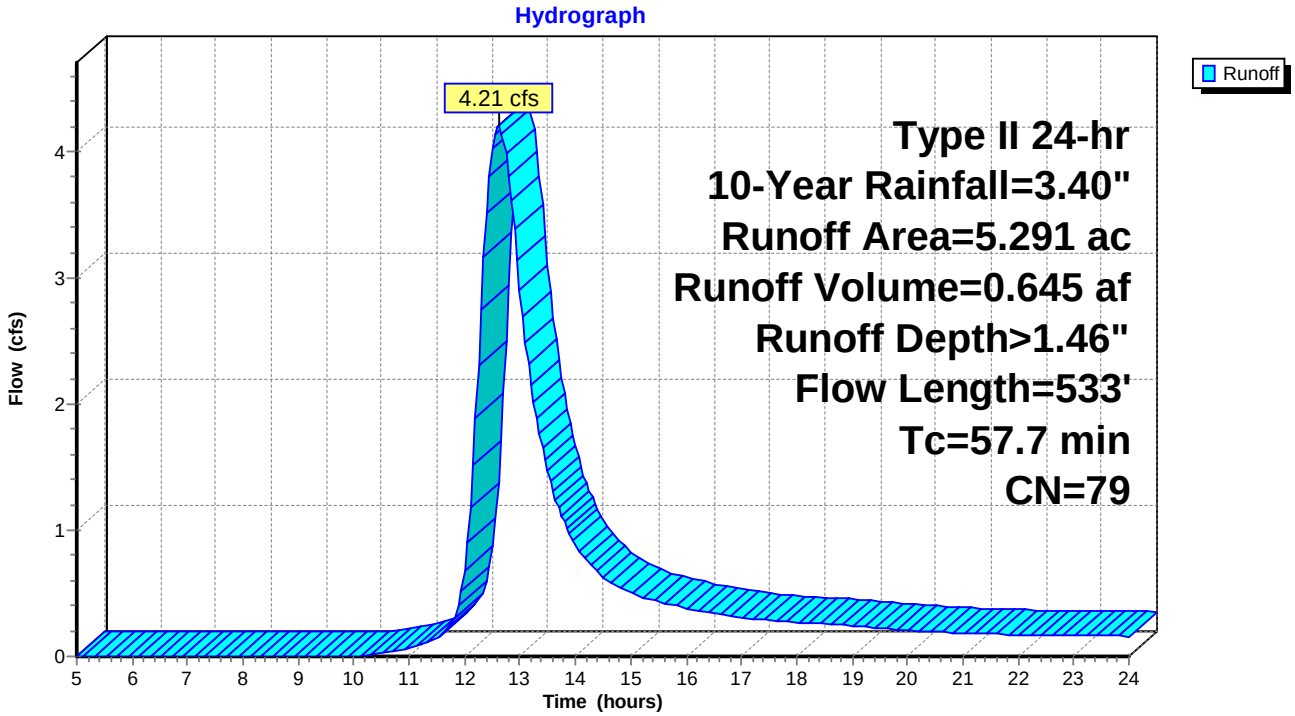
Runoff = 4.21 cfs @ 12.62 hrs, Volume= 0.645 af, Depth> 1.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.40"

Area (ac)	CN	Description
1.001	84	50-75% Grass cover, Fair, HSG D
4.185	79	Woods, Fair, HSG D
0.105	36	Woods, Fair, HSG A
5.291	79	Weighted Average
5.291		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.4	150	0.0129	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.87"
1.4	32	0.0031	0.39		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	54	0.0268	1.15		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
18.1	297	0.0030	0.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
57.7	533	Total			

Subcatchment DA-B: DA-B



Summary for Subcatchment DA-C: DA-C

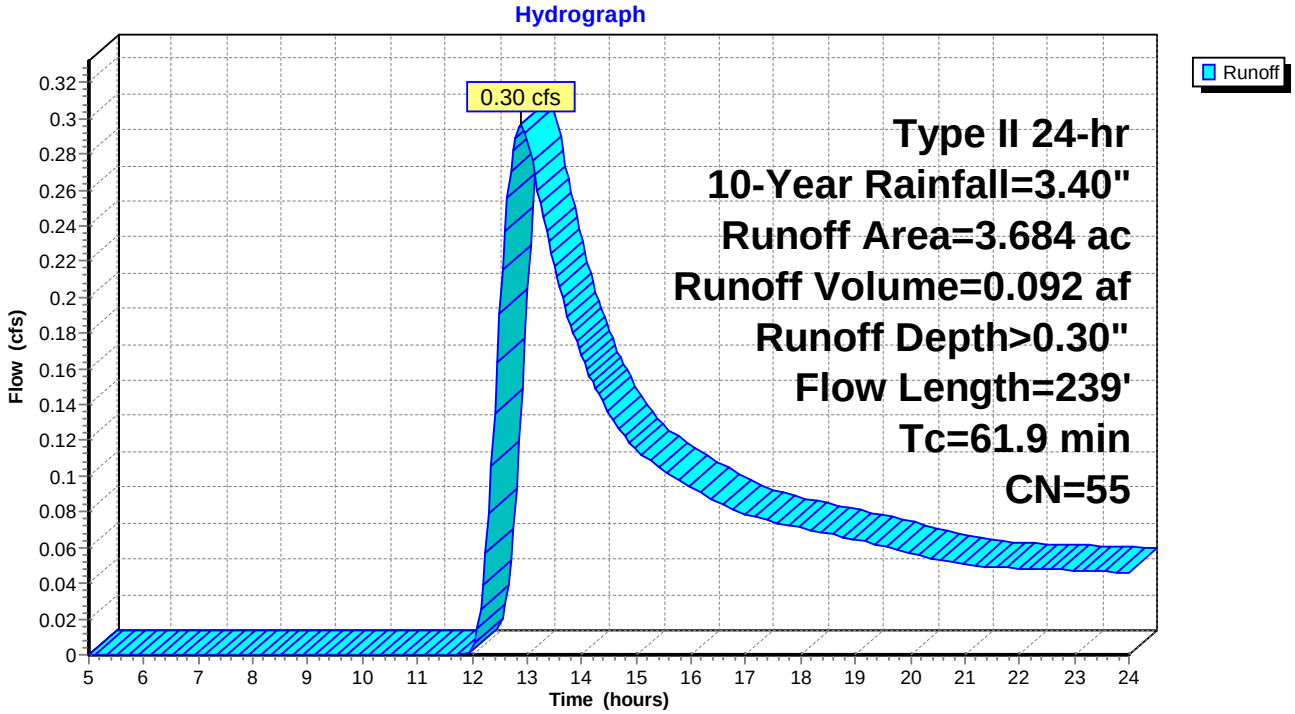
Runoff = 0.30 cfs @ 12.91 hrs, Volume= 0.092 af, Depth> 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.40"

Area (ac)	CN	Description
0.659	49	50-75% Grass cover, Fair, HSG A
0.234	84	50-75% Grass cover, Fair, HSG D
1.172	79	Woods, Fair, HSG D
1.619	36	Woods, Fair, HSG A
3.684	55	Weighted Average
3.684		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
59.7	150	0.0040	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.87"
2.2	89	0.0180	0.67		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
61.9	239	Total			

Subcatchment DA-C: DA-C

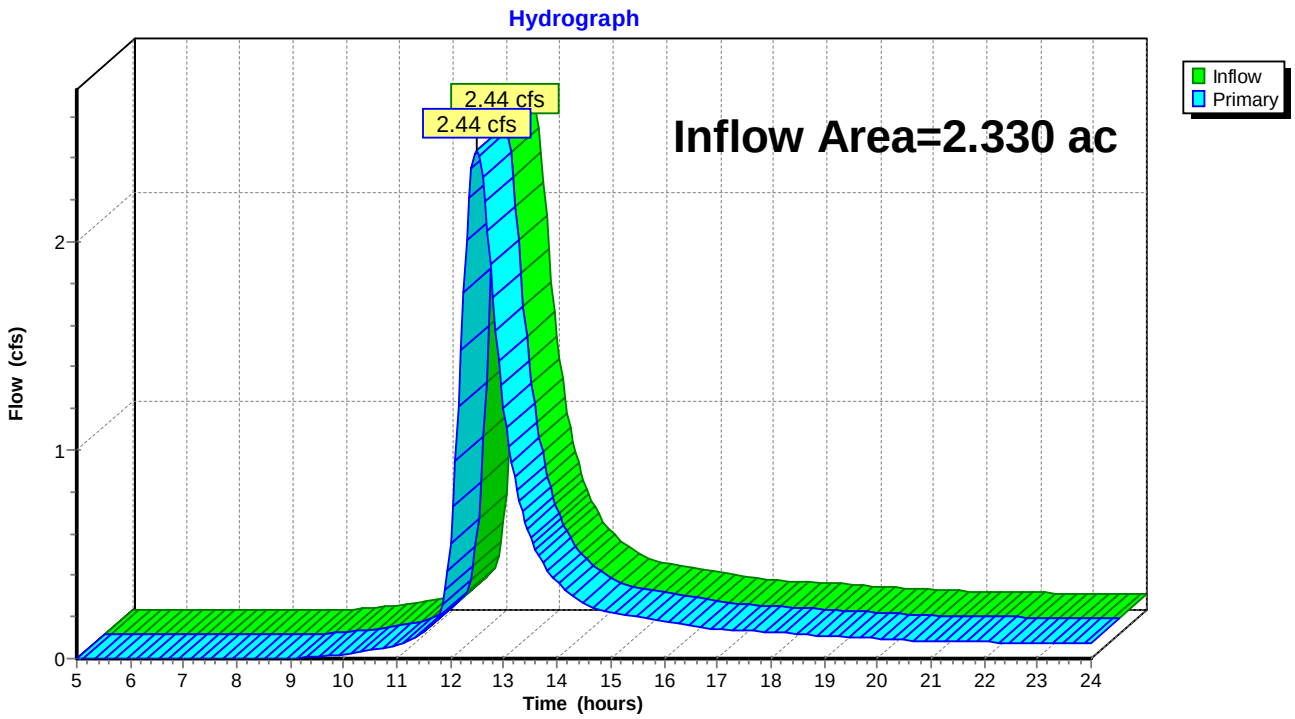


Summary for Link DP-1: Design Point #1

Inflow Area = 2.330 ac, 0.00% Impervious, Inflow Depth > 1.68" for 10-Year event
Inflow = 2.44 cfs @ 12.49 hrs, Volume= 0.326 af
Primary = 2.44 cfs @ 12.49 hrs, Volume= 0.326 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Link DP-1: Design Point #1

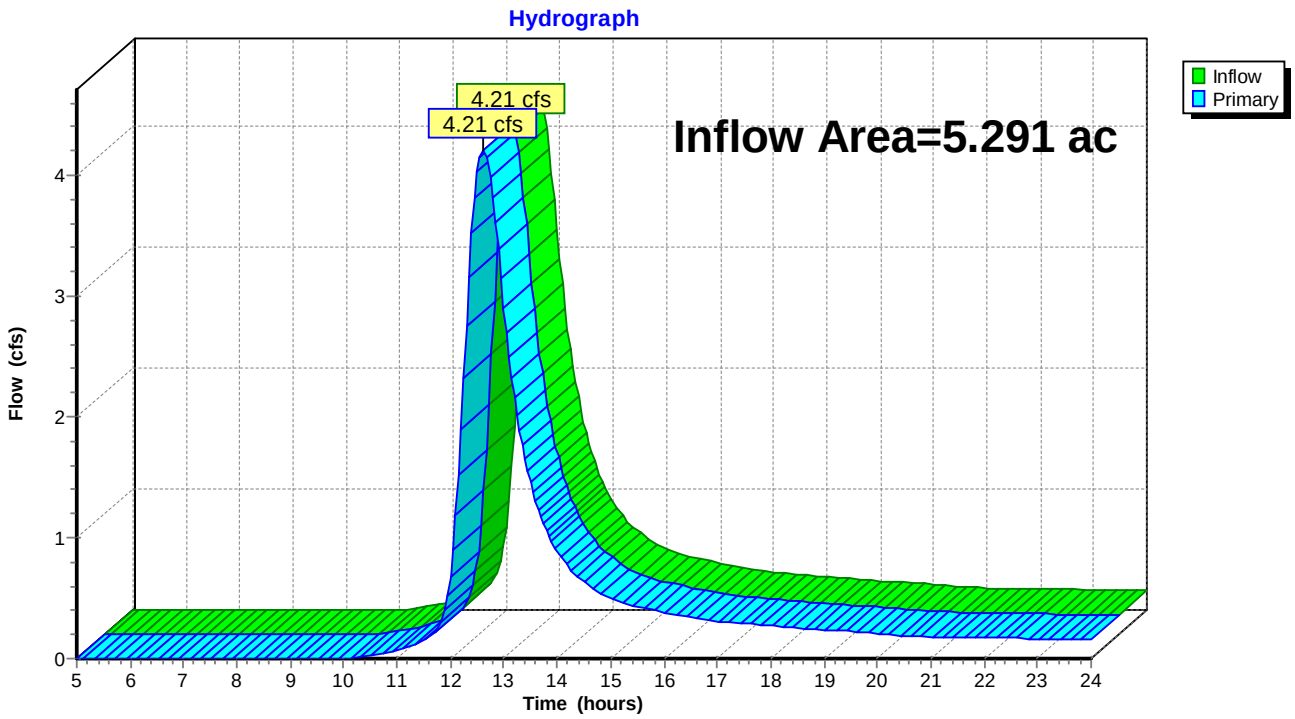


Summary for Link DP-2: Design Point #2

Inflow Area = 5.291 ac, 0.00% Impervious, Inflow Depth > 1.46" for 10-Year event
Inflow = 4.21 cfs @ 12.62 hrs, Volume= 0.645 af
Primary = 4.21 cfs @ 12.62 hrs, Volume= 0.645 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Link DP-2: Design Point #2

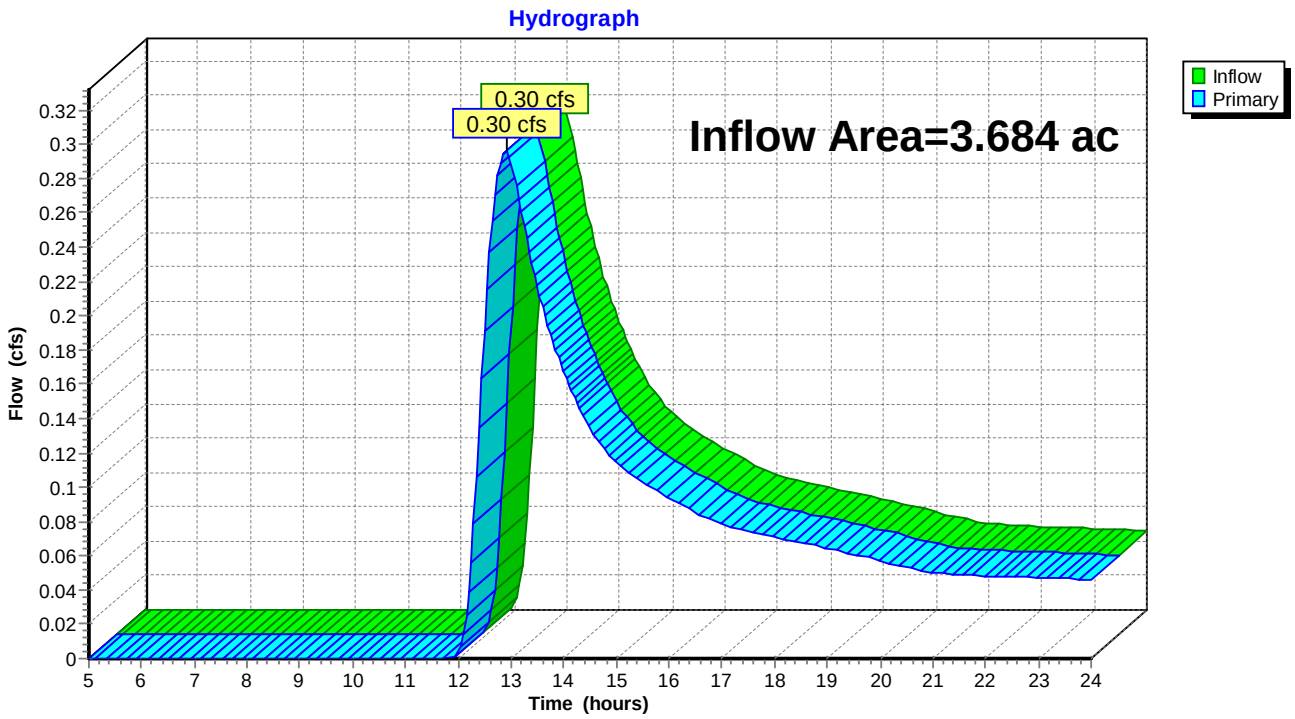


Summary for Link DP-3: Design Point #3

Inflow Area = 3.684 ac, 0.00% Impervious, Inflow Depth > 0.30" for 10-Year event
Inflow = 0.30 cfs @ 12.91 hrs, Volume= 0.092 af
Primary = 0.30 cfs @ 12.91 hrs, Volume= 0.092 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Link DP-3: Design Point #3



Summary for Subcatchment DA-A: DA-A

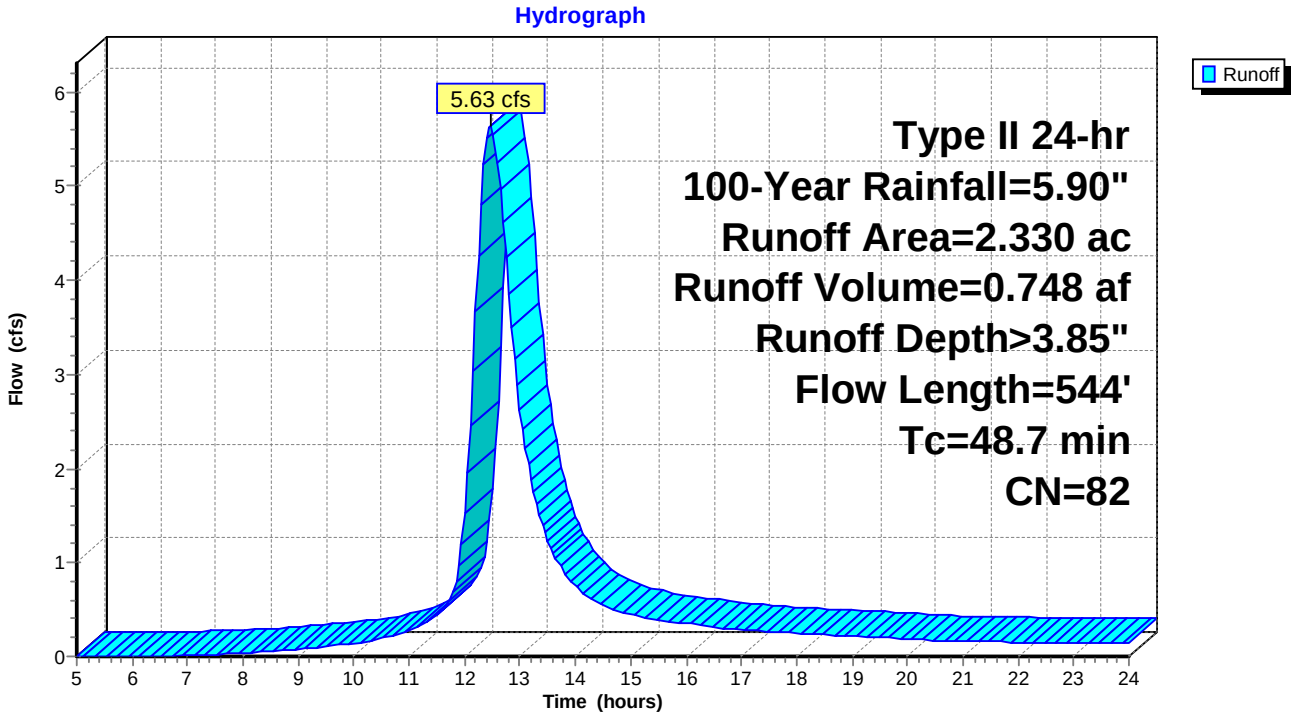
Runoff = 5.63 cfs @ 12.47 hrs, Volume= 0.748 af, Depth> 3.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=5.90"

Area (ac)	CN	Description
1.264	84	50-75% Grass cover, Fair, HSG D
0.031	49	50-75% Grass cover, Fair, HSG A
0.886	79	Woods, Fair, HSG D
0.149	96	Gravel surface, HSG D
2.330	82	Weighted Average
2.330		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.0	150	0.0045	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.87"
8.5	164	0.0021	0.32		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.2	230	0.0029	0.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
48.7	544	Total			

Subcatchment DA-A: DA-A



Summary for Subcatchment DA-B: DA-B

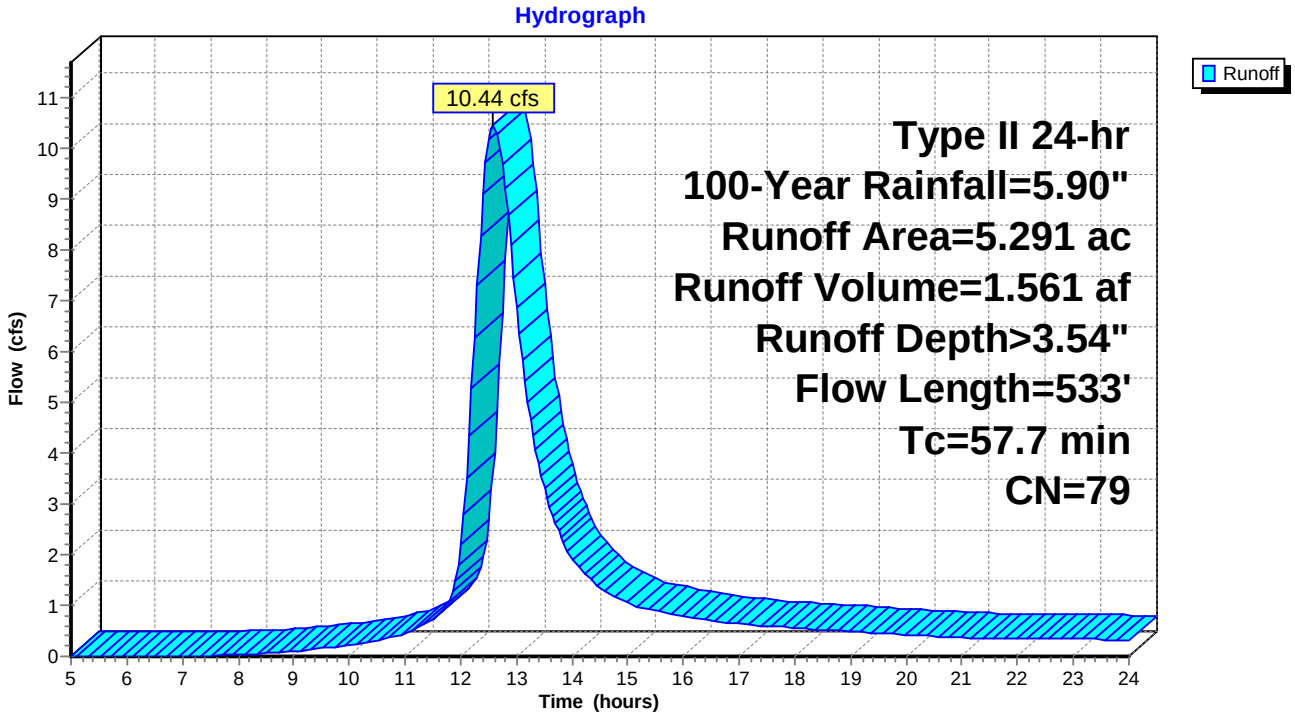
Runoff = 10.44 cfs @ 12.59 hrs, Volume= 1.561 af, Depth> 3.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=5.90"

