GOODFIRE PARKING EXPANSION

MR 117 ROUTE ONE, LLC
FREEPORT, MAINE

LEGEND

EXISTING

REFER TO THE EXISTING CONDITIONS PLAN FOR ADDITIONAL INFORMATION

PROPOSED

	UNDERDRAIN
	GREEN SPACE
	UTILITY PAVEMENT CUTS
	STRIPING
	SEDIMENTATION BARRIER
	EDGE OF EX. PAVEMENT
	CURB
	SIGN
	LAMP OR LIGHT POLE
	UTILITY POLE
	GUY WIRE
	WATER VALVE
	FIRE HYDRANT
	SEWER MANHOLE
	CATCH BASIN
	DRAIN MANHOLE
UE — UE	UNDERGROUND ELECTRIC LINE
W — W	UNDERGROUND WATER LINE
64	MINOR CONTOURS (1 FT)
65	MAJOR CONTOURS (5 FT)
G — G	GAS LINE
SD — SD	STORM DRAIN LINE
S — S	SEWER LINE
1"W	WATER LINE
	EXISTING/PROPOSED BUILDING
OHP OHP	OVERHEAD ELECTRICAL/TELEPHONE/CABLE
	PROPERTY LINE
	SETBACKS

UTILITIES

SEWER

FREEPORT SEWER DISTRICT
43 SOUTH FREEPORT ROAD PO BOX 76
FREEPORT, MAINE 04032
CONTACT: LELAND ARRIS, GENERAL MANAGER
(207) 899-7655

WATER

MAINE WATER COMPANY
93 INDUSTRIAL PARK ROAD
SACO, MAINE 04072
CONTACT: MARCUS KNIPP, E.I.T.
(207) 294-6943

ELECTRIC

CENTRAL MAINE POWER COMPANY (CMP)
162 CANCO ROAD
PORTLAND, MAINE 04103
(207) 828-2882

TELEPHONE

CONSOLIDATED COMMUNICATIONS
(FORMERLY FAIRPOINT)
45 FOREST AVENUE
PORTLAND, MAINE 04101
CONTACT: PAT MORRISON
(207) 745-9363

CABLE

SPECTRUM CABLE
118 JOHNSON ROAD
PORTLAND, MAINE, 04102
CONTACT: MARK PELLETIER
(877) 546-0962

PROJECT TEAM

OWNER

MR 117 ROUTE ONE, LLC
FREEPORT, MAINE
CONTACT: DAVID REDDING

CIVIL ENGINEER:

ACORN ENGINEERING, INC.
PORTLAND, MAINE
CONTACT: SAM LEBEL, P.E.
(207) 775-2655

SURVEYOR

NORSE SURVEYING
BRUNSWICK, MAINE
CONTACT: SEAN PIERCE P.L.S.
(207) 440-3487

ABBREVIATIONS

PARTIAL LIST OF ABBREVIATIONS AND THEIR CORRESPONDING MEANING. PLEASE CONTACT THE ENGINEER FOR ANY CLARIFICATION

APPROX.	APPROXIMATE
BC	BOTTOM OF CURB
BMP	BEST MANAGEMENT PRACTICE
BOT.	BOTTOM
CB	CATCH BASIN
CF	CUBIC FOOT
CIP	CAST IN PLACE
CL	CENTERLINE
CM	CONSTRUCTION MANAGER
CMP	CENTRAL MAINE POWER
CONC.	CONCRETE
CPP	CORRUGATED PLASTIC PIPE
CY	CUBIC YARD
DI	DUCTILE IRON PIPE
DIA.	DIAMETER
DIM.	DIMENSION
EA.	EACH
ELEC.	ELECTRICAL
ELEV.	ELEVATION
EQUIV.	EQUIVALENT
EST.	ESTIMATE
EX.	EXISTING
FFE	FINISH FLOOR ELEVATION
FT.	FEET
HDPE	HIGH DENSITY POLY ETHYLENE
ID	INNER DIAMETER
IN.	INCH
INV.	INVERT
L	LENGTH
MAX.	MAXIMUM
MDEP	MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION
MDOT	MAINE DEPARTMENT OF TRANSPORTATION
M.E.P	MECHANICAL, ELECTRICAL, PLUMBING DESIGNER
MFG.	MANUFACTURED
MH	MANHOLE
MIN.	MINIMUM
O.C.	ON CENTER
OD	OUTSIDE DIAMETER
OHE/T/C	OVERHEAD ELECTRIC/TELEPHONE/CABLE
PC	PRECAST
PE	PROFESSIONAL ENGINEER
PL	PROPERTY LINE
PLS	PROFESSIONAL LAND SURVEYOR
PROP.	PROPOSED
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
PWD	PORTLAND WATER DISTRICT
R	RADIUS
RD	ROOF DRAIN
RET.	RETAINING
ROW	RIGHT OF WAY
S	SLOPE
SD	STORM DRAIN
SDR	STANDARD DIMENSION RATIO
SF	SQUARE FEET
SMH	SEWER MANHOLE
SPEC.	SPECIFICATION
TC	TOP OF CURB
TW	TOP OF WALL
TYP.	TYPICAL
UD	UNDERDRAIN
UGE	UNDERGROUND ELECTRIC
VIF	VERIFY IN FIELD

INDEX

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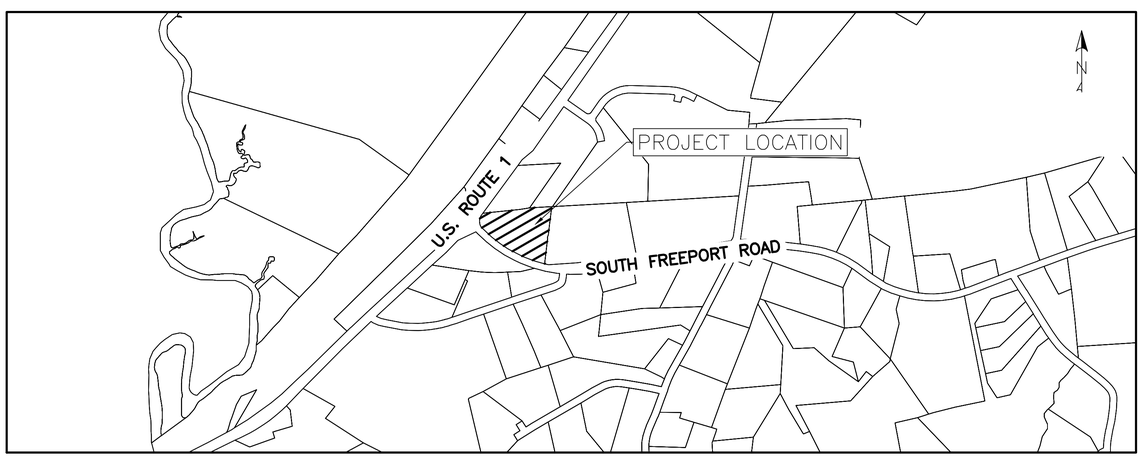
1-888-344-7233



VICINITY MAP
SCALE: 1:500

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
SITE PLAN	SJL 5/28/21
COMMENT RESP.	SJL 9/2/21
COMMENT RESP.	SJL 9/8/21
PED. CONNECTION	SJL 9/15/21
BID SET	SJL 9/29/21
DE MINIMIS CHANGE	SJL 2/4/22
COMMENT RESPONSE	SJL 3/15/22
IFC	SJL 4/8/22
SITE PLAN AMEND	SJL 5/31/23
COMMENT RESPONSE	SJL 6/14/23

DRAWING NAME: COVER SHEET & LEGEND
PROJECT NAME/ADDRESS: GOODFIRE PARKING EXPANSION
117 U.S. ROUTE 1 FREEPORT, MAINE 04032
CLIENT/OWNER OF RECORD: MR 117 ROUTE ONE, LLC
1 BALSAM LANE, FREEPORT MAINE 04032

ACORN ENGINEERING, INC.
PO BOX 3372 PORTLAND MAINE 04101
(207) 775-2655

FILE:	2.84_CIVIL
JN:	2.84
SCALE:	AS NOTED
DESIGNED BY:	SJL
DRAWN BY:	NPH
CHECKED BY:	WHS

STATE OF MAINE
Sam LeBel
SAMUEL J. LEBEL
No. 16505
REGISTERED PROFESSIONAL ENGINEER
LICENSED
6/14/23

DRAWING NO.
C-01

GENERAL NOTES:

1. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANIES AND DIG SAFE AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION FOR UTILITIES. OTHERWISE IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF UNDERGROUND UTILITIES AND LOCATE ANY POTENTIAL CONFLICTS WITH THE APPROVED PLANS PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF ALL EROSION CONTROL MEASURES SHOWN ON THE PLAN. IF DEEMED NECESSARY BY THE OWNER OR OWNER'S REPRESENTATIVE (IF APPLICABLE), ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED AT NO ADDITIONAL COST TO THE OWNER.
3. THE CONTRACTOR SHALL PREPARE THEIR OWN MATERIAL SCHEDULE BASED ON THE PLANS AND FIELD VERIFICATION BY THE CONTRACTOR. ALL MATERIAL SCHEDULES SHOWN WITHIN THE PLAN SET ARE FOR GENERAL INFORMATION ONLY.
4. ALL CONSTRUCTION METHODS, TESTING AND MATERIALS SHALL CONFORM TO THE MAINE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, THE CITY OF PORTLAND AND SERVICING UTILITY REQUIREMENTS, IF ANY. IN CASES WHERE THESE CONFLICT THE MOST STRINGENT SPECIFICATION SHALL APPLY AT NO ADDITIONAL COST TO THE OWNER.
5. THE SITE CONTRACTOR SHALL MAINTAIN A SET OF PAPER AND CAD DRAWINGS WHICH SHALL RECORD THE ACTUAL LOCATION, DIMENSIONS, ELEVATIONS, MATERIALS OF THEIR WORK, INDICATING THEREON ALL VARIATIONS FROM THE CONTRACT DRAWINGS. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH ONE COMPLETE SET OF REPRODUCIBLE RECORD DRAWINGS, IN .DWG FORMAT AND PAPER, STAMPED ''AS-BUILT''. IF AUTOCAD CAPABILITY IS NOT AVAILABLE, EXCLUDE FROM BID IN WRITING.
6. THE CONTRACTOR WILL REMAIN SOLELY AND COMPLETELY RESPONSIBLE FOR ENFORCEMENT OF AND COMPLIANCE WITH 1) ALL CONTRACT PLANS AND SPECIFICATIONS, 2) APPLICABLE INTERNATIONAL BUILDING CODE REQUIREMENTS, AND 3) ALL SITE WORKING CONDITIONS AND SAFETY REQUIREMENTS, DAY AND NIGHT, FOR BOTH PERSONS AND PROPERTY, IN EACH CASE BOTH BY THE CONTRACTOR AND ITS SUBCONTRACTORS. THESE INCLUDE ALL OSHA, NIOSH, U.S. EPA AND ANY OTHER APPLICABLE GOVERNMENTAL REGULATIONS.
7. EXISTING CONDITIONS, BOUNDARY SURVEY, AND TOPOGRAPHY FROM THE PLAN TITLED EXISTING CONDITIONS SURVEY BY NORSE SURVEYING FOR MR 117 ROUTE ONE, LLC, DATED 6/29/21.
8. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCESS TO THE SITE AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY MARKINGS, SIGNAGE AND INCIDENTALS TO MAINTAIN A SAFE VEHICLE AND PEDESTRIAN ACCESS THOUGH THE LIFE OF THE PROJECT. THE CONTRACTOR SHALL NOTIFY THE PORTLAND PUBLIC SAFETY DIVISION ROUTINELY REGARDING TEMPORARY IMPACTS OR CHANGES TO SITE ACCESS CONDITIONS.
9. CONSTRUCTION MANAGEMENT PLAN BY ACORN ENGINEERING SHALL BE REFERRED TO FOR ANTICIPATED PROJECT SCHEDULE AND CLOSURES. TRAFFIC CONTROL SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR TO DETERMINE SOIL CLASSIFICATION INDEPENDENTLY FOR TRENCH, SHORING, AND OTHER SIMILAR CONSTRUCTION MEANS AND METHODS APPLICATIONS.
11. NO HOLES, TRENCHES, OR STRUCTURES SHALL BE LEFT OPEN OR UNATTENDED OVERNIGHT IN ANY AREA ACCESSIBLE TO THE PUBLIC OR WITHIN THE PUBLIC RIGHT-OF-WAY.
12. THE CONTRACTOR SHALL SURVEY ROCK SURFACE PRIOR TO EXCAVATION AND DEVELOP VOLUME CALCULATIONS TO SHARE WITH THE ENGINEER, ACORN ENGINEERING INC. (ACORN), IF ANY.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION OF ALL TREES AND SHRUBS ON THE PROJECT WHICH ARE NOT TO BE REMOVED.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY TRENCH PAVEMENT THAT HAS EXPERIENCED EXCESSIVE SETTLEMENT, CRACKING, OR OPENING OF JOINTS. REPAIRS MAY INCLUDE OVERLAY. REMOVAL OF WORK MAY BE NECESSARY AFTER THE FINAL ACCEPTANCE OF WORK OR PRIOR TO THE END OF THE WARRANTY PERIOD. THIS WORK SHALL BE DONE AT THE CONTRACTOR'S EXPENSE.

CIVIL SITE NOTES:

1. THE CONTRACTOR SHALL SUBMIT IN WRITING ANY REQUESTS TO ACORN TO MODIFY THE CONTRACT DOCUMENTS.
2. ALL SHOP, ERECTION, AND CONSTRUCTION DRAWINGS SHALL BE CHECKED AND STAMPED BY THE CONTRACTOR PRIOR TO SUBMISSION FOR ACORN'S REVIEW. ANY UNCHECKED OR NON-STAMPED SUBMITTALS WILL BE RETURNED WITHOUT REVIEW.
3. CONTRACTOR SHALL THOROUGHLY INSPECT AND SURVEY EXISTING STRUCTURES AND SITE TO VERIFY CONDITIONS THAT AFFECT THE WORK SHOWN ON THE DRAWINGS. CONTRACTOR TO NOTIFY ACORN OF ANY DISCREPANCIES PRIOR TO PROCEEDING.
4. DETAILS SHOWN APPLY TO ALL SIMILAR CONDITIONS UNLESS OTHERWISE INDICATED.
5. ALTHOUGH ALL DUE DILIGENCE HAS BEEN APPLIED TO MAKE THE DRAWINGS AS COMPLETE AS POSSIBLE, NOT ALL DETAILS ARE ILLUSTRATED, NOR IS EVERY EXCEPTION CONDITION ADDRESSED WITHIN THE CONTRACT DOCUMENTS.
6. ALL PROPRIETARY CONNECTIONS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL WORK, INCLUDING DIMENSION AND LAYOUT VERIFICATION, MATERIALS COORDINATION, SHOP DRAWING REVIEW, AND THE WORK OF ANY SUBCONTRACTORS.
8. UNLESS OTHERWISE SPECIFICALLY INDICATED, THE DRAWINGS DO NOT DESCRIBE OR DIRECT MEANS OR METHODS OF CONSTRUCTION.
9. THE CONTRACTOR, IN THE PROPER SEQUENCE, SHALL PERFORM OR SUPERVISE ALL WORK NECESSARY TO ACHIEVE THE FINAL COMPLETED STRUCTURE, AND TO PROTECT THE STRUCTURE, WORKMEN, AND OTHERS DURING THE CONSTRUCTION. SUCH WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR CONSTRUCTION EQUIPMENT, SHORING FOR EXCAVATION, FORMWORK, SCAFFOLDING, SAFETY DEVICES AND PROGRAMS OF ALL KINDS, SUPPORT AND BRACING FOR CRANES AND OTHER ERECTION EQUIPMENT.
10. DO NOT BACKFILL AGAINST RETAINING WALLS UNTIL SUPPORTING SLABS AND FLOOR FRAMING ARE IN PLACE AND SECURELY ANCHORED, UNLESS ADEQUATE BRACING IS PROVIDED.
11. TEMPORARY BRACING SHALL REMAIN IN PLACE UNTIL ALL FLOORS, WALLS, ROOFS AND OTHER SUPPORTING ELEMENTS ARE IN PLACE, IF APPLICABLE.
12. ALL PAVEMENT JOINTS SHALL BE SAWCUT AND APPLIED WITH TACK COAT PRIOR TO PAVING TO PROVIDE A DURABLE AND UNIFORM JOINT.
13. ACORN BEARS NO RESPONSIBILITY FOR THE ABOVE ITEMS, AND SITE OBSERVATION VISITS DO NOT IN ANY WAY INCLUDE INSPECTION OF THEM.
14. ALL PAVING SHALL BE COMPLETED BETWEEN APR. 15 AND NOV. 15 AND MEET MIN TEMP. REQUIREMENTS SET FORTH BY MDOT.

SPECIAL INSPECTION NOTES

1. ALL SITE SOILS-RELATED WORK AND FOOTING EXCAVATIONS PRIOR TO PLACING FORMS SHALL BE REVIEWED BY THE PROJECT GEOTECHNICAL ENGINEER.
2. ALL SITE DRAINAGE-RELATED WORK SHALL BE REVIEWED BY ACORN ENGINEERING.
3. NORMAL REVIEWS BY LOCAL BUILDING DEPARTMENT. NOTIFY 48 HOURS PRIOR TO REQUIRED REVIEW.
4. REQUIRED SPECIAL INSPECTIONS PER I.B.C. SECTION 1705.6 BY AN APPROVED SPECIAL INSPECTOR RETAINED BY OWNER. CONTRACTOR TO COORDINATE SPECIAL INSPECTIONS.
5. SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.

5.1. DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR SHALL BE TO OBSERVE AND/OR TEST THE WORK ASSIGNED AND OUTLINE ABOVE FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS, ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION.

5.2. THE SPECIAL INSPECTOR SHALL FURNISH REGULAR REPORTS TO THE BUILDING OFFICIAL, THE ARCHITECT AND ENGINEER OF RECORD, AND OTHER DESIGNATED PERSONS. PROGRESS REPORTS FOR CONTINUOUS INSPECTION SHALL BE FURNISHED WEEKLY. INDIVIDUAL REPORTS OF PERIODIC INSPECTIONS SHALL BE FURNISHED WITHIN ONE WEEK OF INSPECTION DATES. THE REPORTS SHALL NOTE UNCORRECTED DEFICIENCIES, AND NET CHANGES TO THE APPROVED CONSTRUCTION DOCUMENTS AUTHORIZED BY THE ENGINEER OF RECORD.

5.3. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT WITHIN TEN DAYS OF THE FINAL INSPECTION STATING WHETHER THE WORK REQUIRING A SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE AND BELIEF, IN CONFORMANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE INTERNATIONAL BUILDING CODE. WORK NOT IN COMPLIANCE SHALL BE NOTED IN THE REPORT.

5.4. SPECIAL INSPECTOR SHALL BE EMPLOYED BY OWNER AND COORDINATED BY THE CONTRACTOR.

LAYOUT NOTES:

1. MONUMENTS DELINEATING PROPERTY LINES OR RIGHT OF WAYS SHALL NOT BE DISTURBED DURING CONSTRUCTION OPERATIONS. IN THE CASE A MONUMENT IS DISTURBED, AT THE CONTRACTOR'S EXPENSE, THE MONUMENT SHALL BE RESET TO ITS ORIGINAL LOCATION AND ELEVATION BY A LICENSED PROFESSIONAL LAND SURVEYOR.
2. ALL DIMENSIONS ON THE FOLLOWING SHEETS TAKE PRECEDENT OVER SCALED DIMENSIONS. EACH DRAWING WITH A BAR SCALE MEANS THAT THE DRAWING/DETAIL HAS BEEN SCALED AS ACCURATELY AS POSSIBLE, AND THE BAR SCALE IS FOR GENERAL REFERENCE ONLY. IF NO BAR SCALE IS PRESENT, THEN THERE IS NO SCALE TO THAT DRAWING/DETAIL. AT NO TIME SHOULD DRAWINGS BE SCALED FROM. ANY DISCREPANCIES BETWEEN DRAWINGS, DETAILS, SPECIFICATIONS AND THE FIELD CONDITION SHALL BE IMMEDIATELY REPORTED TO ACORN FOR FURTHER DIRECTIONS BEFORE ANY ADDITIONAL WORK PROCEEDS.
3. SIGNAGE, STRIPING, AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
4. ALL TRAFFIC CONTROL SIGNS INDICATED ON THE SITE LAYOUT PLAN ARE TO MEET ALL REQUIREMENTS & CONDITIONS OF THE CITY OF PORTLAND, MAINE DEPARTMENT OF TRANSPORTATION AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
5. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A LICENSED PROFESSIONAL LAND SURVEYOR TO PROVIDE A MINIMUM OF TWO TEMPORARY BENCHMARKS WITHIN THE SITE AND TO LOCATE PROPOSED STRUCTURE CORNERS.
6. CONTRACTOR TO ENSURE THAT ACCESS, INCLUDING BUT NOT LIMITED TO WALKWAYS, DRIVEWAYS, AND MAILBOXES ADJACENT TO THE PROJECT REMAIN FUNCTIONAL AND AVAILABLE FOR USE AT ALL TIMES.

PERMITTING NOTES

1. THIS PROJECT IS SUBJECT TO THE TERMS AND CONDITIONS OF A SITE PLAN PERMIT FROM THE TOWN OF FREEPORT.
2. THE CONTRACTOR SHALL REVIEW THE ABOVE REFERENCED PERMITS PRIOR TO SUBMITTING A BID FOR THIS PROJECT, AND INCLUDE COSTS AS NECESSARY TO COMPLY WITH THE CONDITIONS OF THESE PERMITS.
3. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES A STREET OPENING PERMIT FROM THE TOWN OF FREEPORT. ADDITIONALLY, COORDINATE WITH THE DEPARTMENT OF PUBLIC WORKS.

GRADING AND DRAINAGE NOTES:

1. TOPSOIL STRIPPED FROM THE SITE THAT IS SUITABLE FOR REUSE AS LOAM (MEETS THE REQUIREMENTS WITHIN SECTION 615 OF THE MDOT STANDARD SPECIFICATIONS, MOST RECENT VERSION AND IS FREE OF TRACEABLE AMOUNTS OF CONTAMINANTS) SHALL BE STOCKPILED WITHIN THE PROPOSED LIMIT OF WORK AREA. THE CONTRACTOR SHALL NOT ASSUME THAT ANY STRIPPED TOPSOIL WILL BE ACCEPTABLE FOR REUSE WITH THEIR ESTIMATE.
2. THE CONTRACTOR SHALL ANTICIPATE THAT GROUNDWATER WILL BE ENCOUNTERED DURING CONSTRUCTION AND SHALL INCLUDE SUFFICIENT COSTS WITHIN THEIR BID TO PROVIDE DEWATERING AS NECESSARY; NO SEPARATE PAYMENT SHALL BE MADE TO THE CONTRACTOR FOR DEWATERING. DEWATERING SHALL INCLUDE TREATMENT OF SILT THROUGH THE USE OF A DIRTBAG BY ACF ENVIRONMENTAL OR APPROVED EQUIVALENT. FLOWS FROM DEWATERING ACTIVITIES SHALL NOT BE DISCHARGED INTO SANITARY SEWERS.
3. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ANY EASEMENT OR TEMPORARY CONSTRUCTION RIGHTS AS NECESSARY BY PRIVATE ADJACENT LAND OWNERS. THE CONTRACTOR SHALL NOT DISTURB ANY SOIL BEYOND THE PROPERTY LINE WITHOUT NOTIFYING AND OBTAINING SUCH EASEMENT OR TEMPORARY CONSTRUCTION RIGHT FROM THE ADJACENT LAND OWNERS. PRIOR TO THE CONTRACTOR PRICING THE WORK, THEY SHALL PROVIDE ACORN WITH PROOF OF SUCH EASEMENT OR TEMPORARY RIGHTS. SHOULD EASEMENTS OR TEMPORARY RIGHTS NOT BE AVAILABLE, THE CONTRACTOR SHALL INCLUDE COST FOR BRACING AND SHORING AS NECESSARY.
4. THE MINIMUM SLOPE SHALL MEET OR EXCEED 0.5% IN ALL CASES WHERE NOT NOTED ON THE GRADING PLAN. SLOPES IDENTIFIED ON THE GRADING PLAN TAKE PRECEDENT. ALL SLOPES SHALL BE AWAY FROM BUILDINGS AND TOP OF PAVEMENT SHALL BE AT OR BELOW EXISTING FINISH FLOOR ELEVATIONS.
5. NO ADDITIONAL PAYMENT FOR UNSUITABLE MATERIALS SHALL BE MADE.
6. ALL STORM DRAIN PIPE SHALL BE SMOOTH BORE INTERIOR PROVIDING A MANNINGS ROUGHNESS COEFFICIENT OF N=0.012 OR LESS.
7. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
8. NATIVE SOILS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LIMIT THE DISTURBANCE TO SUBGRADE SOILS. SHOULD THE SUBGRADE BECOME YIELDING OR DIFFICULT TO WORK, CONTACT ACORN. THE DISTURBED AREAS SHALL BE EXCAVATED AND BACKFILLED WITH COMPACTED SELECT FILL OR CRUSHED STONE AT NO ADDITIONAL EXPENSE TO THE OWNER.

EROSION CONTROL NOTES:

1. DISTURBED AREAS ARE DEFINED AS THOSE SURFACES WHERE EXISTING VEGETATION OR STRUCTURES HAVE BEEN REMOVED, EXPOSING NATIVE SOIL TO THE ELEMENTS.
2. ALL ROUTINE WORK ACTIVITIES SHALL BE CONDUCTED IN SUCH A WAY TO LIMIT THE AMOUNT OF DISTURBED AREA AT ONE TIME TO THE EXTENT PRACTICABLE.
3. PRIOR TO THE START OF ANY CLEARING/LAND DISTURBING ACTIVITIES, THE CONTRACTOR SHALL INSTALL APPLICABLE EROSION CONTROL DEVICES SUCH AS PERIMETER SILT FENCE, AND OTHER APPLICABLE MEASURES. IN THE EVENT THE CONTRACTOR IS NOT SURE A EROSION CONTROL MEASURE SHOULD BE IMPLEMENTED, THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD TO CONFIRM IMPLEMENTATION OF ANY EROSION CONTROL DEVICES.
4. ALL GROUND AREAS GRADED FOR CONSTRUCTION SHALL BE GRADED, LOAMED, SEEDED AND MULCH SHALL BE APPLIED AS SOON AS POSSIBLE WITHIN 7 DAYS FOLLOWING THE COMPLETION OF ANY SOIL DISTURBANCE, AND PRIOR TO ANY STORM EVENT.
5. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED TO THE SATISFACTION OF THE TOWN. THE CONTRACTOR SHALL REFERENCE THE APPROVED EROSION AND SEDIMENTATION CONTROL REPORT FOR TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL DEVICES IN ADDITION TO THE PLAN SET. THE CONTRACTOR SHALL ALSO REFER TO THE MAINE D.E.P.'S PERMIT CONDITIONS, FINDINGS OF FACT AND ORDER (IF ANY), AND THE CURRENT MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION.
6. PRIOR TO PAVING, THE CONTRACTOR SHALL REMOVE ALL SEDIMENT FROM STORM DRAINS, CATCH BASINS, AND APPURTENANCES.
7. REFER TO THE EROSION CONTROL DETAILS & NOTES FOR ADDITIONAL INFORMATION.

UTILITY NOTES:

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND ELEVATION OF THE EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED UPON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO TEST PIT TO DETERMINE THE EXACT LOCATION AND ELEVATION OF UTILITIES TO COORDINATE WITH THE PROPOSED CONNECTIONS OR CROSSING. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO ACORN FOR FURTHER DIRECTIONS BEFORE ANY ADDITIONAL WORK PROCEEDS.
2. CONTRACTOR SHALL, AT NO ADDITIONAL COST TO THE OWNER, CONDUCT EXPLORATORY EXCAVATIONS AT LOCATIONS WHERE PROPOSED EXCAVATION WILL INTERSECT WITH EXISTING UTILITIES, PRIOR TO THE ORDERING OF STRUCTURES.
3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL THE NECESSARY PERMITS FOR THE INSTALLATION OF THE UTILITIES AND STORMDRAINS WITHIN THE PUBLIC RIGHT OF WAY.
5. ALL ADJUSTMENTS TO FINISHED GRADE ARE TO BE COMPLETED BY THE CONTRACTOR. THE CONTRACTOR SHALL CONFIRM STRUCTURES THAT REQUIRE ADJUSTMENT WITH THE ENGINEER OR OWNERS REPRESENTATIVE PRIOR TO ADJUSTING FRAMES.

DEMOLITION NOTES:

1. THE FOLLOWING ITEMS ARE TYPICAL OF MATERIAL WHICH MAY BE ON SITE:
   - ROCK AND CONCRETE FOUNDATIONS
   - CONCRETE SLABS
   - BITUMINOUS ASPHALT PAVEMENT
   - CONCRETE PADS AND BLOCKS
   - FENCE POST AND FENCING
   - UNDERGROUND UTILITY LINES
   - ABOVE AND OR BELOW FUEL OIL AND PROPANE GAS TANKS
   - STORM DRAIN PIPES AND APPURTENANCE STRUCTURES
   - OTHER TRASH & MISCELLANEOUS SOLID WASTES
2. THE CONTRACTOR IS ADVISED TO VISIT THE SITE TO CONFIRM DEMOLITION ITEMS SINCE THE LIST IS NOT INCLUSIVE OF THE SITE CONDITIONS WHICH MAY BE ENCOUNTERED
3. ALL DISPOSAL OF DEMOLITION DEBRIS OR WASTE SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, & FEDERAL REGULATIONS. CONTRACTORS SHALL PROVIDE OWNER WITH APPROPRIATE "BILLS OF LADING" DEMONSTRATING PROPER DISPOSAL OF ALL MATERIALS.
4. THE CLIENT HAS NOT REQUESTED NOR HAS ACORN COMPLETED A PHASE I – ENVIRONMENTAL SITE ASSESSMENT FOR THE PROPERTY.

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
SITE PLAN	SJL 8/26/21
COMMENT RESP.	SJL 9/2/21
BID SET	SJL 9/29/21
IFC	SJL 4/8/22
SITE PLAN AMEND	SJL 5/31/23
COMMENT RESPONSE	SJL 6/14/23

DRAWING NAME: GENERAL NOTES

PROJECT NAME/ADDRESS: GOODFIRE PARKING EXPANSION
117 U.S. ROUTE 1 FREEPORT, MAINE 04032

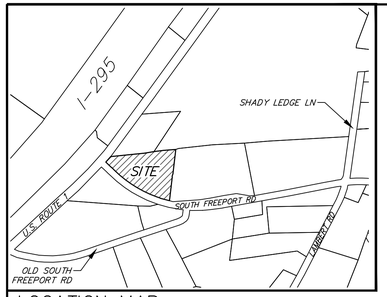
CLIENT/OWNER OF RECORD: MR 117 ROUTE ONE, LLC
1 BALSAM LANE, FREEPORT MAINE 04032

ACORN ENGINEERING, INC.
ACORN ENGINEERING, INC
70 FORE RIVER PARKWAY, PORTLAND, MAINE 04101
PO BOX 4337 (207) 775-2655

FILE:	2.84_CIVIL
JN:	2.84
SCALE:	AS NOTED
DESIGNED BY:	SJL
DRAWN BY:	NPH
CHECKED BY:	WHS

STATE OF MAINE
SAMUEL J. LEBEL
No. 16505
LICENSED PROFESSIONAL ENGINEER
6/14/23

DRAWING NO.
C-02



LOCATION MAP N.T.S.

LEGEND

- PROPERTY LINE
- ABUTTER LINE
- RIGHT-OF-WAY LINE
- SETBACK
- EASEMENT
- BUFFER
- BUILDING
- DECK/STEPS
- OVERHANG
- EDGE WETLAND
- EDGE PAVEMENT
- PAVEMENT PAINT
- EDGE GRAVEL
- CURB LINE
- STREAM
- TREELINE
- 120 118 CONTOURS
- X120.00 SPOT GRADE
- WOOD FENCE
- G GAS
- W WATER
- S SANITARY SEWER
- SD STORM DRAIN
- CULVERT
- OHU OVERHEAD UTILITY
- UGU UNDERGROUND UTILITY
- N/F NOW OR FORMERLY
- MONUMENT FOUND
- IRON PIPE/ROD
- SHRUB
- CONIFEROUS TREE
- BOLLARD/POST
- SIGN
- GAS GATE VALVE
- HYDRANT
- SANITARY MANHOLE
- WETLANDS
- CATCH BASIN
- ELECTRIC METER
- LIGHT POLE
- UTILITY POLE
- GUY WIRE

GENERAL NOTES:

1. THE RECORD OWNER OF THE PARCEL IS MR 117 ROUTE ONE, LLC BY DEED DATED MAY 28, 2021 AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 38249, PAGE 197, AND IS SHOWN AS LOT 5 ON THE TOWN OF FREEPORT TAX MAP 25.
2. THE PROPERTY IS LOCATED IN THE COMMERCIAL 1 (C1) DISTRICT.
   LAND USE REGULATIONS ARE AS FOLLOWS:
   MINIMUM PROPERTY SETBACK: 15 FT.
   MAXIMUM BUILDING HEIGHT: 35 FT.
   MAXIMUM BUILDING COVERAGE: 70%
   • SEE ORDINANCE FOR MORE PARTICULAR INFORMATION.
3. TOTAL AREA OF PARCEL IS APPROXIMATELY 2.69 ACRES AS SHOWN ON PLAN REF. 7A.
4. BOUNDARY INFORMATION SHOWN HEREON IS BASED UPON PLAN REF. 7A TIED TO FIELD MEASUREMENTS OBSERVED BY NORTHERN SURVEY ENGINEERING, LLC IN JUNE, 2021. A COMPLETE RECORDS SEARCH WAS NOT COMPLETED AS PART OF THIS SURVEY, AND THIS PLAT DOES NOT REPRESENT THIS SURVEYORS OPINION AS TO THE EXTENT OF TITLE.
5. TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED UPON AN ON-THE-GROUND FIELD SURVEY COMPLETED BY NORTHERN SURVEY ENGINEERING, LLC IN JUNE, 2021.
6. BOOK AND PAGE REFERENCES SHOWN HEREON ARE IN REFERENCE TO THE CUMBERLAND COUNTY REGISTRY OF DEEDS (C.C.R.D.).
7. PLAN REFERENCES:
   A. "ALTA/NSPS LAND TITLE SURVEY, 117 U.S. ROUTE 1, FREEPORT, CUMBERLAND COUNTY, MAINE, MADE FOR PRETI FLAHERTY, ONE CITY CENTER, PORTLAND, MAINE" BY OWEN HASKELL, INC. REVISED THROUGH MARCH 30, 2021.
8. BEARINGS SHOWN HEREON ARE IN REFERENCE TO GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802-NAD83. ELEVATIONS DEPICTED HEREON ARE IN REFERENCE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), BASED GPS OBSERVATIONS.
9. UTILITY INFORMATION DEPICTED HEREON IS COMPILED USING PHYSICAL SURFACE EVIDENCE LOCATED IN THE FIELD IN CONJUNCTION WITH ANY RECORD INFORMATION AVAILABLE AT THE TIME OF THIS SURVEY (SUE LEVEL C), AND MAY NOT NECESSARILY REPRESENT ALL EXISTING UTILITIES. CONTRACTORS AND/OR DESIGNERS NEED TO CONTACT DIG-SAFE SYSTEMS, INC. (1-888-DIG-SAFE) AND FIELD VERIFY EXISTING UTILITIES PRIOR TO CONSTRUCTION AND/OR EXCAVATION.
10. THE LOCUS PROPERTY AS DEPICTED HEREON DOES NOT FALL WITHIN A SPECIAL FLOOD HAZARD AREA AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR FREEPORT, MAINE, CUMBERLAND COUNTY, COMMUNITY-PANEL NUMBER 230046 0013 B, HAVING AN EFFECTIVE DATE OF JANUARY 17, 1985. THE LOCUS FALLS WITHIN AN AREA IDENTIFIED AS ZONE C, AREAS OF MINIMAL FLOODING (NO SHADING).
11. A WETLAND DELINEATION WAS PERFORMED ON THIS PROJECT SITE IN JUNE, 2021 BY FLYCATCHER, LLC, AND LOCATED BY SUB-METER GPS.

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 INCH = 20 FT.

SEAN P. PIERCE, PLS 2517

REV.:	BY:	DATE:	STATUS:
			THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK.

NORTHERN SURVEY ENGINEERING
207.440.3487
41 CHURCH ROAD, BRUNSWICK, MAINE 04011
www.northernsurveyengineering.com

EXISTING CONDITIONS SURVEY

OF:
MR 117 ROUTE ONE PROPERTY
117 ROUTE 1
FREEPORT, MAINE 04032

FOR:
MR 117 ROUTE ONE, LLC
1 BALSAM LANE
FREEPORT, MAINE 04032

DRAWN	CHECKED
SPP	DJH
PROJECT NO.	DATE
21061	06/29/21
SHEET SIZE	SCALE
24" X 36"	1" = 20'

SHEET 1 OF 1

PLEASE NOTE PLAN PROVIDED IS NOT AN AS-BUILT PLAN. PLAN IS PROVIDED TO DEMONSTRATE THE EXISTING CONDITIONS ON THE SITE AT THE TIME OF THE SITE PLAN AMENDMENT APPLICATION (5/31/23)

SPACE AND BULK STANDARDS

ZONING: COMMERCIAL 1 DISTRICT (C-1)	REQUIRED	EXISTING	PROPOSED
MIN. LOT SIZE	0.92 AC	2.69 AC	2.69 AC
MIN. ROAD FRONTAGE	300'	53'	550'
MAX. BUILDING HEIGHT	35' / 45' [1]	<35'	<35'
MIN. SETBACKS [2]			
FRONT	15'	53'	53'
SIDE	15' / 5' [2]	<5'	<5'
REAR	15' / 5' [2]	360'	360'

[1] PROJECTS THAT MEET THE CRITERIA OF 409.D.6 ARE ELIGILBE FOR A MAXIMUM HEIGHT OF 45'

[2] PROJECTS THAT MEET THE CRITERIA OF 409.D.5 ARE ELIGIBLE FOR A MINIMUM SIDE AND REAR SETBACK OF 5'

PROJECT FRONTAGE LOCATED ALONG SOUTH FREEPORT ROAD

GENERAL NOTES:

1. ANY ASPHALT TO BE REMOVED SHALL BE STRIPPED AND PROPERLY DISPOSED OF OFFSITE.
2. ALL RAMPS TO CONFORM TO ADA GUIDELINES. SLOPE SHALL NOT EXCEED 1 INCH PER FOOT.
3. ALL SITE SIGNAGE TO COMPLY WITH MUTCD STANDARDS. CONTRACTOR TO COORDINATE AND INSTALL.
4. FOLLOWING COMPLETION OF CONSTRUCTION, THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND MANAGEMENT OF DRIVEWAYS, SITE LIGHTING, TRASH REMOVAL AND SNOW REMOVAL.
5. WATER SERVICE LOCATION APPROXIMATE BASED ON SERVICE CARD PROVIDED BY MAINE WATER COMPANY.
6. SEWER SERVICE LOCATION APPROXIMATE BASED ON BUILDING INSPECTION REPORT PREPARED BY CONSULTANT SERVICES DATED FEBRUARY 22, 2021.
7. LOCATION OF PROPOSED CONNECTIONS ARE APPROXIMATE. CONTRACTOR TO CONTACT ENGINEER IF FIELD INFORMATION VARIES FROM INFORMATION ON PLANS.
8. CONTRACTOR IS TO BE CAUTIONED THAT CERTAIN LOCATIONS AND/OR ELEVATIONS OF EXISTING UTILITIES HAVE BEEN PROVIDED THROUGH UTILITY COORDINATION OR OTHER OBSERVATIONS. INFORMATION IS NOT TO BE RELIED UPON AS EXACT OR COMPLETE. CONTRACTOR TO FIELD VERIFY AND COORDINATE WITH UTILITY COMPANY AND DIG SAFE NO LESS THAN 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF ALL UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS INDICATED IN THE CONTRACT DOCUMENTS. CONTRACTOR TO NOTIFY ENGINEER OF ANY DIFFERENTIATIONS FROM EXISTING CONDITIONS, INCLUDING UTILITY INFORMATION, PRIOR TO ANY CHANGES.
9. FOR ALL UTILITIES, ACORN ENGINEERING DESIGN LIMITS END AT EXTERIOR WALL OF BUILDING. METERING OF UTILITIES TO BE COMPLETED BY M.E.P. UNLESS SPECIFIED OTHERWISE.
10. CONTRACTOR TO COORDINATE WITH ARCHITECT ON FINAL UTILITY CONNECTIONS WITHIN THE BUILDING.
11. WATER UTILITIES: FINAL PIPE SIZING PROVIDED BY M.E.P. ENGINEER AND FIRE PROTECTION DESIGNER. INTERNAL METERING, BACKFLOW PREVENTION, AND PRESSURE REDUCERS TO BE COMPLETED BY M.E.P. ENGINEER. DOMESTIC WATER PIPE SIZES WILL DETERMINE THE FINAL WATER METERING OPTIONS. WATER METERING, PRESSURE REDUCER AND BACKFLOW PREVENTION TO BE IN ACCORDANCE WITH THE TOWN OF FREEPORT AND MAINE WATER COMPANY STANDARDS. CONTRACTOR TO FOLLOW METERING GUIDELINES OF MAINE WATER COMPANY AND THE TOWN OF FREEPORT.
12. ELECTRIC UTILITIES: ELECTRIC DESIGN TO BE FINALIZED BY M.E.P. ENGINEER. ELECTRICAL LOAD TO BE DETERMINED BY M.E.P. ENGINEER. METER LOCATION AND TRANSFORMER SIZE, IF NECESSARY DEFINED BY M.E.P. M.E.P. TO FINALIZE SERVICE CONNECTION TO BUILDING. ALL ELECTRIC CONSTRUCTION SHALL CONFORM TO CMP GUIDEBOOK OF STANDARD REQUIREMENTS, MOST RECENT EDITION. DESIGN SUBJECT TO FINAL APPROVAL FROM CMP.

PARKING SUMMARY

	# PARKING SPACES
STANDARD	66
ADA	3
TOTAL PROPOSED SPACES	69

LEGEND:
EXISTING PAVEMENT:
NEW PAVEMENT:
GRAVEL:

APPROX. LOCATION OF EX. 8" WATER STUB PER MAINE WATER COMPANY
PR. 6" DI SPRINKLER LINE WITH 8"X6" TAPPING SLEEVE AND GATE VALVE
POTENTIAL CONNECTION INTO EXISTING SERVICE VALVE WITH 2" TYPE K COPPER SERVICE, EXISTING 1" TAP OFF 8" STUB TO REMAIN. IF CONNECTION INTO EXISTING SERVICE VALVE IS NOT FEASIBLE, INSTALL 2" SADDLE CONNECTION AND NEW CURB STOP. OPTION TBD BY MEP
PR. 2" TYPE K COPPER DOMESTIC LINE
APPROX. LOCATION OF SEWER SERVICE TO BUILDING, SEE NOTE 6.
APPROX. RIGHT-OF-WAY BOUNDARY
EX. ABUTTER'S WATER SERVICE TO REMAIN UNDISTURBED
CASCO BAY TRADING POST 1 LLC N/F MAP 25, LOT 4 BK. 23156, PG. 137
LOCATION OF EX. OVERHEAD SERVICE TO REMAIN
EX. UTILITY POLE, TYP.
LANDSCAPING BUFFER PER LA
PR. SANITARY SERVICE. TELEVISE EX. DOWNSTREAM LINE TO CONFIRM CONDITION OF PIPE AND TAP LOCATION OF NEIGHBOR'S LATERAL. INSTALL NEW PVC SDR 35 PIPE AND COUPLE TO EXISTING LINE UPSTREAM OF NEIGHBOR'S LATERAL. TEST PIT TO DETERMINE EXISTING PIPE INVERT AT COUPLE LOCATION. DIAMETER OF NEW PIPE TO MATCH EX. DOWNSTREAM LINE. VERIFY IN FIELD 1% MIN. PIPE SLOPE CAN BE ACHIEVED. COORDINATE WITH PLUMBING DRAWINGS.
EX. 20' UTILITY EASEMENT PER SURVEY
EX. STATUE TO REMAIN
EX. PAVED DRIVEWAY TO BE REMOVED AND REPLACED WITH 4" OF LOAM AND SEED WITH PLANTINGS PER LA
CAPPED #5 REBAR FOUND 8" A.G. PLS #1252 (HELD)
#5 REBAR FOUND 2" A.G.
U.S. ROUTE 1 (66' R.O.W.)
CLOSE EXISTING CURB CUT BY REMOVING EXISTING PAVEMENT AND REPLACING WITH 4" OF LOAM AND SEED AT PROPERTY LINE PER LA
EXISTING WALKWAY & GRAVEL TO BE REMOVED
EX. ROUTE 1 SIGN
CONCRETE SIDEWALK PER LA
LOCATION OF EX. UNDERGROUND ELECTRIC TO REMAIN
15' SIDE SETBACK, TYP.
LAWN
CURB TIPDOWN, TYP.
PROPOSED BIKE-RACK PER LA
PLANTED AREA PER LA, TYP.
REMOVE EX. SHEDS
SAWN TRANSITION PIECE FROM VERTICAL GRANITE CURB TO SLOPED GRANITE CURB
5' WIDE STONE DUST PEDESTRIAN PATHWAY PER LA
WELL SERVICE TO BE DISCONNECTED FROM PUBLIC WATER SYSTEM AND INTERNAL PLUMBING IF CONNECTION EXISTS. WELL SERVICE TO REMAIN IF USED FOR OUTDOOR IRRIGATION. COORDINATE WITH MAINE WATER COMPANY
PR. CONCRETE PAD FOR SOLID WASTE ENCLOSURE PER DETAIL
HORIZONTAL CEDAR PLANKS ON ENCLOSURE TO MATCH ARCHITECTURAL ELEVATIONS PROVIDED BY ARCHITECT
HATCH DENOTES PR. PAVEMENT PER DETAIL
REMOVE EXISTING LANDSCAPING BED
SNOW STORAGE, TYP.
RELOCATE SOLID WASTE CONTAINER
RELOCATE PROPANE TANK PER OWNER
VERTICAL GRANITE CURB, TYP.
9'X18.5' PARKING STALL, TYP.
CONCRETE SIDEWALK PER LA
BARRIER FREE SIGN, TYP. OF 3
9'X18.5' ADA SPACE
11'X18.5' VAN SPACE
PR. OUTDOOR SEATING AREA WITH CONCRETE PAVERS PER LA
TREES LOCATED IN OUTDOOR SEATING AREA TO BE REMOVED, TYP. OF 4.
RELOCATE MECHANICAL EQUIPMENT PER OWNER
RIM = 97.09
OUT = 12" HDPE INV. = 93.90
SUMP= 92.87
BEDROCK PER SURVEY, TYP.
GAZEBO TO BE REMOVED
PERMEABLE ECORASTER SYSTEM PER DETAIL OR APPROVED EQUAL
REMOVING EXISTING PAVEMENT AND REPLACING WITH 4" OF LOAM AND SEED PER LA
PR. ENTRY SIGN PER LA
EXISTING EOP
APPROX. LOCATION OF R.O.W. PER TOWN'S GIS
PR. STOP SIGN PER DETAIL
12" HDPE INV=93.0'
R5'
SLOPED GRANITE CURB PER DETAIL
SAWN TRANSITION FROM SLOPED CURB TO 4' GRANITE TIPDOWN
R10.00'
24.00'
25.50'
44.00'
43.48'
9.00'
R3'
OUTLINE OF STORMWATER UNIT
PR. LANDSCAPE ISLAND WITH GRANITE CURB, PLANTINGS PER LA
PARKING STALLS ON GRAVEL SHOWN FOR GRAPHICAL PURPOSES ONLY
GRAVEL PARKING AREA TO BE REBUILT PER C-20 AND DETAIL
EDGE OF EX. GRAVEL, TYP.
SAWCUT MIN. 1' OFF AND TACK UNIFORM BUTT JOINT, PRIOR TO PAVING
15' FRONT SETBACK, TYP.
SAWCUT ENTRANCE TO REDEFINE BORDERS AND REMOVE TRIMMED, SEE NOTE 1. OWNER MAY ELECT TO REMOVE ALL EX. PAVEMENT AND REBUILD ENTRANCE PER PAVEMENT PROFILE AS ALTERNATE
R20'
15' REAR SETBACK, TYP.
EX. WETLAND DELINEATED BY FLYCATCHER LLC ON JUNE 1, 2021
STREAM, TYP.
CISTOM PROPERTIES, LLC N/F MAP 10, LOT 304 BK. 8019, PG. 304
6"X6" GRANITE MONUMENT ENGRAVED "H" FOUND 4" A.G. (HELD)
SOUTH FREEPORT ROAD (100' R.O.W.)

20 0 20 40
SCALE: 1"=20'

ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
SITE PLAN	SJL 8/26/21
COMMENT RESP.	SJL 9/2/21
PED. CONNECTION	SJL 9/15/21
BID SET	SJL 9/29/21
DE MINIMIS CHANGE	SJL 2/4/22
COMMENT RESPONSE	SJL 5/13/22
IFC	SJL 4/5/22

DRAWING NAME: SITE & UTILITY PLAN
PROJECT NAME/ADDRESS: GOODFIRE REDEVELOPMENT
117 U.S. ROUTE 1 FREEPORT, MAINE 04032
CLIENT/OWNER OF RECORD: MR 117 ROUTE ONE, LLC
1 BALSAM LANE, FREEPORT MAINE 04032

ACORN ENGINEERING, INC.
ACORN ENGINEERING, INC.
PO BOX 3372, PORTLAND MAINE 04101
(207) 775-2655

FILE: 2.84_CIVIL
JN: 2.84
SCALE: AS NOTED
DESIGNED BY: SJL
DRAWN BY: NPH
CHECKED BY: WHS

STATE OF MAINE
SAMUEL J. LEBEL
16506
LICENSED PROFESSIONAL ENGINEER
4/12

DRAWING NO.
C-03

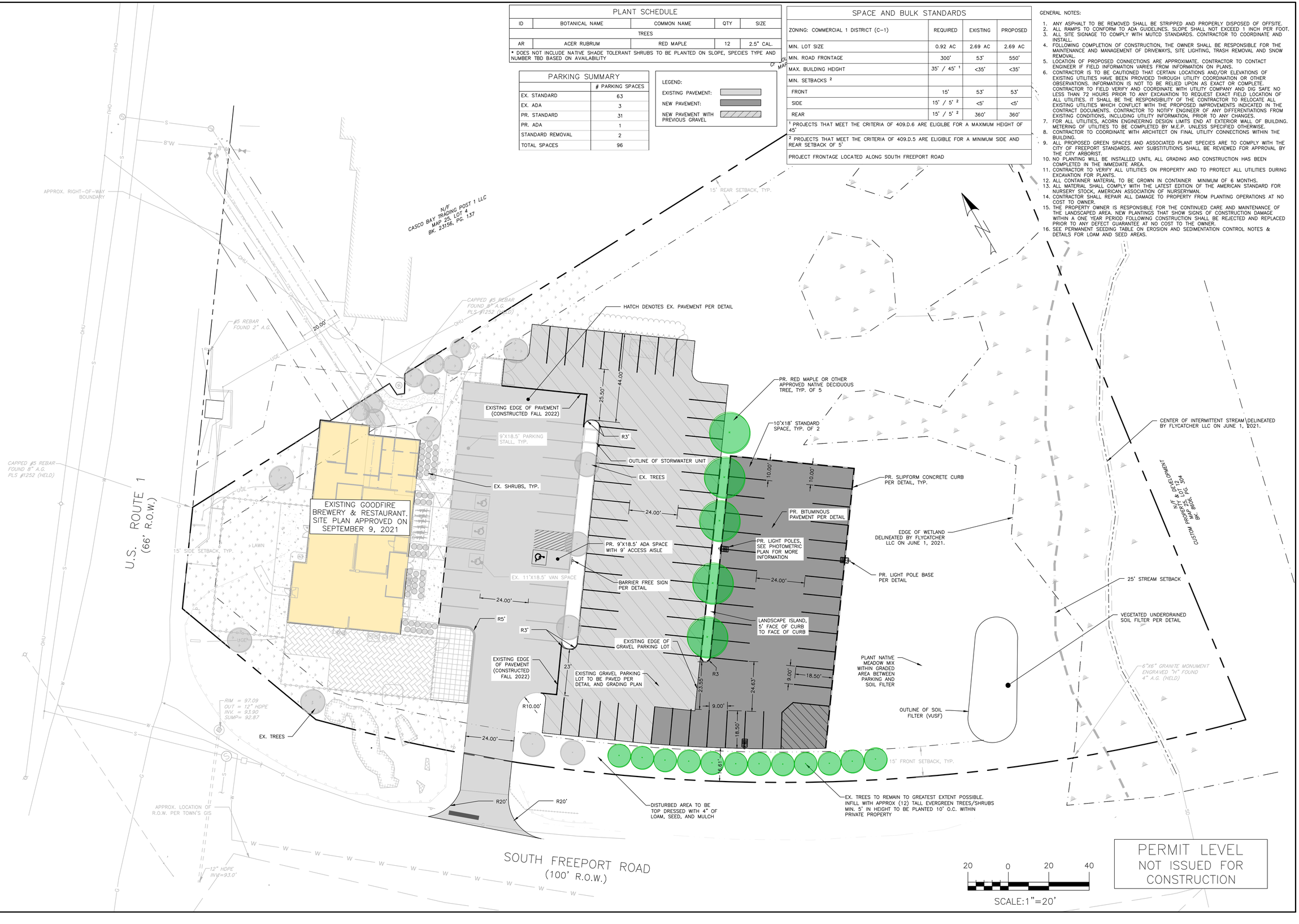
PLANT SCHEDULE				
ID	BOTANICAL NAME	COMMON NAME	QTY	SIZE
TREES				
AR	ACER RUBRUM	RED MAPLE	12	2.5" CAL.
* DOES NOT INCLUDE NATIVE SHADE TOLERANT SHRUBS TO BE PLANTED ON SLOPE, SPECIES TYPE AND NUMBER TBD BASED ON AVAILABILITY				

PARKING SUMMARY	
	# PARKING SPACES
EX. STANDARD	63
EX. ADA	3
PR. STANDARD	31
PR. ADA	1
STANDARD REMOVAL	2
TOTAL SPACES	96

LEGEND:
- EXISTING PAVEMENT:
- NEW PAVEMENT:
- NEW PAVEMENT WITH PREVIOUS GRAVEL

SPACE AND BULK STANDARDS			
ZONING: COMMERCIAL 1 DISTRICT (C-1)	REQUIRED	EXISTING	PROPOSED
MIN. LOT SIZE	0.92 AC	2.69 AC	2.69 AC
MIN. ROAD FRONTAGE	300'	53'	550'
MAX. BUILDING HEIGHT	35' / 45' [1]	<35'	<35'
MIN. SETBACKS [2]			
FRONT	15'	53'	53'
SIDE	15' / 5' [2]	<5'	<5'
REAR	15' / 5' [2]	360'	360'
[1] PROJECTS THAT MEET THE CRITERIA OF 409.D.6 ARE ELIGILBE FOR A MAXIMUM HEIGHT OF 45'			
[2] PROJECTS THAT MEET THE CRITERIA OF 409.D.5 ARE ELIGIBLE FOR A MINIMUM SIDE AND REAR SETBACK OF 5'			
PROJECT FRONTAGE LOCATED ALONG SOUTH FREEPORT ROAD			

GENERAL NOTES:
1. ANY ASPHALT TO BE REMOVED SHALL BE STRIPPED AND PROPERLY DISPOSED OF OFFSITE.
2. ALL RAMPS TO CONFORM TO ADA GUIDELINES. SLOPE SHALL NOT EXCEED 1 INCH PER FOOT.
3. ALL SITE SIGNAGE TO COMPLY WITH MUTCD STANDARDS. CONTRACTOR TO COORDINATE AND INSTALL.
4. FOLLOWING COMPLETION OF CONSTRUCTION, THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND MANAGEMENT OF DRIVEWAYS, SITE LIGHTING, TRASH REMOVAL AND SNOW REMOVAL.
5. LOCATION OF PROPOSED CONNECTIONS ARE APPROXIMATE. CONTRACTOR TO CONTACT ENGINEER IF FIELD INFORMATION VARIES FROM INFORMATION ON PLANS.
6. CONTRACTOR IS TO BE CAUTIONED THAT CERTAIN LOCATIONS AND/OR ELEVATIONS OF EXISTING UTILITIES HAVE BEEN PROVIDED THROUGH UTILITY COORDINATION OR OTHER OBSERVATIONS. INFORMATION IS NOT TO BE RELIED UPON AS EXACT OR COMPLETE. CONTRACTOR TO FIELD VERIFY AND COORDINATE WITH UTILITY COMPANY AND DIG SAFE NO LESS THAN 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF ALL UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS INDICATED IN THE CONTRACT DOCUMENTS. CONTRACTOR TO NOTIFY ENGINEER OF ANY DIFFERENTIATIONS FROM EXISTING CONDITIONS, INCLUDING UTILITY INFORMATION, PRIOR TO ANY CHANGES.
7. FOR ALL UTILITIES, ACORN ENGINEERING DESIGN LIMITS END AT EXTERIOR WALL OF BUILDING. METERING OF UTILITIES TO BE COMPLETED BY M.E.P. UNLESS SPECIFIED OTHERWISE.
8. CONTRACTOR TO COORDINATE WITH ARCHITECT ON FINAL UTILITY CONNECTIONS WITHIN THE BUILDING.
9. ALL PROPOSED GREEN SPACES AND ASSOCIATED PLANT SPECIES ARE TO COMPLY WITH THE CITY OF FREEPORT STANDARDS. ANY SUBSTITUTIONS SHALL BE REVIEWED FOR APPROVAL BY THE CITY ARBORIST.
10. NO PLANTING WILL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
11. CONTRACTOR TO VERIFY ALL UTILITIES ON PROPERTY AND TO PROTECT ALL UTILITIES DURING EXCAVATION FOR PLANTS.
12. ALL CONTAINER MATERIAL TO BE GROWN IN CONTAINER MINIMUM OF 6 MONTHS.
13. ALL MATERIAL SHALL COMPLY WITH THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, AMERICAN ASSOCIATION OF NURSERYMAN.
14. CONTRACTOR SHALL REPAIR ALL DAMAGE TO PROPERTY FROM PLANTING OPERATIONS AT NO COST TO OWNER.
15. THE PROPERTY OWNER IS RESPONSIBLE FOR THE CONTINUED CARE AND MAINTENANCE OF THE LANDSCAPED AREA. NEW PLANTINGS THAT SHOW SIGNS OF CONSTRUCTION DAMAGE WITHIN A ONE YEAR PERIOD FOLLOWING CONSTRUCTION SHALL BE REJECTED AND REPLACED PRIOR TO ANY DEFECT GUARANTEE AT NO COST TO THE OWNER.
16. SEE PERMANENT SEEDING TABLE ON EROSION AND SEDIMENTATION CONTROL NOTES & DETAILS FOR LOAM AND SEED AREAS.



20 0 20 40
SCALE:1"=20'

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
SITE PLAN	SJL 8/26/21
COMMENT RESP.	SJL 9/2/21
PED. CONNECTION	SJL 9/15/21
BID SET	SJL 9/29/21
DE MINIMIS CHANGE	SJL 2/4/22
COMMENT RESPONSE	SJL 5/13/22
IFC	SJL 4/8/22
SITE PLAN AMEND	SJL 5/31/23
COMMENT RESPONSE	SJL 6/14/23

DRAWING NAME: SITE AND LANDSCAPE PLAN
PROJECT NAME/ADDRESS: GOODFIRE PARKING EXPANSION
117 U.S. ROUTE 1 FREEPORT, MAINE 04032
CLIENT/OWNER OF RECORD: MR 117 ROUTE ONE, LLC
1 BALSAM LANE, FREEPORT MAINE 04032

ACORN ENGINEERING, INC.
PO BOX 3372, PORTLAND MAINE 04101
(207) 775-2855

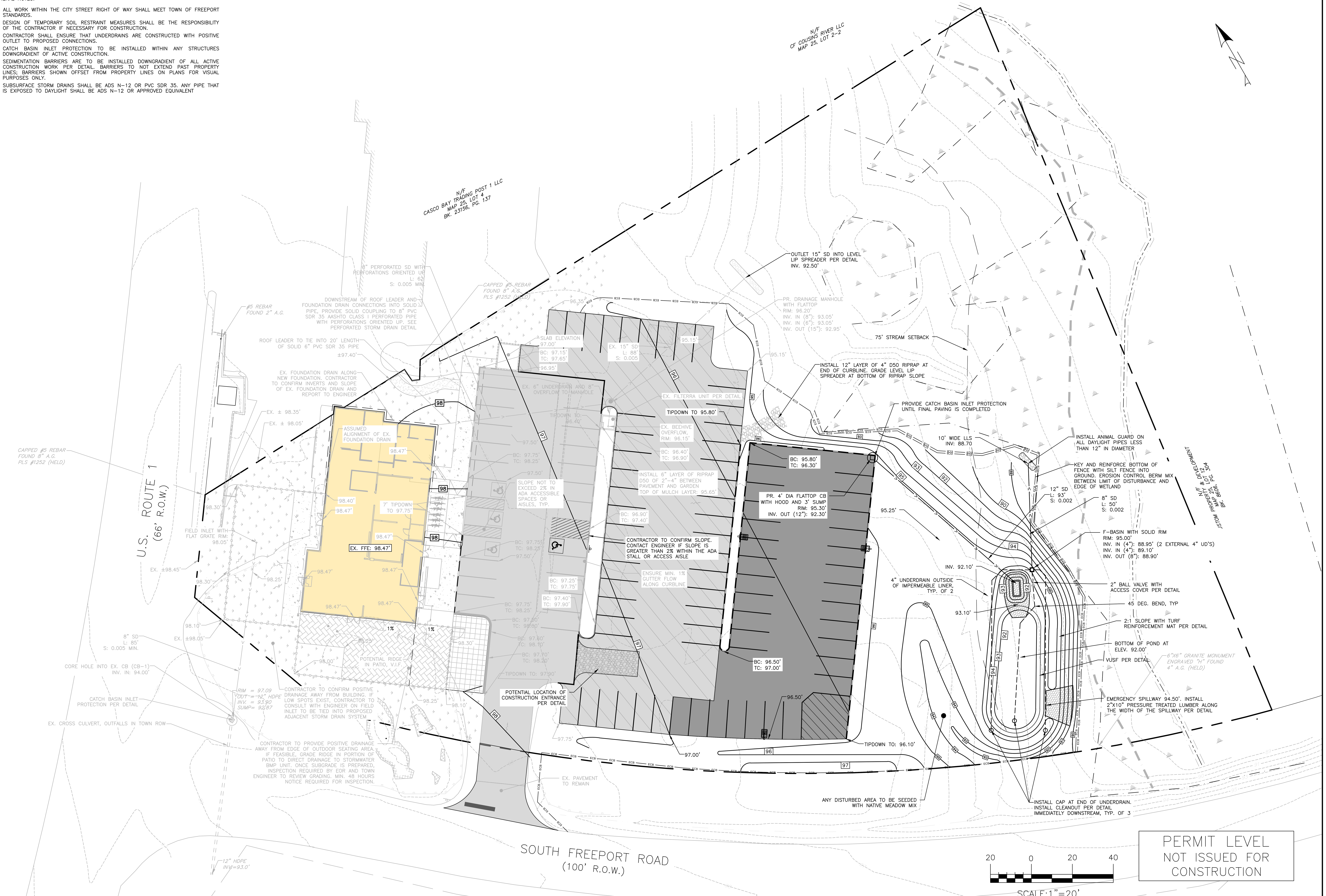
STATE OF MAINE
Sam Lebel
SAMUEL J. LEBEL
No. 16505
PROFESSIONAL ENGINEER
LICENSED
6/14/23

FILE:	2.84_CIVIL
JN:	2.84
SCALE:	AS NOTED
DESIGNED BY:	SJL
DRAWN BY:	NPH
CHECKED BY:	WHS

DRAWING NO.
C-10

GENERAL NOTES:

1. ALL WORK WITHIN THE CITY STREET RIGHT OF WAY SHALL MEET TOWN OF FREEPORT STANDARDS.
2. DESIGN OF TEMPORARY SOIL RESTRAINT MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR IF NECESSARY FOR CONSTRUCTION.
3. CONTRACTOR SHALL ENSURE THAT UNDERDRAINS ARE CONSTRUCTED WITH POSITIVE OUTLET TO PROPOSED CONNECTIONS.
4. CATCH BASIN INLET PROTECTION TO BE INSTALLED WITHIN ANY STRUCTURES DOWNGRADIENT OF ACTIVE CONSTRUCTION.
5. SEDIMENTATION BARRIERS ARE TO BE INSTALLED DOWNGRADIENT OF ALL ACTIVE CONSTRUCTION WORK PER DETAIL. BARRIERS TO NOT EXTEND PAST PROPERTY LINES; BARRIERS SHOWN OFFSET FROM PROPERTY LINES ON PLANS FOR VISUAL PURPOSES ONLY.
6. SUBSURFACE STORM DRAINS SHALL BE ADS N-12 OR PVC SDR 35. ANY PIPE THAT IS EXPOSED TO DAYLIGHT SHALL BE ADS N-12 OR APPROVED EQUIVALENT



PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY / DATE
SITE PLAN	SJL 8/26/21
COMMENT RESP.	SJL 9/2/21
BID SET	SJL 9/29/21
DE MINIMIS CHANGE	SJL 2/4/22
COMMENT RESPONSE	SJL 3/15/22
IFC	SJL 4/8/22
SITE PLAN AMEND	SJL 5/31/23
COMMENT RESPONSE	SJL 6/14/23

DRAWING NAME:
GRADING, DRAINAGE, & EROSION CONTROL PLAN

PROJECT NAME/ADDRESS:
GOODFIRE PARKING EXPANSION
117 U.S. ROUTE 1 FREEPORT, MAINE 04032

CLIENT/OWNER OF RECORD:
MR 117 ROUTE ONE, LLC
1 BALSAM LANE, FREEPORT MAINE 04032

ACORN ENGINEERING, INC.
ACORN ENGINEERING, INC.
PO BOX 3372, PORTLAND MAINE 04101
(207) 775-2655

FILE:	2.84_CIVIL
JN:	2.84
SCALE:	AS NOTED
DESIGNED BY:	SJL
DRAWN BY:	NPH
CHECKED BY:	WHS

STATE OF MAINE
SAMUEL J. LEBEL
No. 16505
LICENSED
PROFESSIONAL ENGINEER
6/14/23

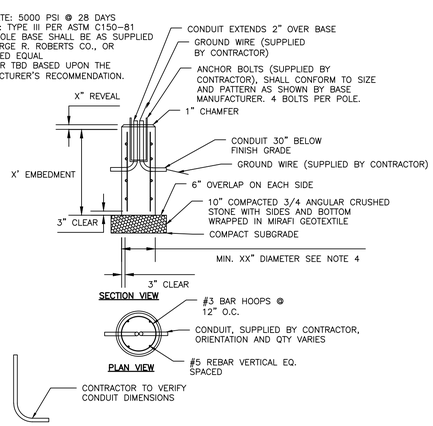
DRAWING NO.

C-20

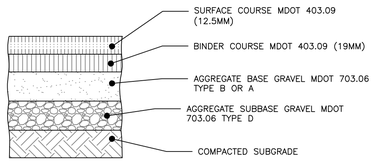
NOTES:
1. CONCRETE: 5000 PSI @ 28 DAYS
2. CEMENT: TYPE III PER ASTM C150-81
3. LIGHT POLE BASE SHALL BE AS SUPPLIED BY GEORGE R. ROBERTS CO., OR APPROVED EQUAL.
4. DIAMETER TBD BASED UPON THE MANUFACTURER'S RECOMMENDATION.

SCHEDULE		
HEIGHT OF POLE	MIN DIAMETER	MIN EMBEDMENT
<20'	1.5'	5'
20'-40'	2'	6'
>40'	3'	8'

REVEALS	
APPLICATIONS	REVEAL
STREET/SIDEWALK	4"
OTHER PED HARDSCAPE	FLUSH
PEDESTRIAN LAWN/MULCH	4"
PARKING AREAS (OPEN TRAFFIC)	24-36"



LIGHT POLE BASE
NOT TO SCALE

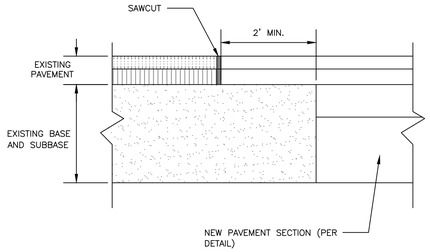


NOTE:
COMPACT AGGREGATES TO 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557

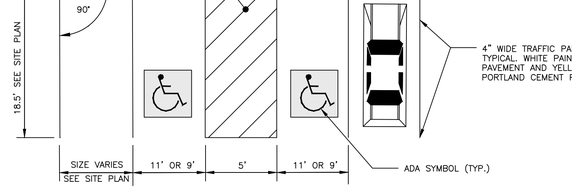
THICKNESS OF LAYERS	
STANDARD	LAYERS
1-1/2"	SURFACE COURSE MDOT 403.09 (12.5mm)
2"	BINDER COURSE MDOT 403.09 (19mm)
3"	AGGREGATE BASE GRAVEL MDOT 703.06 TYPE B OR A
12"	AGGREGATE SUBBASE GRAVEL MDOT 703.06 TYPE D

INTERNAL PARKING PAVEMENT PROFILE
NOT TO SCALE

NOTES:
1. SAWCUT EXISTING PAVEMENT AND REMOVE 2' STRIP OF EXISTING PAVEMENT. CREATE UNIFORM AND RIGID BUTT JOINT AND APPLY BITUMINOUS TACK COAT AT AN APPLICATION RATE OF 0.10 TO 0.14 GALLONS PER SQUARE YARD PRIOR TO PLACEMENT OF NEW BITUMINOUS PAVEMENT.
2. THE NEW PAVEMENT SECTION SHALL MEET THE TOWN OF FREEPORT'S STANDARDS OR THE EXISTING PAVEMENT AND AGGREGATE BASE AND SUBBASE DEPTH, WHICHEVER IS GREATER.

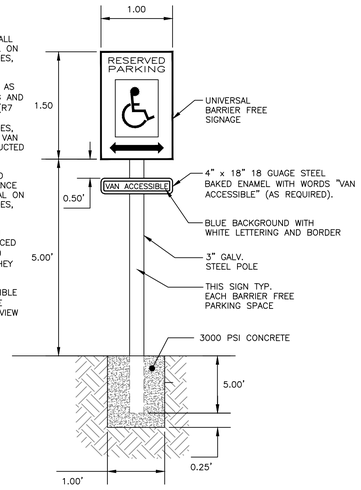


PAVEMENT SAWCUT DETAIL
NOT TO SCALE

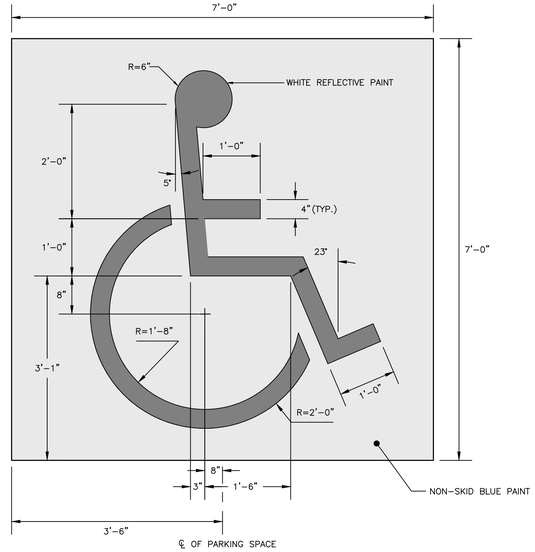


PARKING SPACE DIMENSIONS
NOT TO SCALE

NOTES:
1. ALL ASPECTS OF RESERVED PARKING SIGN CONSTRUCTION SHALL BE IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 OR MOST RECENT EDITION
2. SIGN SHALL BE CONSTRUCTED AS SIGN R7-8 UNDER THE "PARKING AND STANDING SIGNS AND PLAQUES" (R7 SERIES) WITHIN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 OR MOST RECENT EDITION. VAN ACCESSIBILITY SHALL BE CONSTRUCTED AS SIGN R7-8a OR R7-8b.
3. SIGN POST CONSTRUCTION AND MOUNTING SHALL BE IN ACCORDANCE WITH CHAPTER 2A OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 OR MOST RECENT EDITION.
4. SIGN SHALL BE INSTALLED ON BUILDING. SIGNS SHOULD BE PLACED AT SUCH A HEIGHT (AT LEAST 60 INCHES ABOVE SURFACE) THAT THEY DO NOT GET OBSCURED BY ANY PARKED VEHICLES OR OTHER OBSTRUCTIONS AND MUST BE VISIBLE FROM THE DRIVER'S SEAT OF THE VEHICLE AND LOCATED RIGHT IN VIEW OF PARKING.

