



Town of Simsbury

RECEIVED
JUN 21 2023
TOWN OF SIMSBURY
PLANNING DEPARTMENT

Office of Community Planning and Development - Zoning Commission Application

DATE: 6/21/23 FEE: \$ 540.00 CK #: Paid 6/21 APP #: 23-25

PROPERTY ADDRESS: 100 Grist Mill Road

NAME OF OWNER: Ensign-Bickford Aerospace & Defense

MAILING ADDRESS: 640 Hopmeadow St

EMAIL ADDRESS: gjasminski@e-brealty.com TELEPHONE # 860-883-4018

NAME OF AGENT: Gus Jasminski

MAILING ADDRESS: 640 Hopmeadow St Simsbury, CT. 06070

EMAIL ADDRESS: gjasminski@e-brealty.com TELEPHONE # 860-883-4048

ZONING DISTRICT: I-2 LOT AREA: 8.91 SQ FT/ACRES

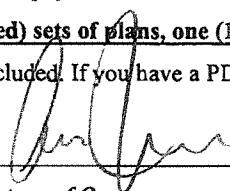
Does this site have wetlands? YES NO Have you applied for a wetlands permit? YES NO

REQUESTED ACTION (PLEASE CHECK APPROPRIATE BOX):

- ZONE CHANGE:** The applicant hereby requests that said premises be changed from zone _____ to zone _____.
- TEXT AMENDMENT:** Please attach proposed changes, including Sections and purposes.
- SPECIAL EXCEPTION:** The applicant hereby requests a public hearing pursuant to Section _____.
- SITE PLAN APPROVAL:** The applicant hereby requests
 - PRELIMINARY
 - FINAL
 - SITE PLAN AMENDMENT** pursuant to Section 11
- SIGN PERMIT**
- OTHER (PLEASE EXPLAIN):** The initial site approval in 1989 held parking in reserve. This application seeks to expand the existing parking by 45 spaces to match the initial parking design

NOTE: Each application must fully comply with the requirements of the Zoning Regulations prior to receipt by the Commission. Each application for zone change and/or special exception shall include a list of names and addresses of abutting property owners and all property owners within 100 feet of the subject site.

A check payable to the Town of Simsbury must accompany this original signed and dated application. Five (5) complete (folded) sets of plans, one (1) paper copy, and a digital copy of the completed application and correspondence must also be included. If you have a PDF of your plans, we would appreciate a copy of that sent to jhollis@simsbury-ct.gov, as well.

 _____ 6/21/23 _____
 Signature of Owner Date Signature of Agent Date

Telephone (860) 658-3245
Facsimile (860) 658-3206

www.simsbury-ct.gov

933 Hopmeadow Street
Simsbury, CT 06070

6/20/23

100 GRIST MILL ROAD
PARKING EXPANSION NARATIVE

The 40,000 SF. building was constructed in 1989 and was designed with a parking count of 157, as part of the approval we held 50 spaces in reserve. The layout for the 157 spaces was complete but only 112 spaces were installed on the site. The parking was expanded by 10 spaces in the 1990's. That configuration has worked until the present.

Ensign-Bickford Aerospace & Defense acquired the property in January 2023 for use in their operations. They are planning on expanding the Electronics Group in the building. The operations will be about one third manufacturing and the balance office. The occupancy will require an expansion of the parking area to a total of 167 spaces. The layout is the same as originally proposed, the site drainage has been updated to include the current separation, treatment and, storage practices.

The site is remote and can only be viewed from the adjacent DYNO Nobel site who we share the site on the east side of RT 10. DYNO also has manufacturing on the adjacent site. The site will only be used for the manufacturer and testing of electronic components.

6/20/23

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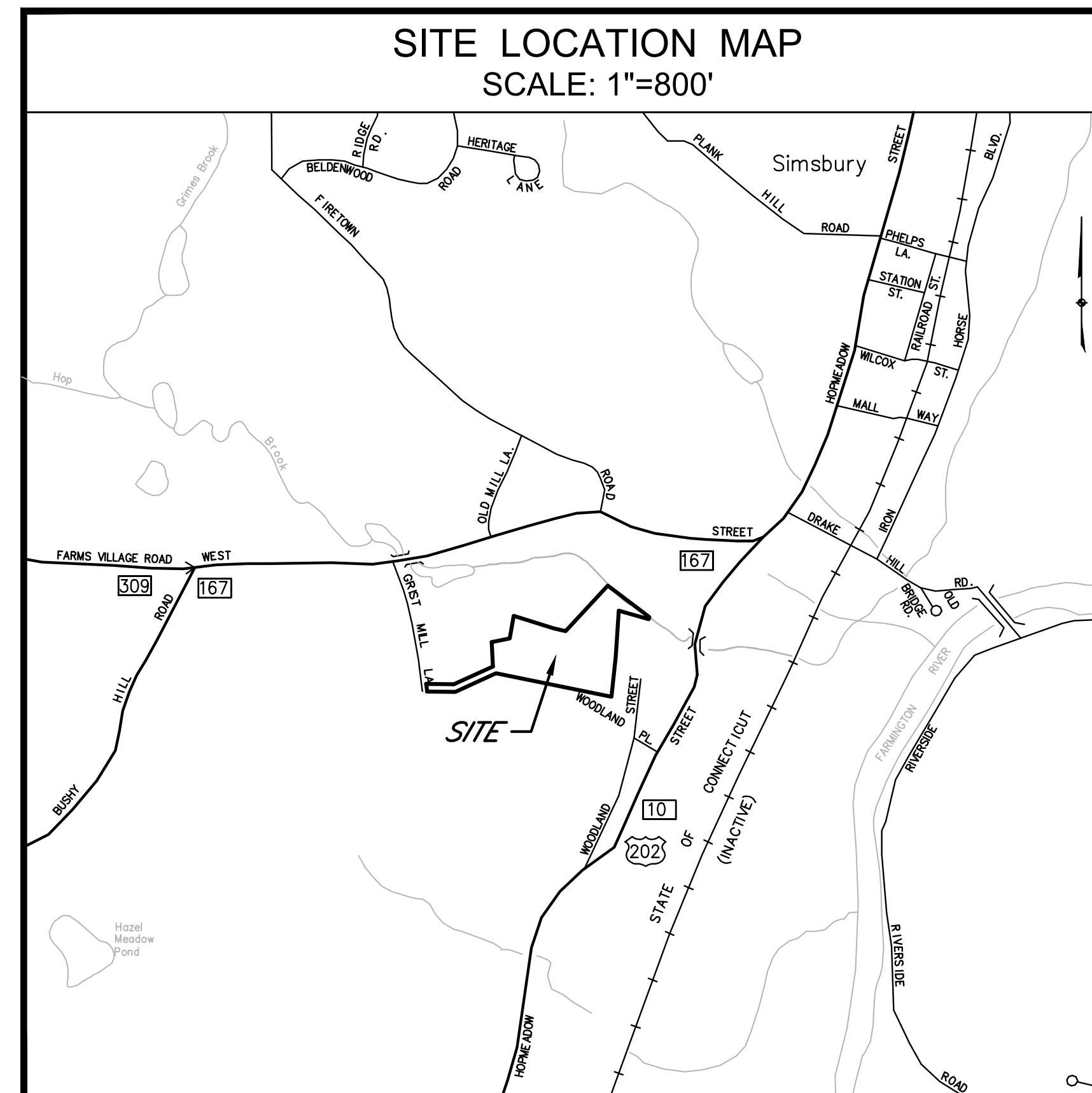
PROPOSED PARKING LOT EXPANSION

100 GRIST MILL ROAD, SIMSBURY, CT

PREPARED FOR

ENSIGN-BICKFORD AEROSPACE & DEFENSE CO.

640 HOPMEADOW STREET, SIMSBURY, CT



DATE: JUNE 5, 2023

REVISED TO: JULY 7, 2023

GHA PROJECT # 113-65



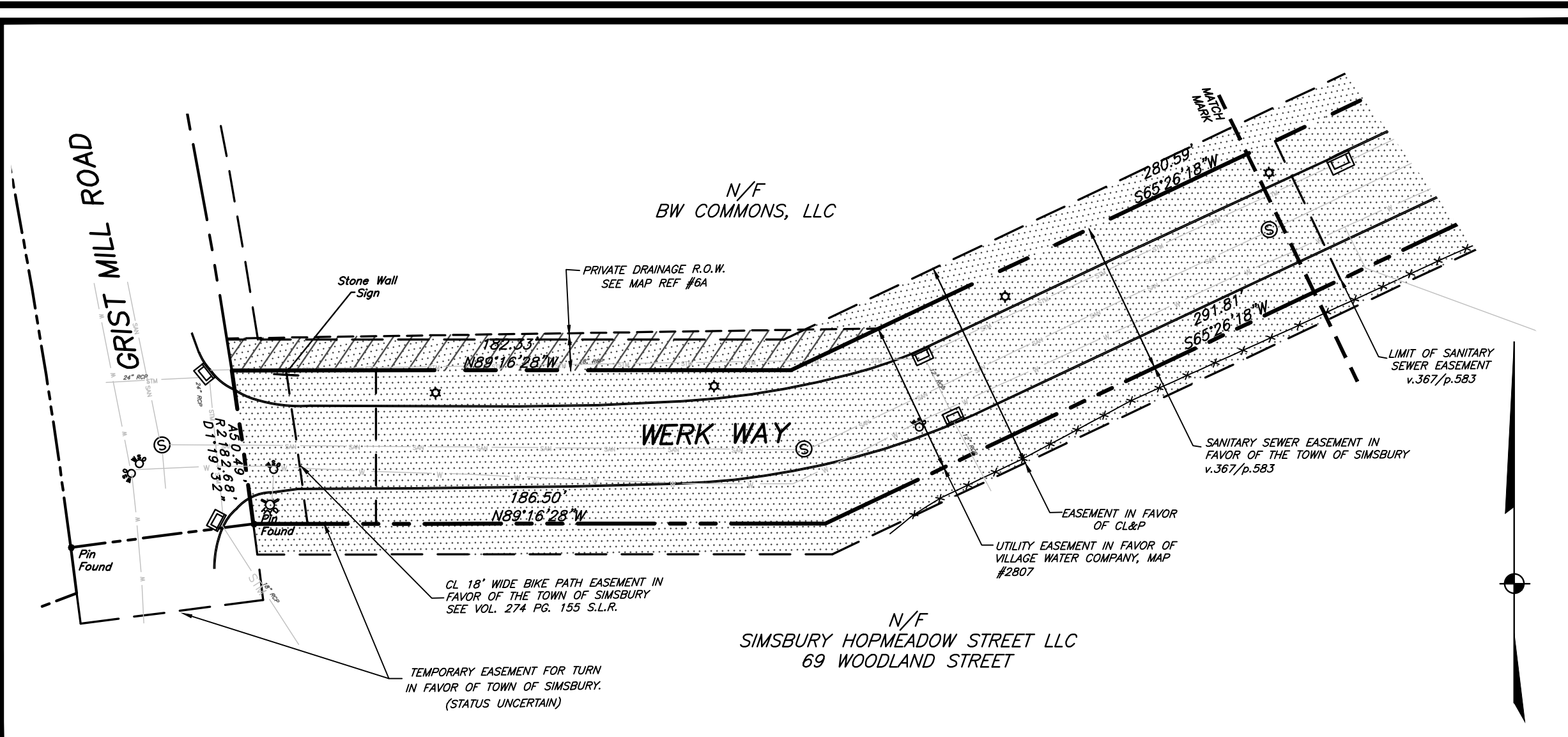
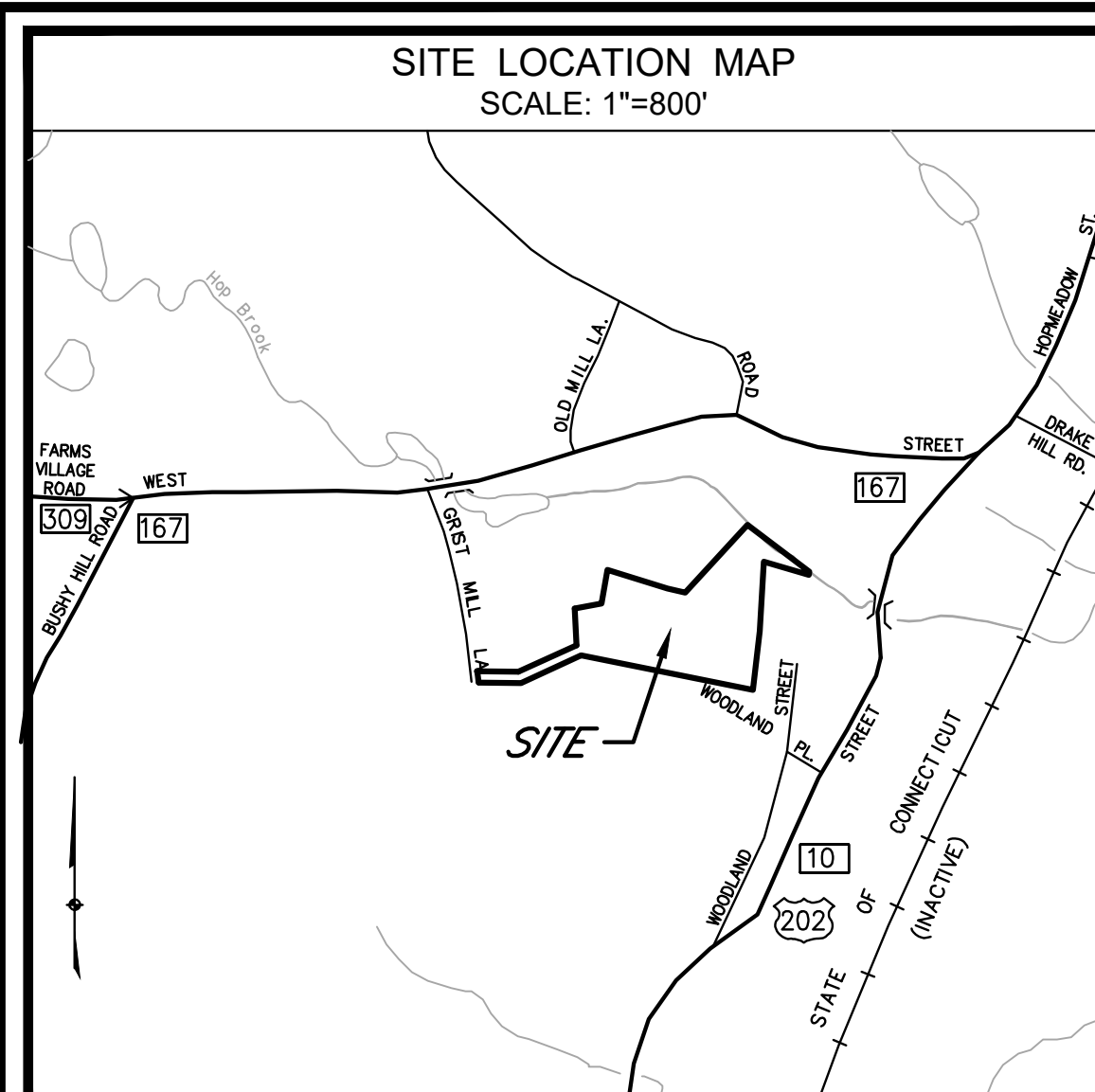
PROFESSIONAL LAND SURVEYORS & CIVIL ENGINEERS
26 BROADWAY NORTH HAVEN, CT 06473; TEL: 203.239.4217 - WWW.GODFREYHOFFMAN.COM
1783 FARMINGTON AVENUE, UNIONVILLE, CT 06085; TEL: 860.673.0444 - WWW.HODGELLCC.COM

**ENSIGN-BICKFORD
AEROSPACE & DEFENSE CO.**

OWNER: ENSIGN-BICKFORD AEROSPACE & DEFENSE CO.; 640 HOPMEADOW ST., SIMSBURY, CT
APPLICANT: ENSIGN-BICKFORD AEROSPACE & DEFENSE CO.; 640 HOPMEADOW ST., SIMSBURY, CT

SHEET INDEX

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C-5.0	DETAILS
C-5.1	RETAIN IT STORMWATER MANAGEMENT SYSTEMS STANDARD DETAILS

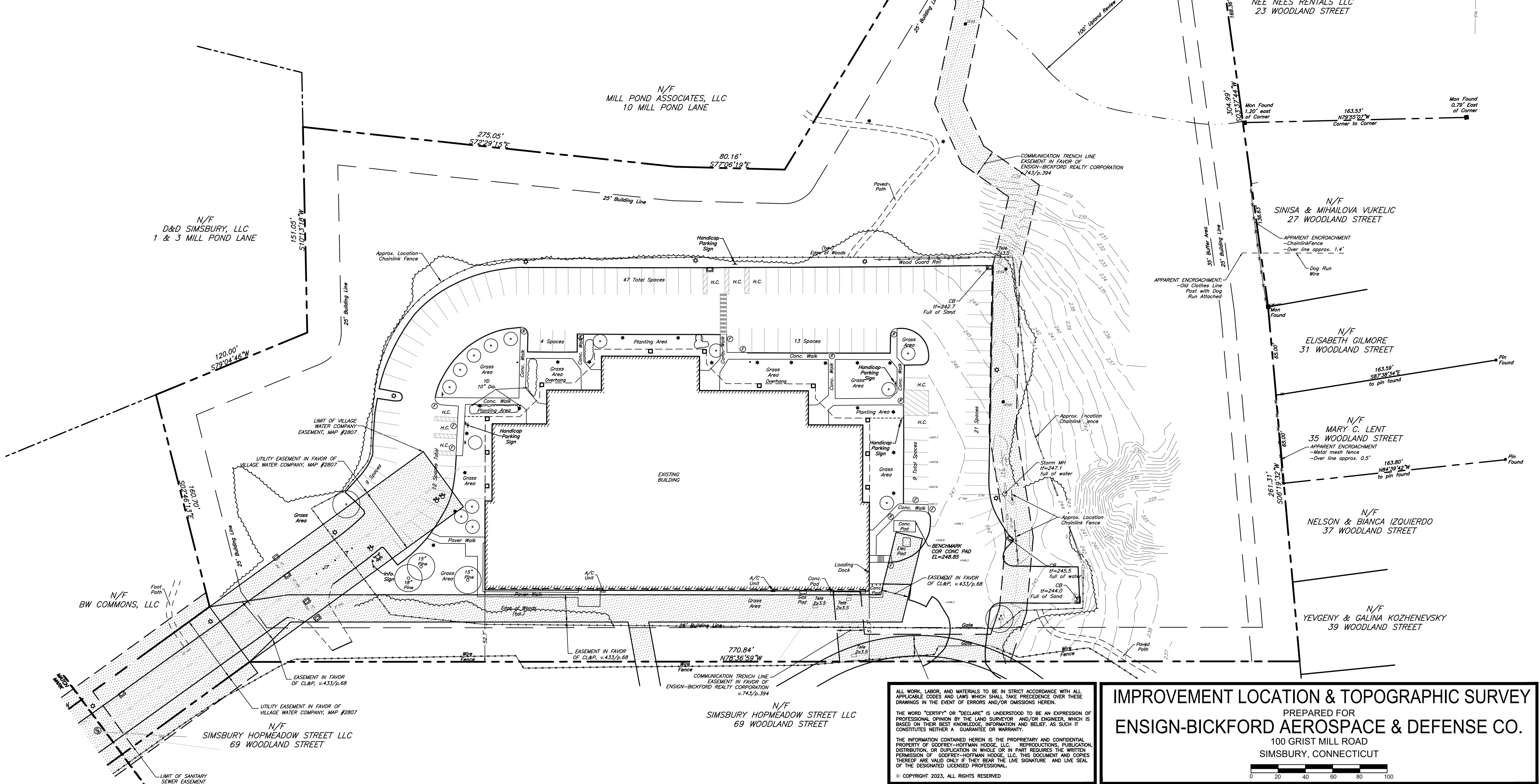


LEGEND

	Property / Street Line		Concrete Monument / TO BE SET
	Easement / Right of Way Line		Iron Pipe / TO BE SET
	Stone Wall		Now or Formerly
	Wire / Chain Link Fence		Ramp/Flush
	Wood / Rail Fence		Type 'C'-L' Catch Basin
	Water Course		Utility Pole
	Existing Contour		Fire Hydrant
	PROPOSED CONTOUR		Light Pole
	PROPOSED SILHOUETTE		Walk Light
	UGS Underground Electric Line		Wetlands
	OHW Overhead Wires		Existing Spot Grade
	GAS Gas Line		Hatch
	S&W Sanitary Sewer Line		Water Gate
	ST&W Storm Sewer Line		Gas Gate
	Telephone Line		Existing Text - Lower Case "italic" Letters
	Water Line		
	Tree Line		
	Existing Structure		
	PROPOSED CONST. ENTRANCE		

NOTES:

- THIS MAP AND SURVEY HAVE BEEN PREPARED IN ACCORDANCE WITH THE REGULATIONS OF CONNECTICUT STATE AGENCIES, SECTIONS 20-300B-1, THRU 20-300B-20, THE MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT, EFFECTIVE JUNE 21, 1996, AMENDED OCTOBER 26, 2018.
 - THE HORIZONTAL ACCURACY CONFORMS TO CLASS "2-2", AND THE TOPOGRAPHIC ACCURACY CONFORMS TO CLASS "2-2".
 - THE SURVEY DETERMINATION CATEGORY IS A "RESURVEY".
 - THE TYPE OF SURVEY IS A "IMPROVEMENT LOCATION & TOPOGRAPHIC SURVEY".
 - WETLANDS DELINEATED BY DAWSON ENVIRONMENTAL, LLC ON 2/15/2023 AND FIELD LOCATED BY GODFREY-HOFFMAN HODGE, LLC ON 02/27/2023.
- ALL MONUMENTATION FOUND OR SET IS DEPICTED ON THIS MAP.
- THE NORTH ARROW, BEARINGS, AND COORDINATES ARE BASED UPON THE CONNECTICUT STATE PLANE COORDINATE SYSTEM, AND 83 UTILIZING THE SUPERIOR INSTRUMENTS GPS NETWORK.
- ELEVATIONS, CONTOURS, AND SPOT SHOTS ARE BASED UPON NAVD 88, ADJUSTMENT 96, UTILIZING THE STATE OF CONNECTICUT ACOGN GPS NETWORK.
- ALL BUILDING OFFSETS ARE MEASURED TO FACE OF SIDING UNLESS OTHERWISE NOTED HEREON.
- REFERENCE MAP(S):
 - RESURVEY MAP PARCEL 25 LAND OWNED BY ENSIGN-BICKFORD REALTY CORPORATION EASTERLY OF GRISTMILL ROAD - SIMSBURY, CONNECTICUT SCALE 1"=40' NOVEMBER 1997, REV. 7-23-07 SHEET 1, 2 OF 2 HODGE SURVEYING ASSOCIATES, P.C.
 - IMPROVEMENT LOCATION SURVEY PROPERTY OF GRISTMILL PARTNERS, LLC 100 GRISTMILL ROAD - SIMSBURY, CONNECTICUT SCALE 1"=40' DATED: 11/25/13 HODGE, LL
 - AS-BUILT UTILITY PLAN & PROFILE L-11 SITE 25 THE POWDER FOREST PREPARED FOR ENSIGN-BICKFORD REALTY CORP SIMSBURY, CONNECTICUT SCALE 1"=40' DATED: MARCH 11, 1989 REVISED TO 12/15/2009.
 - GENERAL SUBDIVISION PLAN SECTION 1 PARCEL 25 SHEET 1, 2 OF 2 POWDER FOREST BUSINESS PARK EASTERLY OF GRISTMILL ROAD - SIMSBURY, CONNECTICUT SCALE 1"=40' OCTOBER 1997 HODGE SURVEYING ASSOCIATES, P.C.
- PROPERTY IS LOCATED IN ZONING DISTRICT 1-2. TOTAL AREA=8.91ac, WITH 1.02a ACRES OF BUFFER AREA.
- PROPERTY IS SUBJECT TO AND TOGETHER WITH THE FOLLOWING:
 - RIGHTS, RESTRICTIONS, ENCUMBRANCES, COVENANTS, EASEMENTS, ETC. AS PER THE RECORD MAY APPEAR.
 - ELECTRICAL DISTRIBUTION SYSTEM EASEMENT IN FAVOR OF THE CONNECTICUT LIGHT & POWER COMPANY DATED JULY 26, 1994 AND RECORDED JULY 27, 1994 IN v.433/p.68.
 - DECLARATION OF EASEMENTS, COVENANTS, AND RESTRICTIONS BY ENSIGN-BICKFORD REALTY CORP. DATED DECEMBER 2, 1983 AND RECORDED DECEMBER 9, 1983 IN v.271/p.246; AS AMENDED AND RESTATED IN AN AMENDED AND RESTATED DECLARATION OF EASEMENTS, COVENANTS AND RESTRICTIONS FOR THE POWDER FOREST BUSINESS PARK DATED DECEMBER 8, 1997 AND RECORDED IN v.479/p.795; AS FURTHER AMENDED BY SECOND AMENDMENT TO DECLARATION OF EASEMENTS, COVENANTS AND RESTRICTIONS FOR THE POWDER FOREST BUSINESS PARK DATED NOVEMBER 12, 2000 AND RECORDED IN v.433/p.227 OF THE SIMSBURY LAND RECORDS. REFER TO CERTIFICATE UNDER DECLARATION DATED JANUARY 6, 1998 AND RECORDED JANUARY 7, 1998 IN v.481/p.116; AS FURTHER AMENDED BY A THIRD AMENDMENT DATED JUNE 7, 2005 AND RECORDED IN v.690/p.418. (FOR RELEASE AND TERMINATION OF DECLARATIONS STATED HEREIN SEE v.891/p.883-871)
 - SANITARY SEWER EASEMENT IN FAVOR OF THE TOWN OF SIMSBURY RECORDED FEBRUARY 6, 1990 IN v.367/p.583.
 - RIGHTWAY RIGHTS OF OTHERS IN AND TO HOP BROOK WHICH CROSSES A PORTION OF THE PREMISES.
 - UTILITY EASEMENT TO THE VILLAGE WATER CO. AS SHOWN ON MAP NO. 2807 ON FILE IN THE OFFICE OF THE TOWN CLERK OF THE TOWN OF SIMSBURY.
 - A COMMUNICATION EASEMENT AGREEMENT DATED AUGUST 20, 2007 AND RECORDED IN v.743/p.394.
 - SPECIAL EXCEPTION DATED JANUARY 2, 2014 AND RECORDED APRIL 15, 2014.
- PROPERTY IS LOCATED IN FLOOD ZONE(S). "X" (AREAS DETERMINED TO BE OUTSIDE THE 100 YEAR FLOOD PLAIN), "AE SHADDED" (AREAS DETERMINED IN THE 100 YEAR FLOOD PLAIN) AND "AE FLOODWAY" (AREAS DETERMINED TO BE IN THE CHANNEL OF A STREAM) AS DEPICTED ON F.I.R.M. MAP NO. 0900000331 DATED, SEPTEMBER 26, 2008.
- THE SUBJECT PROPERTY IS DESIGNATED AS MAP 0-11, BLOCK 103, LOT 005-25 ON THE SIMSBURY ASSESSOR'S RECORDS.
- TOTAL NUMBER OF PARKING SPACES= 111. (8 HANDICAP SPACES) (NOTE: PARKING STRIP AT TIME OF SURVEY EXTREMELY FADED IS SOME AREA WHICH MAY AFFECT PARKING COUNT)
- UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON MAY HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES OR GOVERNMENTAL AGENCIES. FROM PARTIAL TESTIMONY AND FROM OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE LOCATIONS OF WHICH ARE UNKNOWN TO GODFREY-HOFFMAN ASSOCIATES. THE SIZE, LOCATION AND DISTANCES OF ALL SUCH FEATURES MUST BE FIELD OBTAINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL BEFORE YOU DIG 1-800-955-4465.



TO: ENSIGN-BICKFORD AEROSPACE & DEFENSE CO.
TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS
MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

ADAM HOFFMAN, L.S. #15168

NOT VALID WITHOUT LIVE SIGNATURE AND SEAL.



ALL WORK, LABOR, AND MATERIALS TO BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES AND LAWS WHICH SHALL TAKE PRECEDENCE OVER THESE DRAWINGS IN THE EVENT OF ERRORS AND/OR OMISSIONS HEREIN.

THE WORD "CERTIFY" OR "DECLARE" IS UNDERSTOOD TO BE AN EXPRESSION OF PROFESSIONAL OPINION BY THE LAND SURVEYOR AND/OR ENGINEER, WHICH IS BASED ON THEIR BEST KNOWLEDGE, INFORMATION AND BELIEF, AS SUCH IT CONSTITUTES NEITHER A GUARANTEE OR WARRANTY.

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IMPROVEMENT LOCATION & TOPOGRAPHIC SURVEY

PREPARED FOR
ENSIGN-BICKFORD AEROSPACE & DEFENSE CO.
100 GRISTMILL ROAD
SIMSBURY, CONNECTICUT

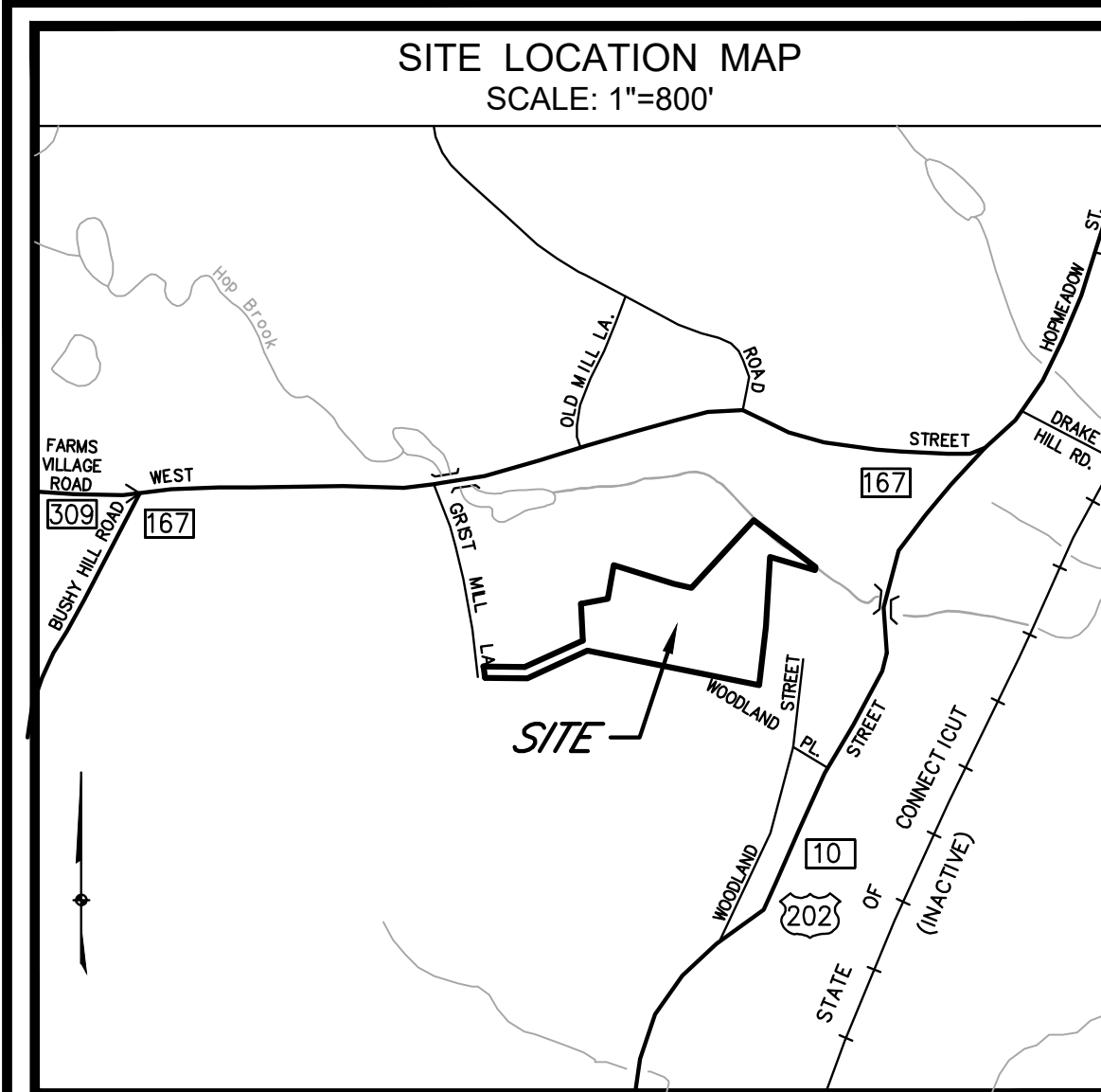
SCALE: 1"=40'

DRAWN BY: KRG
CHECKED BY: AH
DATE: 02-27-2023
SCALE: 1"=40'
PROJECT: 113-65
DRAWING: 1 of 1

NO.	DATE	DESCRIPTION

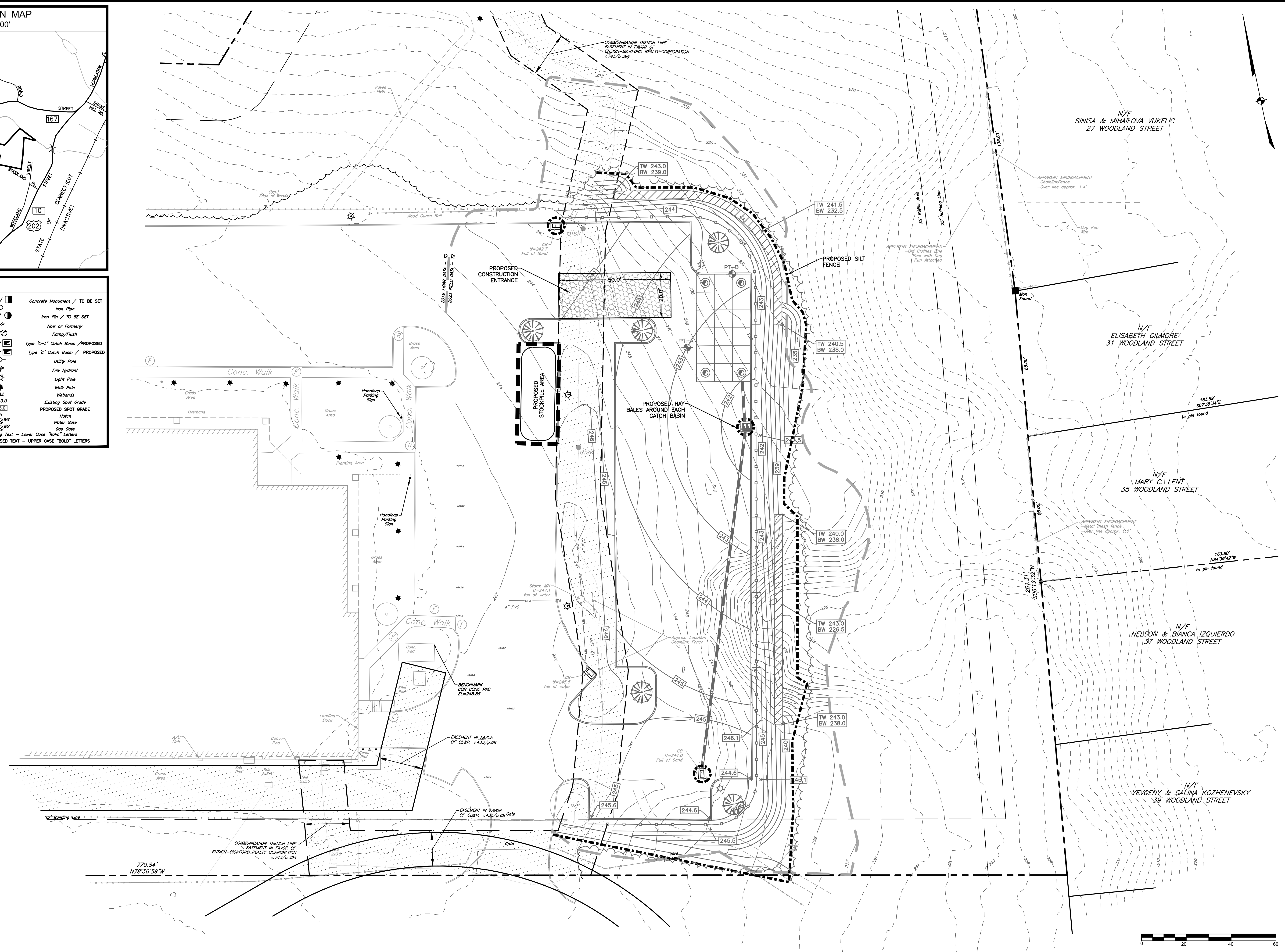
GODFREY HOFFMAN HODGE, LLC

PROFESSIONAL LAND SURVEYORS & CIVIL ENGINEERS
26 BROADWAY NORTH AVENUE, CT 06473 TEL: 203.239.4217 WWW.GODFREYHOFFMAN.COM
1785 FARMINGTON AVENUE, UNIONVILLE, CT 06085 TEL: 860.873.3444 WWW.HODGELL.COM



LEGEND

	Property / Street Line		Concrete Monument / TO BE SET
	Easement / Right of Way Line		Iron Pipe
	Stone Wall		Iron Pin / TO BE SET
	Wire / Chain Link Fence		Now or Formerly
	Wood / Rail Fence		Ramp/Flush
	Water Course		Type "C-1" Catch Basin / PROPOSED
	Existing Contour		Type "C" Catch Basin / PROPOSED
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	PROPOSED SILTLINE		Fire Hydrant
	Underground Electric Line		Light Pole
	Overhead Electric Line		Walk Pole
	Gas Line		Wellhead
	Sanitary Sewer Line		Existing SPOT GRADE
	Storm Sewer Line		PROPOSED SPOT GRADE
	Telephone Line		Hatch
	Water Line		Gate
	Tree Line		Gate
	Existing Structure		Gate
	PROPOSED CONST. ENTRANCE		Gate
			Gate



MAP REFERENCE:

PROPERTY LINE AND EXISTING CONDITIONS INFORMATION OBTAINED FROM MAP PREPARED BY GODFREY-HOFFMAN HODGE, LLC, 26 BROADWAY NORTH HAVEN, CT 06473, ENTITLED "IMPROVEMENT LOCATION & TOPOGRAPHIC SURVEY; PREPARED FOR ENSIGN-BICKFORD AEROSPACE & DEFENCE; 100 GRIST MILL ROAD, SIMSBURY, CONNECTICUT"; DATED 2-27-2023.

IMPORTANT NOTE:
 ADDITIONAL UNDERGROUND UTILITIES MAY EXIST. PRIOR TO ANY EXCAVATION OR CONSTRUCTION, CONTACT:
 "CALL BEFORE YOU DIG" 1-800-322-4455

GODFREY-HOFFMAN HODGE, LLC
 PROFESSIONAL ENGINEERS
 26 BROADWAY NORTH HAVEN, CT 06473 TEL: 203.239.2377 WWW.GODFREYHOFFMAN.COM
 1783 FARMINGTON AVENUE, UNIONVILLE, CT 06865 TEL: 860.673.0444 WWW.HODGELLC.COM



ALL WORK, PERMITS, AND MATERIALS TO BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE SPECIFICATIONS AND STANDARDS OF THE PROFESSION OF ENGINEERING IN THE STATE OF CONNECTICUT. THE WORD "VERIFY" OR "VERIFY" IS UNDERSTOOD TO BE A REQUIREMENT FOR THE ENGINEER TO CHECK THE ACCURACY OF THE INFORMATION PROVIDED BY THE CLIENT OR OTHER SOURCE. THE ENGINEER'S OBLIGATION IS LIMITED TO THE INFORMATION PROVIDED BY THE CLIENT OR OTHER SOURCE. THE ENGINEER DOES NOT WARRANT THE ACCURACY OF THE INFORMATION PROVIDED BY THE CLIENT OR OTHER SOURCE. THE ENGINEER'S OBLIGATION IS LIMITED TO THE INFORMATION PROVIDED BY THE CLIENT OR OTHER SOURCE. THE ENGINEER DOES NOT WARRANT THE ACCURACY OF THE INFORMATION PROVIDED BY THE CLIENT OR OTHER SOURCE. THE ENGINEER'S OBLIGATION IS LIMITED TO THE INFORMATION PROVIDED BY THE CLIENT OR OTHER SOURCE. THE ENGINEER DOES NOT WARRANT THE ACCURACY OF THE INFORMATION PROVIDED BY THE CLIENT OR OTHER SOURCE.

REV. NO.	DATE	DESCRIPTION
1	7-7-2023	TOWN ENG. COMMENTS

PROJECT:
 PROPOSED PARKING LOT EXPANSION
 100 GRIST MILL ROAD
 SIMSBURY, CT

PREPARED FOR:
 ENSIGN-BICKFORD AEROSPACE & DEFENSE CO.
 640 HOPMEADOW ST.
 SIMSBURY, CT

SEDIMENTATION & EROSION CONTROL PLAN
 DRAWN BY: MP/CB
 CHECKED BY: MP
 SCALE: 1"=20'
 PROJECT: 113-65
 DATE: 6/5/2023

C-4.0

GENERAL NOTES:

- HAYBALE FILTERS OR SILTATION FENCE WILL BE INSTALLED AT ALL CULVERT OUTLETS AND ALONG THE TOE OF ALL CRITICAL CUT AND FILL SLOPES.
- CULVERT DISCHARGE AREAS WILL BE PROTECTED WITH RIPRAP CHANNELS; ENERGY DISSIPATORS WILL BE PROVIDED AS NECESSARY.
- CATCH BASINS WILL BE PROTECTED WITH HAYBALE FILTERS OR SILTATION FENCE THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL ALL DISTURBED AREAS ARE THOROUGHLY STABILIZED.
- ALL EROSION AND SEDIMENTATION CONTROL MEASURES WILL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CONNECTICUT EROSION & SEDIMENT CONTROL HANDBOOK.
- EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED PRIOR TO CONSTRUCTION WHENEVER POSSIBLE.
- ALL CONTROL MEASURES WILL BE MAINTAINED IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD.
- ADDITIONAL CONTROL MEASURES WILL BE INSTALLED DURING THE CONSTRUCTION PERIOD, IF NECESSARY OR REQUIRED.
- SEDIMENT REMOVED FROM CONTROL STRUCTURES WILL BE DISPOSED OF IN A MANNER WHICH IS CONSISTENT WITH THE INTENT OF THE PLAN.
- CONTRACTOR IS ASSIGNED THE RESPONSIBILITY FOR IMPLEMENTING THIS EROSION AND SEDIMENT CONTROL PLAN. THIS RESPONSIBILITY INCLUDES THE INSTALLATION AND MAINTENANCE OF CONTROL MEASURES, INFORMING ALL PARTIES ENGAGED ON THE CONSTRUCTION SITE OF THE REQUIREMENTS AND OBJECTIVES OF THE PLAN, NOTIFYING THE CITY LAND USE OFFICE OF ANY TRANSFER OF THIS RESPONSIBILITY, AND FOR CONVEYING A COPY OF THE EROSION AND SEDIMENT CONTROL PLAN IF THE TITLE TO THE LAND IS TRANSFERRED.
- AFFECTED PORTIONS OF OFF-SITE ROADS MUST BE SWEEP CLEAN WHEN REQUIRED OR AT LEAST ONCE A WEEK DURING CONSTRUCTION. DUST CONTROL TO BE ACHIEVED WITH COVERING TRUCK LOADS, SWEEPING ROADS, WATERING AS REQUIRED, OR AS ORDERED BY THE SITE ENGINEER.
- BRUSH SHALL BE CHIPPED AND REMOVED FROM SITE. GRIND STUMPS OR TRANSPORT OFF-SITE; DO NOT BURY TOPSOIL FROM DISTURBED AREAS SHALL BE STRIPPED AND STOCKPILED FOR USE IN FINAL LANDSCAPING.
- AFTER EACH STORM EVENT OR ONCE WEEKLY, ALL SEDIMENT AND EROSION CONTROLS WILL BE INSPECTED. ANY CORRECTIVE ACTIONS TO MITIGATE ENVIRONMENTAL CONCERNS WILL BE ORDERED BY THE SITE ENGINEER OR SITE E&S CONTROL MONITOR.
- ALL PERMANENT AND TEMPORARY SEDIMENT CONTROL DEVICES WILL BE MAINTAINED IN EFFECTIVE CONDITION UNTIL ALL UPLAND AREAS ARE FULLY STABILIZED. UPON COMPLETION OF WORK, ALL TEMPORARY SEDIMENT CONTROL DEVICES SUCH AS SILT FENCE AND HAYBALES SHOULD BE REMOVED FROM THE SITE AND SEDIMENT REMOVED FROM ALL ON-SITE CATCH BASINS AND DISPOSED OF LEGALLY.
- NO CONSTRUCTION OR CONSTRUCTION EQUIPMENT WILL BE ALLOWED ON THE DOWNHILL SIDE OF THE SILT FENCE AS SHOWN ON PLANS, EXCEPT DURING CONSTRUCTION OF ANY ITEMS SHOWN DOWNHILL OF SILT FENCE.

SEQUENCE OF OPERATIONS:

- FLAG LIMITS OF CONSTRUCTION, SCHEDULE PRE-CONSTRUCTION MEETING WITH REPRESENTATIVES OF THE OWNER, CONTRACTOR, ENGINEER AND LOCAL AUTHORITY.
- HOLD PRE-CONSTRUCTION MEETING PRIOR TO ANY SITE DISTURBANCE. REVIEW EROSION CONTROL PLAN AND DISCUSS SCHEDULING OF SITE INSPECTIONS DURING CONSTRUCTION ACTIVITIES.
- INSTALL CONSTRUCTION ENTRANCE.
- INSTALL PERIMETER EROSION AND SEDIMENTATION CONTROLS IN ACCORDANCE WITH THE E&S CONTROL PLAN.
- BEGIN EXCAVATION AND CONSTRUCTION OF FILL EMBANKMENTS. ESTABLISH SUB-GRADE ELEVATIONS FOR TOPSOIL AREAS, PARKING AND ROADWAYS AS REQUIRED.
- BEGIN WALL CONSTRUCTION.
- INSTALL UNDERGROUND UTILITIES (STORM DRAIN SYSTEM AND OTHER UTILITIES).
- PREPARE SUB-BASE, SLOPES, PARKING AREAS AND OTHER AREAS OF DISTURBANCE FOR FINAL GRADING.
- INSTALL PARKING AREA BASE MATERIALS AND COMPACT.
- PLACE TOPSOIL WHERE REQUIRED. COMPLETE PERIMETER LANDSCAPING.
- COMPLETE THE BALANCE OF THE SITE WORK AND STABILIZATION OF ALL OTHER DISTURBED AREAS. INSTALL FIRST COURSE OF PAVING.
- WHEN ALL OTHER WORK HAS BEEN COMPLETED, REPAIR AND SWEEP ALL PAVED AREAS FOR THE FINAL COURSE OF PAVING. INSPECT THE DRAINAGE SYSTEM AND CLEAN AS NEEDED.
- INSTALL FINAL COURSE OF PAVEMENT.
- AFTER SITE IS STABILIZED REMOVE TEMPORARY EROSION AND SEDIMENT CONTROLS.

OPERATION & MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL MEASURES

- SILTATION FENCE
 - ALL SILTATION FENCES SHALL BE INSPECTED AFTER EACH RAINFALL. ALL DETERIORATED FABRIC AND DAMAGED POSTS SHALL BE REPLACED AND PROPERLY REPOSITIONED IN ACCORDANCE WITH THIS PLAN.
 - SEDIMENT DEPOSITS SHALL BE REMOVED FROM BEHIND THE FENCE WHEN THEY EXCEED A HEIGHT OF ONE FOOT.
- HAYBALES
 - ALL HAYBALE RINGS SHALL BE INSPECTED FOLLOWING EACH RAINFALL. REPAIR OR REPLACEMENT SHALL BE PROMPTLY MADE AS NEEDED.
 - DEPOSITS SHALL BE REMOVED AND CLEANED-OUT IF ONE HALF OF THE ORIGINAL HEIGHT OF THE BALES BECOMES FILLED WITH SEDIMENT.

CONTINGENCY EROSION PLAN:

SHOULD UNFORESEEN EROSION OR SEDIMENTATION PROBLEMS ARISE, THE DESIGN ENGINEER OF RECORD AND LOCAL ENFORCEMENT AGENT SHALL BE NOTIFIED IMMEDIATELY. AN INSPECTION OF THE AFFECTED AREA(S) SHALL BE PROMPTLY PERFORMED. A REMEDIAL ACTION PLAN SHALL BE FORMULATED WITH THE LOCAL ENFORCEMENT AGENT'S APPROVAL. THE SITE CONTRACTOR SHALL THEN IMPLEMENT THE RECOMMENDED COURSE OF ACTION WHICH HAS BEEN DETERMINED BY BOTH THE ENGINEER AND LOCAL ENFORCEMENT AGENT.

DUST CONTROL:

THE CONTRACTOR SHALL PROVIDE DUST CONTROL THROUGHOUT THE PROJECT UNTIL SUCH TIME AS ALL DISTURBED AREAS HAVE BEEN STABILIZED. THE CONTRACTOR SHALL UTILIZE METHODS ACCEPTABLE TO THE TOWN ENVIRONMENTAL ENFORCEMENT OFFICER. THE FOLLOW OPERATIONS SHALL BE PERFORMED AS A MINIMUM:

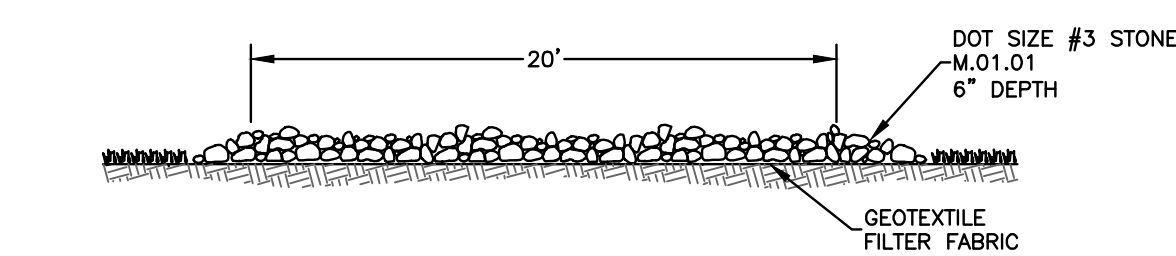
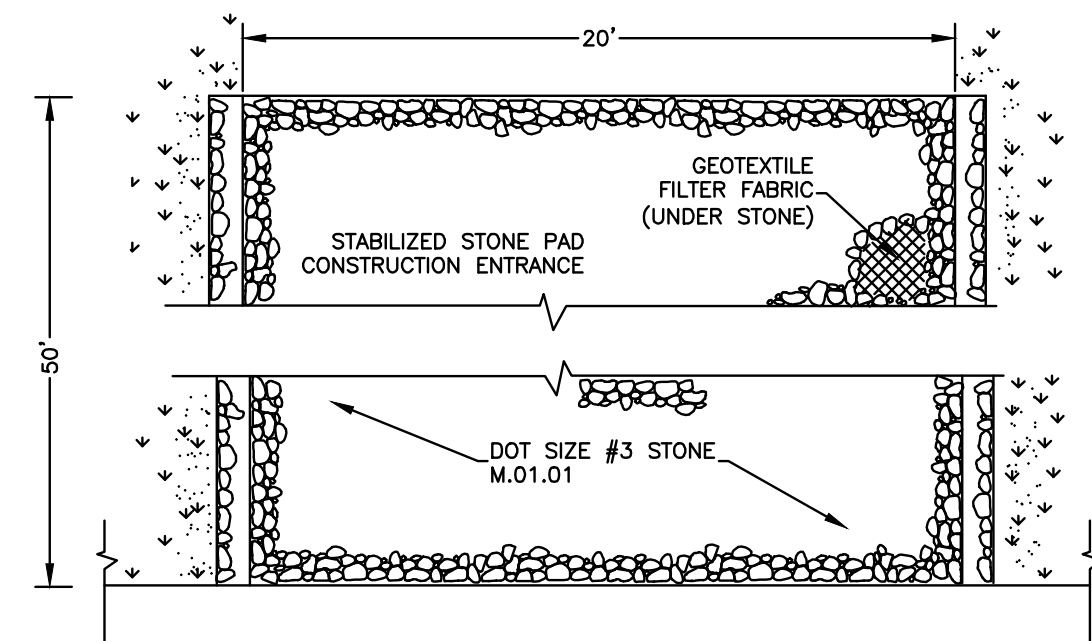
- PERIODICALLY MOISTEN EXPOSED SOIL AREAS WITH WATER ON UNPAVED SURFACES.
- USE OF MECHANICAL SWEEPING ON PAVED AREAS WHERE DUST AND FINE MATERIALS ACCUMULATE AS A RESULT OF TRUCK TRAFFIC, PAVEMENT SAW CUTTING SPILLAGE, AND WIND OR WATER DEPOSITION FROM ADJACENT DISTURBED AREAS. SWEEP DAILY IN HEAVILY TRAFFICKED AREAS AS WARRANTED.
- REPEAT APPLICATION OF DUST CONTROL MEASURES WHEN DUST CONDITIONS BECOME EVIDENT.

TOPSOIL (TO)

MATERIALS:

TOPSOIL SHALL INCLUSIVELY MEAN A SOIL:

MEETING ONE OF THE FOLLOWING SOIL TEXTURES CLASSIFIED ESTABLISHED BY THE USDA CLASSIFICATION SYSTEM BASED UPON THE PROPORTION OF SAND, SILT AND CLAY SIZE PARTICLES AFTER PASSING A 2 MM SIEVE AND SUBJECTED TO A PARTICLE SIZE ANALYSIS: LOAMY SAND, INCLUDING COARSE, LOAMY FINE, AND LOAMY VERY FINE SAND, SANDY LOAM, INCLUDING COARSE, FINE AND VERY FINE SANDY LOAM, LOAM, OR SILT LOAM WITH NOT MORE THAN 60% SILT, CONTAINING NOT LESS THAN 6% AND NOT MORE THAN 20% ORGANIC MATTER AS DETERMINED BY LOSS-ON-IGNITION OF OVEN DRIED SAMPLES DRIED AT 105 DEGREES CENTIGRADE; POSSESSING A PH RANGE OF 6.0-7.5, EXCEPT IF THE VEGETATIVE PRACTICE BEING USED SPECIFICALLY REQUIRES A LOWER PH, THEN THE PH MAY BE ADJUSTED ACCORDINGLY; HAVING SOLUBLE SALTS NOT EXCEEDING 500 PPM, AND THAT IS LOOSE AND FRIABLE AND FREE FROM REFUSE, STUMPS, ROOTS, BRUSH, WEEDS, FROZEN PARTICLES, ROCKS AND STONES OVER 1 1/4" IN DIAMETER, AND ANY MATERIAL THAT WILL PREVENT THE FORMATION OF A SUITABLE SEEDBED AND PREVENT SEED GERMINATION AND PLANT GROWTH. TOPSOIL MAY OF NATURAL ORIGIN OR MANUFACTURED BY BLENDING COMPOSTED ORGANIC MATERIALS WITH ORGANIC DEFICIENT SOILS, MINERAL SOILS, SAND AND LIME SUCH THAT THE RESULTING SOIL MEETS THE MATERIAL SPECIFICATIONS ABOVE.

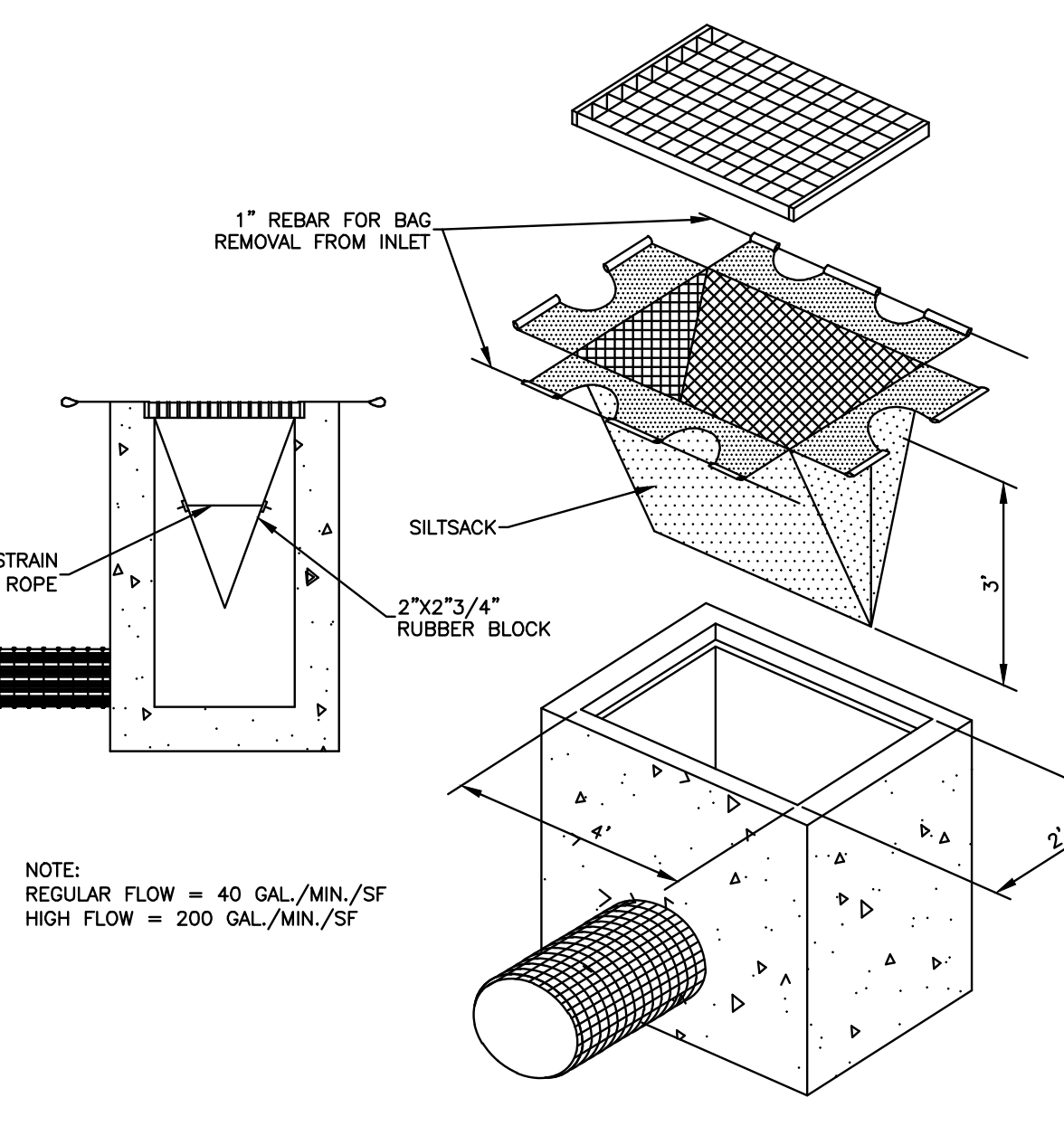


CONSTRUCTION ENTRANCE NOTES:

- MATERIALS
 - STONE: USE ANGULAR STONE SIZED ACCORDING TO THE STANDARDS SET BY ASTM C-33, SIZE NO. 2 OR 3, OR DOT STANDARD SPECIFICATIONS SECTION M.01.01, SIZE #3.
 - GEOTEXTILE: FIBERS USED IN THE GEOTEXTILE SHALL CONSIST OF SYNTHETIC POLYMERS COMPOSED OF AT LEAST 85% BY WEIGHT POLYPROPYLENES, POLYESTERS, AND POLYAMIDES, POLYETHYLENE, POLYOLEFINS, OR POLYVINYLIDENE-CHLORIDES. THE FIBERS SHALL BE FORMED IN A STABLE NETWORK OF FILAMENTS OR YARNS RETAINING DIMENSIONAL STABILITY RELATIVE TO EACH OTHER. THE GEOTEXTILE USED SHALL BE SPECIFICALLY INTENDED FOR "ROAD STABILIZATION" APPLICATIONS AND SHALL BE CONSISTENT WITH THE MANUFACTURER'S RECOMMENDATIONS FOR THE INTENDED USE.
- DIMENSIONS SHALL BE AS INDICATED ON THE DETAIL.
- CONSTRUCTION: CLEAR THE AREA OF THE ENTRANCE OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL AT POORLY DRAINED LOCATIONS INSTALL SUBSURFACE DRAINAGE INSURING THE OUTLETS TO THE DRAINS ARE FREE-FLOWING. IF USING GEOTEXTILE IN PLACE OF A FREE DRAINING MATERIAL, UNROLL THE GEOTEXTILE IN A DIRECTION PARALLEL TO THE ROADWAY CENTERLINE IN A LOOSE MANNER PERMITTING IT TO CONFORM TO THE SURFACE IRREGULARITIES WHEN THE STONE IS PLACED. THE GEOTEXTILE MAY BE TEMPORARILY SECURED WITH PINS RECOMMENDED OR PROVIDED BY THE MANUFACTURER BUT THEY SHALL BE REMOVED PRIOR TO PLACEMENT OF THE STONE. THE STONE TO THE SPECIFIED DIMENSIONS. KEEP ADDITIONAL STONE AVAILABLE OR STOCKPILE OF FUTURE USE.
- MAINTENANCE: MAINTAIN THE ENTRANCE IN A CONDITION WHICH WILL PREVENT TRACKING AND WASHING OF THE SEDIMENT ONTO PAVED SURFACES. PROVIDE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND. ROADS ADJACENT TO THE CONSTRUCTION SITE SHALL BE LEFT CLEAN AT THE END OF EACH DAY. IF THE CONSTRUCTION ENTRANCE IS BEING PROPERLY MAINTAINED AND THE ACTION OF A VEHICLE TRAVELING OVER THE STONE PAD IS NOT SUFFICIENT TO REMOVE THE MAJORITY OF THE SEDIMENT, THEN EITHER (1) INCREASE THE LENGTH OF THE CONSTRUCTION ENTRANCE, OR (2) MODIFY THE CONSTRUCTION ACCESS ROAD SURFACE, OR (3) INSTALL WASHING RACKS AND ASSOCIATED SETTLING AREA OR SIMILAR DEVICES BEFORE THE VEHICLE ENTERS PAVED SURFACES.

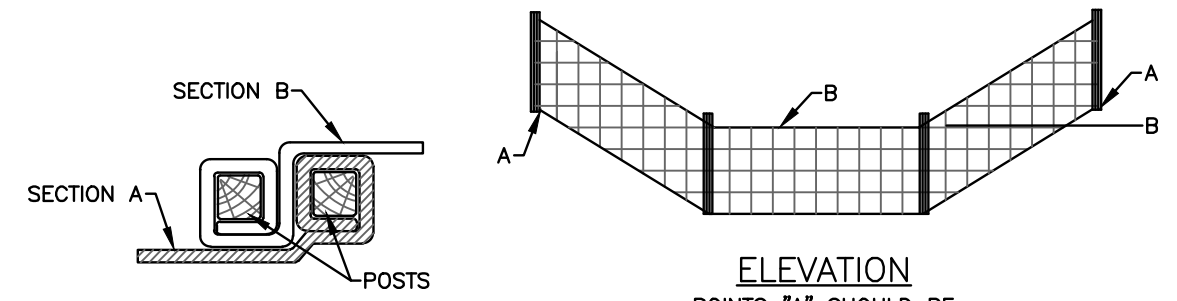
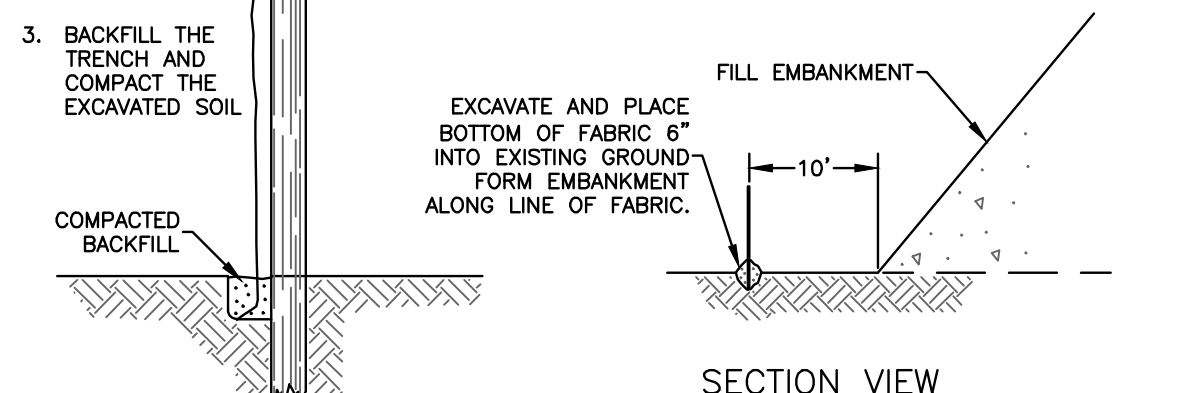
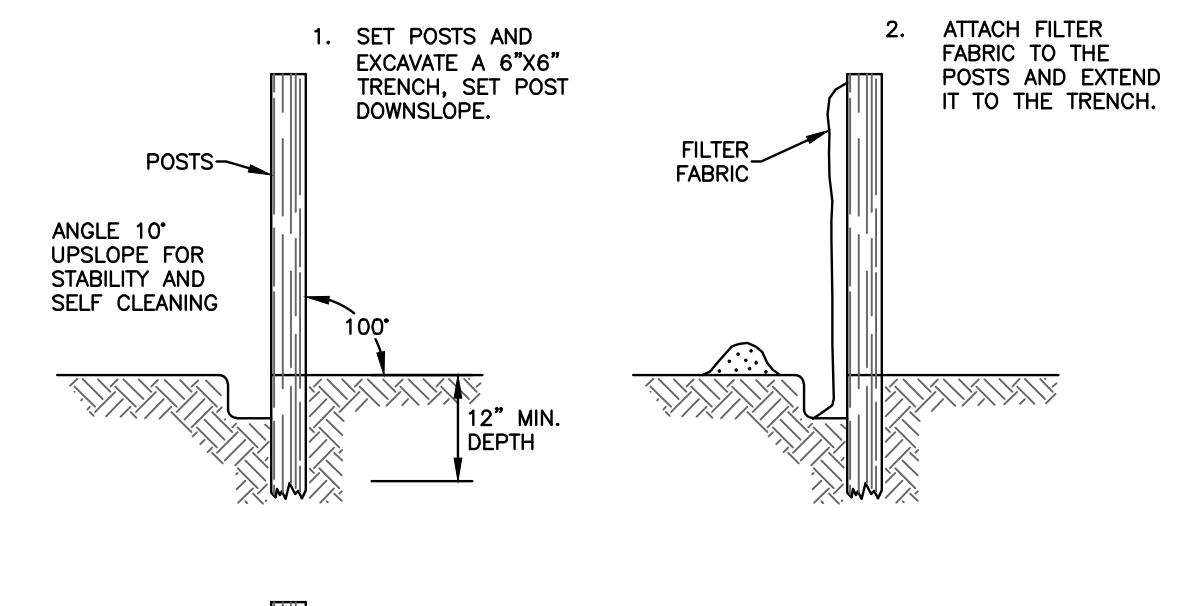
CONSTRUCTION ENTRANCE

NOT TO SCALE



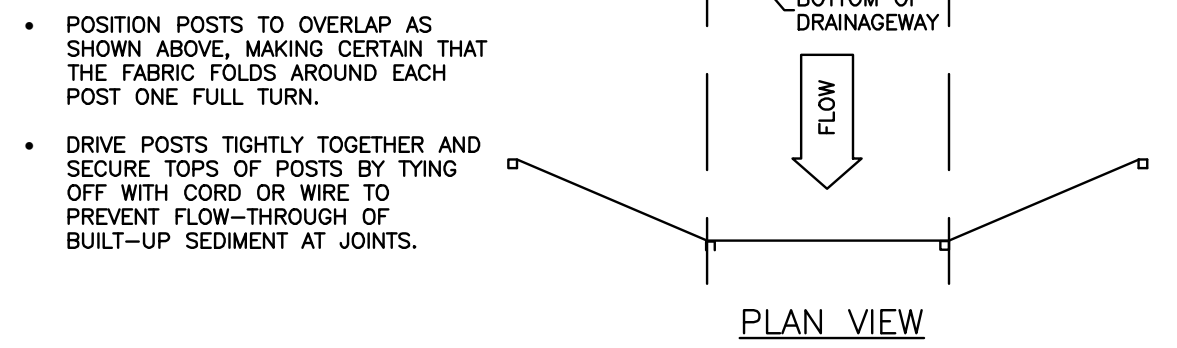
SILTSACK DETAIL

NOT TO SCALE



DETAIL OF FENCE JOINT

(Top View)



SILT FENCE NOTES:

- POSITION POSTS TO OVERLAP AS SHOWN ABOVE, MAKING CERTAIN THAT THE FABRIC FOLDS AROUND EACH POST ONE FULL TURN.
- DRIVE POSTS TIGHTLY TOGETHER AND SECURE TOPS OF POSTS BY TYING OFF WITH CORD OR WIRE TO PREVENT FLOW-THROUGH OF BUILT-UP SEDIMENT AT JOINTS.

MATERIALS:

GEOTEXTILE FABRIC SHALL BE A PERVIOUS SHEET OF POLYPROPYLENE, NYLON, POLYESTER, ETHYLENE OR SIMILAR FILAMENTS AND SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

PHYSICAL PROPERTY	TEST METHOD	MINIMUM REQUIREMENT
FILTERING EFFICIENCY	ASTM 5141	75% (MINIMUM)
GRAB TENSILE STRENGTH	ASTM D4632	100 LBS.
ELONGATION @ FAILURE	ASTM D4632	75%
MULLEN BURST STRENGTH	ASTM D3786	250 PSI
PUNCTURE STRENGTH	ASTM 4833	50 LBS.
APPARENT OPENING SIZE	ASTM D4751	NO LESS THAN 0.90 MM AND NO GREATER THAN 0.60 MM
FLOW RATE	ASTM D4491	0.2 GAL/FT ² /MIN.
PERMATIVITY	ASTM D4491	0.05 SEC. -1 (MIN.)
ULTRAVIOLET RADIATION STABILITY %	ASTM D4355	70% AFTER 500 HOURS OF EXPOSURE (MIN.)

SUPPORTING POSTS: POSTS SHALL BE AT LEAST 42" LONG MADE OF EITHER 1.5 INCH SQUARE HARDWOOD STAKES OR SHALL BE POSTS WITH PROJECTIONS FOR FASTENING THE GEOTEXTILE POSSESSING A MINIMUM STRENGTH OF 0.5 POUNDS PER LINEAR FOOT.

TRENCH EXCAVATION: EXCAVATE A TRENCH 6 INCHES DEEP AND 6 INCHES WIDE ON THE UPHILL SIDE OF THE FENCE LOCATION. FOR SLOPE AND SWALE INSTALLATIONS, EXTEND THE ENDS OF THE TRENCH UPHILL SO THAT THE BOTTOM END OF THE FENCE WILL BE HIGHER THAN THE TOP OF THE LOWEST PORTION OF THE FENCE.

SUPPORT POSTS: INSTALL SUPPORT POSTS ON THE DOWNHILL SIDE OF THE TRENCH TO A MINIMUM DEPTH OF 12 INCHES TO ORIGINAL GROUND. SUPPORT POSTS SHALL BE SPACED NO GREATER THAN 10 FEET APART. SUPPORT POSTS SHOULD BE INSTALLED CLOSER THAN 10 FEET ON STEEP SLOPES OR WHEN CONCENTRATED FLOWS ARE ANTICIPATED.

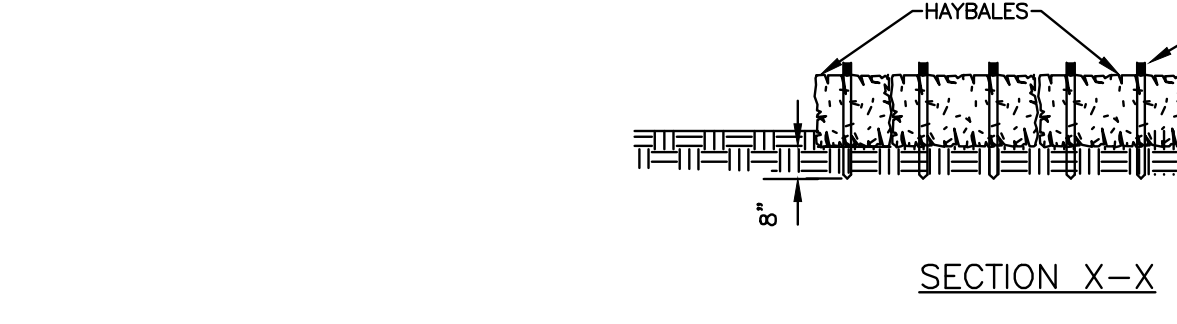
GEOTEXTILE FILTER FABRIC: STAPLE OR SECURE THE GEOTEXTILE TO THE SUPPORT POSTS PER MANUFACTURER'S INSTRUCTION SUCH THAT AT LEAST 6 INCHES OF GEOTEXTILE LIES WITHIN THE TRENCH. THE HEIGHT OF THE FENCE SHALL NOT EXCEED 30 INCHES.

BACKFILL & COMPACTION: BACKFILL TRENCH WITH TAMPED SOIL OR AGGREGATE OVER THE GEOTEXTILE.

MAINTENANCE: SILT FENCE SHOULD BE INSPECTED AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL AMOUNT OF 0.5 INCHES OR GREATER. SEDIMENT DEPOSITS ARE TO BE REMOVED. FENCE SHOULD BE REPAIRED OR REPLACES WITHIN 24 HOURS OF OBSERVED FAILURE.

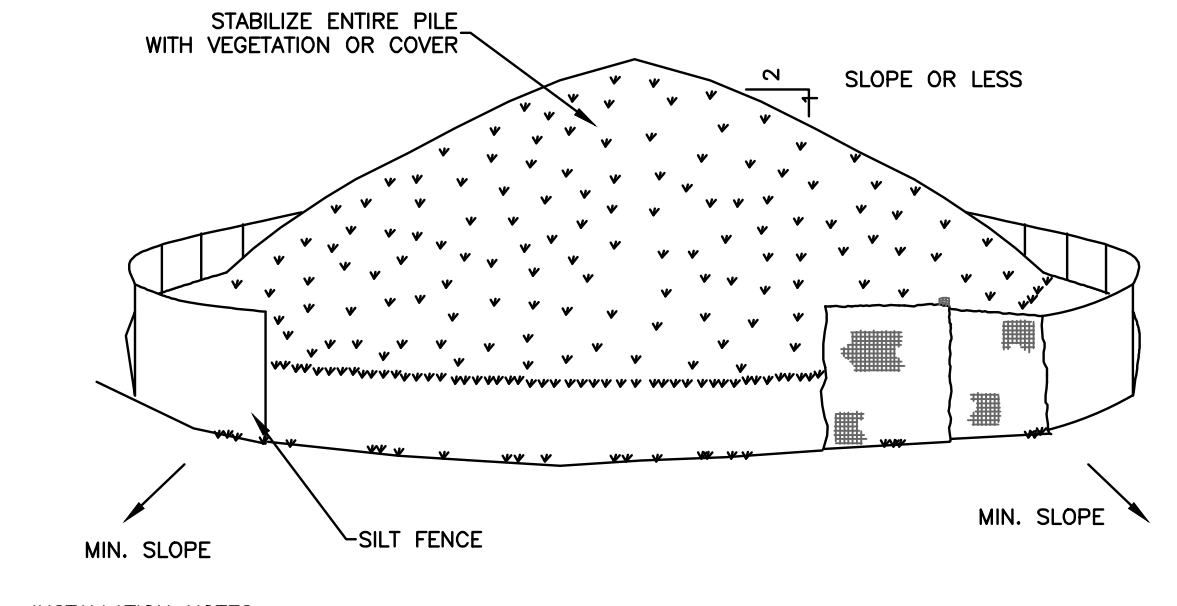
GEOTEXTILE SILT FENCE (GSF):

NOT TO SCALE



STAKED HAYBALES

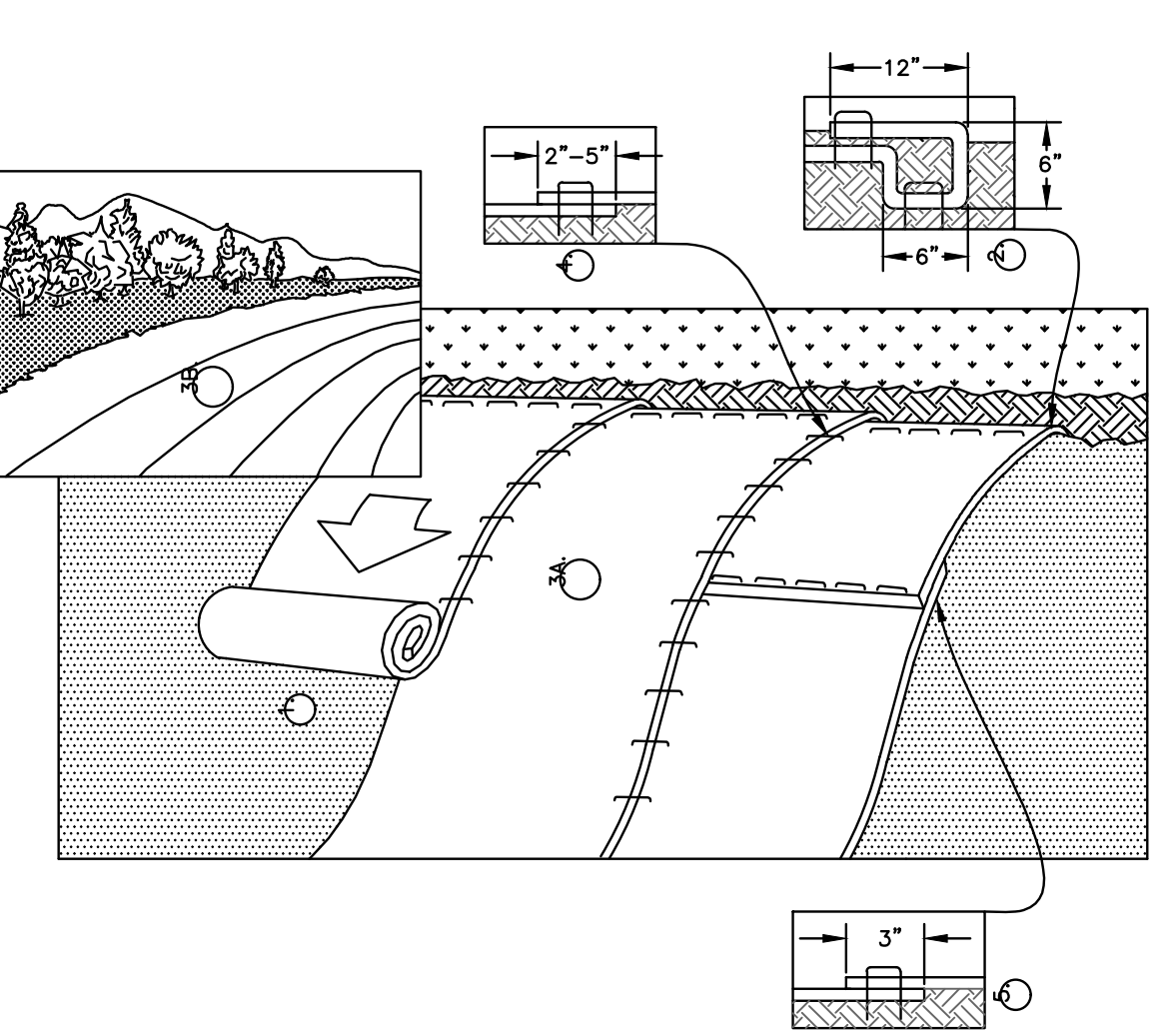
NOT TO SCALE



INSTALLATION NOTES:
 1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
 2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 2 HORIZONTAL TO 1 VERTICAL.
 3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR STRAWBALES, THEN STABILIZED WITH VEGETATION OR COVER.

SOIL STOCKPILING

NOT TO SCALE



INSTALLATION PROCEDURE:

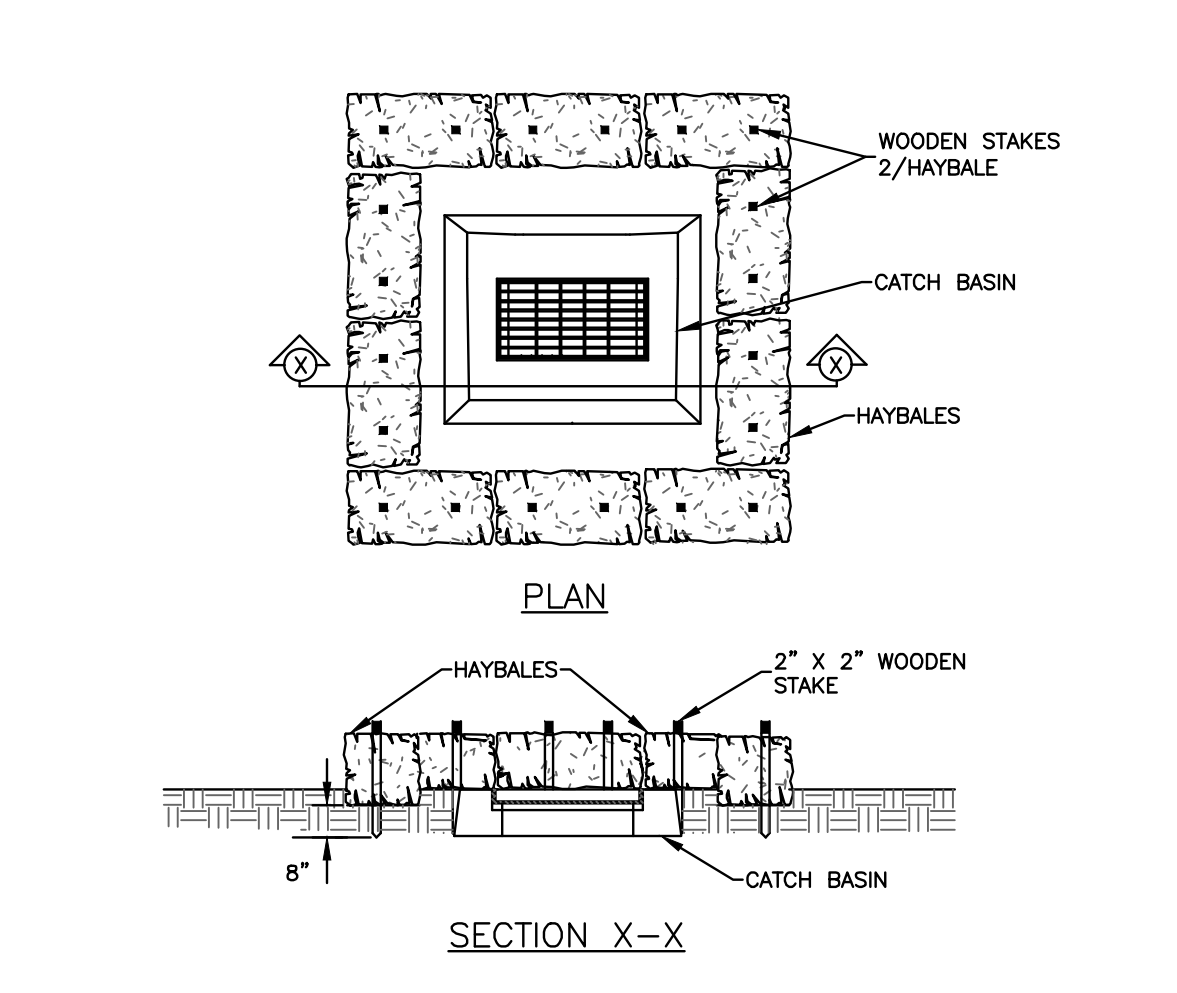
- PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
- BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.
- ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
- THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5cm-12.5cm) OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
- CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5cm) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30cm) APART ACROSS ENTIRE BLANKET WIDTH.