Area (ac)	CN	Description
1.001	84	50-75% Grass cover, Fair, HSG D
4.185	79	Woods, Fair, HSG D
0.105	36	Woods, Fair, HSG A
5.291	79	Weighted Average
5.291		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.4	150	0.0129	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.87"
1.4	32	0.0031	0.39		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	54	0.0268	1.15		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
18.1	297	0.0030	0.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
57.7	533	Total			

Subcatchment DA-B: DA-B



Summary for Subcatchment DA-C: DA-C

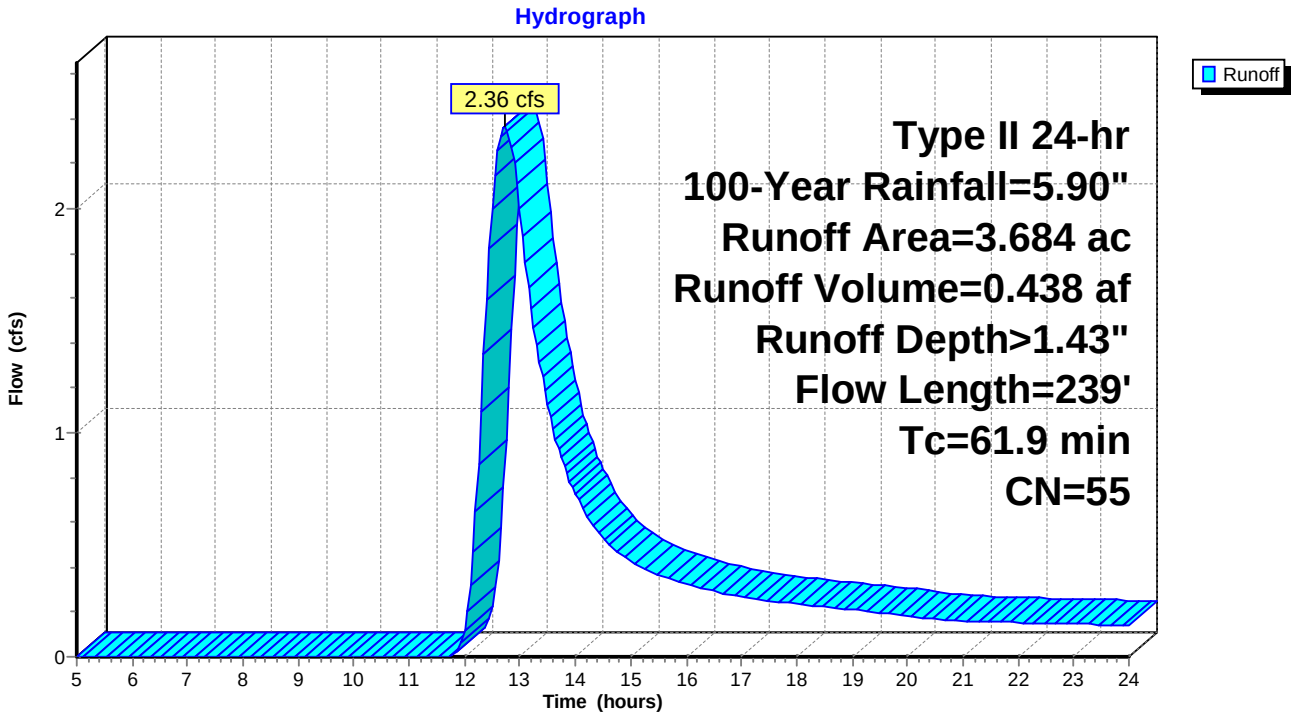
Runoff = 2.36 cfs @ 12.73 hrs, Volume= 0.438 af, Depth> 1.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=5.90"

Area (ac)	CN	Description
0.659	49	50-75% Grass cover, Fair, HSG A
0.234	84	50-75% Grass cover, Fair, HSG D
1.172	79	Woods, Fair, HSG D
1.619	36	Woods, Fair, HSG A
3.684	55	Weighted Average
3.684		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
59.7	150	0.0040	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.87"
2.2	89	0.0180	0.67		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
61.9	239	Total			

Subcatchment DA-C: DA-C

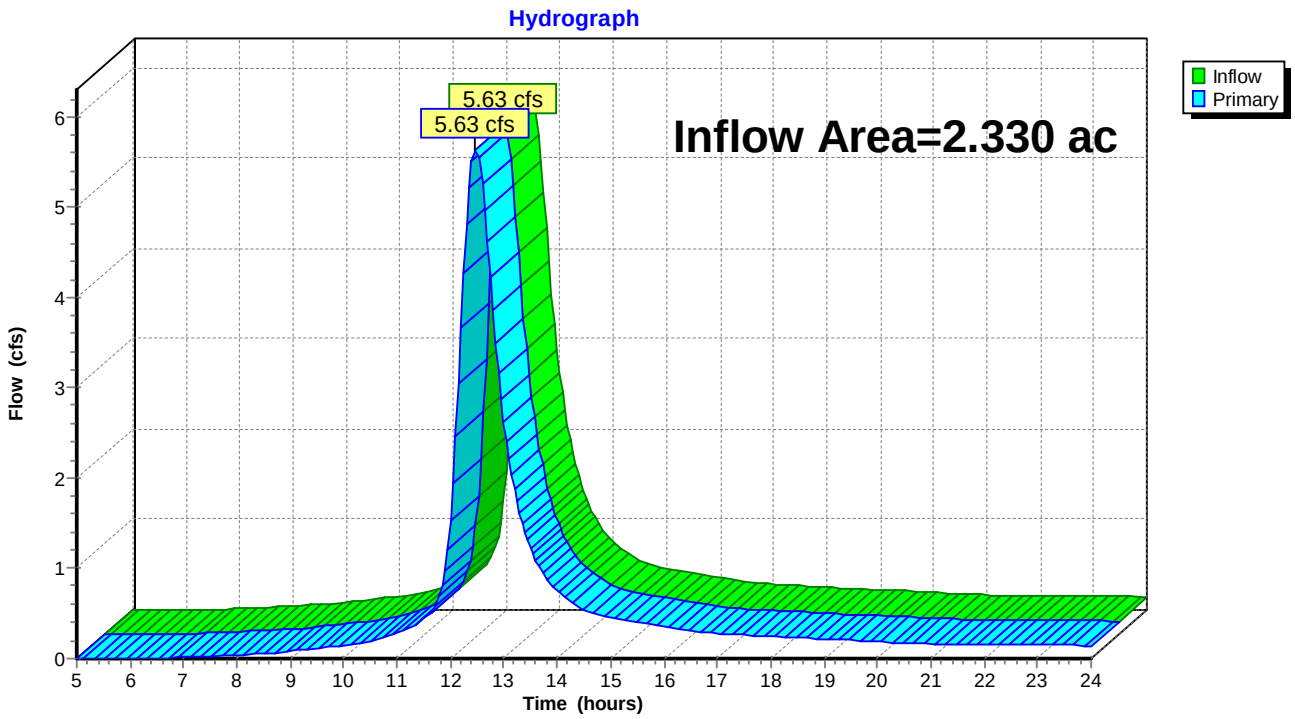


Summary for Link DP-1: Design Point #1

Inflow Area = 2.330 ac, 0.00% Impervious, Inflow Depth > 3.85" for 100-Year event
Inflow = 5.63 cfs @ 12.47 hrs, Volume= 0.748 af
Primary = 5.63 cfs @ 12.47 hrs, Volume= 0.748 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Link DP-1: Design Point #1

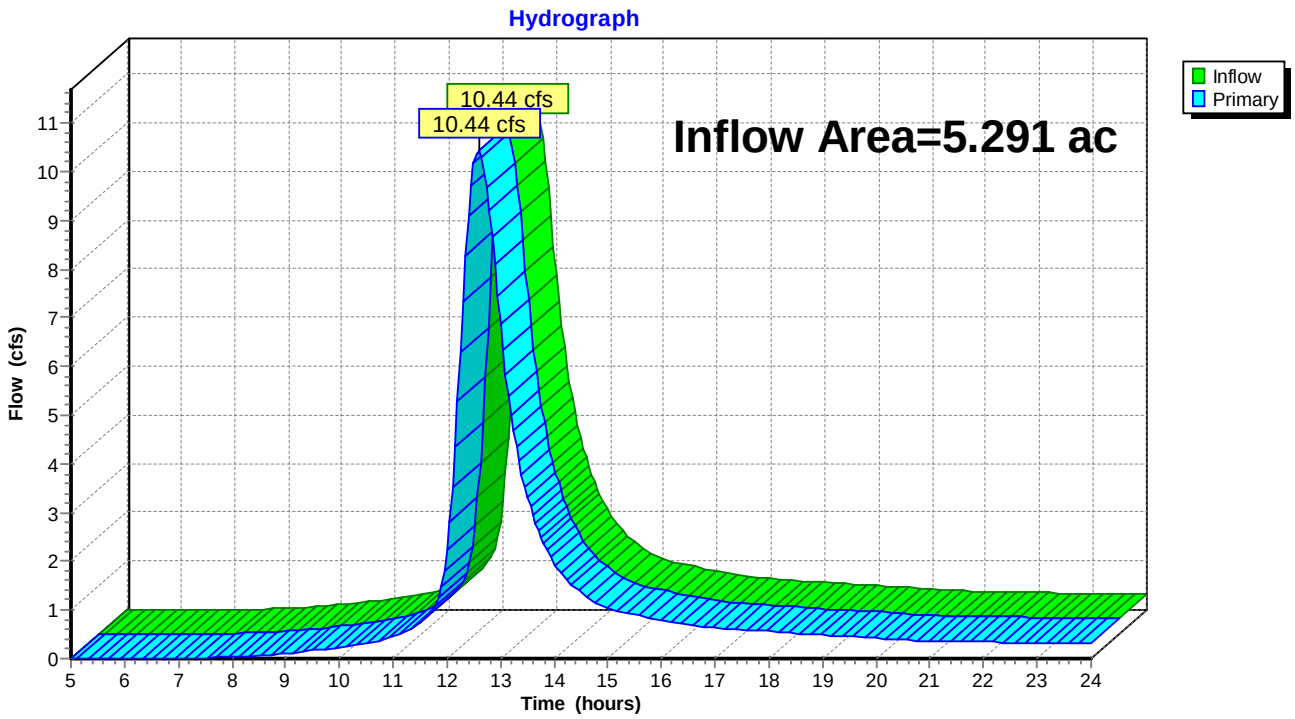


Summary for Link DP-2: Design Point #2

Inflow Area = 5.291 ac, 0.00% Impervious, Inflow Depth > 3.54" for 100-Year event
Inflow = 10.44 cfs @ 12.59 hrs, Volume= 1.561 af
Primary = 10.44 cfs @ 12.59 hrs, Volume= 1.561 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Link DP-2: Design Point #2

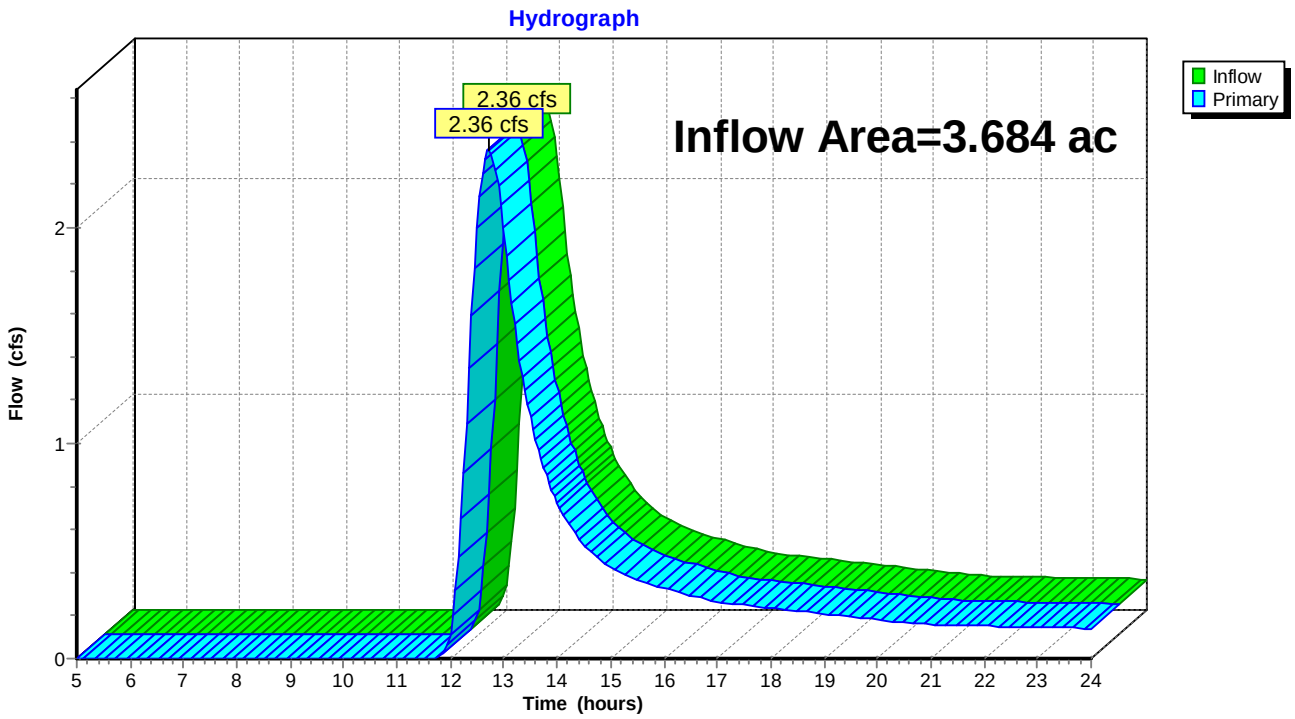


Summary for Link DP-3: Design Point #3

Inflow Area = 3.684 ac, 0.00% Impervious, Inflow Depth > 1.43" for 100-Year event
Inflow = 2.36 cfs @ 12.73 hrs, Volume= 0.438 af
Primary = 2.36 cfs @ 12.73 hrs, Volume= 0.438 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Link DP-3: Design Point #3

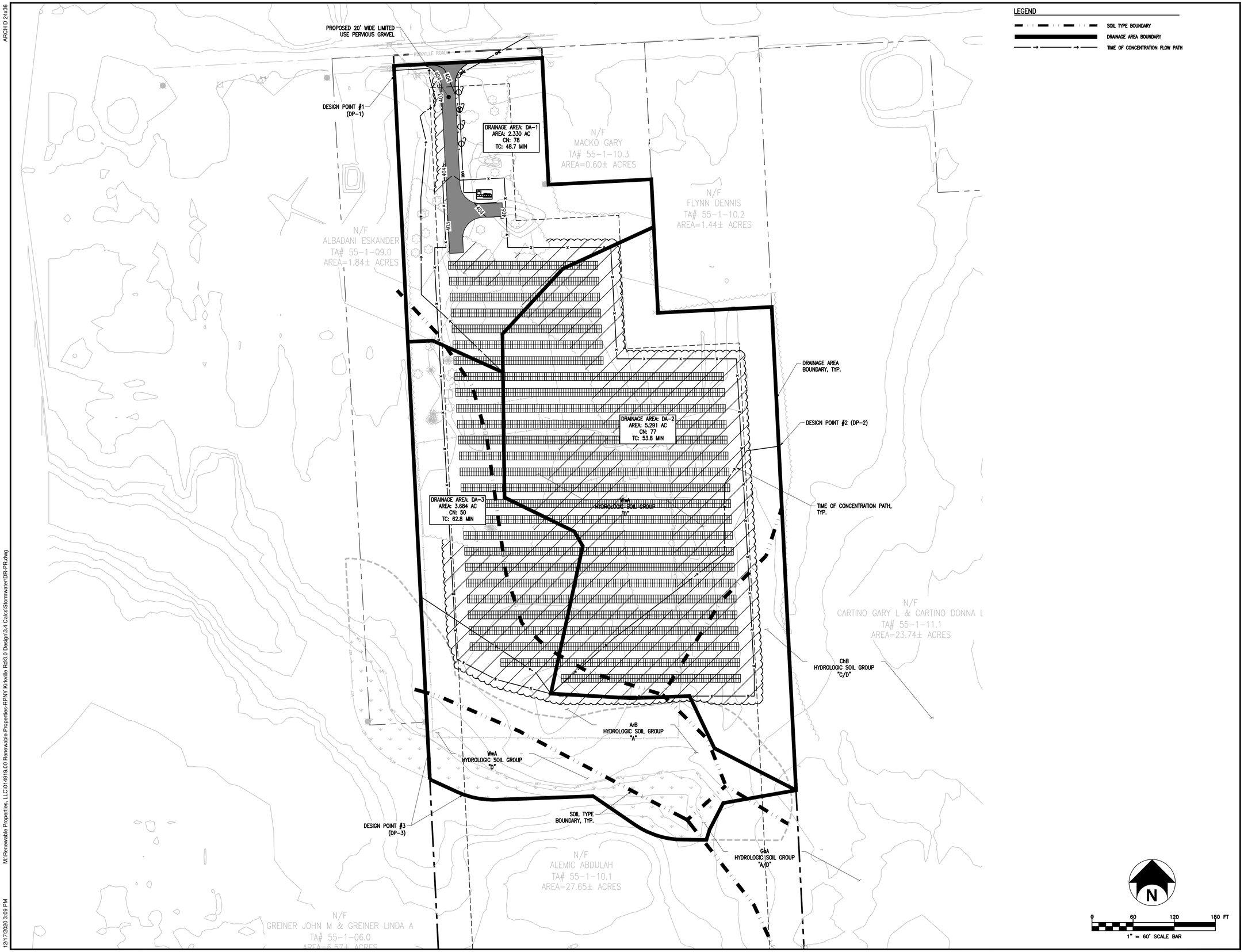


Appendix R-2

Proposed Conditions Drainage Map

And HydroCAD Report

ARCH D 24x36



12/17/2020 3:09 PM M:\Renewable Properties, LLC\014919.00 Renewable Properties-RPNY Kirkville Rd\3.0 Design\3.4 Calcs\Stormwater\DR-PR.dwg

KIRKVILLE ROAD SOLAR PROJECT

7390 KIRKVILLE ROAD
EAST SYRACUSE, NY 13057

RENEWABLE PROPERTIES

RPNY SOLAR 5, LLC

879 SANCHEZ STREET
SAN FRANCISCO, CA 94114

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.

2665 Corning Road
Horseheads, NY 14903

office: 607.795.1110
fax: 607.795.1444

www.bergmannpc.com

DATE	DESCRIPTION

PRELIMINARY
NOT FOR CONSTRUCTION

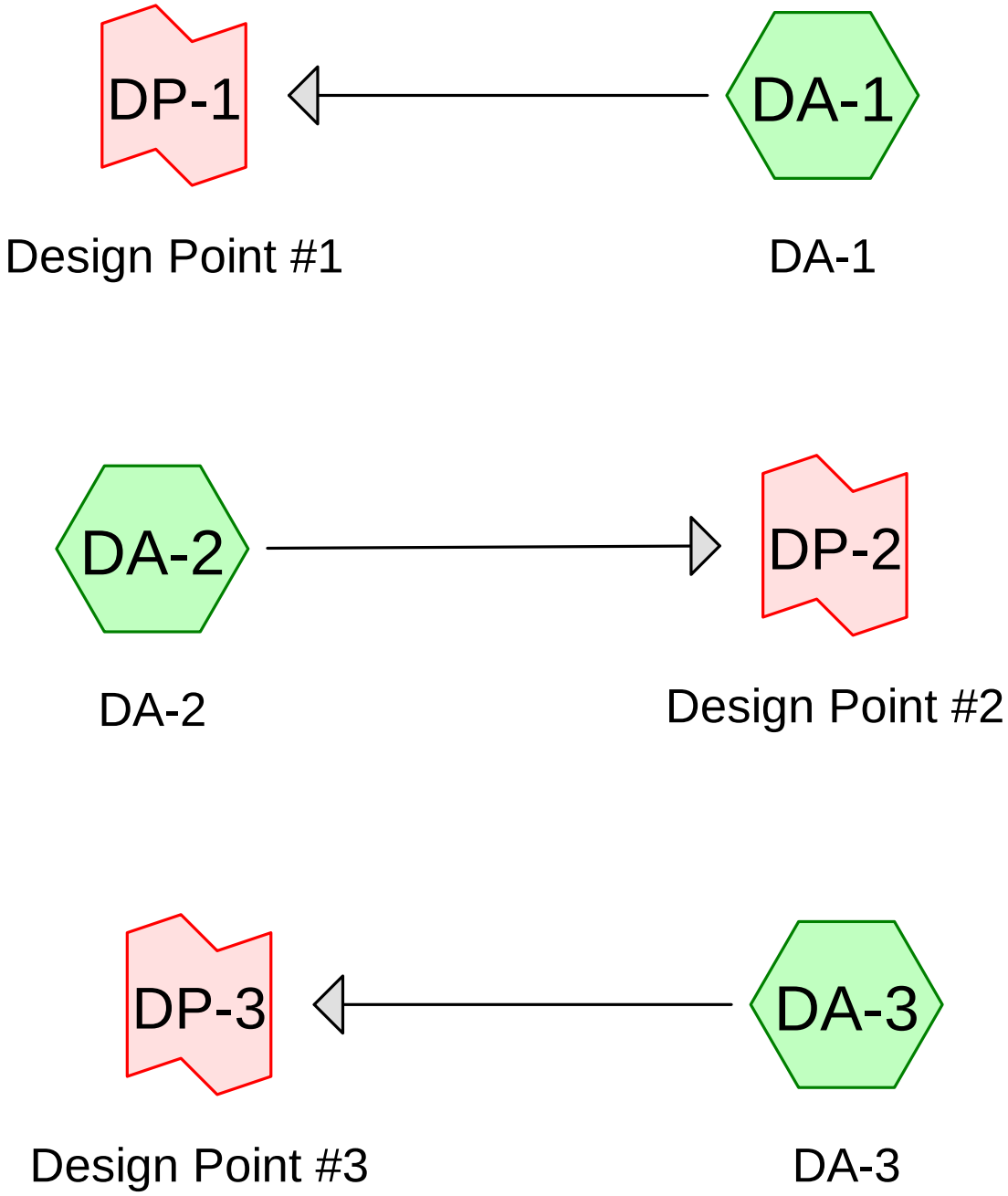
Copyright © Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C

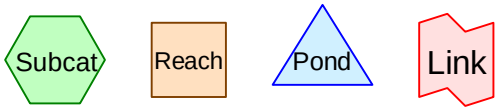
Project Manager: DJP	Checked By: RPS
Designed By: WD	Drawn By: WD
Date Issued:	Project Number:

PROPOSED CONDITIONS DRAINAGE MAP

Drawing Number:

DR-PR





Routing Diagram for DR-PR
Prepared by Bergmann Associates, Printed 12/17/2020
HydroCAD® 10.00-24 s/n 05288 © 2018 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.031	49	50-75% Grass cover, Fair, HSG A (DA-1)
0.175	75	Limited Use Pervious Gravel (DA-1)
1.329	30	Meadow, non-grazed, HSG A (DA-2, DA-3)
5.988	78	Meadow, non-grazed, HSG D (DA-1, DA-2, DA-3)
1.062	36	Woods, Fair, HSG A (DA-3)
2.720	79	Woods, Fair, HSG D (DA-1, DA-2, DA-3)

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
2.422	HSG A	DA-1, DA-2, DA-3
0.000	HSG B	
0.000	HSG C	
8.708	HSG D	DA-1, DA-2, DA-3
0.175	Other	DA-1

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.031	0.000	0.000	0.000	0.000	0.031	50-75% Grass cover, Fair	DA-1
0.000	0.000	0.000	0.000	0.175	0.175	Limited Use Pervious Gravel	DA-1
1.329	0.000	0.000	5.988	0.000	7.317	Meadow, non-grazed	DA-1, DA-2, DA-3
1.062	0.000	0.000	2.720	0.000	3.782	Woods, Fair	DA-1, DA-2, DA-3