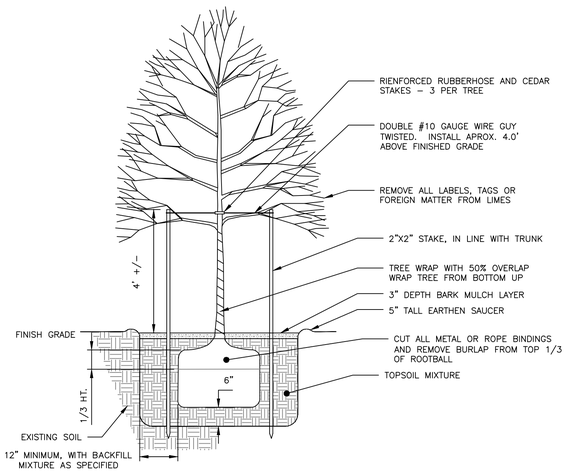


BARRIER FREE PARKING SIGN
NOT TO SCALE



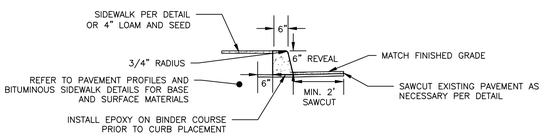
INTERNATIONAL BARRIER FREE SYMBOL
NOT TO SCALE

PLANTING NOTES:
1. ALL PLANT SELECTION AND INSTALLATION WILL BE IN COMPLIANCE WILL THE CITY OF FREEPORT.
2. CONTRACTOR TO VERIFY ALL UTILITIES ON PROPERTY AND TO PROTECT ALL UTILITIES DURING EXCAVATION FOR PLANTS.
3. IF THERE IS A DISCREPANCY BETWEEN THE NUMBER OF PLANTS SHOWN ON THE PLAN AND THE NUMBER OF PLANTS SHOWN IN PLANT LIST (IF ANY), THE NUMBER OF PLANTS SHOWN ON PLAN WILL TAKE PRECEDENCE.
4. ALL MATERIAL SHALL COMPLY WITH THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, AMERICAN ASSOCIATION OF NURSERYMAN AS WELL AS CENTRAL MAINE POWERS COMPATIBLE SPECIES LIST.
5. ALL DISTURBED AREAS NOT TO BE PAVED OR PLANTED SHALL BE LOAMED AND SEEDED AS SHOWN. THE SEED MIX SPECIFICATIONS ARE AS FOLLOWS: LESCO FINE FESCUE LINKS BLEND OF 35% HARD FESCUE, 35% CREEPING RED FESCUE, 20% CHEWINGS FESCUE AND 10% SHEEP FESCUE. ADD 5% LITTLE BLUESTEM AND 5% NORTHEAST WILDFLOWER SEED MIXTURE BY WEIGHT TO THE LINKS BLEND.
6. FOR PRICING PURPOSES, PROVIDE A PER TREE UNIT COST FOR STAKING AND GUYING. IF STAKING AND GUYING IS REQUIRED, REMOVE TREE WRAP, STAKES, AND GUY WIRES AT END OF FIRST GROWING SEASON.
7. FOR TREE PLANTING IN LAWN AREAS, ANY DISTURBED LAWN SHALL BE LOAMED AND SEEDED AS NECESSARY.
8. NEW TREES TO BE INSTALLED WITH A SLOW RELEASE WATERING BAG.
9. CONTRACTOR TO BE HELD RESPONSIBLE FOR THE WATERING AND MAINTENANCE OF ALL PLANT MATERIAL AND LANDSCAPING IMPROVEMENTS FOR AT LEAST 30 DAYS FOLLOWING INSTALLATION. FOLLOWING THIS PERIOD, THE LANDOWNER OR PROPERTY MANAGEMENT SHALL BE RESPONSIBLE FOR CONTINUED WATERING AND MAINTENANCE. CONTRACTOR TO MAINTAIN A ONE YEAR WARRANTY ON ALL PLANTINGS FOLLOWING FINAL INSTALLATION.
10. ALL PROPOSED PLANTS SHALL BE LOCATED AS SHOWN ON THE PLANS. CONTRACTOR TO NOTIFY ENGINEER WHEN PLANTINGS HAVE BEEN MOBILIZED ON SITE. ENGINEER TO INSPECT AND ACCEPT OR REJECT ANY SPECIMENS ON THE BASIS OF APPARENT HEALTH, HARDINESS, AND CONFORMANCE WITH THE PLANTING SCHEDULE. REJECTED SPECIMENS ARE TO BE REPLACED BY THE CONTRACTOR AT NO ADDED COST TO THE OWNER. ACCEPTANCE DOES NOT WAIVE THE REQUIRED ONE YEAR PLANTING WARRANTY.

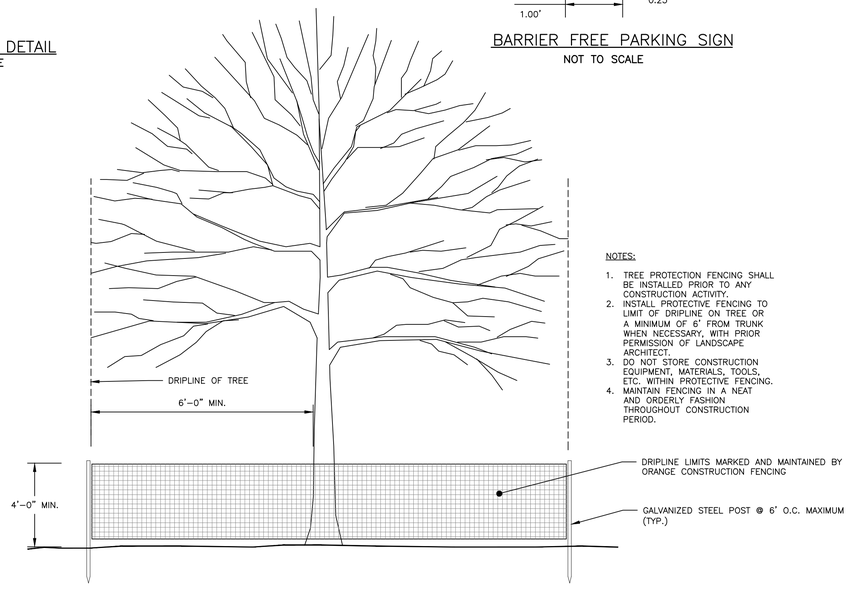


TREE PLANTING DETAIL
NOT TO SCALE

NOTE:
1. TIPDOWNS 7' IN LENGTH SHALL BE PROVIDED AS SEEN ON PLANS



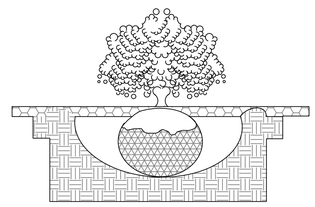
SLIPFORM CONCRETE CURB DETAIL
NOT TO SCALE



NOTES:
1. TREE PROTECTION FENCING SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION ACTIVITY.
2. INSTALL PROTECTIVE FENCING TO LIMIT OF DRIPLINE ON TREE OR A MINIMUM OF 6' FROM TRUNK WHEN NECESSARY, WITH PRIOR PERMISSION OF LANDSCAPE ARCHITECT.
3. DO NOT STORE CONSTRUCTION EQUIPMENT, MATERIALS, TOOLS, ETC. WITHIN PROTECTIVE FENCING.
4. MAINTAIN FENCING IN A NEAT AND ORDERLY FASHION THROUGHOUT CONSTRUCTION PERIOD.

TREE PROTECTION DETAIL
NOT TO SCALE

NOTES:
1. DIG HOLE AT LEAST 2 TIMES THE DIAMETER OF THE ROOT BALL AND AS DEEP AS THE ROOT BALL (NO DEEPER). SET ROOT BALL CENTERED, WITH THE TOP AT DOWNHILL EDGE OF THE HOLE.
2. TOPSOIL BACKFILL SHALL BE NATURAL FRIABLE, FERTILE, FINE LOAMY SOIL POSSESSING THE CHARACTERISTICS OF TOPSOIL IN THE VICINITY WHICH PRODUCE A HEAVY GROWTH. TOPSOIL SHALL CONTAIN NOT LESS THAN 6% NOR MORE THAN 20% ORGANIC MATTER. TOP SOIL SHALL HAVE A pH VALUE OF NOT LESS THAN 5.5 NOR MORE THAN 7.0.
3. CONTAINER GROWN STOCK - REMOVE CONTAINER PROTECTING THE ROOT BALL. GENTLY COMB OUT THE ROOTS. PRUNE DAMAGED ROOTS.
4. BACKFILL THE HOLE WITH TOPSOIL TO A DEPTH NOT TO EXCEED 8" THEN WATER SUFFICIENTLY TO SETTLE TOPSOIL. REPEAT SOIL BACKFILL, WATER, DRAIN. TOPSOIL SHALL BE TAMPED UNDER EDGES OF THE BALLED PLANTS. BACKFILL TO FINISH GRADE AND CREATE AN EARTHEN SAUCER. SOAK PLANTS TWICE WITHIN THE FIRST TWENTY-FOUR HOURS OF PLANTING.



TYPICAL PLANTING
NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
SITE PLAN	SJL 8/26/21
COMMENT RESP.	SJL 9/2/21
COMMENT RESP.	SJL 9/8/21
BID SET	SJL 9/29/21
DE MINIMIS CHANGE	SJL 2/4/22
IFC	SJL 4/8/22
SITE PLAN AMEND	SJL 5/31/23
COMMENT RESPONSE	SJL 6/14/23

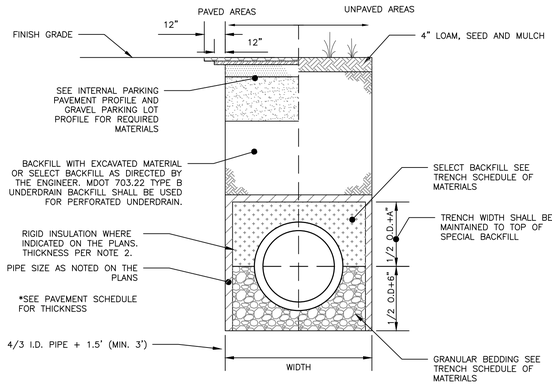
DRAWING NAME: SITE DETAILS
PROJECT NAME/ADDRESS: GOODFIRE PARKING EXPANSION
117 U.S. ROUTE 1 FREEPORT, MAINE 04032
CLIENT/OWNER OF RECORD: MR 117 ROUTE ONE, LLC
1 BALSAM LANE, FREEPORT MAINE 04032

ACORN ENGINEERING, INC.
ENGINEERING, INC.
THIS PLAN SHALL NOT BE MODIFIED IN ANY WAY WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY MODIFICATIONS MADE TO THIS PLAN WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.
ACORN ENGINEERING, INC
PO BOX 472 FREEPORT, MAINE 04101
(207) 775-2655

FILE:	2.84_CIVIL
JN:	2.84
SCALE:	AS NOTED
DESIGNED BY:	SJL
DRAWN BY:	NPH
CHECKED BY:	WHS

STATE OF MAINE
Sam Lebel
SAMUEL J. LEBEL
No. 16505
PROFESSIONAL ENGINEER
LICENSED
6/14/23

DRAWING NO.
C-30



SCHEDULE OF MATERIALS		
TYPE OF PIPE	GRANULAR BEDDING	SELECT BACKFILL
CMP DUCTILE IRON RCP	MDOT 703.22 TYPE B UD BACKFILL	MDOT 703.22 TYPE B UD BACKFILL
PVC/HDPE	MDOT 703.22 TYPE C 3/4" CRUSHED STONE	MDOT 703.22 TYPE B UD BACKFILL
CMP	MDOT 703.22 TYPE C 3/4" CRUSHED STONE	MDOT 703.22 TYPE C 3/4" CRUSHED STONE

TRENCH WIDTH	
PIPE DIAMETER (IN)	MAX. TRENCH WIDTH, A (FT)
4	4
6	4
8	4
10	4
12	5
15	5
18	5
24	6
36	6
48	7

NOTES:

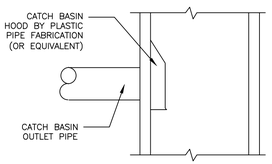
1. BRACING AND SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE STATE AND O.S.H.A. SAFETY STANDARDS. ALL SUCH TRENCH PROTECTION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. PIPE COVER BETWEEN 2' AND 3' SHALL INCLUDE 4" THICK OF RIGID INSULATION. COVER BETWEEN 3' AND 4' SHALL INCLUDE 2" THICK RIGID INSULATION. OTHER UTILITIES ADD 2" OF RIGID INSULATION FOR EACH FOOT OF COVER LESS THAN THE MINIMUM DEPTH. WIDTH OF INSULATION SHALL BE FOUR TIMES THE DIAMETER OF THE PIPE WITH A MINIMUM WIDTH OF 30".
3. INSTALL WARNING TAPE DIRECTLY ABOVE UTILITIES AT THE TOP OF SUBGRADE.
4. MINIMUM COVER
   4.1. 2'-0" – STORM DRAIN
   4.2. 5'-0" – SEWER
5. NO TREES SHALL BE PLANTED WITHIN 5' OF A SEWER PIPE OR SERVICE
6. THIS DETAIL SHALL BE APPLIED ONLY TO DRAINAGE PIPE TRENCHES OUTSIDE OF THE TOWN OF FREEPORT RIGHT-OF-WAY.

INTERNAL STORM DRAIN AND SEWER TYPICAL TRENCH SECTION

NOT TO SCALE

NOTES:

1. INSTALL CATCH BASIN HOODS IN ALL CATCH BASINS WITH A 12" OR 15" OUTLET PIPE.
2. PREFERRED STYLE DESIGNED TO ELIMINATE CEMENTING OF THE TRAP.
3. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION REQUIREMENTS

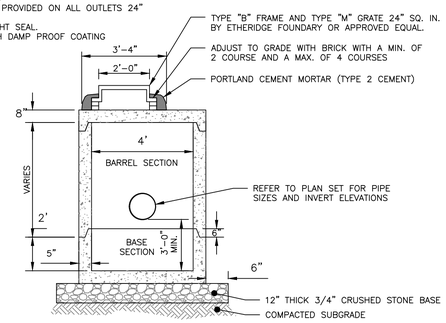


CATCH BASIN HOOD DETAIL

NOT TO SCALE

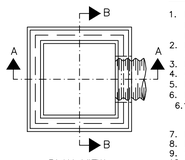
NOTES:

1. ALL CONCRETE TO HAVE A MIN. OF 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
2. DESIGN LOAD FOR H-20 WHEEL LOAD.
3. CATCH BASIN TO CONFORM TO ASTM-C478 SPECIFICATIONS.
4. REINFORCE TO 0.12 IN SQ./LF.
5. JOINTS SEALED WITH BUTYL RUBBER.
6. POLYPROPYLENE STEPS 12" O.C.
7. CATCH BASIN HOODS SHALL BE PROVIDED ON ALL OUTLETS 24" OR LESS.
8. ALL PIPES TO HAVE A WATERTIGHT SEAL.
9. STRUCTURE TO BE APPLIED WITH DAMP PROOF COATING



4'-0" PRECAST CATCH BASIN WITH FLATTOP

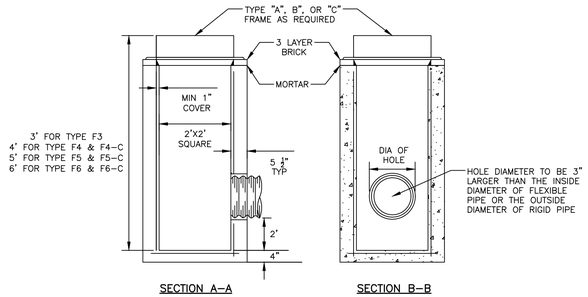
NOT TO SCALE



PLAN VIEW

NOTES:

1. ENTIRE CATCH BASIN WITH EXCEPTION OF LEVELING BRICK FRAME AND GRATE TO BE PRECAST AS A SINGLE PORTLAND CEMENT CONCRETE UNIT, #4 REBAR MINIMUM 8" O.C. OR EQUIVALENT WITH ENGINEER OF RECORD'S APPROVAL.
2. FIBER-REINFORCED CONCRETE TO HAVE A MIN. OF 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
3. DESIGN LOAD FOR H-20 WHEEL LOAD.
4. CATCH BASIN TO CONFORM TO ASTM-C478 SPECIFICATIONS.
5. REINFORCE TO 0.15 IN SQ./LF. JOINTS SEALED WITH RAM-NEK GASKET OR EQUAL.
6. POLYPROPYLENE STEPS 12" O.C.
   6.1. STEPS SHALL BE OFFSET AT NO MORE THAN 12" ON CENTER, STARTING FROM THE TOP OF THE MANHOLE FRAME AND SHALL BE FORGED ALUMINUM OR COPOLYMER POLYPROPYLENE STEPS.
7. EXTERIOR WATERPROOFING.
8. FLEXIBLE WATERTIGHT PIPE BOOTS TO CONFORM TO ASTM C-923.
9. SHALL MEET THE APPLICABLE TOWN OF SCARBOROUGH STANDARDS.
10. CATCH BASIN SHALL BE AS MANUFACTURED BY PRECAST OF MAINE OR APPROVED EQUAL.

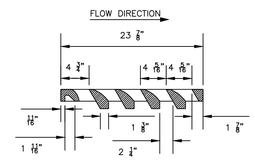


24" SQUARE CATCH BASIN "TYPE F"

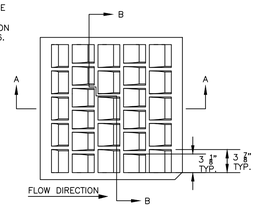
NOT TO SCALE

NOTES:

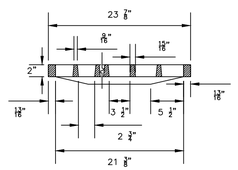
1. TYPE "A" FRAMES ARE TO HAVE 3 FLANGES.
2. TYPE "B" FRAMES ARE TO HAVE 4 FLANGES.
3. THE WORD "GUTTER" IS TO BE MOLDED INTO THE BACK FLANGE – TYPE "B" ONLY.
4. FRAMES AND GRATES ARE TO BE GRAY CAST IRON OR DUCTILE IRON CONFORMING TO AASHTO M306.
5. DIMENSIONS ARE NOMINAL.



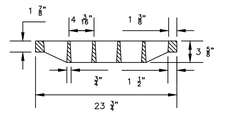
SECTION A-A



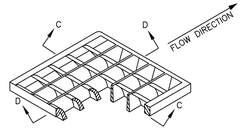
PLAN VIEW



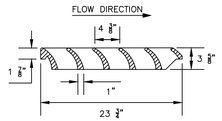
SECTION B-B



SECTION C-C

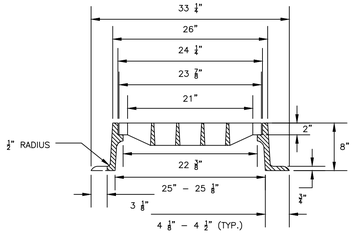


ISOMETRIC VIEW

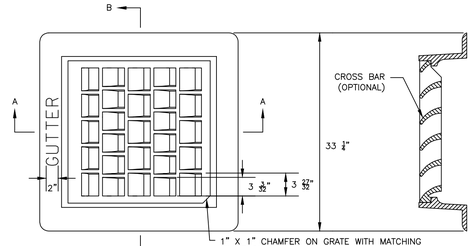


SECTION D-D

GRATE DETAIL



SECTION A-A



PLAN VIEW

SECTION B-B

FRAME DETAIL

CATCH BASIN FRAME & GRATE – SQUARE

NOT TO SCALE

GENERAL NOTES FOR MANHOLES

1. ALL CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4000 LBS. PER SQ. INCH AT THE END OF 28 DAYS, UNLESS OTHERWISE NOTED.
2. MANHOLES MAY BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE, OR CAST IN PLACE.
3. PRECAST REINFORCED CONE BARREL MANUFACTURED PER ASTM SPEC. C-478.
4. ALL STORM MANHOLE COVERS SHALL BE SOLID AND SHALL HAVE ONE ⅞" DIAMETER DRILLED PICK HOLE LOCATED 8" FROM THE CENTER OF THE COVER.
5. ALL STORMWATER/DRAIN MANHOLE COVERS SHALL HAVE "DRAIN" CAST INTO THE COVER.
6. ALL MANHOLE RISERS SHALL BE ETHERIDGE 24" OR APPROVAL EQUAL.
7. CATCH BASIN FRAMES FOR TYPE A4 CATCH BASIN CURB INLETS SHALL BE ETHERIDGE DR5A OR APPROVED EQUAL.
8. CASTINGS SHALL CONFORM TO ASTM DESIGNATION A48-CLASS 35.

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
IFC	SJL	4/8/22
SITE PLAN AMEND	SJL	5/31/23
COMMENT RESPONSE	SJL	6/14/23

DRAWING NAME: **DRAINAGE DETAILS – 1**

PROJECT NAME/ADDRESS: **GOODFIRE PARKING EXPANSION**
117 U.S. ROUTE 1 FREEPORT, MAINE 04032

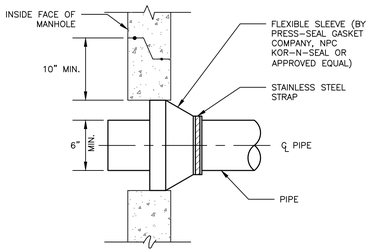
CLIENT/OWNER OF RECORD: MR 117 ROUTE ONE, LLC
1 BALSAM LANE, FREEPORT MAINE 04032

ACORN ENGINEERING, INC.
ENGINEERING · SURVEYING · PLANNING
ACORN ENGINEERING, INC.
PO BOX 1222, POLAND SPRING, MAINE 04101
(207) 775-2655

FILE:	2.84_CIVIL
JN:	2.84
SCALE:	AS NOTED
DESIGNED BY:	SJL
DRAWN BY:	NPH
CHECKED BY:	WHS

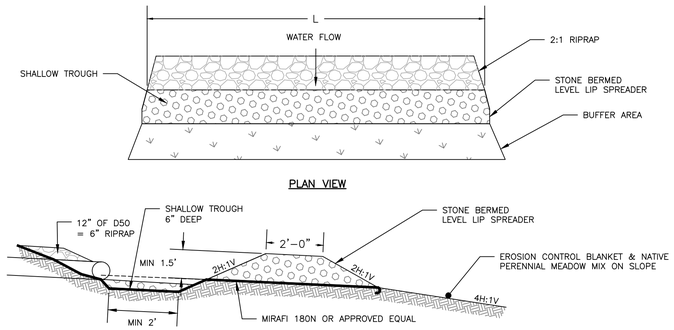
STATE OF MAINE
Sam Lebel
SAMUEL J. LEBEL
No. 16505
PROFESSIONAL ENGINEER
LICENSED
6/14/23

DRAWING NO.
C-31



NEW PIPE TO NEW STRUCTURE CONNECTION DETAIL

NOT TO SCALE



BERM STONE SIZE	
SIEVE SIZE	% PASSING BY WEIGHT
12"	100
6"	84–100
3"	63–83
1"	42–55
#4	8–12

NOTES:

1. FIELDSTONE, ROUGH QUARRIED STONE, BLASTED LEDGE ROCK OR TAILINGS ARE ACCEPTABLE BERM MATERIALS.
2. MEDIAN STONE SIZE TO BE APPROX 3 INCHES AT A MAXIMUM SIZE OF 6 INCHES. SEE TABLE.

LEVEL LIP SPREADER DETAIL

NOT TO SCALE

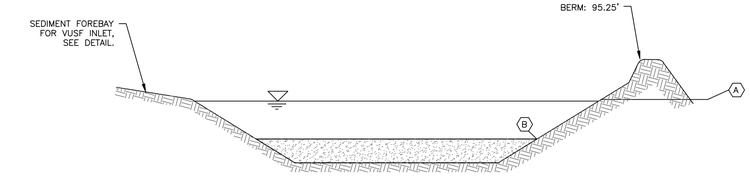
CROSS SECTION OF EMERGENCY SPILLWAY

NOT TO SCALE

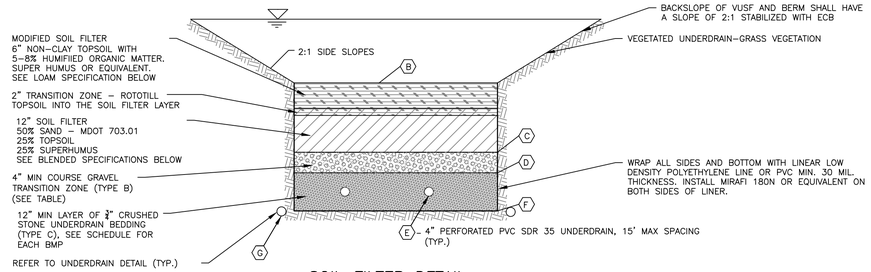
CONSTRUCTION OBSERVATION:

CONSTRUCTION OBSERVATION SHALL BE PROVIDED FOR EACH PHASE OF CONSTRUCTION BY ACORN ENGINEERING. THE CONTRACTOR OR OWNERS REPRESENTATIVE SHALL NOTIFY ACORN ENGINEERING A MINIMUM 48 HOURS OR 2 BUSINESS DAY WHICH EVER IS GREATER PRIOR TO ANY OF THE PHASES OF CONSTRUCTION LISTED BELOW SO THAT THE FOLLOWING SITE VISITS MAY BE SCHEDULED.

1. ONE SITE VISIT AFTER PRELIMINARY CONSTRUCTION OF THE BIORETENTION CELL/VUSF GRADES;
2. ONE SITE VISIT DURING THE INSTALLATION OR THE IMPERVIOUS LINER.
3. ONE SITE VISIT AFTER THE UNDER DRAIN PIPES ARE INSTALLED BUT NOT BACKFILLED.
4. ONE SITE VISIT DURING THE CONSTRUCTION OF THE SOIL FILTER LAYER.
5. ONE SITE VISIT DURING THE CONSTRUCTION OF THE TOPSOIL LAYER.
6. ONE SITE VISIT DURING THE FLOODING OF THE BIORETENTION CELL/VUSF, IF REQUIRED.



CROSS SECTION



SOIL FILTER DETAIL

NOTES:

1. THE SIDESLOPES SHALL BE STABILIZED WITH A MIN. OF 4" LOAM, EROSION CONTROL BLANKETS SC150BN BY NORTH AMERICAN GREEN OR APPROVED EQUAL AND A CONSERVATION SEED MIX. THE BOTTOM OF THE VEGETATED UNDERDRAIN SHALL BE STABILIZED WITH EROSION CONTROL BLANKETS SC150BN BY NORTH AMERICAN GREEN OR APPROVED EQUAL AND A CONSERVATION SEED MIX
2. LIGHT COMPACTION SOIL FILTER AND PIPE BEDDING MATERIAL. (90 TO 92% STANDARD PROCTOR). TESTING SHALL BE PERFORMED BY A QUALIFIED MATERIAL TESTING FIRM.
3. THE SOIL FILTER MEDIA SHALL NOT BE CONSTRUCTED UNTIL THE AREA DRAINING TO THE BASIN HAS BEEN PERMANENTLY STABILIZED.
4. THE SEDIMENT FOREBAY SHALL BE CONSTRUCTED PRIOR TO CONSTRUCTION OF THE SOIL FILTER AND INSPECTED AND MAINTAINED DURING CONSTRUCTION. MAINTENANCE SHALL INCLUDE REMOVAL OF ANY ACCUMULATED SEDIMENT.
5. MINIMUM UNDERDRAIN SLOPE 0.0025 TOWARDS THE OUTLET.
6. TESTING: SIEVE ANALYSIS INCLUDING HYDROMETER TESTING FOR CLAY CONTENT FOR EACH LAYER SHALL BE PERFORMED BY A QUALIFIED SOIL TESTING LABORATORY AND SUBMITTED TO THE PROJECT ENGINEER FOR APPROVAL 2 WEEKS PRIOR TO CONSTRUCTION. ALL TESTING AND SUBMITTALS SHALL BE IN ACCORDANCE WITH THE MAINE DEP – TECHNICAL DESIGN MANUAL SECTION 7.2.5 TESTING AND SUBMITTALS.

SCHEDULE	
ITEM	VUSF1
B TOP OF SOIL FILTER	92.00'
C TOP OF GRAVEL	90.50'
D TOP OF STONE	90.17'
E UNDERDRAIN INVERT	89.45'
F BOTTOM OF STONE	89.17
G UNDERDRAIN INVERT (EXTERNAL)	88.90'

6" SOIL FILTER BED – LOAM TOPSOIL SPECIFICATION	
SIEVE SIZE	% PASSING BY WEIGHT
#4	75–95
#10	60–90
#40	35–85
#200	20–70
1. CLAY FRACTION <2% PASSING THE #200 SIEVE. 2. LOAM SHALL BE LOOSE AND FRIABLE AND SHALL BE FREE FROM ADMIXTURE OF SUBSOIL, REFUSE, LARGE STONES, CLODS OR ROOTS OR RHIZOMES OR "WITCH GRASS" OR OTHER UNDESIRABLE GRASSES.	

SOIL FILTER BED – SUPERHUMUS OR EQUIV. SPECIFICATION	
SIEVE SIZE	% PASSING BY WEIGHT
1"	100
#200	0–5
MINIMAL CLAY CONTENT, NO MORE THAN 3–5% PASSING #200 SIEVE	

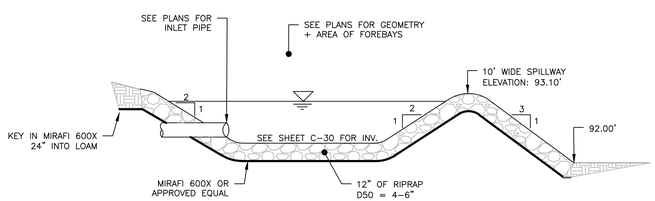
12" SOIL FILTER BED – BLENDED SAND, LOAM, SUPERHUMUS SIEVE ANALYSIS	
SIEVE SIZE	% PASSING BY WEIGHT
#10	85–100
#20	70–100
#60	15–40
#200	8–15
1. CLAY FRACTION <2% PASSING THE #200 SIEVE. 2. SUPERHUMUS OR EQUIVALENT	

SOIL FILTER BED – TRANSISTION ZONE (TYPE B)	
SIEVE SIZE	% PASSING BY WEIGHT
1"	90–100
1/2"	75–100
#4	50–100
#20	15–80
#50	0–15
#200	0–5

SOIL FILTER BED – UNDERDRAIN BEDDING (TYPE C)	
SIEVE SIZE	% PASSING BY WEIGHT
1"	100
3/4"	90–100
3/8"	0–75
#4	0–25
#10	0–5

VEGETATED UNDERDRAINED SOIL FILTER DETAIL

NOT TO SCALE



SEDIMENT FOREBAY DETAIL

NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
SITE PLAN	SJL 8/25/21
COMMENT RESP.	SJL 9/3/21
BID SET	SJL 9/29/21
DE MINIMIS CHANGE	SJL 2/4/22
IFC	SJL 4/8/22
COMMENT RESPONSE	SJL 6/14/23

DRAWING NAME: **DRAINAGE DETAILS – 2**

PROJECT NAME/ADDRESS: **GOODFIRE PARKING EXPANSION**
117 U.S. ROUTE 1 FREEPORT, MAINE 04032

CLIENT/OWNER OF RECORD: MR 117 ROUTE ONE, LLC
1 BALSAM LANE, FREEPORT MAINE 04032

ACORN ENGINEERING, INC.
ENGINEERING, INC.
ACORN ENGINEERING, INC
PO BOX 1237 FREEPORT, MAINE 04101
(207) 775-2655

FILE:	2.84_CIVIL
JN:	2.84
SCALE:	AS NOTED
DESIGNED BY:	SJL
DRAWN BY:	NPH
CHECKED BY:	WHS

STATE OF MAINE
SAMUEL J. LEBEL
No. 16505
PROFESSIONAL ENGINEER
LICENSED
6/14/23

DRAWING NO.
C-32

1.0 EROSION CONTROL MEASURES AND SITE STABILIZATION

AS PART OF THE SITE DEVELOPMENT, THE FOLLOWING TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE IMPLEMENTED. DEVICES SHALL BE INSTALLED AS DESCRIBED IN THIS REPORT OR WITHIN THE PLAN SET. SEE THE MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES FOR FURTHER REFERENCE.

1.1 TEMPORARY EROSION CONTROL MEASURES

THE FOLLOWING TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES ARE PLANNED FOR THE PROJECT'S CONSTRUCTION PERIOD:

1.1.1 CRUSHED STONE STABILIZED CONSTRUCTION ENTRANCES SHALL BE PLACED AT ALL ACCESS POINTS TO THE PROJECT SITE WHERE THERE ARE DISTURBED AREAS. THE FOLLOWING SPECIFICATIONS SHALL BE FOLLOWED AT A MINIMUM:
- STONE SIZE SHALL BE 2–3 INCHES, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
- THE THICKNESS OF THE ENTRANCE STONE LAYER SHALL BE NO LESS THAN 6 INCHES.
- THE ENTRANCE SHALL NOT BE LESS THAN 20 FEET WIDE, HOWEVER NOT LESS THAN THE FULL WIDTH OF POINTS WHERE INGRESS OR EGRESS OCCURS. THE LENGTH SHALL NOT BE LESS THAN 50 FEET IN LENGTH.
- GEOTEXTILE FABRIC (WOVEN OR NON–WOVEN) SHALL BE PLACED OVER THE ENTIRE ENTRANCE AREA.
- THE ENTRANCE/EXIT SHALL BE MAINTAINED TO THE EXTENT THAT IT WILL PREVENT THE TRACKING OF SEDIMENT ONTO PUBLIC ROAD WAYS.

1.1.2 SILTATION FENCE OR EROSION CONTROL BERM SHALL BE INSTALLED DOWN GRADIENT OF ANY DISTURBED AREAS TO TRAP RUNOFF BORNE SEDIMENTS UNTIL PERMANENT STABILIZATION IS ACHIEVED. THE SILT FENCE OR EROSION CONTROL BERM SHALL BE INSTALLED PER THE DETAILS PROVIDED IN THE PLAN SET AND INSPECTED BEFORE AND IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. REPAIRS SHALL BE MADE IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THE FENCE LINE OR BERM. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THE FENCE OR BERM, THE BARRIER SHALL BE REPLACED WITH A STONE CHECK DAM.

1.1.3 HAY MULCH INCLUDING HYDRO SEEDING IS INTENDED TO PROVIDE COVER FOR DENUDED OR SEEDED AREAS UNTIL REVEGETATION IS ESTABLISHED. MULCH PLACED BETWEEN APRIL 15TH AND NOVEMBER 1ST ON SLOPES OF LESS THAN 15 PERCENT SHALL BE COVERED BY FABRIC NETTING AND ANCHORED WITH STAPLES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. MULCH PLACED BETWEEN NOVEMBER 1ST AND APRIL 15TH ON SLOPES EQUAL TO OR STEEPER THAN 8 PERCENT AND EQUAL TO OR FLATTER THAN 2:1 SHALL USE MATS OR FABRIC NETTING AND ANCHORED WITH STAPLES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.

1.1.4 AT ANY TIME OF THE YEAR, ALL SLOPES STEEPER THAN 3:1 SHALL BE STABILIZED WITH DOUBLE NET EROSION CONTROL BLANKET BIONET SC150BN BY NORTH AMERICAN GREEN OR APPROVED EQUAL, OR EROSION CONTROL MIX SLOPE PROTECTION AS DETAILED WITHIN THE PLANS.

1.1.5 ROUTE 1 AND SOUTH FREEPORT ROAD SHALL BE SWEPT TO CONTROL MUD AND DUST FROM THE CONSTRUCTION SITE AS NECESSARY. ADD ADDITIONAL STONE TO THE STABILIZED CONSTRUCTION ENTRANCE TO MINIMIZE THE TRACKING OF MATERIAL OFF THE SITE AND ONTO THE SURROUNDING ROADWAYS.

1.1.6 DURING DEMOLITION, CLEARING AND GRUBBING OPERATIONS, STONE CHECK DAMS SHALL BE INSTALLED AT ANY AREAS OF CONCENTRATED FLOW. THE MAXIMUM HEIGHT OF THE CHECK DAM SHALL NOT EXCEED 2 FEET. THE CENTER OF THE CHECK DAM SHALL BE 6 INCHES BELOW THE OUTER EDGES OF THE DAM. THE CONTRACTOR SHALL MULCH THE SIDE SLOPES AND INSTALL STONE CHECK DAMS FOR ALL NEWLY EXCAVATED DITCH LINES WITHIN 24 HOURS OF THEIR CREATION.

1.1.7 SILT FENCE STAKE SPACING SHALL NOT EXCEED 6 FEET UNLESS THE FENCE IS SUPPORTED WITH 14 GAUGE WIRE IN WHICH CASE THE MAXIMUM SPACING SHALL NOT EXCEED 10 FEET. THE SILT FENCE SHALL BE "TOED" INTO THE GROUND.

1.1.8 STORMDRAIN INLET PROTECTION SHALL BE PROVIDED TO STORMDRAINS THROUGH THE USE OF ANY OF THE FOLLOWING: HAY BALE DROP INLET STRUCTURES, SILT FENCE DROP INLET SEDIMENT FILTER, GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER, OR CURB INLET SEDIMENT FILTER. BARRIERS SHALL BE INSPECTED AFTER EVERY RAINFALL EVENT AND REPAIRED AS NECESSARY. SEDIMENTS SHALL BE REMOVED WHEN ACCUMULATION HAS REACHED ½ THE DESIGN HEIGHT.

1.1.9 DUST CONTROL SHALL BE ACCOMPLISHED BY THE USE OF ANY OF THE FOLLOWING: WATER, CALCIUM CHLORIDE, STONE, OR AN APPROVED MDEP PRODUCT. DUST CONTROL SHALL BE APPLIED AS NEEDED TO ACCOMPLISH DUST CONTROL.

1.1.10 TEMPORARY LOAM, SEED, AND MULCHING SHALL BE USED IN AREAS WHERE NO OTHER EROSION CONTROL MEASURE IS USED. APPLICATION RATES FOR SEEDING ARE PROVIDED AT THE END OF THIS REPORT.

1.1.11 STOCKPILES SHALL BE STABILIZED WITHIN 7 DAYS OF FORMATION UNLESS A SCHEDULED RAIN EVENT OCCURS PRIOR TO THE 7 DAY WINDOW, IN WHICH CASE THE STOCKPILE SHALL BE STABILIZED PRIOR TO THE RAIN EVENT. METHODS OF STABILIZATION SHALL BE MULCH, EROSION CONTROL MIX, OR EROSION CONTROL BLANKETS/MATS. SILT FENCE OR A WOOD WASTE COMPOST FILTER BERM SHALL BE PLACED DOWNHILL OF ANY SOIL STOCKPILE LOCATION.

1.1.12 FOR DISTURBANCE BETWEEN NOVEMBER 1 AND APRIL 15, PLEASE REFER TO WINTER STABILIZATION PLAN IN THIS REPORT AND THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR FURTHER INFORMATION.

1.1.13 IT IS OF THE UTMOST IMPORTANCE THAT STORMWATER RUNOFF AND POTENTIAL SEDIMENT FROM THE CONSTRUCTION SITE BE DIVERTED AROUND THE PROPOSED UNDERDRAINS UNTIL THE TRENCH IS BACKFILLED.

1.2 PERMANENT EROSION CONTROL MEASURES

THE FOLLOWING PERMANENT EROSION CONTROL MEASURES ARE INTENDED FOR POST DISTURBANCE AREAS OF THE PROJECT.

1.2.1 ALL DISTURBED AREAS DURING CONSTRUCTION, NOT SUBJECT TO OTHER PROPOSED CONDITIONS, SHALL RECEIVE A MINIMUM 4" OF LOAM AND SHALL BE LIMED, AND MULCHED.
EROSION CONTROL BLANKETS OR MATS SHALL BE PLACED OVER THE MULCH IN AREAS NOTED IN PARAGRAPH 4.2 OF THIS REPORT.

1.2.2 ALL STORMWATER DEVICES SHALL BE INSTALLED AND TRIBUTARY AREAS STABILIZED PRIOR RECEIVING STORMWATER.

1.2.3 REFER TO THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION.

2.0 EROSION AND SEDIMENTATION CONTROL PLAN

2.1 THE EROSION AND SEDIMENTATION CONTROL PLAN IS INCLUDED WITHIN THE PLAN SET.

3.0 DETAILS AND SPECIFICATIONS

3.1 EROSION CONTROL DETAILS AND SPECIFICATIONS ARE INCLUDED IN THE PLAN SET.

4.0 STABILIZATION PLAN FOR WINTER CONSTRUCTION

WINTER CONSTRUCTION CONSISTS OF EARTHWORK DISTURBANCE BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15. IF A CONSTRUCTION SITE IS NOT STABILIZED WITH PAVEMENT, A ROAD GRAVEL BASE, 75% MATURE VEGETATION COVER OR RIPRAP BY NOVEMBER 15, THEN THE SITE SHALL BE PROTECTED WITH OVER–WINTER STABILIZATION. ANY AREA NOT STABILIZED WITH PAVEMENT, VEGETATION, MULCHING, EROSION CONTROL MIX, EROSION CONTROL MATS, RIPRAP, OR GRAVEL BASE ON A ROAD SHALL BE CONSIDERED OPEN.

THE CONTRACTOR SHALL LIMIT THE WORK AREA TO AREAS THAT WORK WILL OCCUR IN DURING THE SUBSEQUENT 15 DAYS AND SO THAT IT CAN BE MULCHED ONE DAY PRIOR TO A SNOW EVENT. THE CONTRACTOR SHALL STABILIZE WORK AREAS PRIOR TO OPENING ADDITIONAL WORK AREAS TO MINIMIZE AREAS WITHOUT EROSION CONTROL MEASURES.

THE FOLLOWING MEASURES SHALL BE IMPLEMENTED DURING WINTER CONSTRUCTION PERIODS:

4.1 SEDIMENT BARRIERS

DURING FROZEN CONDITIONS, SEDIMENT BARRIERS MAY CONSIST OF EROSION CONTROL MIX BERMS OR ANY OTHER RECOGNIZED SEDIMENT BARRIERS AS FROZEN SOIL PREVENTS THE PROPER INSTALLATION OF HAY BALES OR SILT FENCES.

4.2 MULCHING

ALL AREAS SHALL BE CONSIDERED TO BE DENUDED UNTIL SEEDED AND MULCHED. HAY AND STRAW MULCH SHALL BE APPLIED AT A RATE OF 150 LB. PER 1,000 SQUARE FEET OR 3 TONS/ACRE (TWICE THE NORMAL ACCEPTED RATE OF 75–LBS./1,000 S.F. OR 1.5 TONS/ACRE) AND SHALL BE PROPERLY ANCHORED. EROSION CONTROL MIX MUST BE APPLIED WITH A MINIMUM 4 INCH THICKNESS. MULCH SHALL NOT BE SPREAD ON TOP OF SNOW. THE SNOW SHALL BE REMOVED DOWN TO A ONE–INCH DEPTH OR LESS PRIOR TO APPLICATION. AFTER EACH DAY OF FINAL GRADING, THE AREA SHALL BE PROPERLY STABILIZED WITH ANCHORED HAY OR STRAW OR EROSION CONTROL MATTING. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED OR ADEQUATELY ANCHORED SO THAT GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15, ALL MULCH SHALL BE ANCHORED BY EITHER MULCH NETTING, TRACKING OR WOOD CELLULOSE FIBER. THE COVER WILL BE CONSIDERED SUFFICIENT WHEN THE GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. AFTER NOVEMBER 1ST, MULCHING AND ANCHORING OF ALL EXPOSED SOIL SHALL OCCUR AT THE END OF EACH FINAL GRADING WORKDAY.

4.3 SOIL STOCKPILING

STOCKPILES OF SOIL OR SUBSOIL SHALL BE MULCHED FOR OVER WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE OR WITH A FOUR–INCH LAYER OF EROSION CONTROL MIX. THIS SHALL BE DONE WITHIN 24 HOURS OF STOCKING AND RE–ESTABLISHED PRIOR TO ANY RAINFALL OR SNOWFALL.

4.4 SEEDING

BETWEEN THE DATES OF OCTOBER 15TH AND APRIL 1ST, LOAM OR SEED SHALL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES FINISHED AREAS SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1ST AND IF THE EXPOSED AREA HAS NOT BEEN LOAMED, FINAL GRADING WITH A UNIFORM SURFACE, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE OF 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED.

DORMANT SEEDING MAY BE PLACED PRIOR TO THE PLACEMENT OF MULCH OR EROSION CONTROL BLANKETS. IF DORMANT SEEDING IS USED FOR THE SITE, ALL DISTURBED AREAS SHALL RECEIVE 4" OF LOAM AND SEED AT AN APPLICATION RATE OF 5 LBS/1,000 S.F. ALL AREAS SEEDED DURING THE WINTER SHALL BE INSPECTED IN THE SPRING FOR ADEQUATE CATCH. ALL AREAS INSUFFICIENTLY VEGETATED (LESS THAN 75% CATCH) SHALL BE REVEGETATED BY REPLACING LOAM, SEED AND MULCH. IF DORMANT SEEDING IS NOT USED FOR THE SITE, ALL DISTURBED AREAS SHALL BE REVEGETATED IN THE SPRING.

4.5 OVER WINTER STABILIZATION OF DISTURBED SOILS

BY SEPTEMBER 15TH, ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 15% SHALL BE SEEDED AND MULCHED. IF THE DISTURBED AREAS ARE NOT STABILIZED BY THIS DATE, THEN ONE OF THE FOLLOWING ACTIONS SHALL BE TAKEN TO STABILIZE THE SOIL FOR LATE FALL AND WINTER:

- STABILIZE THE SOIL WITH TEMPORARY VEGETATION – BY OCTOBER 1ST, SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3LBS PER 1,000 S.F., LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT 75 LBS PER 1,000 S.F., AND ANCHOR THE MULCH WITH PLASTIC NETTING. MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR FAILS TO COVER AT LEAST 75% OF THE DISTURBED SOIL BEFORE NOVEMBER 1ST, THEN MULCH THE AREA FOR OVER–WINTER PROTECTION.
- STABILIZE THE SOIL WITH SOD – STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY OCTOBER 1ST. PROPER INSTALLATION INCLUDES PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL.
- STABILIZE THE SOIL WITH MULCH – BY NOVEMBER 15TH, MULCH THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF AT LEAST 150 LBS PER 1,000 S.F. ON THE AREA SO THAT NO SOIL IS VISIBLE THROUGH THE MULCH. IMMEDIATELY AFTER APPLYING THE MULCH, ANCHOR THE MULCH WITH PLASTIC NETTING TO PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.

4.6 OVER WINTER STABILIZATION OF DISTURBED SLOPES

ALL STONE–COVERED SLOPES SHALL BE CONSTRUCTED AND STABILIZED BY NOVEMBER 15TH. ALL SLOPES TO BE VEGETATED SHALL BE SEEDED AND MULCHED BY SEPTEMBER 1ST. A SLOPE IS CONSIDERED A GRADE GREATER THAN 15%. IF A SLOPE TO BE VEGETATED IS NOT STABILIZED BY SEPTEMBER 1ST, THEN ONE OF THE FOLLOWING ACTION SHALL BE TAKEN TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER:

- STABILIZE THE SOIL WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS – BY OCTOBER 1ST THE DISTURBED SLOPE SHALL BE SEEDED WITH WINTER RYE AT A SEEDING RATE OF 3 LBS PER 1,000 S.F. AND THEN INSTALL EROSION CONTROL MATS OR ANCHORED MULCH OVER THE SEEDING. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR FAILS TO COVER AT LEAST 75% OF THE SLOPE BY NOVEMBER 1ST, THEN THE CONTRACTOR SHALL COVER THE SLOPE WITH A LAYER OF EROSION CONTROL MIX OR WITH STONE RIPRAP.
- STABILIZE THE SOIL WITH SOD – THE DISTURBED SLOPE SHALL BE STABILIZED WITH PROPERLY INSTALLED SOD BY OCTOBER 1ST. PROPER INSTALLATION INCLUDES THE CONTRACTOR PINNING THE SOD ONTO THE SLOPE WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL. THE CONTRACTOR SHALL NOT USE LATE–SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 3H:1V OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.
- STABILIZE THE SOIL WITH EROSION CONTROL MIX – EROSION CONTROL MIX SHALL BE PROPERLY INSTALLED BY NOVEMBER 15TH. THE CONTRACTOR SHALL NOT USE EROSION CONTROL MIX TO STABILIZE SLOPES HAVING GRADES GREATER THAN 2H:1V OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.
- STABILIZE THE SOIL WITH STONE RIPRAP – PLACE A LAYER OF STONE RIPRAP ON THE SLOPE BY NOVEMBER 15TH. A REGISTERED PROFESSIONAL ENGINEER SHALL BE HIRED TO DETERMINE THE STONE SIZE NEEDED FOR STABILITY ON THE SLOPE AND TO DESIGN A FILTER LAYER FOR UNDERNEATH THE RIPRAP.

5.0 INSPECTION AND MAINTENANCE

A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE STANDARDS AND CONDITIONS IN THE PERMIT, SHALL CONDUCT PERIODIC VISUAL INSPECTIONS OF INSTALLED EROSION CONTROL MEASURES. THE FREQUENCY OF INSPECTION SHALL OCCUR AT LEAST ONCE EVERY TWO WEEKS, AS WELL AS AFTER A "STORM EVENT". A "STORM EVENT" SHALL CONSIST 0.5 INCHES OF RAIN WITHIN A 24 HOUR PERIOD. THE FOLLOWING EROSION AND SEDIMENT CONTROL – BEST MANAGEMENT PRACTICES (BMP'S) SHALL INSPECTED IN THE MANNER AS DESCRIBED.

5.1 SEDIMENT BARRIERS

HAY BALE BARRIERS, SILT FENCES AND FILTER BERMS SHALL BE INSPECTED AND REPAIRED FOR THE FOLLOWING IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES OF THE BARRIER, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SEDIMENT BARRIERS SHALL BE REPLACED WITH A TEMPORARY CHECK DAM. SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER IS STILL NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE–HALF THE HEIGHT OF THE BARRIER. FILTER BERMS SHOULD BE RESHAPED AS NEEDED. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHOULD BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

5.2 STABILIZED STONE CONSTRUCTION ENTRANCES

THE EXIT SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. WHEN THE CONTROL PAD BECOMES INEFFECTIVE, THE STONE SHALL BE REMOVED ALONG WITH THE COLLECTED SOIL MATERIAL AND REDISTRIBUTED ON SITE IN A STABLE MANNER. THE ENTRANCE SHOULD THEN BE RECONSTRUCTED. THE CONTRACTOR SHALL SWEEP OR WASH PAVEMENT AT EXITS, WHICH HAVE EXPERIENCED MUD–TRACKING ON TO THE PAVEMENT OR TRAVELED WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH AGGREGATE, WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS.

5.3 MULCHED AREAS

ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS, TO CHECK FOR RILL EROSION. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED. NETS MUST BE INSPECTED AFTER RAIN EVENTS FOR DISLOCATION OR FAILURE. IF WASHOUTS OR BREAKAGE OCCUR, RE–INSTALL THE NETS AS NECESSARY AFTER REPAIRING DAMAGE TO THE SLOPE. WHERE MULCH IS USED IN CONJUNCTION WITH ORNAMENTAL PLANTINGS, INSPECT PERIODICALLY THROUGHOUT THE YEAR TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE SOIL SURFACE. REPAIR AS NEEDED.

5.4 DUST CONTROL

WHEN TEMPORARY DUST CONTROL MEASURES ARE USED, REPETITIVE TREATMENT SHALL BE APPLIED AS NEEDED TO ACCOMPLISH CONTROL.

5.5 STORMWATER APPURTENANCES

ALL UNDERDRAINS, STORM DRAINS, AND CATCH BASINS NEED TO BE OPERATING EFFECTIVELY AND FREE OF DEBRIS.

5.6 EROSION AND SEDIMENTATION CONTROL INSPECTIONS:

ACORN ENGINEERING HAS PERSONNEL QUALIFIED TO CONDUCT EROSION AND SEDIMENTATION CONTROL INSPECTIONS. FOR FURTHER INFORMATION CONTACT:

CONTACT: WILL SAVAGE, PE
TELEPHONE: (207) 775–2655

QUALIFICATIONS:

- Ø MAINE PROFESSIONAL ENGINEERING LICENSE #11419
- Ø MAINE DEP – CERTIFIED IN MAINTENANCE & INSPECTION OF STORMWATER BMP'S CERT #14
- Ø CERTIFIED EROSION, SEDIMENT AND STORM WATER INSPECTOR (CESSWI) CERT #0293
- Ø CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC) CERT. #4620

THE CONTRACTOR HAS SOLE RESPONSIBILITY FOR COMPLYING WITH THE EROSION AND SEDIMENTATION REPORT/PLAN, INCLUDING CONTROL OF FUGITIVE DUST. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MONETARY PENALTIES RESULTING FROM FAILURE TO COMPLY WITH THESE STANDARDS.

6.0 IMPLEMENTATION SCHEDULE

THE FOLLOWING IMPLEMENTATION SEQUENCE IS INTENDED TO MAXIMIZE THE EFFECTIVENESS OF THE ABOVE DESCRIBED EROSION CONTROL MEASURES. CONTRACTORS SHOULD AVOID OVEREXPOSING DISTURBED AREAS AND LIMIT THE AMOUNT OF STABILIZATION AREA.

1. INSTALL A STABILIZED CONSTRUCTION ENTRANCE IN ALL LOCATIONS WHERE CONSTRUCTION TRAFFIC WILL ENTER AND EXIT THE SITE.
2. INSTALL PERIMETER SILT FENCE OR EROSION CONTROL BERM.
3. INSTALL ALL OTHER EROSION CONTROL DEVICES AS NECESSARY THROUGHOUT THE REMAINDER OF THIS SCHEDULE.
4. COMMENCE INSTALLATION OF DRAINAGE INFRASTRUCTURE.
5. COMMENCE EARTHWORK OPERATIONS, WALL AND FOUNDATION INSTALLATION.
6. COMMENCE INSTALLATION OF UTILITIES.
7. CONTINUE EARTHWORK AND GRADING TO SUBGRADE AS NECESSARY FOR CONSTRUCTION.
8. COMPLETE INSTALLATION OF DRAINAGE INFRASTRUCTURE, AS WELL AS OTHER UTILITY WORK.
9. COMPLETE REMAINING EARTHWORK OPERATIONS.
10. INSTALL SUB–BASE AND BASE GRAVELS IN PAVED AREAS.
11. INSTALL PAVING, CURBING AND BRICKWORK.
12. LOAM, LIME, FERTILIZE, SEED AND MULCH DISTURBED AREAS AND COMPLETE ALL LANDSCAPING.
13. ONCE THE SITE IS STABILIZED, 90% CATCH OF GRASS HAS BEEN OBTAINED, OR MULCHING OF LANDSCAPE AREAS IS COMPLETE REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.
14. TOUCH UP AREAS WITHOUT A VIGOROUS CATCH OF GRASS WITH LOAM AND SEED.
15. COMPLETE SITE SIGNAGE AND STRIPING.
16. EXECUTE PROPER MAINTENANCE OF ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES THROUGHOUT THE PROJECT.

THE ABOVE IMPLEMENTATION SEQUENCE SHOULD BE GENERALLY FOLLOWED BY THE SITE CONTRACTOR. HOWEVER, THE CONTRACTOR MAY CONSTRUCT SEVERAL ITEMS SIMULTANEOUSLY. THE CONTRACTOR SHALL SUBMIT TO THE OWNER A SCHEDULE OF THE COMPLETION OF THE WORK. IF THE CONTRACTOR IS TO COMMENCE THE CONSTRUCTION OF MORE THAN ONE ITEM ABOVE, THEY SHALL LIMIT THE AMOUNT OF EXPOSED AREAS TO THOSE AREAS IN WHICH WORK IS EXPECTED TO BE UNDERTAKEN DURING THE FOLLOWING 30 DAYS.

THE CONTRACTOR SHALL RE–VEGETATE DISTURBED AREAS AS RAPIDLY AS POSSIBLE. ALL AREAS SHALL BE PERMANENTLY STABILIZED WITHIN 7 DAYS OF FINAL GRADING OR BEFORE A STORM EVENT. THE CONTRACTOR SHALL INCORPORATE PLANNED INLETS AND DRAINAGE SYSTEMS AS EARLY AS POSSIBLE INTO THE CONSTRUCTION PHASE.

7.0 SEEDING PLAN

7.1 SITE PREPARATION

THE SEEDED AREAS SHALL BE FEASIBLY GRADED OUT TO PROVIDE THE USE OF EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. IF NECESSARY, THE SITE MAY REQUIRE ADDITIONAL TEMPORARY EROSION CONTROL MEASURES OUTLINED IN THE EROSION CONTROL REPORT.

7.2 SEEDBED PREPARATION

FERTILIZER SHALL BE APPLIED TO THE SITE AT A RATE OF 13.8 POUNDS PER 1,000 SQUARE FEET. THE COMPOSITION OF THE FERTILIZER SHALL BE 10–10–10 (N–P2O5–K2O) OR EQUIVALENT.

LIMESTONE SHALL BE APPLIED TO THE SITE AT A RATE OF 138 POUNDS PER 1,000 SQUARE FEET.

7.3 SEEDING

THE COMPOSITION AND AMOUNT OF TEMPORARY SEED APPLIED TO A SITE SHALL BE DETERMINED BY THE FOLLOWING TABLE:

TEMPORARY SEED APPLICATION RATES

SEED	LBS / ACRE	RECOMMENDED SEEDING DATES
WINTER RYE	2.57	8/15 TO 10/1
OATS	1.84	4/1 TO 7/1 8/15 TO 9/15
ANNUAL RYGRASS	0.92	4/1 TO 7/1
SUDANGRASS	0.92	5/15 TO 8/15
PERENNIAL	0.92	8/15 TO 9/15
TOTAL	7.17 LBS/ACRE	

PERMANENT SEED APPLICATION RATES

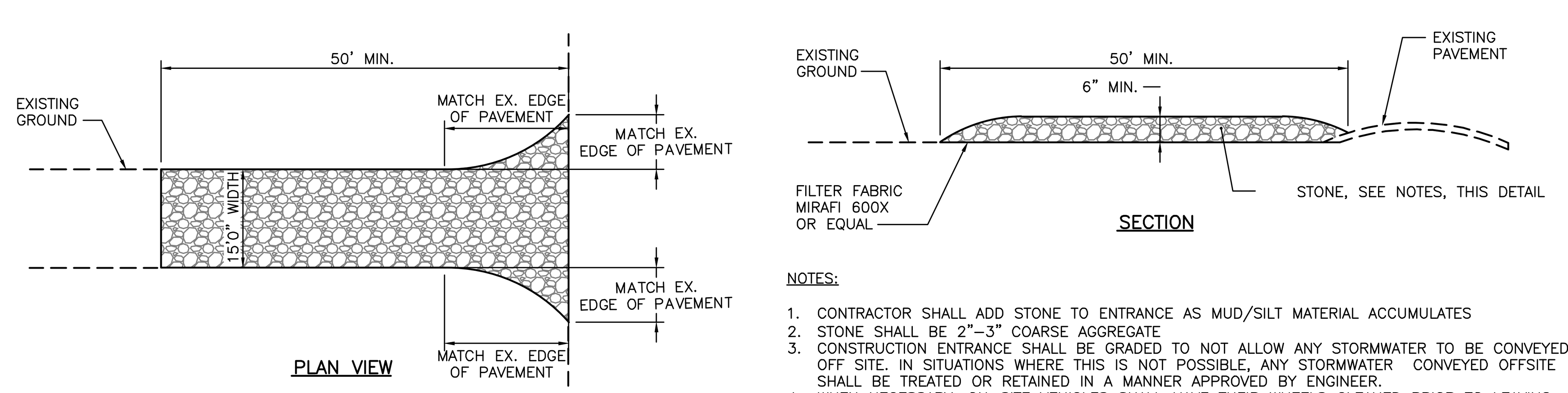
SEED	LBS / ACRE
KENTUCKY BLUEGRASS	20.00
CREEPING RED FESCUE	20.00
PERENNIAL RYEGRASS	4.80
TOTAL	44.8 LBS/ACRE

7.4 MULCHING

MULCH SHALL BE HARDWOOD AND APPLIED AT A RATE OF 70 LBS – 90 LBS PER 1,000 SQUARE FEET. THE MULCH SHALL BE INSTALLED AT A MINIMUM DEPTH OF 4 INCHES. THE SEEDED AREA SHALL BE MULCHED IMMEDIATELY AFTER SEED IS APPLIED. MULCHING DURING THE WINTER SEASON SHALL BE DOUBLE THE NORMAL AMOUNT. REFER TO DETAIL FOR MORE INFORMATION.

8.0 CONCLUSION

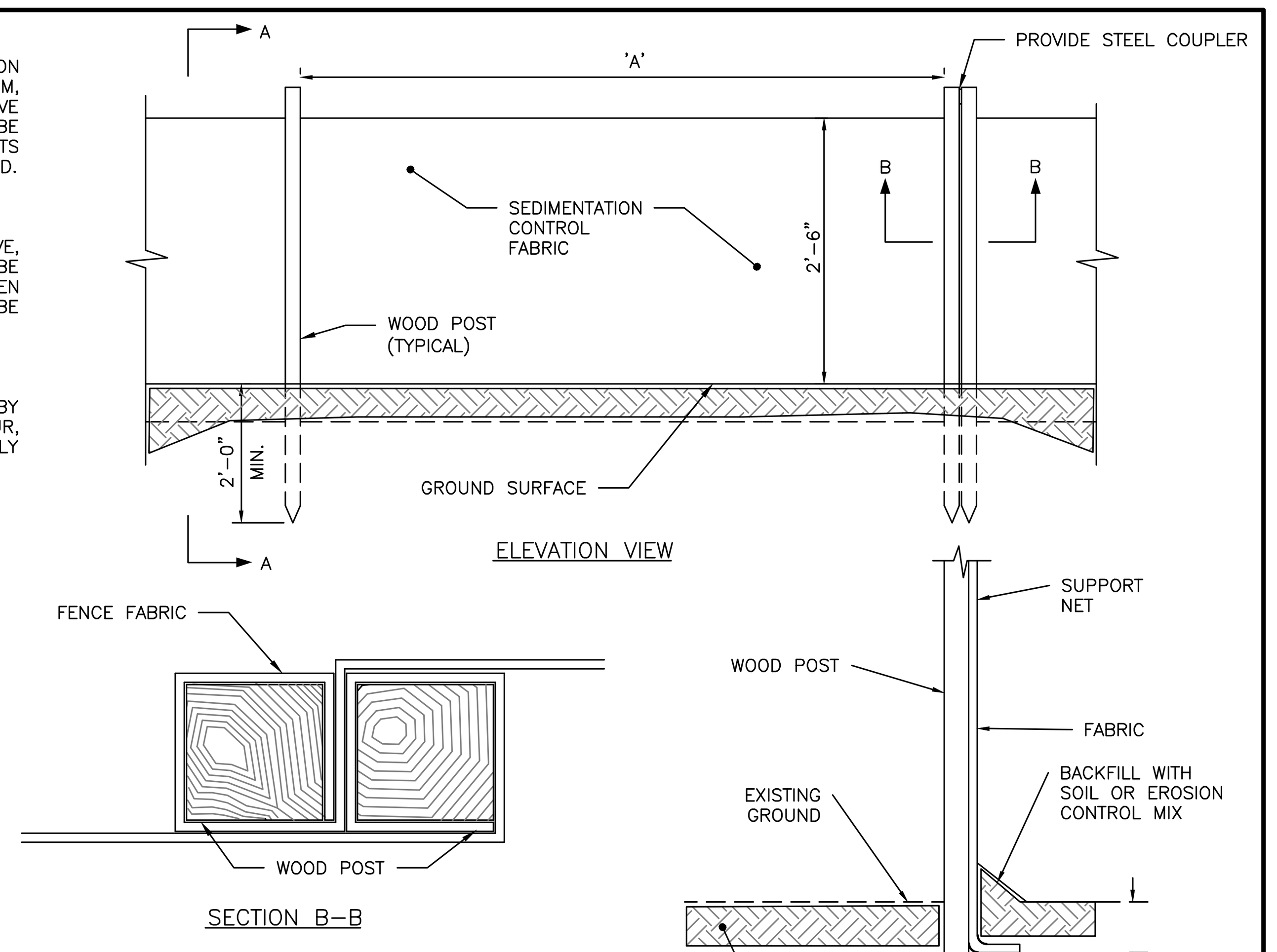
THE ABOVE EROSION CONTROL NARRATIVE IS INTENDED TO MINIMIZE THE DEVELOPMENT IMPACT BY IMPLEMENTING TEMPORARY AND PERMANENT EROSION CONTROL MEASURES. THE CONTRACTOR SHALL ALSO REFER TO THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION.



NOTES:

1. CONTRACTOR SHALL ADD STONE TO ENTRANCE AS MUD/SILT MATERIAL ACCUMULATES
2. STONE SHALL BE 2"–3" COARSE AGGREGATE
3. CONSTRUCTION ENTRANCE SHALL BE GRADED TO NOT ALLOW ANY STORMWATER TO BE CONVEYED OFF SITE. IN SITUATIONS WHERE THIS IS NOT POSSIBLE, ANY STORMWATER CONVEYED OFFSITE SHALL BE TREATED OR RETAINED IN A MANNER APPROVED BY ENGINEER.
4. WHEN NECESSARY, ON–SITE VEHICLES SHALL HAVE THEIR WHEELS CLEANED PRIOR TO LEAVING SITE.
5. CONSTRUCTION ENTRANCE SHALL BE GRADED IN A MANNER THAT PREVENTS TRACKING OF SEDIMENTS ONTO PUBLIC RIGHT–OF–WAY

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

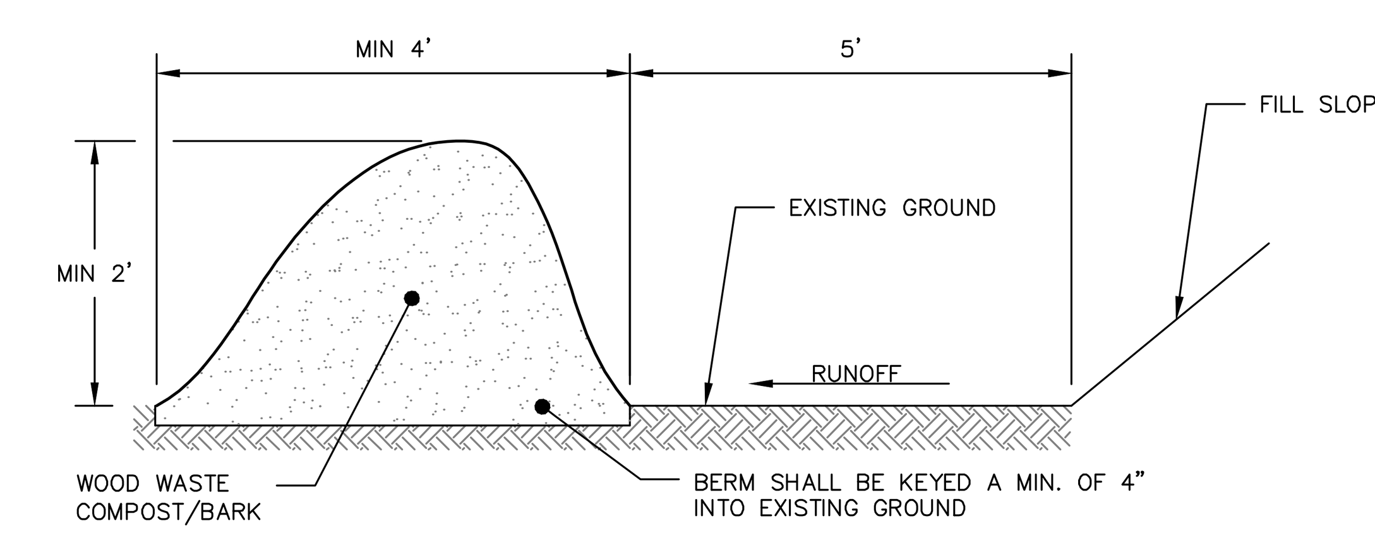


SILT FENCE REINFORCEMENT	MAX. SPACING "A"
NONE	6'
WIRE REINFORCEMENT 14 GAUGE, 6" MESH	10'

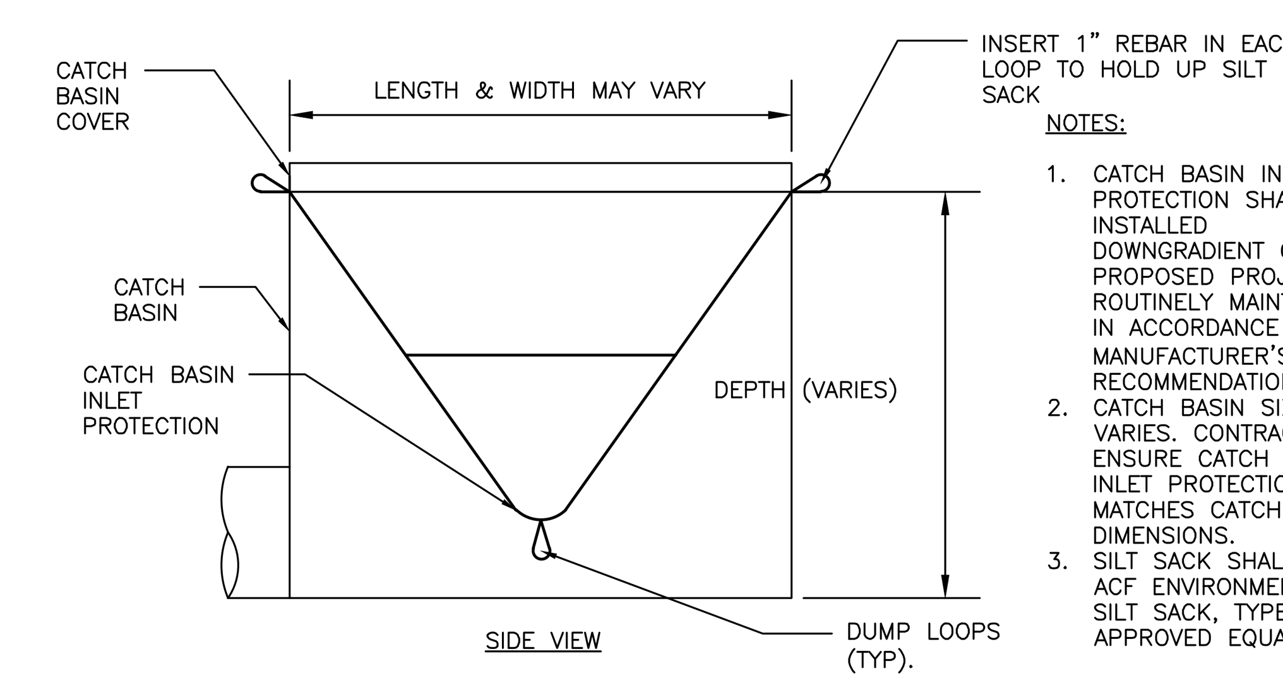
SILTATION FENCE DETAIL
NOT TO SCALE

NOTES:

1. THE EROSION CONTROL MIX SHALL CONFORM TO THE FOLLOWING STANDARDS AND IN ACCORDANCE WITH THE MAINE DOT CHAPTER 700, SECTION 717.04(D):
   - 1.1. pH BETWEEN 5.0 – 8.0
   - 1.2. PARTICLE SIZE (BY WEIGHT):
     - 1.2.1. 100% PASSING A 150 MM (6 IN) SCREEN
     - 1.2.2. 75 TO 85% PASSING A 19 MM (0.75 IN) SCREEN
   - 1.3. SOLUBLE SALTS CONTENT < 4.0 MMHOS/CM
   - 1.4. ORGANIC MATTER 20 TO 100% , DRY WEIGHT BASIS
2. THE BERM SHOULD BE PLACED, UNCOMPACTED, ALONG A RELATIVELY LEVEL CONTOUR, WHEN NECESSARY THE BERM MAY BE PLACED PERPENDICULAR TO THE SLOPE ALONG THE PROPERTY LINE TO CONTAIN THE SEDIMENT PROVIDED A BERM IS LOCATED AT THE BASE OF THE SLOPE.
3. BERMS SHALL REMAIN IN PLACE UNTIL UPSTREAM AREA IS STABILIZED OR 90% CATCH OF VEGETATION IS ATTAINED. BERMS SHALL BE REMOVED OFFSITE OR BY SPREADING SUCH THAT NATIVE EARTH CAN BE SEEN BELOW.



EROSION CONTROL MIX BERM DETAIL
NOT TO SCALE



NOTES:

1. CATCH BASIN INLET PROTECTION SHALL BE INSTALLED DOWNGRADIENT OF PROPOSED PROJECT AND ROUTINELY MAINTAINED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS
2. CATCH BASIN SIZE VARIES. CONTRACTOR TO ENSURE CATCH BASIN INLET PROTECTION MATCHES CATCH BASIN DIMENSIONS.
3. SILT SACK SHALL BE ACF ENVIRONMENTAL SILT SACK, TYPE A, OR APPROVED EQUAL.