EROSION CONTROL BLANKET NOTES:

- EROSION CONTROL BLANKET TO BE INSTALLED ON ALL SLOPES 3 HORIZONTAL TO 1 VERTICAL OR STEEPER.
- IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS

EROSION CONTROL BLANKET

NOT TO SCALE



HAYBALES AT CATCH BASIN

NOT TO SCALE

GODFREY & HOFFMAN
HODGE, LLC

PROFESSIONAL LAND SURVEYORS & CIVIL ENGINEERS
 58 BRISBANE AVENUE SUITE 1000
 06033-4971 WASHINGTON STATE
 1705 FARMINGTON AVENUE SUITE 1000
 06103-6214 HARTFORD, CT
 WWW.GHLLC.COM

STATE OF CONNECTICUT
 PROFESSIONAL ENGINEER
 JOHN J. HODGE
 LICENSE NO. 10258
 EXPIRES 12/31/2025

ALL WORK, LABOR, AND MATERIALS TO BE IN STRICT ACCORDANCE WITH THE SPECIFICATIONS AND REQUIREMENTS OF THE DESIGN AND CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL ENFORCEMENT AGENCY. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES AND UTILITIES AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND MAINTENANCE OF ALL EXISTING UTILITIES AND STRUCTURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL DEBRIS AND WASTE MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND MAINTENANCE OF ALL ADJACENT PROPERTIES AND UTILITIES AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL DEBRIS AND WASTE MATERIALS.

NO.	DATE	TOWN	ENG.	COMMENTS
1	7-7-2023			

PROPOSED PARKING LOT EXPANSION

100 GRIST MILL ROAD
 SIMSBURY, CT

PREPARED FOR:

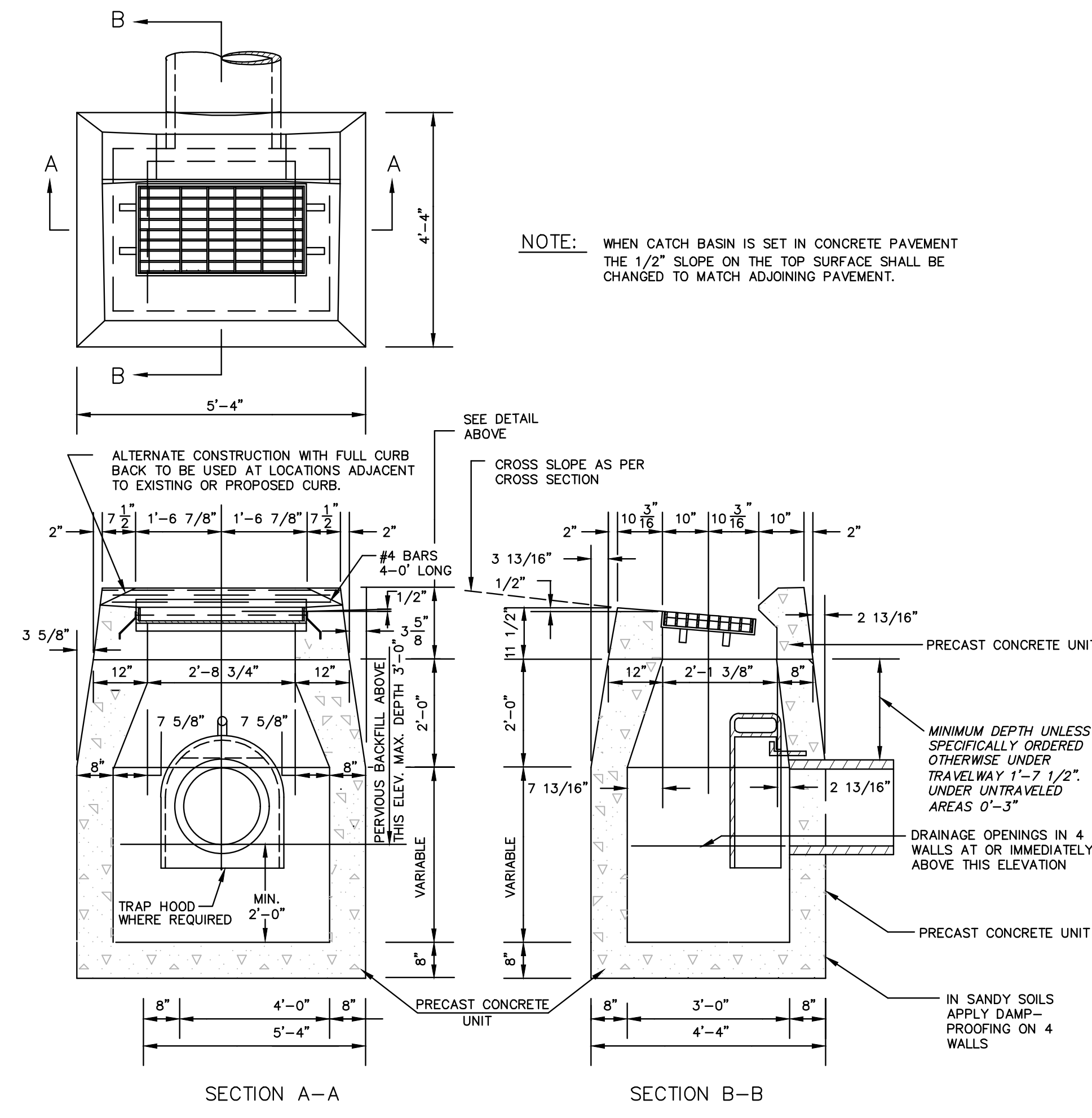
ENSIGN-BICKFORD
 AEROSPACE &
 DEFENSE CO.

640 HOPMEADOW ST.
 SIMSBURY, CT

EROSION & SEDIMENTATION CONTROL DETAILS & NOTES

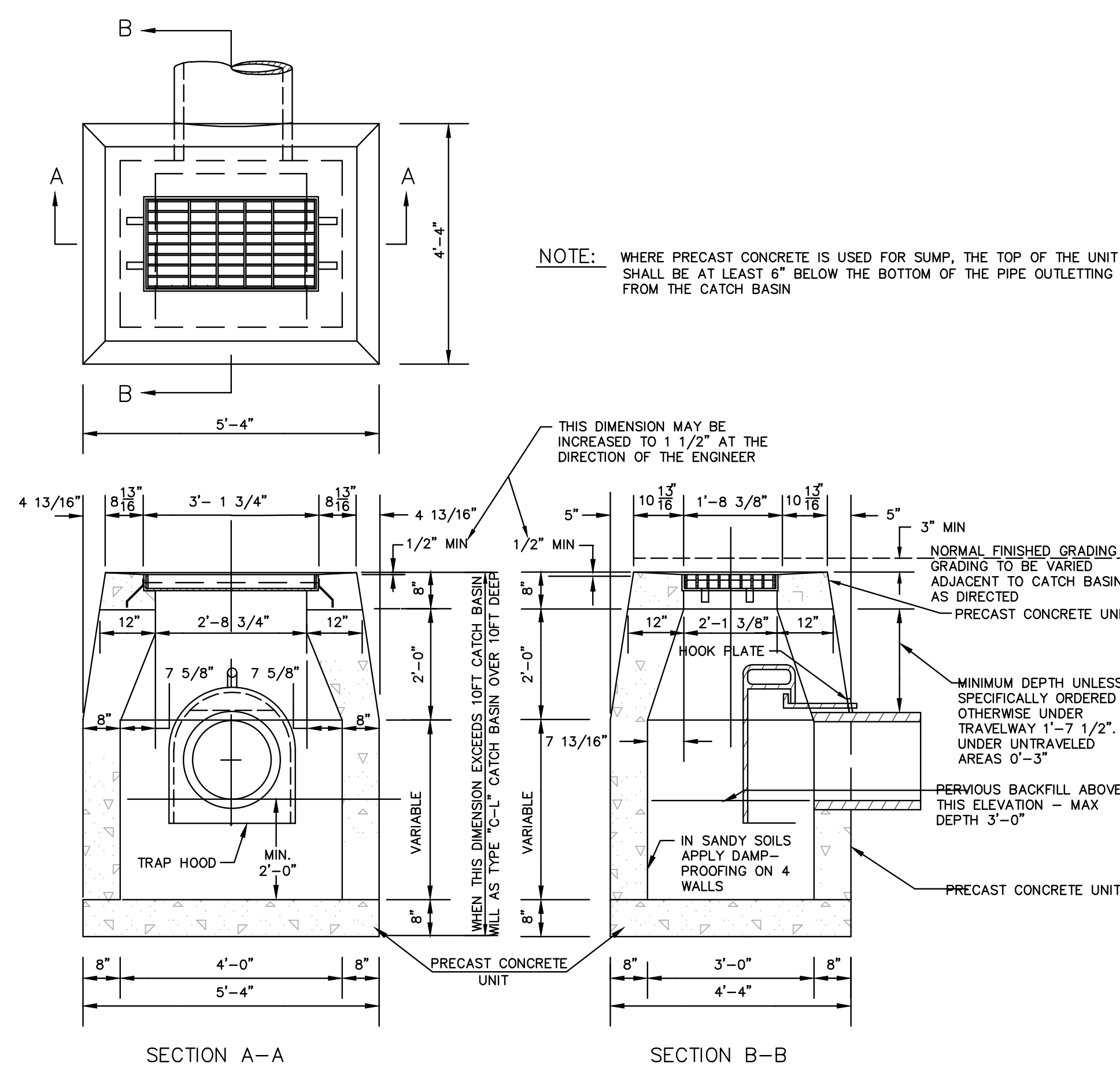
DRAWN BY: MP/CB
 CHECKED BY: MP
 SCALE: AS NOTED
 PROJECT: 113-65
 DATE: 6/5/2023

C-4.1



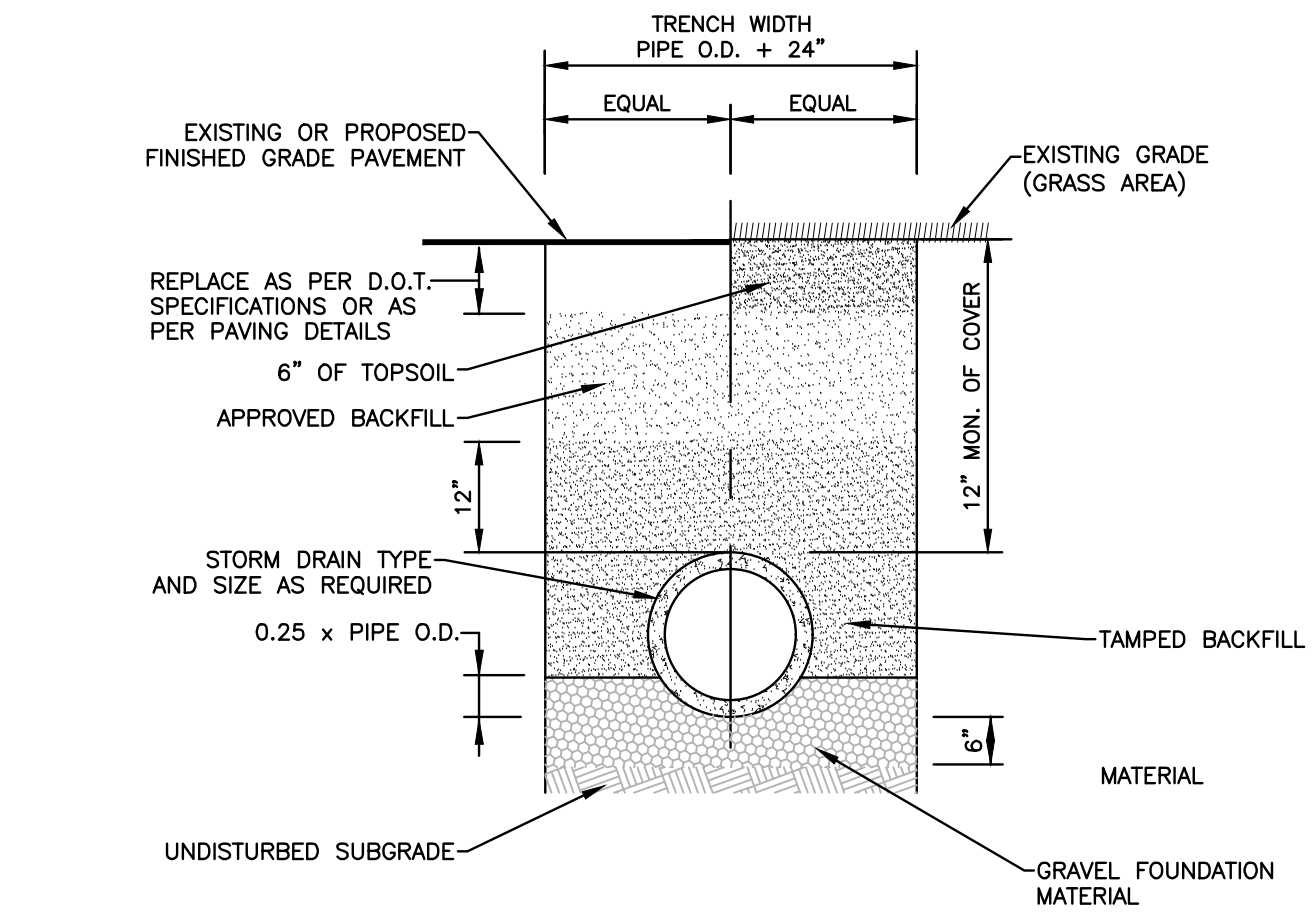
TYPE "C" CATCH BASIN

NOT TO SCALE



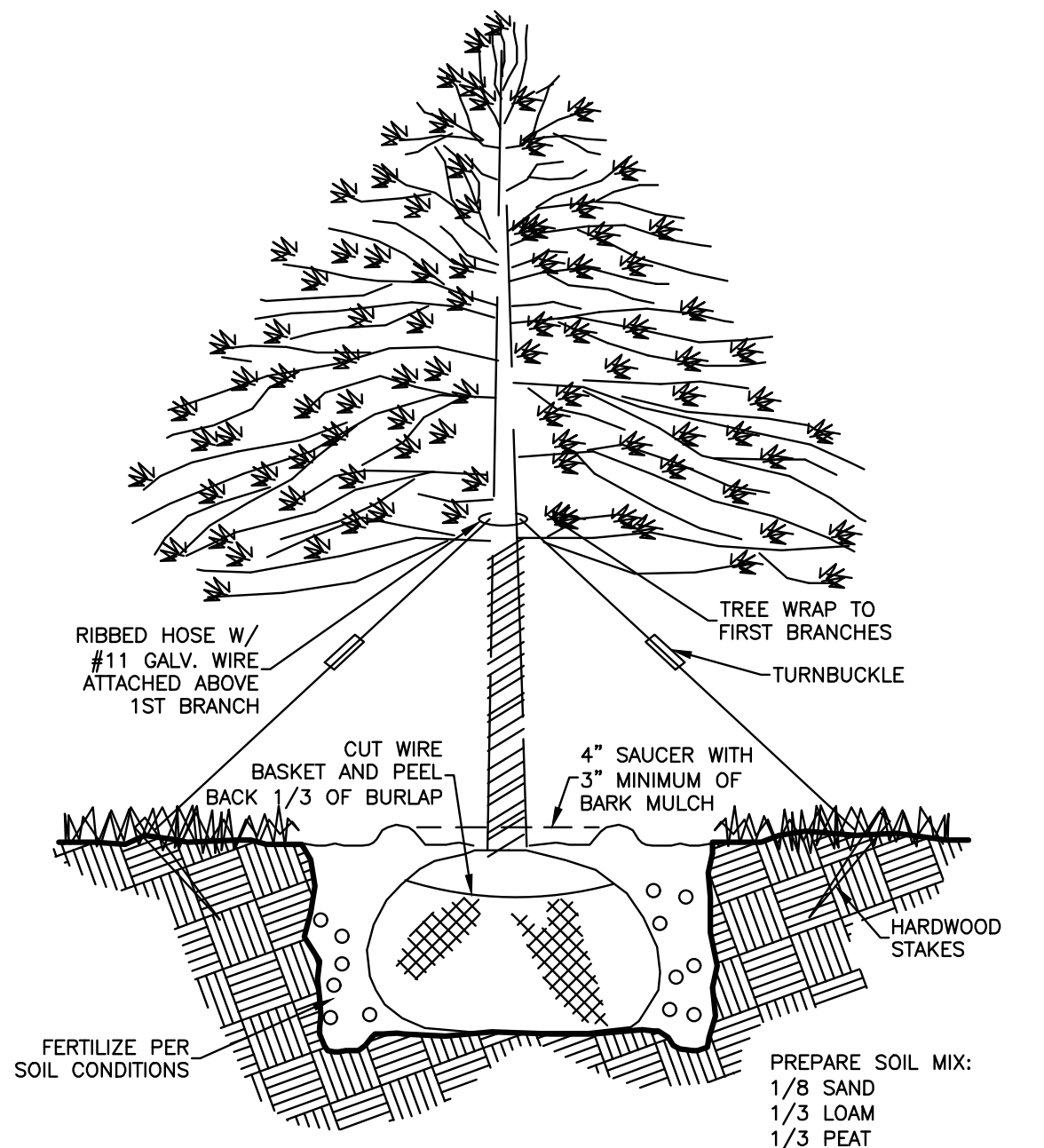
TYPE "C-L" CATCH BASIN

NOT TO SCALE



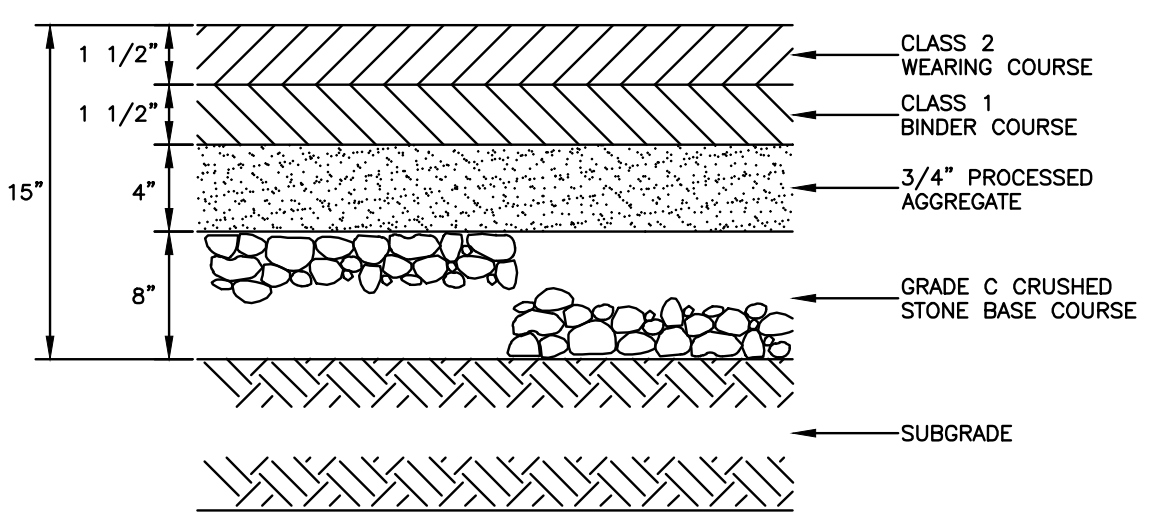
STORM DRAIN TRENCH DETAIL

NOT TO SCALE



TREE PLANTING DETAIL

NOT TO SCALE

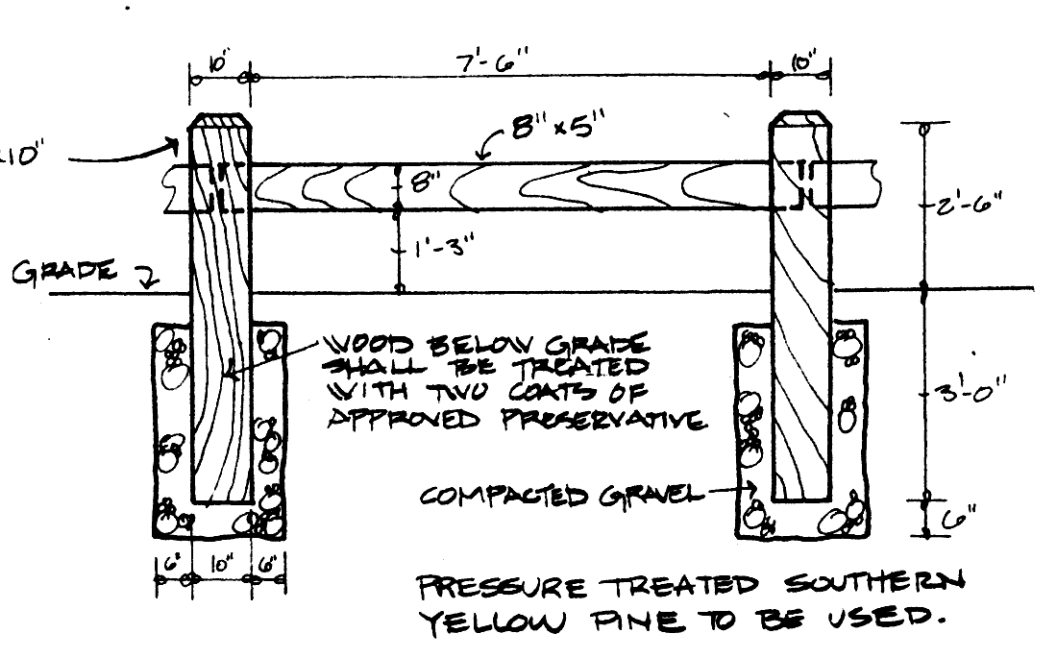


NOTES:

- PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH TOWN OF HAMDEN STANDARDS AND CONNECTICUT DEPARTMENT OF TRANSPORTATION FORM 816.
- PAVEMENT SECTIONS SHALL CONFORM TO THE TYPICAL SECTIONS SHOWN ON THE DETAIL DRAWING. PROCESSED AGGREGATE BASE SHALL CONFORM TO SECTION M.05.01, BANK RUN GRAVEL SUBBASE SHALL CONFORM TO SECTION M.02.02 AND SECTION 2.12. BITUMINOUS CONCRETE PAVEMENT SHALL CONFORM TO SECTION M.04.01.
- SUBGRADE SHALL BE PREPARED PRIOR TO CONSTRUCTING SUBBASE. REMOVE ALL DELETERIOUS OR ORGANIC MATERIALS, FROST OR TOPSOIL FROM SUBGRADE. SHAPE, GRADE AND COMPACT IN ACCORDANCE WITH SECTION 2.09.
- THE CONTRACTOR SHALL COMPACT DRY UNDER ALL PARKING, DRIVEWAY, ROADWAY AREAS TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557 (MODIFIED PROCTOR TEST) OR AS DIRECTED BY THE SITE ENGINEER.
- ALL PAVEMENT MATERIAL THICKNESSES SHOWN ARE AFTER COMPACTION.

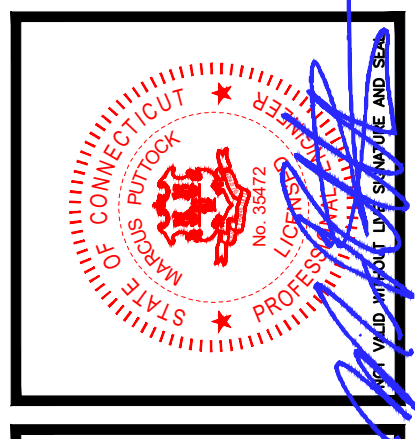
STANDARD DUTY PAVEMENT

NOT TO SCALE



TIMBER GUIDERAIL DETAIL

NOT TO SCALE



ALL WORK, LABOR AND MATERIALS TO BE IN STRICT ACCORDANCE WITH THE SPECIFICATIONS AND STANDARDS OF THE CONNECTICUT DEPARTMENT OF TRANSPORTATION AND THE CONNECTICUT DEPARTMENT OF HIGHWAYS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.

NO.	DATE	DESCRIPTION	TOWN ENG. COMMENTS
1	7-7-2023		

PROJECT:

PROPOSED PARKING LOT EXPANSION

100 GRIST MILL ROAD
SIMSBURY, CT

PREPARED FOR:

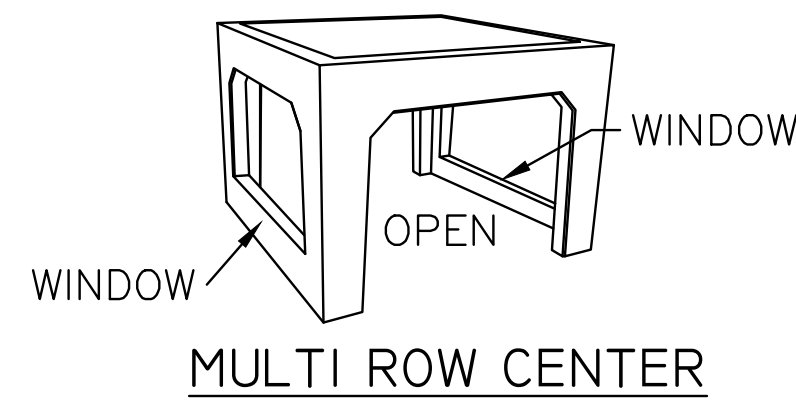
ENSIGN-BICKFORD AEROSPACE & DEFENSE CO.

640 HOPMEADOW ST.
SIMSBURY, CT

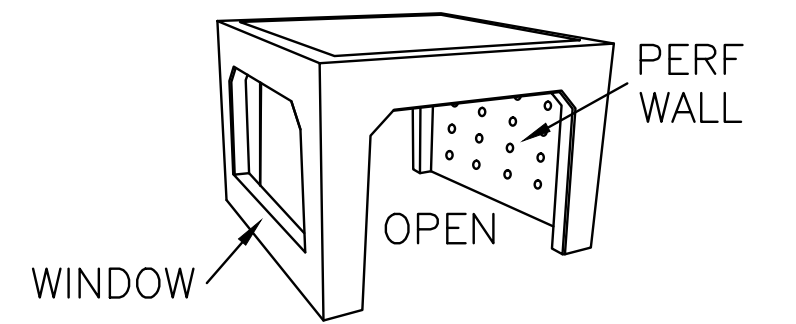
DETAILS

DRAWN BY:	MP/CB
CHECKED BY:	MP
SCALE:	AS NOTED
PROJECT:	113-65
DATE:	6/5/2023

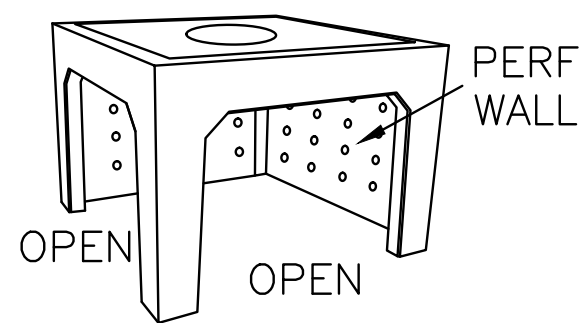
C-5.0



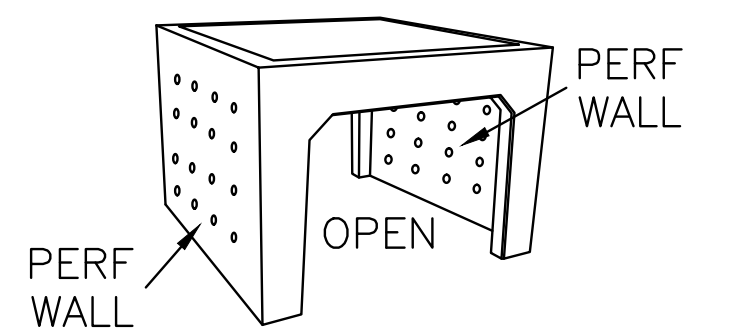
MULTI ROW CENTER



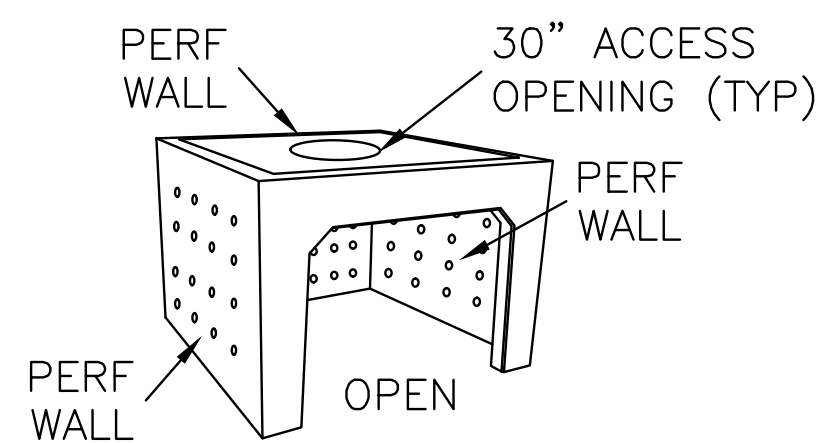
MULTI ROW PERIMETER



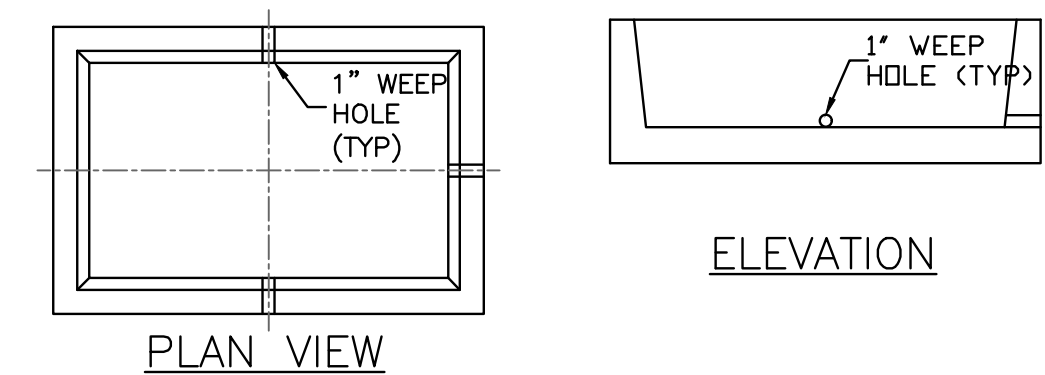
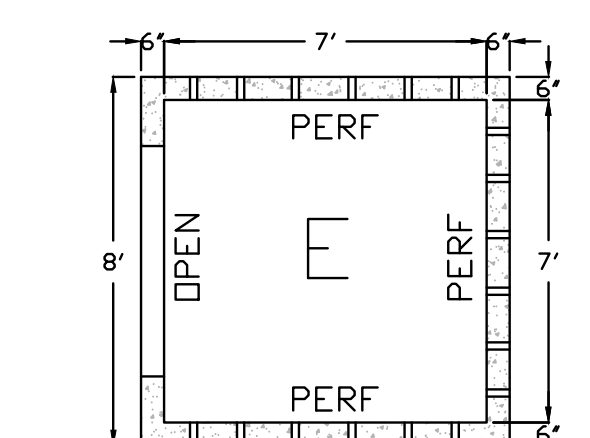
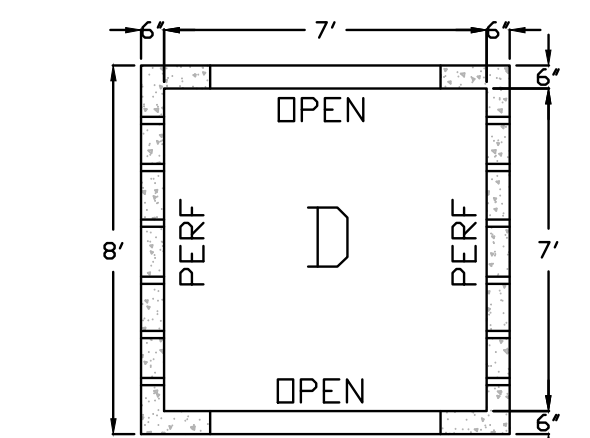
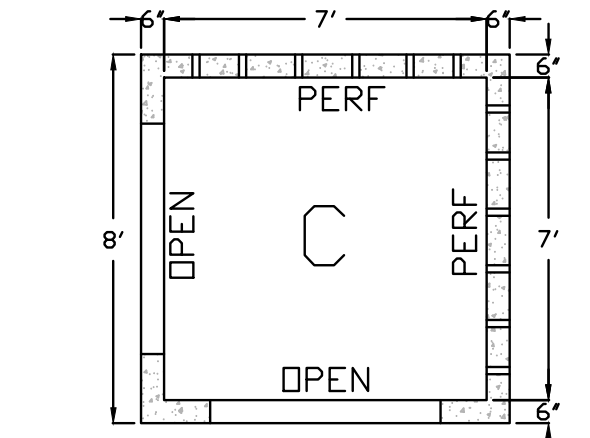
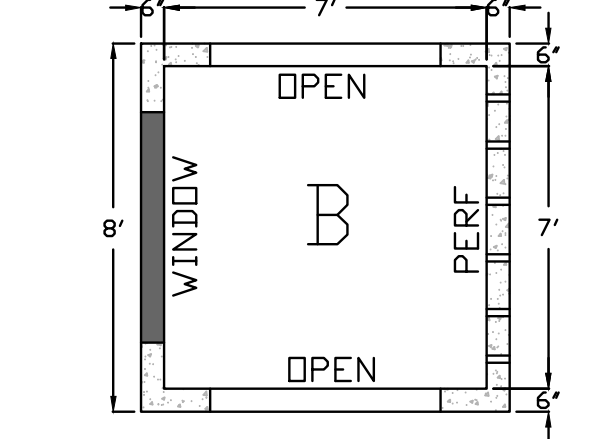
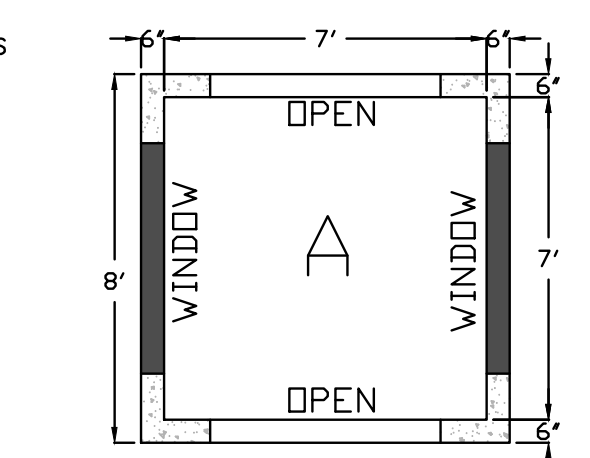
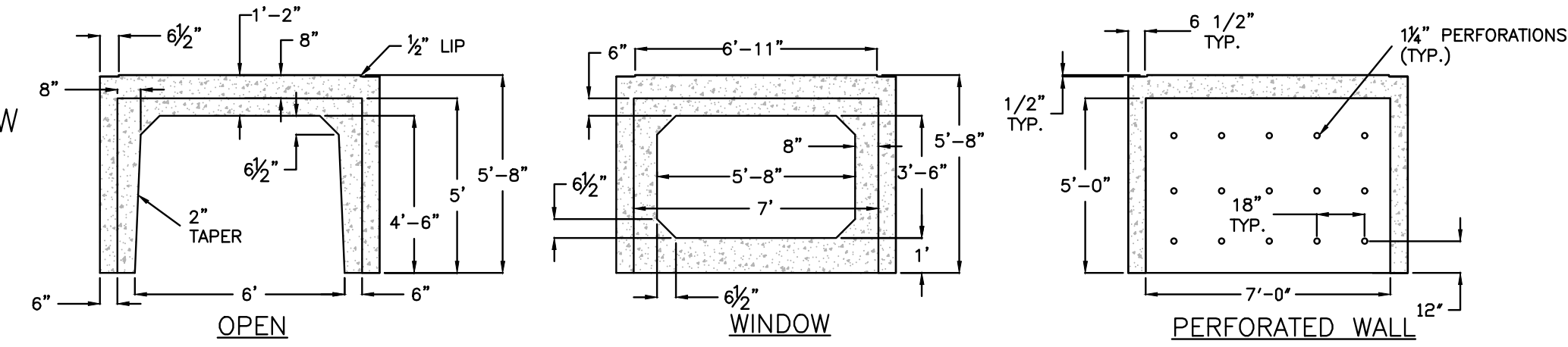
MULTI ROW CORNER



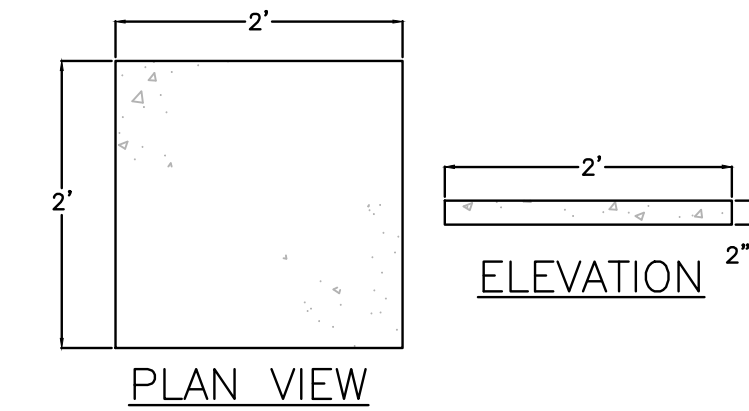
SINGLE ROW CENTER



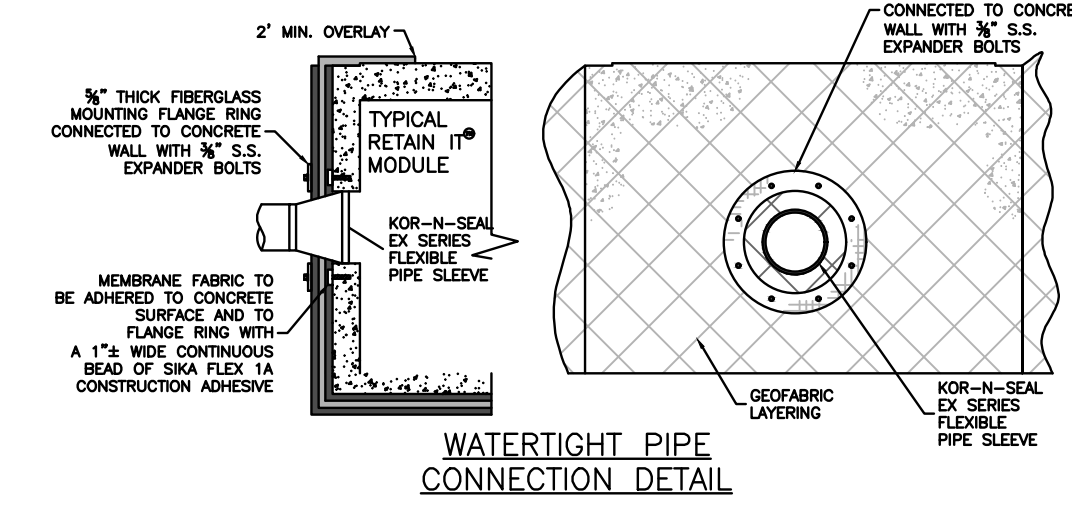
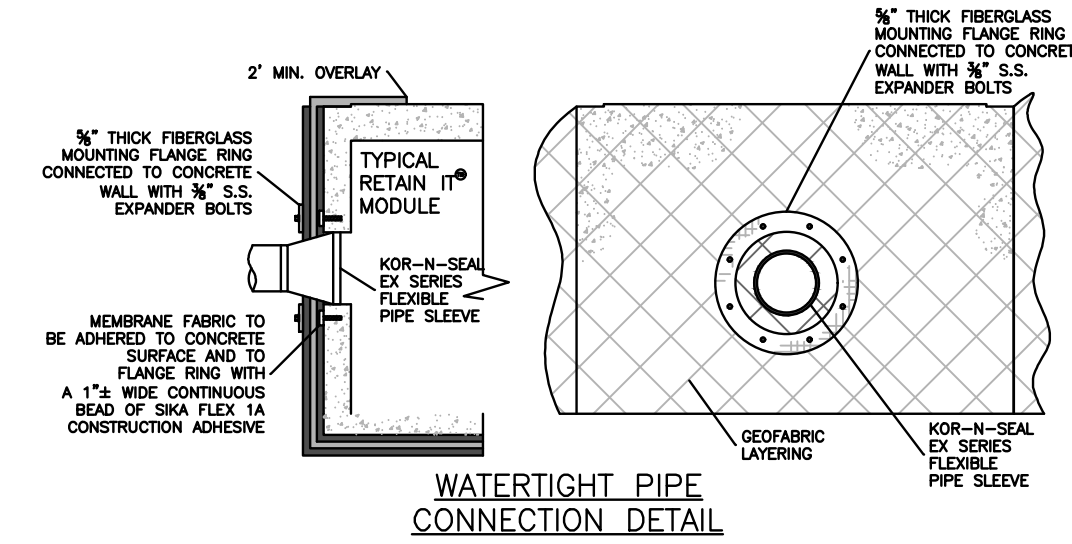
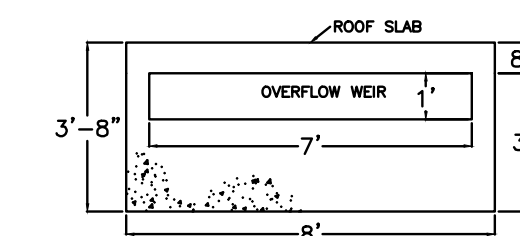
SINGLE ROW END



ENERGY DISSIPATION/
ANTI-SCOUR DEVICE



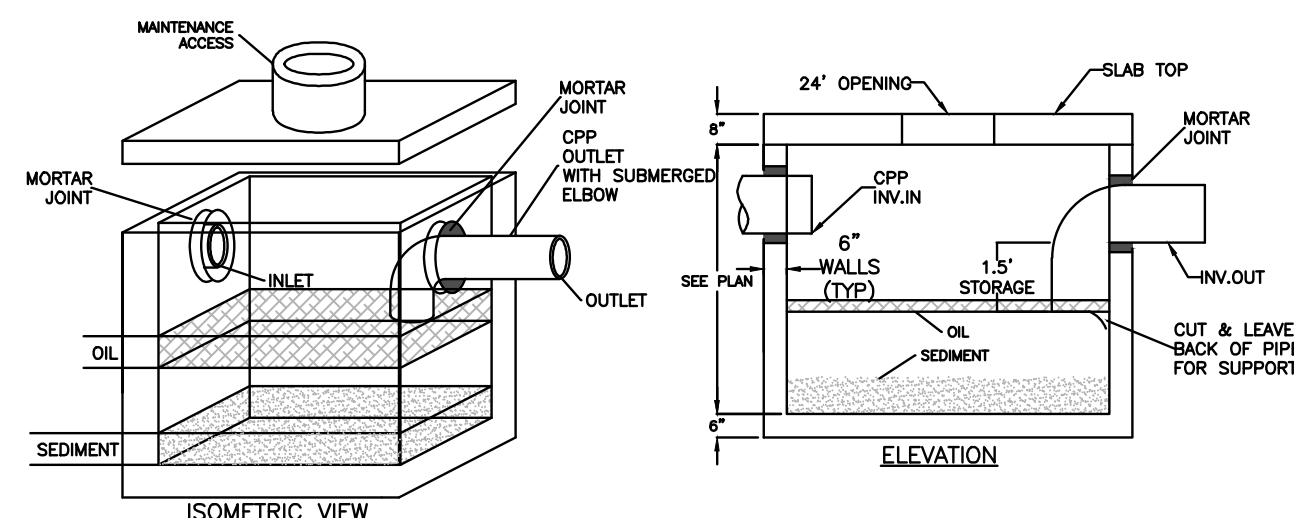
INLET SPLASH PAD



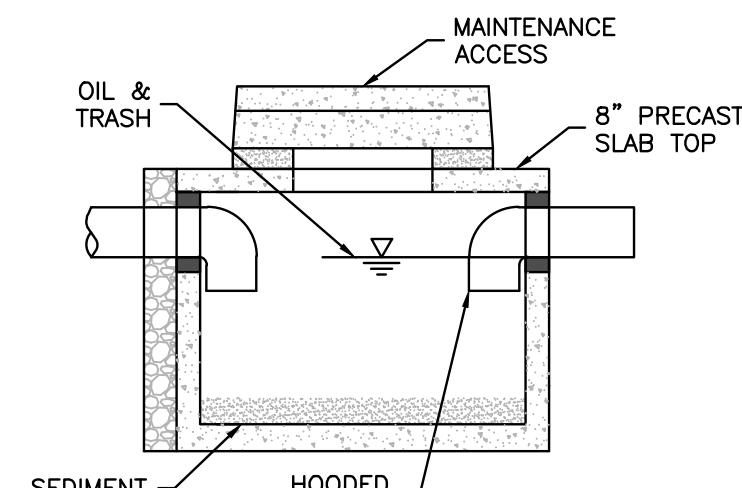
*GEOTEXTILE FABRIC/MEMBRANE LAYER

- 140N GEOTEXTILE
 - 30 MIL PVC LINER MEMBRANE
 - 140N GEOTEXTILE
- MEMBRANE MANUFACTURED BY ENVIRONMENTAL PROTECTION INC. (EPI) OR APPROVED EQUAL

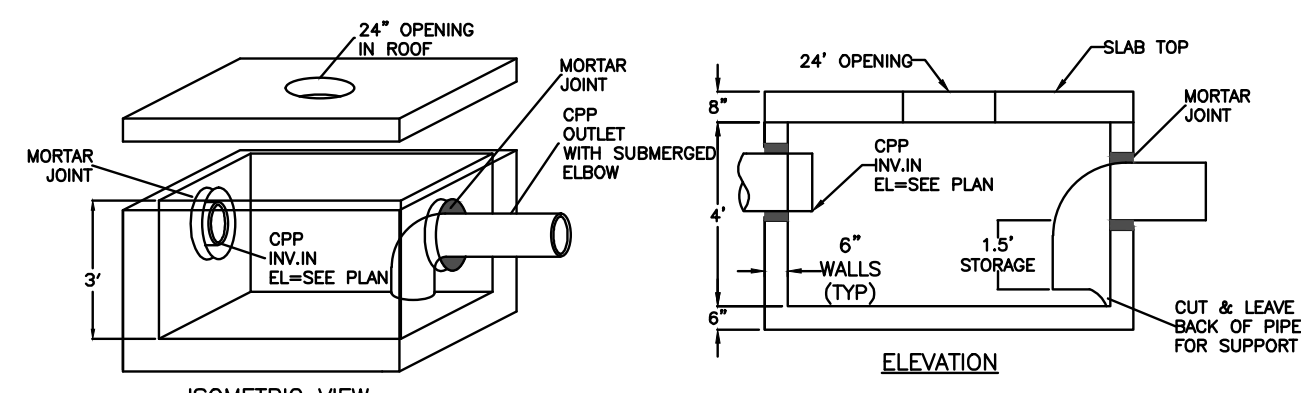
9939 US-131 SOUTH MANCERLONA, MI 49659
1-231-587-9108



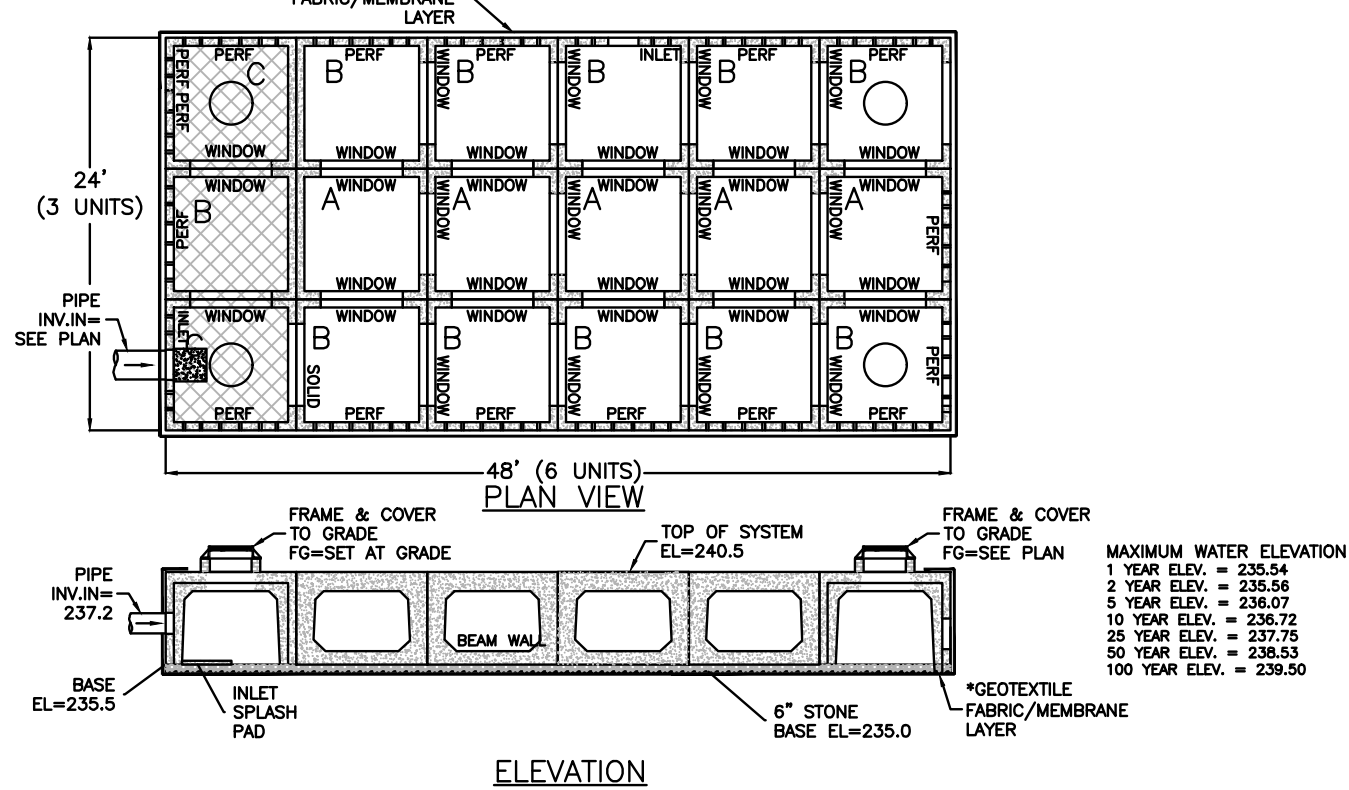
EMERGENCY OIL SPILL CONTAINMENT OIL/WATER SEPARATION SYSTEM INLET MODULE



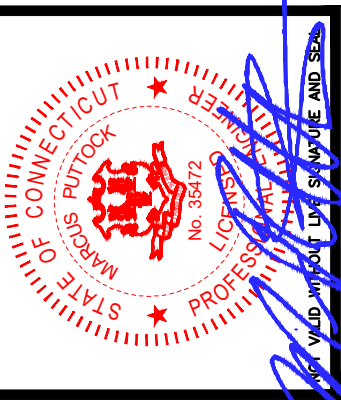
PRIMARY SEDIMENT CONTAINMENT W/ TRASH AND DEBRIS COLLECTION



EMERGENCY OIL SPILL CONTAINMENT OIL/WATER SEPARATION SYSTEM INLET MODULE



GODFREY HOFFMAN HODGE, LLC
PROFESSIONAL ENGINEERS
26 BROADWAY NORTH HAVEN, CT 06472 TEL: 203.239.4271 WWW.GODFREYHOFFMAN.COM
1785 FARMINGTON AVENUE, UNIONVILLE, CT 06865 TEL: 860.673.0444 WWW.HODGELL.COM



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REV.	DATE	DESCRIPTION
1	7-7-2023	TOWN ENG. COMMENTS

PROPOSED PARKING LOT EXPANSION
100 GRIST MILL ROAD
SIMSBURY, CT

PREPARED FOR:
ENSIGN-BICKFORD AEROSPACE & DEFENSE CO.
640 HOPMEADOW ST.
SIMSBURY, CT

retainit
Stormwater Management Systems
STANDARD DETAILS

DRAWN BY:	MP/CB
CHECKED BY:	MP
SCALE:	N.T.S.
PROJECT:	113-65
DATE:	6/5/2023

C-5.1

THE DETAILS SHOWN HEREON ARE COMPILED FROM THE STANDARD DRAWINGS AS PROVIDED ON THE RETAIN IT WEBSITE. SEE PLANS AND SITE STORMWATER MANAGEMENT REPORT FOR SITE SPECIFIC DESIGN DATA.

retainit
Stormwater Management Systems



Engineering Report

Proposed Parking Lot Expansion
Located at

100 Grist Mill Road
Simsbury, Connecticut

Prepared for: Ensign-Bickford Aerospace & Defense Co.
640 Hopmeadow Street
Simsbury, Connecticut

Prepared By: Godfrey Hoffman Hodge, LLC
26 Broadway
North Haven, CT 06473

June 5, 2023
Revised July 7, 2023



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STORMWATER MANAGEMENT PLAN

EXISTING CONDITIONS:

100 Grist Mill Road, located in Simsbury, Connecticut, is a commercial/industrial property with existing improvements including a 40,700± square foot building, parking, and appurtenances. The site is approximately 8.91 acres (388,150 s.f.) in size and is located generally on the crest of a hill with parking areas sloping predominantly easterly. The existing parking lot occupies a significant portion of the property, accommodating 115 parking spaces.

The surrounding area consists of a mix of commercial and residential facilities. Nearby establishments include Mill Commons Apartments, the Terpsichore Dance and Theater, Ares Management Corporation, and others. The property is accessed via Grist Mill Road and a private accessway known as Werk Way, which connects to the main road network, ensuring convenient access for both employees and visitors.

The entire subject property lies within a Zone X indicating an area of minimal flood hazard, as depicted on FEMA - FIRM Community Panel No. 09003C0331F effective September 26, 2008, See FIRMette Appendix A.

Based on a report (see Appendix B) from the Natural Resources Conservation Service (NRCS) the onsite soils are classified as Hinckley Loamy Sands. These soils are generally excessively drained with a capacity to transmit water of 1.42 to 99 in/hr and a depth to water table of more than 80 inches. On-site percolation tests performed on June 26, 2023 and found an infiltration rate of 97.5 in./hr. and 292 in./hr. respectively in the area of proposed stormwater system. Based on these results and a factor of safety of 3, an infiltration rate of 32.5 in./hr. was used for this analysis.

For the purpose of this analysis the Precipitation Frequency Data for stormwater analysis is based on data provided by NOAA Atlas 14 Point Precipitation Frequency Estimates: CT, Type III 24-hour Storm, web address;

https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_printpage.html?lat=41.3403&lon=-72.8962&data=depth&units=english&series=pds (See Appendix C)

This project is located within the Farmington River watershed. This location is outside of any Public Drinking Water Aquifer protection areas. See Appendix D for Watershed Map A-3.0, and Aquifer Protection Map A-4.0.

As part of this parking lot expansion project the existing stormwater system will undergo a thorough inspection, cleaning, and restoration to restore its original functionality. The existing stormwater infrastructure will be assessed by qualified personnel to identify any potential issues, such as clogging, sediment buildup, or structural deterioration. Necessary cleaning techniques, including sediment removal, debris clearing, and pipe flushing, will be employed to ensure the unobstructed flow of stormwater. In cases where repairs or replacements are required, they will be carried out to reinstate the system's proper functionality. This comprehensive inspection, cleaning, and restoration process will ensure

the stormwater system's integrity and efficiency, minimizing the risk of flooding and effectively managing stormwater runoff for the existing parking lot area.

PROPOSAL:

PARKING LOT EXPANSION:

The purpose of this project is to expand the existing parking lot at 100 Grist Mill Road to accommodate the growing parking demands on-site. The proposed expansion includes the addition of 52 parking spaces, bringing the total number of parking spaces to 167. Furthermore, this expansion incorporates the integration of subsurface stormwater management systems to ensure proper handling and treatment of stormwater runoff from the parking lot.

The proposed stormwater system for the expansion project at 100 Grist Mill Road, Simsbury, Connecticut, comprises two catch basins connected via underground pipes to a Retain-it underground storage system. The Retain-it system consists of three rows of six units, each measuring five feet in height. These units are specifically designed to facilitate stormwater infiltration for all analyzed storms, including the critical 100-year storm event. The arrangement of the storage units allows for efficient storage and gradual release of stormwater, preventing excessive runoff and reducing the burden on the municipal drainage system. The combination of catch basins, underground pipes, and the Retain-it storage system ensures effective stormwater management by promoting infiltration and minimizing the risk of localized flooding during severe weather events. The first three units of this system shall be utilized as an oil/grit chamber with outlet filter to capture sediment and allow for proper maintenance of the system.

The post development analysis attached in Appendix E indicates a zero rate and volume of runoff for all storm events analyzed. Given the system is sized to fully capture and infiltrate a 100-year storm event, and access is provided for removal of sediment build-up and maintenance of the system, no pipe outlet is provided. The intent of this is should a larger storm event occur, and the system fill to capacity, or the system become clogged the curbing surrounding the parking lot shall act as a level spreader and avoid a point discharge to the slopes beyond the parking lot. This system further provides visible evidence in the form of ponding in the parking lot should the system become clogged and therefore alert the owner of required maintenance.

STORMWATER MANAGEMENT:

Hydrographs of the developed conditions are included in this report. Based on this analysis there is a net decrease in the peak rate and total volume of stormwater runoff from the site resulting from the proposed activity due to proposed on-site retention system. In addition, proper implementation of the included maintenance plan (See Appendix F) will control pollutants and suspended solids on-site thereby reducing or eliminating downstream pollution from this site.

SUMMARY OF RUNOFF:

Existing Conditions

Prepared by Godfrey Hoffman Associates

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100 Grist Mill Road, Simsbury

Multi-Event Tables

Printed 7/7/2023

Page 54

Events for Reach AP1: Analysis Point

Event	Inflow (cfs)	Outflow (cfs)	Elevation (feet)	Storage (cubic-feet)
1 Year	0.00	0.00	0.00	0
2 Year	0.00	0.00	0.00	0
5 Year	0.00	0.00	0.00	0
10 Year	0.00	0.00	0.00	0
25 Year	0.01	0.01	0.00	0
50 Year	0.04	0.04	0.00	0
100 Year	0.12	0.12	0.00	0

Proposed Parking & Drainage

Prepared by Godfrey Hoffman Associates

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100 Grist Mill Road, Simsbury

Multi-Event Tables

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Page 112

Events for Reach AP1: Analysis Point

Event	Inflow (cfs)	Outflow (cfs)	Elevation (feet)	Storage (cubic-feet)
1 Year	0.00	0.00	0.00	0
2 Year	0.00	0.00	0.00	0
5 Year	0.00	0.00	0.00	0
10 Year	0.00	0.00	0.00	0
25 Year	0.01	0.01	0.00	0
50 Year	0.02	0.02	0.00	0
100 Year	0.08	0.08	0.00	0

Existing Conditions

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Multi-Event Tables

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Page 55

Events for Reach AP2: Analysis Point

Event	Inflow (cfs)	Outflow (cfs)	Elevation (feet)	Storage (cubic-feet)
1 Year	0.00	0.00	0.00	0
2 Year	0.00	0.00	0.00	0
5 Year	0.00	0.00	0.00	0
10 Year	0.00	0.00	0.00	0
25 Year	0.01	0.01	0.00	0
50 Year	0.03	0.03	0.00	0
100 Year	0.11	0.11	0.00	0

Proposed Parking & Drainage

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100 Grist Mill Road, Simsbury

Multi-Event Tables

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Page 113

Events for Reach AP2: Analysis Point

Event	Inflow (cfs)	Outflow (cfs)	Elevation (feet)	Storage (cubic-feet)
1 Year	0.00	0.00	0.00	0
2 Year	0.00	0.00	0.00	0
5 Year	0.00	0.00	0.00	0
10 Year	0.00	0.00	0.00	0
25 Year	0.01	0.01	0.00	0
50 Year	0.02	0.02	0.00	0
100 Year	0.07	0.07	0.00	0

Existing Conditions

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100 Grist Mill Road, Simsbury

Multi-Event Tables

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Events for Reach AP3: Analysis Point

Event	Inflow (cfs)	Outflow (cfs)	Elevation (feet)	Storage (cubic-feet)
1 Year	0.00	0.00	0.00	0
2 Year	0.00	0.00	0.00	0
5 Year	0.00	0.00	0.00	0
10 Year	0.00	0.00	0.00	0
25 Year	0.01	0.01	0.00	0
50 Year	0.03	0.03	0.00	0
100 Year	0.10	0.10	0.00	0

Proposed Parking & Drainage

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100 Grist Mill Road, Simsbury

Multi-Event Tables

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Page 114

Events for Reach AP3: Analysis Point

Event	Inflow (cfs)	Outflow (cfs)	Elevation (feet)	Storage (cubic-feet)
1 Year	0.00	0.00	0.00	0
2 Year	0.00	0.00	0.00	0
5 Year	0.00	0.00	0.00	0
10 Year	0.00	0.00	0.00	0
25 Year	0.01	0.01	0.00	0
50 Year	0.03	0.03	0.00	0
100 Year	0.09	0.09	0.00	0

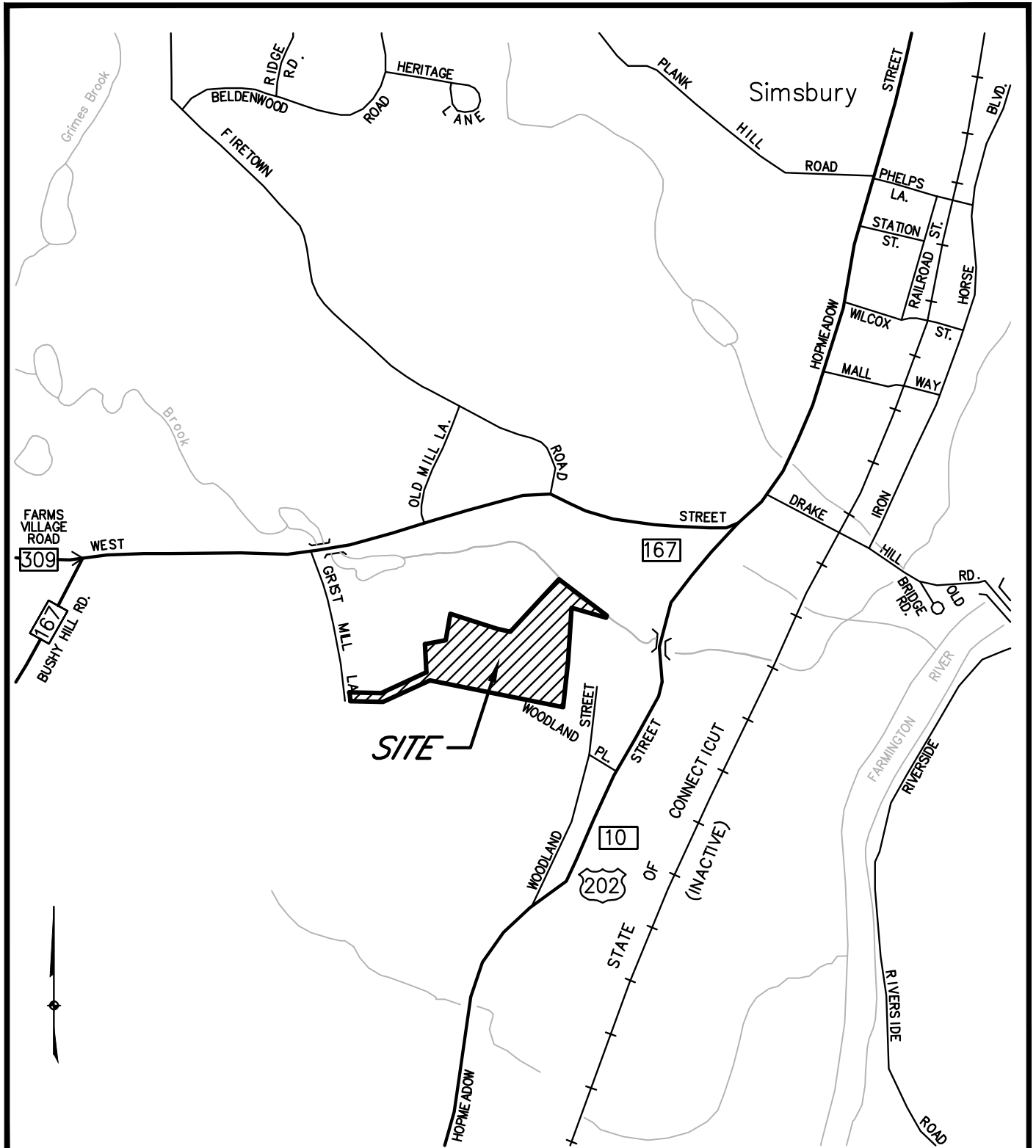
DRAINAGE ANALYSIS METHODOLOGY:

Hydro Cad stormwater modelling software was utilized to calculate peak runoff rates for the pre and post development conditions. Hydro Cad is a hydrology and hydraulic modeling system used for watershed analysis and design. It provides runoff calculations by the SCS TR-20 method and Rational Method, plus many techniques from TR-55, including CN lookup, CN weighting, and multiple procedures for calculating the time-of-concentration. Hydro Cad is a computer program utilized for the simulation of runoff occurring from a single storm event. The program generates flood hydrographs from surface runoff and routes flow through channel reaches or reservoirs. The analysis is based on methodologies contained in the Natural Conservation Resources Service (NRCS) National Engineering Handbook, Section 4, Hydrology, commonly referred to as NEH 4.

TR-20 is a procedure for the watersheds where a rainfall depth is assumed uniformly distributed throughout the drainage area. The total depth of rainfall for each storm event was taken from Precipitation Frequency Data for stormwater analysis as provided by NOAA Atlas 14 Point Precipitation Frequency Estimates: CT, Type III 24-hour Storm, web address; https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_printpage.html?lat=41.3403&lon=-72.8962&data=depth&units=english&series=pds (See Appendix C)

The factors that determine peak flow are namely the runoff curve number (CN), rainfall intensity, time of concentration, and drainage area. The runoff curve number represents a ratio of runoff to rainfall. The more impervious surfaces such as asphalt or concrete, the more water will run off that surface. If the area contains multiple types of surfaces, as is in this case, a composite CN is determined. The fraction of each type of surface within the total area is estimated and multiplied by the appropriate coefficients for the specific type of surfaces and the summation of the product determines a composite coefficient.

The results of the TR-20 analysis for peak run-off discharge from the site during different storm frequencies are listed below. Discharge hydrographs and calculation summaries are included in the report see Appendix E and F.



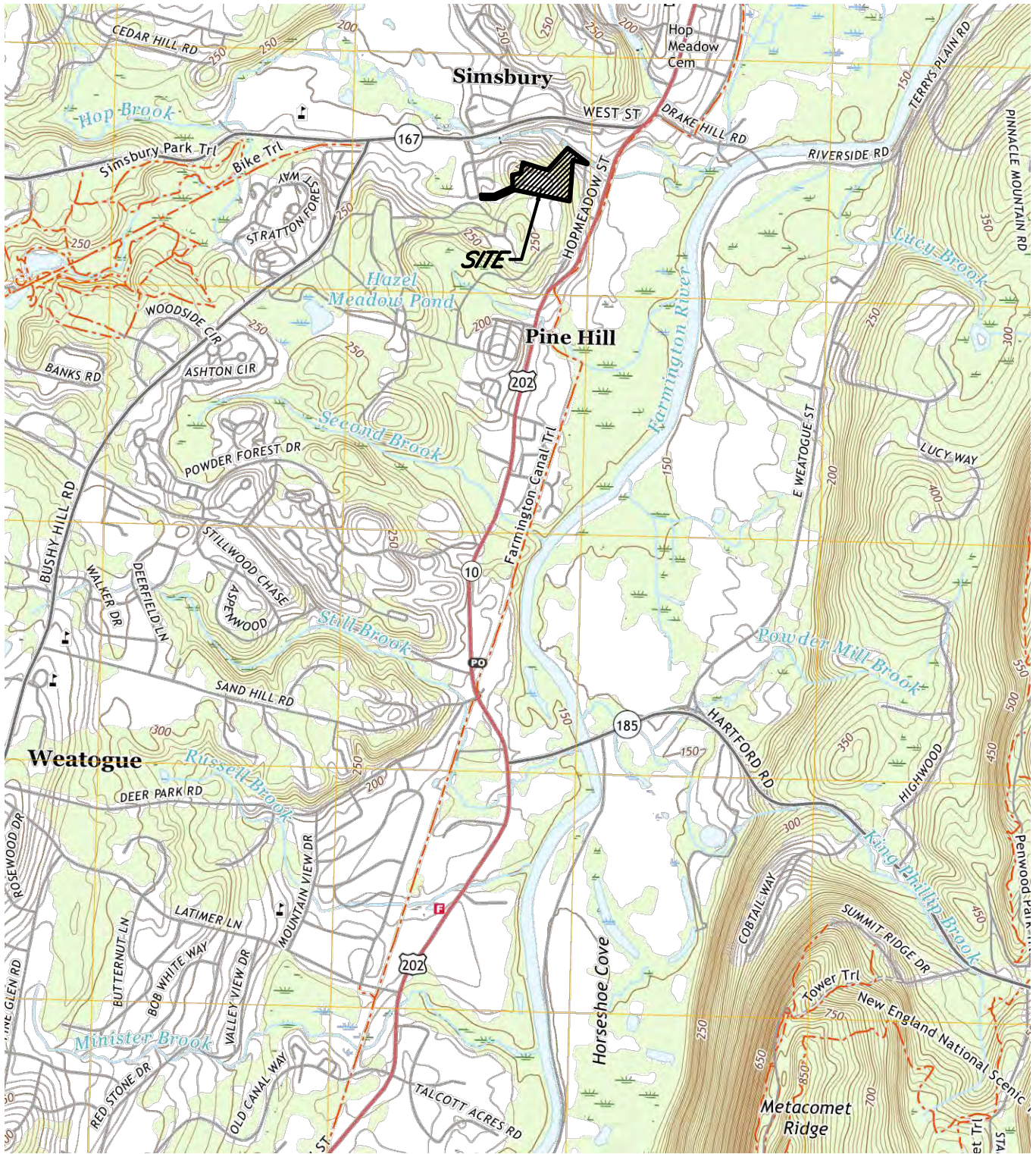
MAP REFERENCE:
 CONNECTICUT DEPARTMENT OF TRANSPORTATION TOWN ROAD MAPS, SIMSBURY, CT; DATE: 12/31/2021


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 1783 FARMINGTON AVENUE, UNIONVILLE, CT 06085; TEL: 860.673.0444 - WWW.HODGELLCC.COM

INDEX MAP

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PROJECT:	113-65
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A-1.0	



MAP REFERENCE:
 UNITED STATES GEOLOGICAL SURVEY MAP, AVON QUADRANGLE; AVON, CT; DATE: 2021



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USGS MAP
 (NEW HAVEN)

DRAWN BY:	CB
CHECKED BY:	MP
SCALE:	1"=2,000'
PROJECT:	113-65
DATE:	6-5-2023
A-2.0	

Appendix A:

National Flood Hazard FIRMette

National Flood Hazard Layer FIRMette

72°48'53"W 41°52'19"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE)
Zone A, V, A99
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*

Future Conditions 1% Annual Chance Flood Hazard *Zone X*

OTHER AREAS OF FLOOD HAZARD

- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS

- NO SCREEN *Zone X*
- Area of Minimal Flood Hazard *Zone X*
- Effective LOMRMs *Zone D*
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

Cross Sections with 1% Annual Chance Water Surface Elevation

- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study

OTHER FEATURES

- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS

- Digital Data Available
- No Digital Data Available
- Unmapped

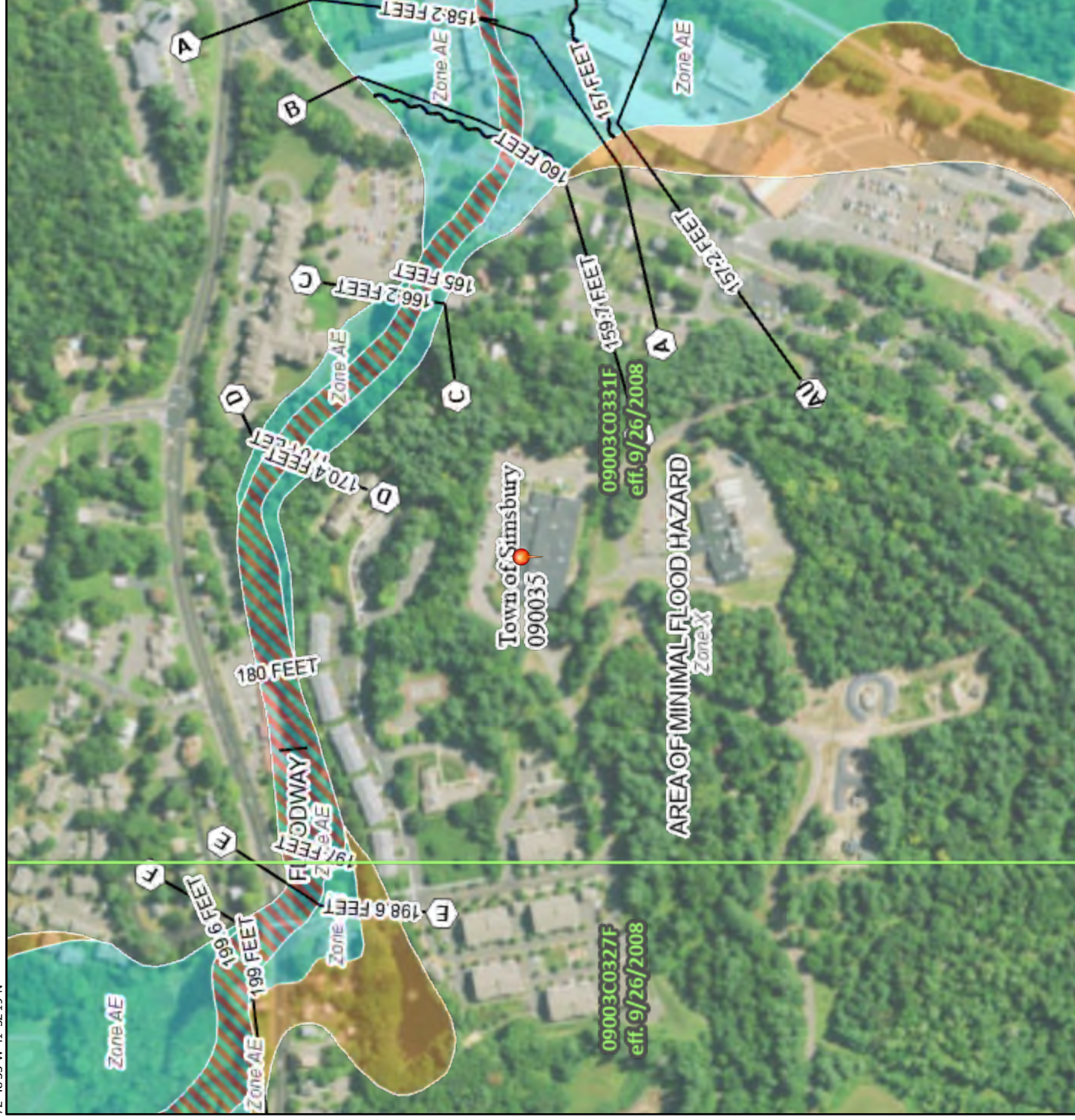


The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **6/7/2023 at 7:34 AM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



72°48'16"W 41°51'52"N

Scale: 1:6,000

Basemap: USGS National Map

Data refreshed October, 2020

Appendix B:

Soil Resource Report



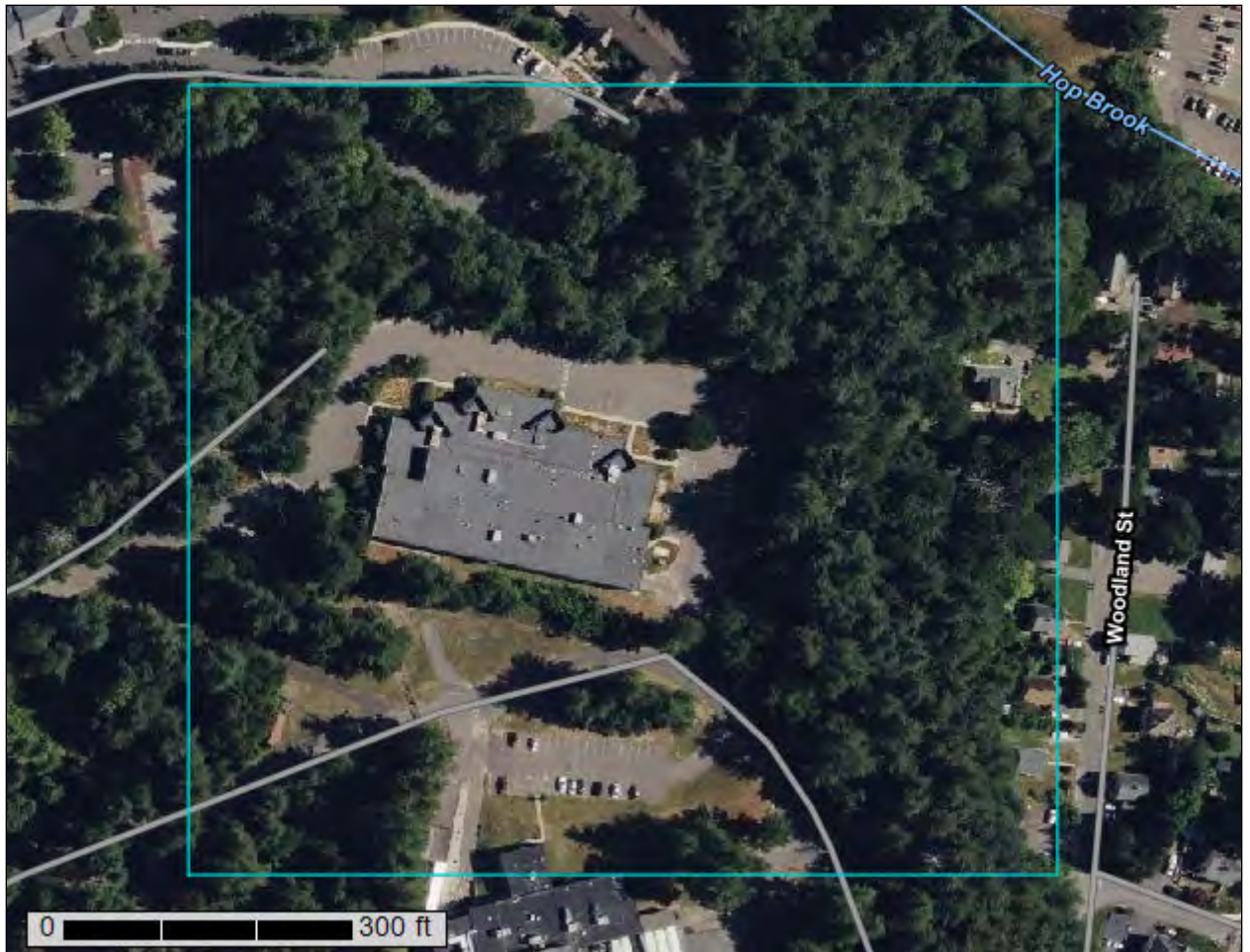
United States
Department of
Agriculture

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 State of Connecticut



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.

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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.

Custom Soil Resource Report

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.

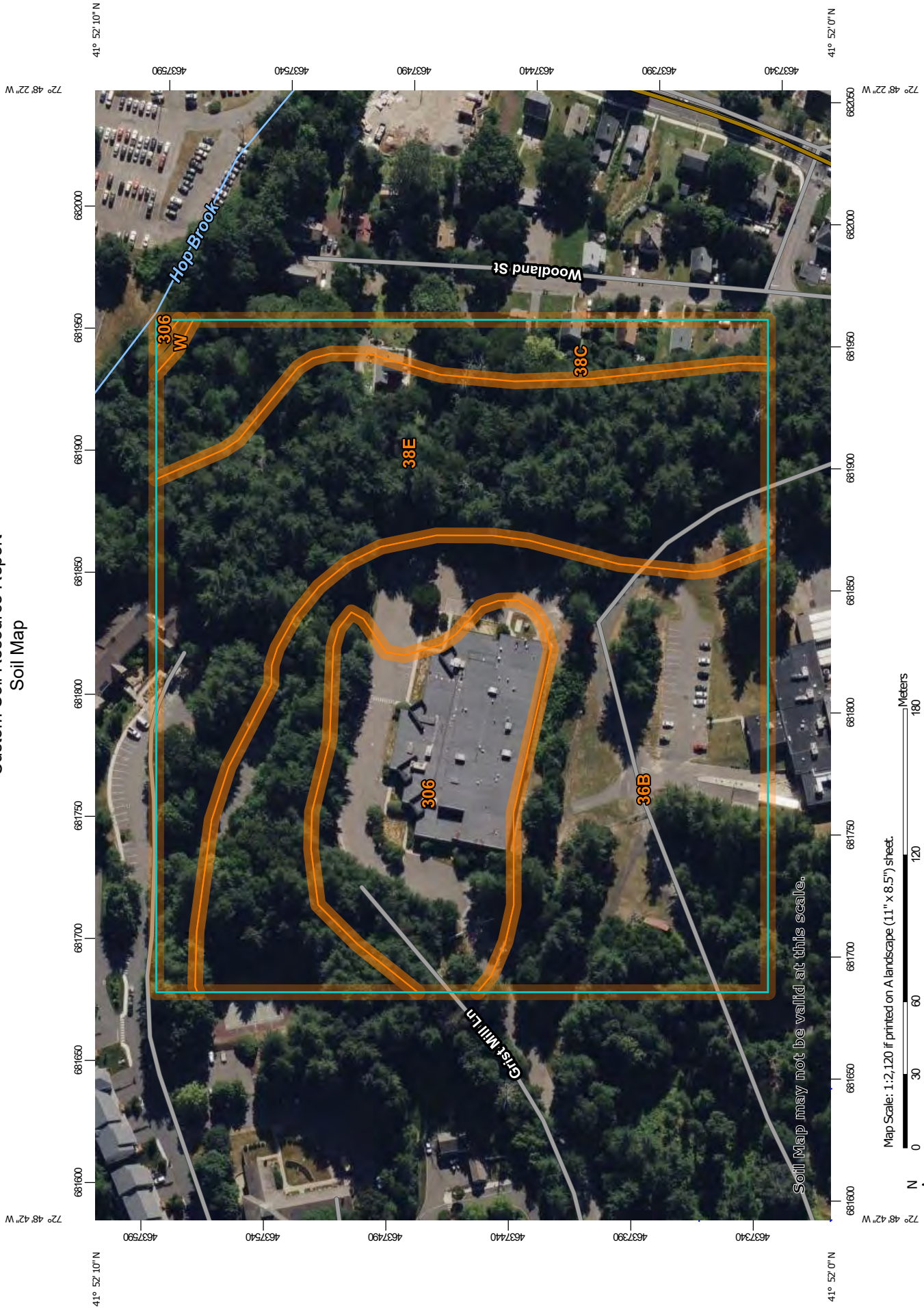
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree 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: 1:2,120 if printed on A landscape (11" x 8.5") sheet.



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

MAP LEGEND

Area of Interest (AOI)	 Area of Interest (AOI)	 Spoil Area
Soils	 Soil Map Unit Polygons	 Stony Spot
	 Soil Map Unit Lines	 Very Stony Spot
	 Soil Map Unit Points	 Wet Spot
Special Point Features	 Blowout	 Other
	 Borrow Pit	 Special Line Features
	 Clay Spot	Water Features
	 Closed Depression	 Streams and Canals
	 Gravel Pit	Transportation
	 Gravelly Spot	 RAILS
	 Landfill	 Interstate Highways
	 Lava Flow	 US Routes
	 Marsh or swamp	 Major Roads
	 Mine or Quarry	 Local Roads
	 Miscellaneous Water	Background
	 Perennial Water	 Aerial Photography
	 Rock Outcrop	
	 Saline Spot	
	 Sandy Spot	
	 Severely Eroded Spot	
	 Sinkhole	
	 Slide or Slip	
	 Sodic Spot	

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: State of Connecticut
 Survey Area Data: Version 22, Sep 12, 2022

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

Date(s) aerial images were photographed: Jun 14, 2022—Oct 6, 2022

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
36B	Windsor loamy sand, 3 to 8 percent slopes	6.7	39.5%
38C	Hinckley loamy sand, 3 to 15 percent slopes	1.6	9.5%
38E	Hinckley loamy sand, 15 to 45 percent slopes	5.8	34.0%
306	Udorthents-Urban land complex	2.9	16.8%
W	Water	0.0	0.2%
Totals for Area of Interest		17.1	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.