Summary for Subcatchment DA-1: DA-1

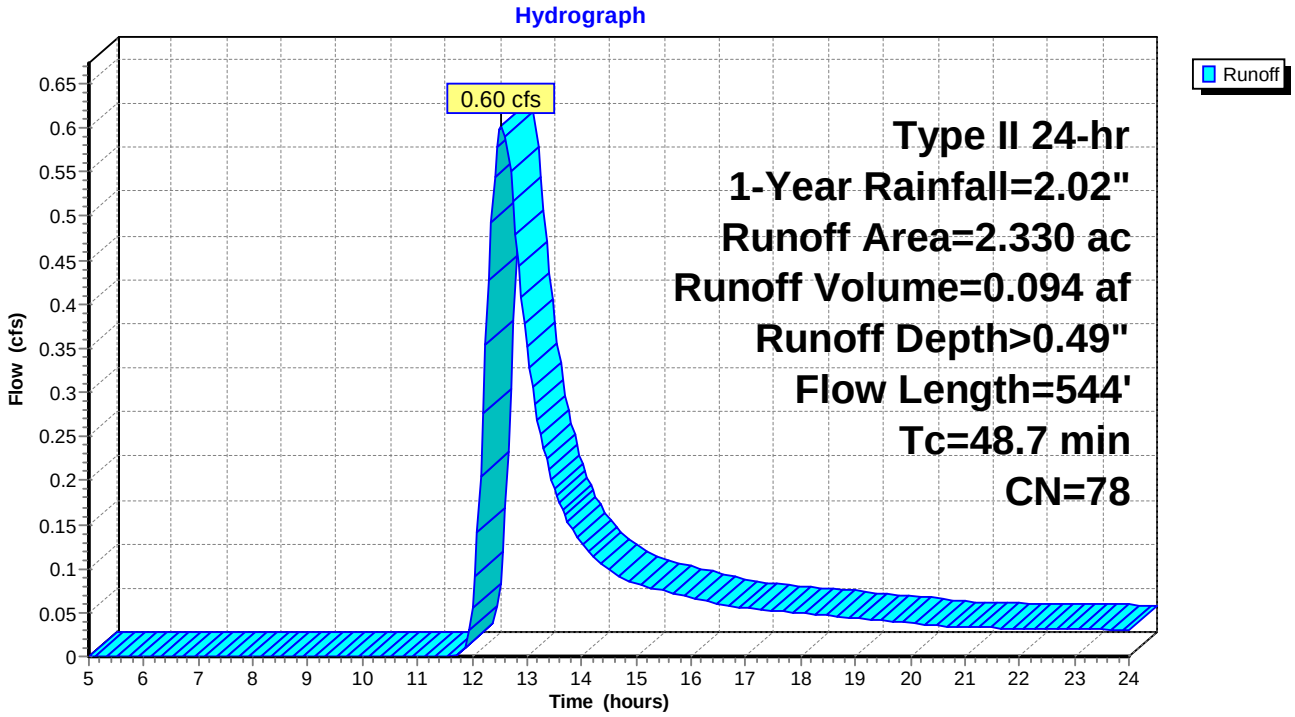
Runoff = 0.60 cfs @ 12.54 hrs, Volume= 0.094 af, Depth> 0.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.02"

	Area (ac)	CN	Description
	1.493	78	Meadow, non-grazed, HSG D
	0.031	49	50-75% Grass cover, Fair, HSG A
	0.631	79	Woods, Fair, HSG D
*	0.175	75	Limited Use Pervious Gravel
	2.330	78	Weighted Average
	2.330		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.0	150	0.0045	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.87"
8.5	164	0.0021	0.32		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.2	230	0.0029	0.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
48.7	544	Total			

Subcatchment DA-1: DA-1



Summary for Subcatchment DA-2: DA-2

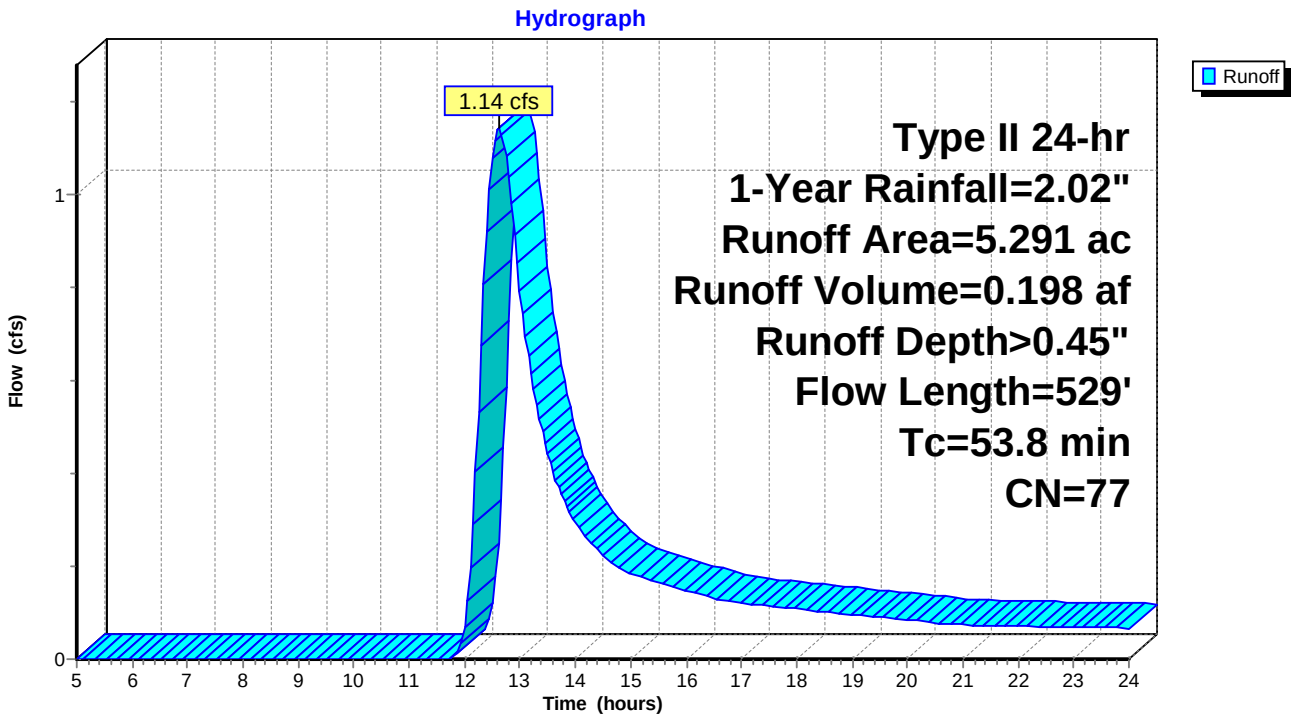
Runoff = 1.14 cfs @ 12.62 hrs, Volume= 0.198 af, Depth> 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.02"

Area (ac)	CN	Description
3.945	78	Meadow, non-grazed, HSG D
1.243	79	Woods, Fair, HSG D
0.103	30	Meadow, non-grazed, HSG A
5.291	77	Weighted Average
5.291		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
38.1	150	0.0129	0.07		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.87"
1.4	32	0.0031	0.39		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	54	0.0268	1.15		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.9	251	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.6	42	0.0030	0.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
53.8	529	Total			

Subcatchment DA-2: DA-2



Summary for Subcatchment DA-3: DA-3

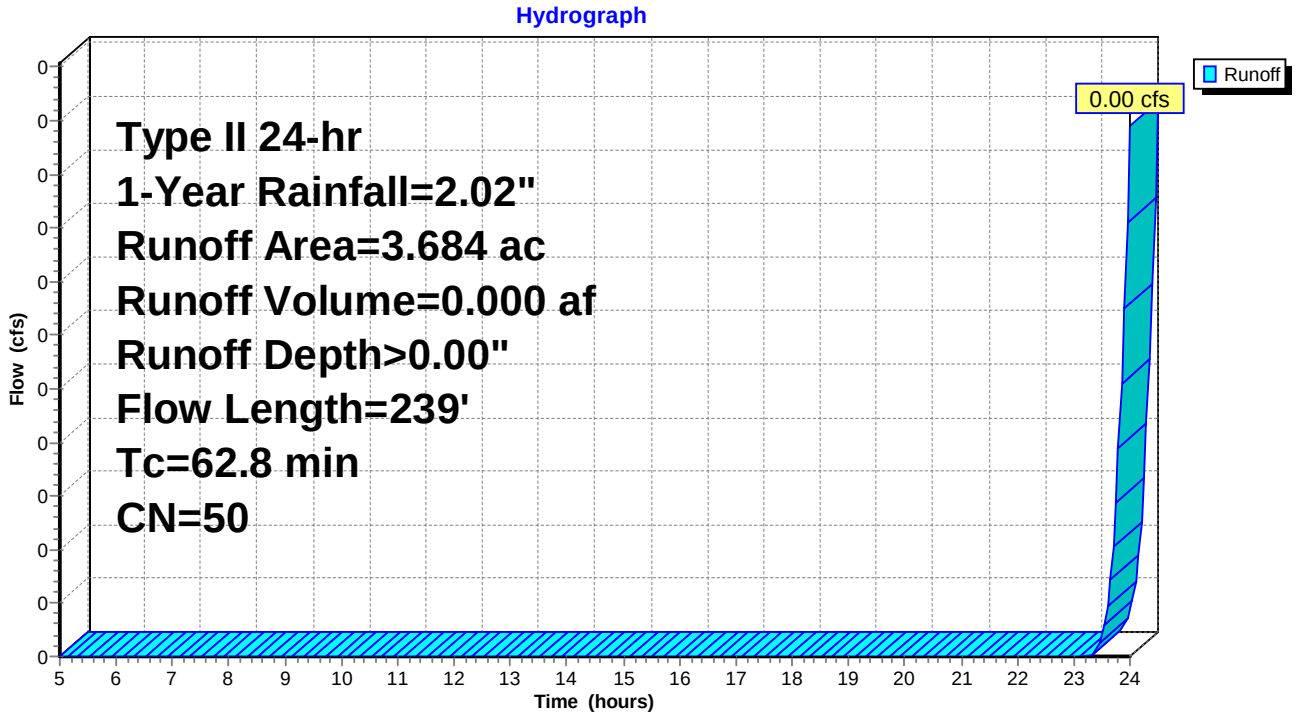
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af, Depth> 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.02"

Area (ac)	CN	Description
1.226	30	Meadow, non-grazed, HSG A
0.550	78	Meadow, non-grazed, HSG D
0.846	79	Woods, Fair, HSG D
1.062	36	Woods, Fair, HSG A
3.684	50	Weighted Average
3.684		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
60.9	150	0.0040	0.04		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.87"
0.8	44	0.0180	0.94		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	45	0.0180	0.67		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
62.8	239	Total			

Subcatchment DA-3: DA-3

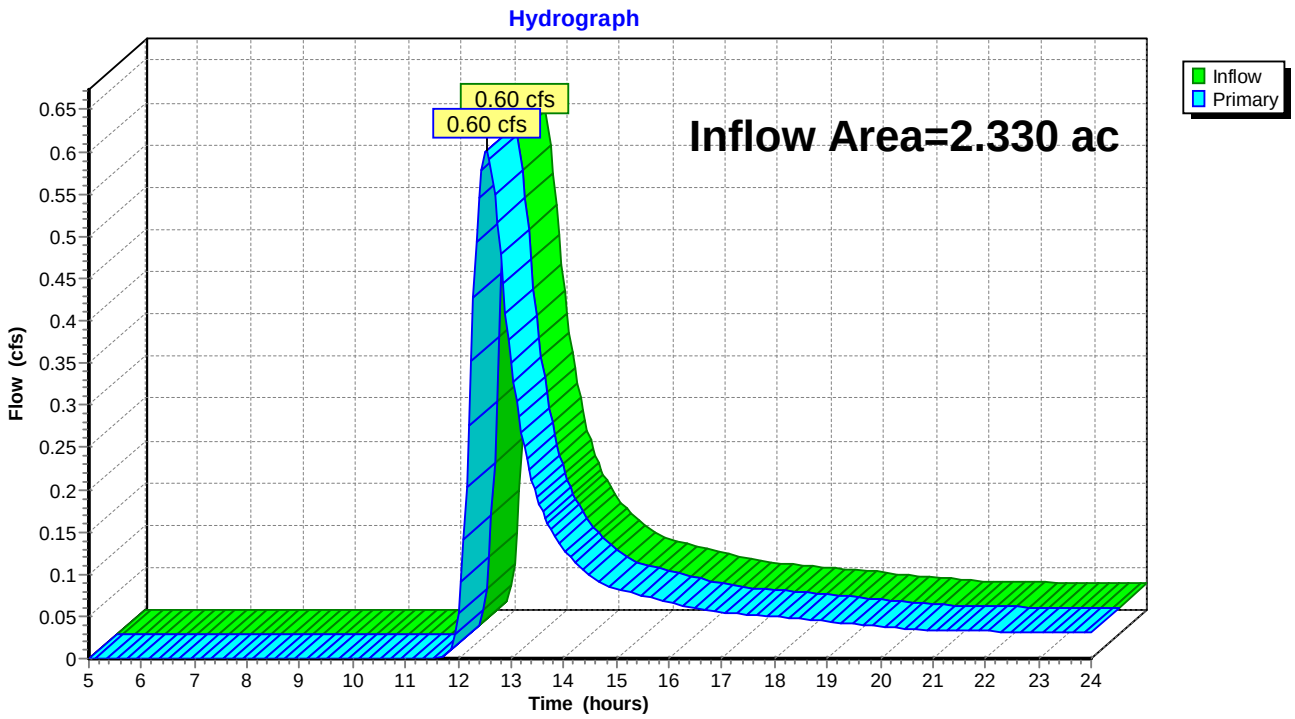


Summary for Link DP-1: Design Point #1

Inflow Area = 2.330 ac, 0.00% Impervious, Inflow Depth > 0.49" for 1-Year event
Inflow = 0.60 cfs @ 12.54 hrs, Volume= 0.094 af
Primary = 0.60 cfs @ 12.54 hrs, Volume= 0.094 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Link DP-1: Design Point #1

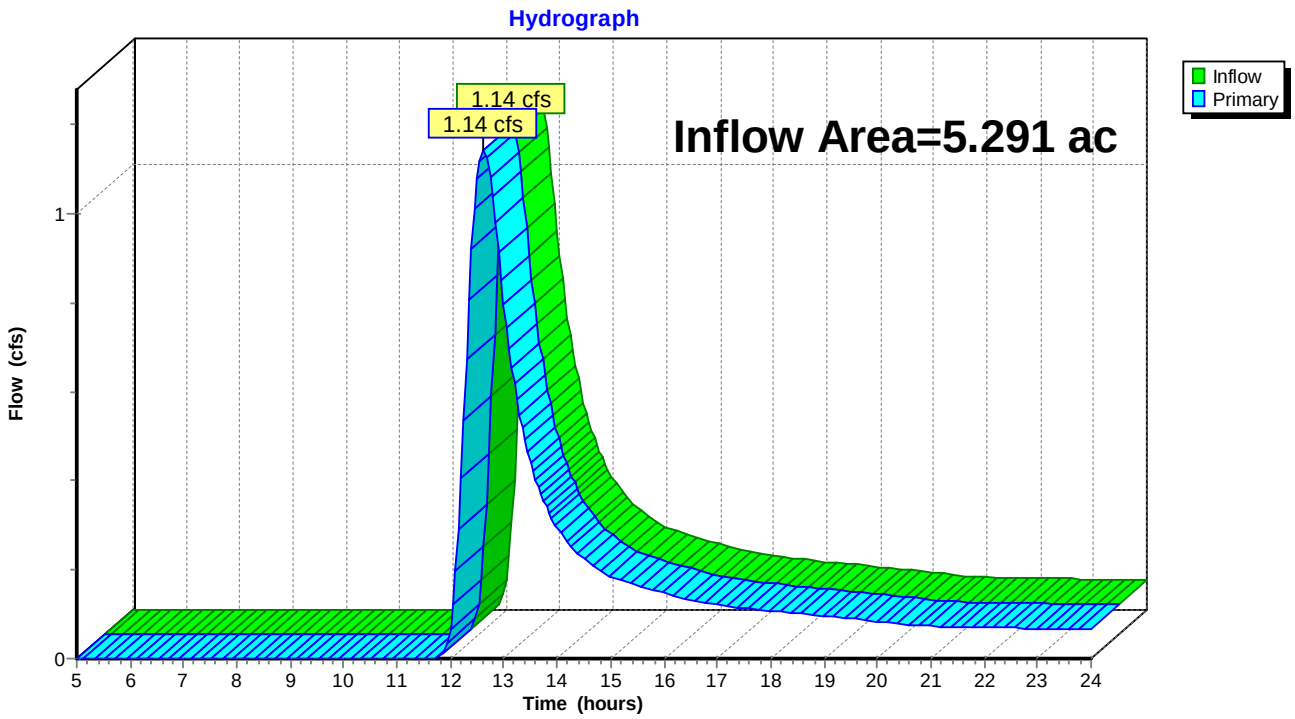


Summary for Link DP-2: Design Point #2

Inflow Area = 5.291 ac, 0.00% Impervious, Inflow Depth > 0.45" for 1-Year event
Inflow = 1.14 cfs @ 12.62 hrs, Volume= 0.198 af
Primary = 1.14 cfs @ 12.62 hrs, Volume= 0.198 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Link DP-2: Design Point #2

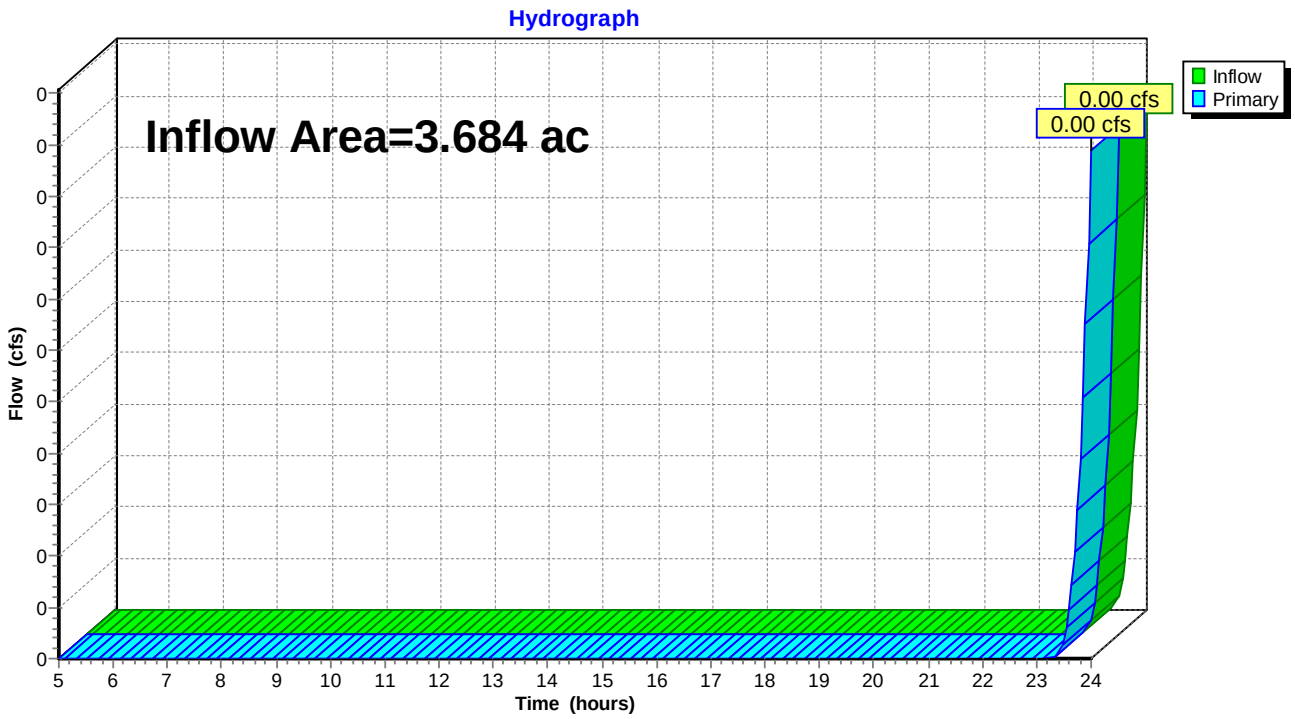


Summary for Link DP-3: Design Point #3

Inflow Area = 3.684 ac, 0.00% Impervious, Inflow Depth > 0.00" for 1-Year event
Inflow = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Link DP-3: Design Point #3



Summary for Subcatchment DA-1: DA-1

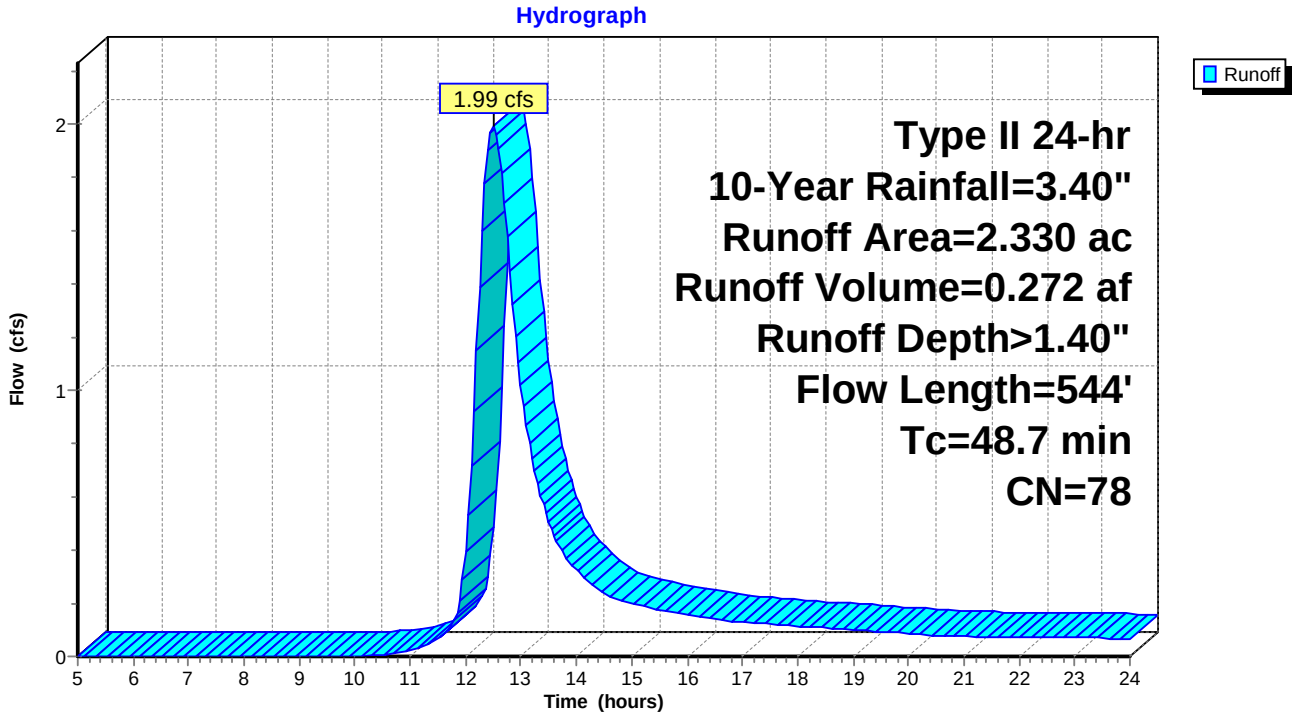
Runoff = 1.99 cfs @ 12.50 hrs, Volume= 0.272 af, Depth> 1.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.40"

	Area (ac)	CN	Description
	1.493	78	Meadow, non-grazed, HSG D
	0.031	49	50-75% Grass cover, Fair, HSG A
	0.631	79	Woods, Fair, HSG D
*	0.175	75	Limited Use Pervious Gravel
	2.330	78	Weighted Average
	2.330		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.0	150	0.0045	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.87"
8.5	164	0.0021	0.32		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.2	230	0.0029	0.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
48.7	544	Total			