CATCH BASIN INLET PROTECTION
NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

ISSUED FOR	BY / DATE
SITE PLAN	SJL 8/26/21
COMMENT RESP.	SJL 9/2/21
BID SET	SJL 9/29/21
IFC	SJL 4/8/22
SITE PLAN AMEND	SJL 5/31/23
COMMENT RESPONSE	SJL 6/14/23

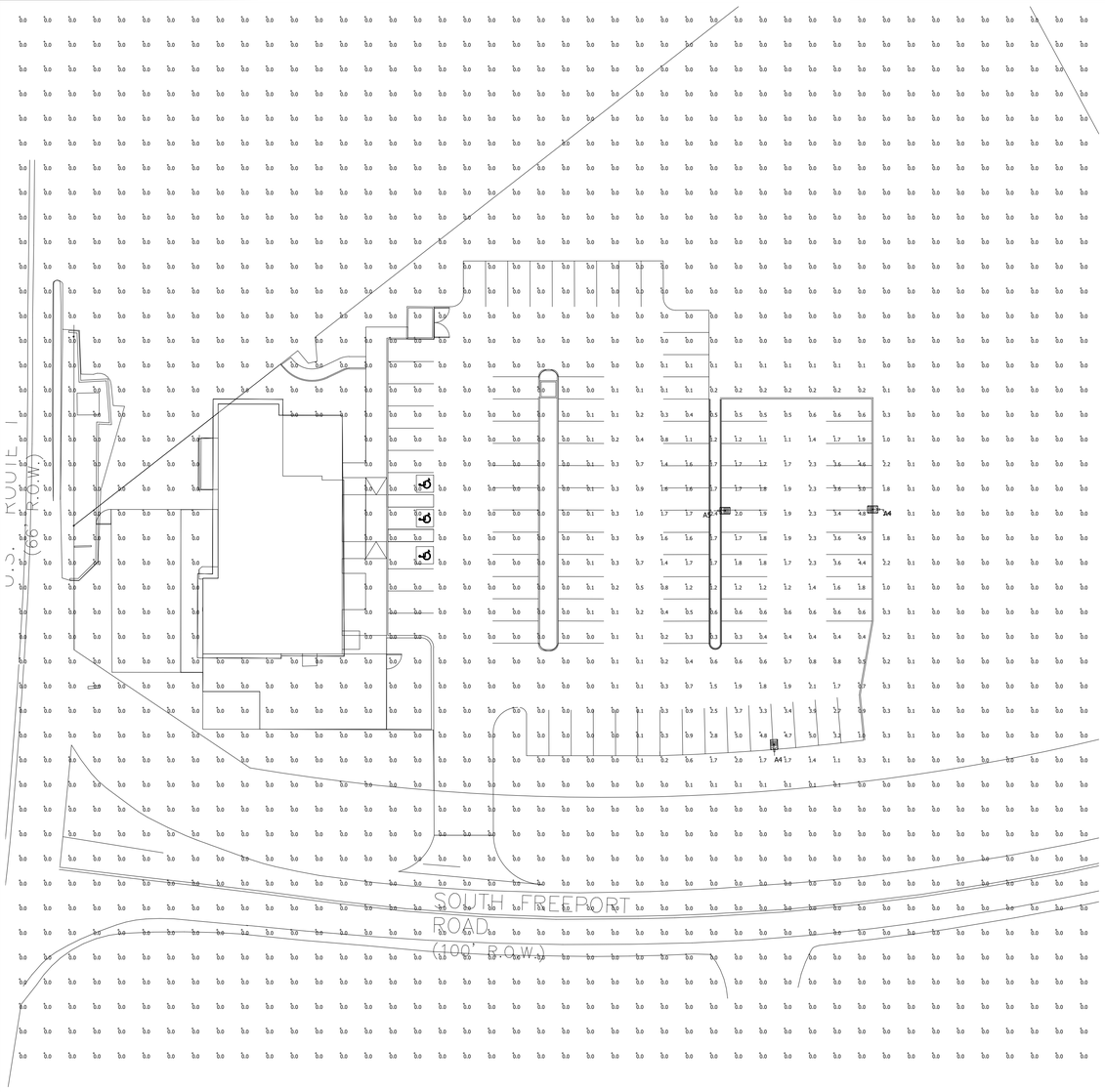
DRAWING NAME:
EROSION & SEDIMENTATION CONTROL DETAILS & NOTES
PROJECT NAME/ADDRESS:
GOODFIRE PARKING EXPANSION
117 U.S. ROUTE 1 FREEPORT, MAINE 04032
CLIENT/OWNER OF RECORD:
MR 117 ROUTE ONE, LLC
1 BALSAM LANE, FREEPORT MAINE 04032

A C O R N ENGINEERING, INC.
ACORN ENGINEERING, INC.
PO BOX 3372, PORTLAND MAINE 04101
(207) 775–2655

FILE:	2.84_CIVIL
JN:	2.84
SCALE:	AS NOTED
DESIGNED BY:	SJL
DRAWN BY:	NPH
CHECKED BY:	WHS

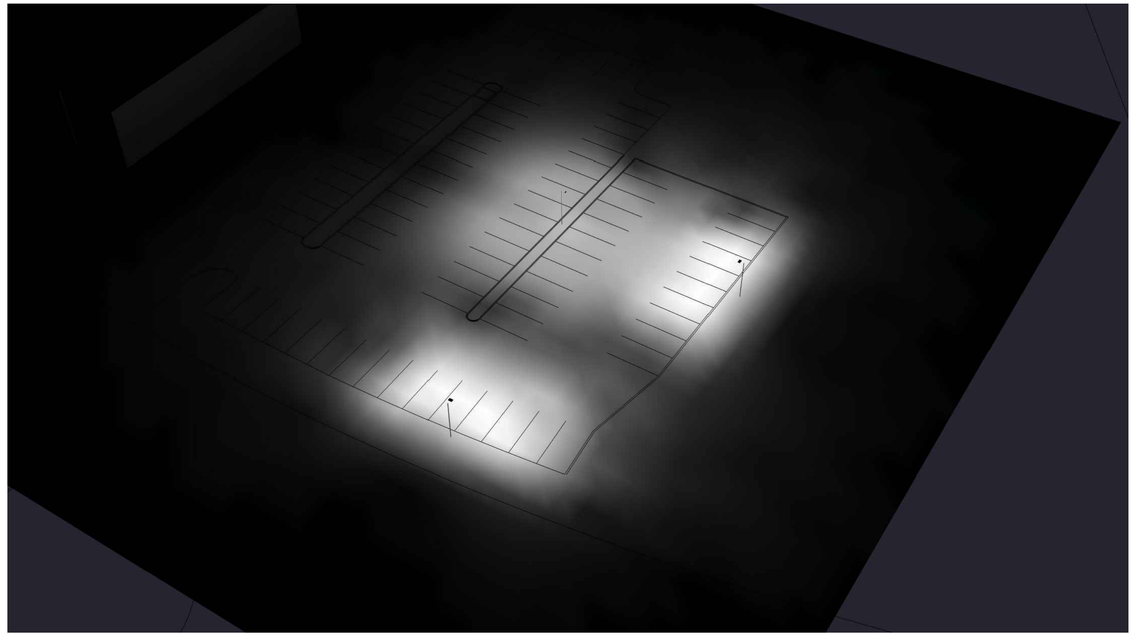
STATE OF MAINE
SAMUEL J. LEBEL
No. 16505
LICENSED
PROFESSIONAL ENGINEER
6/14/23

DRAWING NO.
C-33



Luminaire Schedule							
Symbol	Qty	Label	Mounting Height	LLF	Lum. Lumens	Lum. Watts	Description
	2	A4	15' - 0" AFG	0.900	9313	75	VP-1-160L-75-4K7-4W-HSS-90-B
	1	A5	15' - 0" AFG	0.900	9386	75	VP-1-160L-75-3K7-5QW

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
New Parking Lot	Illuminance	Fc	1.92	5.0	0.3	6.40	16.67
Overall Area	Illuminance	Fc	0.08	5.0	0.0	N.A.	N.A.
Property Line	Illuminance	Fc	0.00	0.0	0.0	N.A.	N.A.



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

1 inch = 30 - FT.

1. THIS LIGHTING DESIGN IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO CURRENT. SITE DETAILS PROVIDED HEREON ARE REPRODUCED ONLY AS A VISUALIZATION AID. FIELD DEVIATIONS MAY SIGNIFICANTLY AFFECT PREDICTED PERFORMANCE. PRIOR TO INSTALLATION, CRITICAL SITE INFORMATION (POLE LOCATIONS, ORIENTATION, MOUNTING HEIGHT, ETC.) SHOULD BE COORDINATED WITH THE CONTRACTOR AND/OR SPECIFIER RESPONSIBLE FOR THE PROJECT.
2. LUMINAIRE DATA IS TESTED TO INDUSTRY STANDARDS UNDER LABORATORY CONDITIONS. OPERATING VOLTAGE AND NORMAL MANUFACTURING TOLERANCES OF LAMP, BALLAST, AND LUMINAIRE MAY AFFECT FIELD RESULTS.
3. CONFORMANCE TO FACILITY CODE AND OTHER LOCAL REQUIREMENTS IS THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.

TITLE:

SOUTH FREEPORT ROAD PARKING LOT
FREEPORT, ME
SITE PHOTOMETRIC PLAN

REVISED FROM DRAWING NUMBER(S):	

Current

DN BY:	DATE:	CHK BY:
DHK	05/30/23	N/A
REV. BY:	DATE:	SCALE:
		AS NOTED
QUOTE:	DRAWING / DESIGN NO.:	
N/A	A230864	

SITE PLAN AMENDMENT APPLICATION

GOODFIRE PARKING EXPANSION

TOWN OF FREEPORT, ME




Prepared By:

ACORN ENGINEERING, INC.

For:

MR 117 ROUTE ONE, LLC

June 14, 2023

A C O R N Engineering, Inc. • www.acorn-engineering.com
207-775-2655 • PO Box 3372 • Portland • Maine • 04104

ACORN ENGINEERING, INC.

Caroline Pelletier, Town Planner
Town of Freeport - Planning
30 Main Street
Freeport, ME 04032

June 14, 2023

Subject: Comment Response Letter
Goodfire Brewing Parking Expansion – Freeport, Maine

On behalf of MR 117 Route One, LLC, we are pleased to respond to the comments that we received from Gorrill-Palmer as part of the Site Plan Amendment peer review.

Comment – *The Application states that a MDEP NRPA Permit by Rule will likely be required. Since there is proposed disturbance within 75 feet of a stream, a MDEP NRPA Permit by Rule appears to be needed for this project. Submit a copy of the permit application to the Town.*

Response – A copy of the permit application for the town has been attached.

Comment – *Show the 75-foot stream setback on the grading plan.*

Response – The 75-foot stream setback is now being shown on the grading plan.

Comment – *We recommend a double row of sediment barriers at disturbance adjacent to the wetlands.*

Response – The grading plan has been revised to indicate a double row of sediment barriers between the limit of disturbance and the wetlands.

Comment – *Show a construction entrance on the erosion control plan.*

Response – A potential construction entrance has been added to the erosion control plan if deemed necessary at the time of construction. It should be noted that the site contractor will likely utilize the existing curb cut which features a paved/stabilized entrance.

Comment – *Show a temporary sediment barrier at the proposed catch basin.*

Response – A callout has been added to the referenced catch basin to clarify inlet protection is required until the parking lot receives surface pavement.

Comment – *Revise the Existing Conditions narrative of the Erosion Control Plan to reference the correct site and surveyor.*

Response – The Erosion and Sedimentation Control Report has been updated.

Comment – *We recommend providing a turning bumpout for vehicles backing out of the last two parking spaces at the proposed parking lot. Without this, the last two spaces in the new parking lot may be difficult to exit.*

Response – The northern edge of the parking expansion has been extended by 1' to provide additional space for vehicles to enter and exit the two northernmost parking spaces. This approach allows for a sufficient setback from the wetland to allow it to remain undisturbed. Our office has conducted a vehicle simulation and the design both with 9' and 10' wide parking spaces are adequate for the majority of passenger vehicles.

Comment – *In order to maintain and/or improve stormwater quality in conformance with Zoning Ordinance Section 602.D.4.k.5, provide a stormwater Operation and Maintenance Manual for the stormwater quality treatment practices onsite, including the previously constructed Filterra filter.*

Response – A post construction stormwater inspection & maintenance plan has been prepared with prescribed maintenance operations for the BMPs on site.

Comment – *The proposed vegetated underdrained soil filter appears to be a composite of a MDEP grassed underdrained soil filter and a MDEP bioretention filter. The pond detail notes that plants for vegetating the pond will be selected by a Landscape Architect. If it is not intended to be planted, revise the notes accordingly. Given the proposed ponding depth of approximately 2.5 feet for the 25-year storm, and the slow release of the runoff through the underdrain, the pond will likely contain water for a longer time and a greater depth than will allow for the survival of plants other than grass. Although it will likely not affect the provided water quality volume, the soil filter voids can be used to provide water quality volume for a bioretention pond, but not for a grassed underdrained soil filter. We recommend revising the pond calculations, design, and details to conform to either a bioretention filter or a grassed underdrained soil filter.*

Response – The referenced BMP is proposed to be a vegetated (or grassed) underdrained soil filter (VUSF). It is not proposed to feature elements of a bioretention cell and as such, we have removed any reference to plantings. Additionally, the water quality volume in table 2 has been clarified to include solely the first 18" of ponding that occurs above grade. Additional storage is provided above that 18" to attenuate peak flows during larger storm events, but is not included in the water quality volume calculations. Lastly, while the HydroCAD includes a 10% void ratio within the filter profile to accurately model the VUSF's storage capabilities, this storage is not included within the water quality volume calculations.

It should also be noted that the pond has been enlarged slightly (bottom of pond filter increased by 100 sf); this design change was performed to ensure that the potential future site build out would not exceed the VUSF filter area requirements of 5% tributary impervious area plus 2% tributary landscaped area. A revised stormwater report has been included with this resubmission to demonstrate the changes in filter area and water quality volume. The peak flow rates from the 2, 10, and 25 year storms remain unchanged when compared to the previous submission.

Comment – *Sheet C-20 calls out a cleanout, typ. of 2 but the cleanouts do not appear to be shown. We recommend that cleanouts be provided on all three underdrains.*

Response – Sheet C-20 has been updated to show a cleanout for each of the three underdrains.

Comment – *The cross section of emergency spillway shown on C-32 appears to call out the top width of the pond berm as 5 feet. Confirm that is the intended width.*

Response – The cross section of the emergency spillway has been updated to show the top width of the pond berm to be 2 feet wide.

Comment – *Confirm the intended location of the geotextile fabric in the cross section of the level lip spreader detail. It is not clear what is intended given the line weights of the detail.*

Response –The fabric is proposed beneath the pipe outlet and under the stone berm before it is keyed into the ground to help mitigate erosive forces on the subgrade. Sheet C-32 has been revised to reflect this.

Comment – *Provide a F-Basin detail for the structure called out at the filter basin.*

Response – A 24" square catch basin "type F" detail has been added to sheet C-31.

Comment – *Provide a light pole base detail.*

Response – A light pole base detail had been added to sheet C-30.

Please let us know if you have any additional questions or comments.

Sincerely,

Samuel J. Lebel, P.E.
Project Manager
Acorn Engineering, Inc.

Nathan PP Holt, E.I.
Project Engineer
Acorn Engineering, Inc.

Revised Documents:

- Section 4: Stormwater Report
- Section 5: Erosion & Sedimentation Control Report
- Section 8: Natural Resources

Revised Drawings:

- Civil Plan Set dated 6/14/23

Section 4

Stormwater Report

A C O R N
ENGINEERING, INC.

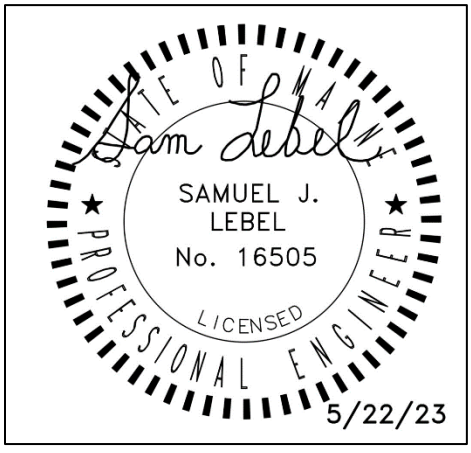
STORMWATER MANAGEMENT REPORT

Prepared For:

MR 117 Route One, LLC
1 Balsam Lane
Freeport, Maine 04032

Prepared By:

Acorn Engineering, Inc.
500 Washington Avenue
Portland, Maine 04103



August 2021
Rev. May 2023
Rev. June 2023

INTRODUCTION

Acorn Engineering, Inc. has been retained by MR 117 Route One LLC to provide civil engineering services for the proposed site expansion to 117 Route 1 in Freeport, Maine in which Goodfire Brewing Company plans to construct additional parking to the east of the existing parking lot for a total of 31 new parking spaces and paving a portion of the existing gravel parking lot. Please note that the stormwater infrastructure has been oversized to accommodate another potential future parking expansion.

A stormwater analysis was prepared to demonstrate that the project will meet the requirements set forth by the Town of Freeport Zoning Ordinance Section 529. Please note that a stormwater analysis was prepared for the initial site plan application from the Summer of 2021 which permitted the change in use of the existing structure to house Goodfire Brewing along with associated site improvements; this was approved by the Town Engineer and Project Review Board and included a focal point to treat the paved parking and and a portion of existing roof area as a best faith measure even though the project did not increase the site's impervious area. The portion of the approved stormwater analysis that has been revised will be shown below in ***bold red*** with the initial stormwater analysis shown in black for reference.

EXISTING CONDITIONS

The proposed project site is located at the intersection of South Freeport Road and Route One in Freeport, Maine. A boundary and topographic survey developed by Northern Surveying Engineering LLC (NORSE) has been included within this submission package. The western portion of the site has already been developed and consists of a front parking lot, existing building, and paved/gravel parking lot to the rear of the building. The eastern portion of the property is wooded and contains a wetland and stream as identified by Flycatcher LLC in the Spring of 2021. The site has been divided into a number of subcatchments and can be seen attachment A. The first subcatchment consists of roof area and the parking lot adjacent to Route 1. This area flows to the north towards the abutting property. The second subcatchment consists of the landscaped area near the southwest corner of the property, this flow sheets towards the catch basin located along South Freeport Road (CB-1). A 12" culvert outlets CB-1 and crosses under South Freeport Road where it daylights in a road side ditch. The third subcatchment consists of the eastern portion of the building, rear parking lot, and wooded area. This runoff is directed towards the wetlands and is conveyed off site via a stream. The slopes on site are relatively flat with grades dropping off towards the wetlands and stream to the east of the site. There are two additional subcatchments labeled as "subcatchment X.1 and subcatchment X.2", these consist of the tributary area along South Freeport Road and Route 1 that drain towards the above-mentioned catch basin (subcatchment X.1) and the road side ditch (subcatchment X.2).

PROPOSED DEVELOPMENT

The project features two new businesses to occupy the existing structure. To accommodate

the new businesses, outdoor seating areas are proposed along the building to the western and southern portions. The curb cut/driveway off Route One will be closed and replaced with loam and seed to improve vehicle circulation, establish better infiltration capacity in this area, and provide a more welcoming façade. The parking lot to the west of the curbed island will be repaved to create a durable surface that promotes drainage and will reduce sediment transport offsite. The parking lot to the east of the site will be expanded along the perimeter to accommodate the required parking for the new businesses. This will be done by utilizing the existing gravel material and compacting the surface to create a uniform wearing surface encouraging sheet flow to a vegetated buffer upgradient of the natural resources. Other open spaces will see an improved condition as it is proposed to loam and seed these areas as well as add plantings per the project landscape architect. Overall, the project proposes to maintain the existing impervious area by offsetting the parking expansion with the closure of the Route 1 driveway and conversion of pavement to green space.

Update: The site proposes to expand the parking lot to the west of the development which features a net impervious area increase of 10,449 SF. The project will also pave the existing gravel parking lot (13,500 sf) which would be considered a maintenance activity. Please note that the site is in the Merril Brook watershed which is currently listed as threatened by MDEP but not urban impaired. As the project will not result in more than one acre of cumulative disturbed or impervious area, the project is not subject to Maine DEP Stormwater Law or Permit-By-Rule; as such, this report will demonstrate that the site's runoff will meet the Town of Freeport's stormwater standards.

GENERAL STANDARDS – WATER QUALITY

Although the project will not result in a net increase in impervious area, the proposal is to provide primary water quality control through a proposed filterra high-flow rain garden BMP or approved equivalent. In exceedance of the Town of Freeport standards, the filterra will treat more than the first ½" of runoff from a storm event. The filterra will treat the heaviest pollutant loading area (the parking spaces closest to the building) as well as roughly half of the roof and the adjacent sidewalk for a total tributary of 11,800 square feet.

Rain gardens and proprietary high-flow soil filter media BMPs have been shown to be effective at filtering out and removing a wide range of pollutants from stormwater runoff. The stormwater will flow vertically through media layers and then be collected within a perforated underdrain pipe. The underdrain will connect to a larger outlet pipe which will daylight into a level lip spreader to the northeast of the site before sheet flowing to a wooded buffer upstream of the wetlands.

It should be noted that the majority of the site work will fall under the category of "maintenance" defined as the DEP as "an activity undertaken to maintain operating condition, original line and grade, hydraulic capacity, and original purpose of the project. Paving an impervious gravel surface at original line, grade and hydraulic capacity is considered maintenance. Replacement of a building is not considered maintenance of the building." The majority of the site would fall into this definition of "maintenance" as the site will retain the initial operating condition, grade, and hydraulic capacity. As such, the

developed area on site consists of the new impervious area generated by the expanded parking lot area and outdoor seating for the new businesses.

In accordance with the Town of Freeport's Stormwater performance standards, it is proposed to treat the parking lot expansion through the use of a vegetated underdrained soil filter (VUSF). The VUSF has been designed to treat the first 0.5" of runoff from a 24-hour storm event. This has been shown in the hydrologic analysis as the "WQV" storm or 0.5" precipitation event will flow through the VUSF's soil filter and will not bypass the filter media.

A ball valve is proposed at the end of the VUSF underdrain network which can be manually adjusted to alter the pond's outflow rate. The ball valve, as well as a simulation of the filter media's attenuating drawdown has been modeled in the hydrologic analysis by running the 0.5" storm and iteratively adjusting the size of the orifice diameter until the WQV is released over 24-48 hours.

The VUSF was designed in general accordance with the Maine DEP Stormwater BMP Manual. This includes the filter size area which exceeds the 5% ratio of tributary impervious area plus 2% of landscaped area. The WQV is also easily achieved within the first 18" of ponding. The WQV was determined by multiplying the tributary runoff to the VUSF by 0.5" in accordance with the Town of Freeport's standards.

Table 1 – Filter Area Sizing

BMP	Tributary Imp (sf)	Tributary Landscaped (sf)	Required Filter Area (sf)	Proposed Filter Area (sf)
VUSF	10,520	565	537	1,007

Table 2 – Water Quality Volume

BMP	Tributary Imp (sf)	Tributary Landscaped (sf)	Required Water Quality Volume (cf)	Proposed Water Quality Volume (cf)
VUSF	10,520	565	896	1,883

FLOODING STANDARD – WATER QUANTITY

The project was modeled using HydroCAD to verify that the post-development conditions do not exceed the pre-development conditions. A 24-hour SCS Type III storm distribution for the 2, 10, and 25-year storm events were used. The corresponding rainfall amounts for these storms are 3.10", 4.60", and 5.80" respectively. Due to the numerous variables, and inherent inaccuracies with the modeling program used to calculate stormwater runoff it is custom at Acorn Engineering, Inc. to round to the nearest whole number. However due to the small size of the project and the minimal existing flows, the stormwater runoff shall be rounded to the nearest tenth of a cubic feet per second (cfs).

Time of Concentration (Tc)

The times of concentration for subcatchments in both the pre and post conditions were calculated by entering the flow path with the associated ground cover and slopes. HydroCAD then calculated the Tc's and incorporated the total Tc for each subcatchment into the model. When the calculated Tc was less than six minutes (0.1 hours), a direct entry of six minutes was used as advised by the TR-55 model. Consistent with previous submissions and best practices, the sheet flow length for any Tc path was capped at 100 feet.

Curve Number (CN)

Within the pre-development model, the grass area adjacent to the building and subcatchment 1 and 2 were considered to be open space grass cover in fair condition with underlying soils in the C hydrologic soil group. The woods to the east of the site were modeled as woods in fair condition with C soils.

The post development condition saw a change in open area condition from fair to good condition cover with underlying C soils. We believe this assumption to be accurate as the infiltration capacity of the open area will be greatly improved due to the proposed landscaping, loaming, and seeding proposed to establish a vigorous landscaped cover. The woods area to the east of the site retained the same properties as the pre-development model.

Pre-development Calculations

The site consists of an already developed building and associated parking, grass landscaping, and a wooded area with wetlands at the rear of the site in the predevelopment condition. For the purpose of this analysis the land has been divided into four separate sub catchments.

- Subcatchment 1 – The first smaller subcatchment is located to the northwestern corner of the site near Route 1. The land is largely flat and impervious draining towards Route 1.
- Subcatchment 2 – The second subcatchment consists of the landscaped area near the southwest corner of the property, this flow sheets towards the catch basin located along South Freeport Road, a culvert passes the catch basin outflow to a 12" culvert that crosses South Freeport Road and outlets in a road side ditch.
- Subcatchment 3 – This subcatchment consists of the eastern portion of the building, rear parking lot, and wooded area. This runoff is directed towards the wetlands and is conveyed off site via a stream.
- Subcatchment X.1 – This subcatchment consists of the offsite tributary area along South Freeport Road and Route 1 that drains to CB-1 which then flows under South Freeport Road via the 12" culvert.
- Subcatchment X.2 – This subcatchment consists of the offsite tributary area along South Freeport Road and Route 1 that drains directly to the roadside ditch.

Peak flow rates for the pre-development storm events are as follows:

Table 3 – Pre-Development Peak Stormwater Flows			
Drainage Area	2-Year Storm Event (cfs)	10-Year Storm Event (cfs)	25-Year Storm Event (cfs)
POI #1	0.2	0.4	0.4
POI #2	1.9	3.3	4.4
POI #3	2.4	4.6	6.5

Post-development Calculations

The drainage patterns from the pre and post conditions remain the same with the exception of the post condition seeing an additional subcatchment due to the eastern portion of the parking lot and building collected by the filterra BMP. The subcatchments are as follows:

- Subcatchment 1 – Portion of runoff to the east of the site directed towards Route 1 North.
- Subcatchment 2 – This subcatchment consists of the impervious and landscaped area to the southwestern portion of the building. The runoff will be collected via field inlets and then plug into CB-1 along South Freeport Road where it will then outlet to the 12" culvert crossing South Freeport Road.
- Subcatchent 3.1 – This subcatchment is primarily impervious area in the form of roof runoff, pavement, and sidewalk to the eastern portion of the building that is tributary to the proposed filterra unit.
- **Subcatchment 3.2 – This portion of the site consists primarily of the gravel parking lot that is proposed to be paved, a portion of the driveway entrance, and the outdoor patio area. This subcatchment has been graded to sheet flow to a curb cut on the eastern end of the parking lot which will then flow down a riprap channel and into a plunge pool to help reduce velocities and settle larger sediment before discharging as uniform sheet flow to the wooded buffer prior to entering the stream.**
- **Subcatchment 3.3 – This portion of the site consists primarily of the parking lot expansion that will flow to an offline deep-sump hooded catch basin on the east of the parking expansion before discharging to the VUSF. A sediment forebay is proposed as part of the treatment train to settle sediments prior to flow entering the VUSF.**
- **Subcatchment 3.4 – This subcatchment consists of the VUSF embankments and bottom of pond that is self-contained.**
- Subcatchment X.1 – This subcatchment remains the same as in the pre development condition.
- Subcatchment X.2 – This subcatchment remains the same as in the pre development condition.

The following tables represents comparison of pre- development and post-development condition peak runoff rates for the proposed development and tributary areas.

Table 4 – Post-Development Peak Stormwater Flows			
Drainage Area	2-Year Storm Event (cfs)	10-Year Storm Event (cfs)	25-Year Storm Event (cfs)
POI #1	0.0	0.1	0.1
POI #2	2.1	3.6	4.8
POI #3	***1.9***	***3.7***	***5.3***

Table 5 – Comparison of Peak Flows						
Drainage Area	2-Year Storm Event (cfs)		10-Year Storm Event (cfs)		25-Year Storm Event (cfs)	
	Pre	Post	Pre	Post	Pre	Post
POI #1	0.2	0.0	0.4	0.1	0.4	0.1
POI #2	1.9	2.1	3.3	3.6	4.4	4.8
POI #3	2.4	***1.9***	4.6	***3.7***	6.5	***5.3***

As shown in Tables 3, 4, and 5, the net impact of the post development peak flows will remain at or below the predevelopment levels for points of interest 1 and 3. Point of interest 2 will see an increase in peak flow as it is conveyed to the public ditch along Route 1. Contrasting this with the significant decrease in flow towards the abutters (point of interest 1), this would be viewed as an overall benefit as the ditches have adequate capacity to handle the slight increase in peak flow (as shown in table 6) as opposed to sending concentrated flows to an abutting neighbor. There are additional benefits considering the increased runoff towards point of interest 2 will be exposed to a well vegetated ditch as opposed to flowing over the abutter's lot into the storm drain system. This will result in natural treatment and settling of contaminants as well as groundwater recharge in the area. A post-development watershed map developed for this project can be viewed in Attachment B, and a copy of the HydroCAD calculations is included within Attachment C of this report.

The only change in peak flow rates occur for POI #3 which remain below the pre-development flow rates. Please note that the VUSF has been intentionally oversized specifically to accommodate a future parking expansion. This expansion, if pursued, would be permitted under its own application; however, through the stormwater analysis, the Applicant does not intend to establish this "2023" post-development flowrate as the future pre-development flowrate. In other words, the 2023 post-development rates are artificially lowered because of oversizing the pond. If a future application comes forth, the original pre-development flowrates from pre-2021 will be utilized for comparison and a new hydrological model will

demonstrate the site's stormwater management and maintenance, or potential reduction, of peak flow rates compared to the existing conditions prior to the Applicant obtaining the property.

Ditch Capacity

This section will demonstrate that the proposed ditch has the capacity to convey the slight increase in flow proposed for this point of interest as opposed to continuing to send concentrated flows to the neighbor. This analysis was performed in HydroCAD to generate peak water elevations in the roadside ditch which can be seen in table 6. The geometry of the ditch was determined based off of field measurements taken on a site visit dated 8/25/2021, these values were input into HydroCAD which modeled the ditch as a reach.

Table 6 – Comparison of Peak Flows to Ditch					
2-Year Storm Event (cfs)		10-Year Storm Event (cfs)		25-Year Storm Event (cfs)	
Pre	Post	Pre	Post	Pre	Post
1.9	2.1	3.3	3.6	4.4	4.8

Using these peak flows, the channel flow depth was generated in HydroCAD by modeling the reach as a trapezoidal channel. The channel depth was measured to be approximately 3.5' deep, assuming a 0.5' allowable freeboard, the channel capacity was estimated to be a 3' depth. As such, the following table breaks down the peak flow depth from each storm event.

Table 7 – Ditch Capacity Analysis					
2-Year Peak Flow Depth (FT)		10-Year Peak Flow Depth (FT)		25-Year Peak Flow Depth (FT)	
Pre	Post	Pre	Post	Pre	Post
0.3	0.3	0.4	0.4	0.5	0.5

As viewed in the table, the roadside ditch has sufficient capacity to handle the increased flows as the peak flow depth in the channel will not change from the pre to post condition, and is currently operating at approximately 17% capacity for the 25-year storm.

SOILS

Onsite soil information includes the following:

- Soil Conservation Service Medium Intensity Soil Survey for Cumberland County

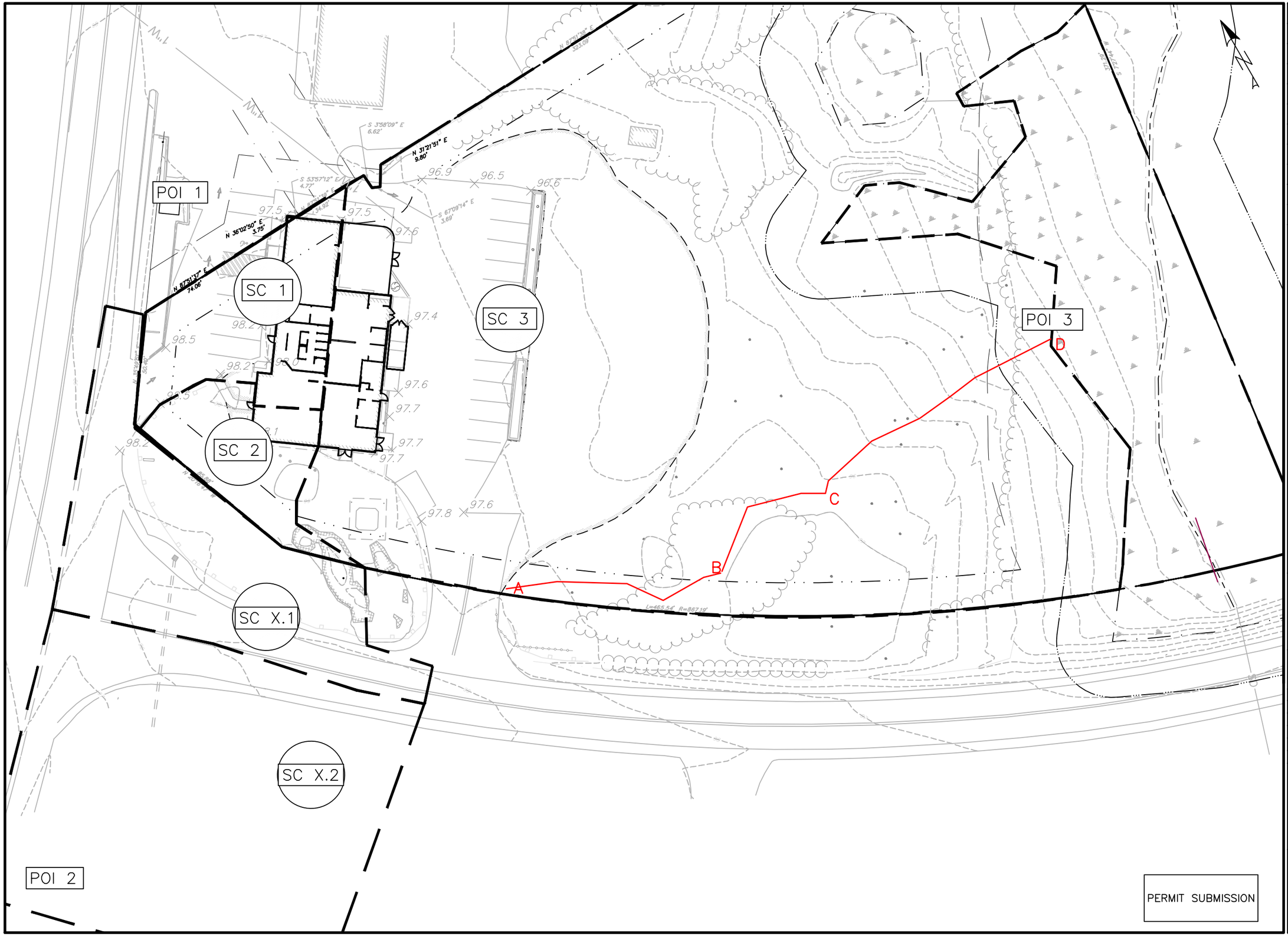
The applicant does not intend to perform a more intense hydric soil boundary delineation because no on-site wastewater or deep cuts are proposed as part of this project. The majority of the site is considered Nicholville very fine sandy loam under the hydrological group C and a portion of the bottom half of the property is considered Scantic silt loam under the hydrological group D. These delineations were taken into account when running the HydroCAD stormwater analysis.

CONCLUSION

The proposed development was designed to meet and exceed the requirements implemented by the Town of Freeport Zoning Ordinance, Section 529. Overall, a large portion of the site will fall under the "maintenance" definition established by the DEP. **The portion of the parking lot expansion that is not considered maintenance (new impervious area) has been sufficiently treated and detained to meet the Town of Freeport's Stormwater standards**. The proposed landscaping around the site will not only improve the aesthetic of the site, but will also provide increased infiltration capacity and pollutant removal capabilities. The impervious area on site will remain neutral due to the site improvements and the proposed water quality BMP will vastly improve the site from the existing condition which features untreated flow over cracked pavement and loose gravel which is a prime candidate for sediment transport. Lastly, the project will intercept concentrated flows that are currently discharging to the downstream neighbor and redirect the flows into an engineered conveyance system along the Route 1 ditchline without adversely impacting the existing infrastructure.

ATTACHMENTS

Attachment A: Pre-Development Watershed Map
Attachment B: Post-Development Watershed Map
Attachment C: HydroCAD Calculations
Attachment D: Soil Survey



ISSUED FOR	BY DATE
SITE PLAN	SJL 8/24/2021
COMMENT RESP.	SJL 9/2/2021

DRAWING NAME: PRE-DEVELOPMENT WATERSHED MAP

PROJECT NAME: 117 U.S. ROUTE 1 REDEVELOPMENT

CLIENT: MR 117 ROUTE ONE, LLC
1 BALSAM LANE, FREEPORT MAINE 04032

ACORN ENGINEERING, INC
65 HANOVER ST.
PORTLAND, MAINE 04101
(207) 775-2655

FILE:	JN_2.84
JN:	2.84
SCALE:	1"=40'
DESIGN BY:	SJL
DRAWN BY:	NPH
CHECKED BY:	WHS

DRAWING NO.

PRE

N/F
CASCO BAY TRADING POST 1 LLC
MAP 25, LOT 4
BK. 23156, PG. 137

#5 REBAR
FOUND 2" A.G.

CAPPED #5 REBAR
FOUND 8" A.G.
PLS #1252 (HELD)

POI 1

POI 3

SC 1

SC 2

SC 3.1

SC 3.2

SC 3.3

SC 3.4

SC X.1

SC X.2

P1

P2

RIM = 97.00
OUT = 12" HDPE
INV. = 93.90
SUMP= 92.87

12" HDPE
INV.=93.0'.

N/F & DEVELOPMENT
CUSTOM PROPERTY LOT 12
MAP 25, LOT 304
BK. 8606, PG.

6"X6" GRANITE MONU
ENGRAVED "H" FOUND
4" A.G. (HELD)

A
B
C
D
E

PERMIT SUBMISSION

ISSUED FOR	BY DATE
SITE PLAN	SJL 8/24/2021
COMMENT RESP.	SJL 9/2/2021
PARKING EXP.	SJL 5/31/2023
COMMENT RESP.	SJL 6/14/2023

DRAWING NAME: POST-DEVELOPMENT WATERSHED MAP

PROJECT NAME: 117 U.S. ROUTE 1 REDEVELOPMENT

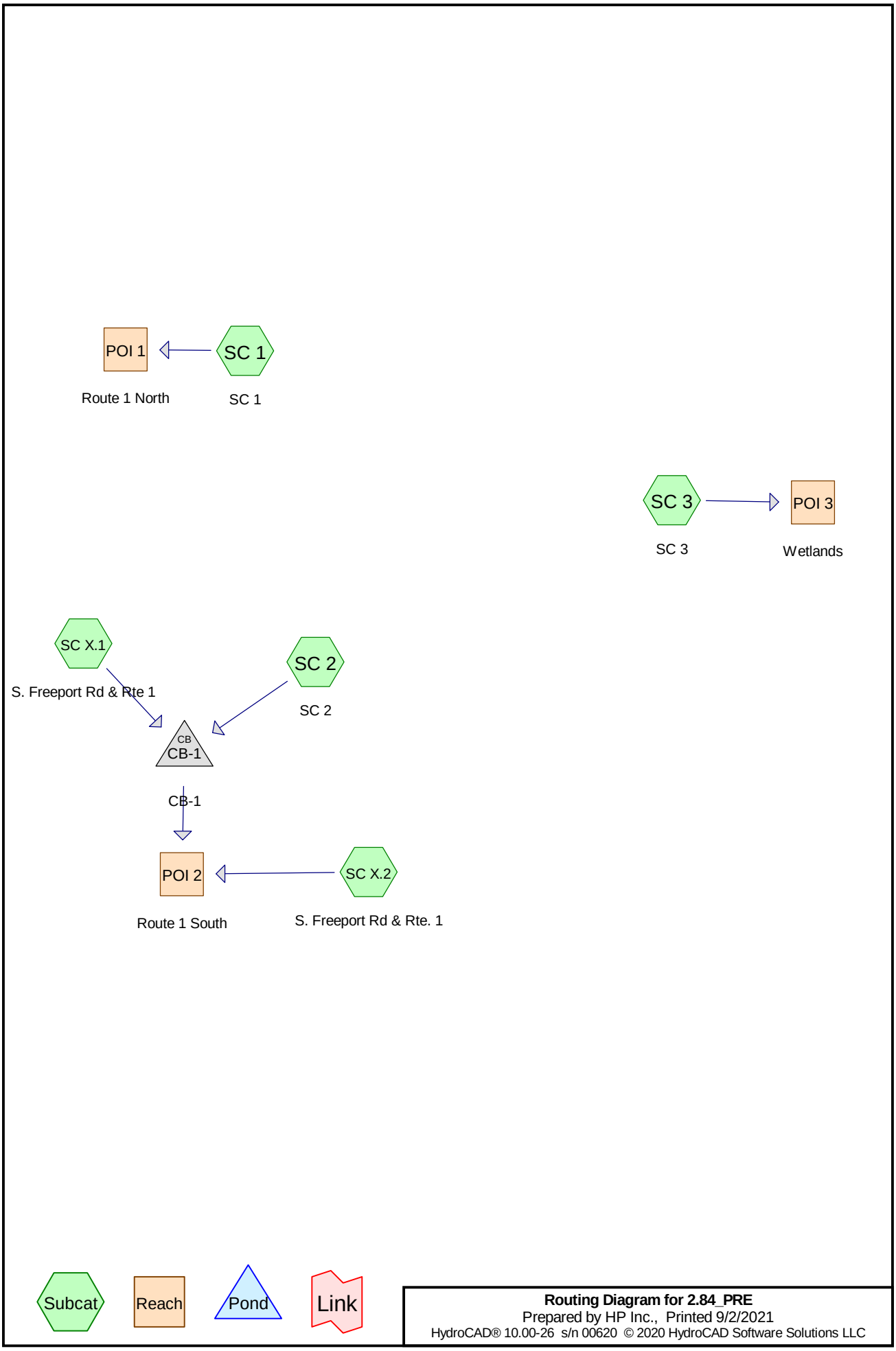
CLIENT: MR 117 ROUTE ONE, LLC
1 BALSAM LANE, FREEPORT MAINE 04032

ACORN ENGINEERING, INC
65 HANOVER ST.
PORTLAND, MAINE 04101
(207) 775-2655

FILE:	JN_2.84
JN:	2.84
SCALE:	1"=40'
DESIGN BY:	SJL
DRAWN BY:	NPH
CHECKED BY:	WHS

DRAWING NO.

POST



Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
23,481	79	50-75% Grass cover, Fair, HSG C (SC 1, SC 2, SC X.1, SC X.2)
15,285	96	Gravel surface (SC 3)
150	74	Landscaped island, >75% Grass cover, Good, HSG C (SC 3)
12,776	98	Paved Parking/Roof/Gazebo/Shed (SC 3)
5,735	98	Paved parking (SC X.2)
2,974	98	Paved parking and Roof (SC 2)
3,228	98	Paved parking, HSG C (SC 1)
7,073	98	South Freeport/Route 1 (SC X.1)
60,232	73	Woods, Fair, HSG C (SC 3)
130,934	**83**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
87,091	HSG C	SC 1, SC 2, SC 3, SC X.1, SC X.2
0	HSG D	
43,843	Other	SC 2, SC 3, SC X.1, SC X.2
130,934		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover
0	0	23,481	0	0	23,481	50-75% Grass cover, Fair
0	0	0	0	15,285	15,285	Gravel surface
0	0	150	0	0	150	Landscaped island, >75% Grass cover, Good
0	0	0	0	12,776	12,776	Paved Parking/Roof/Gazebo/Shed
0	0	3,228	0	5,735	8,963	Paved parking
0	0	0	0	2,974	2,974	Paved parking and Roof
0	0	0	0	7,073	7,073	South Freeport/Route 1
0	0	60,232	0	0	60,232	Woods, Fair
0	**0**	**87,091**	**0**	**43,843**	**130,934**	**TOTAL AREA**

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	CB-1	93.90	93.00	75.0	0.0120	0.012	12.0	0.0	0.0

Time span=1.00-36.00 hrs, dt=0.01 hrs, 3501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment SC 1: SC 1 Runoff Area=3,383 sf 95.42% Impervious Runoff Depth=2.76"
Tc=6.0 min CN=97 Runoff=0.23 cfs 777 cf

Subcatchment SC 2: SC 2 Runoff Area=5,761 sf 51.62% Impervious Runoff Depth=1.99"
Tc=6.0 min CN=89 Runoff=0.31 cfs 956 cf

Subcatchment SC 3: SC 3 Runoff Area=88,443 sf 14.45% Impervious Runoff Depth=1.39"
Flow Length=289' Tc=16.2 min CN=81 Runoff=2.40 cfs 10,251 cf

Subcatchment SC X.1: S. Freeport Rd & Rte Runoff Area=10,837 sf 65.27% Impervious Runoff Depth=2.16"
Tc=6.0 min CN=91 Runoff=0.62 cfs 1,955 cf

Subcatchment SC X.2: S. Freeport Rd & Runoff Area=22,510 sf 25.48% Impervious Runoff Depth=1.60"
Tc=6.0 min CN=84 Runoff=0.97 cfs 2,999 cf

Reach POI 1: Route 1 North Inflow=0.23 cfs 777 cf
Outflow=0.23 cfs 777 cf

Reach POI 2: Route 1 South Avg. Flow Depth=0.31' Max Vel=2.32 fps Inflow=1.90 cfs 5,910 cf
n=0.035 L=100.0' S=0.0200 '/' Capacity=278.26 cfs Outflow=1.89 cfs 5,910 cf

Reach POI 3: Wetlands Inflow=2.40 cfs 10,251 cf
Outflow=2.40 cfs 10,251 cf

Pond CB-1: CB-1 Peak Elev=94.41' Inflow=0.93 cfs 2,910 cf
12.0" Round Culvert n=0.012 L=75.0' S=0.0120 '/' Outflow=0.93 cfs 2,910 cf

Total Runoff Area = 130,934 sf Runoff Volume = 16,938 cf Average Runoff Depth = 1.55"
75.72% Pervious = 99,148 sf 24.28% Impervious = 31,786 sf

Summary for Subcatchment SC 1: SC 1

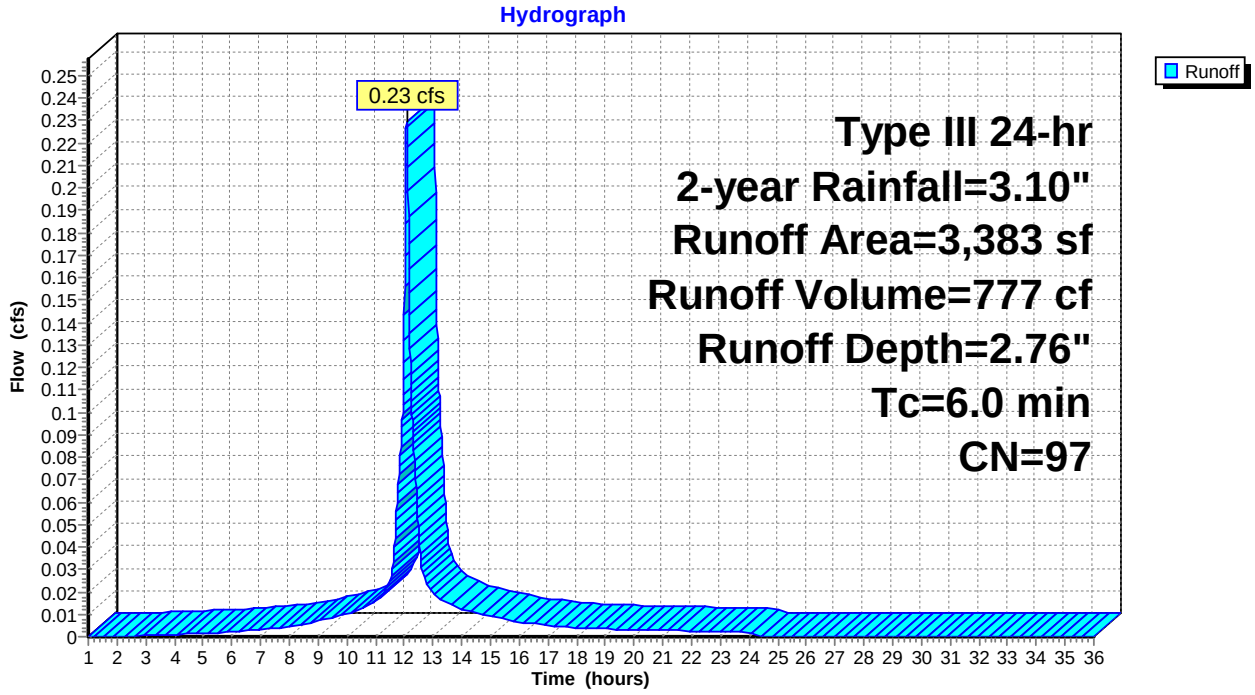
Runoff = 0.23 cfs @ 12.08 hrs, Volume= 777 cf, Depth= 2.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
3,228	98	Paved parking, HSG C
155	79	50-75% Grass cover, Fair, HSG C
3,383	97	Weighted Average
155		4.58% Pervious Area
3,228		95.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, min. Tc (0.1 hour)**

Subcatchment SC 1: SC 1



Summary for Subcatchment SC 2: SC 2

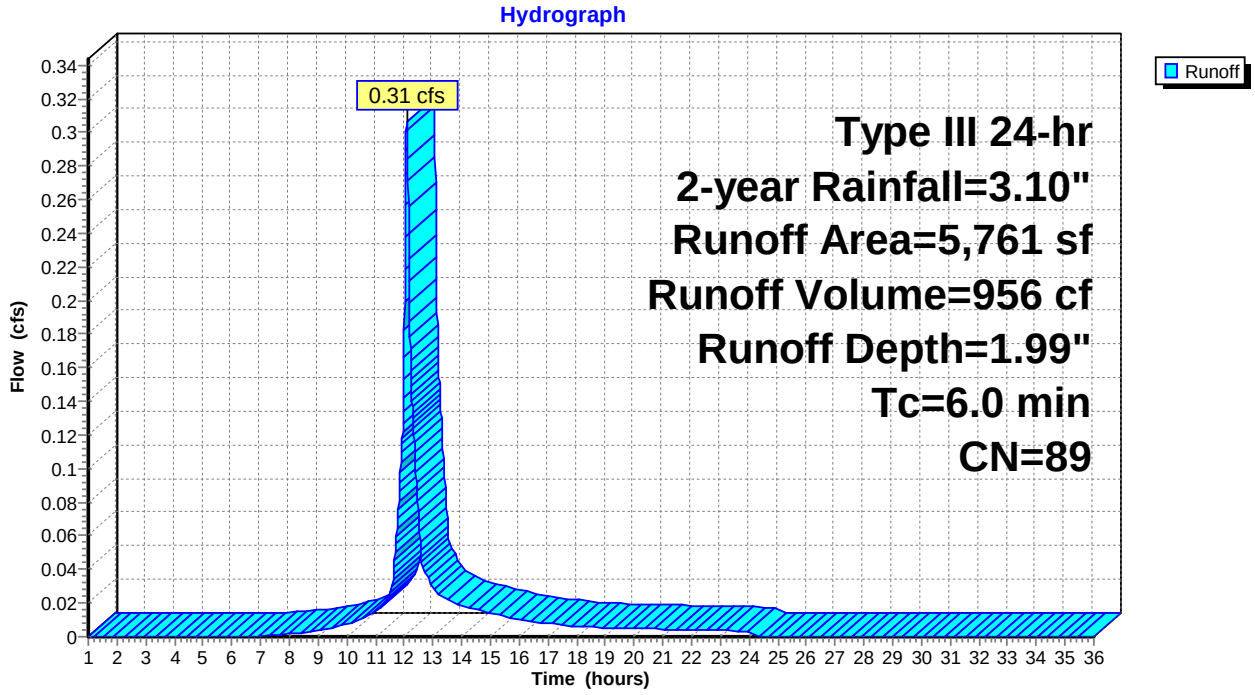
Runoff = 0.31 cfs @ 12.09 hrs, Volume= 956 cf, Depth= 1.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	2,974	98	Paved parking and Roof
	2,787	79	50-75% Grass cover, Fair, HSG C
	5,761	89	Weighted Average
	2,787		48.38% Pervious Area
	2,974		51.62% Impervious Area

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

Subcatchment SC 2: SC 2



Summary for Subcatchment SC 3: SC 3

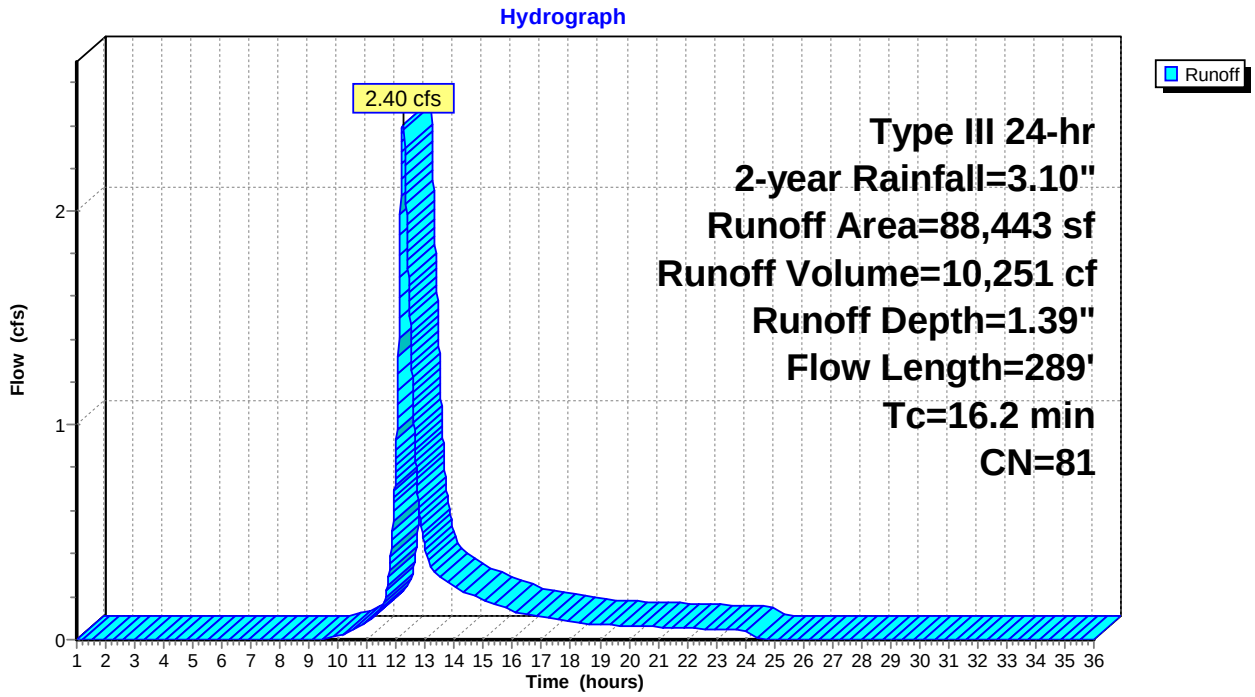
Runoff = 2.40 cfs @ 12.23 hrs, Volume= 10,251 cf, Depth= 1.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
	60,232	73	Woods, Fair, HSG C
*	15,285	96	Gravel surface
*	12,776	98	Paved Parking/Roof/Gazebo/Shed
*	150	74	Landscaped island, >75% Grass cover, Good, HSG C
	88,443	81	Weighted Average
	75,667		85.55% Pervious Area
	12,776		14.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0100	0.13		**Sheet Flow, 100' Sheet Flow (A to B)** Grass: Short n= 0.150 P2= 3.10"
1.3	65	0.0300	0.87		**Shallow Concentrated Flow, Sheet flow to SCF (B to C)** Woodland Kv= 5.0 fps
1.8	124	0.0500	1.12		**Shallow Concentrated Flow, Steep Slopes (C to D)** Woodland Kv= 5.0 fps
16.2	289	Total			

Subcatchment SC 3: SC 3



Summary for Subcatchment SC X.1: S. Freeport Rd & Rte 1

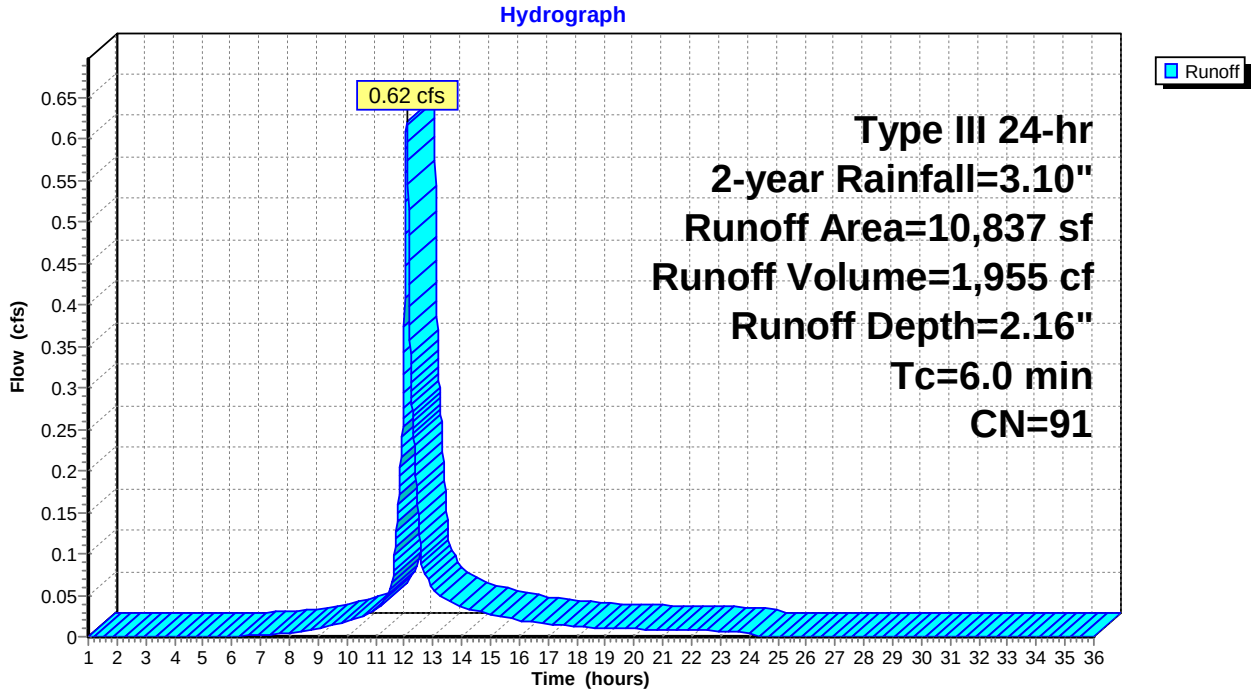
Runoff = 0.62 cfs @ 12.09 hrs, Volume= 1,955 cf, Depth= 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	7,073	98	South Freeport/Route 1
	3,764	79	50-75% Grass cover, Fair, HSG C
	10,837	91	Weighted Average
	3,764		34.73% Pervious Area
	7,073		65.27% Impervious Area

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

Subcatchment SC X.1: S. Freeport Rd & Rte 1



Summary for Subcatchment SC X.2: S. Freeport Rd & Rte. 1

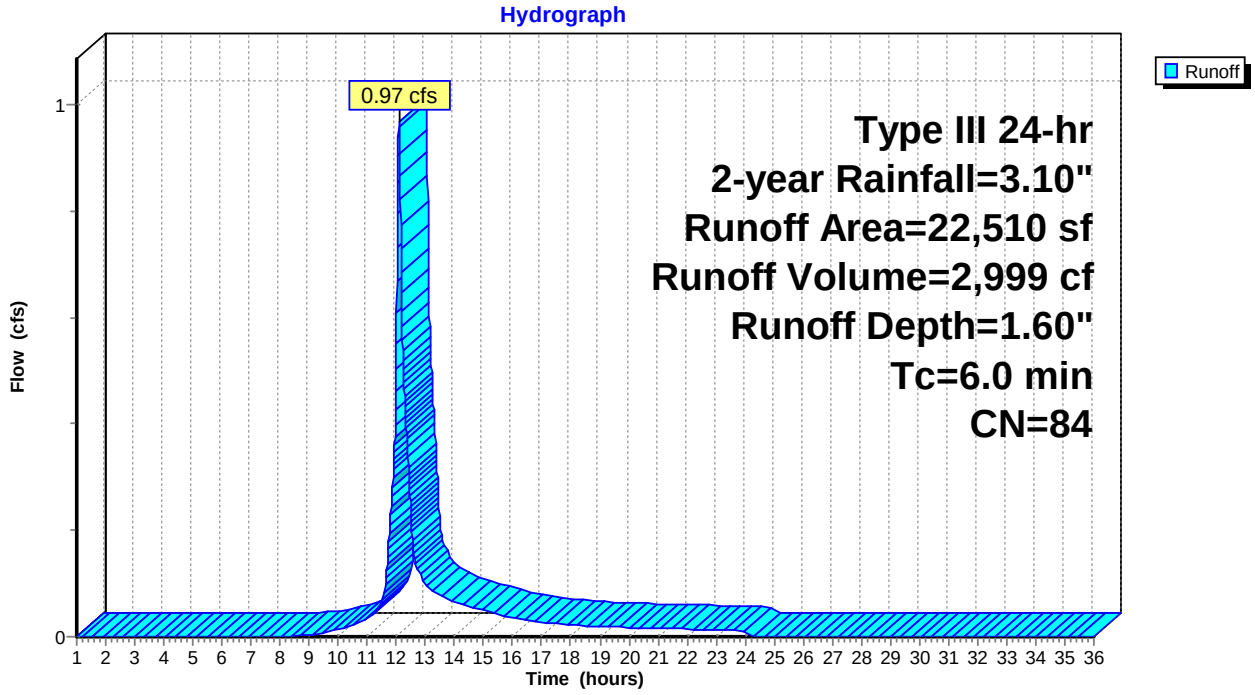
Runoff = 0.97 cfs @ 12.09 hrs, Volume= 2,999 cf, Depth= 1.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	5,735	98	Paved parking
	16,775	79	50-75% Grass cover, Fair, HSG C
	22,510	84	Weighted Average
	16,775		74.52% Pervious Area
	5,735		25.48% Impervious Area

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

Subcatchment SC X.2: S. Freeport Rd & Rte. 1

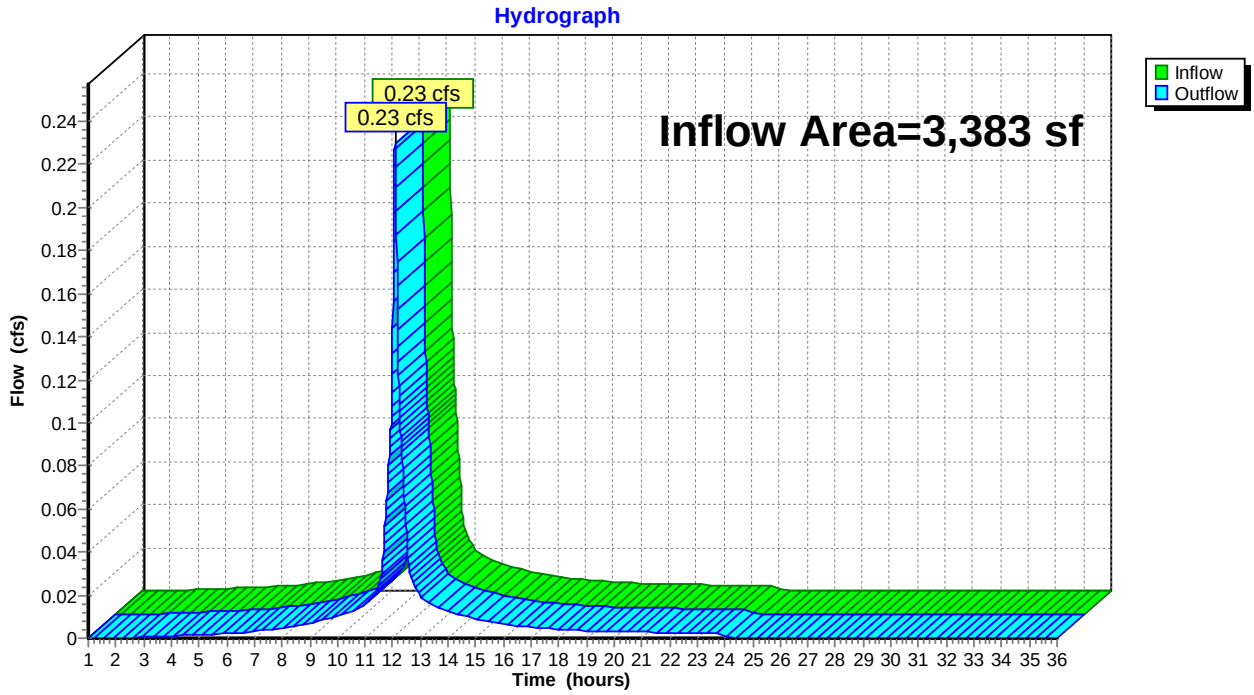


Summary for Reach POI 1: Route 1 North

Inflow Area = 3,383 sf, 95.42% Impervious, Inflow Depth = 2.76" for 2-year event
Inflow = 0.23 cfs @ 12.08 hrs, Volume= 777 cf
Outflow = 0.23 cfs @ 12.08 hrs, Volume= 777 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach POI 1: Route 1 North



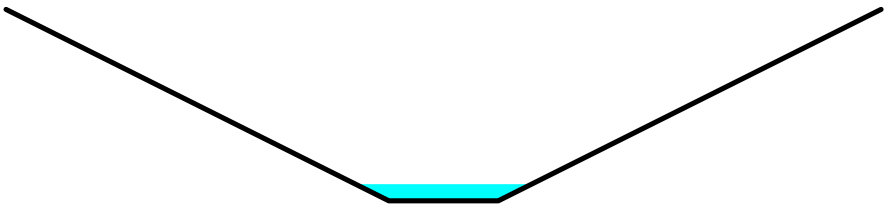
Summary for Reach POI 2: Route 1 South

Inflow Area = 39,108 sf, 40.35% Impervious, Inflow Depth = 1.81" for 2-year event
Inflow = 1.90 cfs @ 12.09 hrs, Volume= 5,910 cf
Outflow = 1.89 cfs @ 12.10 hrs, Volume= 5,910 cf, Atten= 1%, Lag= 0.5 min

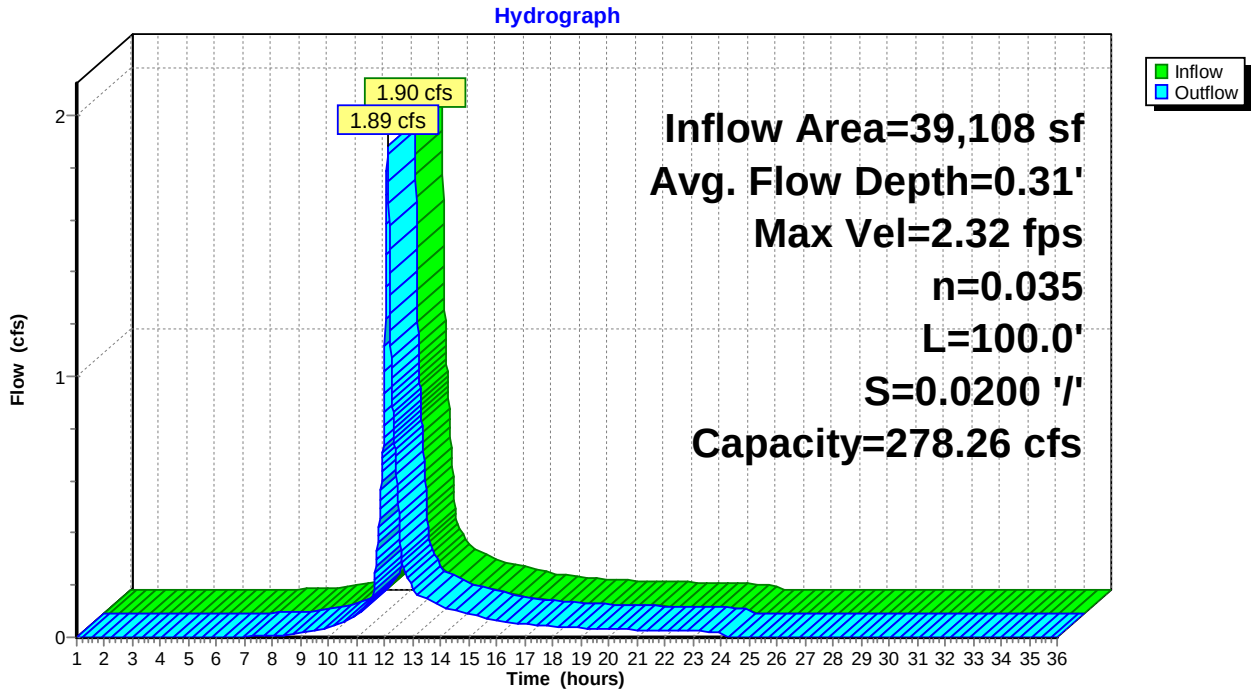
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.32 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 0.75 fps, Avg. Travel Time= 2.2 min

Peak Storage= 81 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.31'
Bank-Full Depth= 3.50' Flow Area= 31.5 sf, Capacity= 278.26 cfs

2.00' x 3.50' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 2.0 '/' Top Width= 16.00'
Length= 100.0' Slope= 0.0200 '/'
Inlet Invert= 93.00', Outlet Invert= 91.00'



Reach POI 2: Route 1 South

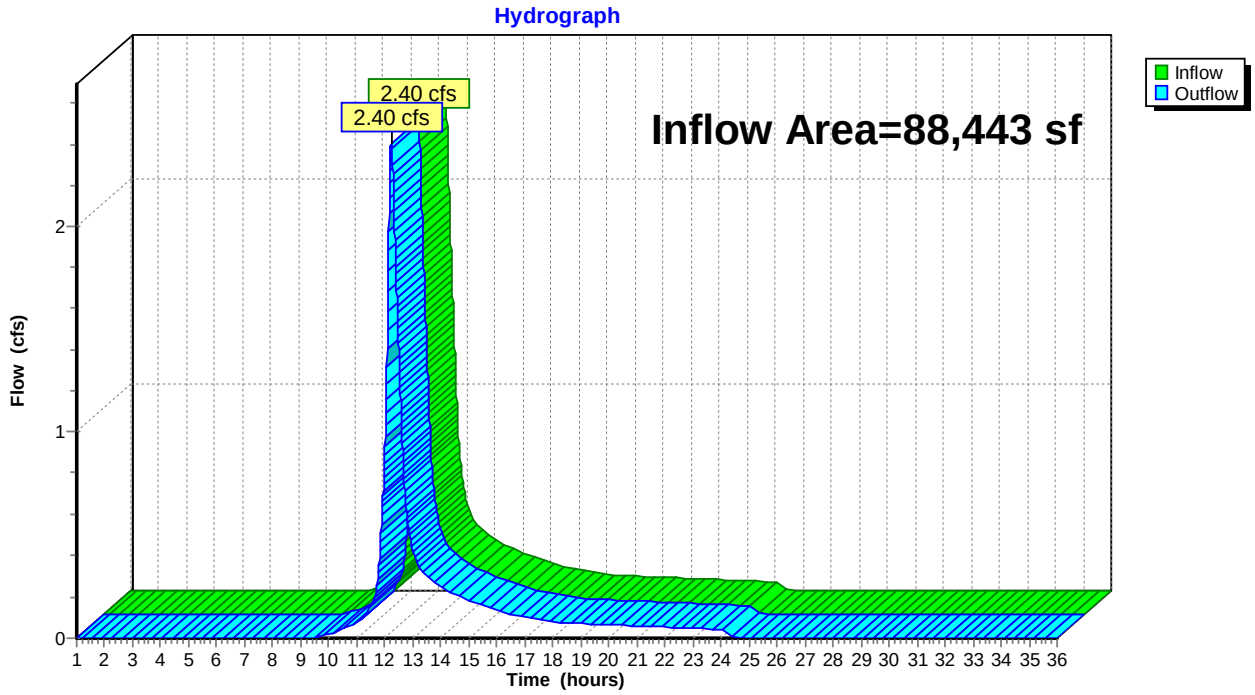


Summary for Reach POI 3: Wetlands

Inflow Area = 88,443 sf, 14.45% Impervious, Inflow Depth = 1.39" for 2-year event
Inflow = 2.40 cfs @ 12.23 hrs, Volume= 10,251 cf
Outflow = 2.40 cfs @ 12.23 hrs, Volume= 10,251 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach POI 3: Wetlands



Summary for Pond CB-1: CB-1

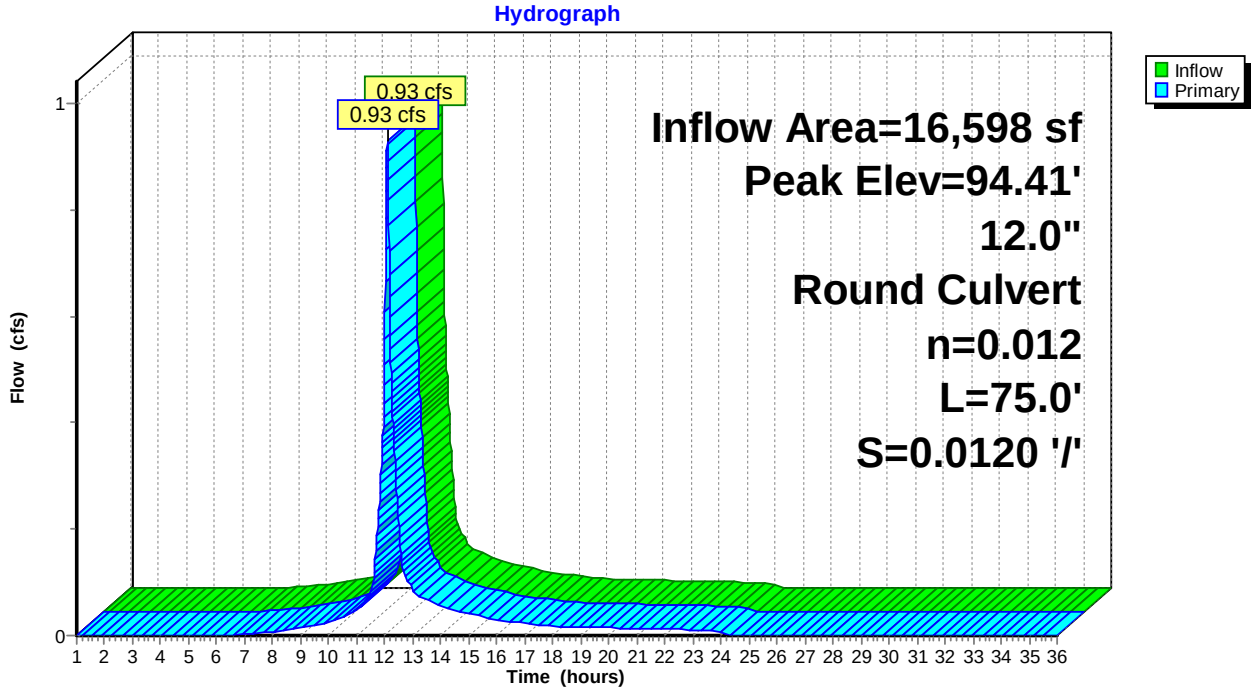
Inflow Area = 16,598 sf, 60.53% Impervious, Inflow Depth = 2.10" for 2-year event
Inflow = 0.93 cfs @ 12.09 hrs, Volume= 2,910 cf
Outflow = 0.93 cfs @ 12.09 hrs, Volume= 2,910 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.93 cfs @ 12.09 hrs, Volume= 2,910 cf

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Peak Elev= 94.41' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	93.90'	**12.0" Round Culvert** L= 75.0' Ke= 0.600 Inlet / Outlet Invert= 93.90' / 93.00' S= 0.0120 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.93 cfs @ 12.09 hrs HW=94.41' TW=93.31' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.93 cfs @ 2.29 fps)

Pond CB-1: CB-1



Time span=1.00-36.00 hrs, dt=0.01 hrs, 3501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment SC 1: SC 1 Runoff Area=3,383 sf 95.42% Impervious Runoff Depth=4.25"
Tc=6.0 min CN=97 Runoff=0.35 cfs 1,198 cf

Subcatchment SC 2: SC 2 Runoff Area=5,761 sf 51.62% Impervious Runoff Depth=3.39"
Tc=6.0 min CN=89 Runoff=0.51 cfs 1,628 cf

Subcatchment SC 3: SC 3 Runoff Area=88,443 sf 14.45% Impervious Runoff Depth=2.63"
Flow Length=289' Tc=16.2 min CN=81 Runoff=4.61 cfs 19,419 cf

Subcatchment SC X.1: S. Freeport Rd & Rte Runoff Area=10,837 sf 65.27% Impervious Runoff Depth=3.59"
Tc=6.0 min CN=91 Runoff=1.01 cfs 3,246 cf

Subcatchment SC X.2: S. Freeport Rd & Runoff Area=22,510 sf 25.48% Impervious Runoff Depth=2.91"
Tc=6.0 min CN=84 Runoff=1.75 cfs 5,453 cf

Reach POI 1: Route 1 North Inflow=0.35 cfs 1,198 cf
Outflow=0.35 cfs 1,198 cf

Reach POI 2: Route 1 South Avg. Flow Depth=0.42' Max Vel=2.73 fps Inflow=3.28 cfs 10,326 cf
n=0.035 L=100.0' S=0.0200 '/' Capacity=278.26 cfs Outflow=3.26 cfs 10,326 cf