Custom Soil Resource Report

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.

State of Connecticut

36B—Windsor loamy sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2svkf

Elevation: 0 to 1,210 feet

Mean annual precipitation: 36 to 71 inches

Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 140 to 240 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Windsor, loamy sand, and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor, Loamy Sand

Setting

Landform: Dunes, outwash plains, deltas, outwash terraces

Landform position (three-dimensional): Tread, riser

Down-slope shape: Convex, linear

Across-slope shape: Convex, linear

Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

O - 0 to 1 inches: moderately decomposed plant material

A - 1 to 3 inches: loamy sand

Bw - 3 to 25 inches: loamy sand

C - 25 to 65 inches: sand

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Excessively drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2s

Hydrologic Soil Group: A

Ecological site: F144AY022MA - Dry Outwash

Hydric soil rating: No

Minor Components

Hinckley, loamy sand

Percent of map unit: 10 percent

Landform: Deltas, kames, eskers, outwash plains

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Head slope, nose slope, crest, side slope, rise

Down-slope shape: Convex

Across-slope shape: Convex, linear

Hydric soil rating: No

Deerfield, loamy sand

Percent of map unit: 5 percent

Landform: Deltas, terraces, outwash plains

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Tread, talf

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

38C—Hinckley loamy sand, 3 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2svmb

Elevation: 0 to 1,290 feet

Mean annual precipitation: 36 to 71 inches

Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 140 to 240 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Hinckley and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hinckley

Setting

Landform: Outwash deltas, outwash terraces, moraines, eskers, kames, outwash plains, kame terraces

Landform position (two-dimensional): Summit, shoulder, backslope, footslope, toeslope

Landform position (three-dimensional): Head slope, nose slope, side slope, crest, riser, tread

Down-slope shape: Concave, convex, linear

Across-slope shape: Convex, linear, concave

Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Custom Soil Resource Report

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 8 inches: loamy sand
Bw1 - 8 to 11 inches: gravelly loamy sand
Bw2 - 11 to 16 inches: gravelly loamy sand
BC - 16 to 19 inches: very gravelly loamy sand
C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 5 percent
Landform: Moraines, eskers, kames, outwash deltas, outwash terraces, outwash plains, kame terraces
Landform position (two-dimensional): Summit, shoulder, backslope, footslope, toeslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, riser, tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Merrimac

Percent of map unit: 5 percent
Landform: Kames, outwash plains, outwash terraces, moraines, eskers
Landform position (two-dimensional): Summit, shoulder, backslope, footslope, toeslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, riser, tread
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Agawam

Percent of map unit: 3 percent

Custom Soil Resource Report

Landform: Outwash deltas, outwash terraces, moraines, eskers, kames, outwash plains, kame terraces

Landform position (two-dimensional): Summit, shoulder, backslope, toeslope, footslope

Landform position (three-dimensional): Head slope, nose slope, side slope, crest, riser, tread

Down-slope shape: Concave, convex, linear

Across-slope shape: Convex, linear, concave

Hydric soil rating: No

Sudbury

Percent of map unit: 2 percent

Landform: Outwash deltas, moraines, outwash plains, kame terraces, outwash terraces

Landform position (two-dimensional): Backslope, footslope

Landform position (three-dimensional): Base slope, tread

Down-slope shape: Concave, linear

Across-slope shape: Concave, linear

Hydric soil rating: No

38E—Hinckley loamy sand, 15 to 45 percent slopes

Map Unit Setting

National map unit symbol: 2svmj

Elevation: 0 to 1,280 feet

Mean annual precipitation: 36 to 71 inches

Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 140 to 240 days

Farmland classification: Not prime farmland

Map Unit Composition

Hinckley and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hinckley

Setting

Landform: Eskers, kames, outwash deltas, outwash terraces, moraines, outwash plains, kame terraces

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Head slope, nose slope, side slope, crest, riser

Down-slope shape: Concave, convex, linear

Across-slope shape: Convex, linear, concave

Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material

Custom Soil Resource Report

A - 1 to 8 inches: loamy sand
Bw1 - 8 to 11 inches: gravelly loamy sand
Bw2 - 11 to 16 inches: gravelly loamy sand
BC - 16 to 19 inches: very gravelly loamy sand
C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 15 to 45 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 5 percent
Landform: Eskers, kames, moraines, outwash deltas, outwash terraces, outwash plains, kame terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, riser
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Merrimac

Percent of map unit: 5 percent
Landform: Outwash plains, outwash terraces, moraines, eskers, kames
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, riser
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Agawam

Percent of map unit: 3 percent
Landform: Eskers, kame terraces, outwash deltas, outwash terraces, moraines, kames, outwash plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, riser
Down-slope shape: Concave, convex, linear

Custom Soil Resource Report

Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Sudbury

Percent of map unit: 2 percent
Landform: Kames, eskers, outwash deltas, outwash plains, kame terraces, outwash terraces, moraines
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: No

306—Udorthents-Urban land complex

Map Unit Setting

National map unit symbol: 9lmg
Elevation: 0 to 2,000 feet
Mean annual precipitation: 43 to 56 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 120 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents and similar soils: 50 percent
Urban land: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Setting

Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Drift

Typical profile

A - 0 to 5 inches: loam
C1 - 5 to 21 inches: gravelly loam
C2 - 21 to 80 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 25 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 high (0.00 to 1.98 in/hr)
Depth to water table: About 54 to 72 inches
Frequency of flooding: None
Frequency of ponding: None

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Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: B

Hydric soil rating: No

Description of Urban Land

Typical profile

H - 0 to 6 inches: material

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydrologic Soil Group: D

Hydric soil rating: Unranked

Minor Components

Unnamed, undisturbed soils

Percent of map unit: 8 percent

Hydric soil rating: No

Udorthents, wet substratum

Percent of map unit: 5 percent

Down-slope shape: Convex

Across-slope shape: Linear

Hydric soil rating: No

Rock outcrop

Percent of map unit: 2 percent

Hydric soil rating: No

W—Water

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

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>

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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 C:

NOAA Atlas 14, Point Precipitation Frequency Estimates



NOAA Atlas 14, Volume 10, Version 3
Location name: Simsbury, Connecticut, USA*
Latitude: 41.8681°, Longitude: -72.8126°
Elevation: m/ft**
 * source: ESRI Maps
 ** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps & aerials](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.349 (0.269-0.450)	0.418 (0.321-0.539)	0.530 (0.406-0.686)	0.623 (0.475-0.812)	0.751 (0.556-1.02)	0.848 (0.615-1.18)	0.949 (0.670-1.38)	1.06 (0.712-1.58)	1.22 (0.791-1.89)	1.35 (0.854-2.13)
10-min	0.495 (0.381-0.637)	0.592 (0.455-0.764)	0.751 (0.575-0.972)	0.883 (0.673-1.15)	1.07 (0.787-1.45)	1.20 (0.871-1.68)	1.35 (0.949-1.95)	1.50 (1.01-2.24)	1.73 (1.12-2.67)	1.91 (1.21-3.02)
15-min	0.582 (0.448-0.750)	0.696 (0.535-0.898)	0.883 (0.676-1.14)	1.04 (0.790-1.35)	1.25 (0.926-1.71)	1.41 (1.02-1.97)	1.58 (1.12-2.29)	1.77 (1.19-2.63)	2.03 (1.32-3.15)	2.25 (1.42-3.56)
30-min	0.787 (0.605-1.01)	0.945 (0.726-1.22)	1.20 (0.922-1.56)	1.42 (1.08-1.84)	1.71 (1.26-2.33)	1.93 (1.40-2.70)	2.16 (1.53-3.14)	2.42 (1.62-3.60)	2.79 (1.80-4.30)	3.08 (1.95-4.87)
60-min	0.992 (0.763-1.28)	1.19 (0.917-1.54)	1.52 (1.17-1.97)	1.79 (1.37-2.34)	2.17 (1.60-2.96)	2.45 (1.78-3.42)	2.75 (1.94-3.98)	3.07 (2.06-4.58)	3.54 (2.29-5.47)	3.91 (2.48-6.18)
2-hr	1.28 (0.990-1.64)	1.53 (1.19-1.96)	1.95 (1.50-2.50)	2.29 (1.76-2.96)	2.76 (2.06-3.76)	3.12 (2.28-4.35)	3.49 (2.49-5.08)	3.94 (2.65-5.84)	4.59 (2.98-7.07)	5.15 (3.27-8.10)
3-hr	1.47 (1.15-1.88)	1.77 (1.37-2.26)	2.25 (1.74-2.88)	2.65 (2.04-3.42)	3.20 (2.40-4.35)	3.61 (2.65-5.03)	4.05 (2.91-5.90)	4.58 (3.09-6.78)	5.39 (3.51-8.28)	6.08 (3.87-9.54)
6-hr	1.85 (1.45-2.34)	2.24 (1.75-2.84)	2.88 (2.25-3.67)	3.42 (2.65-4.38)	4.15 (3.13-5.61)	4.69 (3.47-6.51)	5.28 (3.83-7.69)	6.01 (4.07-8.85)	7.16 (4.67-10.9)	8.15 (5.20-12.7)
12-hr	2.27 (1.79-2.86)	2.80 (2.20-3.53)	3.66 (2.87-4.63)	4.38 (3.41-5.57)	5.36 (4.07-7.23)	6.09 (4.54-8.43)	6.88 (5.03-10.0)	7.89 (5.36-11.6)	9.48 (6.20-14.4)	10.9 (6.96-16.9)
24-hr	2.65 (2.10-3.32)	3.33 (2.64-4.17)	4.45 (3.51-5.59)	5.37 (4.22-6.79)	6.64 (5.08-8.93)	7.57 (5.70-10.5)	8.60 (6.35-12.5)	9.95 (6.78-14.5)	12.1 (7.96-18.4)	14.1 (9.02-21.7)
2-day	2.97 (2.37-3.69)	3.80 (3.03-4.73)	5.16 (4.10-6.44)	6.29 (4.97-7.90)	7.84 (6.05-10.5)	8.96 (6.81-12.4)	10.2 (7.64-15.0)	11.9 (8.17-17.4)	14.8 (9.74-22.4)	17.4 (11.2-26.8)
3-day	3.24 (2.60-4.01)	4.15 (3.33-5.14)	5.65 (4.51-7.02)	6.89 (5.47-8.62)	8.60 (6.66-11.5)	9.83 (7.50-13.6)	11.2 (8.43-16.4)	13.1 (9.01-19.1)	16.4 (10.8-24.6)	19.3 (12.4-29.6)
4-day	3.49 (2.81-4.30)	4.47 (3.59-5.51)	6.06 (4.85-7.52)	7.39 (5.88-9.22)	9.21 (7.16-12.3)	10.5 (8.05-14.5)	12.0 (9.04-17.5)	14.1 (9.66-20.4)	17.5 (11.6-26.3)	20.6 (13.3-31.6)
7-day	4.18 (3.38-5.12)	5.28 (4.26-6.48)	7.08 (5.70-8.73)	8.58 (6.86-10.6)	10.6 (8.29-14.1)	12.1 (9.30-16.6)	13.8 (10.4-20.0)	16.1 (11.1-23.2)	19.9 (13.2-29.7)	23.3 (15.1-35.6)
10-day	4.86 (3.95-5.94)	6.03 (4.89-7.37)	7.93 (6.40-9.74)	9.51 (7.63-11.8)	11.7 (9.13-15.4)	13.3 (10.2-18.0)	15.0 (11.3-21.6)	17.4 (12.0-25.0)	21.3 (14.1-31.8)	24.8 (16.1-37.8)
20-day	7.01 (5.73-8.51)	8.23 (6.71-9.99)	10.2 (8.30-12.5)	11.9 (9.58-14.6)	14.1 (11.1-18.4)	15.8 (12.1-21.1)	17.6 (13.2-24.8)	20.0 (13.9-28.4)	23.7 (15.8-35.1)	26.9 (17.5-40.8)
30-day	8.82 (7.24-10.7)	10.1 (8.24-12.2)	12.1 (9.85-14.7)	13.7 (11.1-16.8)	16.0 (12.6-20.6)	17.7 (13.6-23.5)	19.6 (14.6-27.1)	21.8 (15.2-30.9)	25.2 (16.8-37.2)	28.1 (18.3-42.4)
45-day	11.1 (9.13-13.3)	12.3 (10.2-14.9)	14.4 (11.8-17.4)	16.1 (13.1-19.6)	18.5 (14.5-23.6)	20.3 (15.6-26.5)	22.1 (16.4-30.2)	24.2 (16.9-34.1)	27.0 (18.2-39.8)	29.4 (19.2-44.3)
60-day	13.0 (10.7-15.5)	14.3 (11.8-17.1)	16.4 (13.5-19.8)	18.2 (14.9-22.1)	20.7 (16.2-26.2)	22.6 (17.3-29.2)	24.4 (18.0-32.9)	26.3 (18.5-37.0)	28.7 (19.4-42.1)	30.5 (20.0-45.9)

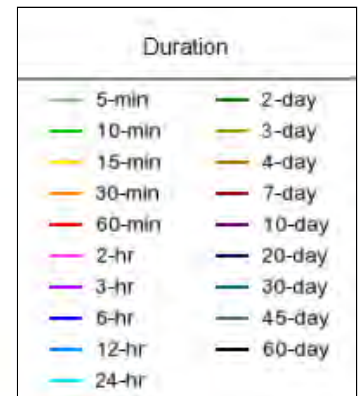
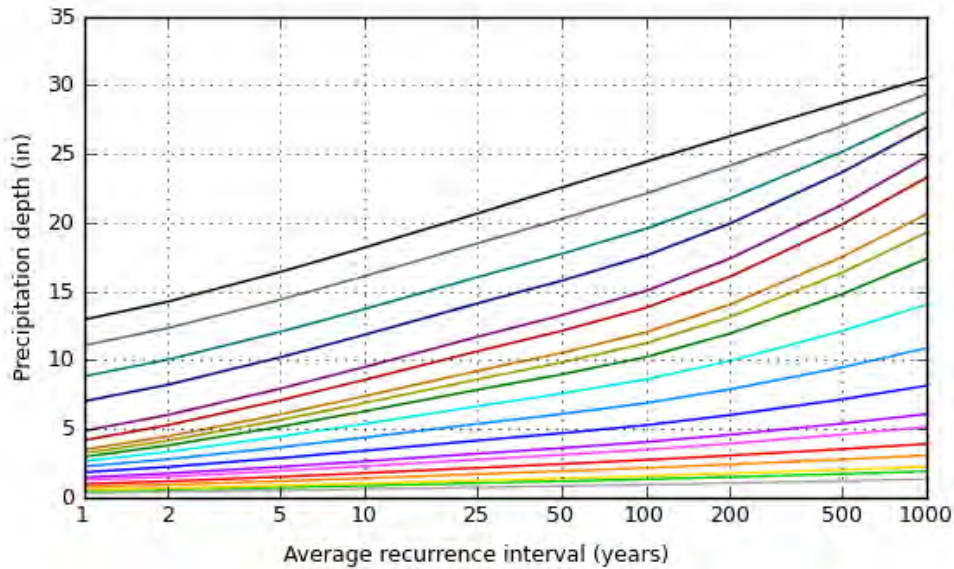
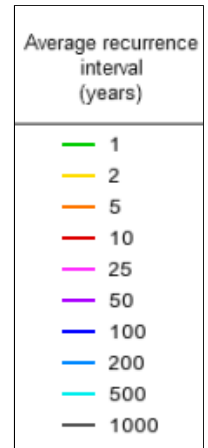
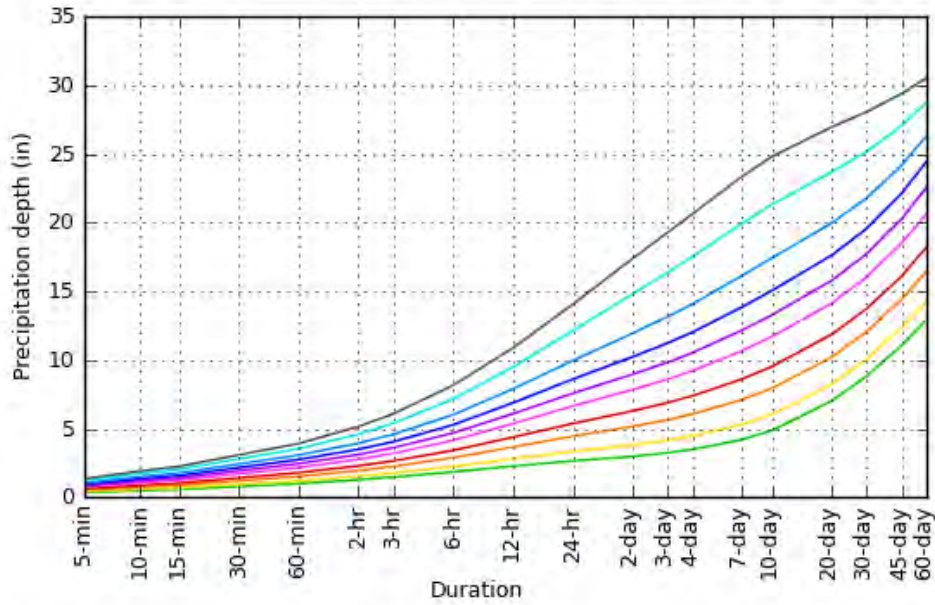
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

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PF graphical

PDS-based depth-duration-frequency (DDF) curves

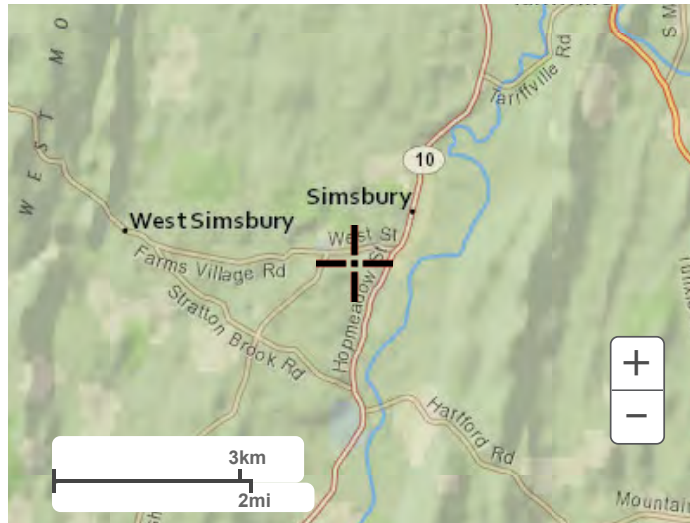
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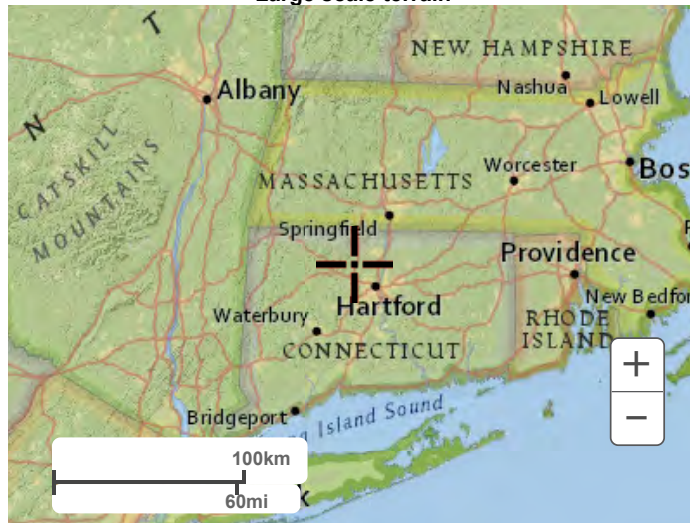
[Back to Top](#)

Maps & aerials

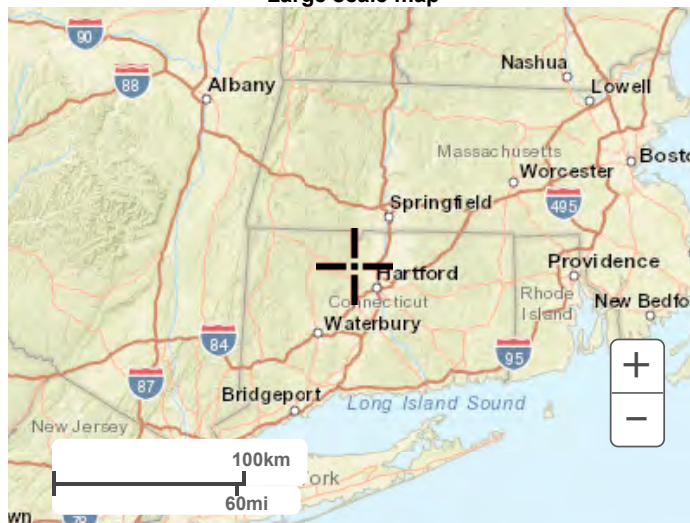
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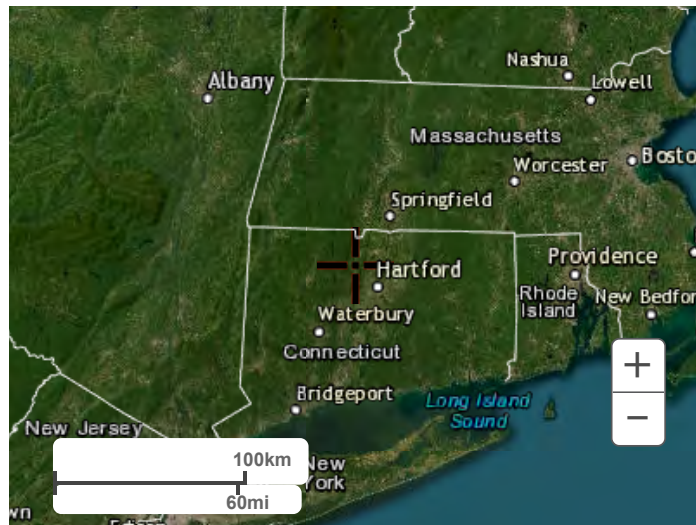
Large scale terrain



Large scale map



Large scale aerial

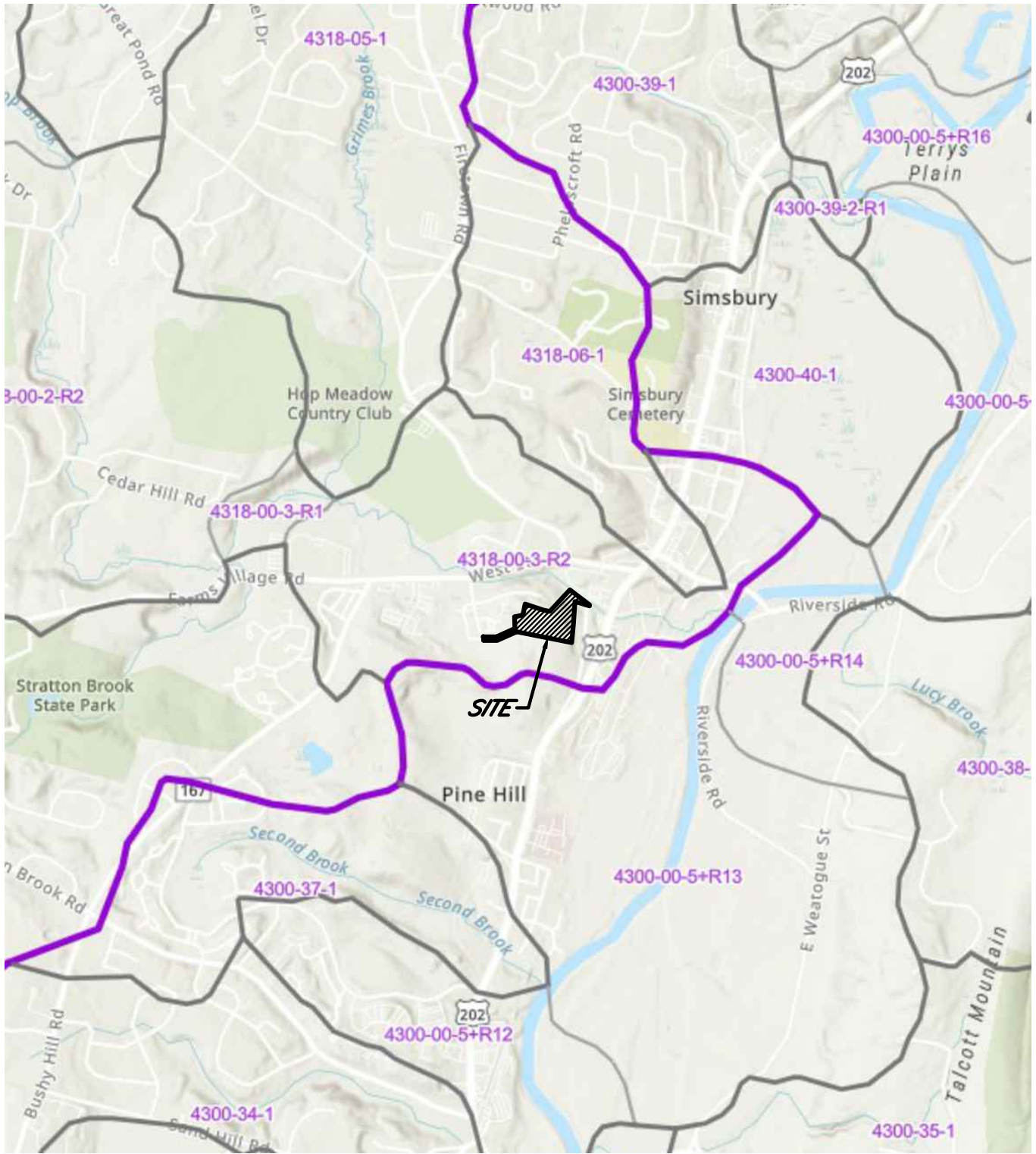


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[National Oceanic and Atmospheric Administration](#)
[National Weather Service](#)
[National Water Center](#)
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

[Disclaimer](#)

Appendix D:



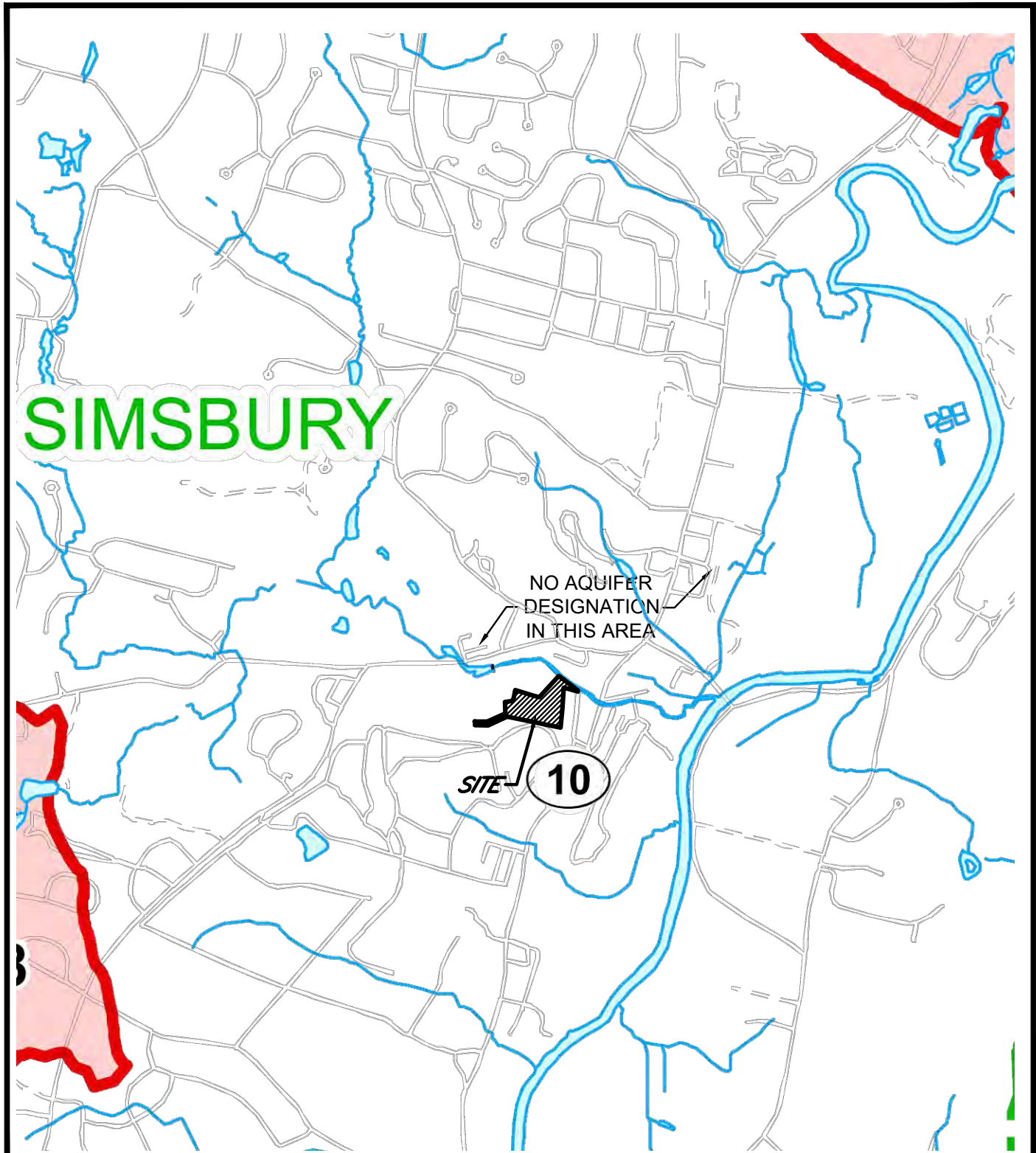
MAP REFERENCE:
 CONNECTICUT DEPT. OF ENVIRONMENTAL PROTECTION GIS DATA WEBSITE, DRAINAGE BASIN SET, DATE: 10/28/19


GODFREY HOFFMAN
HODGE, LLC

PROFESSIONAL LAND SURVEYORS & CIVIL ENGINEERS
 26 BROADWAY NORTH HAVEN, CT 06473; TEL: 203.239.4217 - WWW.GODFREYHOFFMAN.COM
 1783 FARMINGTON AVENUE, UNIONVILLE, CT 06085; TEL: 860.673.0444 - WWW.HODGELLCC.COM

**WATERSHED
 MAP**

DRAWN BY:	CB
CHECKED BY:	MP
SCALE:	1"=2,000'
PROJECT:	113-65
DATE:	08-12-2022
A-3.0	



MAP REFERENCE:
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GODFREY HOFFMAN
HODGE, LLC

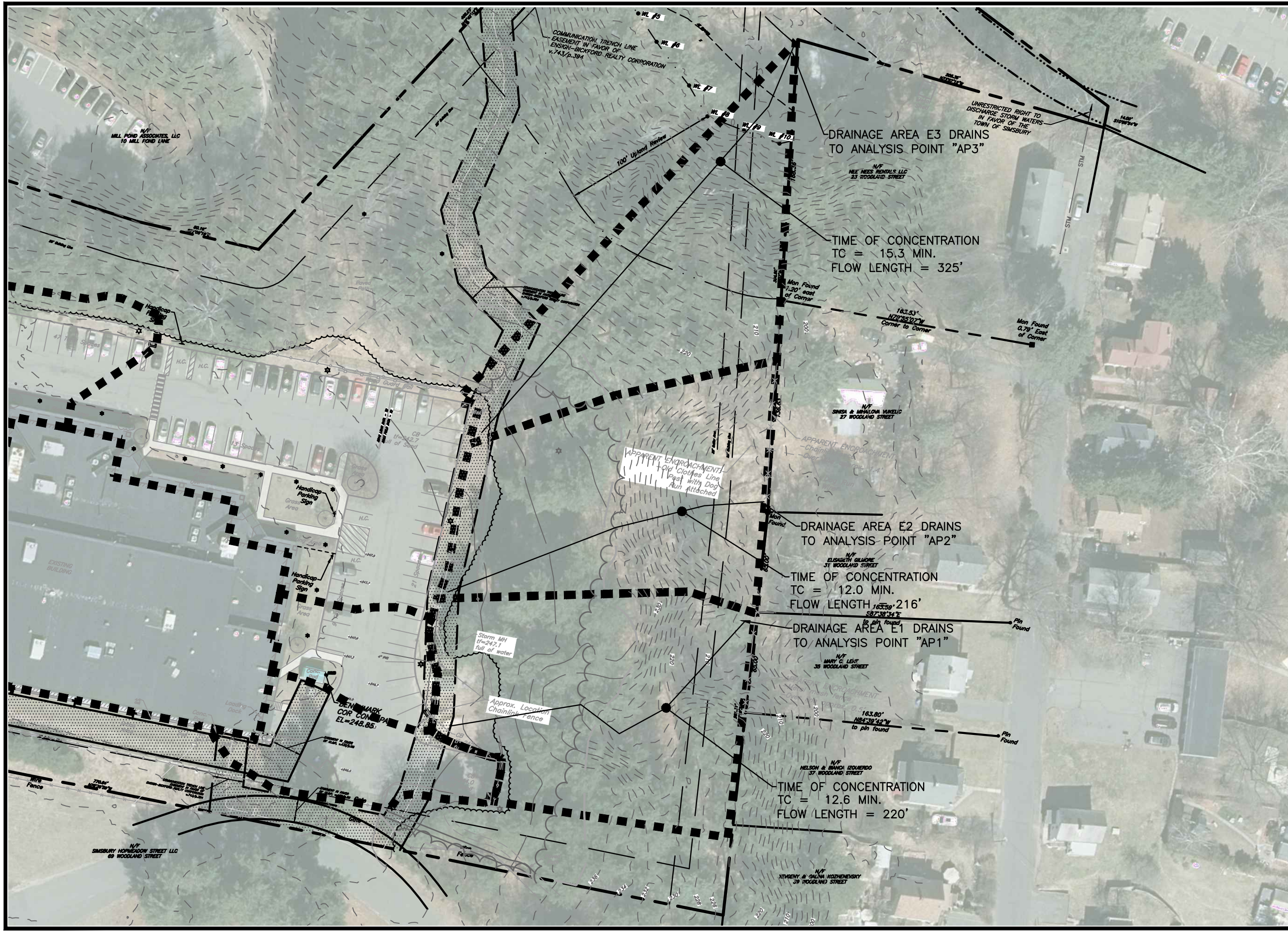
PROFESSIONAL LAND SURVEYORS & CIVIL ENGINEERS
 26 BROADWAY NORTH HAVEN, CT 06473; TEL: 203.239.4217 - WWW.GODFREYHOFFMAN.COM
 1783 FARMINGTON AVENUE, UNIONVILLE, CT 06085; TEL: 860.673.0444 - WWW.HODGELLCC.COM

**AQUIFER
 PROTECTION
 MAP**

DRAWN BY:	CB
CHECKED BY:	MP
SCALE:	1"=2,000'
PROJECT:	113-65
DATE:	6-5-2023
A-4.0	

Appendix E:

Pre & Post-development Drainage Analysis



GODFREY HOFFMAN
HODGE, LLC

PROFESSIONAL LAND SURVEYORS & CIVIL ENGINEERS
 26 BROADWAY NORTH AVENUE, CT 06473; TEL: 203.239.4217 - WWW.GODFREYHOFFMAN.COM
 1783 FARMINGTON AVENUE, UNIONVILLE, CT 06086; TEL: 860.673.0444 - WWW.HODGELL.COM

PROJECT:
PROPOSED PARKING LOT EXPANSION

100 GRIST MILL ROAD
 SIMSBURY, CT

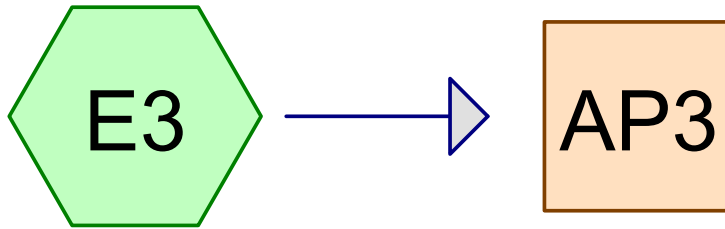
PREPARED FOR:
ENSIGN-BICKFORD AEROSPACE & DEFENSE CO.

640 HOPMEADOW ST.
 SIMSBURY, CT

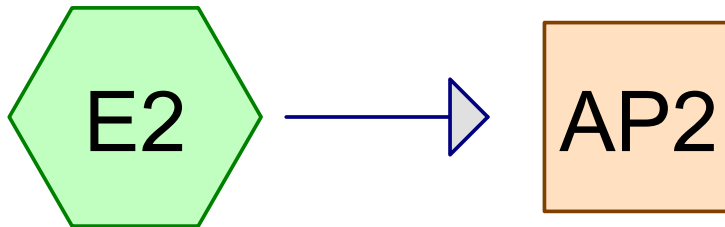
EXISTING DRAINAGE AREAS

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 CHECKED BY: MP
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 PROJECT: 113-65
 DATE: 4/27/2023

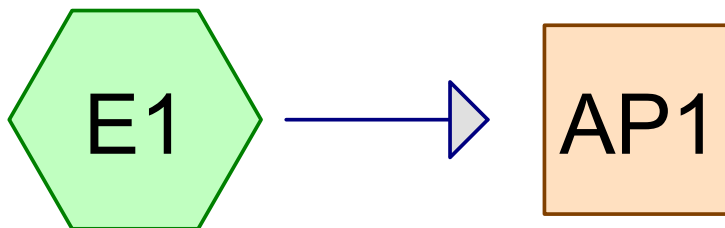
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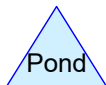
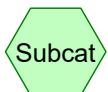
Analysis Area #3 Analysis Point



Analysis Area #2 Analysis Point



Analysis Area #1 Analysis Point



Existing Conditions

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100 Grist Mill Road, Simsbury
Type III 24-hr 1 Year Rainfall=2.65"

Printed 7/7/2023

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 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 E1: Analysis Area #1	Runoff Area=26,775 sf 0.00% Impervious	Runoff Depth=0.00"
	Flow Length=220' Tc=12.6 min CN=30	Runoff=0.00 cfs 0 cf
Subcatchment E2: Analysis Area #2	Runoff Area=25,300 sf 0.00% Impervious	Runoff Depth=0.00"
	Flow Length=216' Tc=12.0 min CN=30	Runoff=0.00 cfs 0 cf
Subcatchment E3: Analysis Area #3	Runoff Area=23,265 sf 0.00% Impervious	Runoff Depth=0.00"
	Flow Length=325' Tc=15.3 min CN=30	Runoff=0.00 cfs 0 cf
Reach AP1: Analysis Point		Inflow=0.00 cfs 0 cf
		Outflow=0.00 cfs 0 cf
Reach AP2: Analysis Point		Inflow=0.00 cfs 0 cf
		Outflow=0.00 cfs 0 cf
Reach AP3: Analysis Point		Inflow=0.00 cfs 0 cf
		Outflow=0.00 cfs 0 cf

Total Runoff Area = 75,340 sf Runoff Volume = 0 cf Average Runoff Depth = 0.00"
100.00% Pervious = 75,340 sf 0.00% Impervious = 0 sf

Existing Conditions

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100 Grist Mill Road, Simsbury
Type III 24-hr 1 Year Rainfall=2.65"

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Summary for Subcatchment E1: Analysis Area #1

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Reach AP1 : Analysis Point

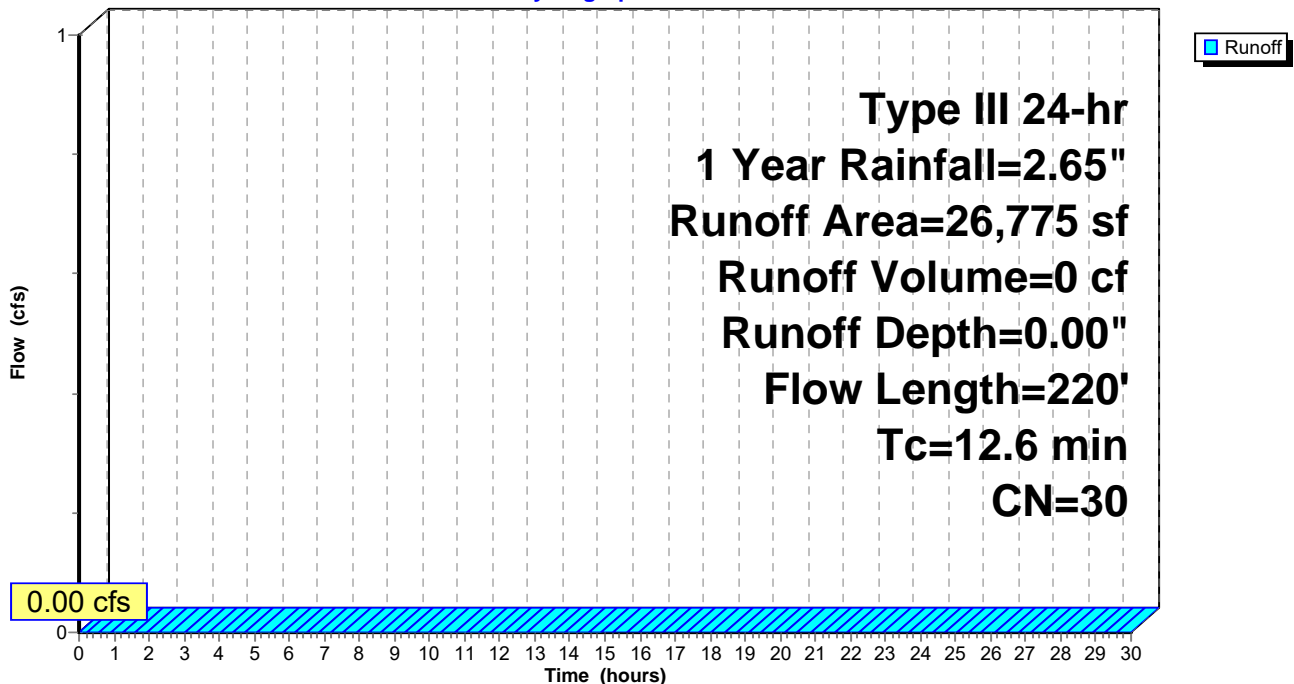
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 Year Rainfall=2.65"

Area (sf)	CN	Description
26,775	30	Woods, Good, HSG A
26,775		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	85	0.2350	0.40		Lag/CN Method,
1.9	25	0.1200	0.22		Lag/CN Method,
3.5	35	0.0570	0.16		Lag/CN Method,
3.7	75	0.1730	0.33		Lag/CN Method,
12.6	220	Total			

Subcatchment E1: Analysis Area #1

Hydrograph



Existing Conditions

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100 Grist Mill Road, Simsbury
Type III 24-hr 1 Year Rainfall=2.65"

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Summary for Subcatchment E2: Analysis Area #2

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Reach AP2 : Analysis Point

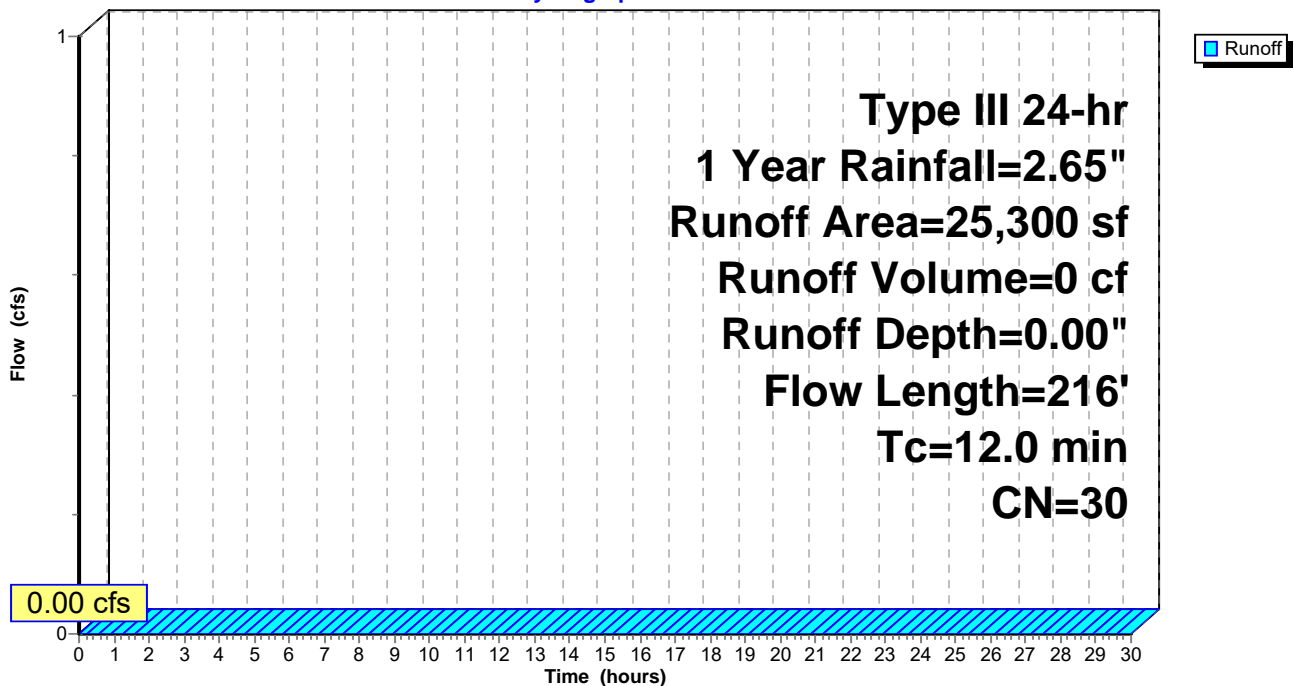
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Type III 24-hr 1 Year Rainfall=2.65"

Area (sf)	CN	Description
25,300	30	Woods, Good, HSG A
25,300		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	116	0.0950	0.27		Lag/CN Method,
1.9	60	0.4670	0.53		Lag/CN Method,
3.0	40	0.1000	0.22		Lag/CN Method,
12.0	216	Total			

Subcatchment E2: Analysis Area #2

Hydrograph



Existing Conditions

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100 Grist Mill Road, Simsbury
Type III 24-hr 1 Year Rainfall=2.65"

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Summary for Subcatchment E3: Analysis Area #3

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Reach AP3 : Analysis Point

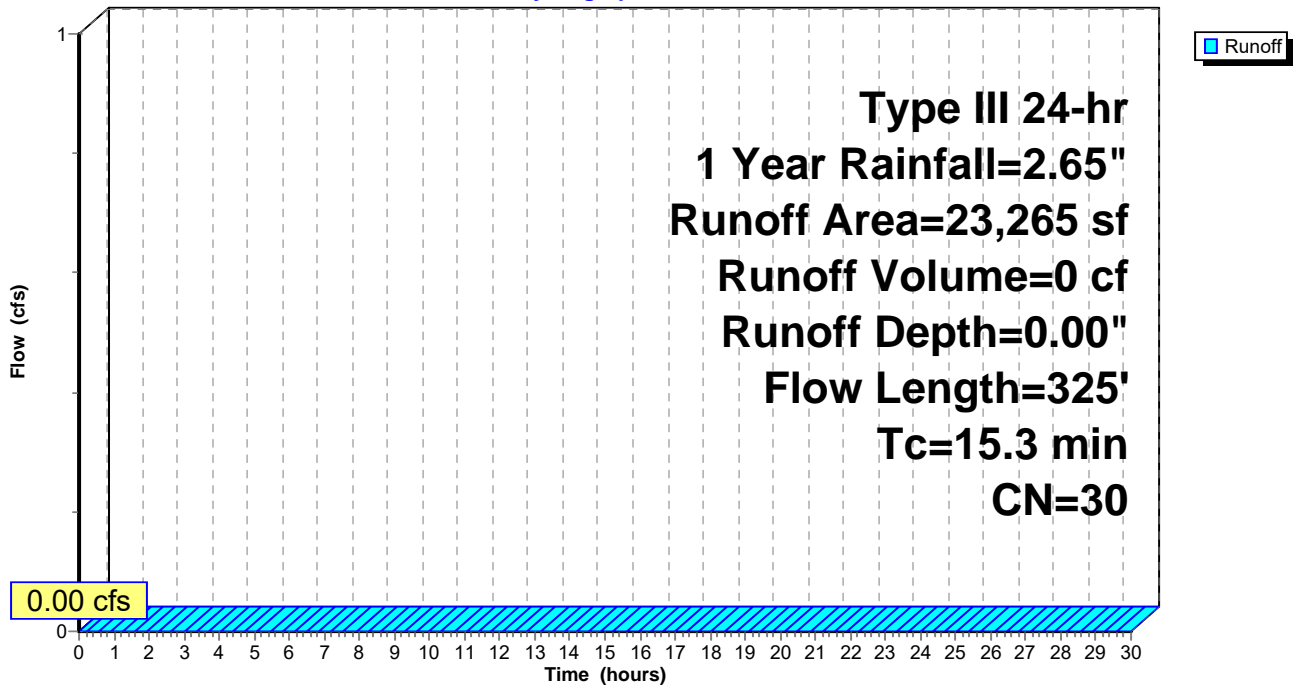
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 Year Rainfall=2.65"

Area (sf)	CN	Description
23,265	30	Woods, Good, HSG A
23,265		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	280	0.2890	0.56		Lag/CN Method,
7.0	45	0.0220	0.11		Lag/CN Method,
15.3	325	Total			

Subcatchment E3: Analysis Area #3

Hydrograph



Existing Conditions

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100 Grist Mill Road, Simsbury
Type III 24-hr 1 Year Rainfall=2.65"

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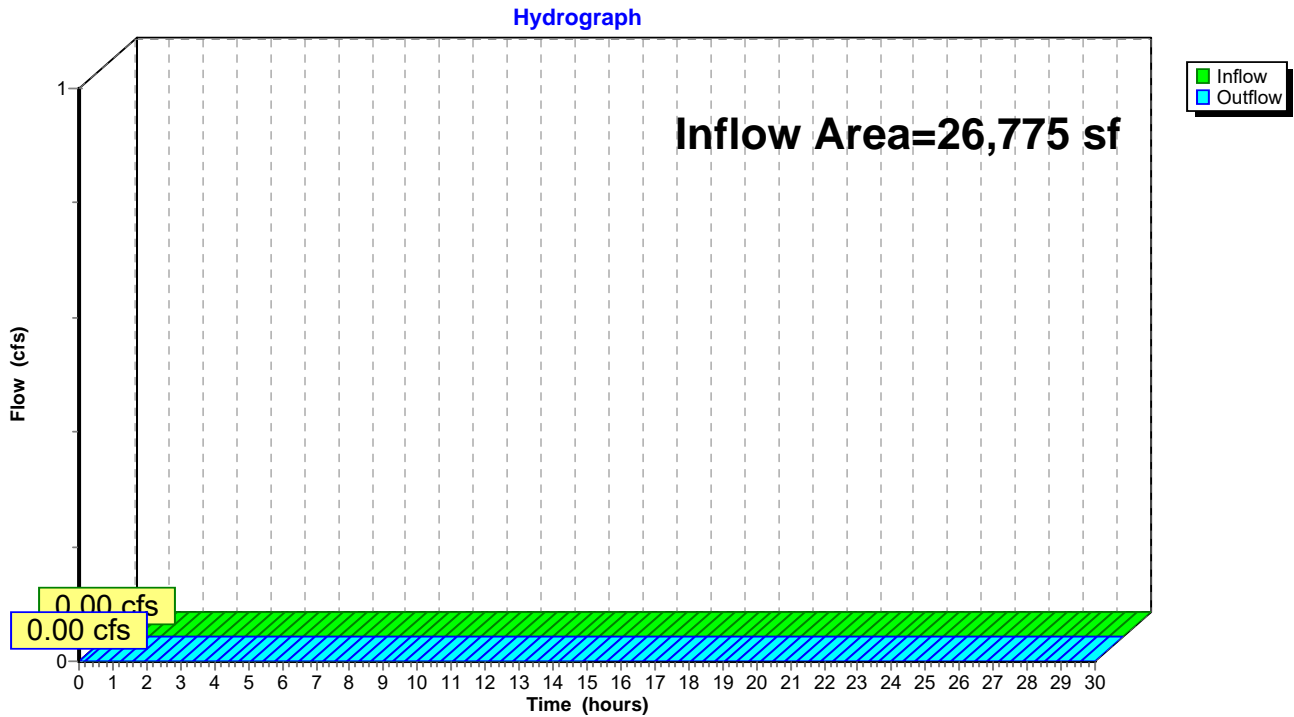
Page 6

Summary for Reach AP1: Analysis Point

Inflow Area = 26,775 sf, 0.00% Impervious, Inflow Depth = 0.00" for 1 Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach AP1: Analysis Point



Existing Conditions

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100 Grist Mill Road, Simsbury
Type III 24-hr 1 Year Rainfall=2.65"

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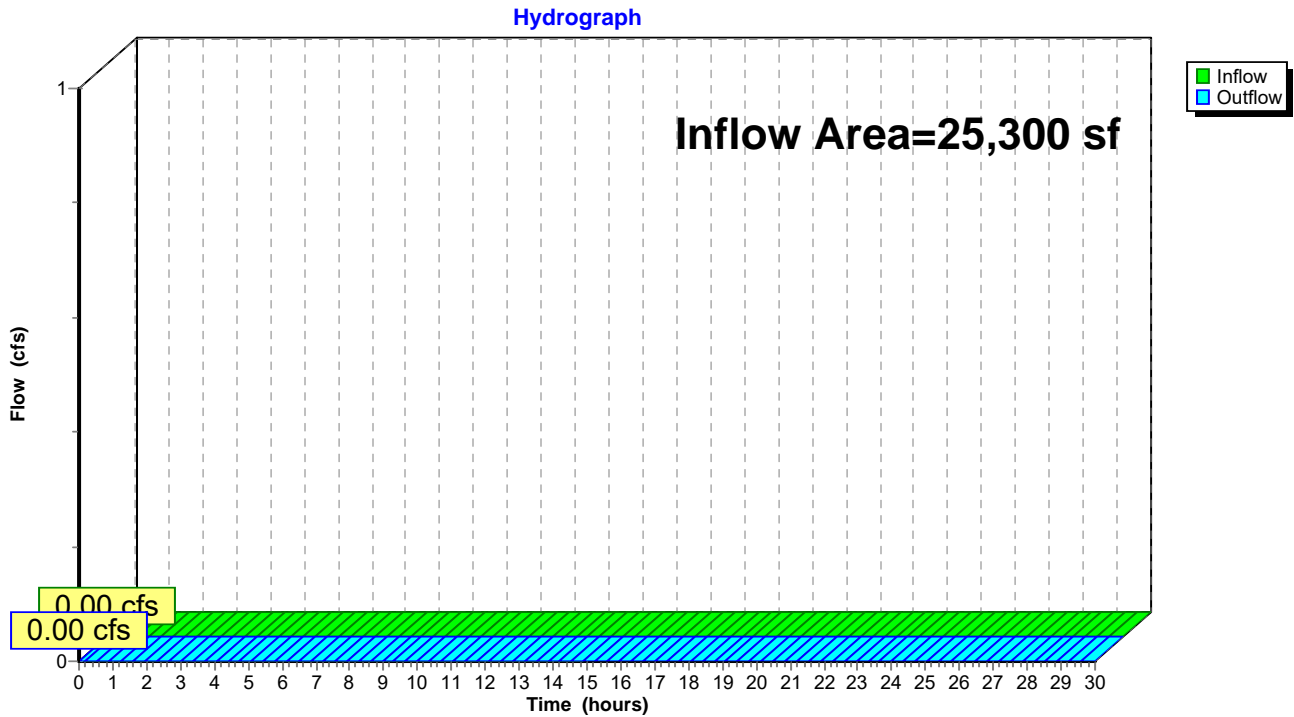
Page 7

Summary for Reach AP2: Analysis Point

Inflow Area = 25,300 sf, 0.00% Impervious, Inflow Depth = 0.00" for 1 Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach AP2: Analysis Point



Existing Conditions

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100 Grist Mill Road, Simsbury
Type III 24-hr 1 Year Rainfall=2.65"

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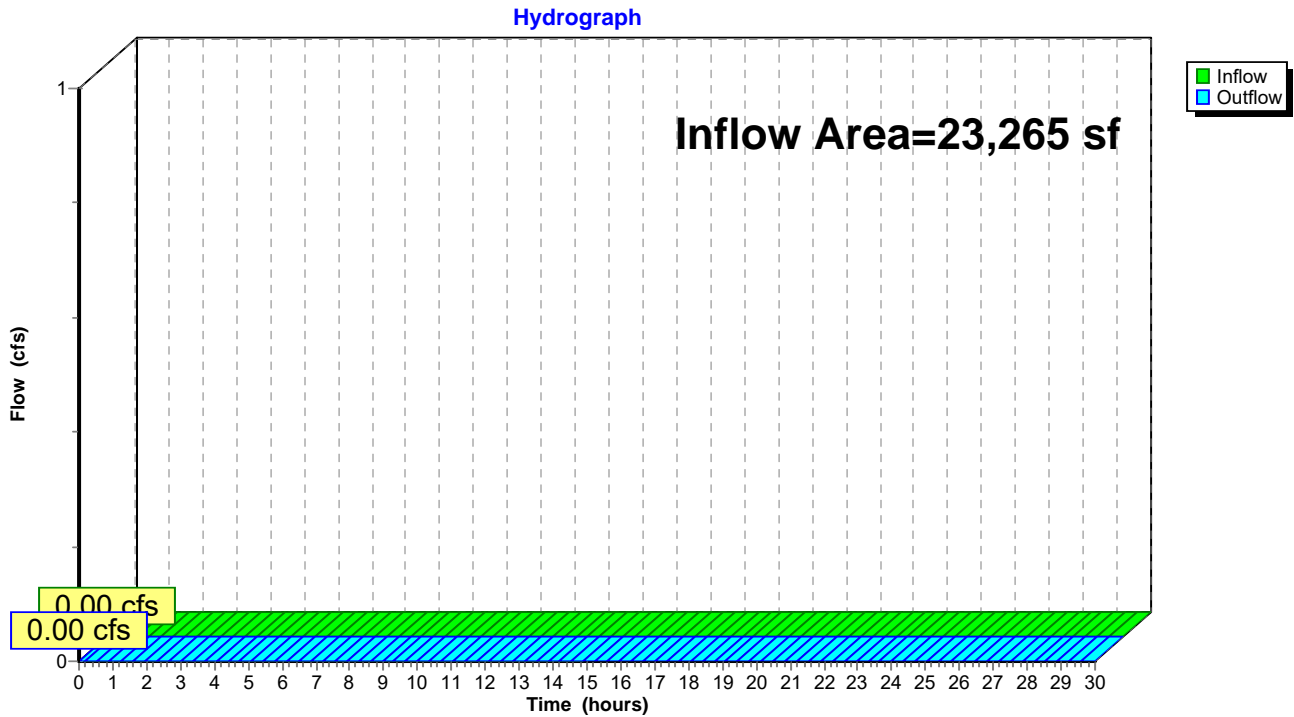
Page 8

Summary for Reach AP3: Analysis Point

Inflow Area = 23,265 sf, 0.00% Impervious, Inflow Depth = 0.00" for 1 Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach AP3: Analysis Point



Existing Conditions

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100 Grist Mill Road, Simsbury
Type III 24-hr 2 Year Rainfall=3.33"
Printed 7/7/2023
Page 9

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 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 E1: Analysis Area #1	Runoff Area=26,775 sf 0.00% Impervious	Runoff Depth=0.00"
	Flow Length=220' Tc=12.6 min CN=30	Runoff=0.00 cfs 0 cf
Subcatchment E2: Analysis Area #2	Runoff Area=25,300 sf 0.00% Impervious	Runoff Depth=0.00"
	Flow Length=216' Tc=12.0 min CN=30	Runoff=0.00 cfs 0 cf
Subcatchment E3: Analysis Area #3	Runoff Area=23,265 sf 0.00% Impervious	Runoff Depth=0.00"
	Flow Length=325' Tc=15.3 min CN=30	Runoff=0.00 cfs 0 cf
Reach AP1: Analysis Point		Inflow=0.00 cfs 0 cf
		Outflow=0.00 cfs 0 cf
Reach AP2: Analysis Point		Inflow=0.00 cfs 0 cf
		Outflow=0.00 cfs 0 cf
Reach AP3: Analysis Point		Inflow=0.00 cfs 0 cf
		Outflow=0.00 cfs 0 cf

Total Runoff Area = 75,340 sf Runoff Volume = 0 cf Average Runoff Depth = 0.00"
100.00% Pervious = 75,340 sf 0.00% Impervious = 0 sf

Existing Conditions

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100 Grist Mill Road, Simsbury
Type III 24-hr 2 Year Rainfall=3.33"

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Summary for Subcatchment E1: Analysis Area #1

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Reach AP1 : Analysis Point

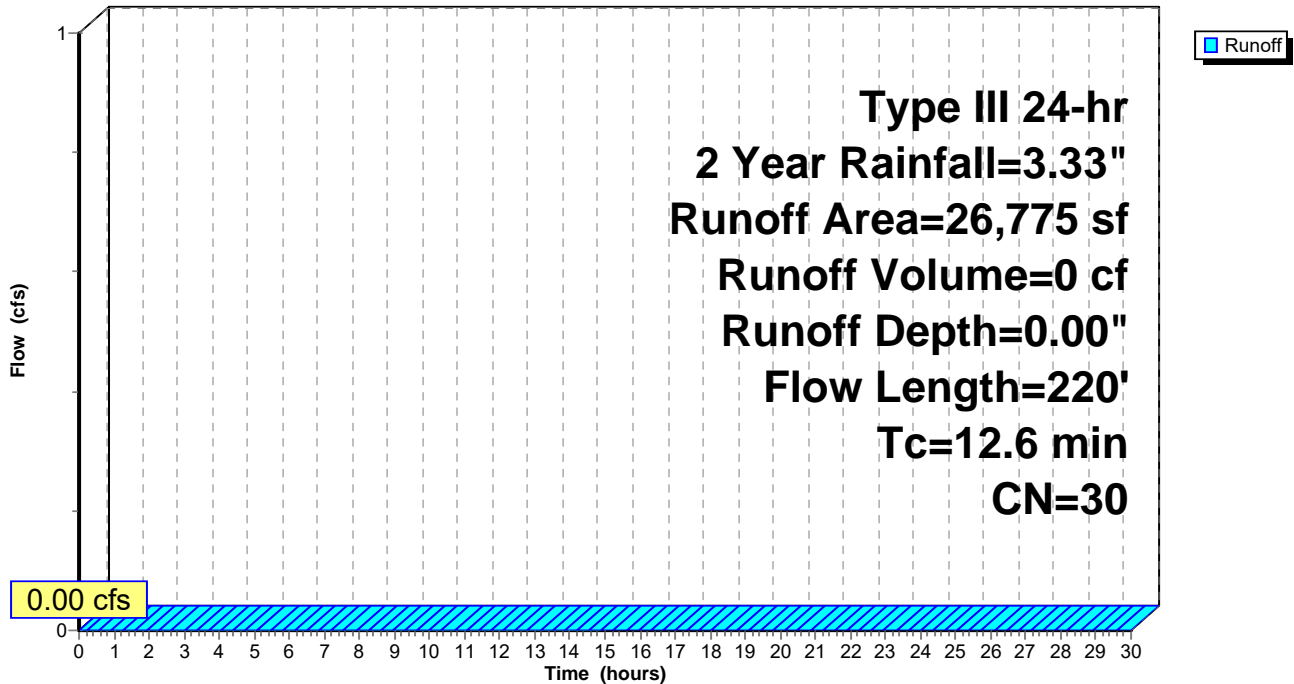
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Type III 24-hr 2 Year Rainfall=3.33"

Area (sf)	CN	Description
26,775	30	Woods, Good, HSG A
26,775		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	85	0.2350	0.40		Lag/CN Method,
1.9	25	0.1200	0.22		Lag/CN Method,
3.5	35	0.0570	0.16		Lag/CN Method,
3.7	75	0.1730	0.33		Lag/CN Method,
12.6	220	Total			

Subcatchment E1: Analysis Area #1

Hydrograph



Existing Conditions

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100 Grist Mill Road, Simsbury
Type III 24-hr 2 Year Rainfall=3.33"

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Summary for Subcatchment E2: Analysis Area #2

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Reach AP2 : Analysis Point

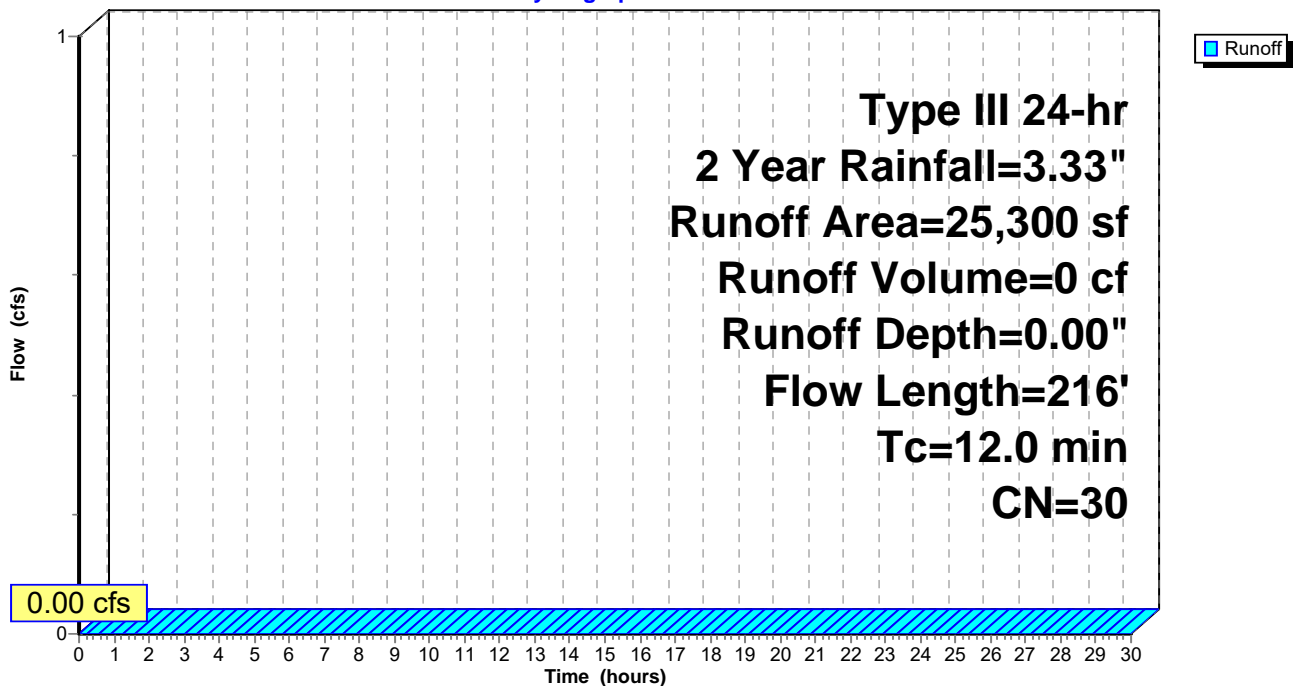
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.33"

Area (sf)	CN	Description
25,300	30	Woods, Good, HSG A
25,300		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	116	0.0950	0.27		Lag/CN Method,
1.9	60	0.4670	0.53		Lag/CN Method,
3.0	40	0.1000	0.22		Lag/CN Method,
12.0	216	Total			

Subcatchment E2: Analysis Area #2

Hydrograph



Existing Conditions

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Summary for Subcatchment E3: Analysis Area #3

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
 Routed to Reach AP3 : Analysis Point

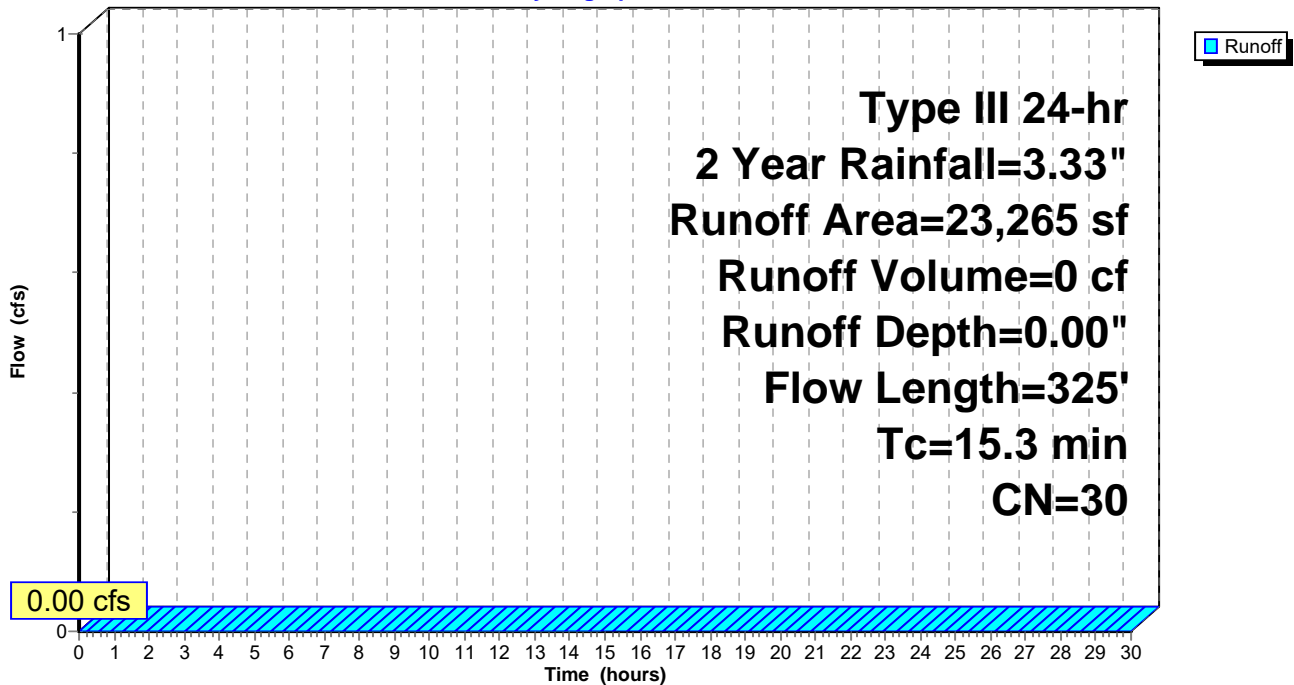
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2 Year Rainfall=3.33"

Area (sf)	CN	Description
23,265	30	Woods, Good, HSG A
23,265		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	280	0.2890	0.56		Lag/CN Method,
7.0	45	0.0220	0.11		Lag/CN Method,
15.3	325	Total			

Subcatchment E3: Analysis Area #3

Hydrograph



Existing Conditions

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Type III 24-hr 2 Year Rainfall=3.33"

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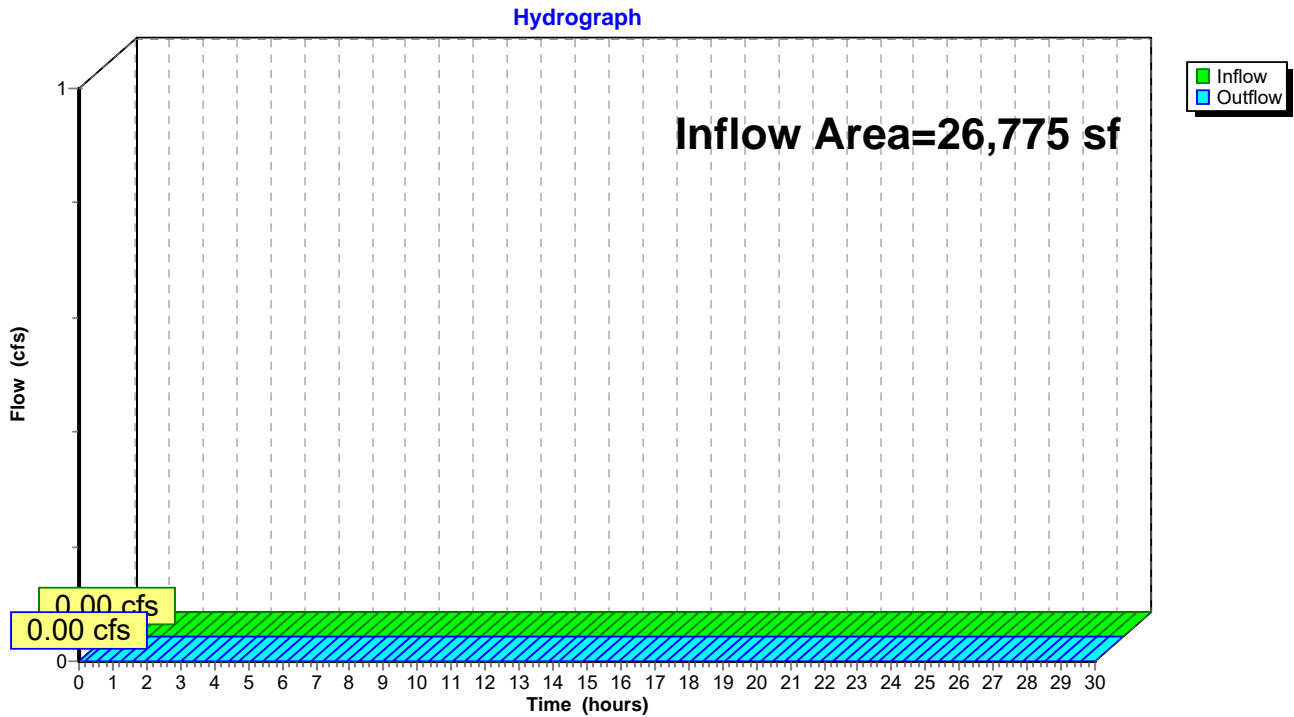
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Summary for Reach AP1: Analysis Point

Inflow Area = 26,775 sf, 0.00% Impervious, Inflow Depth = 0.00" for 2 Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach AP1: Analysis Point



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Type III 24-hr 2 Year Rainfall=3.33"

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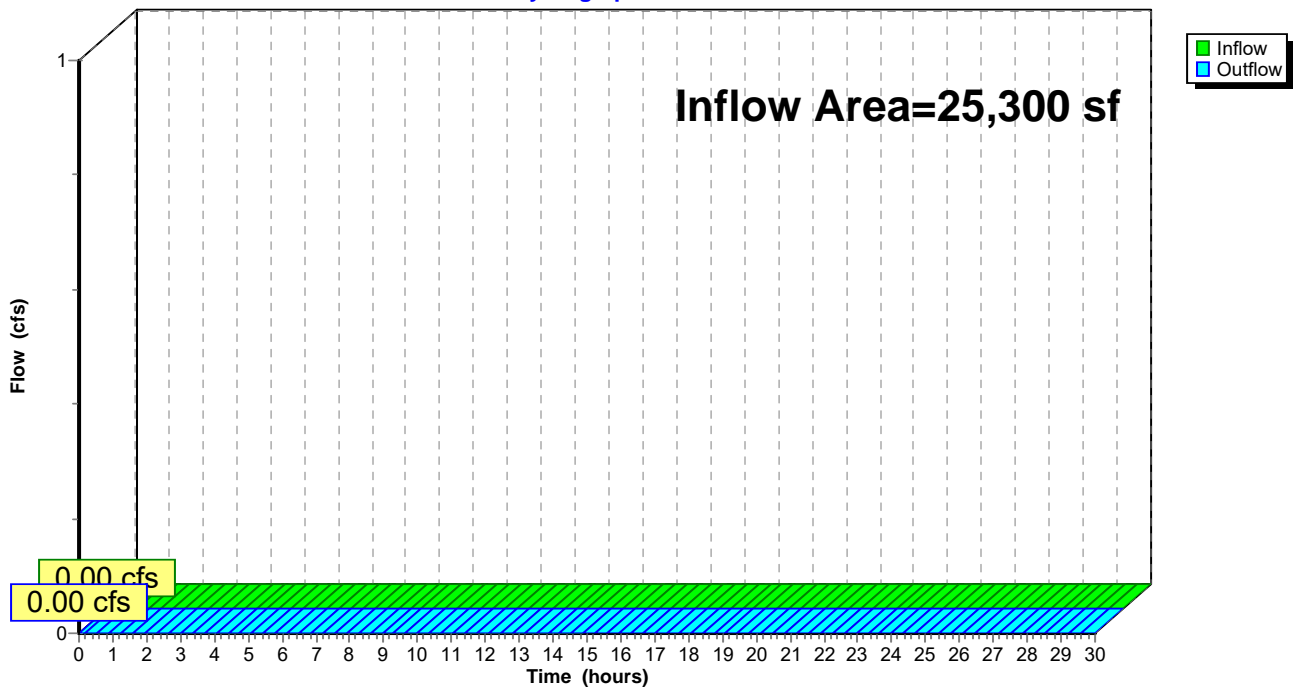
Summary for Reach AP2: Analysis Point

Inflow Area = 25,300 sf, 0.00% Impervious, Inflow Depth = 0.00" for 2 Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach AP2: Analysis Point

Hydrograph



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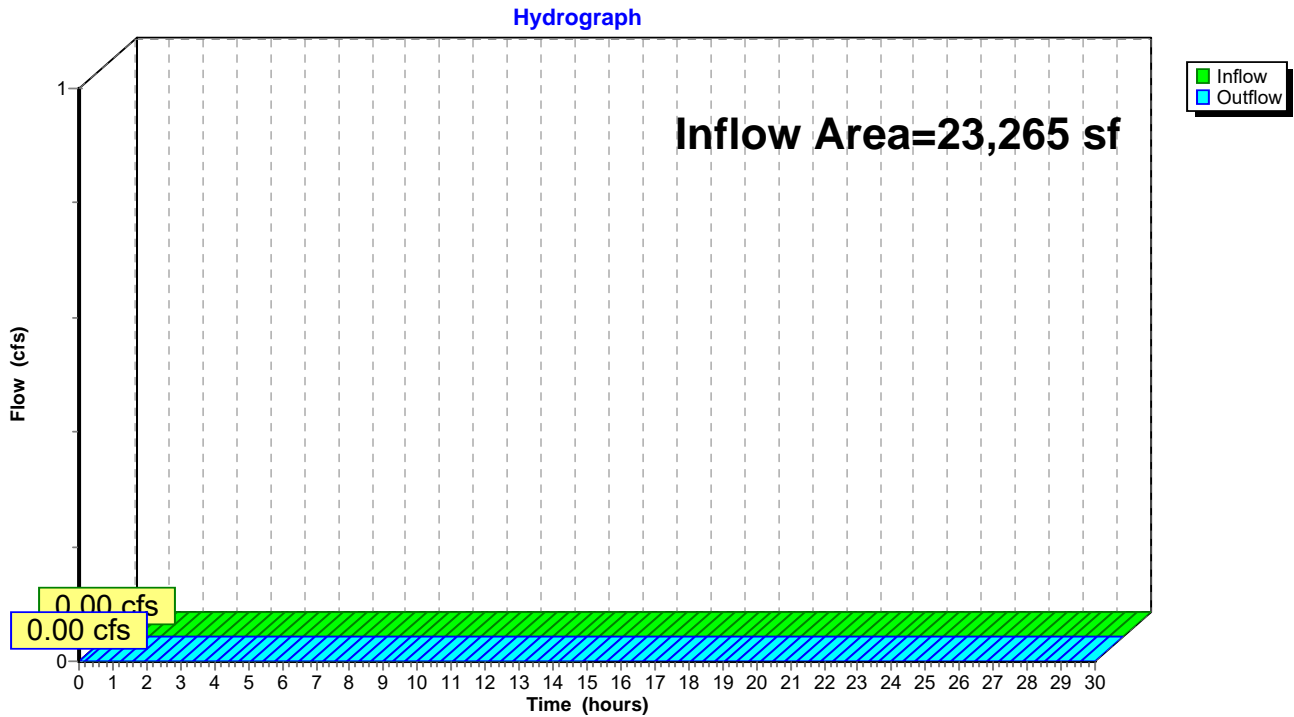
Page 15

Summary for Reach AP3: Analysis Point

Inflow Area = 23,265 sf, 0.00% Impervious, Inflow Depth = 0.00" for 2 Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach AP3: Analysis Point



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Type III 24-hr 5 Year Rainfall=4.45"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 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 E1: Analysis Area #1	Runoff Area=26,775 sf 0.00% Impervious	Runoff Depth=0.00"
	Flow Length=220' Tc=12.6 min CN=30	Runoff=0.00 cfs 0 cf
Subcatchment E2: Analysis Area #2	Runoff Area=25,300 sf 0.00% Impervious	Runoff Depth=0.00"
	Flow Length=216' Tc=12.0 min CN=30	Runoff=0.00 cfs 0 cf
Subcatchment E3: Analysis Area #3	Runoff Area=23,265 sf 0.00% Impervious	Runoff Depth=0.00"
	Flow Length=325' Tc=15.3 min CN=30	Runoff=0.00 cfs 0 cf
Reach AP1: Analysis Point		Inflow=0.00 cfs 0 cf
		Outflow=0.00 cfs 0 cf
Reach AP2: Analysis Point		Inflow=0.00 cfs 0 cf
		Outflow=0.00 cfs 0 cf
Reach AP3: Analysis Point		Inflow=0.00 cfs 0 cf
		Outflow=0.00 cfs 0 cf

Total Runoff Area = 75,340 sf Runoff Volume = 0 cf Average Runoff Depth = 0.00"
100.00% Pervious = 75,340 sf 0.00% Impervious = 0 sf

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Type III 24-hr 5 Year Rainfall=4.45"

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Summary for Subcatchment E1: Analysis Area #1

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Reach AP1 : Analysis Point

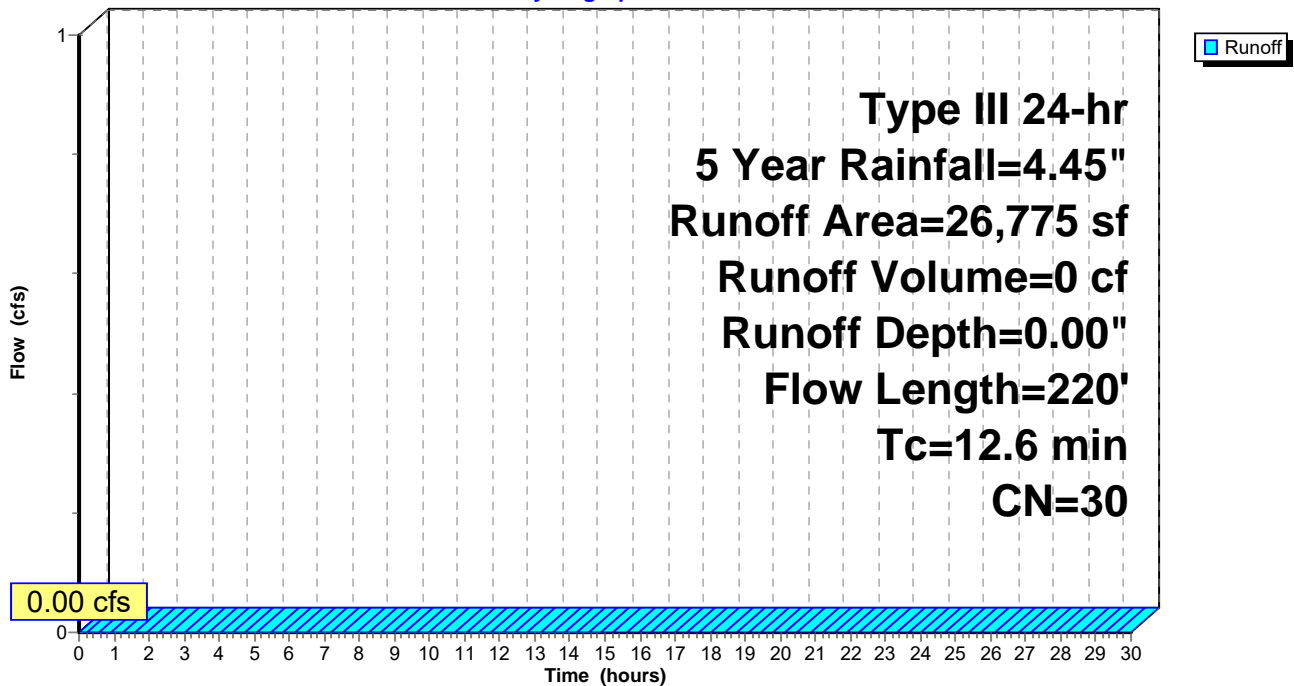
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 5 Year Rainfall=4.45"

