WORKFORCE HOUSING DEVELOPMENT

140 COURT STREET

PORTSMOUTH, NEW HAMPSHIRE

SITE PERMIT PLANS

PERMIT LIST:
NHDES SEWER DISCHARGE PERMIT: TO BE SUBMITTED

OWNERS:
PORTSMOUTH HOUSING AUTHORITY
245 MIDDLE STREET
PORTSMOUTH, NH 03801
TEL. (603) 436-4310

ED PAC, LLC
242 CENTRAL AVENUE
DOVER, NH 03820

CIVIL ENGINEER & LAND SURVEYOR:
AMBIT ENGINEERING, INC.
200 GRIFFIN ROAD, UNIT 3
PORTSMOUTH, N.H. 03801
Tel. (603) 430-9282
Fax (603) 436-2315

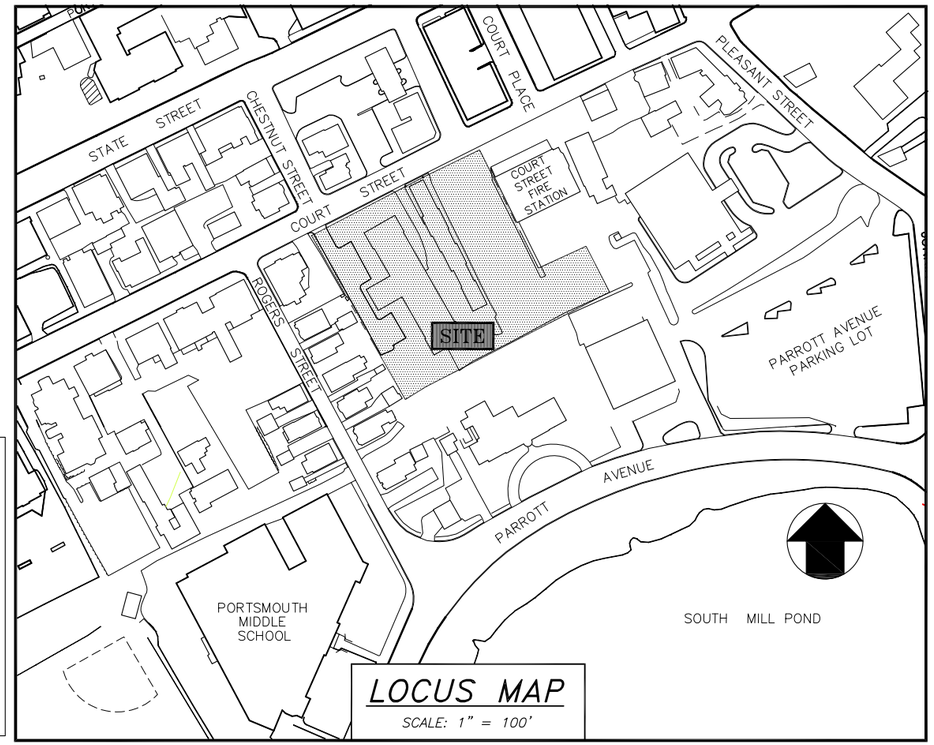
ARCHITECT:
CJ ARCHITECTS
233 VAUGHN STREET
PORTSMOUTH NH, 03801
TEL.(603) 431-2808

LANDSCAPE ARCHITECT:
G2+1 LLC
70 NEW ROAD
SALISBURY, NH 03268
TEL./FAX. (603) 648-6434

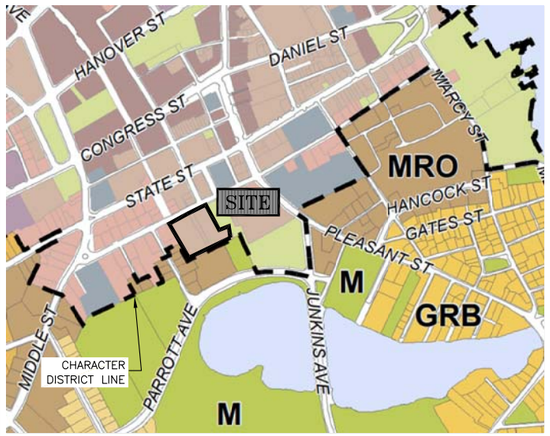
GEOTECHNICAL:
JOHN TURNER CONSULTING
19 DOVER STREET
DOVER, NH 03820
(603) 749-1841

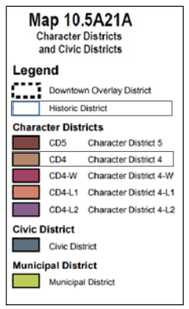
ARCHAEOLOGICAL:
INDEPENDENT ARCHAEOLOGICAL
801 ISLINGTON STREET #31
PORTSMOUTH NH 03801
(603) 430-2970

ATTORNEY:
BOSEN & ASSOCIATES
266 MIDDLE STREET
PORTSMOUTH NH 03801
(603) 427-5500



LOCUS MAP
SCALE: 1" = 100'





INDEX OF SHEETS

LEGEND:

EXISTING	PROPOSED	
		PROPERTY LINE
		SETBACK
S	S	SEWER PIPE
SL	SL	SEWER LATERAL
G	G	GAS LINE
D	D	STORM DRAIN
W	W	WATER LINE
WS	WS	WATER SERVICE
UGE	UGE	UNDERGROUND ELECTRIC
OHW	OHW	OVERHEAD ELECTRIC/WIRES
	UD	FOUNDATION DRAIN
		EDGE OF PAVEMENT (EP)
100	100	CONTOUR
97x3	98x0	SPOT ELEVATION
		UTILITY POLE
		WALL MOUNTED EXTERIOR LIGHTS
		TRANSFORMER ON CONCRETE PAD
		ELECTRIC HANDHOLD
		SHUT OFFS (WATER/GAS)
	GV	GATE VALVE
	HYD	HYDRANT
CB	CB	CATCH BASIN
S	SMH	SEWER MANHOLE
D	DMH	DRAIN MANHOLE
T	TMH	TELEPHONE MANHOLE
14	14	PARKING SPACE COUNT
PM		PARKING METER
LSA		LANDSCAPED AREA
TBD	TBD	TO BE DETERMINED
CI	CI	CAST IRON PIPE
COP	COP	COPPER PIPE
DI	DI	DUCTILE IRON PIPE
PVC	PVC	POLYVINYL CHLORIDE PIPE
RCP	RCP	REINFORCED CONCRETE PIPE
AC	–	ASBESTOS CEMENT PIPE
VC	VC	VITRIFIED CLAY PIPE
EP	EP	EDGE OF PAVEMENT
EL.	EL.	ELEVATION
FF	FF	FINISHED FLOOR
INV	INV	INVERT
S =	S =	SLOPE FT/FT
TBM	TBM	TEMPORARY BENCH MARK
TYP	TYP	TYPICAL

DIG SAFE
MA - ME - NH - RI - VT
1-888-344-7233
CALL TOLL FREE

UTILITY CONTACTS

ELECTRIC:
EVERSOURCE
1700 LAFAYETTE ROAD
PORTSMOUTH, N.H. 03801
Tel. (603) 436-7708, Ext. 555.5678
ATTN: MICHAEL BUSBY, P.E. (MANAGER)

NATURAL GAS:
UNITIL
325 WEST ROAD
PORTSMOUTH, N.H. 03801
Tel. (603) 294-5144
ATTN: DAVE BEAULIEU

CABLE:
COMCAST
155 COMMERCE WAY
PORTSMOUTH, N.H. 03801
Tel. (603) 679-5695 (X1037)
ATTN: MIKE COLLINS

SEWER & WATER:
PORTSMOUTH DEPARTMENT OF PUBLIC WORKS
680 PEVERLY HILL ROAD
PORTSMOUTH, N.H. 03801
Tel. (603) 427-1530
ATTN: JIM TOW

COMMUNICATIONS:
FAIRPOINT COMMUNICATIONS
JOE CONSIDINE
1575 GREENLAND ROAD
GREENLAND, N.H. 03840
Tel. (603) 427-5525

PORTSMOUTH APPROVAL CONDITIONS NOTE:
ALL CONDITIONS ON THIS PLAN SET SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE CITY OF PORTSMOUTH SITE PLAN REVIEW REGULATIONS.

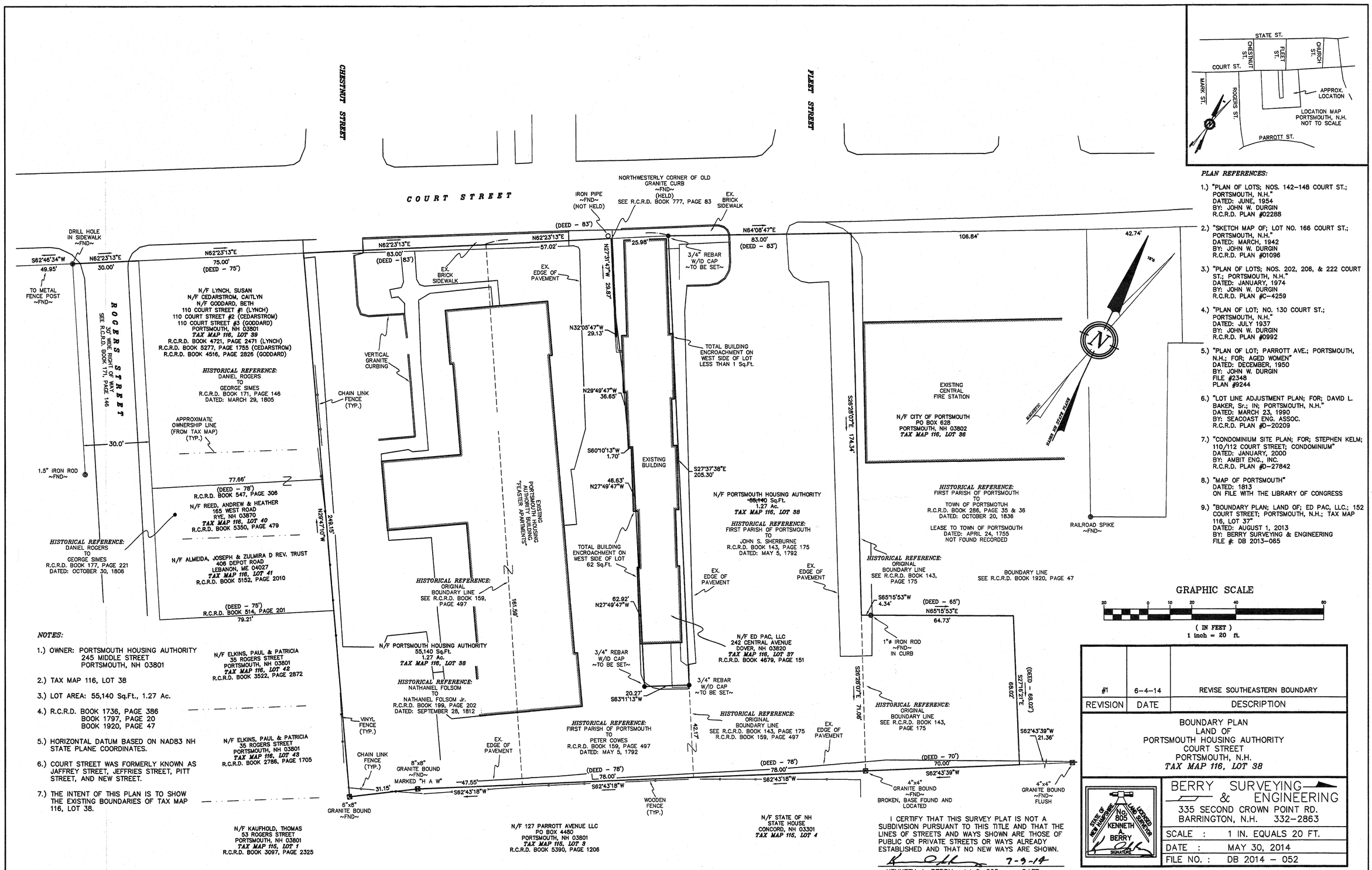
APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN _____ DATE _____

SITE PERMIT PLANS
PORTSMOUTH HOUSING AUTHORITY
WORKFORCE HOUSING DEVELOPMENT
140 COURT STREET
PORTSMOUTH, N.H.

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

PLAN SET SUBMITTAL DATE: 18 JUNE 2018



PLAN REFERENCES:

1.) "PLAN OF LOTS; NOS. 142–148 COURT ST.; PORTSMOUTH, N.H." DATED: JUNE, 1954 BY: JOHN W. DURGIN R.C.R.D. PLAN #02288

2.) "SKETCH MAP OF; LOT NO. 166 COURT ST.; PORTSMOUTH, N.H." DATED: MARCH, 1942 BY: JOHN W. DURGIN R.C.R.D. PLAN #01096

3.) "PLAN OF LOTS; NOS. 202, 206, & 222 COURT ST.; PORTSMOUTH, N.H." DATED: JANUARY, 1974 BY: JOHN W. DURGIN R.C.R.D. PLAN #C-4259

4.) "PLAN OF LOT; NO. 130 COURT ST.; PORTSMOUTH, N.H." DATED: JULY 1937 BY: JOHN W. DURGIN R.C.R.D. PLAN #0992

5.) "PLAN OF LOT; PARROTT AVE.; PORTSMOUTH, N.H.; FOR; AGED WOMEN" DATED: DECEMBER, 1950 BY: JOHN W. DURGIN FILE #2348 PLAN #9244

6.) "LOT LINE ADJUSTMENT PLAN; FOR; DAVID L. BAKER, Sr.; IN; PORTSMOUTH, N.H." DATED: MARCH 23, 1990 BY: SEACOAST ENG. ASSOC. R.C.R.D. PLAN #D-20209

7.) "CONDOMINIUM SITE PLAN; FOR; STEPHEN KELM; 110/112 COURT STREET; CONDOMINIUM" DATED: JANUARY, 2000 BY: AMBIT ENG., INC. R.C.R.D. PLAN #D-27842

8.) "MAP OF PORTSMOUTH" DATED: 1813 ON FILE WITH THE LIBRARY OF CONGRESS

9.) "BOUNDARY PLAN; LAND OF; ED PAC, LLC.; 152 COURT STREET; PORTSMOUTH, N.H.; TAX MAP 116, LOT 37" DATED: AUGUST 1, 2013 BY: BERRY SURVEYING & ENGINEERING FILE #: DB 2013-065

NOTES:

1.) OWNER: PORTSMOUTH HOUSING AUTHORITY
245 MIDDLE STREET
PORTSMOUTH, NH 03801

2.) TAX MAP 116, LOT 38

3.) LOT AREA: 55,140 Sq.Ft., 1.27 Ac.

4.) R.C.R.D. BOOK 1736, PAGE 386
BOOK 1797, PAGE 20
BOOK 1920, PAGE 47

5.) HORIZONTAL DATUM BASED ON NAD83 NH STATE PLANE COORDINATES.

6.) COURT STREET WAS FORMERLY KNOWN AS JAFFREY STREET, JEFFRIES STREET, PITT STREET, AND NEW STREET.

7.) THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING BOUNDARIES OF TAX MAP 116, LOT 38.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

#1	6-4-14	REVISE SOUTHEASTERN BOUNDARY
REVISION	DATE	DESCRIPTION

BOUNDARY PLAN
LAND OF
PORTSMOUTH HOUSING AUTHORITY
COURT STREET
PORTSMOUTH, N.H.
TAX MAP 116, LOT 38

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

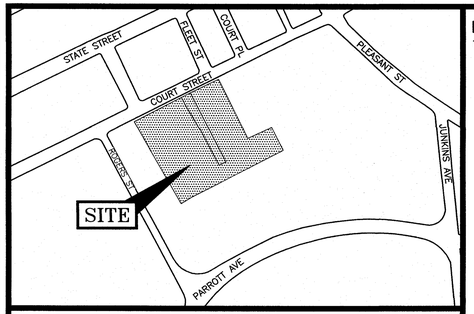
7-9-14
KENNETH A. BERRY L.L.S. 805 DATE

STATE OF NEW HAMPSHIRE No. 805 KENNETH A. BERRY LICENSED LAND SURVEYOR SIGNATURE

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT RD.
BARRINGTON, N.H. 332-2863

SCALE :	1 IN. EQUALS 20 FT.
DATE :	MAY 30, 2014
FILE NO. :	DB 2014 - 052

JN 2790



LOCATION MAP SCALE: 1"=200'

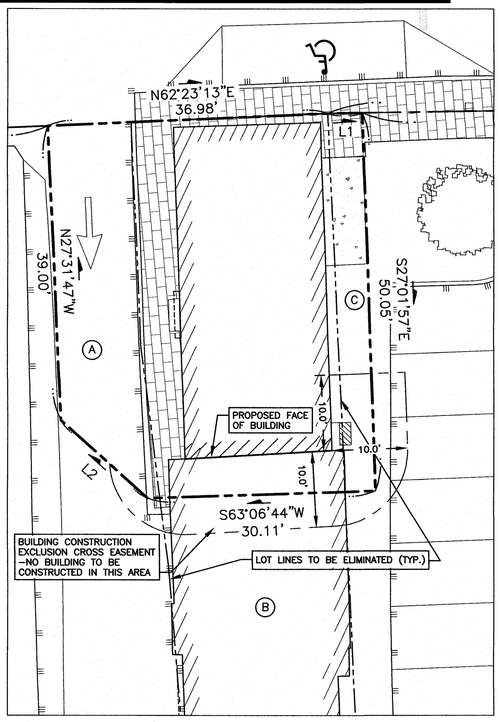
PLAN REFERENCE:

1) BOUNDARY PLAN LAND OF PORTSMOUTH HOUSING AUTHORITY COURT STREET PORTSMOUTH, N.H. TAX MAP 116, LOT 38. PREPARED BY BERRY SURVEYING & ENGINEERING. DATED MAY 30, 2014, WITH A FINAL REVISION DATE OF JUNE 4, 2014. NOT RECORDED.

NAD83 REFERENCE #1
NH SPC PER PLAN

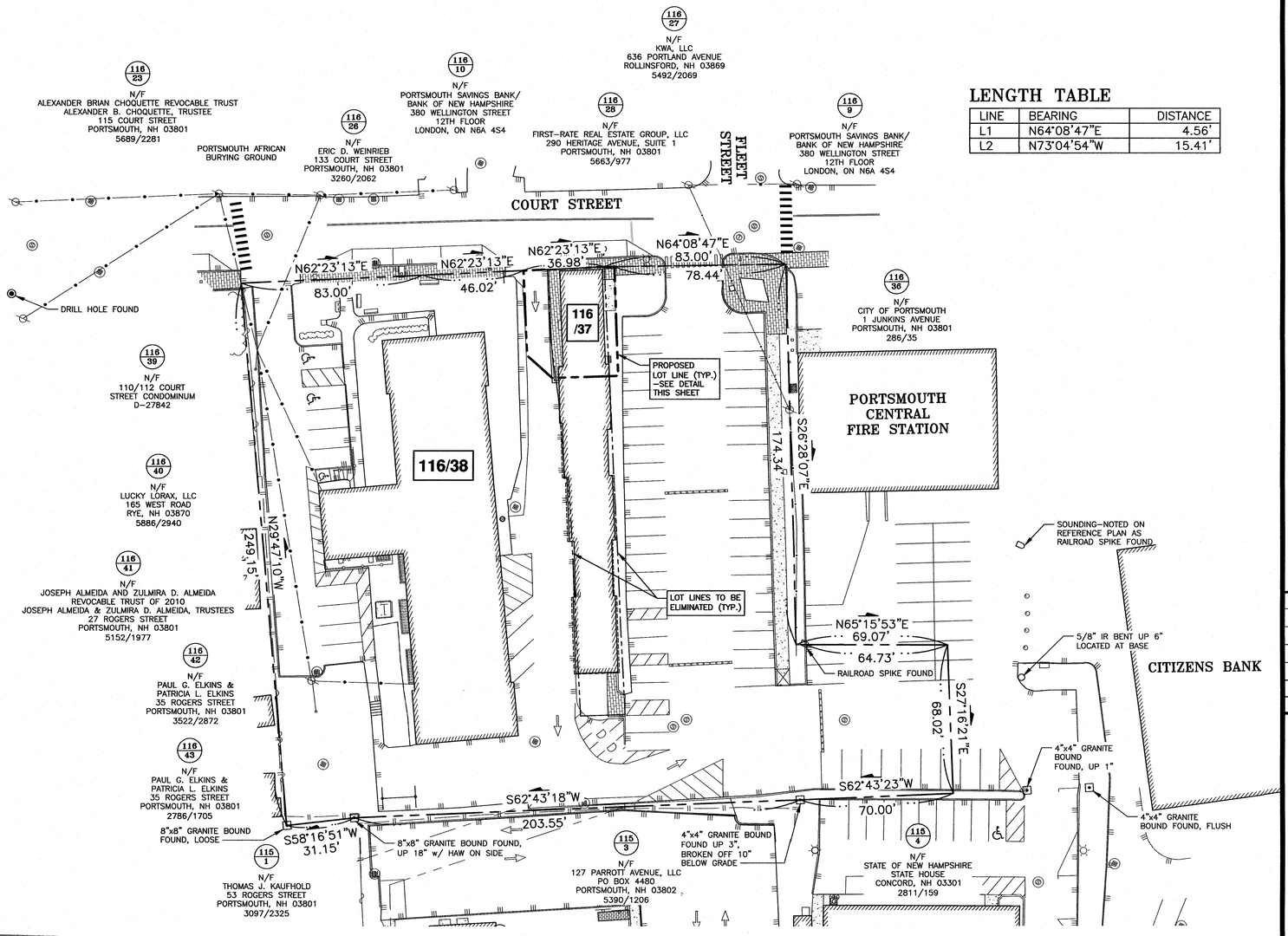
LEGEND:

N/F	NOW OR FORMERLY
RP	RECORD OF PROBATE
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
RR SPK	RAILROAD SPIKE
11/27	MAP 11/LOT 21
○ IR FND	IRON ROD FOUND
○ IP FND	IRON PIPE FOUND
● IR SET	IRON ROD SET
◉ DH FND	DRILL HOLE FOUND
◉ DH SET	DRILL HOLE SET
⊙ NHHB	NHDOT BOUND FOUND
⊙ TB	TOWN BOUND
⊙ BND w/DH	BOUND WITH DRILL HOLE
⊙ ST BND w/DH	STONE BOUND WITH DRILL HOLE



LOT 37
1"=10'

GRAPHIC SCALE
10 5 0 10 20 30 40 FEET
3 0 5 10 METERS



GRAPHIC SCALE
30 0 50 100 120 FEET
10 5 0 10 20 30 METERS

LENGTH TABLE

LINE	BEARING	DISTANCE
L1	N64°08'47"E	4.56'
L2	N73°04'54"W	15.41'

PARCEL CONVEYANCES:

PARCEL A–
PORTSMOUTH HOUSING AUTHORITY TO ED PAC, LLC
504 S.F.

PARCEL B–
ED PAC, LLC TO PORTSMOUTH HOUSING AUTHORITY
3,303 S.F.

PARCEL C–
PORTSMOUTH HOUSING AUTHORITY TO ED PAC, LLC
216 S.F.

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE

STATE OF NEW HAMPSHIRE No. 738 JOHN R. CHAGNON SURVEYOR

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) PARCELS ARE SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 116 AS LOT 38 AND LOT 37.

2) OWNERS OF RECORD:
116/38
PORTSMOUTH HOUSING AUTHORITY
245 MIDDLE STREET
PORTSMOUTH, NH 03801
R.C.R.D BK 1736, PG 386, BK 1797 PG 20, AND BK 1920, PG 47

116/37
ED PAC, LLC
242 CENTRAL AVENUE
DOVER, NH 03820
BK 4679, PG 151

3) PARCEL 116/38 AND 116/37 ARE NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 3301SC0259E. EFFECTIVE 5/17/2005

4) LOT AREAS:
LOT 11/38
EXISTING: 59,976 (S.F.) 1.3769 ACRES
PROPOSED: 62,559 (S.F.) 1.4361 ACRES

LOT 11/37
EXISTING: 4,587 (S.F.) 0.1053 ACRES
PROPOSED: 2,004 (S.F.) 0.0460 ACRES

5) PARCELS ARE LOCATED IN CHARACTER DISTRICT 4 (CD4).

6) THE PURPOSE OF THIS PLAN IS TO SHOW THE RELOCATION OF LOT LINES BETWEEN TAX MAP 116 LOTS 38 AND 37.

7) EXISTING BOUNDARY LINES FROM PLAN REFERENCE 1.

8) PERMANENT MONUMENTS ON LOT 37 TO BE SET IN ACCORDANCE WITH CITY OF PORTSMOUTH STANDARDS AFTER SITE DEVELOPMENT.

NO.	DESCRIPTION	DATE
3	LOT LAYOUTS	6/18/18
2	ISSUED TO TAC	5/8/18
1	ISSUED FOR APPROVAL	4/25/18
0	ISSUED FOR COMMENT	3/5/17

REVISIONS

LOT LINE RELOCATION PLAN
TAX MAP 116 – LOTS 38 & 37
FOR
PORTSMOUTH HOUSING AUTHORITY

OWNERS
PORTSMOUTH HOUSING AUTHORITY
245 MIDDLE STREET
PORTSMOUTH NH 03801

ED PAC, LLC
242 CENTRAL AVENUE
DOVER NH 03820

PARCEL LOCATION
140 COURT STREET
CITY OF PORTSMOUTH
COUNTY OF ROCKINGHAM
STATE OF NEW HAMPSHIRE

SCALE: 1"=30' FEBRUARY 2018

FB 321 PG 19 2790

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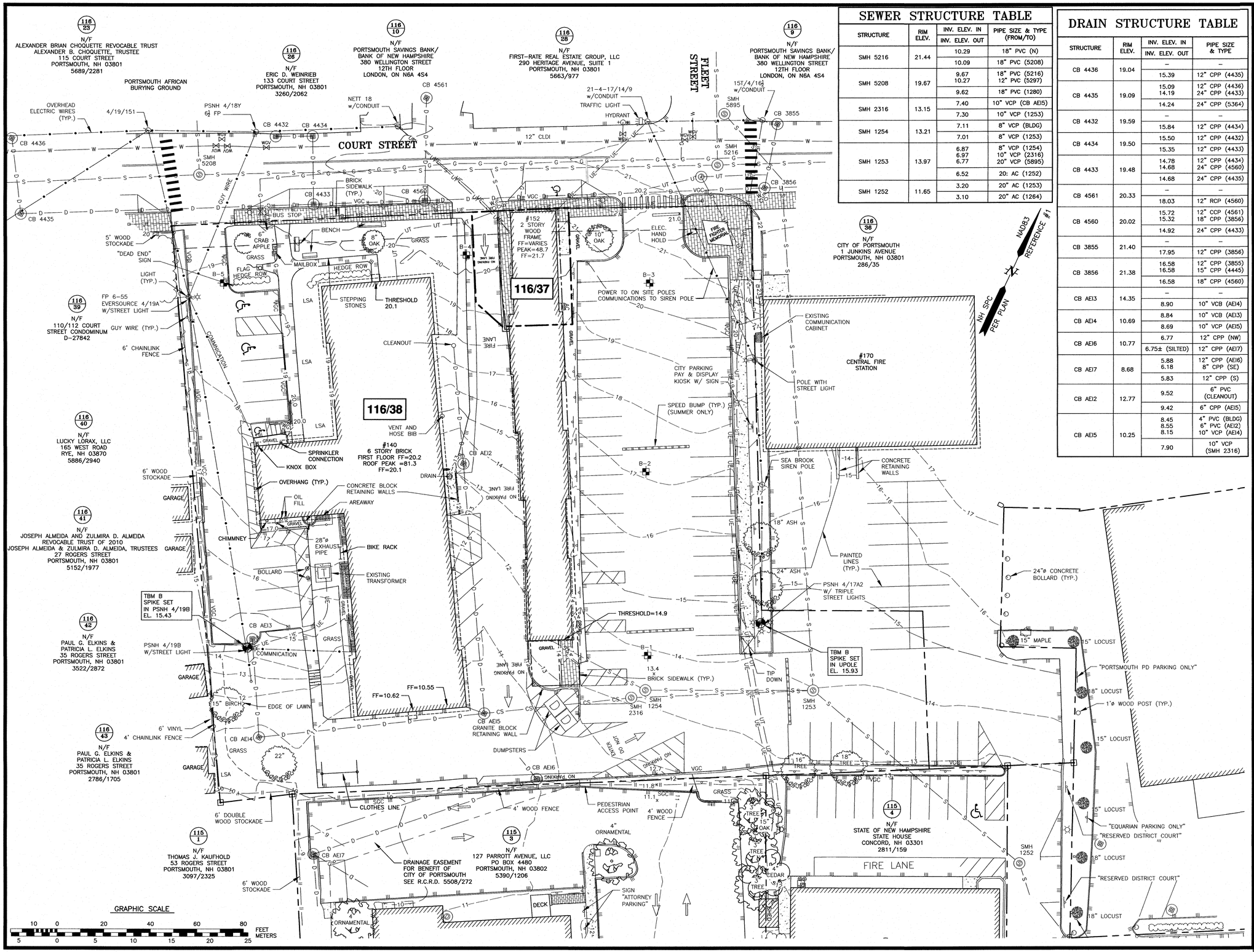

SEWER STRUCTURE TABLE

STRUCTURE	RIM ELEV.	INV. ELEV. IN / INV. ELEV. OUT	PIPE SIZE & TYPE (FROM/TO)
SMH 5216	21.44	10.29	18" PVC (N)
		10.09	18" PVC (5208)
SMH 5208	19.67	9.67 10.27	18" PVC (5216) 12" PVC (5297)
		9.62	18" PVC (1280)
SMH 2316	13.15	7.40	10" VCP (CB AEI5)
		7.30	10" VCP (1253)
SMH 1254	13.21	7.11	8" VCP (BLDG)
		7.01	8" VCP (1253)
SMH 1253	13.97	6.87 6.97 6.77	8" VCP (1254) 10" VCP (2316) 20" VCP (5895)
		6.52	20: AC (1252)
SMH 1252	11.65	3.20	20" AC (1253)
		3.10	20" AC (1264)

DRAIN STRUCTURE TABLE

STRUCTURE	RIM ELEV.	INV. ELEV. IN / INV. ELEV. OUT	PIPE SIZE & TYPE
CB 4436	19.04	–	–
		15.39	12" CPP (4435)
CB 4435	19.09	15.09 14.19	12" CPP (4436) 24" CPP (4433)
		14.24	24" CPP (5364)
CB 4432	19.59	–	–
		15.84	12" CPP (4434)
CB 4434	19.50	15.50	12" CPP (4432)
		15.35	12" CPP (4433)
CB 4433	19.48	14.78 14.68	12" CPP (4434) 24" CPP (4560)
		14.68	24" CPP (4435)
CB 4561	20.33	–	–
		18.03	12" RCP (4560)
CB 4560	20.02	15.72 15.32	12" CCP (4561) 18" CPP (3856)
		14.92	24" CPP (4433)
CB 3855	21.40	–	–
		17.95	12" CPP (3856)
CB 3856	21.38	16.58 16.58	12" CPP (3855) 15" CPP (4445)
		16.58	18" CPP (4560)
CB AEI3	14.35	–	–
		8.90	10" VCB (AEI4)
CB AEI4	10.69	8.84	10" VCB (AEI3)
		8.69	10" VCP (AEI5)
CB AEI6	10.77	6.77	12" CPP (NW)
		6.75± (SILTED)	12" CPP (AEI7)
CB AEI7	8.68	5.88 6.18	12" CPP (AEI6) 8" CPP (SE)
		5.83	12" CPP (S)
CB AEI2	12.77	9.52	6" PVC (CLEANOUT)
		9.42	6" CPP (AEI5)
CB AEI5	10.25	8.45 8.55 8.15	4" PVC (BLDG) 6" PVC (AEI2) 10" VCP (AEI4)
		7.90	10" VCP (SMH 2316)

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) PARCELS ARE SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 116 AS LOT 38 AND LOT 37.

2) OWNERS OF RECORD:
116/38
PORTSMOUTH HOUSING AUTHORITY
245 MIDDLE STREET
PORTSMOUTH, NH 03801
R.C.R.D BK 1736, PG 386, BK 1797 PG 20 AND BK 1920, PG 47

116/37
ED PAC, LLC
242 CENTRAL AVENUE
DOVER, NH 03820
BK 4679, PG 151

3) PARCEL 116/38 AND 116/37 ARE NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 3301SC0259E. EFFECTIVE 5/17/2005

4) EXISTING LOT AREA:
11/38: 59,976 (S.F.) 1.3769 ACRES
11/37: 4,587 (S.F.) 0.1053 ACRES

5) PARCELS ARE LOCATED IN CHARACTER DISTRICT 4 (CD4)

6) THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS ON THE LOTS.

PORTSMOUTH HOUSING AUTHORITY 140 COURT STREET PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	ISSUED FOR APPROVAL	6/18/18
0	ISSUED FOR COMMENT	3/5/18

REVISIONS

STATE OF NEW HAMPSHIRE No. 738 JOHN R. CHAGNON REGISTERED LAND SURVEYOR

SCALE: 1'=20' MARCH 2018

EXISTING CONDITIONS PLAN

C1

FB 321 PG 19

2790

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DEMOLITION NOTES

A) THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR THE DESIGNER. IT IS THE CONTRACTORS' RESPONSIBILITY TO LOCATE UTILITIES AND ANTICIPATE CONFLICTS. CONTRACTOR SHALL REPAIR EXISTING UTILITIES DAMAGED BY THEIR WORK AND RELOCATE EXISTING UTILITIES THAT ARE REQUIRED TO BE RELOCATED PRIOR TO COMMENCING ANY WORK IN THE IMPACTED AREA OF THE PROJECT.

B) ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTORS UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS, ORDINANCES AND CODES. THE CONTRACTOR SHALL COORDINATE REMOVAL, RELOCATION, DISPOSAL, OR SALVAGE OF UTILITIES WITH THE OWNER AND APPROPRIATE UTILITY COMPANY.

C) ANY EXISTING WORK OR PROPERTY DAMAGED OR DISRUPTED BY CONSTRUCTION/ DEMOLITION ACTIVITIES SHALL BE REPLACED OR REPAIRED TO THE ORIGINAL EXISTING CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

D) THE CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES AND CALL DIG SAFE AT LEAST 72 HOURS PRIOR TO THE COMMENCEMENT OF ANY DEMOLITION/CONSTRUCTION ACTIVITIES.

E) SAWCUT AND REMOVE PAVEMENT ONE FOOT OFF PROPOSED EDGE OF PAVEMENT OR EXISTING CURB LINE IN AREAS WHERE PAVEMENT TO BE REMOVED ABUTS EXISTING PAVEMENT OR CONCRETE TO REMAIN.

F) IT IS THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEMSELVES WITH THE CONDITIONS OF ALL THE PERMIT APPROVALS.

G) THE CONTRACTOR SHALL OBTAIN AND PAY FOR ADDITIONAL CONSTRUCTION PERMITS, NOTICES AND FEES NECESSARY TO COMPLETE THE WORK AND ARRANGE FOR AND PAY FOR ANY INSPECTIONS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL AND OFF-SITE DISPOSAL OF MATERIALS REQUIRED TO COMPLETE THE WORK.

H) THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING STRUCTURES, CONCRETE, UTILITIES, VEGETATION, PAVEMENT, AND CONTAMINATED SOIL WITHIN THE WORK LIMITS SHOWN UNLESS SPECIFICALLY IDENTIFIED TO REMAIN. ANY EXISTING DOMESTIC / IRRIGATION SERVICE WELLS IN THE PROJECT AREA IDENTIFIED DURING THE CONSTRUCTION AND NOT CALLED OUT ON THE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER FOR PROPER CAPPING / RE-USE. ANY EXISTING MONITORING WELLS IN THE PROJECT AREA IDENTIFIED DURING THE CONSTRUCTION AND NOT CALLED OUT ON THE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER TO COORDINATE MONITORING WELL REMOVAL AND/OR RELOCATION WITH NHDES AND OTHER AUTHORITY WITH JURISDICTION PRIOR TO CONSTRUCTION.

I) ALL WORK WITHIN THE CITY OF PORTSMOUTH RIGHT OF WAY SHALL BE COORDINATED WITH THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS (DPW).

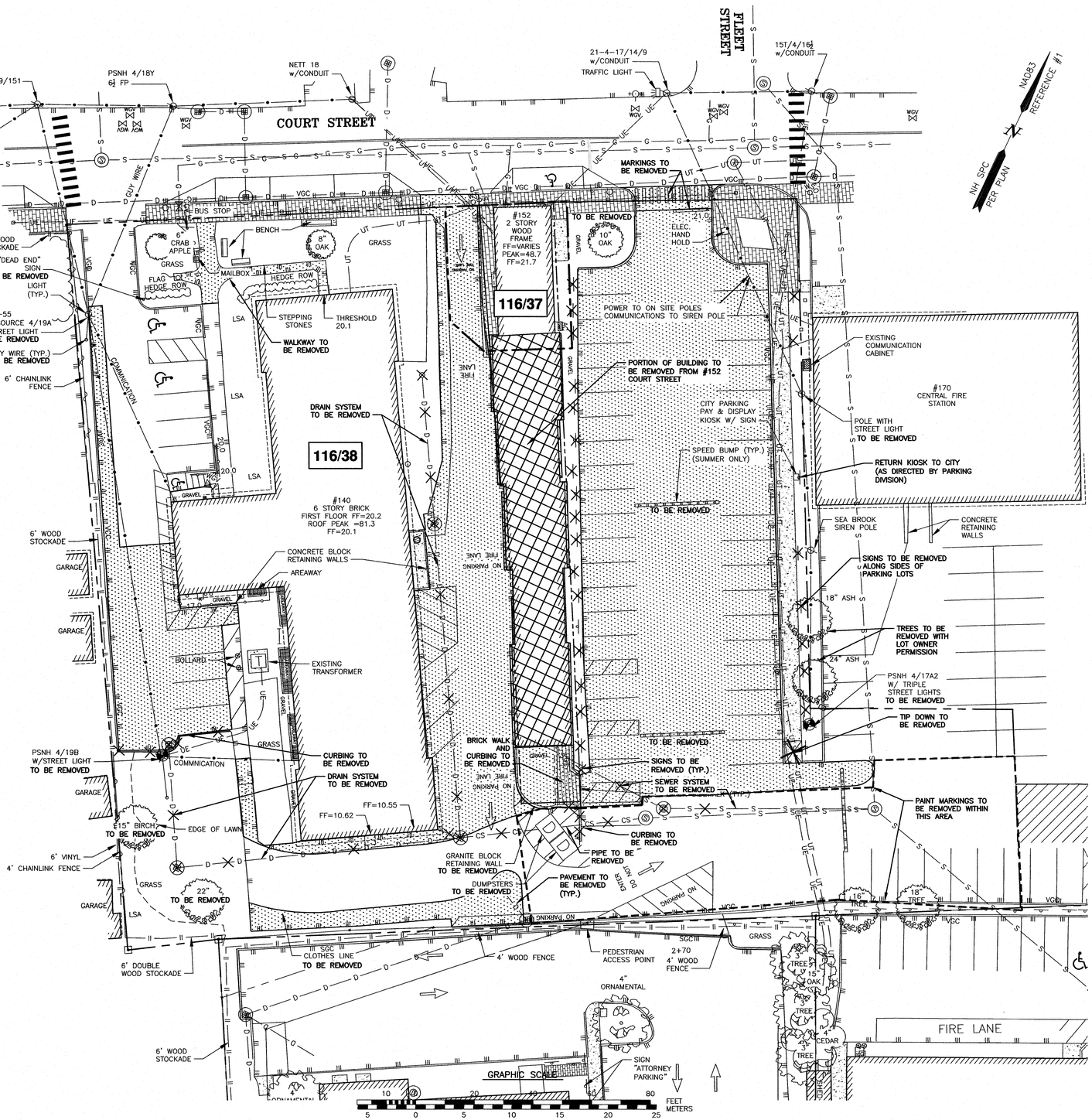
J) REMOVE TREES AND BRUSH AS REQUIRED FOR COMPLETION OF WORK. CONTRACTOR SHALL GRUB AND REMOVE ALL SLUMPS WITHIN LIMITS OF WORK AND DISPOSE OF OFF-SITE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.

K) CONTRACTOR SHALL PROTECT ALL PROPERTY MONUMENTATION THROUGHOUT DEMOLITION AND CONSTRUCTION OPERATIONS. SHOULD ANY MONUMENTATION BE DISTURBED, THE CONTRACTOR SHALL EMPLOY A NH LICENSED LAND SURVEYOR TO REPLACE THEM.

L) PROVIDE INLET PROTECTION BARRIERS AT ALL CATCH BASINS WITHIN CONSTRUCTION LIMITS AND MAINTAIN FOR THE DURATION OF THE PROJECT. INLET PROTECTION BARRIERS SHALL BE HIGH FLOW SILT SACK BY ACF ENVIRONMENTAL OR APPROVED EQUAL. INSPECT BARRIERS WEEKLY AND AFTER EACH RAIN OF 0.25 INCHES OR GREATER. CONTRACTOR SHALL COMPLETE A MAINTENANCE INSPECTION REPORT AFTER EACH INSPECTION. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT OR MORE OFTEN IF WARRANTED OR FABRIC BECOMES CLOGGED. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF ANY CLEARING OR DEMOLITION ACTIVITIES.

M) THE CONTRACTOR SHALL PAY ALL COSTS NECESSARY FOR TEMPORARY PARTITIONING, BARRICADING, FENCING, SECURITY AND SAFELY DEVICES REQUIRED FOR THE MAINTENANCE OF A CLEAN AND SAFE CONSTRUCTION SITE.

N) ANY CONTAMINATED MATERIAL REMOVED DURING THE COURSE OF THE WORK WILL REQUIRE HANDLING IN ACCORDANCE WITH NHDES REGULATIONS. CONTRACTOR SHALL HAVE A HEALTH AND SAFETY PLAN IN PLACE, AND COMPLY WITH ALL APPLICABLE PERMITS, APPROVALS, AUTHORIZATIONS, AND REGULATIONS



AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
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NOTES:

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PORTSMOUTH HOUSING AUTHORITY 140 COURT STREET PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
4	ISSUED FOR APPROVAL	6/18/18
3	ISSUED FOR TAC	5/8/18
2	ISSUED FOR APPROVAL	4/25/18
1	ISSUED FOR COMMENT	2/20/18

REVISIONS

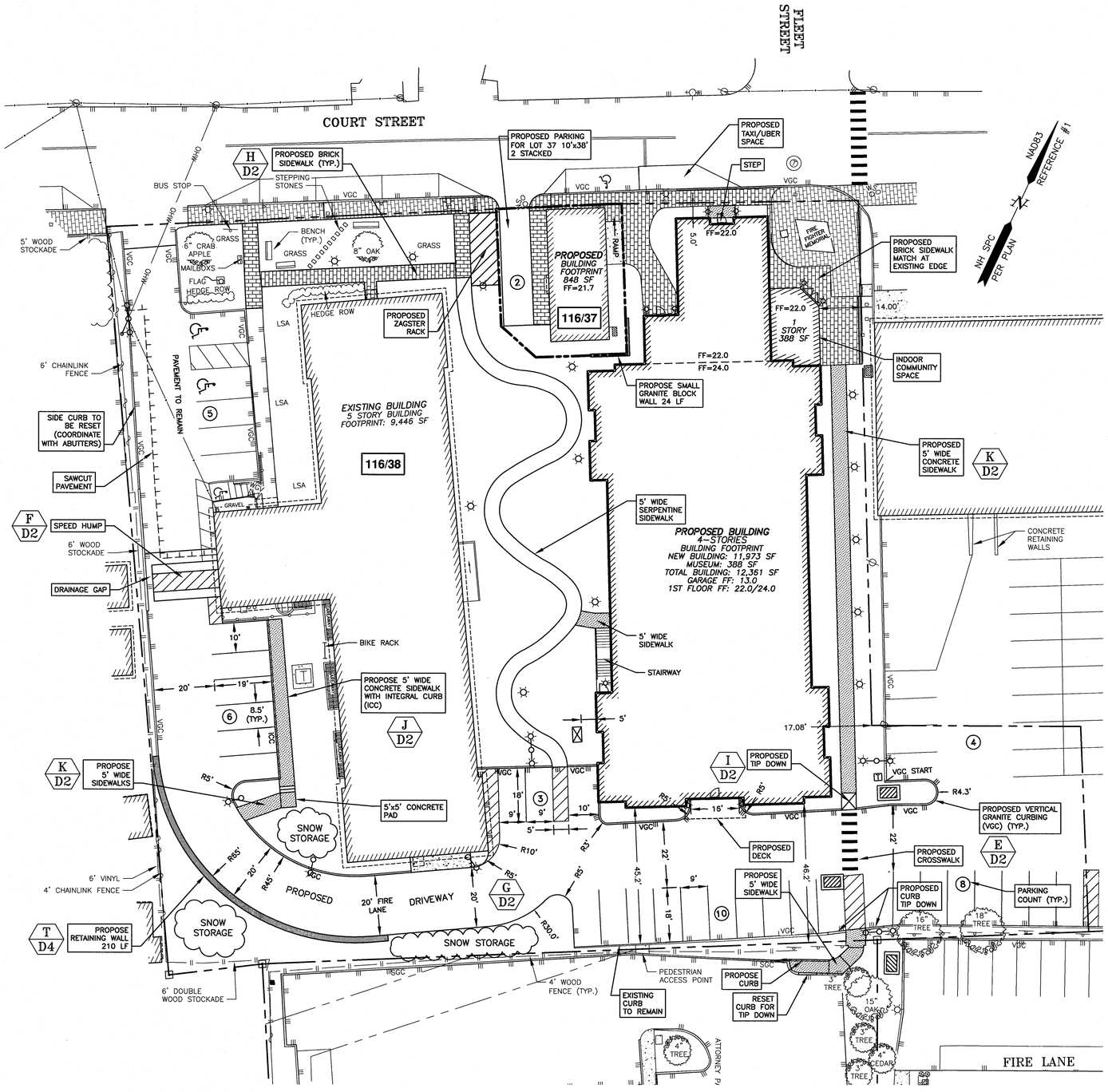
STATE OF NEW HAMPSHIRE
JOHN R. CHAGNON
No. 7651
LICENSED
PROFESSIONAL ENGINEER

SCALE: 1"=20' FEBRUARY 2018

DEMOLITION PLAN C2

FB 321 PG19

2790



ZONING DEVELOPMENT STANDARD

CD4: CHARACTER DISTRICT 4

BUILDING PLACEMENT (PRINCIPLE):

		116/38 (140 COURT ST.)		116/37 (152 COURT ST.)	
	REQUIRED	EXISTING	BUILDING A	EXISTING	PROPOSED
MAX. PRINCIPLE FRONT YARD:	10 FEET	27 FEET	0 FEET	0.9 FEET	0.9 FEET
MIN. SIDE YARD:	NR	26 FEET	6 FEET	1 FOOT	6 FOOT
MIN. REAR YARD:	>5 FEET	32 FEET	46 FEET	20 FEET	5 FEET
FRONT LOT LINE BUILDOUT:	50% MIN	0%	12.5%	73.0%	46.7%

BUILDING TYPES:

ALLOWED BUILDING TYPES: ROWHOUSE, APARTMENT, LIVE/WORK, SMALL/LARGE COMMERCIAL PROHIBITED: HOUSE & DUPLEX

ALLOWED FACADE TYPE: STOOP, STEP, SHOPFRONT, OFFICEFRONT, RECESSED-ENTRY PROHIBITED: PORCH & FORECOURT

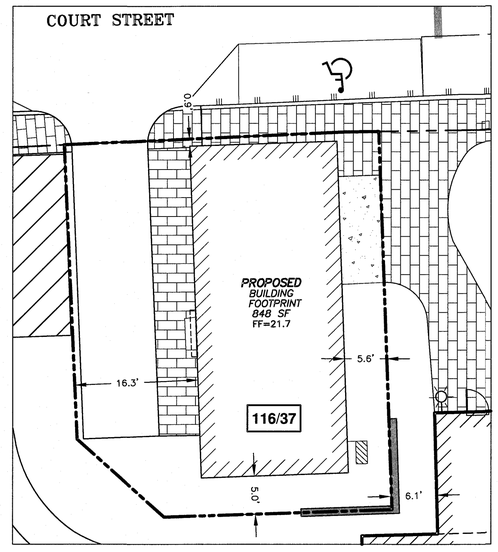
BUILDING FORM:

	REQUIRED	EXISTING	BUILDING A	EXISTING	PROPOSED
MAX STRUCTURE HEIGHT:	35/45 FEET	63 FEET	54 FEET	TO REMAIN	TO REMAIN
MAX. FINISHED FLOOR SURFACE OF GROUND FLOOR ABOVE SIDEWALK GRADE:	36 INCHES	–	<35 INCHES	TO REMAIN	TO REMAIN
MIN. GROUND STORY HEIGHT:	12 FEET	–	12 FEET	TO REMAIN	TO REMAIN
FACADE GLAZING (WINDOW/PERIMETER):	70% SHOP 20–50% OTHER	N/A	TO COMPLY	TO REMAIN	TO REMAIN

ROOF TYPE ALLOWED: FLAT, GABLE, HIP, GAMBREL, MANSARD

LOT OCCUPATION:

MAX BUILDING BLOCK:	200 FEET	47 FEET	28 FEET	19 FEET	19 FEET
MAX FACADE MOD. LENGTH:	80 FEET	47 FEET	28 FEET	19 FEET	19 FEET
MIN. ENTRANCE SPACING:	50 FEET	47 FEET	28 FEET	19 FEET	19 FEET
MAX BUILDING COVERAGE:	90%	15.7%	19.6%	80.5%	42.3%
MAX BUILDING FOOTPRINT:	15,000 SF	9,446 SF	12,361FEET	3,693 SF	848 SF
MIN. LOT AREA:	NR	59,976 SF	62,559 SF	4,587 SF	2,004 SF
MIN. LOT AREA/DWELLING (LOT AREA/# OF UNITS):	NR	–	–	–	–
MIN. OPEN SPACE :	10%	12%	24.0%	1.4%	13.4%



LOT 116/37 SETBACKS:
SCALE: 1"=10'

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
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Fax (603) 436-2315

NOTES:

1) PARCELS ARE SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 116 AS LOT 38 AND LOT 37.