Subcatchment DA-1: DA-1



Summary for Subcatchment DA-2: DA-2

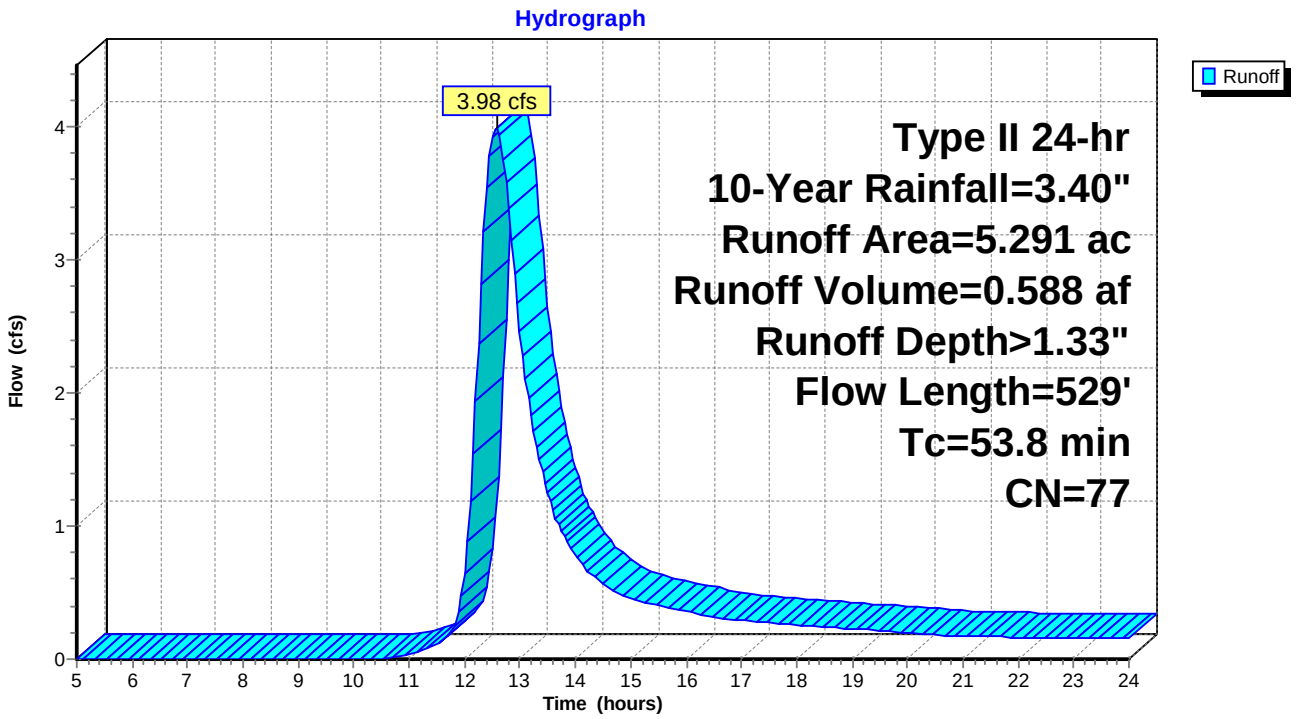
Runoff = 3.98 cfs @ 12.57 hrs, Volume= 0.588 af, Depth> 1.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.40"

Area (ac)	CN	Description
3.945	78	Meadow, non-grazed, HSG D
1.243	79	Woods, Fair, HSG D
0.103	30	Meadow, non-grazed, HSG A
5.291	77	Weighted Average
5.291		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
38.1	150	0.0129	0.07		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.87"
1.4	32	0.0031	0.39		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	54	0.0268	1.15		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.9	251	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.6	42	0.0030	0.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
53.8	529	Total			

Subcatchment DA-2: DA-2



Summary for Subcatchment DA-3: DA-3

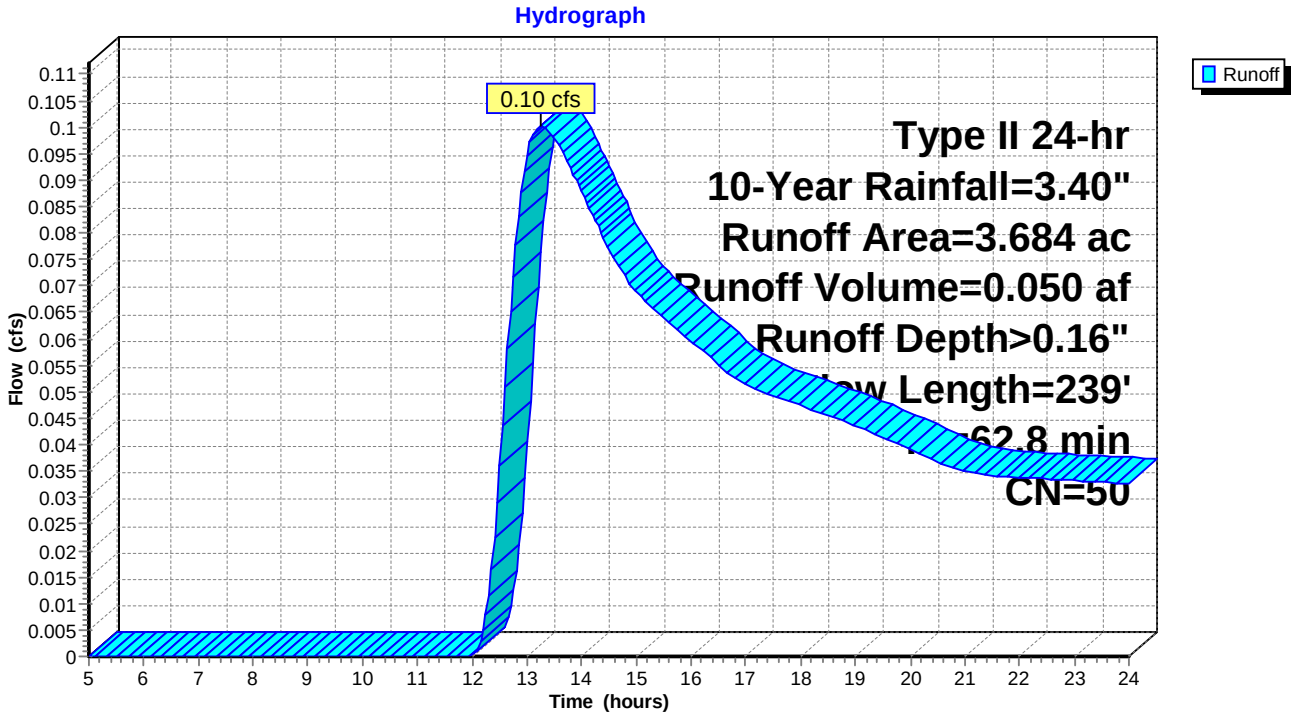
Runoff = 0.10 cfs @ 13.27 hrs, Volume= 0.050 af, Depth> 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.40"

Area (ac)	CN	Description
1.226	30	Meadow, non-grazed, HSG A
0.550	78	Meadow, non-grazed, HSG D
0.846	79	Woods, Fair, HSG D
1.062	36	Woods, Fair, HSG A
3.684	50	Weighted Average
3.684		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
60.9	150	0.0040	0.04		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.87"
0.8	44	0.0180	0.94		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	45	0.0180	0.67		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
62.8	239	Total			

Subcatchment DA-3: DA-3

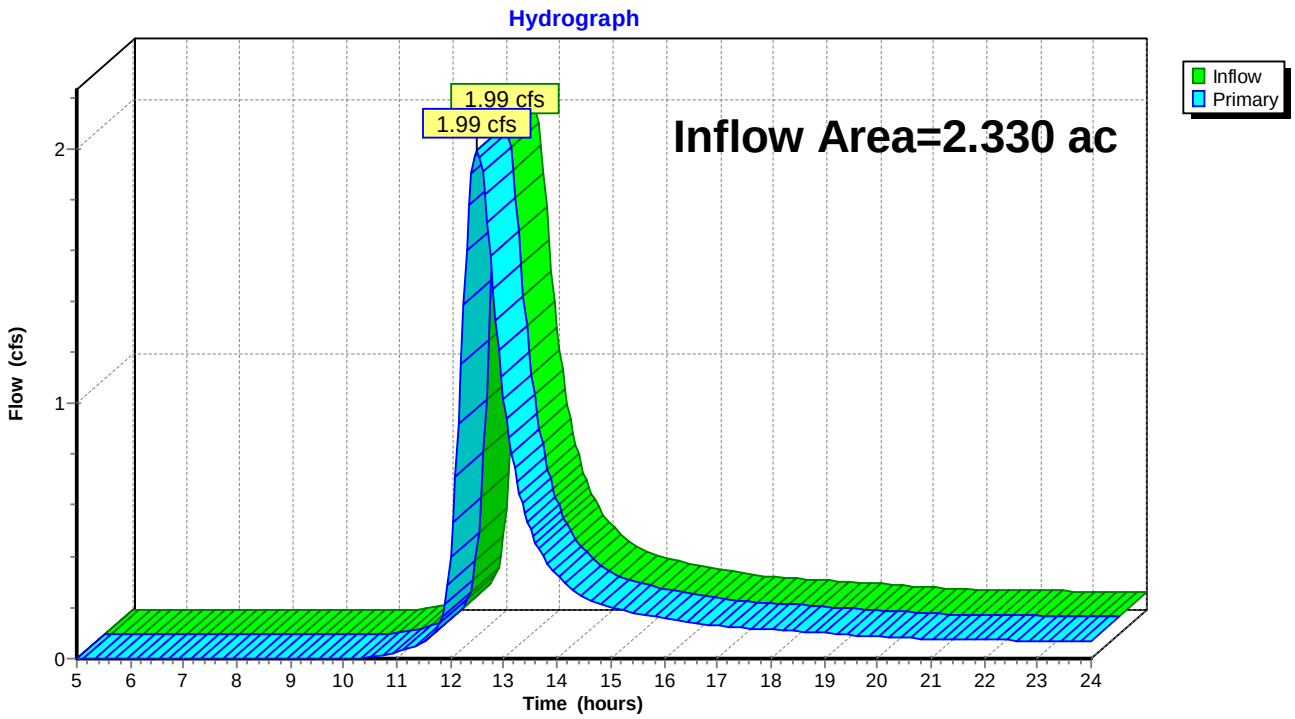


Summary for Link DP-1: Design Point #1

Inflow Area = 2.330 ac, 0.00% Impervious, Inflow Depth > 1.40" for 10-Year event
Inflow = 1.99 cfs @ 12.50 hrs, Volume= 0.272 af
Primary = 1.99 cfs @ 12.50 hrs, Volume= 0.272 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Link DP-1: Design Point #1

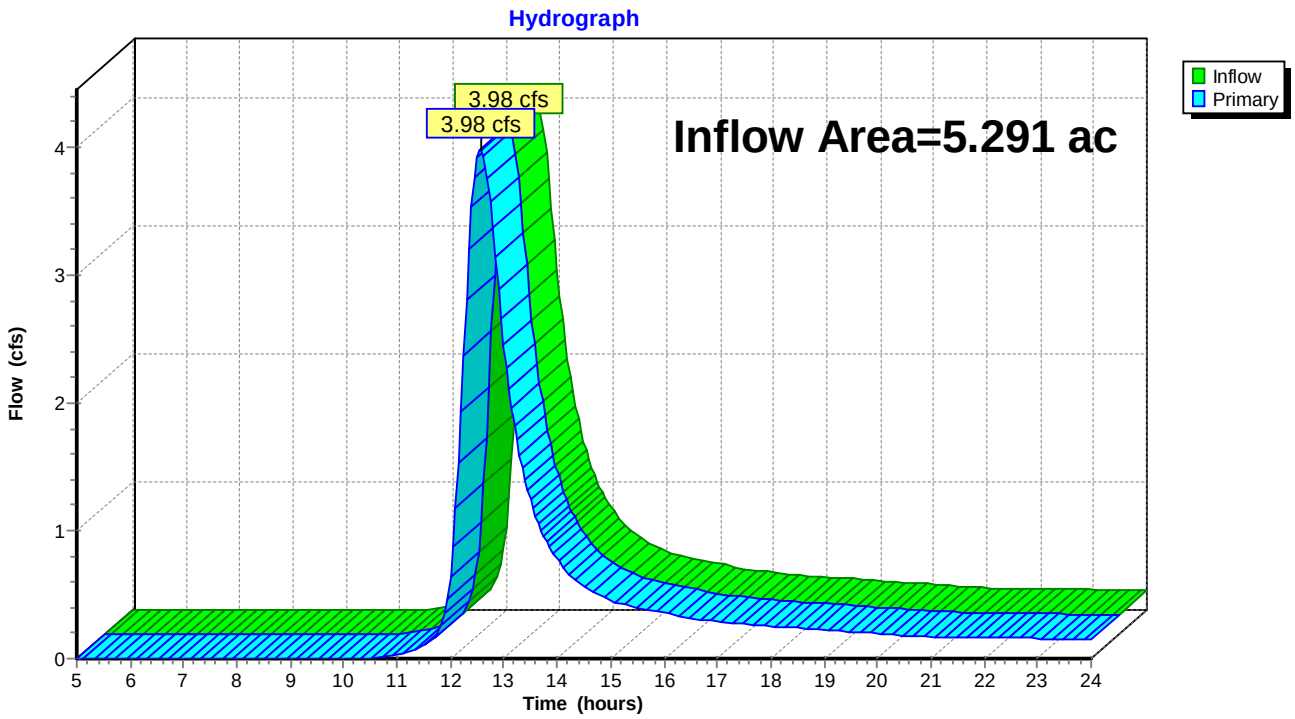


Summary for Link DP-2: Design Point #2

Inflow Area = 5.291 ac, 0.00% Impervious, Inflow Depth > 1.33" for 10-Year event
Inflow = 3.98 cfs @ 12.57 hrs, Volume= 0.588 af
Primary = 3.98 cfs @ 12.57 hrs, Volume= 0.588 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Link DP-2: Design Point #2

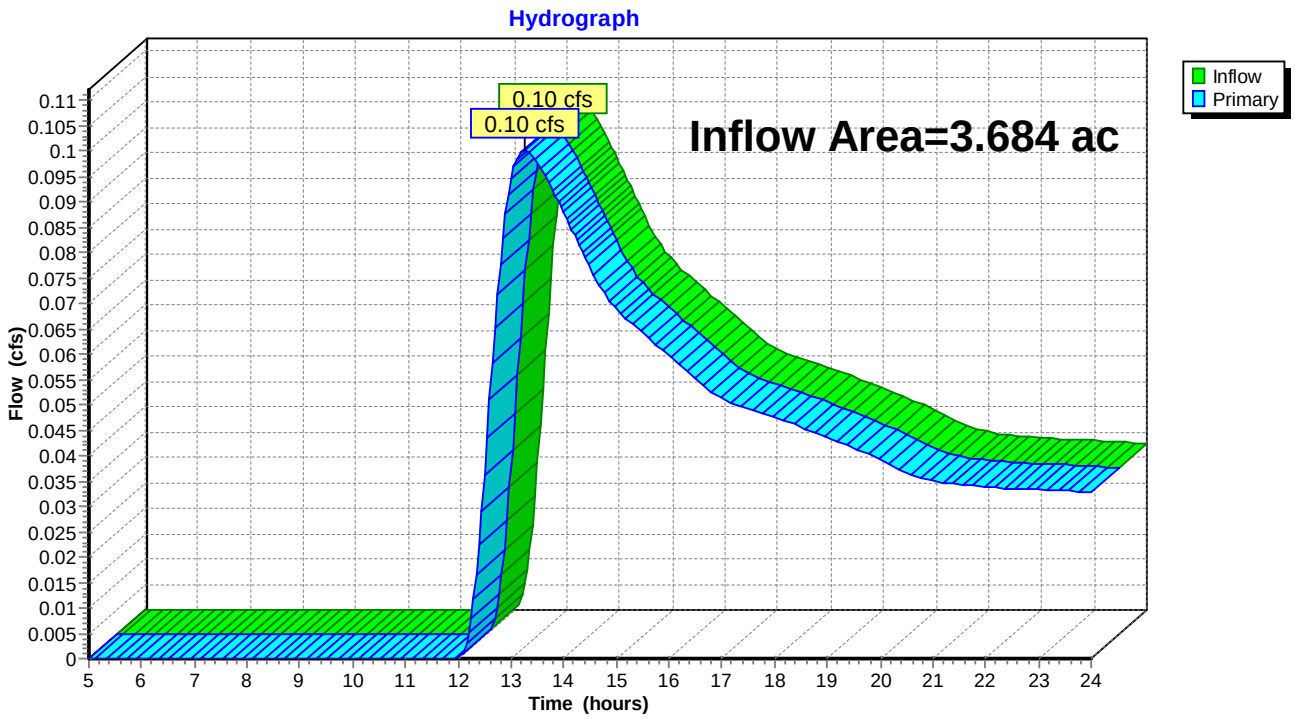


Summary for Link DP-3: Design Point #3

Inflow Area = 3.684 ac, 0.00% Impervious, Inflow Depth > 0.16" for 10-Year event
Inflow = 0.10 cfs @ 13.27 hrs, Volume= 0.050 af
Primary = 0.10 cfs @ 13.27 hrs, Volume= 0.050 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Link DP-3: Design Point #3



Summary for Subcatchment DA-1: DA-1

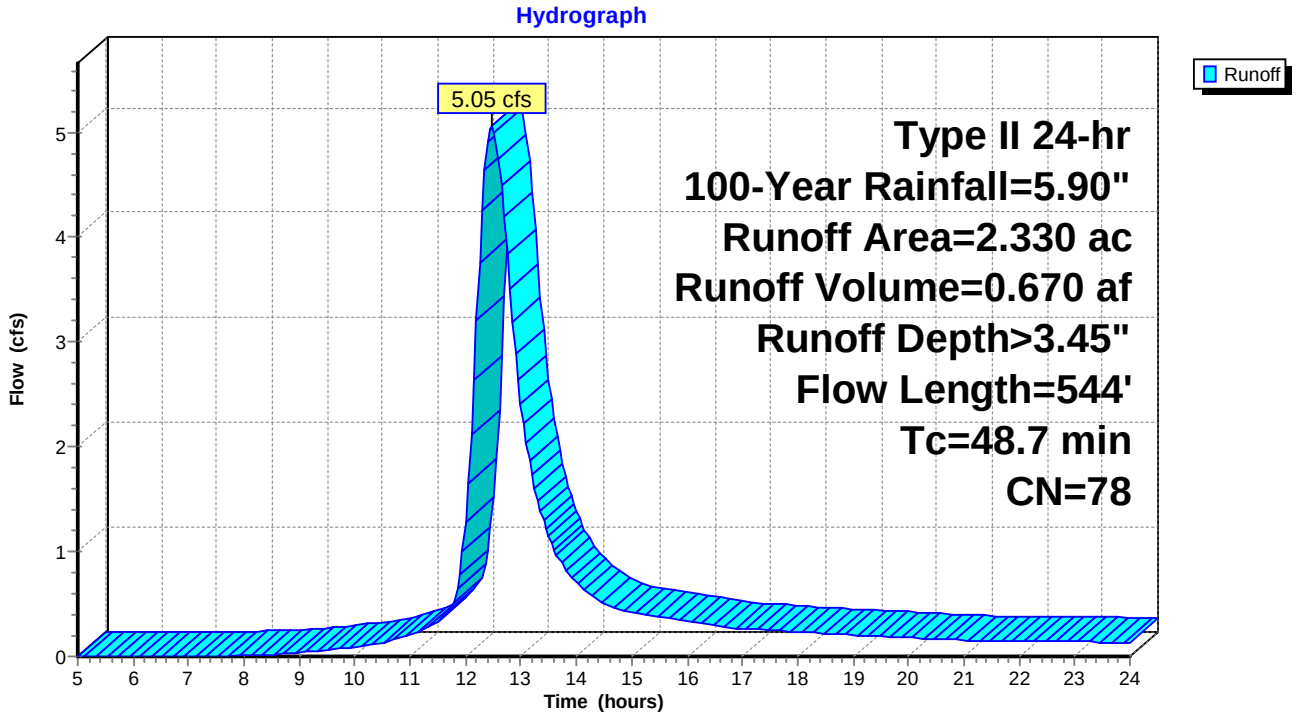
Runoff = 5.05 cfs @ 12.48 hrs, Volume= 0.670 af, Depth> 3.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=5.90"

	Area (ac)	CN	Description
	1.493	78	Meadow, non-grazed, HSG D
	0.031	49	50-75% Grass cover, Fair, HSG A
	0.631	79	Woods, Fair, HSG D
*	0.175	75	Limited Use Pervious Gravel
	2.330	78	Weighted Average
	2.330		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.0	150	0.0045	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.87"
8.5	164	0.0021	0.32		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.2	230	0.0029	0.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
48.7	544	Total			

Subcatchment DA-1: DA-1



Summary for Subcatchment DA-2: DA-2

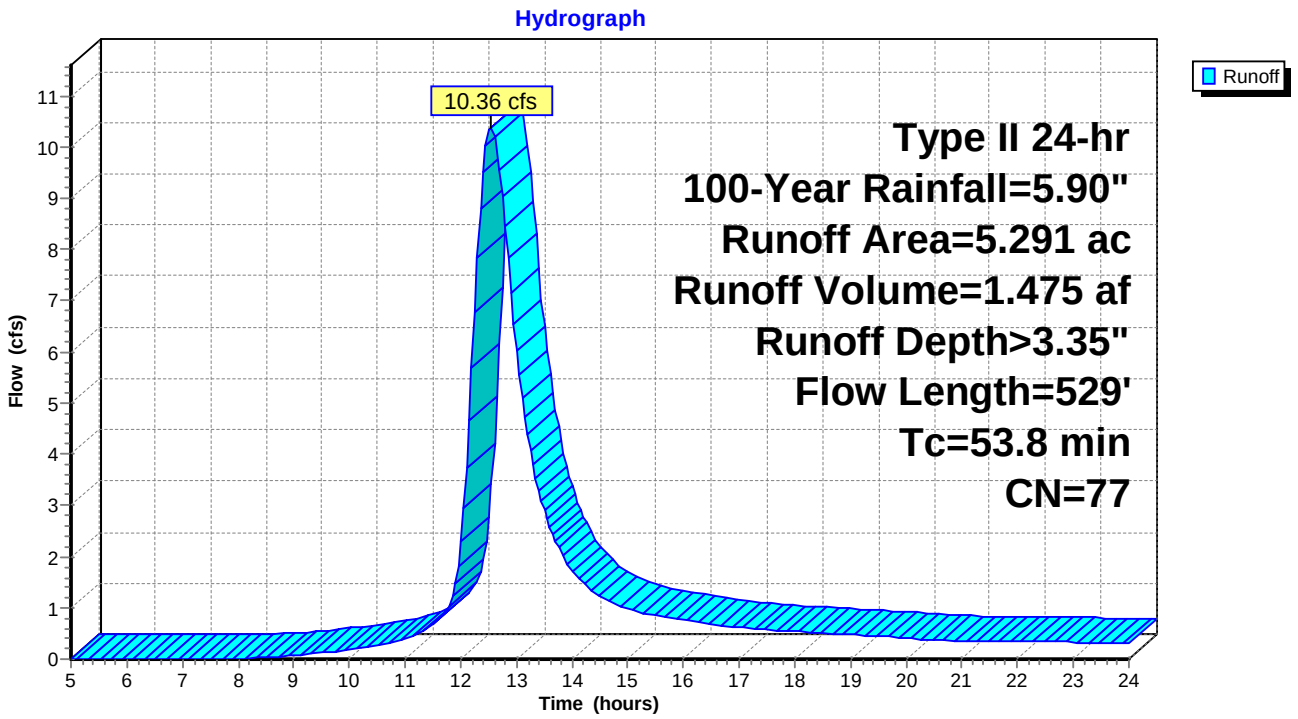
Runoff = 10.36 cfs @ 12.54 hrs, Volume= 1.475 af, Depth> 3.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=5.90"