Area (sf)	CN	Description
26,775	30	Woods, Good, HSG A
26,775		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	85	0.2350	0.40		Lag/CN Method,
1.9	25	0.1200	0.22		Lag/CN Method,
3.5	35	0.0570	0.16		Lag/CN Method,
3.7	75	0.1730	0.33		Lag/CN Method,
12.6	220	Total			

Subcatchment E1: Analysis Area #1

Hydrograph



Existing Conditions

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Type III 24-hr 5 Year Rainfall=4.45"

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Summary for Subcatchment E2: Analysis Area #2

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Reach AP2 : Analysis Point

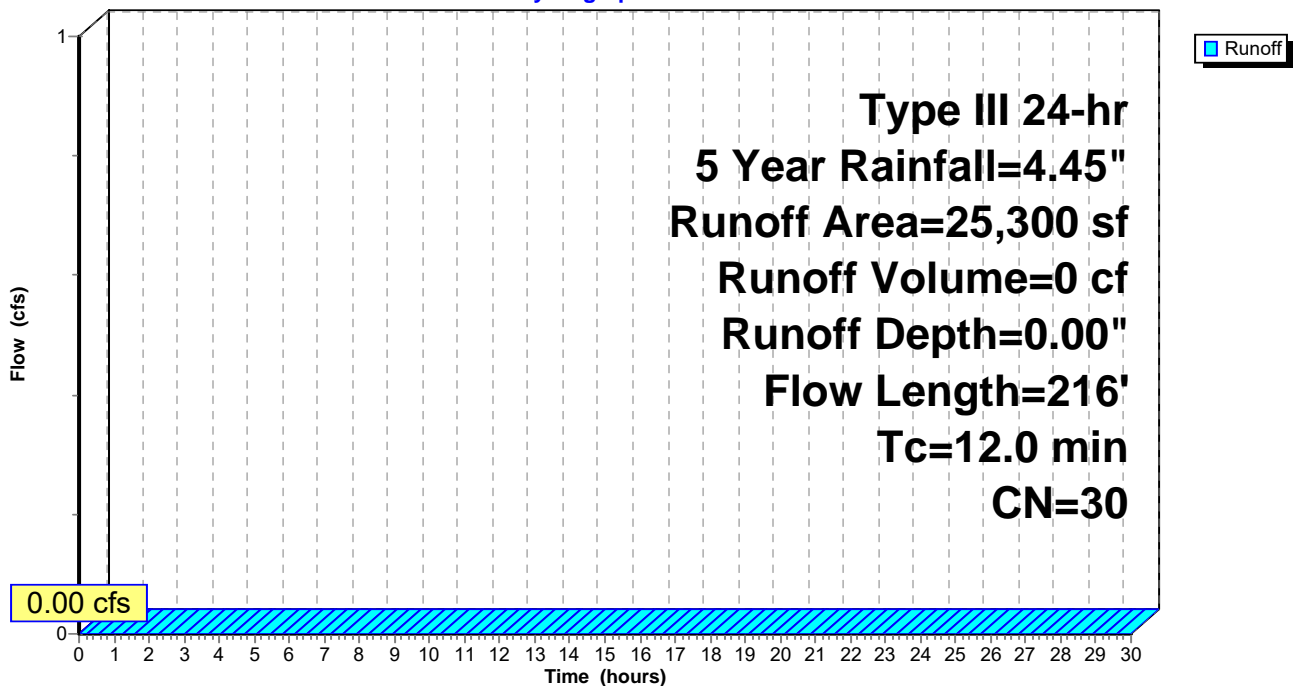
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 5 Year Rainfall=4.45"

Area (sf)	CN	Description
25,300	30	Woods, Good, HSG A
25,300		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	116	0.0950	0.27		Lag/CN Method,
1.9	60	0.4670	0.53		Lag/CN Method,
3.0	40	0.1000	0.22		Lag/CN Method,
12.0	216	Total			

Subcatchment E2: Analysis Area #2

Hydrograph



Existing Conditions

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Summary for Subcatchment E3: Analysis Area #3

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
 Routed to Reach AP3 : Analysis Point

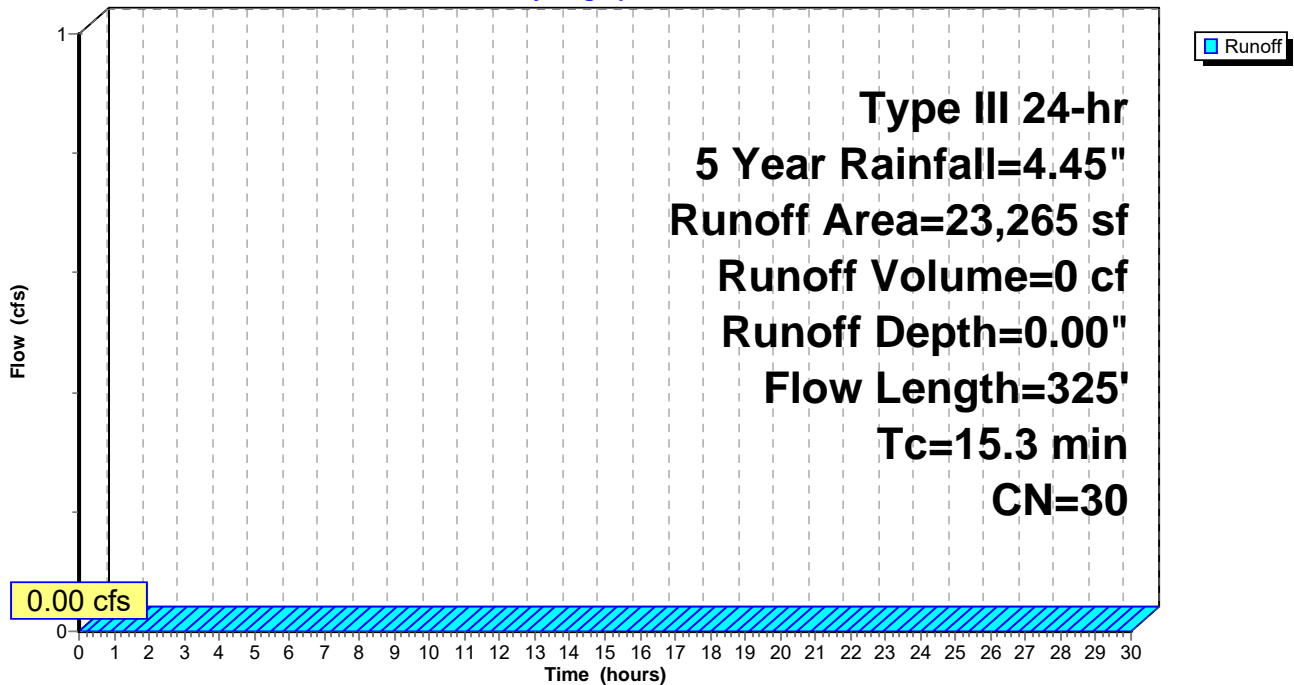
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 5 Year Rainfall=4.45"

Area (sf)	CN	Description
23,265	30	Woods, Good, HSG A
23,265		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	280	0.2890	0.56		Lag/CN Method,
7.0	45	0.0220	0.11		Lag/CN Method,
15.3	325	Total			

Subcatchment E3: Analysis Area #3

Hydrograph



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Type III 24-hr 5 Year Rainfall=4.45"

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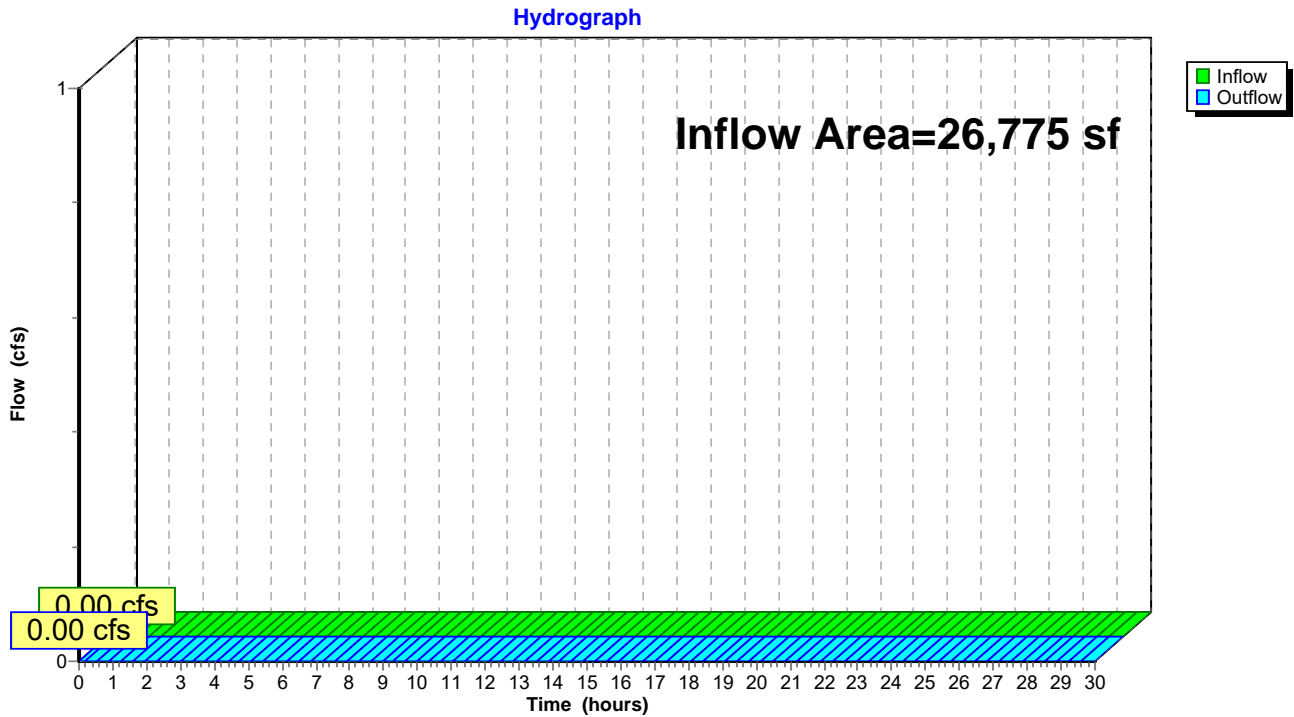
Page 20

Summary for Reach AP1: Analysis Point

Inflow Area = 26,775 sf, 0.00% Impervious, Inflow Depth = 0.00" for 5 Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach AP1: Analysis Point



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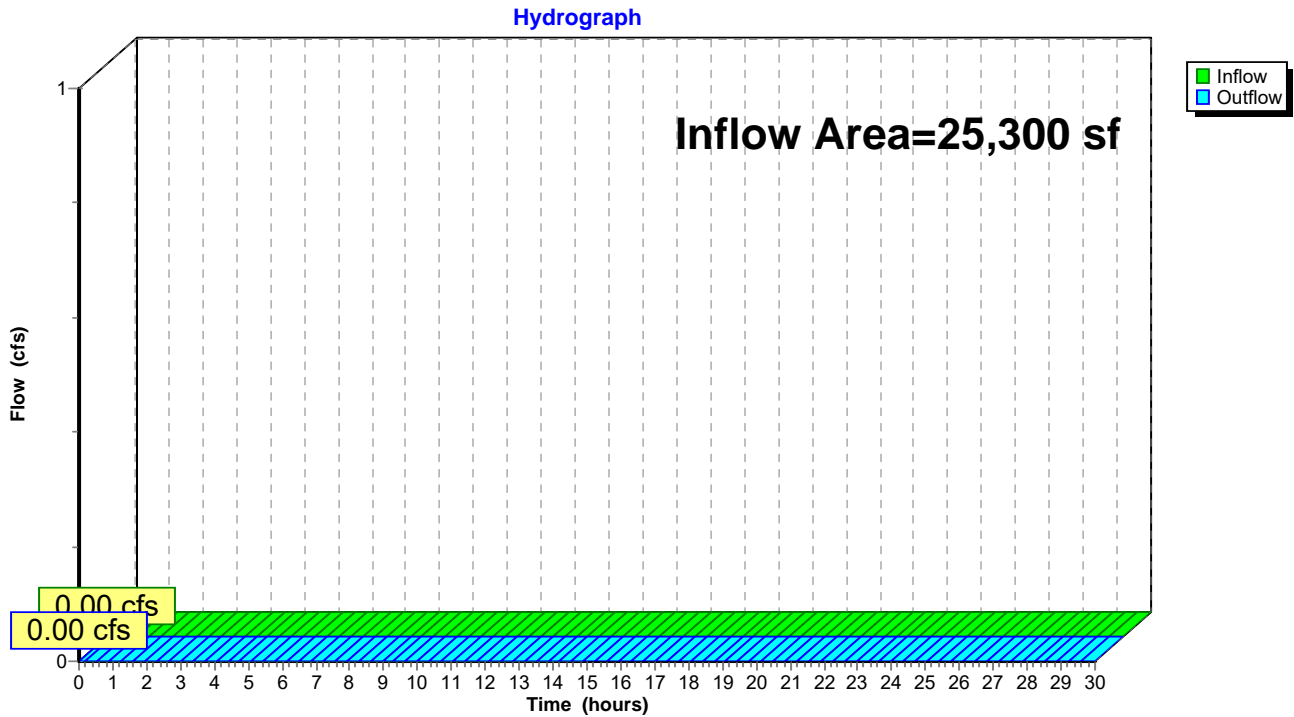
Page 21

Summary for Reach AP2: Analysis Point

Inflow Area = 25,300 sf, 0.00% Impervious, Inflow Depth = 0.00" for 5 Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach AP2: Analysis Point



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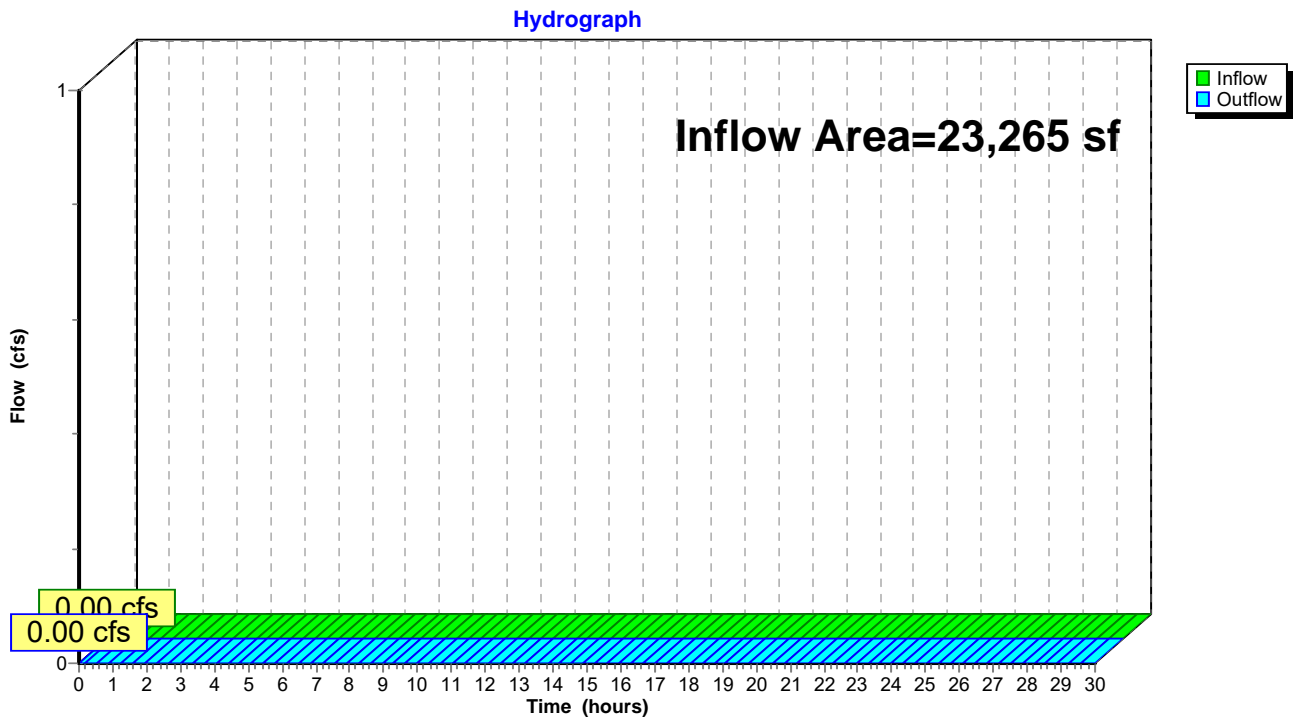
Page 22

Summary for Reach AP3: Analysis Point

Inflow Area = 23,265 sf, 0.00% Impervious, Inflow Depth = 0.00" for 5 Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach AP3: Analysis Point



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Type III 24-hr 10 Year Rainfall=5.37"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 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 E1: Analysis Area #1	Runoff Area=26,775 sf 0.00% Impervious Runoff Depth=0.02" Flow Length=220' Tc=12.6 min CN=30 Runoff=0.00 cfs 46 cf
Subcatchment E2: Analysis Area #2	Runoff Area=25,300 sf 0.00% Impervious Runoff Depth=0.02" Flow Length=216' Tc=12.0 min CN=30 Runoff=0.00 cfs 43 cf
Subcatchment E3: Analysis Area #3	Runoff Area=23,265 sf 0.00% Impervious Runoff Depth=0.02" Flow Length=325' Tc=15.3 min CN=30 Runoff=0.00 cfs 40 cf
Reach AP1: Analysis Point	Inflow=0.00 cfs 46 cf Outflow=0.00 cfs 46 cf
Reach AP2: Analysis Point	Inflow=0.00 cfs 43 cf Outflow=0.00 cfs 43 cf
Reach AP3: Analysis Point	Inflow=0.00 cfs 40 cf Outflow=0.00 cfs 40 cf

Total Runoff Area = 75,340 sf Runoff Volume = 129 cf Average Runoff Depth = 0.02"
100.00% Pervious = 75,340 sf 0.00% Impervious = 0 sf

Existing Conditions

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Type III 24-hr 10 Year Rainfall=5.37"

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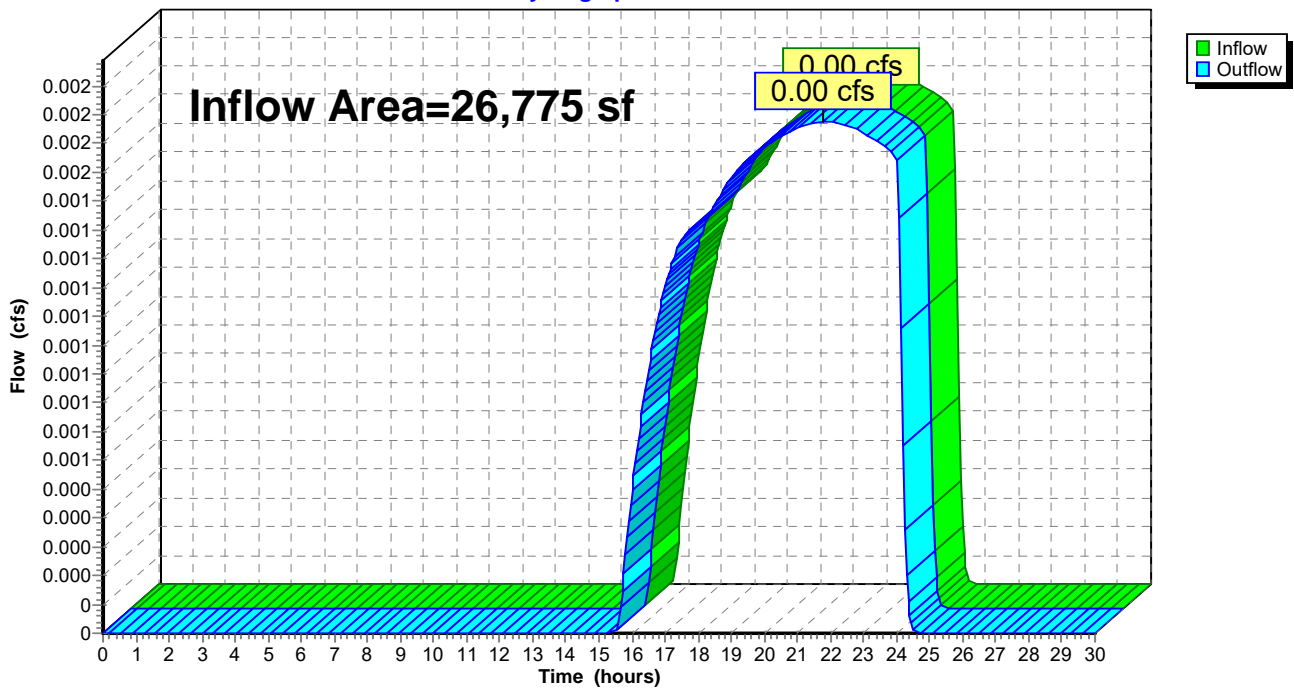
Summary for Reach AP1: Analysis Point

Inflow Area = 26,775 sf, 0.00% Impervious, Inflow Depth = 0.02" for 10 Year event
Inflow = 0.00 cfs @ 21.75 hrs, Volume= 46 cf
Outflow = 0.00 cfs @ 21.75 hrs, Volume= 46 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach AP1: Analysis Point

Hydrograph



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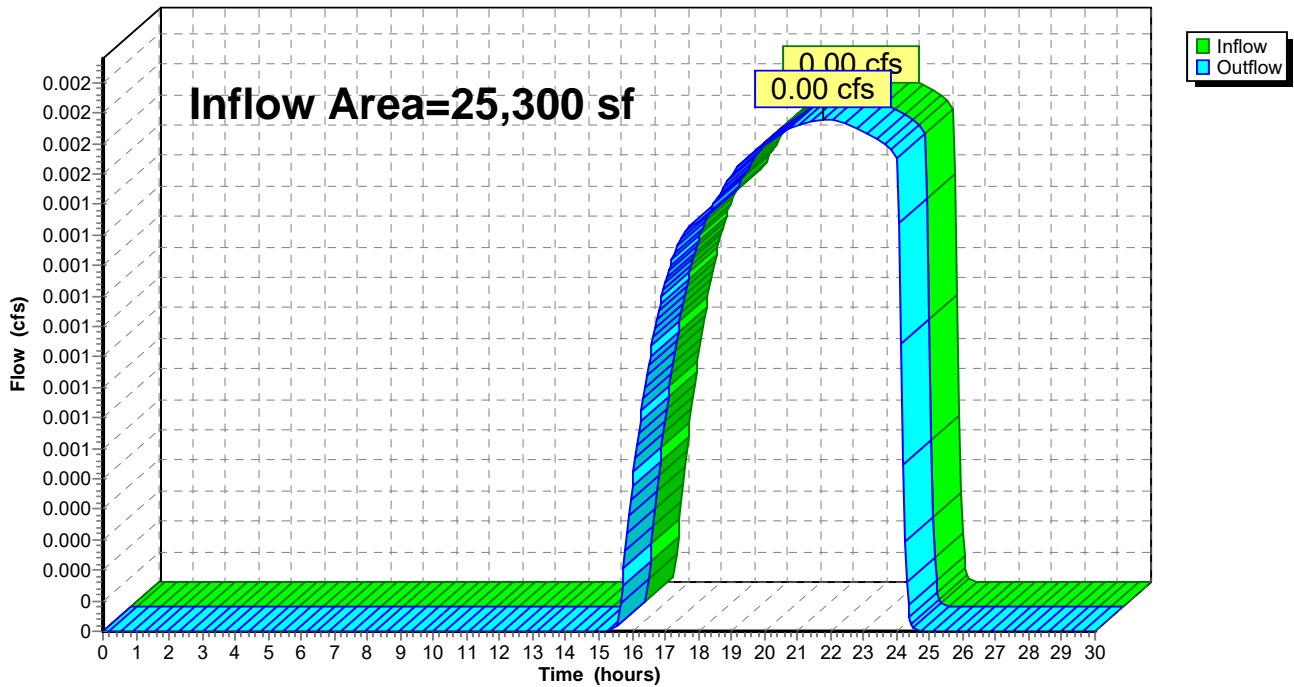
Summary for Reach AP2: Analysis Point

Inflow Area = 25,300 sf, 0.00% Impervious, Inflow Depth = 0.02" for 10 Year event
Inflow = 0.00 cfs @ 21.78 hrs, Volume= 43 cf
Outflow = 0.00 cfs @ 21.78 hrs, Volume= 43 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach AP2: Analysis Point

Hydrograph



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Type III 24-hr 10 Year Rainfall=5.37"

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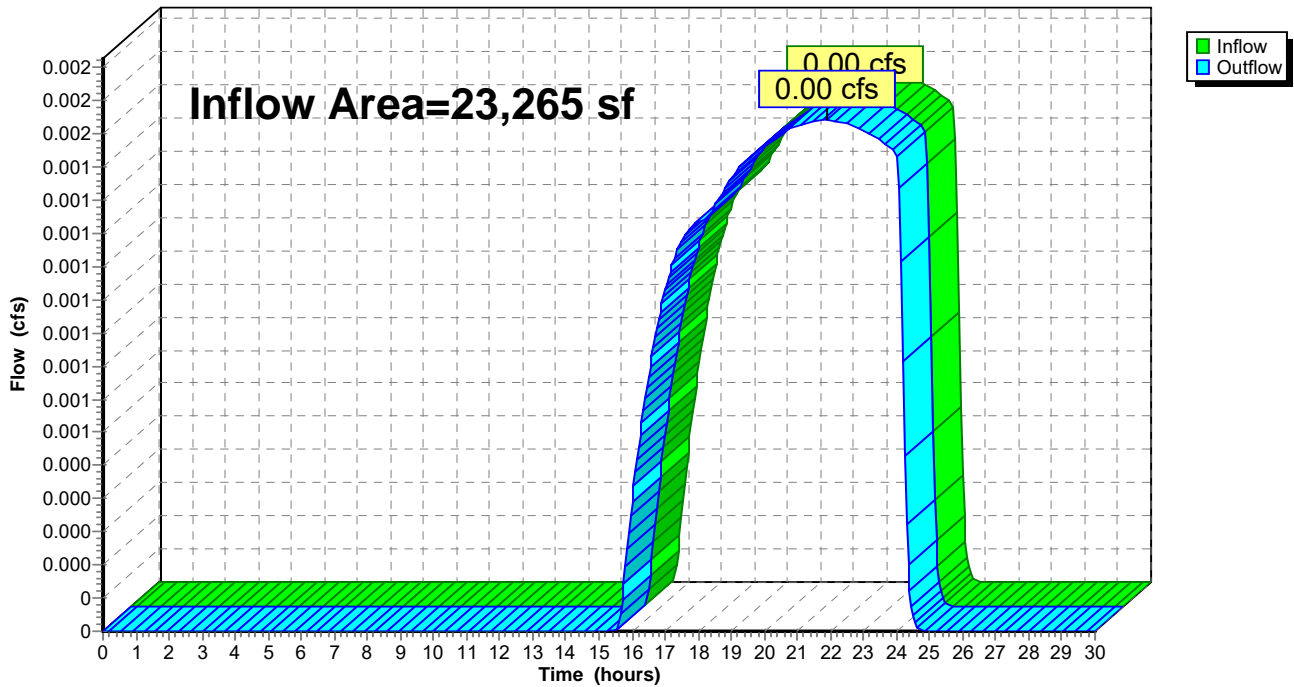
Summary for Reach AP3: Analysis Point

Inflow Area = 23,265 sf, 0.00% Impervious, Inflow Depth = 0.02" for 10 Year event
Inflow = 0.00 cfs @ 21.90 hrs, Volume= 40 cf
Outflow = 0.00 cfs @ 21.90 hrs, Volume= 40 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach AP3: Analysis Point

Hydrograph



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Type III 24-hr 25 Year Rainfall=6.64"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 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 E1: Analysis Area #1

Runoff Area=26,775 sf 0.00% Impervious Runoff Depth=0.15"
Flow Length=220' Tc=12.6 min CN=30 Runoff=0.01 cfs 343 cf

Subcatchment E2: Analysis Area #2

Runoff Area=25,300 sf 0.00% Impervious Runoff Depth=0.15"
Flow Length=216' Tc=12.0 min CN=30 Runoff=0.01 cfs 324 cf

Subcatchment E3: Analysis Area #3

Runoff Area=23,265 sf 0.00% Impervious Runoff Depth=0.15"
Flow Length=325' Tc=15.3 min CN=30 Runoff=0.01 cfs 298 cf

Reach AP1: Analysis Point

Inflow=0.01 cfs 343 cf
Outflow=0.01 cfs 343 cf

Reach AP2: Analysis Point

Inflow=0.01 cfs 324 cf
Outflow=0.01 cfs 324 cf

Reach AP3: Analysis Point

Inflow=0.01 cfs 298 cf
Outflow=0.01 cfs 298 cf

Total Runoff Area = 75,340 sf Runoff Volume = 966 cf Average Runoff Depth = 0.15"
100.00% Pervious = 75,340 sf 0.00% Impervious = 0 sf

Existing Conditions

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Type III 24-hr 25 Year Rainfall=6.64"

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Summary for Subcatchment E1: Analysis Area #1

Runoff = 0.01 cfs @ 14.88 hrs, Volume= 343 cf, Depth= 0.15"
Routed to Reach AP1 : Analysis Point

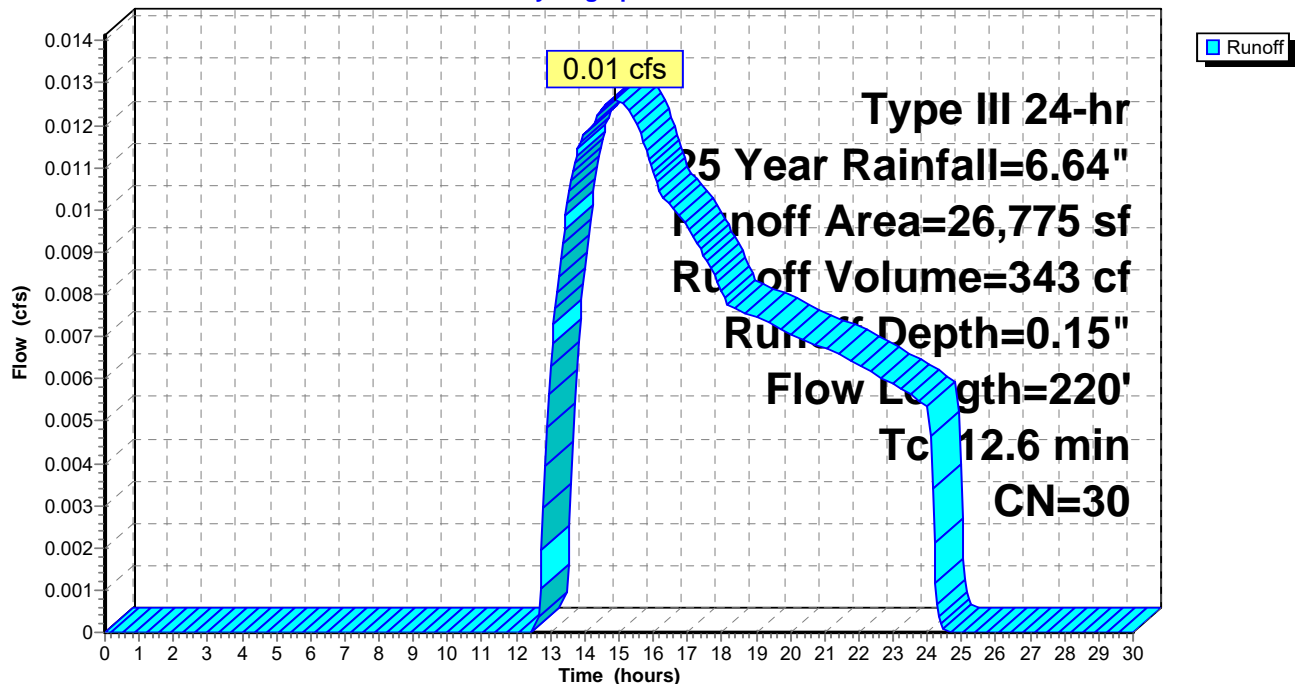
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=6.64"

Area (sf)	CN	Description
26,775	30	Woods, Good, HSG A
26,775		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	85	0.2350	0.40		Lag/CN Method,
1.9	25	0.1200	0.22		Lag/CN Method,
3.5	35	0.0570	0.16		Lag/CN Method,
3.7	75	0.1730	0.33		Lag/CN Method,
12.6	220	Total			

Subcatchment E1: Analysis Area #1

Hydrograph



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Type III 24-hr 25 Year Rainfall=6.64"

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Summary for Subcatchment E2: Analysis Area #2

Runoff = 0.01 cfs @ 14.87 hrs, Volume= 324 cf, Depth= 0.15"
Routed to Reach AP2 : Analysis Point

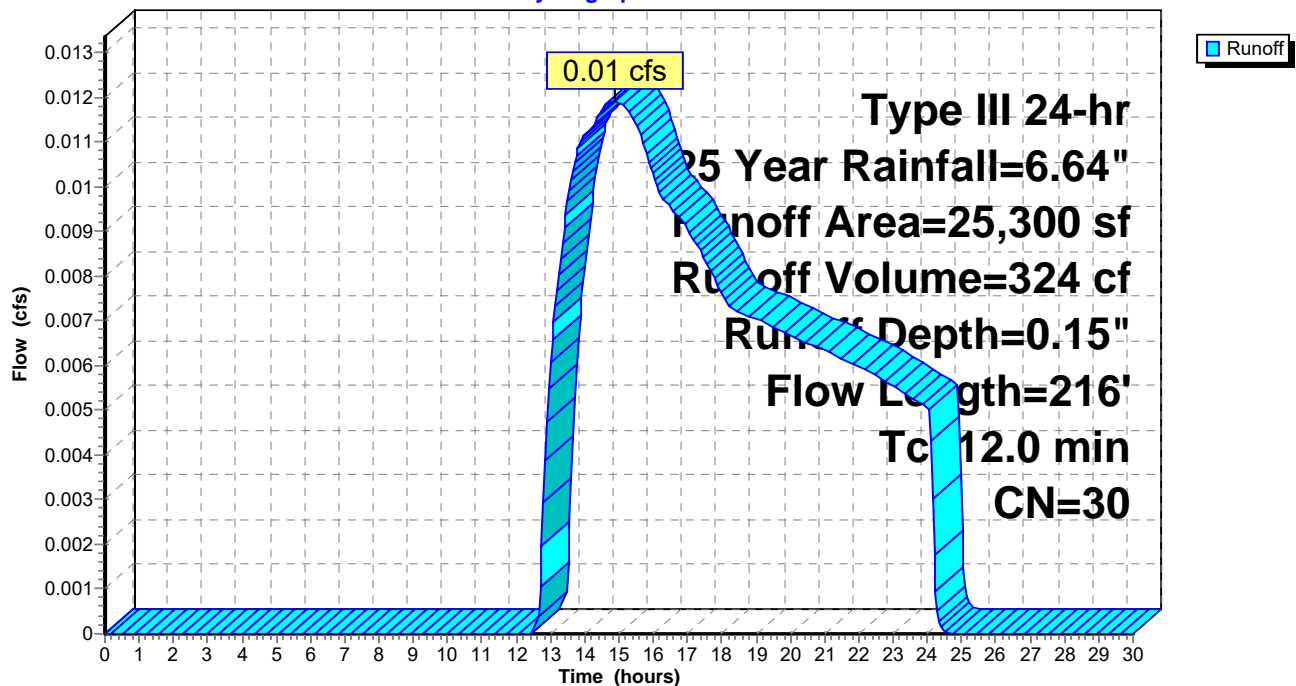
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=6.64"

Area (sf)	CN	Description
25,300	30	Woods, Good, HSG A
25,300		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	116	0.0950	0.27		Lag/CN Method,
1.9	60	0.4670	0.53		Lag/CN Method,
3.0	40	0.1000	0.22		Lag/CN Method,
12.0	216	Total			

Subcatchment E2: Analysis Area #2

Hydrograph



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Type III 24-hr 25 Year Rainfall=6.64"

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Summary for Subcatchment E3: Analysis Area #3

Runoff = 0.01 cfs @ 14.92 hrs, Volume= 298 cf, Depth= 0.15"
Routed to Reach AP3 : Analysis Point

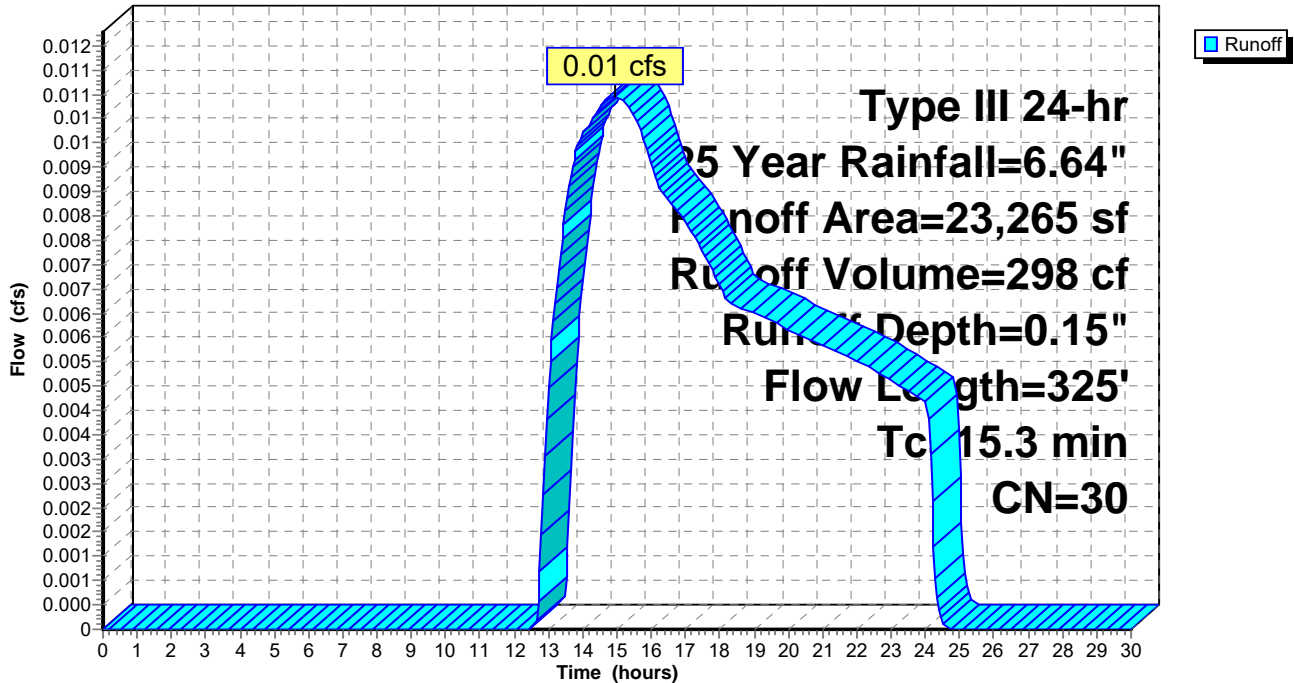
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=6.64"

Area (sf)	CN	Description
23,265	30	Woods, Good, HSG A
23,265		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	280	0.2890	0.56		Lag/CN Method,
7.0	45	0.0220	0.11		Lag/CN Method,
15.3	325	Total			

Subcatchment E3: Analysis Area #3

Hydrograph



Existing Conditions

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Type III 24-hr 25 Year Rainfall=6.64"

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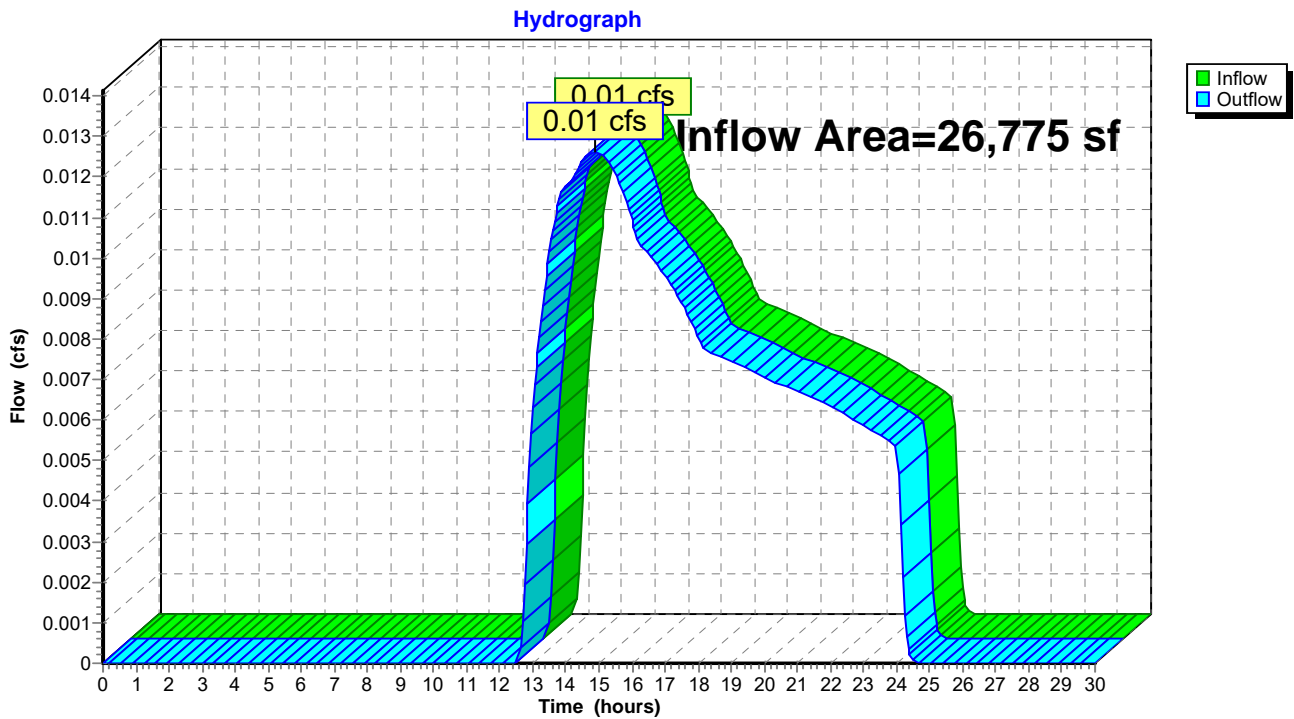
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Summary for Reach AP1: Analysis Point

Inflow Area = 26,775 sf, 0.00% Impervious, Inflow Depth = 0.15" for 25 Year event
Inflow = 0.01 cfs @ 14.88 hrs, Volume= 343 cf
Outflow = 0.01 cfs @ 14.88 hrs, Volume= 343 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach AP1: Analysis Point



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Type III 24-hr 25 Year Rainfall=6.64"

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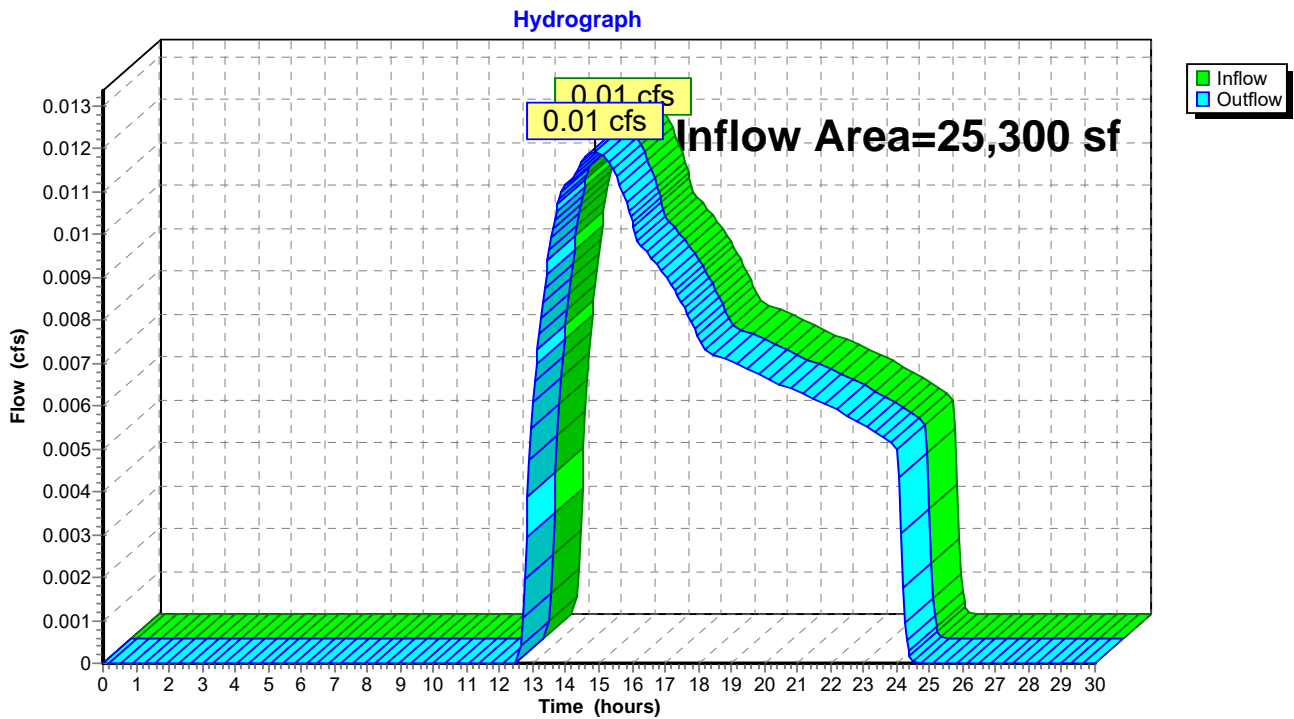
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Summary for Reach AP2: Analysis Point

Inflow Area = 25,300 sf, 0.00% Impervious, Inflow Depth = 0.15" for 25 Year event
Inflow = 0.01 cfs @ 14.87 hrs, Volume= 324 cf
Outflow = 0.01 cfs @ 14.87 hrs, Volume= 324 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach AP2: Analysis Point



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100 Grist Mill Road, Simsbury
Type III 24-hr 25 Year Rainfall=6.64"

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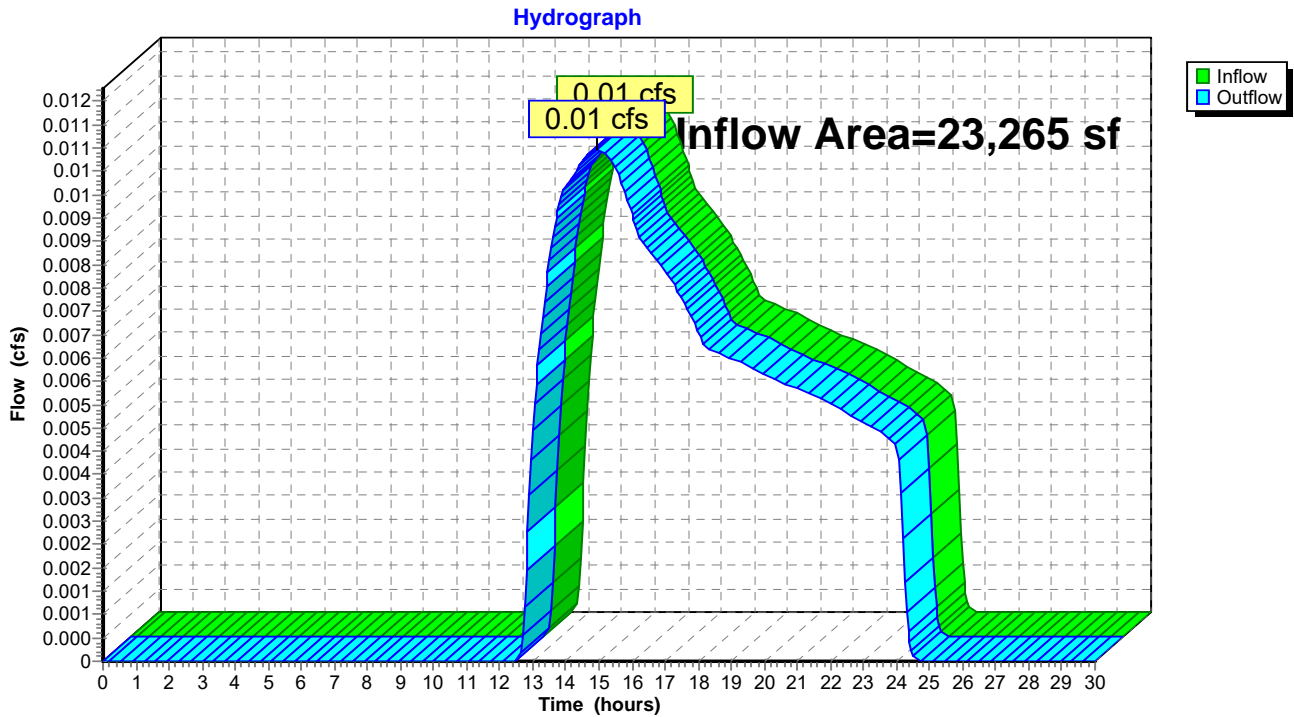
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Summary for Reach AP3: Analysis Point

Inflow Area = 23,265 sf, 0.00% Impervious, Inflow Depth = 0.15" for 25 Year event
Inflow = 0.01 cfs @ 14.92 hrs, Volume= 298 cf
Outflow = 0.01 cfs @ 14.92 hrs, Volume= 298 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach AP3: Analysis Point



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Type III 24-hr 50 Year Rainfall=7.57"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 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 E1: Analysis Area #1

Runoff Area=26,775 sf 0.00% Impervious Runoff Depth=0.32"
Flow Length=220' Tc=12.6 min CN=30 Runoff=0.04 cfs 717 cf

Subcatchment E2: Analysis Area #2

Runoff Area=25,300 sf 0.00% Impervious Runoff Depth=0.32"
Flow Length=216' Tc=12.0 min CN=30 Runoff=0.03 cfs 677 cf

Subcatchment E3: Analysis Area #3

Runoff Area=23,265 sf 0.00% Impervious Runoff Depth=0.32"
Flow Length=325' Tc=15.3 min CN=30 Runoff=0.03 cfs 623 cf

Reach AP1: Analysis Point

Inflow=0.04 cfs 717 cf
Outflow=0.04 cfs 717 cf

Reach AP2: Analysis Point

Inflow=0.03 cfs 677 cf
Outflow=0.03 cfs 677 cf

Reach AP3: Analysis Point

Inflow=0.03 cfs 623 cf
Outflow=0.03 cfs 623 cf

Total Runoff Area = 75,340 sf Runoff Volume = 2,017 cf Average Runoff Depth = 0.32"
100.00% Pervious = 75,340 sf 0.00% Impervious = 0 sf

Existing Conditions

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100 Grist Mill Road, Simsbury
Type III 24-hr 50 Year Rainfall=7.57"

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Summary for Subcatchment E1: Analysis Area #1

Runoff = 0.04 cfs @ 12.57 hrs, Volume= 717 cf, Depth= 0.32"
Routed to Reach AP1 : Analysis Point

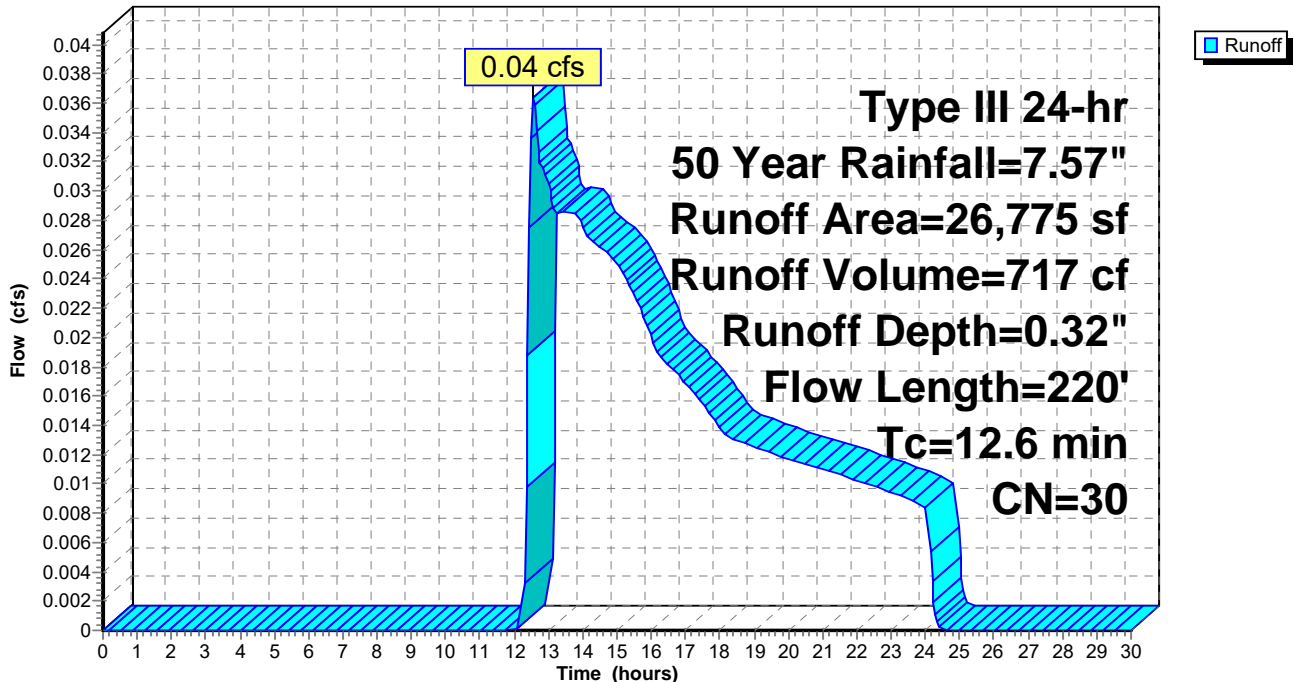
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Year Rainfall=7.57"

Area (sf)	CN	Description
26,775	30	Woods, Good, HSG A
26,775		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	85	0.2350	0.40		Lag/CN Method,
1.9	25	0.1200	0.22		Lag/CN Method,
3.5	35	0.0570	0.16		Lag/CN Method,
3.7	75	0.1730	0.33		Lag/CN Method,
12.6	220	Total			

Subcatchment E1: Analysis Area #1

Hydrograph



Existing Conditions

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Type III 24-hr 50 Year Rainfall=7.57"

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Summary for Subcatchment E2: Analysis Area #2

Runoff = 0.03 cfs @ 12.56 hrs, Volume= 677 cf, Depth= 0.32"
Routed to Reach AP2 : Analysis Point

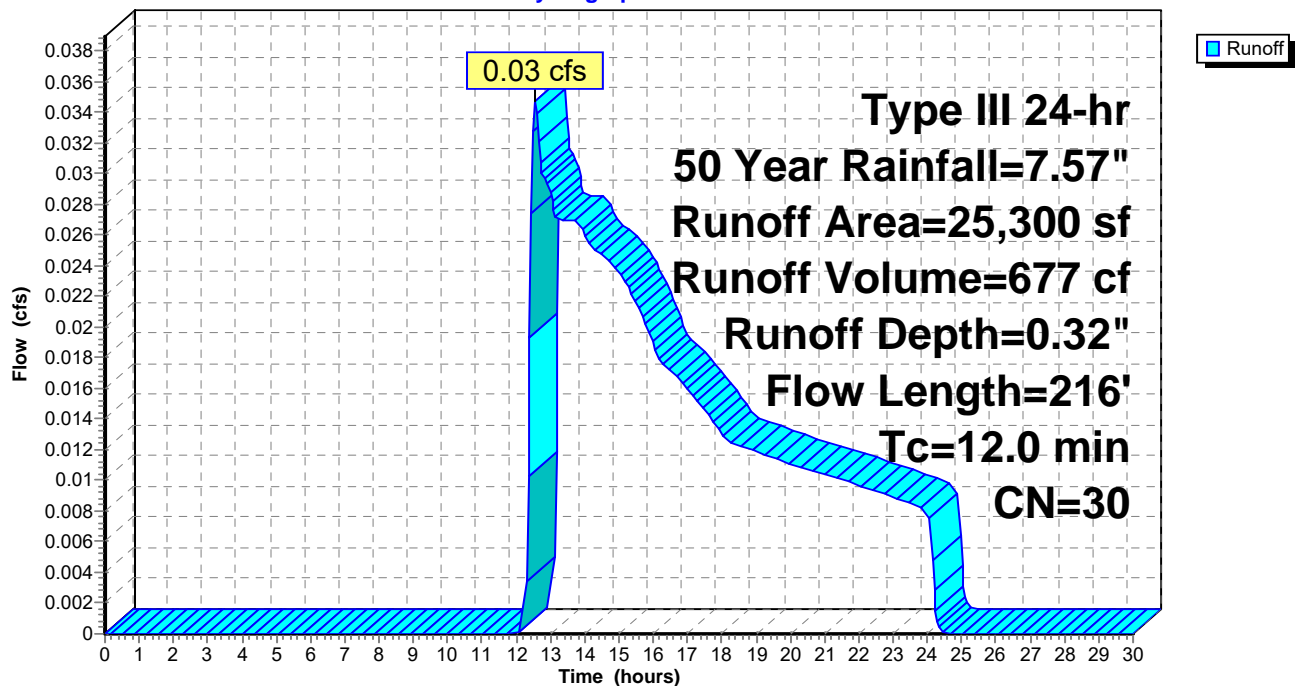
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Year Rainfall=7.57"

Area (sf)	CN	Description
25,300	30	Woods, Good, HSG A
25,300		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	116	0.0950	0.27		Lag/CN Method,
1.9	60	0.4670	0.53		Lag/CN Method,
3.0	40	0.1000	0.22		Lag/CN Method,
12.0	216	Total			

Subcatchment E2: Analysis Area #2

Hydrograph



Existing Conditions

Prepared by Godfrey Hoffman Associates

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Type III 24-hr 50 Year Rainfall=7.57"

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Summary for Subcatchment E3: Analysis Area #3

Runoff = 0.03 cfs @ 12.62 hrs, Volume= 623 cf, Depth= 0.32"
Routed to Reach AP3 : Analysis Point

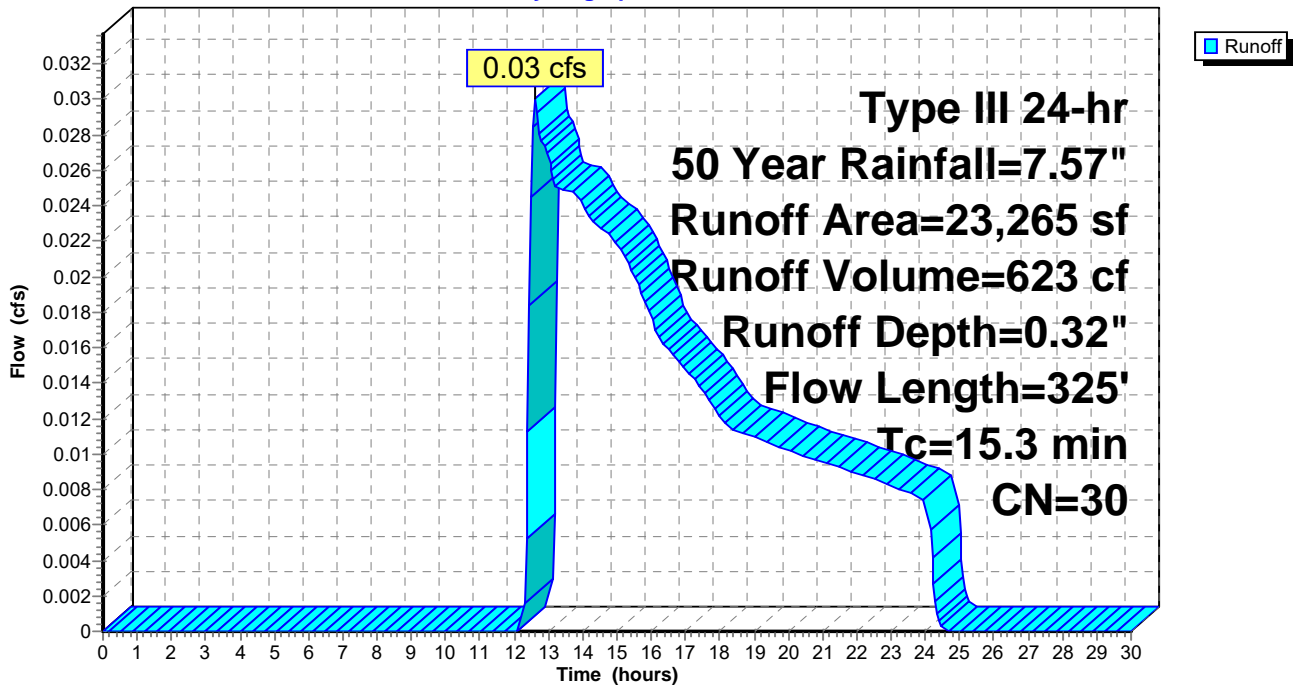
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Year Rainfall=7.57"

Area (sf)	CN	Description
23,265	30	Woods, Good, HSG A
23,265		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	280	0.2890	0.56		Lag/CN Method,
7.0	45	0.0220	0.11		Lag/CN Method,
15.3	325	Total			

Subcatchment E3: Analysis Area #3

Hydrograph



Existing Conditions

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Type III 24-hr 50 Year Rainfall=7.57"

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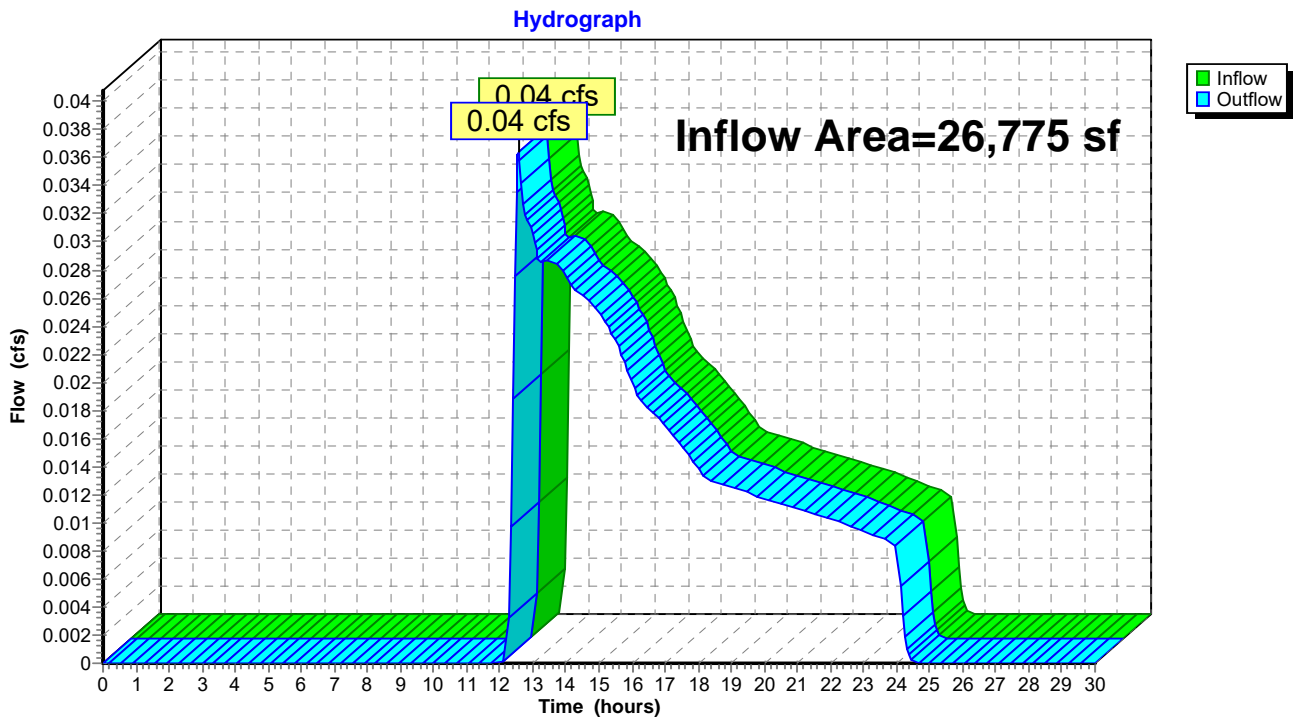
Page 41

Summary for Reach AP1: Analysis Point

Inflow Area = 26,775 sf, 0.00% Impervious, Inflow Depth = 0.32" for 50 Year event
Inflow = 0.04 cfs @ 12.57 hrs, Volume= 717 cf
Outflow = 0.04 cfs @ 12.57 hrs, Volume= 717 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach AP1: Analysis Point



Existing Conditions

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Type III 24-hr 50 Year Rainfall=7.57"

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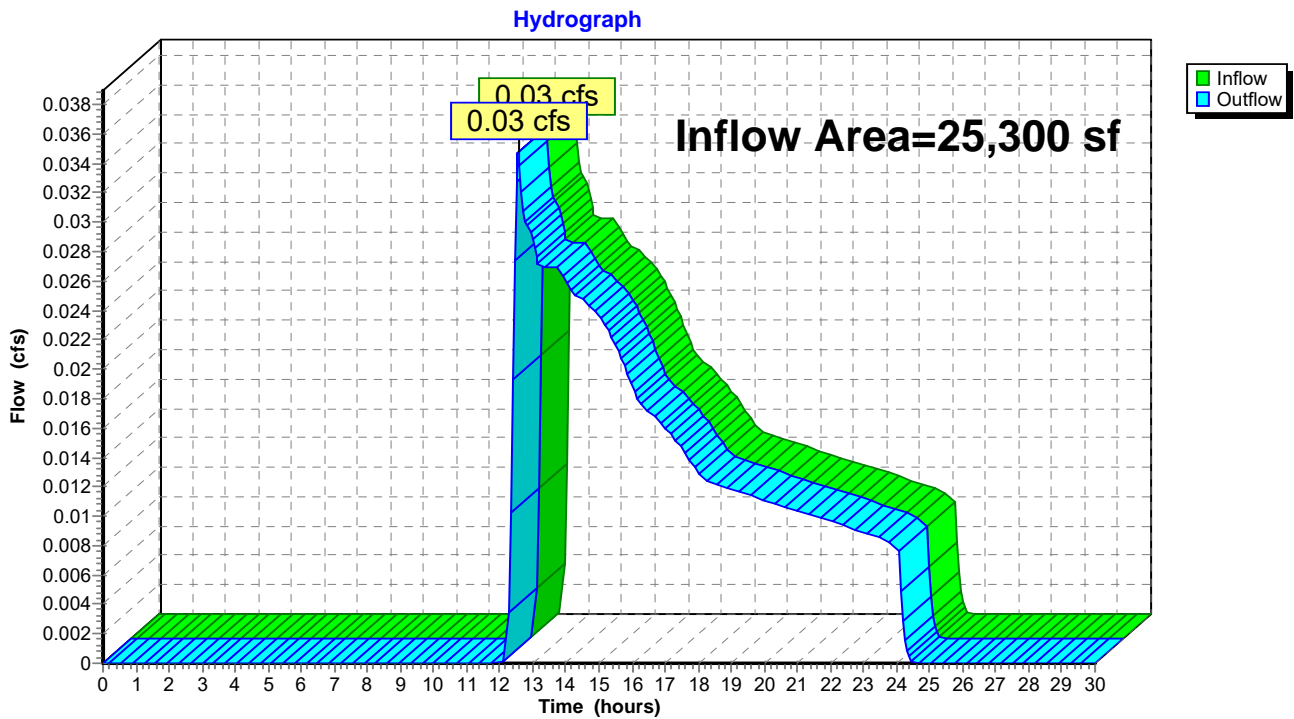
Page 42

Summary for Reach AP2: Analysis Point

Inflow Area = 25,300 sf, 0.00% Impervious, Inflow Depth = 0.32" for 50 Year event
Inflow = 0.03 cfs @ 12.56 hrs, Volume= 677 cf
Outflow = 0.03 cfs @ 12.56 hrs, Volume= 677 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach AP2: Analysis Point



Existing Conditions

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Type III 24-hr 50 Year Rainfall=7.57"

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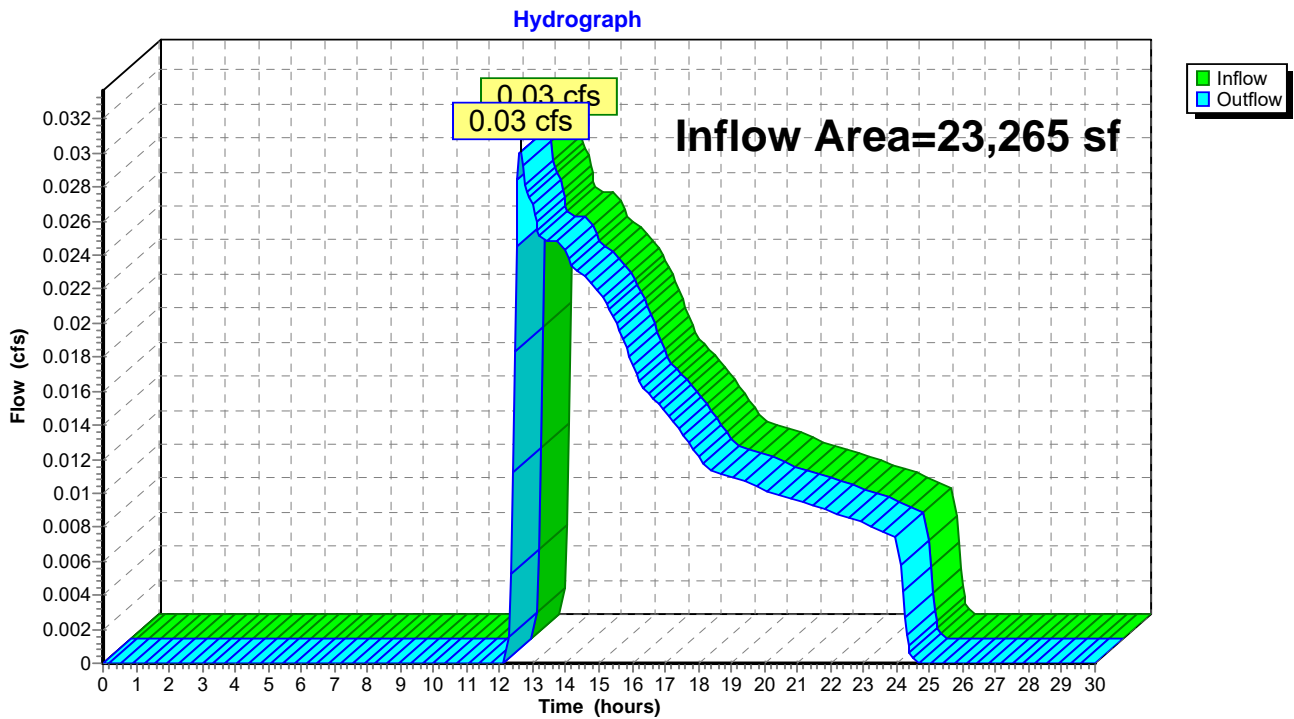
Page 43

Summary for Reach AP3: Analysis Point

Inflow Area = 23,265 sf, 0.00% Impervious, Inflow Depth = 0.32" for 50 Year event
Inflow = 0.03 cfs @ 12.62 hrs, Volume= 623 cf
Outflow = 0.03 cfs @ 12.62 hrs, Volume= 623 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach AP3: Analysis Point



Existing Conditions

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100 Grist Mill Road, Simsbury
Type III 24-hr 100 Year Rainfall=8.60"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 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 E1: Analysis Area #1

Runoff Area=26,775 sf 0.00% Impervious Runoff Depth=0.57"
Flow Length=220' Tc=12.6 min CN=30 Runoff=0.12 cfs 1,266 cf

Subcatchment E2: Analysis Area #2

Runoff Area=25,300 sf 0.00% Impervious Runoff Depth=0.57"
Flow Length=216' Tc=12.0 min CN=30 Runoff=0.11 cfs 1,196 cf

Subcatchment E3: Analysis Area #3

Runoff Area=23,265 sf 0.00% Impervious Runoff Depth=0.57"
Flow Length=325' Tc=15.3 min CN=30 Runoff=0.10 cfs 1,100 cf

Reach AP1: Analysis Point

Inflow=0.12 cfs 1,266 cf
Outflow=0.12 cfs 1,266 cf

Reach AP2: Analysis Point

Inflow=0.11 cfs 1,196 cf
Outflow=0.11 cfs 1,196 cf

Reach AP3: Analysis Point

Inflow=0.10 cfs 1,100 cf
Outflow=0.10 cfs 1,100 cf

Total Runoff Area = 75,340 sf Runoff Volume = 3,562 cf Average Runoff Depth = 0.57"
100.00% Pervious = 75,340 sf 0.00% Impervious = 0 sf

Existing Conditions

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Type III 24-hr 100 Year Rainfall=8.60"

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Summary for Subcatchment E1: Analysis Area #1

Runoff = 0.12 cfs @ 12.47 hrs, Volume= 1,266 cf, Depth= 0.57"
Routed to Reach AP1 : Analysis Point

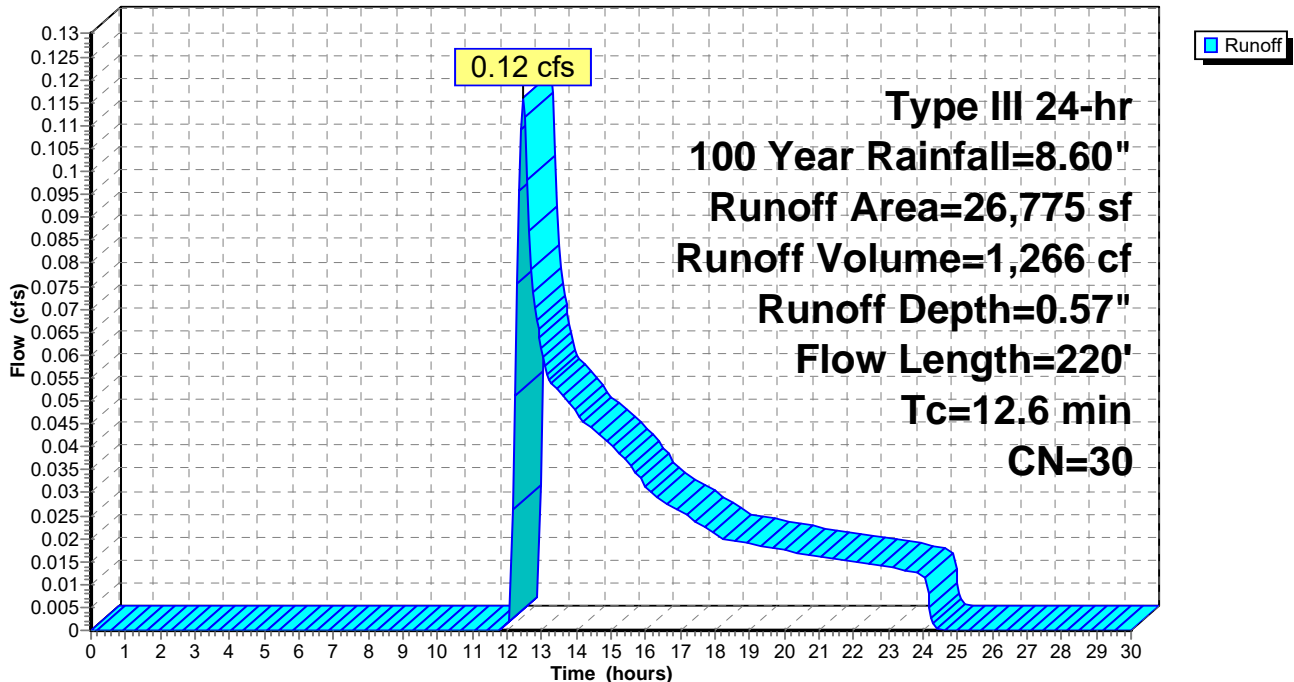
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 Year Rainfall=8.60"

Area (sf)	CN	Description
26,775	30	Woods, Good, HSG A
26,775		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	85	0.2350	0.40		Lag/CN Method,
1.9	25	0.1200	0.22		Lag/CN Method,
3.5	35	0.0570	0.16		Lag/CN Method,
3.7	75	0.1730	0.33		Lag/CN Method,
12.6	220	Total			

Subcatchment E1: Analysis Area #1

Hydrograph



Existing Conditions

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100 Grist Mill Road, Simsbury
Type III 24-hr 100 Year Rainfall=8.60"

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Summary for Subcatchment E2: Analysis Area #2

Runoff = 0.11 cfs @ 12.46 hrs, Volume= 1,196 cf, Depth= 0.57"
Routed to Reach AP2 : Analysis Point

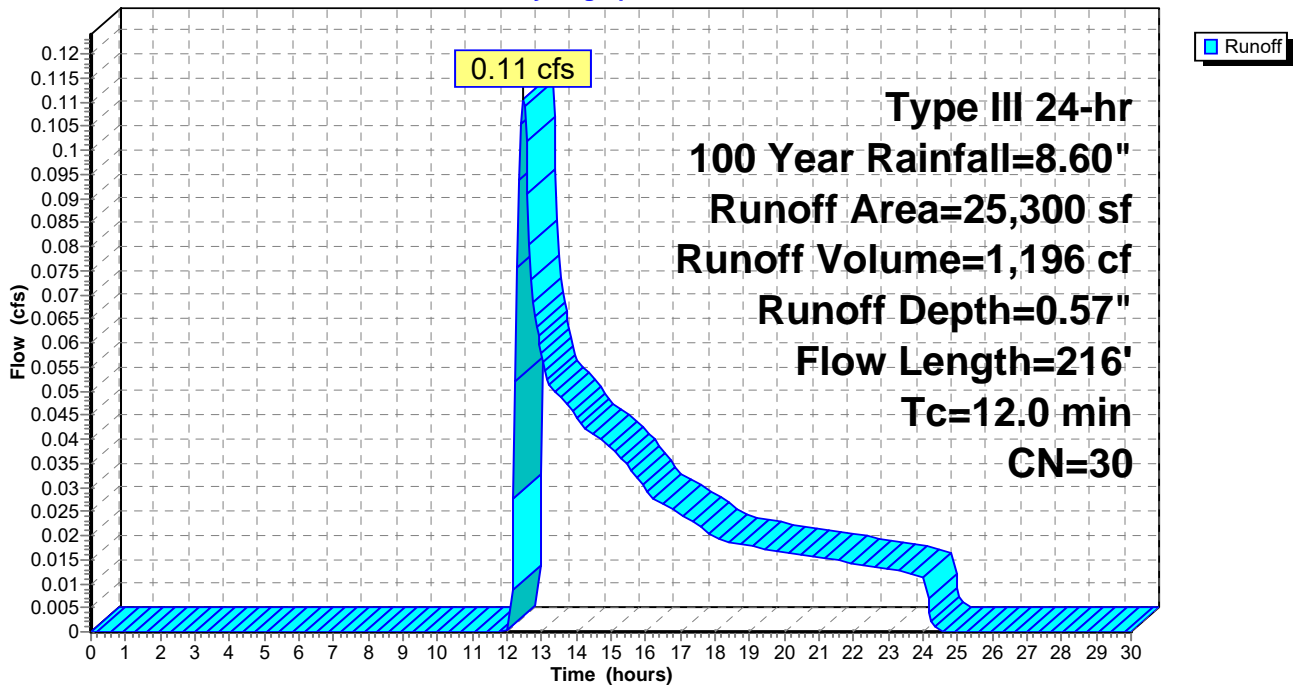
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 Year Rainfall=8.60"

Area (sf)	CN	Description
25,300	30	Woods, Good, HSG A
25,300		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	116	0.0950	0.27		Lag/CN Method,
1.9	60	0.4670	0.53		Lag/CN Method,
3.0	40	0.1000	0.22		Lag/CN Method,
12.0	216	Total			

Subcatchment E2: Analysis Area #2

Hydrograph



Existing Conditions

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Type III 24-hr 100 Year Rainfall=8.60"

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Summary for Subcatchment E3: Analysis Area #3

Runoff = 0.10 cfs @ 12.51 hrs, Volume= 1,100 cf, Depth= 0.57"
Routed to Reach AP3 : Analysis Point

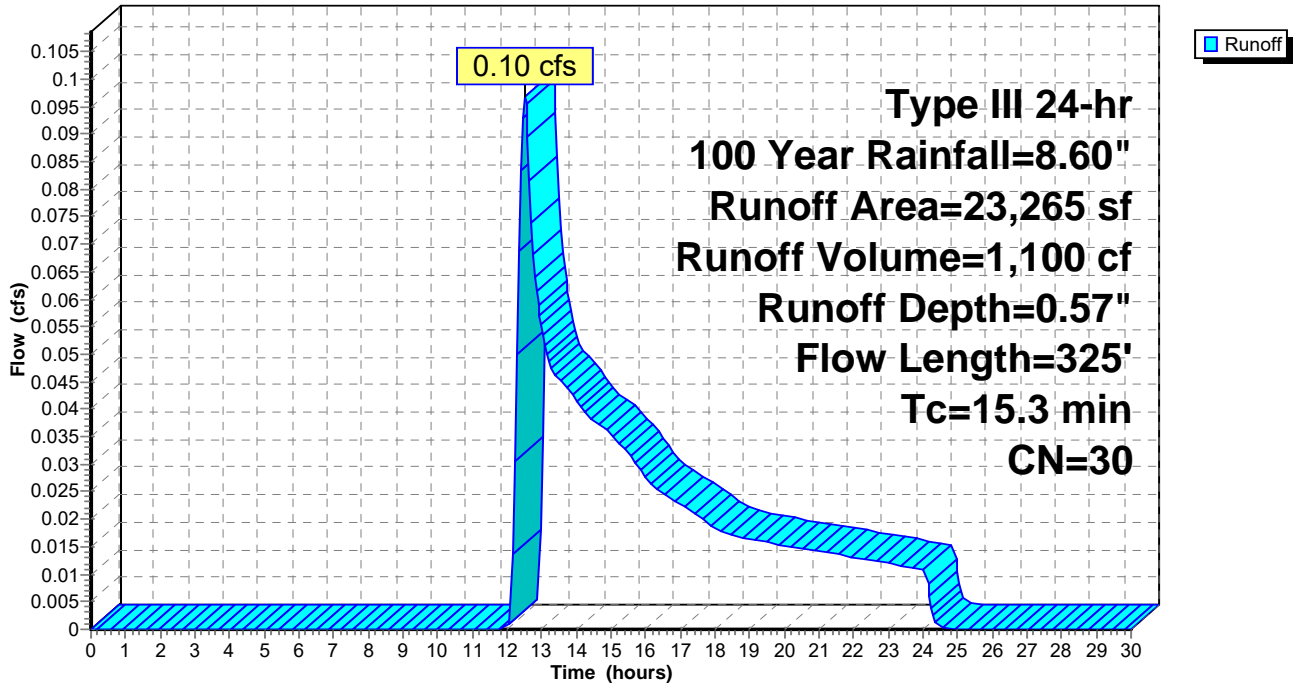
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 Year Rainfall=8.60"

Area (sf)	CN	Description
23,265	30	Woods, Good, HSG A
23,265		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	280	0.2890	0.56		Lag/CN Method,
7.0	45	0.0220	0.11		Lag/CN Method,
15.3	325	Total			

Subcatchment E3: Analysis Area #3

Hydrograph



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Type III 24-hr 100 Year Rainfall=8.60"