2) OWNERS OF RECORD:
116/38
PORTSMOUTH HOUSING AUTHORITY
245 MIDDLE STREET
PORTSMOUTH, NH 03801
R.C.R.D BK 1736, PG 386, BK 1797 PG 20 AND BK 1920, PG 47

116/37
ED PAC, LLC
242 CENTRAL AVENUE
DOVER, NH 03820
BK 4679, PG 151

3) PARCELS 116/38 AND 116/37 ARE NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 3301SC0259E. EFFECTIVE 5/17/2005

4) LOT AREAS:
LOT 11/38
EXIST: 59,976 (S.F.) 1.3769 ACRES
PROPOSED: 63,047 (S.F.) 1.4474 ACRES

LOT 11/37
EXIST: 4,587 (S.F.) 0.105 ACRES
PROPOSED: 1,516 (S.F.) 0.0398 ACRES

5) PARCELS ARE LOCATED IN CHARACTER DISTRICT 4 (CD4)

6) THE PURPOSE OF THIS PLAN IS TO SHOW THE SITE LAYOUT FOR THE PROJECT.

7) SEE BASEMENT PLAN (C4) FOR TRASH ENCLOSURE AREA. PICK UP SCHEDULE WILL BE AS NEEDED TO MAINTAIN CAPACITY.

PORTSMOUTH HOUSING AUTHORITY 140 COURT STREET PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
2	ISSUED FOR APPROVAL	6/18/18
1	ISSUED FOR COMMENT	5/8/18
0	ISSUED FOR COMMENT	4/25/18

REVISIONS

STATE OF NEW HAMPSHIRE JOHN W. CHAGNON No. 738 LICENSED LAND SURVEYOR

SCALE: 1'=20' APRIL 2018

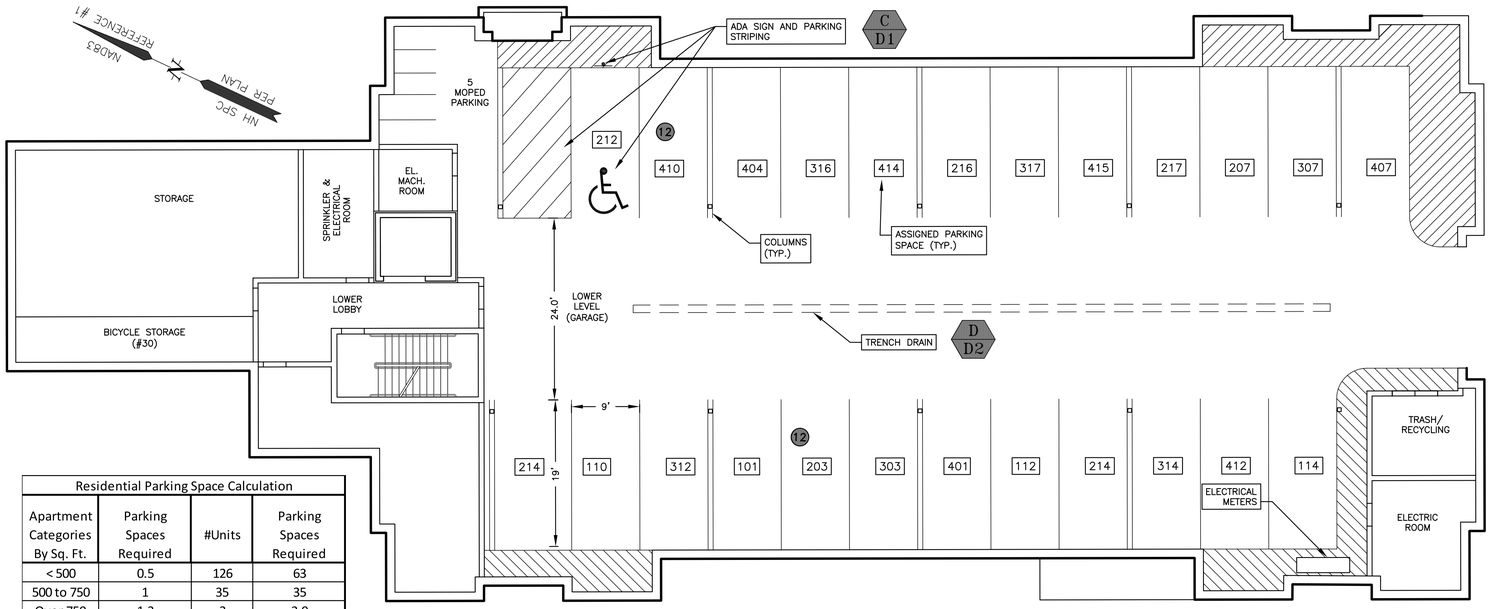
SITE LAYOUT PLAN

C3

FB 321 PG19

2790

J:\J0852\JN2700's\JN 2790's\JN 2790\2017 Site Planning\Plans & Specs\Site\2790SITE3.dwg, SITE_C3



Residential Parking Space Calculation			
Apartment Categories By Sq. Ft.	Parking Spaces Required	#Units	Parking Spaces Required
< 500	0.5	126	63
500 to 750	1	35	35
Over 750	1.3	3	3.9
Visitor Parking = 164/5 =			33
Totals		164	135

Parking Spaces

GRAPHIC SCALE

10 5 0 10 20 30 40 FEET
3 0 5 10 METERS

GARAGE PARKING

SCALE: 1"=10'

OPEN SPACE AREA LOT 37		
OPEN SPACE	AREA (S.F.)	TYPE OF OPEN SPACE
1	347	
LOT SIZE	2,004	
% OPEN SPACE	17.3%	

COMMUNITY OPEN SPACE AREA LOT 38		
OPEN SPACE	AREA (S.F.)	TYPE OF OPEN SPACE
2	2,968	POCKET PARK
3	1,044	MONUMENT PLAZA
4	905	POCKET PARK
5	7,241	POCKET PARK
6	2,496	POCKET PARK
7	388	MUSEUM
TOTAL	15,042	TOTAL OPEN SPACE
LOT SIZE	62,559	
% OPEN SPACE	24.0%	

OPEN SPACE EXHIBIT

SCALE: 1"=30'

GRAPHIC SCALE

30 0 50 100 120 FEET
10 5 0 10 20 30 METERS

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NOTES:

1) THE PURPOSE OF THIS PLAN IS TO SHOW THE PARKING LAYOUT AT THE SITE.

2) PARKING REQUIREMENTS:
10.5A44.30: PARKING LOCATED 20 FT FROM PRINCIPLE BUILDING
10.544.32: PARKING AND LOADING SCREENED BY BUILDING EXCEPT DRIVEWAY
10.5A44.33: DRIVEWAYS NO WIDER THAN 24 FEET WIDE
10.5A44.35 ABOVE GROUND PARKING OF PARKING GARAGE REQUIRES A LINER BUILDING GROUND FLOOR LEVEL
10.5A44.36: PARKING LOT MORE THAN 75 SPACES SHALL HAVE INTERNAL PEDESTRIAN WALK WAY AT LEAST 8FT. PAVED DIFFERENTLY FROM PARKING LOT

TOTAL PARKING SPACES PROVIDED: 60 SPACES

BUILDING DATA

PROPOSED BUILDING:
11,973 SF FOOTPRINT/ 4 STORIES
64 RESIDENTIAL UNITS
(48 1-BEDROOMS/ 16 2-BEDROOM)
NO COMMERCIAL SPACE
1 LEVEL OF PARKING

EXISTING FEASTER APARTMENTS:
6 STORIES
100 RESIDENTIAL UNITS
(95 1-BEDROOM/5 2-BEDROOM)

EXISTING 152 COURT STREET BUILDING:
2.5 STORIES
EXISTING RESIDENTIAL SINGLE FAMILY TO REMAIN.

CJ ARCHITECTS

PORTSMOUTH HOUSING AUTHORITY
COURT STREET DEVELOPMENT

Square Foot Area Summary

Floor	Unit Number	Unit SF Area	1 BR	2 BR	Accessible	<500 SF	>500 SF	Floor GSF
GARAGE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12,006
FIRST	101	667		1			1	12,373
	102	549	1				1	
	103	593	1				1	
	104	539	1				1	
	105	492	1			1		
	106	492	1			1		
	107	491	1			1		
	108	491	1			1		
	109	491	1			1		
	110	559	1		1		1	
	111	492	1			1		
	112	692		1			1	
	113	593	1				1	
	114	653		1			1	
	115	629		1			1	
SECOND	201	499	1			1		11,916
	202	499	1				1	
	203	667		1			1	
	204	566	1				1	
	205	593	1				1	
	206	602	1				1	
	207	492	1			1		
	208	492	1			1		
	209	491	1			1		
	210	491	1			1		
	211	491	1			1		
	212	559	1		1		1	
	213	492	1			1		
	214	785		1			1	
	215	593	1				1	
	216	653		1			1	
	217	629		1			1	
THIRD	301	499	1			1		11,916
	302	499	1				1	
	303	667		1			1	
	304	566	1				1	
	305	593	1				1	
	306	602	1				1	
	307	492	1			1		
	308	492	1			1		
	309	491	1			1		
	310	491	1			1		
	311	491	1			1		
	312	559	1		1		1	
	313	492	1			1		
	314	785		1			1	
	315	593	1				1	
	316	653		1			1	
	317	629		1			1	
FOURTH	401	667		1			1	10,764
	402	566	1				1	
	403	593	1				1	
	404	602	1				1	
	405	492	1			1		
	406	492	1			1		
	407	491	1			1		
	408	491	1			1		
	409	491	1			1		
	410	559	1		1		1	
	411	492	1			1		
	412	785		1			1	
	413	593	1				1	
	414	653		1			1	
	415	629		1			1	
	TOTALS:		48	16	4	26	38	58,975
			64					

PORTSMOUTH HOUSING AUTHORITY 140 COURT STREET PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
4	BASEMENT AND OPEN SPACE	6/18/18
3	SUBMIT FOR APPROVAL	5/8/18
2	ADDED OPEN SPACE	4/25/18
1	ISSUED FOR APPROVAL	3/5/18
0	ISSUED FOR COMMENT	2/20/17

REVISIONS

SCALE: AS SHOWN APRIL 2018

PARKING PLAN AND OPEN SPACE EXHIBIT

C4

FB 321 PG19

2790

J:\JOBS2\JN2700's\JN 2790's\JN 2790\2017 Site Planning\Plans & Specs\Site\2790SITE3.dwg, C4 PARKING

UTILITY NOTES:

1) SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION.

2) COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY.

3) SEE GRADING AND DRAINAGE PLAN FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.

4) ALL WATER MAIN INSTALLATIONS SHALL BE CLASS 52, POLYWRAPPED, CEMENT LINED DUCTILE IRON PIPE.

5) ALL WATERMAIN INSTALLATIONS SHALL BE PRESSURE TESTED AND CHLORINATED AFTER CONSTRUCTION AND BEFORE ACTIVATING THE SYSTEM. CONTRACTOR SHALL COORDINATE WITH THE CITY OF PORTSMOUTH.

6) ALL SEWER PIPE SHALL BE PVC SDR 35 UNLESS OTHERWISE STATED.

7) ALL WORK WITHIN CITY R.O.W. SHALL BE COORDINATED WITH CITY OF PORTSMOUTH

8) CONTRACTOR SHALL MAINTAIN UTILITY SERVICES TO ABUTTING PROPERTIES THROUGHOUT CONSTRUCTION.

9) ANY CONNECTION TO EXISTING WATERMAIN SHALL BE CONSTRUCTED BY THE CITY OF PORTSMOUTH.

10) EXISTING UTILITIES TO BE REMOVED SHALL BE CAPPED AT THE MAIN AND MEET THE DEPARTMENT OF PUBLIC WORKS STANDARDS FOR CAPPING OF WATER AND SEWER SERVICES.

11) ALL ELECTRICAL MATERIAL WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST EDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.

12) THE EXACT LOCATION OF NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH BUILDING DRAWINGS AND UTILITY COMPANIES.

13) ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.

14) ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.

15) THE CONTRACTOR SHALL OBTAIN, PAY FOR, AND COMPLY WITH ALL REQUIRED PERMITS, ARRANGE FOR ALL INSPECTIONS, AND SUBMIT COPIES OF ACCEPTANCE CERTIFICATED TO THE OWNER PRIOR TO THE COMPLETION OF PROJECT.

16) THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED IN THESE DRAWING TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL.

17) CONTRACTOR SHALL PROVIDE EXCAVATION, BEDDING, BACKFILL AND COMPACTION FOR NATURAL GAS SERVICES.

18) A 10-FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18-INCH MINIMUM OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER/SANITARY SEWER CROSSINGS WATER ABOVE SEWER.

19) SAWCUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL PROPOSED UTILITIES LOCATED IN EXISTING PAVEMENT AREAS TO REMAIN.

20) GATE VALVES, FITTINGS, ETC. SHALL MEET THE REQUIREMENTS OF THE CITY OF PORTSMOUTH.

21) COORDINATE TESTING OF SEWER CONSTRUCTION WITH THE CITY OF PORTSMOUTH.

22) ALL SEWER PIPES WITH LESS THAN 6' COVER SHALL BE INSULATED.

23) CONTRACTOR SHALL COORDINATE ALL ELECTRIC WORK INCLUDING BUT NOT LIMITED TO: CONDUIT CONSTRUCTION, MANHOLE CONSTRUCTION, UTILITY POLE CONSTRUCTION, OVERHEAD WIRE RELOCATION, AND TRANSFORMER CONSTRUCTION WITH POWER COMPANY.

24) CONTRACTOR SHALL PHASE UTILITY CONSTRUCTION, PARTICULARLY WATER MAIN AND GAS MAIN CONSTRUCTION AS TO MAINTAIN CONTINUOUS SERVICE TO ABUTTING PROPERTIES. CONTRACTOR SHALL COORDINATE TEMPORARY SERVICES TO ABUTTERS WITH UTILITY COMPANY AND AFFECTED ABUTTER.

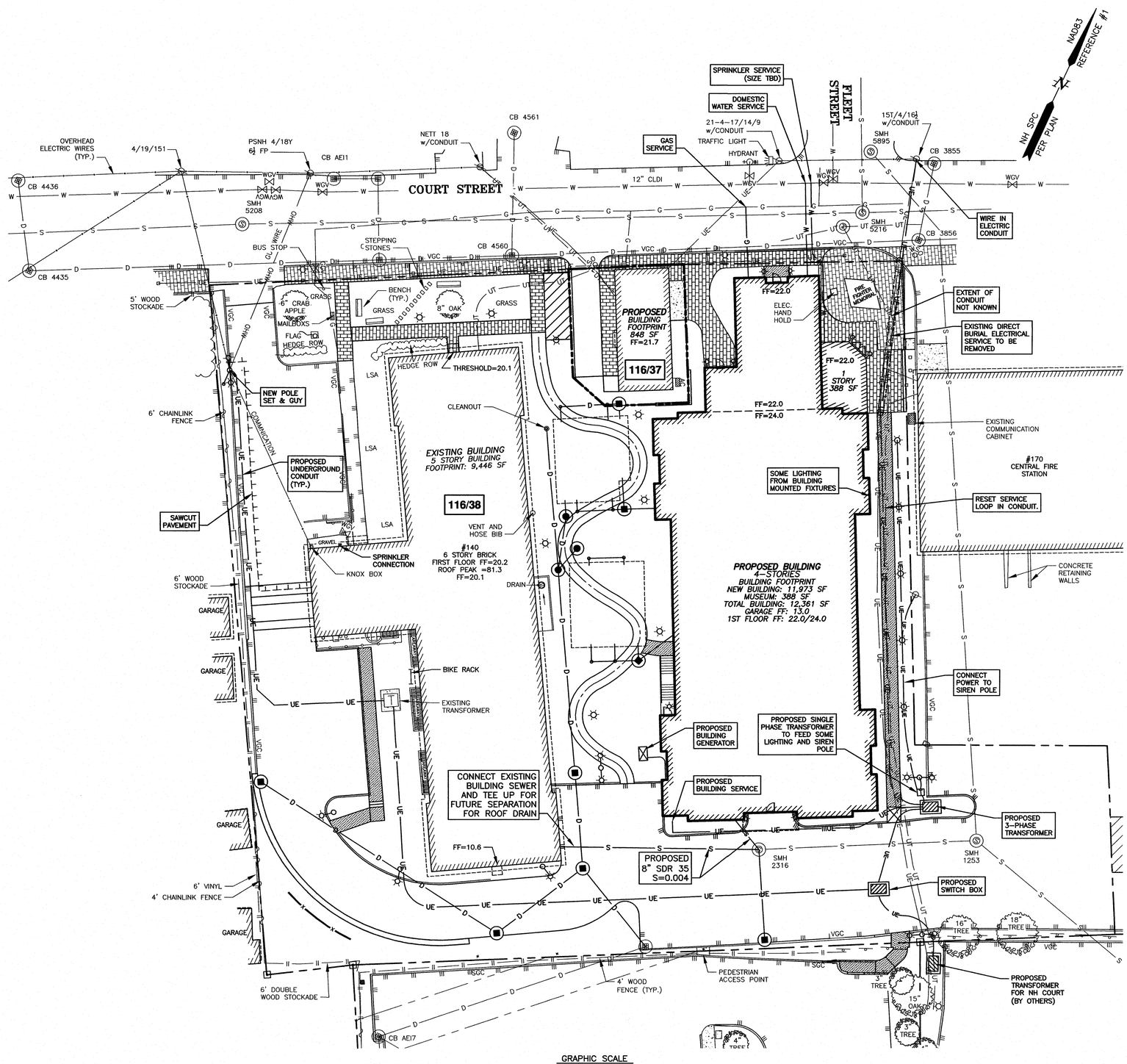
25) SITE LIGHTING SPECIFICATIONS, CONDUIT LAYOUT AND CIRCUITRY FOR PROPOSED SITE LIGHTING AND SIGN ILLUMINATION SHALL BE PROVIDED BY THE PROJECT ELECTRICAL ENGINEER IN COORDINATION WITH THE SITE CIVIL ENGINEER.

26) CONTRACTOR SHALL CONSTRUCT ALL UTILITIES AND DRAINS TO WITHIN 10' OF THE FOUNDATION WALLS AND CONNECT THESE TO SERVICE STUBS FROM THE BUILDING.

27) THE CONTRACTOR SHALL INSTALL THE SEWER LINE AND MANHOLE IN CONSULTATION AND COORDINATION WITH DEPARTMENT OF PUBLIC WORKS.

PROPOSED SEWER CONNECTION

STRUCTURE	RIM ELEV.	INV. ELEV. IN / INV. ELEV. OUT	PIPE SIZE & TYPE (FROM/TO)
SMH 2316 (EXISTING)	12.75	7.40	8" SDR35 (BLDG)
		7.40	10" SDR35 (PSMH 1)
		7.30	10" VCP (1253)
BUILDING			-
		7.45	8" SDR35 (2316)



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NOTES:

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4) INSTALL CATCH BASIN INLET PROTECTION ON ALL EXISTING AND PROPOSED CATCH BASINS UNTIL CONSTRUCTION IS COMPLETED AND THE SITE IS STABILIZED.

5) ALL WATER MAIN AND SANITARY SEWER WORK SHALL MEET THE STANDARDS OF THE NEW HAMPSHIRE STATE PLUMBING CODE AND CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS.

6) UTILITY AS-BUILTS SHALL BE SUBMITTED TO THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS UPON COMPLETION OF THE PROJECT.

7) EVERSOURCE WORK ORDER #3107781

8) PROPOSED SEWER FLOW:
64 UNITS X 170 GPD/UNITS = 10,880 GPD

PORTSMOUTH HOUSING AUTHORITY 140 COURT STREET PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
4	SEWER/DRAIN LINES	6/18/18
3	ELECTRICAL DESIGN	6/3/18
2	ISSUED FOR COMMENT	5/8/18
1	ISSUED FOR APPROVAL	4/25/18
0	ISSUED FOR COMMENT	2/20/18

REVISIONS

JOHN R. CHAMPION No. 9851 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

SCALE: 1"=20' FEBRUARY 2018

UTILITY PLAN

C5

FB 321 PG19

2790

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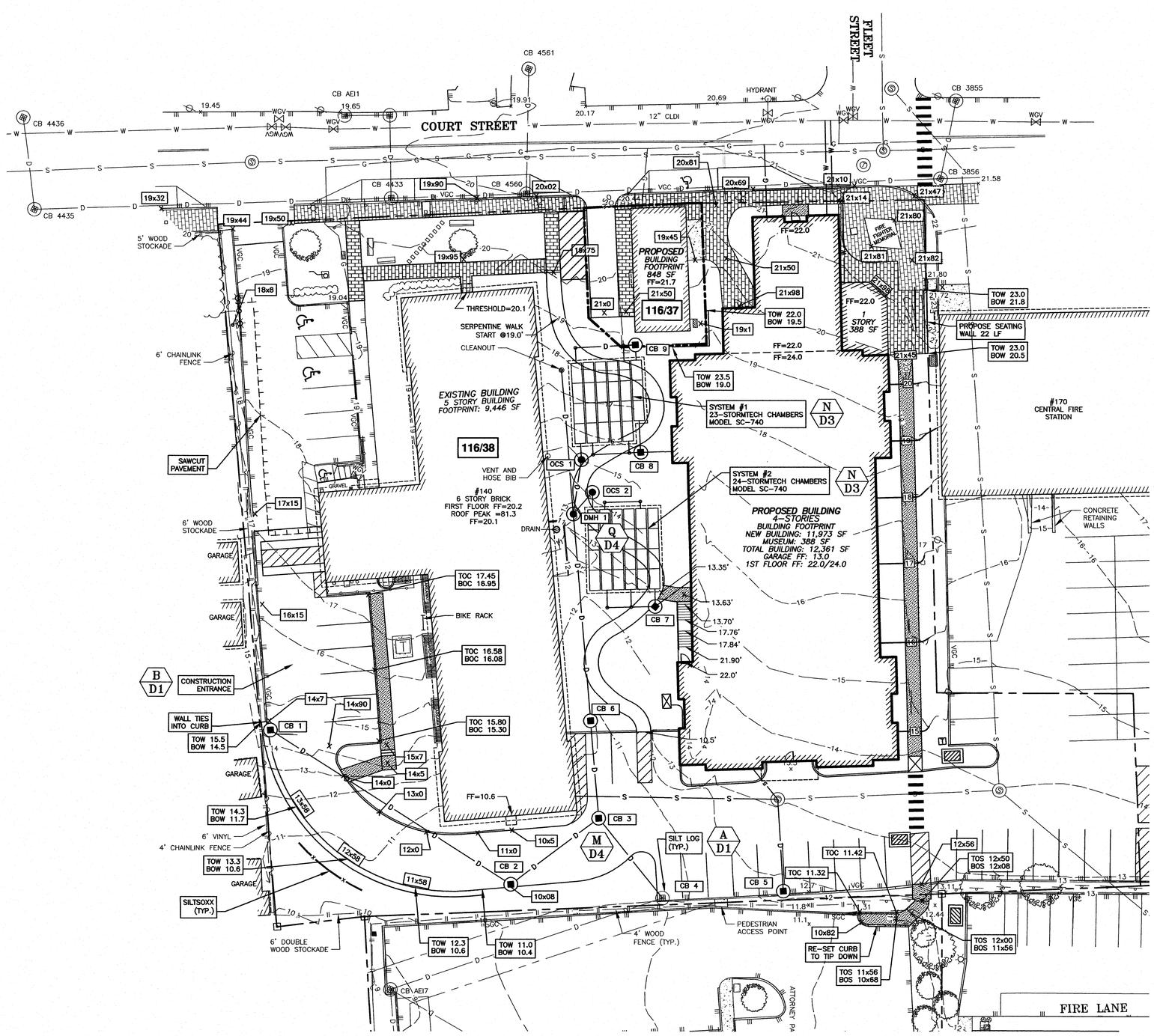

GRAPHIC SCALE

10 0 20 40 60 80 FEET
5 0 5 10 15 20 25 METERS

PROPOSED STORM DRAIN TABLE

(SEE SITE PLANS FOR LOCATIONS)

CB 1
RIM EL. 14.7
INV. OUT 9.70

CB 1 – CB 2
12" HDPE (SMOOTH)
L = 95', S = 0.0271 ft./ft.

CB 2
RIM EL. 10.00
INV. IN 7.13
INV. OUT 7.03

CB 2 – CB 3
12" HDPE (SMOOTH)
L = 34', S = 0.0041 ft./ft.

CB 3
RIM EL.
INV. IN 6.89
INV. IN 6.89
INV. OUT 6.89

CB 4 EXIST.
RIM EL. 10.77
INV. IN 6.77 (NEW)
INV. OUT 6.77

CB 3 – CB 4
12" HDPE (SMOOTH)
L = 31', S = 0.0039 ft./ft.

CB 5
RIM EL. 12.39
INV. OUT 7.54

CB 6
RIM EL. 11.0 +/-
INV. IN 7.04
INV. OUT 7.04

CB 7
RIM EL. 13.0 +/-
SEE DETAIL N/D3

CB 8
RIM EL. 16.0 +/-
SEE DETAIL N/D3

CB 9
RIM EL. 18.5 +/-
SEE DETAIL N/D3

DMH 1
RIM EL. 13.0 +/-
INV. IN 7.38
INV. IN 7.38
INV. OUT 7.38

OCS 1
RIM EL. 15.0 +/-
INV. OUT 11.40
SEE DETAIL N/D3

OCS 2
RIM EL. 14.0 +/-
INV. OUT 7.40
SEE DETAIL N/D3

OCS 1 – DMH 1
12" HDPE (SMOOTH)
L = 14', S = 0.005 ft./ft.

OCS 2 – DMH 1
12" HDPE (SMOOTH)
L = 5', S = 0.004 ft./ft.

DMH 1 – CB 6
12" HDPE (SMOOTH)
L = 68', S = 0.005 ft./ft.

CB 6 – CB 3
12" HDPE (SMOOTH)
L = 30', S = 0.005 ft./ft.

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PORTSMOUTH HOUSING AUTHORITY
140 COURT STREET
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	ISSUED FOR APPROVAL	4/25/18
0	ISSUED FOR COMMENT	2/20/18

REVISIONS

JOHN R. CHAGNON No. 7891 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

SCALE: 1'=20' FEBRUARY 2018

DRAINAGE, GRADING AND EROSION CONTROL PLAN

C6

FB 321 PG19

2790

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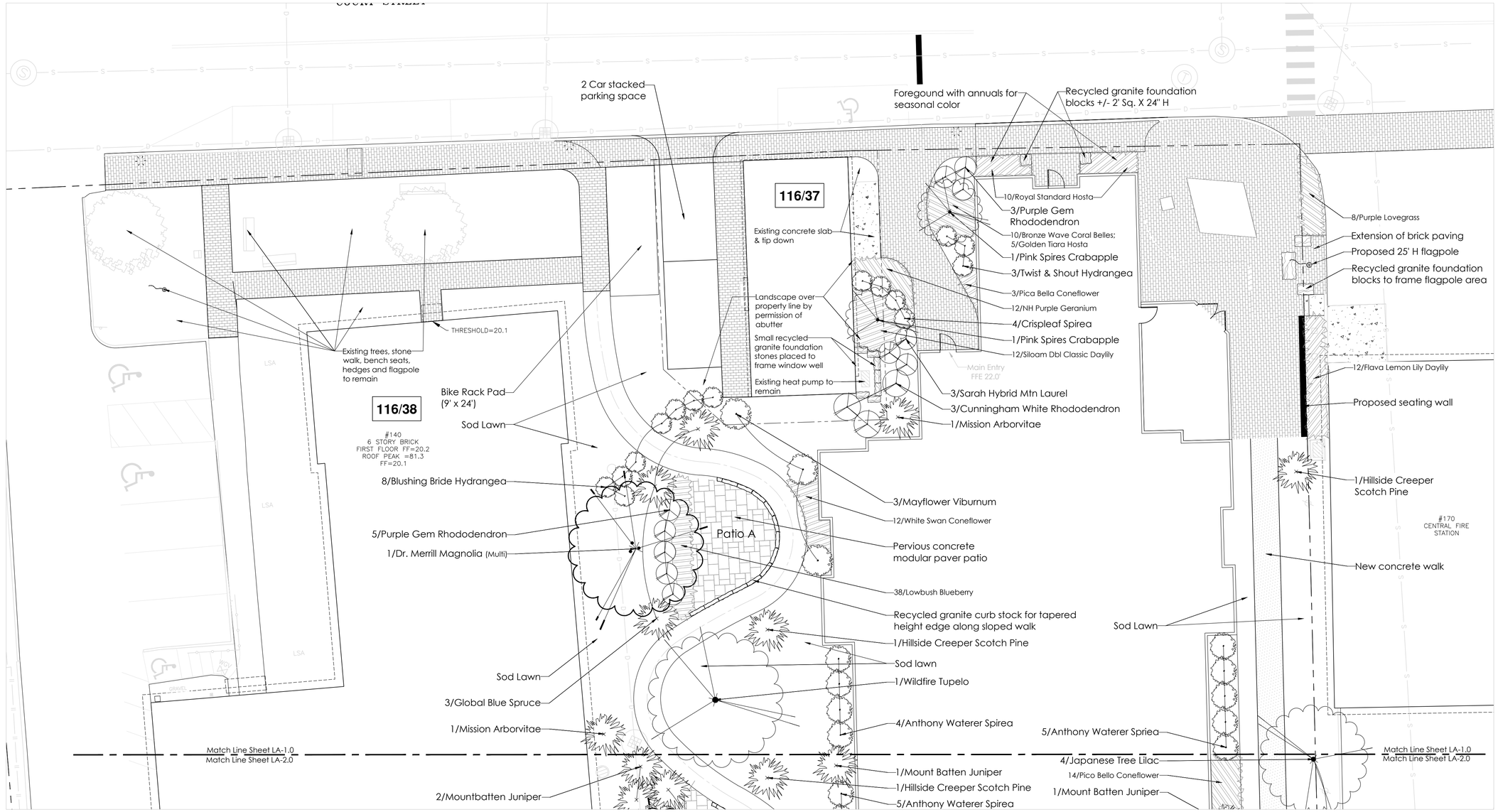

g2+1 LLC
Landscape Architecture Site Planning Graphics

70 New Road
Salisbury, NH 03268
tel/fax: 603.648.6434
web: www.g2plus1.com

Project Name:

Workforce Housing Development
140 Court Street
Portsmouth, New Hampshire 03801

Applicant/Owner of Record:

Portsmouth Housing Authority
245 Middle Street
Portsmouth, NH 03801

Ed Pac, LLC
242 Central Avenue
Dover, NH 03820

For City Approval

registration:

revisions:

no.	date	issued
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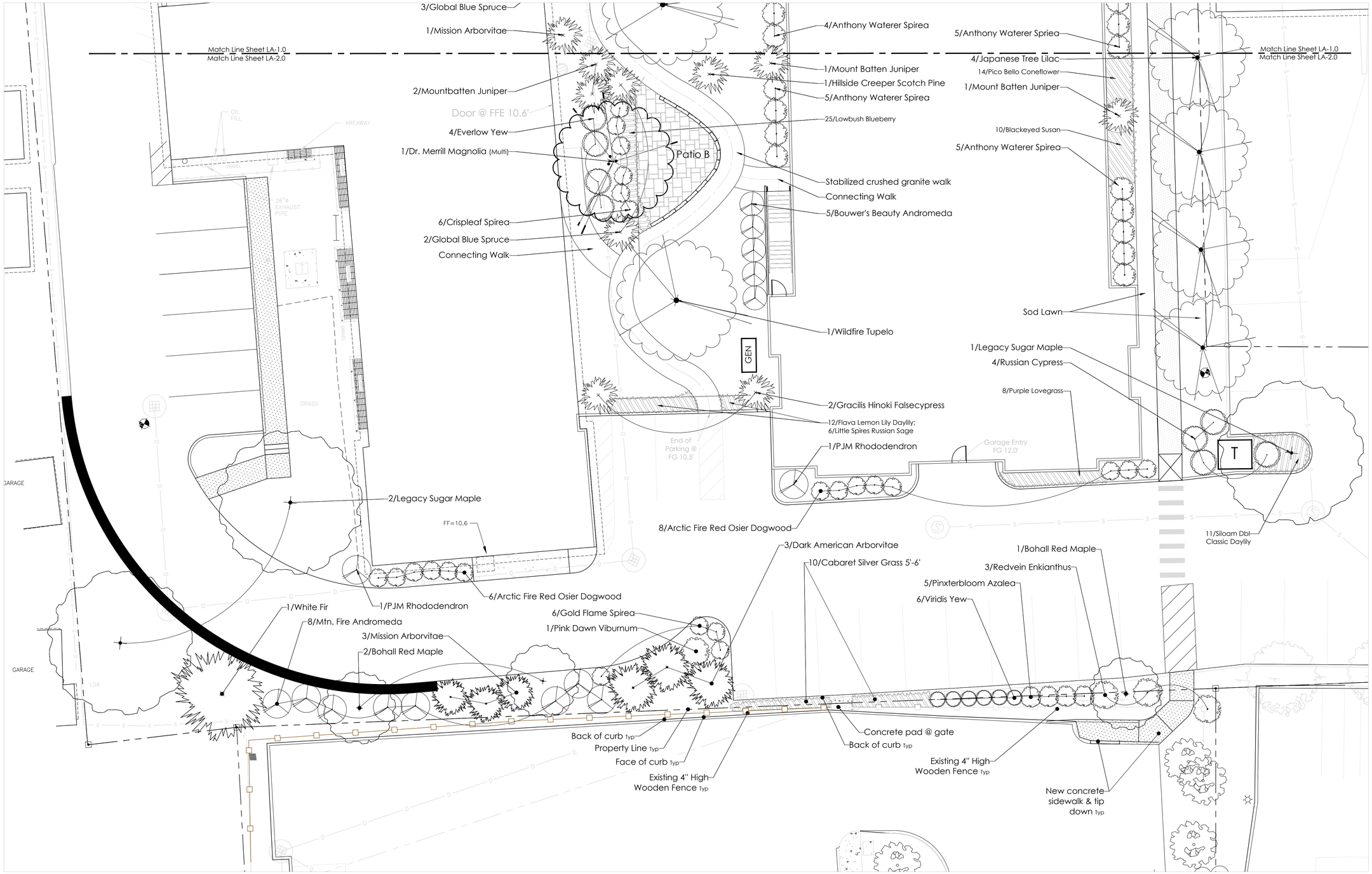
project number:	1306.0
scale:	1" = 10'
drawn by:	dhg
date:	6/18/2018

sheet title/number:

Landscape Plan

LA-1.0



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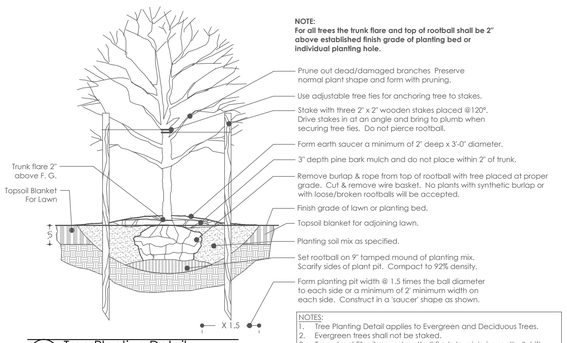
Landscape Plan

LA-2.0

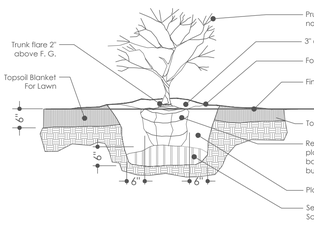


NOTE:
For all trees the trunk flare and top of rootball shall be 2" above established finish grade of planting bed or individual planting hole.

- Prune out dead/damaged branches Preserve normal plant shape and form with pruning.
- Use adjustable tree ties for anchoring tree to stakes.
- Stake with three 2" x 2" wooden stakes placed @120°. Drive stakes in at an angle and bring to plumb when securing tree ties. Do not pierce rootball.
- Form earth saucer a minimum of 2' deep x 3'-0" diameter.
- 3" depth pine bark mulch and do not place within 2" of trunk.
- Remove burlap & rope from top of rootball with tree placed at proper grade. Cut & remove wire basket. No plants with synthetic burlap or with loose/broken rootballs will be accepted.
- Finish grade of lawn or planting bed.
- Topsoil blanket for adjoining lawn.
- Planting soil mix as specified.
- Set rootball on 9" tamped mound of planting mix. Scarify sides of plant pit. Compact to 92% density.
- Form planting pit width @ 1.5 times the ball diameter to each side or a minimum of 2' minimum width on each side. Construct in a 'saucer' shape as shown.

NOTES:
1. Tree Planting Detail applies to Evergreen and Deciduous Trees.
2. Evergreen trees shall not be staked.
3. Tamp backfill soil around rootball firmly to minimize rootball shift.
4. Tree to be set plumb, after settlement.
5. All nursery tags, tape, and similar materials shall be removed.

1 Tree Planting Detail
No Scale

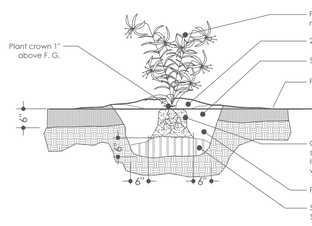


NOTE:
For all shrubs the trunk flare and top of rootball shall be 1" above established finish grade of planting bed or individual planting hole.

- Prune out dead/damaged branches Preserve normal plant shape and form with pruning.
- 3" depth pine bark mulch and do not place within 2" of trunk.
- Form earth saucer a minimum of 2' deep x 3'-0" diameter.
- Finish grade of lawn or planting bed.
- Topsoil blanket for adjoining lawn.
- Remove burlap & rope from top of rootball with tree placed at proper grade. Remove as much of wire basket, if any, as practical. No plants with synthetic burlap or with loose/broken rootballs will be accepted.
- Planting soil mix as specified.
- Set rootball on 9" tamped mound of planting mix. Scarify sides of plant pit.

2 Shrub Planting Detail
No Scale

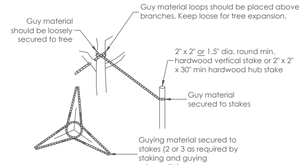
(Shrub Planting Detail applies to Evergreen and Deciduous Shrubs)



NOTE:
For all perennials the plant crown and top of rootball shall be 1" above established finish grade of planting bed or individual planting hole.

- Prune out dead/damaged branches Preserve normal plant shape and form with pruning.
- 2" depth pine bark mulch and do not place within 2" of crown.
- Soil mix backfill compacted to 85%
- Finish grade of lawn or planting bed.
- Gently hand loosen soil from around root ball without severing main roots. Scarify outside surface of root ball if rootbound. Plant perennial at depth equal to that which the plant was grown at the nursery/container.
- Planting soil mix as specified.
- Set rootball on 9" tamped mound of planting mix. Scarify sides of plant pit.

3 Perennial Planting Detail
No Scale



NOTE:
Only use plastic 'Chainlock' or approved equal guying material of landscape quality and suitable for guying trees.

4 Tree Guying Detail
No Scale

Typical Planting Details

N. T. S.

Plant Schedule

6/18/2018

PHA Court Street Landscape
Portsmouth, New Hampshire

Sym	Qty	Common Name	Botanical Name	Zone	Habit of Growth Height	Spread	Installed Size	Type	Notes
Large, Deciduous Trees									
LSM	3	Legacy Sugar Maple	Acer saccharinum 'legacy'	3	50-60'	35-40'	2-1/2-3" cal.	B&B	hardy, vigorous
BWHL	4	Bowhall Columnar Maple	Acer rubrum 'bowhall'	4	40-50'	10-15'	2-1/2" cal.	B&B	Columnar form
TUP	2	Wildfire Tupelo	Nyssa sylvatica 'wildfire'	4	30-40'	20-30'	2-1/2-3" cal.	B&B	Brilliant red leaves in sprint to glossy green, pyramidal
Small, Accent Flowering Trees									
DMM	2	Dr. Merrill Magnolia - MULTI	Magnolia loebneri 'merrill'	3	20-25'	25-30'	8'-10' ht.	B&B	Large 3-4" flowers before leaves, Specimen
JTL	4	Japanese Tree Lilac	Syringa reticulata	3	20-30'	15-25'	2-1/2" cal.	B&B	tough, full sun
PSC	2	Pink Spires Crabapple	Malus 'pink spires'	2	20-25'	12-15'	2-1/2" cal.	B&B	
Evergreen Trees & Accent Evergreens									
CNCF	1	White Fir	Abies concolor	3	30-50'	15-20'	7'-8' ht.	B&B	Soft blue green foliage
DRK	3	Dark American Arborvitae	Thuja occidentalis 'nigra'	4	10-30'	10-12'	6'-7' ht.	B&B	columnar, wide base, shade tolerant
GHFC	2	Gracilis Hinoki Falsecypress	Chamaecyparis obtusa 'gracilis'	4	15-20'	6-8'	6'-7' ht.	B&B	Pyramidal, specimen form
MSA	5	Mission Arborvitae	Thuja occidentalis 'techney'	3	10-15'	6-8'	6'-7' ht.	B&B	columnar, shade tolerant
MTB	4	Mountbatten Juniper	Juniperus chinensis 'mountbatten'	4	15'	6'	6' ht.	B&B	columnar
VRY	6	Viridis Yew	Taxus media 'viridis'	4	10-15'	12-24"	4'-4 1/2' ht.	B&B	Very upright narrow form, great vertical accent
Low, Evergreen Ground Cover									
ELY	4	Ever-Low Yew	Taxus media 'ever-low'	4	1.5'	4-6'	18"-24" spd.	B&B	Hardy, shade tolerant
HSCP	3	Hillside Creeper Scotch Pine	Pinus sylvestris 'hillside creeper'	3	1-2'	6-8'	3' spd.	B&B	
RSCP	4	Russian Cypress	Microbiata decussata	2	1-2'	4-5'	18"-24" spd.	CTN	Sun and shade, arborvitae like foliage
GLS	5	Global Blue Spruce	Picea pungens 'glauca globosa'	2	5-6'	5-6'	10 gal.	CTN	Compact, flat topped rounded form
Accent/Flowering Evergreen Shrubs									
BBA	5	Brouwer's Beauty Andromeda	Pieris 'brouwer's beauty'	5	5'	5'	2'-3' ht.	B&B	
CNW	3	Cunningham White Rhododendron	Rhododendron cat. 'cunningham white'	4	4-5'	4-5'	3'-3 1/2' ht.	B&B	shade, hardy
MFA	8	Mountain Fire Andromeda	Pieris japonica 'mountain fire'	5	9-12'	6-8'	7 gal.	CTN	Upright form, Pendulous white flowers
MTL4	3	Sarah Hybrid Mountain Laurel	Kalmia latifolia 'sarah'	4	3-1/2'	3-1/2'	5 gal.	CTN	Small Accent
PJM	2	PJM Rhododendron	Rhododendron 'PJM'	4	6-8'	6'	3'-3 1/2' ht.	B&B	full sun, hardy
PRG	8	Purple Gem Rhododendron	Rhododendron 'Purple gem'	4	2'	4'	18"-24" spd.	CTN	full sun, hardy, low
Deciduous Flowering Shrubs									
FLH-2	8	Blushing Bride Hydrangea	Hydrangea 'blushing bride'	4	3-4'	3-4'	5 gal.	CTN	Partial shade, White flowers continuous bloom to fall
FLH-5	3	Twist & Shout Hydrangea	Hydrangea 'twist & shout'	4	3-4'	3-4'	5 gal.	CTN	Partial shade, Lace cap multi color, continuous bloom to fall
GFS	4	Gold Flame Spirea	Spirea x bumalda 'gold flame'	4	2-3'	3-4'	18"-24" spd.	CTN	New foliage mottled with red/copper/orange
CLS	10	Crispleaf Spirea	Spirea x bulmalda 'crispa'	4	3-4'	3-4'	3 gal.	CTN	Compact facer, Serrated & twisted foliage
MFV	3	Mayflower Viburnum	Viburnum carlesi	4	6-8'	6-8'	4'-5' ht.	B&B	shade tolerant, wetland
RVE	3	Redvein Enkianthus	Enkianthus campanulatus	4	8-10'	6-8'	4'-5' ht.	B&B	partial shade
ANWS	19	Anthony Waterer Spirea	Spirea	3	3-4'	4-5'	5 gal.	CTN	Reddish purple new foliage, pink flowers
PNKV	1	Pink Dawn Viburnum	Viburnum bodnantense 'pink dawn'	3	10'	7'	4'-5' ht.	B&B	Upright form
AFROG	14	Arctic Fire Red Osier Dogwood	Cornus sericea 'arctic fire'	3	5-6'	4-5'	5 gal.	CTN	Sun/Shade, Bright red stems for winter interest
PXA	4	Pinxterbloom Azalea	Azalea periclymenoides (nudiflorum)	3	5-6'	4-5'	5 gal.	CTN	Spring blooming densely branched, dry sandy soil
Decorative Grasses									
DCGR-4	16	Purple Lovegrass	Eragrostis spectabilis	4	18-24"	30"	1 yr. potted	2 gal.	18"-24", S, Aug/Oct, bronze-red seed heads
DCGR-9	10	Cabaret Silver Grass	Miscanthus sinensis 'cabaret'	4	5-6'	36"	2 gal	CTN	5-6', S, Aug/Oct, wide white/green stripped foliage, White plumes
Perennials/Seasonal Color									
S - Sun; S/Sh - Sun/Shade; S/PSh - Sun and Part Shade; PSh - Part Shade; PSh/Sh - Part Shade/Shade									
Sym	Qty	Common Name	Botanical Name	Zone	Habit of Growth Height	Spread	Type	Size	Features Ht., Exposure, Bloom Period, Color
GC.A-3	24	Daylily	Hemerocallis flava - 'Lemon Lily'				1 yr. potted	2 qt	36", S/PSh, June/July, Lemon Yellow
GC.A-9	23	Daylily	Hemerocallis flava 'Siloam Dbl. Classic'				1 yr. potted	2 qt	18", S/PSh, June, Double Soft Salmon Pink
GC.C-1	17	Purple Coneflower	Echinacea purpurea 'Pica bella'				1 yr. potted	2 qt	24"-29",S/PSh, July/Sept, Deep Pink
GC.C-3	12	White Coneflower	Echinacea purpurea 'White Swan'				1 yr. potted	2 qt	18"-24",S/PSh, June/Sept, White
GC.D-1	6	Little Spire Russian Sage	Perovskia atriplicifolia 'little spire'	4			1 yr. potted	2 qt	18"-24", S, July/Sept, Medium Violet
GC.G-2	10	Coral Belles	Heuchera 'Bronze Wave'	4			1 yr. potted	1 gal.	18", S/PSh, Sept/Oct, Bronze-Purple foliage, tan flowers
GC.H-5	10	Hosta	Hosta 'Royal Standard'				1 yr. potted	1 gal.	24-28", S/Sh, Aug/Sept, White flower, Rich Grn leaf
GC.H-7	5	Hosta	Hosta 'golden tiara'	3			1 yr. potted	1 gal.	10", S/PSh, July/Aug, dark purple
GC.I	63	Lowbush Blueberry	Vaccinium angustifolium				1 yr. potted	2 qt	12", S, May, Violet-Blue
GC.X-3	12	Bloody Cransbill	Geranium sanguineum 'NH Purple'				1 yr. potted	2 qt	8"-12", S/PSh, May/Sept, Magenta Pink
GC.ZZ	10	Black Eyed Susan	Rudbeckia fulgida 'Goldsturm'				1 yr. potted	1 gal.	24-36", S/PSh, Jul/Aug, golden yellow-black center
0	SF	Seasonal Annual Beds	Mixed selection by Landscape Maintenance Contractor, Directed by Owner						
Lawns/Seeding									
0	SF	Soded Fine Lawn	fine Grade, fertilize, seed and Hydromulch (Kentucky Bluegrass and Creeping Red Fescue Blend)						

Notes:

1.) All planting beds shall be mulched with a minimum of 3" of shredded pine bark mulch.
2.) All sod and/or seeded lawn areas to have minimum 6" topsoil blanket.
3.) All native grass seeded areas to have minimum 4" topsoil blanket.
4.) All plant material to conform to current AAN, American Standard for Nursery Stock, ANSI Z60.1-2006.
5.) All mass planted shrub beds and planters around building shall receive a minimum 18" deep topsoil blanket to compensate for the very sandy/granular sub-grade material expected on this site. Topsoil shall meet requirements as called out in specifications.