Reach POI 3: Wetlands Inflow=4.61 cfs 19,419 cf
Outflow=4.61 cfs 19,419 cf

Pond CB-1: CB-1 Peak Elev=94.59' Inflow=1.52 cfs 4,874 cf
12.0" Round Culvert n=0.012 L=75.0' S=0.0120 '/' Outflow=1.52 cfs 4,874 cf

Total Runoff Area = 130,934 sf Runoff Volume = 30,943 cf Average Runoff Depth = 2.84"
75.72% Pervious = 99,148 sf 24.28% Impervious = 31,786 sf

Summary for Subcatchment SC 1: SC 1

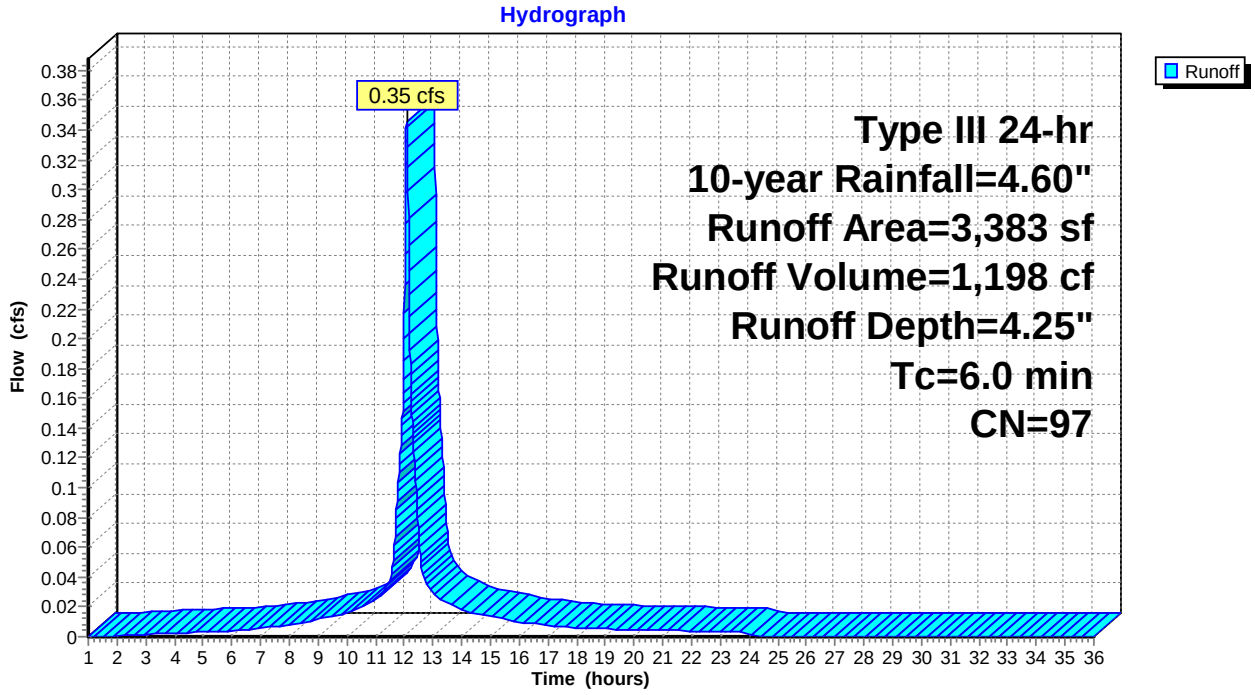
Runoff = 0.35 cfs @ 12.08 hrs, Volume= 1,198 cf, Depth= 4.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
3,228	98	Paved parking, HSG C
155	79	50-75% Grass cover, Fair, HSG C
3,383	97	Weighted Average
155		4.58% Pervious Area
3,228		95.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, min. Tc (0.1 hour)**

Subcatchment SC 1: SC 1



Summary for Subcatchment SC 2: SC 2

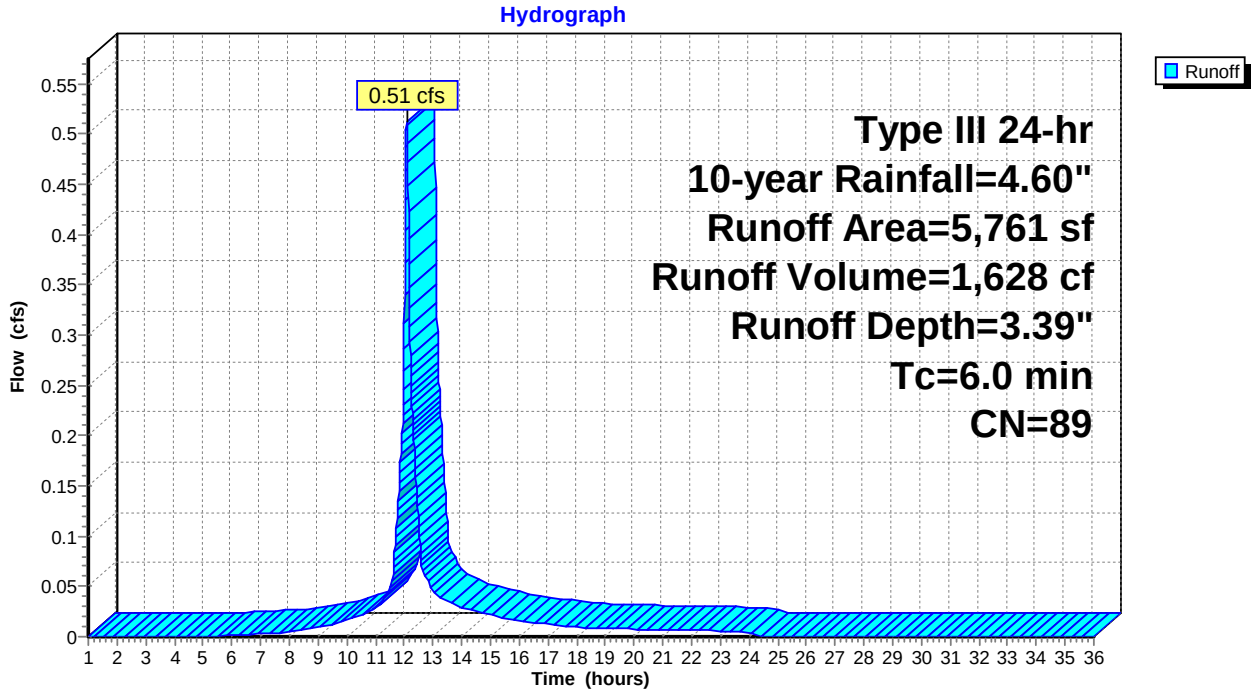
Runoff = 0.51 cfs @ 12.09 hrs, Volume= 1,628 cf, Depth= 3.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	2,974	98	Paved parking and Roof
	2,787	79	50-75% Grass cover, Fair, HSG C
	5,761	89	Weighted Average
	2,787		48.38% Pervious Area
	2,974		51.62% Impervious Area

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

Subcatchment SC 2: SC 2



Summary for Subcatchment SC 3: SC 3

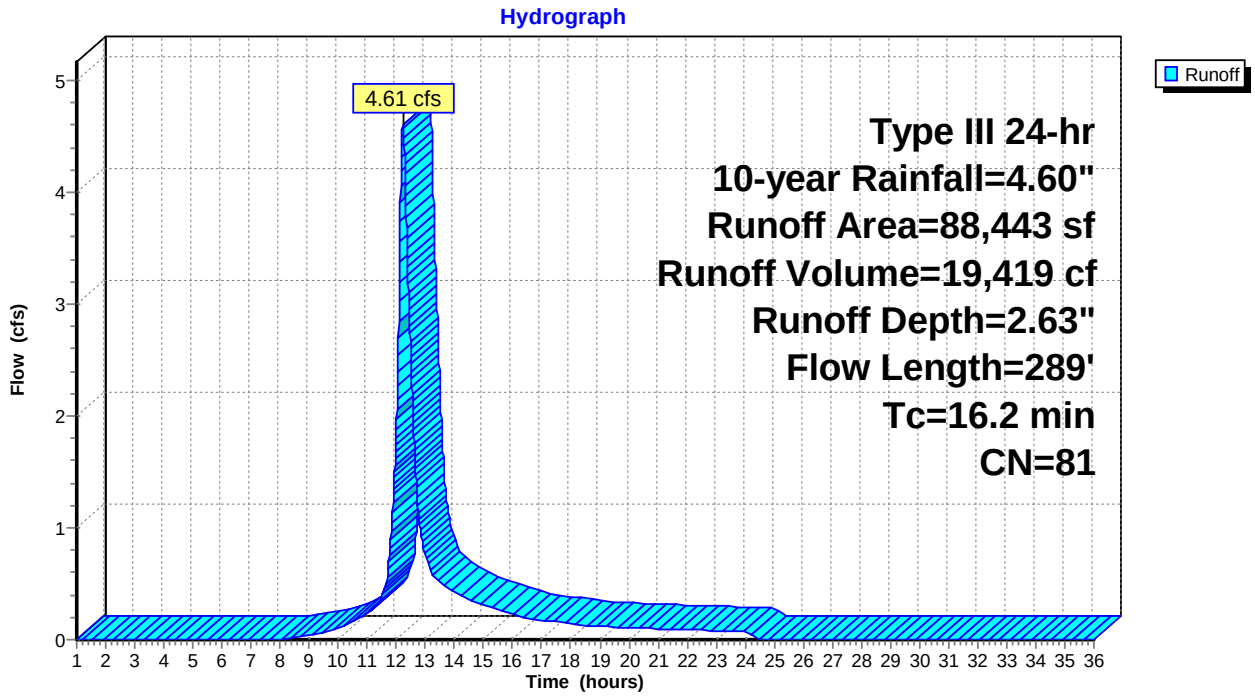
Runoff = 4.61 cfs @ 12.22 hrs, Volume= 19,419 cf, Depth= 2.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
	60,232	73	Woods, Fair, HSG C
*	15,285	96	Gravel surface
*	12,776	98	Paved Parking/Roof/Gazebo/Shed
*	150	74	Landscaped island, >75% Grass cover, Good, HSG C
	88,443	81	Weighted Average
	75,667		85.55% Pervious Area
	12,776		14.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0100	0.13		**Sheet Flow, 100' Sheet Flow (A to B)** Grass: Short n= 0.150 P2= 3.10"
1.3	65	0.0300	0.87		**Shallow Concentrated Flow, Sheet flow to SCF (B to C)** Woodland Kv= 5.0 fps
1.8	124	0.0500	1.12		**Shallow Concentrated Flow, Steep Slopes (C to D)** Woodland Kv= 5.0 fps
16.2	289	Total			

Subcatchment SC 3: SC 3



Summary for Subcatchment SC X.1: S. Freeport Rd & Rte 1

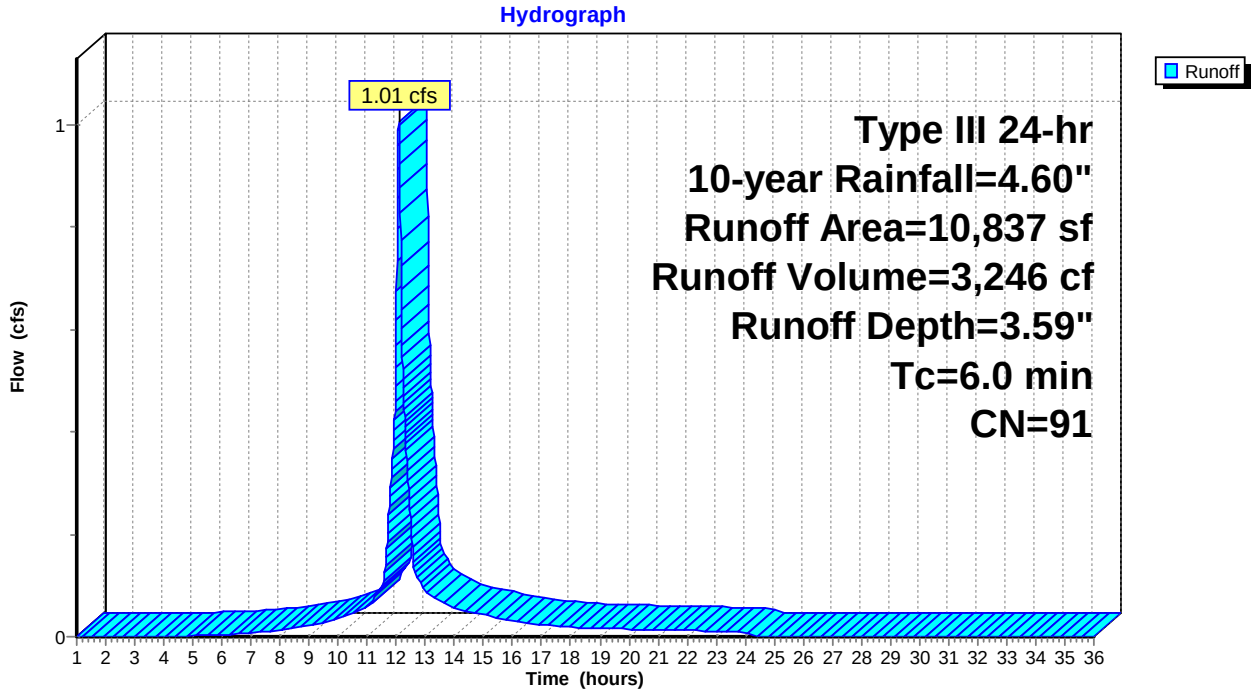
Runoff = 1.01 cfs @ 12.08 hrs, Volume= 3,246 cf, Depth= 3.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	7,073	98	South Freeport/Route 1
	3,764	79	50-75% Grass cover, Fair, HSG C
	10,837	91	Weighted Average
	3,764		34.73% Pervious Area
	7,073		65.27% Impervious Area

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

Subcatchment SC X.1: S. Freeport Rd & Rte 1



Summary for Subcatchment SC X.2: S. Freeport Rd & Rte. 1

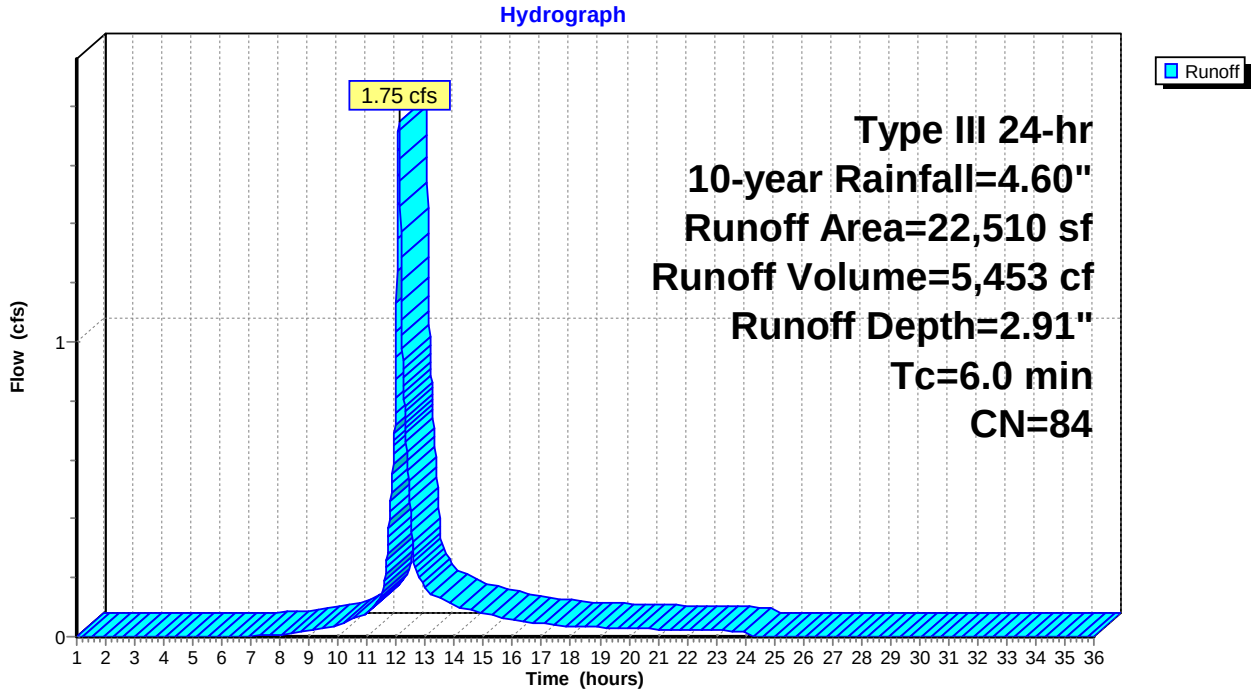
Runoff = 1.75 cfs @ 12.09 hrs, Volume= 5,453 cf, Depth= 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	5,735	98	Paved parking
	16,775	79	50-75% Grass cover, Fair, HSG C
	22,510	84	Weighted Average
	16,775		74.52% Pervious Area
	5,735		25.48% Impervious Area

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

Subcatchment SC X.2: S. Freeport Rd & Rte. 1

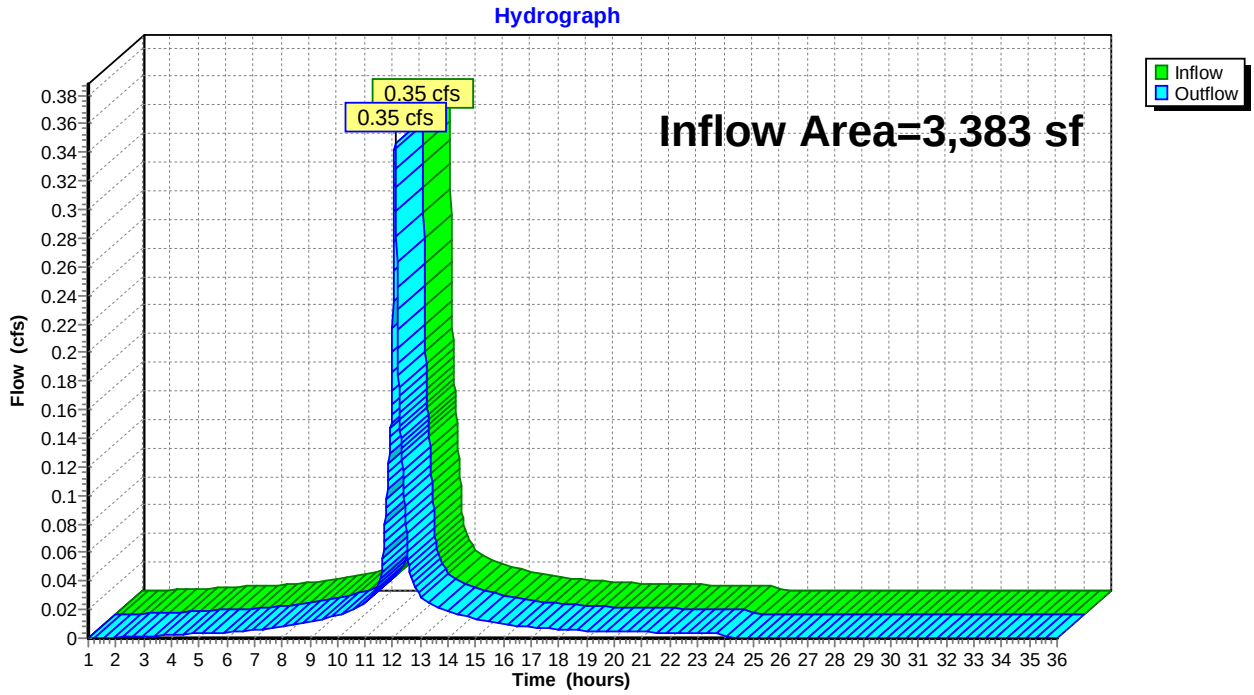


Summary for Reach POI 1: Route 1 North

Inflow Area = 3,383 sf, 95.42% Impervious, Inflow Depth = 4.25" for 10-year event
Inflow = 0.35 cfs @ 12.08 hrs, Volume= 1,198 cf
Outflow = 0.35 cfs @ 12.08 hrs, Volume= 1,198 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach POI 1: Route 1 North



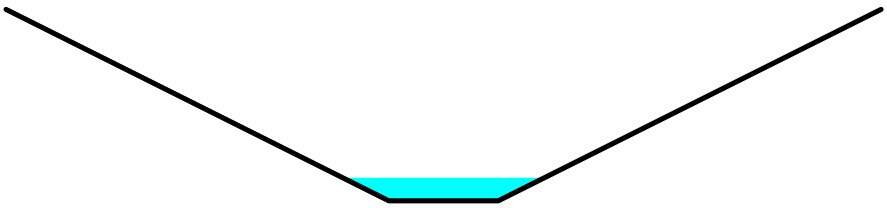
Summary for Reach POI 2: Route 1 South

Inflow Area = 39,108 sf, 40.35% Impervious, Inflow Depth = 3.17" for 10-year event
Inflow = 3.28 cfs @ 12.09 hrs, Volume= 10,326 cf
Outflow = 3.26 cfs @ 12.09 hrs, Volume= 10,326 cf, Atten= 0%, Lag= 0.4 min

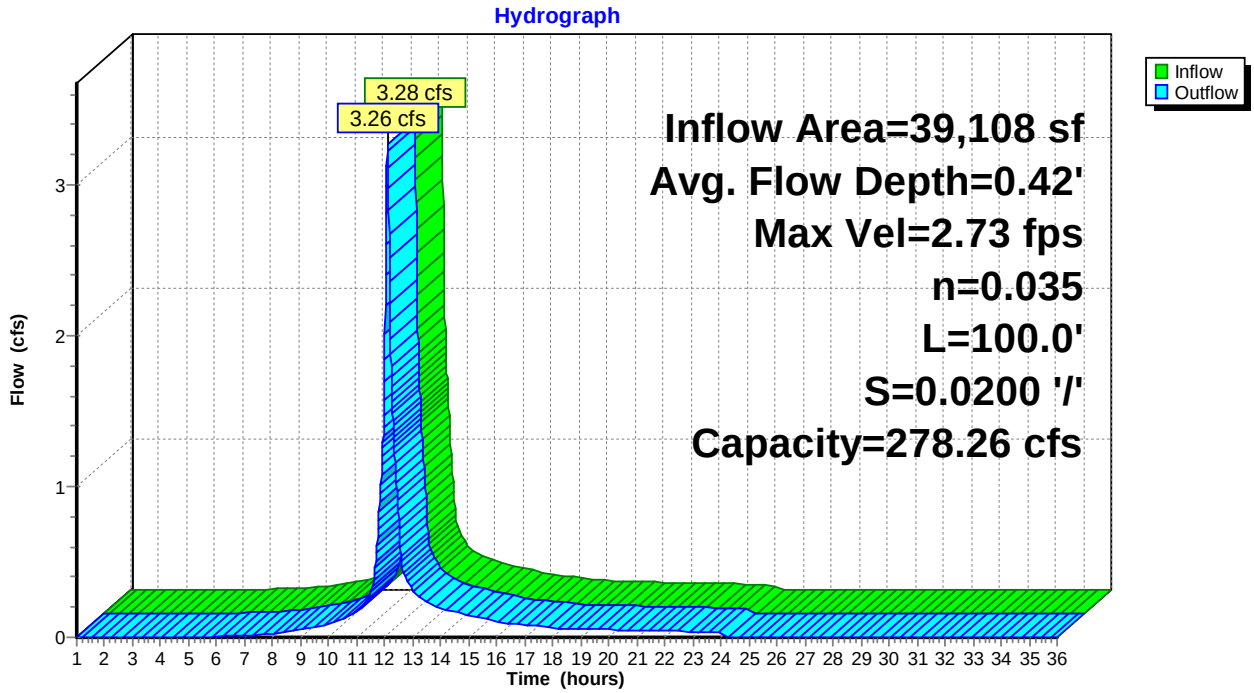
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.73 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 0.83 fps, Avg. Travel Time= 2.0 min

Peak Storage= 119 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.42'
Bank-Full Depth= 3.50' Flow Area= 31.5 sf, Capacity= 278.26 cfs

2.00' x 3.50' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 2.0 '/' Top Width= 16.00'
Length= 100.0' Slope= 0.0200 '/'
Inlet Invert= 93.00', Outlet Invert= 91.00'



Reach POI 2: Route 1 South

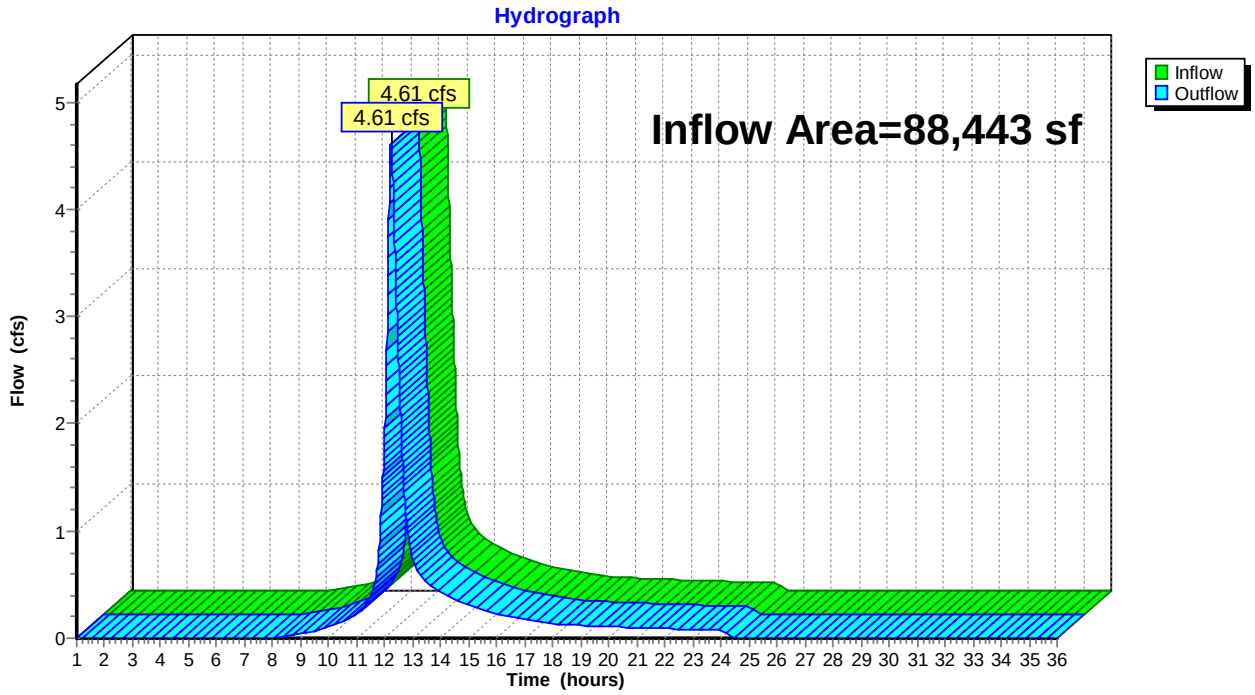


Summary for Reach POI 3: Wetlands

Inflow Area = 88,443 sf, 14.45% Impervious, Inflow Depth = 2.63" for 10-year event
Inflow = 4.61 cfs @ 12.22 hrs, Volume= 19,419 cf
Outflow = 4.61 cfs @ 12.22 hrs, Volume= 19,419 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach POI 3: Wetlands



Summary for Pond CB-1: CB-1

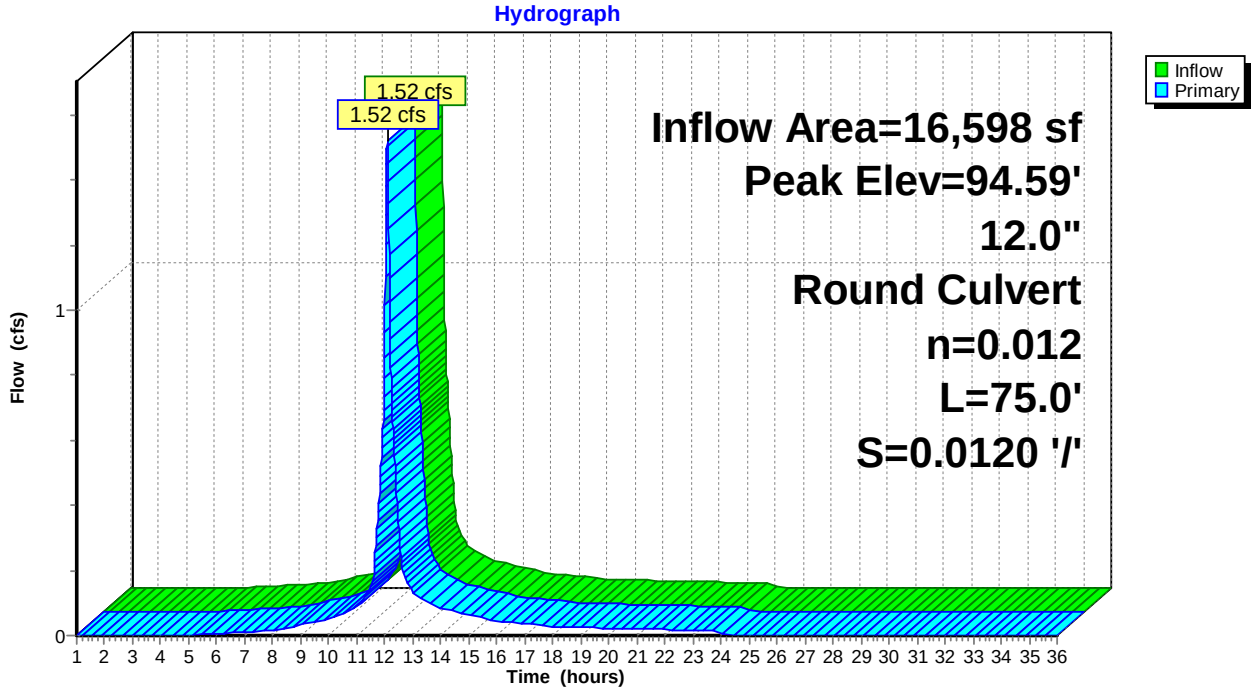
Inflow Area = 16,598 sf, 60.53% Impervious, Inflow Depth = 3.52" for 10-year event
Inflow = 1.52 cfs @ 12.09 hrs, Volume= 4,874 cf
Outflow = 1.52 cfs @ 12.09 hrs, Volume= 4,874 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.52 cfs @ 12.09 hrs, Volume= 4,874 cf

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Peak Elev= 94.59' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	93.90'	**12.0" Round Culvert** L= 75.0' Ke= 0.600 Inlet / Outlet Invert= 93.90' / 93.00' S= 0.0120 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.52 cfs @ 12.09 hrs HW=94.59' TW=93.42' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.52 cfs @ 2.64 fps)

Pond CB-1: CB-1



Time span=1.00-36.00 hrs, dt=0.01 hrs, 3501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment SC 1: SC 1 Runoff Area=3,383 sf 95.42% Impervious Runoff Depth=5.44"
Tc=6.0 min CN=97 Runoff=0.44 cfs 1,535 cf

Subcatchment SC 2: SC 2 Runoff Area=5,761 sf 51.62% Impervious Runoff Depth=4.54"
Tc=6.0 min CN=89 Runoff=0.68 cfs 2,180 cf

Subcatchment SC 3: SC 3 Runoff Area=88,443 sf 14.45% Impervious Runoff Depth=3.70"
Flow Length=289' Tc=16.2 min CN=81 Runoff=6.46 cfs 27,284 cf

Subcatchment SC X.1: S. Freeport Rd & Rte Runoff Area=10,837 sf 65.27% Impervious Runoff Depth=4.76"
Tc=6.0 min CN=91 Runoff=1.32 cfs 4,300 cf

Subcatchment SC X.2: S. Freeport Rd & Runoff Area=22,510 sf 25.48% Impervious Runoff Depth=4.01"
Tc=6.0 min CN=84 Runoff=2.40 cfs 7,521 cf

Reach POI 1: Route 1 North Inflow=0.44 cfs 1,535 cf
Outflow=0.44 cfs 1,535 cf

Reach POI 2: Route 1 South Avg. Flow Depth=0.49' Max Vel=2.98 fps Inflow=4.39 cfs 14,002 cf
n=0.035 L=100.0' S=0.0200 '/' Capacity=278.26 cfs Outflow=4.38 cfs 14,002 cf

Reach POI 3: Wetlands Inflow=6.46 cfs 27,284 cf
Outflow=6.46 cfs 27,284 cf

Pond CB-1: CB-1 Peak Elev=94.72' Inflow=1.99 cfs 6,481 cf
12.0" Round Culvert n=0.012 L=75.0' S=0.0120 '/' Outflow=1.99 cfs 6,481 cf

Total Runoff Area = 130,934 sf Runoff Volume = 42,821 cf Average Runoff Depth = 3.92"
75.72% Pervious = 99,148 sf 24.28% Impervious = 31,786 sf

Summary for Subcatchment SC 1: SC 1

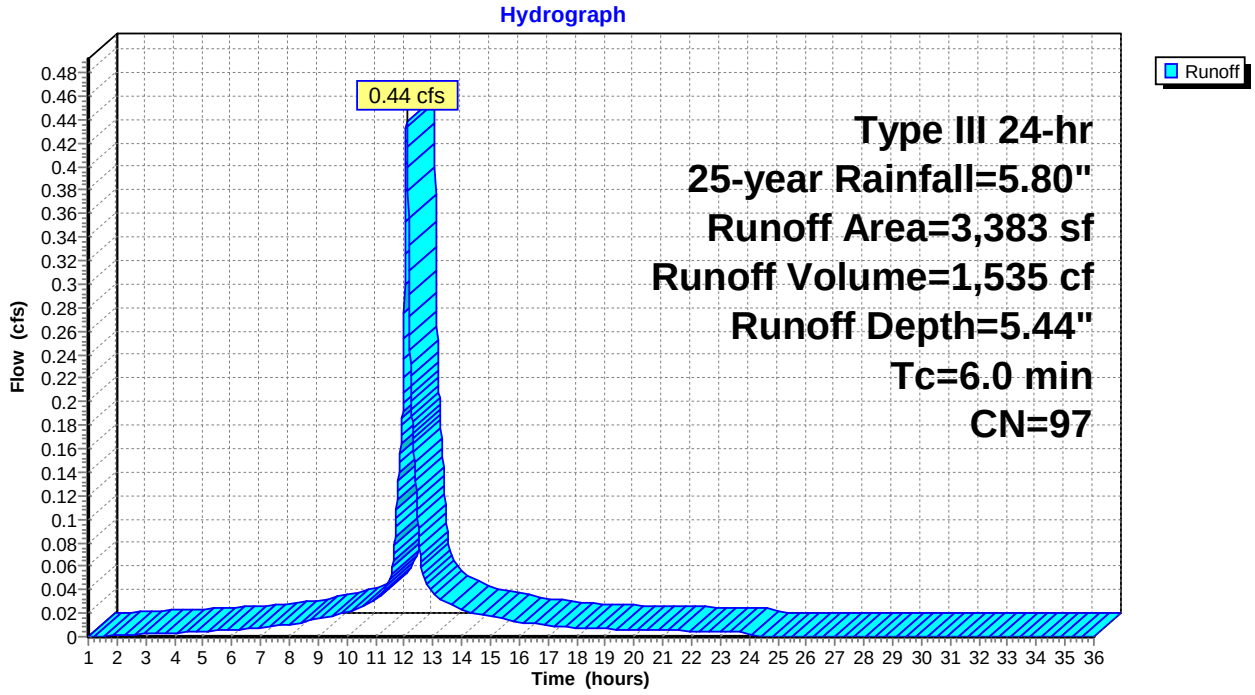
Runoff = 0.44 cfs @ 12.08 hrs, Volume= 1,535 cf, Depth= 5.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

Area (sf)	CN	Description
3,228	98	Paved parking, HSG C
155	79	50-75% Grass cover, Fair, HSG C
3,383	97	Weighted Average
155		4.58% Pervious Area
3,228		95.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, min. Tc (0.1 hour)**

Subcatchment SC 1: SC 1



Summary for Subcatchment SC 2: SC 2

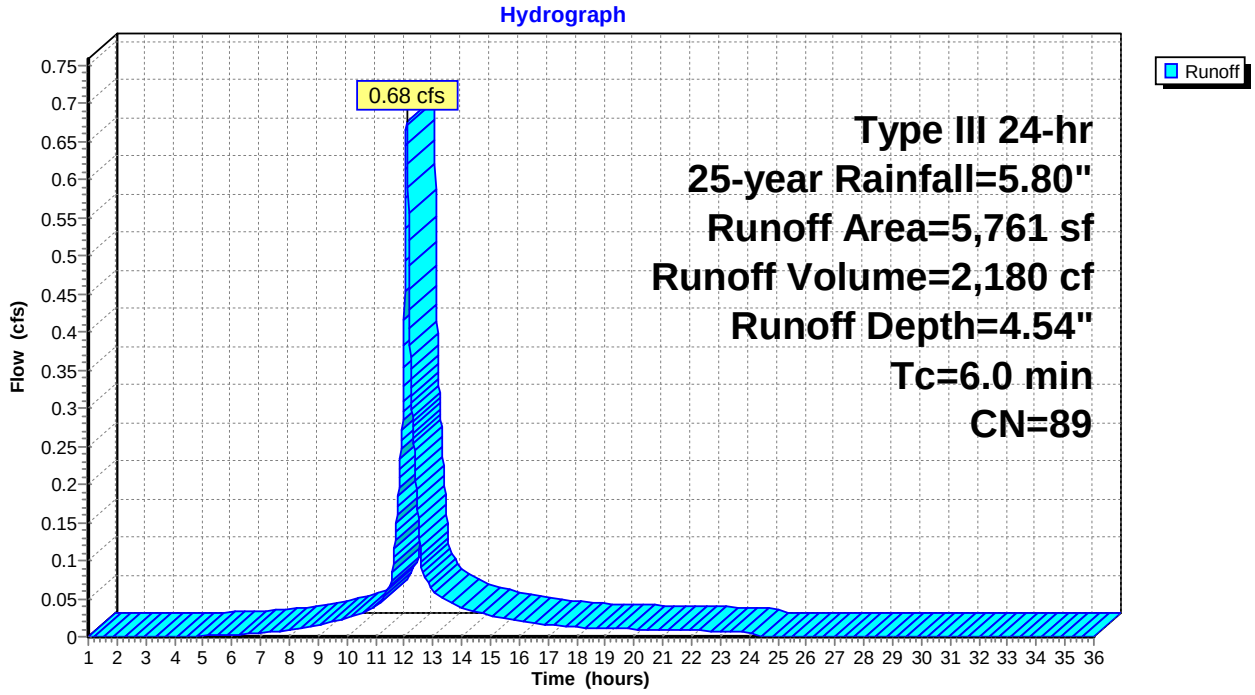
Runoff = 0.68 cfs @ 12.08 hrs, Volume= 2,180 cf, Depth= 4.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	2,974	98	Paved parking and Roof
	2,787	79	50-75% Grass cover, Fair, HSG C
	5,761	89	Weighted Average
	2,787		48.38% Pervious Area
	2,974		51.62% Impervious Area

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

Subcatchment SC 2: SC 2



Summary for Subcatchment SC 3: SC 3

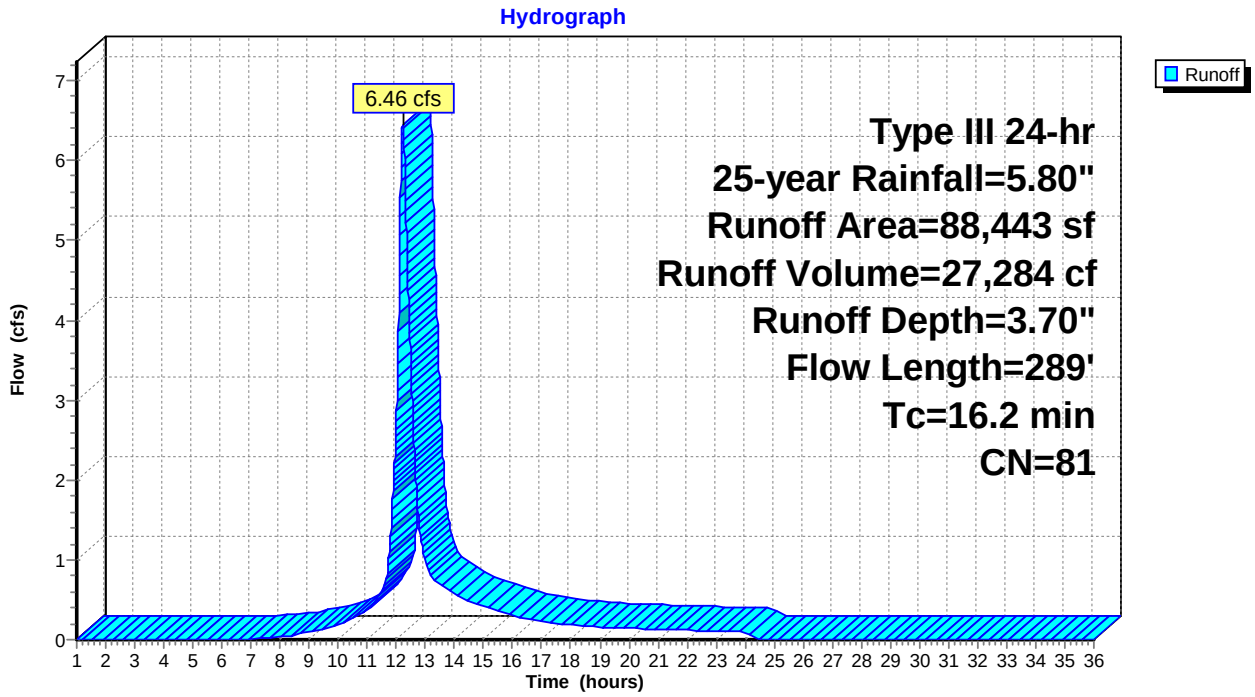
Runoff = 6.46 cfs @ 12.22 hrs, Volume= 27,284 cf, Depth= 3.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
	60,232	73	Woods, Fair, HSG C
*	15,285	96	Gravel surface
*	12,776	98	Paved Parking/Roof/Gazebo/Shed
*	150	74	Landscaped island, >75% Grass cover, Good, HSG C
	88,443	81	Weighted Average
	75,667		85.55% Pervious Area
	12,776		14.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0100	0.13		**Sheet Flow, 100' Sheet Flow (A to B)** Grass: Short n= 0.150 P2= 3.10"
1.3	65	0.0300	0.87		**Shallow Concentrated Flow, Sheet flow to SCF (B to C)** Woodland Kv= 5.0 fps
1.8	124	0.0500	1.12		**Shallow Concentrated Flow, Steep Slopes (C to D)** Woodland Kv= 5.0 fps
16.2	289	Total			

Subcatchment SC 3: SC 3



Summary for Subcatchment SC X.1: S. Freeport Rd & Rte 1

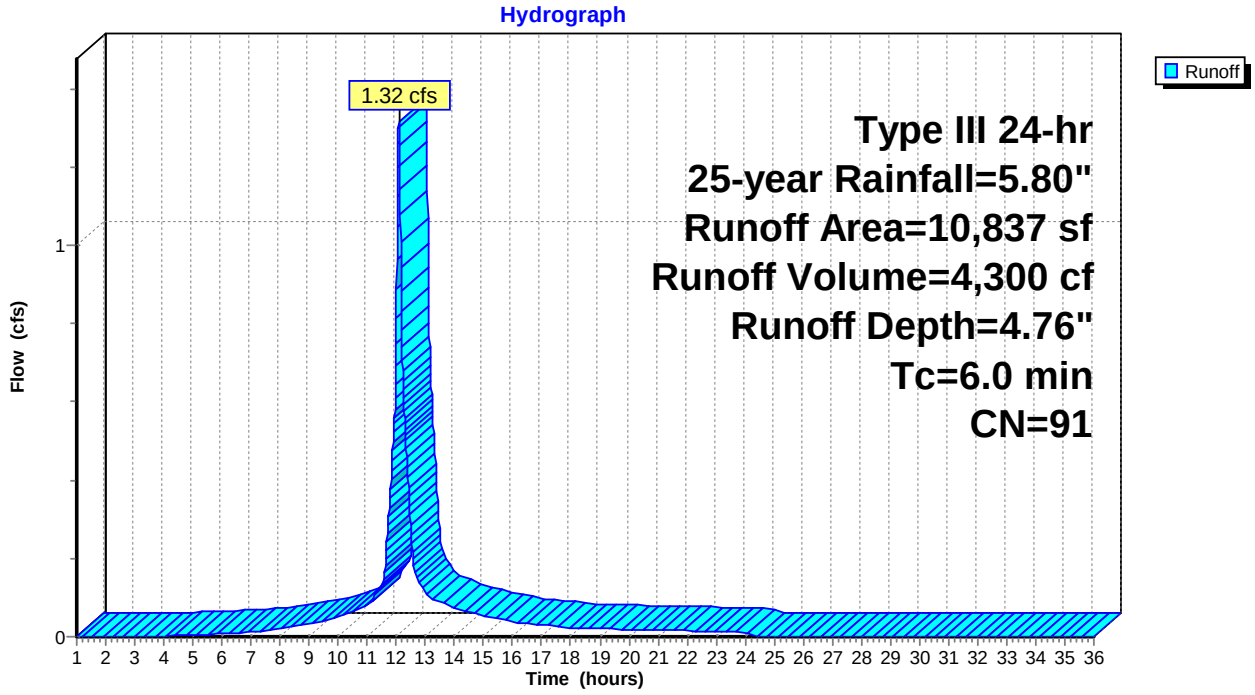
Runoff = 1.32 cfs @ 12.08 hrs, Volume= 4,300 cf, Depth= 4.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	7,073	98	South Freeport/Route 1
	3,764	79	50-75% Grass cover, Fair, HSG C
	10,837	91	Weighted Average
	3,764		34.73% Pervious Area
	7,073		65.27% Impervious Area

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

Subcatchment SC X.1: S. Freeport Rd & Rte 1



Summary for Subcatchment SC X.2: S. Freeport Rd & Rte. 1

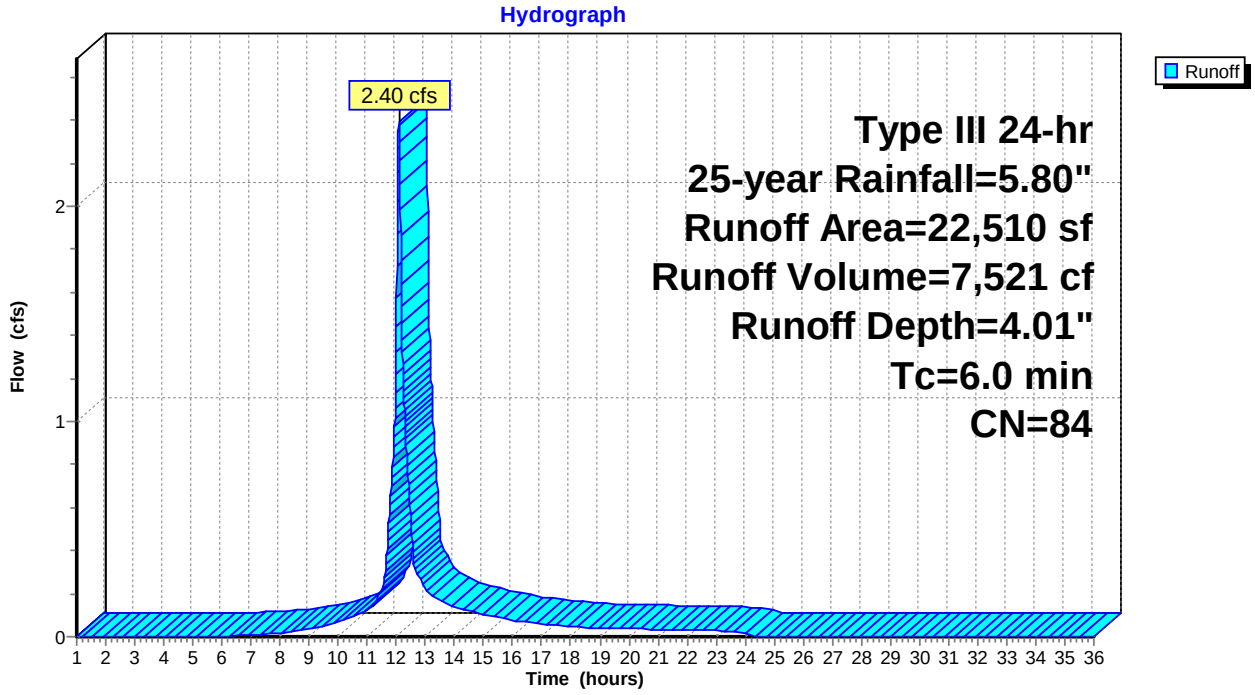
Runoff = 2.40 cfs @ 12.09 hrs, Volume= 7,521 cf, Depth= 4.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	5,735	98	Paved parking
	16,775	79	50-75% Grass cover, Fair, HSG C
	22,510	84	Weighted Average
	16,775		74.52% Pervious Area
	5,735		25.48% Impervious Area

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

Subcatchment SC X.2: S. Freeport Rd & Rte. 1

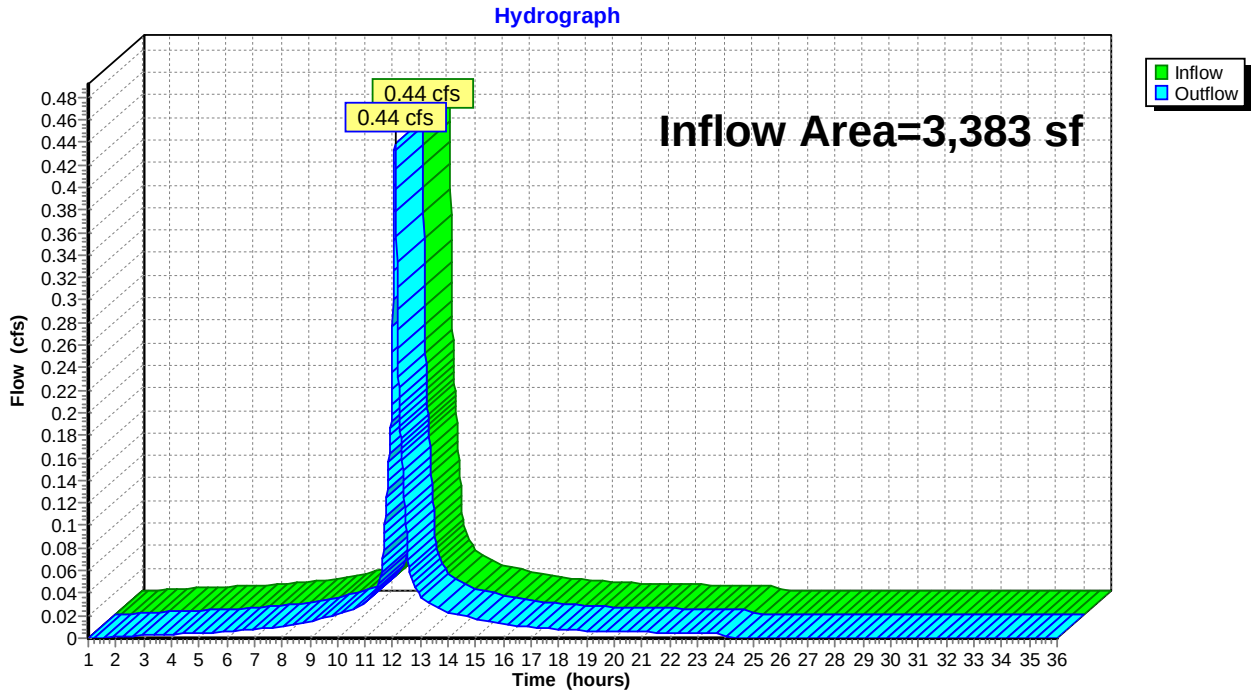


Summary for Reach POI 1: Route 1 North

Inflow Area = 3,383 sf, 95.42% Impervious, Inflow Depth = 5.44" for 25-year event
Inflow = 0.44 cfs @ 12.08 hrs, Volume= 1,535 cf
Outflow = 0.44 cfs @ 12.08 hrs, Volume= 1,535 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach POI 1: Route 1 North



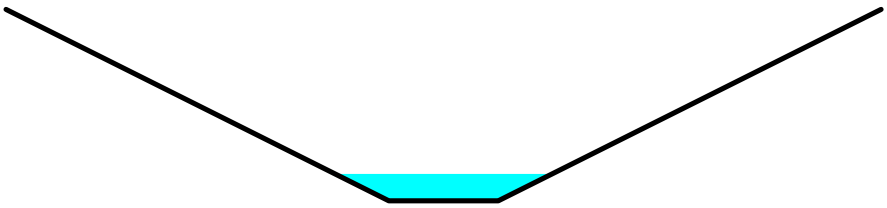
Summary for Reach POI 2: Route 1 South

Inflow Area = 39,108 sf, 40.35% Impervious, Inflow Depth = 4.30" for 25-year event
Inflow = 4.39 cfs @ 12.09 hrs, Volume= 14,002 cf
Outflow = 4.38 cfs @ 12.09 hrs, Volume= 14,002 cf, Atten= 0%, Lag= 0.4 min

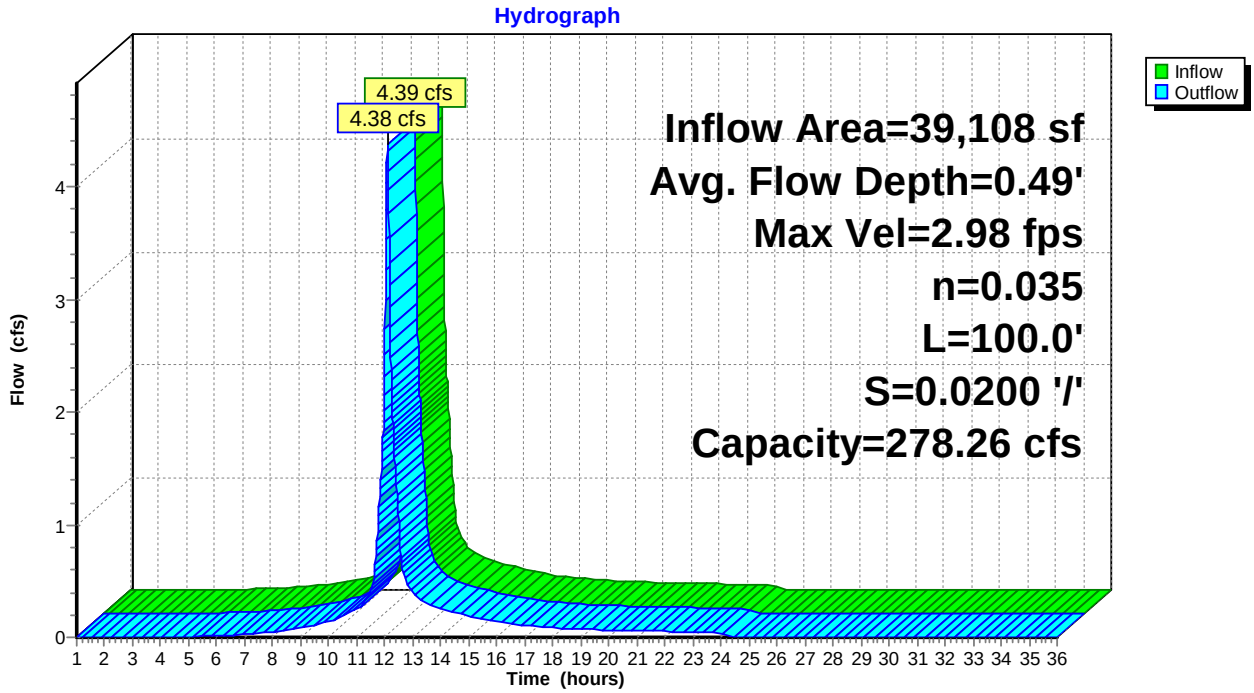
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.98 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 0.90 fps, Avg. Travel Time= 1.9 min

Peak Storage= 147 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.49'
Bank-Full Depth= 3.50' Flow Area= 31.5 sf, Capacity= 278.26 cfs

2.00' x 3.50' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 2.0 '/' Top Width= 16.00'
Length= 100.0' Slope= 0.0200 '/'
Inlet Invert= 93.00', Outlet Invert= 91.00'



Reach POI 2: Route 1 South

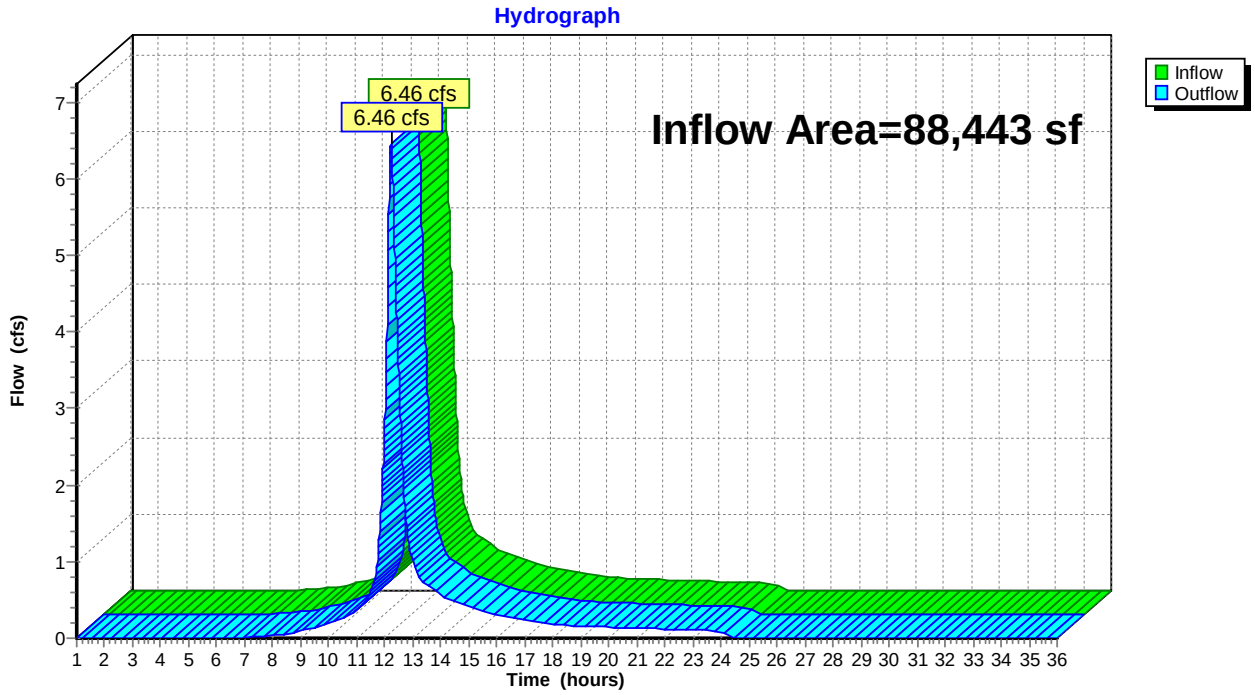


Summary for Reach POI 3: Wetlands

Inflow Area = 88,443 sf, 14.45% Impervious, Inflow Depth = 3.70" for 25-year event
Inflow = 6.46 cfs @ 12.22 hrs, Volume= 27,284 cf
Outflow = 6.46 cfs @ 12.22 hrs, Volume= 27,284 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach POI 3: Wetlands



Summary for Pond CB-1: CB-1

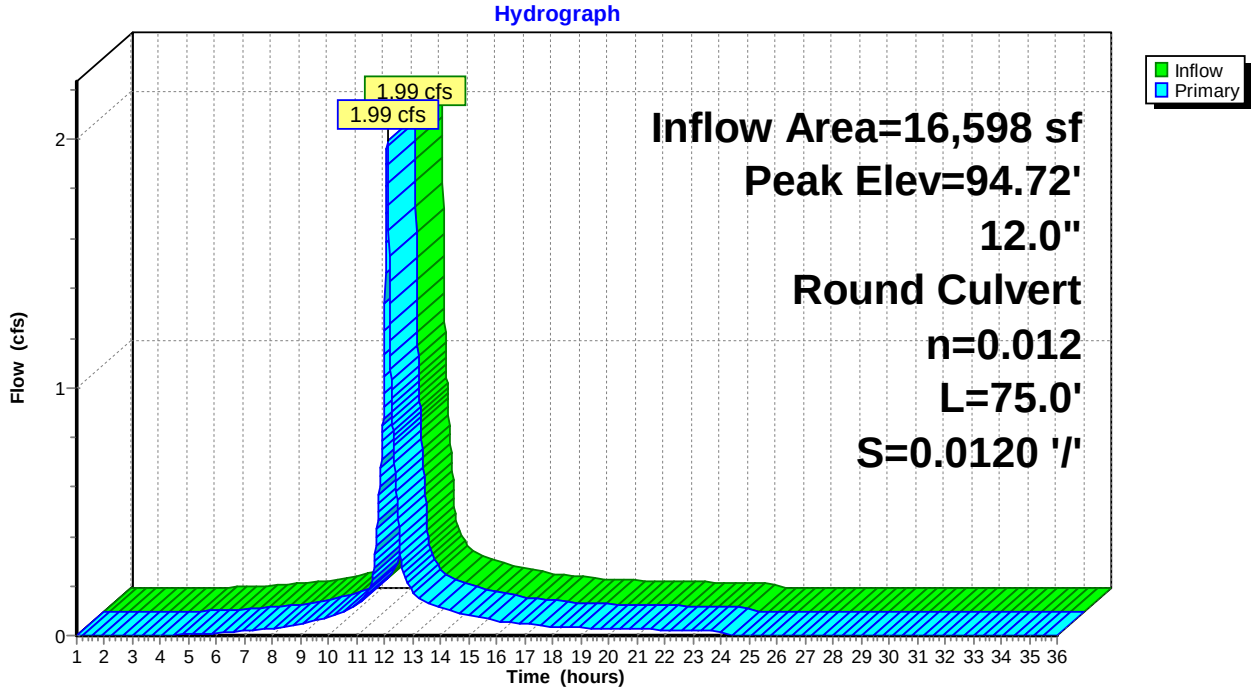
Inflow Area = 16,598 sf, 60.53% Impervious, Inflow Depth = 4.69" for 25-year event
Inflow = 1.99 cfs @ 12.08 hrs, Volume= 6,481 cf
Outflow = 1.99 cfs @ 12.08 hrs, Volume= 6,481 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.99 cfs @ 12.08 hrs, Volume= 6,481 cf

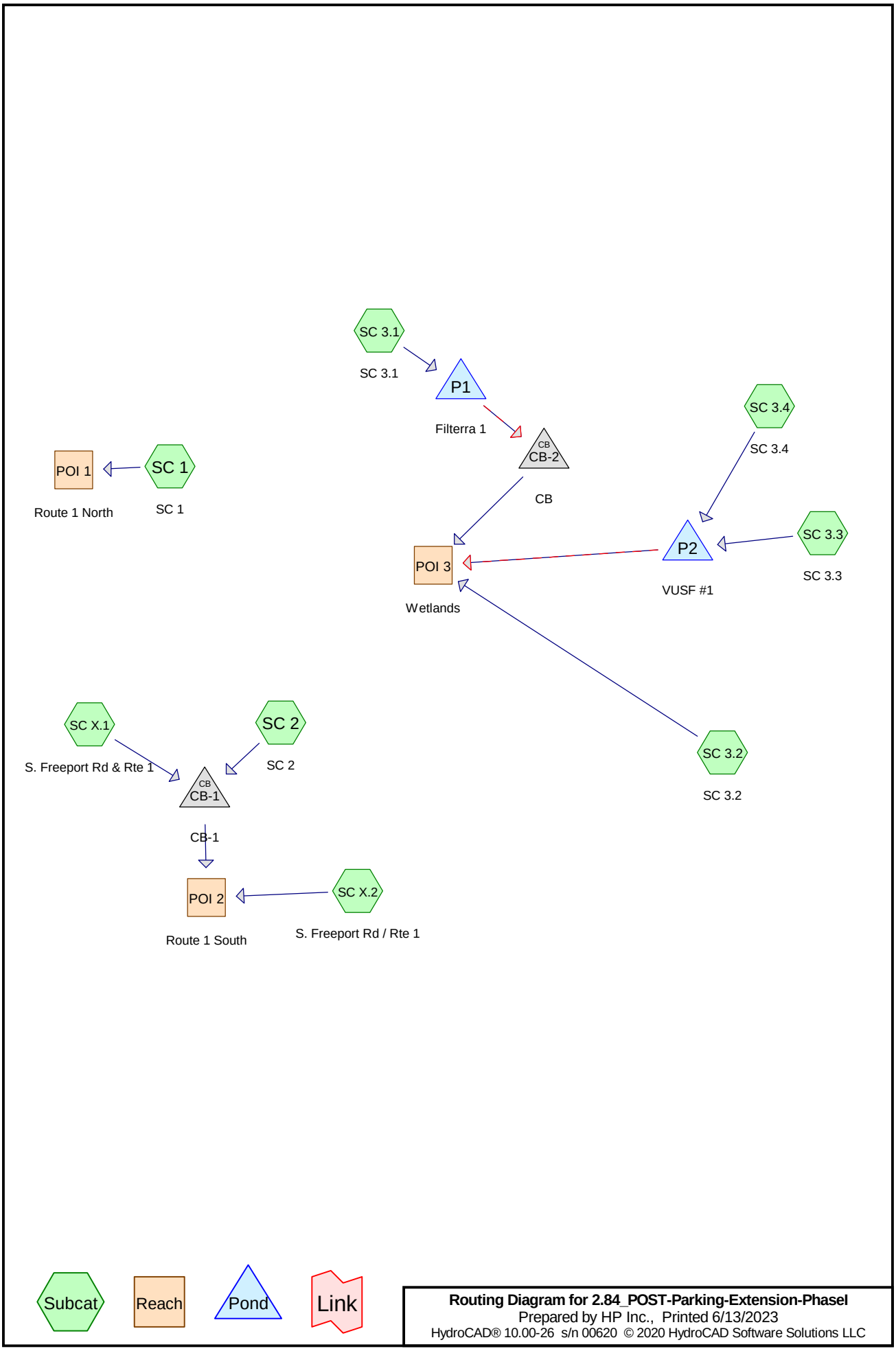
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Peak Elev= 94.72' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	93.90'	**12.0" Round Culvert** L= 75.0' Ke= 0.600 Inlet / Outlet Invert= 93.90' / 93.00' S= 0.0120 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.99 cfs @ 12.08 hrs HW=94.72' TW=93.49' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.99 cfs @ 2.89 fps)

Pond CB-1: CB-1





Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
20,539	79	50-75% Grass cover, Fair, HSG C (SC X.1, SC X.2)
6,997	74	>75% Grass cover, Good, HSG C (SC 1, SC 2, SC 3.3)
2,834	74	Grass/landscaping near driveway entrance (SC 3.2)
621	74	Landscaping, >75% Grass cover, Good, HSG C (SC 3.1)
29,157	65	Meadow / conservation mix East of parking expansion (SC 3.2)
5,735	98	Paved parking (SC X.2)
17,725	98	Paved parking lot and patio space (SC 3.2)
4,881	98	Paved parking, HSG C (SC 2)
11,199	98	Pavement / Roof / Sidewalk (SC 3.1)
10,520	98	Phase I Parking (SC 3.3)
2,516	74	Self contained pond embankment slopes (SC 3.4)
7,073	98	South Freeport/Route 1 (SC X.1)
11,137	73	Woods, Fair, HSG C (SC 3.2)
130,934	**83**	**TOTAL AREA**

Summary for Subcatchment SC 1: SC 1

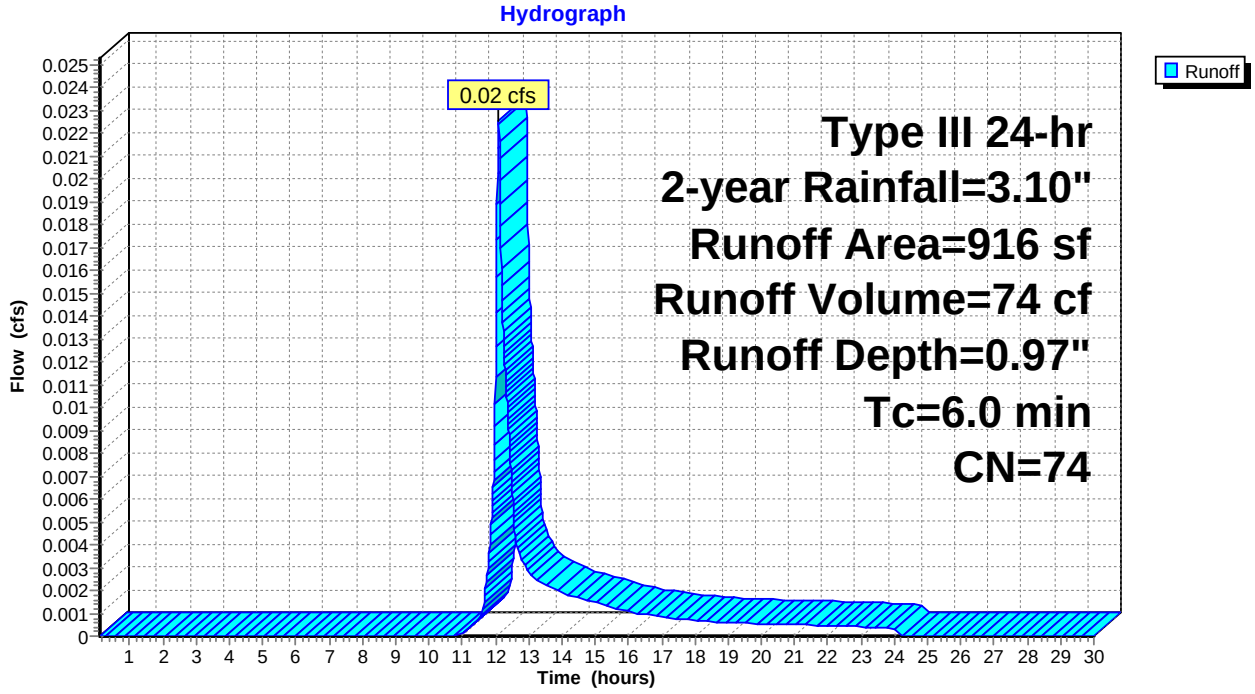
Runoff = 0.02 cfs @ 12.10 hrs, Volume= 74 cf, Depth= 0.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
916	74	>75% Grass cover, Good, HSG C
916		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, min. Tc (0.1 hour)**

Subcatchment SC 1: SC 1



Summary for Subcatchment SC 2: SC 2

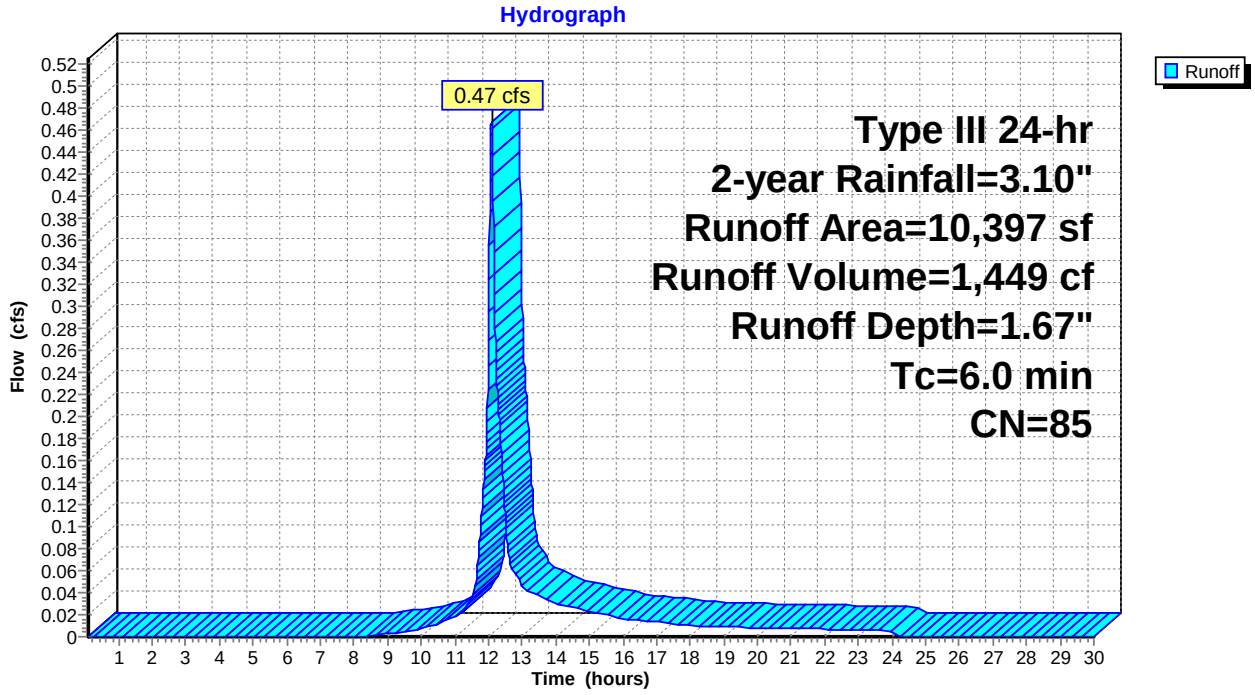
Runoff = 0.47 cfs @ 12.09 hrs, Volume= 1,449 cf, Depth= 1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
4,881	98	Paved parking, HSG C
5,516	74	>75% Grass cover, Good, HSG C
10,397	85	Weighted Average
5,516		53.05% Pervious Area
4,881		46.95% Impervious Area