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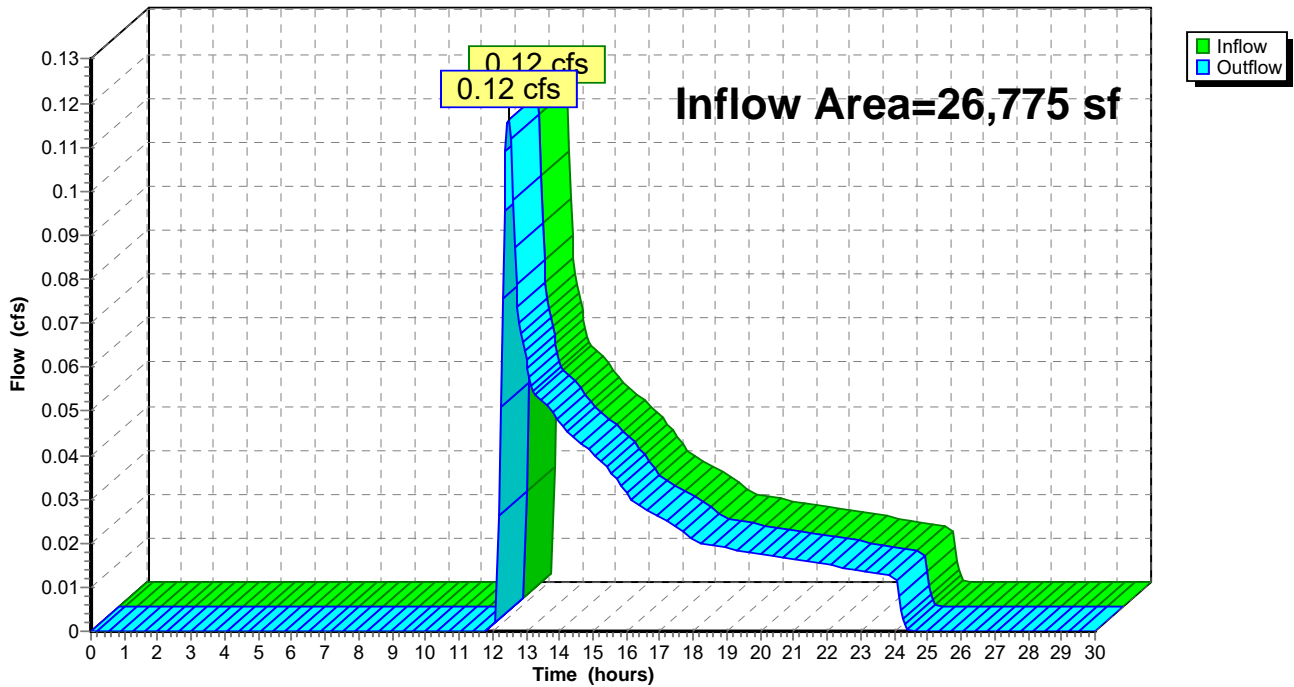
Summary for Reach AP1: Analysis Point

Inflow Area = 26,775 sf, 0.00% Impervious, Inflow Depth = 0.57" for 100 Year event
Inflow = 0.12 cfs @ 12.47 hrs, Volume= 1,266 cf
Outflow = 0.12 cfs @ 12.47 hrs, Volume= 1,266 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach AP1: Analysis Point

Hydrograph



Existing Conditions

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Type III 24-hr 100 Year Rainfall=8.60"

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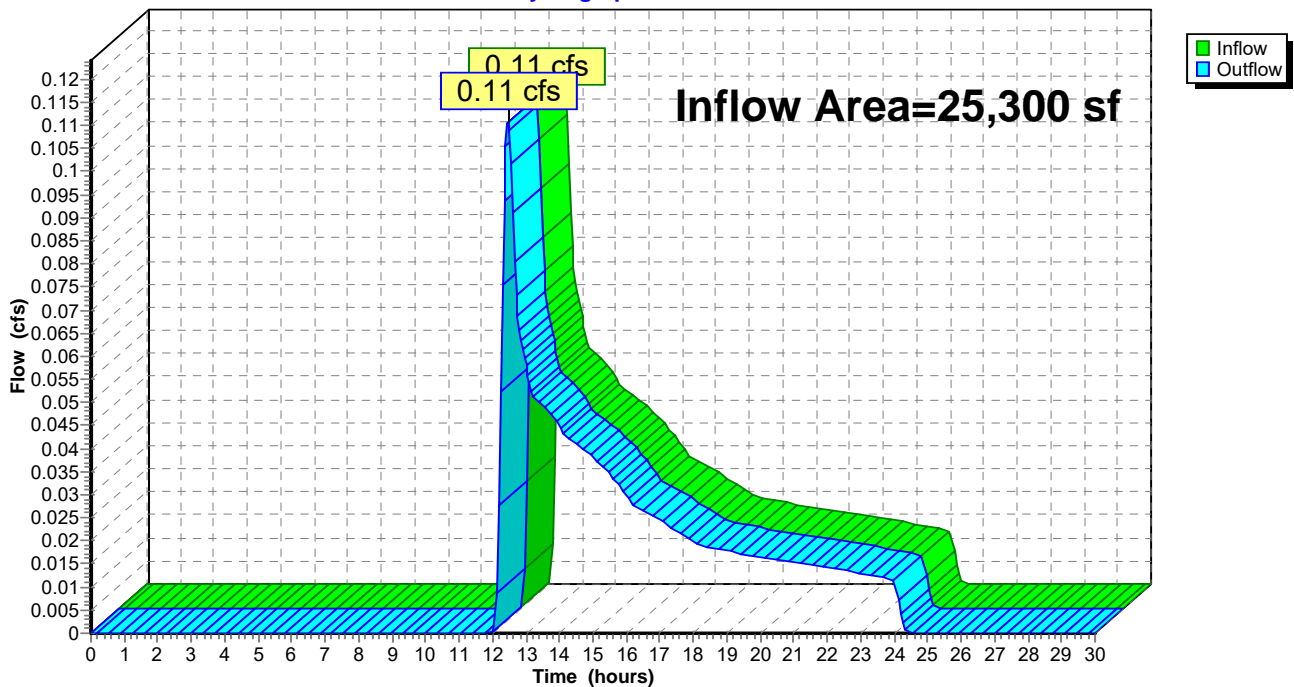
Summary for Reach AP2: Analysis Point

Inflow Area = 25,300 sf, 0.00% Impervious, Inflow Depth = 0.57" for 100 Year event
Inflow = 0.11 cfs @ 12.46 hrs, Volume= 1,196 cf
Outflow = 0.11 cfs @ 12.46 hrs, Volume= 1,196 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach AP2: Analysis Point

Hydrograph



Existing Conditions

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Type III 24-hr 100 Year Rainfall=8.60"

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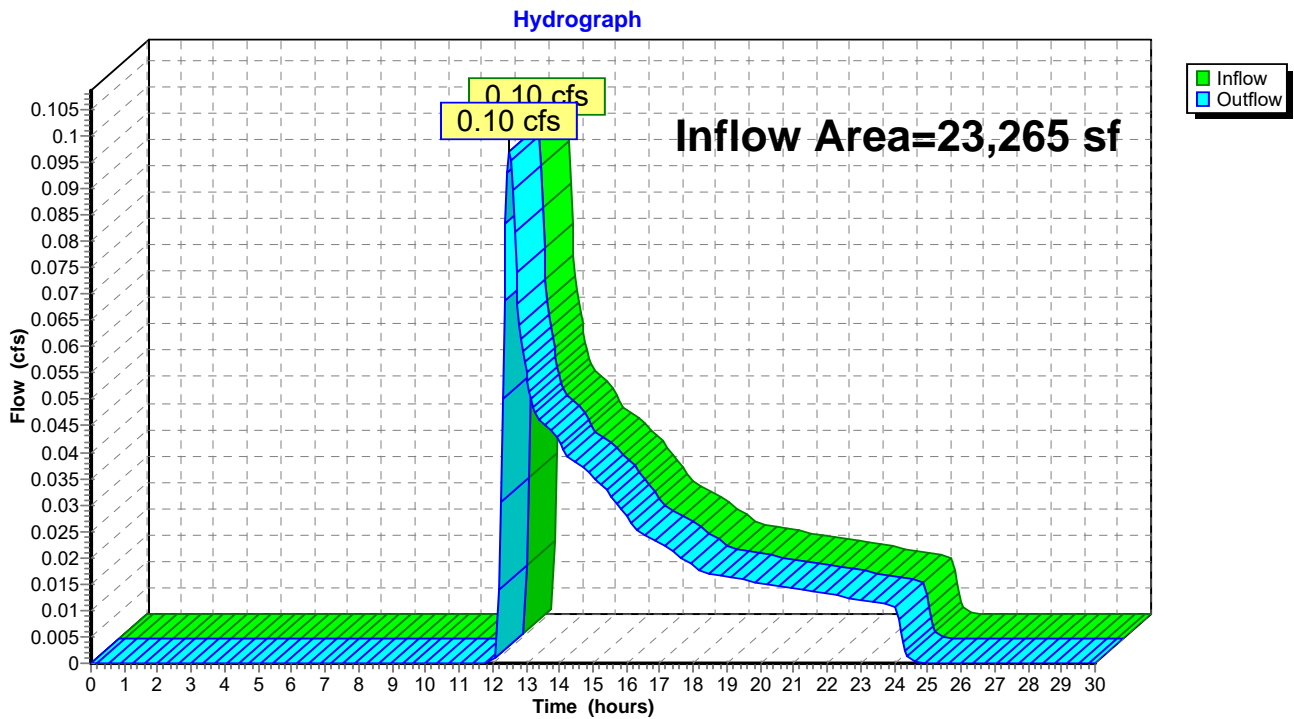
Page 50

Summary for Reach AP3: Analysis Point

Inflow Area = 23,265 sf, 0.00% Impervious, Inflow Depth = 0.57" for 100 Year event
Inflow = 0.10 cfs @ 12.51 hrs, Volume= 1,100 cf
Outflow = 0.10 cfs @ 12.51 hrs, Volume= 1,100 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach AP3: Analysis Point



Existing Conditions

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Events for Subcatchment E1: Analysis Area #1

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1 Year	2.65	0.00	0	0.00
2 Year	3.33	0.00	0	0.00
5 Year	4.45	0.00	0	0.00
10 Year	5.37	0.00	46	0.02
25 Year	6.64	0.01	343	0.15
50 Year	7.57	0.04	717	0.32
100 Year	8.60	0.12	1,266	0.57

Existing Conditions

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Events for Subcatchment E2: Analysis Area #2

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1 Year	2.65	0.00	0	0.00
2 Year	3.33	0.00	0	0.00
5 Year	4.45	0.00	0	0.00
10 Year	5.37	0.00	43	0.02
25 Year	6.64	0.01	324	0.15
50 Year	7.57	0.03	677	0.32
100 Year	8.60	0.11	1,196	0.57

Existing Conditions

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Events for Subcatchment E3: Analysis Area #3

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1 Year	2.65	0.00	0	0.00
2 Year	3.33	0.00	0	0.00
5 Year	4.45	0.00	0	0.00
10 Year	5.37	0.00	40	0.02
25 Year	6.64	0.01	298	0.15
50 Year	7.57	0.03	623	0.32
100 Year	8.60	0.10	1,100	0.57

Existing Conditions

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Events for Reach AP1: Analysis Point

Event	Inflow (cfs)	Outflow (cfs)	Elevation (feet)	Storage (cubic-feet)
1 Year	0.00	0.00	0.00	0
2 Year	0.00	0.00	0.00	0
5 Year	0.00	0.00	0.00	0
10 Year	0.00	0.00	0.00	0
25 Year	0.01	0.01	0.00	0
50 Year	0.04	0.04	0.00	0
100 Year	0.12	0.12	0.00	0

Existing Conditions

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Events for Reach AP2: Analysis Point

Event	Inflow (cfs)	Outflow (cfs)	Elevation (feet)	Storage (cubic-feet)
1 Year	0.00	0.00	0.00	0
2 Year	0.00	0.00	0.00	0
5 Year	0.00	0.00	0.00	0
10 Year	0.00	0.00	0.00	0
25 Year	0.01	0.01	0.00	0
50 Year	0.03	0.03	0.00	0
100 Year	0.11	0.11	0.00	0

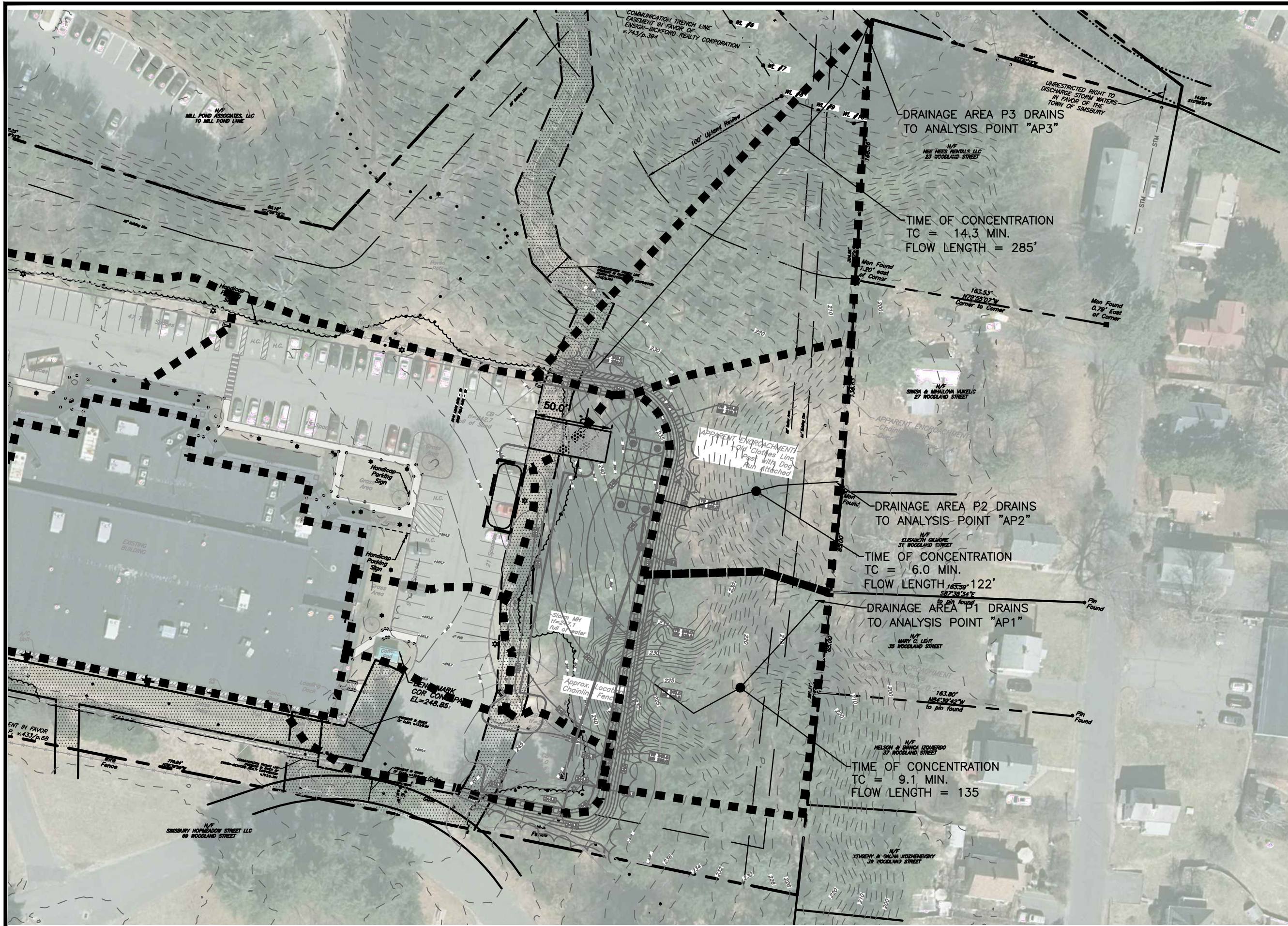
Existing Conditions

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Events for Reach AP3: Analysis Point

Event	Inflow (cfs)	Outflow (cfs)	Elevation (feet)	Storage (cubic-feet)
1 Year	0.00	0.00	0.00	0
2 Year	0.00	0.00	0.00	0
5 Year	0.00	0.00	0.00	0
10 Year	0.00	0.00	0.00	0
25 Year	0.01	0.01	0.00	0
50 Year	0.03	0.03	0.00	0
100 Year	0.10	0.10	0.00	0



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 26 BROADWAY NORTH AVENUE, CT 06473; TEL: 203.239.4217 - WWW.GODFREYHOFFMAN.COM
 1783 FARMINGTON AVENUE, UNIONVILLE, CT 06086; TEL: 860.673.0444 - WWW.HODGELL.CC.COM

PROJECT:
 PROPOSED PARKING
 LOT EXPANSION

100 GRIST MILL
 ROAD
 SIMSBURY, CT

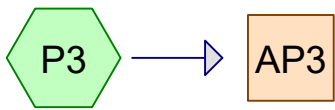
PREPARED FOR:
 ENSIGN-BICKFORD
 AEROSPACE &
 DEFENSE CO.

640 HOPMEADOW ST.
 SIMSBURY, CT

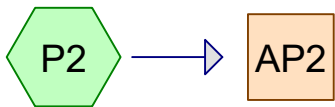
**PROPOSED
 DRAINAGE
 AREAS**

DRAWN BY: MP/CB
CHECKED BY: MP
SCALE: 1"=80'
PROJECT: 113-65
DATE: 4/27/2023

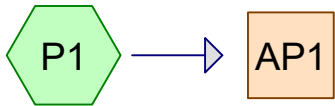
DA-PR



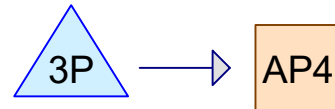
Analysis Area #3 Analysis Point



Analysis Area #2 Analysis Point



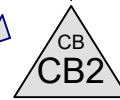
Analysis Area #1 Analysis Point



Retain-it System Analysis Point



Parking & Landscaping

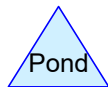
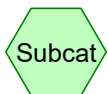


Parking & Landscaping

Double CB



Reset CB w/C-L



Proposed Parking & Drainage

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100 Grist Mill Road, Simsbury
Type III 24-hr 1 Year Rainfall=2.65"

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Page 2

Time span=0.00-30.00 hrs, dt=0.20 hrs, 151 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment P1: Analysis Area #1 Runoff Area=18,385 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=135' Tc=9.1 min CN=30 Runoff=0.00 cfs 0 cf

Subcatchment P2: Analysis Area #2 Runoff Area=16,316 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=122' Tc=6.0 min CN=30 Runoff=0.00 cfs 0 cf

Subcatchment P3: Analysis Area #3 Runoff Area=22,406 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=285' Tc=14.3 min CN=30 Runoff=0.00 cfs 0 cf

Subcatchment P4: Parking & Landscaping Runoff Area=15,000 sf 71.75% Impervious Runoff Depth=1.23"
Tc=6.0 min CN=84 Runoff=0.34 cfs 1,542 cf

Subcatchment P5: Parking & Landscaping Runoff Area=8,753 sf 64.15% Impervious Runoff Depth=0.99"
Tc=6.0 min CN=80 Runoff=0.16 cfs 725 cf

Reach AP1: Analysis Point Inflow=0.00 cfs 0 cf
Outflow=0.00 cfs 0 cf

Reach AP2: Analysis Point Inflow=0.00 cfs 0 cf
Outflow=0.00 cfs 0 cf

Reach AP3: Analysis Point Inflow=0.00 cfs 0 cf
Outflow=0.00 cfs 0 cf

Reach AP4: Analysis Point

Pond 3P: Retain-it System Peak Elev=235.54' Storage=33 cf Inflow=0.50 cfs 2,267 cf
Outflow=0.49 cfs 2,267 cf

Pond CB1: Reset CB w/C-L Peak Elev=240.68' Inflow=0.16 cfs 725 cf
15.0" Round Culvert n=0.012 L=150.0' S=0.0200 '/' Outflow=0.16 cfs 725 cf

Pond CB2: Double CB Peak Elev=237.83' Inflow=0.50 cfs 2,267 cf
15.0" Round Culvert n=0.012 L=15.0' S=0.0200 '/' Outflow=0.50 cfs 2,267 cf

Total Runoff Area = 80,860 sf Runoff Volume = 2,267 cf Average Runoff Depth = 0.34"
79.75% Pervious = 64,482 sf 20.25% Impervious = 16,378 sf

Proposed Parking & Drainage

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Type III 24-hr 1 Year Rainfall=2.65"

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Summary for Subcatchment P1: Analysis Area #1

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Reach AP1 : Analysis Point

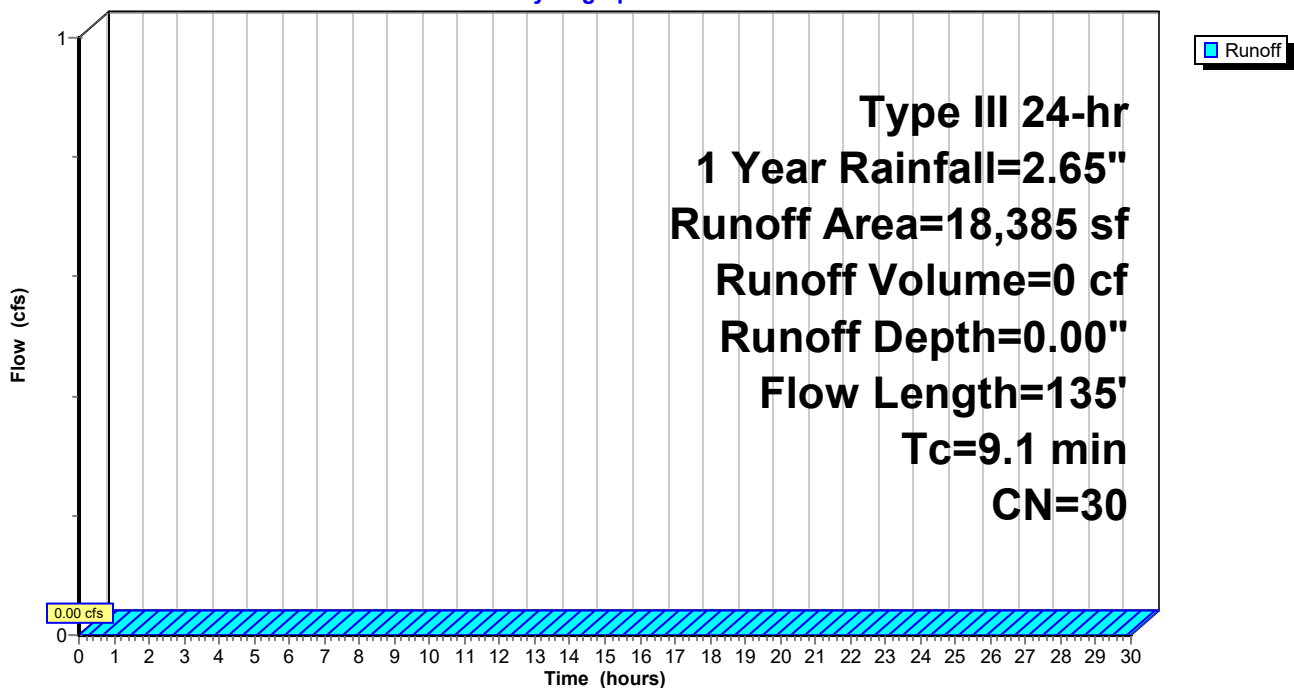
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 1 Year Rainfall=2.65"

Area (sf)	CN	Description
18,385	30	Woods, Good, HSG A
18,385		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	25	0.1200	0.22		Lag/CN Method,
3.5	35	0.0570	0.16		Lag/CN Method,
3.7	75	0.1730	0.33		Lag/CN Method,
9.1	135	Total			

Subcatchment P1: Analysis Area #1

Hydrograph



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Summary for Subcatchment P2: Analysis Area #2

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
 Routed to Reach AP2 : Analysis Point

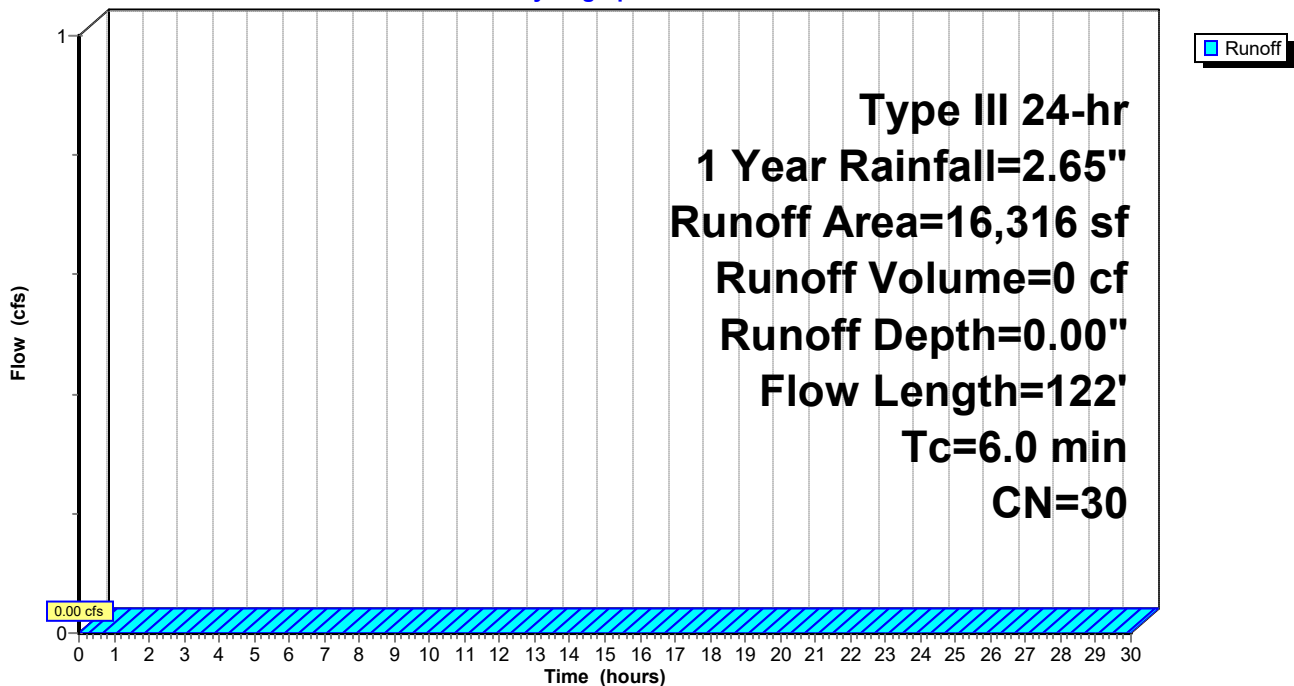
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
 Type III 24-hr 1 Year Rainfall=2.65"

Area (sf)	CN	Description
16,316	30	Woods, Good, HSG A
16,316		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	22	0.3180	0.35		Lag/CN Method,
1.9	60	0.4670	0.53		Lag/CN Method,
3.0	40	0.1000	0.22		Lag/CN Method,
5.9	122	Total, Increased to minimum Tc = 6.0 min			

Subcatchment P2: Analysis Area #2

Hydrograph



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Summary for Subcatchment P3: Analysis Area #3

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Reach AP3 : Analysis Point

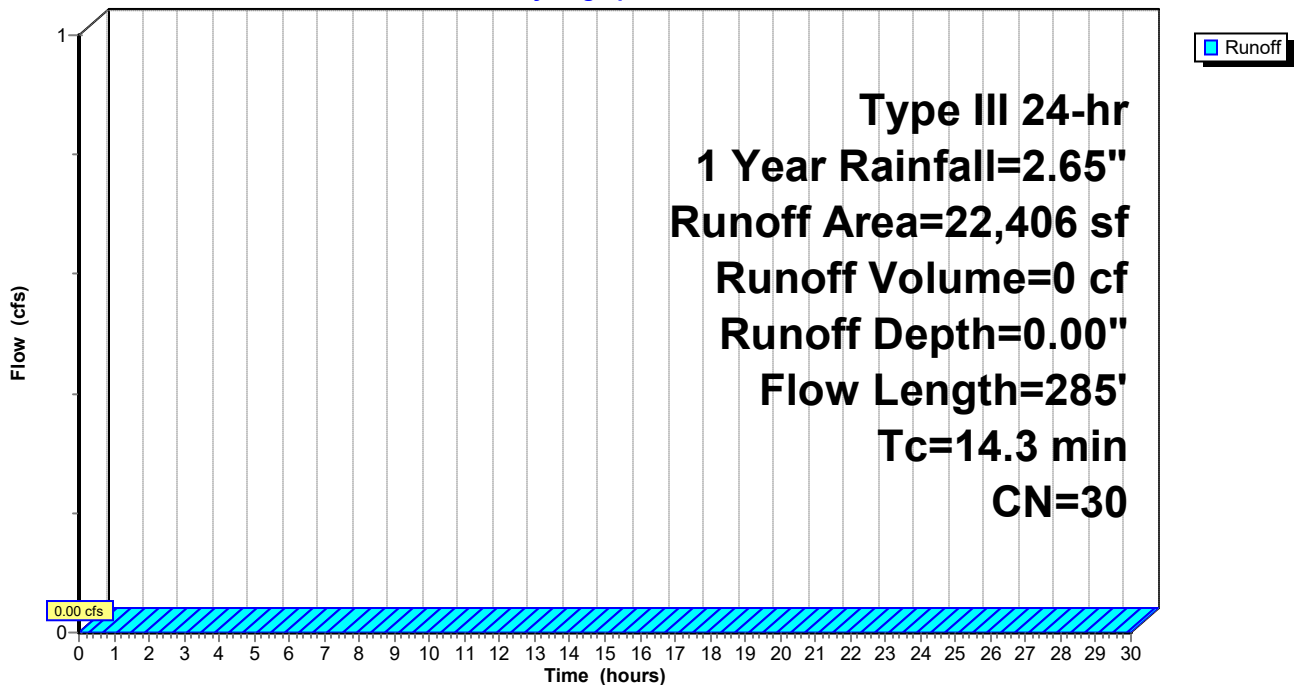
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 1 Year Rainfall=2.65"

Area (sf)	CN	Description
22,406	30	Woods, Good, HSG A
22,406		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	240	0.2890	0.55		Lag/CN Method,
7.0	45	0.0220	0.11		Lag/CN Method, 45
14.3	285	Total			

Subcatchment P3: Analysis Area #3

Hydrograph



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Summary for Subcatchment P4: Parking & Landscaping

Runoff = 0.34 cfs @ 12.13 hrs, Volume= 1,542 cf, Depth= 1.23"
Routed to Pond CB2 : Double CB

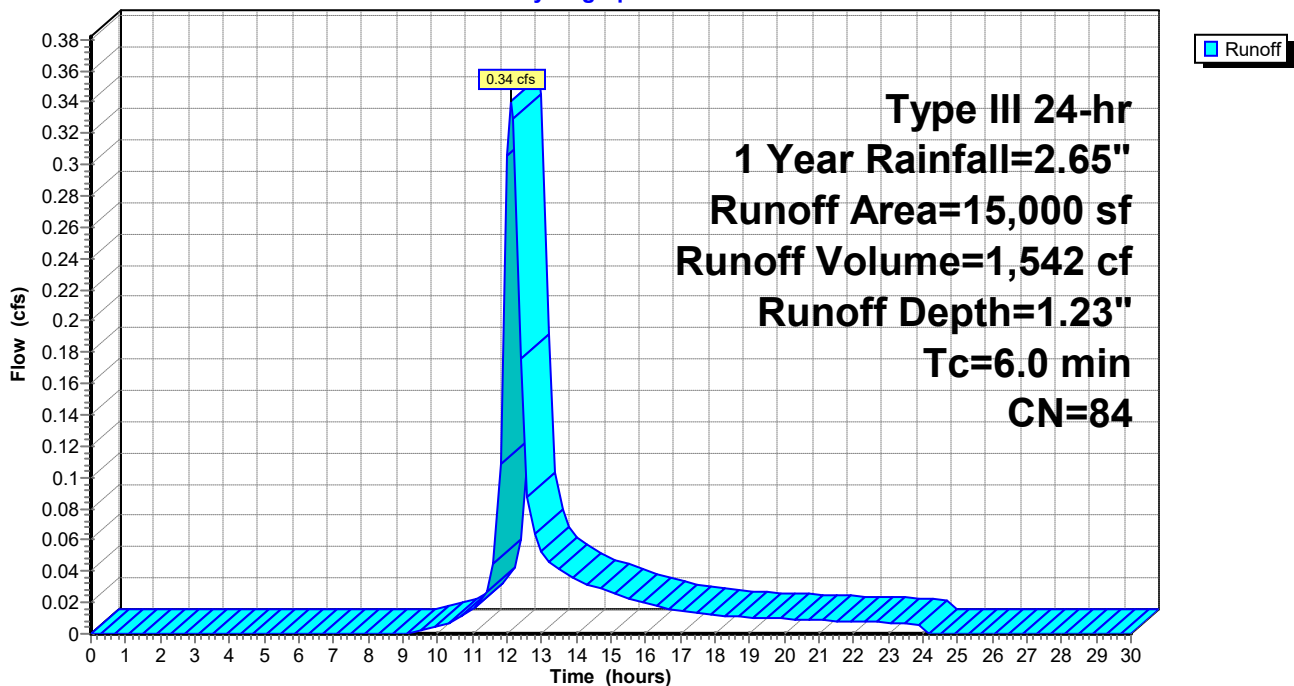
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 1 Year Rainfall=2.65"

Area (sf)	CN	Description
10,763	98	Paved roads w/curbs & sewers, HSG A
4,237	49	50-75% Grass cover, Fair, HSG A
15,000	84	Weighted Average
4,237		28.25% Pervious Area
10,763		71.75% Impervious Area

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

Subcatchment P4: Parking & Landscaping

Hydrograph



Proposed Parking & Drainage

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Summary for Subcatchment P5: Parking & Landscaping

Runoff = 0.16 cfs @ 12.14 hrs, Volume= 725 cf, Depth= 0.99"
Routed to Pond CB1 : Reset CB w/C-L

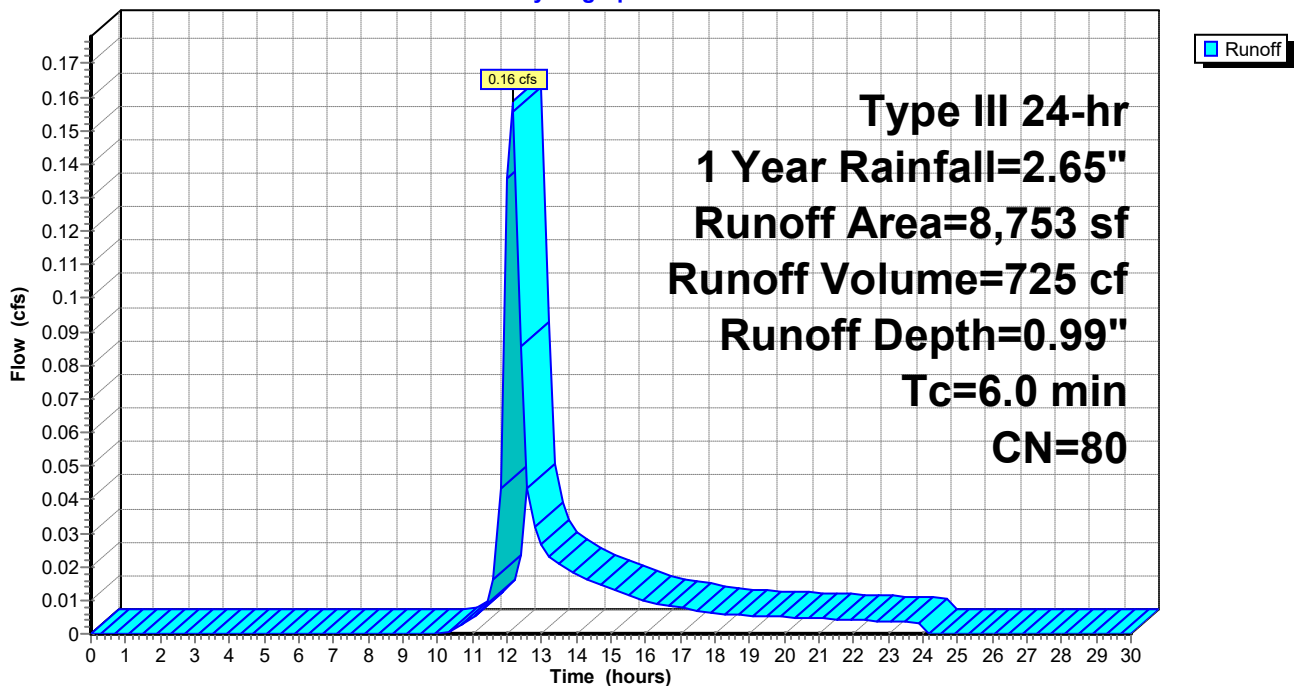
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 1 Year Rainfall=2.65"

Area (sf)	CN	Description
5,615	98	Paved parking, HSG A
3,138	49	50-75% Grass cover, Fair, HSG A
8,753	80	Weighted Average
3,138		35.85% Pervious Area
5,615		64.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Tc-5S

Subcatchment P5: Parking & Landscaping

Hydrograph



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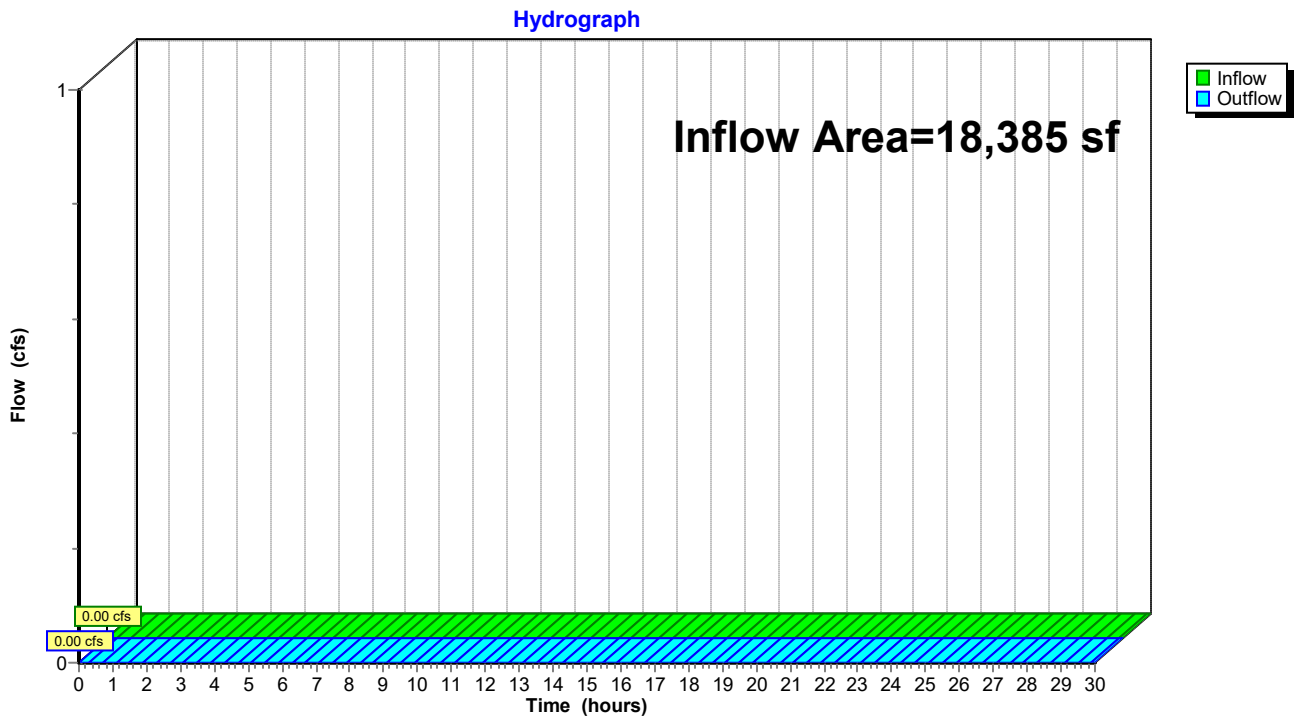
Page 8

Summary for Reach AP1: Analysis Point

Inflow Area = 18,385 sf, 0.00% Impervious, Inflow Depth = 0.00" for 1 Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Reach AP1: Analysis Point



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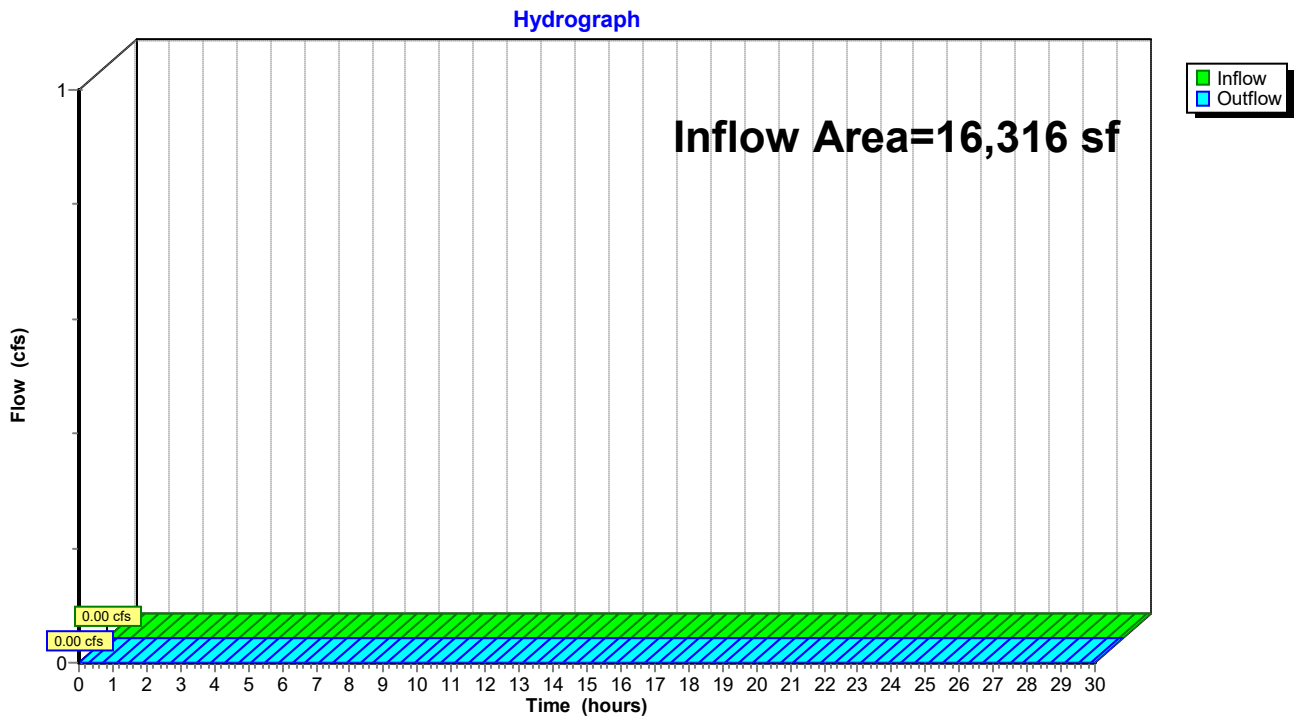
Page 9

Summary for Reach AP2: Analysis Point

Inflow Area = 16,316 sf, 0.00% Impervious, Inflow Depth = 0.00" for 1 Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Reach AP2: Analysis Point



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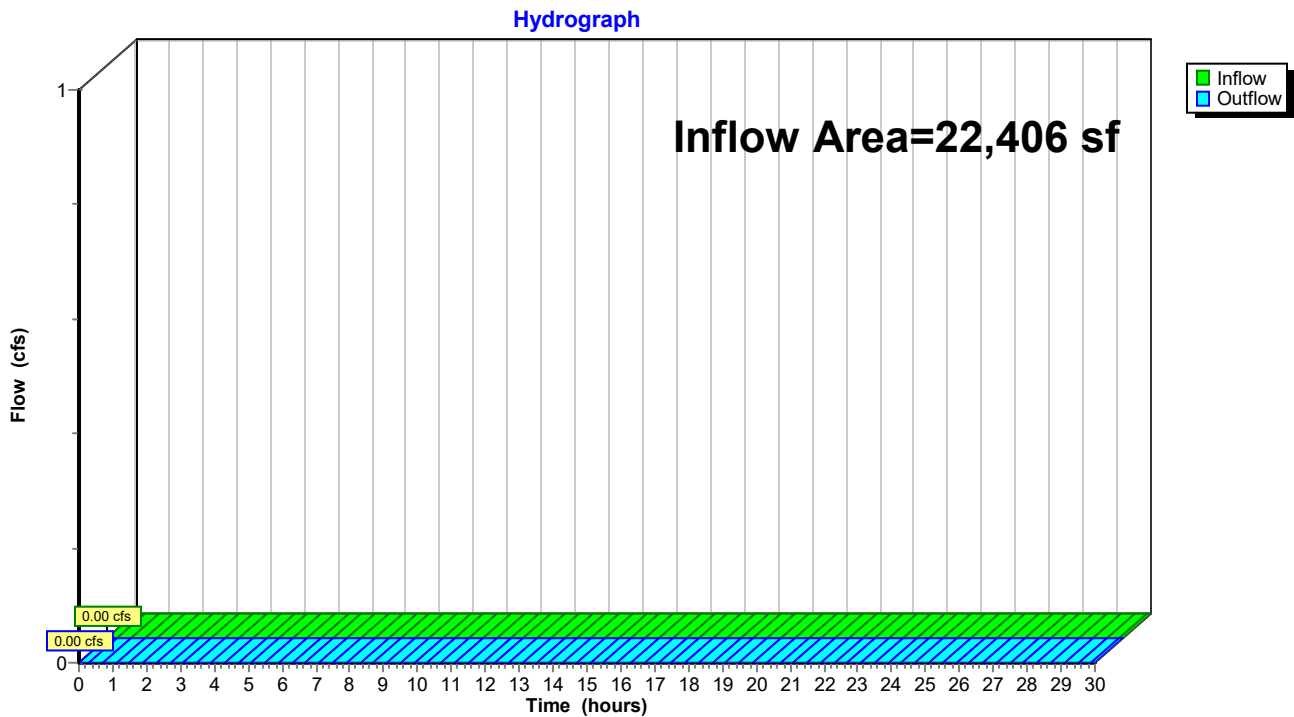
Page 10

Summary for Reach AP3: Analysis Point

Inflow Area = 22,406 sf, 0.00% Impervious, Inflow Depth = 0.00" for 1 Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Reach AP3: Analysis Point



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Summary for Reach AP4: Analysis Point

Inflow Area = 23,753 sf, 68.95% Impervious, Inflow Depth = 0.00" for 1 Year event

Routing by Stor-Ind method

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Summary for Pond 3P: Retain-it System

Inflow Area = 23,753 sf, 68.95% Impervious, Inflow Depth = 1.15" for 1 Year event
Inflow = 0.50 cfs @ 12.13 hrs, Volume= 2,267 cf
Outflow = 0.49 cfs @ 12.15 hrs, Volume= 2,267 cf, Atten= 2%, Lag= 1.1 min
Discarded = 0.49 cfs @ 12.15 hrs, Volume= 2,267 cf

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs / 3
Peak Elev= 235.54' @ 12.15 hrs Surf.Area= 960 sf Storage= 33 cf

Plug-Flow detention time= 1.1 min calculated for 2,252 cf (99% of inflow)
Center-of-Mass det. time= 1.1 min (844.2 - 843.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	235.50'	0 cf	24.00'W x 40.00'L x 5.67'H Field A 5,440 cf Overall - 5,440 cf Embedded = 0 cf x 10.0% Voids
#2A	235.50'	4,203 cf	retain_it retain_it 5.0' x 15 Inside #1 Inside= 84.0"W x 60.0"H => 36.41 sf x 8.00'L = 291.3 cf Outside= 96.0"W x 68.0"H => 45.33 sf x 8.00'L = 362.7 cf 3 Rows adjusted for 166.2 cf perimeter wall
		4,203 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	235.50'	32.000 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.71 cfs @ 12.15 hrs HW=235.54' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.71 cfs)

Proposed Parking & Drainage

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Pond 3P: Retain-it System - Chamber Wizard Field A

Chamber Model = retain_it retain_it 5.0' (retain-it®)

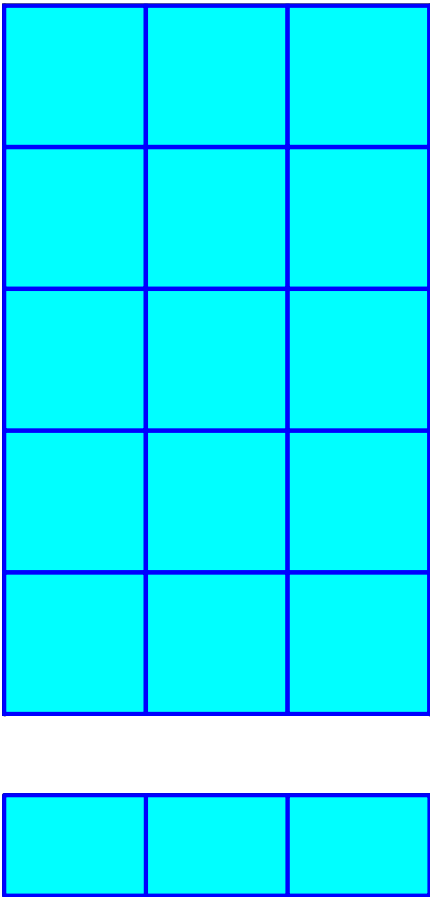
Inside= 84.0"W x 60.0"H => 36.41 sf x 8.00'L = 291.3 cf
Outside= 96.0"W x 68.0"H => 45.33 sf x 8.00'L = 362.7 cf
3 Rows adjusted for 166.2 cf perimeter wall

5 Chambers/Row x 8.00' Long = 40.00' Row Length
3 Rows x 96.0" Wide = 24.00' Base Width
68.0" Chamber Height = 5.67' Field Height

10.4 cf Sidewall x 5 x 2 + 10.4 cf Endwall x 3 x 2 = 166.2 cf Perimeter Wall
15 Chambers x 291.3 cf - 166.2 cf Perimeter wall = 4,203.0 cf Chamber Storage
15 Chambers x 362.7 cf = 5,440.0 cf Displacement

Chamber Storage = 4,203.0 cf = 0.096 af
Overall Storage Efficiency = 77.3%
Overall System Size = 40.00' x 24.00' x 5.67'

15 Chambers
201.5 cy Field



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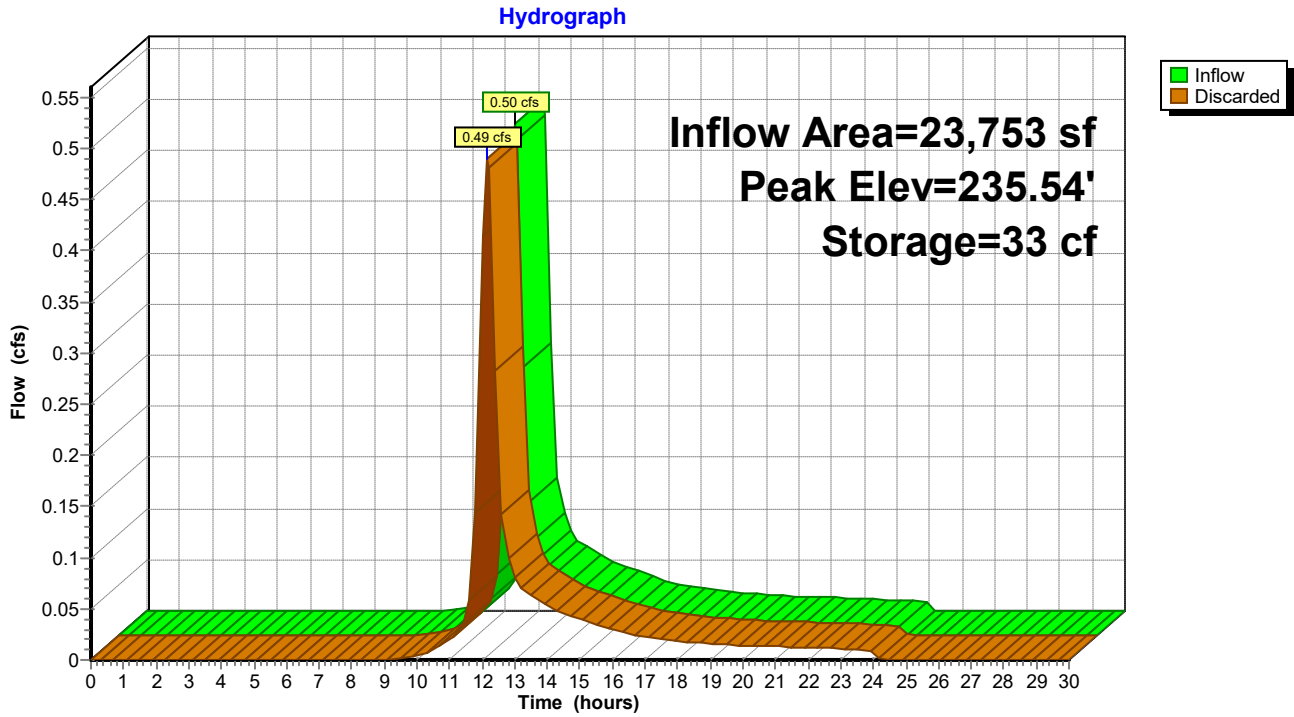
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Pond 3P: Retain-it System



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Summary for Pond CB1: Reset CB w/C-L

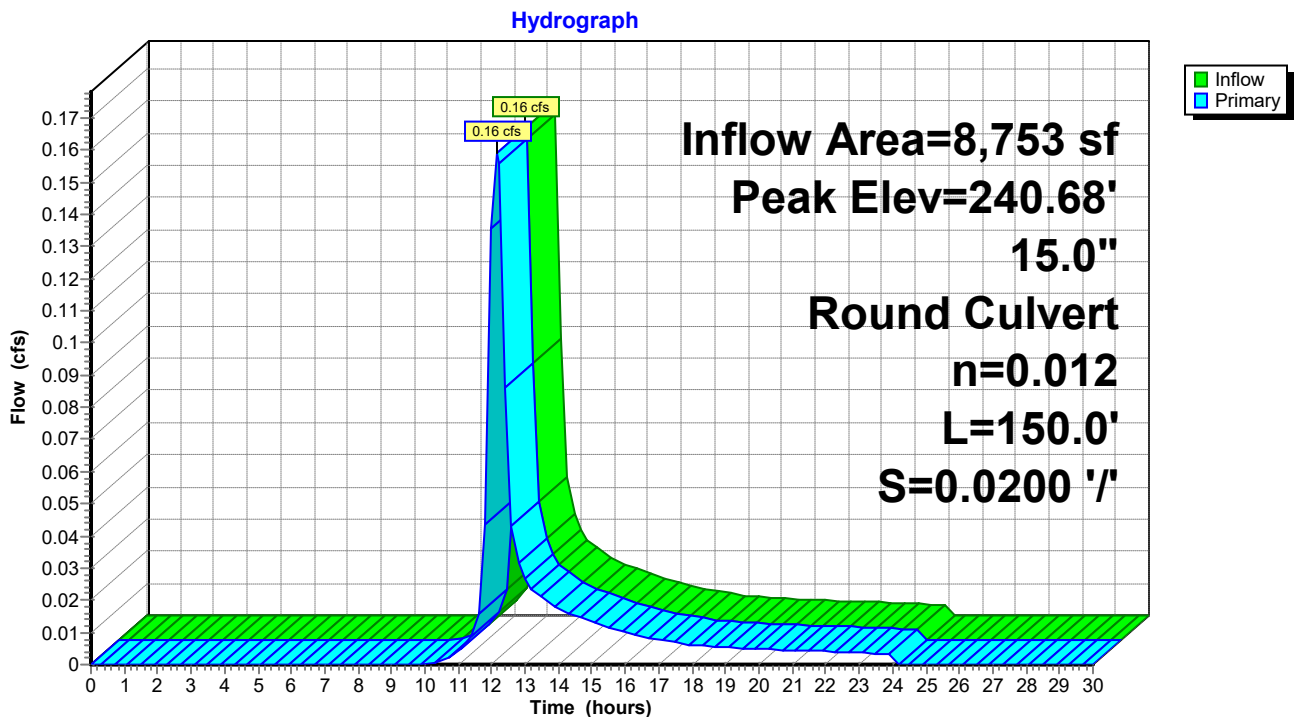
Inflow Area = 8,753 sf, 64.15% Impervious, Inflow Depth = 0.99" for 1 Year event
Inflow = 0.16 cfs @ 12.14 hrs, Volume= 725 cf
Outflow = 0.16 cfs @ 12.14 hrs, Volume= 725 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.16 cfs @ 12.14 hrs, Volume= 725 cf
Routed to Pond CB2 : Double CB

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Peak Elev= 240.68' @ 12.14 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	240.50'	15.0" Round Culvert L= 150.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 240.50' / 237.50' S= 0.0200 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf

Primary OutFlow Max=0.15 cfs @ 12.14 hrs HW=240.68' (Free Discharge)
↑1=Culvert (Inlet Controls 0.15 cfs @ 1.43 fps)

Pond CB1: Reset CB w/C-L



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Summary for Pond CB2: Double CB

Inflow Area = 23,753 sf, 68.95% Impervious, Inflow Depth = 1.15" for 1 Year event
Inflow = 0.50 cfs @ 12.13 hrs, Volume= 2,267 cf
Outflow = 0.50 cfs @ 12.13 hrs, Volume= 2,267 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.50 cfs @ 12.13 hrs, Volume= 2,267 cf
Routed to Pond 3P : Retain-it System

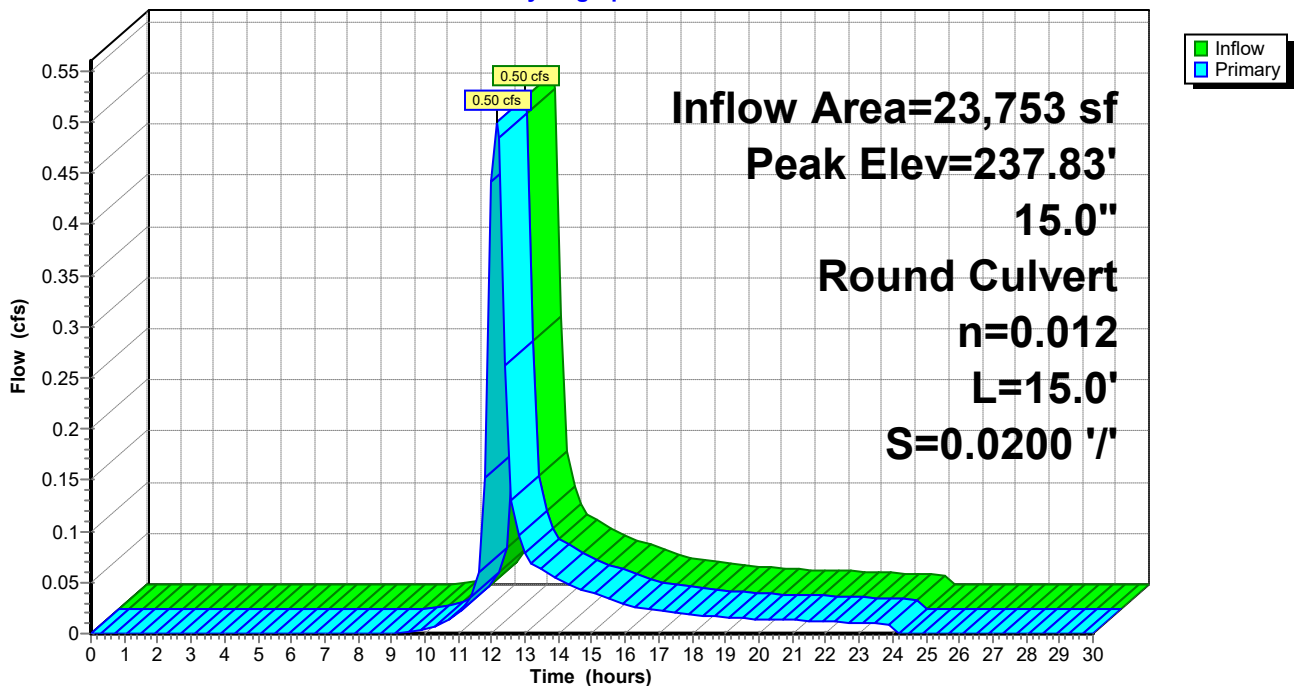
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Peak Elev= 237.83' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	237.50'	15.0" Round Culvert L= 15.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 237.50' / 237.20' S= 0.0200 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf

Primary OutFlow Max=0.47 cfs @ 12.13 hrs HW=237.82' (Free Discharge)
↑1=Culvert (Inlet Controls 0.47 cfs @ 1.92 fps)

Pond CB2: Double CB

Hydrograph



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Time span=0.00-30.00 hrs, dt=0.20 hrs, 151 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment P1: Analysis Area #1	Runoff Area=18,385 sf 0.00% Impervious Flow Length=135' Tc=9.1 min CN=30	Runoff Depth=0.00" Runoff=0.00 cfs 0 cf
Subcatchment P2: Analysis Area #2	Runoff Area=16,316 sf 0.00% Impervious Flow Length=122' Tc=6.0 min CN=30	Runoff Depth=0.00" Runoff=0.00 cfs 0 cf
Subcatchment P3: Analysis Area #3	Runoff Area=22,406 sf 0.00% Impervious Flow Length=285' Tc=14.3 min CN=30	Runoff Depth=0.00" Runoff=0.00 cfs 0 cf
Subcatchment P4: Parking & Landscaping	Runoff Area=15,000 sf 71.75% Impervious Tc=6.0 min CN=84	Runoff Depth=1.79" Runoff=0.49 cfs 2,240 cf
Subcatchment P5: Parking & Landscaping	Runoff Area=8,753 sf 64.15% Impervious Tc=6.0 min CN=80	Runoff Depth=1.50" Runoff=0.24 cfs 1,096 cf
Reach AP1: Analysis Point		Inflow=0.00 cfs 0 cf Outflow=0.00 cfs 0 cf
Reach AP2: Analysis Point		Inflow=0.00 cfs 0 cf Outflow=0.00 cfs 0 cf
Reach AP3: Analysis Point		Inflow=0.00 cfs 0 cf Outflow=0.00 cfs 0 cf
Reach AP4: Analysis Point		
Pond 3P: Retain-it System	Peak Elev=235.56'	Storage=48 cf Inflow=0.74 cfs 3,336 cf Outflow=0.72 cfs 3,336 cf
Pond CB1: Reset CB w/C-L	15.0" Round Culvert n=0.012 L=150.0' S=0.0200 '/'	Peak Elev=240.73' Inflow=0.24 cfs 1,096 cf Outflow=0.24 cfs 1,096 cf
Pond CB2: Double CB	15.0" Round Culvert n=0.012 L=15.0' S=0.0200 '/'	Peak Elev=237.90' Inflow=0.74 cfs 3,336 cf Outflow=0.74 cfs 3,336 cf
Total Runoff Area = 80,860 sf Runoff Volume = 3,336 cf Average Runoff Depth = 0.50"		
79.75% Pervious = 64,482 sf 20.25% Impervious = 16,378 sf		

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Summary for Subcatchment P1: Analysis Area #1

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Reach AP1 : Analysis Point

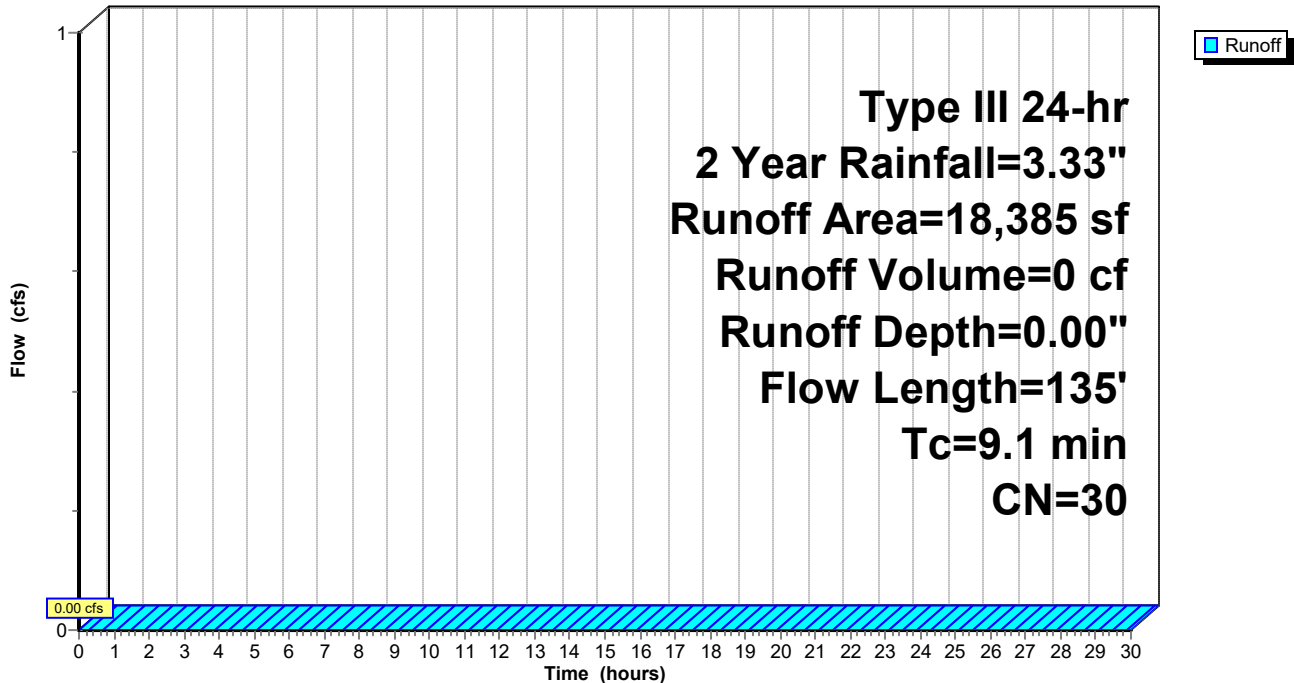
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 2 Year Rainfall=3.33"

Area (sf)	CN	Description
18,385	30	Woods, Good, HSG A
18,385		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	25	0.1200	0.22		Lag/CN Method,
3.5	35	0.0570	0.16		Lag/CN Method,
3.7	75	0.1730	0.33		Lag/CN Method,
9.1	135	Total			

Subcatchment P1: Analysis Area #1

Hydrograph



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Summary for Subcatchment P2: Analysis Area #2

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Reach AP2 : Analysis Point

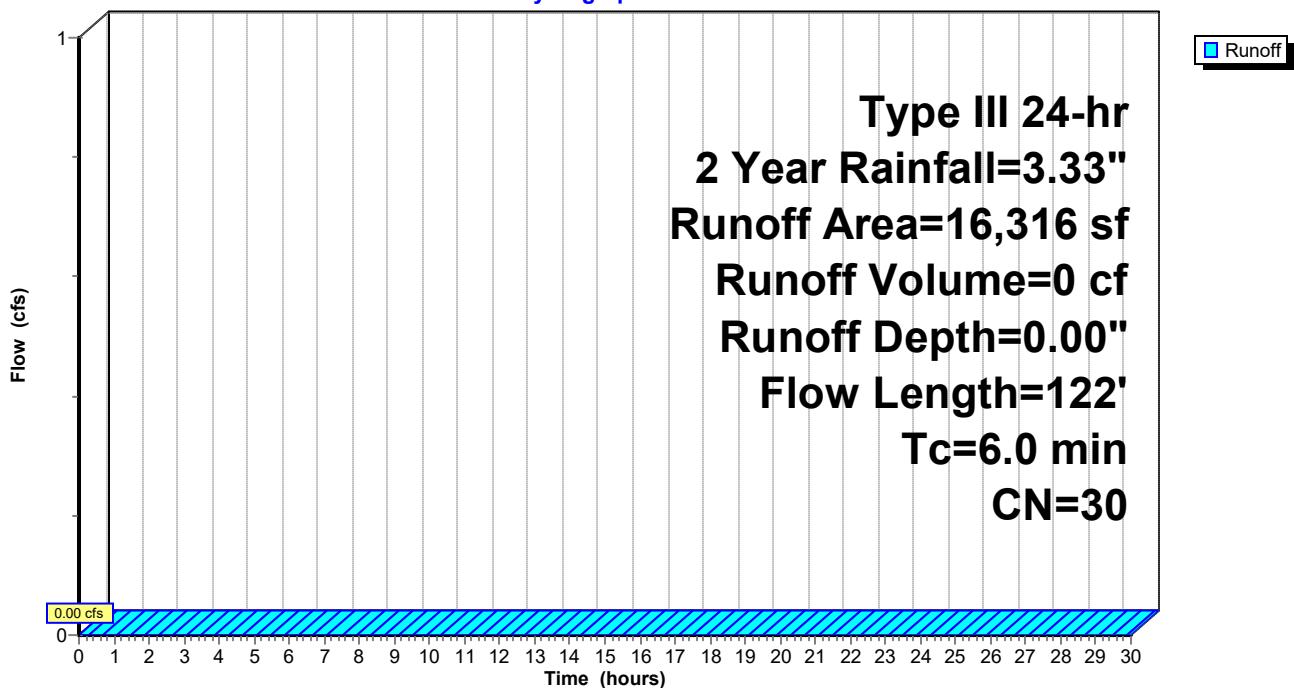
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 2 Year Rainfall=3.33"

Area (sf)	CN	Description
16,316	30	Woods, Good, HSG A
16,316		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	22	0.3180	0.35		Lag/CN Method,
1.9	60	0.4670	0.53		Lag/CN Method,
3.0	40	0.1000	0.22		Lag/CN Method,
5.9	122	Total, Increased to minimum Tc = 6.0 min			

Subcatchment P2: Analysis Area #2

Hydrograph



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Summary for Subcatchment P3: Analysis Area #3

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Reach AP3 : Analysis Point

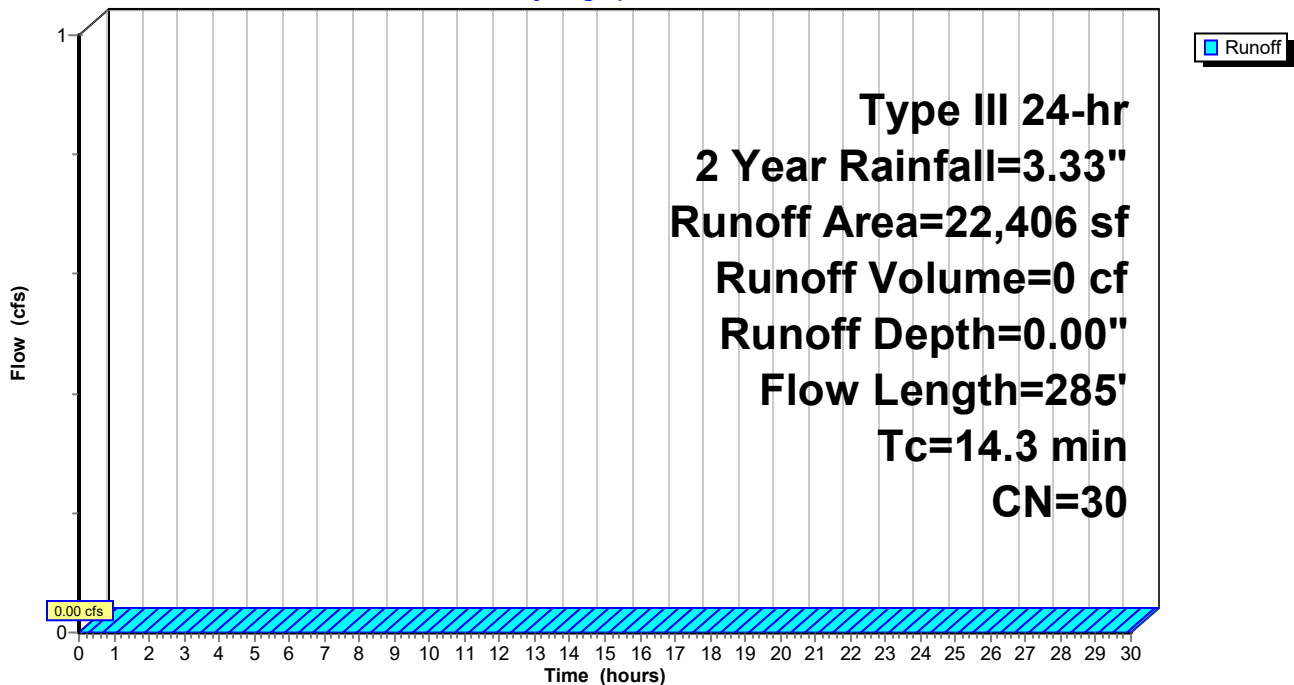
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 2 Year Rainfall=3.33"

Area (sf)	CN	Description
22,406	30	Woods, Good, HSG A
22,406		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	240	0.2890	0.55		Lag/CN Method,
7.0	45	0.0220	0.11		Lag/CN Method, 45
14.3	285	Total			

Subcatchment P3: Analysis Area #3

Hydrograph



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Summary for Subcatchment P4: Parking & Landscaping

Runoff = 0.49 cfs @ 12.11 hrs, Volume= 2,240 cf, Depth= 1.79"
Routed to Pond CB2 : Double CB

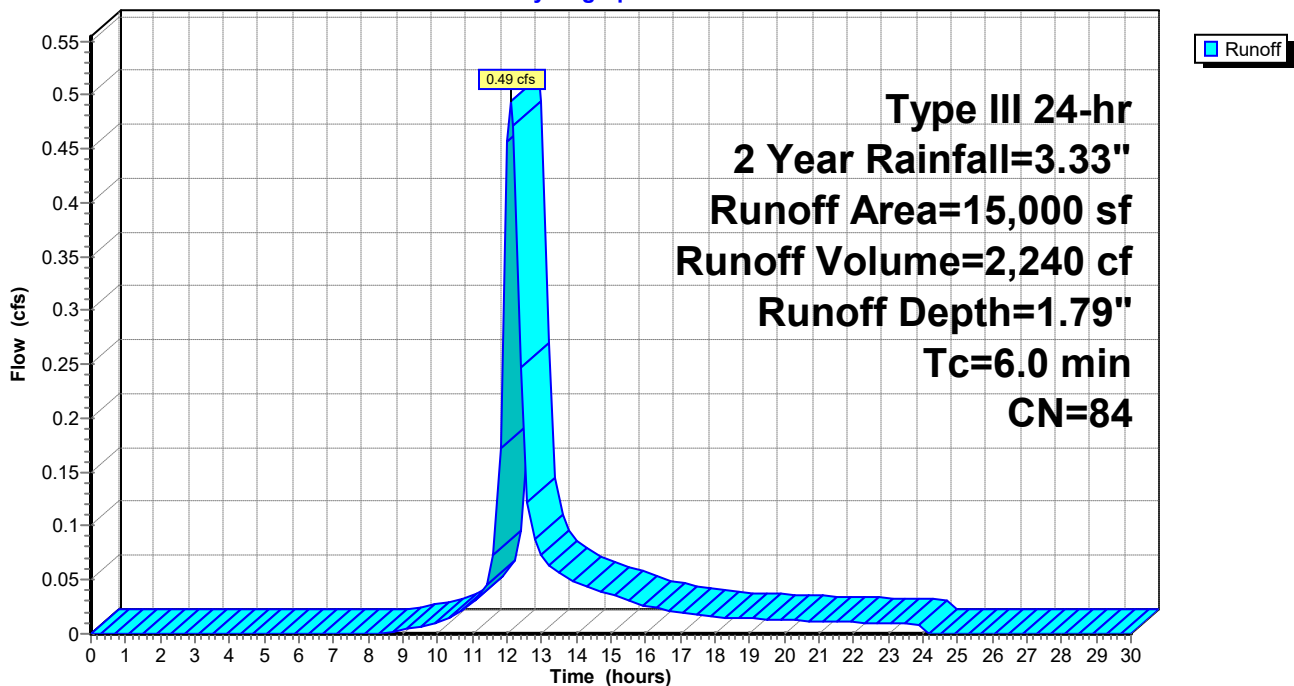
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 2 Year Rainfall=3.33"

Area (sf)	CN	Description
10,763	98	Paved roads w/curbs & sewers, HSG A
4,237	49	50-75% Grass cover, Fair, HSG A
15,000	84	Weighted Average
4,237		28.25% Pervious Area
10,763		71.75% Impervious Area

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

Subcatchment P4: Parking & Landscaping

Hydrograph



Proposed Parking & Drainage

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 Type III 24-hr 2 Year Rainfall=3.33"

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Summary for Subcatchment P5: Parking & Landscaping

Runoff = 0.24 cfs @ 12.13 hrs, Volume= 1,096 cf, Depth= 1.50"
 Routed to Pond CB1 : Reset CB w/C-L

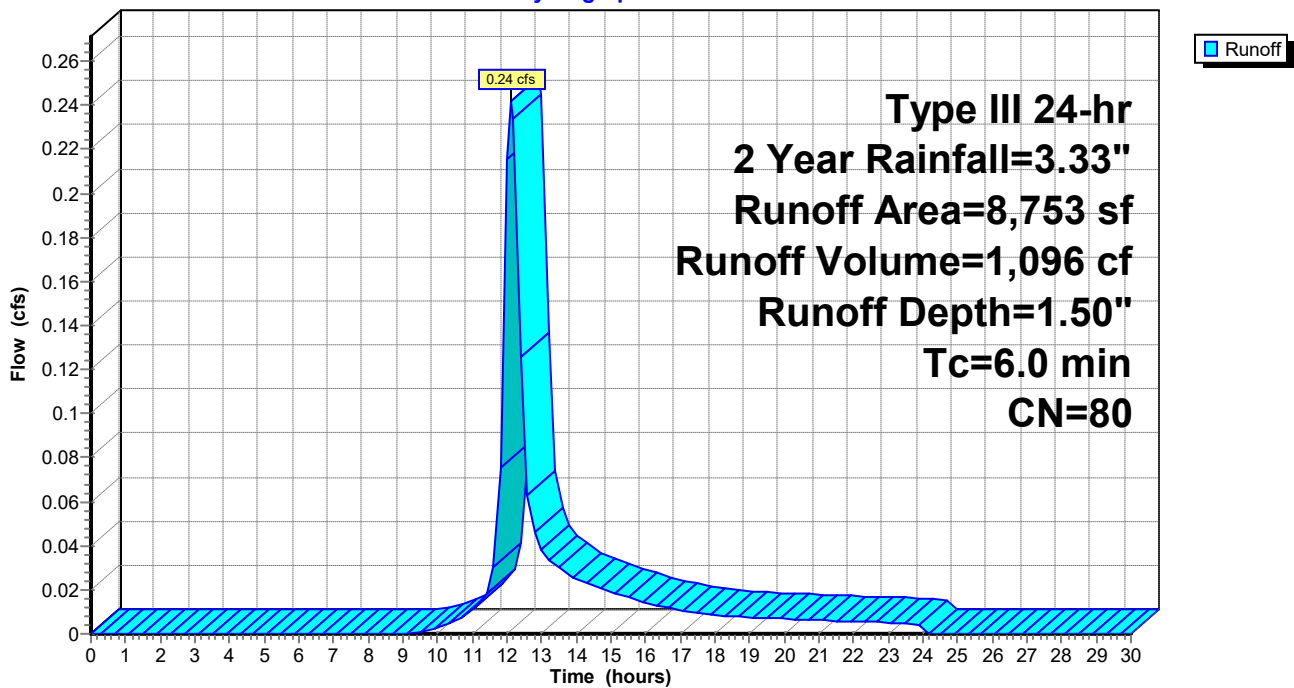
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
 Type III 24-hr 2 Year Rainfall=3.33"

Area (sf)	CN	Description
5,615	98	Paved parking, HSG A
3,138	49	50-75% Grass cover, Fair, HSG A
8,753	80	Weighted Average
3,138		35.85% Pervious Area
5,615		64.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Tc-5S

Subcatchment P5: Parking & Landscaping

Hydrograph



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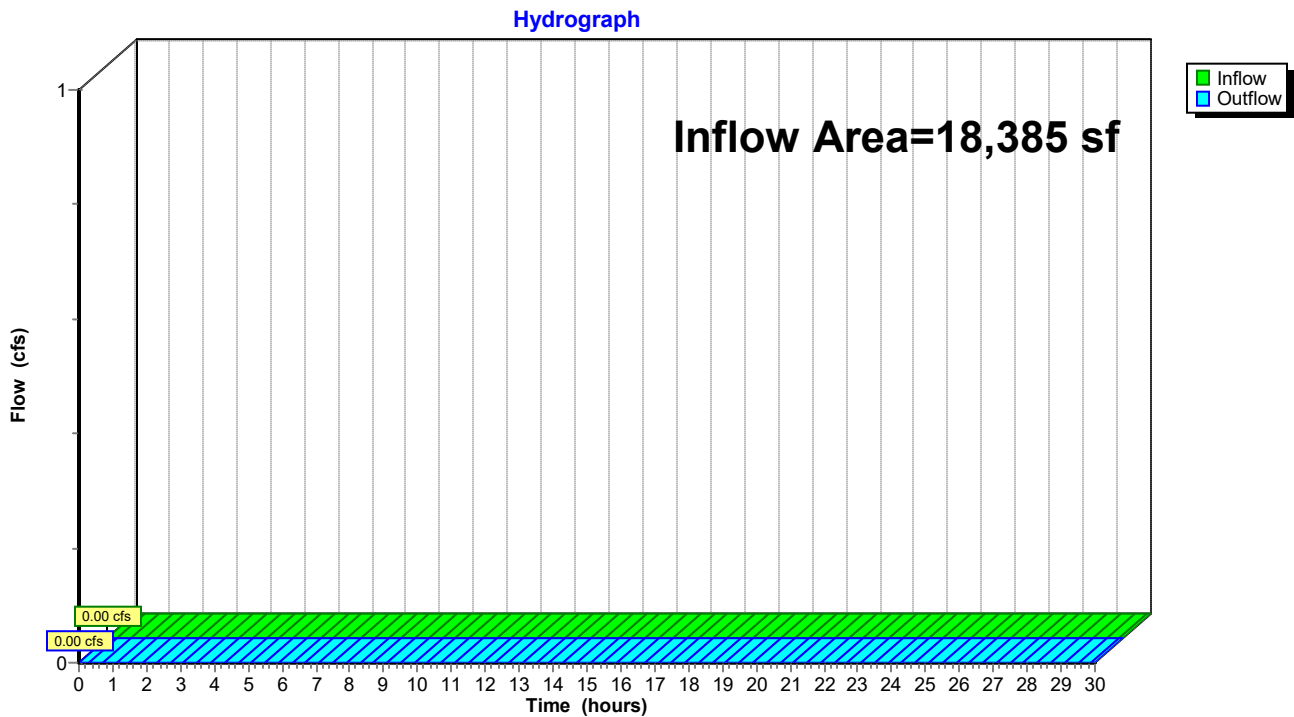
Page 23

Summary for Reach AP1: Analysis Point

Inflow Area = 18,385 sf, 0.00% Impervious, Inflow Depth = 0.00" for 2 Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Reach AP1: Analysis Point



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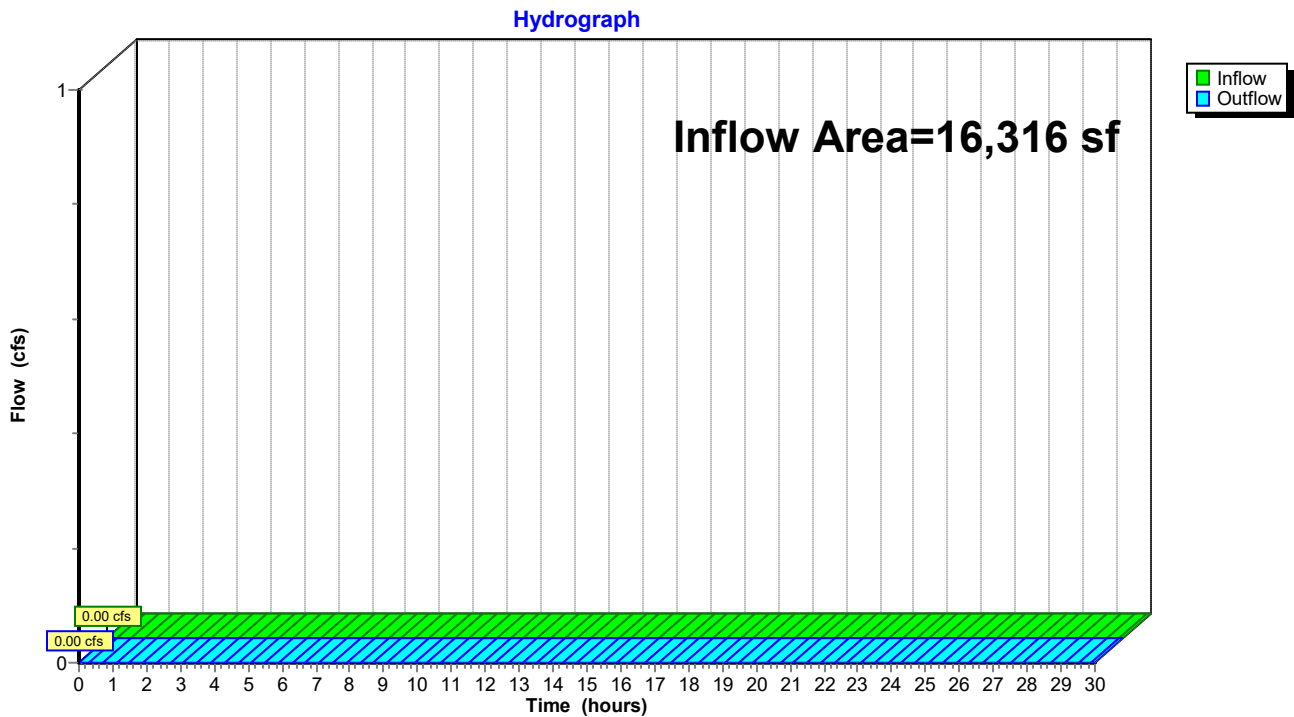
Page 24