Planting Notes

1. Design is based on drawings by Ambit Engineering, Inc., dated June 18, 2018 and may require adjustment due to actual field conditions.
2. This project shall comply with the City of Portsmouth, NH Construction Standards and Details.
3. The contractor shall follow best management practices during construction and shall take all means necessary to stabilize and protect the site from erosion
4. Erosion Control shall be in place prior to construction.
5. If discrepancies exist between the number of plants drawn on the planting plan and the number of plants in the plant list, the planting plan shall govern.
6. All new plant material shall conform to the minimum guidelines established for nursery stock published by the American Association of Nurserymen, Inc. In addition all new plant material for the project shall be of specimen quality.
7. All new plants to be balled and burlapped or container - grown, unless otherwise noted on the plant list. All plants shall be legibly tagged with the proper botanical name.
8. The contractor shall supply all new plant material in quantities sufficient to complete the planting shown on the drawings.
9. Any proposed substitutions of plant species shall be made with plants of equivalent overall form, height, branching habit, flower leaf, color, fruit and culture, and only after written approval of the Landscape Architect.
10. Contractor shall locate and verify all existing utility lines prior to planting and shall report any conflicts to the Landscape Architect.
11. Stake the location of all proposed plantings for approval by Landscape Architect prior to the commencement of planting.
12. New shrubs and ground cover shall bear the same relationship to grade as it bore to previous grade at nursery. Trees shall be set 2" higher than previous grade. No tress shall be planted before acceptance of rough grading.
13. Planting Soil Mix shall consist of: 3 parts sandy loam topsoil, 1.0 part 1/4" minus composted pine bark mulch and .5 parts of composted cow manure.
14. All plant beds to receive two inches (3") of bark mulch. Bark mulch shall be one year old, well composted, shredded native bark not longer than 4" in length and ½" in width, free of woodchips and sawdust. Mulch for ferns and herbaceous perennial shall be no longer than 1" in length. Trees in lawn areas shall be mulched in a 6' diameter minimum saucer. Color of mulch shall be dark brown. Red, orange/red or black colored mulch is not acceptable.
15. Landscape (weed) fabric is not allowed.
16. All existing trees to remain shall be properly protected during construction. Protection techniques shall be reviewed and approved by the Landscape Architect.
17. Prune trees and large shrubs in accordance to guidelines established for nursery stock published by the American Association of Nurserymen, Inc.
18. All disturbed areas will be dressed with 6" of topsoil and planted as noted on the plans or seeded except plant beds. Plant beds shall be prepared to a depth of 12" with 75% loam and 25% of ¼" minus composted bark mulch compost.
19. All alterations to these drawings made in the field during construction shall be recorded by the contractor on "as-built drawings."
20. There shall be a full one (1) year replacement guarantee for all trees and shrubs after final acceptance of initial planting.

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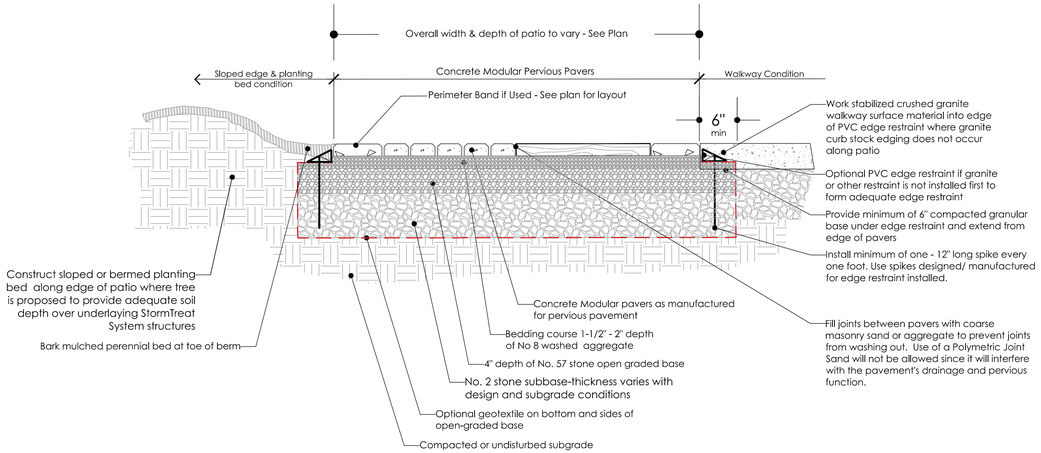
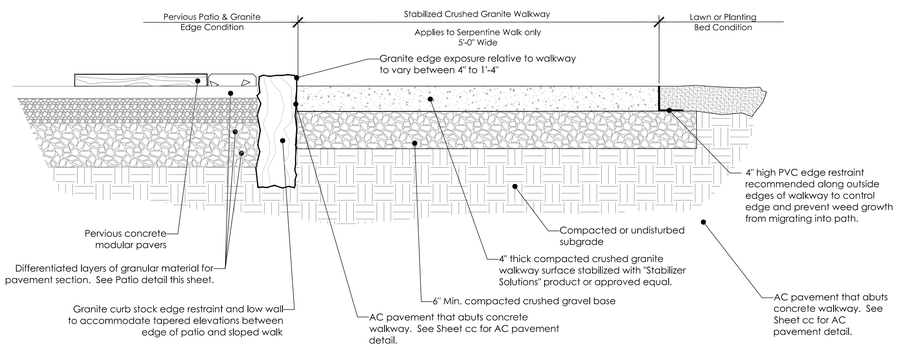
Plant Schedule & Planting Notes

LA-3.0



Pervious Pavement Patio Section Detail

Scale: 1" = 1'-0"



Stabilized Crushed Granite Walk Section Detail

Scale: 1" = xx'

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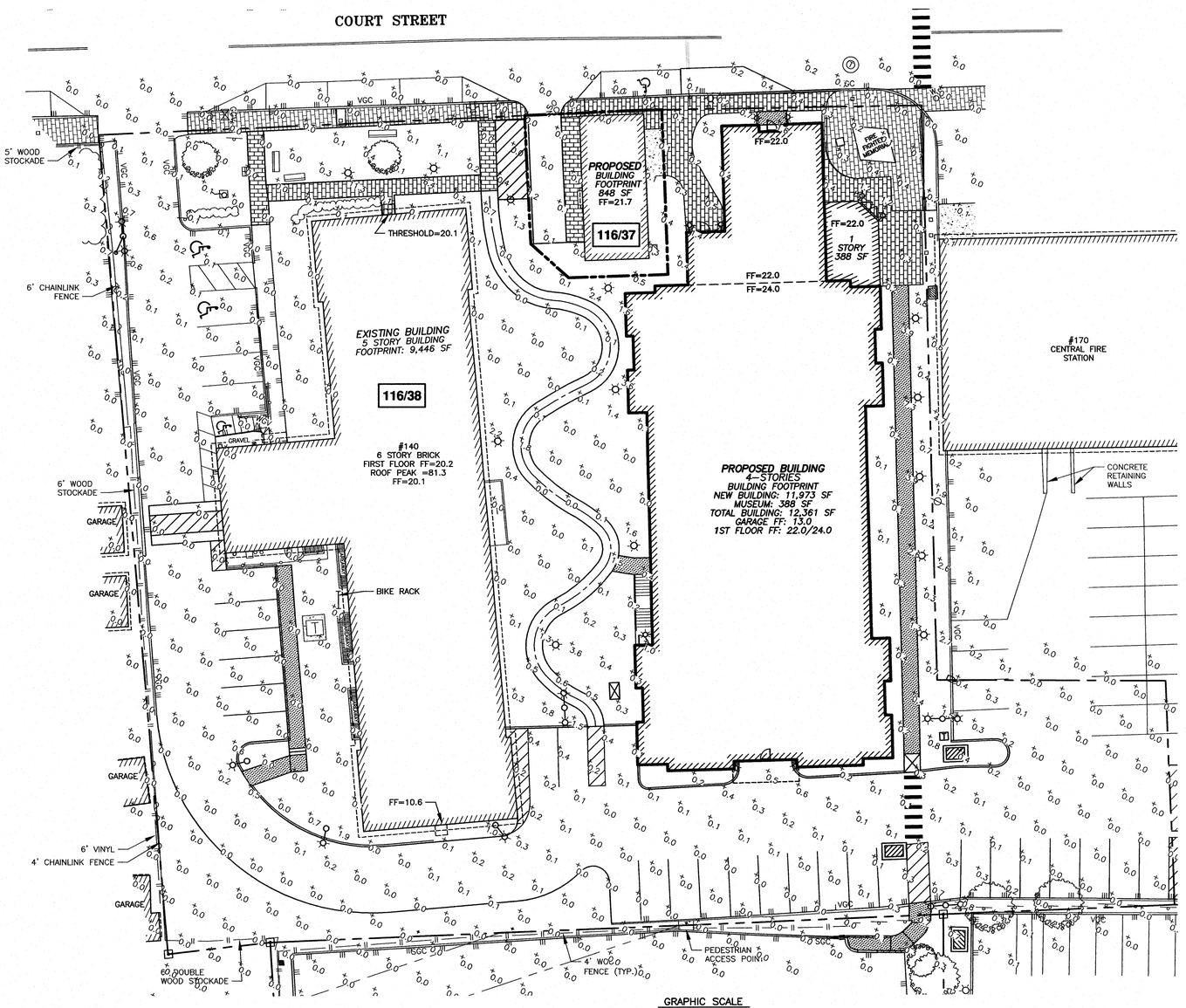
sheet title/number:

Construction Details

LA-4.0

LUMINAIRE SCHEDULE

SYMBOL	LABEL	QTY.	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	LAMP	NUMBER LAMPS	LUMENS PER LAMP	LIGHT LOSS FACTOR	WATTAGE
☼	A	14	AURORALIGHT	LBD 350 C11 GTR NL 12 32 300K	CONICAL 11" STACKED COPPER SHADES WITH NO LOUVERS AND CYLI NDRICAL 32" COPPER STEM WITH BRASS BASE; HT 3'	LED	1	395	0.9	12.42
○☼	B	3	AURORALIGHT	LML 350 C11 GRL 30 P	CONICAL 11" STACKED COPPER SHADES WITH LOUVERS, PAINTED WHITE UNDERSIDE AND FROSTED GLASS LENS, HT 10'	LED	1	400	0.9	18.012
☼○☼	C	4	AURORALIGHT	LML 350 C11 GRL 30 P	CONICAL 11" STACKED COPPER SHADES WITH LOUVERS, PAINTED WHITE UNDERSIDE AND FROSTED GLASS LENS, HT 10'	LED	2	800	0.9	36.024
☼	D	9	AURORALIGHT	LML 350 C11 GRL 30 P	CONICAL 11" STACKED COPPER SHADES WITH LOUVERS, PAINTED WHITE UNDERSIDE AND FROSTED GLASS LENS, ARM LENGTH 1'	LED	1	400	0.9	18.012



AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1–888–DIG–SAFE (1–888–344–7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

4) POLE MOUNTED LIGHTS SHALL HAVE A MAXIMUM FIXTURE OF HEIGHT OF 20 FEET.

5) ALL LIGHTING SHALL BE SHIELDED TO MINIMIZE LIGHT TRESPASS AND DIRECT GLARE BEYOND THE PROPERTY.

6) ALL LIGHTS SHALL BE DARK SKY COMPLIANT AND DIRECTED DOWNWARD.

7) LIGHTING PLAN PREPARED USING AGI32 SOFTWARE. LIGHTING DESIGN BASED ON .IES FILES THAT WERE LAB–TESTED OR COMPUTER GENERATED. ACTUAL RESULTS MAY VARY DEPENDING ON FIELD CONDITIONS, AREA GEOMETRY OR CHANGES IN ELECTRICAL SUPPLY VOLTAGE.

8) LIGHTS SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.

PORTSMOUTH HOUSING AUTHORITY 140 COURT STREET PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	4/25/18
	REVISIONS	

SCALE: 1'=20' FEBRUARY 2018

LIGHTING PLAN

LT1

FB 321 PG19

2790

J:\JOBS2\JN2700's\JN 2790's\JN 2790\2017 Site Planning\Plans & Specs\Site\2790SITE3.dwg, LIGHT_C7

EROSION CONTROL NOTES

CONSTRUCTION SEQUENCE

DO NOT BEGIN CONSTRUCTION UNTIL ALL LOCAL, STATE AND FEDERAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED.

IF REQUIRED THE CONTRACTOR SHALL OBTAIN AN **NPDES** PHASE II STORMWATER PERMIT AND SUBMIT A NOTICE OF INTENT (N.O.I) BEFORE BEGINNING CONSTRUCTION AND SHALL HAVE ON SITE A STORMWATER POLLUTION PREVENTION PLAN (**S.W.P.P.P.**) AVAILABLE FOR INSPECTION BY THE PERMITTING AUTHORITY DURING THE CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CARRYING OUT THE **S.W.P.P.P.** AND INSPECTING AND MAINTAINING ALL BMP'S CALLED FOR BY THE PLAN. THE CONTRACTOR SHALL SUBMIT A NOTICE OF TERMINATION (**N.O.T.**) FORM TO THE REGIONAL EPA OFFICE WITHIN 30 DAYS OF FINAL STABILIZATION OF THE ENTIRE SITE OR TURNING OVER CONTROL OF THE SITE TO ANOTHER OPERATOR.

INSTALL PERIMETER CONTROLS, i.e., SILTSOXX AND CATCH BASIN PROTECTION AROUND THE LIMITS OF DISTURBANCE BEFORE ANY EARTH MOVING OPERATIONS. THE USE OF HAYBALES IS NOT ALLOWED.

CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE.

CUT AND GRUB ALL TREES, SHRUBS, SAPLINGS, BRUSH, VINES AND REMOVE OTHER DEBRIS AND RUBBISH AS REQUIRED. DEMOLISH BUILDINGS AND FENCES AS NEEDED.

LAYOUT AND INSTALL ALL BURIED UTILITIES AND SERVICES UP TO 10' OF THE PROPOSED BUILDING FOUNDATIONS. CAP AND MARK TERMINATIONS OR LOG SWING TIES.

CONSTRUCT BUILDINGS.

CONNECT UTILITIES.

PLACE BINDER LAYER OF PAVEMENT, THEN RAISE CATCH BASIN FRAMES TO FINAL GRADE. REINSTALL BASIN INLET PROTECTION.

PLANT LANDSCAPING IN AREAS OUT OF WAY OF BUILDING CONSTRUCTION. PREPARE AND STABILIZE FINAL SITE GRADING BY ADDING TOPSOIL, SEED, MULCH AND FERTILIZER.

AFTER BUILDINGS ARE COMPLETED, FINISH ALL REMAINING LANDSCAPED WORK.

CONSTRUCT ASPHALT WEARING COURSE.

REMOVE TRAPPED SEDIMENTS FROM COLLECTION DEVICES AS APPROPRIATE, AND THEN REMOVE TEMPORARY EROSION CONTROL MEASURES UPON COMPLETION OF FINAL STABILIZATION OF THE SITE.

GENERAL CONSTRUCTION NOTES

THE EROSION CONTROL PROCEDURES SHALL CONFORM TO SECTION 645 OF THE "STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION" OF THE NHDOT, AND "STORM WATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE". THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED. THE SMALLEST PRACTICAL AREA OF LAND SHOULD BE EXPOSED AT ANY ONE TIME DURING DEVELOPMENT. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED FOR MORE THAN 45 DAYS.

ANY DISTURBED AREAS WHICH ARE TO BE LEFT TEMPORARILY, AND WHICH WILL BE REGRADED LATER DURING CONSTRUCTION SHALL BE MACHINE HAY MULCHED AND SEEDED WITH RYE GRASS TO PREVENT EROSION.

DUST CONTROL: IF TEMPORARY STABILIZATION PRACTICES, SUCH AS TEMPORARY VEGETATION AND MULCHING, DO NOT ADEQUATELY REDUCE DUST GENERATION, APPLICATION OF WATER OR CALCIUM CHLORIDE SHALL BE APPLIED IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES.

SILT FENCES AND SILTSOXX SHALL BE PERIODICALLY INSPECTED DURING THE LIFE OF THE PROJECT AND AFTER EACH STORM. ALL DAMAGED SILT FENCES AND SILTSOXX SHALL BE REPAIRED. SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED IN A SECURED LOCATION.

AVOID THE USE OF FUTURE OPEN SPACES (LOAM AND SEED AREAS) WHEREVER POSSIBLE DURING CONSTRUCTION. CONSTRUCTION TRAFFIC SHALL USE THE ROADBEDS OF FUTURE ACCESS DRIVES AND PARKING AREAS.

ADDITIONAL TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED IN AMOUNTS NECESSARY TO COMPLETE FINISHED GRADING OF ALL EXPOSED AREAS—CONSTRUCT SILT FENCE OR SILTSOXX AROUND TOPSOIL STOCKPILE.

AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL. STUMPS SHALL BE DISPOSED OF IN AN APPROVED FACILITY.

ALL FILLS SHALL BE PLACED AND COMPACTED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS.

ALL NON–STRUCTURAL, SITE–FILL SHALL BE PLACED AND COMPACTED TO 90% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 18 INCHES IN THICKNESS UNLESS OTHERWISE NOTED.

FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIAL, TRASH, WOODY DEBRIS, LEAVES, BRUSH OR ANY DELETERIOUS MATTER SHALL NOT BE INCORPORATED INTO FILLS.

FILL MATERIAL SHALL NOT BE PLACED ON FROZEN FOUNDATION SUBGRADE.

DURING CONSTRUCTION AND UNTIL ALL DEVELOPED AREAS ARE FULLY STABILIZED, ALL EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EACH ONE HALF INCH OF RAINFALL.

THE CONTRACTOR SHALL MODIFY OR ADD EROSION CONTROL MEASURES AS NECESSARY TO ACCOMMODATE PROJECT CONSTRUCTION.

ALL ROADWAYS AND PARKING AREAS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.

AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
- BASE COURSE GRAVELS HAVE BEEN INSTALLED ON AREAS TO BE PAVED
- A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
- A MINIMUM OF 3 INCHES OF NON–EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED
- EROSION CONTROL BLANKETS HAVE BEEN INSTALLED

VEGETATIVE PRACTICE

FOR PERMANENT MEASURES AND PLANTINGS:

LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM LAYER AT A RATE OF 2 TONS PER ACRE.

FERTILIZER SHALL BE SPREAD ON THE TOP LAYER OF LOAM AND WORKED INTO THE SURFACE. FERTILIZER APPLICATION RATE SHALL BE 500 POUNDS PER ACRE OF 10–20–20 FERTILIZER.

SEED SHALL BE SOWN AT THE RATES SHOWN IN THE TABLE BELOW. IMMEDIATELY BEFORE SEEDING, THE SOIL SHALL BE LIGHTLY RAKED. ONE HALF THE SEED SHALL BE SOWN IN ONE DIRECTION AND THE OTHER HALF AT RIGHT ANGLES TO THE ORIGINAL DIRECTION. IT SHALL BE LIGHTLY RAKED INTO THE SOIL TO A DEPTH NOT OVER 1/4 INCH AND ROLLED WITH A HAND ROLLER WEIGHING NOT OVER 100 POUNDS PER LINEAR FOOT OF WIDTH. HAY MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING AT A RATE OF 1.5 TO 2 TONS PER ACRE, AND SHALL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE EROSION AND SEDIMENT CONTROL HANDBOOK.

THE SURFACE SHALL BE WATERED AND KEPT MOIST WITH A FINE SPRAY AS REQUIRED, WITHOUT WASHING AWAY THE SOIL, UNTIL THE GRASS IS WELL ESTABLISHED. ANY AREAS WHICH ARE NOT SATISFACTORILY COVERED SHALL BE RESEEDED, AND ALL NOXIOUS WEEDS REMOVED.

A GRASS SEED MIXTURE CONTAINING THE FOLLOWING SEED REQUIREMENTS SHALL BE:

GENERAL COVER	PROPORTION	SEEDING RATE
CREEPING RED FESCUE	50%	100 LBS/ACRE
KENTUCKY BLUEGRASS	50%	

SLOPE SEED (USED ON ALL SLOPES GREATER THAN OR EQUAL TO 3:1)

CREEPING RED FESCUE	42%	
TALL FESCUE	42%	48 LBS/ACRE
BIRDSFOOT TREFOIL	16%	

IN NO CASE SHALL THE WEED CONTENT EXCEED ONE PERCENT BY WEIGHT. ALL SEED SHALL COMPLY WITH APPLICABLE STATE AND FEDERAL SEED LAWS.

FOR TEMPORARY PROTECTION OF DISTURBED AREAS:
MULCHING AND SEEDING SHALL BE APPLIED AT THE FOLLOWING RATES:
PERENNIAL RYE: 0.7 LBS/1,000 S.F.
MULCH: 1.5 TONS/ACRE

MAINTENANCE AND PROTECTION

THE CONTRACTOR SHALL MAINTAIN ALL LOAM & SEED AREAS UNTIL FINAL ACCEPTANCE AT THE COMPLETION OF THE CONTRACT. MAINTENANCE SHALL INCLUDE WATERING, WEEDING, REMOVAL OF STONES AND OTHER FOREIGN OBJECTS OVER 1/2 INCHES IN DIAMETER WHICH MAY APPEAR AND THE FIRST TWO (2) CUTTINGS OF GRASS NO CLOSER THEN TEN (10) DAYS APART. THE FIRST CUTTING SHALL BE ACCOMPLISHED WHEN THE GRASS IS FROM 2 1/2 TO 3 INCHES HIGH. ALL BARE AND DEAD SPOTS WHICH BECOME APPARENT SHALL BE PROPERLY PREPARED, LIMED AND FERTILIZED, AND RESEEDED BY THE CONTRACTOR AT HIS EXPENSE AS MANY TIMES AS NECESSARY TO SECURE GOOD GROWTH. THE ENTIRE AREA SHALL BE MAINTAINED, WATERED AND CUT UNTIL ACCEPTANCE OF THE LAWN BY THE OWNER'S REPRESENTATIVE.

THE CONTRACTOR SHALL TAKE WHATEVER MEASURES ARE NECESSARY TO PROTECT THE GRASS WHILE IT IS DEVELOPING.

TO BE ACCEPTABLE, SEEDED AREAS SHALL CONSIST OF A UNIFORM STAND OF AT LEAST 90 PERCENT ESTABLISHED PERMANENT GRASS SPECIES, WITH UNIFORM COUNT OF AT LEAST 100 PLANTS PER SQUARE FOOT.

SEEDED AREAS WILL BE FERTILIZED AND RESEEDED AS NECESSARY TO INSURE VEGETATIVE ESTABLISHMENT.

THE SWALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY UNTIL ADEQUATE VEGETATION IS ESTABLISHED.

THE SILT FENCE OR SILTSOXX BARRIER SHALL BE CHECKED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.

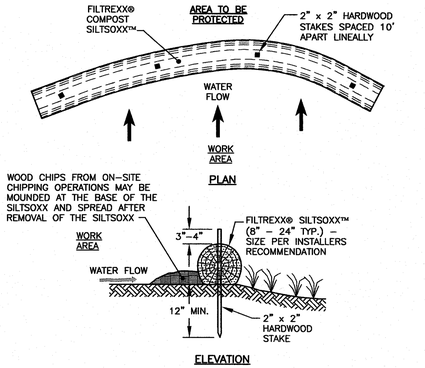
SILT FENCING AND SILTSOXX SHALL BE REMOVED ONCE VEGETATION IS ESTABLISHED, AND DISTURBED AREAS RESULTING FROM SILT FENCE AND SILTSOXX REMOVAL SHALL BE PERMANENTLY SEEDED.

WINTER NOTES

ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.

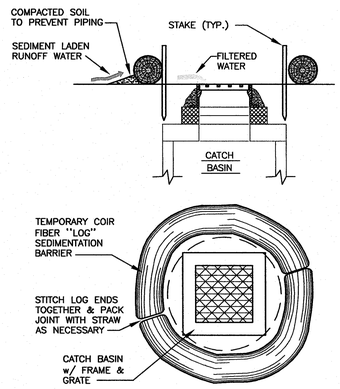
ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.



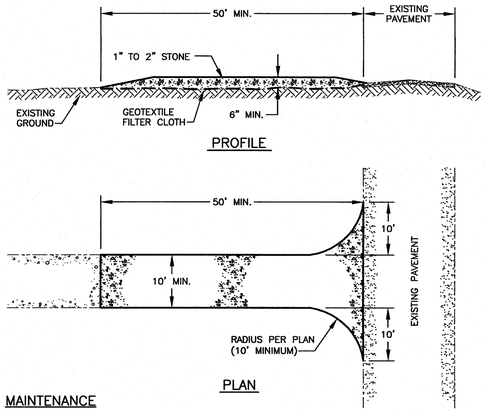
NOTES:
1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
2. FILLTREXX SYSTEM SHALL BE INSTALLED BY A CERTIFIED FILTREXX INSTALLER.
3. THE CONTRACTOR SHALL MAINTAIN THE COMPOST FILTRATION SYSTEM IN A FUNCTIONAL CONDITION AT ALL TIMES. IT WILL BE ROUTINELY INSPECTED AND REPAIRED WHEN REQUIRED.
4. SILTSOXX DEPICTED IS FOR MINIMUM SLOPES, GREATER SLOPES MAY REQUIRE ADDITIONAL PLACEMENTS.
5. THE COMPOST FILTER MATERIAL WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED, AS DETERMINED BY THE ENGINEER.

A / C6 FILTREXX® SILTSOXX™ FILTRATION SYSTEM (AS NEEDED) NTS



NOTE:
1. PRIOR TO INSTALLATION, SILT LOGS SHALL BE KEPT DRY AND STORED IN THEIR ORIGINAL WRAPPING.
2. MINIMUM CROSS SECTIONAL DIAMETER OF SILT LOGS: 12".
3. SILT LOGS MAY BE CUT AND RE–STITCHED AS NEEDED PER MANUFACTURERS RECOMMENDATIONS.
4. SILT LOGS SHALL BE INSPECTED AFTER EACH STORM EVENT.
5. REMOVE ACCUMULATED SILT WHEN DEPTH REACHES ONE HALF OF SILT LOG DIAMETER.
6. IF LOGS ARE TOO STIFF TO BEND AROUND CATCH BASIN INLET, THEY MAY BE CUT AND LAID SQUARE.

"SILT LOG" BARRIER AT CATCH BASIN INLET (AS NEEDED) NTS



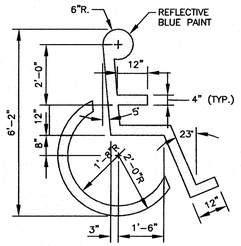
MAINTENANCE

1) MUD AND SOIL PARTICLES WILL EVENTUALLY CLOG THE VOIDS IN THE GRAVEL AND THE EFFECTIVENESS OF THE GRAVEL PAD WILL NOT BE SATISFACTORY. WHEN THIS OCCURS, THE PAD SHOULD BE TOP DRESSED WITH NEW STONE. COMPLETE REPLACEMENT OF THE PAD MAY BE NECESSARY WHEN THE PAD BECOMES COMPLETELY CLOGGED.
2) IF WASHING FACILITIES ARE USED, THE SEDIMENT TRAPS SHOULD BE CLEANED OUT AS OFTEN AS NECESSARY TO ASSURE THAT ADEQUATE TRAPPING EFFICIENCY AND STORAGE VOLUME IS AVAILABLE. VEGETATIVE FILTER STRIPS SHOULD BE MAINTAINED TO INSURE A VIGOROUS STAND OF VEGETATION AT ALL TIMES.

CONSTRUCTION SPECIFICATIONS

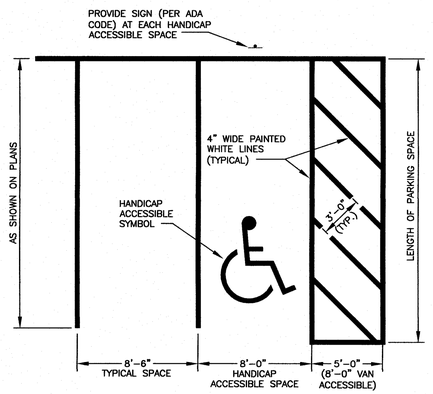
1) STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 1 TO 2 INCH STONE.
2) THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 50 FEET, EXCEPT FOR A SINGLE RESIDENTIAL LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY.
3) THE THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
4) THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS OR 10 FEET, WHICHEVER IS GREATER.
5) GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE. FILTER CLOTH IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENCE LOT.
6) ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
7) THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO PUBLIC RIGHT–OF–WAY MUST BE REMOVED PROMPTLY.
8) WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHT–OF–WAY, WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

B / C6 STABILIZED CONSTRUCTION ENTRANCE NTS



NOTES:
1) SYMBOL TO BE PAINTED IN ALL HANDICAPPED SPACES.
2) SYMBOL, PAINT AND SIGNAGE TO CONFORM TO AMERICANS WITH DISABILITIES ACT (ADA).
3) ALL VAN ACCESSIBLE SPACES SHALL HAVE "VAN ACCESSIBLE" PLATE INSTALLED ON SIGN POST BELOW HANDICAP SIGN.

HANDICAP ACCESSIBLE SYMBOL



C / C4 HANDICAP PARKING DETAIL NTS

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801–7114
Tel (603) 430–9282
Fax (603) 436–2315

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1–888–DIG–SAFE (1–888–344–7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

PORTSMOUTH HOUSING AUTHORITY 140 COURT STREET PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
2	ISSUED TO TAC	6/18/18
1	ISSUED FOR APPROVAL	4/25/18
0	ISSUED FOR COMMENT	2/20/18

REVISIONS

STATE OF NEW HAMPSHIRE – JOHN R. CRAGNON NO. 9861 LICENSED PROFESSIONAL ENGINEER

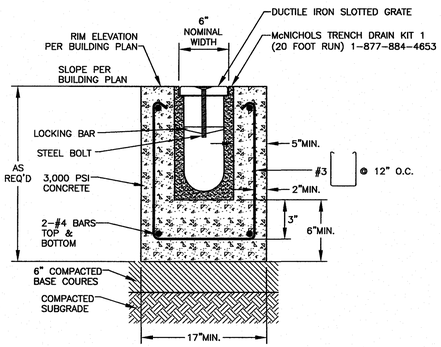
SCALE: AS SHOWN FEBRUARY 2018

EROSION PROTECTION NOTES AND DETAILS — **D1**

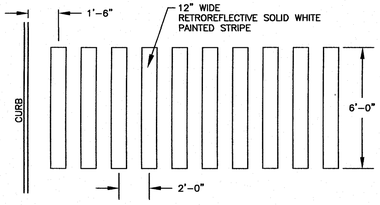
FB 321 PG 19

2790

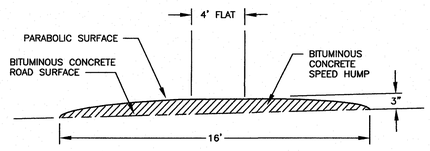
J:\JOBS2\N2700's\JN 2790's\JN 2790\2017 Site Planning\Plans & Specs\Site\27900703.dwg, DETAILS D1



D C4 TRENCH DRAIN DETAIL
NTS



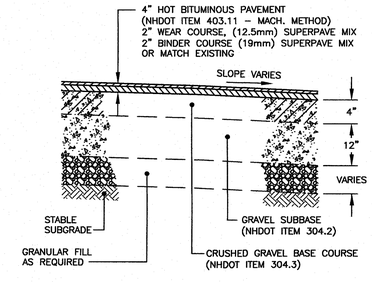
E C3 PAINTED CROSSWALK DETAIL
NTS



REFERENCE:
MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009, REVISED MAY 2012.

F C3 SPEED HUMP DETAIL
NTS

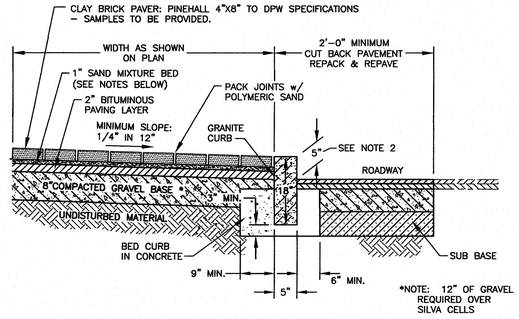
NOTE: STRIPE PER MUTCD STANDARDS



G C3 TYPICAL PAVEMENT CROSS-SECTION
NTS

CONSTRUCTION NOTE:

EXISTING GRANITE CURB DISTURBED BY CONSTRUCTION SHALL BE REUSED AND ANY MISSING CURB SHALL BE REPLACED WITH NEW CURB MATCHING EXISTING CURB SIZE. NO CURB LESS THAN 3' IN LENGTH WILL BE ALLOWED.



BRICK PAVEMENT NOTES

SCOPE OF WORK:

1) THE WORK SHALL CONSIST OF CONSTRUCTING/RECONSTRUCTING THE SUB-BASE AND CONSTRUCTING A NEW BRICK SIDEWALK AS DIRECTED IN THE FIELD BY THE ENGINEER.
2) REVEAL SHALL BE 5" (COORDINATE WITH PORTSMOUTH DPW).

METHODS OF CONSTRUCTION:

A) ALL LABOR AND MATERIALS SHALL CONFORM TO THE STATE OF NEW HAMPSHIRE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, SECTION 608, AND CITY OF PORTSMOUTH SPECIFICATIONS FOR NEW BRICK SIDEWALK, SECTION 6.

B) ALL BRICKS SHALL CONFORM TO THE REQUIREMENTS OF ASTM STANDARD SPECIFICATIONS FOR BUILDING BRICKS: CLASS SX, TYPE 1, APPLICATION PX. THE BRICKS SHALL BE NO. 1, WIRE CUT TYPE FOR PAVING, WITH A COMPRESSIVE STRENGTH OF NOT LESS THAN 6,000 POUNDS PER SQUARE INCH. THE BRICKS SHALL NOT BE CORED OR HAVE FROGS AND SHALL BE OF A STANDARD SIZE (2.25" X 4 X 8").

C) EXCAVATION FOR SIDEWALKS SHALL BE AT A DEPTH OF 10 INCHES BELOW FINISH GRADE. IN AREAS NOT BUTTING CURBING OR BUILDINGS, THE EXCAVATION SHALL BE 6 INCHES WIDER THAN THE FINISHED SIDEWALK WIDTH. AT ALL DRIVE CROSSINGS, THE DEPTH OF EXCAVATION SHALL BE INCREASED ACCORDINGLY. THE CONTRACTOR SHALL PROVIDE NEAT AND SQUARE CUTTING OF EXISTING ASPHALT ROAD SURFACE AS NEEDED. ALL UNSUITABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF OFF-SITE AT THE CONTRACTOR'S OWN EXPENSE.

D) THE BASE MATERIAL SHALL CONSIST OF A MIXTURE OF STONES OR ROCK FRAGMENTS AND PARTICLES WITH 100% PASSING THE 3 INCH SIEVE, 95% TO 100% PASSING THE 2 INCH SIEVE, 55% TO 85% PASSING THE 1 INCH SIEVE, AND 27% TO 52% PASSING THE NO. 4 SIEVE. AT LEAST 50% OF THE MATERIALS RETAINED ON THE 1 INCH SIEVE SHALL HAVE A FRACTURED FACE. THE BASE MATERIAL SHALL BE THOROUGHLY COMPACTED TO THE DEPTH SPECIFIED OR DIRECTED. IN THE WAY OF ALL DRIVE CROSSINGS THE BASE WILL BE INCREASED TO A COMPACTED DEPTH OF 12 INCHES. GRAVEL REQUIREMENTS FOR RECONSTRUCTION WILL BE AS DIRECTED, BASED ON SITE CONDITIONS. THE WORK INCLUDES BACKING UP ANY AND ALL CURB BEING INSTALLED BY OTHERS ON BOTH SIDES.

E) THE CLAY BRICK PAVERS SHALL BE LAID IN A 1 INCH BED OF A SAND MIXTURE COMPRISED OF: 3 PARTS SAND MIXED WITH 1 PART PORTLAND CEMENT.

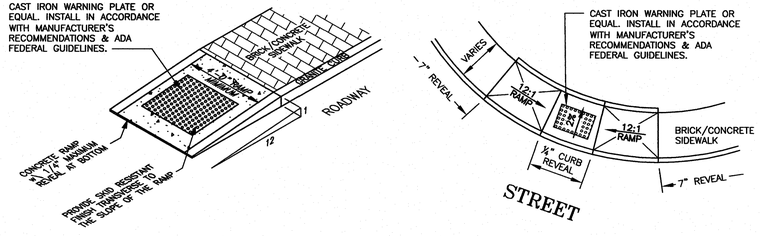
F) THE CONTRACTOR SHALL LAY THE BRICKS SO THAT APPROXIMATELY 5.2 BRICKS SHALL COVER ONE SQUARE FOOT.

G) THE SIDEWALK SHALL PITCH TOWARDS THE STREET AS SHOWN ON THE GRADING PLAN.

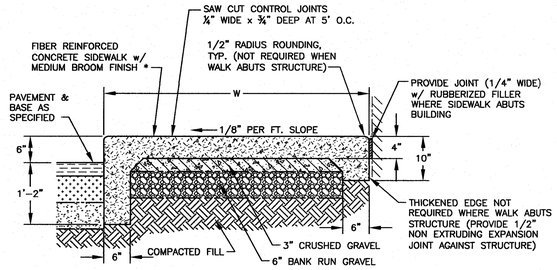
H) IN AREAS WHERE THE FRONT OF THE BRICK SIDEWALK IS NOT ADJACENT TO GRANITE CURBING, THE CONTRACTOR SHALL INSTALL EDGING TO HOLD THE BRICKS IN PLACE. SUCH EDGING SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS.

I) THE CONTRACTOR SHALL SUBMIT A SAMPLE OF THE BRICKS FOR APPROVAL BY THE CITY BEFORE BRICKS ARE INSTALLED.

H C3 BRICK SIDEWALK w/ VERTICAL GRANITE CURB
(STONE DUST BEDDING OVER BITUMINOUS PAVING) NTS

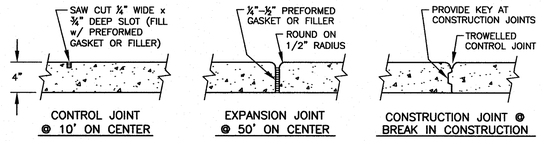


I C3 TYPICAL SIDEWALK TIP DOWNS
NTS

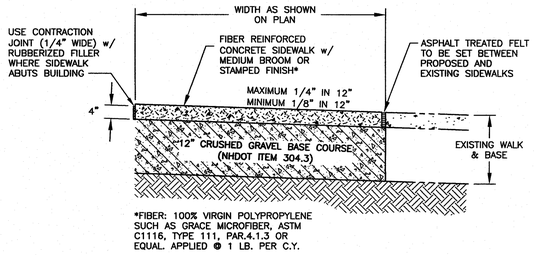


*FIBER: 100% VIRGIN POLYPROPYLENE SUCH AS GRACE MICROFIBER, ASTM C1116, TYPE 111, PAR.4.1.3 OR EQUAL. APPLIED @ 1 LB. PER C.Y.

CROSS SECTION

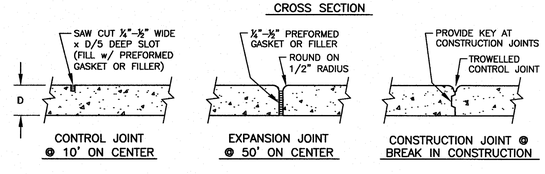


J C3 CONCRETE WALK w/ CONCRETE CURB
NTS



*FIBER: 100% VIRGIN POLYPROPYLENE SUCH AS GRACE MICROFIBER, ASTM C1116, TYPE 111, PAR.4.1.3 OR EQUAL. APPLIED @ 1 LB. PER C.Y.

CROSS SECTION



K C3 PORTLAND CEMENT CONCRETE SIDEWALK
NTS

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

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PORTSMOUTH HOUSING AUTHORITY 140 COURT STREET PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
2	ISSUED TO TAC	6/18/18
1	ISSUED FOR APPROVAL	4/25/18
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REVISIONS

JOHN R. CHAGNON NO. 7651 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

SCALE: AS SHOWN FEBRUARY 2018

DETAILS D2

FB 321 PG 19

2790

J:\JOBS2\JN2700's\JN 2790's\JN 2790\2017 Site Planning\Plans & Specs\Site\2790DT03.dwg, DETAILS D2

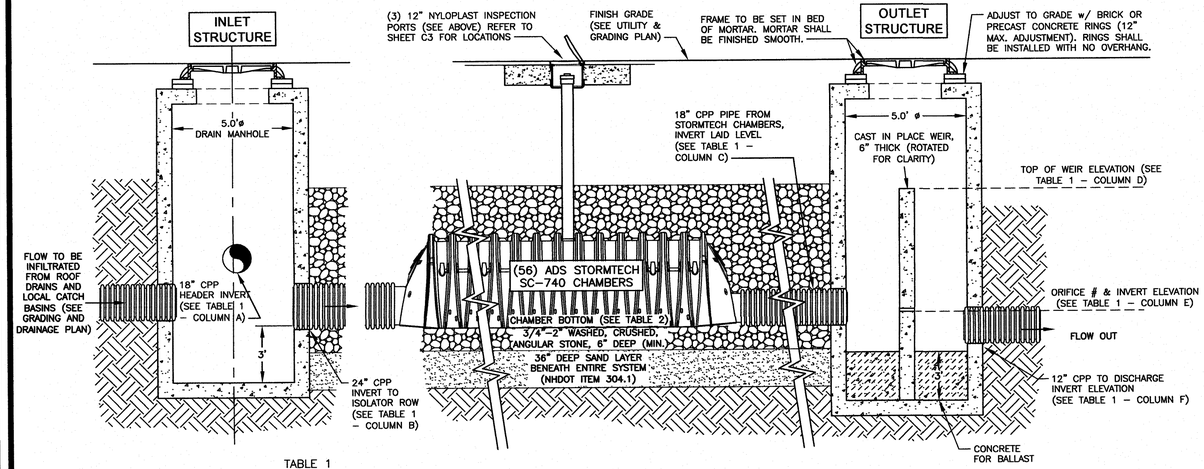
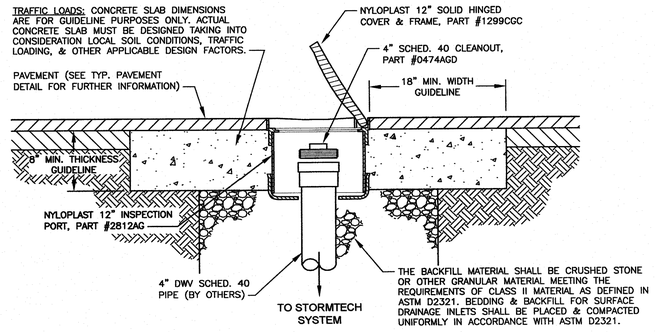


TABLE 1

SYSTEM #	A	B	C	D	E	F
1	11.25	11.00	11.00	14.50	(3) – 2" (EL.-11.50)	11.40
2	7.25	7.00	7.00	10.50	(3) – 2" (EL.-7.50)	7.40

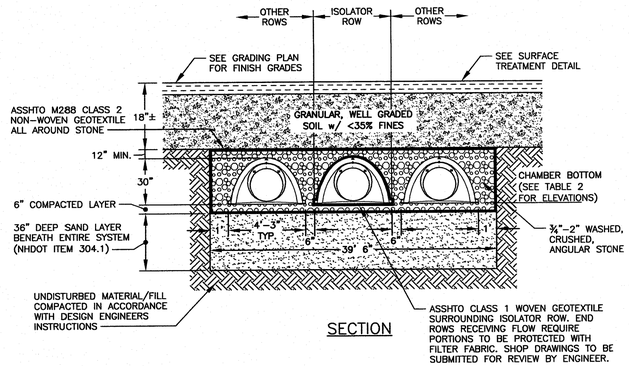
N C6 STORMWATER INLET & OUTLET CONTROL STRUCTURES

NTS



NYLOPLAST 12" INSPECTION PORT

(TRAFFIC RATED INSTALLATION)



SECTION

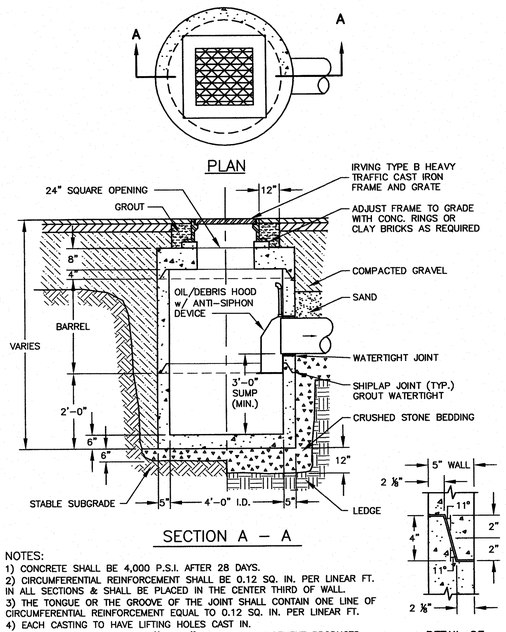
TABLE 2

SYSTEM #	CHAMBER BOTTOM
1	11.00
2	7.00

N C6 STORMTECH SC-740 STORMWATER CHAMBER SYSTEM

INSTALL PER MANUFACTURER'S INSTRUCTIONS (1-888-892-2694). A STORMTECH REPRESENTATIVE SHALL BE CONSULTED PRIOR TO CONSTRUCTION AND ON SITE DURING CONSTRUCTION OF THE STORMTECH SYSTEM

NTS



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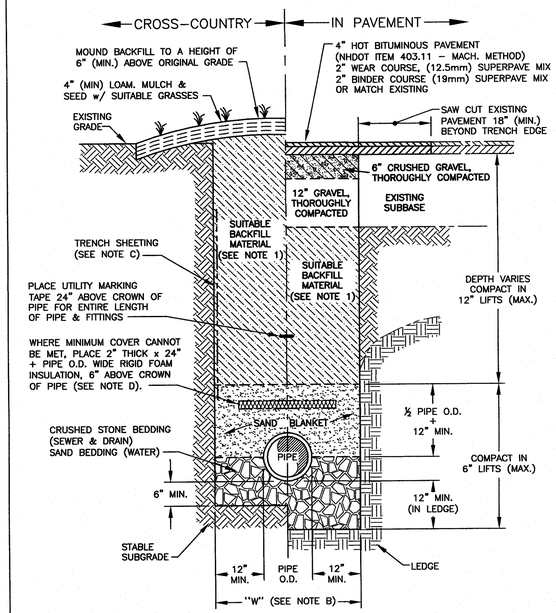
2) CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER LINEAR FT. IN ALL SECTIONS & SHALL BE PLACED IN THE CENTER THIRD OF WALL.
3) THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FT.
4) EACH CASTING TO HAVE LIFTING HOLES CAST IN.
5) OUTLET HOOD SHALL BE A "SNOUT" BY BEST MANAGEMENT PRODUCTS, INC. OR APPROVED EQUAL. SIZING AND INSTALLATION PER MANUFACTURER'S RECOMMENDATIONS.

M C5 CATCH BASIN w/ OIL-DEBRIS HOOD

NTS



TRENCH NOTES:

A) TRENCH BACKFILL:
– IN PAVED AREAS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER SIX INCHES IN LARGEST DIMENSION, OR ANY MATERIALS DEEMED TO BE UNACCEPTABLE BY THE ENGINEER.

– IN CROSS-COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE.

B) "W" = MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES. FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D..

C) TRENCH SHEETING:
IF REQUIRED. WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID-DIAMETER, IT SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE. WHERE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW FINISHED GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.

D) MINIMUM PIPE COVER FOR UTILITY MAINS (UNLESS COVERNED BY OTHER CODES):
6' MINIMUM FOR SEWER (IN PAVEMENT)
4' MINIMUM FOR SEWER (CROSS COUNTRY)
3' MINIMUM FOR STORMWATER DRAINS
5' MINIMUM FOR WATER MAINS

E) ALL PAVEMENT CUTS SHALL BE REPAIRED BY THE INFRARED HEAT METHOD.

O C5 TYPICAL PIPE TRENCH

NTS

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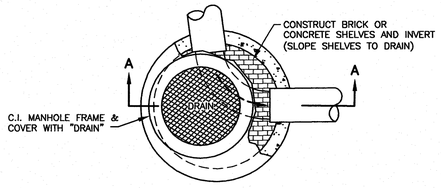
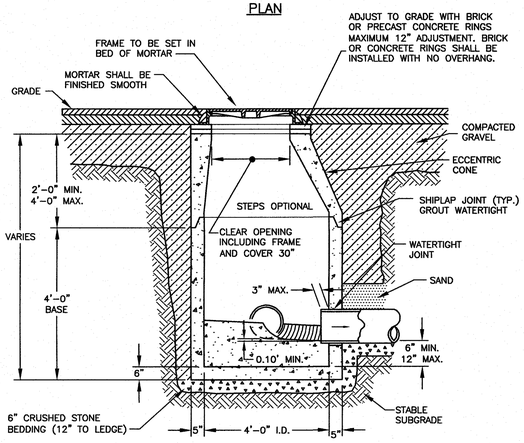


PLAN



SECTION A – A

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3. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FT..
4. EACH CASTING TO HAVE LIFTING HOLES CAST IN.