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

Subcatchment SC 2: SC 2



Summary for Subcatchment SC 3.1: SC 3.1

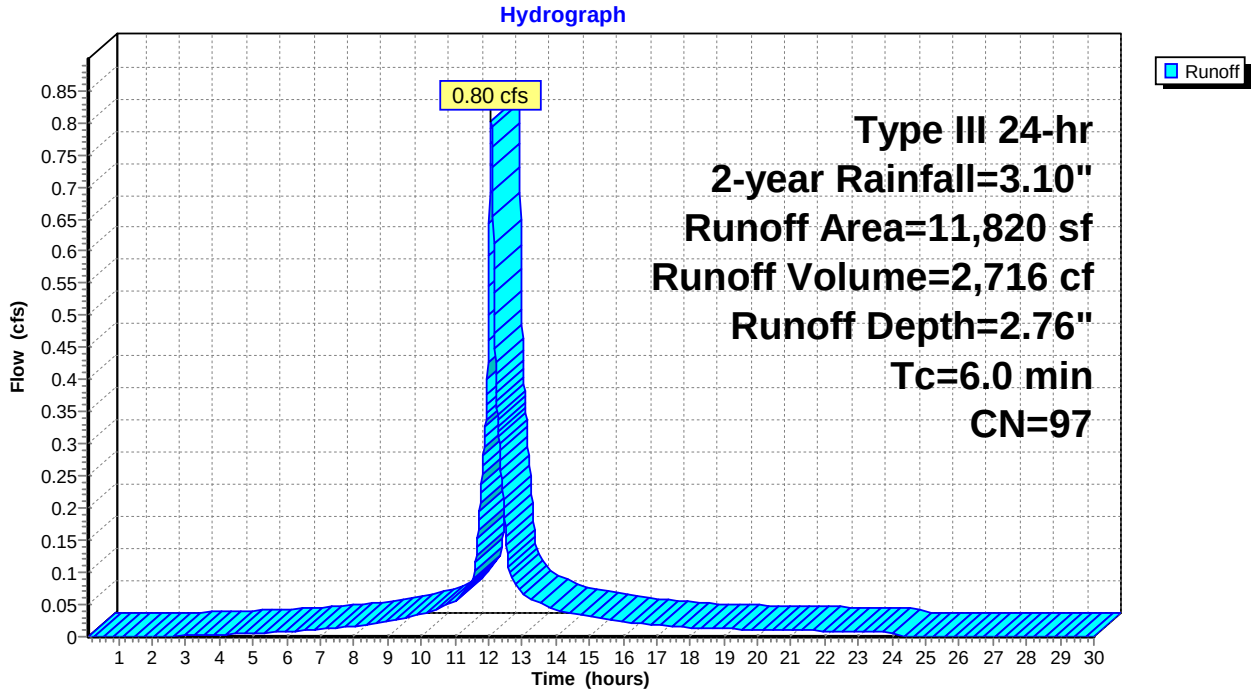
Runoff = 0.80 cfs @ 12.08 hrs, Volume= 2,716 cf, Depth= 2.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	621	74	Landscaping, >75% Grass cover, Good, HSG C
*	11,199	98	Pavement / Roof / Sidewalk
	11,820	97	Weighted Average
	621		5.25% Pervious Area
	11,199		94.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum Tc (0.1 hour)**

Subcatchment SC 3.1: SC 3.1



Summary for Subcatchment SC 3.2: SC 3.2

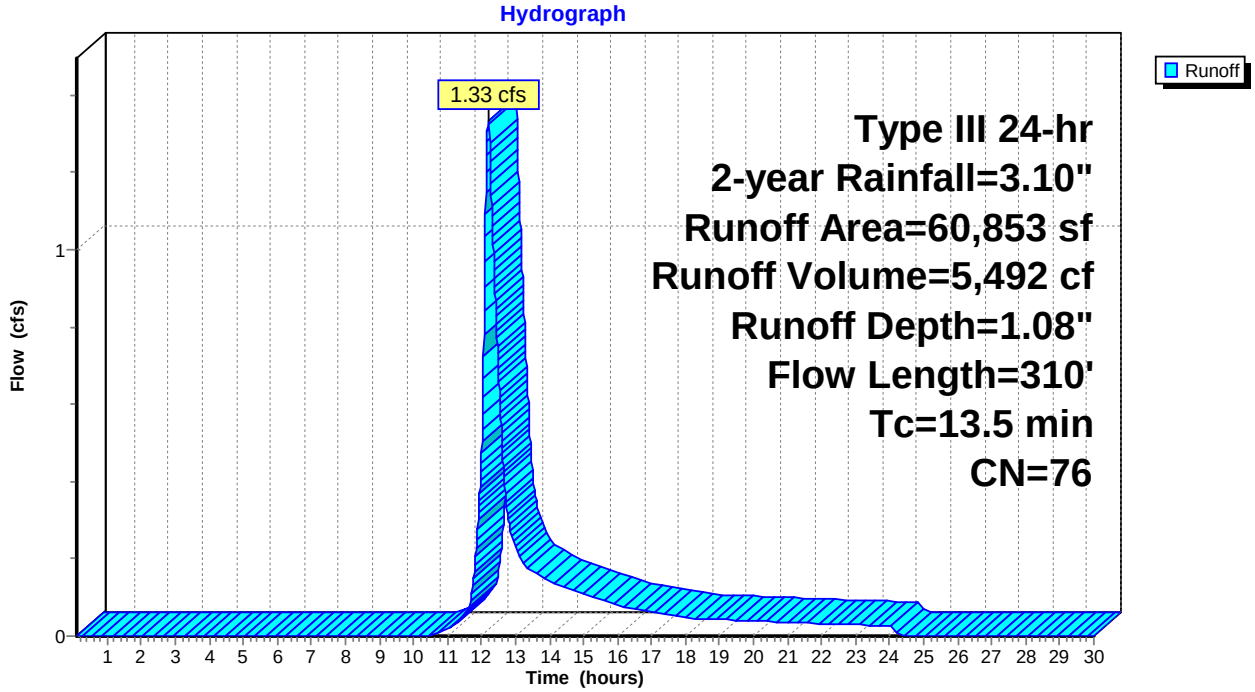
Runoff = 1.33 cfs @ 12.20 hrs, Volume= 5,492 cf, Depth= 1.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	17,725	98	Paved parking lot and patio space
*	2,834	74	Grass/landscaping near driveway entrance
*	11,137	73	Woods, Fair, HSG C
*	29,157	65	Meadow / conservation mix East of parking expansion
	60,853	76	Weighted Average
	43,128		70.87% Pervious Area
	17,725		29.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0300	0.14		**Sheet Flow, Sheet flow (A to B)** Grass: Dense n= 0.240 P2= 3.27"
0.7	90	0.0200	2.12		**Shallow Concentrated Flow, SCF (B to C)** Grassed Waterway Kv= 15.0 fps
0.2	70	0.1000	4.74		**Shallow Concentrated Flow, SCF (C to D)** Grassed Waterway Kv= 15.0 fps
0.6	50	0.0800	1.41		**Shallow Concentrated Flow, SCF (D to E)** Woodland Kv= 5.0 fps
13.5	310	Total			

Subcatchment SC 3.2: SC 3.2



Summary for Subcatchment SC 3.3: SC 3.3

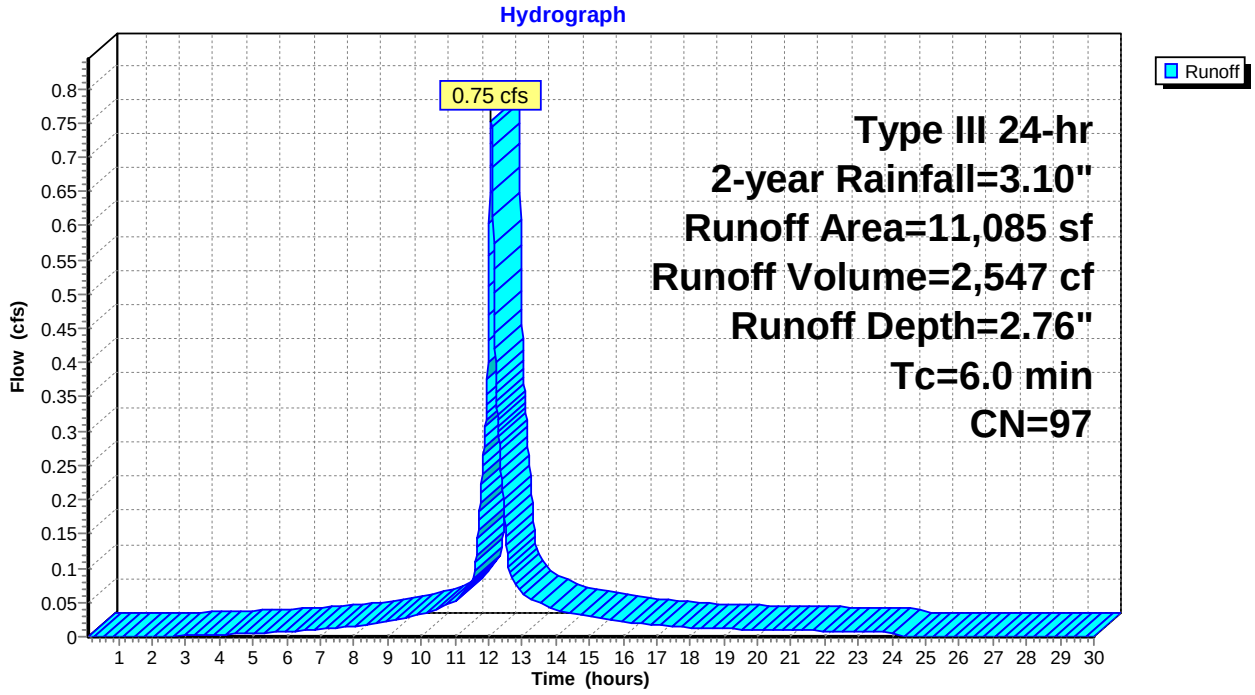
Runoff = 0.75 cfs @ 12.08 hrs, Volume= 2,547 cf, Depth= 2.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	10,520	98	Phase I Parking
	565	74	>75% Grass cover, Good, HSG C
	11,085	97	Weighted Average
	565		5.10% Pervious Area
	10,520		94.90% Impervious Area

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

Subcatchment SC 3.3: SC 3.3



Summary for Subcatchment SC 3.4: SC 3.4

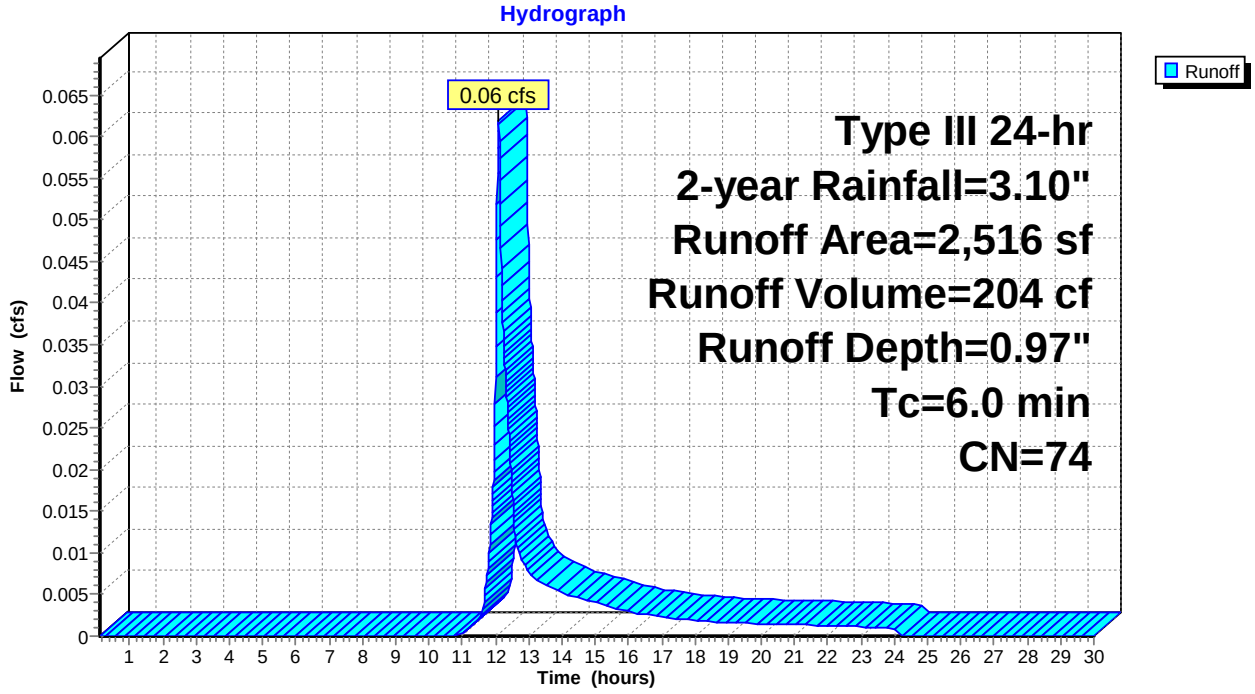
Runoff = 0.06 cfs @ 12.10 hrs, Volume= 204 cf, Depth= 0.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	2,516	74	Self contained pond embankment slopes
	2,516		100.00% Pervious Area

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

Subcatchment SC 3.4: SC 3.4



Summary for Subcatchment SC X.1: S. Freeport Rd & Rte 1

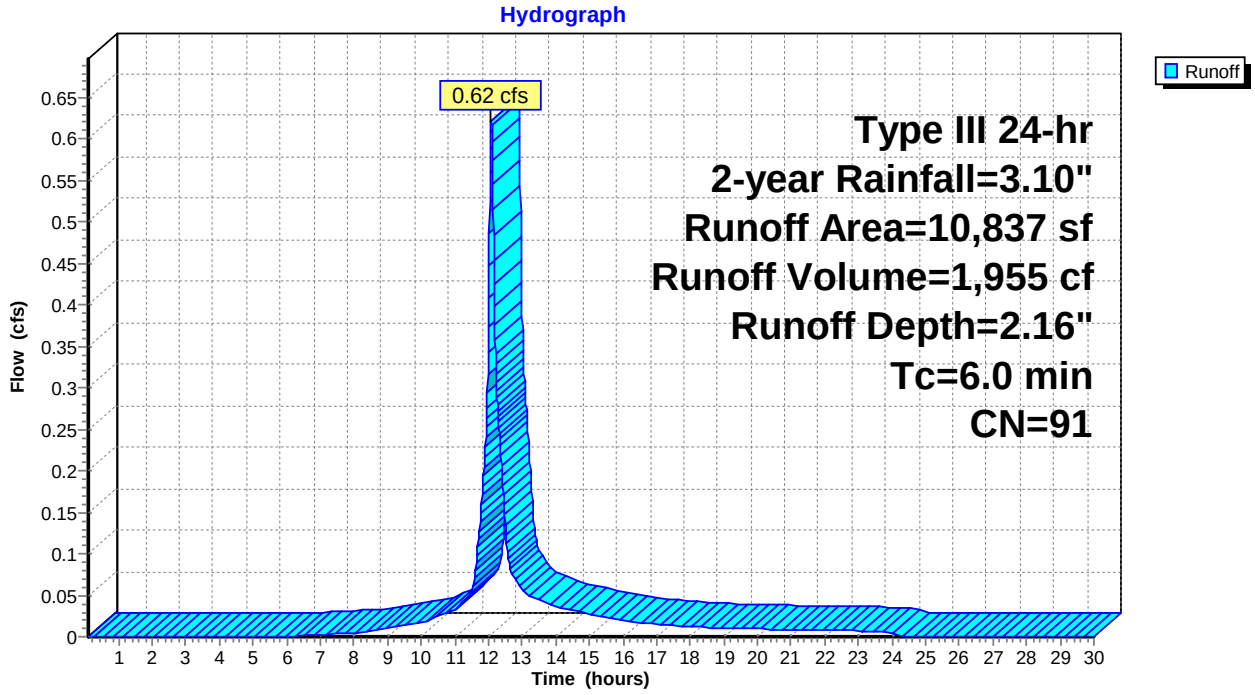
Runoff = 0.62 cfs @ 12.09 hrs, Volume= 1,955 cf, Depth= 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	7,073	98	South Freeport/Route 1
	3,764	79	50-75% Grass cover, Fair, HSG C
	10,837	91	Weighted Average
	3,764		34.73% Pervious Area
	7,073		65.27% Impervious Area

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

Subcatchment SC X.1: S. Freeport Rd & Rte 1



Summary for Subcatchment SC X.2: S. Freeport Rd / Rte 1

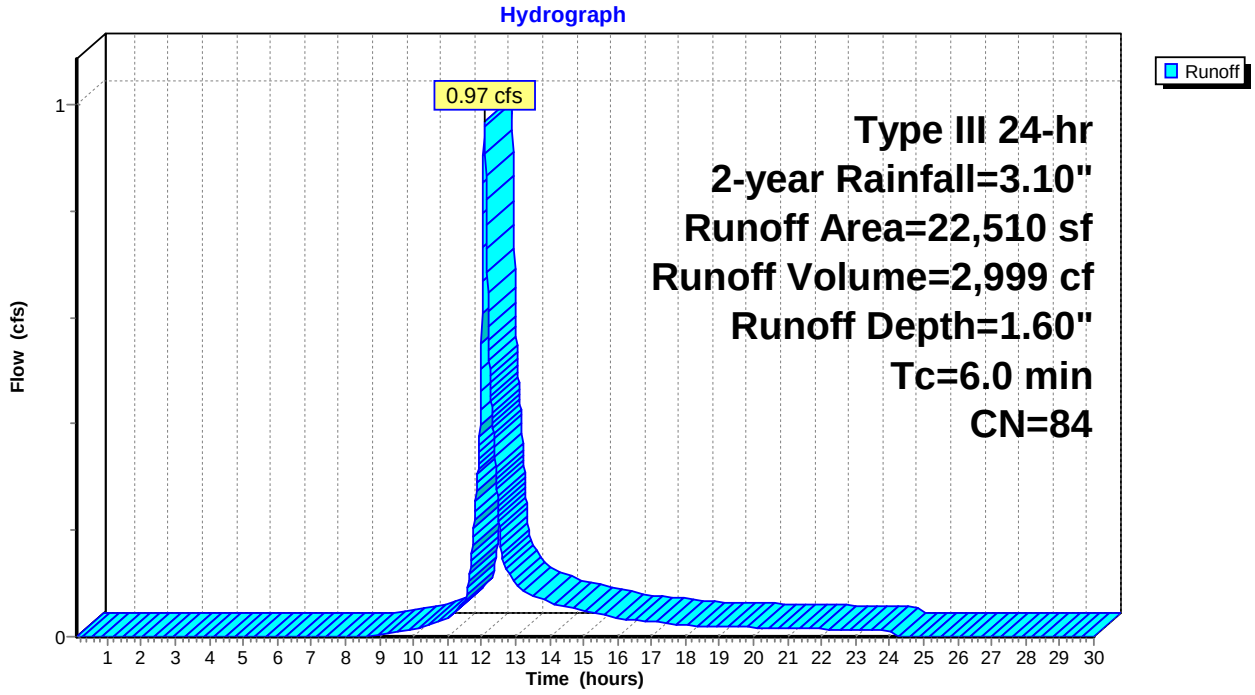
Runoff = 0.97 cfs @ 12.09 hrs, Volume= 2,999 cf, Depth= 1.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	5,735	98	Paved parking
	16,775	79	50-75% Grass cover, Fair, HSG C
	22,510	84	Weighted Average
	16,775		74.52% Pervious Area
	5,735		25.48% Impervious Area

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

Subcatchment SC X.2: S. Freeport Rd / Rte 1

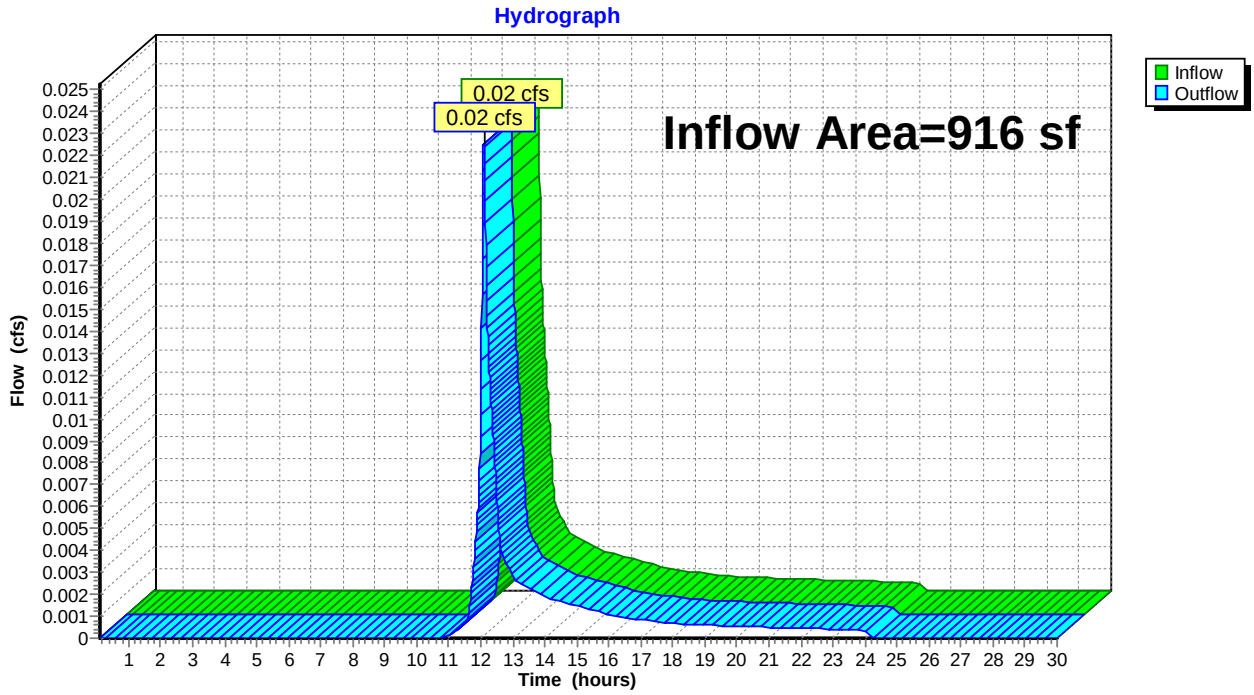


Summary for Reach POI 1: Route 1 North

Inflow Area = 916 sf, 0.00% Impervious, Inflow Depth = 0.97" for 2-year event
Inflow = 0.02 cfs @ 12.10 hrs, Volume= 74 cf
Outflow = 0.02 cfs @ 12.10 hrs, Volume= 74 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs

Reach POI 1: Route 1 North



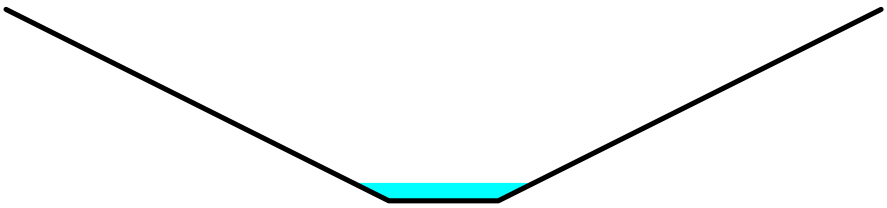
Summary for Reach POI 2: Route 1 South

Inflow Area = 43,744 sf, 40.44% Impervious, Inflow Depth = 1.76" for 2-year event
Inflow = 2.06 cfs @ 12.09 hrs, Volume= 6,403 cf
Outflow = 2.05 cfs @ 12.10 hrs, Volume= 6,403 cf, Atten= 1%, Lag= 0.5 min

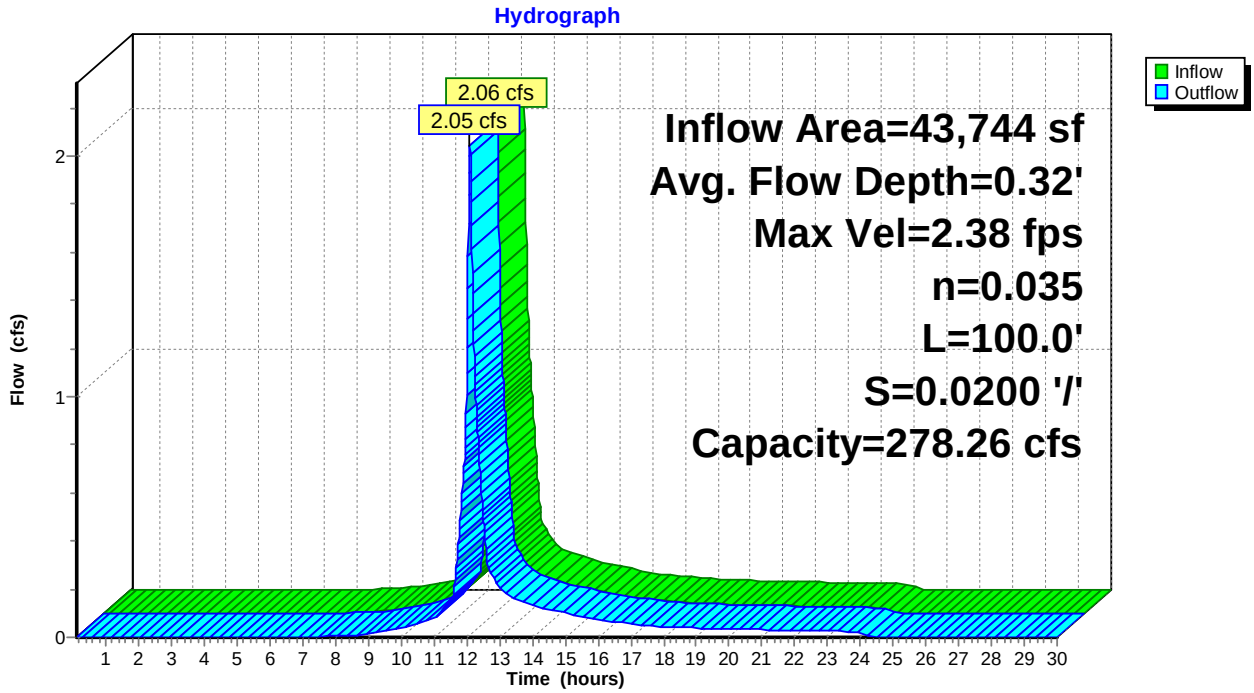
Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.38 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 0.76 fps, Avg. Travel Time= 2.2 min

Peak Storage= 86 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.32'
Bank-Full Depth= 3.50' Flow Area= 31.5 sf, Capacity= 278.26 cfs

2.00' x 3.50' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 2.0 '/' Top Width= 16.00'
Length= 100.0' Slope= 0.0200 '/'
Inlet Invert= 93.00', Outlet Invert= 91.00'



Reach POI 2: Route 1 South

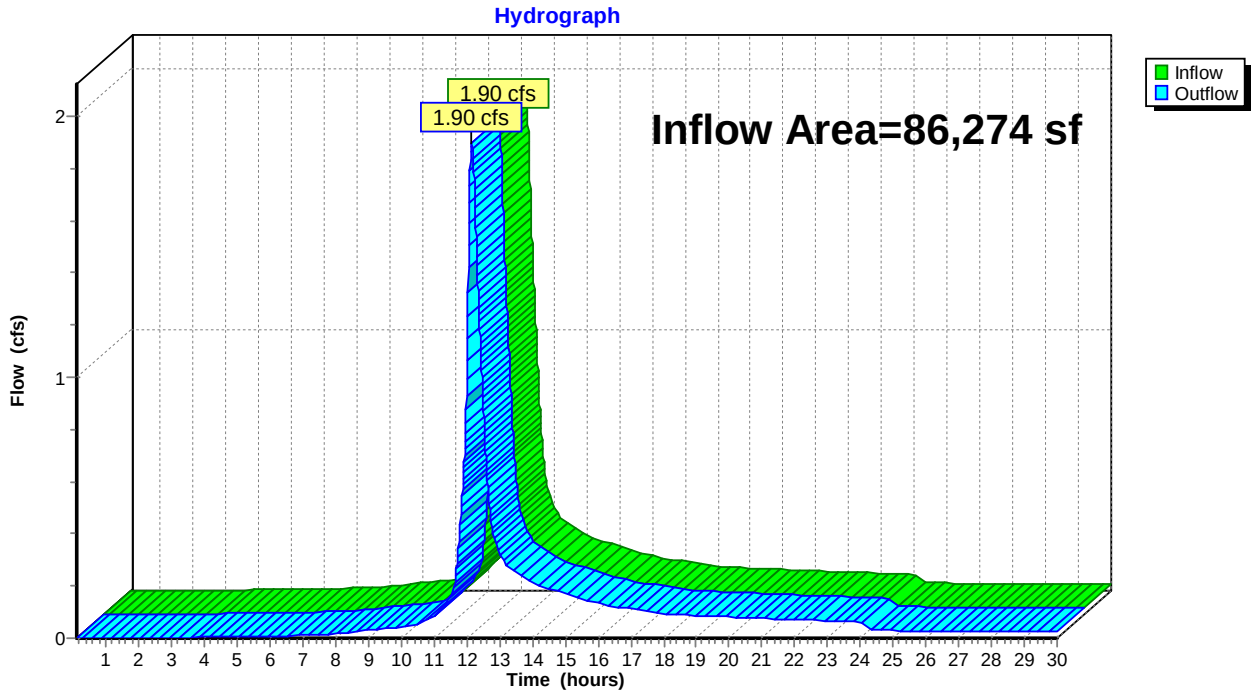


Summary for Reach POI 3: Wetlands

Inflow Area = 86,274 sf, 45.72% Impervious, Inflow Depth > 1.43" for 2-year event
Inflow = 1.90 cfs @ 12.15 hrs, Volume= 10,303 cf
Outflow = 1.90 cfs @ 12.15 hrs, Volume= 10,303 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs

Reach POI 3: Wetlands



Summary for Pond CB-1: CB-1

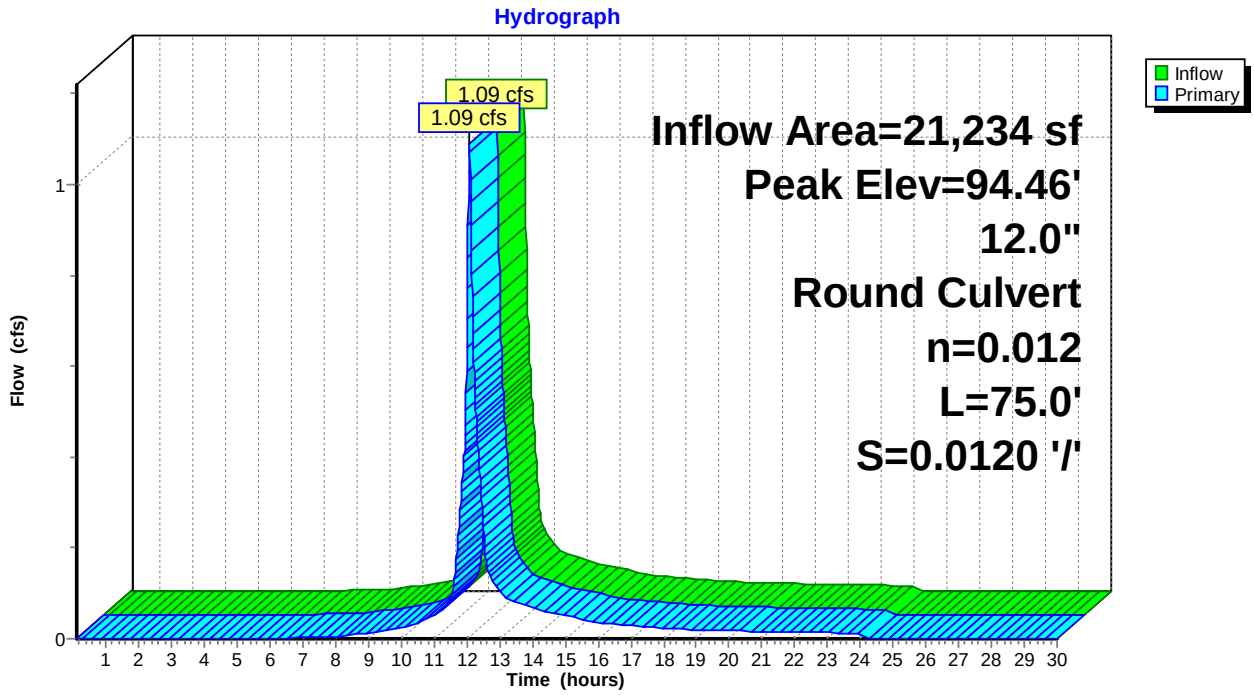
Inflow Area = 21,234 sf, 56.30% Impervious, Inflow Depth = 1.92" for 2-year event
Inflow = 1.09 cfs @ 12.09 hrs, Volume= 3,404 cf
Outflow = 1.09 cfs @ 12.09 hrs, Volume= 3,404 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.09 cfs @ 12.09 hrs, Volume= 3,404 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Peak Elev= 94.46' @ 12.09 hrs
Flood Elev= 94.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	93.90'	**12.0" Round Culvert** L= 75.0' Ke= 0.600 Inlet / Outlet Invert= 93.90' / 93.00' S= 0.0120 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.09 cfs @ 12.09 hrs HW=94.46' TW=93.32' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.09 cfs @ 2.39 fps)

Pond CB-1: CB-1



Summary for Pond CB-2: CB

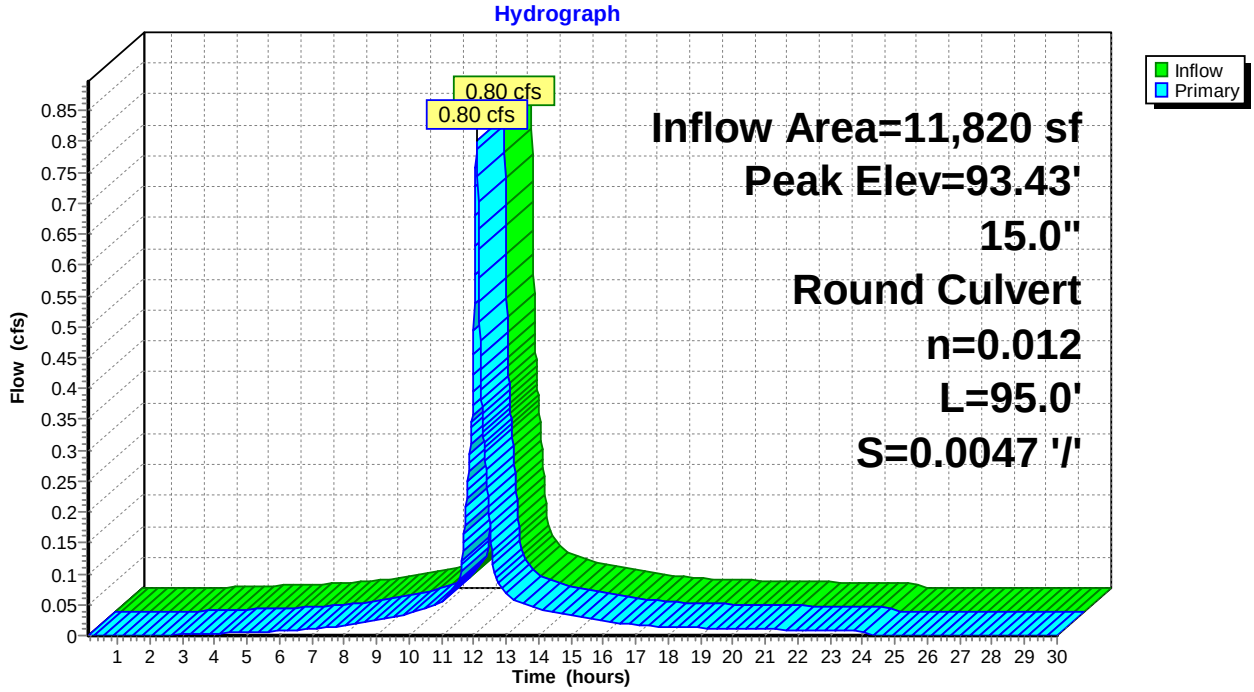
Inflow Area = 11,820 sf, 94.75% Impervious, Inflow Depth = 2.76" for 2-year event
Inflow = 0.80 cfs @ 12.09 hrs, Volume= 2,716 cf
Outflow = 0.80 cfs @ 12.09 hrs, Volume= 2,716 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.80 cfs @ 12.09 hrs, Volume= 2,716 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Peak Elev= 93.43' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	92.95'	**15.0" Round Culvert** L= 95.0' Ke= 0.600 Inlet / Outlet Invert= 92.95' / 92.50' S= 0.0047 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.80 cfs @ 12.09 hrs HW=93.43' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.80 cfs @ 2.74 fps)

Pond CB-2: CB



Summary for Pond P1: Filterra 1

Inflow Area = 11,820 sf, 94.75% Impervious, Inflow Depth = 2.76" for 2-year event
Inflow = 0.80 cfs @ 12.08 hrs, Volume= 2,716 cf
Outflow = 0.80 cfs @ 12.09 hrs, Volume= 2,716 cf, Atten= 0%, Lag= 0.2 min
Primary = 0.80 cfs @ 12.09 hrs, Volume= 2,716 cf
Secondary = 0.00 cfs @ 0.10 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Peak Elev= 94.02' @ 12.09 hrs Surf.Area= 36 sf Storage= 6 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (766.9 - 766.8)

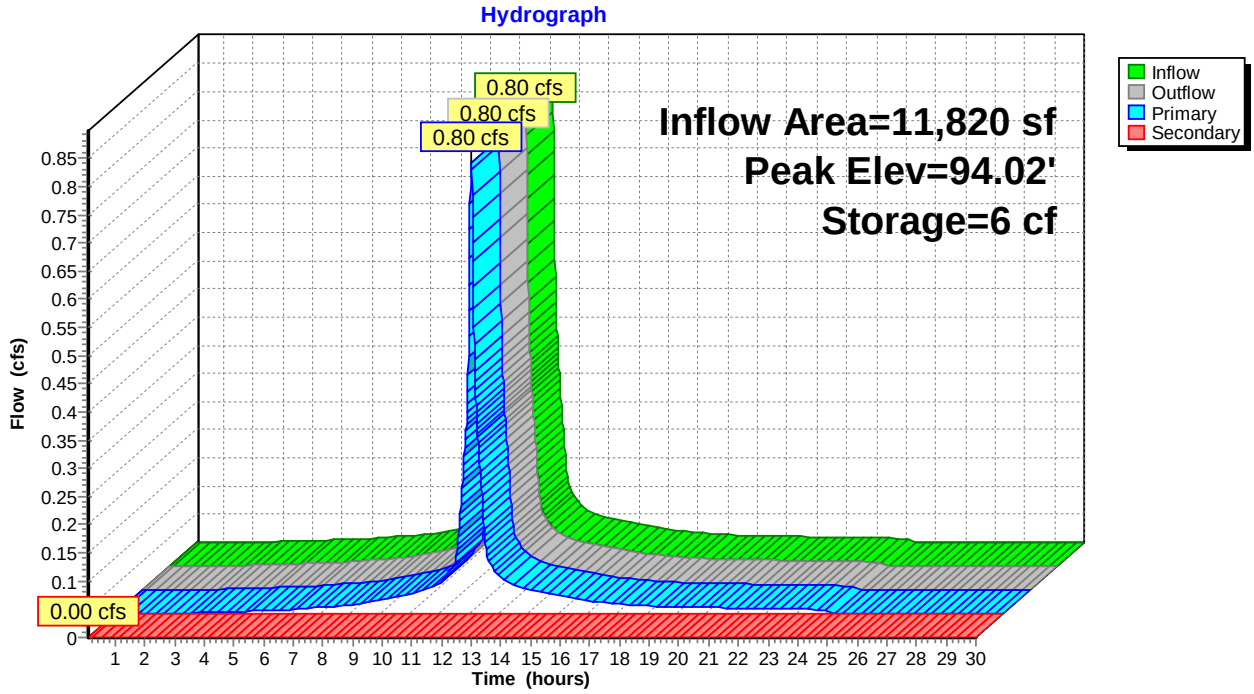
Volume	Invert	Avail.Storage	Storage Description
#1	93.15'	18 cf	**6.00'W x 6.00'L x 2.50'H Soil Filter Media** 90 cf Overall x 20.0% Voids
#2	95.65'	27 cf	**6.00'W x 6.00'L x 0.75'H Ponding** -Impervious
#3	96.40'	180 cf	**30.00'W x 30.00'L x 0.20'H Spillover/Ponding to CB**
		225 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	93.15'	**6.0" Round Culvert** L= 4.0' Ke= 0.600 Inlet / Outlet Invert= 93.15' / 93.12' S= 0.0075 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Primary	93.15'	**140.000 in/hr Soil Media Filtration over Surface area**
#3	Secondary	96.15'	**3.1" x 3.8" Horiz. CB Overflow X 5.00 columns** X 5 rows C= 0.600 in 24.0" x 24.0" Grate (51% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.80 cfs @ 12.09 hrs HW=94.02' TW=93.43' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 0.68 cfs @ 3.47 fps)
└─**2=Soil Media Filtration** (Exfiltration Controls 0.12 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.10 hrs HW=93.15' TW=92.95' (Dynamic Tailwater)
└─**3=CB Overflow** (Controls 0.00 cfs)

Pond P1: Filterra 1



Summary for Pond P2: VUSF #1

Inflow Area = 13,601 sf, 77.35% Impervious, Inflow Depth = 2.43" for 2-year event
Inflow = 0.81 cfs @ 12.08 hrs, Volume= 2,751 cf
Outflow = 0.03 cfs @ 15.27 hrs, Volume= 2,095 cf, Atten= 96%, Lag= 191.4 min
Primary = 0.03 cfs @ 15.27 hrs, Volume= 2,095 cf
Secondary = 0.00 cfs @ 0.10 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Peak Elev= 93.02' @ 15.27 hrs Surf.Area= 4,223 sf Storage= 1,786 cf

Plug-Flow detention time= 514.9 min calculated for 2,095 cf (76% of inflow)
Center-of-Mass det. time= 430.3 min (1,204.4 - 774.0)

Volume	Invert	Avail.Storage	Storage Description
#1	92.00'	4,913 cf	**Ponding (Prismatic)** Listed below (Recalc)
#2	90.50'	135 cf	**Filter Media/Loam (Prismatic)** Listed below (Recalc) 1,350 cf Overall x 10.0% Voids
#3	90.17'	66 cf	**Transition Gravel (Prismatic)** Listed below (Recalc) 332 cf Overall x 20.0% Voids
#4	89.17'	400 cf	**Crushed Stone (Prismatic)** Listed below (Recalc) 1,007 cf Overall - 7 cf Embedded = 1,000 cf x 40.0% Voids
#5	89.45'	6 cf	**4.0" Round Pipe Storage** Inside #4 L= 70.0' 7 cf Overall - 0.2" Wall Thickness = 6 cf
		5,520 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.00	1,007	0	0
93.00	1,295	1,151	1,151
94.00	1,944	1,620	2,771
95.00	2,340	2,142	4,913

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
90.50	900	0	0
92.00	900	1,350	1,350

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
90.17	1,007	0	0
90.50	1,007	332	332

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
89.17	1,007	0	0
90.17	1,007	1,007	1,007

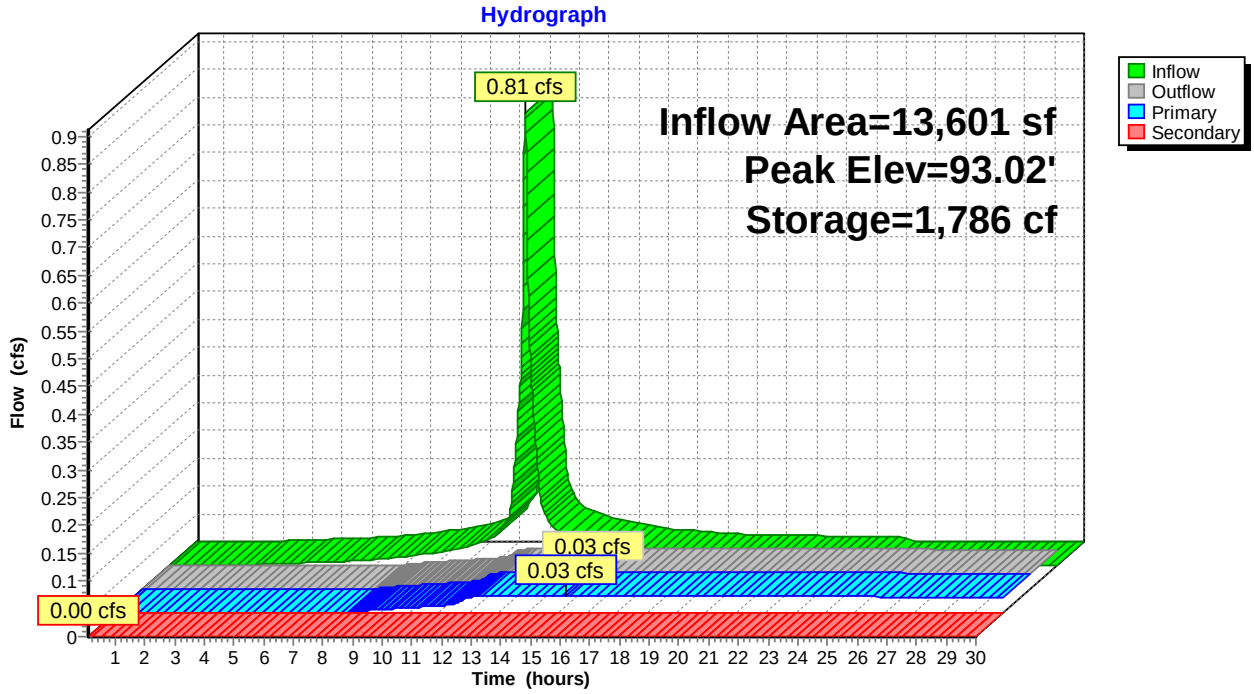
Device	Routing	Invert	Outlet Devices
#1	Primary	88.90'	**8.0" Round Culvert** L= 80.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 88.90' / 88.50' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf
#2	Device 1	89.45'	**0.8" Vert. WQV Outlet** C= 0.600

#3 Secondary 94.50' **10.0' long (Profile 1) Broad-Crested Rectangular Weir**
Head (feet) 0.49 0.98 1.48
Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=0.03 cfs @ 15.27 hrs HW=93.02' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.03 cfs of 2.37 cfs potential flow)
└─**2=WQV Outlet** (Orifice Controls 0.03 cfs @ 9.06 fps)

Secondary OutFlow Max=0.00 cfs @ 0.10 hrs HW=89.17' TW=0.00' (Dynamic Tailwater)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P2: VUSF #1



Summary for Subcatchment SC 1: SC 1

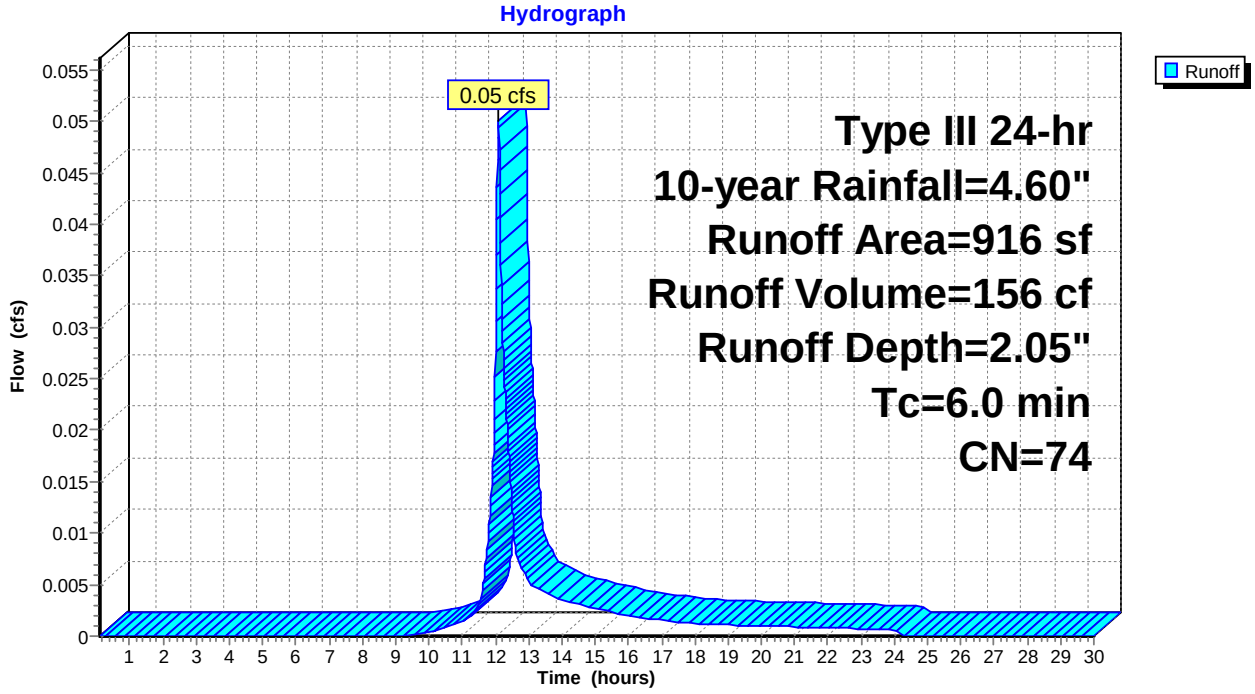
Runoff = 0.05 cfs @ 12.09 hrs, Volume= 156 cf, Depth= 2.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
916	74	>75% Grass cover, Good, HSG C
916		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, min. Tc (0.1 hour)**

Subcatchment SC 1: SC 1



Summary for Subcatchment SC 2: SC 2

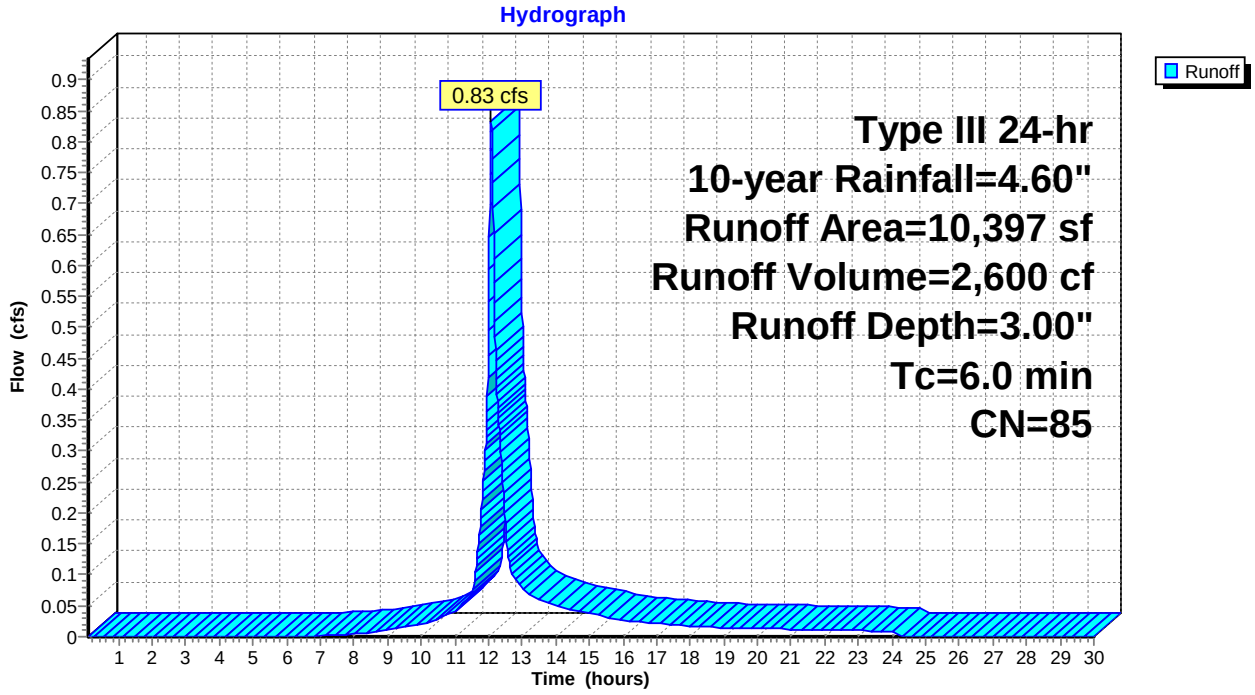
Runoff = 0.83 cfs @ 12.09 hrs, Volume= 2,600 cf, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
4,881	98	Paved parking, HSG C
5,516	74	>75% Grass cover, Good, HSG C
10,397	85	Weighted Average
5,516		53.05% Pervious Area
4,881		46.95% Impervious Area

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

Subcatchment SC 2: SC 2



Summary for Subcatchment SC 3.1: SC 3.1

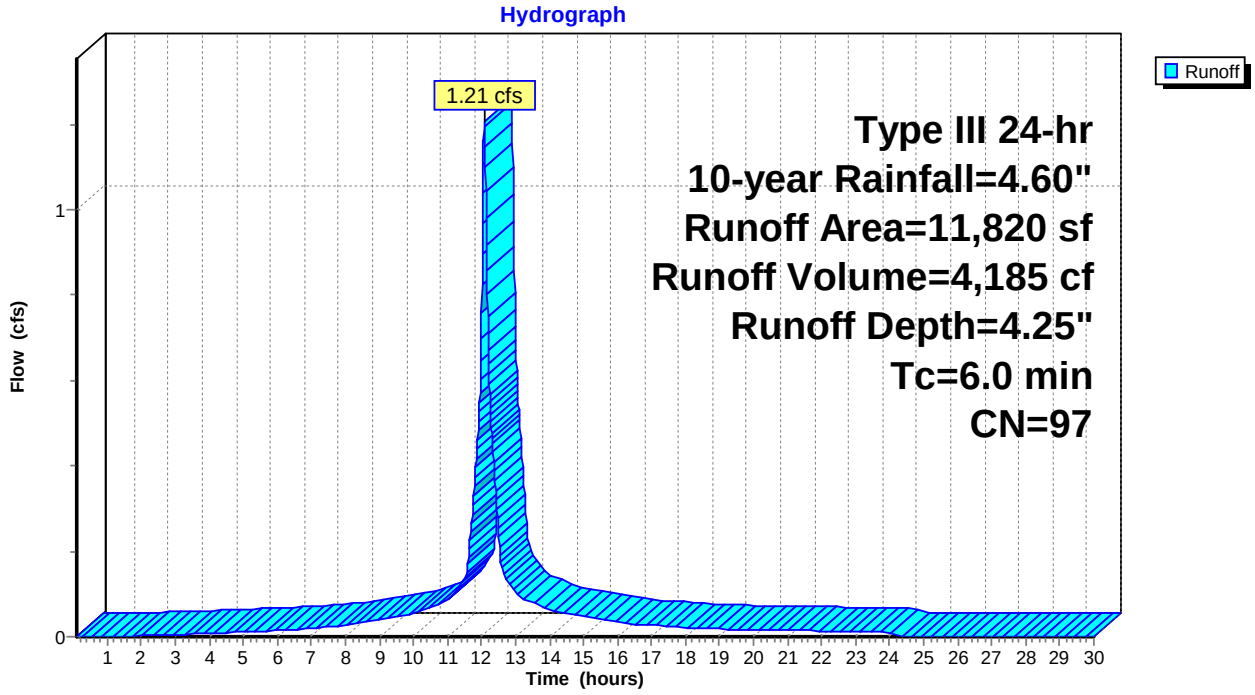
Runoff = 1.21 cfs @ 12.08 hrs, Volume= 4,185 cf, Depth= 4.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	621	74	Landscaping, >75% Grass cover, Good, HSG C
*	11,199	98	Pavement / Roof / Sidewalk
	11,820	97	Weighted Average
	621		5.25% Pervious Area
	11,199		94.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum Tc (0.1 hour)**

Subcatchment SC 3.1: SC 3.1



Summary for Subcatchment SC 3.2: SC 3.2

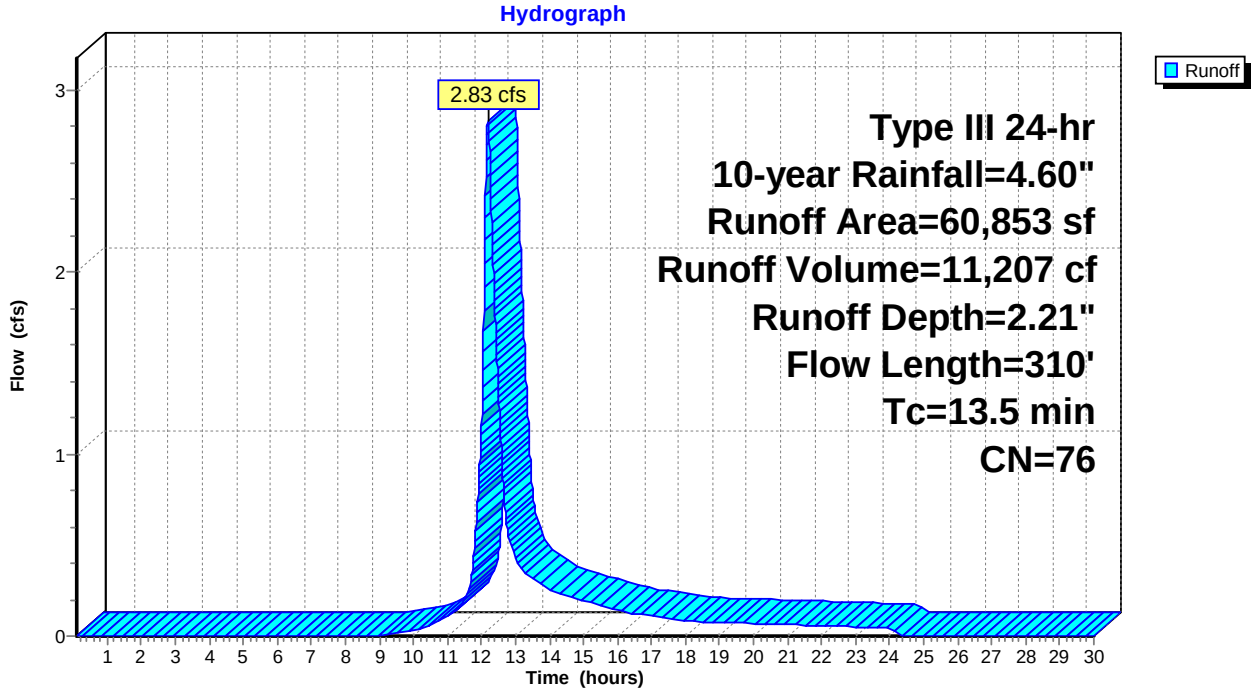
Runoff = 2.83 cfs @ 12.19 hrs, Volume= 11,207 cf, Depth= 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	17,725	98	Paved parking lot and patio space
*	2,834	74	Grass/landscaping near driveway entrance
*	11,137	73	Woods, Fair, HSG C
*	29,157	65	Meadow / conservation mix East of parking expansion
	60,853	76	Weighted Average
	43,128		70.87% Pervious Area
	17,725		29.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0300	0.14		**Sheet Flow, Sheet flow (A to B)** Grass: Dense n= 0.240 P2= 3.27"
0.7	90	0.0200	2.12		**Shallow Concentrated Flow, SCF (B to C)** Grassed Waterway Kv= 15.0 fps
0.2	70	0.1000	4.74		**Shallow Concentrated Flow, SCF (C to D)** Grassed Waterway Kv= 15.0 fps
0.6	50	0.0800	1.41		**Shallow Concentrated Flow, SCF (D to E)** Woodland Kv= 5.0 fps
13.5	310	Total			

Subcatchment SC 3.2: SC 3.2



Summary for Subcatchment SC 3.3: SC 3.3

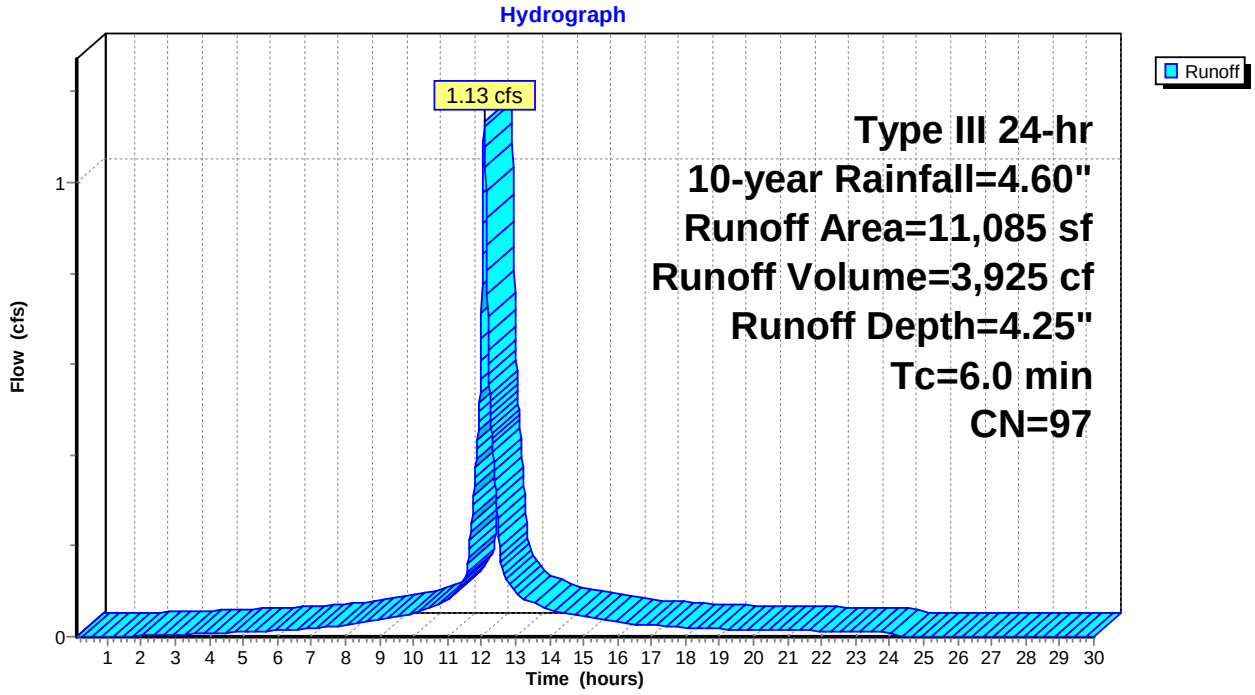
Runoff = 1.13 cfs @ 12.08 hrs, Volume= 3,925 cf, Depth= 4.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	10,520	98	Phase I Parking
	565	74	>75% Grass cover, Good, HSG C
	11,085	97	Weighted Average
	565		5.10% Pervious Area
	10,520		94.90% Impervious Area

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

Subcatchment SC 3.3: SC 3.3



Summary for Subcatchment SC 3.4: SC 3.4

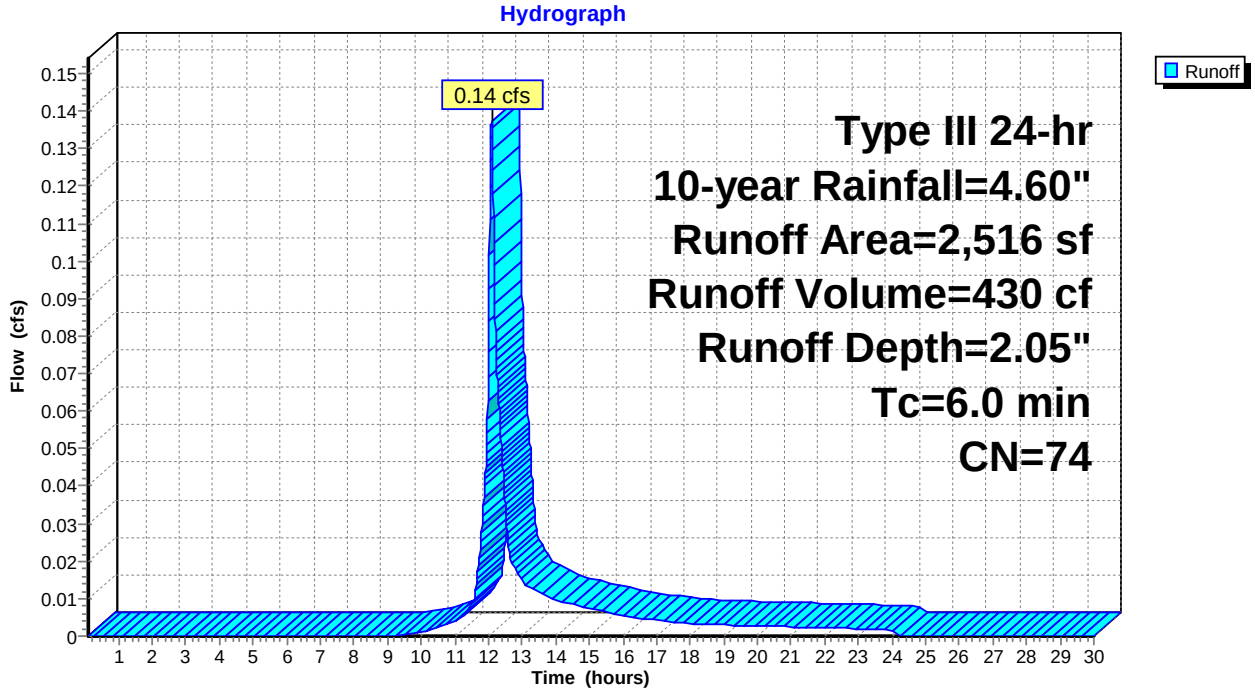
Runoff = 0.14 cfs @ 12.09 hrs, Volume= 430 cf, Depth= 2.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	2,516	74	Self contained pond embankment slopes
	2,516		100.00% Pervious Area

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

Subcatchment SC 3.4: SC 3.4



Summary for Subcatchment SC X.1: S. Freeport Rd & Rte 1

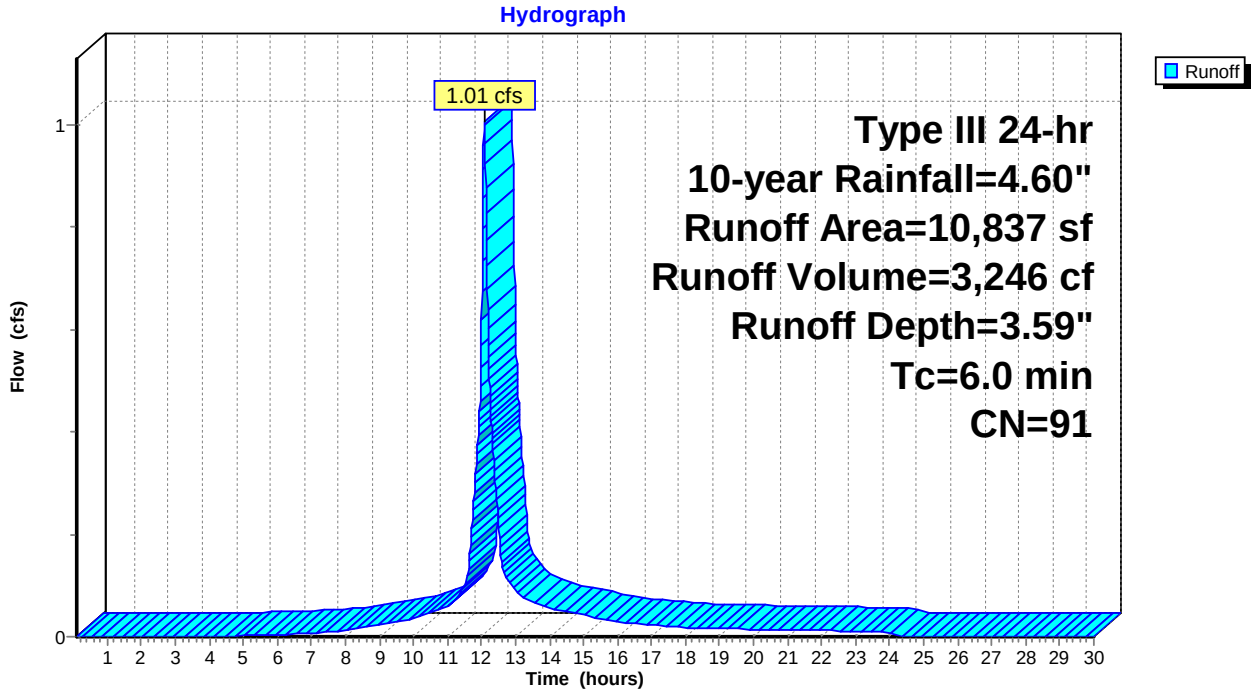
Runoff = 1.01 cfs @ 12.08 hrs, Volume= 3,246 cf, Depth= 3.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	7,073	98	South Freeport/Route 1
	3,764	79	50-75% Grass cover, Fair, HSG C
	10,837	91	Weighted Average
	3,764		34.73% Pervious Area
	7,073		65.27% Impervious Area

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

Subcatchment SC X.1: S. Freeport Rd & Rte 1



Summary for Subcatchment SC X.2: S. Freeport Rd / Rte 1

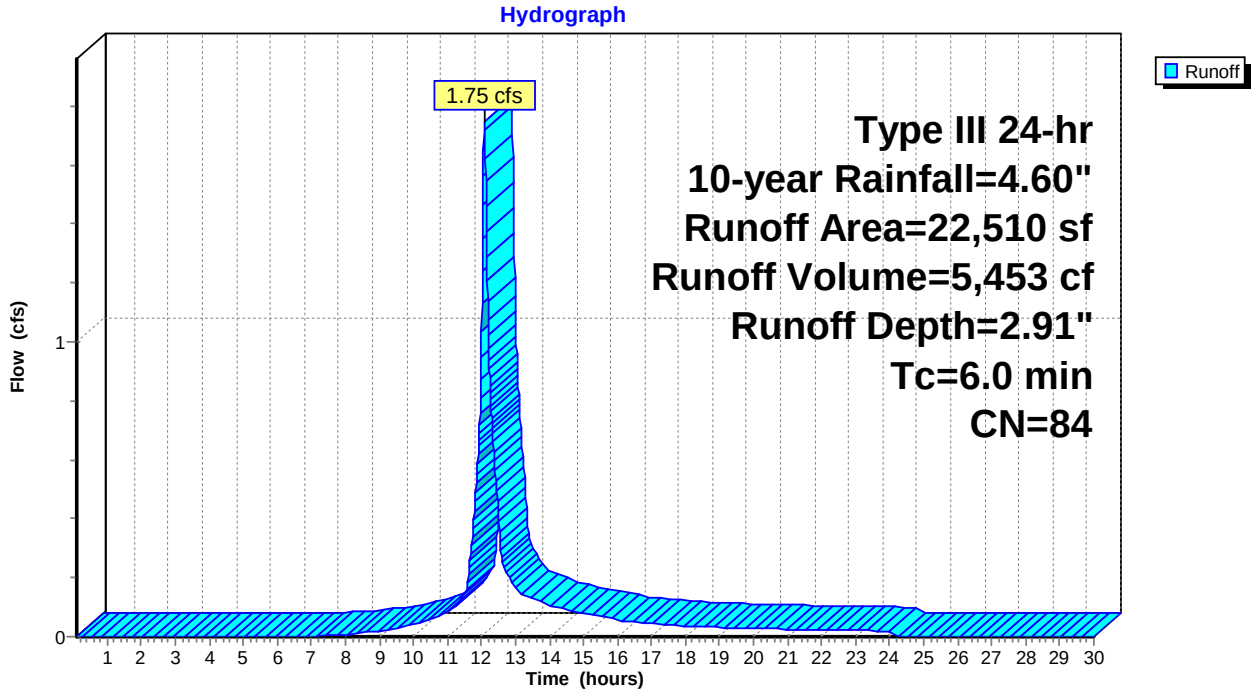
Runoff = 1.75 cfs @ 12.09 hrs, Volume= 5,453 cf, Depth= 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	5,735	98	Paved parking
	16,775	79	50-75% Grass cover, Fair, HSG C
	22,510	84	Weighted Average
	16,775		74.52% Pervious Area
	5,735		25.48% Impervious Area

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

Subcatchment SC X.2: S. Freeport Rd / Rte 1

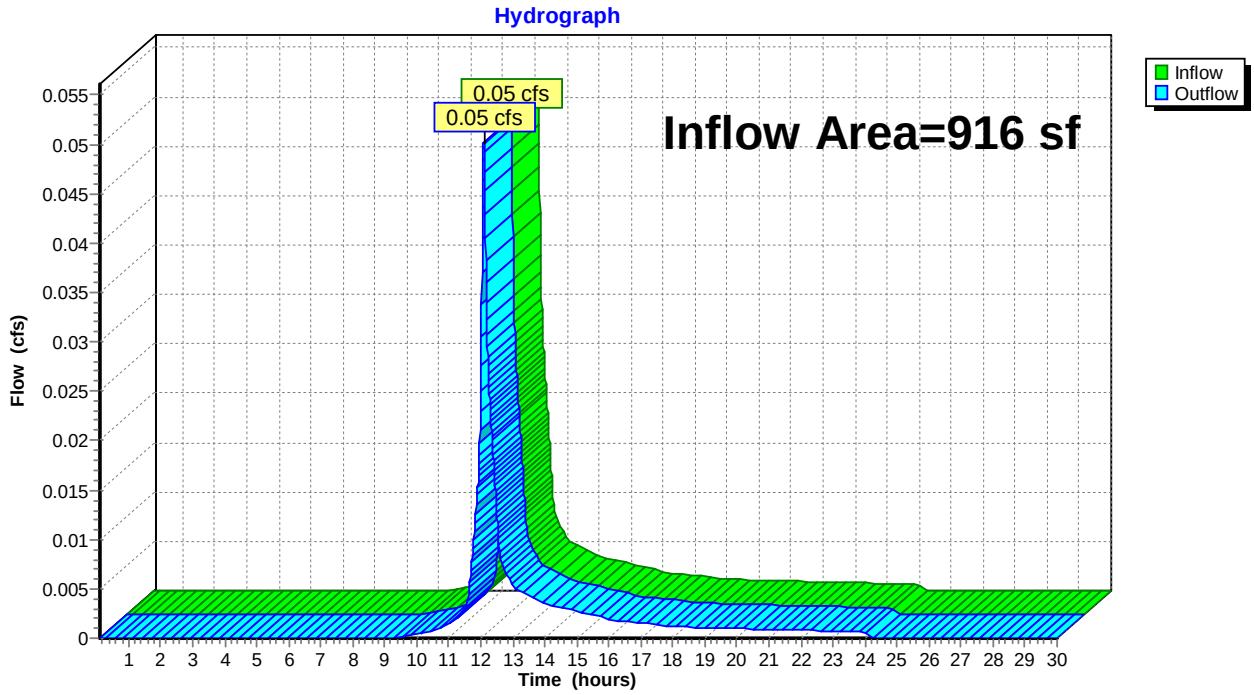


Summary for Reach POI 1: Route 1 North

Inflow Area = 916 sf, 0.00% Impervious, Inflow Depth = 2.05" for 10-year event
Inflow = 0.05 cfs @ 12.09 hrs, Volume= 156 cf
Outflow = 0.05 cfs @ 12.09 hrs, Volume= 156 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs

Reach POI 1: Route 1 North



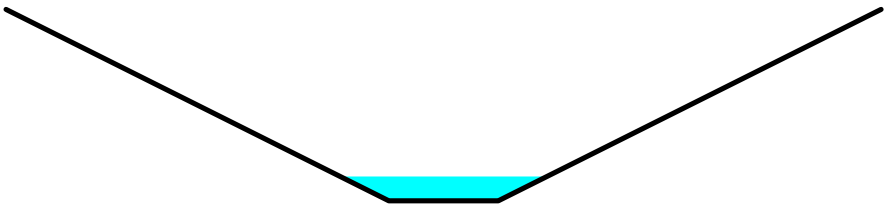
Summary for Reach POI 2: Route 1 South

Inflow Area = 43,744 sf, 40.44% Impervious, Inflow Depth = 3.10" for 10-year event
Inflow = 3.60 cfs @ 12.09 hrs, Volume= 11,298 cf
Outflow = 3.58 cfs @ 12.09 hrs, Volume= 11,298 cf, Atten= 0%, Lag= 0.4 min