Summary for Reach AP2: Analysis Point

Inflow Area = 16,316 sf, 0.00% Impervious, Inflow Depth = 0.00" for 2 Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Reach AP2: Analysis Point



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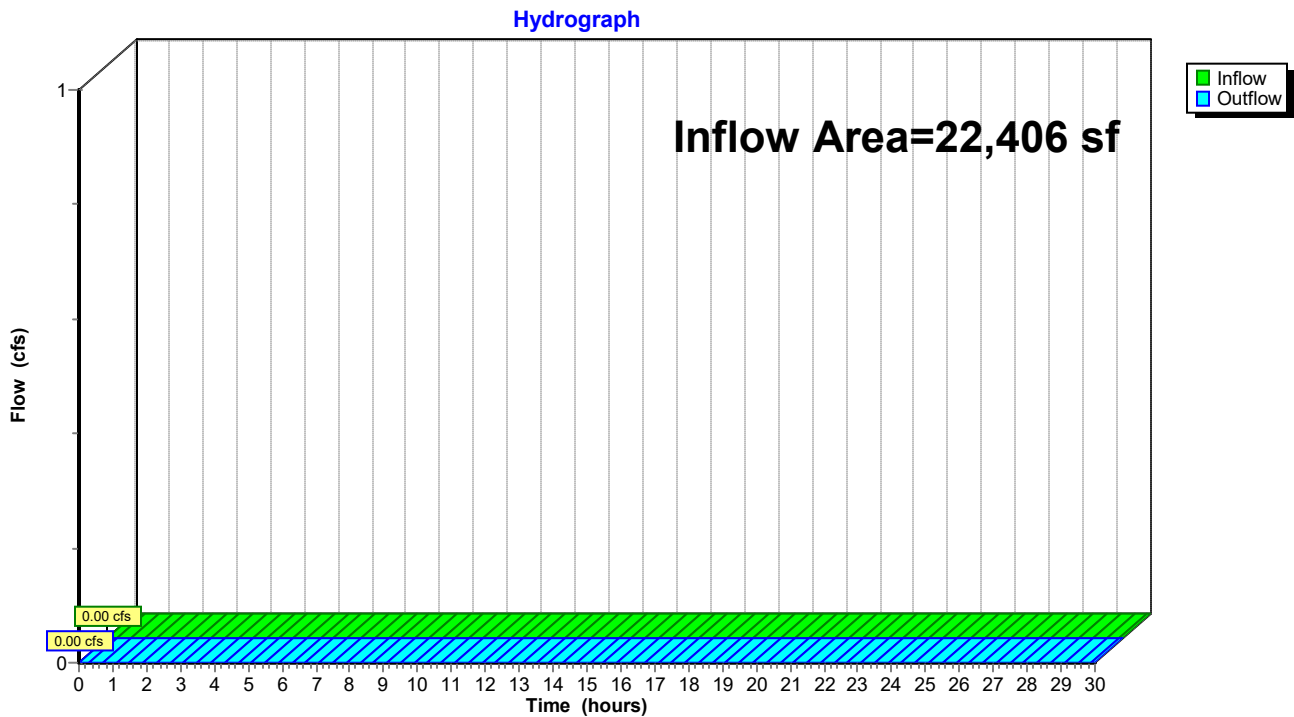
Page 25

Summary for Reach AP3: Analysis Point

Inflow Area = 22,406 sf, 0.00% Impervious, Inflow Depth = 0.00" for 2 Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Reach AP3: Analysis Point



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Summary for Reach AP4: Analysis Point

Inflow Area = 23,753 sf, 68.95% Impervious, Inflow Depth = 0.00" for 2 Year event

Routing by Stor-Ind method

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Summary for Pond 3P: Retain-it System

Inflow Area = 23,753 sf, 68.95% Impervious, Inflow Depth = 1.69" for 2 Year event
Inflow = 0.74 cfs @ 12.12 hrs, Volume= 3,336 cf
Outflow = 0.72 cfs @ 12.14 hrs, Volume= 3,336 cf, Atten= 2%, Lag= 1.2 min
Discarded = 0.72 cfs @ 12.14 hrs, Volume= 3,336 cf

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs / 3
Peak Elev= 235.56' @ 12.14 hrs Surf.Area= 960 sf Storage= 48 cf

Plug-Flow detention time= 1.1 min calculated for 3,314 cf (99% of inflow)
Center-of-Mass det. time= 1.1 min (833.1 - 832.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	235.50'	0 cf	24.00'W x 40.00'L x 5.67'H Field A 5,440 cf Overall - 5,440 cf Embedded = 0 cf x 10.0% Voids
#2A	235.50'	4,203 cf	retain_it retain_it 5.0' x 15 Inside #1 Inside= 84.0"W x 60.0"H => 36.41 sf x 8.00'L = 291.3 cf Outside= 96.0"W x 68.0"H => 45.33 sf x 8.00'L = 362.7 cf 3 Rows adjusted for 166.2 cf perimeter wall
		4,203 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	235.50'	32.000 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.71 cfs @ 12.14 hrs HW=235.55' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.71 cfs)

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Pond 3P: Retain-it System - Chamber Wizard Field A

Chamber Model = retain_it retain_it 5.0' (retain-it®)

Inside= 84.0"W x 60.0"H => 36.41 sf x 8.00'L = 291.3 cf

Outside= 96.0"W x 68.0"H => 45.33 sf x 8.00'L = 362.7 cf

3 Rows adjusted for 166.2 cf perimeter wall

5 Chambers/Row x 8.00' Long = 40.00' Row Length

3 Rows x 96.0" Wide = 24.00' Base Width

68.0" Chamber Height = 5.67' Field Height

10.4 cf Sidewall x 5 x 2 + 10.4 cf Endwall x 3 x 2 = 166.2 cf Perimeter Wall

15 Chambers x 291.3 cf - 166.2 cf Perimeter wall = 4,203.0 cf Chamber Storage

15 Chambers x 362.7 cf = 5,440.0 cf Displacement

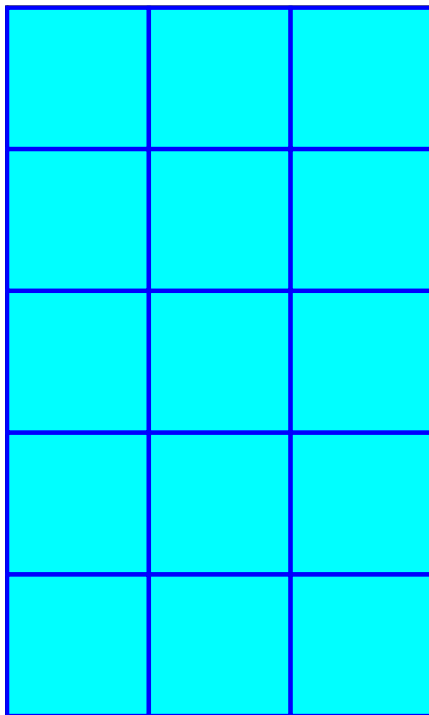
Chamber Storage = 4,203.0 cf = 0.096 af

Overall Storage Efficiency = 77.3%

Overall System Size = 40.00' x 24.00' x 5.67'

15 Chambers

201.5 cy Field



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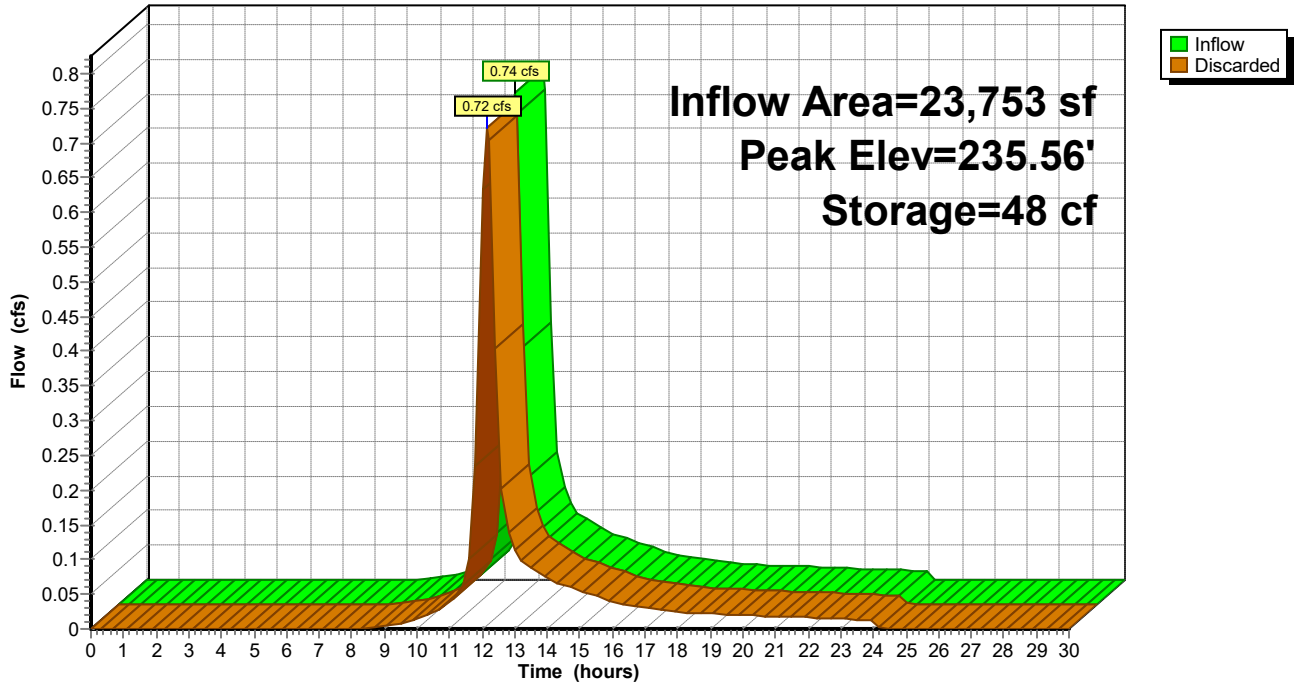
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Pond 3P: Retain-it System

Hydrograph



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Summary for Pond CB1: Reset CB w/C-L

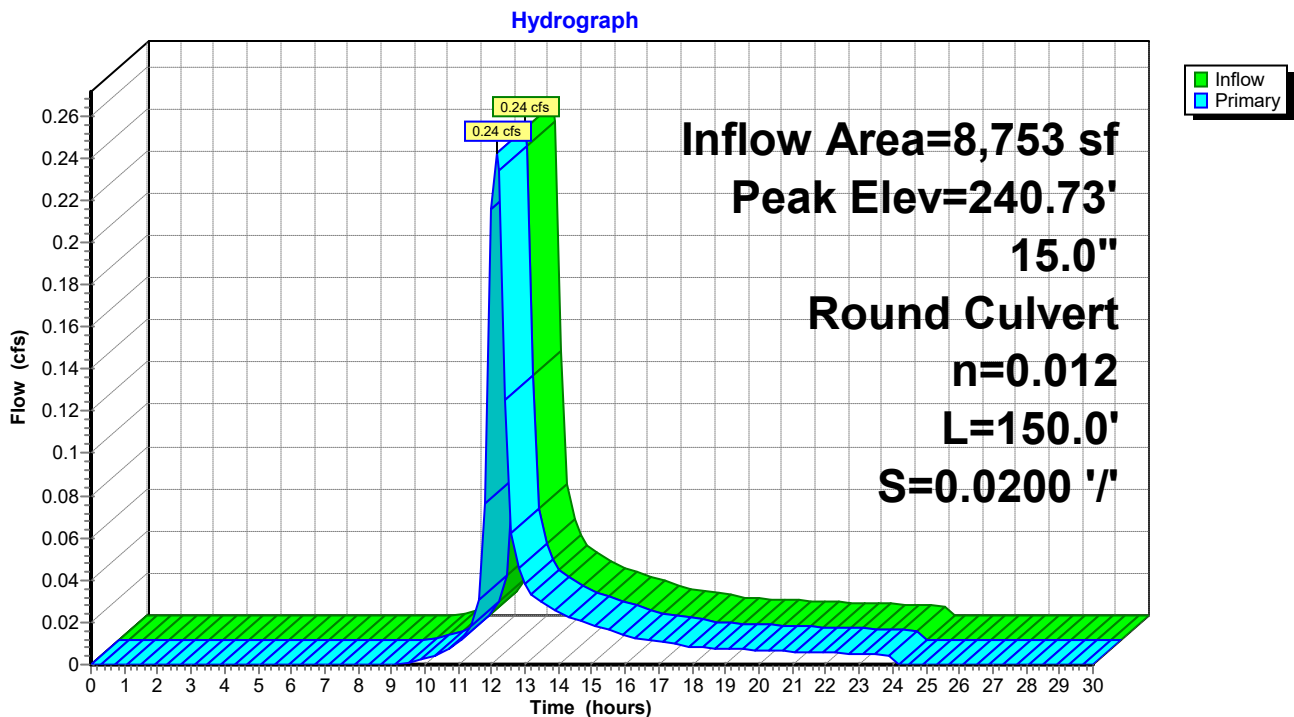
Inflow Area = 8,753 sf, 64.15% Impervious, Inflow Depth = 1.50" for 2 Year event
Inflow = 0.24 cfs @ 12.13 hrs, Volume= 1,096 cf
Outflow = 0.24 cfs @ 12.13 hrs, Volume= 1,096 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.24 cfs @ 12.13 hrs, Volume= 1,096 cf
Routed to Pond CB2 : Double CB

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Peak Elev= 240.73' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	240.50'	15.0" Round Culvert L= 150.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 240.50' / 237.50' S= 0.0200 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf

Primary OutFlow Max=0.23 cfs @ 12.13 hrs HW=240.72' (Free Discharge)
↑1=Culvert (Inlet Controls 0.23 cfs @ 1.59 fps)

Pond CB1: Reset CB w/C-L



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Summary for Pond CB2: Double CB

Inflow Area = 23,753 sf, 68.95% Impervious, Inflow Depth = 1.69" for 2 Year event
Inflow = 0.74 cfs @ 12.12 hrs, Volume= 3,336 cf
Outflow = 0.74 cfs @ 12.12 hrs, Volume= 3,336 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.74 cfs @ 12.12 hrs, Volume= 3,336 cf
Routed to Pond 3P : Retain-it System

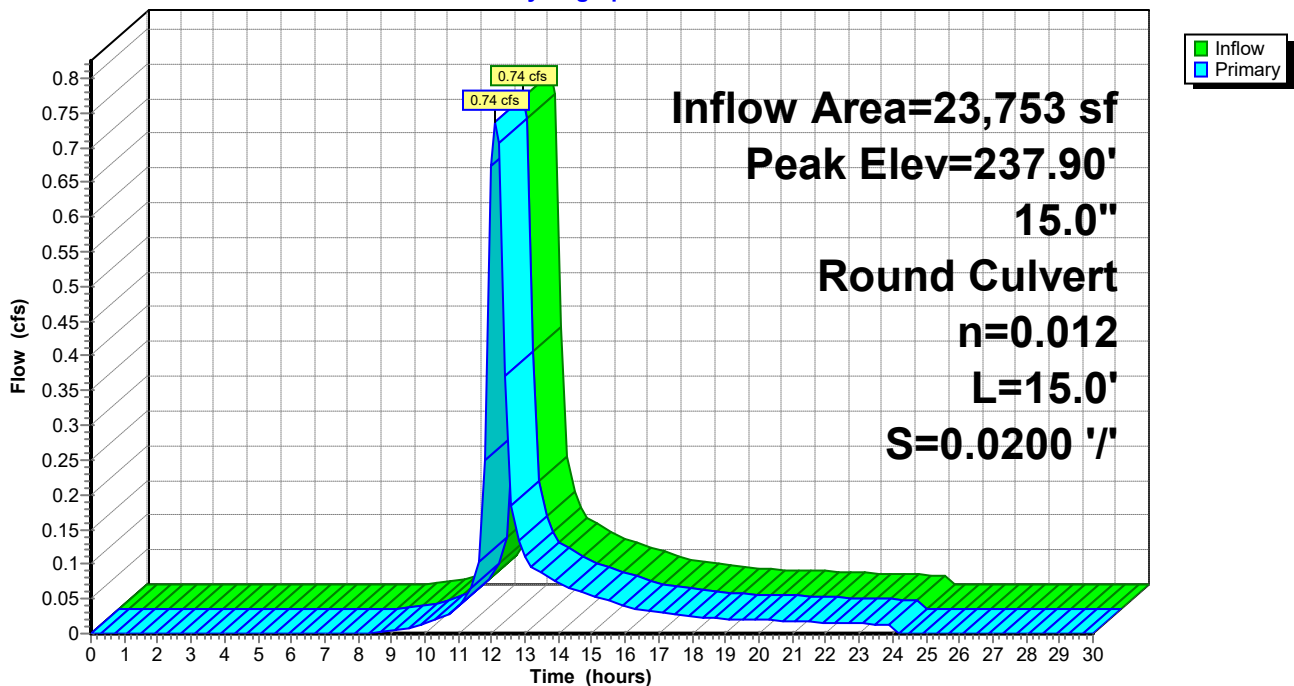
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Peak Elev= 237.90' @ 12.12 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	237.50'	15.0" Round Culvert L= 15.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 237.50' / 237.20' S= 0.0200 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf

Primary OutFlow Max=0.69 cfs @ 12.12 hrs HW=237.89' (Free Discharge)
↑1=Culvert (Inlet Controls 0.69 cfs @ 2.12 fps)

Pond CB2: Double CB

Hydrograph



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Time span=0.00-30.00 hrs, dt=0.20 hrs, 151 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment P1: Analysis Area #1	Runoff Area=18,385 sf 0.00% Impervious Flow Length=135' Tc=9.1 min CN=30	Runoff Depth=0.00" Runoff=0.00 cfs 0 cf
Subcatchment P2: Analysis Area #2	Runoff Area=16,316 sf 0.00% Impervious Flow Length=122' Tc=6.0 min CN=30	Runoff Depth=0.00" Runoff=0.00 cfs 0 cf
Subcatchment P3: Analysis Area #3	Runoff Area=22,406 sf 0.00% Impervious Flow Length=285' Tc=14.3 min CN=30	Runoff Depth=0.00" Runoff=0.00 cfs 0 cf
Subcatchment P4: Parking & Landscaping	Runoff Area=15,000 sf 71.75% Impervious Tc=6.0 min CN=84	Runoff Depth=2.77" Runoff=0.77 cfs 3,465 cf
Subcatchment P5: Parking & Landscaping	Runoff Area=8,753 sf 64.15% Impervious Tc=6.0 min CN=80	Runoff Depth=2.42" Runoff=0.39 cfs 1,764 cf
Reach AP1: Analysis Point		Inflow=0.00 cfs 0 cf Outflow=0.00 cfs 0 cf
Reach AP2: Analysis Point		Inflow=0.00 cfs 0 cf Outflow=0.00 cfs 0 cf
Reach AP3: Analysis Point		Inflow=0.00 cfs 0 cf Outflow=0.00 cfs 0 cf
Reach AP4: Analysis Point		
Pond 3P: Retain-it System	Peak Elev=236.07' Storage=481 cf	Inflow=1.15 cfs 5,229 cf Outflow=0.71 cfs 5,022 cf
Pond CB1: Reset CB w/C-L	15.0" Round Culvert n=0.012 L=150.0' S=0.0200 '/'	Peak Elev=240.79' Inflow=0.39 cfs 1,764 cf Outflow=0.39 cfs 1,764 cf
Pond CB2: Double CB	15.0" Round Culvert n=0.012 L=15.0' S=0.0200 '/'	Peak Elev=238.01' Inflow=1.15 cfs 5,229 cf Outflow=1.15 cfs 5,229 cf
Total Runoff Area = 80,860 sf Runoff Volume = 5,229 cf Average Runoff Depth = 0.78"		
79.75% Pervious = 64,482 sf 20.25% Impervious = 16,378 sf		

Proposed Parking & Drainage

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Summary for Subcatchment P1: Analysis Area #1

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
 Routed to Reach AP1 : Analysis Point

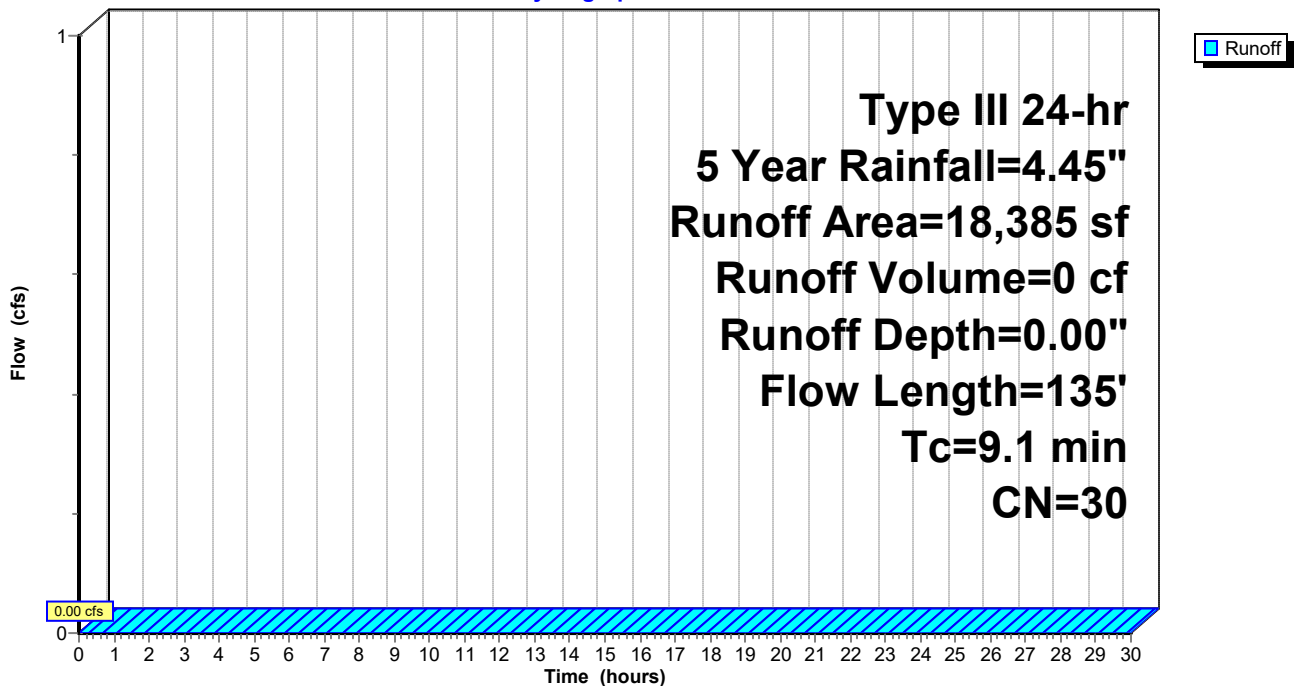
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
 Type III 24-hr 5 Year Rainfall=4.45"

Area (sf)	CN	Description
18,385	30	Woods, Good, HSG A
18,385		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	25	0.1200	0.22		Lag/CN Method,
3.5	35	0.0570	0.16		Lag/CN Method,
3.7	75	0.1730	0.33		Lag/CN Method,
9.1	135	Total			

Subcatchment P1: Analysis Area #1

Hydrograph



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Summary for Subcatchment P2: Analysis Area #2

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Reach AP2 : Analysis Point

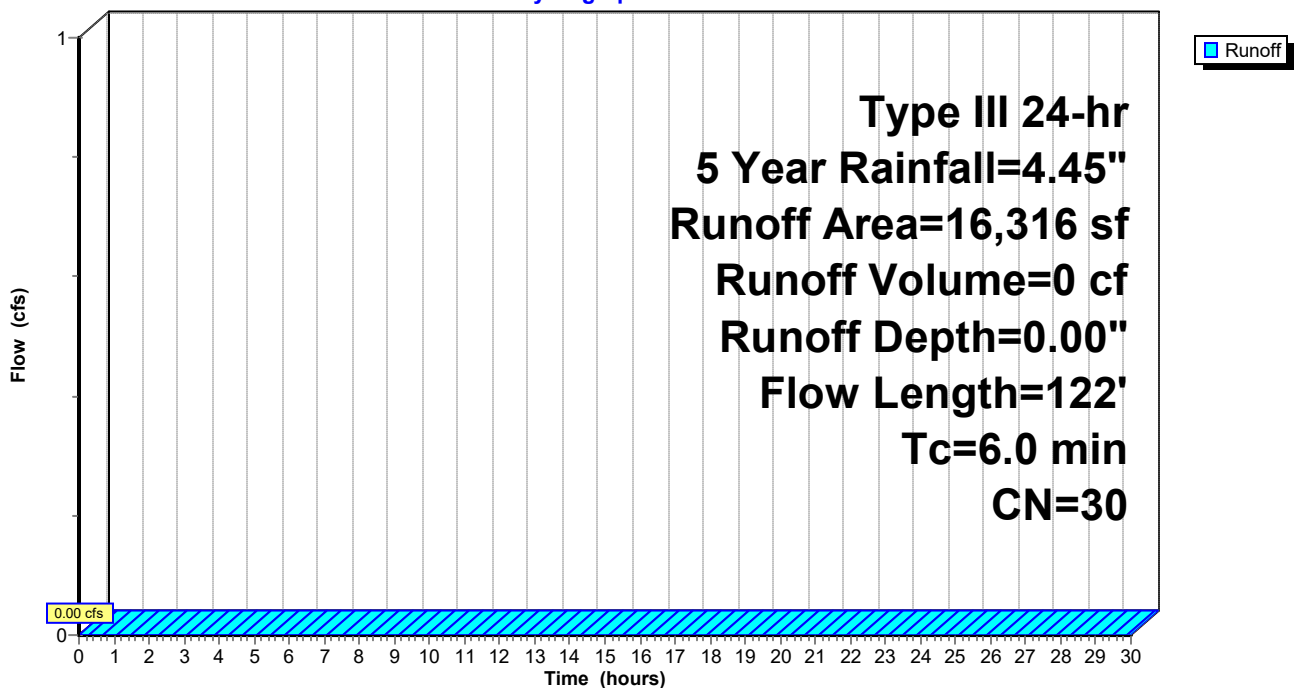
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 5 Year Rainfall=4.45"

Area (sf)	CN	Description
16,316	30	Woods, Good, HSG A
16,316		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	22	0.3180	0.35		Lag/CN Method,
1.9	60	0.4670	0.53		Lag/CN Method,
3.0	40	0.1000	0.22		Lag/CN Method,
5.9	122	Total, Increased to minimum Tc = 6.0 min			

Subcatchment P2: Analysis Area #2

Hydrograph



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Summary for Subcatchment P3: Analysis Area #3

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Reach AP3 : Analysis Point

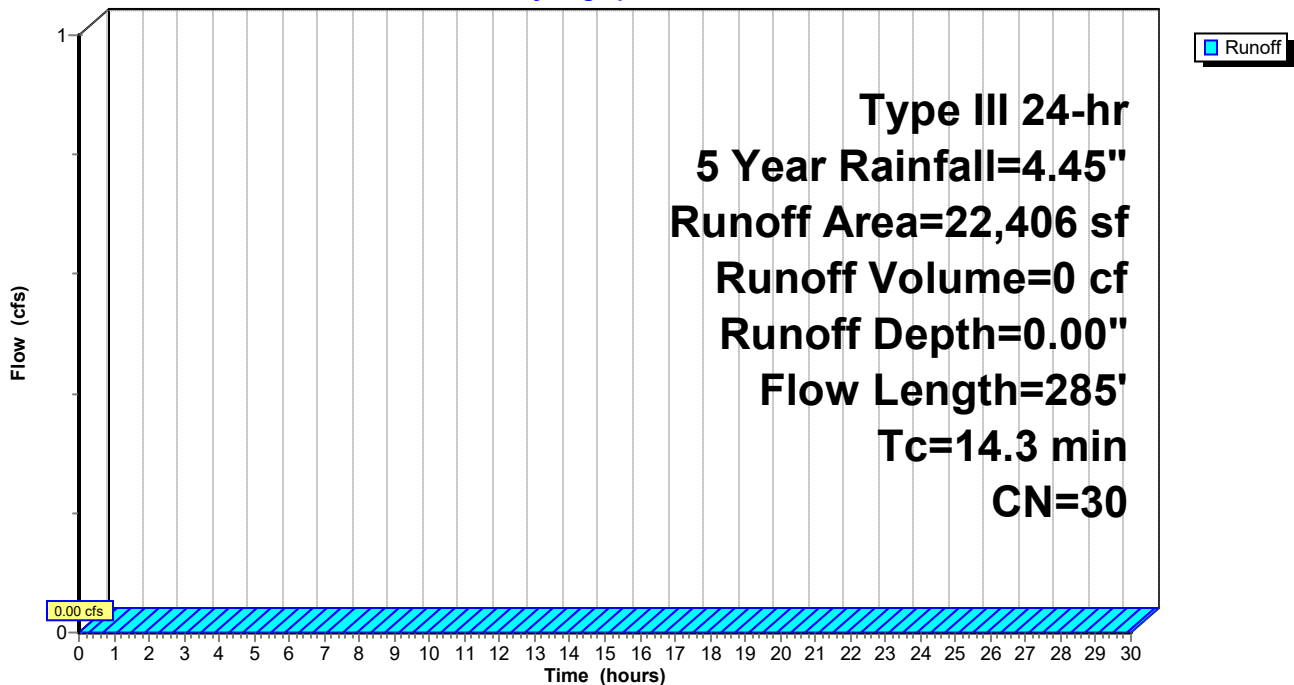
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 5 Year Rainfall=4.45"

Area (sf)	CN	Description
22,406	30	Woods, Good, HSG A
22,406		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	240	0.2890	0.55		Lag/CN Method,
7.0	45	0.0220	0.11		Lag/CN Method, 45
14.3	285	Total			

Subcatchment P3: Analysis Area #3

Hydrograph



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Summary for Subcatchment P4: Parking & Landscaping

Runoff = 0.77 cfs @ 12.10 hrs, Volume= 3,465 cf, Depth= 2.77"
Routed to Pond CB2 : Double CB

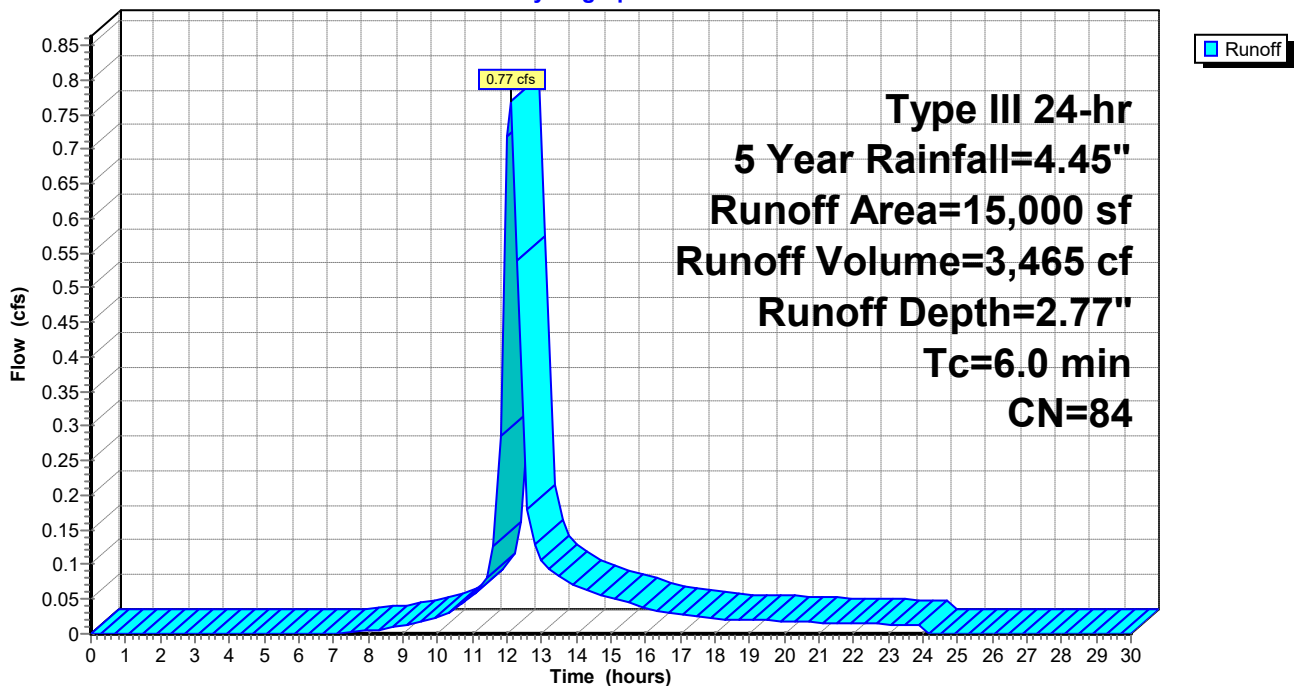
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 5 Year Rainfall=4.45"

Area (sf)	CN	Description
10,763	98	Paved roads w/curbs & sewers, HSG A
4,237	49	50-75% Grass cover, Fair, HSG A
15,000	84	Weighted Average
4,237		28.25% Pervious Area
10,763		71.75% Impervious Area

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

Subcatchment P4: Parking & Landscaping

Hydrograph



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Summary for Subcatchment P5: Parking & Landscaping

Runoff = 0.39 cfs @ 12.11 hrs, Volume= 1,764 cf, Depth= 2.42"
Routed to Pond CB1 : Reset CB w/C-L

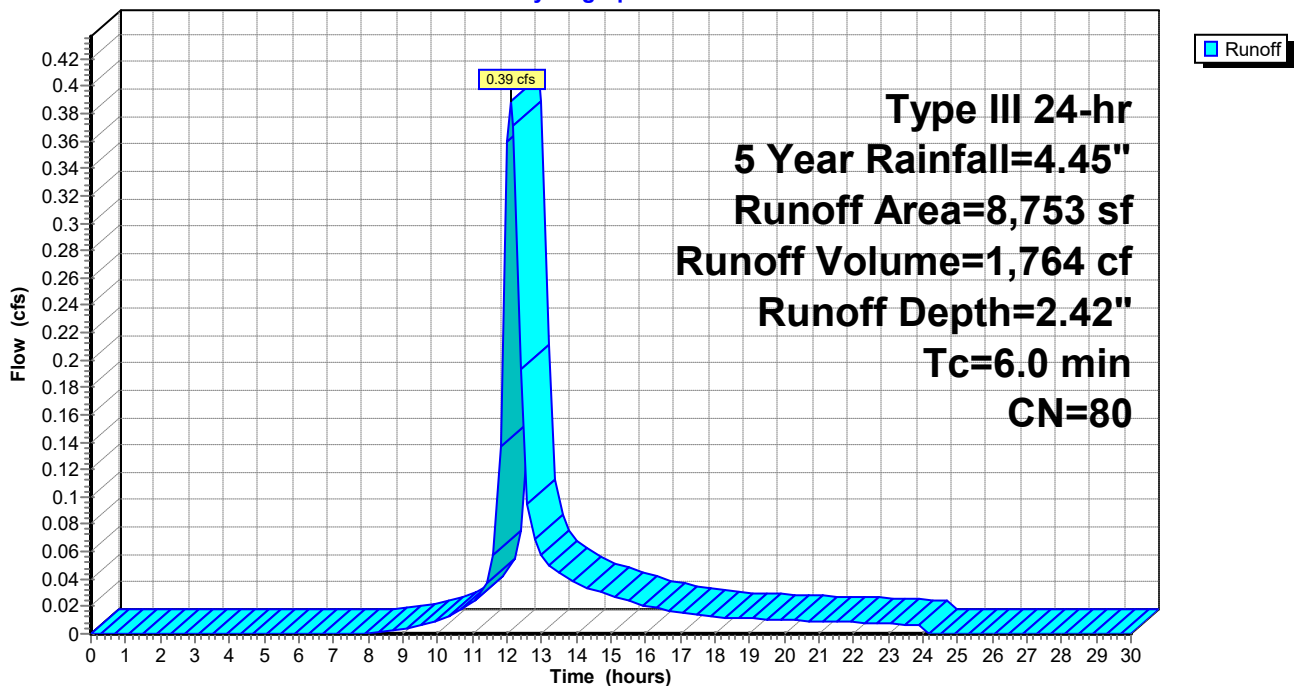
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 5 Year Rainfall=4.45"

Area (sf)	CN	Description
5,615	98	Paved parking, HSG A
3,138	49	50-75% Grass cover, Fair, HSG A
8,753	80	Weighted Average
3,138		35.85% Pervious Area
5,615		64.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Tc-5S

Subcatchment P5: Parking & Landscaping

Hydrograph



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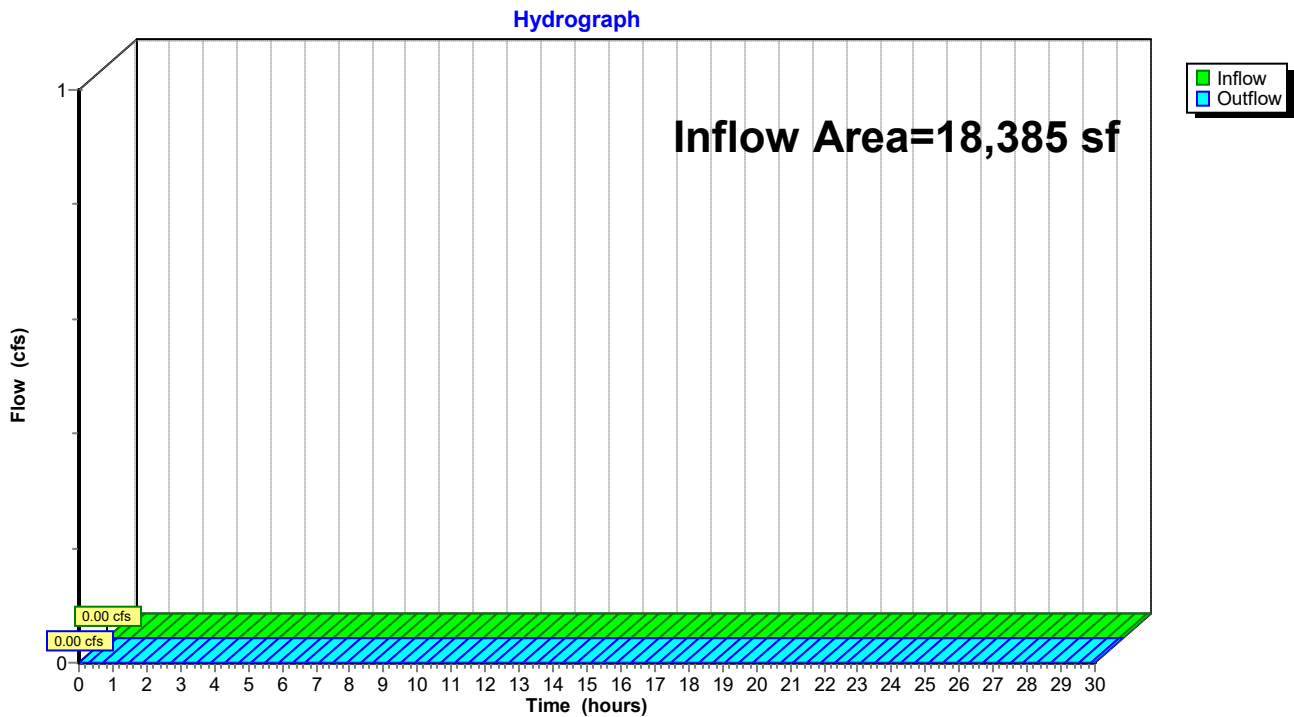
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Summary for Reach AP1: Analysis Point

Inflow Area = 18,385 sf, 0.00% Impervious, Inflow Depth = 0.00" for 5 Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Reach AP1: Analysis Point



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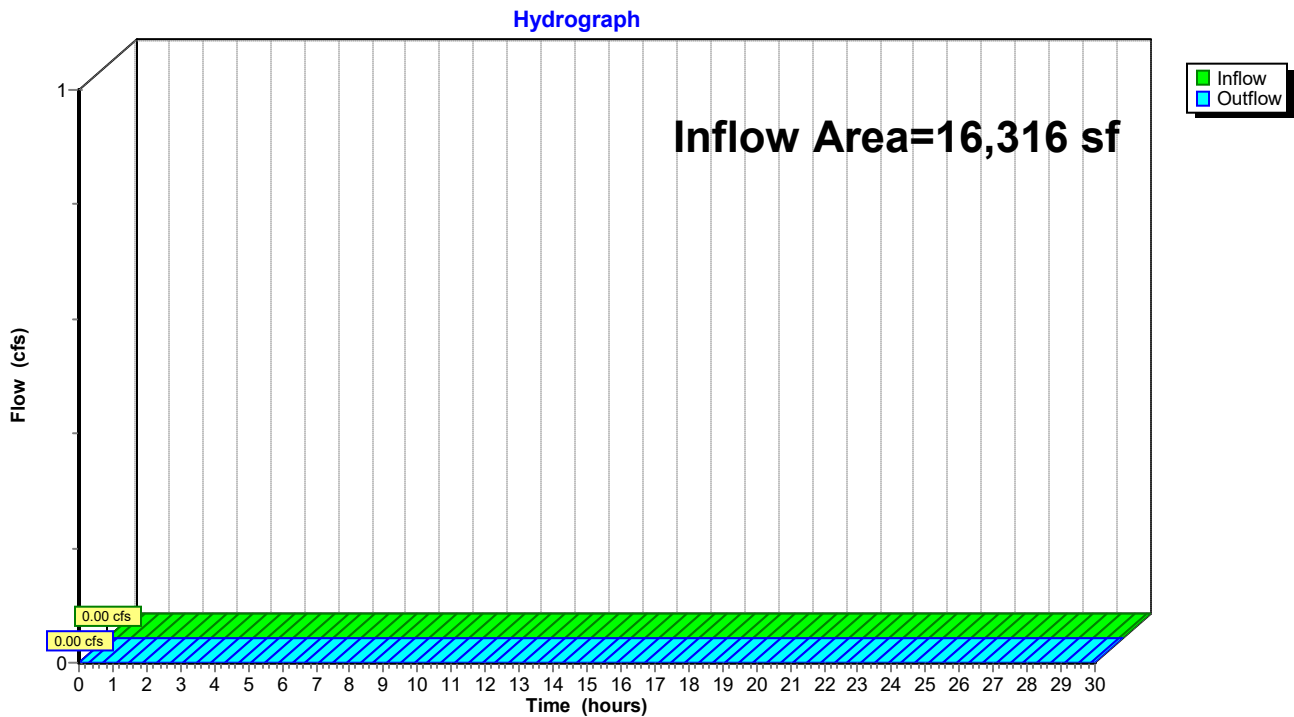
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Summary for Reach AP2: Analysis Point

Inflow Area = 16,316 sf, 0.00% Impervious, Inflow Depth = 0.00" for 5 Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Reach AP2: Analysis Point



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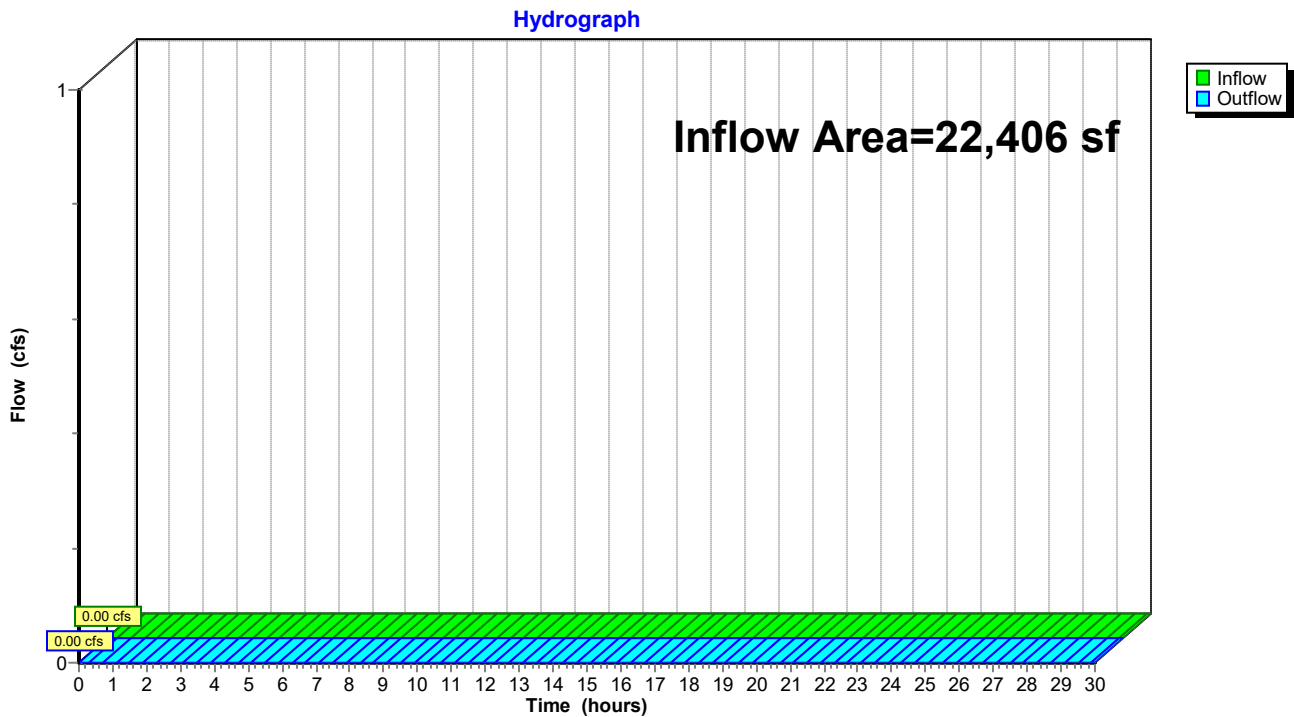
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Summary for Reach AP3: Analysis Point

Inflow Area = 22,406 sf, 0.00% Impervious, Inflow Depth = 0.00" for 5 Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Reach AP3: Analysis Point



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Summary for Reach AP4: Analysis Point

Inflow Area = 23,753 sf, 68.95% Impervious, Inflow Depth = 0.00" for 5 Year event

Routing by Stor-Ind method

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Type III 24-hr 5 Year Rainfall=4.45"

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Summary for Pond 3P: Retain-it System

Inflow Area = 23,753 sf, 68.95% Impervious, Inflow Depth = 2.64" for 5 Year event
Inflow = 1.15 cfs @ 12.10 hrs, Volume= 5,229 cf
Outflow = 0.71 cfs @ 12.00 hrs, Volume= 5,022 cf, Atten= 38%, Lag= 0.0 min
Discarded = 0.71 cfs @ 12.00 hrs, Volume= 5,022 cf

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs / 3
Peak Elev= 236.07' @ 12.35 hrs Surf.Area= 960 sf Storage= 481 cf

Plug-Flow detention time= 27.7 min calculated for 4,989 cf (95% of inflow)
Center-of-Mass det. time= 6.2 min (825.4 - 819.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	235.50'	0 cf	24.00'W x 40.00'L x 5.67'H Field A 5,440 cf Overall - 5,440 cf Embedded = 0 cf x 10.0% Voids
#2A	235.50'	4,203 cf	retain_it retain_it 5.0' x 15 Inside #1 Inside= 84.0"W x 60.0"H => 36.41 sf x 8.00'L = 291.3 cf Outside= 96.0"W x 68.0"H => 45.33 sf x 8.00'L = 362.7 cf 3 Rows adjusted for 166.2 cf perimeter wall
		4,203 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	235.50'	32.000 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.71 cfs @ 12.00 hrs HW=235.65' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.71 cfs)

Proposed Parking & Drainage

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Pond 3P: Retain-it System - Chamber Wizard Field A

Chamber Model = retain_it retain_it 5.0' (retain-it®)

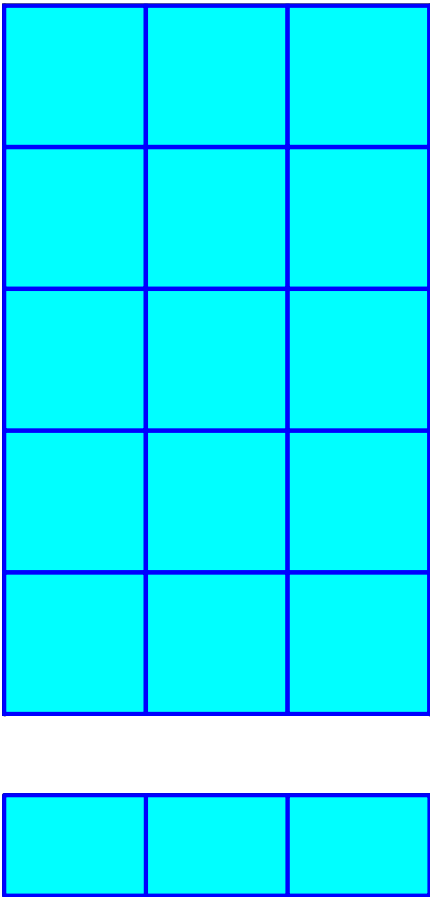
Inside= 84.0"W x 60.0"H => 36.41 sf x 8.00'L = 291.3 cf
Outside= 96.0"W x 68.0"H => 45.33 sf x 8.00'L = 362.7 cf
3 Rows adjusted for 166.2 cf perimeter wall

5 Chambers/Row x 8.00' Long = 40.00' Row Length
3 Rows x 96.0" Wide = 24.00' Base Width
68.0" Chamber Height = 5.67' Field Height

10.4 cf Sidewall x 5 x 2 + 10.4 cf Endwall x 3 x 2 = 166.2 cf Perimeter Wall
15 Chambers x 291.3 cf - 166.2 cf Perimeter wall = 4,203.0 cf Chamber Storage
15 Chambers x 362.7 cf = 5,440.0 cf Displacement

Chamber Storage = 4,203.0 cf = 0.096 af
Overall Storage Efficiency = 77.3%
Overall System Size = 40.00' x 24.00' x 5.67'

15 Chambers
201.5 cy Field



Proposed Parking & Drainage

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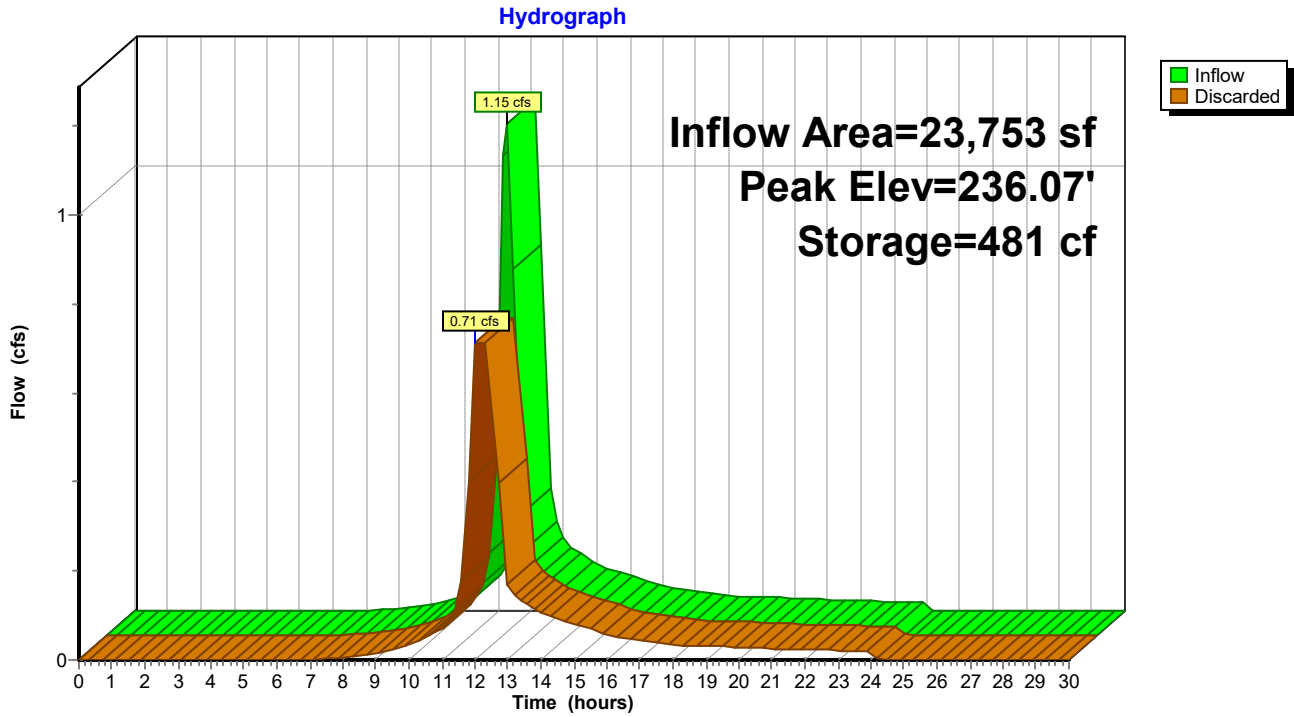
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Pond 3P: Retain-it System



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Type III 24-hr 5 Year Rainfall=4.45"

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Summary for Pond CB1: Reset CB w/C-L

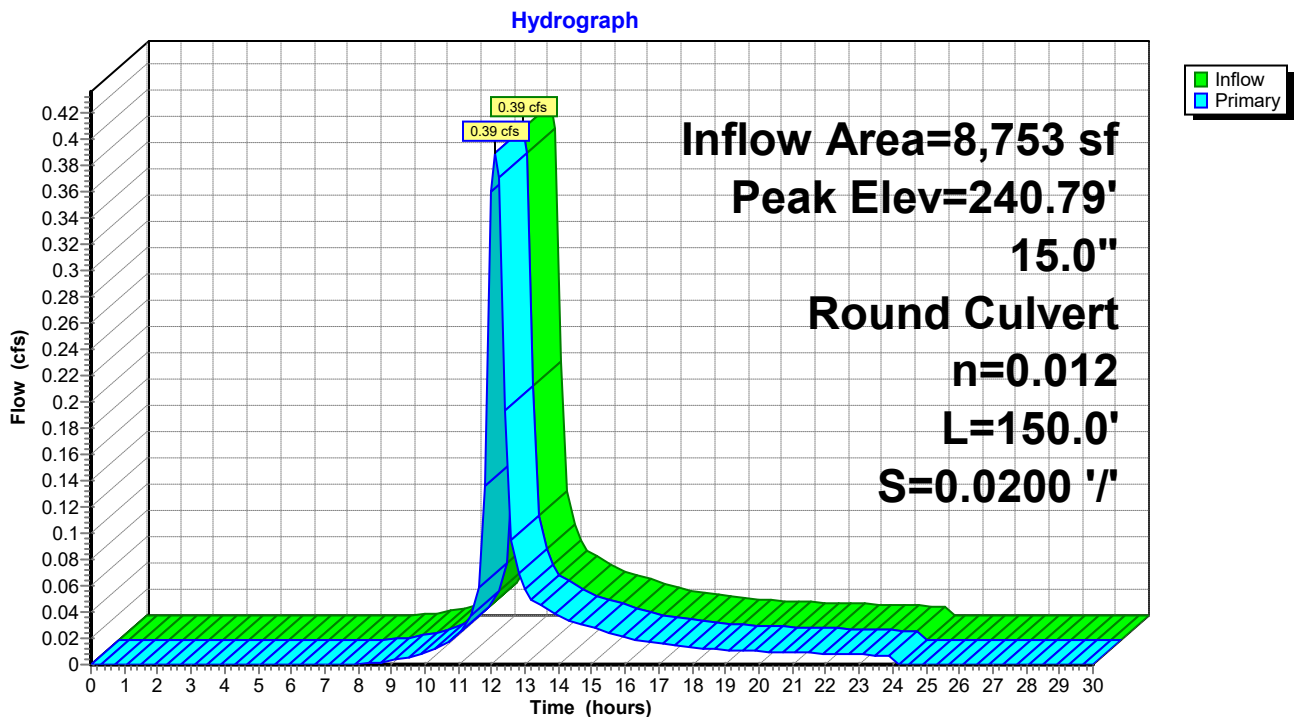
Inflow Area = 8,753 sf, 64.15% Impervious, Inflow Depth = 2.42" for 5 Year event
Inflow = 0.39 cfs @ 12.11 hrs, Volume= 1,764 cf
Outflow = 0.39 cfs @ 12.11 hrs, Volume= 1,764 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.39 cfs @ 12.11 hrs, Volume= 1,764 cf
Routed to Pond CB2 : Double CB

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Peak Elev= 240.79' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	240.50'	15.0" Round Culvert L= 150.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 240.50' / 237.50' S= 0.0200 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf

Primary OutFlow Max=0.37 cfs @ 12.11 hrs HW=240.78' (Free Discharge)
↑1=Culvert (Inlet Controls 0.37 cfs @ 1.80 fps)

Pond CB1: Reset CB w/C-L



Proposed Parking & Drainage

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Type III 24-hr 5 Year Rainfall=4.45"

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Summary for Pond CB2: Double CB

Inflow Area = 23,753 sf, 68.95% Impervious, Inflow Depth = 2.64" for 5 Year event
Inflow = 1.15 cfs @ 12.10 hrs, Volume= 5,229 cf
Outflow = 1.15 cfs @ 12.10 hrs, Volume= 5,229 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.15 cfs @ 12.10 hrs, Volume= 5,229 cf
Routed to Pond 3P : Retain-it System

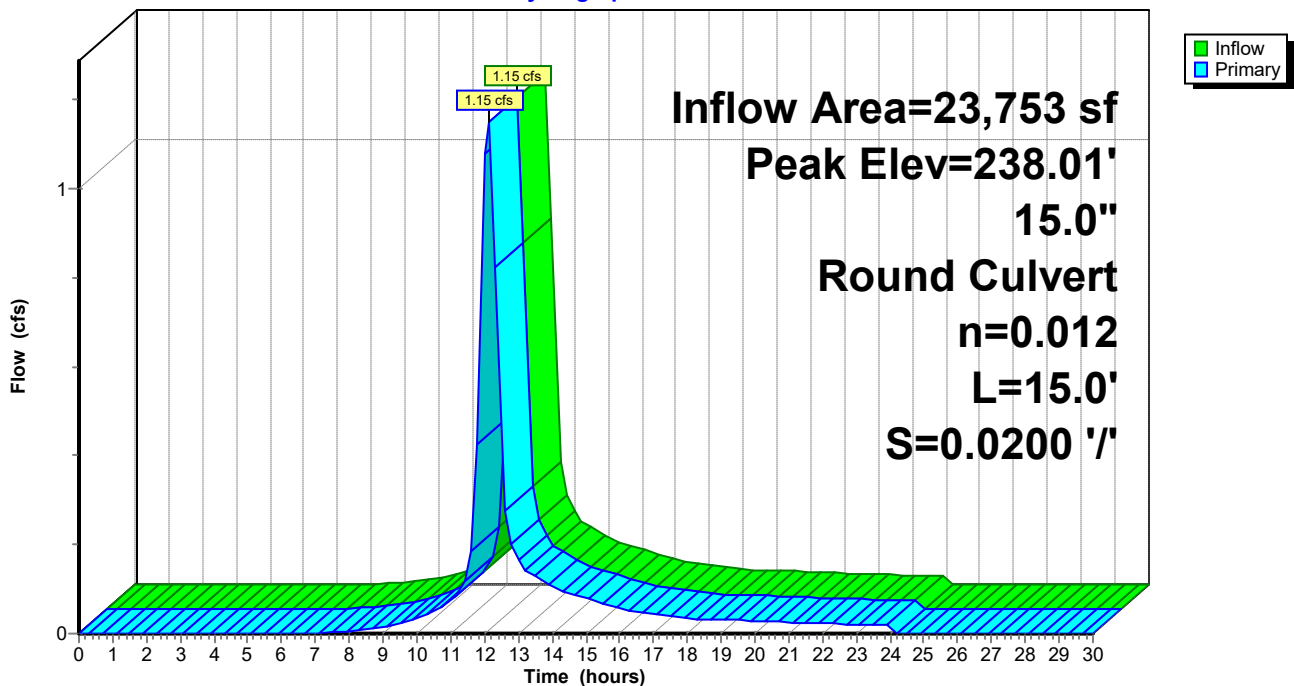
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Peak Elev= 238.01' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	237.50'	15.0" Round Culvert L= 15.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 237.50' / 237.20' S= 0.0200 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf

Primary OutFlow Max=1.08 cfs @ 12.10 hrs HW=237.99' (Free Discharge)
↑1=Culvert (Inlet Controls 1.08 cfs @ 2.39 fps)

Pond CB2: Double CB

Hydrograph



Proposed Parking & Drainage

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Type III 24-hr 10 Year Rainfall=5.37"

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Time span=0.00-30.00 hrs, dt=0.20 hrs, 151 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment P1: Analysis Area #1 Runoff Area=18,385 sf 0.00% Impervious Runoff Depth=0.02"
Flow Length=135' Tc=9.1 min CN=30 Runoff=0.00 cfs 32 cf

Subcatchment P2: Analysis Area #2 Runoff Area=16,316 sf 0.00% Impervious Runoff Depth=0.02"
Flow Length=122' Tc=6.0 min CN=30 Runoff=0.00 cfs 28 cf

Subcatchment P3: Analysis Area #3 Runoff Area=22,406 sf 0.00% Impervious Runoff Depth=0.02"
Flow Length=285' Tc=14.3 min CN=30 Runoff=0.00 cfs 38 cf

Subcatchment P4: Parking & Landscaping Runoff Area=15,000 sf 71.75% Impervious Runoff Depth=3.61"
Tc=6.0 min CN=84 Runoff=1.00 cfs 4,513 cf

Subcatchment P5: Parking & Landscaping Runoff Area=8,753 sf 64.15% Impervious Runoff Depth=3.22"
Tc=6.0 min CN=80 Runoff=0.52 cfs 2,347 cf

Reach AP1: Analysis Point Inflow=0.00 cfs 32 cf
Outflow=0.00 cfs 32 cf

Reach AP2: Analysis Point Inflow=0.00 cfs 28 cf
Outflow=0.00 cfs 28 cf

Reach AP3: Analysis Point Inflow=0.00 cfs 38 cf
Outflow=0.00 cfs 38 cf

Reach AP4: Analysis Point

Pond 3P: Retain-it System Peak Elev=236.72' Storage=1,024 cf Inflow=1.52 cfs 6,861 cf
Outflow=0.71 cfs 6,723 cf

Pond CB1: Reset CB w/C-L Peak Elev=240.83' Inflow=0.52 cfs 2,347 cf
15.0" Round Culvert n=0.012 L=150.0' S=0.0200 ' ' Outflow=0.52 cfs 2,347 cf

Pond CB2: Double CB Peak Elev=238.10' Inflow=1.52 cfs 6,861 cf
15.0" Round Culvert n=0.012 L=15.0' S=0.0200 ' ' Outflow=1.52 cfs 6,861 cf

Total Runoff Area = 80,860 sf Runoff Volume = 6,958 cf Average Runoff Depth = 1.03"
79.75% Pervious = 64,482 sf 20.25% Impervious = 16,378 sf

Proposed Parking & Drainage

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Type III 24-hr 10 Year Rainfall=5.37"

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Summary for Subcatchment P1: Analysis Area #1

Runoff = 0.00 cfs @ 21.75 hrs, Volume= 32 cf, Depth= 0.02"
Routed to Reach AP1 : Analysis Point

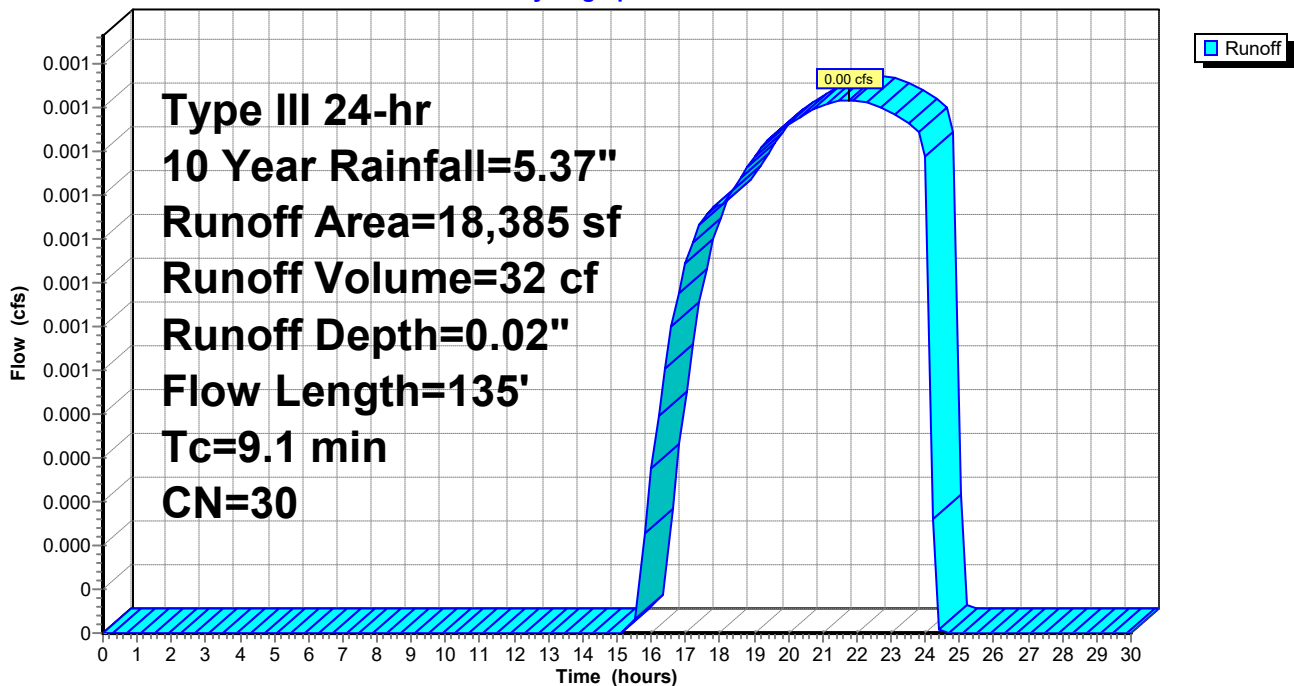
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 10 Year Rainfall=5.37"

Area (sf)	CN	Description
18,385	30	Woods, Good, HSG A
18,385		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	25	0.1200	0.22		Lag/CN Method,
3.5	35	0.0570	0.16		Lag/CN Method,
3.7	75	0.1730	0.33		Lag/CN Method,
9.1	135	Total			

Subcatchment P1: Analysis Area #1

Hydrograph



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Summary for Subcatchment P3: Analysis Area #3

Runoff = 0.00 cfs @ 21.83 hrs, Volume= 38 cf, Depth= 0.02"
Routed to Reach AP3 : Analysis Point

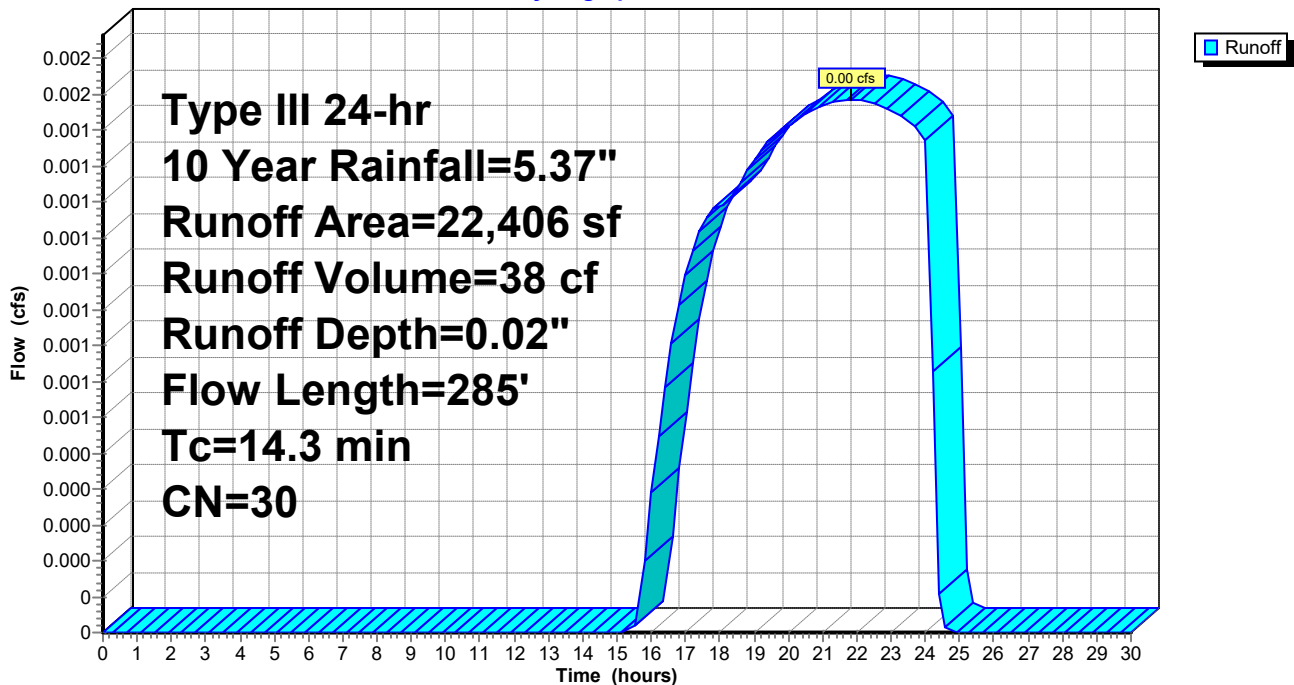
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 10 Year Rainfall=5.37"

Area (sf)	CN	Description
22,406	30	Woods, Good, HSG A
22,406		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	240	0.2890	0.55		Lag/CN Method,
7.0	45	0.0220	0.11		Lag/CN Method, 45
14.3	285				Total

Subcatchment P3: Analysis Area #3

Hydrograph



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Summary for Subcatchment P4: Parking & Landscaping

Runoff = 1.00 cfs @ 12.09 hrs, Volume= 4,513 cf, Depth= 3.61"
 Routed to Pond CB2 : Double CB

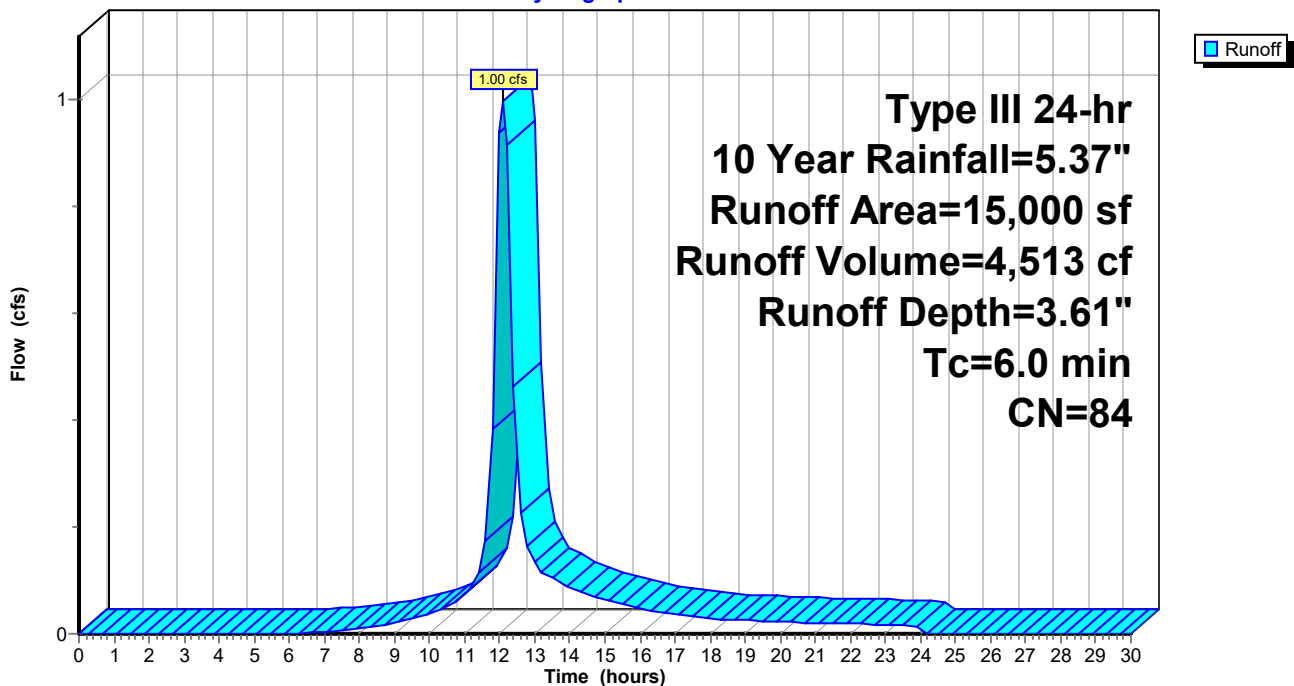
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
 Type III 24-hr 10 Year Rainfall=5.37"

Area (sf)	CN	Description
10,763	98	Paved roads w/curbs & sewers, HSG A
4,237	49	50-75% Grass cover, Fair, HSG A
15,000	84	Weighted Average
4,237		28.25% Pervious Area
10,763		71.75% Impervious Area

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

Subcatchment P4: Parking & Landscaping

Hydrograph



Proposed Parking & Drainage

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 Type III 24-hr 10 Year Rainfall=5.37"

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Summary for Subcatchment P5: Parking & Landscaping

Runoff = 0.52 cfs @ 12.10 hrs, Volume= 2,347 cf, Depth= 3.22"
 Routed to Pond CB1 : Reset CB w/C-L

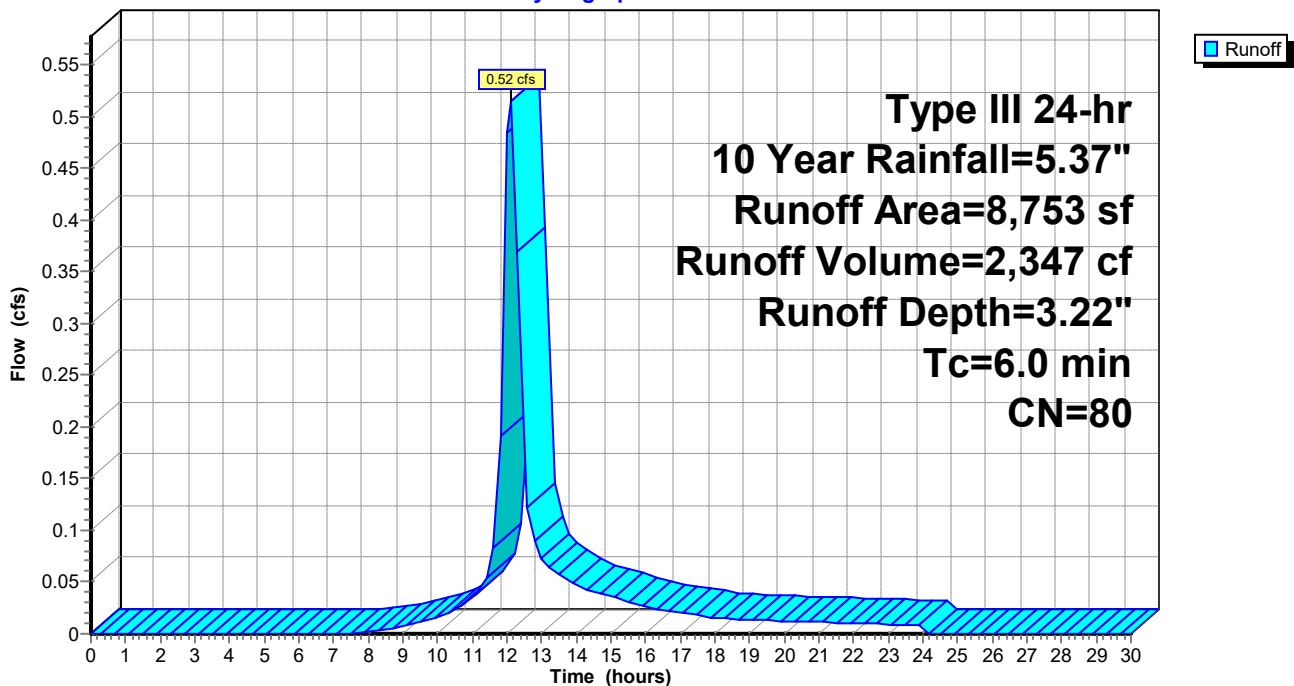
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
 Type III 24-hr 10 Year Rainfall=5.37"

Area (sf)	CN	Description
5,615	98	Paved parking, HSG A
3,138	49	50-75% Grass cover, Fair, HSG A
8,753	80	Weighted Average
3,138		35.85% Pervious Area
5,615		64.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Tc-5S

Subcatchment P5: Parking & Landscaping

Hydrograph



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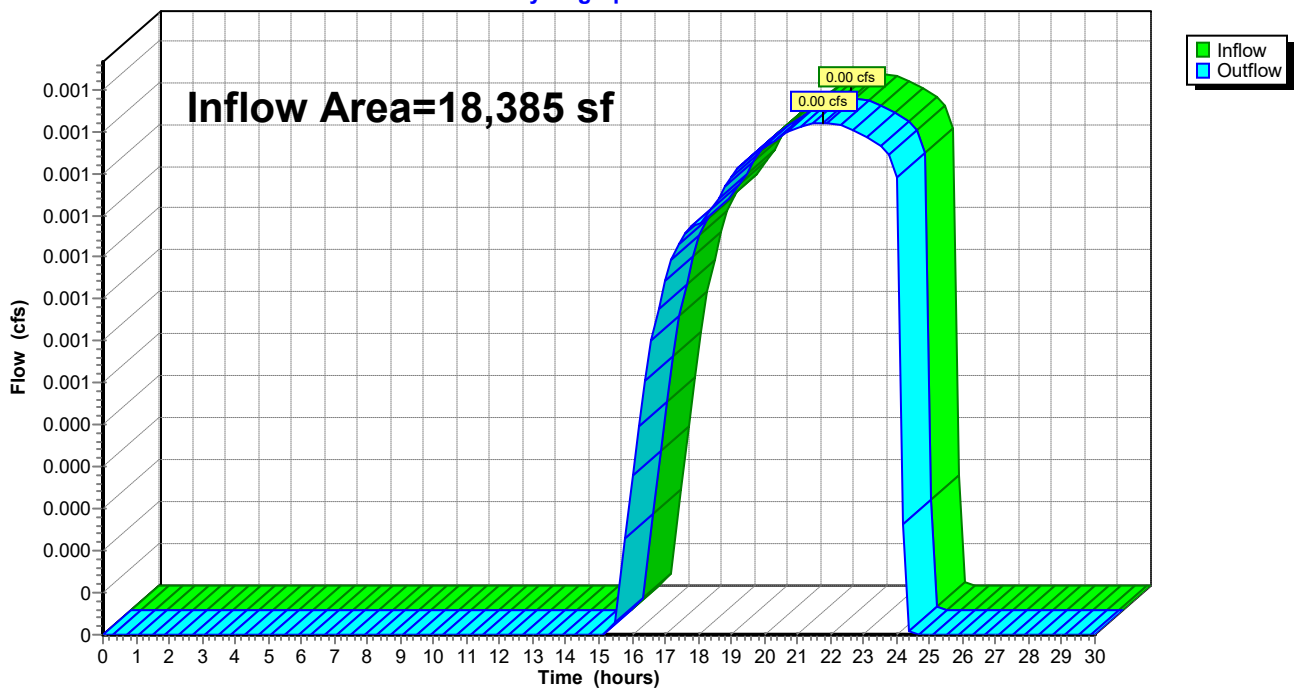
Summary for Reach AP1: Analysis Point

Inflow Area = 18,385 sf, 0.00% Impervious, Inflow Depth = 0.02" for 10 Year event
Inflow = 0.00 cfs @ 21.75 hrs, Volume= 32 cf
Outflow = 0.00 cfs @ 21.75 hrs, Volume= 32 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Reach AP1: Analysis Point

Hydrograph



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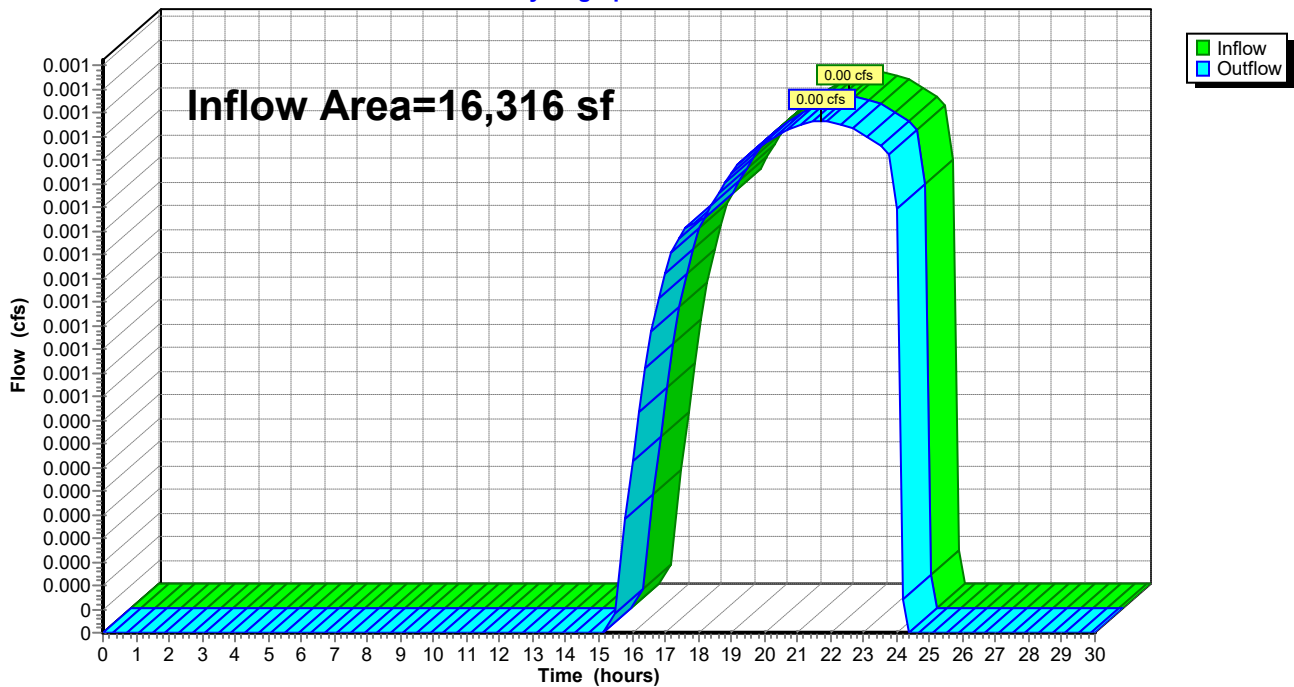
Summary for Reach AP2: Analysis Point

Inflow Area = 16,316 sf, 0.00% Impervious, Inflow Depth = 0.02" for 10 Year event
Inflow = 0.00 cfs @ 21.70 hrs, Volume= 28 cf
Outflow = 0.00 cfs @ 21.70 hrs, Volume= 28 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Reach AP2: Analysis Point