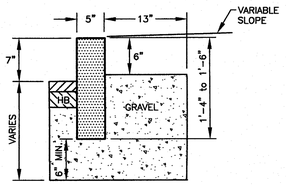
Q / C5 DRAIN MANHOLE DETAIL

NTS

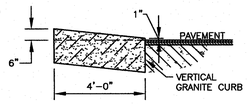
MIN. LENGTH OF CURB STONES 3FT.
MAX. LENGTH OF CURB STONES 10FT.
MAX. LENGTH OF STRAIGHT CURB STONES LAID ON CURVES SEE CHART

NOTE: ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATE LENGTH.

Radius	Max. length
21'	3'
22' – 28'	4'
29' – 35'	5'
36' – 42'	6'
43' – 49'	7'
50' – 56'	8'
57' – 60'	9'
over 60'	10'

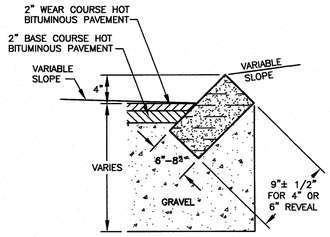


VERTICAL GRANITE CURB



NOTE: JOINTS BETWEEN STONES TO BE MORTARED

GRANITE CURB END



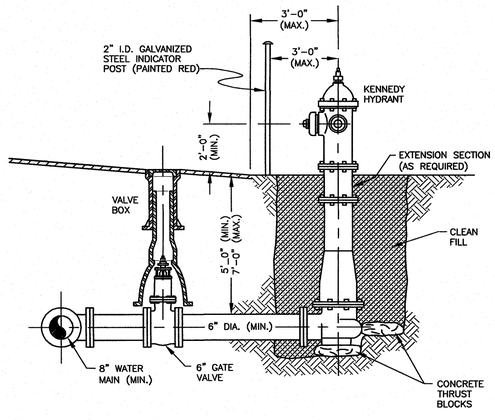
SLOPE GRANITE CURB

MIN. LENGTH OF STRAIGHT CURB STONES: 18"
MAX. LENGTH OF STRAIGHT CURB STONES: 8FT.
MAX. LENGTH OF STRAIGHT STRAIGHT CURB STONES LAID ON CURVE: SEE CHART

Radius for stones with square joints	Maximum length
16' – 28'	6" – 1'
29' – 41'	2'
42' – 55'	3'
56' – 68'	4'
69' – 82'	5'
83' – 96'	6'
97' – 110'	7'
over 110'	8'

– / C3 GRANITE CURBING DETAILS

NTS



S / C4 FIRE HYDRANT INSTALLATION DETAIL

NTS

HYDRANT NOTES:
1) HYDRANTS SHALL BE INSTALLED A MAXIMUM DISTANCE OF 3'-0" FROM CURB LINE TO OPERATING NUT.

2) THE PUMPER OUTLET NOZZLE SHALL FACE THE STREET.

3) CENTERLINE OF NOZZLES SHALL BE A MINIMUM OF 2'-0" ABOVE FINISHED GRADE OF STREET.

4) AREA AROUND HYDRANT SHALL BE GRADED TO ALLOW ANY SURFACE WATER TO DRAIN AWAY FROM HYDRANT.

5) HYDRANT SHALL BE FIRMLY SUPPORTED ALL AROUND THE STANDPIPE.

6) EARTH FILL SHALL BE TAMPED TO GIVE FIRM SUPPORT TO THE HYDRANT BARREL.

7) A GATE VALVE SHALL BE INSTALLED BETWEEN THE HYDRANT AND THE MAIN ON THE LATERAL.

8) HYDRANT LATERALS SHALL BE 6" INSIDE DIAMETER (MINIMUM).

9) HYDRANT LATERALS SHALL BE CONNECTED TO WATER MAINS 8" IN DIAMETER OR LARGER.

10) ALL JOINTS AT HYDRANT CONNECTION SHALL BE RESTRAINED MECHANICAL JOINTS.

11) INSTALLATION OF HYDRANTS IN AREAS OF HEAVY VEGETATIVE GROWTH SHALL HAVE A 10' RADIUS CLEAR AREA ALL AROUND THE OPERATING NUT OF THE HYDRANT.

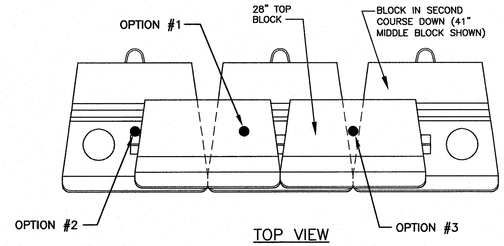
12) THERE SHALL ALSO BE AN INDICATOR POST FABRICATED FROM 2" I.D. GALVANIZED STEEL PIPE, 7' ABOVE FINISHED GRADE, AND SET 2' BELOW GRADE IN CLASS "A" CONCRETE CONCRETE, 6" ALL AROUND POST. THIS POST SHALL BE COATED WITH ZINC CHROMATE PRIMER AND PAINTED WITH HIGH VISIBILITY RED. THE INDICATOR POST SHALL BE NO CLOSER THAN 3' FROM THE OPERATING NUT, AND SET ON THE SIDE OF THE HYDRANT FACING ONCOMING TRAFFIC. TOP OF POST SHALL BE THREADED AND CAPPED.

13) INSTALLATION OF HYDRANTS IN HEAVY GROWTH AREAS SHALL HAVE GATE BOXES RAISED 6" ABOVE GRADE AND SHALL BE PAINTED ORANGE FOR HIGH VISIBILITY.

CONNECTION OPTION #1
EXPANSION ANCHOR INTO THE 28" TOP BLOCK
•SPACING AS REQUIRED FOR APPURTENANCE
•MASS OF SINGLE BLOCK AVAILABLE TO RESIST OVERTURNING FORCES

CONNECTION OPTION #2
GROUT POSTS IN V-SHAPED GAP BETWEEN 28" TOP BLOCKS
•SPACING IN MULTIPLES OF 46 1/8" INCREMENTS
•MASS OF 2 ADJACENT BLOCKS AVAILABLE TO RESIST OVERTURNING FORCES

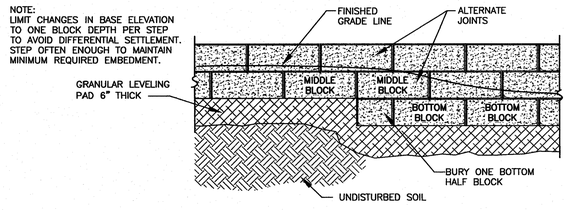
CONNECTION OPTION #3
CORE THROUGH TOP BLOCK & GROUT POSTS IN V-SHAPED GAP BETWEEN BLOCKS IN SECOND COURSE DOWN
•SPACING IN MULTIPLES OF 46 1/8" INCREMENTS
•MASS OF 2 ADJACENT BLOCKS IN SECOND LEVEL DOWN AND 3 TOP ROW BLOCKS AVAILABLE TO RESIST OVERTURNING FORCES



TOP VIEW

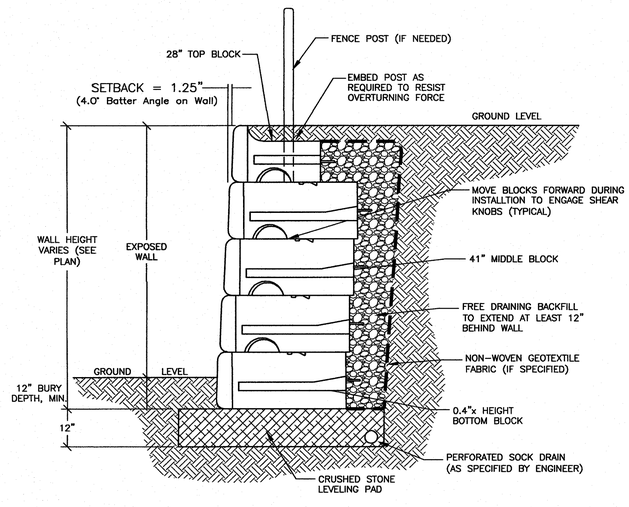
TYPICAL FENCE INSTALLATION ON MODULAR BLOCK WALL
NO SCALE

NOTE:
LIMIT CHANGES IN BASE ELEVATION TO ONE BLOCK DEPTH PER STEP TO AVOID DIFFERENTIAL SETTLEMENT. STEP OFTEN ENOUGH TO MAINTAIN MINIMUM REQUIRED EMBEDMENT.



STEPPING BASE DETAIL

NTS



TYPICAL GRAVITY WALL w/ 41" MODULAR BLOCKS
NO SCALE

MODULAR BLOCK
RETAINING WALL DETAILS (REDI-ROCK) OR APPROVED EQUAL

T / C3

NOTE: STAMPED DESIGN DRAWINGS SHALL BE SUBMITTED TO THE CITY OF PORTSMOUTH FOR APPROVAL PRIOR TO CONSTRUCTION.

NTS

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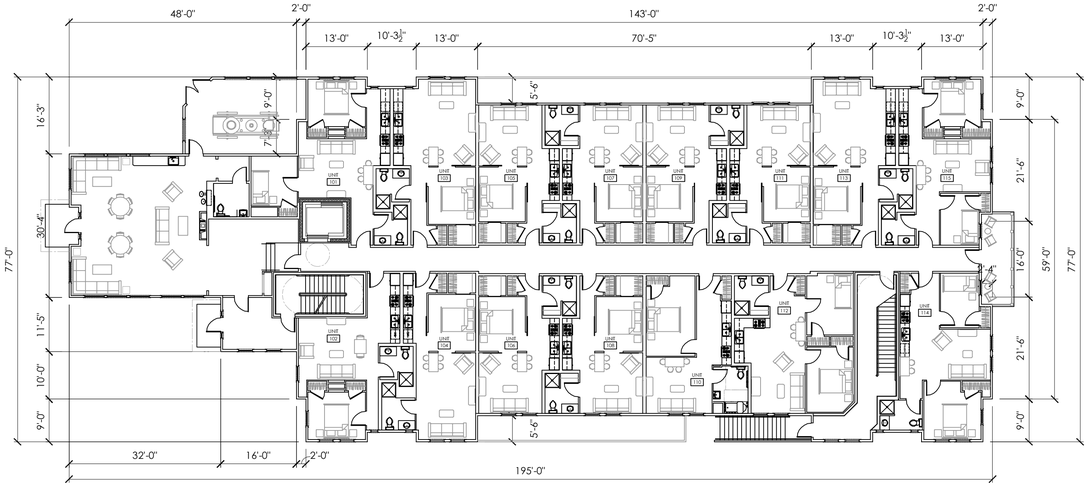
DETAILS D4

FB 321 PG 19

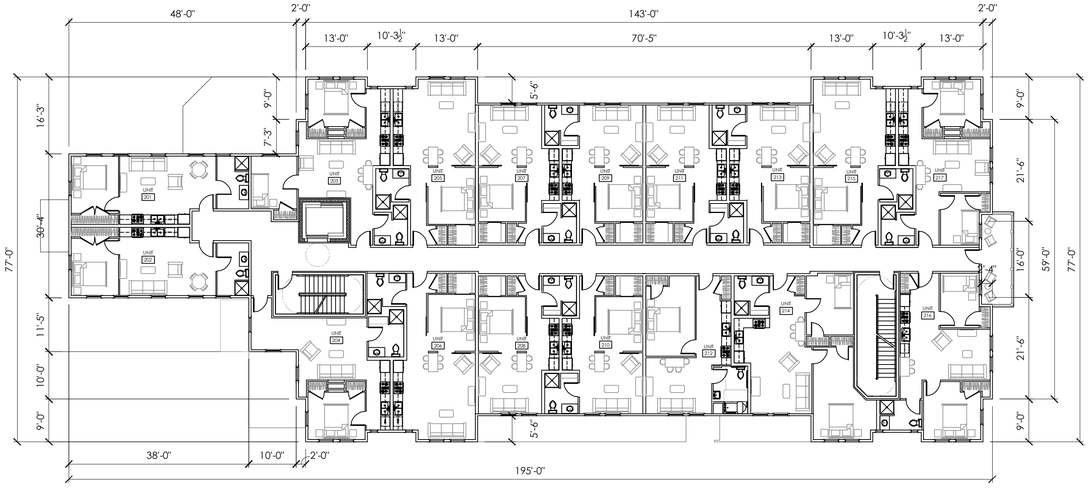
2790

J:_JOBS2_\JN2700's\JN 2790's\2017 Site Planning\Plans & Specs\Site\2790DT03.dwg, DETAILS 04



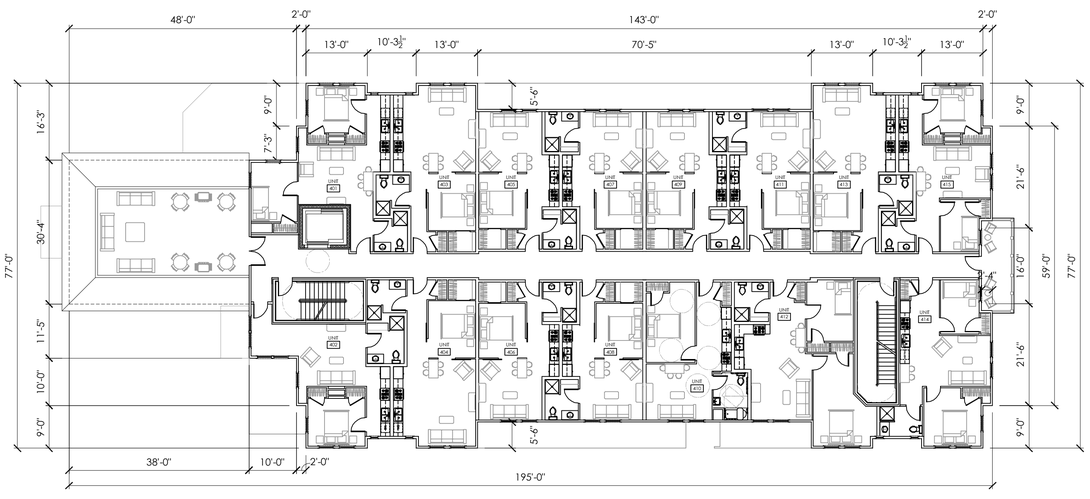
FIRST FLOOR PLAN

1 N.T.S.



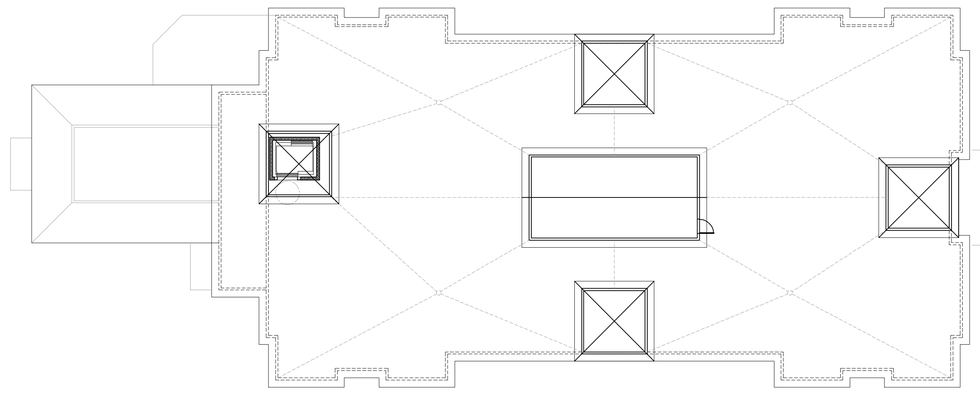
SECOND AND THIRD FLOOR PLAN

2 N.T.S.



FOURTH FLOOR PLAN

3 N.T.S.



ROOF PLAN

4 N.T.S.

COURT STREET DEVELOPMENT

PORTSMOUTH, NEW HAMPSHIRE

FLOOR PLANS AND ROOF PLAN

HISTORIC DISTRICT COMMISSION APPLICATION FOR APPROVAL: JULY 11, 2018

CJ ARCHITECTS

PORTSMOUTH HOUSING

7.0

1 NORTH ELEVATION

SCALE: 1/4" = 1'-0" ON 22 x 34 SHEET

COURT STREET DEVELOPMENT
PORTSMOUTH, NEW HAMPSHIRE

NORTH ELEVATION

HISTORIC DISTRICT COMMISSION APPLICATION FOR APPROVAL: JULY 11, 2018

CJ ARCHITECTS

PORTSMOUTH HOUSING

8.0

1 PARTIAL EAST ELEVATION

SCALE: 1/4" = 1'-0" ON 22 x 34 SHEET

COURT STREET DEVELOPMENT
PORTSMOUTH, NEW HAMPSHIRE

EAST ELEVATION

HISTORIC DISTRICT COMMISSION APPLICATION FOR APPROVAL: JULY 11, 2018

CJ ARCHITECTS

PORTSMOUTH HOUSING

8.1

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SCALE: 1/4" = 1'-0" ON 22 x 34 SHEET

COURT STREET DEVELOPMENT

PORTSMOUTH, NEW HAMPSHIRE

EAST ELEVATION

HISTORIC DISTRICT COMMISSION APPLICATION FOR APPROVAL: JULY 11, 2018

CJ ARCHITECTS

PORTSMOUTH HOUSING

8.2

1 SOUTH ELEVATION

SCALE: 1/4" = 1'-0" ON 22 x 34 SHEET

COURT STREET DEVELOPMENT

PORTSMOUTH, NEW HAMPSHIRE

SOUTH ELEVATION

HISTORIC DISTRICT COMMISSION APPLICATION FOR APPROVAL: JULY 11, 2018

CJ ARCHITECTS

PORTSMOUTH HOUSING

8.3

1 PARTIAL WEST ELEVATION

SCALE: 1/4" = 1'-0" ON 22 x 34 SHEET

COURT STREET DEVELOPMENT
PORTSMOUTH, NEW HAMPSHIRE

WEST ELEVATION

HISTORIC DISTRICT COMMISSION APPLICATION FOR APPROVAL: JULY 11, 2018

CJ ARCHITECTS

PORTSMOUTH HOUSING

8.4

1 PARTIAL WEST ELEVATION

SCALE: 1/4" = 1'-0" ON 22 x 34 SHEET

COURT STREET DEVELOPMENT
PORTSMOUTH, NEW HAMPSHIRE

WEST ELEVATION

HISTORIC DISTRICT COMMISSION APPLICATION FOR APPROVAL: JULY 11, 2018

CJ ARCHITECTS

PORTSMOUTH HOUSING

8.5

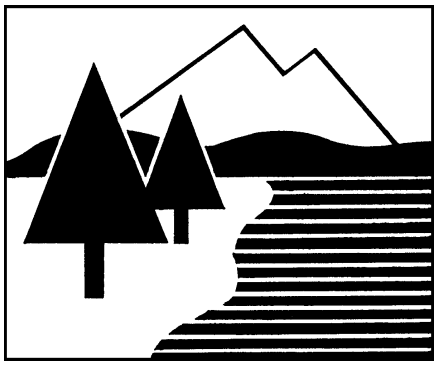
DRAINAGE ANALYSIS

SITE REDEVELOPMENT

140 COURT STREET

PORTSMOUTH HOUSING AUTHORITY

PORTSMOUTH, NH



18 JUNE, 2018

Ambit Engineering, Inc.

Civil Engineers and Land Surveyors
200 Griffin Road, Unit 3
Portsmouth, NH 03801
Phone: 603.430.9282; Fax: 603.436.2315
E-mail: djl@ambitengineering.com
(Ambit Job Number 2790)

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The hydrologic modeling utilized for this analysis uses the “Extreme Precipitation” values for rainfall from The Northeast Regional Climate Center (Cornell University).

This drainage analysis examines the pre-development (existing) and post-development (proposed) stormwater drainage patterns for the proposed renovation / redevelopment of an existing five story, 9,446 square foot building and the construction of a new 11,973 square foot building and associated site improvements at 140 Court Street in Portsmouth, NH. The site is shown on the City of Portsmouth Assessor’s Tax Map 116 as Lots 38 and 37. The project proposes to relocate the lot lines between the two lots. Portsmouth Housing Authority will retain Lot 38 to support the proposed redevelopment. The total proposed size of new lot 38 is 62,559 square-feet (1.4361 acres). The total proposed size of new lot 37 is 2,004 square-feet (0.0460 acres).

The new and renovated buildings will be serviced by public water and sewer. The development has the potential to increase stormwater runoff to adjacent properties, and therefore must be designed in a manner to prevent that occurrence. This will be done primarily by capturing stormwater runoff and routing it through appropriate stormwater facilities, designed to ensure that there will be no increase in peak runoff from the site as a result of this project.

SITE REDEVELOPMENT

140 COURT STREET

PORTSMOUTH HOUSING AUTHORITY

PORTSMOUTH, NH

INTRODUCTION / PROJECT DESCRIPTION

This drainage report is designed to assist the owner, planning board, contractor, regulatory reviewer, and others in understanding the impact of the proposed development project on local surface water runoff and quality. The project site is shown on the City of Portsmouth, NH Assessor's Tax Map 116 as Lots 38 and 37.

Bounding the site to the north and west are single and multi-family residential properties. Bounding the site to the east is the Portsmouth Fire Department. Bounding the site to the south are the Rockingham County Family Court and the Portsmouth District Court. The property is located in the Character District (CD4). A vicinity map is included in the Appendix to this report.

The proposed development will construct a new residential building, new parking area, and other associated improvements such as a utilities and landscaping.

This report includes information about the existing site and the proposed development necessary to analyze stormwater runoff and to design any required mitigation. The report includes maps of pre-development and post-development watersheds, sub-catchment areas and calculations of runoff. The report will provide a narrative of the stormwater runoff and describe numerically and graphically the surface water runoff patterns for this site. Proposed stormwater management and treatment structures and methods will also be described, as well as erosion and sediment control practices. To fully understand the proposed site development the reader should also review a complete site plan set in addition to this report.

METHODOLOGY

This report uses the US Soil Conservation Service (SCS) Method for estimating stormwater runoff. The SCS method is published in The National Engineering Handbook (NEH), Section 4 "Hydrology" and includes the Technical Release No. 20, (TR-20) "Computer Program for Project Formulation Hydrology", and Technical Release No. 55 (TR-55) "Urban Hydrology for Small Watersheds" methods. This report uses the HydroCAD version 10.0 program, written by

HydroCAD Software Solutions LLC, Chocorua, N.H., to apply these methods for the calculation of runoff and for pond modeling.

Time of Concentration (Tc) is calculated by entering measured flow path data such as flow path type, length, slope and surface characteristics into the HydroCAD program. For the purposes of this report, a minimum time of concentration of 5 minutes is used.

The storm events used for the calculations in this report are the 10-year and 50-year (24-hour) storms. Watershed basin boundaries have been delineated using topographic maps prepared by Ambit Engineering and field observations to confirm.

SITE SPECIFIC INFORMATION

Based on the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), Soil Survey of Rockingham County, New Hampshire, and confirmed by field exploration conducted by Ambit Engineering, Inc., the site is made up of one soil type:

799 – Urban land – Canton Complex (3-15% slopes), well drained with a typical depth to restrictive feature of more than 80 inches. This soil has a Hydrologic Soil Group (HSG) classification of A, with a Low runoff class.

The physical characteristics of the site consist of (3-15%) grades that generally slope from the north to the south. Elevations on the site range from 10 to 20 feet above sea level. The existing site is developed and includes 3 existing buildings with paved parking. Vegetation around the developed portion of the lot consists of established grasses, shrubs and trees.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) number 33015C0259E (effective date May 17, 2005), the project site is located in Zone X and is determined to be outside of the 0.2% annual chance floodplain. A copy of the FIRM map is included in the Appendix.

PRE-DEVELOPMENT DRAINAGE

The majority of the existing site drains via overland flow from the front of the lots along Court Street at the north towards the rear of the site to the south. Runoff is collected in a series of catch basins that enter a closed drainage system and then enter the combined sewer system. There is no existing stormwater detention or treatment on the site. There are portions to the rear of the site that flow to an existing catch basin that flow off site to a private closed drainage system.

In the pre-development condition, the site has been analyzed as ten subcatchments (ES1, ES1a, ES2, ES2a, ES3, ES4, ES5, ES6, ES7 and ES8) based on localized topography and discharge location. Subcatchment ES1 is the western most paved parking and driveway entrance to the site and flows overland directly to a catch basin located at the end of the driveway. Subcatchment

ES2 is the rooftop runoff of the western most building and flows by pipe to a catch basin located at the southeastern corner of this building. Subcatchment ES1a is a small strip of land between an existing curb and the property line to the west. Subcatchment ES2a is a small depressed area within the center driveway between the two existing buildings which flows to a yard drain and into the closed drainage system for the site. Subcatchment ES3 is a combination of grass and paved area in the northeast corner of the western most building and flows to a catch basin within the center driveway which then enters the closed drainage system for the site. Subcatchment ES4 is a grassed yard to the southwest of the western most building and flows to a catch basin within the center driveway which then enters the closed drainage system for the site. Subcatchment ES5 is the eastern most portion of the paved parking to the south and west of the Central Fire Station which flows to a catch basin along the southern boundary of the site which then leaves the site to a private closed drainage system to the south. Subcatchments ES6, ES7 and ES8 flow along the frontage with Court Street which flows off site to the existing closed drainage system in Court Street. The final outflow from ES8 is Discharge Point 2 (DP2).

Table 1: Pre-Development Watershed Basin Summary

Watershed Basin ID	Basin Area (SF)	Tc (MIN)	CN	10-Year Runoff (CFS)	50-Year Runoff (CFS)	Design Point
ES1	8,698	2.8	87	1.26	2.07	DP1
ES1a	667	0.0	61	0.04	0.09	DP5
ES2	32,053	2.5	97	5.26	8.06	DP1
ES2a	196	0.1	98	0.04	0.05	DP1
ES3	2,371	0.9	68	0.19	0.41	DP1
ES4	2,604	0.8	61	0.15	0.36	DP1
ES4a	491	0.0	61	0.03	0.07	DP4
ES5	33,193	2.5	96	5.41	8.31	DP3
ES6	2,738	1.5	98	0.47	0.72	DP2
ES7	1,263	0.6	98	0.22	0.34	DP2
ES8	4,051	1.2	98	0.17	1.08	DP2

POST-DEVELOPMENT DRAINAGE

The proposed development has been designed to match the pre-development drainage patterns to the greatest extent feasible. In the post-development condition, the site has been analyzed as fourteen separate watersheds (PS1, PS1a, PS2, PS4, PS4a PS5, PS5a, PS5aa, PS5aaa, PS5b, PS5bb, PS6, PS7 and PS8 based on localized topography and discharge locations. Basins PS1a and PS4a are small relatively inconsequential areas that drain offsite. PS1 (driveway), PS2 (Existing Rooftop) and PS4 (driveway) are similar in size and area as in the existing condition and discharge to Discharge Point 3 (DP3). Basins PS5a (New Rooftop), PS5aa, PS5aaa (Both Landscaped Areas) all flow to Infiltration System # 1. This system consists of 23 StormTech Chambers (SC-740). Basins PS5b (New Rooftop) and PS5bb (Landscaped Area) flow to Infiltration System # 2. This system consists of 24 StormTech Chambers (SC-740). Outflows from System #1 and System #2 enter a combined system and discharge together with outflows from PS1, PS3 and PS4 to Discharge Point 3 (DP3). Basin PS5 is primarily runoff from the existing Fire Station and parking to the rear of the Fire Station. Basin PS5 flow to Discharge Point 1 (Combined Sewer). Flow from PS6, PS7 and PS8 all flow to a closed drainage system in Court Street and are quantified together at Discharge Point 2 (DP2).

Table 2: Post-Development Watershed Basin Summary

Watershed Basin ID	Basin Area (SF)	Tc (MIN)	CN	10-Year Runoff (CFS)	50-Year Runoff (CFS)	Design Point
PS1a	13,467	520	81	0.09	0.16	DP1
PS1b	5,162	5.0	80	0.40	0.72	DP1
PS1c	2,141	5.0	53	0.03	0.12	DP1
PS1d	4,207	5.0	59	0.12	0.32	DP1
PS1e	2,325	520	91	0.02	0.03	DP1
PS1f	7,076	520	77	0.06	0.12	DP1
Ps1	1,562	5.0	98	0.18	0.27	DP1

Since the existing conditions at the site are predominantly impervious surface, and no treatment or dedicated infiltration systems currently exist for the site, providing the proposed treatment by

means of the two StormTech Stormwater Chamber and infiltration systems represents a vast improvement on the water quality of the runoff.

Table 3 shows a summary of the comparison between pre-developed flows and post-developed flows for the design point.

Table 3: Pre-Development to Post-Development Comparison

	Q10 (CFS)		Q50 (CFS)	
Design Point	**Pre**	**Post**	**Pre**	**Post**
DP 1	6.84	4.88	10.84	7.69
DP2	1.41	1.41	2.12	2.13
DP3	5.41	3.68	8.31	6.30
DP4	0.03	0.07	0.07	0.17
DP5	0.04	0.04	0.09	0.09

EROSION AND SEDIMENT CONTROL PRACTICES

The erosion potential for this site as it exists is low due to the existing vegetation and the built-up nature of the surrounding sites. During construction, the major potential for erosion is wind and stormwater runoff. The contractor will be required to inspect and maintain all necessary erosion control measures, as well as installing any additional measures as required. All erosion control practices shall conform to "The Stormwater Management and Erosion Control Handbook for Urban and Developing Areas in New Hampshire." Some examples of erosion and sediment control measures to be utilized for this project during construction may include:

- Silt Soxx (or approved alternative) located at the toe of disturbed slopes
- Stabilized construction entrance at access point to the site
- Temporary mulching and seeding for disturbed areas
- Spraying water over disturbed areas to minimize wind erosion

After construction, permanent stabilization will be accomplished by permanent seeding, landscaping and surfacing the access drives and parking areas with either compacted gravel or asphalt paving.

CONCLUSION

The proposed development has been designed to be less than the pre-development drainage pattern for the majority of the major flows that are anticipated. There is a very minor increase represented by Discharge Point 5 (DP5). With the design of two Stormwater infiltration systems to slow the release of storm water, the post-development runoff rates are reduced to be below the

pre-development runoff rates and will provide treatment. Erosion and sediment control practices will be implemented for both the temporary condition during construction and for final stabilization after construction. Therefore, there are no negative impacts to downstream receptors or adjacent properties anticipated as a result of this project. There is also no negative impact to the City of Portsmouth storm drainage system.

REFERENCES

1. City of Portsmouth, NH. Site Plan Review Regulations amended December 18, 2014.

2. Comprehensive Environmental Inc. and New Hampshire Department of Environmental Services. *New Hampshire Stormwater Manual (Volumes 1, 2 and 3)*, December 2008 (Revision 1.0).

3. Minnick, E.L. and H.T. Marshall. *Stormwater Management and Erosion and Sediment Control Handbook for Urban and Developing Areas in New Hampshire*, prepared by Rockingham County Conservation District, prepared for New Hampshire Department of Environmental Services, in cooperation with USDA Soil Conservation Service, August 1992.

4. HydroCAD Software Solution, LLC. *HydroCAD Stormwater Modeling System Version 10.0* copyright 2013.


SITE LOCATION
Partial Legend
See the cover sheet for the complete legend.
7-5A Lot or lot-unit number
2.56 ac Parcel area in acres (ac) or square feet (sf)
Address number
233-137 Parcel number from a neighboring map
66 Parcel line dimension
Street name
Parcel/Parcel boundary
Parcel/ROW boundary
Water boundary
Structure (1994 data)
Parcel covered by this map
Parcel from a neighboring map (see other map for current status)
0 50 100 Feet
0 20 40 Meters
This map is for assessment purposes only. It is not intended for legal description or conveyance.
Parcels are mapped as of April 1.
Building footprints are 2006 data and may not represent current structures.
Streets appearing on this map may be paper (unbuilt) streets.
Lot numbers take precedence over address numbers. Address numbers shown on this map may not represent posted or legal addresses.
Nearby Tax Maps
Map Location
Portsmouth, New Hampshire
2016
Tax Map 116

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New Hampshire
Location	
Longitude	70.758 degrees West
Latitude	43.074 degrees North
Elevation	0 feet
Date/Time	Fri, 08 Jun 2018 09:51:05 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.04	**1yr**	0.70	0.98	1.21	1.56	2.03	2.66	2.92	**1yr**	2.35	2.81	3.22	3.94	4.55	**1yr**
2yr	0.32	0.50	0.62	0.81	1.02	1.30	**2yr**	0.88	1.18	1.52	1.94	2.49	3.21	3.57	**2yr**	2.84	3.43	3.94	4.68	5.33	**2yr**
5yr	0.37	0.58	0.73	0.98	1.25	1.61	**5yr**	1.08	1.47	1.89	2.43	3.14	4.07	4.58	**5yr**	3.60	4.40	5.04	5.94	6.70	**5yr**
10yr	0.41	0.65	0.82	1.12	1.45	1.89	**10yr**	1.25	1.73	2.23	2.89	3.75	4.86	5.53	**10yr**	4.31	5.32	6.09	7.11	7.98	**10yr**
25yr	0.48	0.76	0.97	1.34	1.78	2.34	**25yr**	1.53	2.14	2.78	3.63	4.74	6.17	7.10	**25yr**	5.46	6.83	7.81	9.03	10.05	**25yr**
50yr	0.54	0.86	1.10	1.54	2.08	2.76	**50yr**	1.79	2.53	3.29	4.33	5.66	7.39	8.58	**50yr**	6.54	8.25	9.43	10.81	11.97	**50yr**
100yr	0.60	0.97	1.25	1.77	2.42	3.26	**100yr**	2.09	2.98	3.91	5.16	6.77	8.85	10.38	**100yr**	7.83	9.98	11.39	12.96	14.27	**100yr**
200yr	0.68	1.10	1.43	2.05	2.83	3.84	**200yr**	2.44	3.52	4.62	6.14	8.08	10.60	12.55	**200yr**	9.38	12.06	13.76	15.55	17.01	**200yr**
500yr	0.80	1.32	1.72	2.49	3.49	4.78	**500yr**	3.01	4.39	5.78	7.71	10.22	13.47	16.14	**500yr**	11.92	15.52	17.68	19.78	21.48	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.36	0.44	0.59	0.72	0.88	**1yr**	0.63	0.86	0.93	1.33	1.69	2.24	2.49	**1yr**	1.98	2.39	2.87	3.19	3.90	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.19	**2yr**	0.86	1.16	1.37	1.82	2.34	3.06	3.45	**2yr**	2.71	3.32	3.82	4.55	5.09	**2yr**
5yr	0.35	0.54	0.67	0.92	1.17	1.40	**5yr**	1.01	1.37	1.61	2.12	2.73	3.78	4.19	**5yr**	3.35	4.03	4.72	5.53	6.24	**5yr**
10yr	0.39	0.59	0.73	1.03	1.33	1.60	**10yr**	1.14	1.56	1.80	2.39	3.05	4.37	4.85	**10yr**	3.87	4.67	5.43	6.41	7.19	**10yr**

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
25yr	0.44	0.67	0.83	1.19	1.56	1.90	**25yr**	1.35	1.86	2.10	2.75	3.53	4.73	5.88	**25yr**	4.19	5.65	6.64	7.78	8.67	**25yr**
50yr	0.48	0.73	0.91	1.31	1.76	2.17	**50yr**	1.52	2.12	2.35	3.06	3.92	5.35	6.78	**50yr**	4.73	6.52	7.71	9.03	10.00	**50yr**
100yr	0.54	0.81	1.01	1.46	2.01	2.47	**100yr**	1.73	2.41	2.62	3.40	4.33	6.02	7.82	**100yr**	5.32	7.52	8.95	10.49	11.55	**100yr**
200yr	0.59	0.89	1.13	1.63	2.27	2.81	**200yr**	1.96	2.75	2.93	3.77	4.77	6.75	9.02	**200yr**	5.97	8.68	10.38	12.20	13.35	**200yr**
500yr	0.68	1.02	1.31	1.90	2.71	3.36	**500yr**	2.33	3.28	3.41	4.30	5.43	7.86	10.89	**500yr**	6.95	10.47	12.63	14.92	16.17	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.44	0.54	0.72	0.89	1.08	**1yr**	0.77	1.06	1.26	1.74	2.20	2.98	3.17	**1yr**	2.64	3.05	3.58	4.37	5.04	**1yr**
2yr	0.34	0.52	0.64	0.87	1.07	1.27	**2yr**	0.92	1.24	1.48	1.96	2.52	3.42	3.71	**2yr**	3.03	3.56	4.09	4.84	5.63	**2yr**
5yr	0.40	0.62	0.77	1.05	1.34	1.62	**5yr**	1.15	1.59	1.89	2.54	3.25	4.34	4.97	**5yr**	3.84	4.78	5.38	6.38	7.16	**5yr**
10yr	0.47	0.72	0.89	1.25	1.61	1.98	**10yr**	1.39	1.93	2.28	3.11	3.96	5.34	6.21	**10yr**	4.72	5.97	6.83	7.85	8.76	**10yr**
25yr	0.58	0.88	1.09	1.56	2.05	2.57	**25yr**	1.77	2.52	2.96	4.08	5.16	7.76	8.36	**25yr**	6.87	8.04	9.17	10.35	11.42	**25yr**
50yr	0.67	1.02	1.27	1.83	2.47	3.13	**50yr**	2.13	3.06	3.60	5.01	6.34	9.71	10.48	**50yr**	8.59	10.08	11.48	12.74	13.98	**50yr**
100yr	0.79	1.20	1.50	2.16	2.97	3.82	**100yr**	2.56	3.73	4.38	6.17	7.79	12.15	13.14	**100yr**	10.75	12.63	14.36	15.72	17.11	**100yr**
200yr	0.93	1.39	1.77	2.56	3.57	4.66	**200yr**	3.08	4.56	5.35	7.60	9.57	15.23	16.48	**200yr**	13.48	15.85	18.00	19.38	20.94	**200yr**
500yr	1.15	1.71	2.20	3.20	4.55	6.06	**500yr**	3.93	5.92	6.94	10.05	12.62	20.58	22.27	**500yr**	18.21	21.41	24.26	25.55	27.37	**500yr**

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SCS METHODS

Technical Release - 55 Urban Hydrology for Small Watersheds

TR-55 presents simplified procedures to calculate storm runoff volume, peak rate of discharge, partial hydrographs and storage volumes for water control structures. The procedures are applicable to small watersheds, especially urbanizing watersheds with time of concentration between 0.1 hours and 10.0 hours. TR-55 is an approximation of the more detailed TR-20 method and does not have TR-20's capability to flood route. The user should examine the sensitivity of the analysis being conducted to ensure that the degree of error is tolerable. TR-55 contains two methods, the Tabular Hydrograph method and the Graphical Peak Discharge method. The accuracy of both methods is comparable; they differ only in their output. Both methods are based on open and unconfined flow over land and in channels.

The TR-55 Tabular Method can develop partial composite flood hydrographs at any point in a watershed by dividing the watershed into homogeneous subareas. By doing this, the method can estimate runoff from a larger nonhomogeneous watershed. The method is especially applicable for estimating the effects of land use change in a portion of a watershed. It can also be used to estimate the effects of proposed structures. The TR-55 Graphical Peak Discharge method calculates peak discharge using an assumed unit hydrograph and a thorough, but rapid, evaluation of the soils, slope, and surface cover characteristics of the watershed. This method is recommended for use in the design of all erosion and sediment control measures and simple stormwater management practices. When more detail and accuracy are required or when an accurate simulation of natural conditions is required, one of the other appropriate methods should be used. The TR-55 Graphical Peak Discharge method is the method that is discussed in this manual.

SCS TR-55 Graphical Peak Discharge Method

The peak discharge equation used in this method is:

$$q_p = q_u A_m Q F_p$$

where:

q_p is the peak discharge in cubic feet per second (cfs).

q_u is the unit peak discharge in cubic feet per second per square mile per inch of runoff (csm/in).

A_m is the drainage area in square miles.

Q is the runoff from the watershed in inches.

F_p is a pond and swamp adjustment factor that can be applied for ponds or swamps that are spread throughout the watershed and not in the time of concentration flow path.

Technical Release-20 Computer Program for Project Formulation Hydrology

The TR-20 computer program assists the engineer in hydrologic evaluation of flood events for use in analysis of water resource projects. The program is a single event model which computes direct runoff resulting from any natural or synthetic rainstorm. It develops flood hydrographs from runoff and routes the flow through stream channels and reservoirs. It combines the routed hydrograph with those from tributaries and computes the peak discharges, their times of occurrence and the water surface elevations at any desired cross section or structure. The program provides for the analysis of up to nine different rainstorm distributions over a watershed under various combinations of land treatment. The analysis can be performed on as many as 200 reaches and 99 structures in any one continuous run. The procedure should probably not be used for subarea drainage areas less than 5 acres nor more than 20 square miles.

Input Data Required

The following information is required to use TR-20:

Drainage Area - The drainage area of each subwatershed in square miles.

Runoff Curve Number - A factor that relates mass rainfall to mass runoff. It is based on soil characteristics, cover type, and land treatment. Tables 6-4.1 - 6-4.3 provides runoff curve numbers for urban areas and agricultural areas.

Time of Concentration - The time which would be required for the surface runoff from the hydraulically most remote part of the drainage area to reach the point being evaluated. A more detailed discussion of time of concentration is found later in this chapter.

Reach Length - The length of the stream or valley in feet selected for generally constant hydraulic characteristics for use in the study. A watershed may have several reaches in the flow path.

Cross Section Information - This information consists of either surveyed valley and channel sections with appropriate Manning's "n" values or "x" and "m" discharge coefficient values obtained from nomographs in the TR-20 documentation for the valley and channel reach.

Rainfall Data - The average depth, in inches, of rainfall occurring over a watershed or subwatershed for a given design frequency and duration storm event.

Structural Data - Information on any culverts, bridges, or reservoirs in the watershed that includes elevations, discharges, and storage behind the structures.

Output Data

The type and amount of output can be controlled by options within the program. In general the output data will provide estimates of peak flow, hydrographs, peak times, runoff volumes, and water surface elevations at any location within the watershed.

Runoff Curve Number (RCN)

The runoff curve number is a factor that relates mass rainfall to mass runoff. It is based on soil characteristics, cover type, hydrologic condition, and land treatment. Tables 6-4.1 through 6-4.3 provide runoff curve numbers for urban areas, cultivated agricultural areas, and other agricultural areas for various hydrologic conditions

Cover type relates to the kind of cover found on the soil such as vegetation, bare soil, and impervious surfaces such as parking areas, roofs, streets, and roads.

Hydrologic condition indicates the effects of cover type and treatment on infiltration and runoff rates. It is generally estimated from the density of plant and crop residue on the area. Good hydrologic condition indicates that the soil usually has low runoff potential for that specific hydrologic soil group, cover type and treatment. Some factors to consider in estimating the effect of cover on infiltration and runoff are: canopy or density of leaves, amount of year-round cover, amount of grass or close-seeded legumes in a rotation, percent of residue cover, and the degree of surface roughness.

Treatment is a cover type modifier used to describe the management of cultivated agricultural lands. It includes mechanical practices such as contouring and terracing, and management practices, such as crop rotations and reduced or no tillage.

TABLE 6-4.1 -- RUNOFF CURVE NUMBERS (Average Watershed Condition)

COVER DESCRIPTION Cover type and hydrologic condition	Average percent impervious area[2]	CURVE NUMBERS FOR HYDROLOGIC SOIL GROUP A	B	C	D
FULLY DEVELOPED URBAN AREAS[1] (Vegetation Established)					
Lawns, open spaces, parks, golf courses, cemeteries, etc.					
good condition; grass cover on 75% or more of the area		39	61	74	80
fair condition; grass cover on 50% to 75% of the area		49	69	79	84
poor condition; grass cover on 50% or less of the area		68	79	86	89
Paved parking lots, roofs, driveways, etc.		98	98	98	98
Streets and roads;					
paved with curbs and storm sewers		98	98	98	98
gravel		76	85	89	91
dirt		72	82	87	89
paved with open ditches		83	89	92	93
Commercial and business areas	85	89	92	94	95
Industrial districts	72	81	88	91	93
Row houses, town houses, and residential with lot sizes 1/8 acre or less	65	77	85	90	92
Residential					
Average lot size					
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acre	12	46	65	77	82
DEVELOPING URBAN AREAS[3] (No vegetation Established)					
Newly graded area		77	86	91	94

1. For land uses with impervious areas, curve numbers are computed assuming that 100% of runoff from impervious areas is directly connected to the drainage system. Pervious areas (lawn) are considered to be equivalent to lawns in good condition and the impervious areas have an RCN of 98.

2. Includes paved streets.

3. Use for the design of temporary measures during grading and construction. Impervious area percent for urban areas under development vary considerably. The user will determine the percent impervious. Then using the newly graded area RCN and Table 6-4, the composite RCN can be computed for any degree of development.

Source: USDA Soil Conservation Service

TABLE 6-4.2 -- RUNOFF CURVE NUMBERS (Average Watershed Condition)

COVER DESCRIPTION		Hydrologic condition[4]	CURVE NUMBERS FOR HYDROLOGIC SOIL GROUP			
Cover type and hydrologic condition			A	B	C	D
CULTIVATED AGRICULTURAL LAND						
Fallow	Bare soil		77	86	91	94
	Crop residue cover (CR)	poor	76	85	90	93
	CR	good	74	83	88	90
Row crops	Straight row (SR)	poor	72	81	88	91
	SR	good	67	78	85	89
	SR & CR	poor	71	80	87	90
	SR & CR	good	64	75	82	85
	Contoured (C)	poor	70	79	84	88
	C	good	65	75	82	86
	C & CR	poor	69	78	83	87
	C & CR	good	64	74	81	85
	Contoured & Terraces (C&T)	poor	66	74	80	82
	C&T	good	62	71	78	81
	C&T & CR	poor	65	73	79	81
	C&T & CR	good	61	70	77	80
Small grain	SR	poor	65	76	84	88
	SR	good	63	75	83	87
	SR & CR	poor	64	75	83	86
	SR & CR	good	60	72	80	84
	C	poor	63	74	82	85
	C	good	61	73	81	84
	C & CR	poor	62	73	81	84
	C & CR	good	60	72	80	83
	C&T	poor	61	72	79	82
	C&T	good	59	70	78	81
	C&T & CR	poor	60	71	78	81
	C&T & CR	good	58	69	77	80
Close-seeded Legumes or Rotation Meadow[5]	SR	poor	66	77	85	89
	SR	good	58	72	81	85
	C	poor	64	75	83	85
	C	good	55	69	78	83
	C&T	poor	63	73	80	83
	C&T	good	51	67	76	80

4. For conservation tillage poor hydrologic condition, 5 to 20 percent of the surface is covered with residue (less than 750 #/acre row crops or 300#/acre small grain).
   For conservation tillage good hydrologic condition, more than 20 percent of the surface is covered with residue (greater than 750 #/acre row crops or 300 #/acre small grain).
5. Close-drilled or broadcast.

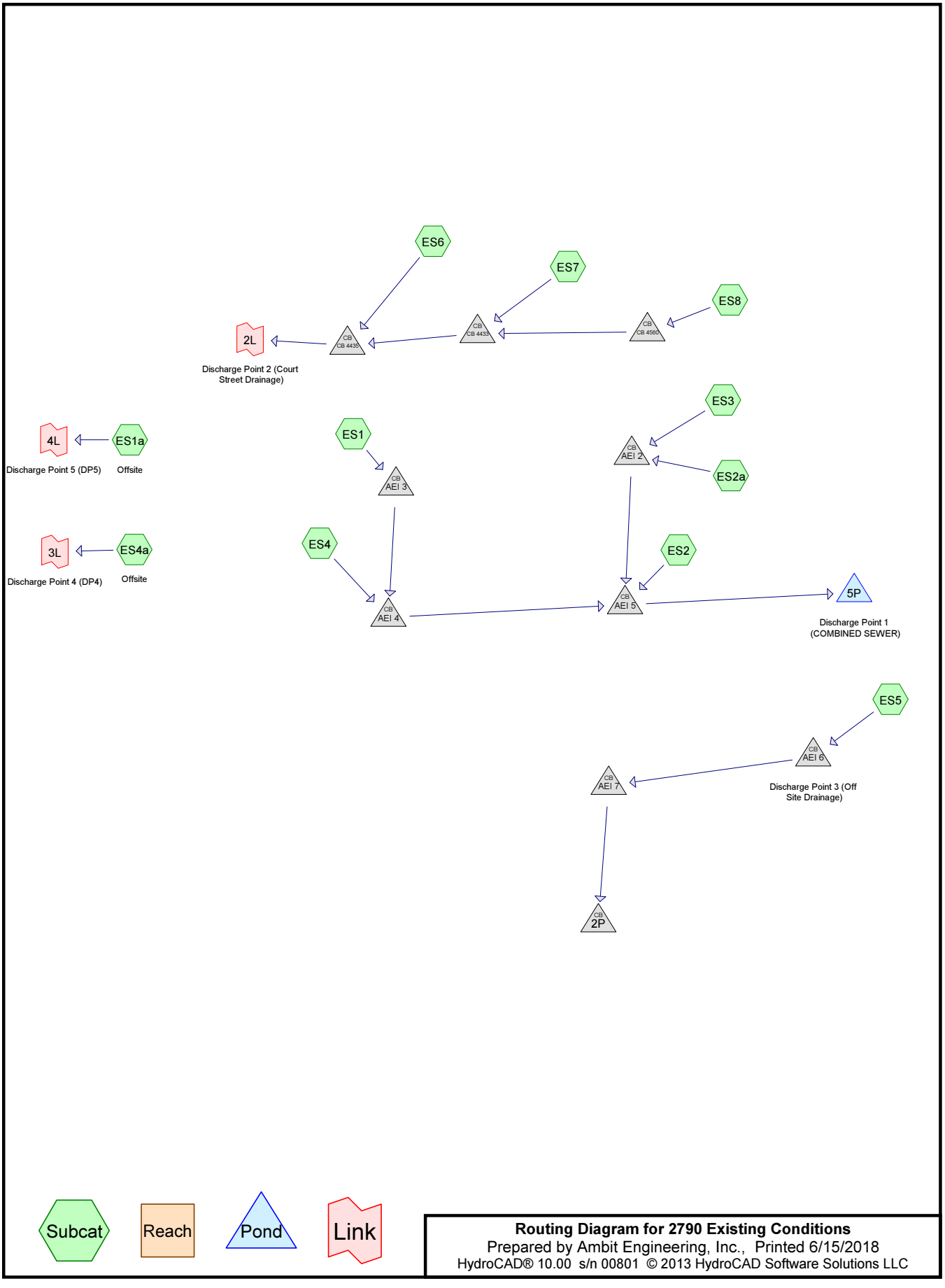
Source: USDA Soil Conservation Service

TABLE 6-4.3 -- RUNOFF CURVE NUMBERS (Average Watershed Condition)

COVER DESCRIPTION		CURVE NUMBERS FOR HYDROLOGIC SOIL GROUP			
Cover type and hydrologic condition	Hydrologic condition[6]	A	B	C	D
NON-CULTIVATED AGRICULTURAL LAND					
Pasture, grassland, or range - continuous forage for grazing	poor	68	79	86	89
	fair	49	69	79	84
	good	39	61	74	80
Meadow - continuous grass, protected from grazing and generally mowed for hay	---	30	58	71	78
Woods-grass combination (orchard or tree farm)	poor	57	73	82	86
	fair	43	65	76	82
	good	32	58	72	79
Brush - brush-weed-grass mixture with brush the major element	poor	48	67	77	83
	fair	35	56	70	77
	good	30	48	65	73
Woods	poor	45	66	77	83
	fair	36	60	73	79
	good	30	55	70	77
Farmsteads - buildings, lanes, driveways, and surrounding lots	---	59	74	82	86

6. Poor hydrologic condition has less than 50 percent ground cover density.
   Fair hydrologic condition has between 50 and 75 percent ground cover density.
   Good hydrologic condition has more than 75 percent ground cover density.