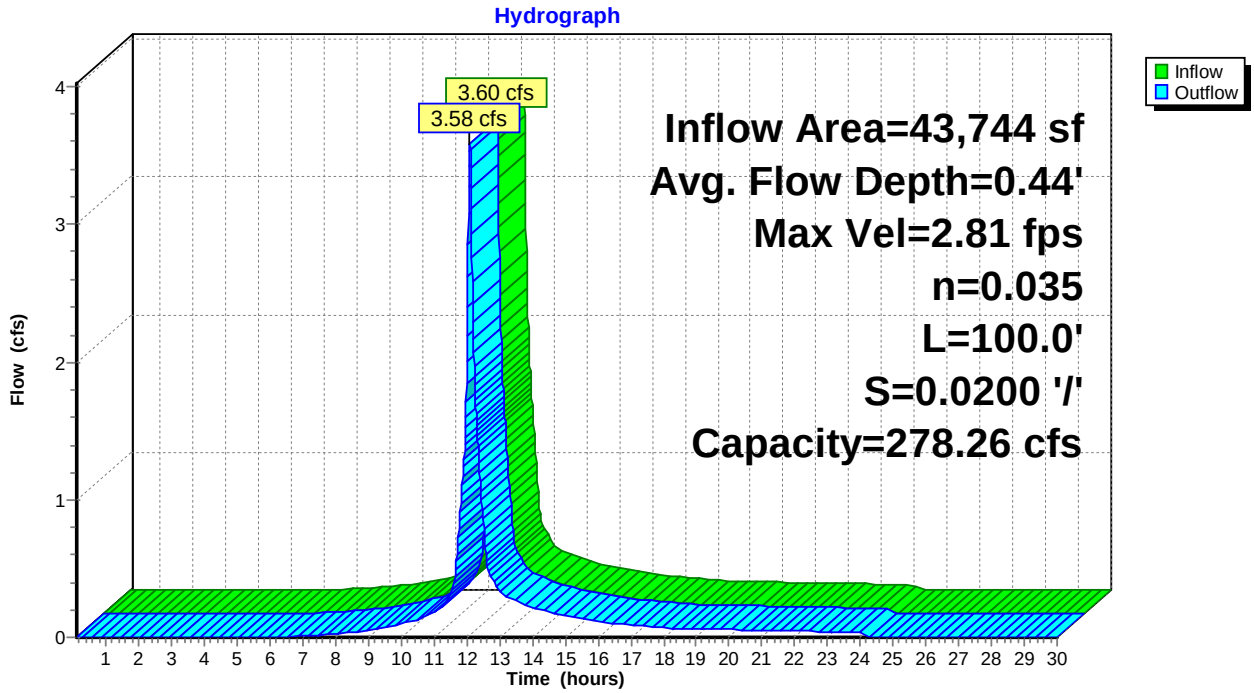
Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.81 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 0.85 fps, Avg. Travel Time= 2.0 min

Peak Storage= 127 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.44'
Bank-Full Depth= 3.50' Flow Area= 31.5 sf, Capacity= 278.26 cfs

2.00' x 3.50' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 2.0 '/' Top Width= 16.00'
Length= 100.0' Slope= 0.0200 '/'
Inlet Invert= 93.00', Outlet Invert= 91.00'



Reach POI 2: Route 1 South

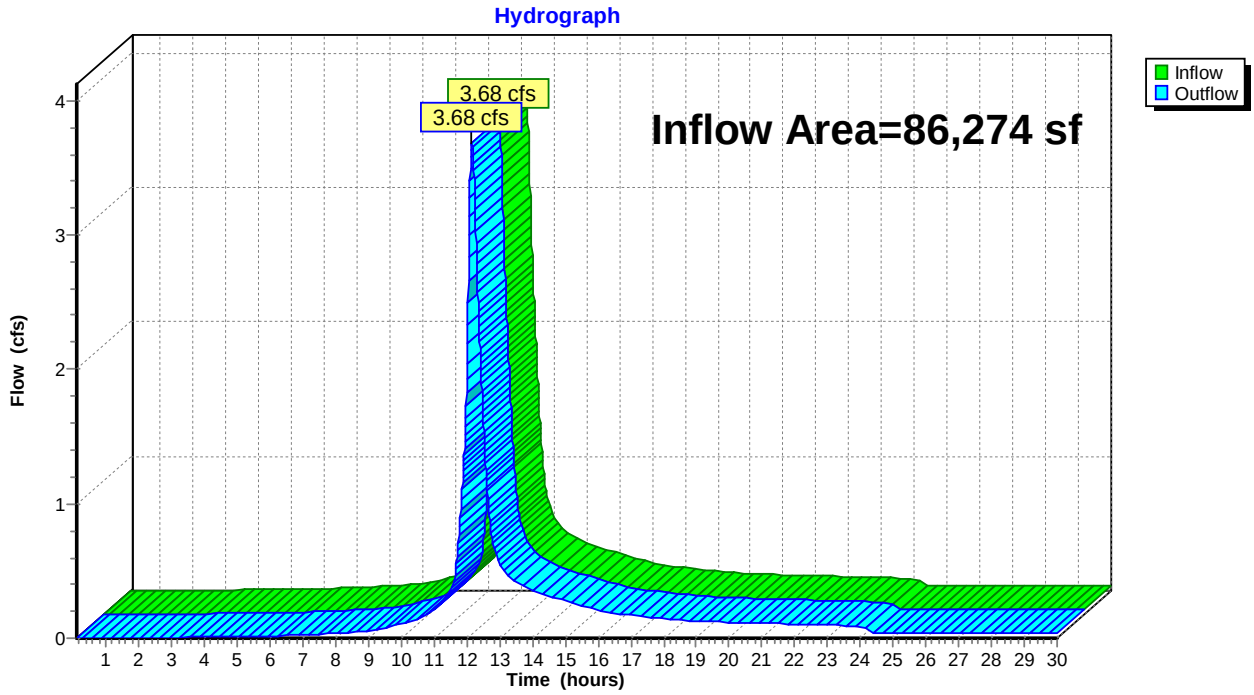


Summary for Reach POI 3: Wetlands

Inflow Area = 86,274 sf, 45.72% Impervious, Inflow Depth > 2.49" for 10-year event
Inflow = 3.68 cfs @ 12.15 hrs, Volume= 17,870 cf
Outflow = 3.68 cfs @ 12.15 hrs, Volume= 17,870 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs

Reach POI 3: Wetlands



Summary for Pond CB-1: CB-1

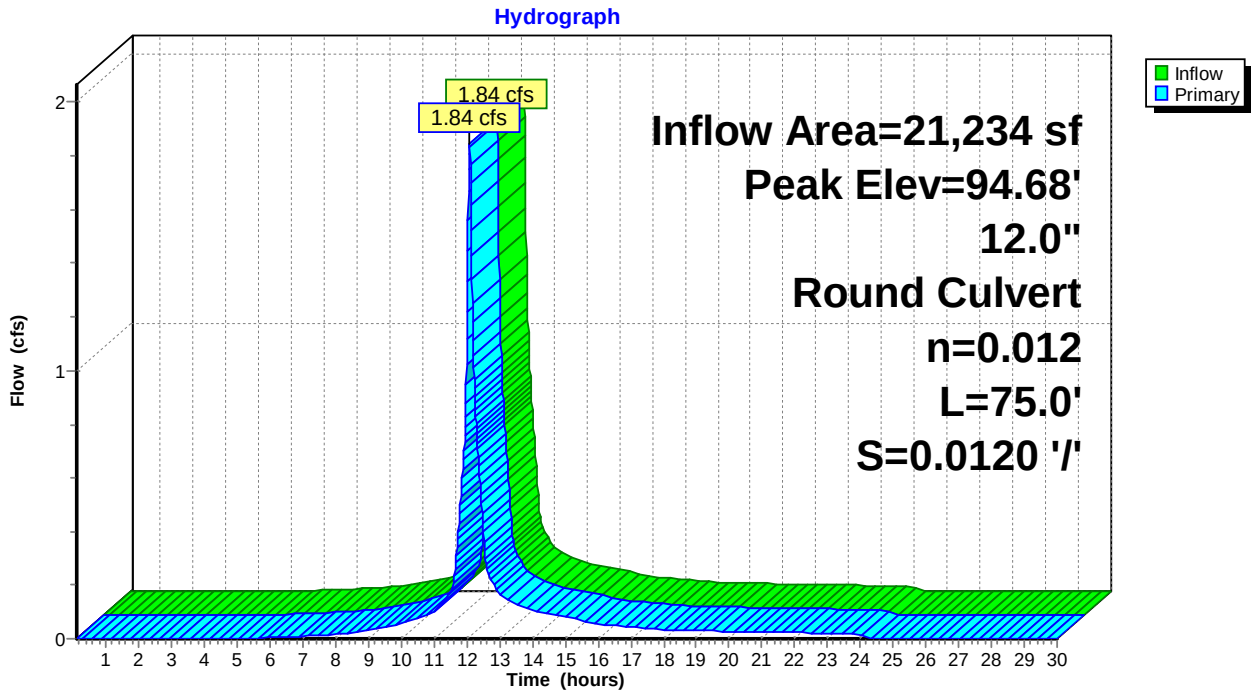
Inflow Area = 21,234 sf, 56.30% Impervious, Inflow Depth = 3.30" for 10-year event
Inflow = 1.84 cfs @ 12.09 hrs, Volume= 5,846 cf
Outflow = 1.84 cfs @ 12.09 hrs, Volume= 5,846 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.84 cfs @ 12.09 hrs, Volume= 5,846 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Peak Elev= 94.68' @ 12.09 hrs
Flood Elev= 94.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	93.90'	**12.0" Round Culvert** L= 75.0' Ke= 0.600 Inlet / Outlet Invert= 93.90' / 93.00' S= 0.0120 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.84 cfs @ 12.09 hrs HW=94.68' TW=93.44' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.84 cfs @ 2.81 fps)

Pond CB-1: CB-1



Summary for Pond CB-2: CB

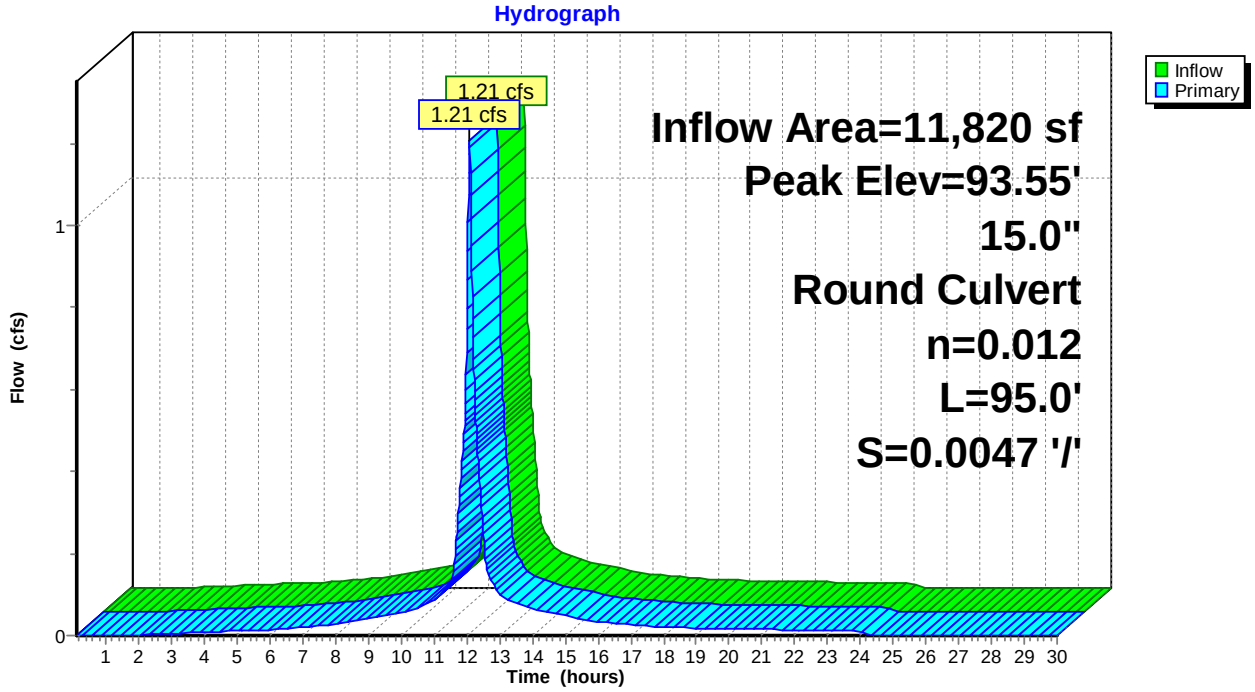
Inflow Area = 11,820 sf, 94.75% Impervious, Inflow Depth = 4.25" for 10-year event
Inflow = 1.21 cfs @ 12.09 hrs, Volume= 4,185 cf
Outflow = 1.21 cfs @ 12.09 hrs, Volume= 4,185 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.21 cfs @ 12.09 hrs, Volume= 4,185 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Peak Elev= 93.55' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	92.95'	**15.0" Round Culvert** L= 95.0' Ke= 0.600 Inlet / Outlet Invert= 92.95' / 92.50' S= 0.0047 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.21 cfs @ 12.09 hrs HW=93.55' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.21 cfs @ 3.04 fps)

Pond CB-2: CB



Summary for Pond P1: Filterra 1

Inflow Area = 11,820 sf, 94.75% Impervious, Inflow Depth = 4.25" for 10-year event
Inflow = 1.21 cfs @ 12.08 hrs, Volume= 4,185 cf
Outflow = 1.21 cfs @ 12.09 hrs, Volume= 4,185 cf, Atten= 0%, Lag= 0.4 min
Primary = 1.21 cfs @ 12.09 hrs, Volume= 4,185 cf
Secondary = 0.00 cfs @ 0.10 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Peak Elev= 95.06' @ 12.09 hrs Surf.Area= 36 sf Storage= 14 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (757.6 - 757.5)

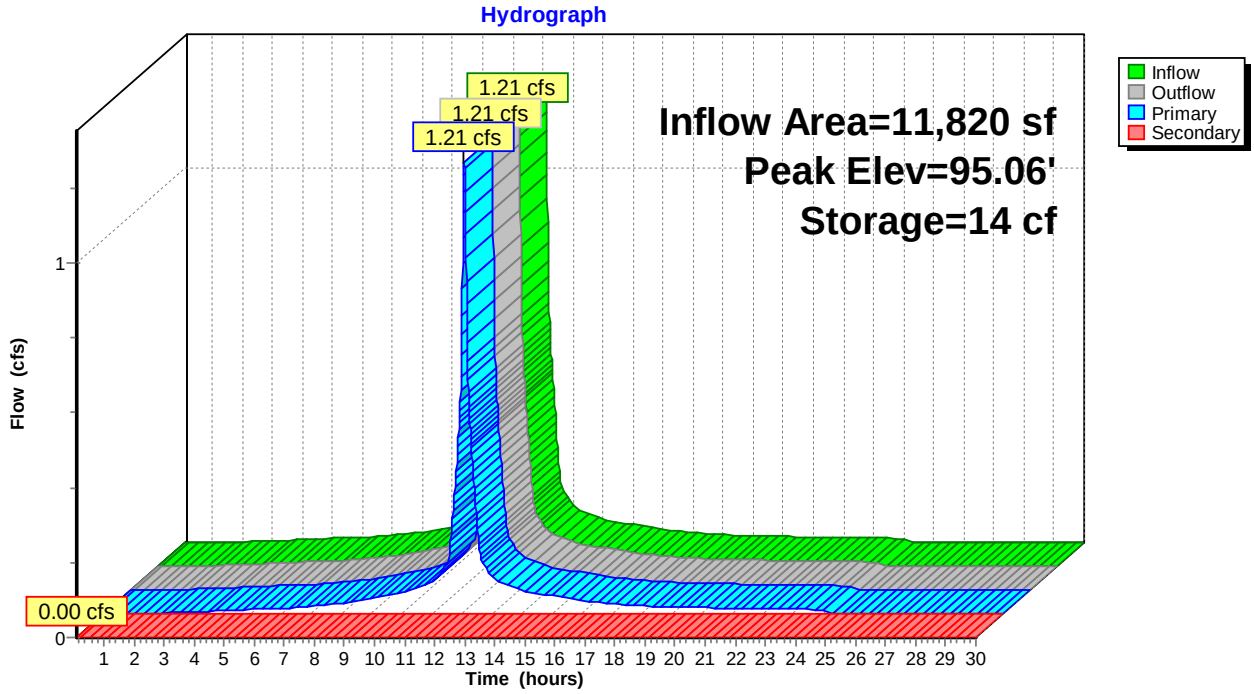
Volume	Invert	Avail.Storage	Storage Description
#1	93.15'	18 cf	**6.00'W x 6.00'L x 2.50'H Soil Filter Media** 90 cf Overall x 20.0% Voids
#2	95.65'	27 cf	**6.00'W x 6.00'L x 0.75'H Ponding** -Impervious
#3	96.40'	180 cf	**30.00'W x 30.00'L x 0.20'H Spillover/Ponding to CB**
		225 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	93.15'	**6.0" Round Culvert** L= 4.0' Ke= 0.600 Inlet / Outlet Invert= 93.15' / 93.12' S= 0.0075 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Primary	93.15'	**140.000 in/hr Soil Media Filtration over Surface area**
#3	Secondary	96.15'	**3.1" x 3.8" Horiz. CB Overflow X 5.00 columns** X 5 rows C= 0.600 in 24.0" x 24.0" Grate (51% open area) Limited to weir flow at low heads

Primary OutFlow Max=1.20 cfs @ 12.09 hrs HW=95.05' TW=93.55' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 1.09 cfs @ 5.54 fps)
└─**2=Soil Media Filtration** (Exfiltration Controls 0.12 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.10 hrs HW=93.15' TW=92.95' (Dynamic Tailwater)
└─**3=CB Overflow** (Controls 0.00 cfs)

Pond P1: Filterra 1



Summary for Pond P2: VUSF #1

Inflow Area = 13,601 sf, 77.35% Impervious, Inflow Depth = 3.84" for 10-year event
Inflow = 1.27 cfs @ 12.08 hrs, Volume= 4,354 cf
Outflow = 0.03 cfs @ 16.20 hrs, Volume= 2,479 cf, Atten= 97%, Lag= 247.2 min
Primary = 0.03 cfs @ 16.20 hrs, Volume= 2,479 cf
Secondary = 0.00 cfs @ 0.10 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Peak Elev= 93.80' @ 16.20 hrs Surf.Area= 4,730 sf Storage= 3,006 cf

Plug-Flow detention time= 529.3 min calculated for 2,478 cf (57% of inflow)
Center-of-Mass det. time= 416.1 min (1,182.0 - 765.8)

Volume	Invert	Avail.Storage	Storage Description
#1	92.00'	4,913 cf	**Ponding (Prismatic)** Listed below (Recalc)
#2	90.50'	135 cf	**Filter Media/Loam (Prismatic)** Listed below (Recalc) 1,350 cf Overall x 10.0% Voids
#3	90.17'	66 cf	**Transition Gravel (Prismatic)** Listed below (Recalc) 332 cf Overall x 20.0% Voids
#4	89.17'	400 cf	**Crushed Stone (Prismatic)** Listed below (Recalc) 1,007 cf Overall - 7 cf Embedded = 1,000 cf x 40.0% Voids
#5	89.45'	6 cf	**4.0" Round Pipe Storage** Inside #4 L= 70.0' 7 cf Overall - 0.2" Wall Thickness = 6 cf
		5,520 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.00	1,007	0	0
93.00	1,295	1,151	1,151
94.00	1,944	1,620	2,771
95.00	2,340	2,142	4,913

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
90.50	900	0	0
92.00	900	1,350	1,350

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
90.17	1,007	0	0
90.50	1,007	332	332

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
89.17	1,007	0	0
90.17	1,007	1,007	1,007

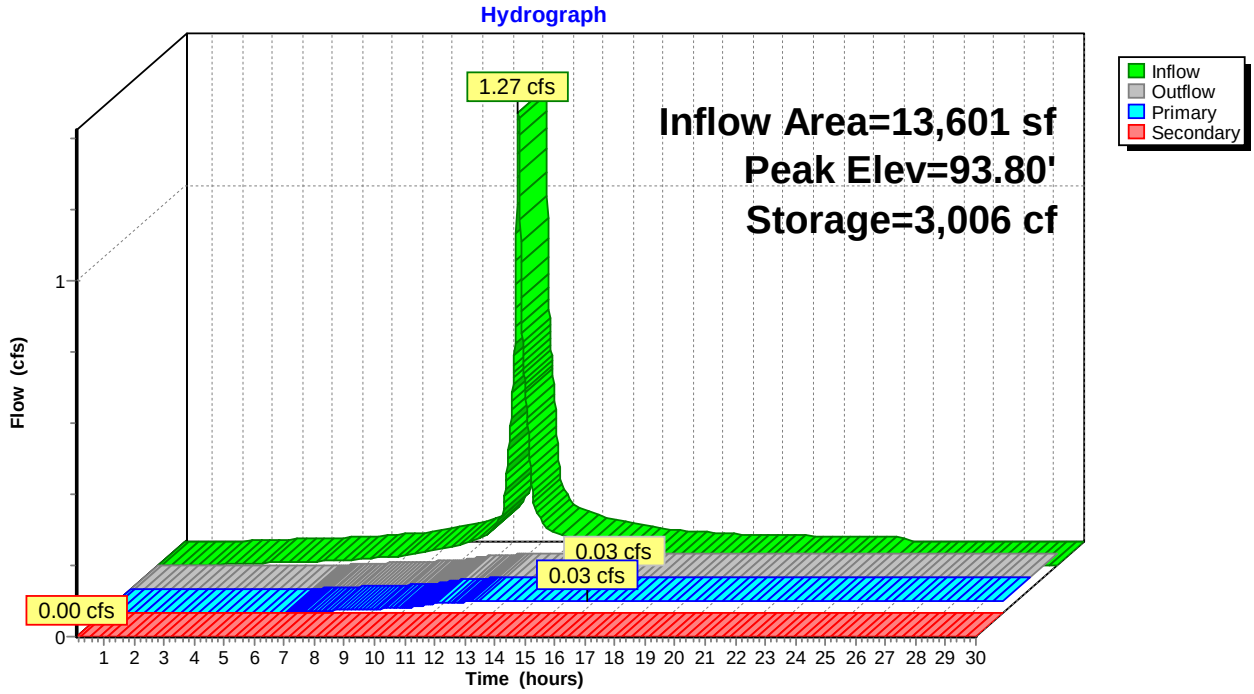
Device	Routing	Invert	Outlet Devices
#1	Primary	88.90'	**8.0" Round Culvert** L= 80.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 88.90' / 88.50' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf
#2	Device 1	89.45'	**0.8" Vert. WQV Outlet** C= 0.600

#3 Secondary 94.50' **10.0' long (Profile 1) Broad-Crested Rectangular Weir**
Head (feet) 0.49 0.98 1.48
Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=0.03 cfs @ 16.20 hrs HW=93.80' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.03 cfs of 2.60 cfs potential flow)
└─**2=WQV Outlet** (Orifice Controls 0.03 cfs @ 10.01 fps)

Secondary OutFlow Max=0.00 cfs @ 0.10 hrs HW=89.17' TW=0.00' (Dynamic Tailwater)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P2: VUSF #1



Summary for Subcatchment SC 1: SC 1

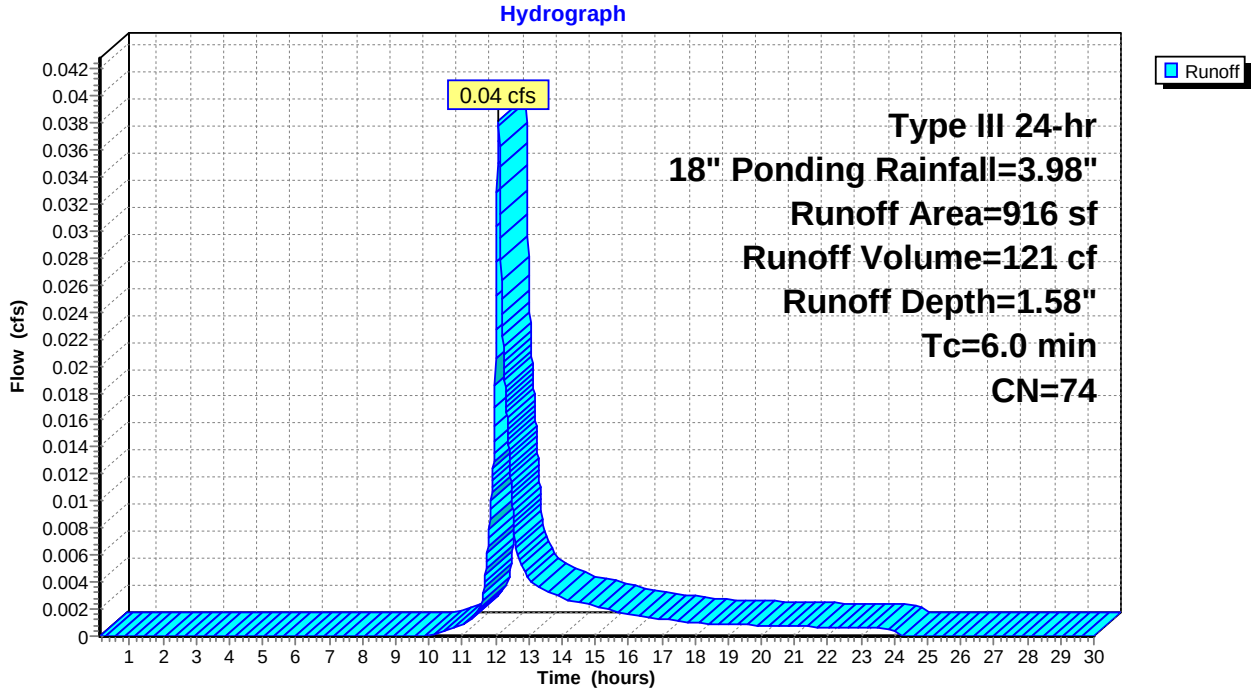
Runoff = 0.04 cfs @ 12.09 hrs, Volume= 121 cf, Depth= 1.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 18" Ponding Rainfall=3.98"

Area (sf)	CN	Description
916	74	>75% Grass cover, Good, HSG C
916		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, min. Tc (0.1 hour)**

Subcatchment SC 1: SC 1



Summary for Subcatchment SC 2: SC 2

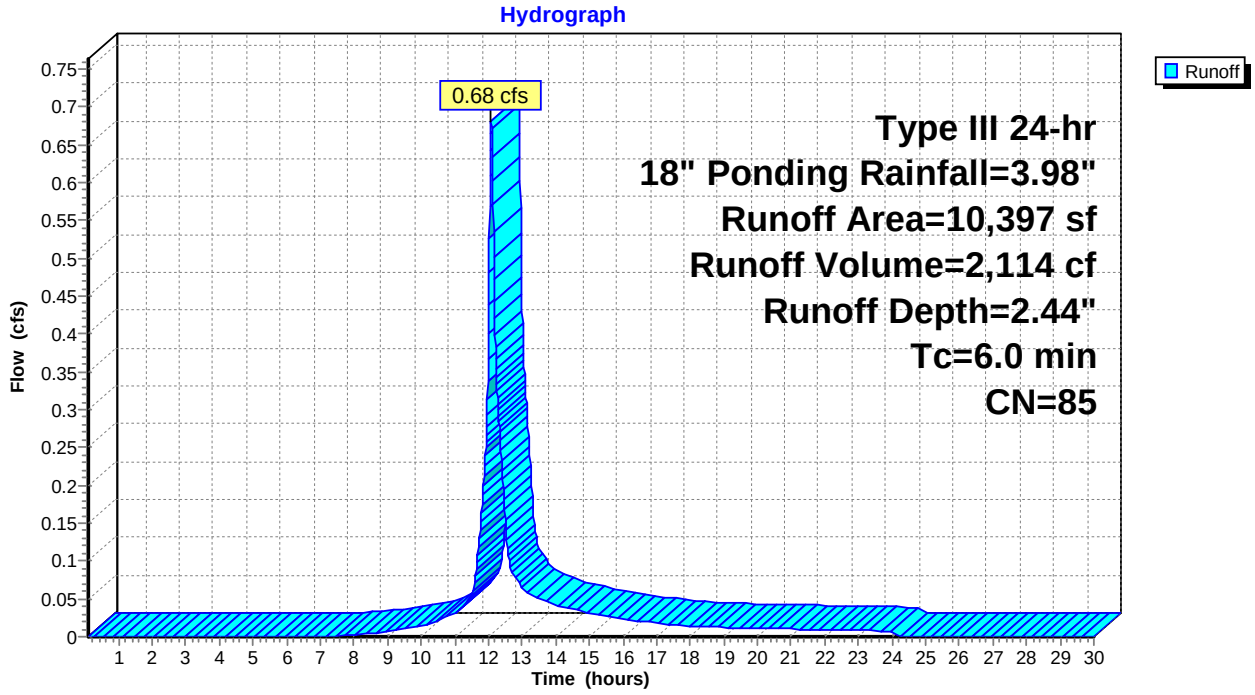
Runoff = 0.68 cfs @ 12.09 hrs, Volume= 2,114 cf, Depth= 2.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 18" Ponding Rainfall=3.98"

Area (sf)	CN	Description
4,881	98	Paved parking, HSG C
5,516	74	>75% Grass cover, Good, HSG C
10,397	85	Weighted Average
5,516		53.05% Pervious Area
4,881		46.95% Impervious Area

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

Subcatchment SC 2: SC 2



Summary for Subcatchment SC 3.1: SC 3.1

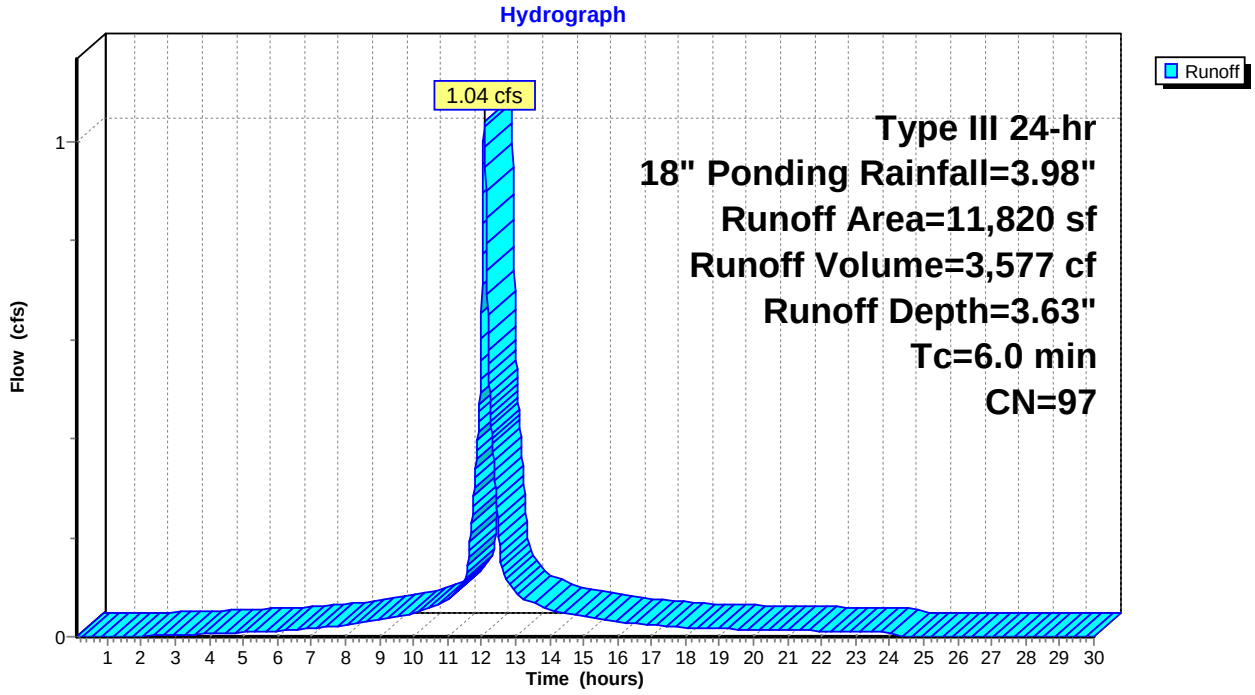
Runoff = 1.04 cfs @ 12.08 hrs, Volume= 3,577 cf, Depth= 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 18" Ponding Rainfall=3.98"

	Area (sf)	CN	Description
*	621	74	Landscaping, >75% Grass cover, Good, HSG C
*	11,199	98	Pavement / Roof / Sidewalk
	11,820	97	Weighted Average
	621		5.25% Pervious Area
	11,199		94.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum Tc (0.1 hour)**

Subcatchment SC 3.1: SC 3.1



Summary for Subcatchment SC 3.2: SC 3.2

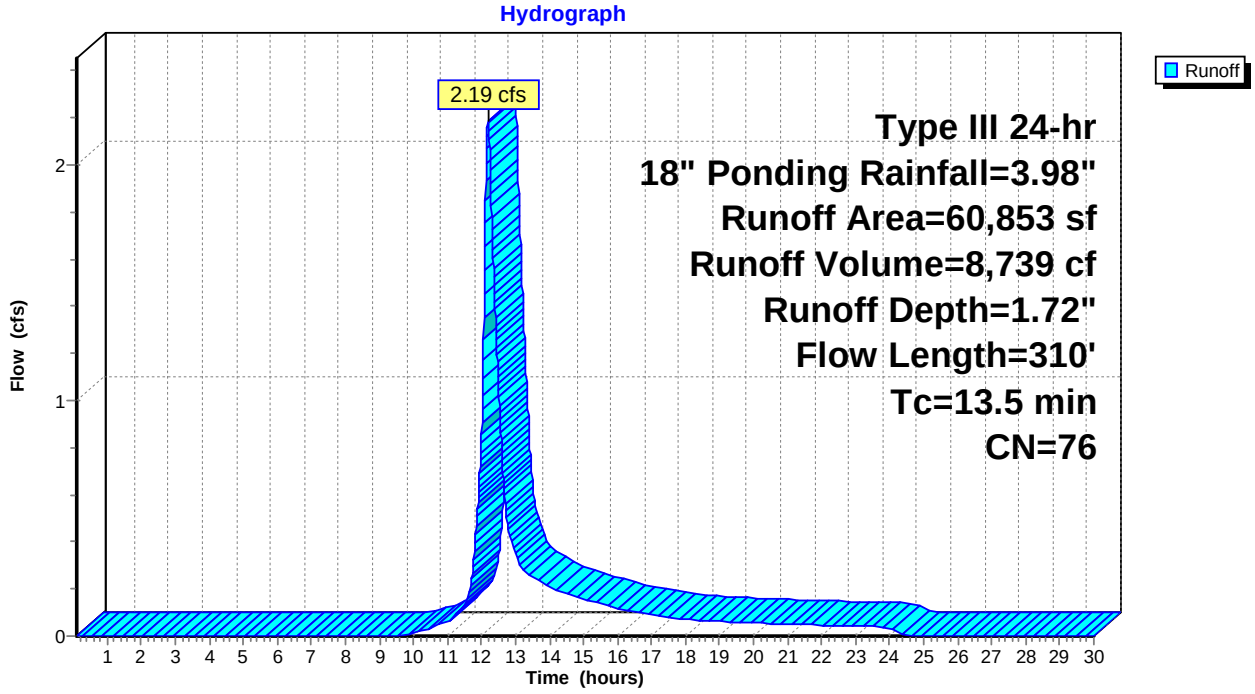
Runoff = 2.19 cfs @ 12.19 hrs, Volume= 8,739 cf, Depth= 1.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 18" Ponding Rainfall=3.98"

	Area (sf)	CN	Description
*	17,725	98	Paved parking lot and patio space
*	2,834	74	Grass/landscaping near driveway entrance
*	11,137	73	Woods, Fair, HSG C
*	29,157	65	Meadow / conservation mix East of parking expansion
	60,853	76	Weighted Average
	43,128		70.87% Pervious Area
	17,725		29.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0300	0.14		**Sheet Flow, Sheet flow (A to B)** Grass: Dense n= 0.240 P2= 3.27"
0.7	90	0.0200	2.12		**Shallow Concentrated Flow, SCF (B to C)** Grassed Waterway Kv= 15.0 fps
0.2	70	0.1000	4.74		**Shallow Concentrated Flow, SCF (C to D)** Grassed Waterway Kv= 15.0 fps
0.6	50	0.0800	1.41		**Shallow Concentrated Flow, SCF (D to E)** Woodland Kv= 5.0 fps
13.5	310	Total			

Subcatchment SC 3.2: SC 3.2



Summary for Subcatchment SC 3.3: SC 3.3

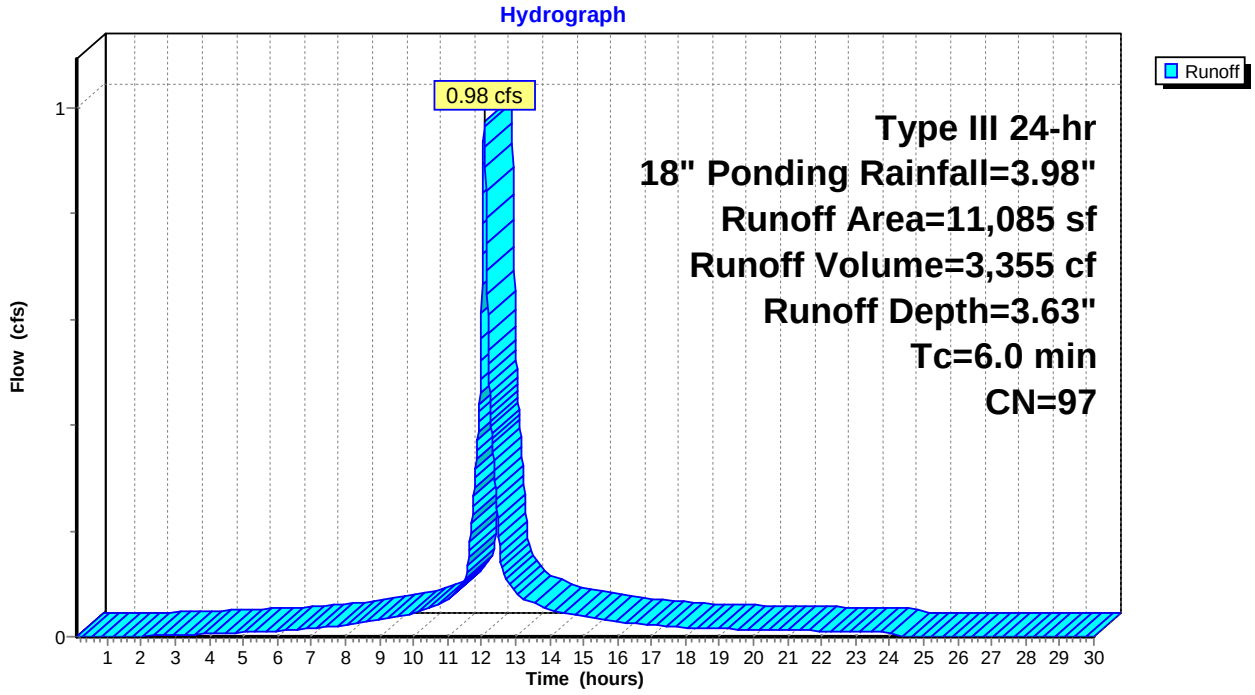
Runoff = 0.98 cfs @ 12.08 hrs, Volume= 3,355 cf, Depth= 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 18" Ponding Rainfall=3.98"

	Area (sf)	CN	Description
*	10,520	98	Phase I Parking
	565	74	>75% Grass cover, Good, HSG C
	11,085	97	Weighted Average
	565		5.10% Pervious Area
	10,520		94.90% Impervious Area

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

Subcatchment SC 3.3: SC 3.3



Summary for Subcatchment SC 3.4: SC 3.4

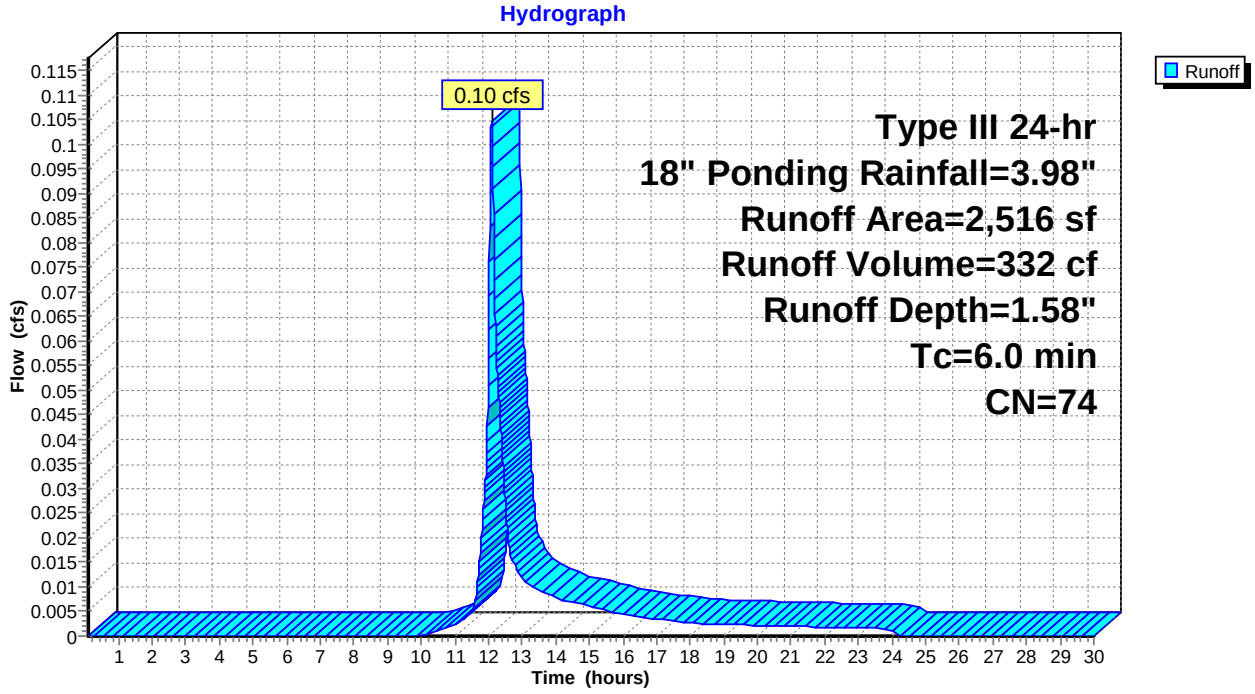
Runoff = 0.10 cfs @ 12.09 hrs, Volume= 332 cf, Depth= 1.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 18" Ponding Rainfall=3.98"

	Area (sf)	CN	Description
*	2,516	74	Self contained pond embankment slopes
	2,516		100.00% Pervious Area

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

Subcatchment SC 3.4: SC 3.4



Summary for Subcatchment SC X.1: S. Freeport Rd & Rte 1

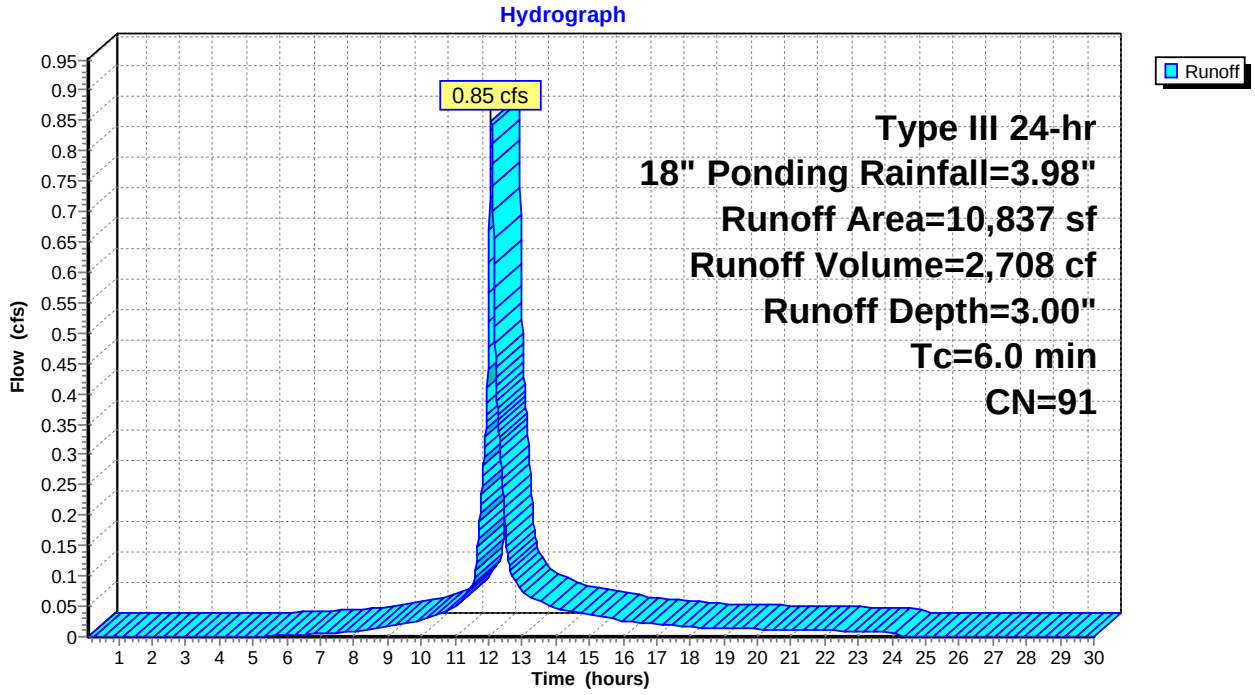
Runoff = 0.85 cfs @ 12.09 hrs, Volume= 2,708 cf, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 18" Ponding Rainfall=3.98"

	Area (sf)	CN	Description
*	7,073	98	South Freeport/Route 1
	3,764	79	50-75% Grass cover, Fair, HSG C
	10,837	91	Weighted Average
	3,764		34.73% Pervious Area
	7,073		65.27% Impervious Area

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

Subcatchment SC X.1: S. Freeport Rd & Rte 1



Summary for Subcatchment SC X.2: S. Freeport Rd / Rte 1

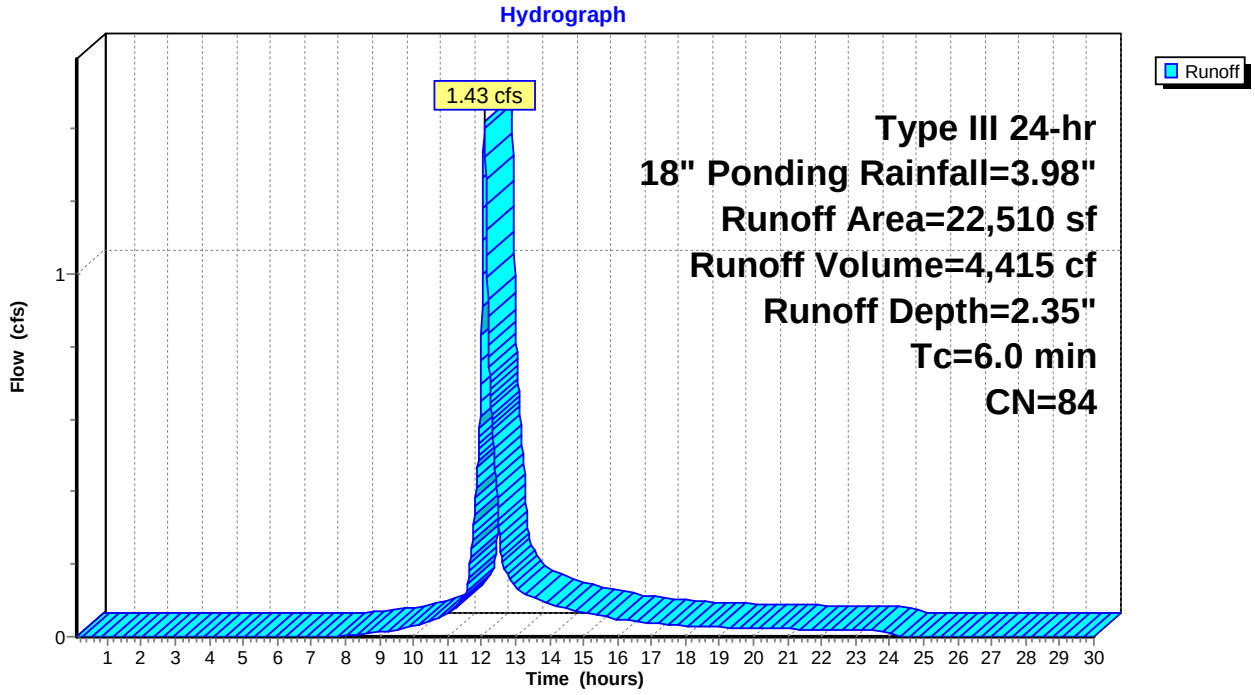
Runoff = 1.43 cfs @ 12.09 hrs, Volume= 4,415 cf, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 18" Ponding Rainfall=3.98"

	Area (sf)	CN	Description
*	5,735	98	Paved parking
	16,775	79	50-75% Grass cover, Fair, HSG C
	22,510	84	Weighted Average
	16,775		74.52% Pervious Area
	5,735		25.48% Impervious Area

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

Subcatchment SC X.2: S. Freeport Rd / Rte 1

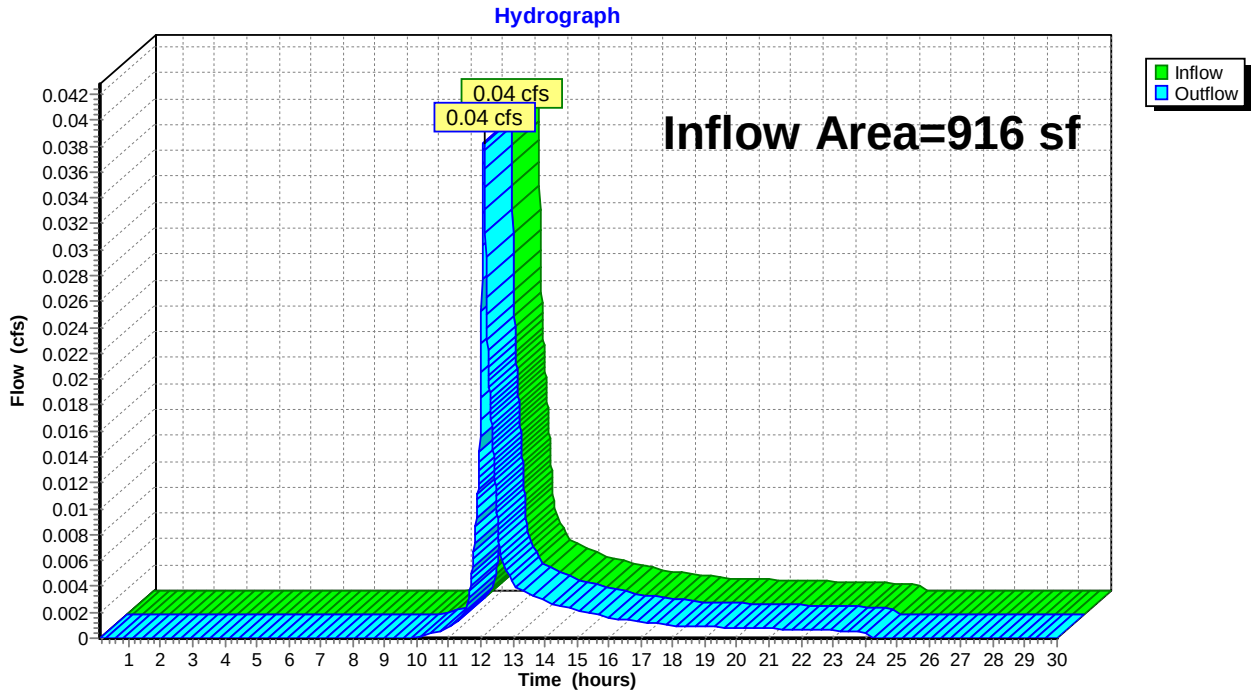


Summary for Reach POI 1: Route 1 North

Inflow Area = 916 sf, 0.00% Impervious, Inflow Depth = 1.58" for 18" Ponding event
Inflow = 0.04 cfs @ 12.09 hrs, Volume= 121 cf
Outflow = 0.04 cfs @ 12.09 hrs, Volume= 121 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs

Reach POI 1: Route 1 North



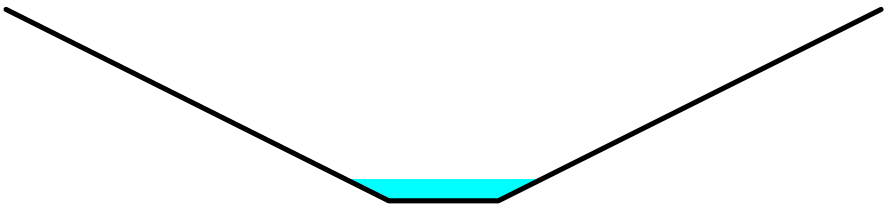
Summary for Reach POI 2: Route 1 South

Inflow Area = 43,744 sf, 40.44% Impervious, Inflow Depth = 2.53" for 18" Ponding event
Inflow = 2.96 cfs @ 12.09 hrs, Volume= 9,236 cf
Outflow = 2.94 cfs @ 12.09 hrs, Volume= 9,236 cf, Atten= 0%, Lag= 0.4 min

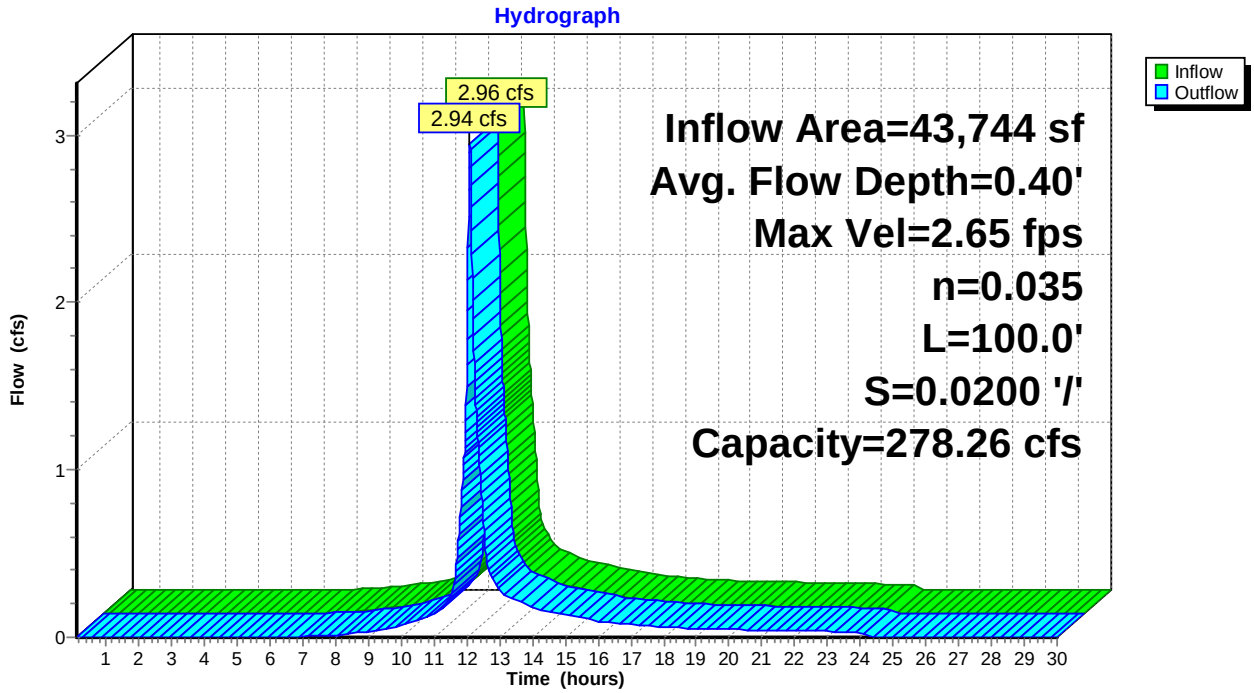
Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.65 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 0.82 fps, Avg. Travel Time= 2.0 min

Peak Storage= 111 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.40'
Bank-Full Depth= 3.50' Flow Area= 31.5 sf, Capacity= 278.26 cfs

2.00' x 3.50' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 2.0 '/' Top Width= 16.00'
Length= 100.0' Slope= 0.0200 '/'
Inlet Invert= 93.00', Outlet Invert= 91.00'



Reach POI 2: Route 1 South

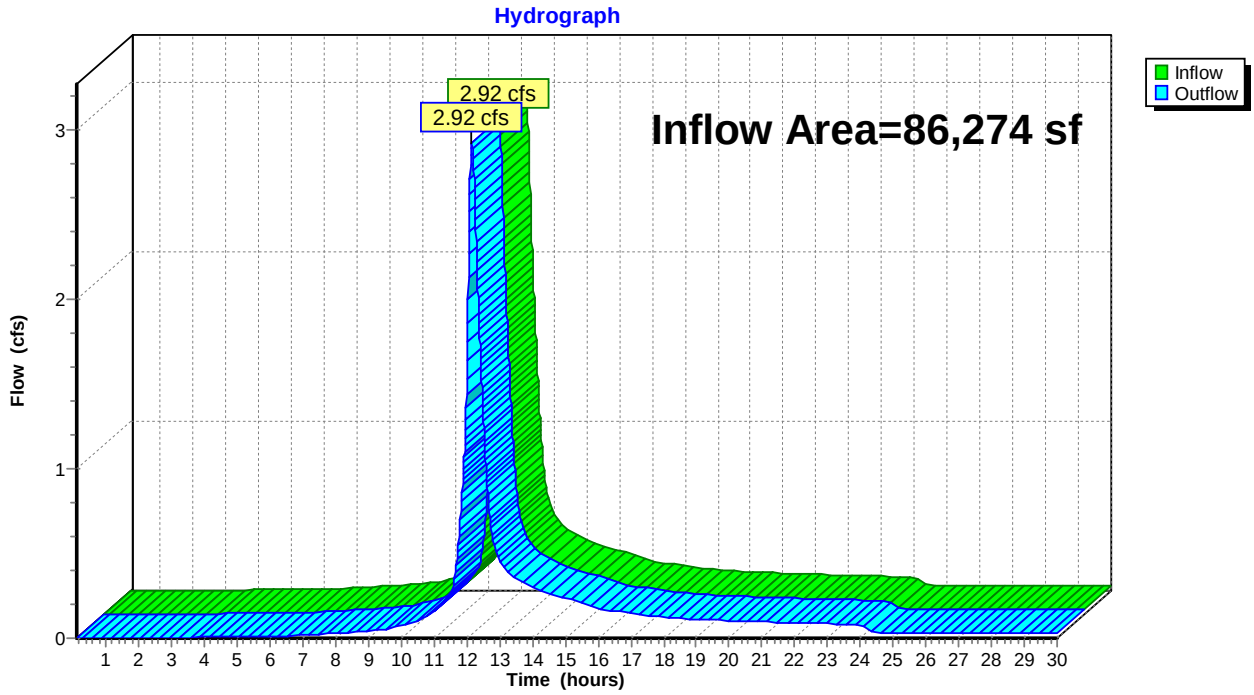


Summary for Reach POI 3: Wetlands

Inflow Area = 86,274 sf, 45.72% Impervious, Inflow Depth > 2.04" for 18" Ponding event
Inflow = 2.92 cfs @ 12.15 hrs, Volume= 14,648 cf
Outflow = 2.92 cfs @ 12.15 hrs, Volume= 14,648 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs

Reach POI 3: Wetlands



Summary for Pond CB-1: CB-1

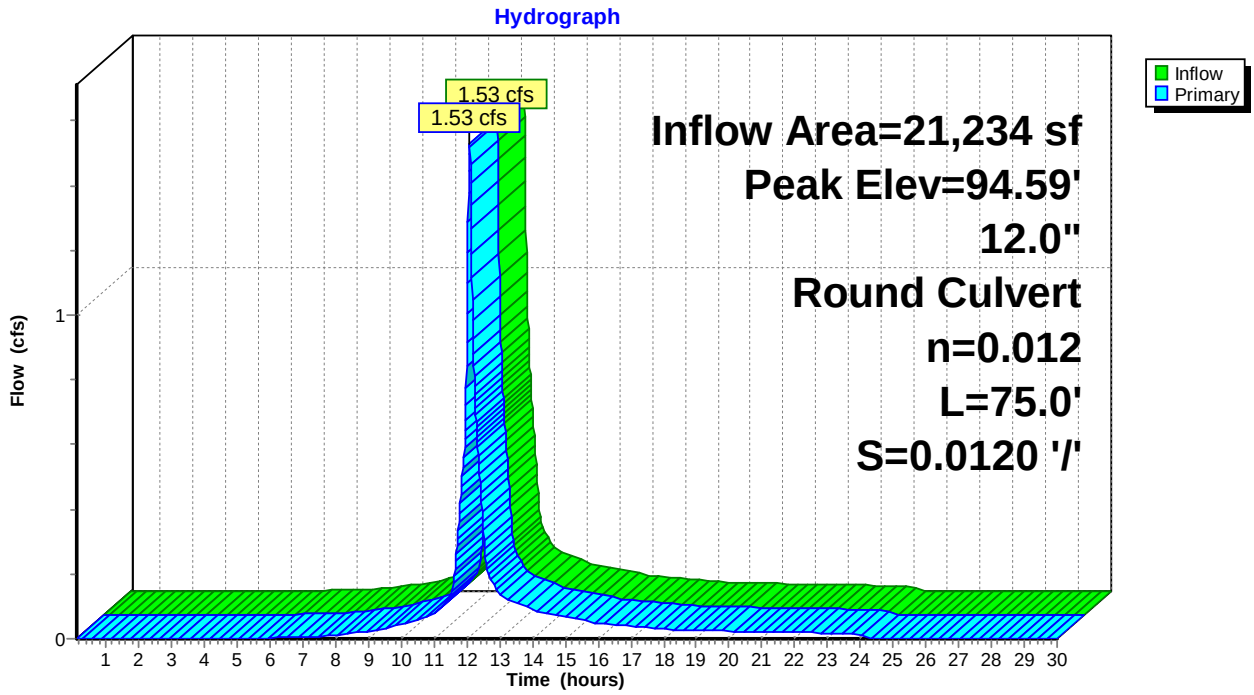
Inflow Area = 21,234 sf, 56.30% Impervious, Inflow Depth = 2.72" for 18" Ponding event
Inflow = 1.53 cfs @ 12.09 hrs, Volume= 4,822 cf
Outflow = 1.53 cfs @ 12.09 hrs, Volume= 4,822 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.53 cfs @ 12.09 hrs, Volume= 4,822 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Peak Elev= 94.59' @ 12.09 hrs
Flood Elev= 94.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	93.90'	**12.0" Round Culvert** L= 75.0' Ke= 0.600 Inlet / Outlet Invert= 93.90' / 93.00' S= 0.0120 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.53 cfs @ 12.09 hrs HW=94.59' TW=93.40' (Dynamic Tailwater)
↳**1=Culvert** (Inlet Controls 1.53 cfs @ 2.65 fps)

Pond CB-1: CB-1



Summary for Pond CB-2: CB

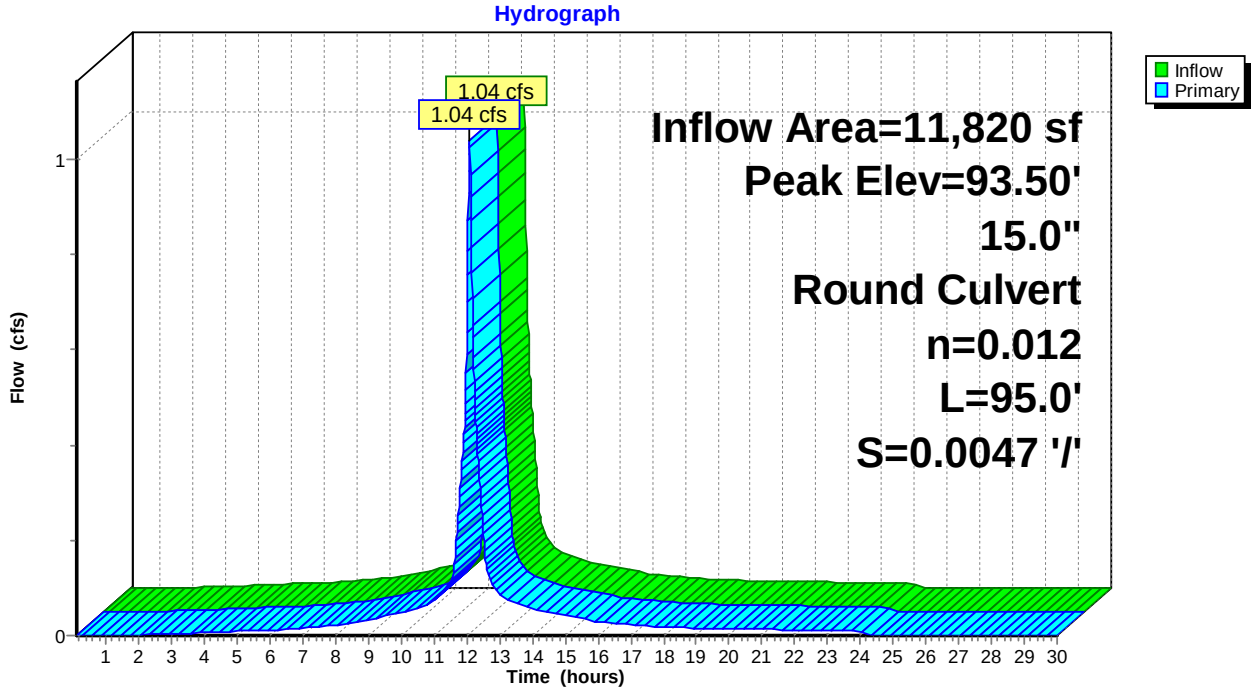
Inflow Area = 11,820 sf, 94.75% Impervious, Inflow Depth = 3.63" for 18" Ponding event
Inflow = 1.04 cfs @ 12.09 hrs, Volume= 3,577 cf
Outflow = 1.04 cfs @ 12.09 hrs, Volume= 3,577 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.04 cfs @ 12.09 hrs, Volume= 3,577 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Peak Elev= 93.50' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	92.95'	**15.0" Round Culvert** L= 95.0' Ke= 0.600 Inlet / Outlet Invert= 92.95' / 92.50' S= 0.0047 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.04 cfs @ 12.09 hrs HW=93.50' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.04 cfs @ 2.93 fps)

Pond CB-2: CB



Summary for Pond P1: Filterra 1

Inflow Area = 11,820 sf, 94.75% Impervious, Inflow Depth = 3.63" for 18" Ponding event
Inflow = 1.04 cfs @ 12.08 hrs, Volume= 3,577 cf
Outflow = 1.04 cfs @ 12.09 hrs, Volume= 3,577 cf, Atten= 0%, Lag= 0.3 min
Primary = 1.04 cfs @ 12.09 hrs, Volume= 3,577 cf
Secondary = 0.00 cfs @ 0.10 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Peak Elev= 94.58' @ 12.09 hrs Surf.Area= 36 sf Storage= 10 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (760.8 - 760.8)

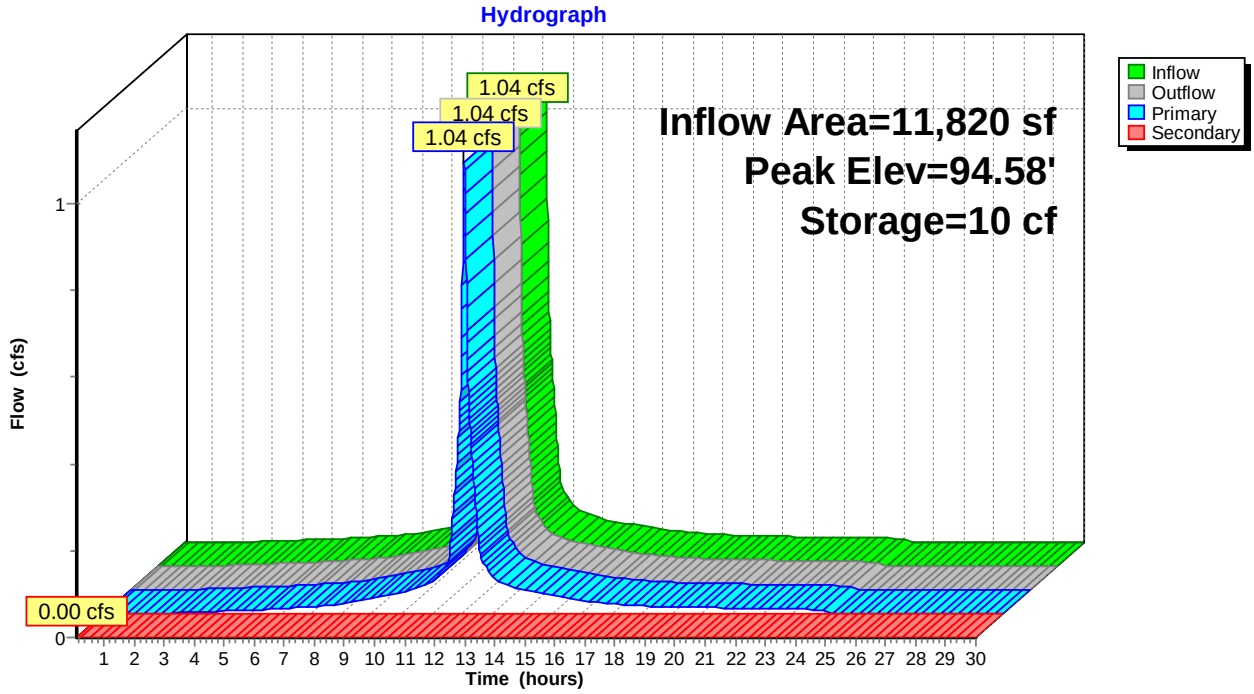
Volume	Invert	Avail.Storage	Storage Description
#1	93.15'	18 cf	**6.00'W x 6.00'L x 2.50'H Soil Filter Media** 90 cf Overall x 20.0% Voids
#2	95.65'	27 cf	**6.00'W x 6.00'L x 0.75'H Ponding** -Impervious
#3	96.40'	180 cf	**30.00'W x 30.00'L x 0.20'H Spillover/Ponding to CB**
		225 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	93.15'	**6.0" Round Culvert** L= 4.0' Ke= 0.600 Inlet / Outlet Invert= 93.15' / 93.12' S= 0.0075 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Primary	93.15'	**140.000 in/hr Soil Media Filtration over Surface area**
#3	Secondary	96.15'	**3.1" x 3.8" Horiz. CB Overflow X 5.00 columns** X 5 rows C= 0.600 in 24.0" x 24.0" Grate (51% open area) Limited to weir flow at low heads

Primary OutFlow Max=1.04 cfs @ 12.09 hrs HW=94.58' TW=93.50' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 0.92 cfs @ 4.69 fps)
└─**2=Soil Media Filtration** (Exfiltration Controls 0.12 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.10 hrs HW=93.15' TW=92.95' (Dynamic Tailwater)
└─**3=CB Overflow** (Controls 0.00 cfs)

Pond P1: Filterra 1



Summary for Pond P2: VUSF #1

Inflow Area = 13,601 sf, 77.35% Impervious, Inflow Depth = 3.25" for 18" Ponding event
Inflow = 1.08 cfs @ 12.08 hrs, Volume= 3,686 cf
Outflow = 0.03 cfs @ 15.86 hrs, Volume= 2,333 cf, Atten= 97%, Lag= 226.5 min
Primary = 0.03 cfs @ 15.86 hrs, Volume= 2,333 cf
Secondary = 0.00 cfs @ 0.10 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Peak Elev= 93.50' @ 15.86 hrs Surf.Area= 4,535 sf Storage= 2,490 cf

Plug-Flow detention time= 526.4 min calculated for 2,333 cf (63% of inflow)
Center-of-Mass det. time= 422.3 min (1,191.0 - 768.7)

Volume	Invert	Avail.Storage	Storage Description
#1	92.00'	4,913 cf	**Ponding (Prismatic)** Listed below (Recalc)
#2	90.50'	135 cf	**Filter Media/Loam (Prismatic)** Listed below (Recalc) 1,350 cf Overall x 10.0% Voids
#3	90.17'	66 cf	**Transition Gravel (Prismatic)** Listed below (Recalc) 332 cf Overall x 20.0% Voids
#4	89.17'	400 cf	**Crushed Stone (Prismatic)** Listed below (Recalc) 1,007 cf Overall - 7 cf Embedded = 1,000 cf x 40.0% Voids
#5	89.45'	6 cf	**4.0" Round Pipe Storage** Inside #4 L= 70.0' 7 cf Overall - 0.2" Wall Thickness = 6 cf
		5,520 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.00	1,007	0	0
93.00	1,295	1,151	1,151
94.00	1,944	1,620	2,771
95.00	2,340	2,142	4,913

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
90.50	900	0	0
92.00	900	1,350	1,350

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
90.17	1,007	0	0
90.50	1,007	332	332

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
89.17	1,007	0	0
90.17	1,007	1,007	1,007

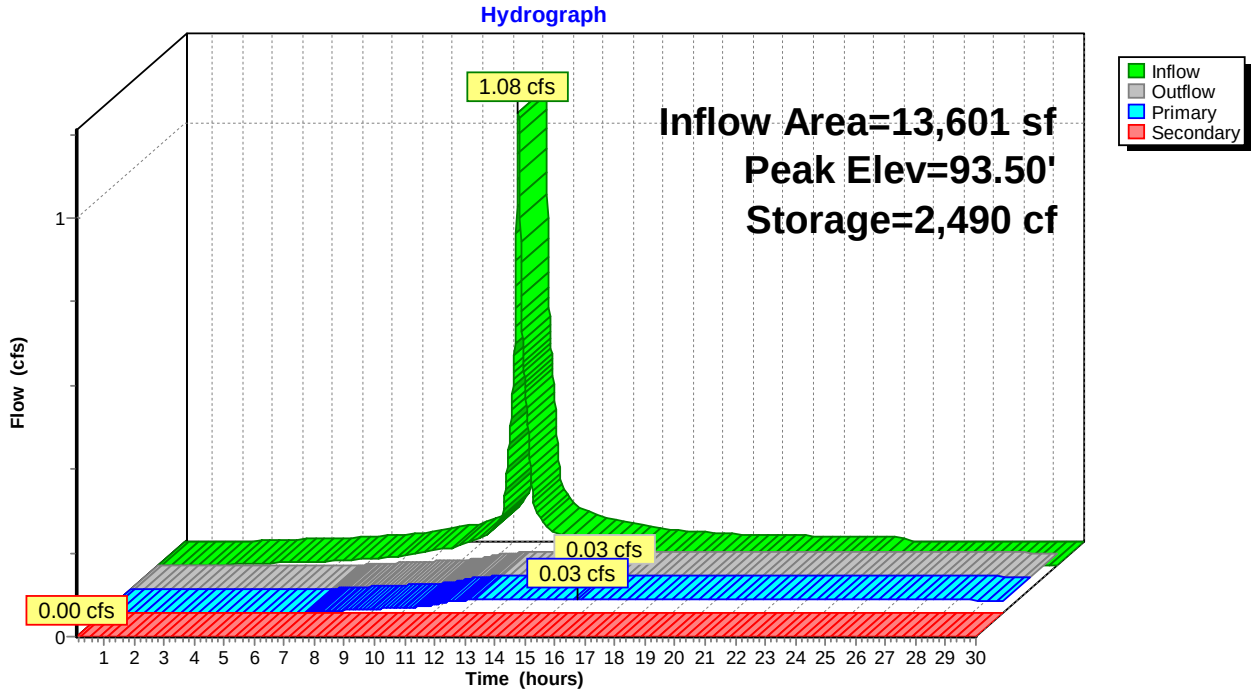
Device	Routing	Invert	Outlet Devices
#1	Primary	88.90'	**8.0" Round Culvert** L= 80.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 88.90' / 88.50' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf
#2	Device 1	89.45'	**0.8" Vert. WQV Outlet** C= 0.600