Hydrograph



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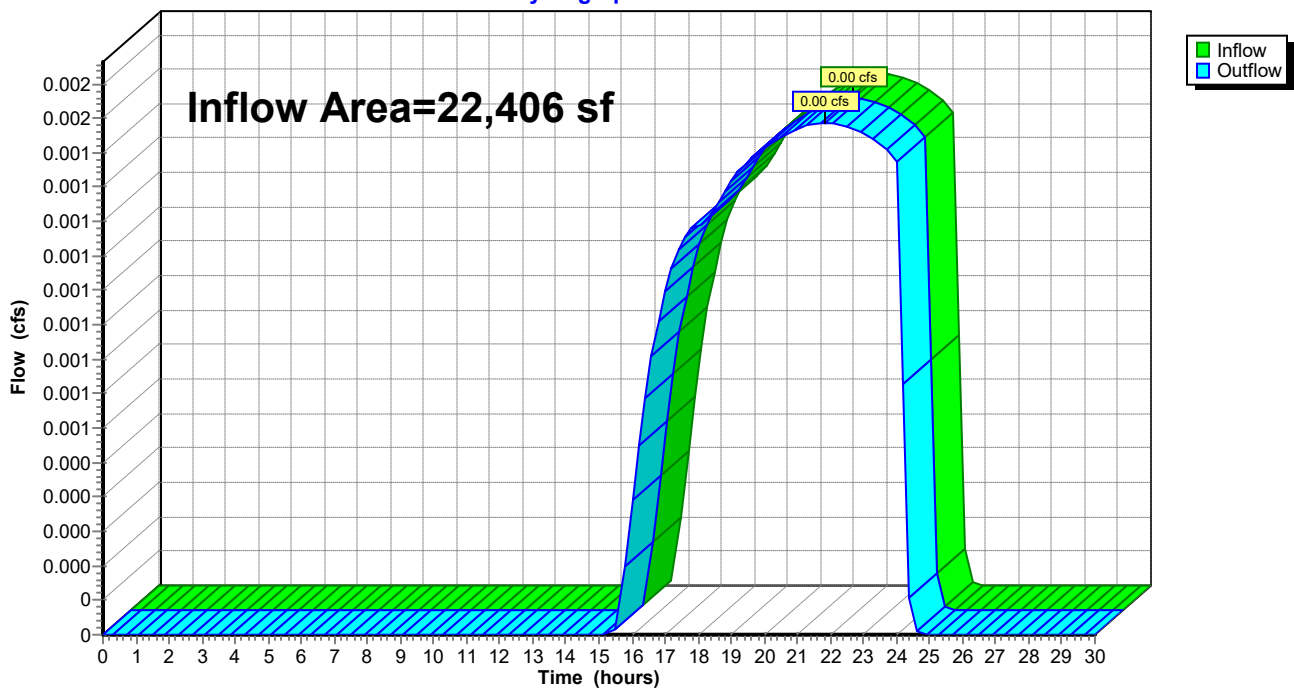
Summary for Reach AP3: Analysis Point

Inflow Area = 22,406 sf, 0.00% Impervious, Inflow Depth = 0.02" for 10 Year event
Inflow = 0.00 cfs @ 21.83 hrs, Volume= 38 cf
Outflow = 0.00 cfs @ 21.83 hrs, Volume= 38 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Reach AP3: Analysis Point

Hydrograph



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Type III 24-hr 10 Year Rainfall=5.37"

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Summary for Reach AP4: Analysis Point

Inflow Area = 23,753 sf, 68.95% Impervious, Inflow Depth = 0.00" for 10 Year event

Routing by Stor-Ind method

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Type III 24-hr 10 Year Rainfall=5.37"

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Summary for Pond 3P: Retain-it System

Inflow Area = 23,753 sf, 68.95% Impervious, Inflow Depth = 3.47" for 10 Year event
Inflow = 1.52 cfs @ 12.10 hrs, Volume= 6,861 cf
Outflow = 0.71 cfs @ 12.00 hrs, Volume= 6,723 cf, Atten= 53%, Lag= 0.0 min
Discarded = 0.71 cfs @ 12.00 hrs, Volume= 6,723 cf

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs / 3
Peak Elev= 236.72' @ 12.43 hrs Surf.Area= 960 sf Storage= 1,024 cf

Plug-Flow detention time= 19.7 min calculated for 6,678 cf (97% of inflow)
Center-of-Mass det. time= 8.2 min (819.6 - 811.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	235.50'	0 cf	24.00'W x 40.00'L x 5.67'H Field A 5,440 cf Overall - 5,440 cf Embedded = 0 cf x 10.0% Voids
#2A	235.50'	4,203 cf	retain_it retain_it 5.0' x 15 Inside #1 Inside= 84.0"W x 60.0"H => 36.41 sf x 8.00'L = 291.3 cf Outside= 96.0"W x 68.0"H => 45.33 sf x 8.00'L = 362.7 cf 3 Rows adjusted for 166.2 cf perimeter wall
		4,203 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	235.50'	32.000 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.71 cfs @ 12.00 hrs HW=235.81' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.71 cfs)

Proposed Parking & Drainage

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Pond 3P: Retain-it System - Chamber Wizard Field A

Chamber Model = retain_it retain_it 5.0' (retain-it®)

Inside= 84.0"W x 60.0"H => 36.41 sf x 8.00'L = 291.3 cf

Outside= 96.0"W x 68.0"H => 45.33 sf x 8.00'L = 362.7 cf

3 Rows adjusted for 166.2 cf perimeter wall

5 Chambers/Row x 8.00' Long = 40.00' Row Length

3 Rows x 96.0" Wide = 24.00' Base Width

68.0" Chamber Height = 5.67' Field Height

10.4 cf Sidewall x 5 x 2 + 10.4 cf Endwall x 3 x 2 = 166.2 cf Perimeter Wall

15 Chambers x 291.3 cf - 166.2 cf Perimeter wall = 4,203.0 cf Chamber Storage

15 Chambers x 362.7 cf = 5,440.0 cf Displacement

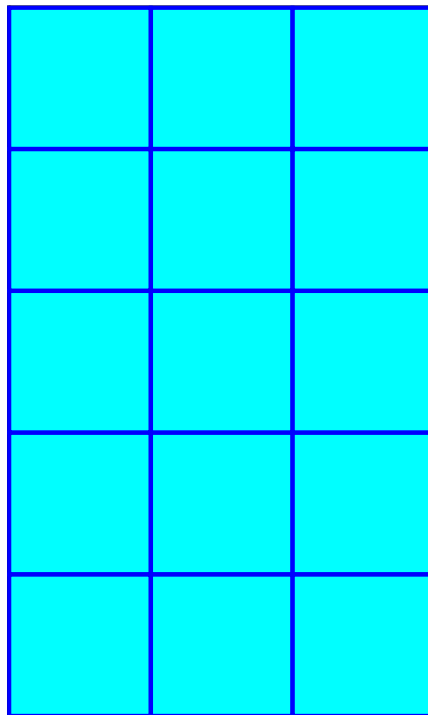
Chamber Storage = 4,203.0 cf = 0.096 af

Overall Storage Efficiency = 77.3%

Overall System Size = 40.00' x 24.00' x 5.67'

15 Chambers

201.5 cy Field



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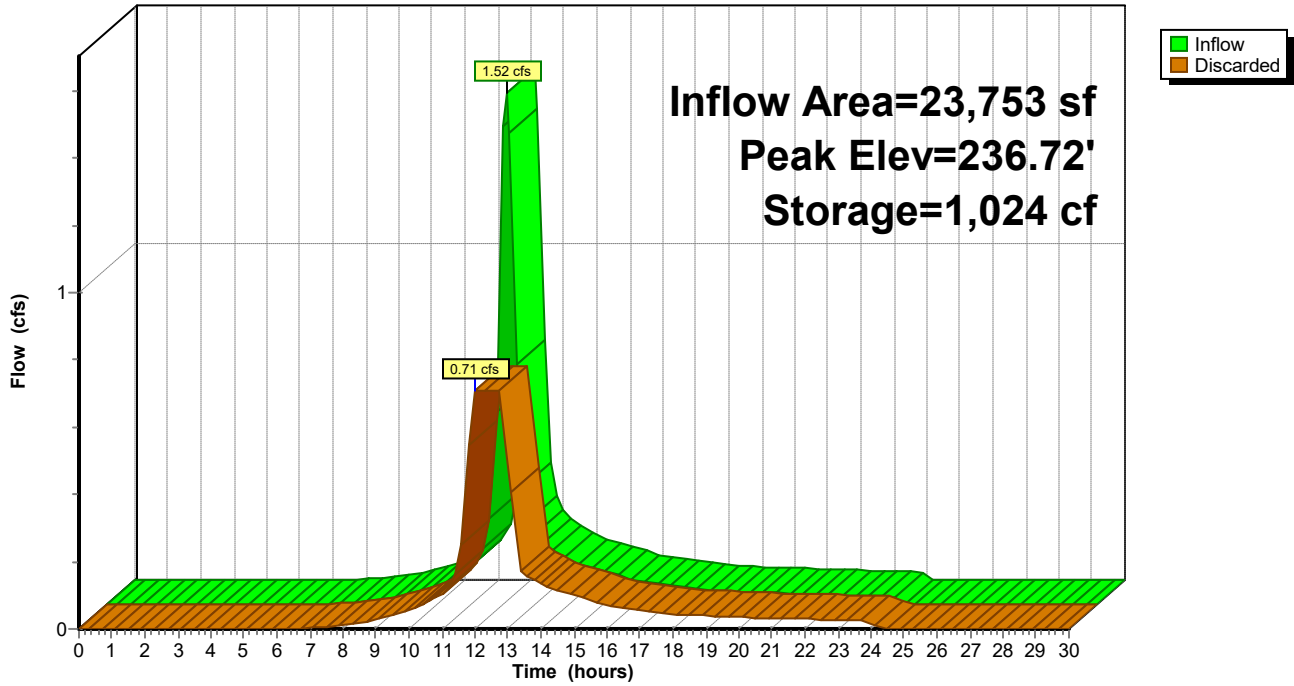
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Pond 3P: Retain-it System

Hydrograph



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Summary for Pond CB1: Reset CB w/C-L

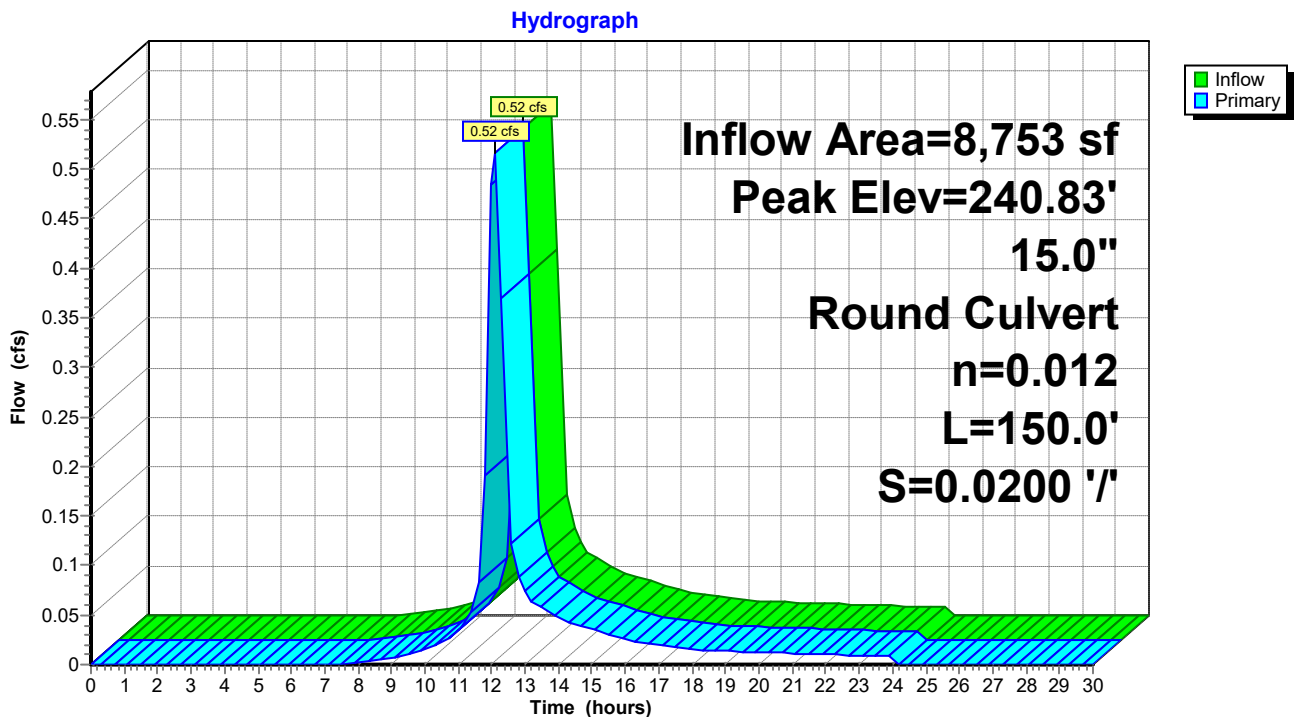
Inflow Area = 8,753 sf, 64.15% Impervious, Inflow Depth = 3.22" for 10 Year event
Inflow = 0.52 cfs @ 12.10 hrs, Volume= 2,347 cf
Outflow = 0.52 cfs @ 12.10 hrs, Volume= 2,347 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.52 cfs @ 12.10 hrs, Volume= 2,347 cf
Routed to Pond CB2 : Double CB

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Peak Elev= 240.83' @ 12.10 hrs

Device #	Routing	Invert	Outlet Devices
1	Primary	240.50'	15.0" Round Culvert L= 150.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 240.50' / 237.50' S= 0.0200 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf

Primary OutFlow Max=0.49 cfs @ 12.10 hrs HW=240.82' (Free Discharge)
↑1=Culvert (Inlet Controls 0.49 cfs @ 1.93 fps)

Pond CB1: Reset CB w/C-L



Proposed Parking & Drainage

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Type III 24-hr 10 Year Rainfall=5.37"

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Summary for Pond CB2: Double CB

Inflow Area = 23,753 sf, 68.95% Impervious, Inflow Depth = 3.47" for 10 Year event
Inflow = 1.52 cfs @ 12.10 hrs, Volume= 6,861 cf
Outflow = 1.52 cfs @ 12.10 hrs, Volume= 6,861 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.52 cfs @ 12.10 hrs, Volume= 6,861 cf
Routed to Pond 3P : Retain-it System

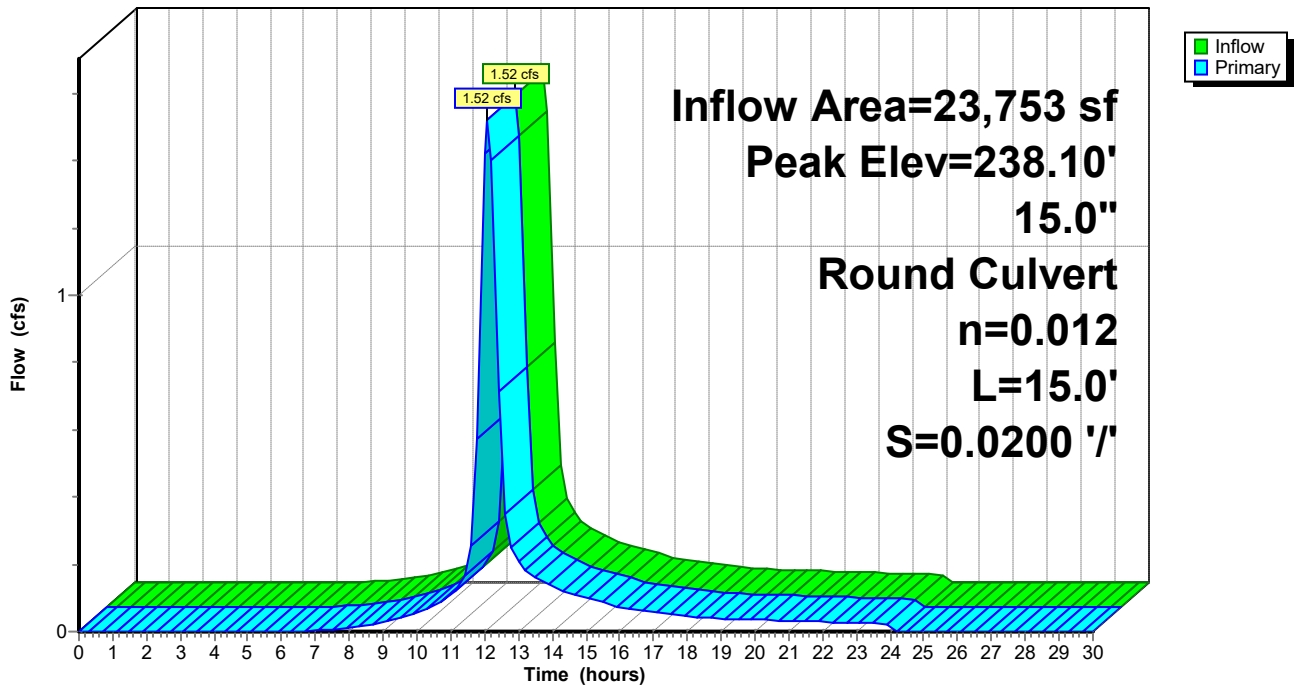
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Peak Elev= 238.10' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	237.50'	15.0" Round Culvert L= 15.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 237.50' / 237.20' S= 0.0200 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf

Primary OutFlow Max=1.41 cfs @ 12.10 hrs HW=238.07' (Free Discharge)
↑1=Culvert (Inlet Controls 1.41 cfs @ 2.58 fps)

Pond CB2: Double CB

Hydrograph



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Type III 24-hr 25 Year Rainfall=6.64"

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Time span=0.00-30.00 hrs, dt=0.20 hrs, 151 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment P1: Analysis Area #1 Runoff Area=18,385 sf 0.00% Impervious Runoff Depth=0.15"
Flow Length=135' Tc=9.1 min CN=30 Runoff=0.01 cfs 236 cf

Subcatchment P2: Analysis Area #2 Runoff Area=16,316 sf 0.00% Impervious Runoff Depth=0.15"
Flow Length=122' Tc=6.0 min CN=30 Runoff=0.01 cfs 209 cf

Subcatchment P3: Analysis Area #3 Runoff Area=22,406 sf 0.00% Impervious Runoff Depth=0.15"
Flow Length=285' Tc=14.3 min CN=30 Runoff=0.01 cfs 287 cf

Subcatchment P4: Parking & Landscaping Runoff Area=15,000 sf 71.75% Impervious Runoff Depth=4.80"
Tc=6.0 min CN=84 Runoff=1.32 cfs 5,998 cf

Subcatchment P5: Parking & Landscaping Runoff Area=8,753 sf 64.15% Impervious Runoff Depth=4.36"
Tc=6.0 min CN=80 Runoff=0.71 cfs 3,183 cf

Reach AP1: Analysis Point Inflow=0.01 cfs 236 cf
Outflow=0.01 cfs 236 cf

Reach AP2: Analysis Point Inflow=0.01 cfs 209 cf
Outflow=0.01 cfs 209 cf

Reach AP3: Analysis Point Inflow=0.01 cfs 287 cf
Outflow=0.01 cfs 287 cf

Reach AP4: Analysis Point

Pond 3P: Retain-it System Peak Elev=237.75' Storage=1,892 cf Inflow=2.02 cfs 9,181 cf
Outflow=0.71 cfs 9,082 cf

Pond CB1: Reset CB w/C-L Peak Elev=240.90' Inflow=0.71 cfs 3,183 cf
15.0" Round Culvert n=0.012 L=150.0' S=0.0200 ' /' Outflow=0.71 cfs 3,183 cf

Pond CB2: Double CB Peak Elev=238.21' Inflow=2.02 cfs 9,181 cf
15.0" Round Culvert n=0.012 L=15.0' S=0.0200 ' /' Outflow=2.02 cfs 9,181 cf

Total Runoff Area = 80,860 sf Runoff Volume = 9,913 cf Average Runoff Depth = 1.47"
79.75% Pervious = 64,482 sf 20.25% Impervious = 16,378 sf

Proposed Parking & Drainage

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 Type III 24-hr 25 Year Rainfall=6.64"

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Summary for Subcatchment P1: Analysis Area #1

Runoff = 0.01 cfs @ 14.83 hrs, Volume= 236 cf, Depth= 0.15"
 Routed to Reach AP1 : Analysis Point

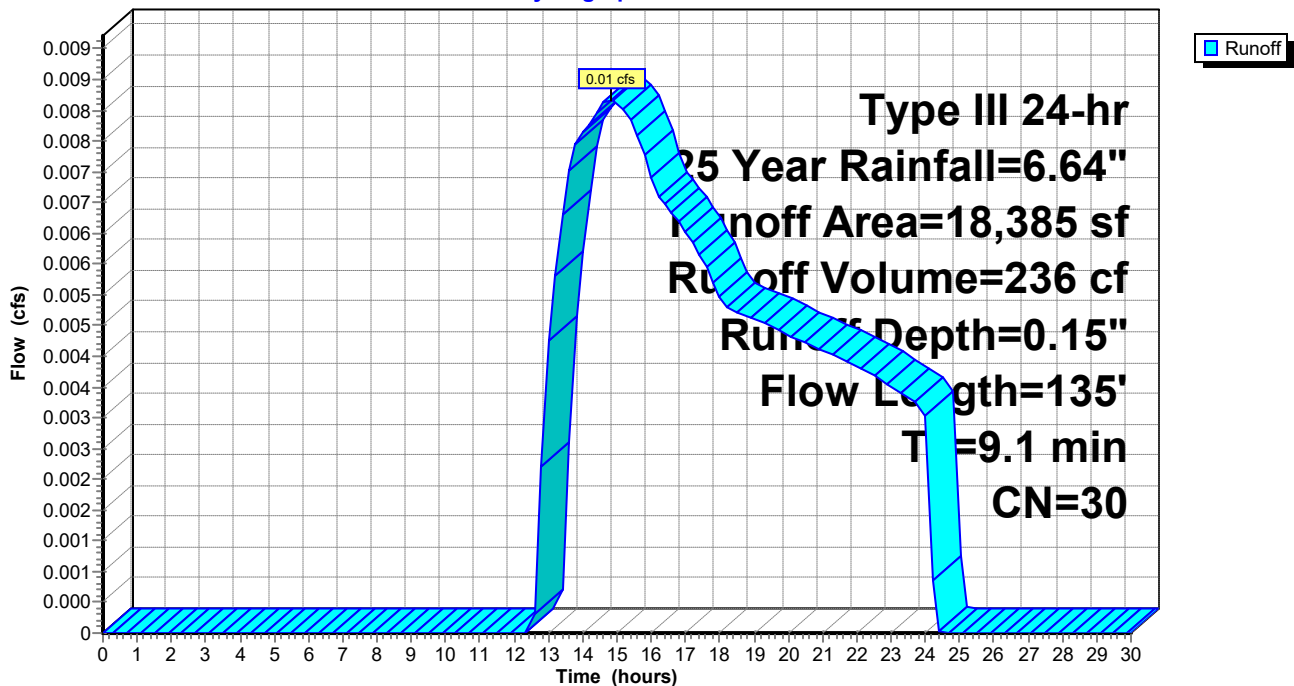
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
 Type III 24-hr 25 Year Rainfall=6.64"

Area (sf)	CN	Description
18,385	30	Woods, Good, HSG A
18,385		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	25	0.1200	0.22		Lag/CN Method,
3.5	35	0.0570	0.16		Lag/CN Method,
3.7	75	0.1730	0.33		Lag/CN Method,
9.1	135	Total			

Subcatchment P1: Analysis Area #1

Hydrograph



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Summary for Subcatchment P2: Analysis Area #2

Runoff = 0.01 cfs @ 14.78 hrs, Volume= 209 cf, Depth= 0.15"
 Routed to Reach AP2 : Analysis Point

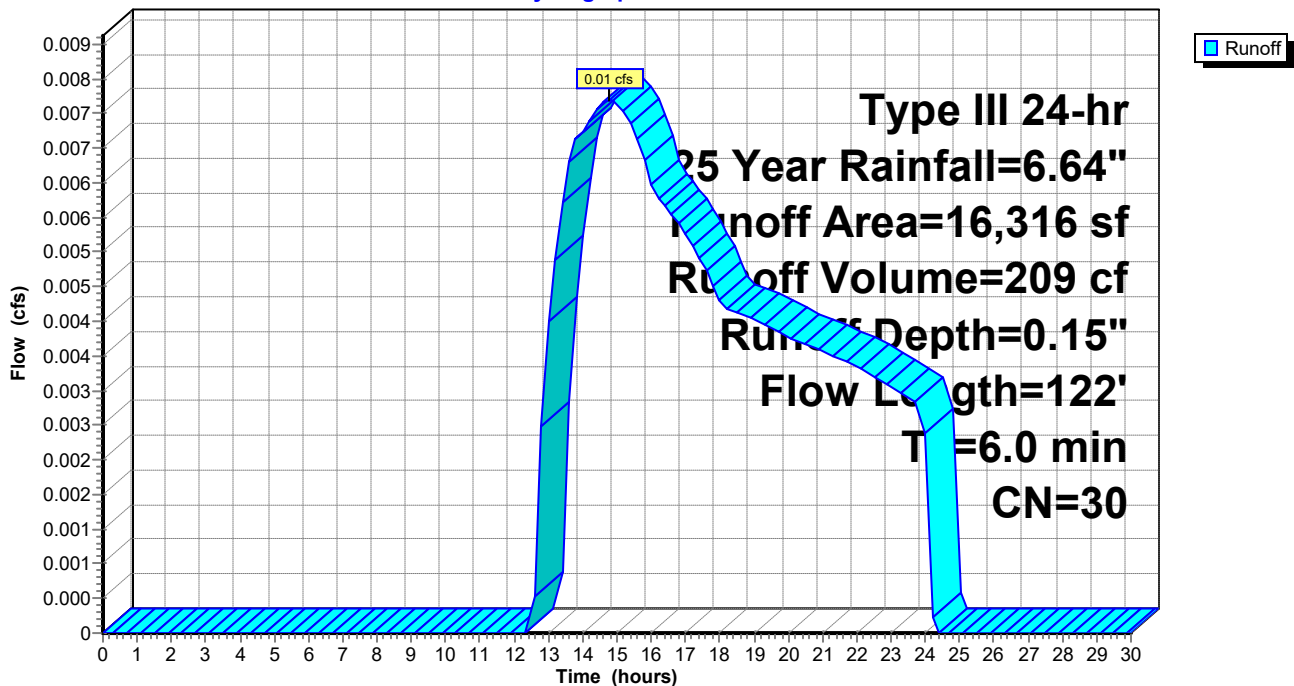
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
 Type III 24-hr 25 Year Rainfall=6.64"

Area (sf)	CN	Description
16,316	30	Woods, Good, HSG A
16,316		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	22	0.3180	0.35		Lag/CN Method,
1.9	60	0.4670	0.53		Lag/CN Method,
3.0	40	0.1000	0.22		Lag/CN Method,
5.9	122	Total, Increased to minimum Tc = 6.0 min			

Subcatchment P2: Analysis Area #2

Hydrograph



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Summary for Subcatchment P3: Analysis Area #3

Runoff = 0.01 cfs @ 14.91 hrs, Volume= 287 cf, Depth= 0.15"
Routed to Reach AP3 : Analysis Point

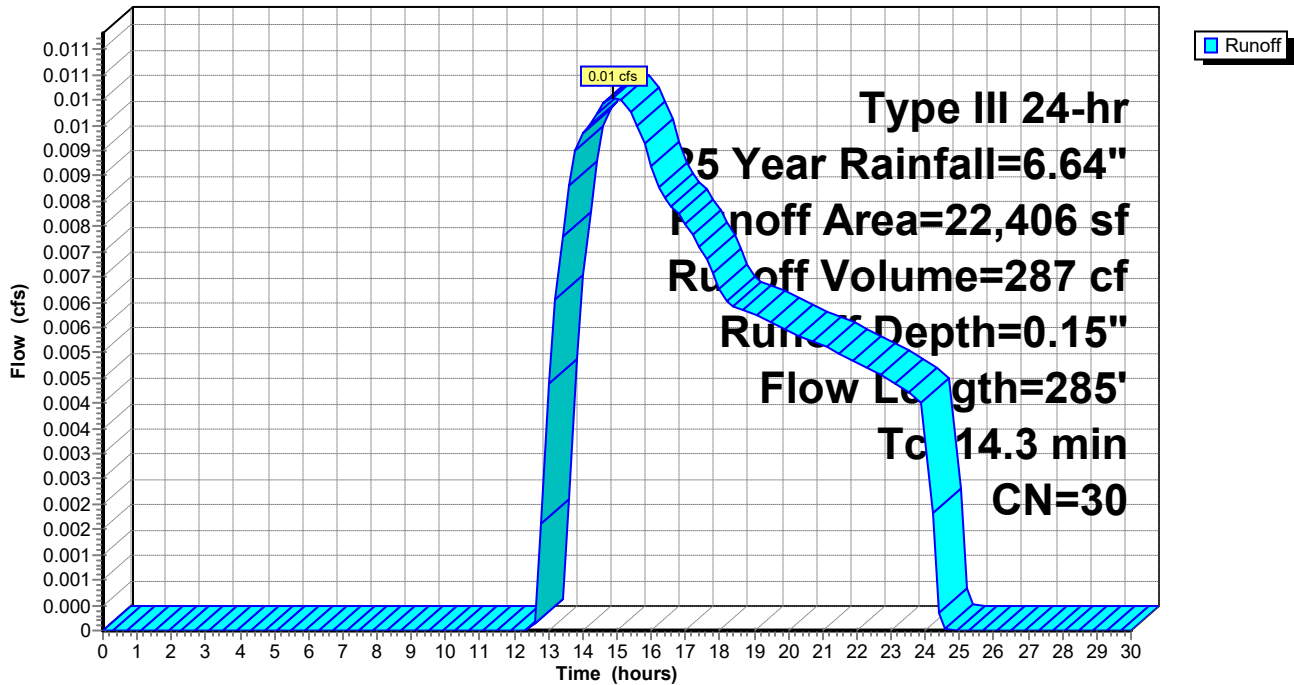
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 25 Year Rainfall=6.64"

Area (sf)	CN	Description
22,406	30	Woods, Good, HSG A
22,406		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	240	0.2890	0.55		Lag/CN Method,
7.0	45	0.0220	0.11		Lag/CN Method, 45
14.3	285	Total			

Subcatchment P3: Analysis Area #3

Hydrograph



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Summary for Subcatchment P4: Parking & Landscaping

Runoff = 1.32 cfs @ 12.09 hrs, Volume= 5,998 cf, Depth= 4.80"
Routed to Pond CB2 : Double CB

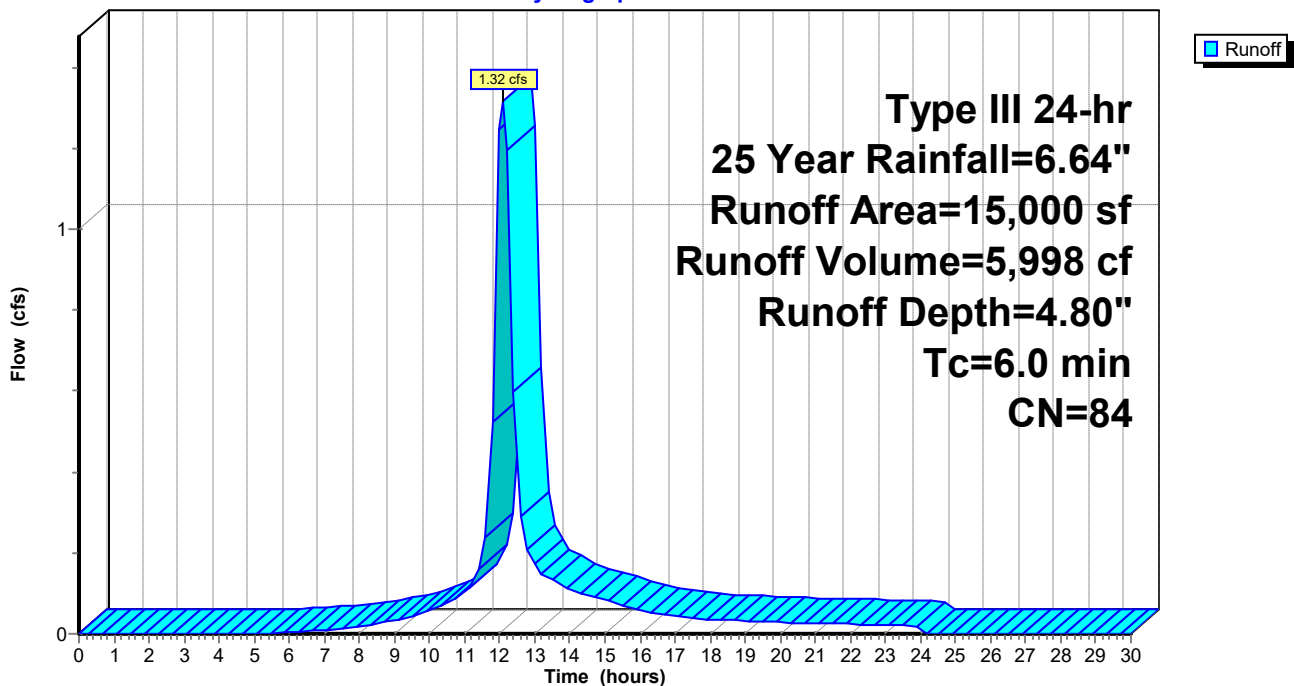
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 25 Year Rainfall=6.64"

Area (sf)	CN	Description
10,763	98	Paved roads w/curbs & sewers, HSG A
4,237	49	50-75% Grass cover, Fair, HSG A
15,000	84	Weighted Average
4,237		28.25% Pervious Area
10,763		71.75% Impervious Area

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

Subcatchment P4: Parking & Landscaping

Hydrograph



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Summary for Subcatchment P5: Parking & Landscaping

Runoff = 0.71 cfs @ 12.09 hrs, Volume= 3,183 cf, Depth= 4.36"
 Routed to Pond CB1 : Reset CB w/C-L

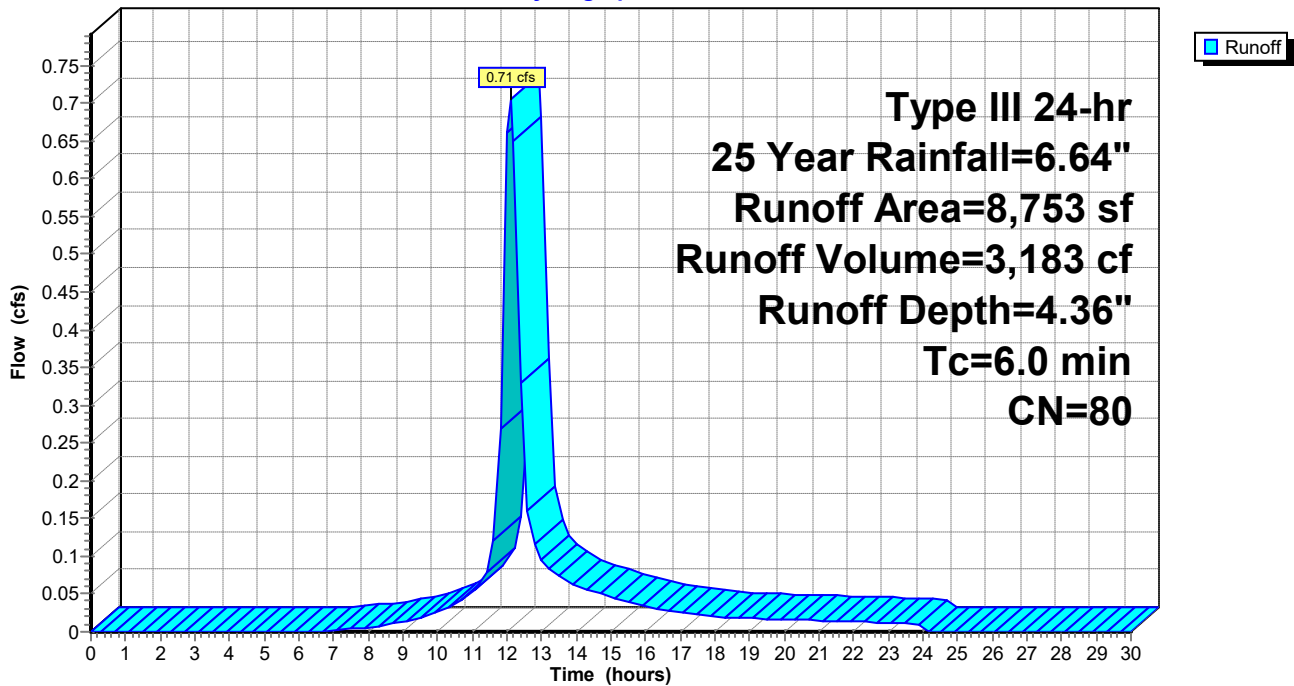
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
 Type III 24-hr 25 Year Rainfall=6.64"

Area (sf)	CN	Description
5,615	98	Paved parking, HSG A
3,138	49	50-75% Grass cover, Fair, HSG A
8,753	80	Weighted Average
3,138		35.85% Pervious Area
5,615		64.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Tc-5S

Subcatchment P5: Parking & Landscaping

Hydrograph



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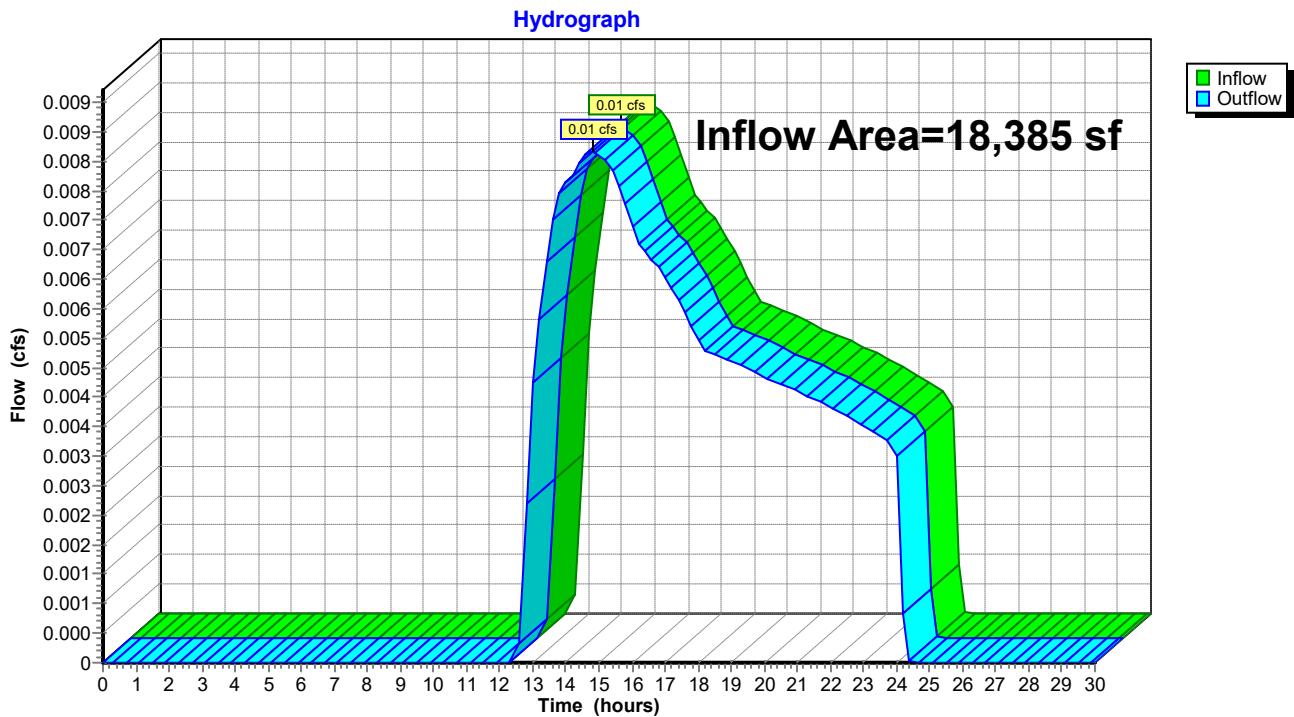
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Summary for Reach AP1: Analysis Point

Inflow Area = 18,385 sf, 0.00% Impervious, Inflow Depth = 0.15" for 25 Year event
Inflow = 0.01 cfs @ 14.83 hrs, Volume= 236 cf
Outflow = 0.01 cfs @ 14.83 hrs, Volume= 236 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Reach AP1: Analysis Point



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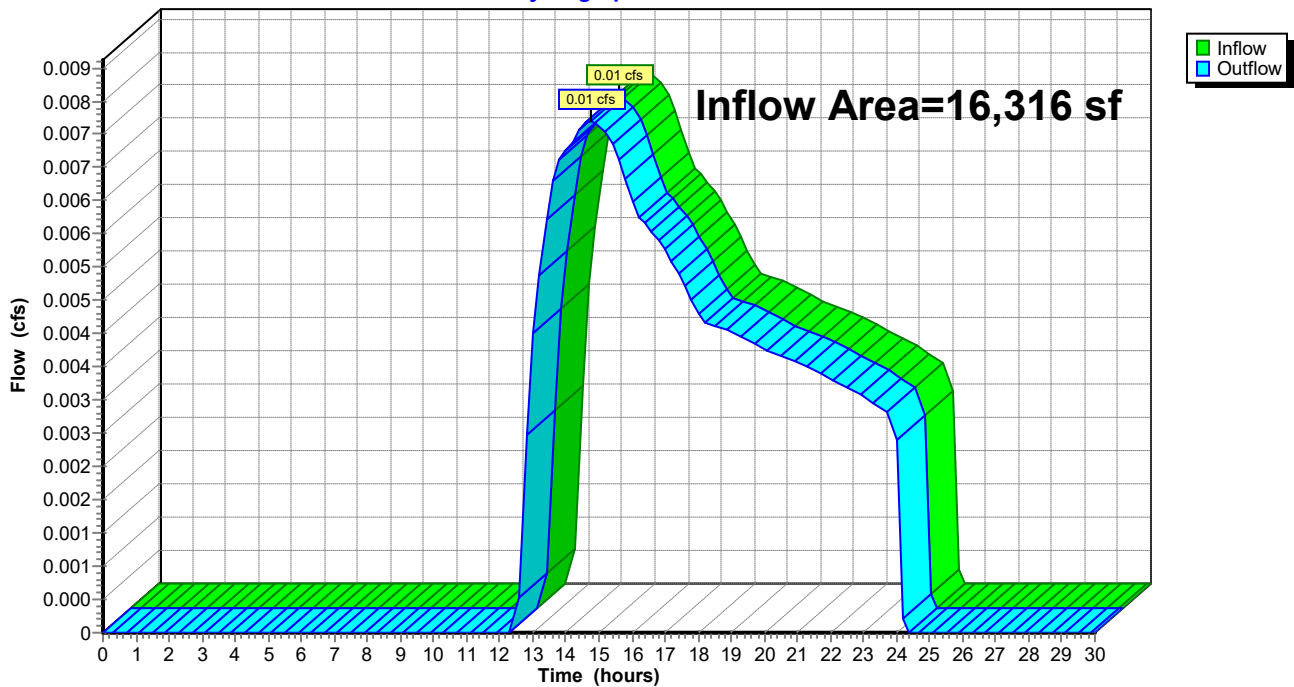
Summary for Reach AP2: Analysis Point

Inflow Area = 16,316 sf, 0.00% Impervious, Inflow Depth = 0.15" for 25 Year event
Inflow = 0.01 cfs @ 14.78 hrs, Volume= 209 cf
Outflow = 0.01 cfs @ 14.78 hrs, Volume= 209 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Reach AP2: Analysis Point

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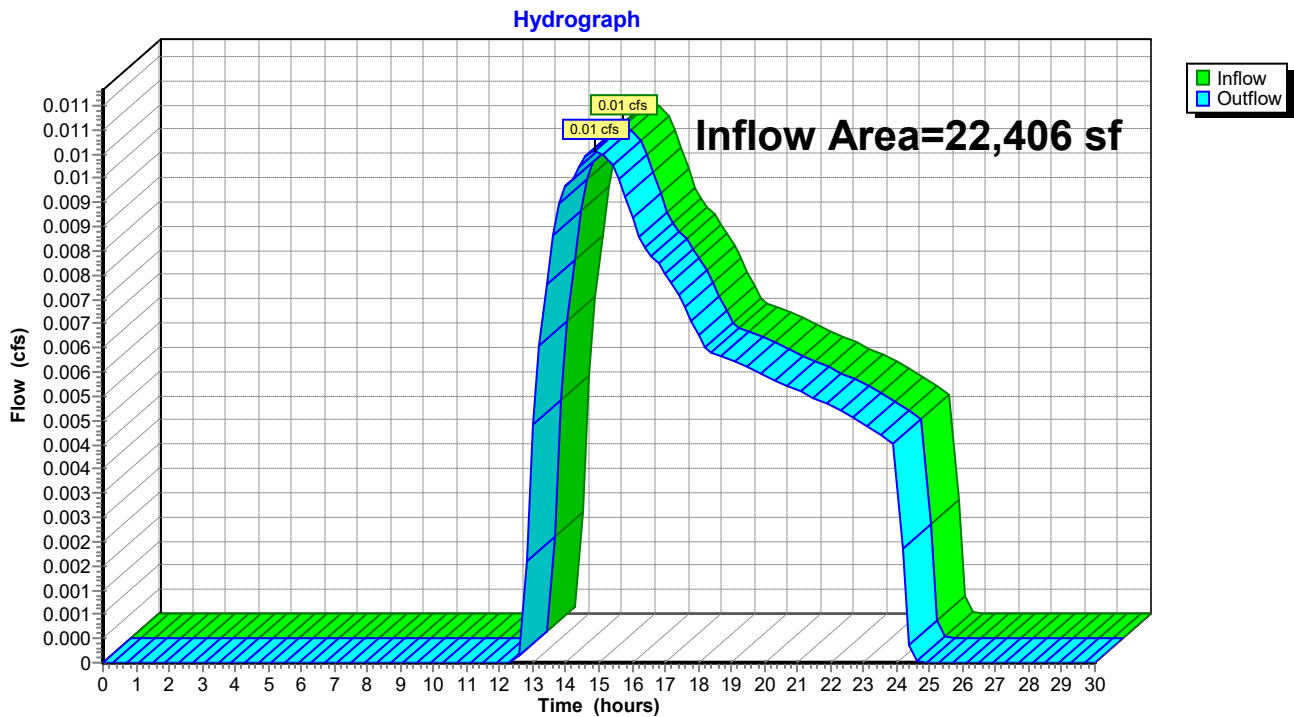
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Summary for Reach AP3: Analysis Point

Inflow Area = 22,406 sf, 0.00% Impervious, Inflow Depth = 0.15" for 25 Year event
Inflow = 0.01 cfs @ 14.91 hrs, Volume= 287 cf
Outflow = 0.01 cfs @ 14.91 hrs, Volume= 287 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Reach AP3: Analysis Point



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Summary for Reach AP4: Analysis Point

Inflow Area = 23,753 sf, 68.95% Impervious, Inflow Depth = 0.00" for 25 Year event

Routing by Stor-Ind method

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Summary for Pond 3P: Retain-it System

Inflow Area = 23,753 sf, 68.95% Impervious, Inflow Depth = 4.64" for 25 Year event
Inflow = 2.02 cfs @ 12.09 hrs, Volume= 9,181 cf
Outflow = 0.71 cfs @ 11.80 hrs, Volume= 9,082 cf, Atten= 65%, Lag= 0.0 min
Discarded = 0.71 cfs @ 11.80 hrs, Volume= 9,082 cf

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs / 3
Peak Elev= 237.75' @ 12.49 hrs Surf.Area= 960 sf Storage= 1,892 cf

Plug-Flow detention time= 20.3 min calculated for 9,022 cf (98% of inflow)
Center-of-Mass det. time= 13.8 min (817.1 - 803.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	235.50'	0 cf	24.00'W x 40.00'L x 5.67'H Field A 5,440 cf Overall - 5,440 cf Embedded = 0 cf x 10.0% Voids
#2A	235.50'	4,203 cf	retain_it retain_it 5.0' x 15 Inside #1 Inside= 84.0"W x 60.0"H => 36.41 sf x 8.00'L = 291.3 cf Outside= 96.0"W x 68.0"H => 45.33 sf x 8.00'L = 362.7 cf 3 Rows adjusted for 166.2 cf perimeter wall
		4,203 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	235.50'	32.000 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.71 cfs @ 11.80 hrs HW=235.57' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.71 cfs)

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Pond 3P: Retain-it System - Chamber Wizard Field A

Chamber Model = retain_it retain_it 5.0' (retain-it®)

Inside= 84.0"W x 60.0"H => 36.41 sf x 8.00'L = 291.3 cf

Outside= 96.0"W x 68.0"H => 45.33 sf x 8.00'L = 362.7 cf

3 Rows adjusted for 166.2 cf perimeter wall

5 Chambers/Row x 8.00' Long = 40.00' Row Length

3 Rows x 96.0" Wide = 24.00' Base Width

68.0" Chamber Height = 5.67' Field Height

10.4 cf Sidewall x 5 x 2 + 10.4 cf Endwall x 3 x 2 = 166.2 cf Perimeter Wall

15 Chambers x 291.3 cf - 166.2 cf Perimeter wall = 4,203.0 cf Chamber Storage

15 Chambers x 362.7 cf = 5,440.0 cf Displacement

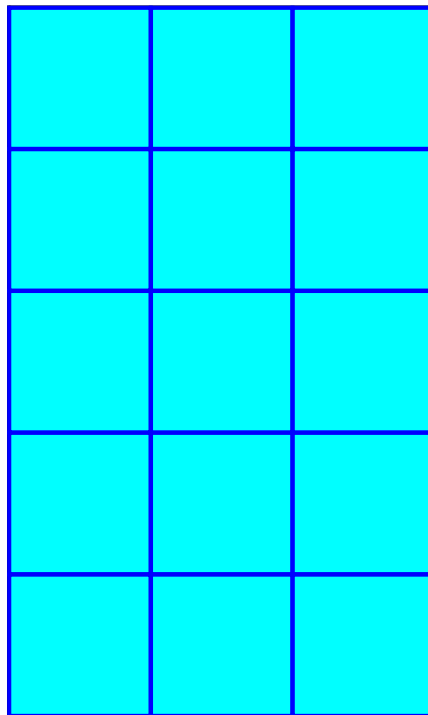
Chamber Storage = 4,203.0 cf = 0.096 af

Overall Storage Efficiency = 77.3%

Overall System Size = 40.00' x 24.00' x 5.67'

15 Chambers

201.5 cy Field



Proposed Parking & Drainage

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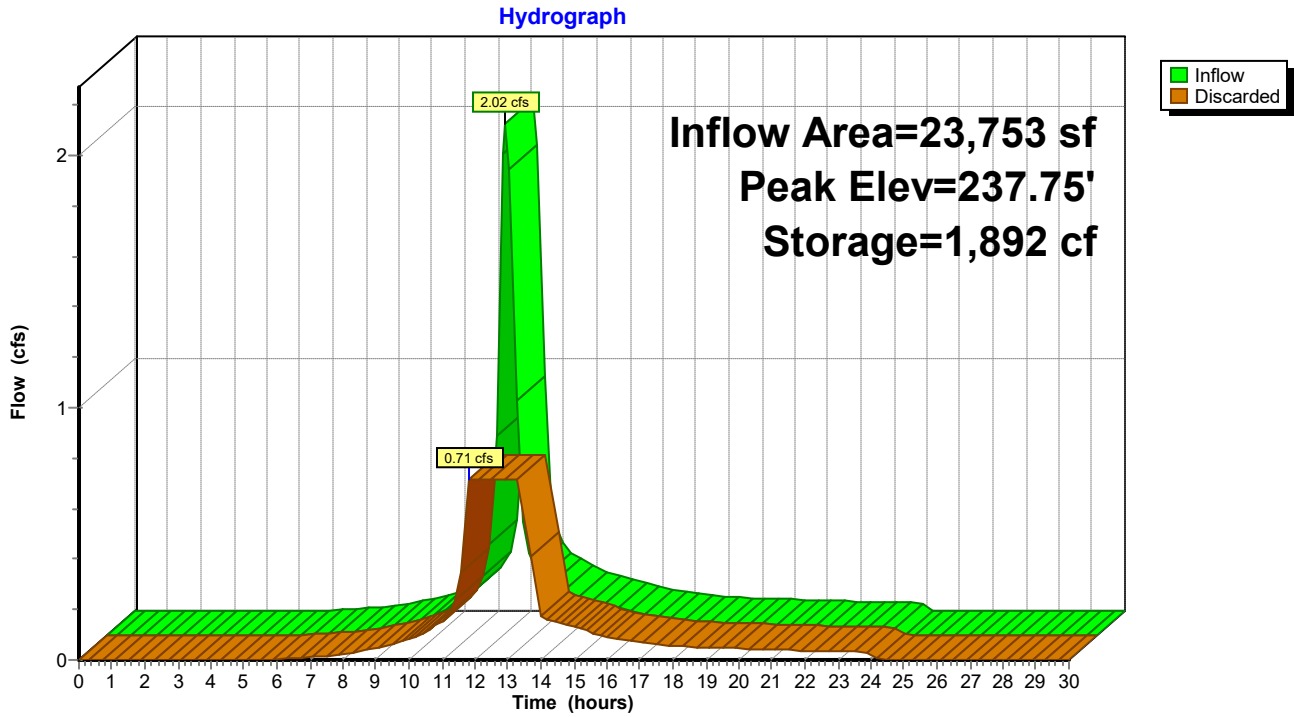
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Pond 3P: Retain-it System



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Summary for Pond CB1: Reset CB w/C-L

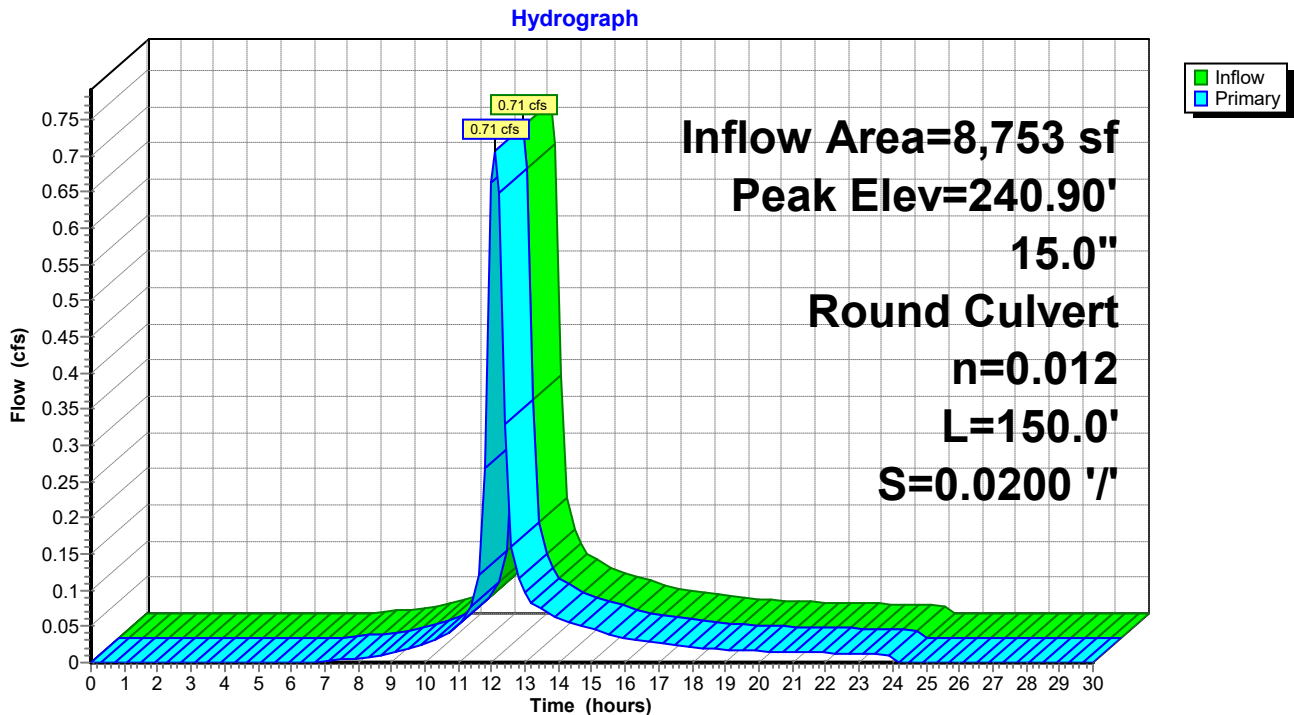
Inflow Area = 8,753 sf, 64.15% Impervious, Inflow Depth = 4.36" for 25 Year event
Inflow = 0.71 cfs @ 12.09 hrs, Volume= 3,183 cf
Outflow = 0.71 cfs @ 12.09 hrs, Volume= 3,183 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.71 cfs @ 12.09 hrs, Volume= 3,183 cf
Routed to Pond CB2 : Double CB

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Peak Elev= 240.90' @ 12.09 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	240.50'	15.0" Round Culvert L= 150.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 240.50' / 237.50' S= 0.0200 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf

Primary OutFlow Max=0.66 cfs @ 12.09 hrs HW=240.88' (Free Discharge)
↑1=Culvert (Inlet Controls 0.66 cfs @ 2.09 fps)

Pond CB1: Reset CB w/C-L



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Summary for Pond CB2: Double CB

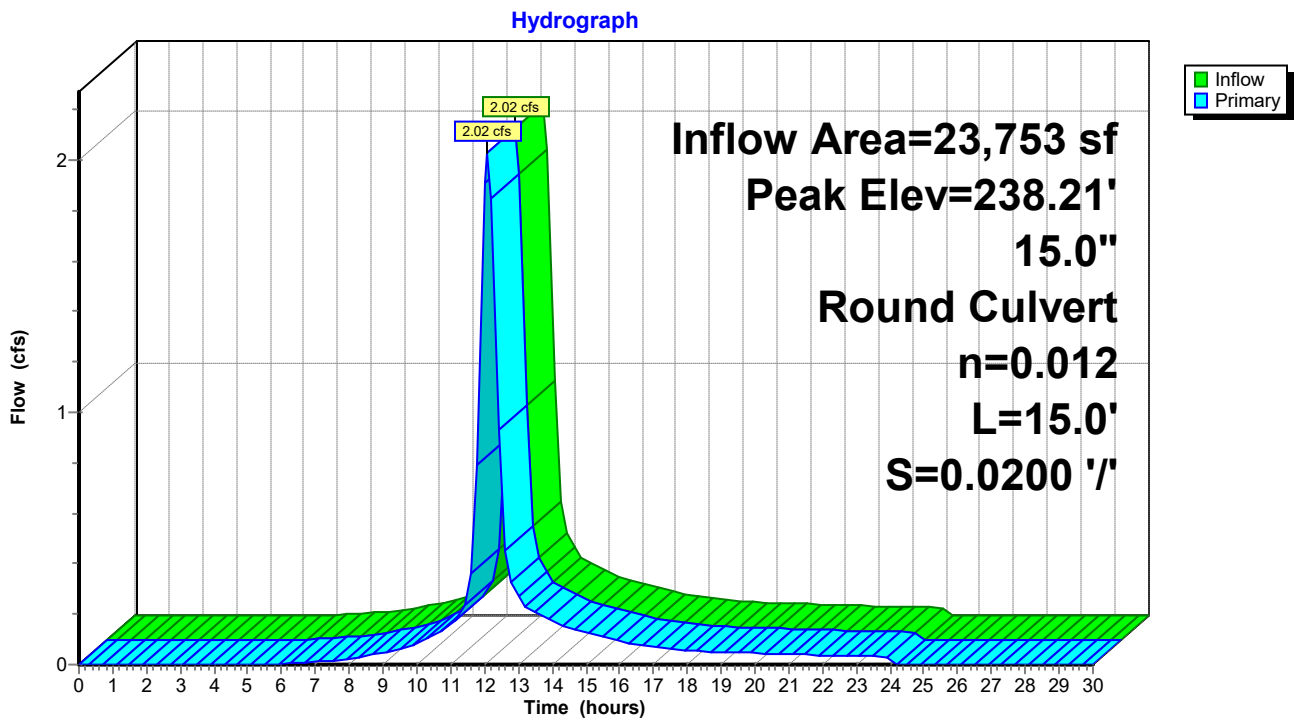
Inflow Area = 23,753 sf, 68.95% Impervious, Inflow Depth = 4.64" for 25 Year event
Inflow = 2.02 cfs @ 12.09 hrs, Volume= 9,181 cf
Outflow = 2.02 cfs @ 12.09 hrs, Volume= 9,181 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.02 cfs @ 12.09 hrs, Volume= 9,181 cf
Routed to Pond 3P : Retain-it System

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Peak Elev= 238.21' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	237.50'	15.0" Round Culvert L= 15.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 237.50' / 237.20' S= 0.0200 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf

Primary OutFlow Max=1.88 cfs @ 12.09 hrs HW=238.18' (Free Discharge)
↑1=Culvert (Barrel Controls 1.88 cfs @ 4.03 fps)

Pond CB2: Double CB



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Time span=0.00-30.00 hrs, dt=0.20 hrs, 151 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment P1: Analysis Area #1 Runoff Area=18,385 sf 0.00% Impervious Runoff Depth=0.32"
Flow Length=135' Tc=9.1 min CN=30 Runoff=0.02 cfs 492 cf

Subcatchment P2: Analysis Area #2 Runoff Area=16,316 sf 0.00% Impervious Runoff Depth=0.32"
Flow Length=122' Tc=6.0 min CN=30 Runoff=0.02 cfs 437 cf

Subcatchment P3: Analysis Area #3 Runoff Area=22,406 sf 0.00% Impervious Runoff Depth=0.32"
Flow Length=285' Tc=14.3 min CN=30 Runoff=0.03 cfs 600 cf

Subcatchment P4: Parking & Landscaping Runoff Area=15,000 sf 71.75% Impervious Runoff Depth=5.68"
Tc=6.0 min CN=84 Runoff=1.55 cfs 7,104 cf

Subcatchment P5: Parking & Landscaping Runoff Area=8,753 sf 64.15% Impervious Runoff Depth=5.22"
Tc=6.0 min CN=80 Runoff=0.84 cfs 3,810 cf

Reach AP1: Analysis Point Inflow=0.02 cfs 492 cf
Outflow=0.02 cfs 492 cf

Reach AP2: Analysis Point Inflow=0.02 cfs 437 cf
Outflow=0.02 cfs 437 cf

Reach AP3: Analysis Point Inflow=0.03 cfs 600 cf
Outflow=0.03 cfs 600 cf

Reach AP4: Analysis Point

Pond 3P: Retain-it System Peak Elev=238.53' Storage=2,548 cf Inflow=2.39 cfs 10,914 cf
Outflow=0.71 cfs 11,008 cf

Pond CB1: Reset CB w/C-L Peak Elev=240.94' Inflow=0.84 cfs 3,810 cf
15.0" Round Culvert n=0.012 L=150.0' S=0.0200 ' Outflow=0.84 cfs 3,810 cf

Pond CB2: Double CB Peak Elev=238.29' Inflow=2.39 cfs 10,914 cf
15.0" Round Culvert n=0.012 L=15.0' S=0.0200 ' Outflow=2.39 cfs 10,914 cf

Total Runoff Area = 80,860 sf Runoff Volume = 12,443 cf Average Runoff Depth = 1.85"
79.75% Pervious = 64,482 sf 20.25% Impervious = 16,378 sf

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Summary for Subcatchment P1: Analysis Area #1

Runoff = 0.02 cfs @ 12.64 hrs, Volume= 492 cf, Depth= 0.32"
Routed to Reach AP1 : Analysis Point

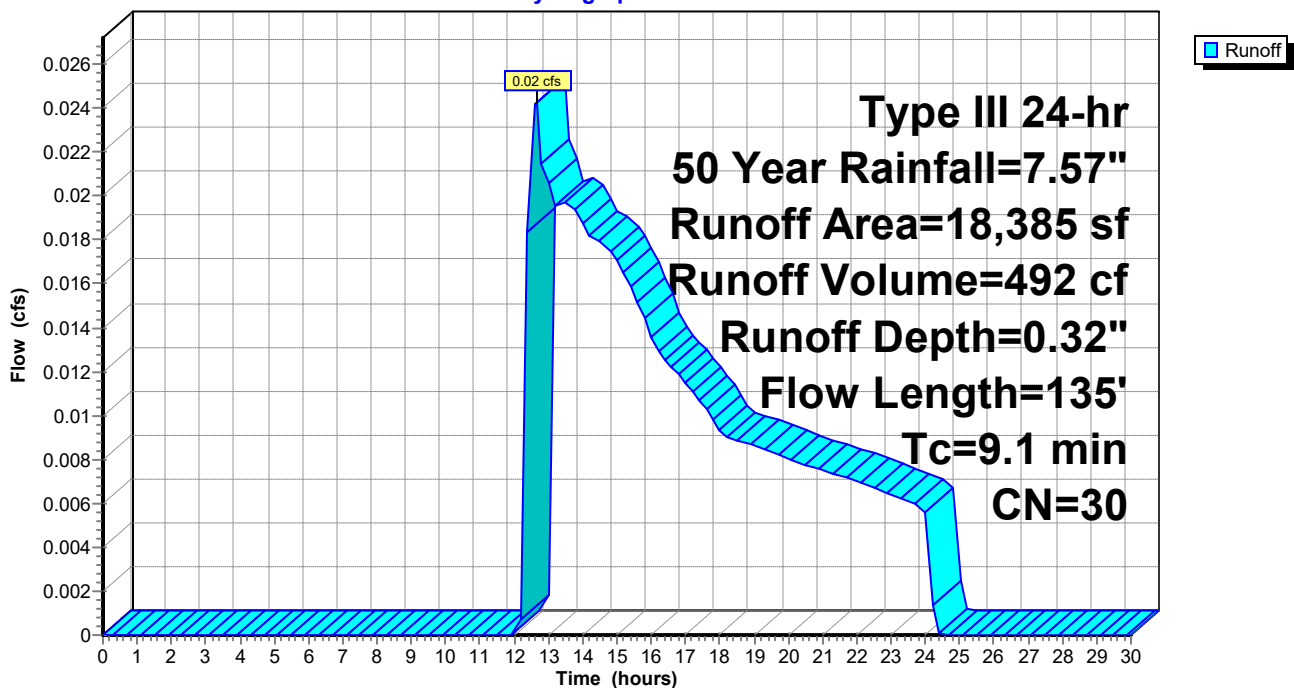
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 50 Year Rainfall=7.57"

Area (sf)	CN	Description
18,385	30	Woods, Good, HSG A
18,385		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	25	0.1200	0.22		Lag/CN Method,
3.5	35	0.0570	0.16		Lag/CN Method,
3.7	75	0.1730	0.33		Lag/CN Method,
9.1	135	Total			

Subcatchment P1: Analysis Area #1

Hydrograph



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Summary for Subcatchment P2: Analysis Area #2

Runoff = 0.02 cfs @ 12.49 hrs, Volume= 437 cf, Depth= 0.32"
Routed to Reach AP2 : Analysis Point

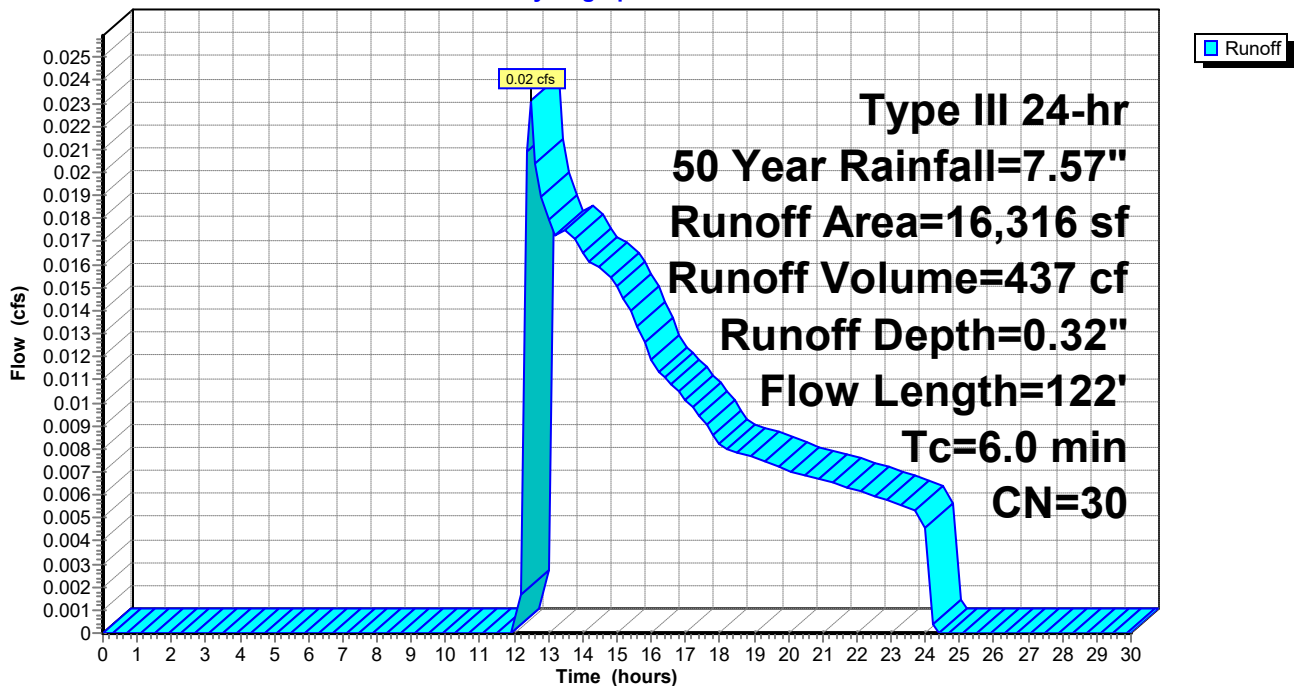
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 50 Year Rainfall=7.57"

Area (sf)	CN	Description
16,316	30	Woods, Good, HSG A
16,316		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	22	0.3180	0.35		Lag/CN Method,
1.9	60	0.4670	0.53		Lag/CN Method,
3.0	40	0.1000	0.22		Lag/CN Method,
5.9	122	Total, Increased to minimum Tc = 6.0 min			

Subcatchment P2: Analysis Area #2

Hydrograph



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Summary for Subcatchment P3: Analysis Area #3

Runoff = 0.03 cfs @ 12.68 hrs, Volume= 600 cf, Depth= 0.32"
Routed to Reach AP3 : Analysis Point

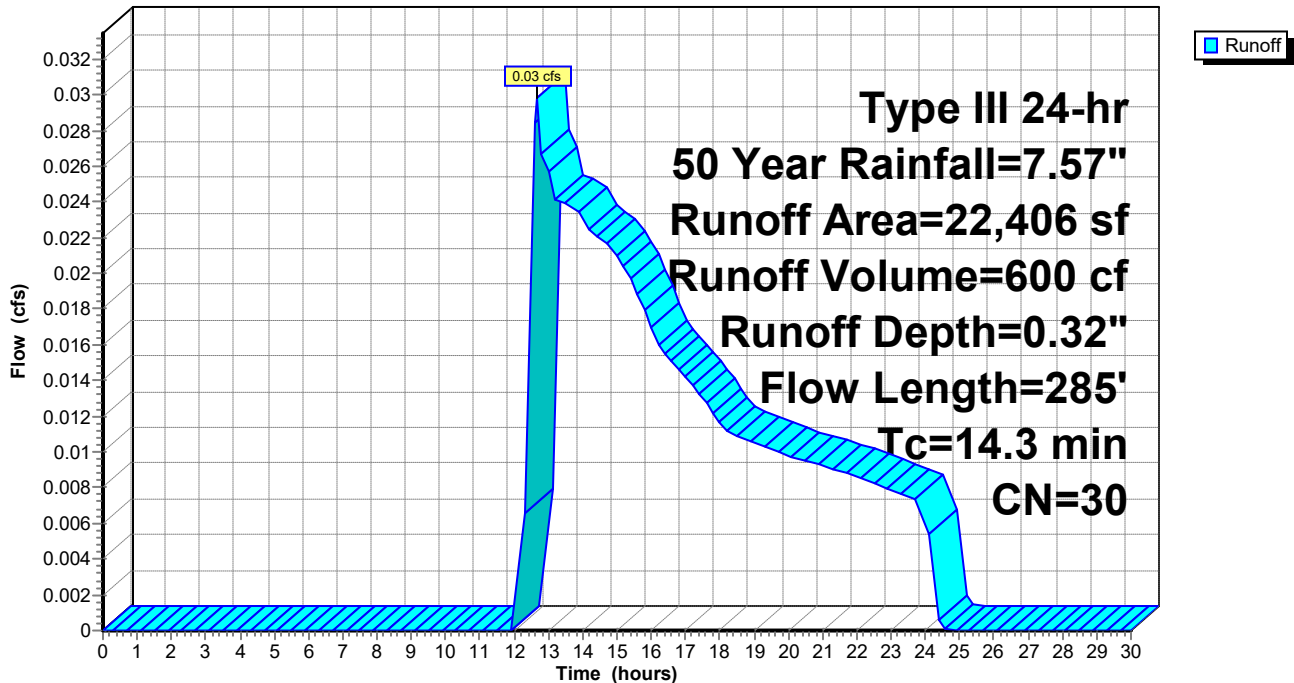
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 50 Year Rainfall=7.57"

Area (sf)	CN	Description
22,406	30	Woods, Good, HSG A
22,406		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	240	0.2890	0.55		Lag/CN Method,
7.0	45	0.0220	0.11		Lag/CN Method, 45
14.3	285	Total			

Subcatchment P3: Analysis Area #3

Hydrograph



Proposed Parking & Drainage

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Summary for Subcatchment P4: Parking & Landscaping

Runoff = 1.55 cfs @ 12.08 hrs, Volume= 7,104 cf, Depth= 5.68"
Routed to Pond CB2 : Double CB

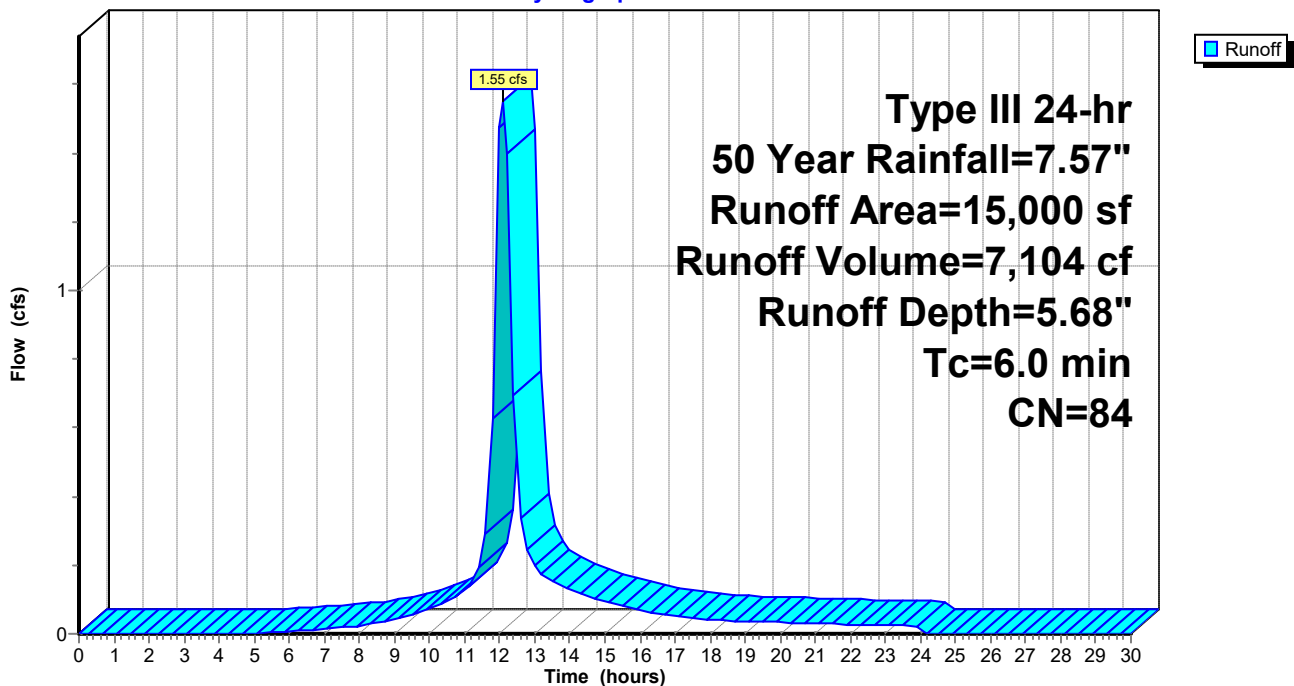
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 50 Year Rainfall=7.57"

Area (sf)	CN	Description
10,763	98	Paved roads w/curbs & sewers, HSG A
4,237	49	50-75% Grass cover, Fair, HSG A
15,000	84	Weighted Average
4,237		28.25% Pervious Area
10,763		71.75% Impervious Area

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

Subcatchment P4: Parking & Landscaping

Hydrograph



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Summary for Subcatchment P5: Parking & Landscaping

Runoff = 0.84 cfs @ 12.09 hrs, Volume= 3,810 cf, Depth= 5.22"
 Routed to Pond CB1 : Reset CB w/C-L

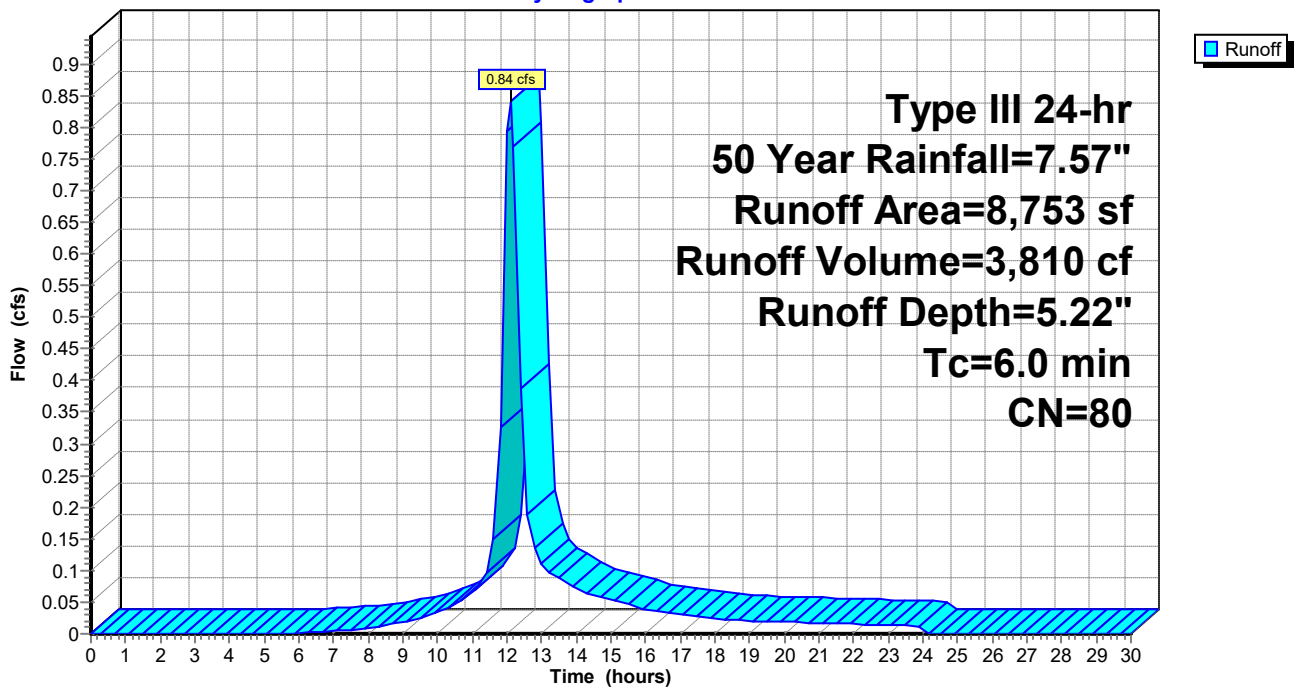
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
 Type III 24-hr 50 Year Rainfall=7.57"

Area (sf)	CN	Description
5,615	98	Paved parking, HSG A
3,138	49	50-75% Grass cover, Fair, HSG A
8,753	80	Weighted Average
3,138		35.85% Pervious Area
5,615		64.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Tc-5S

Subcatchment P5: Parking & Landscaping

Hydrograph



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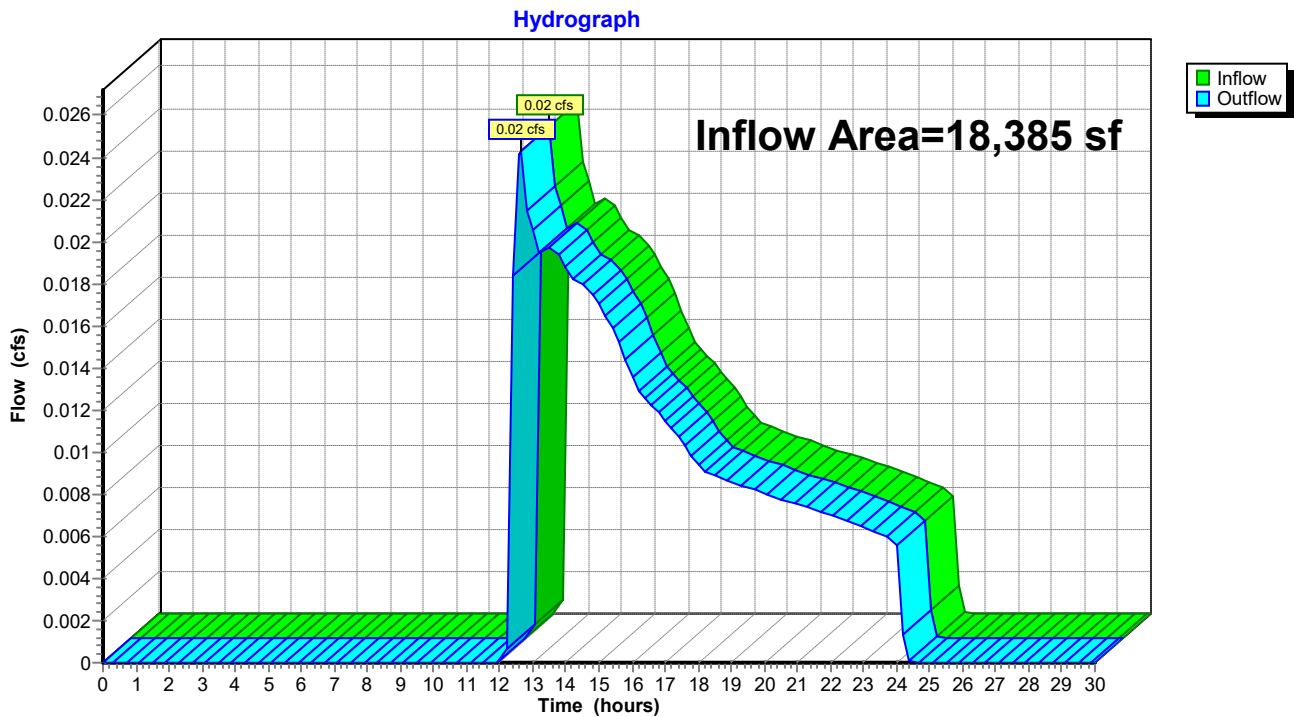
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Summary for Reach AP1: Analysis Point

Inflow Area = 18,385 sf, 0.00% Impervious, Inflow Depth = 0.32" for 50 Year event
Inflow = 0.02 cfs @ 12.64 hrs, Volume= 492 cf
Outflow = 0.02 cfs @ 12.64 hrs, Volume= 492 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Reach AP1: Analysis Point