Source: USDA Soil Conservation Service



Routing Diagram for 2790 Existing Conditions
Prepared by Ambit Engineering, Inc., Printed 6/15/2018

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.242	61	>75% Grass cover, Good, HSG B (ES1, ES1a, ES2, ES3, ES4, ES4a, ES5)
0.180	98	Gravel surface, HSG B (ES2, ES3, ES5)
1.025	98	Paved parking, HSG B (ES1, ES2, ES2a, ES5, ES6, ES7, ES8)
0.468	98	Roofs, HSG B (ES2, ES5)
0.069	98	Unconnected pavement, sidewalk, HSG B (ES1, ES2a, ES3, ES5, ES6, ES7)
0.033	98	Unconnected pavement,sidewalk, HSG B (ES8)
0.011	98	Unconnected pavement,sidewalks , HSG B (ES2)
2.028	**94**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
2.028	HSG B	ES1, ES1a, ES2, ES2a, ES3, ES4, ES4a, ES5, ES6, ES7, ES8
0.000	HSG C	
0.000	HSG D	
0.000	Other	
2.028		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchme Numbers
0.000	0.242	0.000	0.000	0.000	0.242	>75% Grass cover, Good	
0.000	0.180	0.000	0.000	0.000	0.180	Gravel surface	
0.000	1.025	0.000	0.000	0.000	1.025	Paved parking	
0.000	0.468	0.000	0.000	0.000	0.468	Roofs	
0.000	0.069	0.000	0.000	0.000	0.069	Unconnected pavement, sidewalk	
0.000	0.033	0.000	0.000	0.000	0.033	Unconnected pavement,sidewalk	
0.000	0.011	0.000	0.000	0.000	0.011	Unconnected pavement,sidewalks	
0.000	**2.028**	**0.000**	**0.000**	**0.000**	**2.028**	**TOTAL AREA**	

Pipe Listing (selected 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	2P	5.58	5.33	82.0	0.0030	0.013	12.0	0.0	0.0
2	AEI 2	9.42	8.55	102.8	0.0085	0.010	6.0	0.0	0.0
3	AEI 3	8.90	8.84	37.5	0.0016	0.013	10.0	0.0	0.0
4	AEI 4	8.69	8.15	92.4	0.0058	0.013	10.0	0.0	0.0
5	AEI 5	7.90	7.40	58.5	0.0085	0.013	10.0	0.0	0.0
6	AEI 6	6.77	5.88	96.0	0.0093	0.013	12.0	0.0	0.0
7	AEI 7	5.83	5.58	85.0	0.0029	0.013	12.0	0.0	0.0
8	CB 4433	14.38	13.99	121.0	0.0032	0.013	24.0	0.0	0.0
9	CB 4435	13.99	15.41	100.0	-0.0142	0.013	24.0	0.0	0.0
10	CB 4560	14.92	14.38	42.8	0.0126	0.013	24.0	0.0	0.0

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 ES1: Runoff Area=8,698 sf 70.65% Impervious Runoff Depth>3.22"
Flow Length=220' Tc=2.8 min CN=87 Runoff=1.26 cfs 0.054 af

Subcatchment ES1a: Offsite Runoff Area=667 sf 0.00% Impervious Runoff Depth>1.15"
Tc=0.0 min CN=61 Runoff=0.04 cfs 0.001 af

Subcatchment ES2: Runoff Area=32,053 sf 98.00% Impervious Runoff Depth>4.17"
Flow Length=114' Tc=2.5 min CN=97 Runoff=5.26 cfs 0.256 af

Subcatchment ES2a: Runoff Area=196 sf 100.00% Impervious Runoff Depth>4.24"
Flow Length=27' Slope=0.0740 '/' Tc=0.1 min CN=98 Runoff=0.04 cfs 0.002 af

Subcatchment ES3: Runoff Area=2,371 sf 18.85% Impervious Runoff Depth>1.62"
Flow Length=108' Tc=0.9 min CN=68 Runoff=0.19 cfs 0.007 af

Subcatchment ES4: Runoff Area=2,604 sf 0.00% Impervious Runoff Depth>1.15"
Flow Length=81' Slope=0.0525 '/' Tc=0.8 min CN=61 Runoff=0.15 cfs 0.006 af

Subcatchment ES4a: Offsite Runoff Area=491 sf 0.00% Impervious Runoff Depth>1.15"
Tc=0.0 min CN=61 Runoff=0.03 cfs 0.001 af

Subcatchment ES5: Runoff Area=33,193 sf 95.00% Impervious Runoff Depth>4.09"
Flow Length=356' Tc=2.5 min CN=96 Runoff=5.41 cfs 0.259 af

Subcatchment ES6: Runoff Area=2,738 sf 100.00% Impervious Runoff Depth>4.24"
Flow Length=121' Tc=1.5 min CN=98 Runoff=0.47 cfs 0.022 af

Subcatchment ES7: Runoff Area=1,263 sf 100.00% Impervious Runoff Depth>4.24"
Flow Length=49' Slope=0.0051 '/' Tc=0.6 min CN=98 Runoff=0.22 cfs 0.010 af

Subcatchment ES8: Runoff Area=4,051 sf 100.00% Impervious Runoff Depth>4.24"
Flow Length=143' Slope=0.0098 '/' Tc=1.2 min CN=98 Runoff=0.71 cfs 0.033 af

Pond 2P: Peak Elev=9.31' Inflow=5.41 cfs 0.259 af
12.0" Round Culvert n=0.013 L=82.0' S=0.0030 '/' Outflow=5.41 cfs 0.259 af

Pond 5P: Discharge Point 1 (COMBINED SEWER) Inflow=6.84 cfs 0.324 af
Primary=6.84 cfs 0.324 af

Pond AEI 2: Peak Elev=17.61' Inflow=0.23 cfs 0.009 af
6.0" Round Culvert n=0.010 L=102.8' S=0.0085 '/' Outflow=0.23 cfs 0.009 af

Pond AEI 3: Peak Elev=17.99' Inflow=1.26 cfs 0.054 af
10.0" Round Culvert n=0.013 L=37.5' S=0.0016 '/' Outflow=1.26 cfs 0.054 af

Pond AEI 4: Peak Elev=17.95' Inflow=1.40 cfs 0.059 af
10.0" Round Culvert n=0.013 L=92.4' S=0.0058 '/' Outflow=1.40 cfs 0.059 af

Pond AEI 5: Peak Elev=17.55' Inflow=6.84 cfs 0.324 af
10.0" Round Culvert n=0.013 L=58.5' S=0.0085 '/' Outflow=6.84 cfs 0.324 af

Pond AEI 6: Discharge Point 3 (Off Site Drainage) Peak Elev=14.07' Inflow=5.41 cfs 0.259 af
12.0" Round Culvert n=0.013 L=96.0' S=0.0093 '/' Outflow=5.41 cfs 0.259 af

Pond AEI 7: Peak Elev=12.08' Inflow=5.41 cfs 0.259 af
12.0" Round Culvert n=0.013 L=85.0' S=0.0029 '/' Outflow=5.41 cfs 0.259 af

Pond CB 4433: Peak Elev=15.90' Inflow=0.93 cfs 0.043 af
24.0" Round Culvert n=0.013 L=121.0' S=0.0032 '/' Outflow=0.94 cfs 0.043 af

Pond CB 4435: Peak Elev=15.90' Inflow=1.41 cfs 0.065 af
24.0" Round Culvert n=0.013 L=100.0' S=-0.0142 '/' Outflow=1.41 cfs 0.065 af

Pond CB 4560: Peak Elev=15.91' Inflow=0.71 cfs 0.033 af
24.0" Round Culvert n=0.013 L=42.8' S=0.0126 '/' Outflow=0.71 cfs 0.033 af

Link 2L: Discharge Point 2 (Court Street Drainage) Inflow=1.41 cfs 0.065 af
Primary=1.41 cfs 0.065 af

Link 3L: Discharge Point 4 (DP4) Inflow=0.03 cfs 0.001 af
Primary=0.03 cfs 0.001 af

Link 4L: Discharge Point 5 (DP5) Inflow=0.04 cfs 0.001 af
Primary=0.04 cfs 0.001 af

Total Runoff Area = 2.028 ac Runoff Volume = 0.651 af Average Runoff Depth = 3.85"
11.93% Pervious = 0.242 ac 88.07% Impervious = 1.786 ac

Summary for Subcatchment ES1:

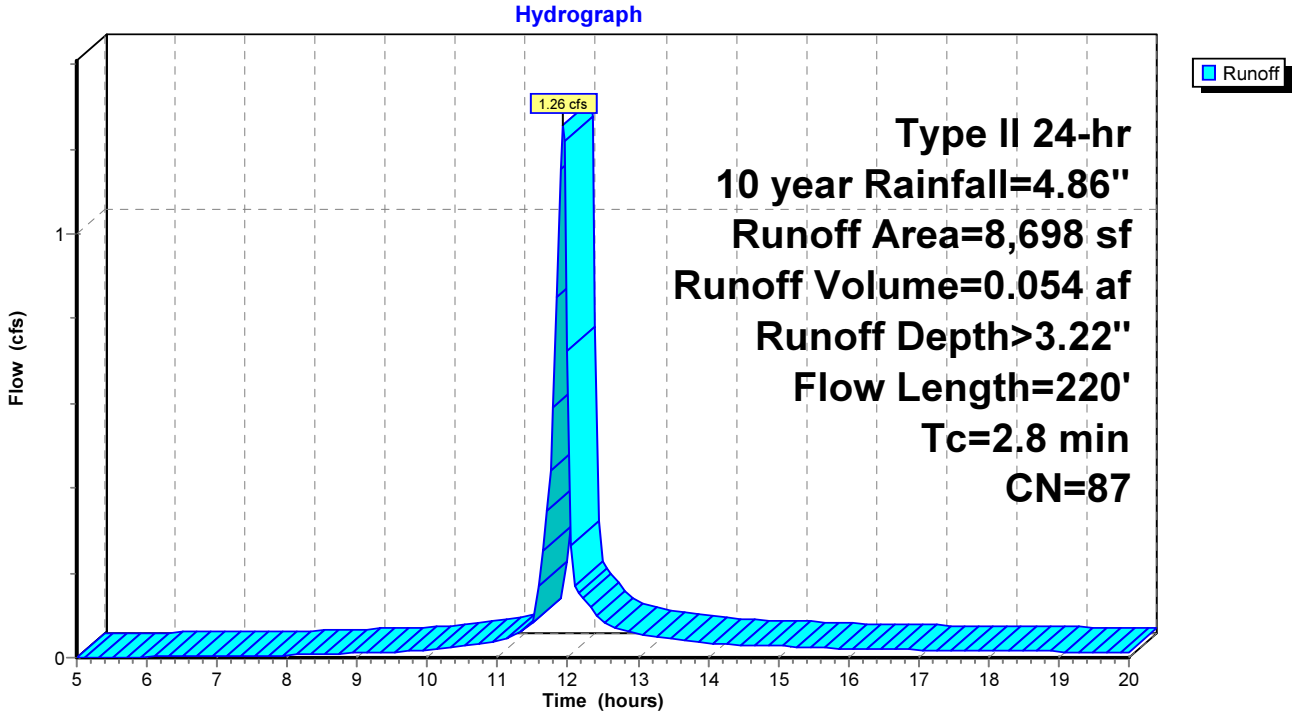
Runoff = 1.26 cfs @ 11.93 hrs, Volume= 0.054 af, Depth> 3.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.86"

	Area (sf)	CN	Description
	5,487	98	Paved parking, HSG B
*	658	98	Unconnected pavement, sidewalk, HSG B
	2,553	61	>75% Grass cover, Good, HSG B
	8,698	87	Weighted Average
	2,553		29.35% Pervious Area
	6,145		70.65% Impervious Area
	658		10.71% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	84	0.0089	0.66		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	136	0.0239	3.14		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.8	220	Total			

Subcatchment ES1:



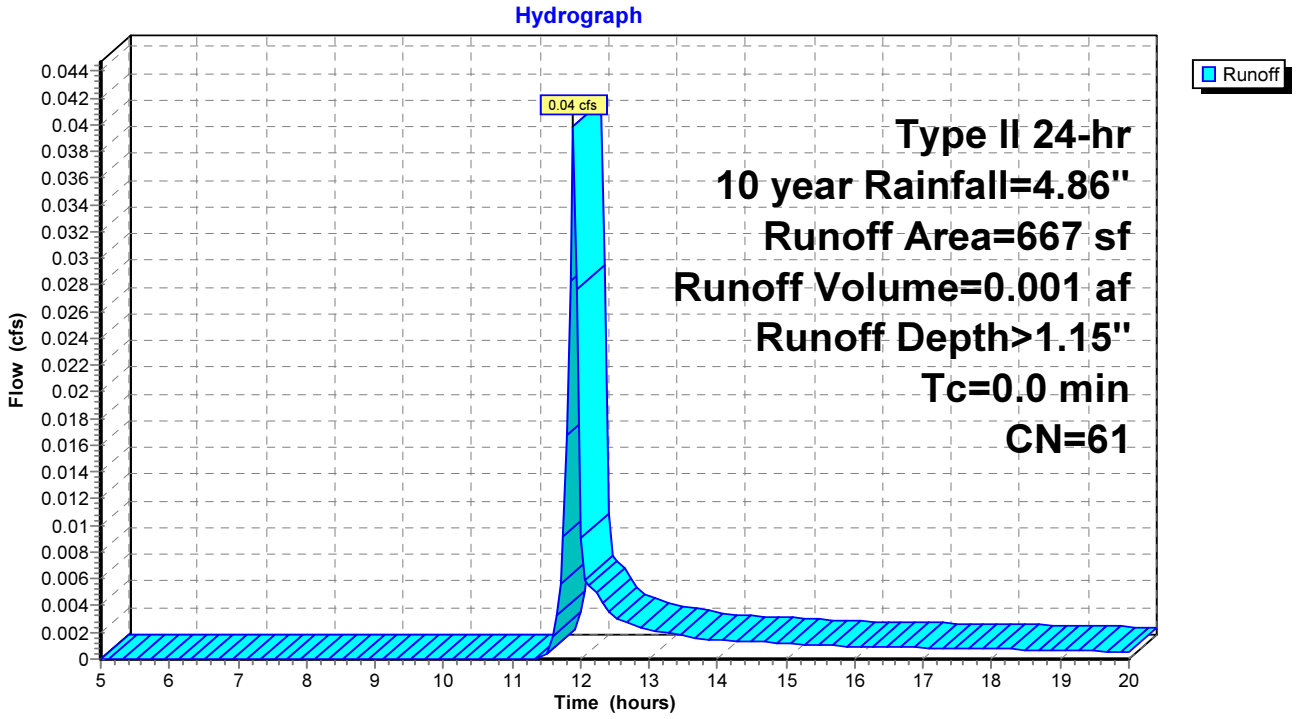
Summary for Subcatchment ES1a: Offsite

Runoff = 0.04 cfs @ 11.90 hrs, Volume= 0.001 af, Depth> 1.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.86"

Area (sf)	CN	Description
667	61	>75% Grass cover, Good, HSG B
667		100.00% Pervious Area

Subcatchment ES1a: Offsite



Summary for Subcatchment ES2:

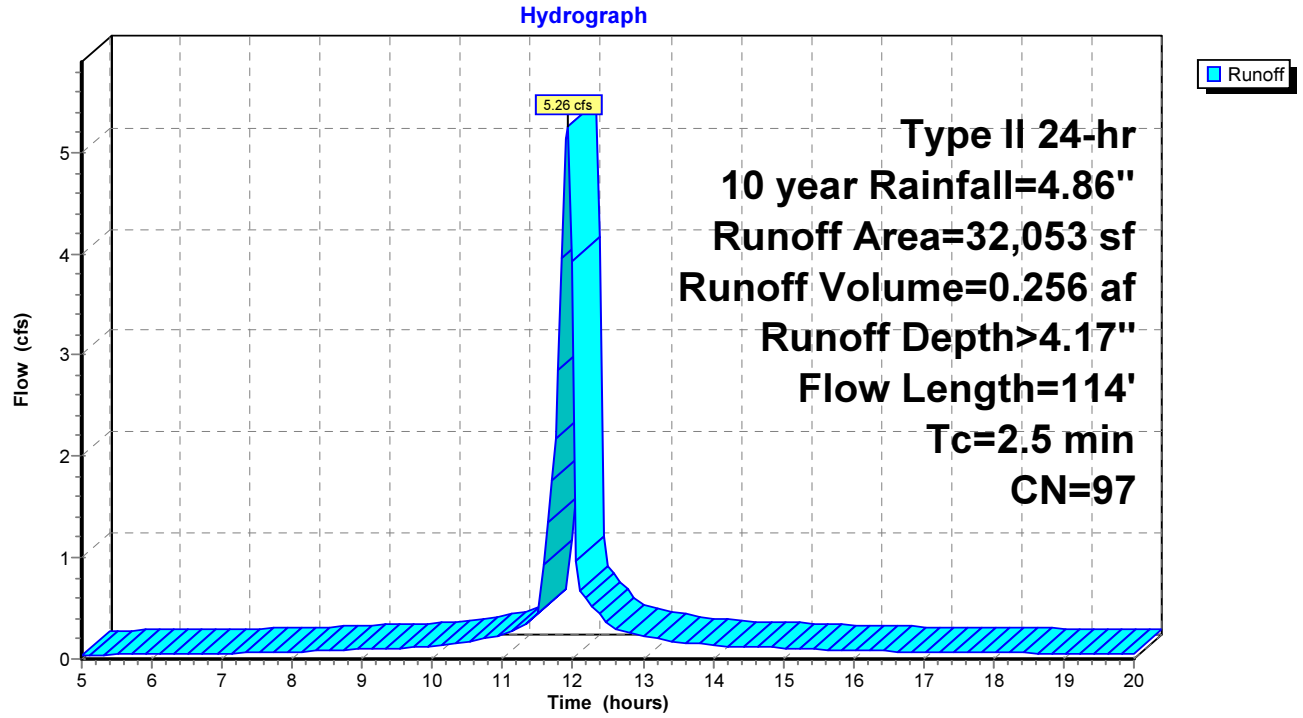
Runoff = 5.26 cfs @ 11.92 hrs, Volume= 0.256 af, Depth> 4.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.86"

	Area (sf)	CN	Description
	10,300	98	Roofs, HSG B
	3,910	98	Roofs, HSG B
	641	61	>75% Grass cover, Good, HSG B
*	480	98	Unconnected pavement,sidewalks , HSG B
	9,865	98	Paved parking, HSG B
*	6,857	98	Gravel surface, HSG B
	32,053	97	Weighted Average
	641		2.00% Pervious Area
	31,412		98.00% Impervious Area
	480		1.53% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	35	0.0071	0.74		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.21"
1.7	79	0.0050	0.75		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.21"
2.5	114	Total			

Subcatchment ES2:



Summary for Subcatchment ES2a:

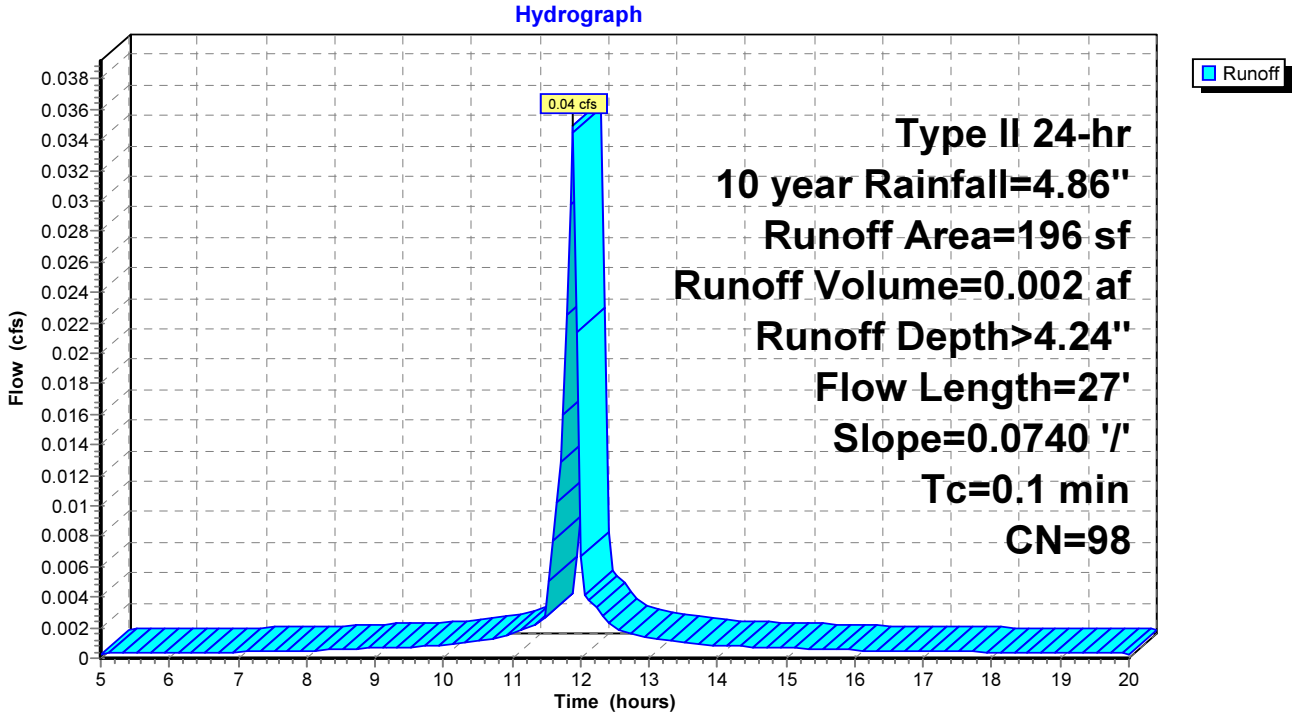
Runoff = 0.04 cfs @ 11.89 hrs, Volume= 0.002 af, Depth> 4.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.86"

	Area (sf)	CN	Description
	102	98	Paved parking, HSG B
*	94	98	Unconnected pavement, sidewalk, HSG B
	196	98	Weighted Average
	196		100.00% Impervious Area
	94		47.96% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	27	0.0740	5.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps

Subcatchment ES2a:



Summary for Subcatchment ES3:

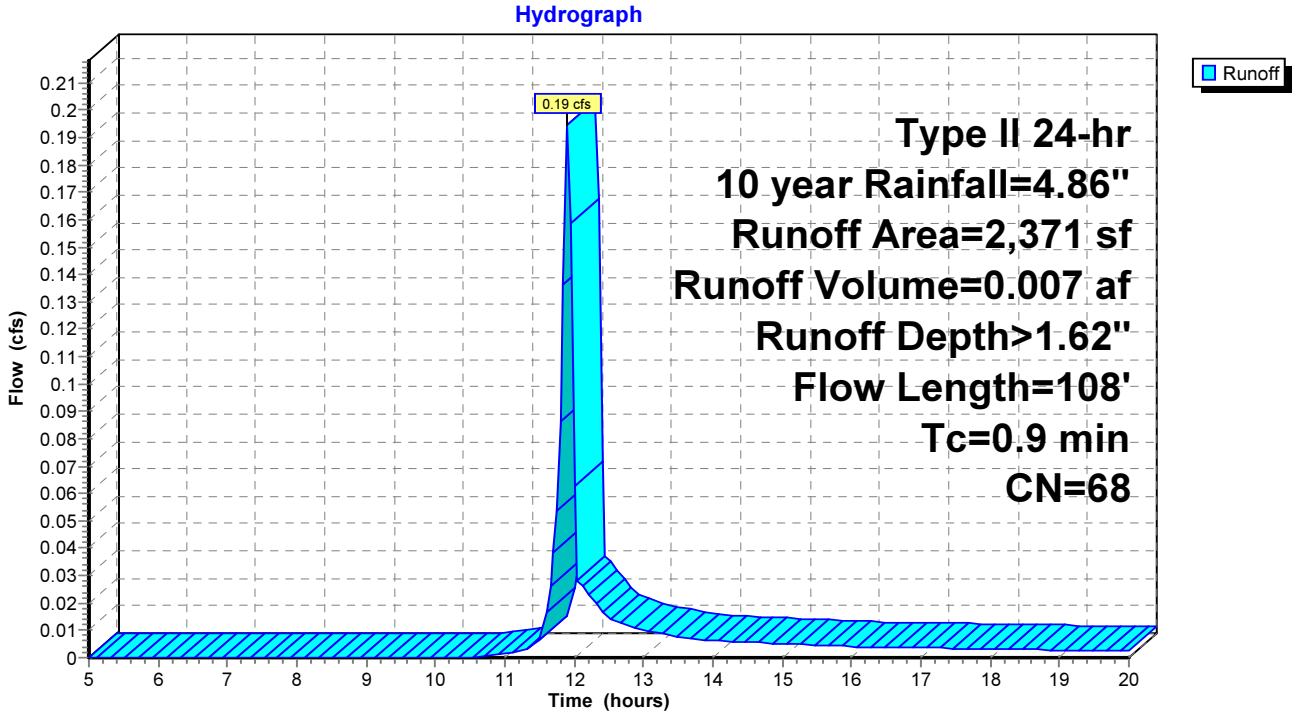
Runoff = 0.19 cfs @ 11.91 hrs, Volume= 0.007 af, Depth> 1.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.86"

	Area (sf)	CN	Description
*	414	98	Gravel surface, HSG B
*	33	98	Unconnected pavement, sidewalk, HSG B
	1,924	61	>75% Grass cover, Good, HSG B
	2,371	68	Weighted Average
	1,924		81.15% Pervious Area
	447		18.85% Impervious Area
	33		7.38% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	58	0.0819	5.81		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	50	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	108	Total			

Subcatchment ES3:



Summary for Subcatchment ES4:

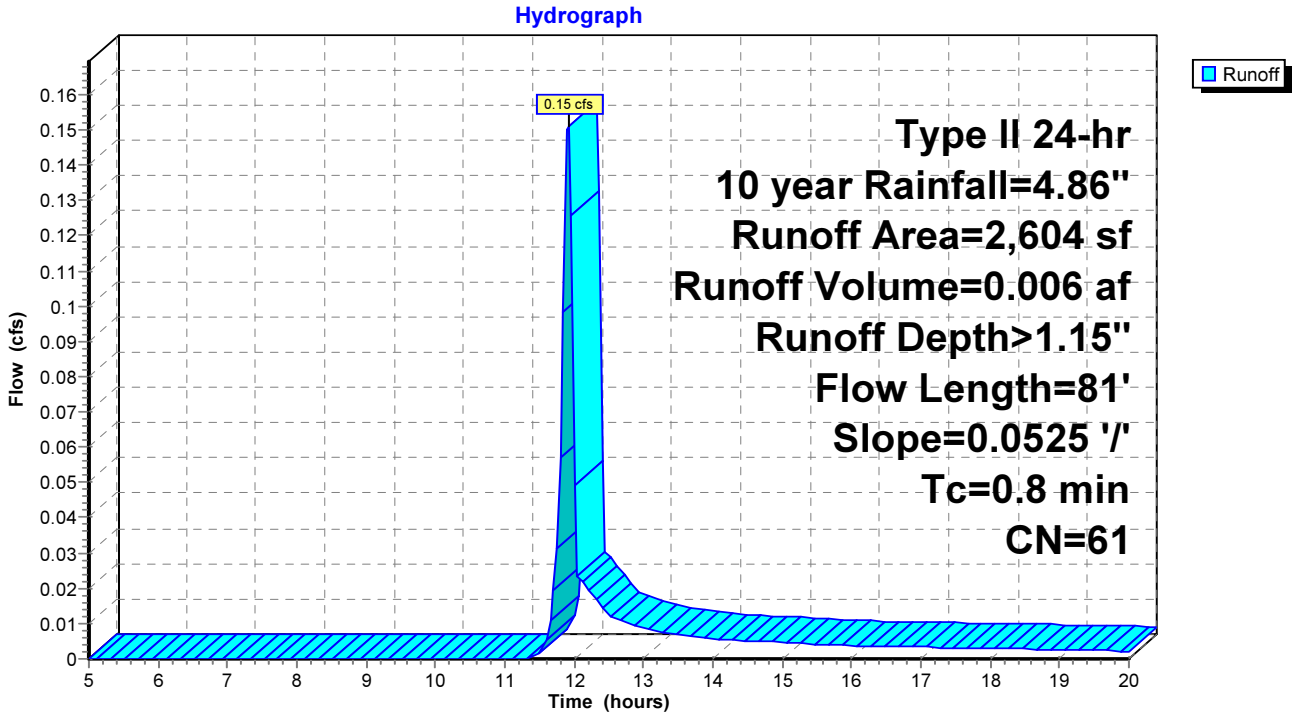
Runoff = 0.15 cfs @ 11.91 hrs, Volume= 0.006 af, Depth> 1.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.86"

Area (sf)	CN	Description
2,604	61	>75% Grass cover, Good, HSG B
2,604		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	81	0.0525	1.60		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps

Subcatchment ES4:



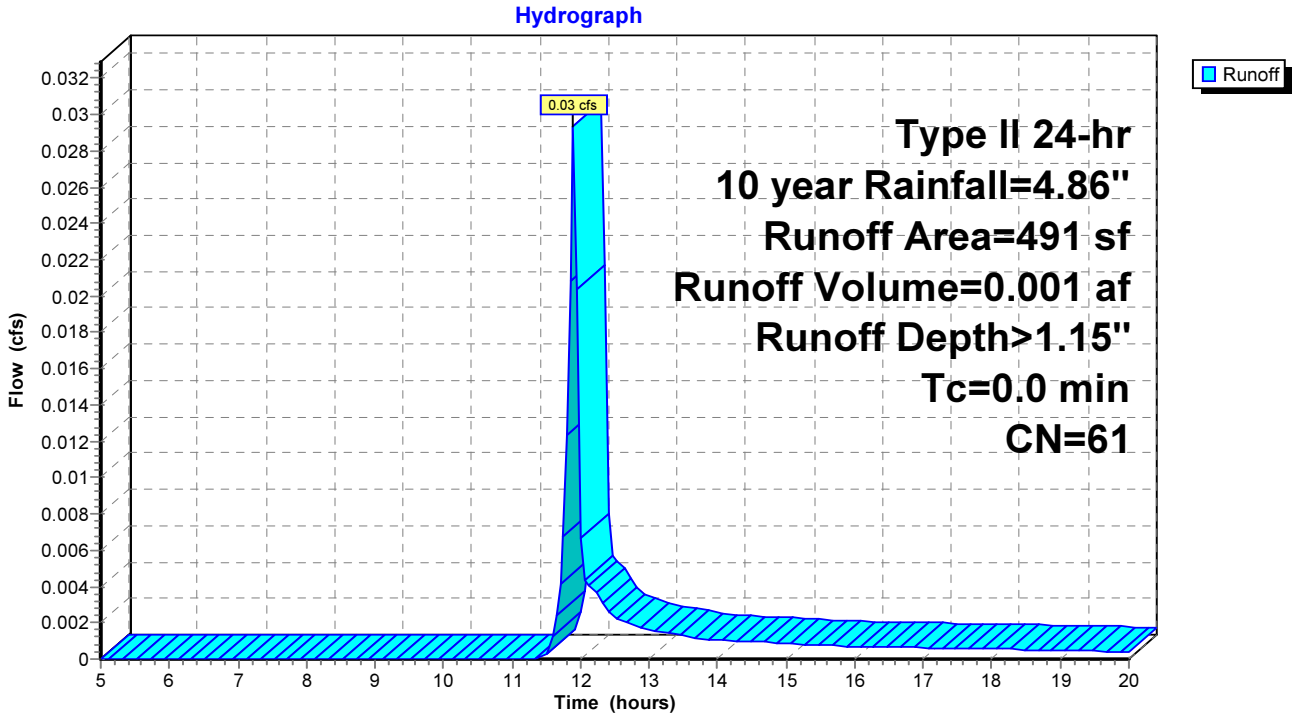
Summary for Subcatchment ES4a: Offsite

Runoff = 0.03 cfs @ 11.90 hrs, Volume= 0.001 af, Depth> 1.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.86"

Area (sf)	CN	Description
491	61	>75% Grass cover, Good, HSG B
491		100.00% Pervious Area

Subcatchment ES4a: Offsite



Summary for Subcatchment ES5:

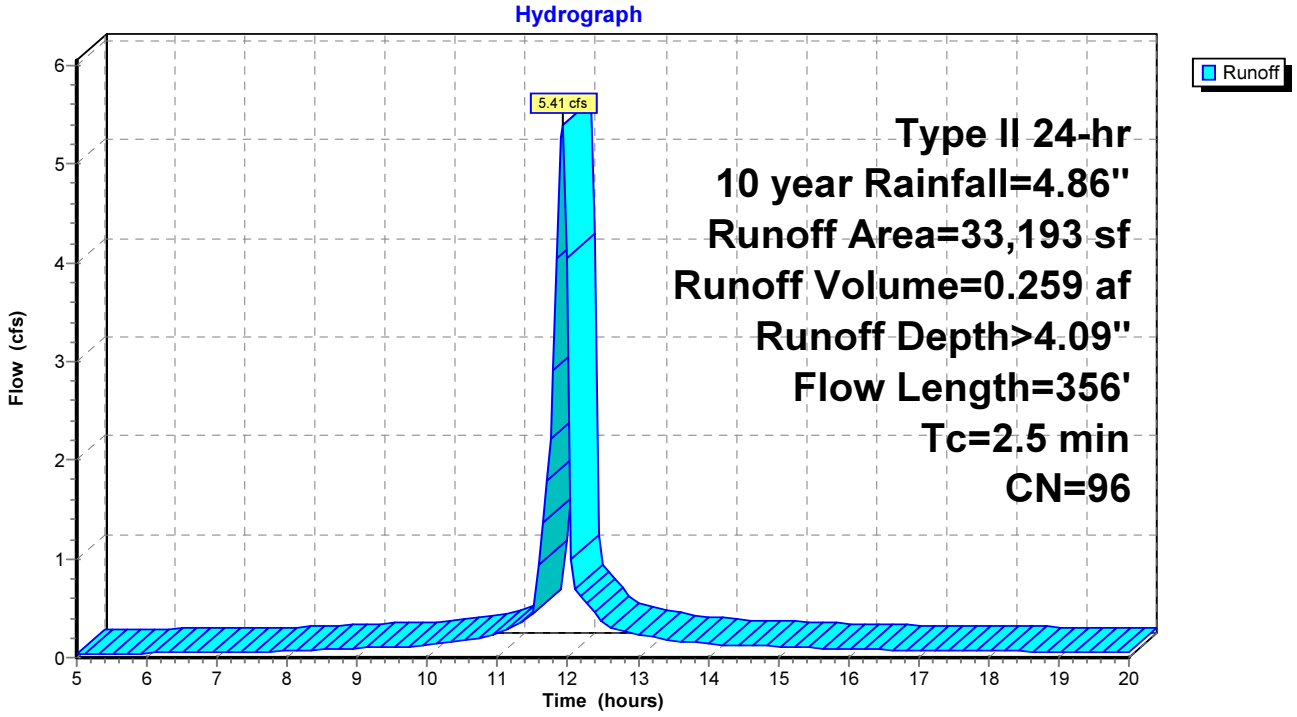
Runoff = 5.41 cfs @ 11.92 hrs, Volume= 0.259 af, Depth> 4.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.86"

	Area (sf)	CN	Description
	6,186	98	Roofs, HSG B
	23,335	98	Paved parking, HSG B
*	1,456	98	Unconnected pavement, sidewalk, HSG B
	1,658	61	>75% Grass cover, Good, HSG B
*	558	98	Gravel surface, HSG B
	33,193	96	Weighted Average
	1,658		5.00% Pervious Area
	31,535		95.00% Impervious Area
	1,456		4.62% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	56	0.0050	0.70		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.21"
1.2	300	0.0417	4.15		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.5	356	Total			

Subcatchment ES5:



Summary for Subcatchment ES6:

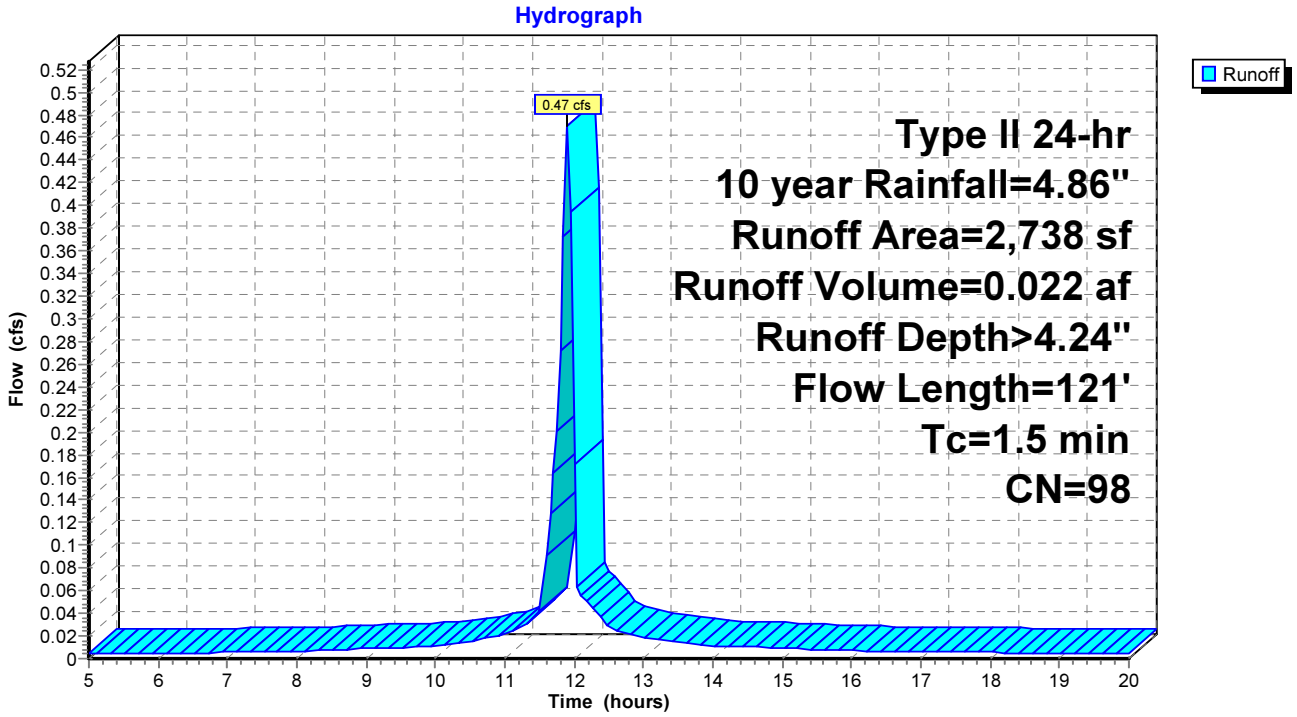
Runoff = 0.47 cfs @ 11.90 hrs, Volume= 0.022 af, Depth> 4.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.86"

	Area (sf)	CN	Description
	2,329	98	Paved parking, HSG B
*	409	98	Unconnected pavement, sidewalk, HSG B
	2,738	98	Weighted Average
	2,738		100.00% Impervious Area
	409		14.94% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	26	0.0096	0.69		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	95	0.0078	1.79		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.5	121	Total			

Subcatchment ES6:



Summary for Subcatchment ES7:

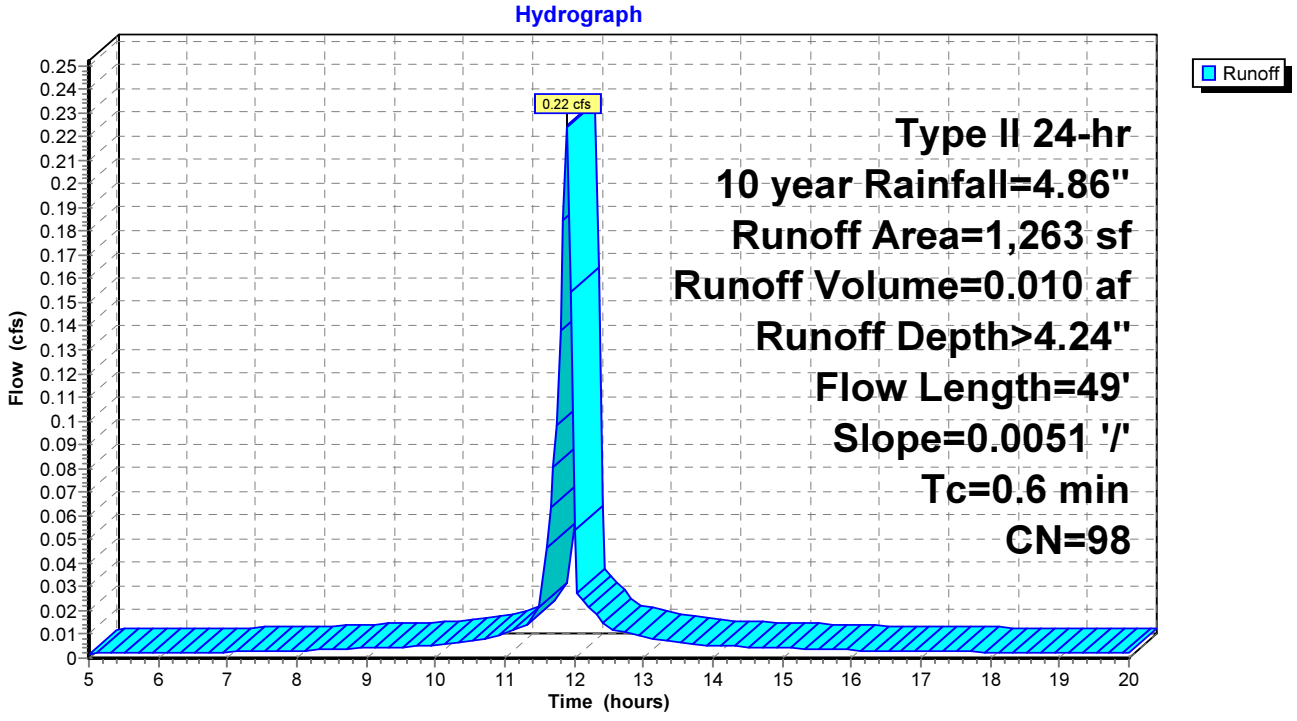
Runoff = 0.22 cfs @ 11.89 hrs, Volume= 0.010 af, Depth> 4.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.86"

	Area (sf)	CN	Description
	922	98	Paved parking, HSG B
*	341	98	Unconnected pavement, sidewalk, HSG B
	1,263	98	Weighted Average
	1,263		100.00% Impervious Area
	341		27.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	49	0.0051	1.45		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps

Subcatchment ES7:



Summary for Subcatchment ES8:

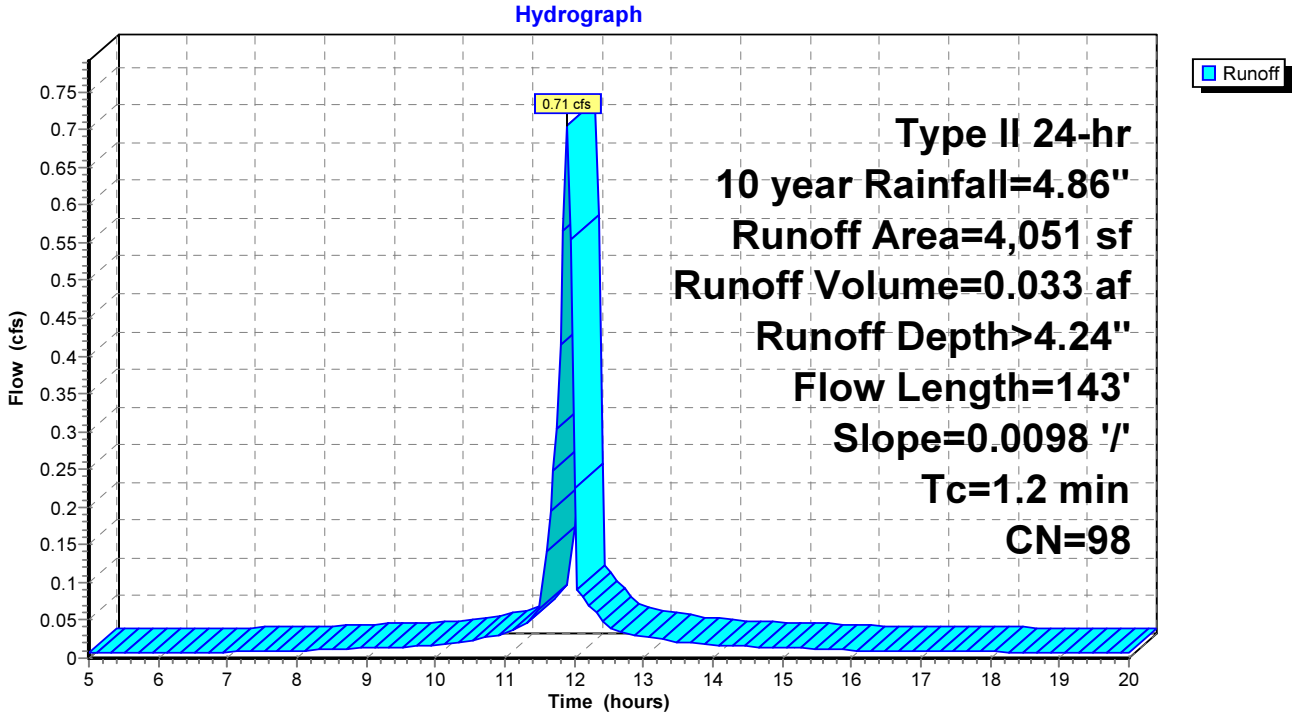
Runoff = 0.71 cfs @ 11.90 hrs, Volume= 0.033 af, Depth> 4.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.86"

	Area (sf)	CN	Description
	2,607	98	Paved parking, HSG B
*	1,444	98	Unconnected pavement,sidewalk, HSG B
	4,051	98	Weighted Average
	4,051		100.00% Impervious Area
	1,444		35.65% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	143	0.0098	2.01		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps

Subcatchment ES8:



Summary for Pond 2P:

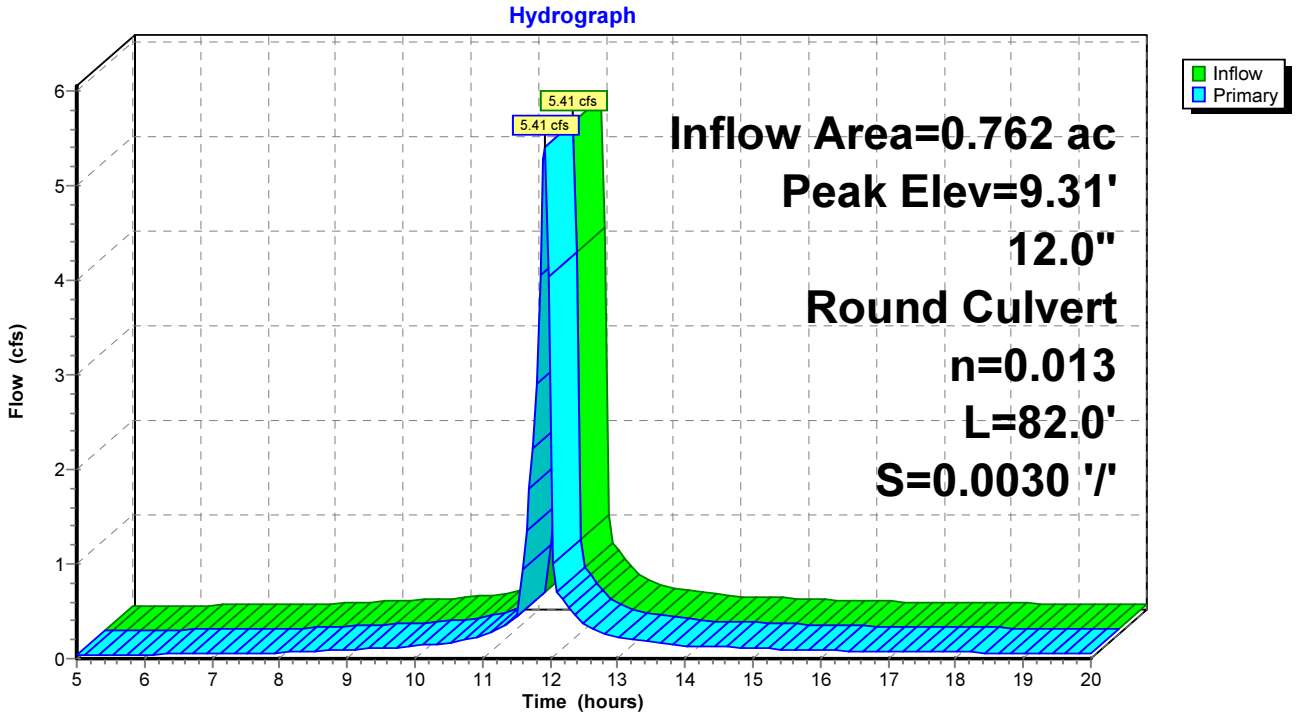
Inflow Area = 0.762 ac, 95.00% Impervious, Inflow Depth > 4.09" for 10 year event
Inflow = 5.41 cfs @ 11.92 hrs, Volume= 0.259 af
Outflow = 5.41 cfs @ 11.92 hrs, Volume= 0.259 af, Atten= 0%, Lag= 0.0 min
Primary = 5.41 cfs @ 11.92 hrs, Volume= 0.259 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 9.31' @ 11.92 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	5.58'	**12.0" Round Culvert** L= 82.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 5.58' / 5.33' S= 0.0030 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=5.25 cfs @ 11.92 hrs HW=9.16' (Free Discharge)
1=Culvert (Barrel Controls 5.25 cfs @ 6.68 fps)

Pond 2P:

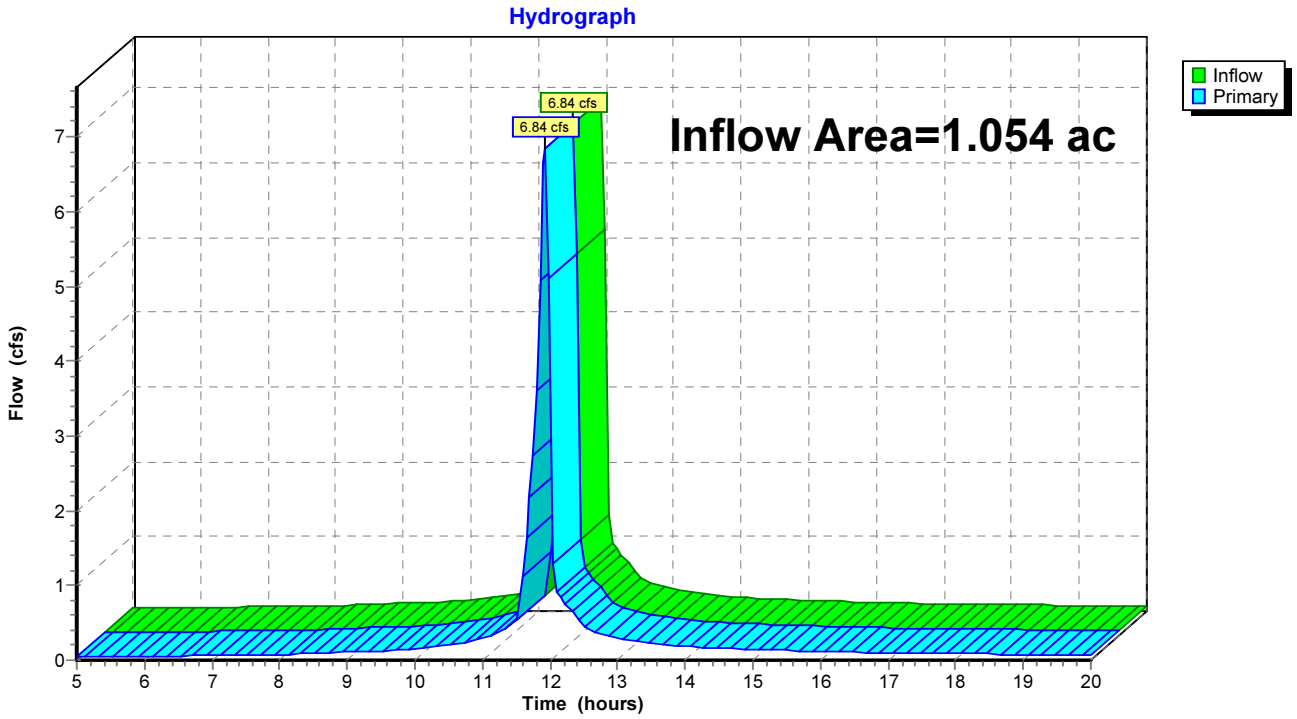


Summary for Pond 5P: Discharge Point 1 (COMBINED SEWER)

Inflow Area = 1.054 ac, 83.18% Impervious, Inflow Depth > 3.69" for 10 year event
Inflow = 6.84 cfs @ 11.92 hrs, Volume= 0.324 af
Primary = 6.84 cfs @ 11.92 hrs, Volume= 0.324 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 5P: Discharge Point 1 (COMBINED SEWER)



Summary for Pond AEI 2:

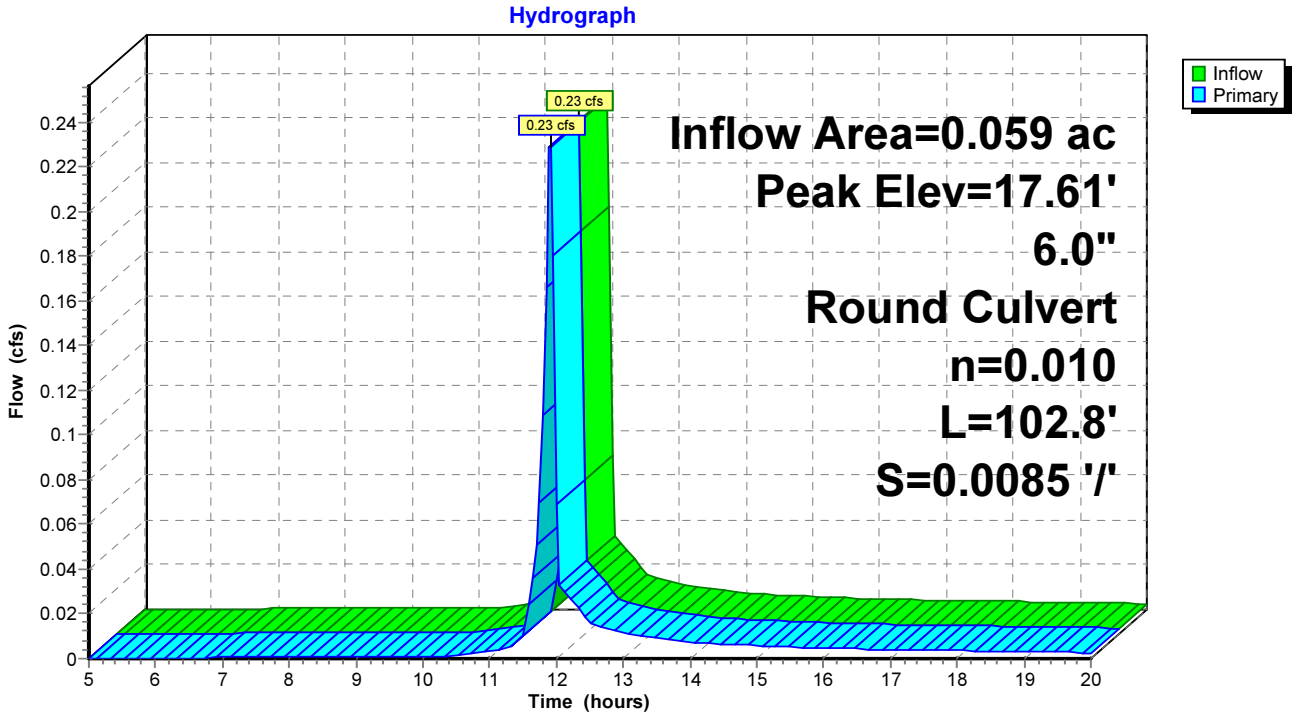
Inflow Area = 0.059 ac, 25.05% Impervious, Inflow Depth > 1.82" for 10 year event
Inflow = 0.23 cfs @ 11.90 hrs, Volume= 0.009 af
Outflow = 0.23 cfs @ 11.90 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min
Primary = 0.23 cfs @ 11.90 hrs, Volume= 0.009 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 17.61' @ 11.97 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	9.42'	**6.0" Round Culvert** L= 102.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.42' / 8.55' S= 0.0085 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.00 cfs @ 11.90 hrs HW=13.77' TW=17.13' (Dynamic Tailwater)
↑**1=Culvert** (Controls 0.00 cfs)

Pond AEI 2:



Summary for Pond AEI 3:

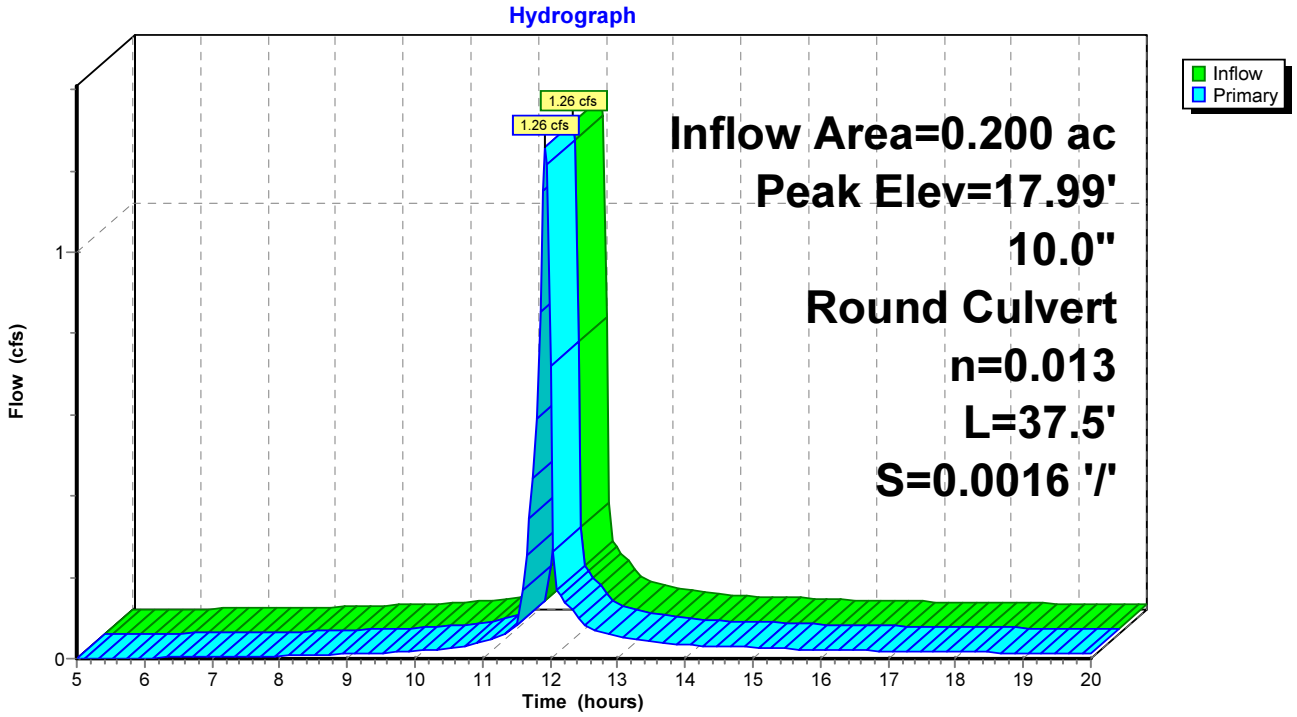
Inflow Area = 0.200 ac, 70.65% Impervious, Inflow Depth > 3.22" for 10 year event
Inflow = 1.26 cfs @ 11.93 hrs, Volume= 0.054 af
Outflow = 1.26 cfs @ 11.93 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 1.26 cfs @ 11.93 hrs, Volume= 0.054 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 17.99' @ 12.02 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	8.90'	**10.0" Round Culvert** L= 37.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 8.90' / 8.84' S= 0.0016 '/' Cc= 0.900 n= 0.013 Clay tile, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 11.93 hrs HW=13.02' TW=16.19' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Pond AEI 3:



Summary for Pond AEI 4:

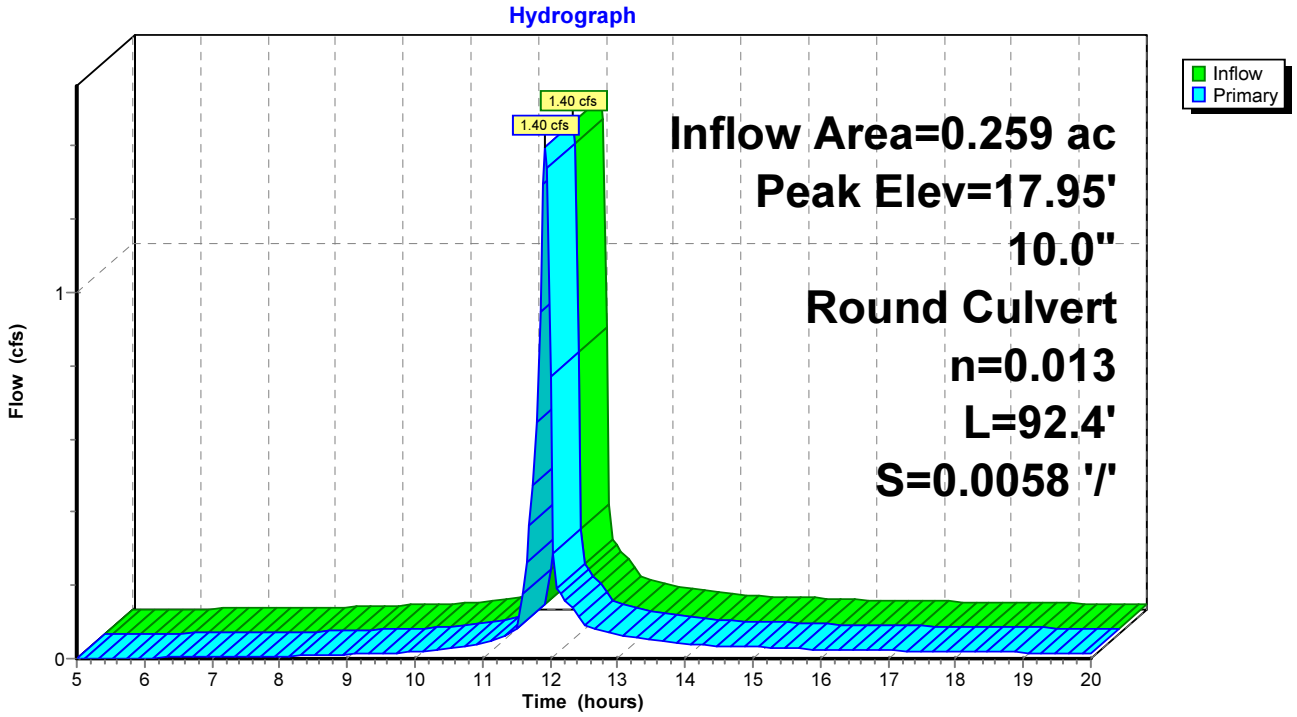
Inflow Area = 0.259 ac, 54.37% Impervious, Inflow Depth > 2.74" for 10 year event
Inflow = 1.40 cfs @ 11.93 hrs, Volume= 0.059 af
Outflow = 1.40 cfs @ 11.93 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min
Primary = 1.40 cfs @ 11.93 hrs, Volume= 0.059 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 17.95' @ 11.97 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	8.69'	**10.0" Round Culvert** L= 92.4' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 8.69' / 8.15' S= 0.0058 '/' Cc= 0.900 n= 0.013 Clay tile, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 11.93 hrs HW=16.00' TW=17.05' (Dynamic Tailwater)
↑**1=Culvert** (Controls 0.00 cfs)

Pond AEI 4:



Summary for Pond AEI 5:

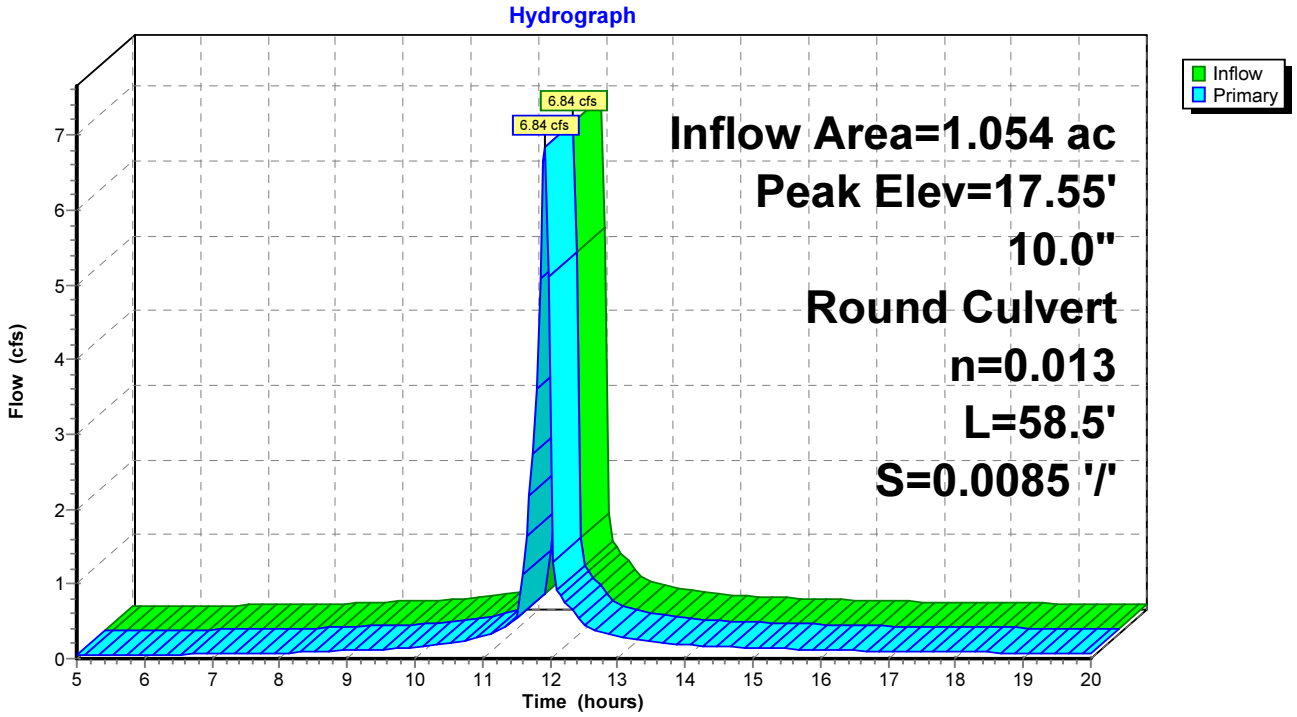
Inflow Area = 1.054 ac, 83.18% Impervious, Inflow Depth > 3.69" for 10 year event
Inflow = 6.84 cfs @ 11.92 hrs, Volume= 0.324 af
Outflow = 6.84 cfs @ 11.92 hrs, Volume= 0.324 af, Atten= 0%, Lag= 0.0 min
Primary = 6.84 cfs @ 11.92 hrs, Volume= 0.324 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 17.55' @ 11.92 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.90'	**10.0" Round Culvert** L= 58.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 7.90' / 7.40' S= 0.0085 '/' Cc= 0.900 n= 0.013 Clay tile, Flow Area= 0.55 sf

Primary OutFlow Max=6.64 cfs @ 11.92 hrs HW=17.07' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 6.64 cfs @ 12.17 fps)

Pond AEI 5:



Summary for Pond AEI 6: Discharge Point 3 (Off Site Drainage)

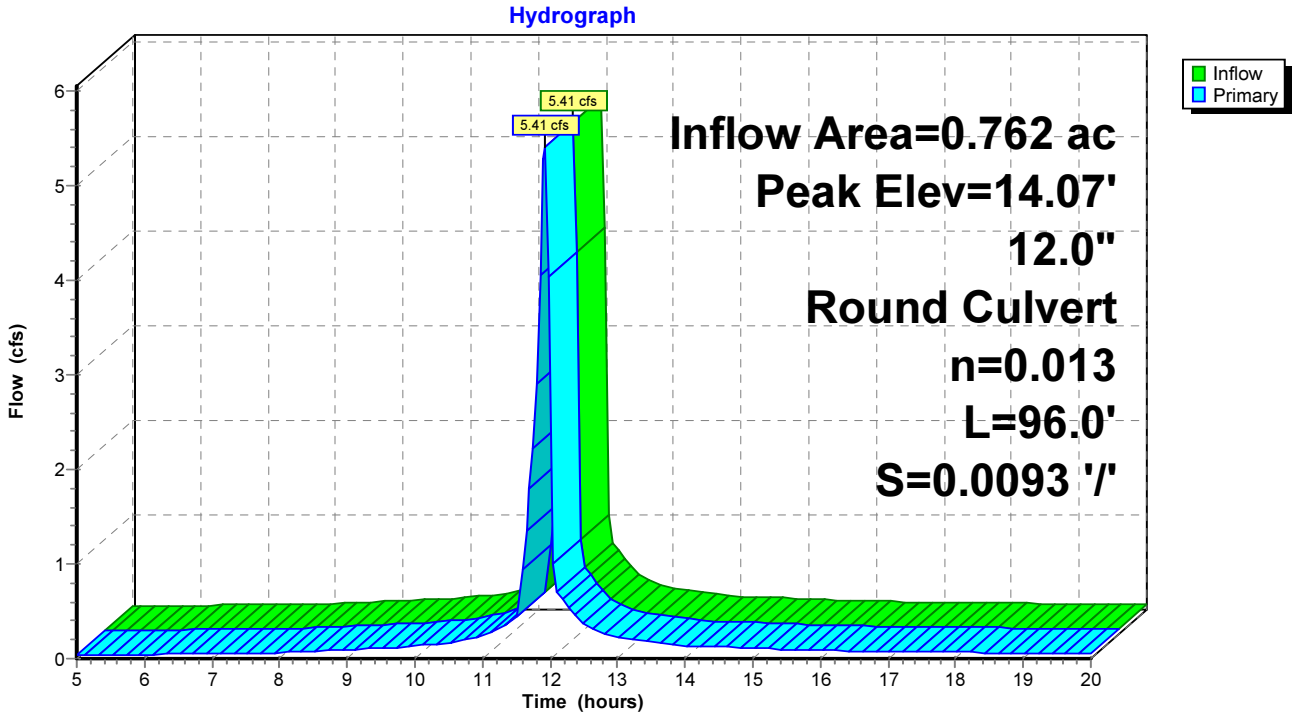
Inflow Area = 0.762 ac, 95.00% Impervious, Inflow Depth > 4.09" for 10 year event
Inflow = 5.41 cfs @ 11.92 hrs, Volume= 0.259 af
Outflow = 5.41 cfs @ 11.92 hrs, Volume= 0.259 af, Atten= 0%, Lag= 0.0 min
Primary = 5.41 cfs @ 11.92 hrs, Volume= 0.259 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 14.07' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	6.77'	**12.0" Round Culvert** L= 96.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 6.77' / 5.88' S= 0.0093 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.68 cfs @ 11.92 hrs HW=12.99' TW=11.45' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.68 cfs @ 4.69 fps)

Pond AEI 6: Discharge Point 3 (Off Site Drainage)



Summary for Pond AEI 7:

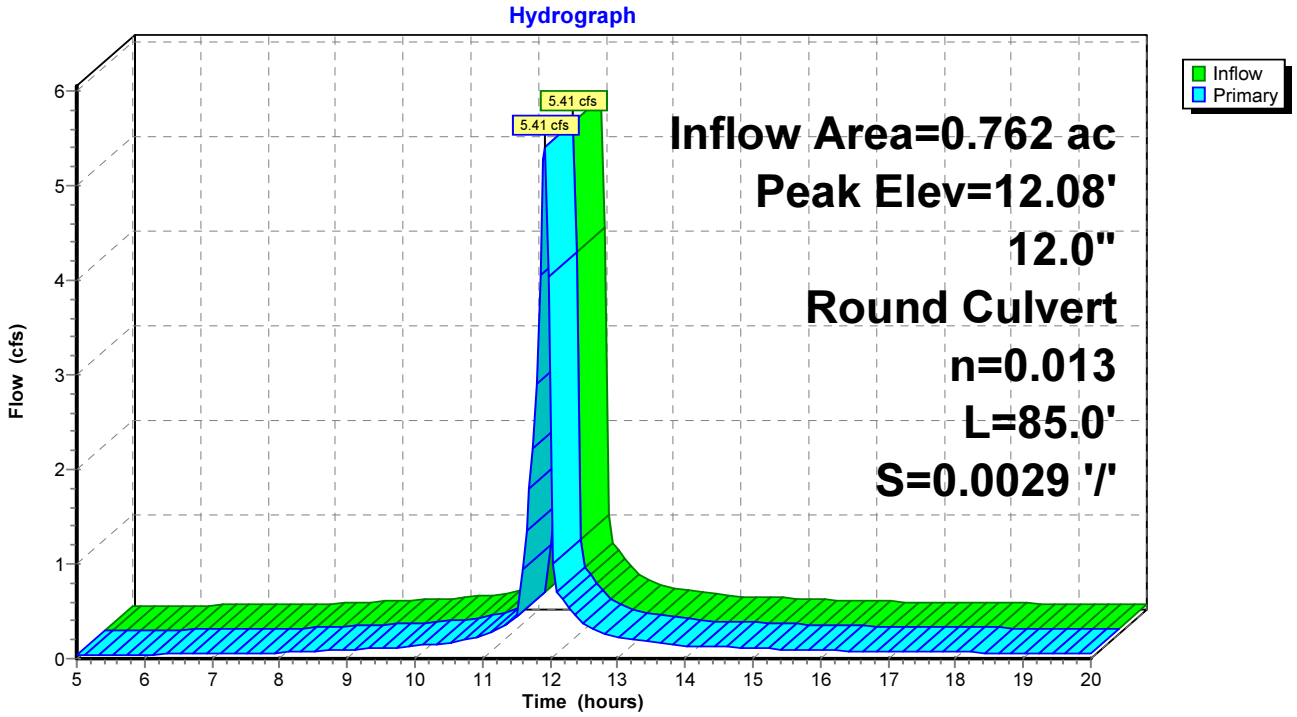
Inflow Area = 0.762 ac, 95.00% Impervious, Inflow Depth > 4.09" for 10 year event
Inflow = 5.41 cfs @ 11.92 hrs, Volume= 0.259 af
Outflow = 5.41 cfs @ 11.92 hrs, Volume= 0.259 af, Atten= 0%, Lag= 0.0 min
Primary = 5.41 cfs @ 11.92 hrs, Volume= 0.259 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 12.08' @ 11.94 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	5.83'	**12.0" Round Culvert** L= 85.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 5.83' / 5.58' S= 0.0029 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=4.67 cfs @ 11.92 hrs HW=11.45' TW=9.16' (Dynamic Tailwater)
1=Culvert (Outlet Controls 4.67 cfs @ 5.95 fps)

Pond AEI 7:



Summary for Pond CB 4433:

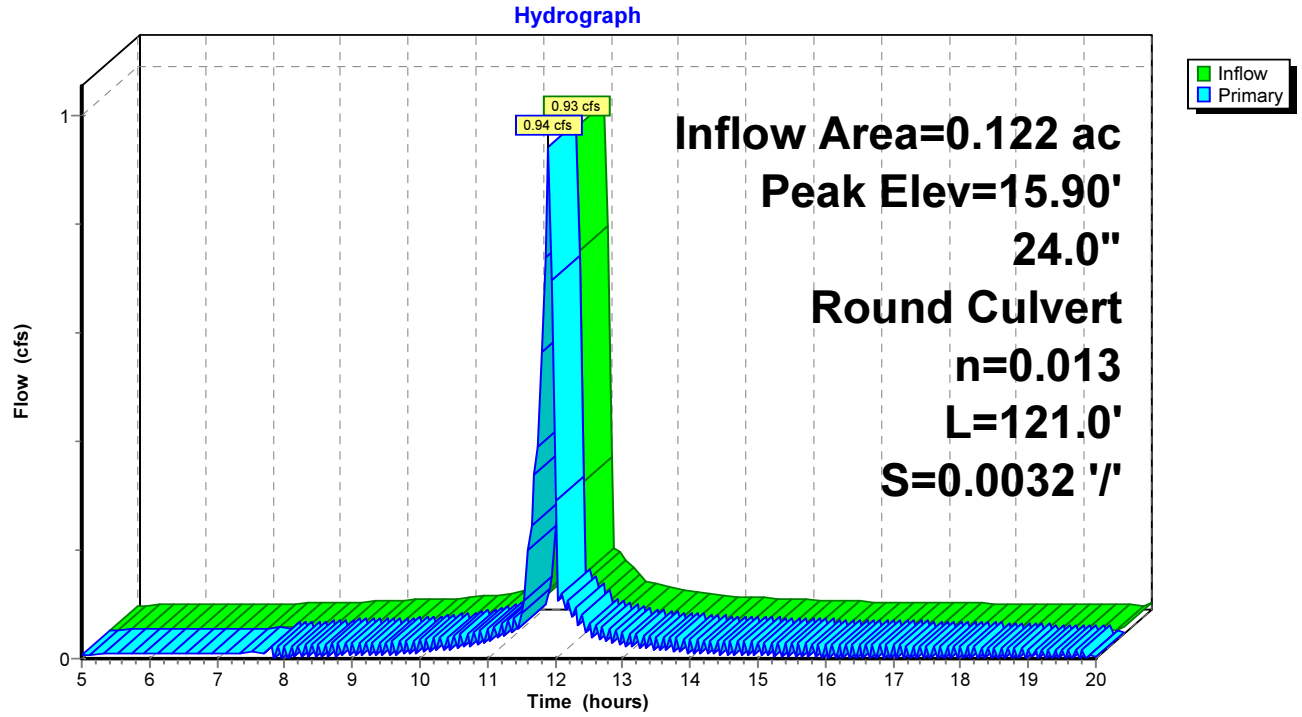
Inflow Area = 0.122 ac,100.00% Impervious, Inflow Depth > 4.24" for 10 year event
Inflow = 0.93 cfs @ 11.90 hrs, Volume= 0.043 af
Outflow = 0.94 cfs @ 11.90 hrs, Volume= 0.043 af, Atten= 0%, Lag= 0.0 min
Primary = 0.94 cfs @ 11.90 hrs, Volume= 0.043 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 15.90' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	14.38'	**24.0" Round Culvert** L= 121.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 14.38' / 13.99' S= 0.0032 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=0.00 cfs @ 11.90 hrs HW=15.85' TW=15.90' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Pond CB 4433:



Summary for Pond CB 4435:

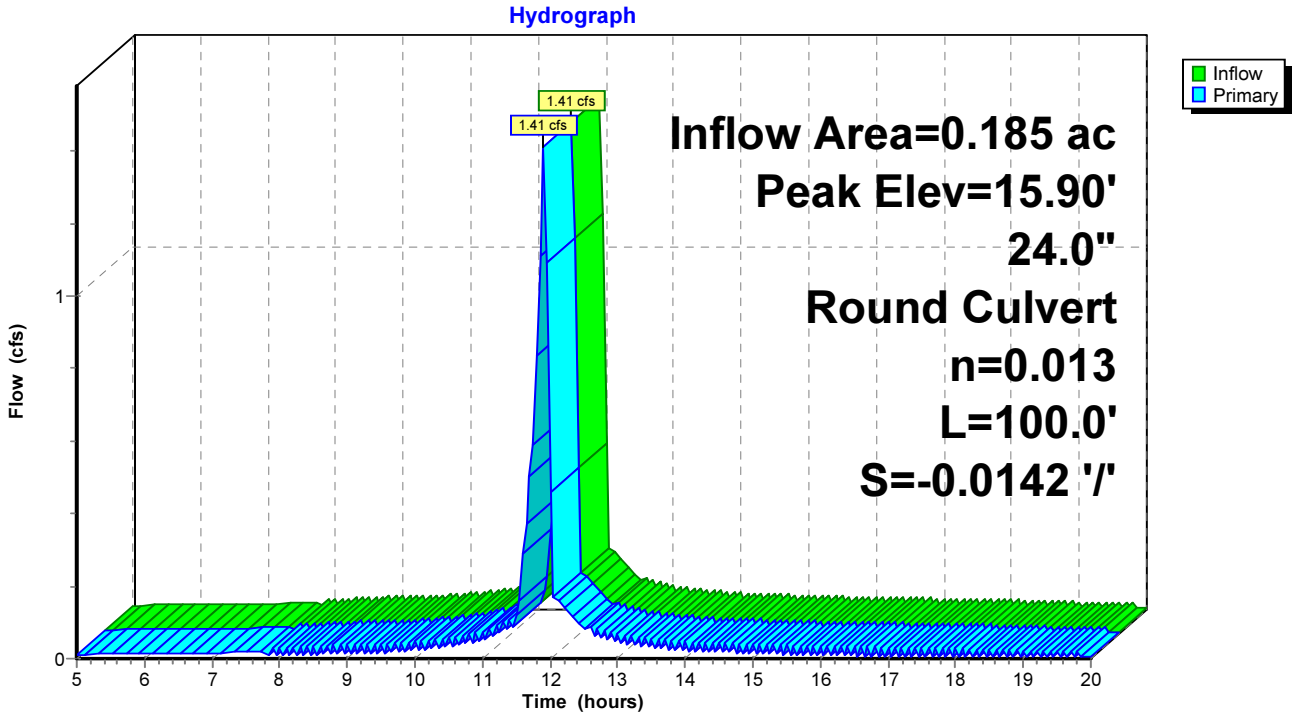
Inflow Area = 0.185 ac,100.00% Impervious, Inflow Depth > 4.24" for 10 year event
Inflow = 1.41 cfs @ 11.90 hrs, Volume= 0.065 af
Outflow = 1.41 cfs @ 11.90 hrs, Volume= 0.065 af, Atten= 0%, Lag= 0.0 min
Primary = 1.41 cfs @ 11.90 hrs, Volume= 0.065 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 15.90' @ 11.90 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	15.41'	**24.0" Round Culvert** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.99' / 15.41' S= -0.0142 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=1.41 cfs @ 11.90 hrs HW=15.90' TW=0.00' (Dynamic Tailwater)
↳**1=Culvert** (Inlet Controls 1.41 cfs @ 2.38 fps)

Pond CB 4435:



Summary for Pond CB 4560:

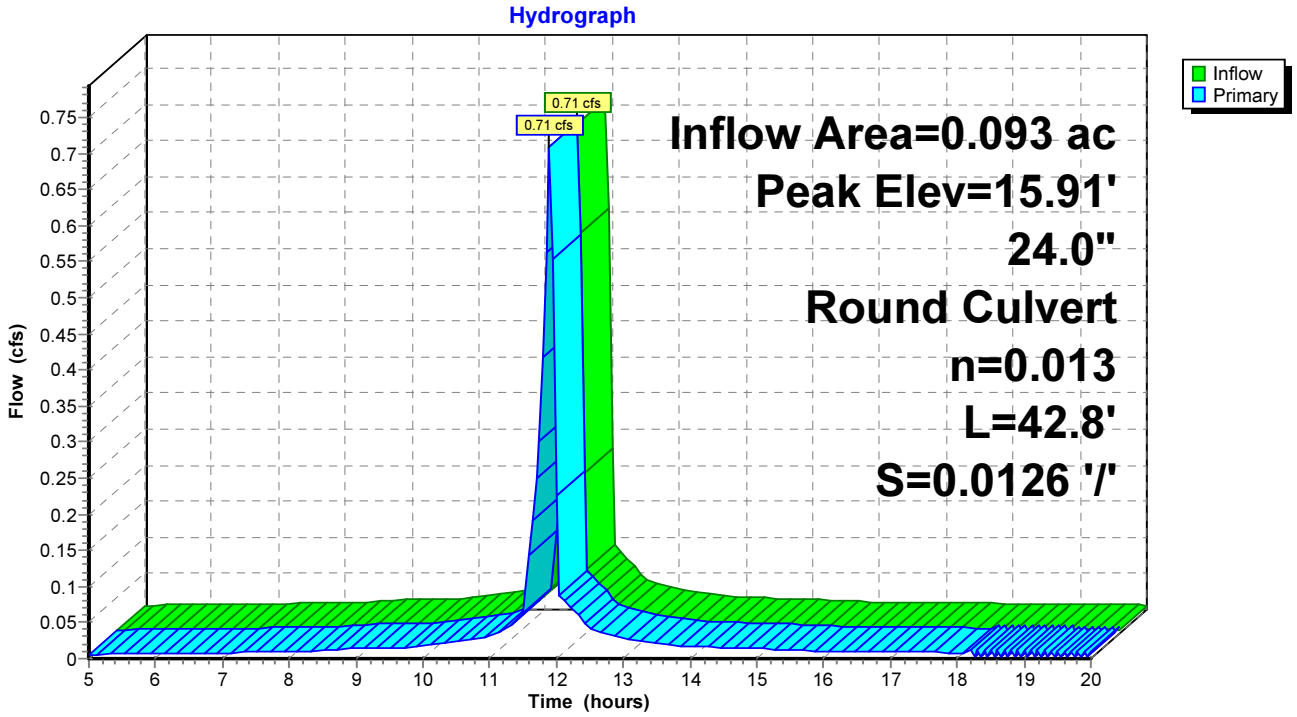
Inflow Area = 0.093 ac,100.00% Impervious, Inflow Depth > 4.24" for 10 year event
Inflow = 0.71 cfs @ 11.90 hrs, Volume= 0.033 af
Outflow = 0.71 cfs @ 11.90 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.0 min
Primary = 0.71 cfs @ 11.90 hrs, Volume= 0.033 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 15.91' @ 11.99 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	14.92'	**24.0" Round Culvert** L= 42.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 14.92' / 14.38' S= 0.0126 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=0.00 cfs @ 11.90 hrs HW=15.81' TW=15.85' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Pond CB 4560:

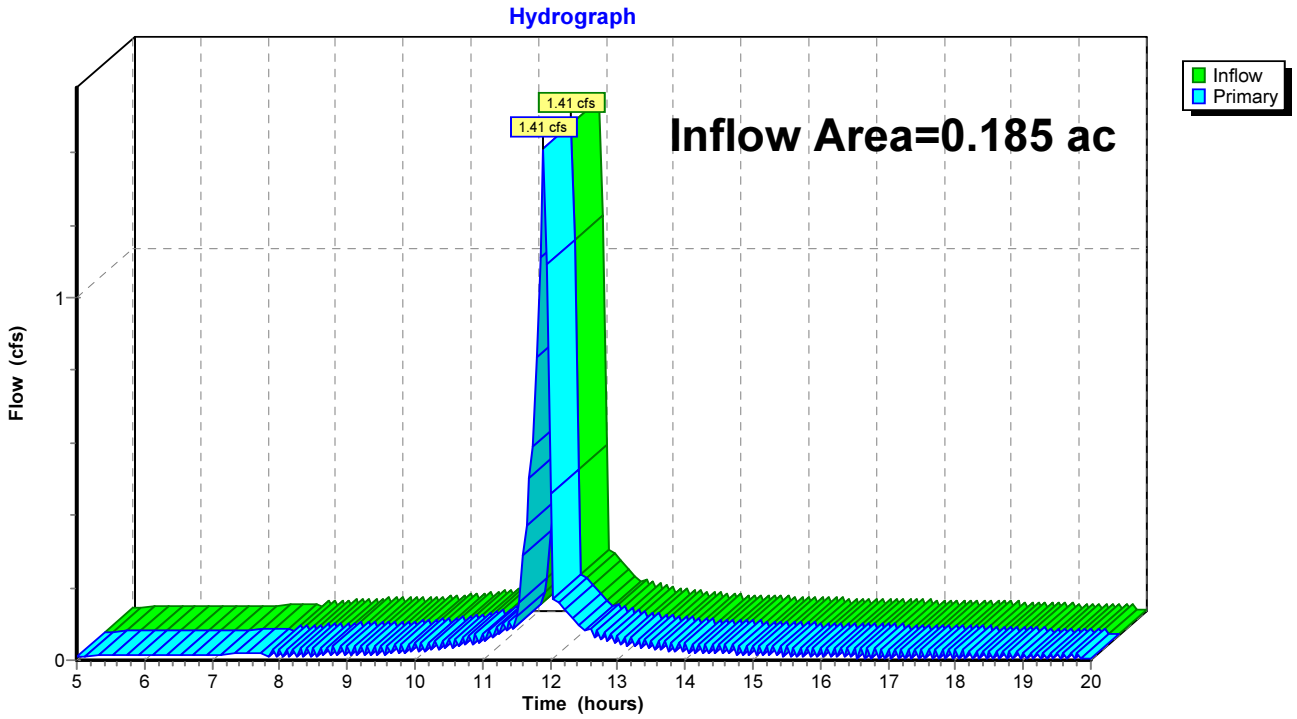


Summary for Link 2L: Discharge Point 2 (Court Street Drainage)

Inflow Area = 0.185 ac,100.00% Impervious, Inflow Depth > 4.24" for 10 year event
Inflow = 1.41 cfs @ 11.90 hrs, Volume= 0.065 af
Primary = 1.41 cfs @ 11.90 hrs, Volume= 0.065 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: Discharge Point 2 (Court Street Drainage)

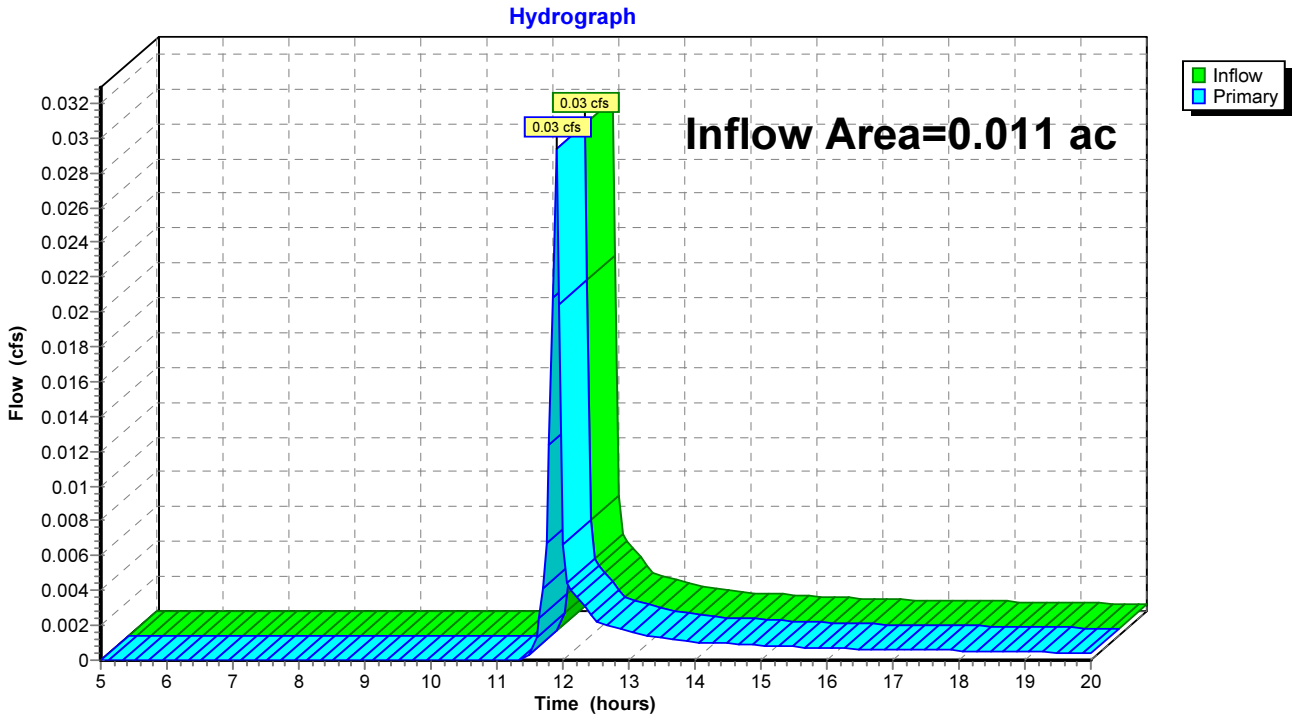


Summary for Link 3L: Discharge Point 4 (DP4)

Inflow Area = 0.011 ac, 0.00% Impervious, Inflow Depth > 1.15" for 10 year event
Inflow = 0.03 cfs @ 11.90 hrs, Volume= 0.001 af
Primary = 0.03 cfs @ 11.90 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: Discharge Point 4 (DP4)

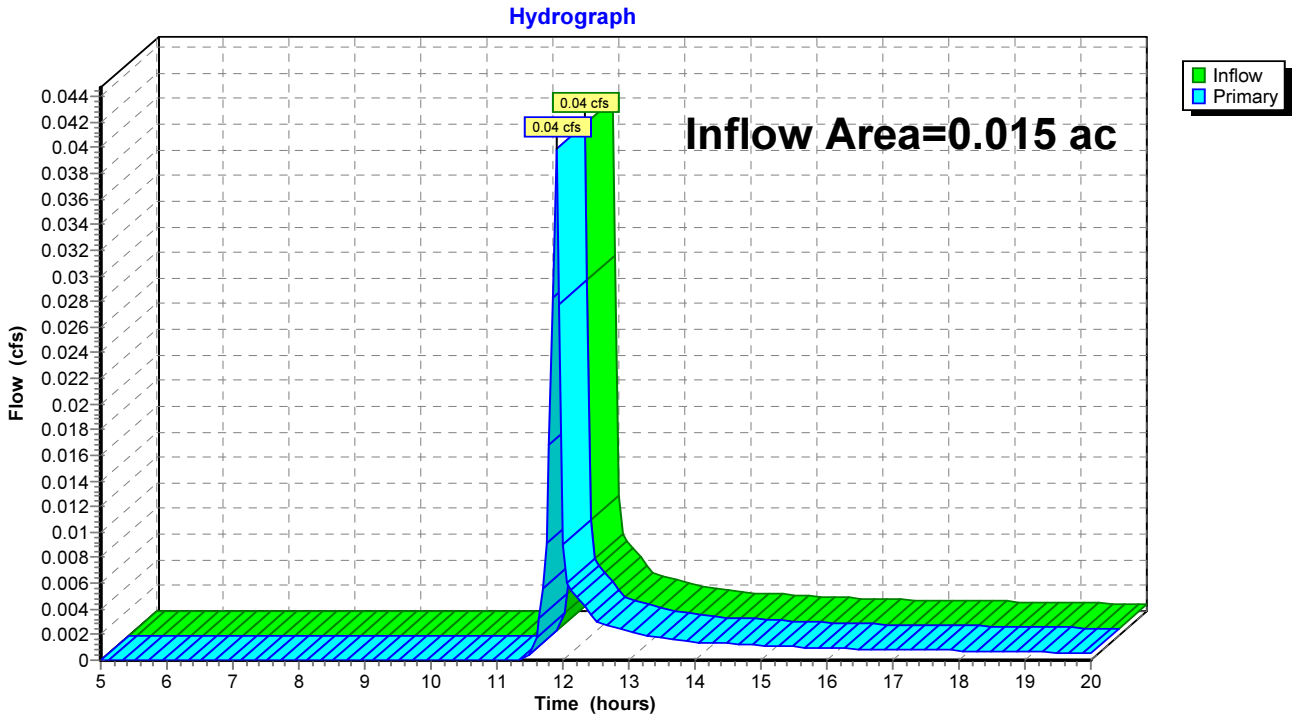


Summary for Link 4L: Discharge Point 5 (DP5)

Inflow Area = 0.015 ac, 0.00% Impervious, Inflow Depth > 1.15" for 10 year event
Inflow = 0.04 cfs @ 11.90 hrs, Volume= 0.001 af
Primary = 0.04 cfs @ 11.90 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 4L: Discharge Point 5 (DP5)



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 ES1: Runoff Area=8,698 sf 70.65% Impervious Runoff Depth>5.50"
Flow Length=220' Tc=2.8 min CN=87 Runoff=2.07 cfs 0.091 af

Subcatchment ES1a: Offsite Runoff Area=667 sf 0.00% Impervious Runoff Depth>2.73"
Tc=0.0 min CN=61 Runoff=0.09 cfs 0.003 af