#3	Secondary	94.50'	**10.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=0.03 cfs @ 15.86 hrs HW=93.50' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.03 cfs of 2.52 cfs potential flow)
└─**2=WQV Outlet** (Orifice Controls 0.03 cfs @ 9.65 fps)

Secondary OutFlow Max=0.00 cfs @ 0.10 hrs HW=89.17' TW=0.00' (Dynamic Tailwater)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P2: VUSF #1



Summary for Subcatchment SC 1: SC 1

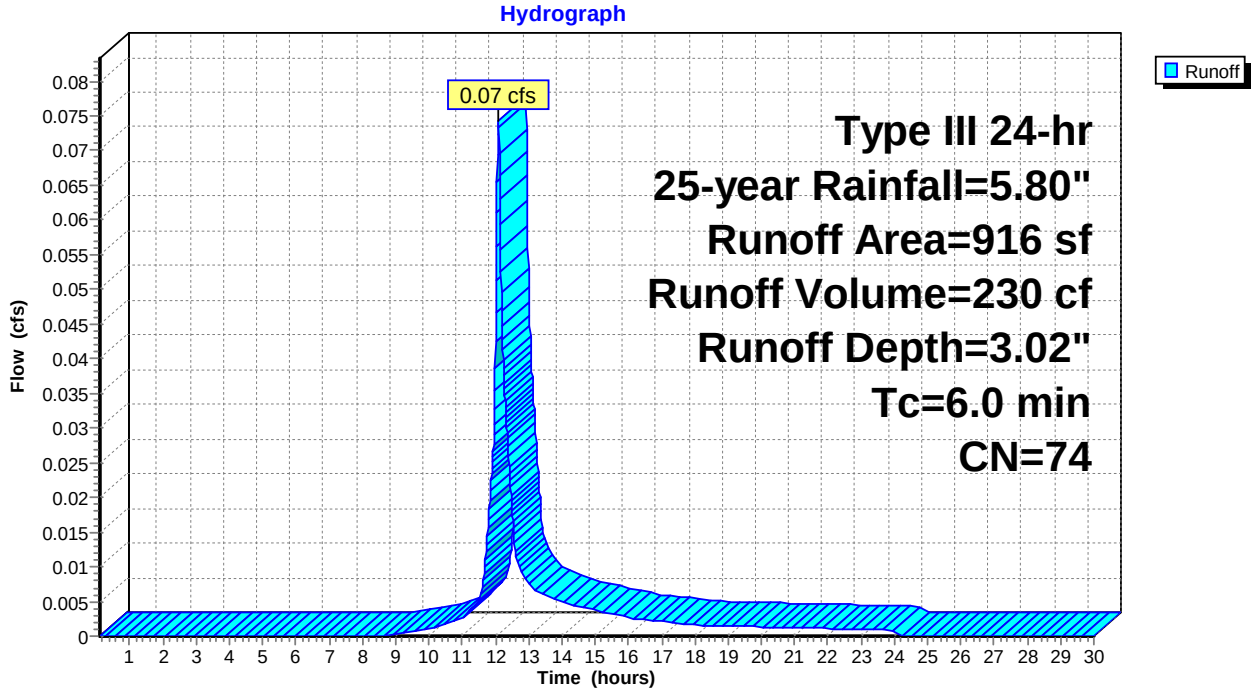
Runoff = 0.07 cfs @ 12.09 hrs, Volume= 230 cf, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

Area (sf)	CN	Description
916	74	>75% Grass cover, Good, HSG C
916		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, min. Tc (0.1 hour)**

Subcatchment SC 1: SC 1



Summary for Subcatchment SC 2: SC 2

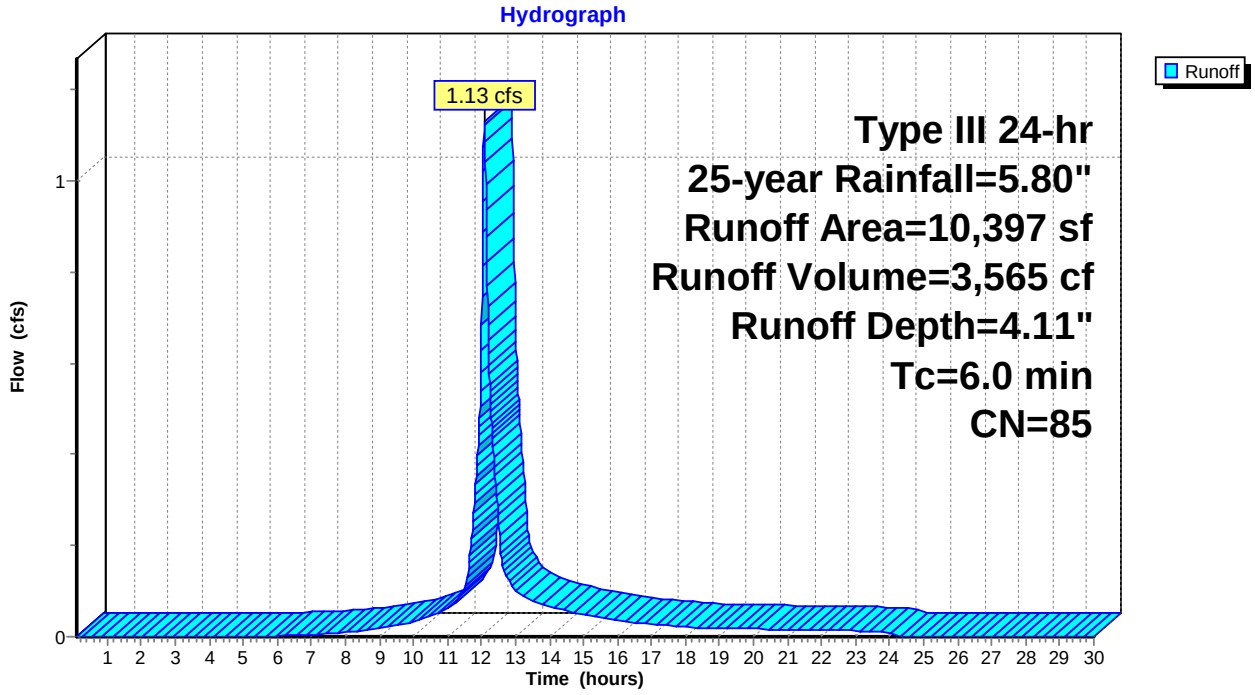
Runoff = 1.13 cfs @ 12.09 hrs, Volume= 3,565 cf, Depth= 4.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

Area (sf)	CN	Description
4,881	98	Paved parking, HSG C
5,516	74	>75% Grass cover, Good, HSG C
10,397	85	Weighted Average
5,516		53.05% Pervious Area
4,881		46.95% Impervious Area

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

Subcatchment SC 2: SC 2



Summary for Subcatchment SC 3.1: SC 3.1

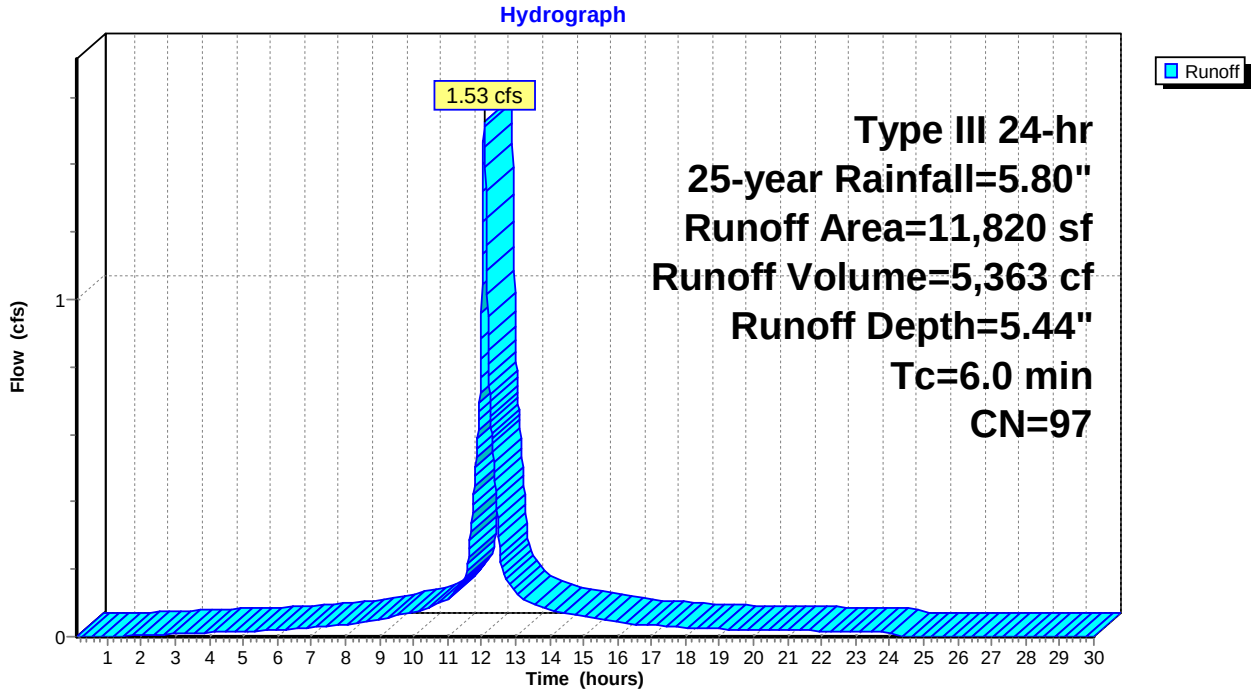
Runoff = 1.53 cfs @ 12.08 hrs, Volume= 5,363 cf, Depth= 5.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	621	74	Landscaping, >75% Grass cover, Good, HSG C
*	11,199	98	Pavement / Roof / Sidewalk
	11,820	97	Weighted Average
	621		5.25% Pervious Area
	11,199		94.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum Tc (0.1 hour)**

Subcatchment SC 3.1: SC 3.1



Summary for Subcatchment SC 3.2: SC 3.2

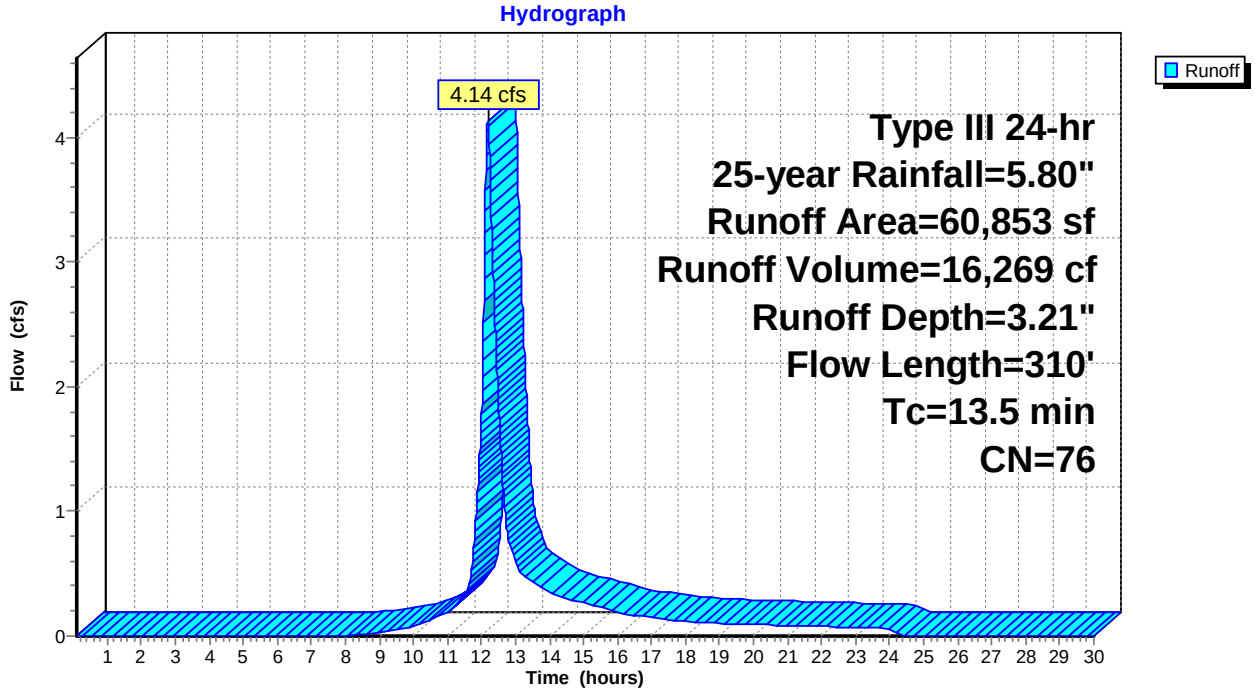
Runoff = 4.14 cfs @ 12.19 hrs, Volume= 16,269 cf, Depth= 3.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	17,725	98	Paved parking lot and patio space
*	2,834	74	Grass/landscaping near driveway entrance
*	11,137	73	Woods, Fair, HSG C
*	29,157	65	Meadow / conservation mix East of parking expansion
	60,853	76	Weighted Average
	43,128		70.87% Pervious Area
	17,725		29.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0300	0.14		**Sheet Flow, Sheet flow (A to B)** Grass: Dense n= 0.240 P2= 3.27"
0.7	90	0.0200	2.12		**Shallow Concentrated Flow, SCF (B to C)** Grassed Waterway Kv= 15.0 fps
0.2	70	0.1000	4.74		**Shallow Concentrated Flow, SCF (C to D)** Grassed Waterway Kv= 15.0 fps
0.6	50	0.0800	1.41		**Shallow Concentrated Flow, SCF (D to E)** Woodland Kv= 5.0 fps
13.5	310	Total			

Subcatchment SC 3.2: SC 3.2



Summary for Subcatchment SC 3.3: SC 3.3

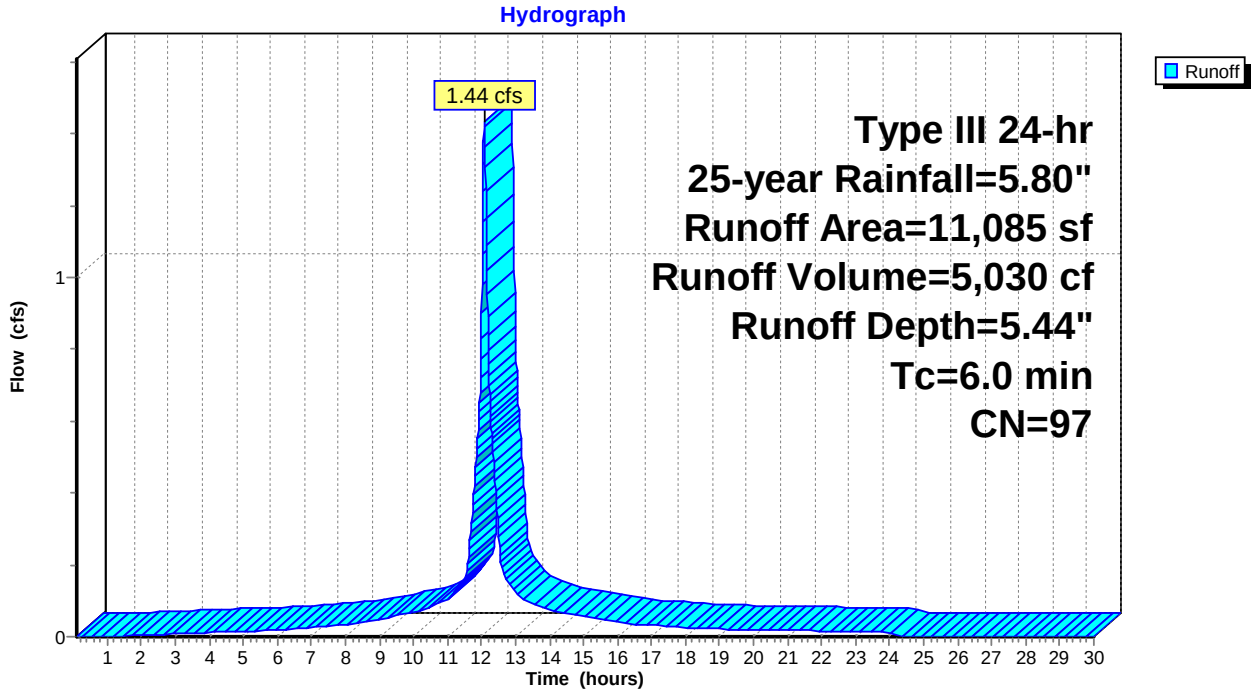
Runoff = 1.44 cfs @ 12.08 hrs, Volume= 5,030 cf, Depth= 5.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	10,520	98	Phase I Parking
	565	74	>75% Grass cover, Good, HSG C
	11,085	97	Weighted Average
	565		5.10% Pervious Area
	10,520		94.90% Impervious Area

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

Subcatchment SC 3.3: SC 3.3



Summary for Subcatchment SC 3.4: SC 3.4

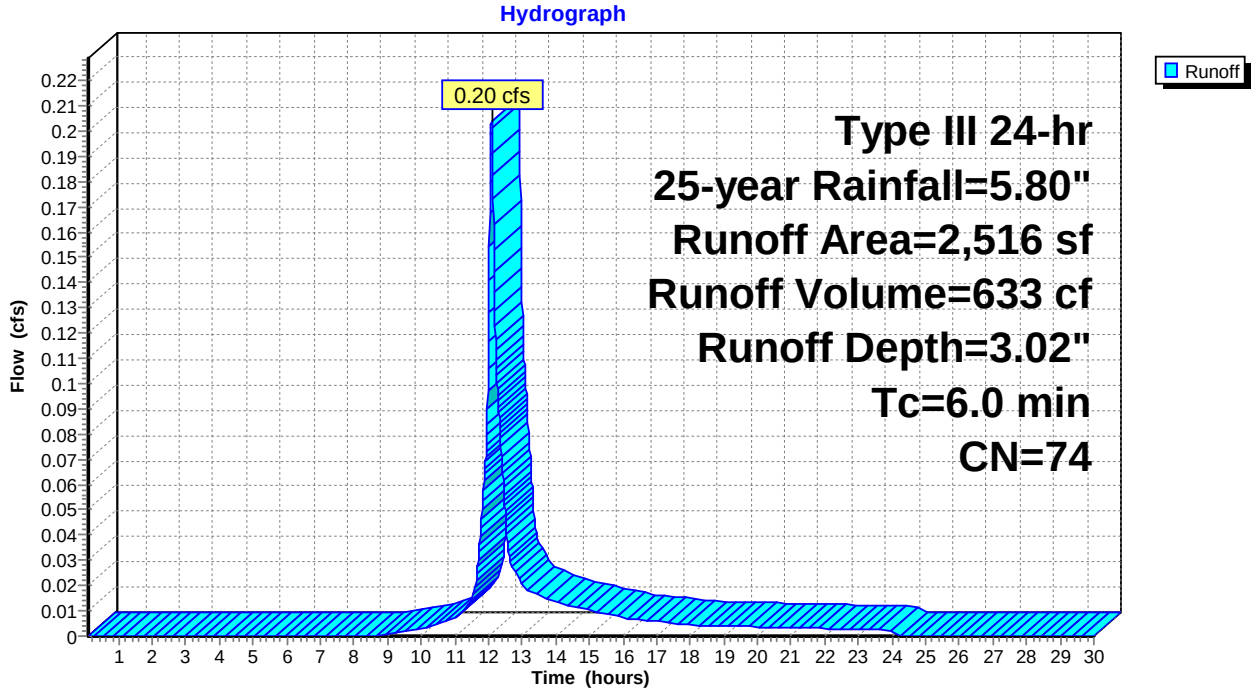
Runoff = 0.20 cfs @ 12.09 hrs, Volume= 633 cf, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	2,516	74	Self contained pond embankment slopes
	2,516		100.00% Pervious Area

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

Subcatchment SC 3.4: SC 3.4



Summary for Subcatchment SC X.1: S. Freeport Rd & Rte 1

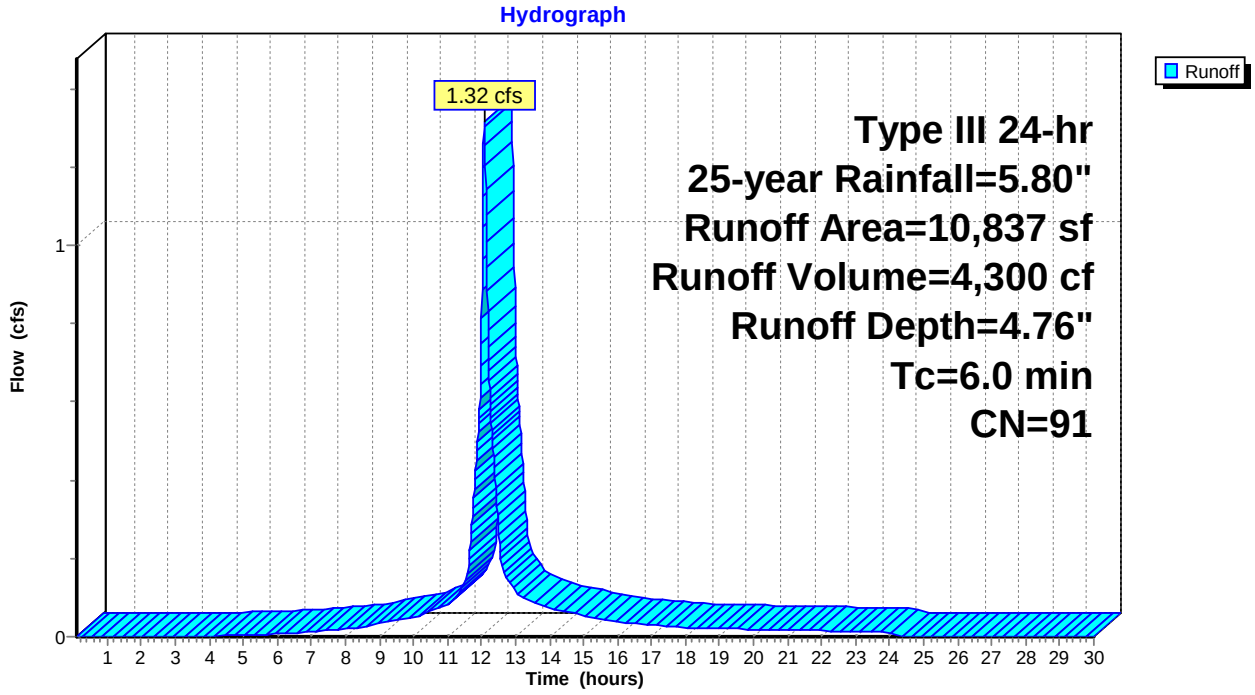
Runoff = 1.32 cfs @ 12.08 hrs, Volume= 4,300 cf, Depth= 4.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	7,073	98	South Freeport/Route 1
	3,764	79	50-75% Grass cover, Fair, HSG C
	10,837	91	Weighted Average
	3,764		34.73% Pervious Area
	7,073		65.27% Impervious Area

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

Subcatchment SC X.1: S. Freeport Rd & Rte 1



Summary for Subcatchment SC X.2: S. Freeport Rd / Rte 1

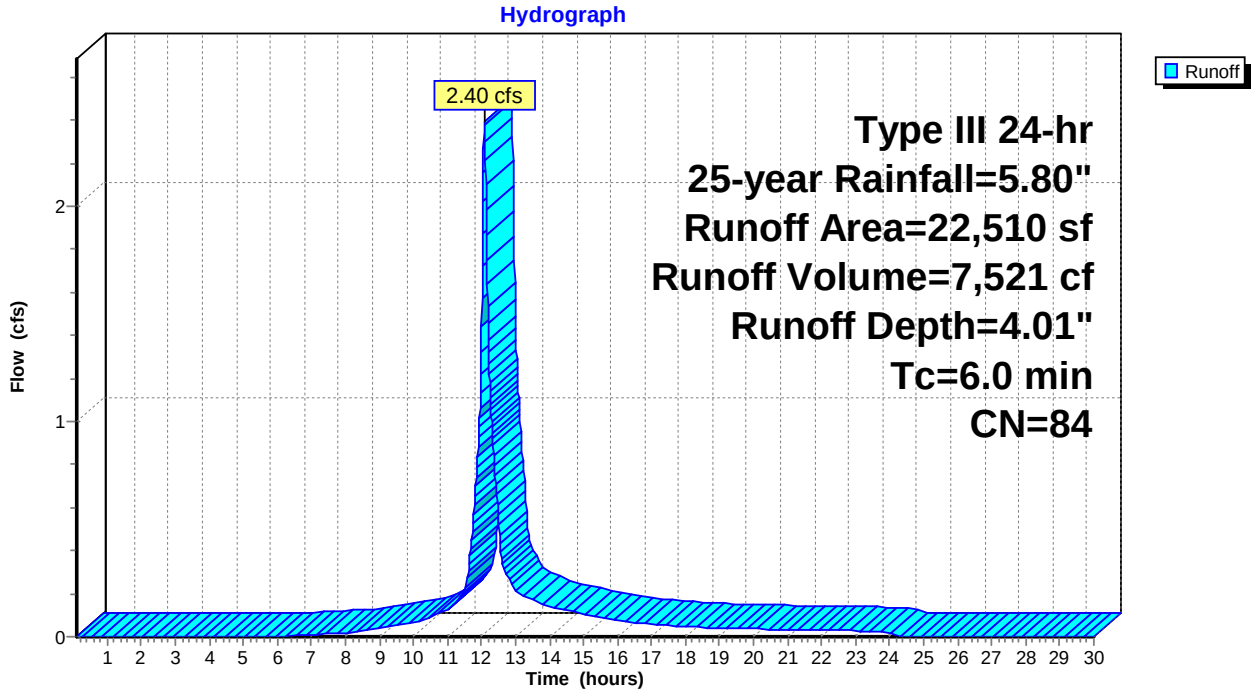
Runoff = 2.40 cfs @ 12.09 hrs, Volume= 7,521 cf, Depth= 4.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	5,735	98	Paved parking
	16,775	79	50-75% Grass cover, Fair, HSG C
	22,510	84	Weighted Average
	16,775		74.52% Pervious Area
	5,735		25.48% Impervious Area

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

Subcatchment SC X.2: S. Freeport Rd / Rte 1

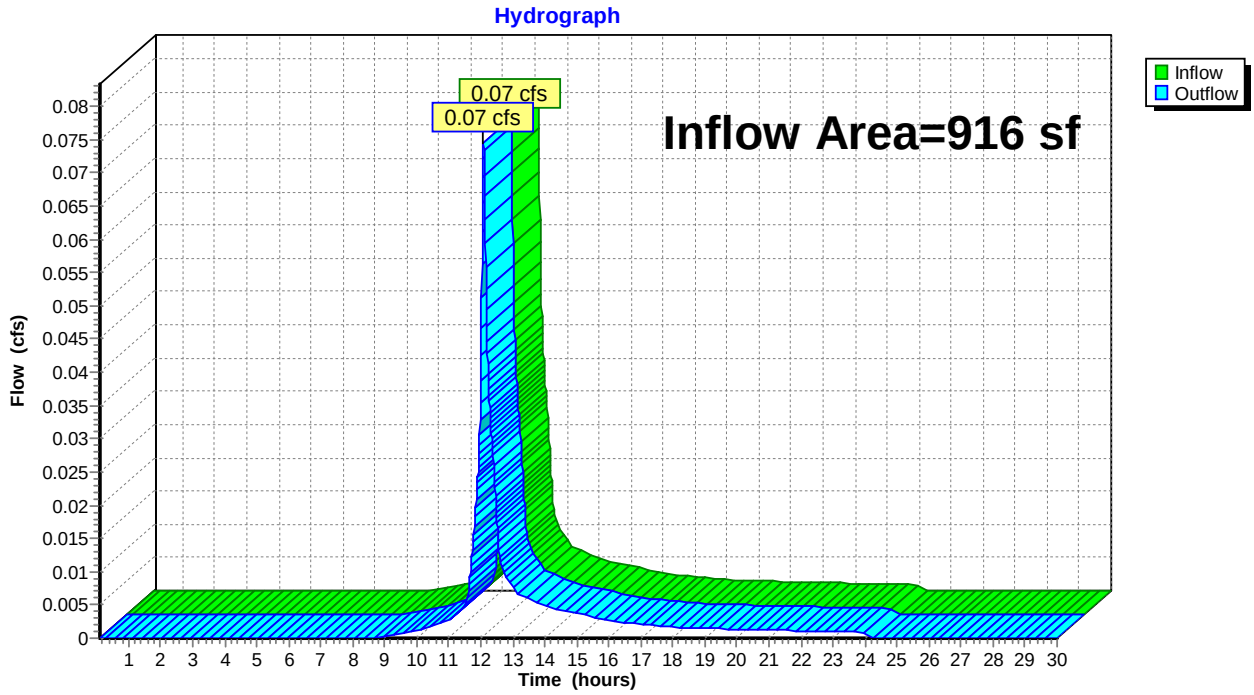


Summary for Reach POI 1: Route 1 North

Inflow Area = 916 sf, 0.00% Impervious, Inflow Depth = 3.02" for 25-year event
Inflow = 0.07 cfs @ 12.09 hrs, Volume= 230 cf
Outflow = 0.07 cfs @ 12.09 hrs, Volume= 230 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs

Reach POI 1: Route 1 North



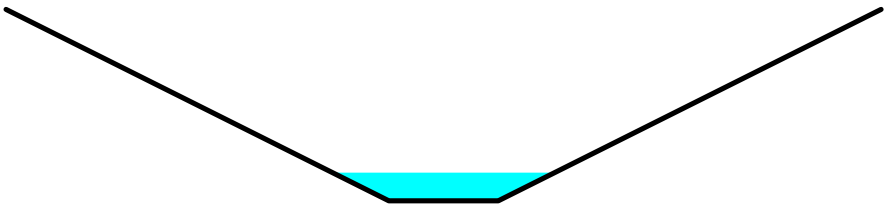
Summary for Reach POI 2: Route 1 South

Inflow Area = 43,744 sf, 40.44% Impervious, Inflow Depth = 4.22" for 25-year event
Inflow = 4.84 cfs @ 12.09 hrs, Volume= 15,386 cf
Outflow = 4.83 cfs @ 12.09 hrs, Volume= 15,386 cf, Atten= 0%, Lag= 0.4 min

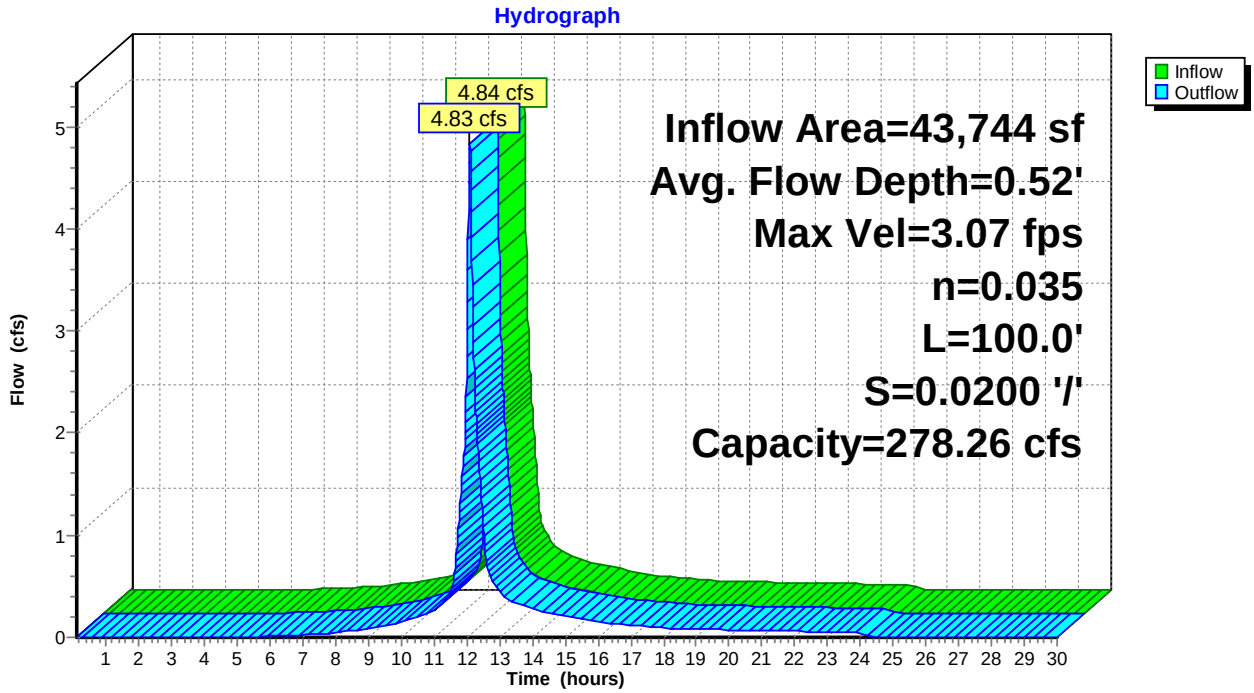
Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.07 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 0.93 fps, Avg. Travel Time= 1.8 min

Peak Storage= 158 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.52'
Bank-Full Depth= 3.50' Flow Area= 31.5 sf, Capacity= 278.26 cfs

2.00' x 3.50' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 2.0 '/' Top Width= 16.00'
Length= 100.0' Slope= 0.0200 '/'
Inlet Invert= 93.00', Outlet Invert= 91.00'



Reach POI 2: Route 1 South

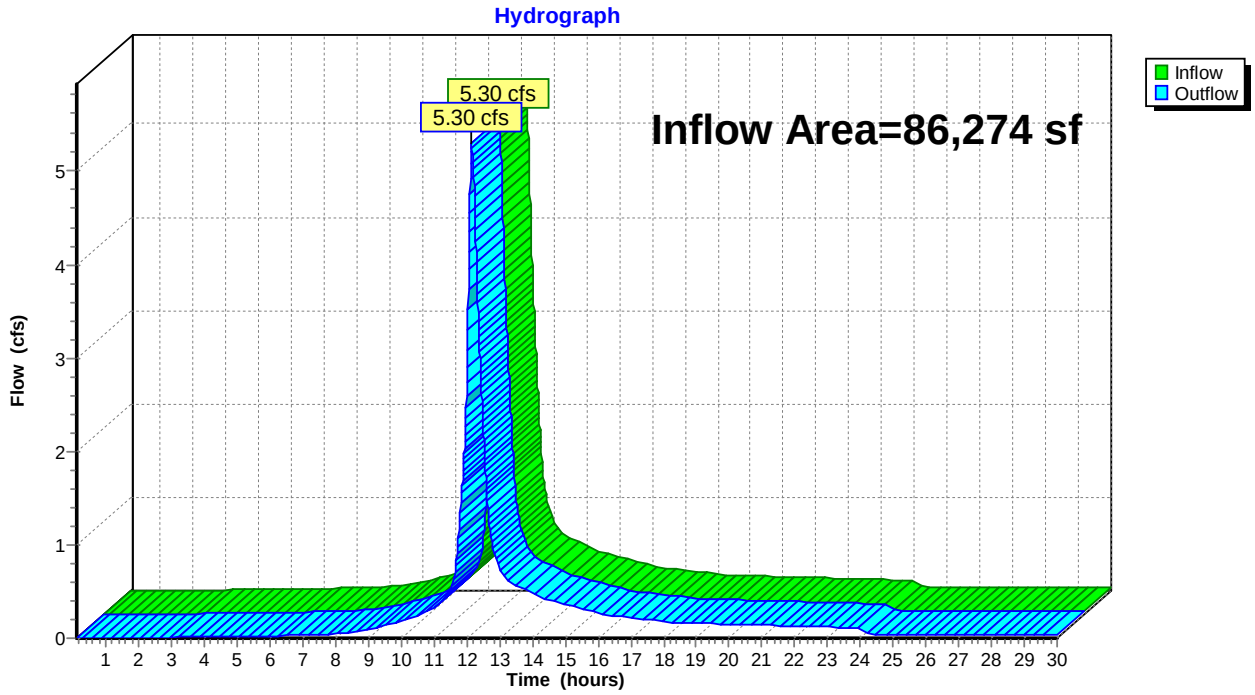


Summary for Reach POI 3: Wetlands

Inflow Area = 86,274 sf, 45.72% Impervious, Inflow Depth > 3.39" for 25-year event
Inflow = 5.30 cfs @ 12.14 hrs, Volume= 24,353 cf
Outflow = 5.30 cfs @ 12.14 hrs, Volume= 24,353 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs

Reach POI 3: Wetlands



Summary for Pond CB-1: CB-1

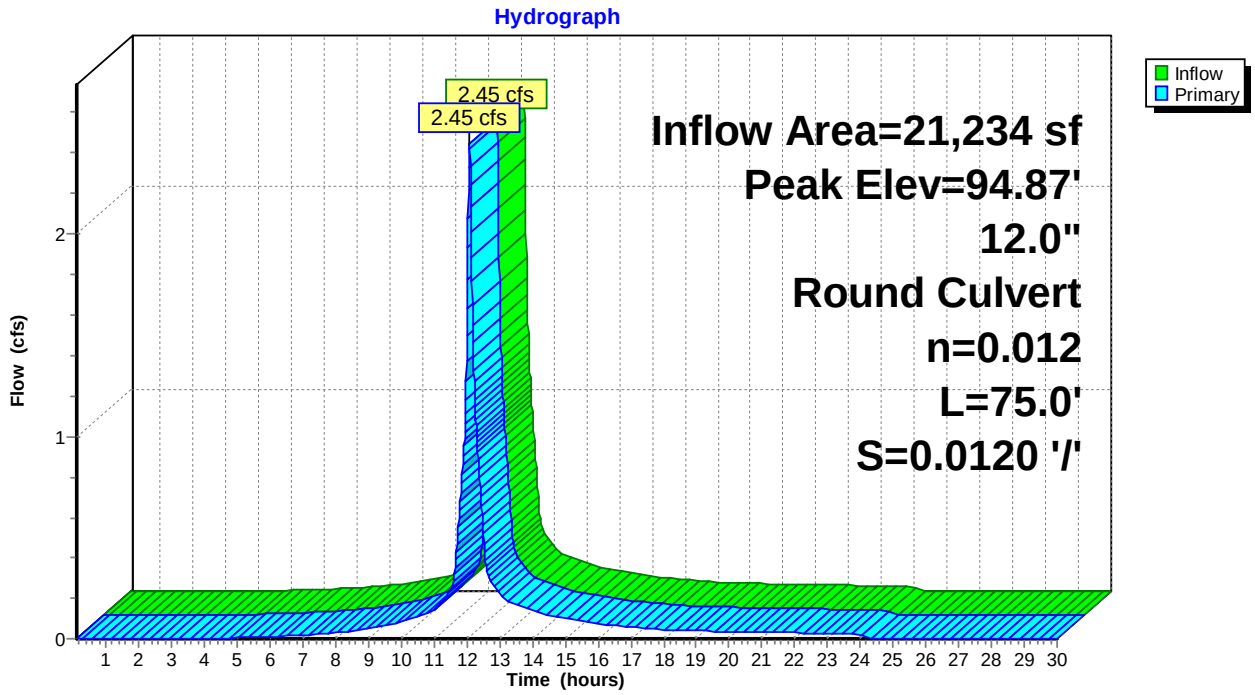
Inflow Area = 21,234 sf, 56.30% Impervious, Inflow Depth = 4.44" for 25-year event
Inflow = 2.45 cfs @ 12.09 hrs, Volume= 7,865 cf
Outflow = 2.45 cfs @ 12.09 hrs, Volume= 7,865 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.45 cfs @ 12.09 hrs, Volume= 7,865 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Peak Elev= 94.87' @ 12.09 hrs
Flood Elev= 94.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	93.90'	**12.0" Round Culvert** L= 75.0' Ke= 0.600 Inlet / Outlet Invert= 93.90' / 93.00' S= 0.0120 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.44 cfs @ 12.09 hrs HW=94.87' TW=93.52' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 2.44 cfs @ 3.14 fps)

Pond CB-1: CB-1



Summary for Pond CB-2: CB

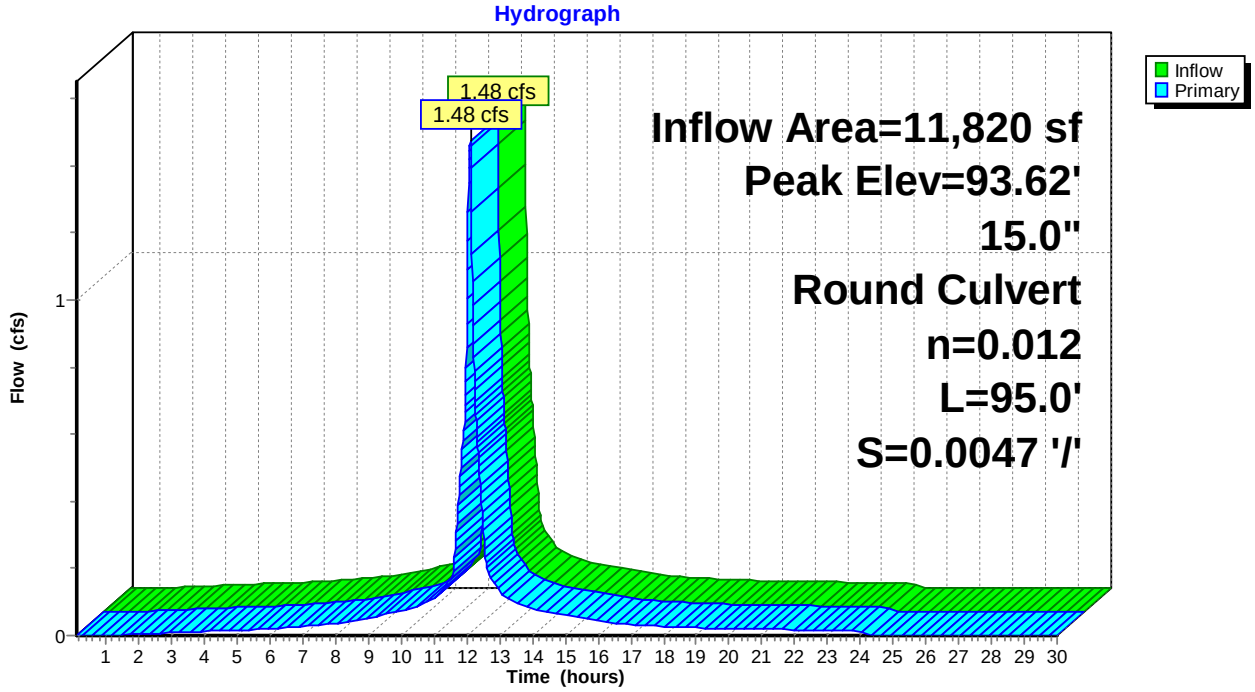
Inflow Area = 11,820 sf, 94.75% Impervious, Inflow Depth = 5.44" for 25-year event
Inflow = 1.48 cfs @ 12.10 hrs, Volume= 5,363 cf
Outflow = 1.48 cfs @ 12.10 hrs, Volume= 5,363 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.48 cfs @ 12.10 hrs, Volume= 5,363 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Peak Elev= 93.62' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	92.95'	**15.0" Round Culvert** L= 95.0' Ke= 0.600 Inlet / Outlet Invert= 92.95' / 92.50' S= 0.0047 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.48 cfs @ 12.10 hrs HW=93.62' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.48 cfs @ 3.19 fps)

Pond CB-2: CB



Summary for Pond P1: Filterra 1

Inflow Area = 11,820 sf, 94.75% Impervious, Inflow Depth = 5.44" for 25-year event
Inflow = 1.53 cfs @ 12.08 hrs, Volume= 5,363 cf
Outflow = 1.48 cfs @ 12.10 hrs, Volume= 5,363 cf, Atten= 4%, Lag= 1.3 min
Primary = 1.48 cfs @ 12.10 hrs, Volume= 5,363 cf
Secondary = 0.00 cfs @ 0.10 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Peak Elev= 95.98' @ 12.11 hrs Surf.Area= 36 sf Storage= 30 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (752.9 - 752.8)

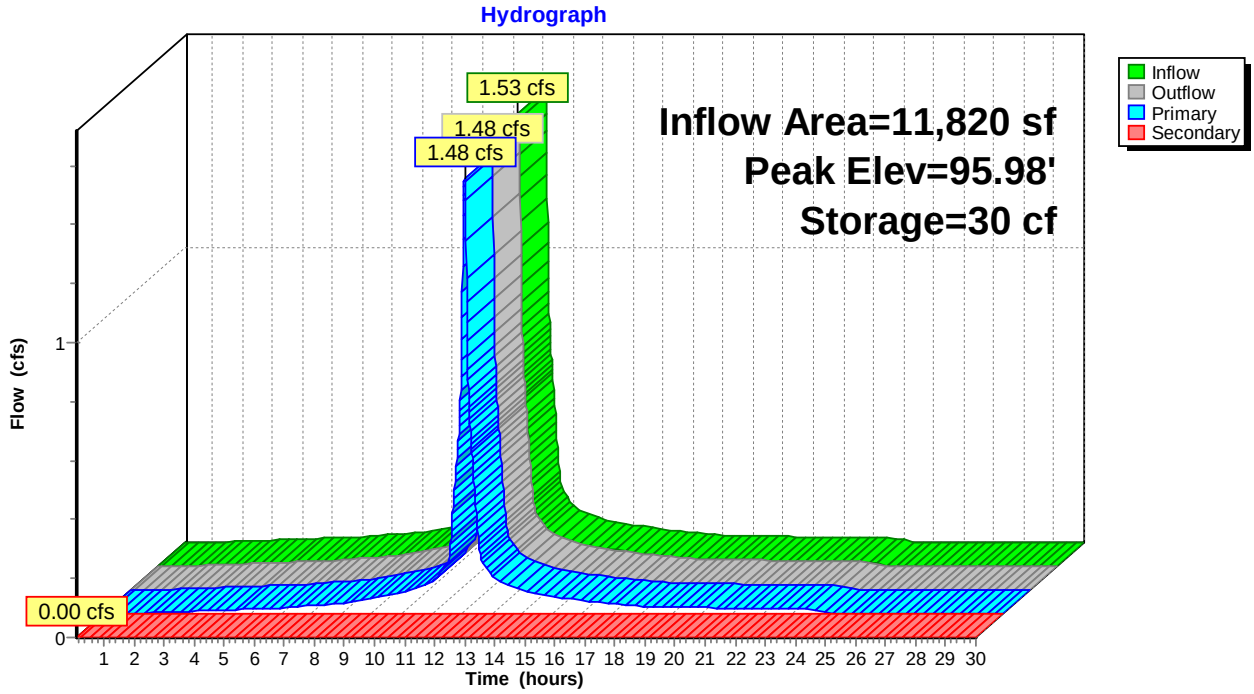
Volume	Invert	Avail.Storage	Storage Description
#1	93.15'	18 cf	**6.00'W x 6.00'L x 2.50'H Soil Filter Media** 90 cf Overall x 20.0% Voids
#2	95.65'	27 cf	**6.00'W x 6.00'L x 0.75'H Ponding** -Impervious
#3	96.40'	180 cf	**30.00'W x 30.00'L x 0.20'H Spillover/Ponding to CB**
		225 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	93.15'	**6.0" Round Culvert** L= 4.0' Ke= 0.600 Inlet / Outlet Invert= 93.15' / 93.12' S= 0.0075 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Primary	93.15'	**140.000 in/hr Soil Media Filtration over Surface area**
#3	Secondary	96.15'	**3.1" x 3.8" Horiz. CB Overflow X 5.00 columns** X 5 rows C= 0.600 in 24.0" x 24.0" Grate (51% open area) Limited to weir flow at low heads

Primary OutFlow Max=1.48 cfs @ 12.10 hrs HW=95.97' TW=93.62' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 1.36 cfs @ 6.92 fps)
└─**2=Soil Media Filtration** (Exfiltration Controls 0.12 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.10 hrs HW=93.15' TW=92.95' (Dynamic Tailwater)
└─**3=CB Overflow** (Controls 0.00 cfs)

Pond P1: Filterra 1



Summary for Pond P2: VUSF #1

Inflow Area = 13,601 sf, 77.35% Impervious, Inflow Depth = 5.00" for 25-year event
Inflow = 1.64 cfs @ 12.08 hrs, Volume= 5,662 cf
Outflow = 0.04 cfs @ 17.08 hrs, Volume= 2,720 cf, Atten= 98%, Lag= 299.7 min
Primary = 0.04 cfs @ 17.08 hrs, Volume= 2,720 cf
Secondary = 0.00 cfs @ 0.10 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.10-30.00 hrs, dt= 0.01 hrs
Peak Elev= 94.34' @ 17.08 hrs Surf.Area= 4,991 sf Storage= 4,051 cf

Plug-Flow detention time= 534.4 min calculated for 2,720 cf (48% of inflow)
Center-of-Mass det. time= 404.6 min (1,166.1 - 761.5)

Volume	Invert	Avail.Storage	Storage Description
#1	92.00'	4,913 cf	**Ponding (Prismatic)** Listed below (Recalc)
#2	90.50'	135 cf	**Filter Media/Loam (Prismatic)** Listed below (Recalc) 1,350 cf Overall x 10.0% Voids
#3	90.17'	66 cf	**Transition Gravel (Prismatic)** Listed below (Recalc) 332 cf Overall x 20.0% Voids
#4	89.17'	400 cf	**Crushed Stone (Prismatic)** Listed below (Recalc) 1,007 cf Overall - 7 cf Embedded = 1,000 cf x 40.0% Voids
#5	89.45'	6 cf	**4.0" Round Pipe Storage** Inside #4 L= 70.0' 7 cf Overall - 0.2" Wall Thickness = 6 cf
		5,520 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.00	1,007	0	0
93.00	1,295	1,151	1,151
94.00	1,944	1,620	2,771
95.00	2,340	2,142	4,913

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
90.50	900	0	0
92.00	900	1,350	1,350

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
90.17	1,007	0	0
90.50	1,007	332	332

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
89.17	1,007	0	0
90.17	1,007	1,007	1,007

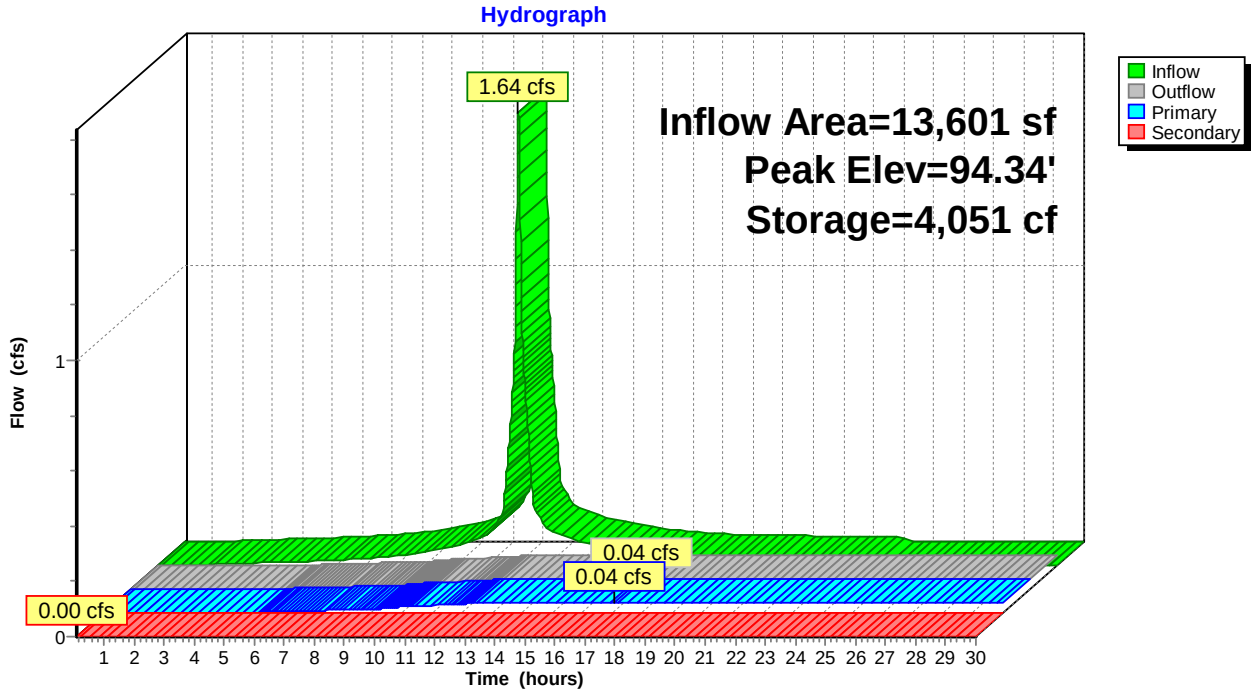
Device	Routing	Invert	Outlet Devices
#1	Primary	88.90'	**8.0" Round Culvert** L= 80.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 88.90' / 88.50' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf
#2	Device 1	89.45'	**0.8" Vert. WQV Outlet** C= 0.600

#3 Secondary 94.50' **10.0' long (Profile 1) Broad-Crested Rectangular Weir**
Head (feet) 0.49 0.98 1.48
Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=0.04 cfs @ 17.08 hrs HW=94.34' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.04 cfs of 2.75 cfs potential flow)
└─**2=WQV Outlet** (Orifice Controls 0.04 cfs @ 10.61 fps)

Secondary OutFlow Max=0.00 cfs @ 0.10 hrs HW=89.17' TW=0.00' (Dynamic Tailwater)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P2: VUSF #1



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 Cumberland County and Part of Oxford County, Maine

August 20, 2021

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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Contents

How Soil Surveys Are Made

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

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

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

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

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

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

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

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

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

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

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

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

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

Soil Map

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

Custom Soil Resource Report
Soil Map

Map Scale: 1:1,080 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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: Cumberland County and Part of Oxford County, Maine
Survey Area Data: Version 17, Jun 5, 2020

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

Date(s) aerial images were photographed: Jun 7, 2019—Jul 2, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

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
BgB	Nicholville very fine sandy loam, 0 to 8 percent slopes	2.5	69.2%
Sn	Scantic silt loam, 0 to 3 percent slopes	1.1	30.8%
Totals for Area of Interest		**3.6**	**100.0%**

Map Unit Descriptions

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

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

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

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

onsite investigation is needed to define and locate the soils and miscellaneous areas.

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

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

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

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

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

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

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

Cumberland County and Part of Oxford County, Maine

BgB—Nicholville very fine sandy loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2yjg5
Elevation: 20 to 2,300 feet
Mean annual precipitation: 34 to 50 inches
Mean annual air temperature: 37 to 45 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Nicholville

Setting

Landform: Lakebeds (relict)
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-silty glaciomarine deposits

Typical profile

Ap - 0 to 7 inches: very fine sandy loam
Bs - 7 to 19 inches: very fine sandy loam
BC - 19 to 30 inches: very fine sandy loam
C - 30 to 65 inches: loamy very fine sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.14 to 1.42 in/hr)
Depth to water table: About 18 to 30 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: High (about 10.3 inches)

Interpretive groups

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

Minor Components

Roundabout, somewhat poorly drained

Percent of map unit: 5 percent
Landform: Lakebeds (relict)

Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Croghan

Percent of map unit: 5 percent
Landform: Lakebeds (relict)
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Salmon

Percent of map unit: 3 percent
Landform: Lakebeds (relict)
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Roundabout

Percent of map unit: 2 percent
Landform: Lakebeds (relict)
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

Sn—Scantic silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2slv3
Elevation: 10 to 900 feet
Mean annual precipitation: 33 to 60 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Scantic

Setting

Landform: Marine terraces, river valleys
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glaciomarine deposits

Typical profile

Ap - 0 to 9 inches: silt loam
Bg1 - 9 to 16 inches: silty clay loam
Bg2 - 16 to 29 inches: silty clay
Cg - 29 to 65 inches: silty clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: D
Hydric soil rating: Yes

Minor Components

Lamoine

Percent of map unit: 8 percent
Landform: River valleys, marine terraces
Landform position (three-dimensional): Riser, rise
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Biddeford

Percent of map unit: 3 percent
Landform: Marine terraces, river valleys
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave, linear
Ecological site: F144BY002ME - Marine Terrace Depression
Hydric soil rating: Yes

Roundabout

Percent of map unit: 2 percent
Landform: River valleys, marine terraces
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear

Across-slope shape: Linear
Hydric soil rating: Yes

Buxton

Percent of map unit: 2 percent
Landform: Marine terraces, river valleys
Landform position (three-dimensional): Riser, rise
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

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ACORN
ENGINEERING, INC.

POST CONSTRUCTION - STORMWATER INSPECTION & MAINTENANCE PLAN

Prepared For:

MR 117 Route One, LLC
1 Balsam Lane
Freeport, Maine 04032

Prepared By:

Acorn Engineering, Inc.
500 Washington Avenue
Portland, Maine 04103

June 2023

ACORN ENGINEERING, INC.

RESPONSIBLE PARTY

The owner, MR 117 Route One LLC and/or their successor shall be responsible for contracting with a qualified stormwater professional to implement the Inspection and Maintenance Plan. The qualified stormwater professional shall maintain a stormwater log (report) summarizing inspections, maintenance, and corrective action taken. The Qualified Stormwater Professional shall annually submit the Stormwater Log to the Department of Public Services prior to June 15th.

The following is an example of a qualified stormwater professional that the owner may contract through.

Organization: Will Savage, PE
Acorn Engineering, Inc
Portland, Maine

Phone: (207) 775-2655

Qualifications:

- Maine Professional Engineering License #11419
- Maine DEP - Certified in Maintenance & Inspection of Stormwater BMP's Cert #14
- Certified Erosion, Sediment and Storm Water Inspector (CESSWI) Cert #0293
- Certified Professional in Erosion and Sediment Control (CPESC) Cert. #4620

The inspection and maintenance criteria is based upon the Maine DEP - Stormwater Management for Maine, Volume III: BMPs Technical Design Manual. Refer to the Grading, Drainage, & Erosion Control Plan for the location of the BMP.

PURPOSE

This Inspection and Maintenance Plan has been individually tailored to this parcel's stormwater infrastructure, site characteristics, and their respective opportunities and limitations related to reducing the pollutant load on the receiving watershed. The maintenance of a parcel's impervious surfaces and stormwater infrastructure is critical to extending the long-term performance and effectiveness of Best Management Practices (BMPs). The Inspection and Maintenance Plan represents the parcel's minimum activities to meet the permit requirements. The parcel shall still be subject to any applicable Civil Site Plans, Permit Applications, Erosion and Sedimentation Control Plans Reports, Stormwater Management Plans, Inspection and Maintenance Manuals, and all Municipal, State, and Federal rules.

OPERATION AND MAINTENANCE ACTIVITY

Sweeping:

Annual sweeping of the driveways and parking areas following the snow melt for accumulated winter sand, if necessary. Appropriately dispose of all collected material.

Catch Basins:

Catch basins shall be inspected to confirm that the structure is operating properly.

- Inspect the presence of accumulated sediment or debris any sediment shall be removed. The equipment shall meet the following minimum specifications; power jet and water source for washing down the storm drain, vacuum attachment for catch basin cleaning, and a liquid handling method to dewater the material.
- Sediment shall be removed when accumulation is within 6 inches of the outfall pipe invert. Legally dispose of accumulated sediment and debris from the bottom of the basin, inlet grates, and inflow channels to the basin.
- If the basin outlet is designed with a hood to trap floatable materials (e.g. Snout), check to ensure watertight seal is working.
- Appropriately dispose of all collected material.

Storm Drains:

The storm drain shall be annually inspected for the presence of accumulated sediment or debris. Any sediment shall be removed as required.

- The equipment shall meet the following minimum specifications; power jet and water source for washing down the storm drain, vacuum attachment for catch basin cleaning, and a liquid handling method to dewater the material.
- Inspect and legally dispose of accumulated sediment and debris within the storm drains between basins. Liquids must be decanted on-site and returned to the catch basin.

Vegetated Underdrained Soil Filter (VUSF):

The maintenance of the VUSF shall be in accordance with the following activities identified below and the most recent version of the Maine DEP Volume III BMPs Technical Design Manual Chapter 7.1 – Grassed Underdrained Soil Filters.

- The soil filter shall be inspected after every major storm within the first year to ensure the filter area is draining within a 48-hour period and no less than a 24-hour period, and that the grass is establishing. Thereafter, the filter should be inspected at least once every six months to ensure that is draining within a 48-hour period following a one-inch storm or greater.
- Soil filter modification shall occur if the filter bed is draining in less than 24 hours. The top six inches of the filter shall be replaced with six inches of loam, per the most recent Maine DEP specification. Soil filter replacement shall be replaced with fresh material on a yearly basis.

- The filter area shall not be fertilized unless it is absolutely necessary to facilitate vegetative growth.
- Weeding to limit growth of plants besides the grass will likely be necessary.
- If desired, mowing shall only occur by a handheld weed-wacker or push mower and should be mowed no more than two times per growing season to maintain grass heights of no less than six inches. Riding lawnmowers will not be permitted or accessible.
- Maintaining a healthy cover of grass will minimize clogging with fine sediments. If ponding exceeds 48 hours, the top of the filter bed should be rototilled to reestablish the soil's filtration capacity.
- The top several inches of the filter can be replaced with fresh material if water is ponding for more than 72 hours, or the basin can be rototilled, seeded and mulched. Once the filter is mature, adding new material (a 1-inch to 2-inch cover of mature compost) can compensate for subsidence.
- The sediment forebays should be inspected to ensure that the entire surface area is covered by riprap. Sediment may need be removed annually depending on sand application and the upstream catch basin's effectiveness at trapping sediment in the deep sumps.

Level Lip Spreader:

The maintenance of the level lip spreaders shall be in accordance with the following activities identified below and the most recent version of the Maine DEP Volume III BMPs Technical Design Manual Chapter 8.3 – Level Spreaders.

- The level lip spreaders shall be inspected after the first major storm to ensure stability.
- The level lip spreaders shall be inspected for sediment and debris buildup and removed when it accounts for greater than 25% of the capacity.
- Ensure that the level lip spreader maintains a level berm. If any signs of scour or channelization are evident, the root cause should be identified, and the issue must be repaired prior to the next storm event.

Filterra/Focal Point & Bioretention Cell:

The maintenance for the FocalPoints shall be in accordance with the attached "FocalPoint Operations & Maintenance" document. Additionally, the downstream drainage manhole shall be inspected to confirm the structure is operating properly.

- Dig out silt (if any) and mulch and remove trash and foreign items.
- After removal of mulch and debris, measure distance from the top of the FocalPoint HPMBS engineered media soil to the flow line elevation of the adjacent overflow conveyance. If this distance is greater than that specified on the plans (typ. 6") add media (not topsoil or other) to recharge to the distance specified.
- Mulch should be replaced with aged, double shredded hardwood mulch with fines removed.
- The plant should be replaced if dead or dying. If the plant is alive, prune as necessary to encourage growth in the correct directions.
- Any signs of rill erosion should be corrected and stabilized with river stone if necessary.

The area around the unit should be cleaned. All debris should be disposed of correctly.

Vegetated Areas and Embankments:

Inspect all landscaped and or vegetated slopes and embankments on an annual basis. Vegetated areas with bare areas or sparse growth (<90% coverage) shall be revegetated. Mulch shall be applied to landscaped areas, as necessary. Dead or decaying landscaping (ground cover, shrubs, trees etc.) shall be replanted in accordance with the approved Landscape Plan.

INSPECTION AND MAINTENANCE TABLE

Inspection and Maintenance Frequency	Spring or Yearly	Summer	Fall
Sweeping/Sand Removal	X		
Catch Basins	X		X
Storm Drains	X		
Vegetated Underdrained Soil Filters	X	X	
Level Lip Spreader	X		X
Field Inlets	X	X	
Sediment Forebay	X		
Filterra/Focal Point/Biocell	X	X	
Vegetated Areas & Embankments	X	X	

In the above chart, it is assumed the certified stormwater professional will inspect each item in the spring. Inspections outside of the spring visits can likely be conducted by the property manager.

STORMWATER MAINTENANCE AND INSPECTION AGREEMENT: INSPECTION LOG

CATCH BASIN:			
Location: 117 Route 1 Freeport, ME		**Latitude:**	43.817330°
		Longitude:	-70.143860°
Description of Located Point: Lot with driveway access off South Freeport Road		**Inspector:**	
		Date of Inspection:	
		Weather Conditions:	
Days since last precipitation		**MEDEP Permit #**	N/A
Quantity of last precipitation (in)		**Design Drawings:**	

Maintenance Items	Inspect In Spring	Inspect In Fall	Inspect As Necessary		Maintenance Requested (Date)	Maintenance Completed (Date)	Summary of Maintenance Required
Catch Basins							
Catch basin is working properly and is free of debris and sediment	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Basin outlet hood (if any) is working properly.	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Inter-basin storm drain is functioning properly and free of sediment and debris.	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Catch basin sediment further than 6" from invert out	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
No sign of illicit discharge is present	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
General							
Access to facility is adequate	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Photographs of most recent site inspection are included	☐	☐	☐				
Additional Comments:							

STORMWATER MAINTENANCE AND INSPECTION AGREEMENT: INSPECTION LOG

LEVEL SPREADERS:			
Location: 117 Route 1 Freeport, ME		**Latitude:**	43.682792°
		Longitude:	70.258106°
Description of Located Point: Lot with driveway access off South Freeport Road		**Inspector:**	
		Date of Inspection:	
		Weather Conditions:	
Days since last precipitation		**MDEP Permit #**	N/A
Quantity of last precipitation (in)		**Design Drawings:**	

Maintenance Items	Inspect In Spring	Inspect In Fall	Inspect As Necessary		Maintenance Requested (Date)	Maintenance Completed (Date)	Summary of Maintenance Required
Level Spreaders and Buffers							
Stone berm is in good condition	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Berm is level and does not promote concentrated flow.	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Buffer is in good condition, free of concentrated flows and erosion	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Site is free of unnecessary vegetation, leaves and woody growth.	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Any new site developments have not reduced size or function of buffer	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Accumulated sediment is not within six inches of top of level spreader	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Meadow buffer grass is greater than six inches in elevation	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Level spreader drains within 72 hours of 1" or rain or more in 24 hours	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
General							
Access to facility is adequate	☐	☐	☐	☐ Yes ☐ No ☐ N/A			

STORMWATER MAINTENANCE AND INSPECTION AGREEMENT: INSPECTION LOG

Maintenance Items	Inspect In Spring	Inspect In Fall	Inspect As Necessary		Maintenance Requested (Date)	Maintenance Completed (Date)	Summary of Maintenance Required
Photographs of most recent site inspection are included	☐	☐	☐				
Additional Comments:							

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STORMWATER MAINTENANCE AND INSPECTION AGREEMENT: INSPECTION LOG

STORMWATER PIPE:							
Location: 117 Route 1 Freeport, ME					**Latitude:**		43.817330°
					Longitude:		-70.143860°
Description of Located Point: North West and North corner of property					**Inspector:**		
					Date of Inspection:		
					Weather Conditions:		
Days since last precipitation					**MEDEP Permit #**		N/A
Quantity of last precipitation (					**Design Drawings:**		
Maintenance Items	**Inspect In Spring**	**Inspect In Fall**	**Inspect As Necessary**		**Maintenance Requested (Date)**	**Maintenance Completed (Date)**	**Summary of Maintenance Required**
Inlets, Outlets, Culverts & Storm Drains							
Pipe/culvert is free of obstruction, accumulated sediment and debris	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Pipe inlet and outlet is free of obstruction, accumulated sediment and debris	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Pipe/culvert, inlet and outlet is free of collapses and structural damage	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Outlet and inlet are properly conveying stormwater and no erosion is visible	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
General							
Access to facility is adequate	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Photographs of most recent site inspection are included	☐	☐	☐				
Additional Comments:							

MaineDOT - Stormwater Control BMP Inspection Log

VEGETATED AREAS:							
Location: 117 Route 1 Freeport, ME					**Latitude:** 43.817330°		
					Longitude: -70.143860°		
Description of Located Point: Lot with driveway access off South Freeport Road					**Inspector:**		
					Date of Inspection:		
					Weather Conditions:		
DOT Region:							
MATS Asset Number:		**WIN:**			**Design Drawings:**		

Maintenance Items	Inspect In Spring	Inspect In Fall	Inspect As Necessary		Maintenance Requested (Date)	Maintenance Completed (Date)	Summary of Maintenance Required
Embankments							
Slopes and embankments are in good condition.	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Site is free of rill erosion	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
General							
Site is free of locations with less than 90% vegetative cover	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Plantings are capable of withstanding concentrated flows	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Access to facility is adequate	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Photographs of most recent site inspection are included	☐	☐	☐				
Additional Comments:							

STORMWATER MAINTENANCE AND INSPECTION AGREEMENT: INSPECTION LOG

VUSF BMP:			
Location: 117 Route 1 Freeport, ME		**Latitude:**	43.817330°
		Longitude:	-70.143860°
Description of Located Point: North West and North corner of property		**Inspector:**	
		Date of Inspection:	
		Weather Conditions:	
Days since last precipitation		**MDEP Permit #**	N/A
Quantity of last precipitation (in)		**Design Drawings**	

Maintenance Items	Inspect In Spring	Inspect In Fall	Inspect As Necessary		Maintenance Requested (Date)	Maintenance Completed (Date)	Summary of Maintenance Required
Vegetated Underdrain Soil Filter							
Soil filter retains the design volume for a drain down time greater than 24-hours and less than 48-hours	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Permeability is between 0.24 and 4 in/hr	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Filter bed consists of at least 6 in of loam	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Filter bed planting height is no less than 6"	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Filter area is properly planted, showing no bare spots and free of unwanted vegetative growth	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
The outlet control structure is in good working condition and free of debris	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Plantings are in good condition and do not show signs of rot or decay	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Filter bed grass height is no less than 6"	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Embankment grass height is no less than 6"	☐	☐	☐	☐ Yes ☐ No ☐ N/A			

STORMWATER MAINTENANCE AND INSPECTION AGREEMENT: INSPECTION LOG

Maintenance Items	Inspect In Spring	Inspect In Fall	Inspect As Necessary		Maintenance Requested (Date)	Maintenance Completed (Date)	Summary of Maintenance Required
The outlet control structure is in good working condition	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
If applicable, plantings are in good condition and do not show signs of rot or decay	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
General							
Access to facility is adequate	☐	☐	☐	☐ Yes ☐ No ☐ N/A			
Photographs of most recent site inspection are included	☐	☐	☐				
Additional Comments:							

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Filterra Bioscape Owner's Manual

(No Precast Vault Provided)

filterra®

Bioscape®

CONTECH®
ENGINEERED SOLUTIONS

This Owner's Manual applies to Filterra Bioscape ONLY (Filterra installed directly into an excavated basin or other customer provided container, such as a large cast-in-place vault).

filterra® Bioscape®

Table of Contents

CONTECH® ENGINEERED SOLUTIONS

Introduction

Thank you for your purchase of the Filterra® Bioscape® System. Filterra® is a specially engineered stormwater treatment system incorporating high performance biofiltration media to remove pollutants from stormwater runoff. The system's biota (vegetation and soil microorganisms) then further breakdown and absorb captured pollutants. All components of the system work together to provide a sustainable long-term solution for treating stormwater runoff.

Included with your purchase is a Supervised Activation service as well as a 1-year warranty from delivery of the system. In some cases, a Final Site Assessment (assessment of unit condition, mulch replacement, debris removal and pruning) may also be included for systems smaller than 1000 sf in size. Check your order documentation for further information.

Filterra® Bioscape® systems should not be activated until the site is stabilized to prevent construction related runoff from entering and contaminating the system. For Filterra® Bioscape® systems installed within an excavated basin, Contech provides an erosion control sock around the perimeter to provide an extra layer of protection. However, these protection devices are intended as a best practice and cannot fully prevent contamination. It is the purchaser's responsibility to provide adequate measures to prevent construction related runoff from entering the Filterra® Bioscape® system.

Design and Installation

Each project presents different scopes for the use of Filterra® Bioscape® systems. Information and help may be provided to the design engineer during the planning process. Correct Filterra® Bioscape® sizing (by rainfall region) is essential to predict pollutant removal rates for a given area. The engineer shall submit calculations for approval by the local jurisdiction. The contractor is responsible for the correct installation of Filterra® Bioscape® systems as shown in approved plans. A comprehensive installation manual is available from Contech.

Activation Overview

Activation of the Filterra® Bioscape® system is a procedure completed by the contractor to place the system into working condition. This involves the following items:

- Installation of the Filterra® Bioscape® underdrain system
- Installation of the Filterra® media layer
- Planting of the system's vegetation
- Placement of pretreatment mulch layer using mulch certified for use in Filterra® systems

Minimum Requirements

The minimum requirements for Filterra® Bioscape®Activation are as follows:

1. The purchaser must have sourced vegetation meeting the requirements outlined in the Filterra® Bioscape® Activation Package
2. A pre-construction meeting is required to discuss site requirements, logistics planning and activation FAQ and red flags.
3. The site landscaping must be fully stabilized, i.e. full landscaping installed and some grass cover (not just straw and seed) is required to reduce sediment transport. Construction debris and materials should be removed from surrounding area.
4. Final paving must be completed. Final paving ensures that paving materials will not enter and contaminate the Filterra® system during the paving process, and that the plant will receive runoff from the drainage area, assisting with plant survival for the Filterra® system.
5. All immediate upstream and downstream structures should be placed with piping into the system already installed for connection during activation.

An Activation Checklist is included in the Filterra® Bioscape® Activation Package to ensure proper conditions are met for Activation. A charge of $1500.00 will be invoiced for each Supervised Activation visit requested by Customer where Contech determines that the site does not meet the conditions required for Activation.

Filterra Plant Selection Overview

A Plant List is available on the Contech website highlighting recommended plants for Filterra® Bioscape® systems in your area. Keep in mind that plants are subject to availability due to seasonality. Plants installed in the Filterra® Bioscape® system shall be container-grown plants (max 15 gallon) from nursery stock and will be immature in height and spread at Activation. It is the responsibility of the owner to provide adequate irrigation when necessary to the plant of the Filterra® Bioscape® system. The "Filterra® Bioscape® Activation Package" document is included as an appendix and discusses proper selection of the plants within Filterra® Bioscape® systems.