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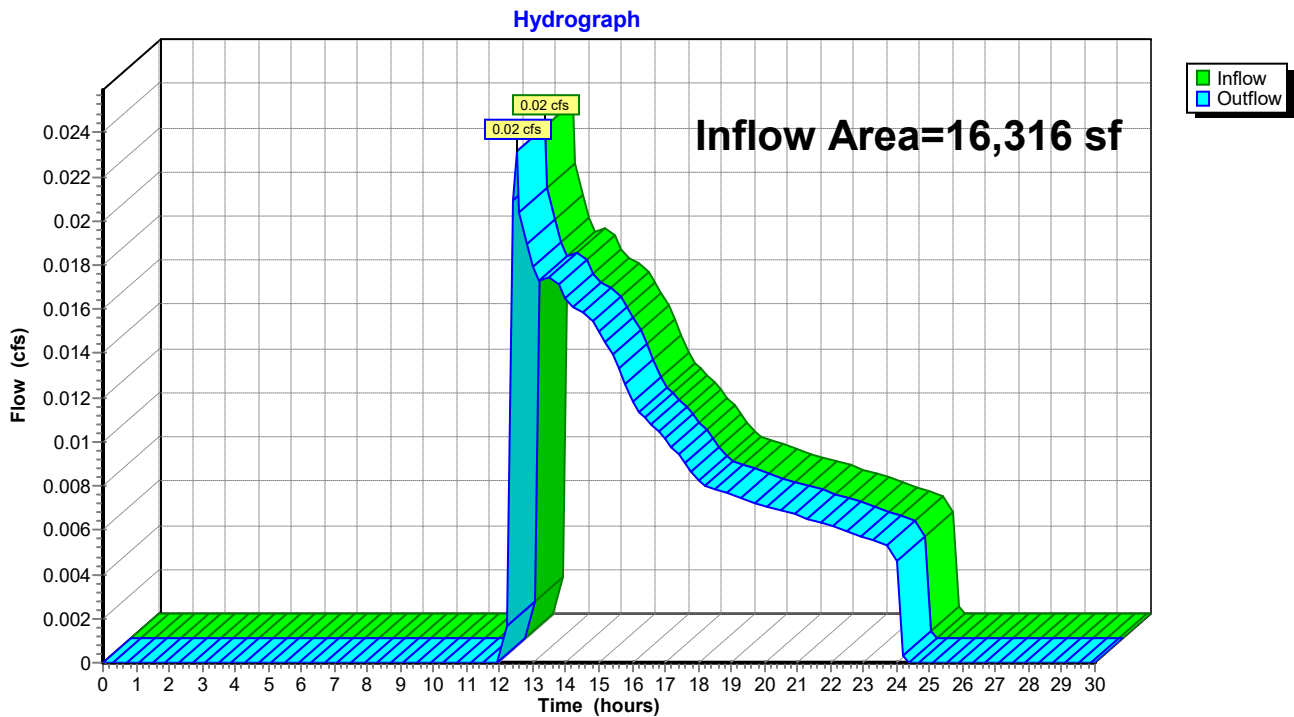
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Summary for Reach AP2: Analysis Point

Inflow Area = 16,316 sf, 0.00% Impervious, Inflow Depth = 0.32" for 50 Year event
Inflow = 0.02 cfs @ 12.49 hrs, Volume= 437 cf
Outflow = 0.02 cfs @ 12.49 hrs, Volume= 437 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Reach AP2: Analysis Point



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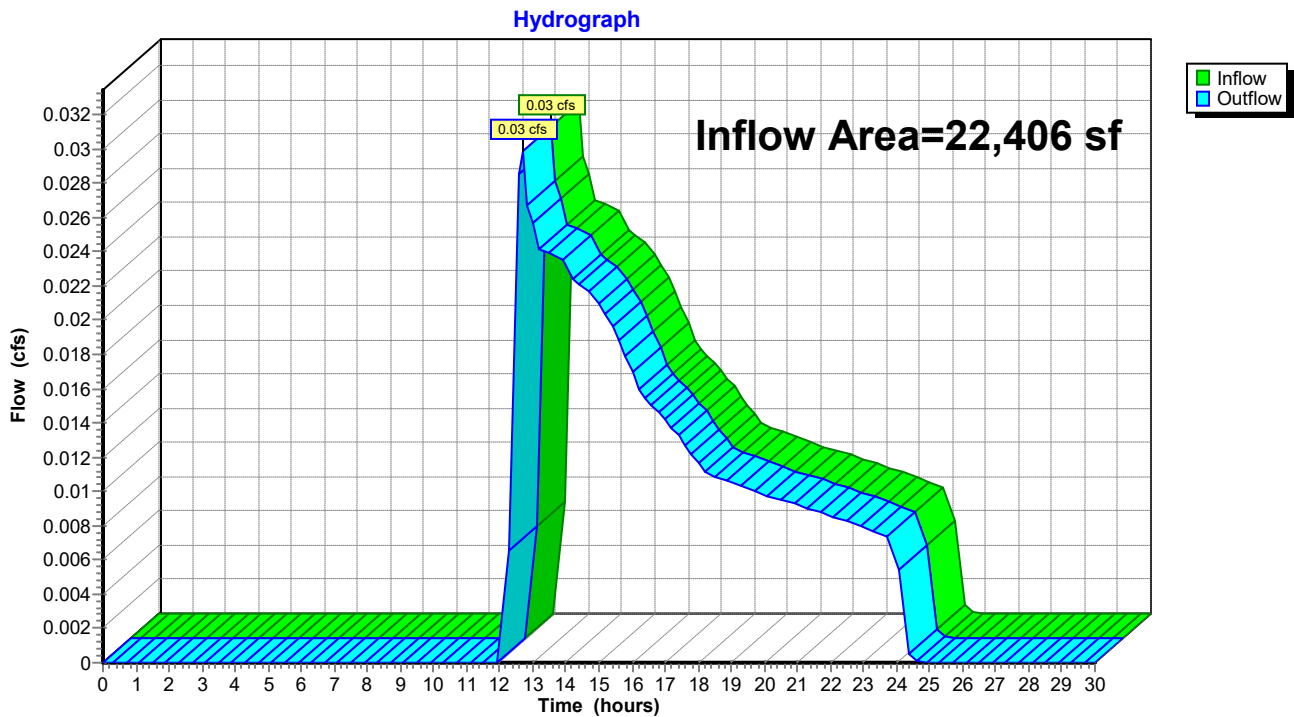
Page 85

Summary for Reach AP3: Analysis Point

Inflow Area = 22,406 sf, 0.00% Impervious, Inflow Depth = 0.32" for 50 Year event
Inflow = 0.03 cfs @ 12.68 hrs, Volume= 600 cf
Outflow = 0.03 cfs @ 12.68 hrs, Volume= 600 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Reach AP3: Analysis Point



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Summary for Reach AP4: Analysis Point

Inflow Area = 23,753 sf, 68.95% Impervious, Inflow Depth = 0.00" for 50 Year event

Routing by Stor-Ind method

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Summary for Pond 3P: Retain-it System

Inflow Area = 23,753 sf, 68.95% Impervious, Inflow Depth = 5.51" for 50 Year event
Inflow = 2.39 cfs @ 12.09 hrs, Volume= 10,914 cf
Outflow = 0.71 cfs @ 11.80 hrs, Volume= 11,008 cf, Atten= 70%, Lag= 0.0 min
Discarded = 0.71 cfs @ 11.80 hrs, Volume= 11,008 cf

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs / 3
Peak Elev= 238.53' @ 12.55 hrs Surf.Area= 960 sf Storage= 2,548 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 20.7 min (819.1 - 798.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	235.50'	0 cf	24.00'W x 40.00'L x 5.67'H Field A 5,440 cf Overall - 5,440 cf Embedded = 0 cf x 10.0% Voids
#2A	235.50'	4,203 cf	retain_it retain_it 5.0' x 15 Inside #1 Inside= 84.0"W x 60.0"H => 36.41 sf x 8.00'L = 291.3 cf Outside= 96.0"W x 68.0"H => 45.33 sf x 8.00'L = 362.7 cf 3 Rows adjusted for 166.2 cf perimeter wall
		4,203 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	235.50'	32.000 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.71 cfs @ 11.80 hrs HW=235.61' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.71 cfs)

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Pond 3P: Retain-it System - Chamber Wizard Field A

Chamber Model = retain_it retain_it 5.0' (retain-it®)

Inside= 84.0"W x 60.0"H => 36.41 sf x 8.00'L = 291.3 cf

Outside= 96.0"W x 68.0"H => 45.33 sf x 8.00'L = 362.7 cf

3 Rows adjusted for 166.2 cf perimeter wall

5 Chambers/Row x 8.00' Long = 40.00' Row Length

3 Rows x 96.0" Wide = 24.00' Base Width

68.0" Chamber Height = 5.67' Field Height

10.4 cf Sidewall x 5 x 2 + 10.4 cf Endwall x 3 x 2 = 166.2 cf Perimeter Wall

15 Chambers x 291.3 cf - 166.2 cf Perimeter wall = 4,203.0 cf Chamber Storage

15 Chambers x 362.7 cf = 5,440.0 cf Displacement

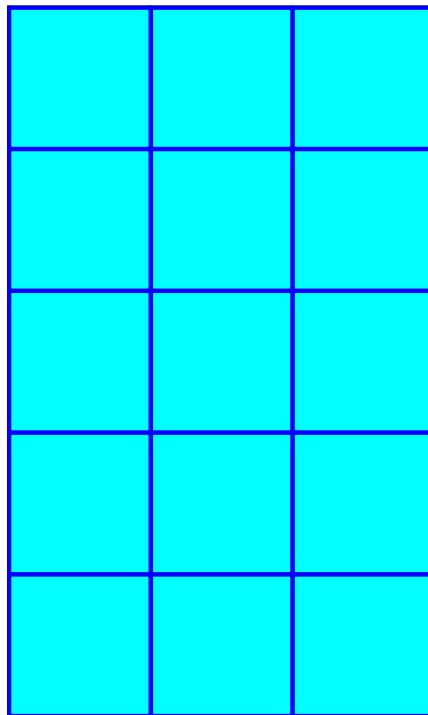
Chamber Storage = 4,203.0 cf = 0.096 af

Overall Storage Efficiency = 77.3%

Overall System Size = 40.00' x 24.00' x 5.67'

15 Chambers

201.5 cy Field



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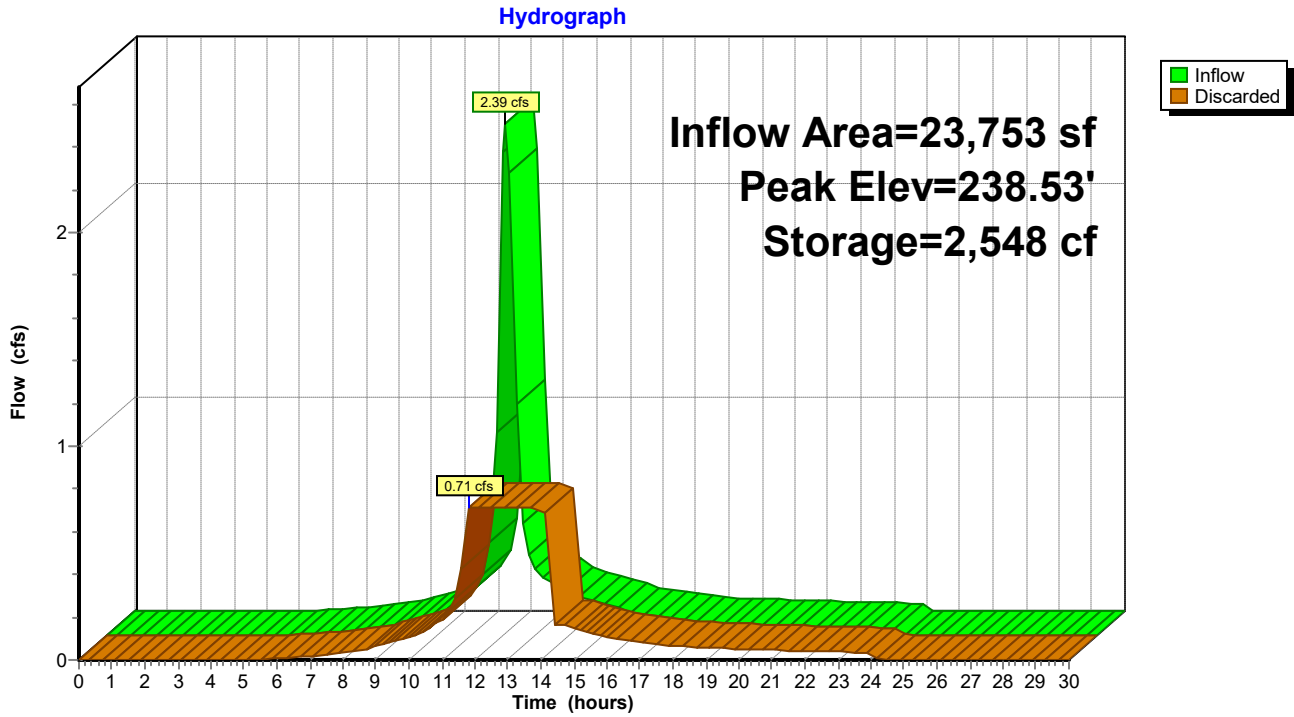
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Pond 3P: Retain-it System



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Summary for Pond CB1: Reset CB w/C-L

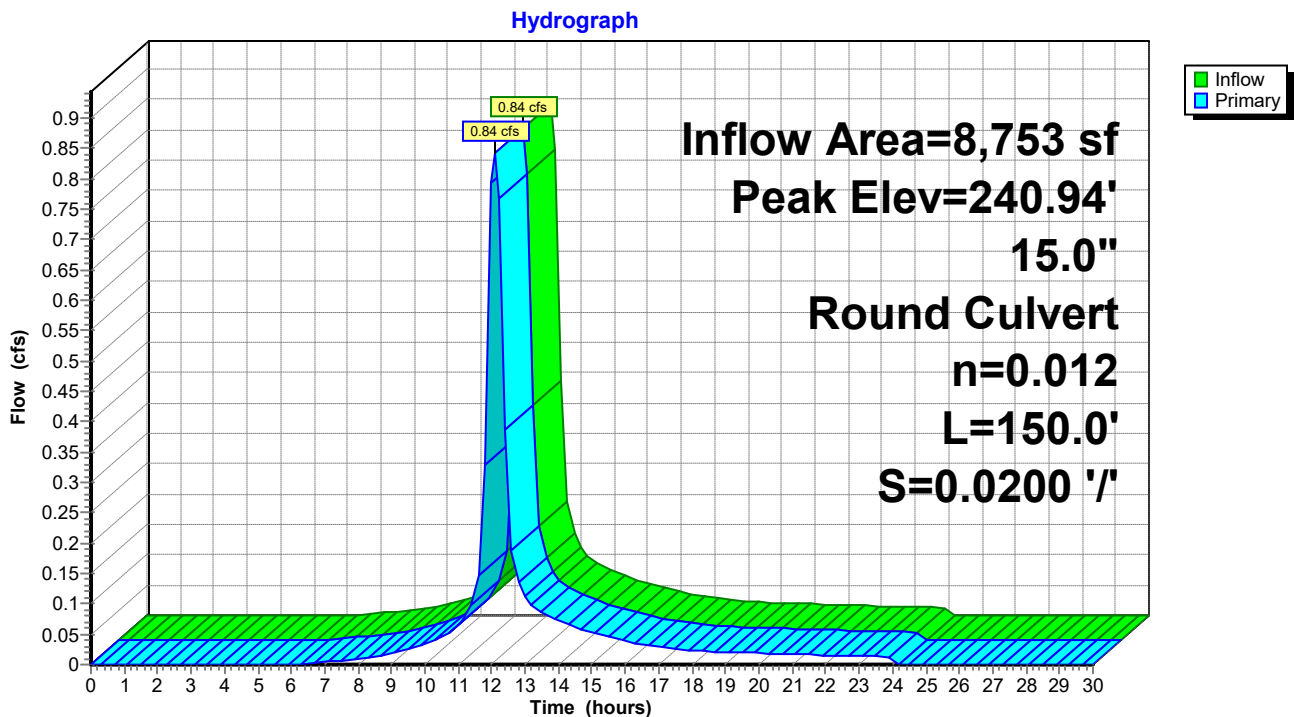
Inflow Area = 8,753 sf, 64.15% Impervious, Inflow Depth = 5.22" for 50 Year event
Inflow = 0.84 cfs @ 12.09 hrs, Volume= 3,810 cf
Outflow = 0.84 cfs @ 12.09 hrs, Volume= 3,810 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.84 cfs @ 12.09 hrs, Volume= 3,810 cf
Routed to Pond CB2 : Double CB

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Peak Elev= 240.94' @ 12.09 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	240.50'	15.0" Round Culvert L= 150.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 240.50' / 237.50' S= 0.0200 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf

Primary OutFlow Max=0.78 cfs @ 12.09 hrs HW=240.92' (Free Discharge)
↑1=Culvert (Inlet Controls 0.78 cfs @ 2.19 fps)

Pond CB1: Reset CB w/C-L



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Summary for Pond CB2: Double CB

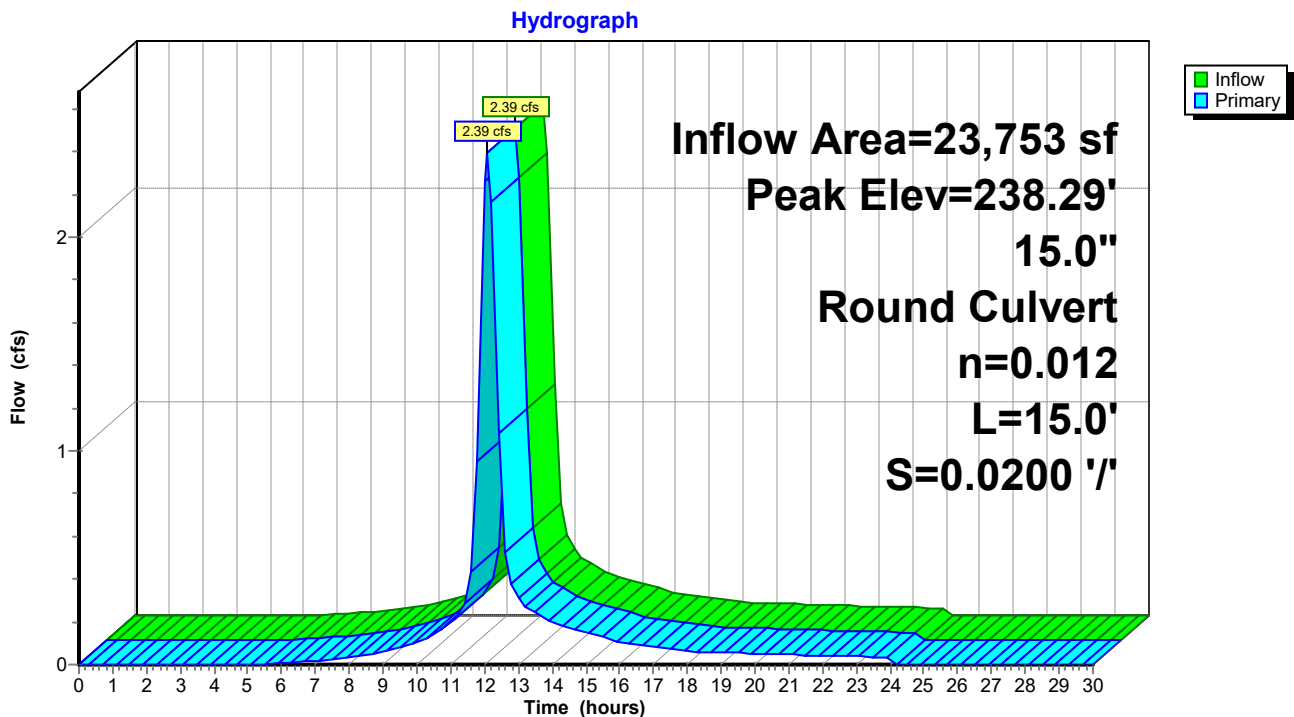
Inflow Area = 23,753 sf, 68.95% Impervious, Inflow Depth = 5.51" for 50 Year event
Inflow = 2.39 cfs @ 12.09 hrs, Volume= 10,914 cf
Outflow = 2.39 cfs @ 12.09 hrs, Volume= 10,914 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.39 cfs @ 12.09 hrs, Volume= 10,914 cf
Routed to Pond 3P : Retain-it System

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Peak Elev= 238.29' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	237.50'	15.0" Round Culvert L= 15.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 237.50' / 237.20' S= 0.0200 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf

Primary OutFlow Max=2.22 cfs @ 12.09 hrs HW=238.25' (Free Discharge)
↑1=Culvert (Barrel Controls 2.22 cfs @ 4.15 fps)

Pond CB2: Double CB



Proposed Parking & Drainage

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Time span=0.00-30.00 hrs, dt=0.20 hrs, 151 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment P1: Analysis Area #1 Runoff Area=18,385 sf 0.00% Impervious Runoff Depth=0.57"
Flow Length=135' Tc=9.1 min CN=30 Runoff=0.08 cfs 869 cf

Subcatchment P2: Analysis Area #2 Runoff Area=16,316 sf 0.00% Impervious Runoff Depth=0.57"
Flow Length=122' Tc=6.0 min CN=30 Runoff=0.07 cfs 771 cf

Subcatchment P3: Analysis Area #3 Runoff Area=22,406 sf 0.00% Impervious Runoff Depth=0.57"
Flow Length=285' Tc=14.3 min CN=30 Runoff=0.09 cfs 1,059 cf

Subcatchment P4: Parking & Landscaping Runoff Area=15,000 sf 71.75% Impervious Runoff Depth=6.67"
Tc=6.0 min CN=84 Runoff=1.81 cfs 8,341 cf

Subcatchment P5: Parking & Landscaping Runoff Area=8,753 sf 64.15% Impervious Runoff Depth=6.19"
Tc=6.0 min CN=80 Runoff=0.99 cfs 4,515 cf

Reach AP1: Analysis Point Inflow=0.08 cfs 869 cf
Outflow=0.08 cfs 869 cf

Reach AP2: Analysis Point Inflow=0.07 cfs 771 cf
Outflow=0.07 cfs 771 cf

Reach AP3: Analysis Point Inflow=0.09 cfs 1,059 cf
Outflow=0.09 cfs 1,059 cf

Reach AP4: Analysis Point

Pond 3P: Retain-it System Peak Elev=239.50' Storage=3,365 cf Inflow=2.80 cfs 12,856 cf
Outflow=0.71 cfs 12,835 cf

Pond CB1: Reset CB w/C-L Peak Elev=240.98' Inflow=0.99 cfs 4,515 cf
15.0" Round Culvert n=0.012 L=150.0' S=0.0200 ' ' Outflow=0.99 cfs 4,515 cf

Pond CB2: Double CB Peak Elev=238.37' Inflow=2.80 cfs 12,856 cf
15.0" Round Culvert n=0.012 L=15.0' S=0.0200 ' ' Outflow=2.80 cfs 12,856 cf

Total Runoff Area = 80,860 sf Runoff Volume = 15,556 cf Average Runoff Depth = 2.31"
79.75% Pervious = 64,482 sf 20.25% Impervious = 16,378 sf

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Summary for Subcatchment P1: Analysis Area #1

Runoff = 0.08 cfs @ 12.44 hrs, Volume= 869 cf, Depth= 0.57"
Routed to Reach AP1 : Analysis Point

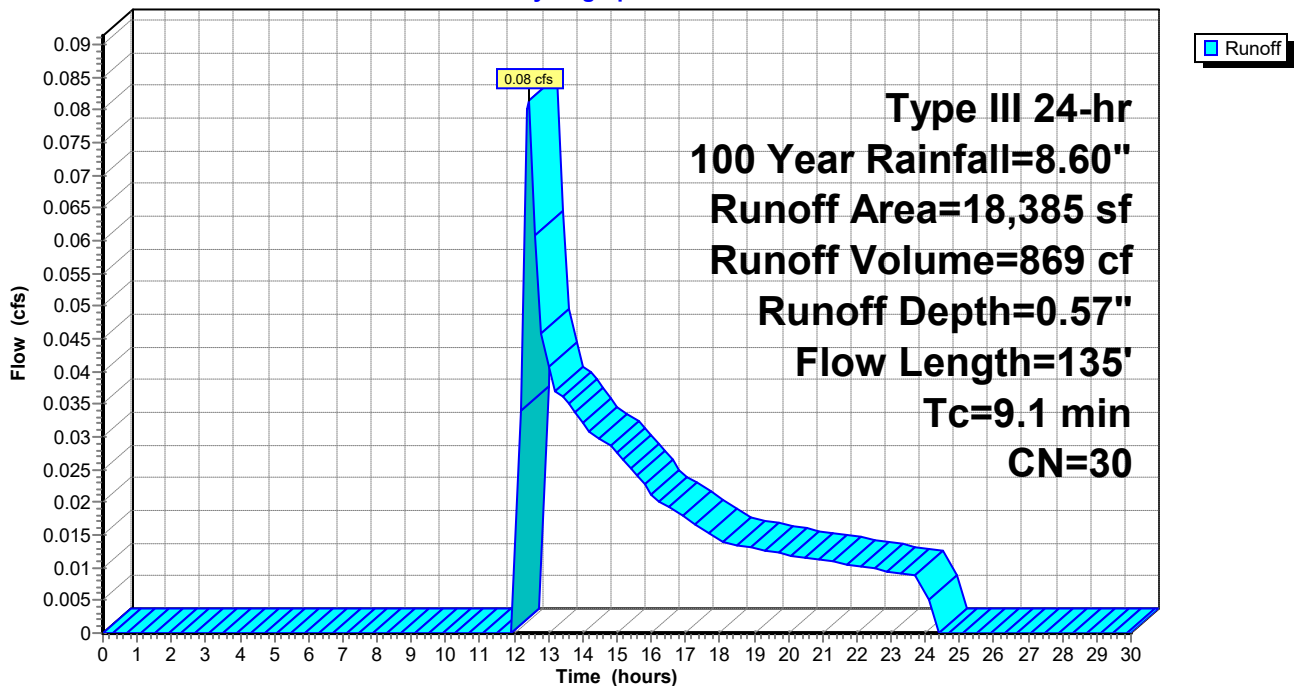
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 100 Year Rainfall=8.60"

Area (sf)	CN	Description
18,385	30	Woods, Good, HSG A
18,385		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	25	0.1200	0.22		Lag/CN Method,
3.5	35	0.0570	0.16		Lag/CN Method,
3.7	75	0.1730	0.33		Lag/CN Method,
9.1	135	Total			

Subcatchment P1: Analysis Area #1

Hydrograph



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Summary for Subcatchment P2: Analysis Area #2

Runoff = 0.07 cfs @ 12.41 hrs, Volume= 771 cf, Depth= 0.57"
 Routed to Reach AP2 : Analysis Point

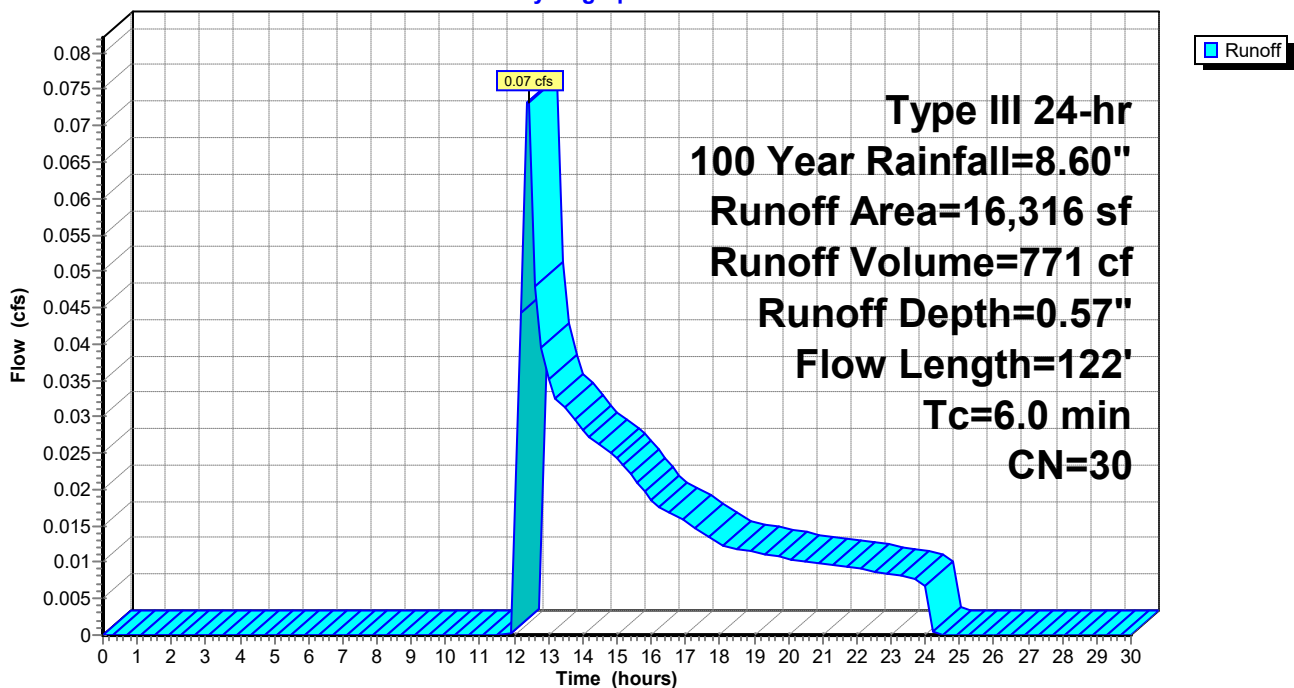
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
 Type III 24-hr 100 Year Rainfall=8.60"

Area (sf)	CN	Description
16,316	30	Woods, Good, HSG A
16,316		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	22	0.3180	0.35		Lag/CN Method,
1.9	60	0.4670	0.53		Lag/CN Method,
3.0	40	0.1000	0.22		Lag/CN Method,
5.9	122	Total, Increased to minimum Tc = 6.0 min			

Subcatchment P2: Analysis Area #2

Hydrograph



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Summary for Subcatchment P3: Analysis Area #3

Runoff = 0.09 cfs @ 12.52 hrs, Volume= 1,059 cf, Depth= 0.57"
Routed to Reach AP3 : Analysis Point

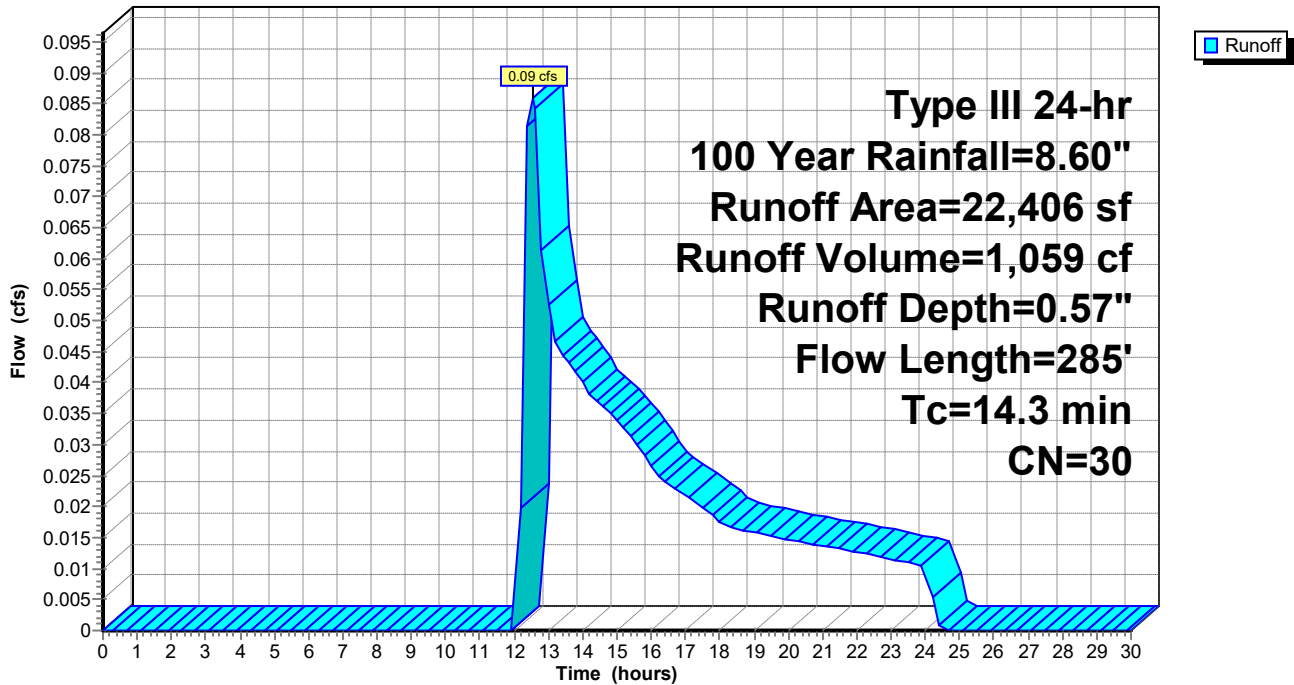
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 100 Year Rainfall=8.60"

Area (sf)	CN	Description
22,406	30	Woods, Good, HSG A
22,406		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	240	0.2890	0.55		Lag/CN Method,
7.0	45	0.0220	0.11		Lag/CN Method, 45
14.3	285	Total			

Subcatchment P3: Analysis Area #3

Hydrograph



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Summary for Subcatchment P4: Parking & Landscaping

Runoff = 1.81 cfs @ 12.08 hrs, Volume= 8,341 cf, Depth= 6.67"
Routed to Pond CB2 : Double CB

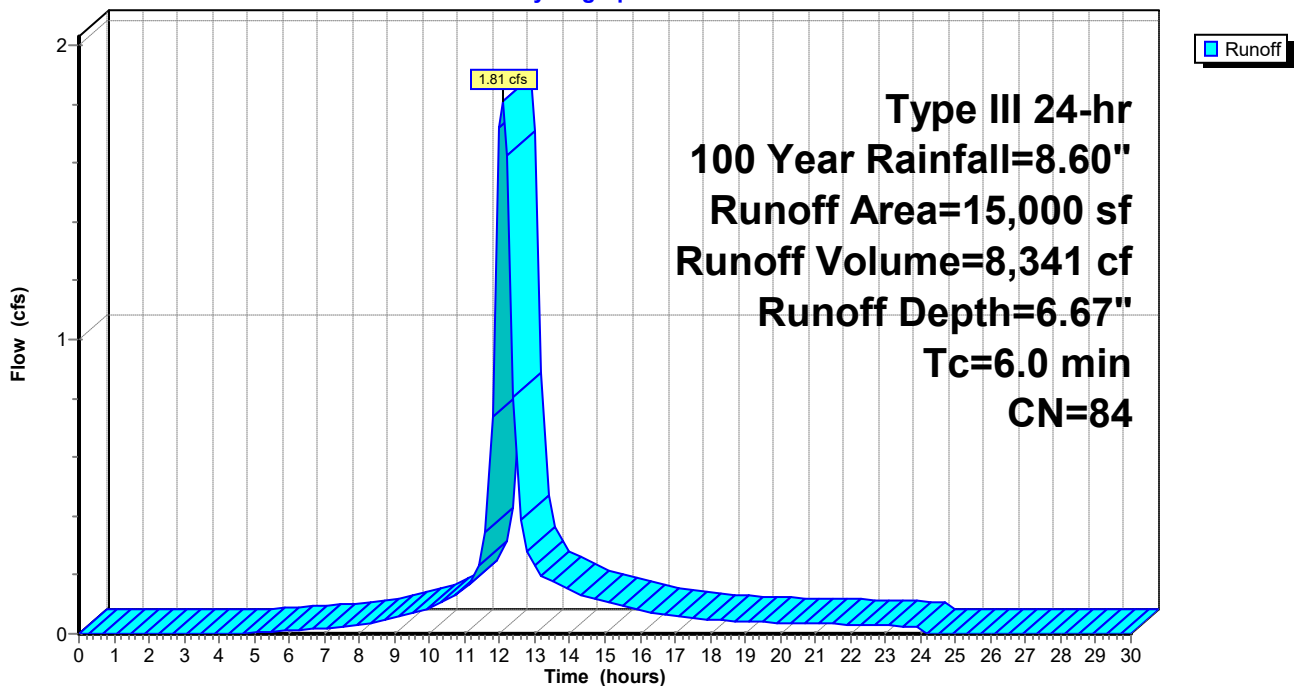
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 100 Year Rainfall=8.60"

Area (sf)	CN	Description
10,763	98	Paved roads w/curbs & sewers, HSG A
4,237	49	50-75% Grass cover, Fair, HSG A
15,000	84	Weighted Average
4,237		28.25% Pervious Area
10,763		71.75% Impervious Area

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

Subcatchment P4: Parking & Landscaping

Hydrograph



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Summary for Subcatchment P5: Parking & Landscaping

Runoff = 0.99 cfs @ 12.09 hrs, Volume= 4,515 cf, Depth= 6.19"
Routed to Pond CB1 : Reset CB w/C-L

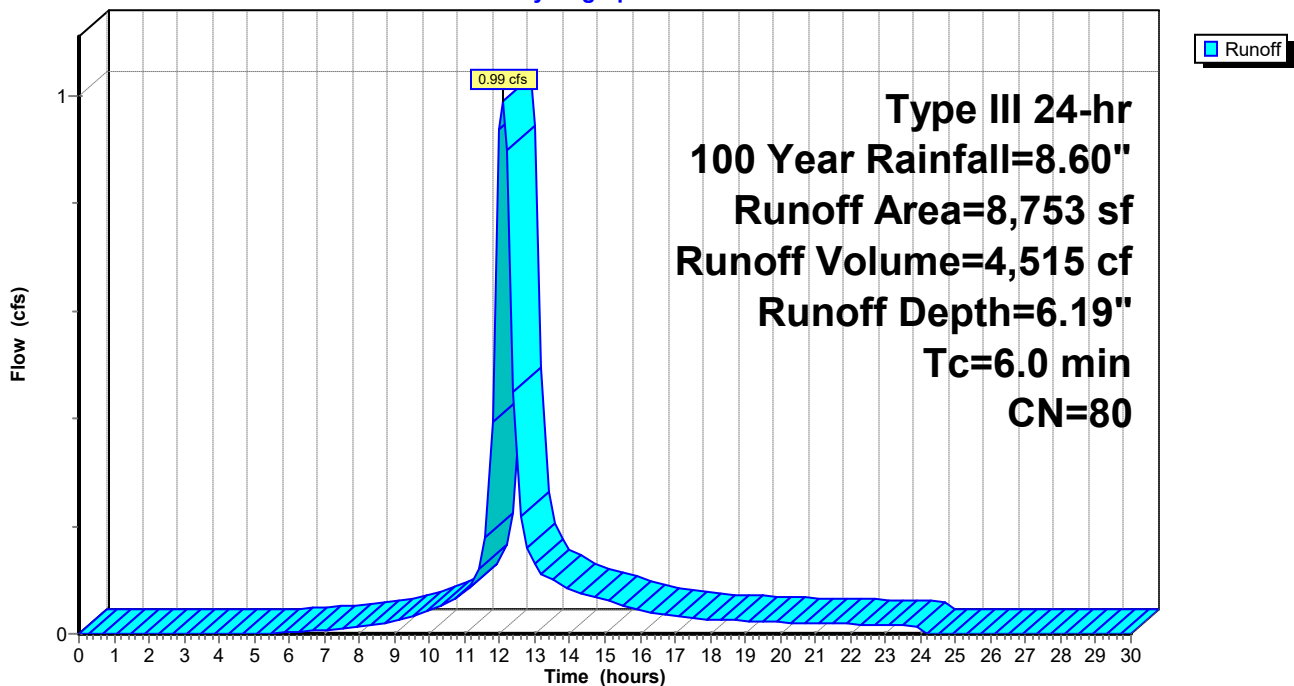
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Type III 24-hr 100 Year Rainfall=8.60"

Area (sf)	CN	Description
5,615	98	Paved parking, HSG A
3,138	49	50-75% Grass cover, Fair, HSG A
8,753	80	Weighted Average
3,138		35.85% Pervious Area
5,615		64.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Tc-5S

Subcatchment P5: Parking & Landscaping

Hydrograph



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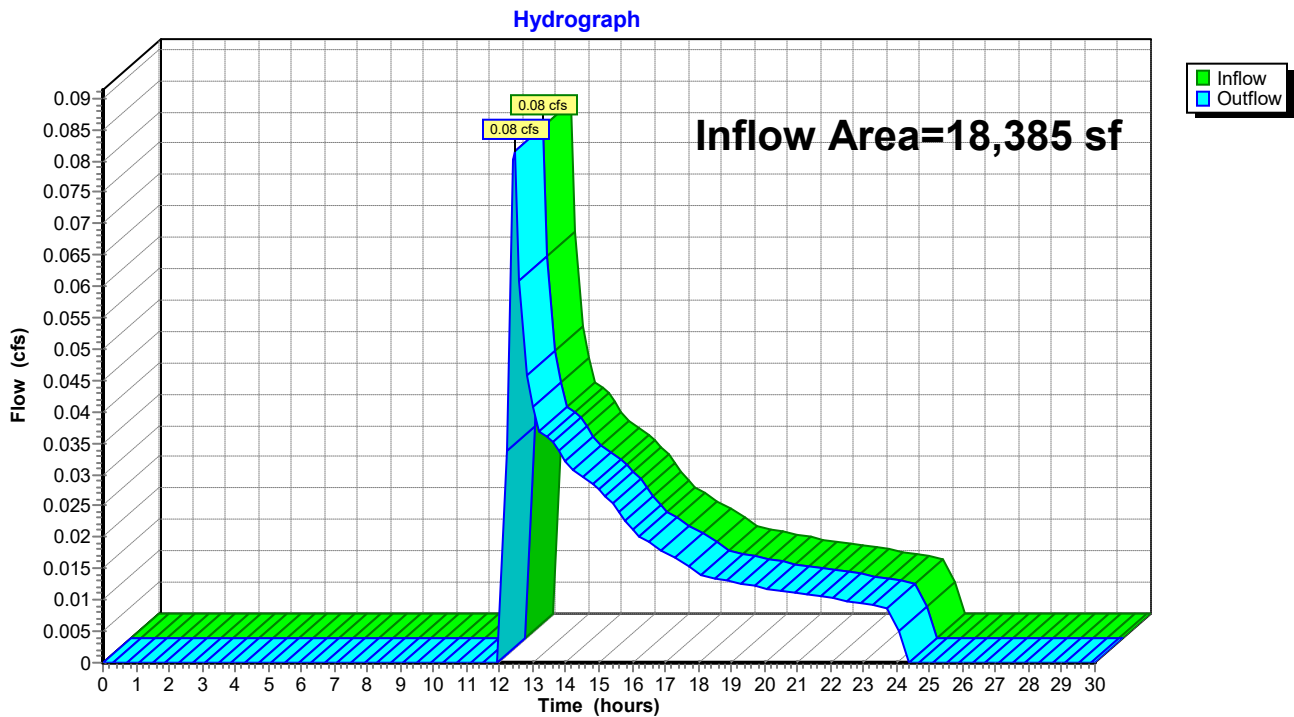
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Summary for Reach AP1: Analysis Point

Inflow Area = 18,385 sf, 0.00% Impervious, Inflow Depth = 0.57" for 100 Year event
Inflow = 0.08 cfs @ 12.44 hrs, Volume= 869 cf
Outflow = 0.08 cfs @ 12.44 hrs, Volume= 869 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Reach AP1: Analysis Point



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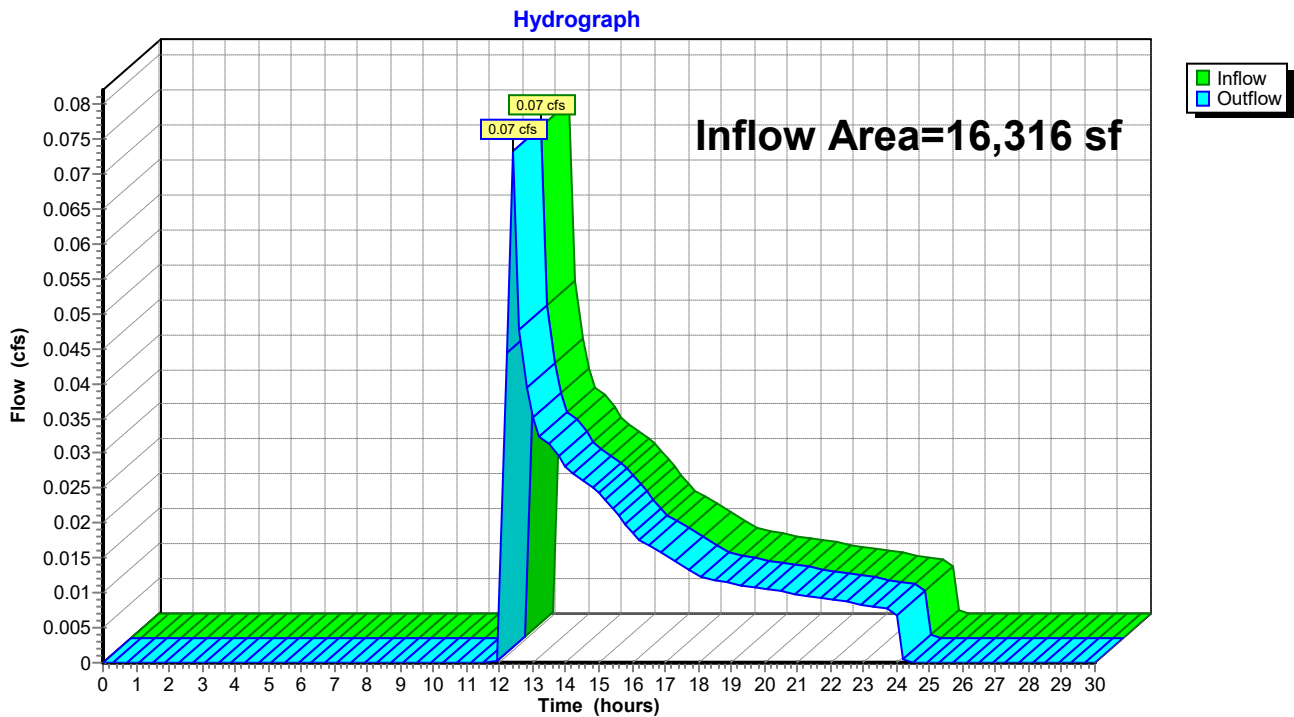
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Summary for Reach AP2: Analysis Point

Inflow Area = 16,316 sf, 0.00% Impervious, Inflow Depth = 0.57" for 100 Year event
Inflow = 0.07 cfs @ 12.41 hrs, Volume= 771 cf
Outflow = 0.07 cfs @ 12.41 hrs, Volume= 771 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Reach AP2: Analysis Point



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Type III 24-hr 100 Year Rainfall=8.60"

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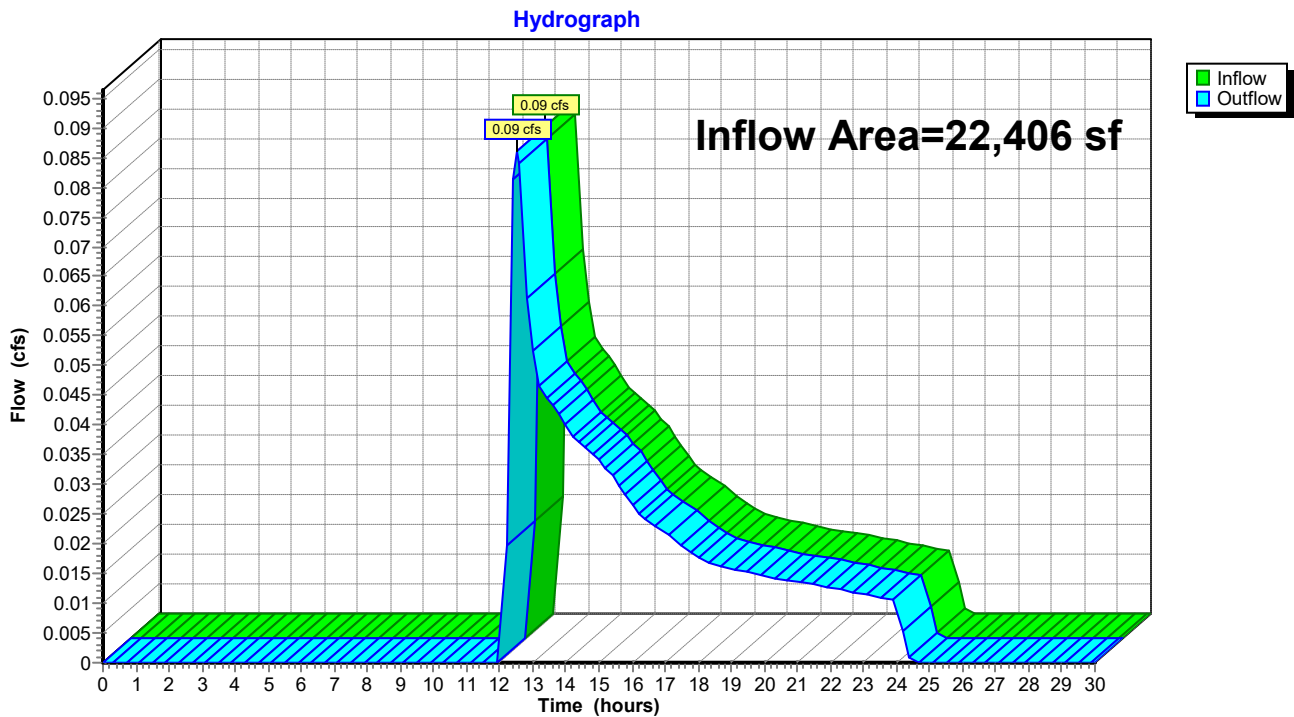
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Summary for Reach AP3: Analysis Point

Inflow Area = 22,406 sf, 0.00% Impervious, Inflow Depth = 0.57" for 100 Year event
Inflow = 0.09 cfs @ 12.52 hrs, Volume= 1,059 cf
Outflow = 0.09 cfs @ 12.52 hrs, Volume= 1,059 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs

Reach AP3: Analysis Point



Proposed Parking & Drainage

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Summary for Reach AP4: Analysis Point

Inflow Area = 23,753 sf, 68.95% Impervious, Inflow Depth = 0.00" for 100 Year event

Routing by Stor-Ind method

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Summary for Pond 3P: Retain-it System

Inflow Area = 23,753 sf, 68.95% Impervious, Inflow Depth = 6.49" for 100 Year event
Inflow = 2.80 cfs @ 12.08 hrs, Volume= 12,856 cf
Outflow = 0.71 cfs @ 11.80 hrs, Volume= 12,835 cf, Atten= 75%, Lag= 0.0 min
Discarded = 0.71 cfs @ 11.80 hrs, Volume= 12,835 cf

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs / 3
Peak Elev= 239.50' @ 12.61 hrs Surf.Area= 960 sf Storage= 3,365 cf

Plug-Flow detention time= 29.2 min calculated for 12,750 cf (99% of inflow)
Center-of-Mass det. time= 28.0 min (822.0 - 793.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	235.50'	0 cf	24.00'W x 40.00'L x 5.67'H Field A 5,440 cf Overall - 5,440 cf Embedded = 0 cf x 10.0% Voids
#2A	235.50'	4,203 cf	retain_it retain_it 5.0' x 15 Inside #1 Inside= 84.0"W x 60.0"H => 36.41 sf x 8.00'L = 291.3 cf Outside= 96.0"W x 68.0"H => 45.33 sf x 8.00'L = 362.7 cf 3 Rows adjusted for 166.2 cf perimeter wall
		4,203 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	235.50'	32.000 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.71 cfs @ 11.80 hrs HW=235.68' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.71 cfs)

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Pond 3P: Retain-it System - Chamber Wizard Field A

Chamber Model = retain_it retain_it 5.0' (retain-it®)

Inside= 84.0"W x 60.0"H => 36.41 sf x 8.00'L = 291.3 cf

Outside= 96.0"W x 68.0"H => 45.33 sf x 8.00'L = 362.7 cf

3 Rows adjusted for 166.2 cf perimeter wall

5 Chambers/Row x 8.00' Long = 40.00' Row Length

3 Rows x 96.0" Wide = 24.00' Base Width

68.0" Chamber Height = 5.67' Field Height

10.4 cf Sidewall x 5 x 2 + 10.4 cf Endwall x 3 x 2 = 166.2 cf Perimeter Wall

15 Chambers x 291.3 cf - 166.2 cf Perimeter wall = 4,203.0 cf Chamber Storage

15 Chambers x 362.7 cf = 5,440.0 cf Displacement

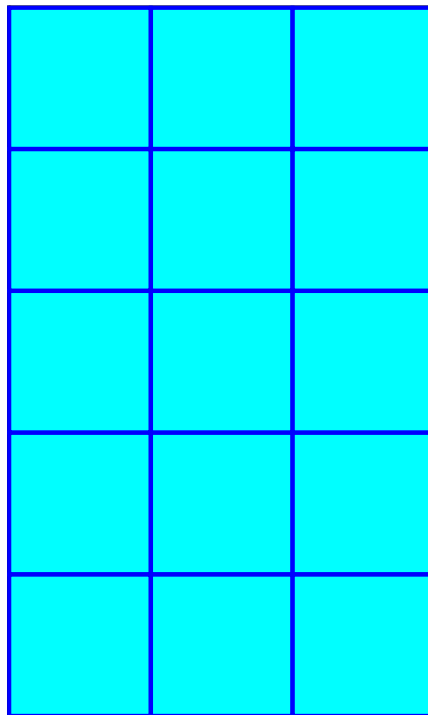
Chamber Storage = 4,203.0 cf = 0.096 af

Overall Storage Efficiency = 77.3%

Overall System Size = 40.00' x 24.00' x 5.67'

15 Chambers

201.5 cy Field



Proposed Parking & Drainage

Prepared by Godfrey Hoffman Associates

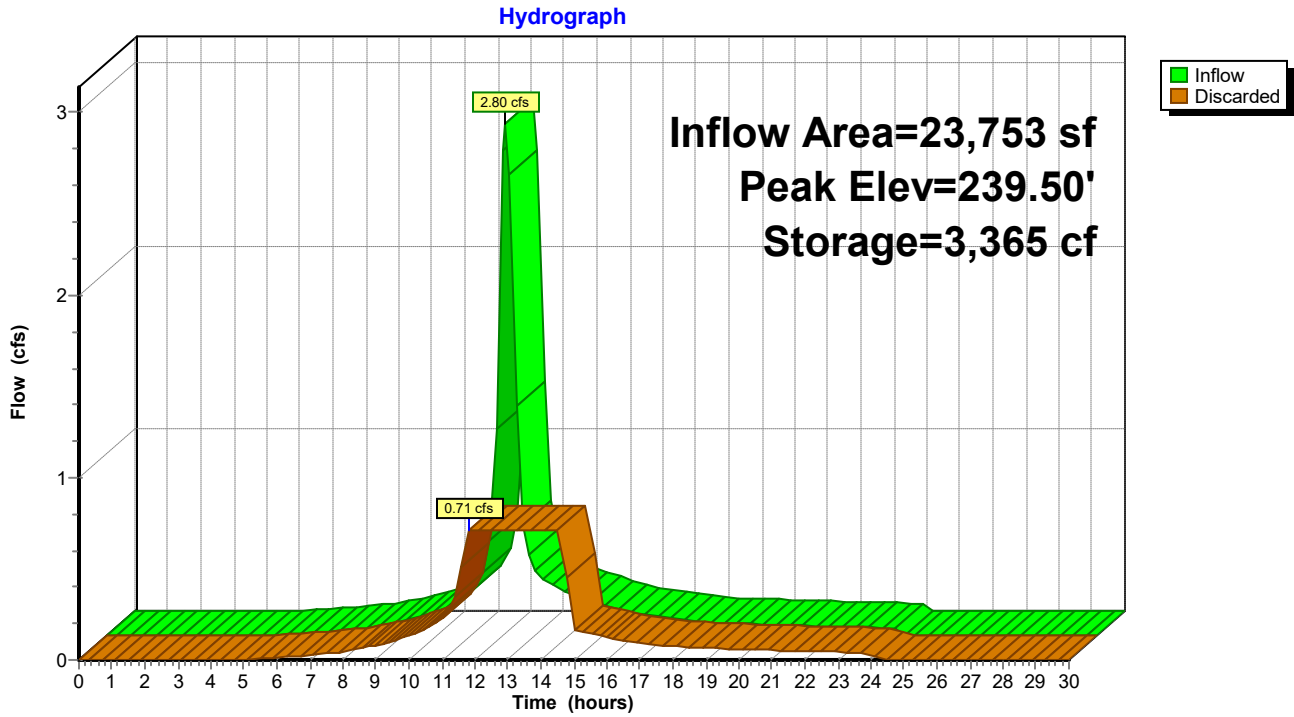
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Pond 3P: Retain-it System



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Summary for Pond CB1: Reset CB w/C-L

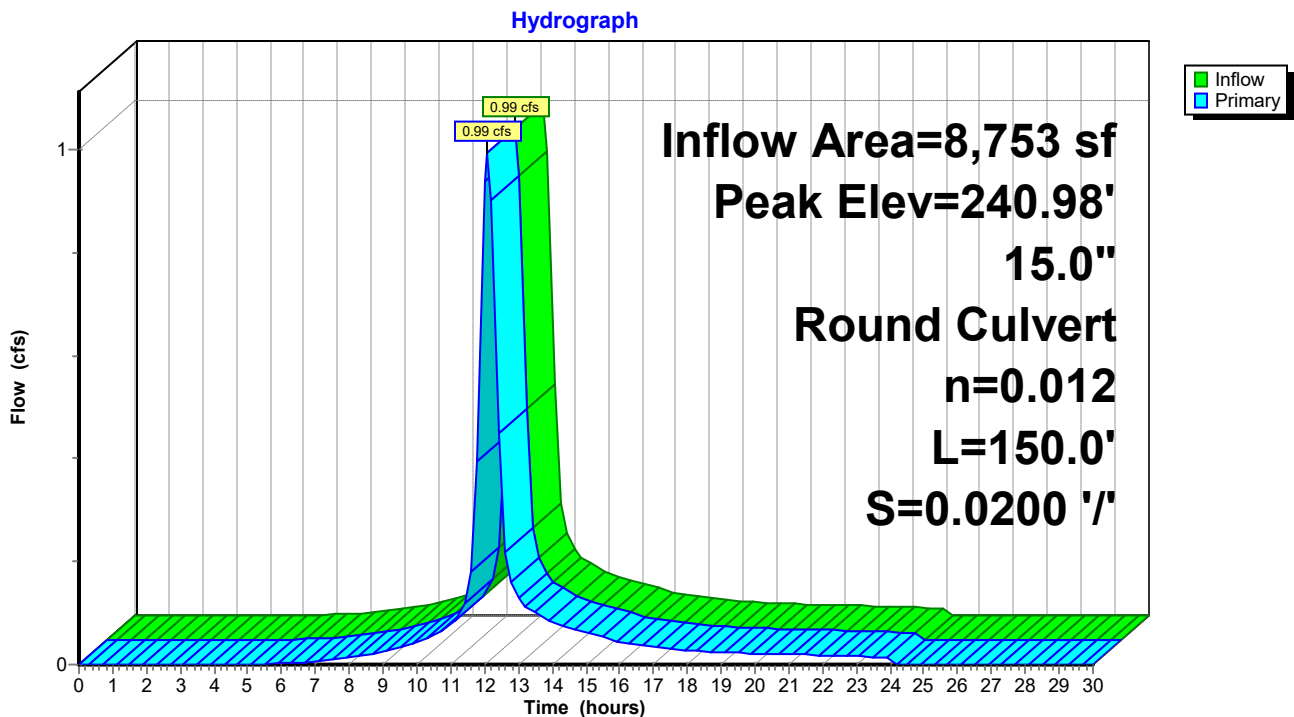
Inflow Area = 8,753 sf, 64.15% Impervious, Inflow Depth = 6.19" for 100 Year event
Inflow = 0.99 cfs @ 12.09 hrs, Volume= 4,515 cf
Outflow = 0.99 cfs @ 12.09 hrs, Volume= 4,515 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.99 cfs @ 12.09 hrs, Volume= 4,515 cf
Routed to Pond CB2 : Double CB

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Peak Elev= 240.98' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	240.50'	15.0" Round Culvert L= 150.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 240.50' / 237.50' S= 0.0200 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf

Primary OutFlow Max=0.92 cfs @ 12.09 hrs HW=240.95' (Free Discharge)
↑1=Culvert (Inlet Controls 0.92 cfs @ 2.29 fps)

Pond CB1: Reset CB w/C-L



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Summary for Pond CB2: Double CB

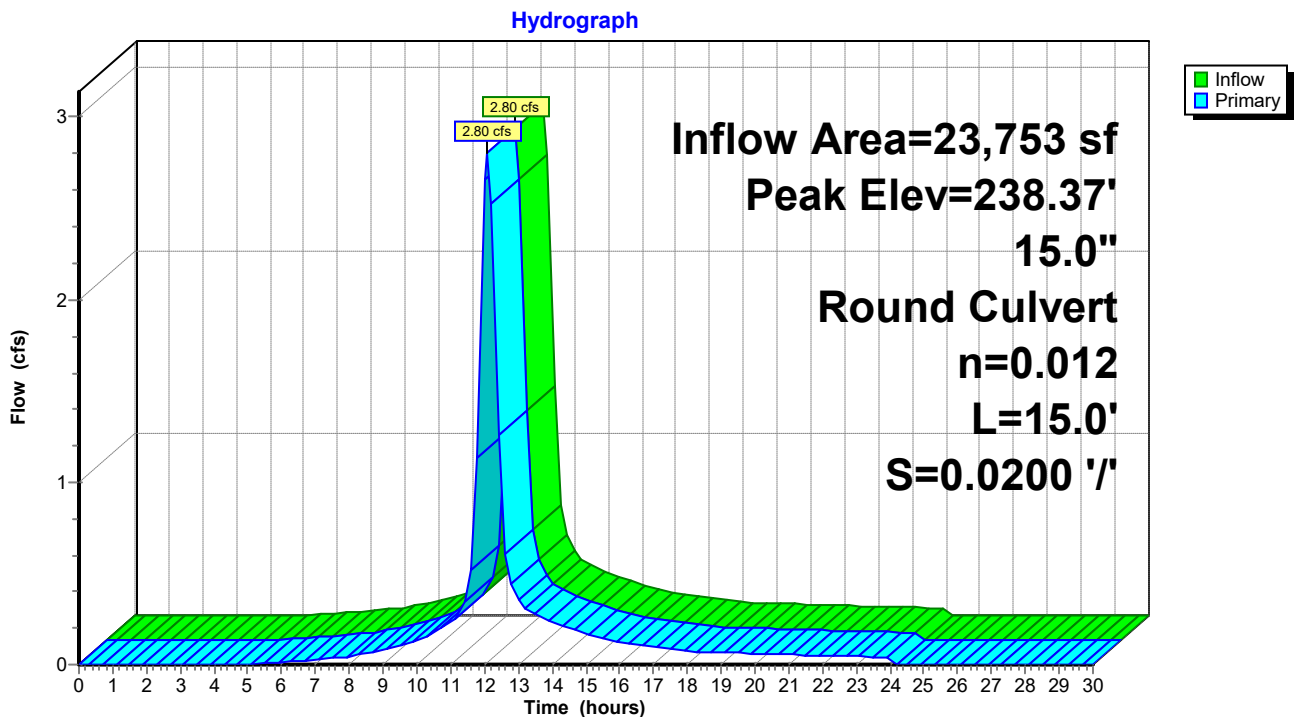
Inflow Area = 23,753 sf, 68.95% Impervious, Inflow Depth = 6.49" for 100 Year event
Inflow = 2.80 cfs @ 12.08 hrs, Volume= 12,856 cf
Outflow = 2.80 cfs @ 12.08 hrs, Volume= 12,856 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.80 cfs @ 12.08 hrs, Volume= 12,856 cf
Routed to Pond 3P : Retain-it System

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.20 hrs
Peak Elev= 238.37' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	237.50'	15.0" Round Culvert L= 15.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 237.50' / 237.20' S= 0.0200 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf

Primary OutFlow Max=2.60 cfs @ 12.08 hrs HW=238.33' (Free Discharge)
↑1=Culvert (Barrel Controls 2.60 cfs @ 4.26 fps)

Pond CB2: Double CB



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Events for Subcatchment P1: Analysis Area #1

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1 Year	2.65	0.00	0	0.00
2 Year	3.33	0.00	0	0.00
5 Year	4.45	0.00	0	0.00
10 Year	5.37	0.00	32	0.02
25 Year	6.64	0.01	236	0.15
50 Year	7.57	0.02	492	0.32
100 Year	8.60	0.08	869	0.57

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Events for Subcatchment P2: Analysis Area #2

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1 Year	2.65	0.00	0	0.00
2 Year	3.33	0.00	0	0.00
5 Year	4.45	0.00	0	0.00
10 Year	5.37	0.00	28	0.02
25 Year	6.64	0.01	209	0.15
50 Year	7.57	0.02	437	0.32
100 Year	8.60	0.07	771	0.57

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Multi-Event Tables

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Events for Subcatchment P3: Analysis Area #3

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1 Year	2.65	0.00	0	0.00
2 Year	3.33	0.00	0	0.00
5 Year	4.45	0.00	0	0.00
10 Year	5.37	0.00	38	0.02
25 Year	6.64	0.01	287	0.15
50 Year	7.57	0.03	600	0.32
100 Year	8.60	0.09	1,059	0.57

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Events for Subcatchment P4: Parking & Landscaping

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1 Year	2.65	0.34	1,542	1.23
2 Year	3.33	0.49	2,240	1.79
5 Year	4.45	0.77	3,465	2.77
10 Year	5.37	1.00	4,513	3.61
25 Year	6.64	1.32	5,998	4.80
50 Year	7.57	1.55	7,104	5.68
100 Year	8.60	1.81	8,341	6.67

Proposed Parking & Drainage

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Events for Subcatchment P5: Parking & Landscaping

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1 Year	2.65	0.16	725	0.99
2 Year	3.33	0.24	1,096	1.50
5 Year	4.45	0.39	1,764	2.42
10 Year	5.37	0.52	2,347	3.22
25 Year	6.64	0.71	3,183	4.36
50 Year	7.57	0.84	3,810	5.22
100 Year	8.60	0.99	4,515	6.19

Proposed Parking & Drainage

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Events for Reach AP1: Analysis Point

Event	Inflow (cfs)	Outflow (cfs)	Elevation (feet)	Storage (cubic-feet)
1 Year	0.00	0.00	0.00	0
2 Year	0.00	0.00	0.00	0
5 Year	0.00	0.00	0.00	0
10 Year	0.00	0.00	0.00	0
25 Year	0.01	0.01	0.00	0
50 Year	0.02	0.02	0.00	0
100 Year	0.08	0.08	0.00	0

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Events for Reach AP2: Analysis Point

Event	Inflow (cfs)	Outflow (cfs)	Elevation (feet)	Storage (cubic-feet)
1 Year	0.00	0.00	0.00	0
2 Year	0.00	0.00	0.00	0
5 Year	0.00	0.00	0.00	0
10 Year	0.00	0.00	0.00	0
25 Year	0.01	0.01	0.00	0
50 Year	0.02	0.02	0.00	0
100 Year	0.07	0.07	0.00	0

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Events for Reach AP3: Analysis Point

Event	Inflow (cfs)	Outflow (cfs)	Elevation (feet)	Storage (cubic-feet)
1 Year	0.00	0.00	0.00	0
2 Year	0.00	0.00	0.00	0
5 Year	0.00	0.00	0.00	0
10 Year	0.00	0.00	0.00	0
25 Year	0.01	0.01	0.00	0
50 Year	0.03	0.03	0.00	0
100 Year	0.09	0.09	0.00	0

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Events for Reach AP4: Analysis Point

Event	Outflow (cfs)	Elevation (feet)	Storage (cubic-feet)
1 Year	0.00	0.00	0
2 Year	0.00	0.00	0
5 Year	0.00	0.00	0
10 Year	0.00	0.00	0
25 Year	0.00	0.00	0
50 Year	0.00	0.00	0
100 Year	0.00	0.00	0

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Events for Pond 3P: Retain-it System

Event	Inflow (cfs)	Discarded (cfs)	Elevation (feet)	Storage (cubic-feet)
1 Year	0.50	0.49	235.54	33
2 Year	0.74	0.72	235.56	48
5 Year	1.15	0.71	236.07	481
10 Year	1.52	0.71	236.72	1,024
25 Year	2.02	0.71	237.75	1,892
50 Year	2.39	0.71	238.53	2,548
100 Year	2.80	0.71	239.50	3,365

Proposed Parking & Drainage

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Events for Pond CB1: Reset CB w/C-L

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
1 Year	0.16	0.16	240.68	0
2 Year	0.24	0.24	240.73	0
5 Year	0.39	0.39	240.79	0
10 Year	0.52	0.52	240.83	0
25 Year	0.71	0.71	240.90	0
50 Year	0.84	0.84	240.94	0
100 Year	0.99	0.99	240.98	0

Proposed Parking & Drainage

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Multi-Event Tables

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Events for Pond CB2: Double CB

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
1 Year	0.50	0.50	237.83	0
2 Year	0.74	0.74	237.90	0
5 Year	1.15	1.15	238.01	0
10 Year	1.52	1.52	238.10	0
25 Year	2.02	2.02	238.21	0
50 Year	2.39	2.39	238.29	0
100 Year	2.80	2.80	238.37	0

Appendix F:

Stormwater Maintenance Plan

STORMWATER MANAGEMENT & MAINTENANCE PLAN

Ensign-Bickford Aerospace & Defense Co.
Located at

100 Grist Mill Road
Simsbury, Connecticut

Prepared By: Godfrey Hoffman Hodge, LLC
26 Broadway
North Haven, CT 06473

STORMWATER MAINTENANCE PLAN

To ensure high quality, long-term performance of the site stormwater management system, the system components, and Stormwater Treatment Practices (STP's) need to be inspected on a regular basis by maintenance personnel and/or stormwater management professionals as required. STP maintenance inspections are intended to do the following:

- Ensure the facilities are generally safe.
- Maintain the proper stormwater management capacity.
- Follow Standard Engineering practice.

The STP inspection process includes three major steps. These are:

1. Pre-Inspection Preparation
2. Conducting the Inspection using Checklists
3. Inspection Follow-up and Maintenance Notification

Maintenance personnel and/or stormwater management professional will perform STP inspections. Maintenance personnel have the advantage of being at the location for the performance of more routine inspection items. A stormwater management professional will perform the more detailed inspections of the measures as required to identify less obvious problems and determine the appropriate steps to be taken to correct the situation.

The property owner Ensign-Bickford Aerospace & Defense Co. and/or his assigned representative with a principal business address of 640 Hopmeadow Street, Simsbury, CT is assigned the responsibility for implementing this stormwater management and maintenance plan. This responsibility includes the inspections, maintenance and record keeping as outlined herein. Further City land use offices shall be notified of any transfer of this responsibility, and for conveying a copy of this stormwater management and maintenance plan if the title to the property is transferred.

Pre-Inspection Preparation

Prior to the STP inspection, the inspector will gather certain materials to aid in the inspection process. These materials may include, but are not limited to:

- STP Background information: Historic information on each STP to be inspected. This information should be on file with the office manager or with the stormwater management professional. This information will aid in the inspection process and help to ensure that past maintenance or structural problems have been addressed.
- Inspection Equipment: The inspector will prepare all necessary equipment required to perform a comprehensive, safe inspection of the facility.

Conducting the Inspection Using Checklists

Inspection checklists will outline the minimum elements to be examined during inspection. Checklists will be detailed enough and formatted in such a way that information is maximized. The checklists will have the following characteristics:

- Be able to be integrated well with a database of maintenance problems.
- Be quantitative so that maintenance can be easily prioritized.
- Be very specific about possible problems to reduce subjectivity.
- Link problems to specific actions

The following items describe the Stormwater Treatment Practice maintenance items as well as frequency of maintenance inspections.

I. Parking Area Pavement

Street, Driveway and Parking Area Sweeping

Parking areas shall be swept by a mechanical sweeper capable of removing sand and sediment collected within the paved areas. Mechanical sweeping shall be biannually performed in April/May and September. Materials collected from the sweeping activity shall be disposed of at an off-site location in a manner conforming to all applicable laws and regulations.

II. Stormwater Management System Components

The inspection of the storm drainage systems including Catch Basins and Stormwater Retention System components shall be performed by maintenance personnel. Inspections will be performed in April or May, after final snow melt, and in September. Cleaning and maintenance of the facilities will be scheduled for the time of the inspections. Additional inspections/observations shall be made on a weekly or monthly basis based on the routine site maintenance schedule and additional cleanings scheduled as required. Inspection and maintenance schedules may be adjusted to be more frequent if based on observations and experience over time conditions warrant.

A. Cleaning of Catch Basins

The cleaning of all catch basins is an essential component of the stormwater management and maintenance. The catch basin is the primary system component to collect surface runoff and convey it through the stormwater management system. CB1 through CB5 as noted and depicted on attached Proposed Drainage Areas Plans shall be maintained as follows:

1. Removal of collected debris on the catch basin grate.
2. Removal of trash from within the catch basin structure
3. Removal of sediment from the catch basin sump

Maintenance personnel shall perform monitoring of the catch basin sumps during routine maintenance. Additional sediment removal from sumps shall be performed when sumps are filled to one-half (1/2) capacity.

B. Stormwater Retention System

The following schedule shall be followed for routine maintenance of the stormwater retention system:

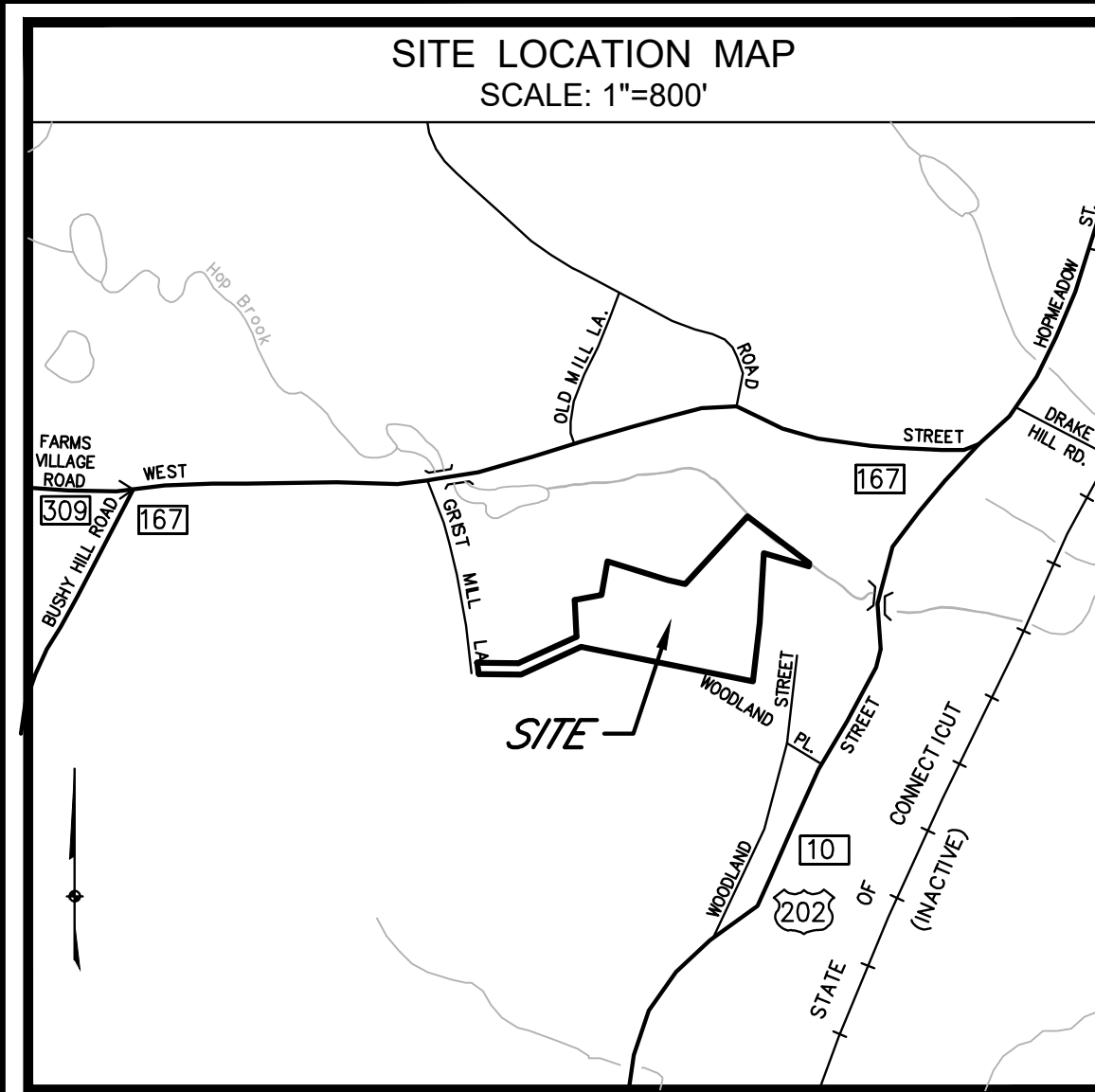
1. Inspect pipe inlets and outlets at manhole inspection ports as noted and depicted on Building Addition Grading and Utility Plan for clogging or sediment accumulation and remove any debris as required.
 - Monthly during the first year after installation
 - Spring and Fall after the first year of installation.

The following schedule shall be followed to maintain performance of the stormwater retention system. Additional inspections or work may be required based on issues found during the inspection.

1. Two (2) years after installation inspect the interior of the stormwater management system using CCTV or comparable techniques. Perform removal of debris as required.
2. Check the surrounding pavement areas for depressions over and surrounding the stormwater retention system. These observations should be made monthly during the first year after installation of the system, and biannually in spring and fall thereafter. Depressions or settling in paved areas shall be monitored and corrected as directed by engineer of record as this may indicate a failure or functional deficiency.

Based on observations made during the inspection, appropriate maintenance shall be performed.

Personnel that may enter sub-surface stormwater management structures shall be properly trained and certified in confined spaces per all OSHA regulations. It is the responsibility of the property owner to ensure that no inspection personnel enter sub-surface structures without proper certification and safety measures in place.



LEGEND

	Property / Street Line		Concrete Monument / TO BE SET
	Easement / Right of Way Line		Iron Pipe
	Stone Wall		Iron Pin / TO BE SET
	Wire / Chain Link Fence		Now or Formerly
	Wood / Rail Fence		Ramp/Flush
	Water Course		Type 'C-1' Catch Basin / PROPOSED
	Existing Contour		Type 'C-2' Catch Basin / PROPOSED
	PROPOSED CONTOUR		Utility Pole
	PROPOSED SILHOUETTE		Fire Hydrant
	Underground Electric Line		Light Pole
	Overhead Electric Line		Walk Pole
	Gas Line		Wellhead
	Sanitary Sewer Line		Existing Spot Grade
	Storm Sewer Line		PROPOSED SPOT GRADE
	Telephone Line		Hatch
	Water Line		Water Gate
	Tree Line		Gas Gate
	Existing Structure		Existing Text - Lower Case "italic" Letters
	PROPOSED CONST. ENTRANCE		PROPOSED TEXT - UPPER CASE "bold" LETTERS

LANDSCAPING NOTES:
 1. ALL LANDSCAPE MATERIAL SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM INSTALLATION.
 2. ALL DISTURBED AREAS SHALL BE FINISHED WITH A MINIMUM OF 6" TOPSOIL AND SEEDED.

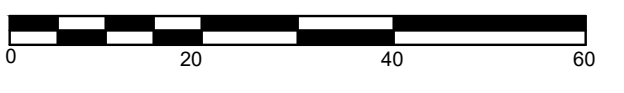
BUFFER PLANT LIST

SYMBOL	COMMON NAME	LATIN NAME	SIZE	QTY.
	RED MAPLE	Acer Rubrum	4"-5" FULL	5



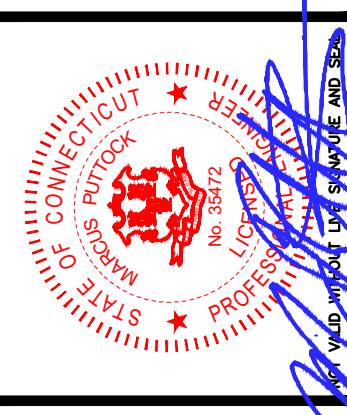
MAP REFERENCE:

PROPERTY LINE AND EXISTING CONDITIONS INFORMATION OBTAINED FROM MAP PREPARED BY GODFREY-HOFFMAN HODGE, LLC, 26 BROADWAY NORTH HAVEN, CT 06473, ENTITLED "IMPROVEMENT LOCATION & TOPOGRAPHIC SURVEY; PREPARED FOR ENSIGN-BICKFORD AEROSPACE & DEFENCE; 100 GRIST MILL ROAD, SIMSBURY, CONNECTICUT"; DATED 2-27-2023.



IMPORTANT NOTE:
 ADDITIONAL UNDERGROUND UTILITIES MAY EXIST. PRIOR TO ANY EXCAVATION OR CONSTRUCTION, CONTACT:
 "CALL BEFORE YOU DIG" 1-800-322-4455

GODFREY-HOFFMAN HODGE, LLC
 PROFESSIONAL LANDSCAPE ARCHITECTS & ENGINEERS
 26 BROADWAY NORTH HAVEN, CT 06473 TEL: 203.239.2377 WWW.GODFREYHOFFMAN.COM
 1785 FARMINGTON AVENUE, UNIONVILLE, CT 06865 TEL: 860.673.0444 WWW.HODGELLC.COM



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REVISION SCHEDULE

NO.	DATE	DESCRIPTION
1	7-7-2023	TOWN ENG. COMMENTS

PROJECT:
PROPOSED PARKING LOT EXPANSION
 100 GRIST MILL ROAD
 SIMSBURY, CT

PREPARED FOR:
 ENSIGN-BICKFORD AEROSPACE & DEFENSE CO.
 640 HOPMEADOW ST.
 SIMSBURY, CT

LANDSCAPING PLAN
 DRAWN BY: MP/CB
 CHECKED BY: MP
 SCALE: 1"=20'
 PROJECT: 113-65
 DATE: 6/5/2023
C-3.0



A17XFU150

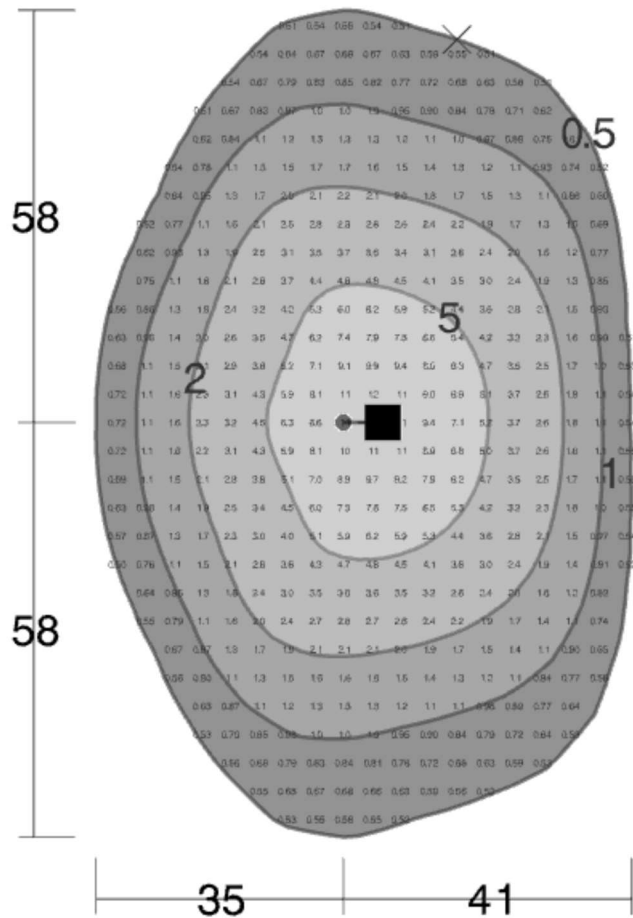
a17xfu150-150w_5k.ies

RAB Lighting Inc.
A17XFU150-150W_5K 0% CCT Setting
Single (Arm)



Luminaire Watts	151	W
Ballast/Driver Factor	1.00	
Light Loss Factor	1.00	
Total Proration Factor	1.00	
Luminaire Lumens	20261	lms

20 ft



Min: 0.50 fc
Max/Avg: 4.9

Avg: 2.5 fc
Avg/Min: 4.9

Max: 12 fc
 Max/Min: 24