Area (ac)	CN	Description
3.945	78	Meadow, non-grazed, HSG D
1.243	79	Woods, Fair, HSG D
0.103	30	Meadow, non-grazed, HSG A
5.291	77	Weighted Average
5.291		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
38.1	150	0.0129	0.07		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.87"
1.4	32	0.0031	0.39		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	54	0.0268	1.15		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.9	251	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.6	42	0.0030	0.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
53.8	529	Total			

Subcatchment DA-2: DA-2



Summary for Subcatchment DA-3: DA-3

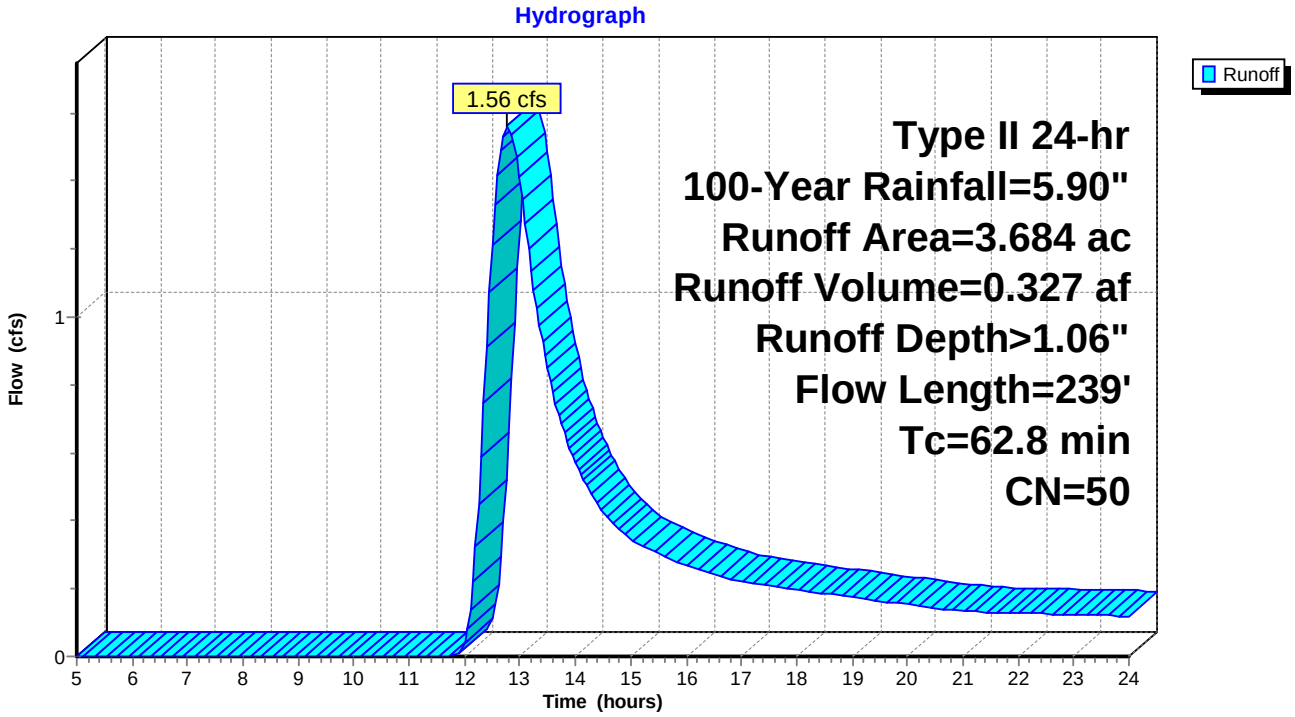
Runoff = 1.56 cfs @ 12.78 hrs, Volume= 0.327 af, Depth> 1.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=5.90"

Area (ac)	CN	Description
1.226	30	Meadow, non-grazed, HSG A
0.550	78	Meadow, non-grazed, HSG D
0.846	79	Woods, Fair, HSG D
1.062	36	Woods, Fair, HSG A
3.684	50	Weighted Average
3.684		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
60.9	150	0.0040	0.04		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.87"
0.8	44	0.0180	0.94		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	45	0.0180	0.67		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
62.8	239	Total			

Subcatchment DA-3: DA-3

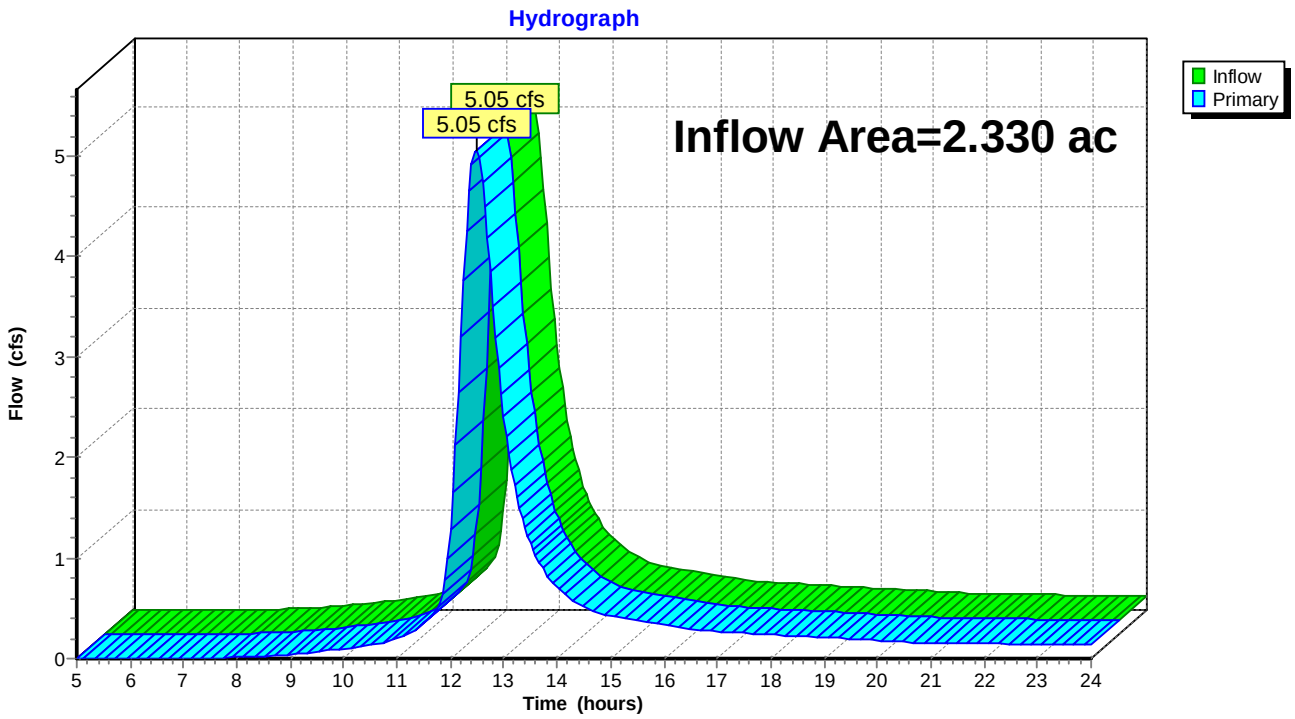


Summary for Link DP-1: Design Point #1

Inflow Area = 2.330 ac, 0.00% Impervious, Inflow Depth > 3.45" for 100-Year event
Inflow = 5.05 cfs @ 12.48 hrs, Volume= 0.670 af
Primary = 5.05 cfs @ 12.48 hrs, Volume= 0.670 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Link DP-1: Design Point #1

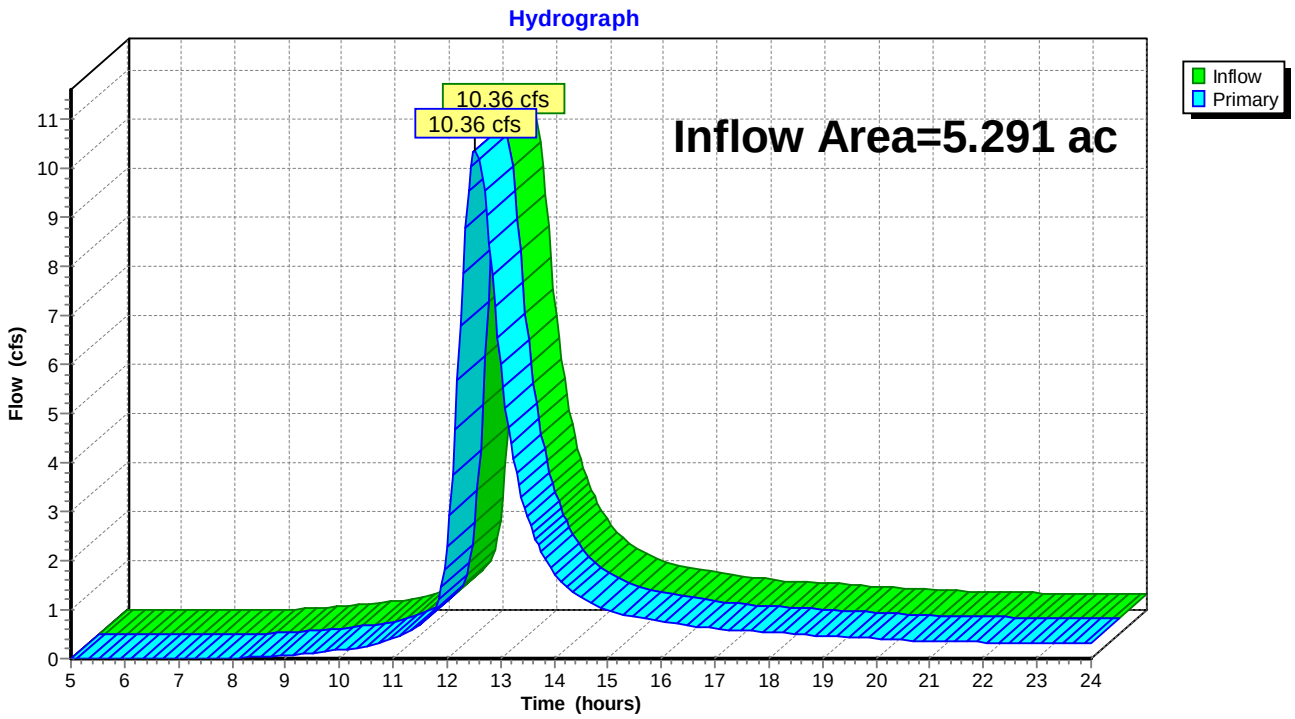


Summary for Link DP-2: Design Point #2

Inflow Area = 5.291 ac, 0.00% Impervious, Inflow Depth > 3.35" for 100-Year event
Inflow = 10.36 cfs @ 12.54 hrs, Volume= 1.475 af
Primary = 10.36 cfs @ 12.54 hrs, Volume= 1.475 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Link DP-2: Design Point #2

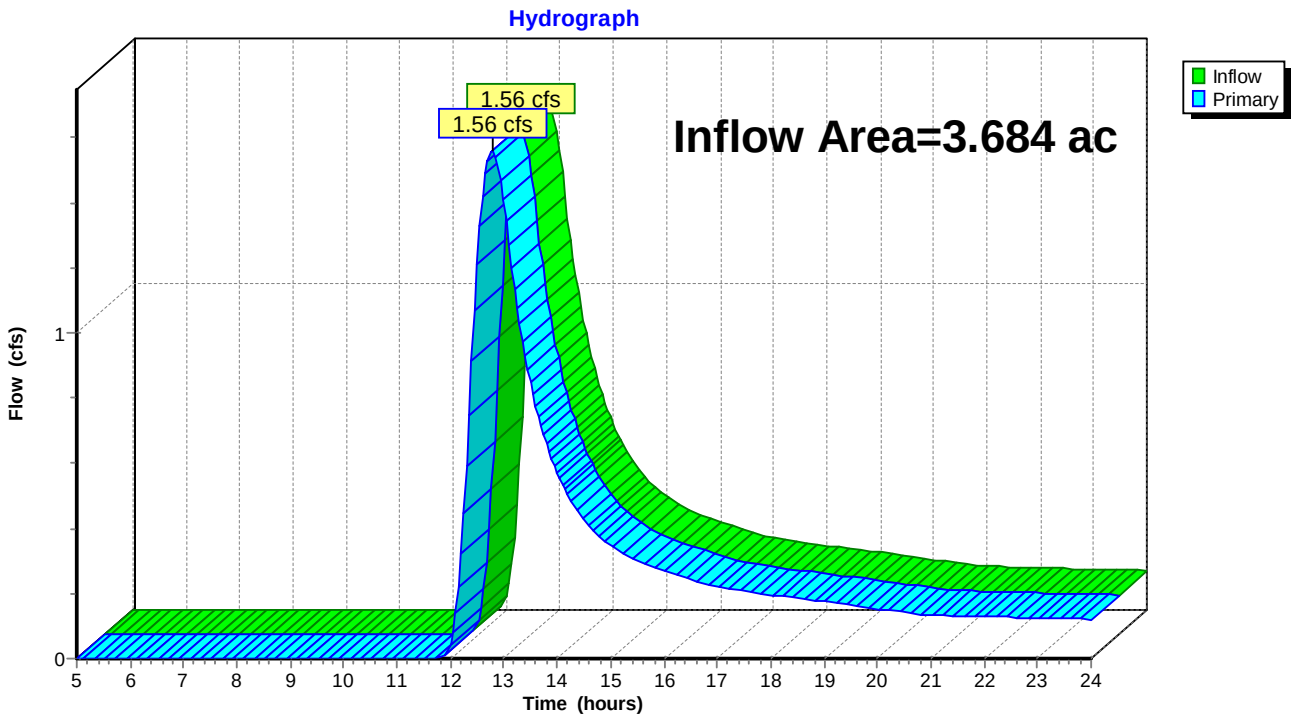


Summary for Link DP-3: Design Point #3

Inflow Area = 3.684 ac, 0.00% Impervious, Inflow Depth > 1.06" for 100-Year event
Inflow = 1.56 cfs @ 12.78 hrs, Volume= 0.327 af
Primary = 1.56 cfs @ 12.78 hrs, Volume= 0.327 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Link DP-3: Design Point #3



Appendix R-3
NRCS Soils Report

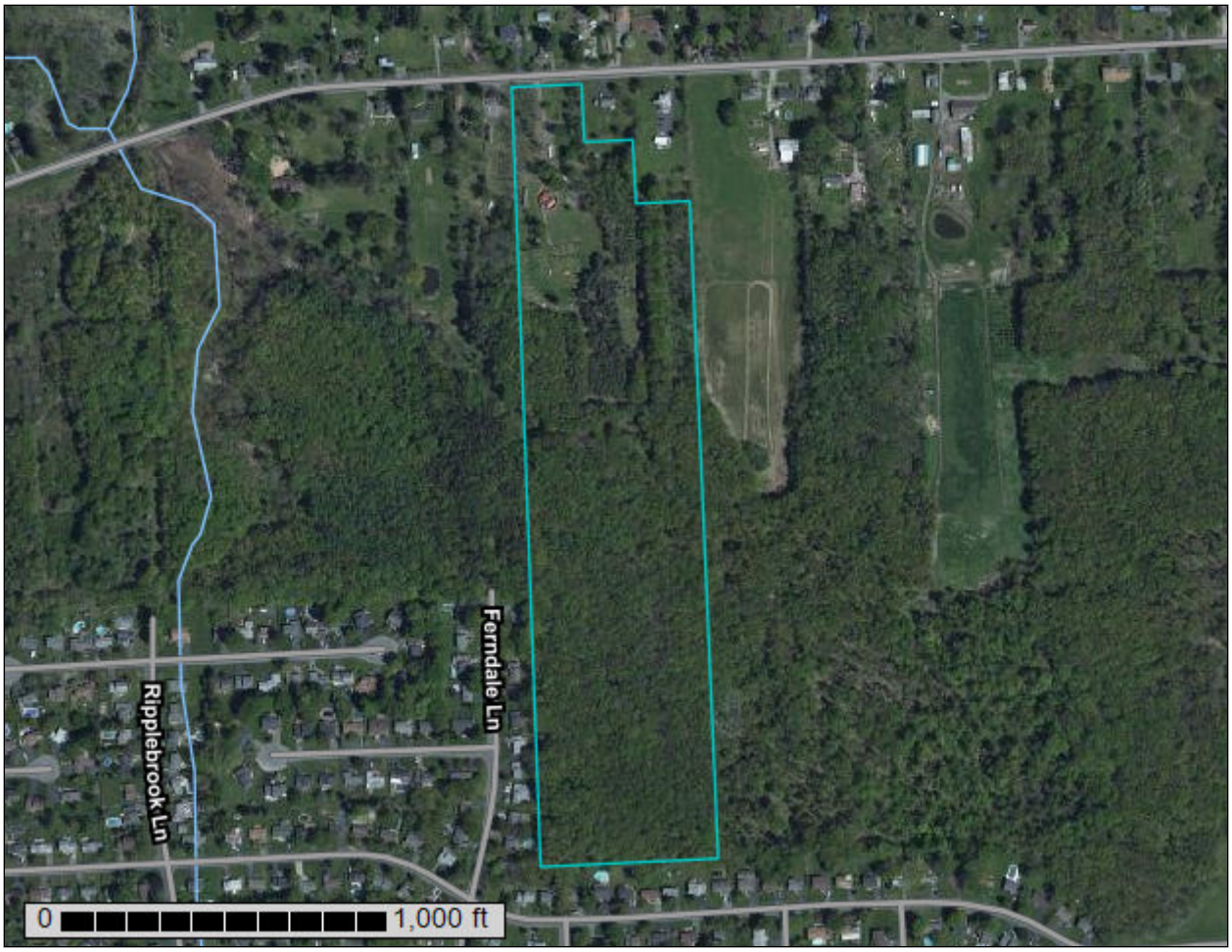
United States Department of Agriculture

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 Onondaga County, New York

Kirkville Road Solar Project



December 14, 2020

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

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface.....2
How Soil Surveys Are Made.....5
Soil Map.....8
Soil Map.....9
Legend.....10
Map Unit Legend.....11
Map Unit Descriptions.....11
Onondaga County, New York.....13
ArB—Arkport very fine sandy loam, 2 to 6 percent slopes.....13
ChB—Collamer silt loam, 2 to 6 percent slopes.....14
GaA—Galen very fine sandy loam, 0 to 2 percent slopes.....15
MtA—Minoa fine sandy loam, 0 to 2 percent slopes.....17
NgA—Niagara silt loam, 0 to 4 percent slopes.....18
WwA—Williamson silt loam, 0 to 2 percent slopes.....19
Soil Information for All Uses.....22
Soil Properties and Qualities.....22
Soil Qualities and Features.....22
Hydrologic Soil Group.....22
References.....27

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.

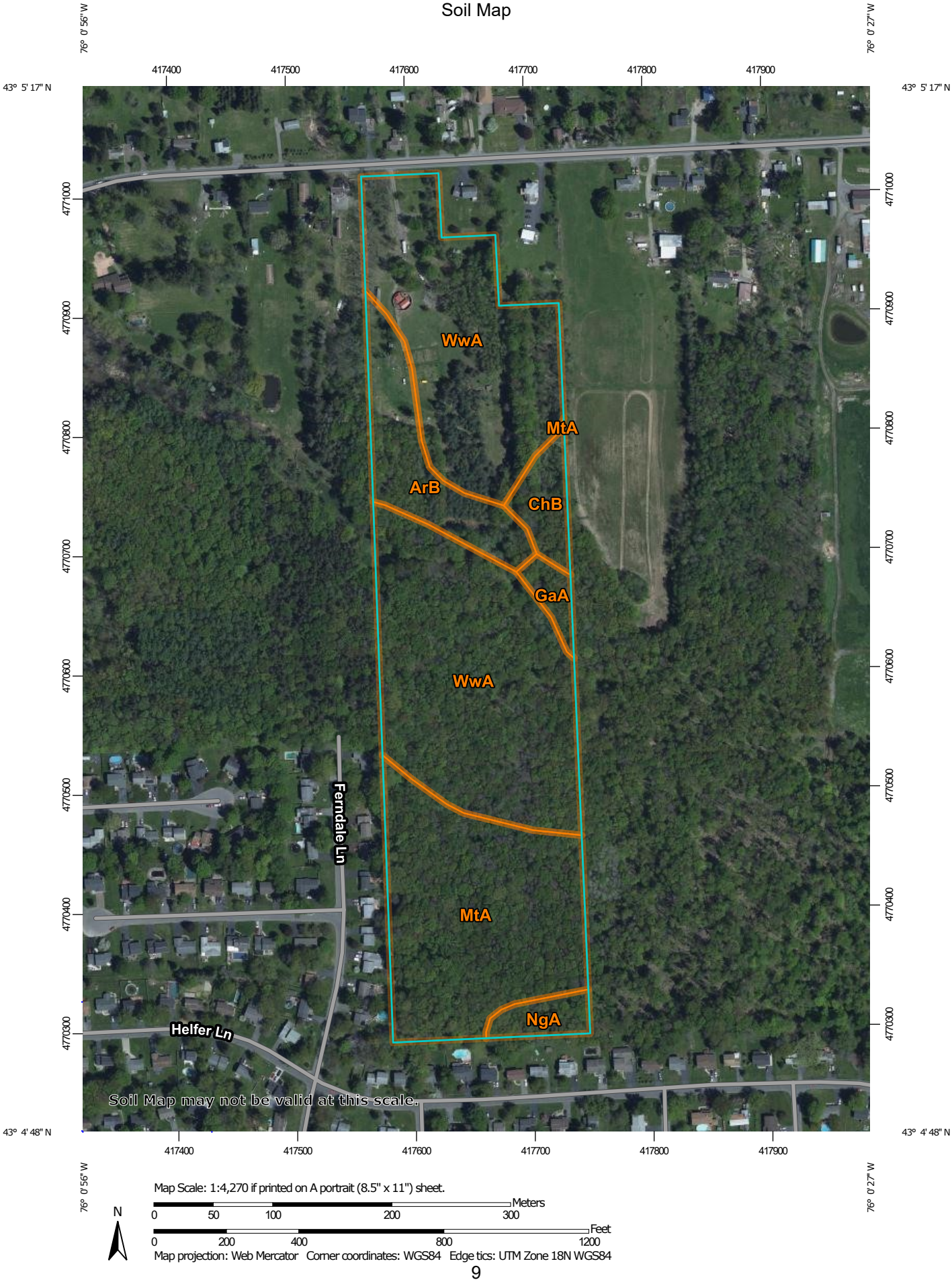
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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.

Custom Soil Resource Report
Soil Map



Map Scale: 1:4,270 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

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 1:20,000.

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: Onondaga County, New York
Survey Area Data: Version 15, Jun 11, 2020

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

Date(s) aerial images were photographed: May 21, 2020—Jun 17, 2020

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
ArB	Arkport very fine sandy loam, 2 to 6 percent slopes	2.6	9.5%
ChB	Collamer silt loam, 2 to 6 percent slopes	0.9	3.3%
GaA	Galen very fine sandy loam, 0 to 2 percent slopes	0.5	1.7%
MtA	Minoa fine sandy loam, 0 to 2 percent slopes	7.2	26.3%
NgA	Niagara silt loam, 0 to 4 percent slopes	0.6	2.3%
WwA	Williamson silt loam, 0 to 2 percent slopes	15.6	56.9%
Totals for Area of Interest		**27.5**	**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.