Warranty Overview

Refer to the Contech® Engineered Solutions LLC Stormwater Treatment System LIMITED WARRANTY for further information. The following conditions may void the Filterra® Bioscape® system's warranty and waive the manufacturer provided Final Site Assessment (if applicable):

- Unauthorized activation or performance of any of the items listed in the activation overview without Contech supervision or input
- Removal of any Filterra® system components
- Failure to prevent construction related runoff from entering the Filterra® system
- Failure to properly store and protect any Filterra® components (including media and underdrain stone) that are shipped separately to the site

Routine Maintenance Guidelines

With proper routine maintenance, the biofiltration media within the Filterra® Bioscape® system should last as long as traditional bioretention media. Routine maintenance can be provided by certified maintenance providers listed on the Contech website. Training can also be provided to other stormwater maintenance or landscape providers.

Why Maintain?

All stormwater treatment systems require maintenance for effective operation. This necessity is often incorporated in your property's permitting process as a legally binding BMP maintenance agreement. Other reasons to maintain are:

- Avoiding legal challenges from your jurisdiction's maintenance enforcement program.
- Prolonging the expected lifespan of your Filterra® media.
- Avoiding more costly media replacement.
- Helping reduce pollutant loads leaving your property.

Simple maintenance of the Filterra® Bioscape® is required to continue effective pollutant removal from stormwater runoff before discharge into downstream waters. This procedure will also extend the longevity of the living biofilter system. The unit will recycle and accumulate pollutants within the biomass, but is also subjected to other materials entering the inlet. This may include trash, silt and leaves etc. which will be contained above the mulch layer. Too much silt may inhibit the Filterra's flow rate, which is the reason for site stabilization before activation. Regular replacement of the mulch stops accumulation of such sediment.

When to Maintain?

Maintenance visits are typically scheduled seasonally; the spring visit aims to clean up after winter loads including salts and sands while the fall visit helps the system by removing excessive leaf litter.

It has been found that in regions which receive between 30-50 inches of annual rainfall, (2) two visits are generally recommended; In regions with less rainfall often only (1) one visit per annum is sufficient. Varying land uses can affect maintenance frequency; e.g. some fast food restaurants require more frequent trash removal. Contributing drainage areas which are subject to new development wherein the recommended erosion and sediment control measures have not been implemented may require additional maintenance visits.

Some sites may be subjected to extreme sediment or trash loads, requiring more frequent maintenance visits. This is the reason for detailed notes of maintenance actions per unit, helping the Manufacturer and Owner predict future maintenance frequencies, reflecting individual site conditions.

Owners must promptly notify the maintenance provider of any damage to the plant(s), which constitute(s) an integral part of the bioretention technology.

Exclusion of Services

Clean up due to major contamination such as oils, chemicals, toxic spills, etc. will result in additional costs and are not included as part of the Final Site Assessment (if applicable). Should a major contamination event occur the Owner must block off the outlet pipe of the Filterra® (where the cleaned runoff drains to, such as drop inlet) and block off the throat of the Filterra®. The Supplier should be informed immediately.

Maintainenance Visit Summary

Maintenance visits are typically scheduled seasonally; the spring visit aims to clean up after winter loads including salts and sands while the fall visit helps the system by removing excessive leaf litter.

1. Inspection of Filterra® Bioscape® and surrounding area
2. Removal of erosion control stones
3. Removal of debris, trash and mulch
4. Removal and disposal of erosion control sock from system perimeter (should be completed at 6 month or 12 month maintenance depending upon site characteristics). A new erosion control sock is no longer needed after the first year.
5. Mulch replacement
6. Plant health evaluation and pruning or replacement as necessary
7. Clean area around Filterra®
8. Complete paperwork

Plant Care for Filterra® Systems

After Activation, the Contractor is responsible for proper care of the vegetation until the site is handed over to the Owner. After that, it is the Site Owner's responsibility to care for the vegetation. Contech recommends the following care for the plants:

1. To prevent transplant shock (especially if planting takes place in the hot season), it may be necessary to prune some of the foliage to compensate for reduced root uptake capacity. This is accomplished by pruning away some of the smaller secondary branches or a main scaffold branch if there are too many. Too much foliage relative to the root ball can dehydrate and damage the plant.
2. Plant staking may be required.
3. With all trees/shrubs, remove dead, diseased, crossed/rubbing, sharply crotched branches or branches growing excessively long or in wrong direction compared to majority of branches.
4. Contech recommends irrigation of the Filterra® Vegetation. The following guidance will help to ensure the vegetation is properly irrigated.

Irrigation Recommendations:

- Each Filterra® system must receive adequate irrigation to ensure survival of the living system during periods of drier weather.
- Irrigation sources include rainfall runoff from downspouts and/or gutter flow, applied water through the tree grate or in some cases from an irrigation system with emitters installed during construction.
- At Activation: Apply about one (cool climates) to two (warm climates) gallons of water per inch of trunk diameter over the root ball.
- During Establishment: In common with all plants, each Filterra® plant will require more frequent watering during the establishment period. One inch of applied water per week for the first three months is recommended for cooler climates (2 to 3 inches for warmer climates). If the system is receiving rainfall runoff from the drainage area, then irrigation may not be needed. Inspection of the soil moisture content can be evaluated by gently brushing aside the mulch layer and feeling the soil. Be sure to replace the mulch when the assessment is complete. Irrigate as needed**.
- Established Plants: Established plants have fully developed root systems and can access the entire water column in the media. Therefore irrigation is less frequent but requires more applied water when performed. For a mature system assume 3.5 inches of available water within the media matrix. Irrigation demand can be estimated as 1" of irrigation demand per week. Therefore if dry periods exceed 3 weeks, irrigation may be required.

*** Five gallons per square yard approximates 1 inch of water. Therefore for a 6' x 6 foot Filterra® approximately 20-60 gallons of applied water is needed. To ensure even distribution of water it needs to be evenly sprinkled over the entire surface of the filter bed, with special attention to make sure the root ball is completely wetted. NOTE: if needed, measure the time it takes to fill a five gallon bucket to estimate the applied water flow rate. Then calculate the time needed to irrigate the Filterra®, For example is the flow rate of the sprinkler is 5 gallons/minute then it would take 12 minutes to irrigate a 6'x6' filter.*

Plant Replacement:

In some cases, plants will require replacement. Please follow the procedures below to ensure a properly functioning Filterra® system.

1. Remove the existing plant, and leave as much of the Filterra® media in place as possible.
2. Select a replacement per the Filterra® Bioscape® Activation Package.
3. Prior to removing the plant from the container, ensure the soil moisture is sufficient to maintain the integrity of the root ball. If needed, pre-wet the container plant.
4. Cut away any roots which are growing out of the container drain holes.
5. Plant(s) should be carefully removed from the pot by gently pounding on the sides of the container with the fist to loosen root ball. Then carefully slide out. Do not lift plant(s) by trunk as this can break roots and cause soil to fall off. Extract the root ball in a horizontal position and support it to prevent it from breaking apart. Alternatively, the pot can be cut away to minimize root ball disturbance.
6. Excavate a hole with a diameter 4" greater than the root ball, gently place the plant(s).
7. Plant the tree/shrub/grass with the top of the root ball 1" above surrounding media to allow for settling.
8. All plants should have the main stem centered in the tree grate (where applicable) upon completion of installation.
9. Reinstall or add mulch to a depth of 3" per Contech's mulch specifications for Filterra® systems.

Maintenance Visit Procedure

Keep sufficient documentation of maintenance actions to predict location specific maintenance frequencies and needs. An example Maintenance Report is included in this manual.

1. Inspection of Filterra and surrounding area

- Record individual unit before maintenance with photograph (numbered). Record on Maintenance Report (see example in this document) the following:

Record on Maintenance Report the following:

Standing Water	yes | no
Is Bypass Clear	yes | no

If yes answered to any of these observations, record with close-up photograph (numbered).

2. Removal of erosion control stones

- Set aside erosion control stones for reuse after mulch has been replaced.
- Dig out silt (if any) and mulch and remove trash & foreign items.

Record on Maintenance Report the following:

Is scour present around the inlet areas? yes | no

If answering yes, consider adding additional erosion control stone.

3. Removal of debris, trash and mulch

- After removal of mulch and debris, measure distance from the top of the Filterra engineered media soil to the top of the top slab. Compare the measured distance to the distance shown on the approved Contract Drawings for the system. Add Filterra media (not top soil or other) to bring media up as needed to distance indicated on drawings.

Record on Maintenance Report the following:

Silt/Clay	yes | no
Bypass Clear	yes | no
Leaves	yes | no
# of Buckets Removed	_____

4. Removal and Disposal of Erosion Control Sock

- Remove and dispose of erosion control sock if site conditions allow (site should be fully stabilized). Erosion control sock is no longer needed after 1-year post activation.

5. Mulch Replacement

- Add mulch evenly across entire system to a depth of three inches.

6. Vegetation health evaluation and pruning

- Examine the vegetation health and replace if necessary. Prune vegetation to encourage growth in the correct directions. Since Filterra® Bioscape® systems can contain many plants, only notation of individual damaged or unhealthy plants is necessary.
  - » Record on Maintenance Report the following:
  - » Vegetation Health
  - » Vegetation Damage

Document damaged or unhealthy plants with photographs.

7. Clean side slopes and area around the Filterra Bioscape system

- Remove all trash and debris to be disposed of appropriately.

8. Complete paperwork

- Complete Maintenance Report. Some jurisdictions require submission of maintenance reports in accordance with approvals. It is the responsibility of the owner to comply with local regulations.

Maintenance Tools, Safety Equipment and Supplies

Ideal tools include: camera, bucket, shovel, broom, pruners, hoe/rake, and tape measure. Appropriate Personal Protective Equipment (PPE) should be used in accordance with local or company procedures. This may include impervious gloves where the type of trash is unknown, high visibility clothing, barricades when working in close proximity to traffic and safety hats, glasses, and shoes.

Most visits require minor trash removal and a full replacement of mulch. Mulch should be a double shredded, hardwood variety.

Maintenance Checklist

Drainage System Failure	Problem	Conditions to Check	Condition that Should Exist	Actions
Inlet	Excessive sediment or trash accumulation.	Accumulated sediments or trash impair free flow of water into Filterra.	Inlet should be free of obstructions allowing free distributed flow of water into Filterra.	Sediments and/or trash should be removed.
Mulch Cover	Trash and floatable debris accumulation.	Excessive trash and/or debris accumulation.	Minimal trash or other debris on mulch cover.	Trash and debris should be removed and mulch cover raked level. Ensure bark nugget mulch is not used.
Mulch Cover	"Ponding" of water on mulch cover.	"Ponding" in unit could be indicative of clogging due to excessive fine sediment accumulation or spill of petroleum oils.	Stormwater should drain freely and evenly through mulch cover.	Recommend contact manufacturer and replace mulch as a minimum.
Vegetation	Plants not growing or in poor condition.	Soil/mulch too wet, evidence of spill. Incorrect plant selection. Pest infestation. Vandalism to plants.	Plants should be healthy and pest free.	Contact manufacturer for advice.
Vegetation	Plant growth excessive.	Plants should be appropriate to the species and location of Filterra.		Trim/prune plants in accordance with typical landscaping and safety needs.
Maintenance is ideally to be performed twice annually.				

Filterra Inspection & Maintenance Log

Filterra System Size/Model:_____ **Location:** _____

Date	Mulch & Debris Removed	Depth of Mulch Added	Mulch Brand	Vegetation Species	Issues with System	Comments
1/1/17	*5 – 5 gal Buckets*	*3"*	*Lowe's Premium Brown Mulch*	*Galaxy Magnolia*	*- Standing water in downstream structure*	*- Removed blockage in downstream structure*

Appendix 1 – Filterra® Bioscape® Activation Package

FILTERRA® BIOSCAPE® ACTIVATION PACKAGE

(No Precast Vaults Provided)

CONTECH® ENGINEERED SOLUTIONS

It is the purchaser's responsibility to Activate the Filterra Bioscape System and provide adequate measures to prevent construction related runoff from entering the Filterra Bioscape system.

Included with your purchase is Supervised Activation of the Filterra system by the manufacturer as well as a 1-year warranty from delivery of the system. The purchaser must ensure that the site is acceptable for Filterra Bioscape Activation. A checklist (included as page 2 of this document must be completed and submitted to the Contech Activation Coordinator. The minimum requirements for Filterra Bioscape Activation are as follows:

1. The purchaser must have sourced vegetation meeting the requirements outlined in "Plant Selection for Filterra Systems" below.
2. A pre-construction meeting is required to discuss site requirements, logistics planning and activation FAQ and red flags.
3. The site landscaping must be fully stabilized, i.e. full landscaping installed and some grass cover (not just straw and seed) is required to reduce sediment transport. Construction debris and materials should be removed from surrounding area.
4. Final paving must be completed. Final paving ensures that paving materials will not enter and contaminate the Filterra system during the paving process, and that the plant will receive runoff from the drainage area, assisting with plant survival for the Filterra system.
5. All immediate upstream and downstream structures should be placed with piping into the system already installed for connection during activation.

Plant Selection for Filterra® Bioscape® Systems

All Filterra systems require vegetation for proper long-term performance. As indicated in the Filterra Bioscape Activation Package, the Contractor is responsible for sourcing the proper vegetation prior to Supervised Activation. Contech or a Contech representative will supervise installation the vegetation during the Activation process.

Contractors must ensure the vegetation meets the following 3 requirements:

1. Select plant(s) as specified in the engineering plans and specifications AND that are listed on Contech's Configuration Specific Plant Lists.
2. All plants MUST be container-grown in nursery containers no larger than 15 gallons. Crated and/or Ball/Burlap plants are NOT permitted.
3. Quantities should be selected based on plant palette options found starting on page 3 of this document.

If Contech or Contech's representative shows up for Supervised Activation and any of the 3 requirements above are not met, Activation cannot be performed and the Contractor will be billed a $1,500 Unprepared Site fee*.

* *UNPREPARED SITE FEE NOTE: A charge of $1500.00 will be invoiced for each activation visit requested by customer where Contech determines that the site does not meet the conditions required for Activation AND/OR acceptable plants are not provided by the contractor.*

Filterra® Contractor Activation Checklist

Requested Activation Date: _____ System Designation: _____

Project Name: _____

Site Contact Name: _____ Site Contact Phone/Email: _____

Site Owner/End User Name: _____ Site Owner/End User Phone/Email: _____

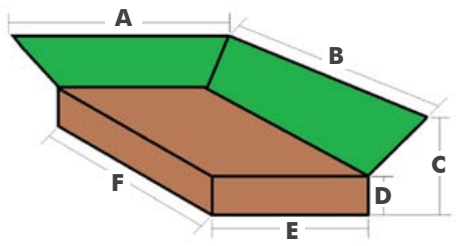
Please complete the following checklist, sign, date, and submit with your activation request to your Contech Project Consultant. Along with the checklist, fill out the as-built dimensions of the Filterra Bioscape system excavation(s), and attach photos of the Filterra Bioscape excavation(s). This information is essential to ensure the proper amount of material is provided.

Checklist:

- ☐ Upstream drainage area to Filterra Bioscape system is stabilized.
- ☐ Filterra Bioscape excavated per plan dimensions to bottom of Filterra underdrain stone depth. Surface area of media area must match order quantities.
- ☐ If additional depth of drain rock is required per site plans, additional drain rock is installed to the Filterra Bioscape underdrain pipe elevation.
- ☐ Excavation sides vertical from bottom of excavation to top of mulch (Approximately 34" when 6" underdrain is utilized).
- ☐ Excavation sides maximum slope 3:1 from top of mulch to finished grade.
- ☐ Side slopes above top of mulch elevation stabilized with sod or other slope stabilization.
- ☐ Bioscape Inlet (BSI) structure or other inlet/bypass structure installed and properly backfilled with maximum 3:1 slopes to top of mulch elevation.
- ☐ Inflow pipe(s) connected from BSI or other inlet structure to edge of Filterra Bioscape system excavation.
- ☐ Outflow pipe(s) connected from edge of Filterra Bioscape system excavation to downstream structure.
- ☐ Outflow pipe(s) are SDR35, properly sized per site plan underdrain pipe size(s).
- ☐ Excavation is dry and free from construction related sediment and debris.
- ☐ Bottom of excavation is properly scarified.
- ☐ Excavation is accessible by standard construction equipment.
- ☐ Plants have been purchased in accordance with the guidance in "Plant Selection for Filterra Bioscape Systems"
- ☐ Photos attached.

NOTE: Please ensure that all of the above conditions have been met prior to activation request. A mobilization fee (minimum $1000.00) applies for each activation visit requested by Customer where Contech determines that the site does not meet the above conditions suitable for activation.

As-Built Dimensions



A.	OVERALL EXCAVATION WIDTH:	_____FT
B.	OVERALL EXCAVATION LENGTH:	_____FT
C.	OVERALL EXCAVATION HEIGHT:	_____FT
D.	FILTERRA BED HEIGHT:	_____FT
E.	FILTERRA MEDIA BED WIDTH:	_____FT
F.	FILTERRA MEDIA BED LENGTH:	_____FT

Signature _____ Date _____

* *UNPREPARED SITE FEE NOTE: A charge of $1500.00 will be invoiced for each activation visit requested by customer where Contech determines that the site does not meet the conditions required for Activation AND/OR acceptable plants are not provided by the contractor.*

Filterra® Bioscape Plant Palettes

KEY: (refer to plant lists for species sizing)

A. EXTRA SMALL GRASS
- Up to 2′ mature spread
- 1-2 gallon typical (1 gal. minimum)

B. SMALL GRASS/SHRUB
- 2′-4′ mature spread
- 1-7 gallon typical

C. MEDIUM SHRUB
- 4′-6′ mature spread
- 1-7 gallon typical

D. LARGE SHRUB OR EXTRA LARGE SHRUB OR TREE
- 6′ mature spread and greater, 30′ max. mature height
- Up to 15 gallon maximum

NOTE: *For larger vaults and in-ground Filterra Bioscape systems, palettes can be scaled (i.e. Qty 6 of the 175 SF Palette can be used for a 1056 SF Filterra Bioscape).*

MIX & MATCH SUBSTITUTION OPTIONS:

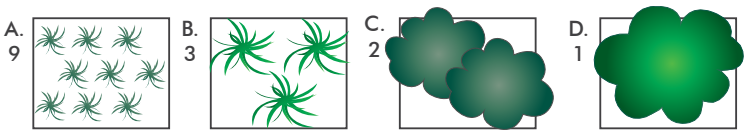
1 Large Shrub or Extra Large Shrub or Tree
- 2 Medium Shrubs
- 4 Small Grass/SHrubs
- 12 Extra Small Grasses

1 Medium Shrub
- 2 Small Grass/Shrubs
- 6 Extra Small Grasses

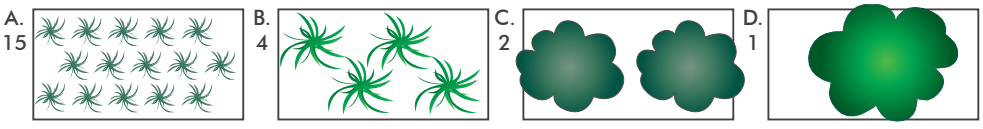
1 Small Grass/Shrub
- 3 Extra Small Grasses

25 SF example

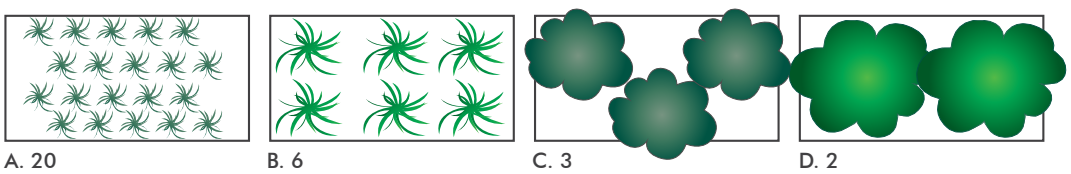
50 SF example



75 SF example

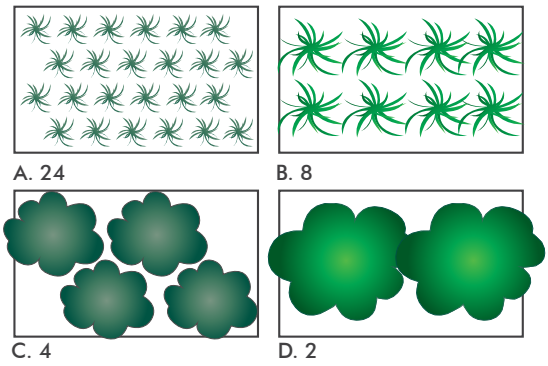


100 SF example



* *UNPREPARED SITE FEE NOTE: A charge of $1500.00 will be invoiced for each activation visit requested by customer where Contech determines that the site does not meet the conditions required for Activation AND/OR acceptable plants are not provided by the contractor.*

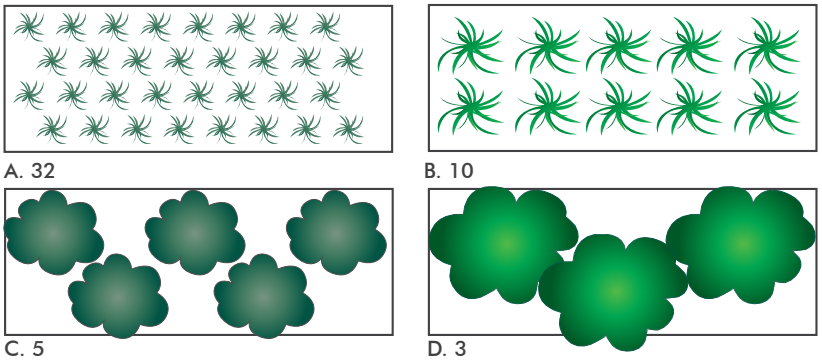
125 SF example



A. 24 B. 8

C. 4 D. 2

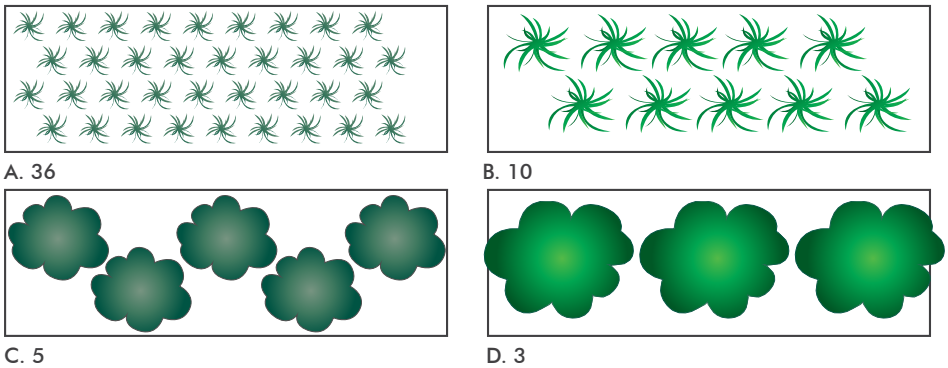
150 SF example



A. 32 B. 10

C. 5 D. 3

175 SF example



A. 36 B. 10

C. 5 D. 3

In some cases, Contech may consider alternate plant species as approved by the Product Manager. Please list the plant name in the space below and submit this sheet to your Contech Activation Coordinator. If the plant species is approved, either the Product Manager or the Activation Coordinator will sign the form and return to you for inclusion with your Activation Checklist.

Requested Plant Species: _____ Approved: _____

Date: _____

* *UNPREPARED SITE FEE NOTE: A charge of $1500.00 will be invoiced for each activation visit requested by customer where Contech determines that the site does not meet the conditions required for Activation AND/OR acceptable plants are not provided by the contractor.*

NOTES

9100 Centre Pointe Drive, Suite 400
West Chester, OH 45069
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PDF 1/23

Section 5

Erosion & Sedimentation Control Report

ACORN
ENGINEERING, INC.

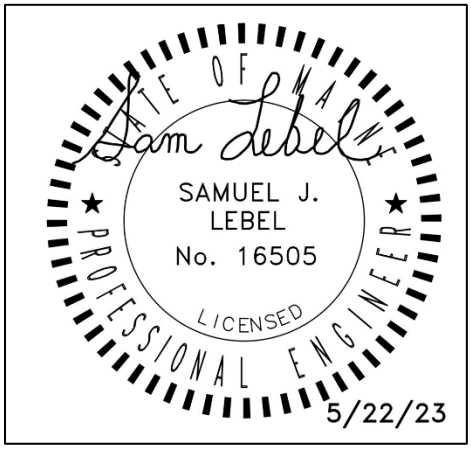
EROSION & SEDIMENTATION CONTROL REPORT

Prepared For:

MR 117 Route One, LLC
1 Balsam Lane
Freeport, Maine 04032

Prepared By:

Acorn Engineering, Inc.
500 Washington Avenue
Portland, Maine 04103



August 2021
Rev. May 2023

INTRODUCTION

Acorn Engineering, Inc. has been retained by MR 117 Route One LLC to provide civil engineering services for the proposed site expansion to 117 Route 1 in Freeport, Maine in which Goodfire Brewing Company plans to construct additional parking to the east of the existing parking lot.

The following stormwater analysis and erosion and sedimentation control plan were developed in accordance with the Section 529 of the Town of Freeport's Zoning Ordinance, the Maine DEP Chapter 500 Stormwater Management Appendix A and B (1), Amended January 11, 2015, and the Maine DEP's Erosion & Sediment Control BMP's Manual, revised in 2016.

1.0 EXISTING CONDITIONS

The proposed project site is located at 117 Route 1 in Freeport, Maine. A boundary plan has been prepared by NORSE of Brunswick, Maine dated June 29, 2021.

Abutting Uses:

- North C1
- West C1
- South C1
- East C1

The 2.69-acre site is in a relatively flat topographic area, with grades that drop off away towards the wetlands to the east of the site.

1.1 Existing Soils

Onsite soil information includes the following:

- United States Department of Agriculture Web Soil Survey

The area within and surrounding the project includes soils types listed in the table below. The susceptibility of soils to erosion is indicated on a relative "K" scale of values over a range of 0.02 to 0.69. Higher "K" values indicate more erodible soils.

Soils Type	K Value
Nicholville very fine sandy loam	0.37
Scantic silt loam	0.28

The soil "K" values for the soils, listed above, show a low to medium susceptibility to erosion. The site's susceptibility to erosion is from the USDA Web Soil Survey. Implementation of the proposed Erosion & Sedimentation Measures by the contractor will be of the utmost importance to preserve the soil on site and prevent any migration.

1.2 Existing Erosion Problems

The gravel parking area to the rear of the site displays rutting and channelization from stormwater runoff. The front of the lot consists mostly of impervious area and well established grass

1.3 Critical Areas

The edge of the gravel parking lot will be suscept to erosion and is upgradient of the wetlands on site, as such it will be the contractor's responsibility for providing erosion control measures to prevent sediment migration.

1.4 Protected Natural Resource

There are wetlands located to the east of the site that have been delineated by Flycatcher LLC. These wetlands will not be disturbed by the project. Any work to occur the wetlands will need to be protected by a double row of sediment barriers per Maine DEP recommendations.

1.5 Previous Construction Activity (5 years)

Acorn Engineering, Inc. is not aware of any construction related activities within the project limits within the past 5 years.

1.6 Timber Harvesting

Acorn Engineering, Inc. is not aware of any timber harvesting within the past five years.

2.0 EROSION CONTROL MEASURES AND SITE STABILIZATION

As part of the site development, the following temporary and permanent erosion and sedimentation control devices shall be implemented. Devices shall be installed as described in this report or within the plan set. See the Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices for further reference.

2.1 Temporary Erosion Control Measures

The following temporary erosion and sedimentation control measures are planned for the project's construction period:

2.1.1 Crushed stone stabilized construction entrances shall be placed at all access points to the project site where there are disturbed areas. The following specifications shall be followed at a minimum:

- Stone size shall be 2-3 inches or reclaimed or recycled concrete equivalent.
- The thickness of the entrance stone layer shall be no less than 6 inches.
- The entrance shall not be less than 20 feet wide, however not less than the full width of points where ingress or egress occurs. The length shall not be less than 50 feet in length.
- Geotextile fabric (woven or non-woven) shall be placed over the entire entrance area.
- The entrance/exit shall be maintained to the extent that it will prevent the tracking of sediment onto public roadways.

2.1.2 Siltation fence or erosion control berm shall be installed down gradient of any disturbed areas to trap runoff borne sediments until permanent stabilization is achieved. The silt fence or erosion control berm shall be installed per the details provided in the plan set and inspected before and immediately after each rainfall and at least daily during prolonged rainfall. Repairs shall be made if there are any signs of erosion or sedimentation below the fence line or berm. If there are signs of undercutting at the center or the edges, or impounding of large volumes of water behind the fence or berm, the barrier shall be replaced with a stone check dam.

2.1.3 Hay mulch including hydro seeding is intended to provide cover for denuded or seeded areas until revegetation is established. Mulch placed between April 15th and November 1st on slopes of less than 15 percent shall be covered by fabric netting and anchored with staples in accordance with the manufacturer's recommendation. Mulch placed between November 1st and April 15th on slopes equal to or steeper than 8 percent and equal to or flatter than 2:1 shall use mats or fabric netting and anchored with staples in accordance with the manufacturer's recommendation.

2.1.4 At any time of the year, all slopes greater than 3:1 shall be stabilized with Double Net Erosion Control Blanket Bionet SC150BN by North American

Green or Approved Equal, or Erosion Control Mix Slope Protection as detailed within the plans.

2.1.5 The onsite parking lot shall be swept to control mud and dust from the construction site as necessary. Add additional stone to the stabilized construction entrance to minimize the tracking of material off the site and onto the surrounding roadways.

2.1.6 During demolition, clearing and grubbing operations, stone check dams shall be installed at any areas of concentrated flow. The maximum height of the check dam shall not exceed 2 feet. The center of the check dam shall be 6 inches below the outer edges of the dam. The contractor shall mulch the side slopes and install stone check dams for all newly excavated ditch lines within 24 hours of their creation.

2.1.7 Silt fence stake spacing shall not exceed 6 feet unless the fence is supported with 14-gauge wire in which case the maximum spacing shall not exceed 10 feet. The silt fence shall be "toed" into the ground.

2.1.8 Storm drain inlet protection shall be provided to storm drains using any of the following: hay bale drop inlet structures, silt fence drop inlet sediment filter, gravel and wire mesh drop inlet sediment filter, or curb inlet sediment filter. Barriers shall be inspected after every rainfall event and repaired as necessary. Sediments shall be removed when accumulation has reached ½ the design height.

2.1.9 Dust control shall be accomplished using any of the following: water, calcium chloride, stone, or an approved MDEP product. Measures shall be applied as needed to accomplish dust control.

2.1.10 Temporary loam, seed, and mulching shall be used in areas where no other erosion control measure is used. Application rates for seeding are provided at the end of this report.

2.1.11 Stockpiles shall be stabilized within 7 days of formation unless a scheduled rain event occurs prior to the 7-day window, in which case the stockpile shall be stabilized prior to the rain event. Methods of stabilization shall be mulch, erosion control mix, or erosion control blankets/mats. Silt fence or a wood waste compost filter berm shall be placed downhill of any soil stockpile location.

2.1.12 For disturbance between November 1 and April 15, please refer to winter stabilization plan in this report and the Maine Erosion and Sediment Control BMP manual for further information.

2.1.13 It is of the utmost importance that stormwater runoff and potential sediment from the construction site be diverted around the proposed underdrains until the trench is backfilled.

2.2 Permanent Erosion Control Measures

The following permanent erosion control measures are intended for post disturbance areas of the project.

2.2.1 All disturbed areas during construction, not subject to other proposed conditions, shall receive a minimum 4" of loam, limed, and mulched. Erosion control blankets or mats shall be placed over the mulch in areas noted in paragraph 4.1 of this report.

2.2.2 All stormwater devices shall be installed, and tributary areas stabilized prior receiving stormwater.

2.2.3 Refer to the Maine Erosion and Sediment Control BMP manual for additional information.

3.0 EROSION AND SEDIMENTATION CONTROL PLAN

The Erosion and Sedimentation Control Plan is included within the plan set.

4.0 DETAILS AND SPECIFICATIONS

Erosion Control Details and Specifications are included in the plan set.

5.0 STABILIZATION PLAN FOR WINTER CONSTRUCTION

Winter Construction consists of earthwork disturbance between the dates of November 1 and April 15. If a construction site is not stabilized with pavement, a road gravel base, 75% mature vegetation cover or riprap by November 15, then the site shall be protected with over-winter stabilization. Any area not stabilized with pavement, vegetation, mulching, erosion control mix, erosion control mats, riprap, or gravel base on a road shall be considered open.

The contractor shall limit the work area to areas that work will occur in during the subsequent 15 days and so that it can be mulched one day prior to a snow event. The contractor shall stabilize work areas prior to opening additional work areas to minimize areas without erosion control measures.

The following measures shall be implemented during winter construction periods:

5.1 Sediment Barriers

During frozen conditions, sediment barriers may consist of erosion control mix berms or any other recognized sediment barriers as frozen soil prevents the proper installation of hay bales or silt fences.

5.2 Mulching

All areas shall be considered to be denuded until seeded and mulched. Hay and straw mulch shall be applied at a rate of 150 lb. per 1,000 square feet or 3 tons/acre (twice the normal accepted rate of 75-lbs./1,000 s.f. or 1.5 tons/acre) and shall be properly

anchored. Erosion control mix must be applied with a minimum 4-inch thickness. Mulch shall not be spread on top of snow. The snow shall be removed down to a one-inch depth or less prior to application. After each day of final grading, the area shall be properly stabilized with anchored hay or straw or erosion control matting. An area shall be considered to have been stabilized when exposed surfaces have been either mulched or adequately anchored so that ground surface is not visible through the mulch. Between the dates of November 1 and April 15, all mulch shall be anchored by either mulch netting, tracking or wood cellulose fiber. The cover will be considered sufficient when the ground surface is not visible through the mulch. After November 1st, mulch and anchoring of all exposed soil shall occur at the end of each final grading workday.

5.3 Soil Stockpiling

Stockpiles of soil or subsoil shall be mulched for over winter protection with hay or straw at twice the normal rate or with a four-inch layer of erosion control mix. This shall be done within 24 hours of stocking and re-established prior to any rainfall or snowfall.

5.4 Seeding

Between the dates of October 15th and April 1st, loam or seed shall not be required. During periods of above freezing temperatures finished areas shall be fine graded and either protected with mulch or temporarily seeded and mulched until the final treatment can be applied. If the date is after November 1st and if the exposed area has not been loamed, final grading with a uniform surface, then the area may be dormant seeded at a rate of 3 times higher than specified for permanent seed and then mulched.

Dormant seeding may be placed prior to the placement of mulch or erosion control blankets. If dormant seeding is used for the site, all disturbed areas shall receive 4" of loam and seed at an application rate of 5 lbs./1,000 s.f. All areas seeded during the winter shall be inspected in the spring for adequate catch. All areas insufficiently vegetated (less than 75% catch) shall be revegetated by replacing loam, seed and mulch. If dormant seeding is not used for the site, all disturbed areas shall be revegetated in the spring.

5.5 Over winter stabilization of disturbed soils

By September 15th, all disturbed soils on areas having a slope less than 15% shall be seeded and mulched. If the disturbed areas are not stabilized by this date, then one of the following actions shall be taken to stabilize the soil for late fall and winter:

- Stabilize the soil with temporary vegetation – By October 1st, seed the disturbed soil with winter rye at a seeding rate of 3lbs per 1,000 s.f., lightly mulch the seeded soil with hay or straw at 75 lbs per 1,000 s.f., and anchor the mulch with plastic netting. Monitor growth of the rye over the next 30 days. If the rye fails to grow at least three inches or fails to cover at least 75% of the disturbed soil before November 1st, then mulch the area for over-winter protection.

- Stabilize the soil with sod – Stabilize the disturbed soil with properly installed sod by October 1st. Proper installation includes pinning the sod onto the soil with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil.

- Stabilize the soil with mulch – By November 15th, mulch the disturbed soil by spreading hay or straw at a rate of at least 150 lbs per 1,000 s.f. on the area so that no soil is visible through the mulch. Immediately after applying the mulch, anchor the mulch with plastic netting to prevent wind from moving the mulch off the disturbed soil.

5.6 Over winter stabilization of disturbed slopes

All stone-covered slopes shall be constructed and stabilized by November 15th. All slopes to be vegetated shall be seeded and mulched by September 1st. A slope is considered a grade greater than 15%. If a slope to be vegetated is not stabilized by September 1st, then one of the following action shall be taken to stabilize the slope for late fall and winter:

- Stabilize the soil with temporary vegetation and erosion control mats – By October 1st the disturbed slope shall be seeded with winter rye at a seeding rate of 3 lbs per 1,000 s.f. and then install erosion control mats or anchored mulch over the seeding. If the rye fails to grow at least three inches or fails to cover at least 75% of the slope by November 1st, then the contractor shall cover the slope with a layer of erosion control mix or with stone riprap.

- Stabilize the soil with sod – The disturbed slope shall be stabilized with properly installed sod by October 1st. Proper installation includes the contractor pinning the sod onto the slope with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil. The contractor shall not use late-season sod installation to stabilize slopes having a grade greater than 3H:1V or having groundwater seeps on the slope face.

- Stabilize the soil with erosion control mix – Erosion control mix shall be properly installed by November 15th. The contractor shall not use erosion control mix to stabilize slopes having grades greater than 2H:1V or having groundwater seeps on the slope face.

- Stabilize the soil with stone riprap – Place a layer of stone riprap on the slope by November 15th. A registered professional engineer shall be hired to determine the stone size needed for stability on the slope and to design a filter layer for underneath the riprap.

6.0 INSPECTION AND MAINTENANCE

A person with knowledge of erosion and stormwater control, including the standards and conditions in the permit, shall conduct periodic visual inspections of installed erosion control measures. The frequency of inspection shall occur at least once every two weeks, as well as after a "storm event". A "storm event" shall consist 0.5 inches of rain within a 24-hour period. The following Erosion and Sediment Control - Best Management Practices (BMP's) shall inspected in the manner as described.

6.1 Sediment Barriers

Hay bale barriers, silt fences and filter berms shall be inspected and repaired for the following if there are any signs of erosion or sedimentation below them. If there are signs of undercutting at the center or the edges of the barrier, or impounding of large volumes of water behind them, sediment barriers shall be replaced with a temporary check dam. Should the fabric on a silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, the fabric shall be replaced promptly. Sediment deposits should be removed when deposits reach approximately one-half the height of the barrier. Filter berms should be reshaped as needed. Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required should be dressed to conform to the existing grade, prepared and seeded.

6.2 Stabilized Stone Construction Entrances

The exit shall be maintained in a condition that will prevent tracking of sediment onto public rights-of-way. When the control pad becomes ineffective, the stone shall be removed along with the collected soil material and redistributed on site in a stable manner. The entrance should then be reconstructed. The contractor shall sweep or wash pavement at exits, which have experienced mud-tracking on to the pavement or traveled way. When washing is required, it shall be done on an area stabilized with aggregate, which drains into an approved sediment trapping device. All sediment shall be prevented from entering storm drains, ditches, or waterways.

6.3 Mulched Areas

All mulches must be inspected periodically, in particular after rainstorms, to check for rill erosion. If less than 90% of the soil surface is covered by mulch, additional mulch shall be immediately applied. Nets must be inspected after rain events for dislocation or failure. If washouts or breakage occur, re-install the nets as necessary after repairing damage to the slope. Where mulch is used in conjunction with ornamental plantings, inspect periodically throughout the year to determine if mulch is maintaining coverage of the soil surface. Repair as needed.

6.4 Dust Control

When temporary dust control measures are used, repetitive treatment shall be applied as needed to accomplish control.

6.5 Stormwater Appurtenances

All underdrains, storm drains, and catch basins need to be operating effectively and free of debris.

6.6 Erosion and Sedimentation Control Inspections:

Acorn Engineering has personnel qualified to conduct Erosion and Sedimentation Control Inspections. For further information, contact:

Contact: Will Savage, PE
Telephone: (207) 775-2655

Qualifications:

- Maine Professional Engineering License #11419
- Maine DEP - Certified in Maintenance & Inspection of Stormwater BMP's Cert #14
- Certified Erosion, Sediment and Storm Water Inspector (CESSWI) Cert #0293
- Certified Professional in Erosion and Sediment Control (CPESC) Cert. #4620

The Contractor has sole responsibility for complying with the Erosion and Sedimentation Report/Plan, including control of fugitive dust. The Contractor shall be responsible for any monetary penalties resulting from failure to comply with these standards.

7.0 IMPLEMENTATION SCHEDULE

The following implementation sequence is intended to maximize the effectiveness of the above described erosion control measures. Contractors should avoid overexposing disturbed areas and limit the amount of stabilization area.

1. Install a stabilized construction entrance in all locations where construction traffic will enter and exit the site.
2. Install perimeter silt fence or erosion control berm.
3. Commence installation of drainage infrastructure.
4. Install all other erosion control devices as necessary throughout the remainder of this schedule.
5. Commence earthwork operations, associated with the roadway construction.
6. Commence installation of utilities.
7. Continue earthwork and grading to subgrade as necessary for construction.
8. Complete installation of drainage infrastructure, as well as other utility work.
9. Complete remaining earthwork operations.
10. Install sub-base and base gravels in paved areas.
11. Install paving, curbing and brickwork.
12. Loam, lime, fertilize, seed and mulch disturbed areas and complete all landscaping.
13. Once the site is stabilized, 90% catch of grass has been obtained, or mulching of landscape areas is complete, remove all temporary erosion control measures.
14. Touch up areas without a vigorous catch of grass with loam and seed.

15. Complete site signage and striping.
16. Execute proper maintenance of all temporary and permanent erosion control measures throughout the project.

The above implementation sequence should be generally followed by the site contractor. However, the contractor may construct several items simultaneously. The contractor shall submit to the owner a schedule of the completion of the work. If the contractor is to commence the construction of more than one item above, they shall limit the amount of exposed areas to those areas in which work is expected to be undertaken during the following 30 days.

The contractor shall re-vegetate disturbed areas as rapidly as possible. All areas shall be permanently stabilized within 7 days of final grading or before a storm event. The contractor shall incorporate planned inlets and drainage systems as early as possible into the construction phase.

8.0 CONCLUSION

The above erosion control narrative is intended to minimize the development impact by implementing temporary and permanent erosion control measures. The contractor shall also refer to the Maine Erosion and Sediment Control BMP manual for additional information.

9.0 ATTACHMENTS

- Temporary Seeding Plan
- Permanent Seeding Plan

TEMPORARY SEEDING PLAN

Site Preparation

The seeded areas shall be feasibly graded out to provide the use of equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. If necessary, the site may require additional temporary erosion control measures outlined in the Erosion Control report.

Seedbed Preparation

Fertilizer shall be applied to the site at a rate of 13.8 pounds per 1,000 square feet. The composition of the fertilizer shall be 10-10-10 (N-P2O5-K2O) or equivalent.

Limestone shall be applied to the site at a rate of 138 pounds per 1,000 square feet.

Seeding

The composition and amount of temporary seed applied to a site shall be determined by the following table:

Seed	Pounds / 1,000 S.F.	Recommended Seeding Dates
Winter Rye	2.57	Aug-15 to Oct-1
Oats	1.84	Apr-1 to Jul-1 Aug-15 to Sep-15
Annual Ryegrass	0.92	Apr-1 to Jul-1
Sudangrass	0.92	May-15 to Aug-15
Perennial	0.92	Aug-15 to Sep-15

Mulching

Mulch shall be applied at a rate of 70 lbs – 90 lbs per 1,000 square feet. The mulch shall be installed at a minimum depth of 4 inches. The seeded area shall be mulched immediately after seed is applied. Mulching during the winter season shall be double the normal amount.

Conclusion

Please refer to the Maine Erosion and Sediment Control BMP manual for additional information pertaining to temporary seeding and mulching.

PERMANENT SEEDING PLAN

Site Preparation

The seeded areas shall be feasibly graded out to provide the use of equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. If necessary, the site may require additional temporary erosion control measures outlined in the Erosion Control report.

Seedbed Preparation

Fertilizer shall be applied to the site at a rate of 13.8 pounds per 1,000 square feet. The composition of the fertilizer shall be 10-10-10 (N-P2O5-K2O) or equivalent.

Limestone shall be applied to the site at a rate of 138 pounds per 1,000 square feet.

Seeding

The composition and amount of permanent seed applied to a site shall be determined by the following table:

Seed	Pounds / 1,000 S.F.
Kentucky Bluegrass	0.46
Creeping Red Fescue	0.46
Perennial Ryegrass	0.11
Total	1.03

Mulching

Mulch shall be applied at a rate of 70 lbs – 90 lbs per 1,000 square feet. The mulch shall be installed at a minimum depth of 4 inches. The seeded area shall be mulched immediately after seed is applied. Mulching during the winter season shall be double the normal amount.

Recommendations

Permanent seeding is recommended to be completed in the spring. Later summer seeding is allowed if completed prior to September 1st. If seeding cannot be accomplished during the periods recommended for permanent seeding, then the contractor shall perform temporary seeding per the temporary seeding plan.

Conclusion

Please refer to the Maine Erosion and Sediment Control BMP manual for additional information pertaining to permanent seeding and mulching.

Section 8

Natural Resource

Natural Resources

The site has been delineated for wetlands, waterbodies, and the presence of vernal pools. Based on the report prepared by Flycatcher LLC dated July 6th, 2021, no vernal pools were found within the wetlands. An intermittent stream was located which flows into the wetland from a culvert under South Freeport Road. The project is not proposing any disturbance or fill within the wetlands or stream channel but will require grading activities to occur within the 75' stream setback. The grading for the project will not encroach within 25' of the stream and is necessary to construct the vegetated underdrained soil filter to adequately treat, detain, and slowly release stormwater flows into the surrounding watershed. The slopes between the stream channel and edge of disturbance will be less than a 3:1 slope (existing) and will provide a wooded buffer for habitat and stormwater runoff. A permit-by-rule through the Maine DEP application for grading activities adjacent to a stream has been included in the application to the Town for their records.

Memorandum of Findings

Date: July 6, 2021

To: Sam Lebel, P.E., Acorn Engineering

CC: Will Savage (Acorn), Richard Jordan & Jessie Hutchinson (Flycatcher LLC)

From: David Brenneman, Flycatcher LLC

Subject: 117 US Route 1 – Wetland and Waterbody Delineations

Dear Sam,

At the request of Acorn Engineering, on June 1, 2021 a wetland scientist from Flycatcher LLC (Flycatcher) completed a wetland, stream and potential vernal pool survey on an approximately 2.7-acre area northeast of the intersection of Route 1 and South Freeport Road in Freeport. The area investigated included tax map 25, lot 5, located at 117 US-1 ("Survey Area", see attached drawing for a depiction).

Survey Area Description

The Survey Area is primarily forested and scrub-shrub cover with some areas of emergent vegetation and development. Land use on the western portion of the site includes a former commercial restaurant, (Conundrum Wine Bistro), with outdoor dining area and parking lot in front and behind the building.

The site was previously delineated by Mark Cenci Geologic, Inc. on June 12, 2009, and has shown evidence of disturbance since the initial survey. Topography gradually slopes downhill from the highest point in the Survey Area at the west of the site to the east and north. An intermittent stream drains into the Survey Area from the south and then forms a channel again to the north of the Survey Area (off-site). The Survey Area is bordered by South Freeport Road to the south and US-1 to the west.

Methods

Desktop Review

Prior to the site visit, I completed a brief desktop analysis of GIS based environmental data from the following sources:

- United States Geological Survey (USGS) topographic mapping;
- United States Fish and Wildlife Service (USFWS) national wetland inventory (NWI) mapping;
- Natural Resources Conservation Service (NRCS) medium-intensity soil survey mapping;
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs);
- USGS National Hydrography Dataset;
- Resource location data from Mark Cenci Geologic, Inc.
- Recent and historic aerial photography.

Review of the data is helpful to target areas where wetlands and streams may be present.

Natural Resource Agency Outreach

This survey did not include outreach to natural resource or permitting agencies. If permits are required, during the application process the Maine Department of Environmental Protection (MDEP) and US Army Corps of Engineers (USACE) may require review by the Maine Department of Inland Fisheries and Wildlife (MDIFW), the Maine Natural Areas Program (MNAP), the Maine Historic Preservation Commission, and/or the US Fish & Wildlife Service for additional information on known or potential protected resources (e.g., rare, threatened or endangered flora, fauna and rare natural communities).

Wetlands

Wetland delineations were conducted in accordance with the USACE Wetland Delineation Manual and the Northcentral and Northeast Regional Supplement (Version 2.0). The manual and supplement provide a repeatable methodology to identify potential wetland areas and are the accepted wetland delineation methodology of the MDEP and the USACE.

The Survey Area was investigated by a wetland scientist meandering across the site. When a location appeared to have the requisite three factors that constitute a wetland (i.e., hydrophytic vegetation, indicators of hydrology, and the presence of hydric soils) an investigation was undertaken. The scientist analyzed site-specific data to determine if the area met the criteria to be considered a wetland.

When wetlands were identified, the boundaries of the wetlands were marked with glo-pink survey flagging emblazoned with the word "Wetland Delineation" or "Wetland Boundary" and numbered in sequential order. Each flag was geo-located as described below under "GPS Location".

Wetlands of Special Significance (WoSS)

Chapter 310 of the Maine Natural Resources Protection Act (NRPA) defines a subset of wetlands that provide a high level of functions and/or values to the surrounding and regional environment. Wetlands of Special Significance (WoSS) are afforded additional protections and generally more rigorous permitting oversight if a permittee's project will result in unavoidable impacts to WoSS. WoSS were identified based on on-site observations noted during the delineation. Additional WoSS qualifiers may be met following outreach with MDIFW or MNAP. WoSS determinations are included in Table 1.

Stream and Channel Identification

Stream identification followed the NRPA definition of a "river, stream or brook" (Section 480-B). If a watercourse meeting the above definition was observed, blue survey flagging was hung along the centerline (for streams less than six feet in width) or along the top of the bank (for streams six feet or wider). The locations of each flag were geolocated as described below under "GPS Location".

Vernal Pool Survey

To survey for vernal pools, the definitions provided in Chapter 335 of the NRPA and the USACE Maine General Permit were used. Vernal pools are temporarily/seasonally flooded wetlands that provide the primary breeding habitat for vernal pool indicator species, and a host of secondary faunal species. Wood frogs (*Lithobates sylvaticus*), spotted salamanders (*Ambystoma maculatum*), blue spotted salamanders (*Ambystoma laterale*), and fairy shrimp (*Eubranchipus spp.*) are vernal pool indicator species that depend on vernal pools to complete their life cycle. Productivity of breeding vernal pool species is the primary metric used by regulatory authorities to assess vernal pool quality; thus, vernal pools must be assessed during the breeding season (generally mid-April to late-May). Out of season surveys can be conducted to identify potential habitat and the wetland scientist will rely on topography, evidence of wetland hydroperiod and observations of secondary indicators (e.g., fingernail clams, caddisfly larvae cases) when making a potential habitat determination.

GPS Location

All features (e.g., wetland boundaries) located during the site visit were geolocated using a mapping grade global positioning system ("GPS") unit (Juniper Systems' Geode GPS Antenna and ESRI's ArcGIS Collector software). The data were collected using real-time correction and standards specified by the manufacturer to achieve sub-meter accuracy. The data was exported to CAD drawing file format (.dwg) and provided to you via email on June 2, 2021. These data can be used during your initial design when planning avoidance and minimization of impacts to natural resources.

Results

Wetlands

Flycatcher mapped two shrub cover wetlands in the eastern portion of the Survey Area. The boundaries of these wetland differ somewhat from the delineation completed by Mark Cenci, Inc. It appears portions of the wetland have been filled at some point in the past, separating wetland W-DRB-1 and W-DRB-2.

The location of resources observed within the Survey Area are shown on the resource map provided in Attachment 1. Summary descriptions of wetlands are provided in Table 1 below. Representative photographs of the site are provided in Attachment 2.

Streams

An intermittent stream flows through W-DRB-1 from a culvert under South Freeport Road and dissipates into the wetland. The stream has minimal banks and is approximately 24-30 wide with a muck/silt bottom. The channel forms again just north of the Survey Area and drains towards Cousins River to the west.

Vernal Pools

No vernal pool habitat was observed within the Survey Area.

Table 1. Summary Descriptions of Wetlands Delineated Within the Survey Area

Resource ID	Notes/Description	Covertype[1]	Dominant Plants	Hydrology Indicators	Hydric Soil Indicator[2]	WoSS Determination
W-DRB-1	• Scrub-shrub and emergent wetland along eastern portion of site • Extends offsite to the east • S-DRB-1 enters wetland at South Freeport Road	PSS1/EM1E	Speckled alder *(Alnus incana),* pussy willow *(Salix discolor),* twinsisters *(Lonicera tatarica*) Southern arrow-wood *(Viburnum dentatum),* glossy false buckthorn *(Frangula alnus),* rambler rose *(Rosa multiflora),* sensitive fern *(Onoclea sensibilis),* broad-leaf meadowsweet *(Spiraea latifolia)*	Surface water (A1), High-water table (A2), Saturation (A3), Water-stained leaves (B9), Drainage patterns (A10)	Indicator A11 - Dark surface horizon underlain by a horizon with a depleted matrix	Yes - areas within 25ft of stream
W-DRB-2	• Wetland isolated by fill adjacent to northern portion of W-DRB-1	PSS1E	Speckled alder, pussy willow, sensitive fern, *Equisetum sp.* Japanese knotweed *(Reynoutria japonica)*	Surface water (A1), High-water table (A2), Saturation (A3), Water-stained leaves (B9)	Indicator A11 - Dark surface horizon underlain by a horizon with a depleted matrix	No

[1] Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. FWS/OBS-79/31, Washington, D.C.

[2] United States Department of Agriculture, Natural Resources Conservation Service. 2018. Field Indicators of Hydric Soils in the United States, Version 8.2. L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.

Thank you for the opportunity to assist you with natural resource identification for this project. If you have any questions regarding the results provided in this report, please do not hesitate to contact me.

Sincerely,

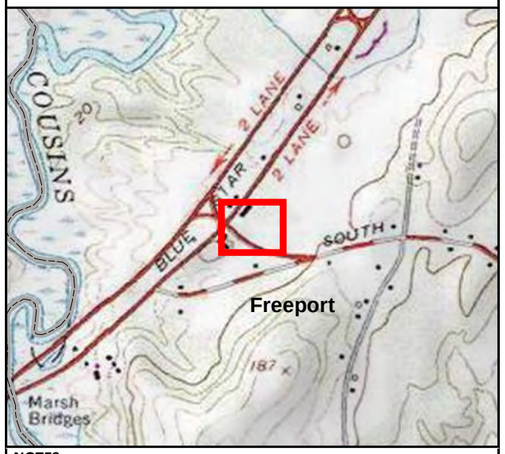
David Brenneman, Senior Project Lead
Dave@flycatcherllc.com
(207) 751-3053

ATTACHMENT 1

Natural Resources Map

LEGEND

- SURVEY AREA
- DELINEATED INTERMITTENT STREAM, CENTERLINE
- DELINEATED WETLAND BOUNDARY
- DELINEATED WETLAND



NOTES:

1 BASEMAP IMAGERY FROM ESRI/NAIP "WORLD IMAGERY" SERVICE LAYER.
2 RESOURCES DELINEATIONS WERE CONDUCTED BY FLYCATCHER IN JUNE 2021.
3 SURVEY AREA BASED ON PDF OF PROPERTY BOUNDARY AND FIELD OBSERVATIONS.

N

0 50 100
Feet
1 " = 50 '
1:600

PROJECT:

ACORN ENGINEERING, INC.
117 US ROUTE 1
FREEPORT, CUMBERLAND COUNTY, MAINE

TITLE:

DELINEATED WETLANDS AND WATERCOURSES

DRAWN BY:	D. KENWORTHY	PROJ NO.:	19A-7
CHECKED BY:	D. BRENNEMAN		
MONTH:	JUNE		**ATTACHMENT 1**
YEAR:	2021		

Flycatcher LAND + SCIENCE + PEOPLE

ACORN ENGINEERING, INC

FILE NO.: Acorn_Goodfire_Delin_Fig2_DelinRes_11x17L.mxd

Plot Date: 6/1/2021, 16:58:27 PM by JAKEN -- LAYOUT: ANSI B(11"x17")
Path: D:\Flycatcher\Projects\Acorn\Acorn_Goodfire_Delin_Fig2_DelinRes_11x17L.mxd

Coordinate System: NAD 1983 StatePlane Maine West FIPS 1802 Feet (Foot US)
Map Rotation: 0

ATTACHMENT 2

Photographs from Site Visit

Sensitive fern stand in W-DRB-1, June 1, 2021

Representative photo of scrub-shrub cover in W-DRB-1, June 1, 2020

Representative photo of W-DRB-2, June 1, 2021

Presumed fill contaminated with Japanese knotweed, upslope of W-DRB-2, June 1, 2021

Looking north at Stream DRB-1, June 1, 2021

Looking south at Stream DRB-1, June 1, 2021

Lot behind former Conundrum Wine Bistro at western side of site, June 1, 2021

Pine uplands at center of Survey Area, June 1, 2021

ACORN ENGINEERING, INC.

Maine Department of Environmental Protection
Southern Maine Regional Office
312 Canco Road
Portland, ME 04103

June 9, 2023

Subject: Natural Resources Protection Act Permit-by-Rule

To Whom it May Concern:

On behalf of MR Route One, LLC, we are pleased to submit the accompanying package of materials intended to serve as a NRPA Permit-by-rule notification as part of the proposed site expansion and improvements associated with the parking expansion at 117 Route 1.

The project received planning board approval for the proposed change in use of the property and site improvements as part of the September 15th planning board meeting in 2021. Since then, Goodfire Brewing has converted the site to a vibrant location in Freeport in accordance with their Site Plan Approval. Both in response to current operations and anticipation of future parking demand as the business grows in popularity, Goodfire Brewing proposes to expand their existing parking lot to the east to support the demand generated by the business and reduce the likelihood of patrons using neighboring businesses or the street as parking. The parking expansion consists of 31 new paved parking spaces with capacity for a future full build out of approximately 57 new spaces if the parking on site proves to still be insufficient. A vegetated underdrained soil filter (VUSF) is proposed to treat and detain the stormwater runoff generated from the parking expansion and the future build out. The VUSF has been sited to avoid any disturbance of the existing wetlands and stream on site as delineated by Flycatcher LLC in 2021. To adequately treat and detain the anticipated stormwater runoff the VUSF grading will encroach on the associated 75' stream setback as required per section 2 of the PBR Standards. The VUSF will outlet the stormwater discharge at an attenuated rate to a level lip spreader that is located within 75' of the delineated stream and wetland on site and meets section 7 of the PBR Standards. Note that the slopes adjacent to the stream are less than a 33% sustained slope which provides for gentle topography on the site and provides an effective buffer between the stream and proposed development. Overall, we believe the project strikes the appropriate balance between prioritizing traffic safety and prioritizing natural resources; this was done by helping reduce parking spillover on South Freeport Road and Route 1 in Freeport, adequately treating and detaining the stormwater runoff from the site, and locating the impervious area away from the natural resources while not requiring any wetland fill and still providing a 25' stream buffer. A stormwater PBR is not required as the project is not within an urban impaired stream watershed and will not result in more than 1 acre of disturbed area, the project is under going a separate site plan amendment review concurrently through the town of Freeport at the time of this PBR submission.

Please do not hesitate to contact our office with any questions.

Sincerely,

Samuel J. Lebel, P.E.
Project Manager
Acorn Engineering, Inc.

The following documents and drawings are included as part of this application.

Documents:

- Section 1: Authorization Letter
- Section 2: Natural Resources Protection Act (PBR) Application
- Section 3: Sketch Map
- Section 4: Photographs of the Site
- Section 6: Certificate of Good Standing
- Section 7: Maine DEP Payment Portal Confirmation

Drawings:

- Section 5: Civil and Photometric Plans dated 5/30/23

Section 1

Authorization Letter

May 31, 2023

To whom it may concern,

I grant Sam Lebel, PE of Acorn Engineering, Inc. authority to act on behalf of Goodfire Brewing Co. for all matters pertaining to permitting associated with the proposed project.

Thank you.

Sincerely,

David Redding
Owner/Manager
Goodfire Brewing Co

Section 2

PBR Application Form

DEPARTMENT OF ENVIRONMENTAL PROTECTION

PERMIT BY RULE NOTIFICATION FORM

(For use with DEP Regulation, Natural Resources Protection Act - Permit by Rule Standards, Chapter 305)

APPLICANT INFORMATION (Owner)		AGENT INFORMATION (If Applying on Behalf of Owner)	
Name:	MR 117 ROUTE ONE, LLC	Name:	Acorn Engineering, Inc.
Mailing Address:	1 Balsam Lane	Mailing Address:	PO Box 3372
Mailing Address:		Mailing Address:	
Town/State/Zip:	Freeport, ME 04032	Town/State/Zip:	Portland, Maine 04101
Daytime Phone #:	(207) 808-8910 Ext:	Daytime Phone #:	(207) 775-2655 Ext:
Email Address:	david@goodfirebrewing.com	Email Address:	slebel@acorn-engineering.com

PROJECT INFORMATION

Part of a larger project? (check 1):	❑ Yes ☒ No	After the Fact? (check 1):	❑ Yes ☒ No	Project involves work below mean low water? (check 1):	❑ Yes ☒ No	Name of waterbody:	Unnamed Stream and wetland
Project Town:	Freeport		Town Email Address:	CPelletier@freeportmaine.com		Map and Lot Number:	Map 25, Lot 5
Brief Project Description:	The project proposed to construct parking expansion of 31 new paved spaces. A vegetated underdrained soil filter (VUSF) is proposed to treat and detain the stormwater runoff generated by the additional impervious area. The grading associated with the VUSF will not encroach within the wetland and will maintain over a 25' buffer from the stream.						
Project Location & Brief Directions to Site:	The site is located at 180 South Freeport Road, Freeport, ME 04032. From the Freeport Fire Department, head south on Main Street. Continue onto Lower Main Street (0.4 miles), take left onto US-1 South (0.6 miles). In approximate 2.2 miles, turn left onto South Freeport Road then immediately turn left into parking lot entrance.						

PERMIT BY RULE (PBR) SECTIONS (Check at least one): I am filing notice of my intent to carry out work that meets the requirements for Permit-by-Rule (PBR) under DEP Rules, Chapter 305. I and my agent(s), if any, have read and will comply with all of the standards in the Sections checked below.

- ☑ **Sec. (2) Act. Adj. to Prot. Natural Res.**
- ❑ **Sec. (3) Intake Pipes**
- ❑ **Sec. (4) Replacement of Structures**
- ❑ **Sec. (6) Movement of Rocks or Veg.**
- ☑ **Sec. (7) Outfall Pipes**
- ❑ **Sec. (8) Shoreline Stabilization**
- ❑ **Sec. (9) Utility Crossing**
- ❑ **Sec. (10) Stream Crossing**
- ❑ **Sec. (11) State Transportation Facilities**
- ❑ **Sec. (12) Restoration of Natural Areas**
- ❑ **Sec. (13) F&W Creat./Water Qual. Improv.**
- ❑ **Sec. (15) Public Boat Ramps**
- ❑ **Sec. (16) Coastal Sand Dune Projects**
- ❑ **Sec. (16-A) Beach Nourishment**
- ❑ **Sec. (17) Transfer/Permit Extension**
- ❑ **Sec. (18) Maintenance Dredging**
- ❑ **Sec. (19) Act. Near SVP Habitat**
- ❑ **Sec. (20) Act. Near Waterfowl/Bird Habitat**

NOTE: Municipal permits also *may* be required. Contact your local code enforcement office for information. Federal permits may be required for stream crossings and for projects involving wetland fill. Contact the Army Corps of Engineers at the Maine Project Office for information.

NOTIFICATION FORMS CANNOT BE ACCEPTED WITHOUT THE NECESSARY ATTACHMENTS AND FEE

- ☑ ***Attach*** **all required submissions for the PBR Section(s) checked above. The required submissions for each PBR Section are outlined in Chapter 305 and may differ depending on the Section you are submitting under.**
- ☑ ***Attach*** **a location map that clearly identifies the site (U.S.G.S. topo map, Maine Atlas & Gazetteer, or similar).**
- ☑ ***Attach*** ***Proof of Legal Name*** **if applicant is a corporation, LLC, or other legal entity. Provide a copy of Secretary of State's *registration information* (available at http://icrs.informe.org/nei-sos-icrs/ICRS?MainPage=x). Individuals and municipalities are not required to provide any proof of identity.**

FEE: Pay by credit card at the Payment Portal. The Permit-by-Rule fee may be found here https://www.maine.gov/dep/feeschedule.pdf and is currently $288.

- X ***Attach*** **payment confirmation from the Payment Portal when filing this notification form.**

Signature & Certification:

- I authorize staff of the Departments of Environmental Protection, Inland Fisheries & Wildlife, and Marine Resources to access the project site for the purpose of determining compliance with the rules**.**
- I understand that this PBR becomes effective 14 calendar days after receipt by the Department of this completed form, the required submissions, and fee, *unless the Department approves or denies the PBR prior to that date.*

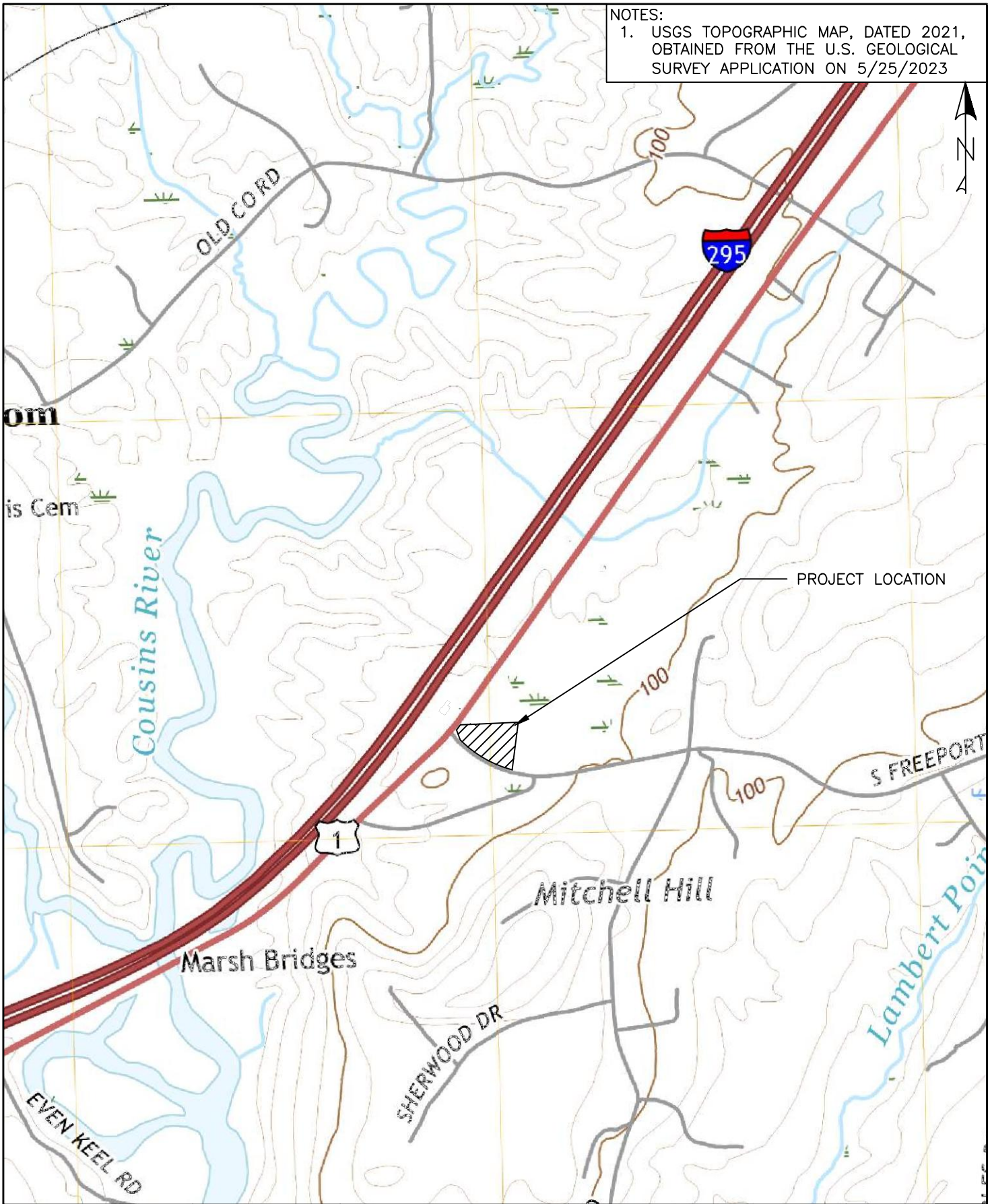
By signing this Notification Form, I represent that the project meets all applicability requirements and standards in Chapter 305 rule and that the applicant has sufficient title, right, or interest in the property where the activity takes place.

Signature of Agent or Applicant (may be typed):	Sam Lebel	Date:	6/9/2023

Keep a copy as a record of permit**.** Email this completed form with attachments to DEP at: DEP.PBRNotification@maine.gov. DEP will send a copy to the Town Office as evidence of DEP's receipt of notification. No further authorization will be issued by DEP after receipt of notice. A PBR is valid for two years, except Section 4, "Replacement of Structures," are valid for three years. **Work carried out in violation of the Natural Resources Protection Act or any provision in Chapter 305 is subject to enforcement.**

Section 3

Sketch Map



DRAWING NO.

EX

FILE:	2.84_CIVIL
JN:	2.84
SCALE:	NTS
DESIGN BY:	SJL
DRAWN BY:	NPH
CHECKED BY:	WHS

ACORN ENGINEERING, INC
ACORN ENGINEERING, INC. P.O. BOX 3372
PORTLAND, MAINE 04101 (207) 775-2655

DRAWING NAME: SKETCH MAP

PROJECT NAME: 117 U.S. ROUTE 1 PARKING EXPANSION

CLIENT: GOODFIRE BREWEING CO
PORTLAND, ME 04102

ISSUED FOR	BY DATE
SITE PLAN	SJL 5/31/23

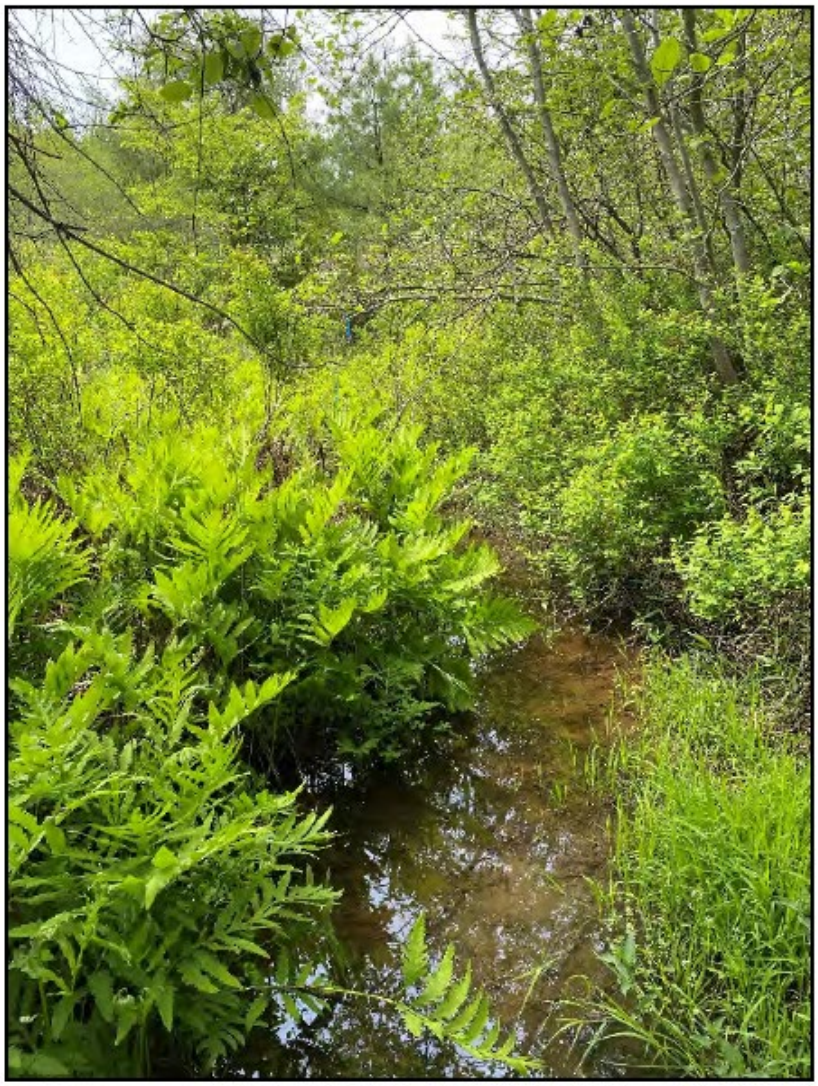
Section 4

Photos

1. Sensitive fern stand within Wetland taken by Flycatcher LLC, June 1, 2021. Wetland to remain undisturbed.

2. Representative photo of scrub-shrub cover within wetland taken by Flycatcher LLC, June 1, 2021. Wetland to remain undisturbed.

3. Looking north at Stream taken by Flycatcher LLC, June 1, 2021. Grading activities to maintain 25' minimum setback from stream.



4. Looking South at Stream taken by Flycatcher LLC, June 1, 2021. Grading activities to maintain 25' minimum setback from stream.

Section 6

Certificate of Good Standing

MAINE
Department of the Secretary of State
Bureau of Corporations, Elections and Commissions

Corporate Name Search

Information Summary

Subscriber activity report

This record contains information from the CEC database and is accurate as of: Thu Jun 08 2023 14:18:55. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
MR 117 ROUTE ONE, LLC	20220363DC	LIMITED LIABILITY COMPANY (DOMESTIC)	MERGED

Filing Date	Expiration Date	Jurisdiction
05/10/2021	N/A	MAINE

Other Names **(A=Assumed ; F=Former)**

NONE

Clerk/Registered Agent

DAVID REDDING
1 BALSAM LANE
FREEPORT, ME 04032

New Search

Click on a link to obtain additional information.

List of Filings View list of filings

No additional information available for this entity.

You will need Adobe Acrobat version 3.0 or higher in order to view PDF files.
If you encounter problems, visit the troubleshooting page.

If you encounter technical difficulties while using these services, please contact the Webmaster. If you are unable to find the information you need through the resources provided on this web site, please contact the Division of Corporations, UCC & Commissions Reporting and Information Section at 207-624-7752 or e-mail.