Subcatchment ES2: Runoff Area=32,053 sf 98.00% Impervious Runoff Depth>6.45"
Flow Length=114' Tc=2.5 min CN=97 Runoff=8.06 cfs 0.396 af

Subcatchment ES2a: Runoff Area=196 sf 100.00% Impervious Runoff Depth>6.51"
Flow Length=27' Slope=0.0740 '/' Tc=0.1 min CN=98 Runoff=0.05 cfs 0.002 af

Subcatchment ES3: Runoff Area=2,371 sf 18.85% Impervious Runoff Depth>3.44"
Flow Length=108' Tc=0.9 min CN=68 Runoff=0.41 cfs 0.016 af

Subcatchment ES4: Runoff Area=2,604 sf 0.00% Impervious Runoff Depth>2.73"
Flow Length=81' Slope=0.0525 '/' Tc=0.8 min CN=61 Runoff=0.36 cfs 0.014 af

Subcatchment ES4a: Offsite Runoff Area=491 sf 0.00% Impervious Runoff Depth>2.73"
Tc=0.0 min CN=61 Runoff=0.07 cfs 0.003 af

Subcatchment ES5: Runoff Area=33,193 sf 95.00% Impervious Runoff Depth>6.38"
Flow Length=356' Tc=2.5 min CN=96 Runoff=8.31 cfs 0.405 af

Subcatchment ES6: Runoff Area=2,738 sf 100.00% Impervious Runoff Depth>6.51"
Flow Length=121' Tc=1.5 min CN=98 Runoff=0.72 cfs 0.034 af

Subcatchment ES7: Runoff Area=1,263 sf 100.00% Impervious Runoff Depth>6.51"
Flow Length=49' Slope=0.0051 '/' Tc=0.6 min CN=98 Runoff=0.34 cfs 0.016 af

Subcatchment ES8: Runoff Area=4,051 sf 100.00% Impervious Runoff Depth>6.51"
Flow Length=143' Slope=0.0098 '/' Tc=1.2 min CN=98 Runoff=1.08 cfs 0.050 af

Pond 2P: Peak Elev=13.36' Inflow=8.31 cfs 0.405 af
12.0" Round Culvert n=0.013 L=82.0' S=0.0030 '/' Outflow=8.31 cfs 0.405 af

Pond 5P: Discharge Point 1 (COMBINED SEWER) Inflow=10.84 cfs 0.519 af
Primary=10.84 cfs 0.519 af

Pond AEI 2: Peak Elev=31.83' Inflow=0.46 cfs 0.018 af
6.0" Round Culvert n=0.010 L=102.8' S=0.0085 '/' Outflow=0.46 cfs 0.018 af

Pond AEI 3: Peak Elev=32.90' Inflow=2.07 cfs 0.091 af
10.0" Round Culvert n=0.013 L=37.5' S=0.0016 '/' Outflow=2.07 cfs 0.091 af

Pond AEI 4: Peak Elev=32.78' Inflow=2.40 cfs 0.105 af
10.0" Round Culvert n=0.013 L=92.4' S=0.0058 '/' Outflow=2.40 cfs 0.105 af

Pond AEI 5: Peak Elev=31.62' Inflow=10.84 cfs 0.519 af
10.0" Round Culvert n=0.013 L=58.5' S=0.0085 '/' Outflow=10.84 cfs 0.519 af

Pond AEI 6: Discharge Point 3 (Off Site Drainage) Peak Elev=24.63' Inflow=8.31 cfs 0.405 af
12.0" Round Culvert n=0.013 L=96.0' S=0.0093 '/' Outflow=8.31 cfs 0.405 af

Pond AEI 7: Peak Elev=19.91' Inflow=8.31 cfs 0.405 af
12.0" Round Culvert n=0.013 L=85.0' S=0.0029 '/' Outflow=8.31 cfs 0.405 af

Pond CB 4433: Peak Elev=16.03' Inflow=1.42 cfs 0.066 af
24.0" Round Culvert n=0.013 L=121.0' S=0.0032 '/' Outflow=1.41 cfs 0.066 af

Pond CB 4435: Peak Elev=16.01' Inflow=2.12 cfs 0.100 af
24.0" Round Culvert n=0.013 L=100.0' S=-0.0142 '/' Outflow=2.12 cfs 0.100 af

Pond CB 4560: Peak Elev=16.03' Inflow=1.08 cfs 0.050 af
24.0" Round Culvert n=0.013 L=42.8' S=0.0126 '/' Outflow=1.08 cfs 0.050 af

Link 2L: Discharge Point 2 (Court Street Drainage) Inflow=2.12 cfs 0.100 af
Primary=2.12 cfs 0.100 af

Link 3L: Discharge Point 4 (DP4) Inflow=0.07 cfs 0.003 af
Primary=0.07 cfs 0.003 af

Link 4L: Discharge Point 5 (DP5) Inflow=0.09 cfs 0.003 af
Primary=0.09 cfs 0.003 af

Total Runoff Area = 2.028 ac Runoff Volume = 1.030 af Average Runoff Depth = 6.10"
11.93% Pervious = 0.242 ac 88.07% Impervious = 1.786 ac

Summary for Subcatchment ES1:

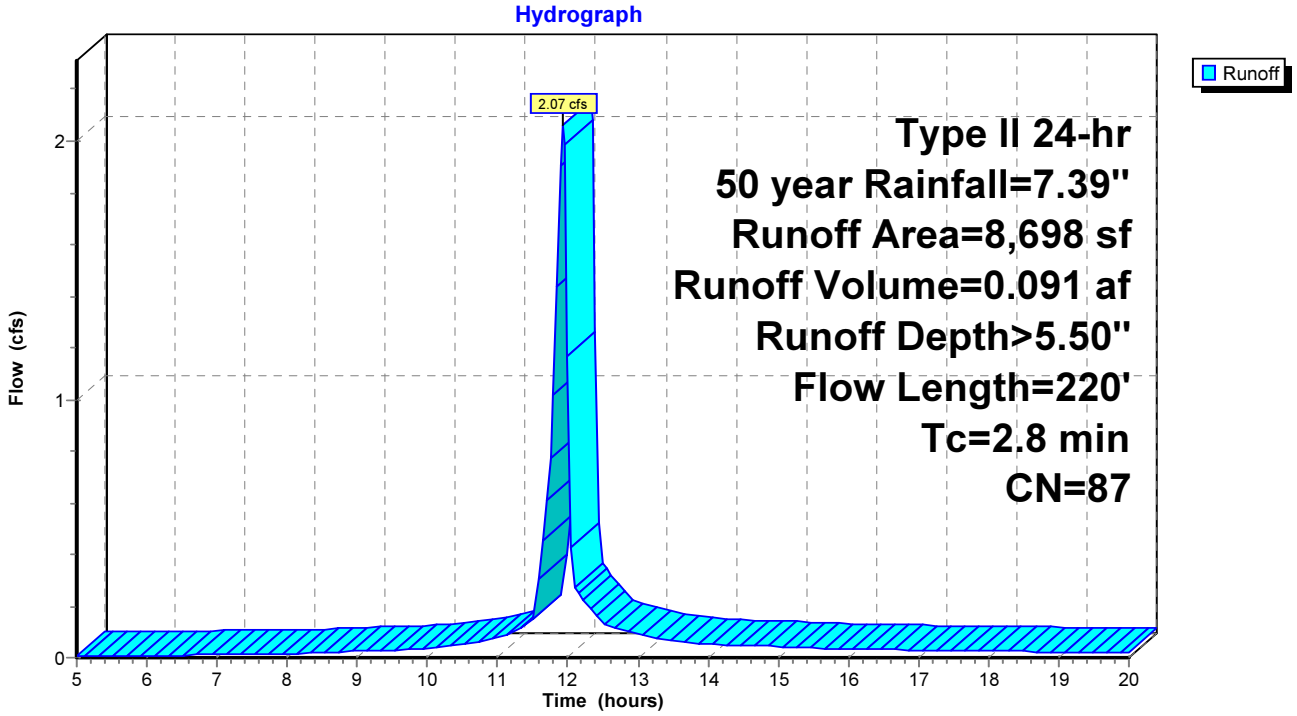
Runoff = 2.07 cfs @ 11.93 hrs, Volume= 0.091 af, Depth> 5.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=7.39"

	Area (sf)	CN	Description
	5,487	98	Paved parking, HSG B
*	658	98	Unconnected pavement, sidewalk, HSG B
	2,553	61	>75% Grass cover, Good, HSG B
	8,698	87	Weighted Average
	2,553		29.35% Pervious Area
	6,145		70.65% Impervious Area
	658		10.71% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	84	0.0089	0.66		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	136	0.0239	3.14		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.8	220	Total			

Subcatchment ES1:



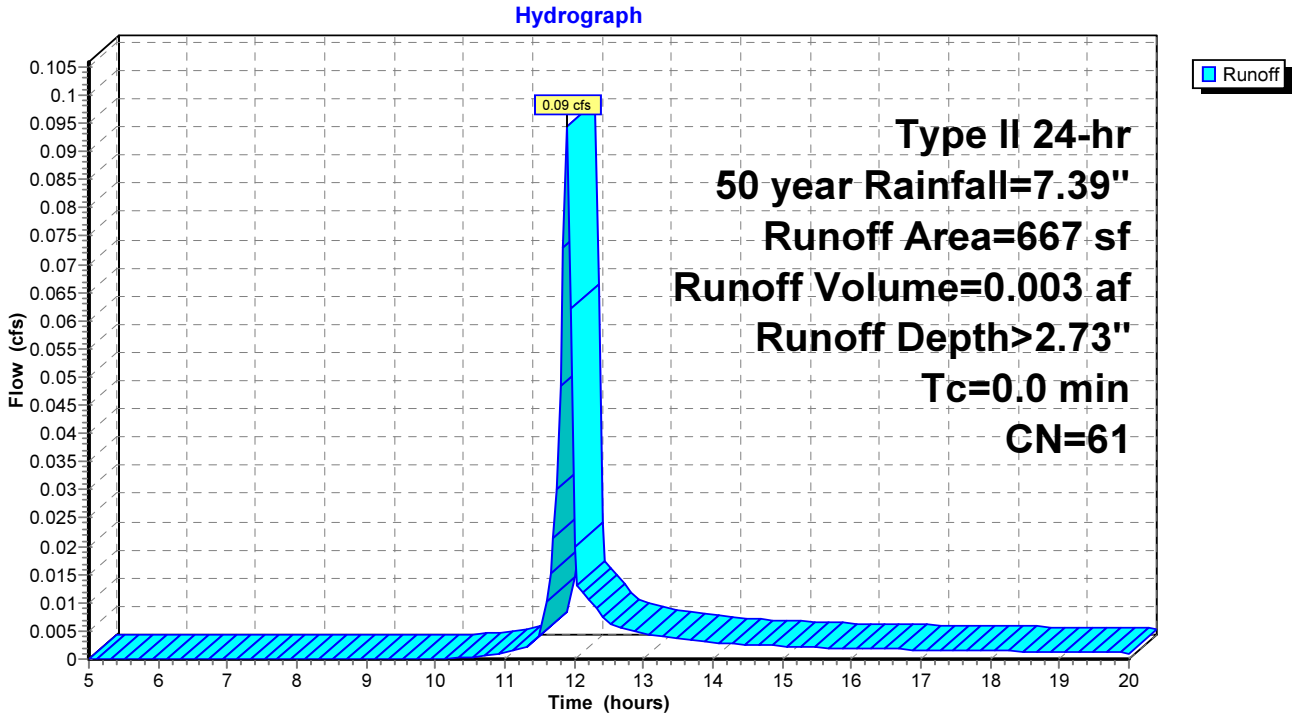
Summary for Subcatchment ES1a: Offsite

Runoff = 0.09 cfs @ 11.89 hrs, Volume= 0.003 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=7.39"

Area (sf)	CN	Description
667	61	>75% Grass cover, Good, HSG B
667		100.00% Pervious Area

Subcatchment ES1a: Offsite



Summary for Subcatchment ES2:

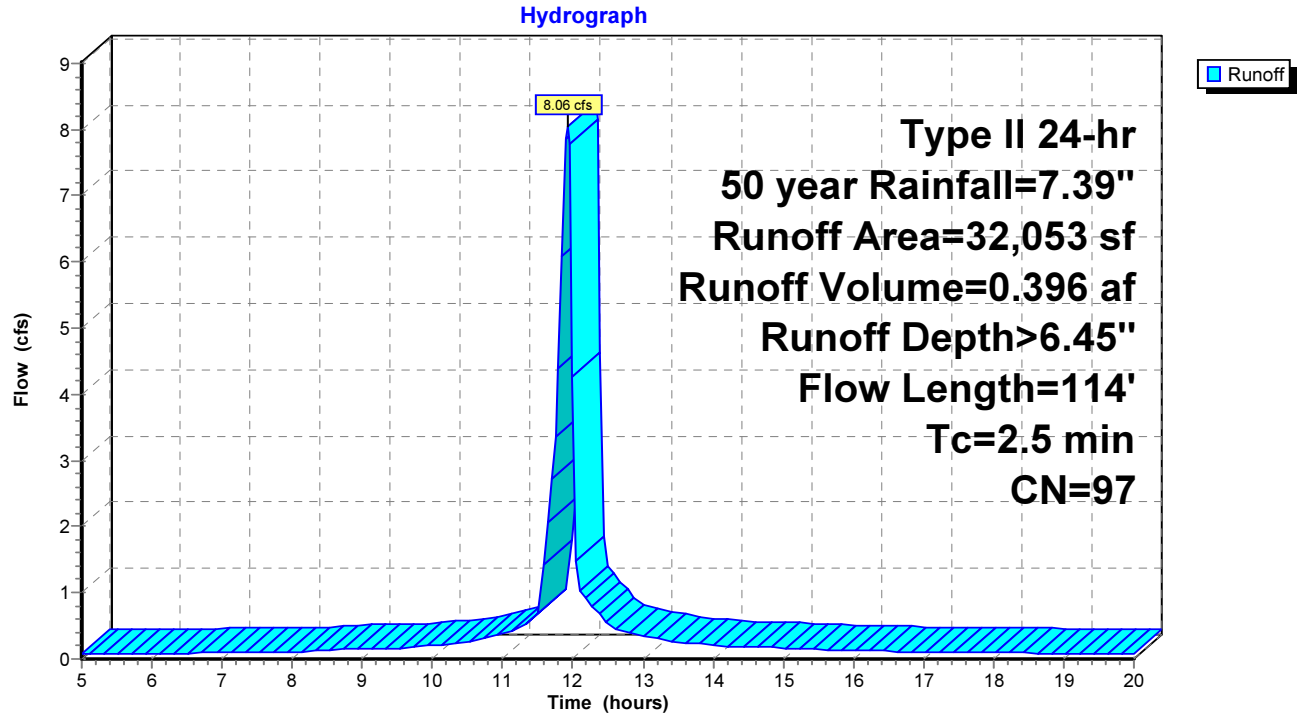
Runoff = 8.06 cfs @ 11.92 hrs, Volume= 0.396 af, Depth> 6.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=7.39"

	Area (sf)	CN	Description
	10,300	98	Roofs, HSG B
	3,910	98	Roofs, HSG B
	641	61	>75% Grass cover, Good, HSG B
*	480	98	Unconnected pavement,sidewalks , HSG B
	9,865	98	Paved parking, HSG B
*	6,857	98	Gravel surface, HSG B
	32,053	97	Weighted Average
	641		2.00% Pervious Area
	31,412		98.00% Impervious Area
	480		1.53% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	35	0.0071	0.74		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.21"
1.7	79	0.0050	0.75		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.21"
2.5	114	Total			

Subcatchment ES2:



Summary for Subcatchment ES2a:

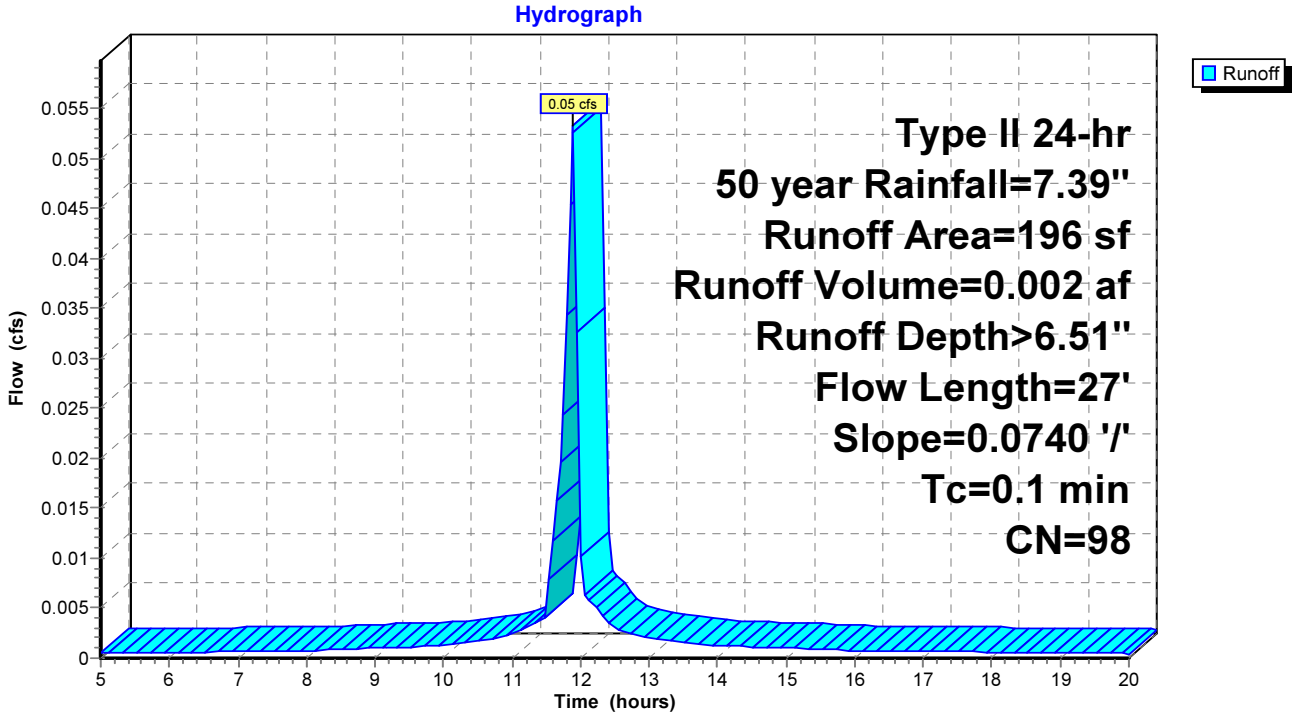
Runoff = 0.05 cfs @ 11.89 hrs, Volume= 0.002 af, Depth> 6.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=7.39"

	Area (sf)	CN	Description
	102	98	Paved parking, HSG B
*	94	98	Unconnected pavement, sidewalk, HSG B
	196	98	Weighted Average
	196		100.00% Impervious Area
	94		47.96% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	27	0.0740	5.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps

Subcatchment ES2a:



Summary for Subcatchment ES3:

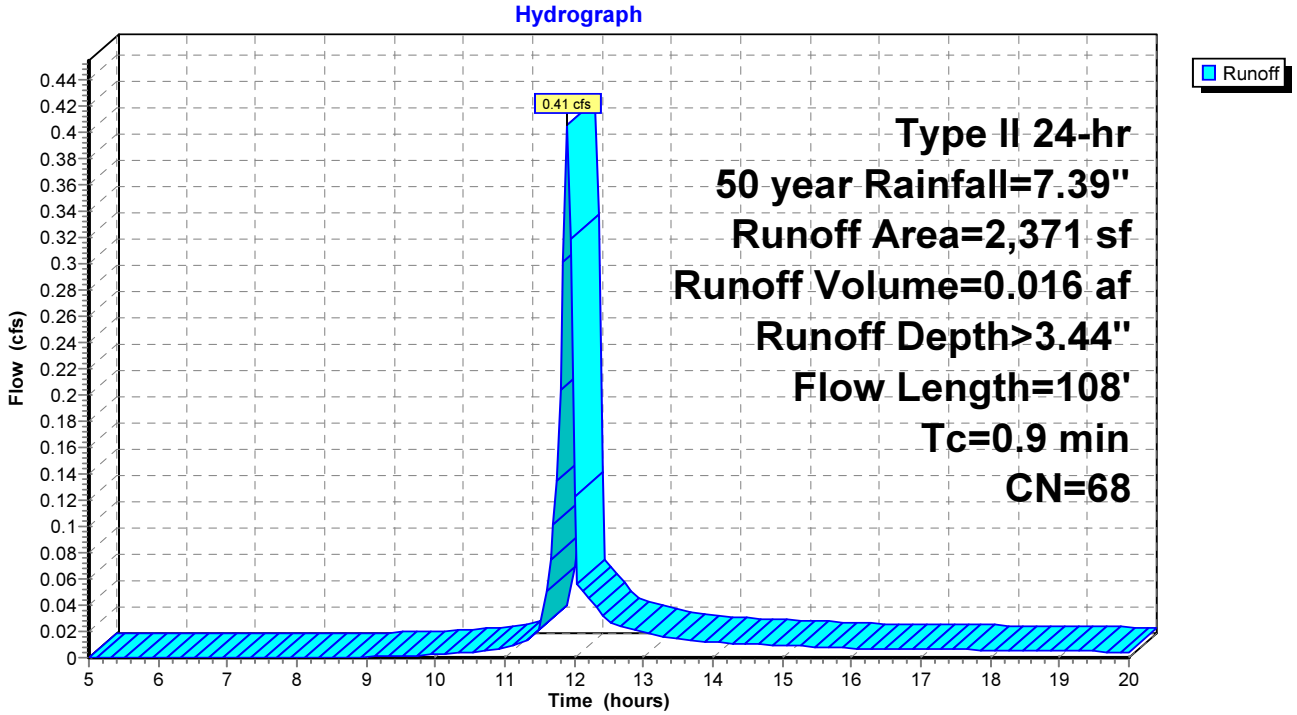
Runoff = 0.41 cfs @ 11.90 hrs, Volume= 0.016 af, Depth> 3.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=7.39"

	Area (sf)	CN	Description
*	414	98	Gravel surface, HSG B
*	33	98	Unconnected pavement, sidewalk, HSG B
	1,924	61	>75% Grass cover, Good, HSG B
	2,371	68	Weighted Average
	1,924		81.15% Pervious Area
	447		18.85% Impervious Area
	33		7.38% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	58	0.0819	5.81		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	50	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	108	Total			

Subcatchment ES3:



Summary for Subcatchment ES4:

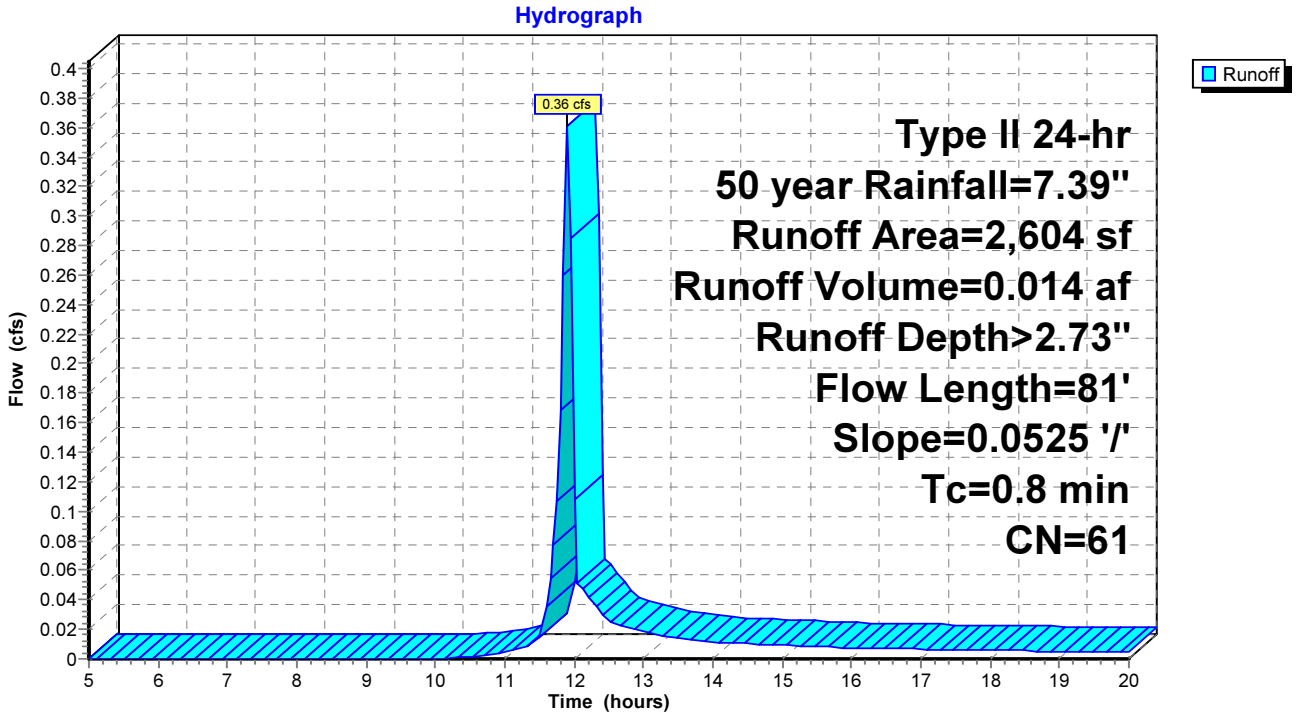
Runoff = 0.36 cfs @ 11.90 hrs, Volume= 0.014 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=7.39"

Area (sf)	CN	Description
2,604	61	>75% Grass cover, Good, HSG B
2,604		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	81	0.0525	1.60		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps

Subcatchment ES4:



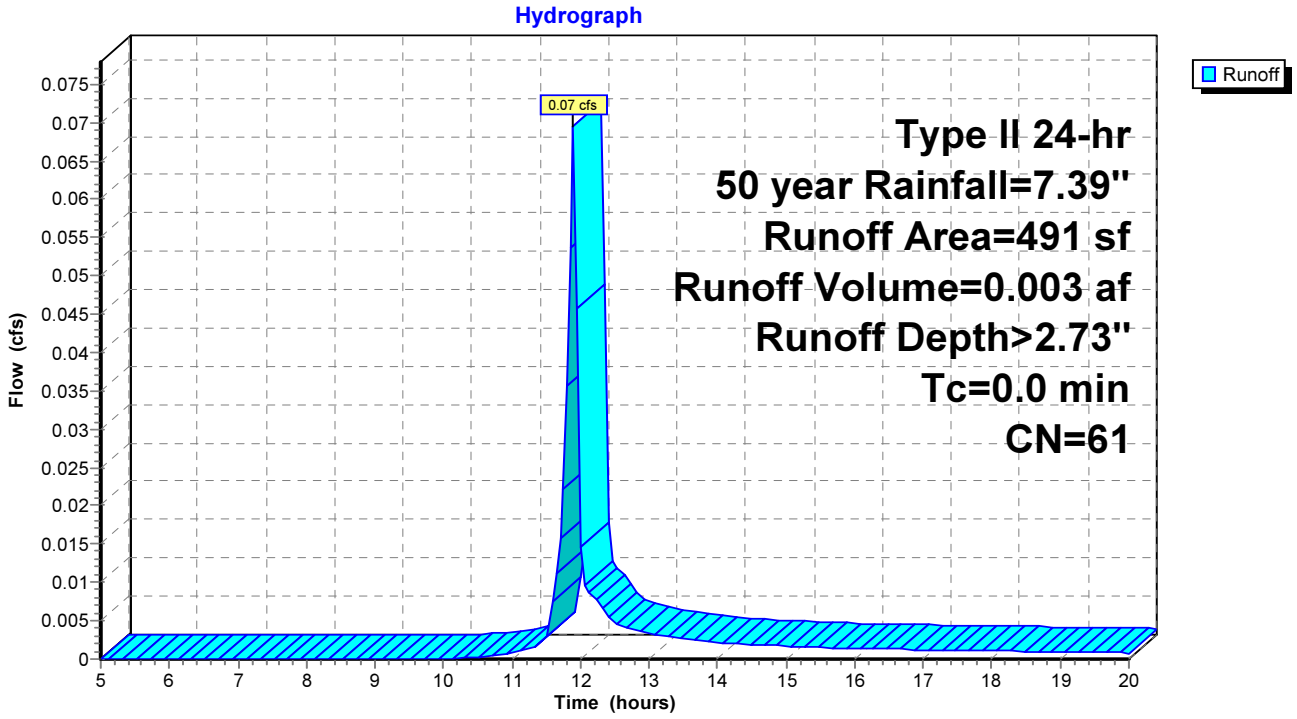
Summary for Subcatchment ES4a: Offsite

Runoff = 0.07 cfs @ 11.89 hrs, Volume= 0.003 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=7.39"

Area (sf)	CN	Description
491	61	>75% Grass cover, Good, HSG B
491		100.00% Pervious Area

Subcatchment ES4a: Offsite



Summary for Subcatchment ES5:

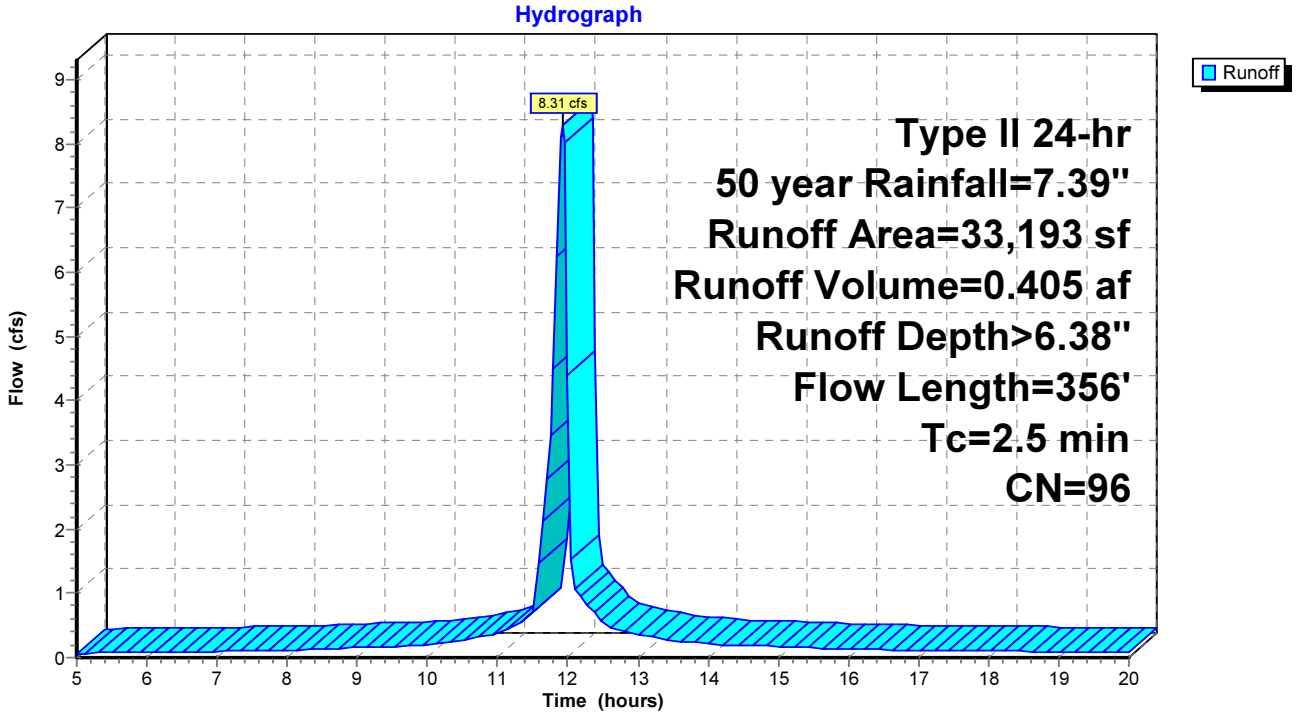
Runoff = 8.31 cfs @ 11.92 hrs, Volume= 0.405 af, Depth> 6.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=7.39"

	Area (sf)	CN	Description
	6,186	98	Roofs, HSG B
	23,335	98	Paved parking, HSG B
*	1,456	98	Unconnected pavement, sidewalk, HSG B
	1,658	61	>75% Grass cover, Good, HSG B
*	558	98	Gravel surface, HSG B
	33,193	96	Weighted Average
	1,658		5.00% Pervious Area
	31,535		95.00% Impervious Area
	1,456		4.62% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	56	0.0050	0.70		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.21"
1.2	300	0.0417	4.15		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.5	356	Total			

Subcatchment ES5:



Summary for Subcatchment ES6:

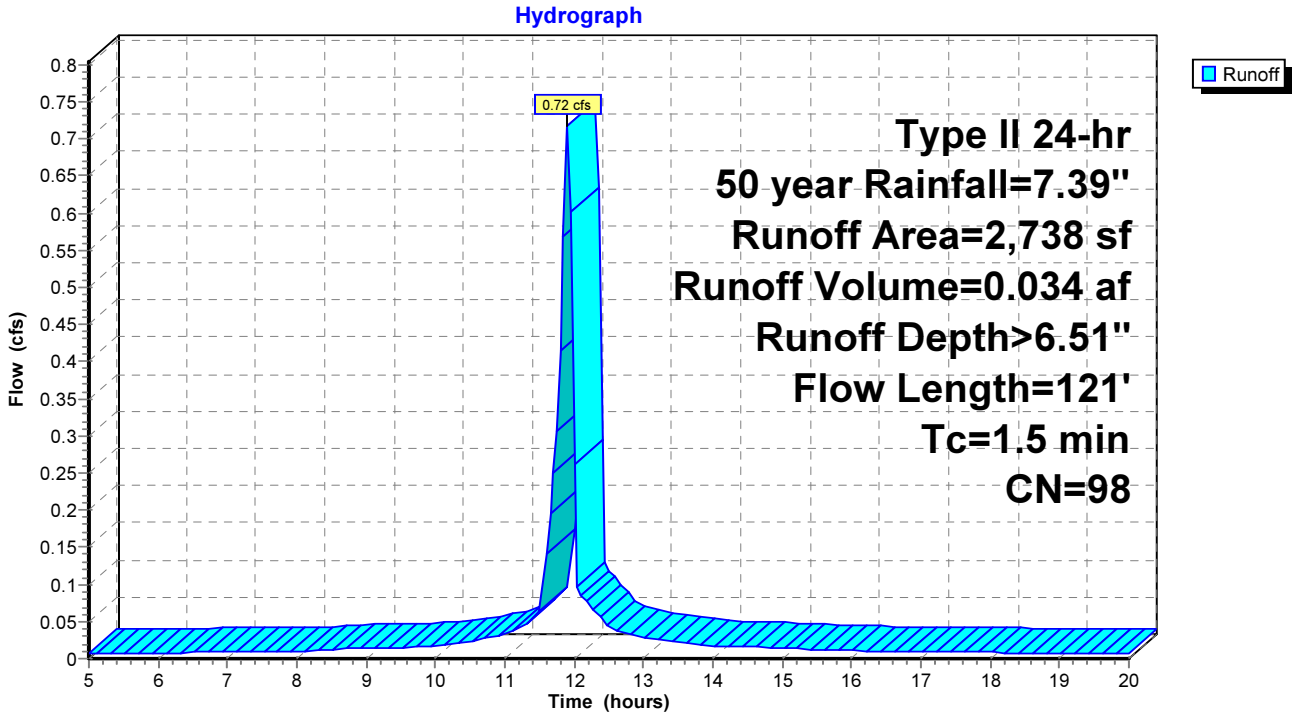
Runoff = 0.72 cfs @ 11.90 hrs, Volume= 0.034 af, Depth> 6.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=7.39"

	Area (sf)	CN	Description
	2,329	98	Paved parking, HSG B
*	409	98	Unconnected pavement, sidewalk, HSG B
	2,738	98	Weighted Average
	2,738		100.00% Impervious Area
	409		14.94% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	26	0.0096	0.69		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	95	0.0078	1.79		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.5	121	Total			

Subcatchment ES6:



Summary for Subcatchment ES7:

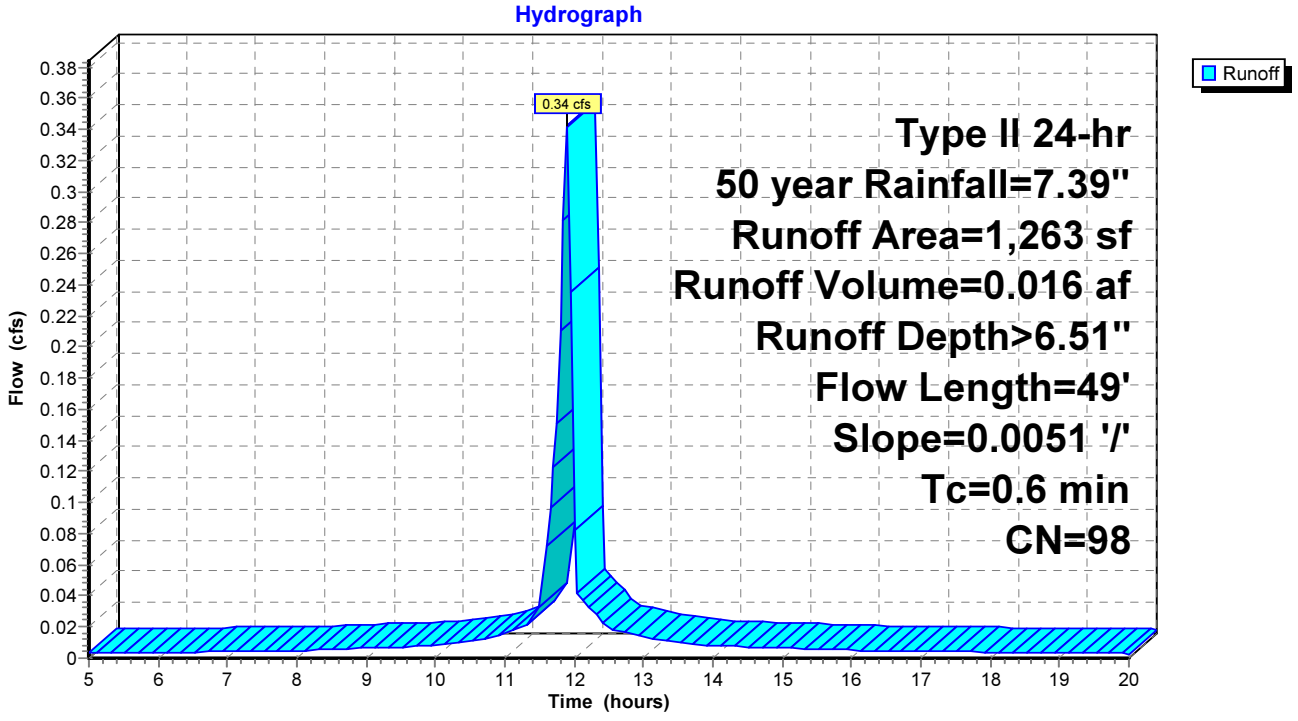
Runoff = 0.34 cfs @ 11.89 hrs, Volume= 0.016 af, Depth> 6.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=7.39"

	Area (sf)	CN	Description
	922	98	Paved parking, HSG B
*	341	98	Unconnected pavement, sidewalk, HSG B
	1,263	98	Weighted Average
	1,263		100.00% Impervious Area
	341		27.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	49	0.0051	1.45		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps

Subcatchment ES7:



Summary for Subcatchment ES8:

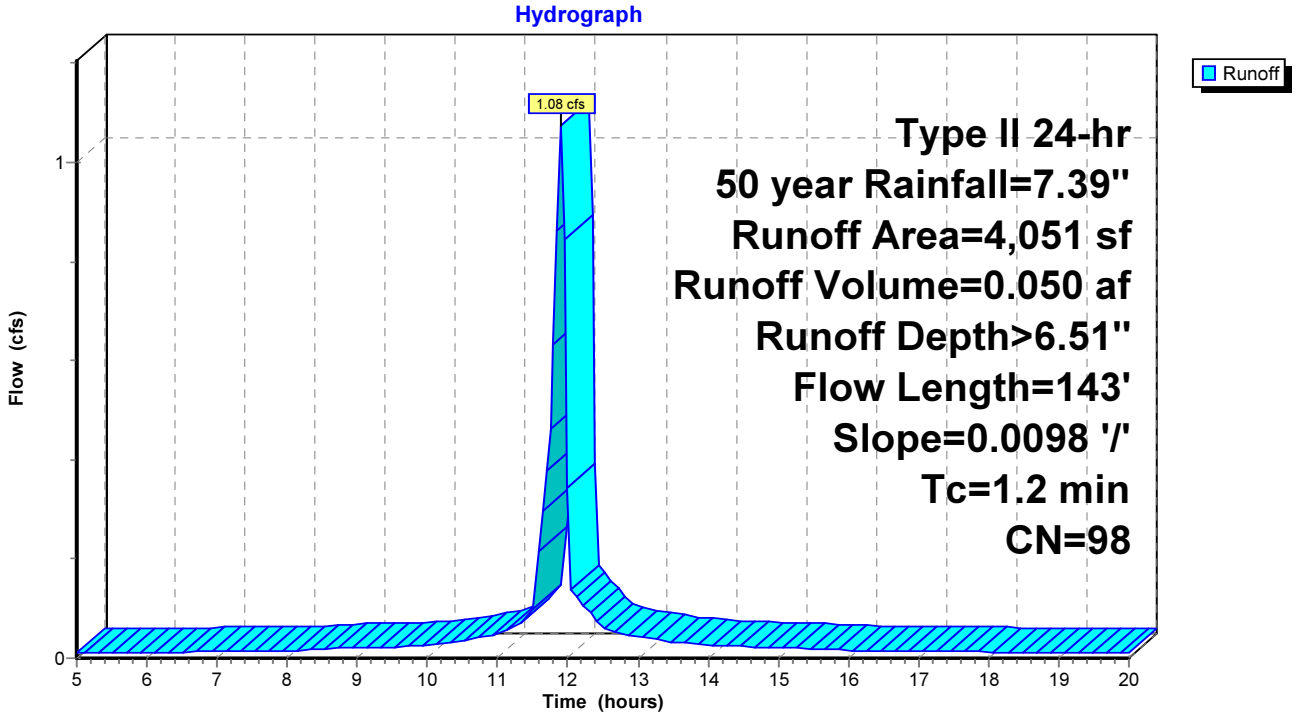
Runoff = 1.08 cfs @ 11.90 hrs, Volume= 0.050 af, Depth> 6.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=7.39"

	Area (sf)	CN	Description
	2,607	98	Paved parking, HSG B
*	1,444	98	Unconnected pavement,sidewalk, HSG B
	4,051	98	Weighted Average
	4,051		100.00% Impervious Area
	1,444		35.65% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	143	0.0098	2.01		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps

Subcatchment ES8:



Summary for Pond 2P:

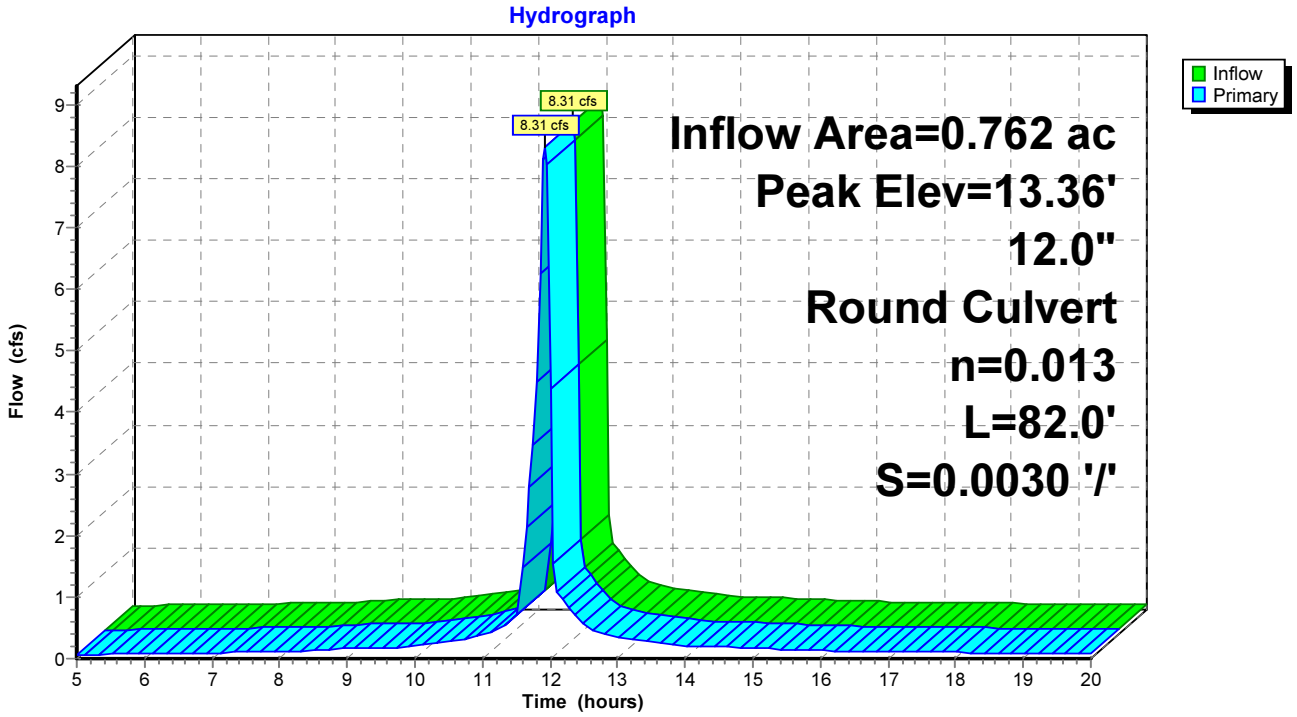
Inflow Area = 0.762 ac, 95.00% Impervious, Inflow Depth > 6.38" for 50 year event
Inflow = 8.31 cfs @ 11.92 hrs, Volume= 0.405 af
Outflow = 8.31 cfs @ 11.92 hrs, Volume= 0.405 af, Atten= 0%, Lag= 0.0 min
Primary = 8.31 cfs @ 11.92 hrs, Volume= 0.405 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 13.36' @ 11.92 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	5.58'	**12.0" Round Culvert** L= 82.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 5.58' / 5.33' S= 0.0030 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=8.07 cfs @ 11.92 hrs HW=13.01' (Free Discharge)
1=Culvert (Barrel Controls 8.07 cfs @ 10.27 fps)

Pond 2P:

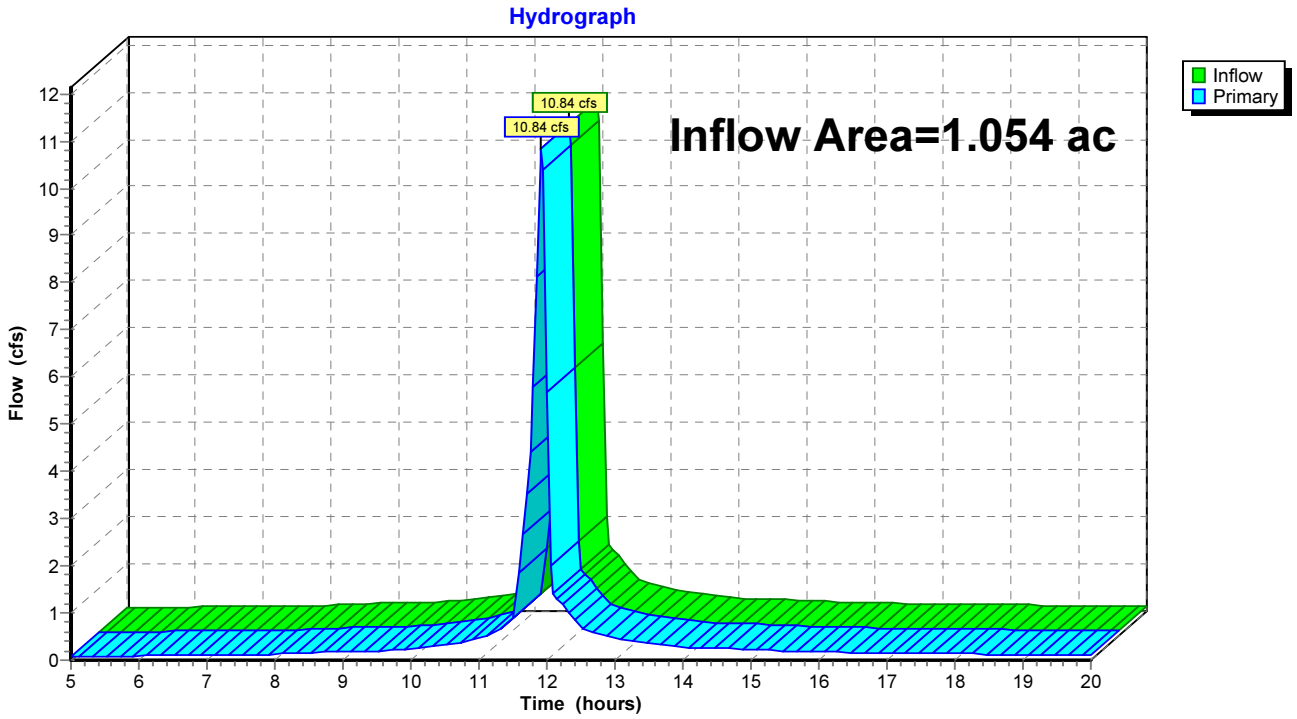


Summary for Pond 5P: Discharge Point 1 (COMBINED SEWER)