Onondaga County, New York

ArB—Arkport very fine sandy loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 9vfh
Elevation: 300 to 900 feet
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Arkport and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Arkport

Setting

Landform: Deltas on lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Glaciofluvial or deltaic deposits with a high content of fine and very fine sand

Typical profile

H1 - 0 to 10 inches: very fine sandy loam
H2 - 10 to 18 inches: very fine sandy loam
H3 - 18 to 60 inches: very fine sandy loam
H4 - 60 to 70 inches: very fine sand

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
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
Calcium carbonate, maximum content: 15 percent
Available water capacity: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Ecological site: F101XY005NY - Dry Outwash
Hydric soil rating: No

Minor Components

Howard

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

Minoa

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

Colonie

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

Alton

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

Galen

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

ChB—Collamer silt loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 9vgb
Elevation: 360 to 1,310 feet
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Collamer

Setting

Landform: Lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Silty and clayey glaciolacustrine deposits

Typical profile

H1 - 0 to 10 inches: silt loam
H2 - 10 to 16 inches: silt loam
H3 - 16 to 42 inches: silt loam

H4 - 42 to 60 inches: stratified silt loam to very fine sand

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water capacity: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C/D
Ecological site: F101XY009NY - Moist Lake Plain
Hydric soil rating: No

Minor Components

Niagara

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

Unnamed soils

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

Dunkirk

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

GaA—Galen very fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 9vgs
Elevation: 360 to 560 feet
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Galen

Setting

Landform: Deltas on lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Deltaic deposits with a high content of fine and very fine sand

Typical profile

H1 - 0 to 9 inches: very fine sandy loam
H2 - 9 to 15 inches: very fine sandy loam
H3 - 15 to 48 inches: loamy fine sand
H4 - 48 to 60 inches: stratified loamy fine sand to fine sand to silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Available water capacity: Moderate (about 6.5 inches)

Interpretive groups

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

Minor Components

Arkport

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

Unnamed soils

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

Minoa

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

Lamson

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

MtA—Minoa fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 9vjn
Elevation: 250 to 800 feet
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Prime farmland if drained

Map Unit Composition

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

Description of Minoa

Setting

Landform: Deltas on lake plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Deltaic or glaciolacustrine deposits with a high content of fine and very fine sand

Typical profile

H1 - 0 to 10 inches: fine sandy loam
H2 - 10 to 38 inches: loamy very fine sand
H3 - 38 to 60 inches: stratified very fine sand to fine sand to silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water capacity: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: F101XY006NY - Moist Outwash
Hydric soil rating: No

Minor Components

Galen

Percent of map unit: 8 percent
Hydric soil rating: No

Lamson

Percent of map unit: 8 percent
Landform: Depressions
Hydric soil rating: Yes

Unnamed soils

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

Canandaigua

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

NgA—Niagara silt loam, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 9vjv
Elevation: 360 to 1,590 feet
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Prime farmland if drained

Map Unit Composition

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

Description of Niagara

Setting

Landform: Lake plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Silty and clayey glaciolacustrine deposits

Typical profile

H1 - 0 to 11 inches: silt loam
H2 - 11 to 39 inches: silt loam
H3 - 39 to 60 inches: stratified silt loam to loamy very fine sand

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water capacity: High (about 10.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: F101XY009NY - Moist Lake Plain
Hydric soil rating: No

Minor Components

Canandaigua

Percent of map unit: 7 percent
Landform: Depressions
Hydric soil rating: Yes

Williamson

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

Collamer

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

Unnamed soils

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

WwA—Williamson silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 9vld
Elevation: 360 to 460 feet
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Williamson and similar soils: 80 percent
Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Williamson

Setting

Landform: Lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Glaciolacustrine or eolian deposits with a high content of silt and very fine sand

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 22 inches: silt loam
H3 - 22 to 45 inches: very fine sandy loam
H4 - 45 to 60 inches: very fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 15 to 24 inches to fragipan
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 13 to 22 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.2 inches)

Interpretive groups

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

Minor Components

Colonie

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

Niagara

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

Arkport

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

Galen

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

Collamer

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

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

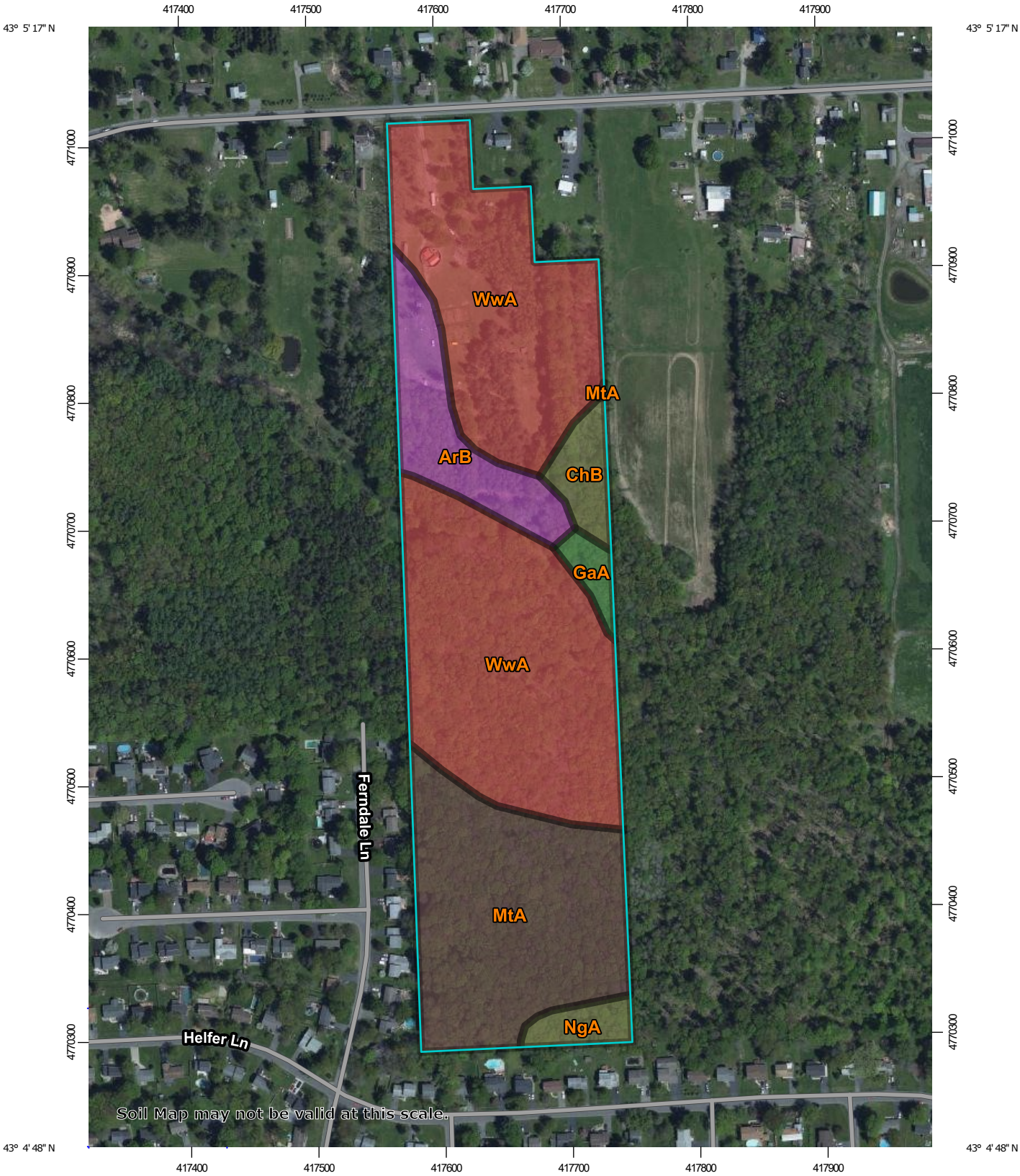
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group



Map Scale: 1:4,270 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

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 Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

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 1:20,000.

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: Onondaga County, New York
Survey Area Data: Version 15, Jun 11, 2020

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

Date(s) aerial images were photographed: May 21, 2020—Jun 17, 2020

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.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
ArB	Arkport very fine sandy loam, 2 to 6 percent slopes	A	2.6	9.5%
ChB	Collamer silt loam, 2 to 6 percent slopes	C/D	0.9	3.3%
GaA	Galen very fine sandy loam, 0 to 2 percent slopes	A/D	0.5	1.7%
MtA	Minoa fine sandy loam, 0 to 2 percent slopes	B/D	7.2	26.3%
NgA	Niagara silt loam, 0 to 4 percent slopes	C/D	0.6	2.3%
WwA	Williamson silt loam, 0 to 2 percent slopes	D	15.6	56.9%
Totals for Area of Interest			**27.5**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix S

Cultural/Historic Resources Review

NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ERIK KULLESEID
Commissioner

October 23, 2020

Allison Koch
Environmental Analyst
LaBella Associates, DPC.
300 State Street, Suite 201
Rochester, NY 14614

Re: NYSERDA
Kirkville Road Solar/1.6 MW/7 Acres
Town of Manlius, Onondaga County, NY
20PR06560

Dear Allison Koch:

Thank you for requesting the comments of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the project in accordance with the New York State Historic Preservation Act of 1980 (Section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the OPRHP and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8) and its implementing regulations (6 NYCRR Part 617).

Based upon this review, it is the opinion of OPRHP that no properties, including archaeological and/or historic resources, listed in or eligible for the New York State and National Registers of Historic Places will be impacted by this project.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

R. Daniel Mackay

Deputy Commissioner for Historic Preservation
Division for Historic Preservation

APPENDIX E

Full Environmental Assessment Form

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: RPNY 5, LLC Kirkville Road Solar Project		
Project Location (describe, and attach a general location map): 7390 Kirkville Road in the Town of Manlius, Onondaga County, New York (43.083927, -76011575) (Please refer to attached USGS Map)		
Brief Description of Proposed Action (include purpose or need): The proposed project consists of a 1.6 MW solar energy system solar farm located on an approximately 6.95-acre portion of a 27.65-acre parcel (Parcel ID: 055.-01-10.1). The Project will involve the installation of ground mounted photovoltaic panels as well as associated access road, electric utility upgrades, power inverters and perimeter fencing for the solar energy system.		
Name of Applicant/Sponsor: RPNY Solar 5, LLC c/o Stephanie Loucas (Renewable Properties, LLC)	Telephone: 415-710-3834 E-Mail: stephanie@renewprop.com	
Address: 879 Sanchez Street		
City/PO: San Francisco	State: CA	Zip Code: 94114
Project Contact (if not same as sponsor; give name and title/role): Bergmann, c/o Kelly Sullivan	Telephone: 585-333-3116 E-Mail: khsullivan@bergmannpc.com	
Address: 280 East Broad Street, Suite 200		
City/PO: Rochester	State: NY	Zip Code: 14604
Property Owner (if not same as sponsor): Alemic Abdulah	Telephone: 315-560-4113 E-Mail: N/A	
Address: 6533 N. Manlius Road		
City/PO: Kirkville	State: NY	Zip Code: 13082

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, or Village Board of Trustees ☑Yes ☐No	Town of Manilus Planning Board Application - Site Plan Referral	12/22/2020
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	Town of Manilus Planning Board - Site Plan Approval and Special Use Permit Approval	12/22/2020
c. City, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☐Yes ☑No		
e. County agencies ☑Yes ☐No	Onondaga County Planning Board	TBD
f. Regional agencies ☐Yes ☑No		
g. State agencies ☑Yes ☐No	SHPO - No Effect; NYSERDA - Incentives; NYSDEC - SPDES GP-020-001	TBD - SHPO No Effect received: 10/23/2020
h. Federal agencies ☐Yes ☑No	USACE - NWP 51 (Non-Reporting) - if nec, USDA Rural Energy for America Funding	USACE - NWP 51 N/A, USDA TBD

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☐Yes ☑No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes ☑No

iii. Is the project site within a Coastal Erosion Hazard Area? ☑Yes ☐No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☐Yes ☑No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☐Yes ☐No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☐Yes ☑No

If Yes, identify the plan(s):

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☑Yes ☐No

If Yes, identify the plan(s):

Onondaga County Agricultural and Farmland Protection Plan

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
Restricted Agricultural (RA)

b. Is the use permitted or allowed by a special or conditional use permit? ☑ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site? _____

C.4. Existing community services.

a. In what school district is the project site located? East Syracuse - Minoa Central School District

b. What police or other public protection forces serve the project site?
Manlius Police Department

c. Which fire protection and emergency medical services serve the project site?
Minoa Fire Department and Critical Response Committee emergency services

d. What parks serve the project site?
Ellis Field Park and Green Lakes State Park

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)?
Community Solar Farm

b. a. Total acreage of the site of the proposed action? 6.95± acres
b. Total acreage to be physically disturbed? 6.95± acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 27.65± acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☑ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☑ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
_____
ii. Is a cluster/conservation layout proposed? ☐ Yes ☐ No
iii. Number of lots proposed? _____
iv. Minimum and maximum proposed lot sizes? Minimum _____ Maximum _____

e. Will the proposed action be constructed in multiple phases? ☐ Yes ☑ No
i. If No, anticipated period of construction: _____ months
ii. If Yes:
- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

f. Does the project include new residential uses? ☐Yes ☑No
If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase	_____	_____	_____	_____
At completion of all phases	_____	_____	_____	_____

g. Does the proposed action include new non-residential construction (including expansions)? ☑Yes ☐No
If Yes,
i. Total number of structures N/A
ii. Dimensions (in feet) of largest proposed structure: N/A height; N/A width; and N/A length
iii. Approximate extent of building space to be heated or cooled: N/A square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☐Yes ☑No
If Yes,
i. Purpose of the impoundment: _____
ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☐Other specify: _____
iii. If other than water, identify the type of impounded/contained liquids and their source. _____
iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: _____ acres
v. Dimensions of the proposed dam or impounding structure: _____ height; _____ length
vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete): _____

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? ☐Yes ☑No
(Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite)
If Yes:
i .What is the purpose of the excavation or dredging? _____
ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?
- Volume (specify tons or cubic yards): _____
- Over what duration of time? _____

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them. _____
iv. Will there be onsite dewatering or processing of excavated materials? ☐Yes ☐No
If yes, describe. _____
v. What is the total area to be dredged or excavated? _____acres
vi. What is the maximum area to be worked at any one time? _____ acres
vii. What would be the maximum depth of excavation or dredging? _____ feet
viii. Will the excavation require blasting? ☐Yes ☐No
ix. Summarize site reclamation goals and plan: _____

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐Yes ☑No
If Yes:
i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): _____

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

_____

_____

_____

_____

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐Yes ☐No

If Yes, describe: _____

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐ Yes ☐No

If Yes:

- acres of aquatic vegetation proposed to be removed: _____
- expected acreage of aquatic vegetation remaining after project completion: _____
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____

  _____
- proposed method of plant removal: _____
- if chemical/herbicide treatment will be used, specify product(s): _____

v. Describe any proposed reclamation/mitigation following disturbance: _____

_____

c. Will the proposed action use, or create a new demand for water? ☐Yes ☑No

If Yes:

i. Total anticipated water usage/demand per day: _____ gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☐Yes ☐No

If Yes:

- Name of district or service area: _____
- Does the existing public water supply have capacity to serve the proposal? ☐ Yes ☐ No
- Is the project site in the existing district? ☐ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☐ No
- Do existing lines serve the project site? ☐ Yes ☐ No

iii. Will line extension within an existing district be necessary to supply the project? ☐Yes ☐No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

  _____
- Source(s) of supply for the district: _____

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐ Yes ☐No

If, Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

_____

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☐Yes ☑No

If Yes:

i. Total anticipated liquid waste generation per day: _____ gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): _____

_____

_____

iii. Will the proposed action use any existing public wastewater treatment facilities? ☐Yes ☐No

If Yes:

- Name of wastewater treatment plant to be used: _____
- Name of district: _____
- Does the existing wastewater treatment plant have capacity to serve the project? ☐Yes ☐No
- Is the project site in the existing district? ☐Yes ☐No
- Is expansion of the district needed? ☐Yes ☐No

- Do existing sewer lines serve the project site? ☐Yes ☐No
- Will a line extension within an existing district be necessary to serve the project? ☐Yes ☐No

  If Yes:
  - Describe extensions or capacity expansions proposed to serve this project: _____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐Yes ☐No

If Yes:
- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

_____

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☑Yes ☐No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

0 Square feet or 0 acres (impervious surface)

1,204 Square feet or 27.65 acres (parcel size)

ii. Describe types of new point sources. Limited Use Pervious Gravel Roadway

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

On-site surface water

- If to surface waters, identify receiving water bodies or wetlands: _____
- Will stormwater runoff flow to adjacent properties? ☐Yes ☑No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☑Yes ☐No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☐Yes ☑No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐Yes ☑No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐Yes ☐No

ii. In addition to emissions as calculated in the application, the project will generate:
- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

_____

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☐Yes ☑No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐Weekend ☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): _____

iii. Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

iv. Does the proposed action include any shared use parking? ☐Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☐No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☐No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☐Yes ☑No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☐Yes ☐No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: 8:00 am - 6:00 pm
- Saturday: 8:00 am - 6:00 pm
- Sunday: N/A
- Holidays: N/A

ii. During Operations:

- Monday - Friday: N/A
- Saturday: N/A
- Sunday: N/A
- Holidays: N/A

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☑ Yes ☐ No

If yes:

i. Provide details including sources, time of day and duration:

Noise levels will increase during construction due to construction equipment during the hours of 8:00 AM - 6:00 PM Monday through Saturday.

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☐ Yes ☑ No

Describe: _____

n. Will the proposed action have outdoor lighting? ☐ Yes ☑ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☐ Yes ☑ No

Describe: _____

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☑ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☑ No

If Yes:

i. Product(s) to be stored _____

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally, describe the proposed storage facilities: _____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☑ No

If Yes:

i. Describe proposed treatment(s):

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☑ Yes ☐ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: 0.1 tons per Month (unit of time)
- Operation : N/A tons per N/A (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: Waste will consist of office waste and cardboard items from deliveries. Most of the waste will be recyclable
- Operation: N/A

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: A refuse container will remain on site during construction and be emptied by a licensed hauler as needed
- Operation: N/A

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility: _____

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☐ Industrial ☐ Commercial ☑ Residential (suburban) ☐ Rural (non-farm)
☑ Forest ☑ Agriculture ☐ Aquatic ☐ Other (specify): _____

ii. If mix of uses, generally describe: _____

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	0.15	0.00	-0.15
• Forested	23.66	19.42	-4.24
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	3.35	7.57	+4.22
• Agricultural (includes active orchards, field, greenhouse etc.)	0.00	0.00	0.00
• Surface water features (lakes, ponds, streams, rivers, etc.)	0.00	0.00	0.00
• Wetlands (freshwater or tidal)	0.49	0.49	0.00
• Non-vegetated (bare rock, earth or fill)	0.00	0.00	0.00
• Other Describe: Limited Use Pervious Gravel	0	0.17	+0.17

c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☑ No

i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☐ Yes ☑ No

If Yes,

i. Identify Facilities:

_____

_____

e. Does the project site contain an existing dam? ☐ Yes ☑ No

If Yes:

i. Dimensions of the dam and impoundment:

- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____

iii. Provide date and summarize results of last inspection:

_____

_____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Has the facility been formally closed? ☐ Yes ☐ No

- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

_____

_____

iii. Describe any development constraints due to the prior solid waste activities: _____

_____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

_____

_____

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☐ Yes ☑ No

If Yes:

i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☐ Yes ☑ No

☐ Yes – Spills Incidents database Provide DEC ID number(s): _____

☐ Yes – Environmental Site Remediation database Provide DEC ID number(s): _____

☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures: _____

_____

_____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☑ Yes ☐ No

If yes, provide DEC ID number(s): E734105

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

The former Greiner Orchard site is approximately 0.25 miles southwest of the project. The Greiner site is under an to environmental easement and includes ground water use restriction, soil management plan, land use restriction, site management plan, and IC/ EC plan.

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☑ No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☑ No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? 5.77± feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____ %

c. Predominant soil type(s) present on project site:

WwA - Williamson silt loam	56.9 %
MtA - Minoa fine sandy loam	26.3 %
ArB - Arkport very fine sandy loam	9.5 %

d. What is the average depth to the water table on the project site? Average: 2.26 feet

e. Drainage status of project site soils:
- ☑ Well Drained: 9.5 % of site
- ☑ Moderately Well Drained: 61.9 % of site
- ☑ Poorly Drained 28.6 % of site

f. Approximate proportion of proposed action site with slopes:
- ☑ 0-10%: 100 % of site
- ☐ 10-15%: _____ % of site
- ☐ 15% or greater: _____ % of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☑ Yes ☐ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☑ Yes ☐ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑ Yes ☐ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name _____ Classification _____
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name NYS Wetland Approximate Size NYS Wetland (in a...
- Wetland No. (if regulated by DEC) SYE-11

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐ Yes ☑ No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____

i. Is the project site in a designated Floodway? ☐ Yes ☑ No

j. Is the project site in the 100-year Floodplain? ☑ Yes ☐ No

k. Is the project site in the 500-year Floodplain? ☑ Yes ☐ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☑ Yes ☐ No
If Yes:

i. Name of aquifer: Principal Aquifer

m. Identify the predominant wildlife species that occupy or use the project site:

Grey Squirrel | Rabbits | Eastern Chipmunks
White-tailed Deer | Raccoon | Migratory Birds

n. Does the project site contain a designated significant natural community? ☐ Yes ☑ No

If Yes:

i. Describe the habitat/community (composition, function, and basis for designation): _____

ii. Source(s) of description or evaluation: _____

iii. Extent of community/habitat:

- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☑ Yes ☐ No

If Yes:

i. Species and listing (endangered or threatened): Indiana Bat and Northern Long Eared Bat, tree clearing will be conducted during the winter months to avoid impacts to these species.

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐ Yes ☑ No

If Yes:

i. Species and listing: _____

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☑ No

If yes, give a brief description of how the proposed action may affect that use: _____

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☑ No

If Yes, provide county plus district name/number: _____

b. Are agricultural lands consisting of highly productive soils present? ☑ Yes ☐ No

i. If Yes: acreage(s) on project site? 19.6 acres (All Areas are Prime Farmland)

ii. Source(s) of soil rating(s): NRCS Web Soil Survey

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No

If Yes:

i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature

ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No

If Yes:

i. CEA name: _____

ii. Basis for designation: _____

iii. Designating agency and date: _____

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☐ Yes ☑ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: _____

iii. Brief description of attributes on which listing is based:

_____

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☐ Yes ☑ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☐ Yes ☑ No

If Yes:

i. Identify resource: _____

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): _____

iii. Distance between project and resource: _____ miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: _____

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

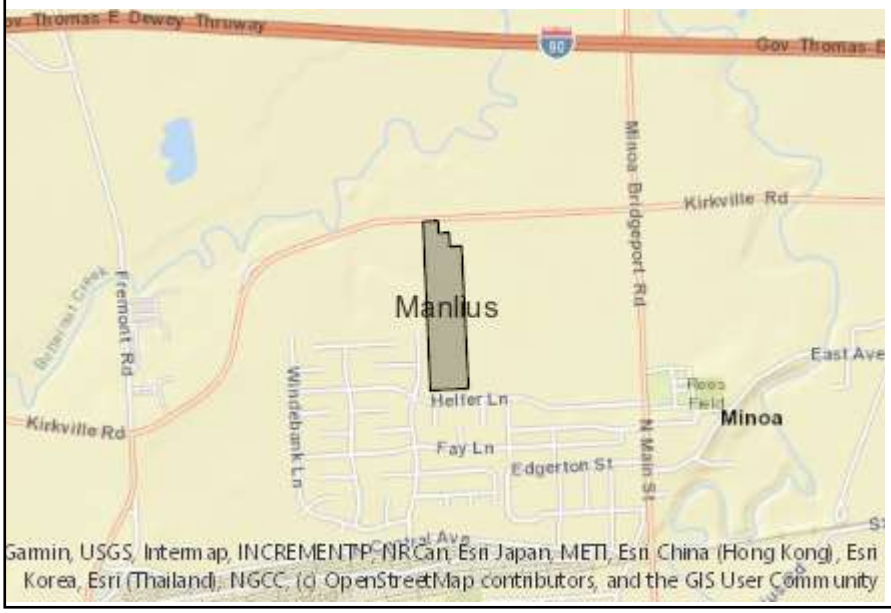
Applicant/Sponsor Name Kelly Sullivan - Bergmann Date December 21, 2020

Signature Kelly Sullivan Title Senior Project Manager

PRINT FORM

EAF Mapper Summary Report

Tuesday, December 15, 2020 2:39 PM



Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.

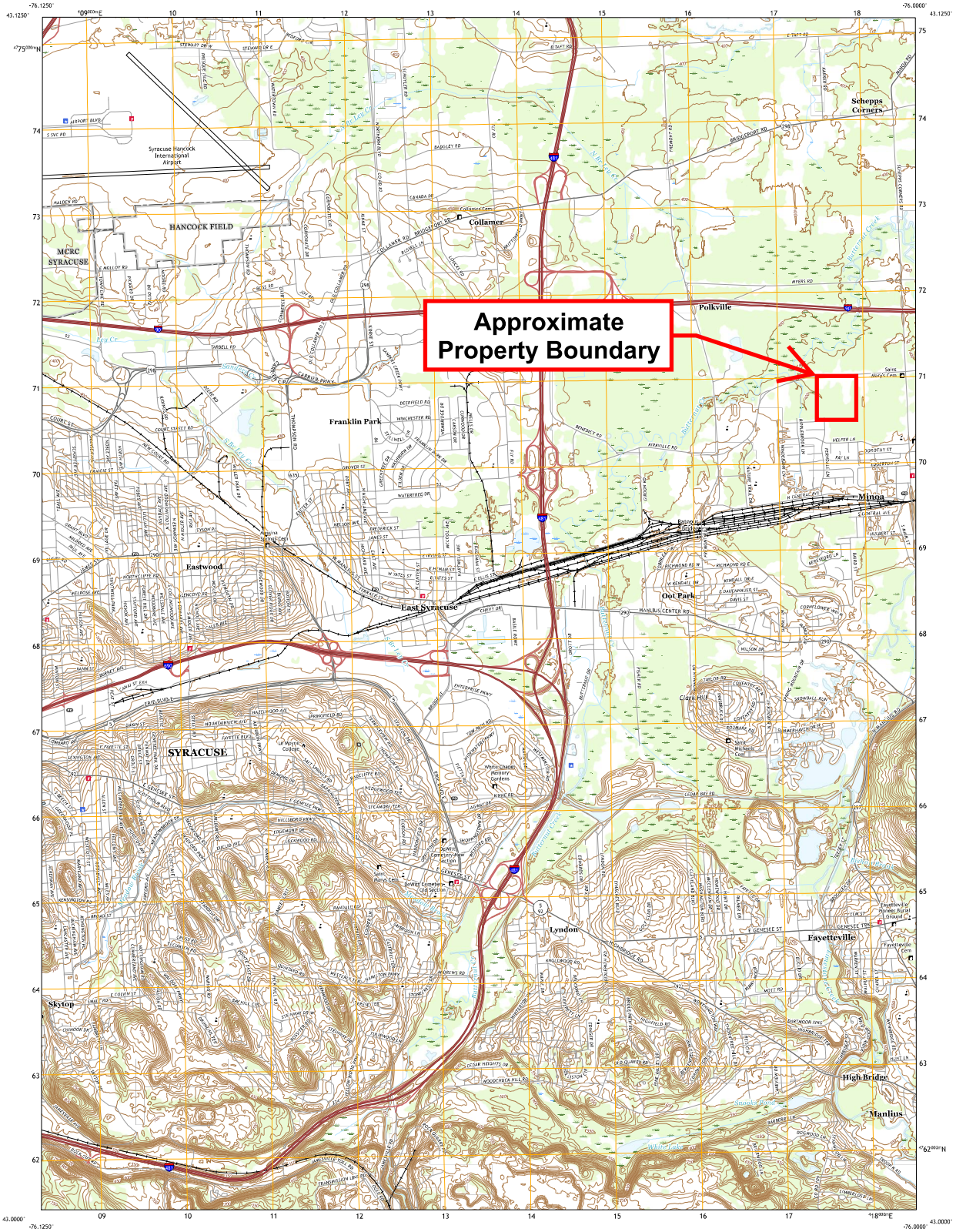
B.i.i [Coastal or Waterfront Area]	No
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.iii [Within 2,000' of DEC Remediation Site]	Yes
E.1.h.iii [Within 2,000' of DEC Remediation Site - DEC ID]	E734105
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	Yes
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.iv [Surface Water Features - Wetlands Name]	NYS Wetland
E.2.h.iv [Surface Water Features - Wetlands Size]	NYS Wetland (in acres):1451.0
E.2.h.iv [Surface Water Features - DEC Wetlands Number]	SYE-11
E.2.h.v [Impaired Water Bodies]	No
E.2.i. [Floodway]	No

E.2.j. [100 Year Floodplain]	Yes
E.2.k. [500 Year Floodplain]	Yes
E.2.l. [Aquifers]	Yes
E.2.l. [Aquifer Names]	Principal Aquifer
E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	Yes
E.2.o. [Endangered or Threatened Species - Name]	Indiana Bat
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	No
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.3.f. [Archeological Sites]	No
E.3.i. [Designated River Corridor]	No

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map US Topo

SYRACUSE EAST QUADRANGLE
NEW YORK • ONONDAGA COUNTY
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and 1 000-meter grid:Universal Transverse Mercator, Zone 18T
This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery.....NAIP, August 2017 - December 2017
Roads.....U.S. Census Bureau, 2016
Names.....GNIS, 1980 - 2019
Hydrography.....National Hydrography Dataset, 1899 - 2019
Contours.....National Elevation Dataset, 1998 - 2018
Boundaries.....Multiple sources; see metadata file 2017 - 2018

Wetlands.....FWS National Wetlands Inventory 1978 - 2009

UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET
MN GN
12°20'
218 MILS
0°48'
13 MILS

U.S. National Grid
100,000-m Square ID
VN
Grid Zone Designation
18T

SCALE 1:24 000
KILOMETERS 0.5 0 1 1 2
METERS 1000 500 0 1000 2000
MILES 0.5
FEET 1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.18

NEW YORK
QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

1 Brewerton
2 Cicero
3 Cleveland
4 Syracuse West
5 Manlius
6 South Onondaga
7 Jamesville
8 Oran

ADJOINING QUADRANGLES

ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

SYRACUSE EAST, NY
2019

NSN
NGA REF NO. 4 3 0 1 5 2 7 4 2 1 0 6

APPENDIX G

Professional Fees Reimbursement Agreement

TOWN OF MANLIUS

SPECIAL PERMIT APPLICATION – EXHIBIT "G"

PROFESSIONAL FEES REIMBURSEMENT AGREEMENT

As a condition of the application(s) to the Town of Manlius, its Zoning Board of Appeals, Planning Board, codes administration/planning office, and/or Town Board (the "Town") for various zoning, land use, construction and related reviews, approvals, certificates, permits and related consideration(s) (including for any local governmental assisted funding) related to the request of Kirkville Road Solar: (the "Application"), Wildcat Renewables, LLC [name], a California based Limited Liability Company located at 879 Sanchez Street, San Francisco, CA 94114 [legal address] ("Applicant") relative to proposed development at 7390 Kirkville Road, East Syracuse, NY 13057 [project address], Tax Parcel # 313889 055.01.10.1, Manlius, New York, and related matters (the "Project") agrees as follows:

The Application and Project may or will likely entail that the Town incur legal, engineering, architectural, administrative and related expense(s) including, without limitation, for both on staff and third party consultants involved in the consideration of the Application and Project, and including, without limitation, attendance at Zoning Board of Appeals, Planning Board, and Town Board meetings, consultation with the Applicant, its or the Town's engineer, architect, attorney, and/or other Town officers and employees, or consultants or professional service providers, incidental to the Application from the earlier of the filing of the Application for and/or first presentation of the Project to Town, and through final completion and issuance of all Town and other governmental permits, certifications and approvals.

In connection with and consideration of the foregoing, Applicant agrees to bear all cost and expense for such administrative, legal, engineering, architect and other professional and consulting assistance to the Town incidental to the Application and Project, and including that expense incurred by the Town for Town employees and officers performing reasonable and necessary work on behalf of the Town incident to the Application or Project.

In connection with the foregoing, Applicant shall reimburse the Town for time spent by outside consultants and professionals at the usual rate charged by them to private clientele, or if none, then the usual rate charged to municipalities. Reimbursement for the cost of Town employees and officers shall be based upon the cost to Town for the services of such persons, including salary and fringe benefits, reduced to an hourly rate and including overtime where directly attributable to the Application or Project.

Should the Town determine, in its sole discretion, that additional services are required to represent, supervise, inspect, evaluate and/or consult, including in order to protect the rights and/or interests of the Town such as relative to an enforcement or violation proceeding, the Applicant shall likewise bear all costs associated with such services.

This Agreement shall be effective as of October 8, 2020 The Applicant shall deposit an initial sum of $2,450.00 and such other amounts as from time to time the Town may determine, payable to and deposited with the Town and which sum or sums shall be applied against those sums reimbursable to the Town pursuant to the terms of this Agreement (the "Deposit"). Upon completion or discontinuance of the Application and Project and payment of all fees incurred, any unused Deposit shall be returned to the Applicant.

The Applicant shall receive periodically, one or more statements detailing charges for which reimbursement has been made against the Deposit, detailing unpaid amounts, if any, and setting forth any additional Deposit required by the Town. Failure to pay any amounts due the Town of Manlius within twenty (20) days of the date of statement may result in the termination of work/services by Town relative to the Application, the non-issuance suspension or revocation of any certificates, permits or approvals, and/or denial of applications, the Town's commencement of collection efforts, and/or the exercise of any other rights or remedies available to Town hereunder or pursuant to applicable law, including under the Town Code. No certificates, approvals or permits, including, without limitation, Certificates of Occupancy/Compliance, may be issued until all fees due hereunder are paid or sufficient Deposit for same made.

Notwithstanding any provision hereof to the contrary or otherwise, the intent of this Agreement is to subject all of those subject matter areas under applicable provisions of Federal, State, and County laws, rules and regulations whatsoever, the Town Code including as any of same may be amended from time to time, and without limitation, those provisions under Chapters 59, 63, 72, 83, 95, 96, 104, 119, 123, 125, 126, 127, 131, 147, and 155 of the Town Code to the provisions hereof; in addition any financing or funding applications incidental to the Application or Project and requiring sponsorship or support of Town, and review under the State Environmental Quality Review Act or other State or Federal environmental, historical or related laws, rules or regulations shall likewise be subject to the provisions hereof.

In addition, and notwithstanding any provisions hereof to the contrary or otherwise, any provisions of the Town Code or other laws, rules or regulations providing rights more favorable to and protective of Town shall be deemed incorporated herein by reference, and shall not be deemed superseded by less protective provisions herein.

In the event of a breach or default by Applicant, Town shall be entitled to pursue any and all legal rights and remedies pursuant to applicable law including, without limitation, the Town Code and shall be entitled to recover, in addition to any sums due, reasonable attorney's fees, costs and disbursements incurred in any such efforts.

If any part of this Agreement or the application thereof to any person or entity or circumstance is adjudged invalid, illegal or unconstitutional by any court of competent jurisdiction, such order or judgment shall be confined in its operation to the part of this law or in its application directly involved in the controversy in which such judgment shall have been rendered and shall not affect or impair the validity of the remainder of this Agreement or the application thereof to other persons, entities or circumstances. Further, in adjudging such invalid, illegal or unconstitutional provision or part thereof, the court shall attempt to modify same to a provision or part which is not illegal, invalid or unconstitutional and which best achieves the intent of such illegal, invalid or unconstitutional provision or part thereof.

The Town Supervisor has executed this agreement pursuant to a blanket Resolution adopted by the Town Board at a meeting thereof held on _____, 20__, and is duly authorized and empowered to execute this instrument and enter into this Agreement on behalf of the Town of Manlius.

In the event Applicant is a closely held corporation, partnership or limited liability company, its three (3) largest principals shall be signatories to this Agreement, as joint and severable parties with Applicant and Town.

This instrument shall be executed in triplicate. At least one original shall be permanently filed, after execution thereof, in the office of the Town Clerk and one in the Code Enforcement Office.

Dated: 10/8/20_

Wildcat Renewables, LLC

Print Applicant Name | **Applicant's Authorized Signature/Title**

Applicant Address: 879 Sanchez Street San Francisco, CA 94114

Stephanie Loucas

Print Applicant (Principal) Name | **Applicant's Principal Signature**

Print Applicant (Principal) Name | **Applicant's Principal Signature**

Print Applicant (Principal) Name | **Applicant's Principal Signature**

TOWN OF MANLIUS

By: _____

Name: _____

Title: _____

dd/2017

TOWN OF MANLIUS

DISCLOSURE AFFIDAVIT

This affidavit is a part of and must be completed and attached to every application, petition, request submitted for a *site plan, variance, amendment, change of zoning, approval of a plat, exemption from a plat or official map, license* or *permit.*

STATE OF NEW YORK)
) SS:
COUNTY OF ONONDAGA)

I. Stephanie Lovcas, being duly sworn, deposes and says that (s) he is:
applicant
(applicant, petitioner, corporation officer, property owner, *etc.)*

II. That deponent has read and is familiar with the provisions of the General Municipal Law, Section 809 which states:

A. Every application, petition or request submitted for a site plan, variance, amendment, change of zoning, approval of a plat, exemption from a plat or official map, license or permit, pursuant to the provisions or any ordinance, local law, rule or regulation constituting the zoning and planning regulations of a municipality shall state the name, residence and the nature and extent of the interest of any state officer or any officer or employee of such municipality is a part, in the person, partnership or association making such application, petition or request (hereinafter called the applicant) to the extent known to such applicant.

B. For the purpose of this action an officer or employee shall be deemed to have an interest in the applicant when (s)he, his/her spouse, or their brothers, sisters, parents, children, grandchildren, or the spouse of any of them:

1) is the applicant, or
2) is an officer, director, partner or employee of the applicant, or
3) legally or beneficially owns or controls stock of a corporate applicant or is a member of a partnership or association applicant, or
4) is a party to an agreement with such an applicant, express or implied, whereby (s) he may receive any payment or other benefit, whether or not for services rendered, or contingent upon the favorable approval of such application, petition or request.

C. Ownership of less than five percent (5%) of the stock of a corporation whose stock is listed on the New York or American Stock Exchanges shall not constitute an interest for the purposes of this section.

D. A person who knowingly and intentionally violates this section shall be guilty of a misdemeanor.

III. That no Town of Manlius officer, employee or a relative of either, as defined in Section 809 General Municipal Law has any interest in this application.

-OR-

If a Town of Manlius officer, employee or relative of either as defined in Section 809 General Municipal law has any interest in this application, the full particulars are provided on an attached sheet.

Date: October 14, 2020.

Stephanie Lucas
(Print Name)

(Signature)

(Entity Name)

By (Officer) (Title)

879 Sanchez Street SF, CA 94114
(Mailing Address of Applicant)

415. 710. 3834
(Telephone Number)

Date: _____, 20_____.

(Print Name)

(Signature)

(Entity Name)

By (Officer) (Title)

(Mailing Address of Applicant)

(Telephone Number)

ACKNOWLEDGEMENTS

STATE OF NEW YORK)
) SS:
COUNTY OF ONONDAGA)

On this _____ day of _____ in the year 20_____, before me, the undersigned, a notary public in and for said state, personally appeared _____, _____, and _____ personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within Petition and acknowledged to me the he/she/they executed the same in his/her/their capacity, and that by his/her/their signature(s) on the Petition, the individual or the persons upon behalf of which the individual acted executed the instrument.

_____
Notary Public

CALIFORNIA ALL- PURPOSE CERTIFICATE OF ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California }

County of Alameda }

On Oct. 14 2020 before me, V. K. Chopra, Notary Public,
(Here insert name and title of the officer)

personally appeared STEPHANIE H. LOUCAS,
who proved to me on the basis of satisfactory evidence to be the person(~~s~~) whose name(~~s~~) is/~~are~~ subscribed to the within instrument and acknowledged to me that he/she/~~they~~ executed the same in his/her/~~their~~ authorized capacity(~~ies~~), and that by his/her/~~their~~ signature(~~s~~) on the instrument the person(~~s~~), or the entity upon behalf of which the person(~~s~~) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Notary Public Signature (Notary Public Seal)

V. K. CHOPRA
COMM. # 2202947
NOTARY PUBLIC • CALIFORNIA
CONTRA COSTA COUNTY
Comm. Exp. JUNE 26, 2021
MGC1 MGC1

ADDITIONAL OPTIONAL INFORMATION

DESCRIPTION OF THE ATTACHED DOCUMENT

(Title or description of attached document)

(Title or description of attached document continued)

Number of Pages _____ Document Date _____

CAPACITY CLAIMED BY THE SIGNER

- ☐ Individual (s)
- ☐ Corporate Officer
  (Title)
- ☐ Partner(s)
- ☐ Attorney-in-Fact
- ☐ Trustee(s)
- ☐ Other _____

INSTRUCTIONS FOR COMPLETING THIS FORM

This form complies with current California statutes regarding notary wording and, if needed, should be completed and attached to the document. Acknowledgments from other states may be completed for documents being sent to that state so long as the wording does not require the California notary to violate California notary law.

- State and County information must be the State and County where the document signer(s) personally appeared before the notary public for acknowledgment.
- Date of notarization must be the date that the signer(s) personally appeared which must also be the same date the acknowledgment is completed.
- The notary public must print his or her name as it appears within his or her commission followed by a comma and then your title (notary public).
- Print the name(s) of document signer(s) who personally appear at the time of notarization.
- Indicate the correct singular or plural forms by crossing off incorrect forms (i.e. ~~he~~/she/~~they,~~ is /~~are~~) or circling the correct forms. Failure to correctly indicate this information may lead to rejection of document recording.
- The notary seal impression must be clear and photographically reproducible. Impression must not cover text or lines. If seal impression smudges, re-seal if a sufficient area permits, otherwise complete a different acknowledgment form.
- Signature of the notary public must match the signature on file with the office of the county clerk.
  - Additional information is not required but could help to ensure this acknowledgment is not misused or attached to a different document.
  - Indicate title or type of attached document, number of pages and date.
  - Indicate the capacity claimed by the signer. If the claimed capacity is a corporate officer, indicate the title (i.e. CEO, CFO, Secretary).
- Securely attach this document to the signed document with a staple.

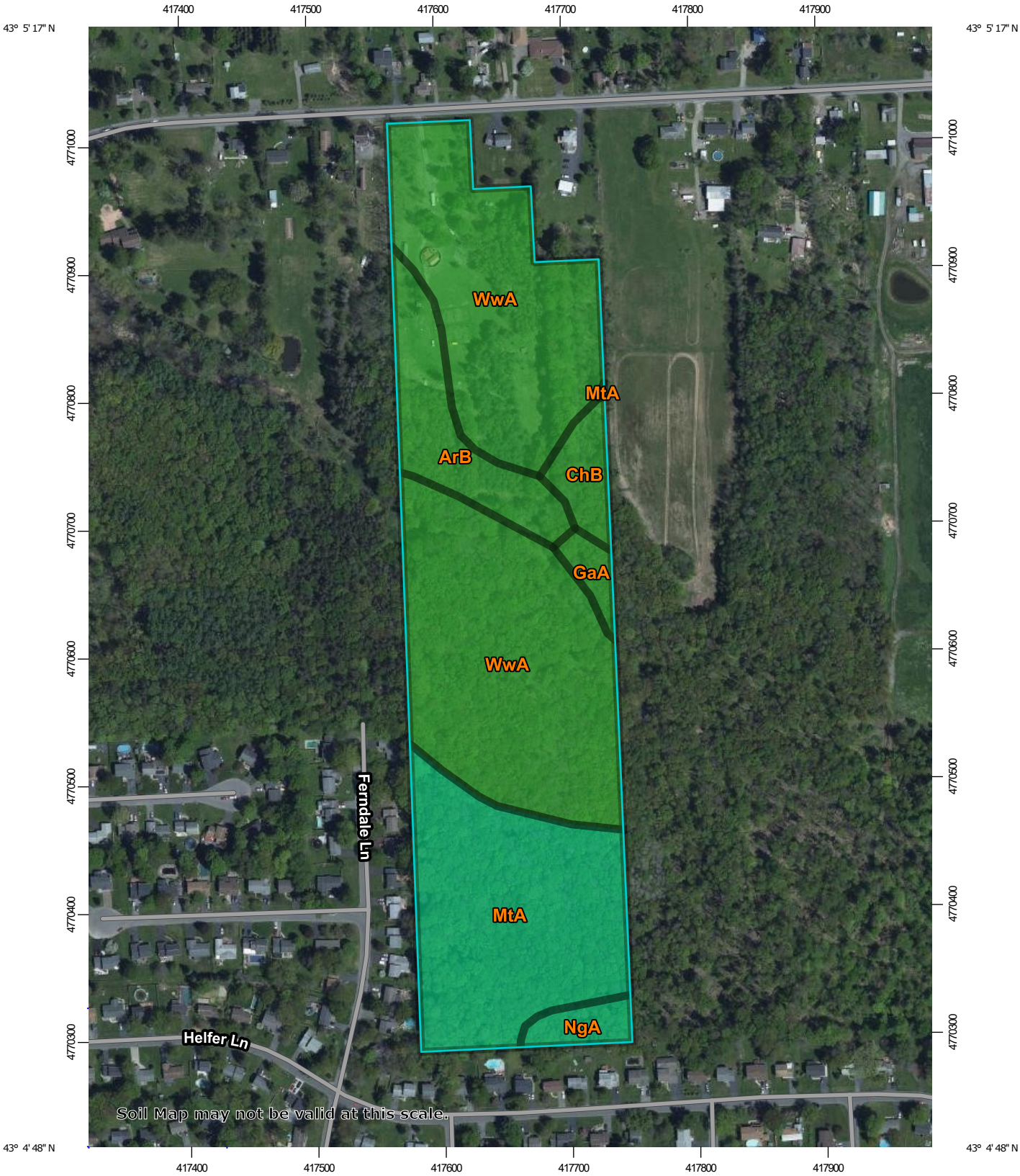
RPNY Solar 5, LLC – Kirkville Road Solar Project
Special Use Permit & Site Plan Review- Prime Farmland Supplemental

The proposed RPNY Solar 5, LLC Kirkville Road Solar Project ("Project") is located on farmland that is listed as Prime Farmland. The Property is located at 7390 Kirkville Road (Onondaga County Parcel ID: 055.-01-10.1) in the Town of Manlius, Onondaga County, New York. The soils located within on the Property are listed within Table 1 (Please refer to attached NRCS – Onondaga County Farmland Classification, RPNY Solar 5, LLC).

Table 1. RPNY Solar 5, LLC - Kirkville Road Solar Project

Farmland Rating	Acreage within Property Boundary	Percentage within Property Boundary
All Areas are Prime Farmland	19.7 acres	71.4 %
Prime farmland if drained	7.8 acres	28.6%

Farmland Classification—Onondaga County, New York
(RPNY Solar 5, LLC)



Map Scale: 1:4,270 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

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 Rating Polygons

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated
- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Soil Rating Lines

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated
- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Soil Rating Points

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated

- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:20,000.

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: Onondaga County, New York
Survey Area Data: Version 15, Jun 11, 2020

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

Date(s) aerial images were photographed: May 21, 2020—Jun 17, 2020

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.

Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
ArB	Arkport very fine sandy loam, 2 to 6 percent slopes	All areas are prime farmland	2.6	9.5%
ChB	Collamer silt loam, 2 to 6 percent slopes	All areas are prime farmland	0.9	3.3%
GaA	Galen very fine sandy loam, 0 to 2 percent slopes	All areas are prime farmland	0.5	1.7%
MtA	Minoa fine sandy loam, 0 to 2 percent slopes	Prime farmland if drained	7.2	26.3%
NgA	Niagara silt loam, 0 to 4 percent slopes	Prime farmland if drained	0.6	2.3%
WwA	Williamson silt loam, 0 to 2 percent slopes	All areas are prime farmland	15.6	56.9%
Totals for Area of Interest			**27.5**	**100.0%**

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Renewable Properties, LLC
879 Sanchez Street
San Francisco, CA 94114
www.renewprop.com

December 22, 2020

Mr. Randy Capriotti
Director of Code Enforcement
Town of Manlius, NY
301 Brooklea Drive
Fayetteville, NY 10366

RE: Kirkville Road Solar Project Narrative

Dear Mr. Capriotti,

On behalf of RPNY Solar 5, LLC, we submit this letter as part of the Site Plan and Special Use Permit Application for the Kirkville Road Solar Project ("Project"), a small-scale community solar project located on approximately 7-acres of an approximately 27-acre parcel (APN: 313889 055.-01-10.1) of land in Onondaga County, NY. The land is currently zoned Restricted Agriculture (RA), and we have entered into a lease agreement with the property owner (Abdulah Alemic) to facilitate development of this project.

The Project will generate a total of approximately 1.6 megawatts (MWs) of clean alternating current (AC), reliable solar energy when complete and will interconnect to National Grid's pre-existing electrical distribution system, which is already located on-site. The power generated from this facility will be sold directly to consumers via the state's Community Distributed Generation program (commonly called community solar). This program allows customers to directly offset their energy use with local solar power while saving money on their electrical bills. Electricity generated from the Project will power roughly 327 homes per year with clean, renewable power.

The Project will utilize approximately 5,616 solar modules and 13 string inverters which convert the sun's energy into useable AC power. The Project will utilize a fix tilt system to accommodate the constrained nature of the site. The modules will be mounted on a steel racking system, which will be anchored into the ground using driven steel piers. The overall height of the array will be no more than 8 feet tall.

Construction for the project is anticipated to begin on/about July 15, 2021 and is anticipated to be completed around November 15, 2021. It is anticipated that the number of workers per day will vary according to construction stage during this four (4) month time period, but approximately 7 to 10 workers may be expected during non-peak activities. Approximately, up to 30 workers could be expected during peak construction activities. Peak activities are expected to last no more than 20 days.

This Project is an opportunity for the residents of Manlius to benefit from cleaner, cheaper electricity and contribute towards New York's ambitious renewable energy goals. We look forward to working with the Town of Manlius to advance this Project through the local land use review and approval process.

Sincerely,

RENEWABLE PROPERTIES

RENEWABLE PROPERTIES

Stephanie Loucas
Vice President, Development
415-710-3834

Kirkville Road Solar

RPNY Solar 5, LLC

Operations and Maintenance

The Kirkville Road Solar Project (Project) will require minimal servicing and will be remotely operated. As part of the longterm operations and maintenance of the Project, we expect approximately six regular trips a year and per manufacturer recommendations. Regular maintenance activities preformed during visit would include solar panel washing, vegetation management, and equipment maintenance. PV inverters, transformers, main switchgear enclosures, weather station, and other components will be visually inspected for signs of corrosion, or physical damage. These inspections will be conducted by authorized personnel.

Water for panel washing would be trucked to the site, and the runoff would percolate through the underlying soils. Ongoing operations include remotely monitoring the status and output of the system and alerts regarding faults, alarms, and output irregularities. Otherwise, the solar facility will operate itself by collecting energy from the sun.

Kirkville Road Solar Project

RPNY Solar 5

Project Decommissioning Plan

January, 2021

TABLE OF CONTENTS

1. Introduction
2. The Proponent
2.1. Project Information
3. Decommissioning of the Solar Facility
3.1. Equipment Dismantling and Removal
3.2. Environmental Effects
3.3. Site Restoration
3.4. Managing Materials and Waste
3.5. Decommissioning During Construction
3.6. Decommissioning Notification
3.7. Approvals
4. Cost of Decommissioning
5. Timeline

- Appendix A: Management of Excess Materials and Waste
- Appendix B: Estimated Decommissioning Costs

1 Introduction

RPNY Solar 5 ("RPNY 5") proposes to build a ground-mounted photovoltaic (PV) solar facility ("Solar Facility") in the Town of Manlius, referred to as the "Kirkville Road Solar Project." The Solar Facility is planned to connect to the local electrical grid and have a nameplate capacity of 1.625 megawatts (MW) alternating current (AC). The Solar Facility is proposed to occupy approximately 28 acres on Tax Parcel: 55.00-1-10.1, Town of Manlius, Onondaga County, NY (the "Facility Site").

This Plan assumes that the Solar Facility will have a useful life and a maturity date of thirty-five (35) years. Upon decommissioning, the Solar Facility will be dismantled, and the Facility Site restored to a state similar to its pre-construction condition. The Plan also covers the case of the abandonment of a Solar Facility, for any reason, prior to the project's 35-year maturity date. It is designed to provide a level of financial protection for the Town of Manlius.

This Decommissioning Plan ("Plan") provides an overview of activities that will occur during the decommissioning phase of the Solar Facility, including activities related to the restoration of land, the management of materials and waste, projected costs and a decommissioning cost and surety bond.

Decommissioning of the Solar Facility will include the disconnection of the Solar Facility from the electrical grid and the removal of all Solar Facility components including:

- Photovoltaic (PV) modules, panel racking and supports;
- Inverter units, transformers, and other electrical equipment;
- Access roads*, wiring cables, perimeter fence; and,
- Concrete foundations.

This Decommissioning Plan is based on current best management practices and procedures. This Plan may be subject to revision based on new standards and emergent best management practices at the time of decommissioning.

2 The Proponent

RPNY 5 or the future owner-operator will manage and coordinate decommissioning process. RPNY 5 or the future owner-operator will obtain all necessary regulatory approvals that vary depending on the jurisdiction, project capacity, and site location. RPNY 5 or the future owner-operator will be committed to the safety, health, and welfare of the hosting community.

The conditions and obligations of this Decommissioning Plan shall be bounded upon the RPNY 5, its heirs, executors, administrators, successors or assigns.

Contact information for the proponent is as follows:

Company:	RPNY Solar 5
Contact:	Stephanie Loucas
Address:	897 Sanchez Street, San Francisco, CA 94114
Telephone:	(207) 712-6113
Email:	stephanie@renewprop.com

2.1 Project Information

Address:	7390 Kirkville Road, East Syracuse, NY 13057 (43.122360 N, 78.384920 W)
Tax ID:	55.00-1-10.1
Project Size:	Solar Facility of 1.625 MW AC
Property Owner:	Alemic Abdulah
Site Agreement:	Signed option agreement to lease or purchase the property

3 Decommissioning of the Solar Facility

The project may be decommissioned under the following conditions:

1. RPNY 5 or any entity that may own or operate the facility in the future (the "future owner-operator") decides to retire the Solar Facility;
2. Commercial operation of the Solar Facility has not commenced within eighteen (18) months of the project's construction completion; or
3. The Solar Facility ceases to be operational for more than twelve (12) months outside of routine repairs or causes beyond the reasonable control of RPNY 5 or the future owner operator.

RPNY 5 will provide a financial guarantee to the Town of Manlius prior to undertaking construction in the form of a surety bond to guarantee that money is available to perform the Solar Facility decommissioning. Although RPNY 5 intends to perform the decommissioning, unforeseen circumstances such RPNY 5 selling the project to another entity or RPNY 5 going out of business are possible. The surety bond will be renewed annually and will remain available to any party performing the decommissioning, such as a municipality or a landowner.

At the time of decommissioning, the installed components will be removed, reused, disposed of, and recycled, where possible. The Facility Site will be restored to a state similar to its preconstruction condition, as further described in the Site Restoration sub-section below. All removal of equipment will be done in accordance with any applicable regulations and manufacturer recommendations.

All applicable permits will be acquired, and compliance with the State Environmental Quality Review (SEQR) requirements will be achieved.

In the unlikely scenario that RPNY 5 or the future owner-operator cannot execute the decommissioning, the Town of Manlius may commence the decommissioning through the surety bond established to cover the expenses.

3.1 Equipment Dismantling and Removal

Generally, the sequence of decommissioning of the Solar Facility proceeds in the reverse order of the installation.

1 The Solar Facility shall be disconnected from the utility power grid.

2 PV modules shall be disconnected, collected, and disposed at an approved solar module recycler or reused / resold on the market. Although the PV modules will not be cutting edge technology at the time of decommissioning, they are estimated to still produce 80% of the original electricity output at year 25 and add value for many years.

3 All aboveground electrical interconnection and distribution cables and poles shall be removed and disposed off-site at an approved facility.

4. In accordance with NYSDAM guidelines, all underground direct buried electrical conduits and conductors with less than 48-inches of cover shall be removed by means causing the least amount of disturbance possible.
5. Underground electric conduits and direct buried conductors with 48-inches or more of soil cover shall be abandoned in place. In accordance with NYSDAM guidelines, abandoned conduit must be sealed or capped in accordance with the best practices at the time of decommissioning to avoid the potential to direct subsurface drainage onto neighboring land uses.
6. Galvanized steel PV module support and racking system support posts shall be removed and disposed off-site or recycled/salvaged at an approved facility.
7. Electrical and electronic devices, including transformers, inverters, switchgear, and support structures shall be removed and disposed off-site at an approved facility. Any components not required for return to the power authority will be disposed off-site or recycled/salvaged at an approved facility.
8. Concrete foundations shall be removed and disposed off-site at an approved facility. In accordance with NYSDAM guidelines, access roads in agricultural areas shall be removed, unless otherwise specified by the landowner. If access roads are to be removed, the areas should be regraded with topsoil from recorded excess native topsoil disposal areas. If suitable topsoil from these areas is unavailable, imported topsoil may be used as long as it is free of invasive species and consistent with topsoil quality on the affected site.
9. Fencing and gates shall be removed and will be disposed off-site at an approved facility.

3.2 Environmental Effects

Decommissioning activities, particularly the removal of project components, could result in environmental effects like those of the construction phase. There is the potential for ground disturbance, erosion/sedimentation, soil compaction, spills, and related impacts to adjacent watercourses or significant natural features. Construction best management practices and mitigation measures, similar to those employed during the construction phase of the Solar Facility, will be implemented. These will remain in place until the site is stabilized and the ground cover has been reestablished in order to mitigate erosion, silt/sediment runoff and any impacts on significant natural features or water bodies located adjacent to the Project Site.

Road traffic will temporarily increase due to the movement of decommissioning crews and equipment. There may be an increase in particulate matter (dust) in adjacent areas during the decommissioning phase. Decommissioning activities may lead to temporary elevated noise levels from heavy machinery and an increase in vehicle trips to the project location. Work will be undertaken during daylight hours and will conform to any applicable restrictions. Recycling of structural components will be maximized to the extent possible to reduce solid waste disposal.

3.3 Site Restoration

During the decommissioning phase, all project components (Appendix A) will be removed, and the Facility Site will be restored to a state similar to its pre-construction condition. The site is currently considered vacant land, so the goal of site restoration for this Facility Site is as a vacant field. At the time of decommissioning, RPNY 5 or the future owner-operator will coordinate with the landowner and the Soil and Water Conservation District.

Additionally, if access roads in agricultural areas are removed in accordance with landowner wishes, topsoil will be returned from recorded excess native topsoil disposal areas, if present, or topsoil free of invasive species will be imported consistent with the quality of the topsoil on the affected site.

Rehabilitated lands shall be re-seeded to help stabilize soil conditions, enhance soil structure, and increase soil fertility.

3.4 Managing Materials and Waste

Through the decommissioning phase, a variety of excess materials and wastes will be generated (Appendix A). Most of the materials used in a Solar Facility are reusable or recyclable and some equipment may have manufacturer take-back and recycling requirements. Any remaining materials will be removed and disposed of off-site at an appropriate facility. RPNY 5 or the future owner-operator will establish policies and procedures to maximize recycling and reuse and will work with manufacturers, local subcontractors, and waste firms to segregate material to be disposed of, recycled, or reused.

RPNY 5 or the future owner-operator will be responsible for the logistics of collecting and recycling the PV modules and to minimize the potential for modules to be discarded in the municipal waste stream. Currently, some manufacturers and new companies are looking for ways to recycle and/or reuse solar modules when they have reached the end of their lifespan. It is anticipated there will be more recycling options available for solar modules at the end of the project lifespan. RPNY 5 or the future owner-operator will determine the best way of disposing of the solar modules using best management practices at the time of decommissioning. RPNY 5 or the future owner-operator will coordinate with the municipality if the disposal of any project component at the municipal waste facility is necessary.

3.5 Decommissioning During Construction or Abandonment Before Maturity

In case of abandonment of the Solar Facility during construction or before the Expected Decommissioning Date, the same decommissioning procedures used for decommissioning after ceasing operation will be undertaken and the same decommissioning and restoration program will be completed, in as far as construction proceeded before abandonment. The Solar Facility will be dismantled, materials removed and recycled/disposed, the soil that was removed will be graded and the site restored to a state similar to its preconstruction condition.

3.6 Decommissioning Notification

Decommissioning activities may require the notification of stakeholders given the nature of the work at the Facility Site. The Town of Manlius will be notified prior to commencement of any decommissioning activities. In accordance with NYSDAM guidelines, RPNY 5 or the future owner-operator will also notify NYSDAM prior to decommissioning.

Notification activities will be initiated six months prior to decommissioning. At this time, RPNY 5 or the future owner-operator will update their list of stakeholders and notify appropriate jurisdictions and overseeing agencies of decommissioning activities. Federal, county, and local authorities, including the utility company, will be notified as needed to discuss the potential approvals required to engage in decommissioning activities.

3.7 Approvals

Well-planned and well-managed renewable energy facilities are not expected to pose environmental risks at the time of decommissioning. Decommissioning of a Solar Facility will follow the regulatory standards of the day. RPNY 5 or the future owner-operator will ensure that any required permits are obtained prior to decommissioning. This Decommissioning Report will be updated as necessary in the future, but not less

than every five years, to ensure that changes in technology and site restoration methods are taken into consideration.

4 Costs of Decommissioning & Decommissioning Bond

The current cost to decommission the 1.625 MW Solar Facility has been estimated on behalf of RPNY 5 by their engineering consultants, following industry standards and using guidance from NYSERDA, at $147,135 (see Appendix B). The cost estimate is based upon the best available information and engineering and demolition experience with other types of construction projects.

In addition, the salvage values of valuable recyclable materials (aluminum, steel, copper, etc.) have *not* been factored into the decommissioning cost estimate, and the scrap value will be determined on current market rates at the time of salvage.

At the start of construction, RPNY 5 will post a surety bond in the amount of approximately $261,289 which is the total amount at the project's 30-year maturity (see Appendix B).

5 Estimated Timeline

RPNY 5 has prepared a timeline for the major actions to be undertaken during decommissioning. As it is difficult to know what specific approvals and protocols will be in place when decommissioning begins, the timing of these actions is estimated based on best available information.

- Notifications to Stakeholders: Months 0 to 6 (Town notified 6 months prior to decommissioning activities)
- Permitting and environmental review: Months 2 to 6
- Physical Decommissioning and Removal of Equipment: Months 6 to 9
- Restoration: Months 6 to 15 (depending on timing of growing season)

APPENDIX A

Management of Excess Materials and Waste

Materials/ Waste	Means of Managing Excess Materials and Waste
PV Modules	If there is no possibility for reuse, the panels will either be returned to the manufacturer for appropriate disposal or will be transported to a recycling facility where the glass, metal, and semiconductor materials will be separated and recycled.
Metal racking	These materials will be disposed off-site at an approved facility
Transformers and substation components	The small amount of oil from the transformers will be removed onsite to reduce the potential for spills and will be transported to an approved facility for disposal. The substation transformer, step-up transformers and the inverter units will be transported off-site to be sent back to the manufacturer, recycled, reused, or safely disposed off-site in accordance with current standards and best practices.
Inverters, fans, switchgear and fixtures	The metal components of the inverters, fans, and fixtures will be disposed of or recycled, where possible. Remaining components will be disposed of in accordance with the standards of the day.
Gravel (or other granular)	It is possible that the municipality may accept uncontaminated material without processing for use on local roads; however, for the purpose of this report it is assumed that the material will be removed from the project location by truck to a location where the aggregate can be processed for salvage. It will then be reused as fill for construction. It is not expected that any such material will be contaminated.
Geotextile fabric	It is assumed that during excavation of the aggregate, a large portion of the geotextile will be “picked up” and sorted out at the aggregate reprocessing site. Geotextile fabric that is remaining or large pieces that can be readily removed from the excavated aggregate will be disposed of off-site at an approved disposal facility.
Concrete inverter/ BESS/ transformer foundations	Concrete foundations will be broken down and transported by certified and licensed contractor to a recycling or approved disposal facility.
Cables and wiring	The aboveground electrical line that connects the substation to the point of common coupling will be disconnected and disposed of at an approved facility. Support poles, if made of untreated wood, will be chipped for reuse. Associated electronic equipment (isolation switches, fuses, metering) will be transported off-site to be sent back to the manufacturer, recycled, reused, or safely disposed off-site in accordance with current standards and best practices. Underground conduits, conductors, and other facilities originally installed at less than 48” in depth will be removed and recycled or safely disposed of in accordance with current standards and best practices.
Fencing	Fencing will be removed and recycled at a metal recycling facility.
Utility Poles	Customer-owned utility poles will be dismantled and transported to a licensed treated wood recycling facility to be assessed for reuse for operational use or for secondary use in construction projects.
Debris	Any remaining debris on the site will be separated into recyclables/residual wastes and will be transported from the site and managed as appropriate.

APPENDIX B

Estimated Decommissioning Costs

Slayton A Solar Farm

Description	Qty	Unit	Unit Price	Total
Remove Rack Wiring	1.625	per MW	$1,500	$2,438
Remove Panels	1.625	per MW	$2,000	$3,250
Dismantle Racks	1.625	per MW	$5,000	$8,125
Remove Electrical Equipment	1.625	per MW	$1,500	$2,438
Remove Utility Poles & Wires	1	Lump Sum	$5,000	$5,000
Breakup and Remove Concreate Pads	1	per Pad	$2,500	$2,500
Remove Racks	1.625	per MW	$3,000	$4,875
Remove Cables	1.625	per MW	$2,500	$4,063
Remove Posts or Ground Screws	1.625	per MW	$6,000	$9,750
Remove Wire Mesh Fence	2,330	per LF	$3	$6,990
Remove Gravel Road	7,610	per SF	$0.75	$5,708
Earthwork & Grading to Restore to Original Contours	2000	per CY	$2.00	$4,000
Seed Disturbed Areas	270,000	per SF	$0.25	$67,500
Disposal and Transportation to Recycling Center	1	Lump Sum	$8,000	$8,000
E&S Controls & Environmental Monitoring	1	Lump Sum	$7,500	$7,500
Contractor Mobilization & Demobilization	1	Lump Sum	$5,000	$5,000
Decommissioning Cost – Current Total				$147,135
Decommissioning Cost After 30 Years (2% Inflation Rate)				$261,289

Decommissioning Bond Value with Escalation Rate of 2%	
Year	Amount
1	$147,135
2	$150,078
3	$153,079
4	$156,141
5	$159,264
6	$162,449
7	$165,698
8	$169,012
9	$172,392
10	$175,840
11	$179,357
12	$182,944
13	$186,603
14	$190,335
15	$194,142
16	$198,024
17	$201,985
18	$206,025
19	$210,145
20	$214,348
21	$218,635
22	$223,008
23	$227,468
24	$232,017
25	$236,657
26	$241,391
27	$246,218
28	$251,143
29	$256,166
30	$261,289

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2020-AEA-12293-OE

Issued Date: 12/22/2020

Faris Matin
Renewable Properties
2914 Larkin St
San Francisco, CA 94109

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Solar Panel Kirkville Road Solar Corner Point 2
Location:	Manlius, NY
Latitude:	43-05-14.42N NAD 83
Longitude:	76-00-45.99W
Heights:	405 feet site elevation (SE) 30 feet above ground level (AGL) 435 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 06/22/2022 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

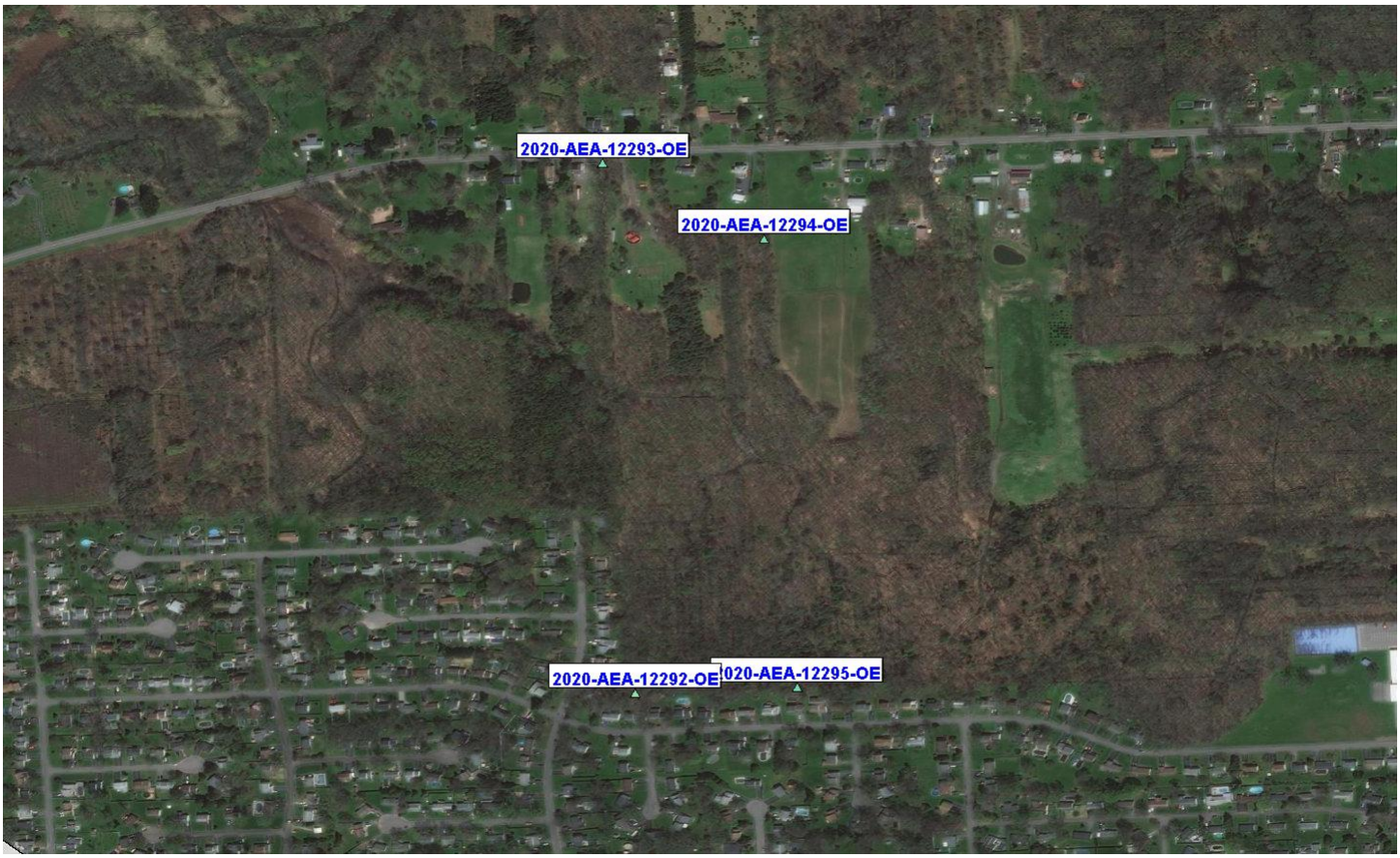
This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (404) 305-6531, or darin.clipper@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2020-AEA-12293-OE.

Signature Control No: 457280982-460273086 (DNE)
Darin Clipper
Specialist

Attachment(s)
Case Description
Map(s)

1.6 MW AC Ground Mounted Photovoltaic System. Structure height are transmission poles. Array is 8 ft high.

Verified Map for ASN 2020-AEA-12293-OE