Inflow Area = 1.054 ac, 83.18% Impervious, Inflow Depth > 5.91" for 50 year event
Inflow = 10.84 cfs @ 11.92 hrs, Volume= 0.519 af
Primary = 10.84 cfs @ 11.92 hrs, Volume= 0.519 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond 5P: Discharge Point 1 (COMBINED SEWER)



Summary for Pond AEI 2:

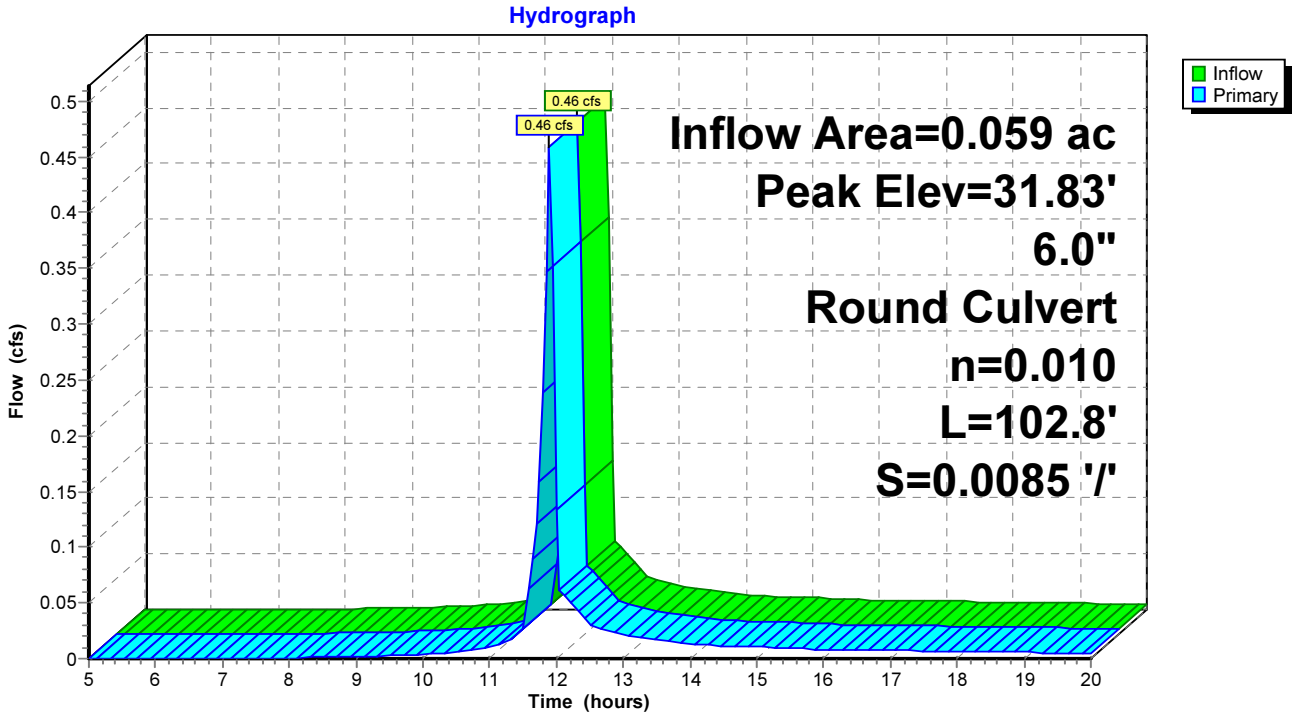
Inflow Area = 0.059 ac, 25.05% Impervious, Inflow Depth > 3.67" for 50 year event
Inflow = 0.46 cfs @ 11.90 hrs, Volume= 0.018 af
Outflow = 0.46 cfs @ 11.90 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min
Primary = 0.46 cfs @ 11.90 hrs, Volume= 0.018 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 31.83' @ 11.97 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	9.42'	**6.0" Round Culvert** L= 102.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.42' / 8.55' S= 0.0085 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.00 cfs @ 11.90 hrs HW=22.08' TW=30.73' (Dynamic Tailwater)
↑**1=Culvert** (Controls 0.00 cfs)

Pond AEI 2:



Summary for Pond AEI 3:

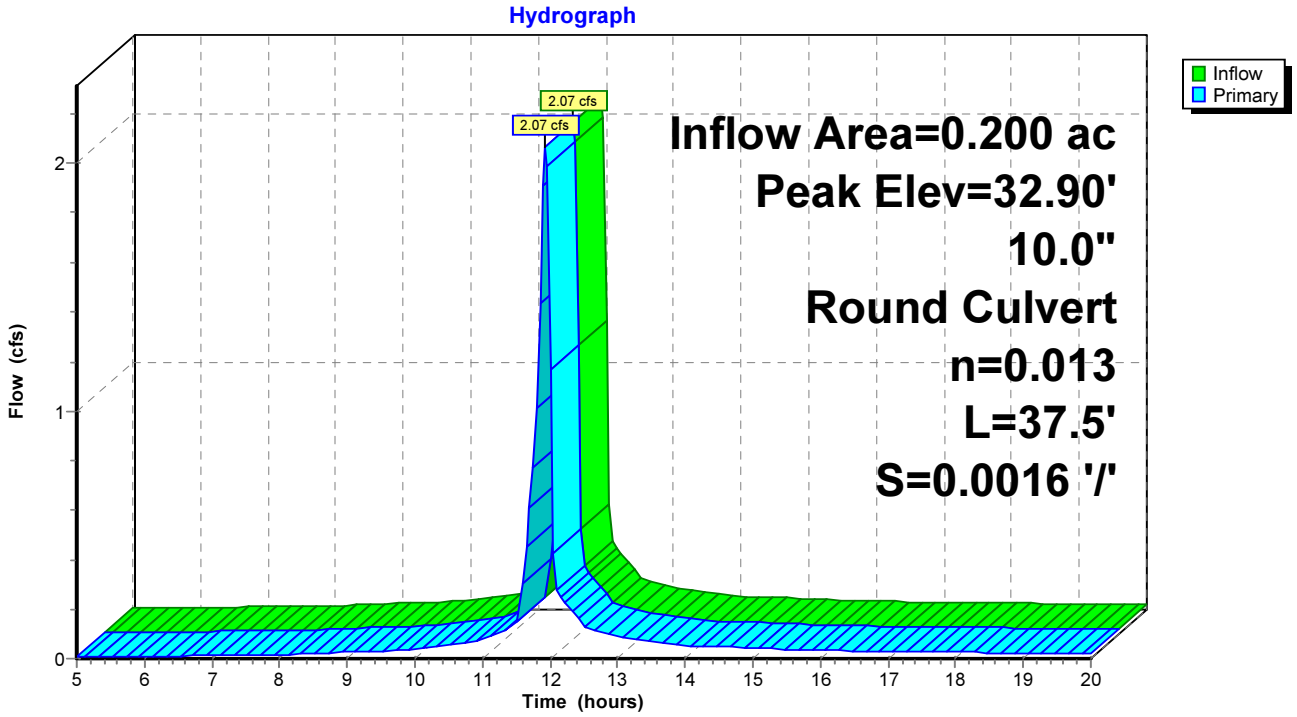
Inflow Area = 0.200 ac, 70.65% Impervious, Inflow Depth > 5.50" for 50 year event
Inflow = 2.07 cfs @ 11.93 hrs, Volume= 0.091 af
Outflow = 2.07 cfs @ 11.93 hrs, Volume= 0.091 af, Atten= 0%, Lag= 0.0 min
Primary = 2.07 cfs @ 11.93 hrs, Volume= 0.091 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 32.90' @ 12.02 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	8.90'	**10.0" Round Culvert** L= 37.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 8.90' / 8.84' S= 0.0016 '/' Cc= 0.900 n= 0.013 Clay tile, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 11.93 hrs HW=20.56' TW=28.34' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Pond AEI 3:



Summary for Pond AEI 4:

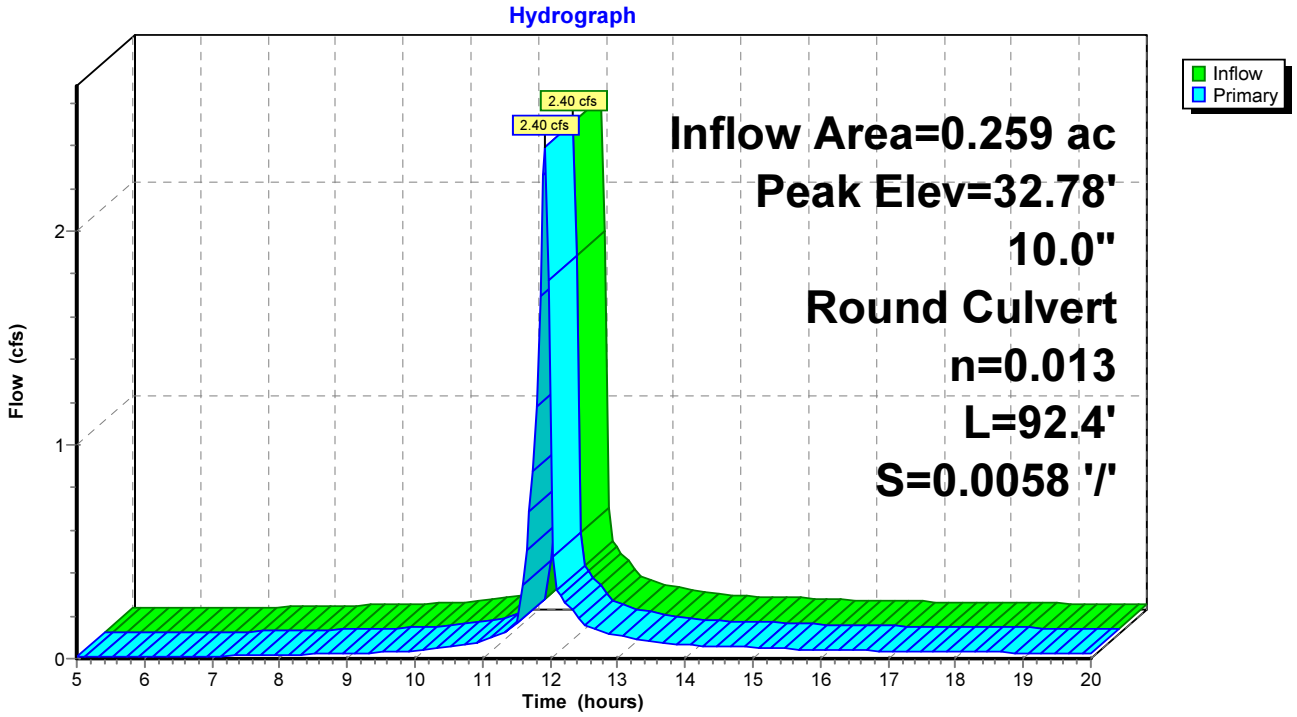
Inflow Area = 0.259 ac, 54.37% Impervious, Inflow Depth > 4.86" for 50 year event
Inflow = 2.40 cfs @ 11.93 hrs, Volume= 0.105 af
Outflow = 2.40 cfs @ 11.93 hrs, Volume= 0.105 af, Atten= 0%, Lag= 0.0 min
Primary = 2.40 cfs @ 11.93 hrs, Volume= 0.105 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 32.78' @ 11.97 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	8.69'	**10.0" Round Culvert** L= 92.4' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 8.69' / 8.15' S= 0.0058 '/' Cc= 0.900 n= 0.013 Clay tile, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 11.93 hrs HW=27.54' TW=30.32' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Pond AEI 4:



Summary for Pond AEI 5:

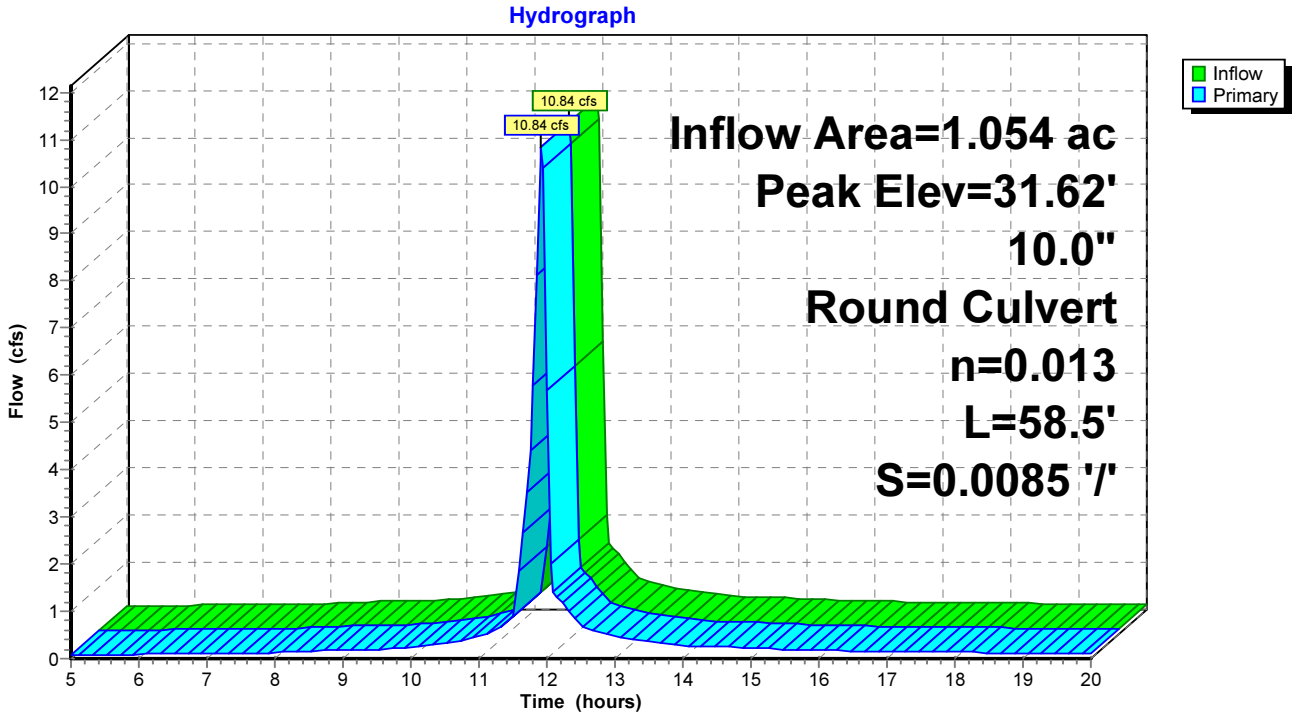
Inflow Area = 1.054 ac, 83.18% Impervious, Inflow Depth > 5.91" for 50 year event
Inflow = 10.84 cfs @ 11.92 hrs, Volume= 0.519 af
Outflow = 10.84 cfs @ 11.92 hrs, Volume= 0.519 af, Atten= 0%, Lag= 0.0 min
Primary = 10.84 cfs @ 11.92 hrs, Volume= 0.519 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 31.62' @ 11.92 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.90'	**10.0" Round Culvert** L= 58.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 7.90' / 7.40' S= 0.0085 '/' Cc= 0.900 n= 0.013 Clay tile, Flow Area= 0.55 sf

Primary OutFlow Max=10.51 cfs @ 11.92 hrs HW=30.39' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 10.51 cfs @ 19.27 fps)

Pond AEI 5:



Summary for Pond AEI 6: Discharge Point 3 (Off Site Drainage)

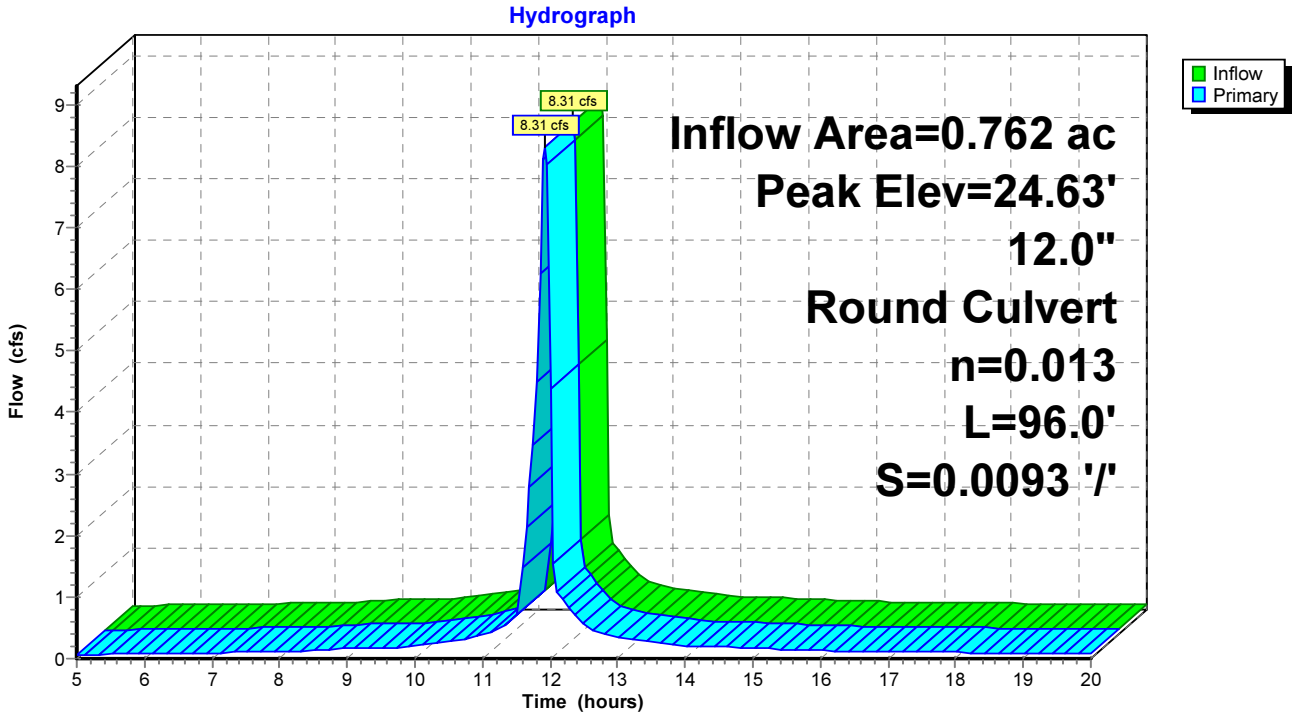
Inflow Area = 0.762 ac, 95.00% Impervious, Inflow Depth > 6.38" for 50 year event
Inflow = 8.31 cfs @ 11.92 hrs, Volume= 0.405 af
Outflow = 8.31 cfs @ 11.92 hrs, Volume= 0.405 af, Atten= 0%, Lag= 0.0 min
Primary = 8.31 cfs @ 11.92 hrs, Volume= 0.405 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 24.63' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	6.77'	**12.0" Round Culvert** L= 96.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 6.77' / 5.88' S= 0.0093 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=5.67 cfs @ 11.92 hrs HW=22.07' TW=18.42' (Dynamic Tailwater)
1=Culvert (Outlet Controls 5.67 cfs @ 7.22 fps)

Pond AEI 6: Discharge Point 3 (Off Site Drainage)



Summary for Pond AEI 7:

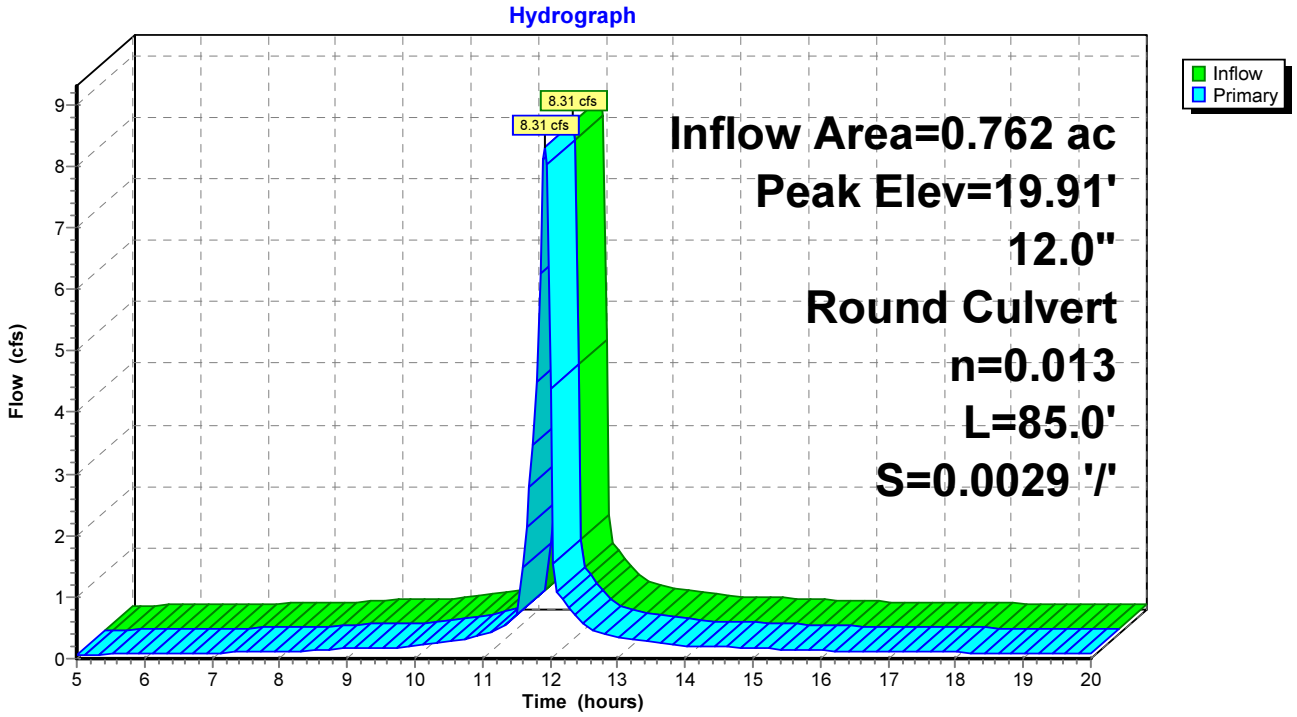
Inflow Area = 0.762 ac, 95.00% Impervious, Inflow Depth > 6.38" for 50 year event
Inflow = 8.31 cfs @ 11.92 hrs, Volume= 0.405 af
Outflow = 8.31 cfs @ 11.92 hrs, Volume= 0.405 af, Atten= 0%, Lag= 0.0 min
Primary = 8.31 cfs @ 11.92 hrs, Volume= 0.405 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 19.91' @ 11.94 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	5.83'	**12.0" Round Culvert** L= 85.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 5.83' / 5.58' S= 0.0029 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=7.18 cfs @ 11.92 hrs HW=18.42' TW=13.01' (Dynamic Tailwater)
1=Culvert (Outlet Controls 7.18 cfs @ 9.14 fps)

Pond AEI 7:



Summary for Pond CB 4433:

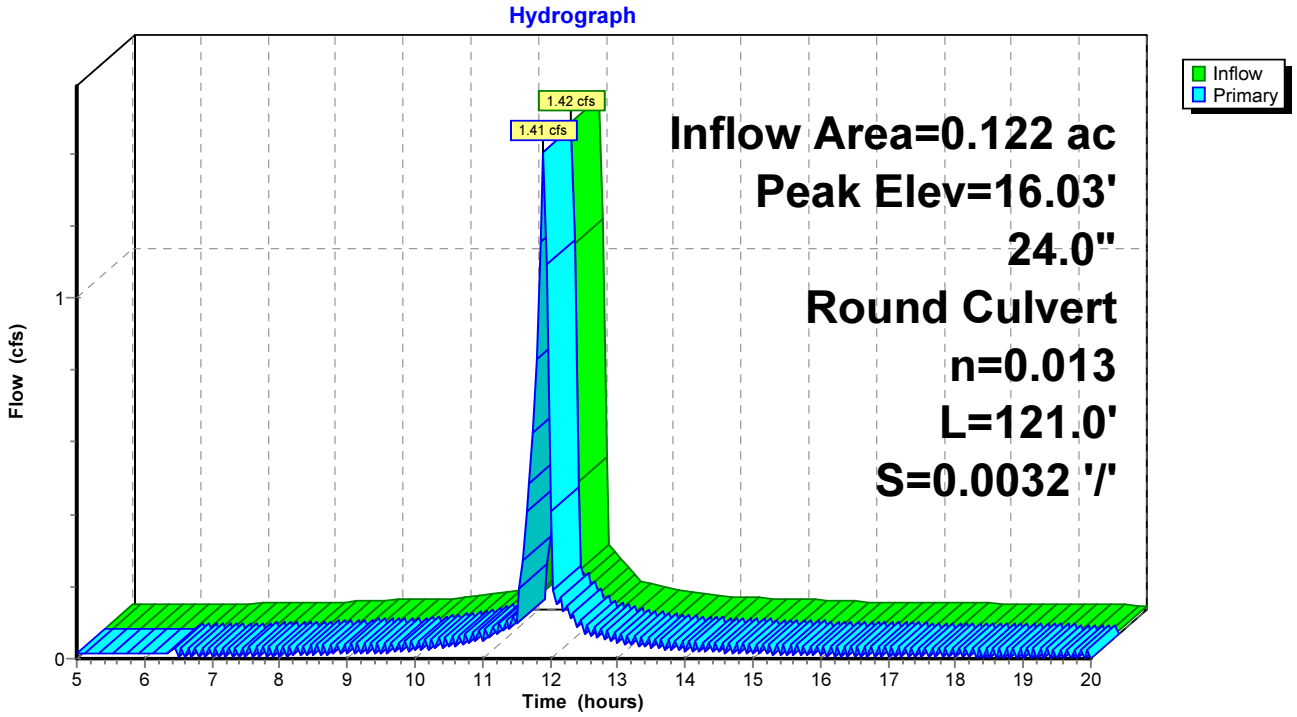
Inflow Area = 0.122 ac,100.00% Impervious, Inflow Depth > 6.51" for 50 year event
Inflow = 1.42 cfs @ 11.90 hrs, Volume= 0.066 af
Outflow = 1.41 cfs @ 11.90 hrs, Volume= 0.066 af, Atten= 1%, Lag= 0.0 min
Primary = 1.41 cfs @ 11.90 hrs, Volume= 0.066 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 16.03' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	14.38'	**24.0" Round Culvert** L= 121.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 14.38' / 13.99' S= 0.0032 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=0.00 cfs @ 11.90 hrs HW=15.97' TW=16.01' (Dynamic Tailwater)
↑**1=Culvert** (Controls 0.00 cfs)

Pond CB 4433:



Summary for Pond CB 4435:

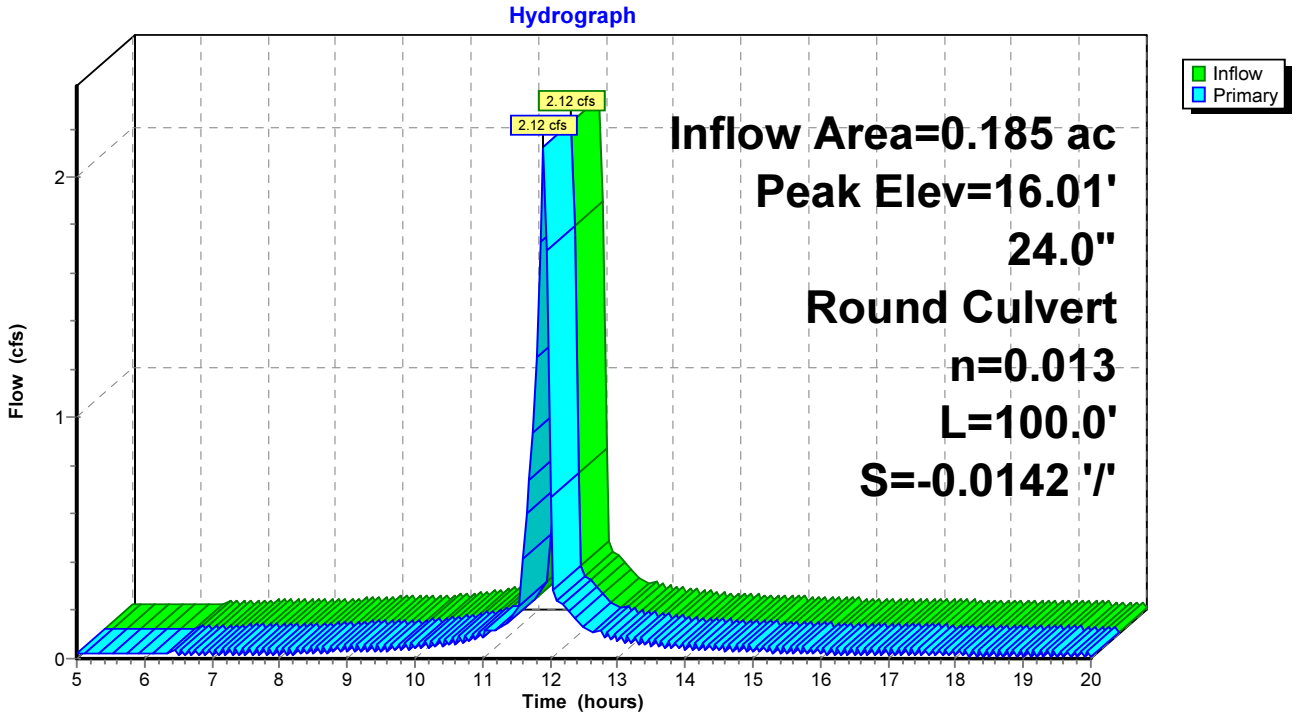
Inflow Area = 0.185 ac,100.00% Impervious, Inflow Depth > 6.51" for 50 year event
Inflow = 2.12 cfs @ 11.90 hrs, Volume= 0.100 af
Outflow = 2.12 cfs @ 11.90 hrs, Volume= 0.100 af, Atten= 0%, Lag= 0.0 min
Primary = 2.12 cfs @ 11.90 hrs, Volume= 0.100 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 16.01' @ 11.90 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	15.41'	**24.0" Round Culvert** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.99' / 15.41' S= -0.0142 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=2.11 cfs @ 11.90 hrs HW=16.01' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.11 cfs @ 2.65 fps)

Pond CB 4435:



Summary for Pond CB 4560:

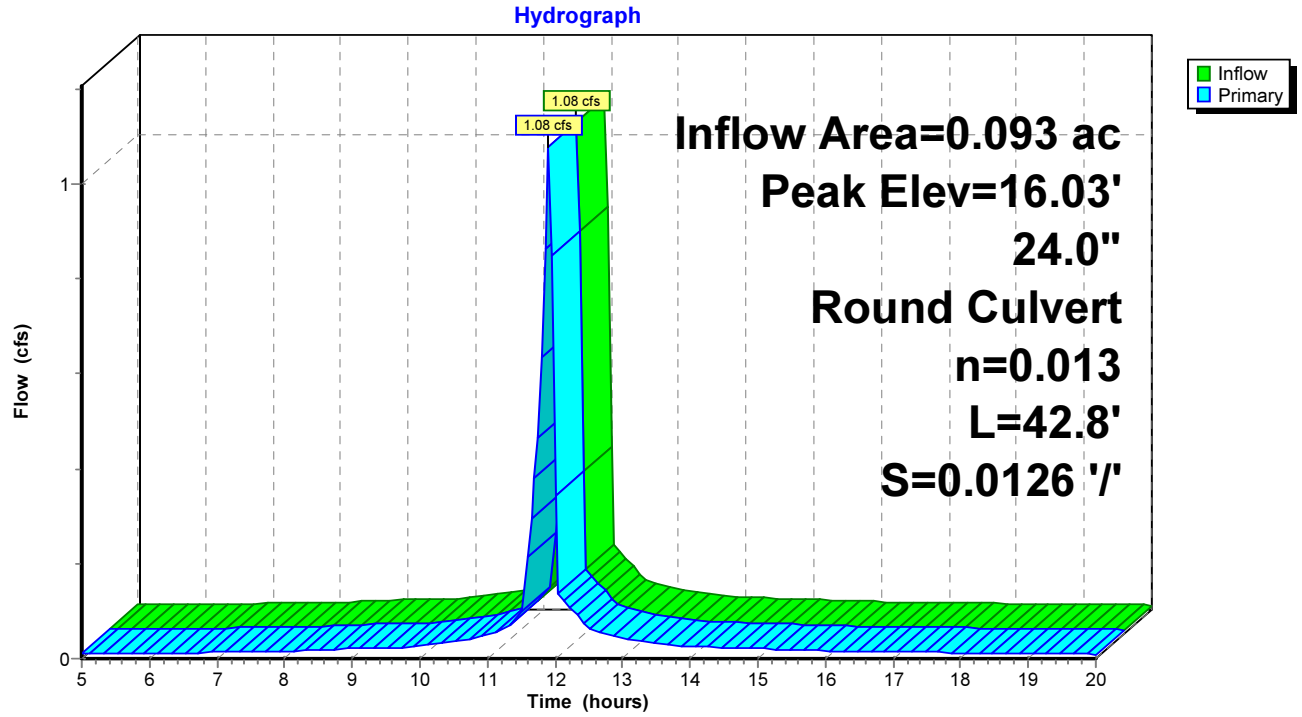
Inflow Area = 0.093 ac,100.00% Impervious, Inflow Depth > 6.51" for 50 year event
Inflow = 1.08 cfs @ 11.90 hrs, Volume= 0.050 af
Outflow = 1.08 cfs @ 11.90 hrs, Volume= 0.050 af, Atten= 0%, Lag= 0.0 min
Primary = 1.08 cfs @ 11.90 hrs, Volume= 0.050 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 16.03' @ 11.99 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	14.92'	**24.0" Round Culvert** L= 42.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 14.92' / 14.38' S= 0.0126 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=0.00 cfs @ 11.90 hrs HW=15.92' TW=15.97' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Pond CB 4560:

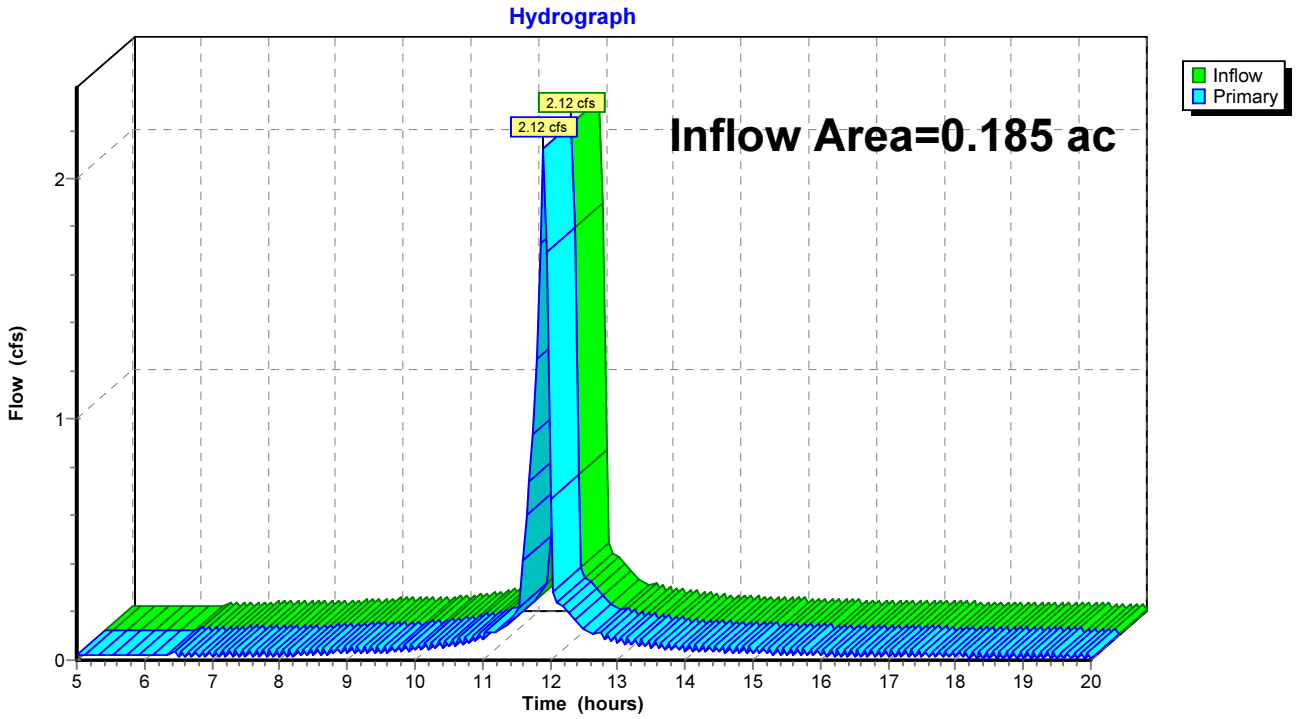


Summary for Link 2L: Discharge Point 2 (Court Street Drainage)

Inflow Area = 0.185 ac,100.00% Impervious, Inflow Depth > 6.51" for 50 year event
Inflow = 2.12 cfs @ 11.90 hrs, Volume= 0.100 af
Primary = 2.12 cfs @ 11.90 hrs, Volume= 0.100 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: Discharge Point 2 (Court Street Drainage)

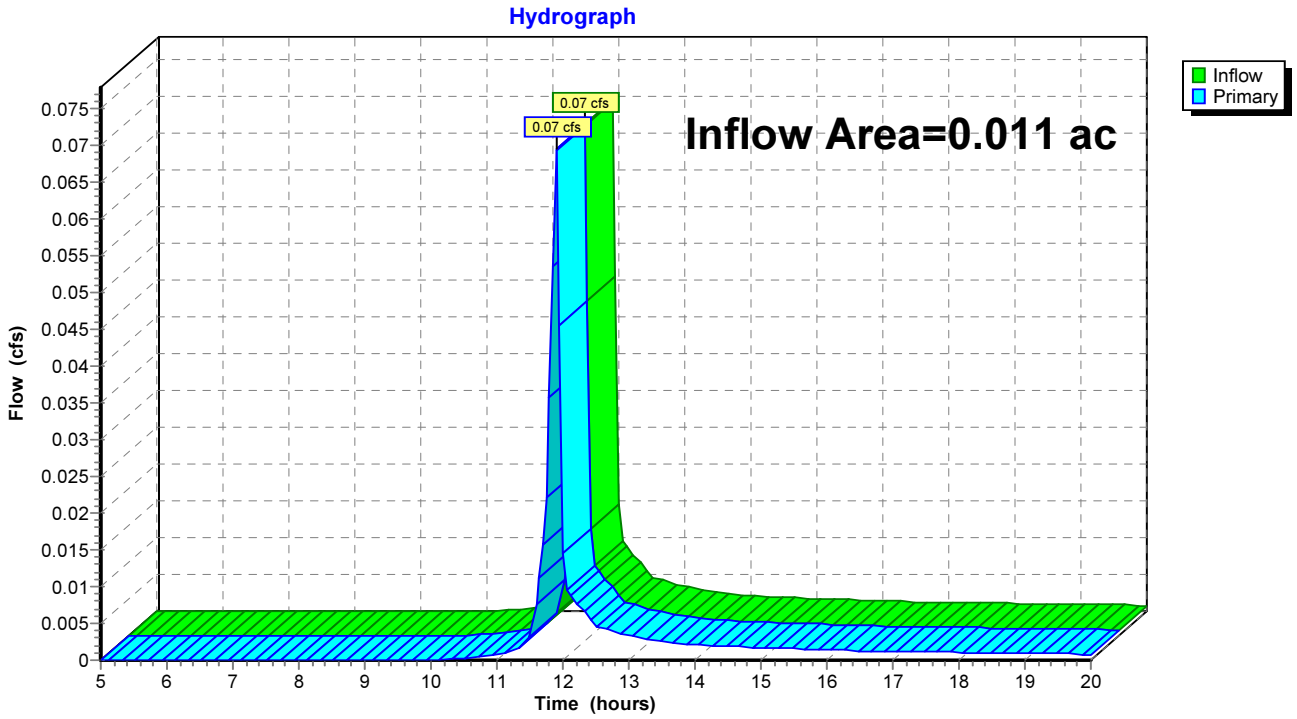


Summary for Link 3L: Discharge Point 4 (DP4)

Inflow Area = 0.011 ac, 0.00% Impervious, Inflow Depth > 2.73" for 50 year event
Inflow = 0.07 cfs @ 11.89 hrs, Volume= 0.003 af
Primary = 0.07 cfs @ 11.89 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: Discharge Point 4 (DP4)

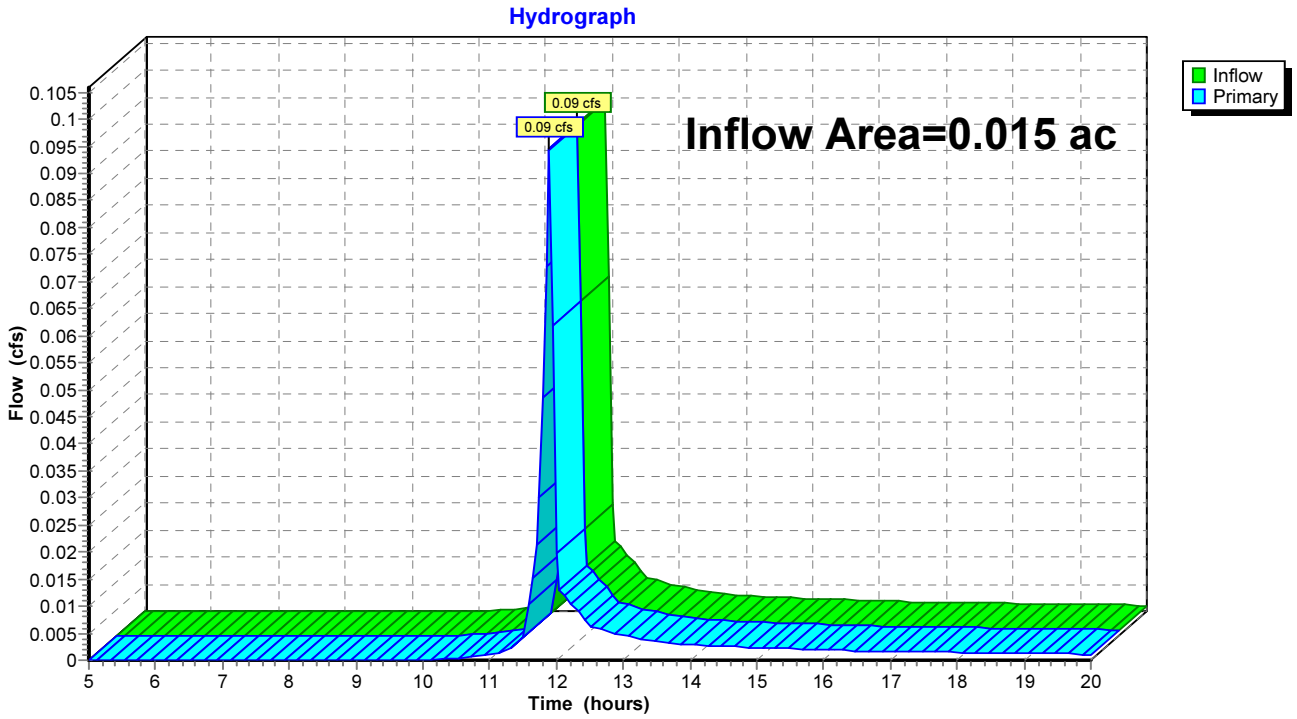


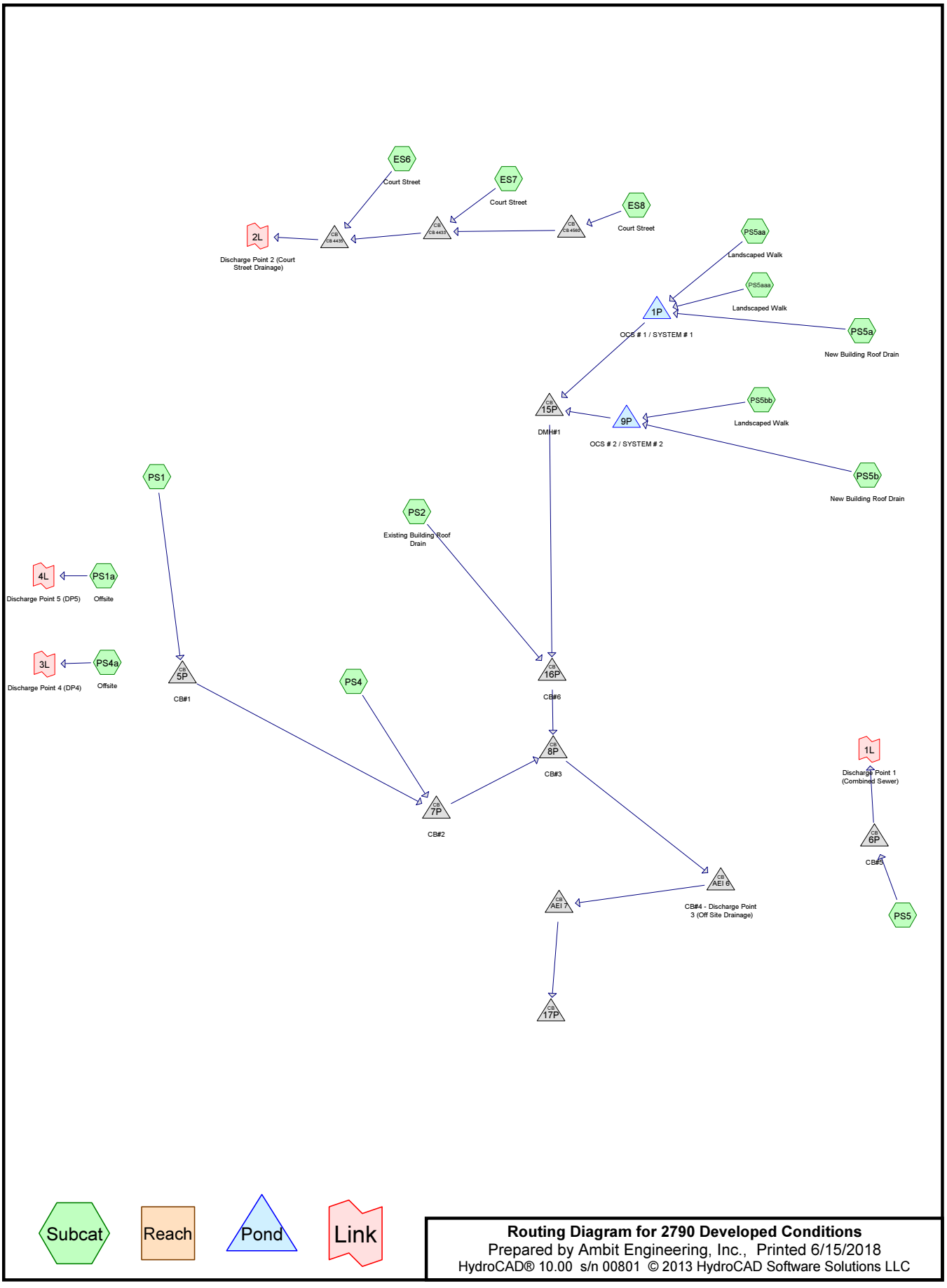
Summary for Link 4L: Discharge Point 5 (DP5)

Inflow Area = 0.015 ac, 0.00% Impervious, Inflow Depth > 2.73" for 50 year event
Inflow = 0.09 cfs @ 11.89 hrs, Volume= 0.003 af
Primary = 0.09 cfs @ 11.89 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 4L: Discharge Point 5 (DP5)





Routing Diagram for 2790 Developed Conditions
Prepared by Ambit Engineering, Inc., Printed 6/15/2018
HydroCAD® 10.00 s/n 00801 © 2013 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.377	39	>75% Grass cover, Good, HSG A (PS1, PS4, PS5, PS5aa, PS5aaa, PS5bb)
0.044	61	>75% Grass cover, Good, HSG B (PS1a, PS4a)
0.147	98	Paved parking, HSG A (PS1)
0.103	98	Paved parking, HSG B (ES6, ES7, ES8)
0.540	98	Paved roads w/curbs & sewers, HSG A (PS4, PS5)
0.016	98	Paved sidewalk w/curbs & sewers, HSG A (PS5aaa, PS5bb)
0.077	98	Paved sidewalks w/curbs & sewers, HSG A (PS1, PS5, PS5aa)
0.682	98	Roofs, HSG A (PS2, PS5, PS5a, PS5aa, PS5b)
0.012	98	Unconnected pavement, sidewalk, HSG B (ES6, ES7)
0.070	98	Unconnected pavement,sidewalk, HSG B (ES8)
2.067	**86**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
1.839	HSG A	PS1, PS2, PS4, PS5, PS5a, PS5aa, PS5aaa, PS5b, PS5bb
0.229	HSG B	ES6, ES7, ES8, PS1a, PS4a
0.000	HSG C	
0.000	HSG D	
0.000	Other	
2.067		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchme Numbers
0.377	0.044	0.000	0.000	0.000	0.421	>75% Grass cover, Good	
0.147	0.103	0.000	0.000	0.000	0.250	Paved parking	
0.540	0.000	0.000	0.000	0.000	0.540	Paved roads w/curbs & sewers	
0.016	0.000	0.000	0.000	0.000	0.016	Paved sidewalk w/curbs & sewers	
0.077	0.000	0.000	0.000	0.000	0.077	Paved sidewalks w/curbs & sewers	
0.682	0.000	0.000	0.000	0.000	0.682	Roofs	
0.000	0.012	0.000	0.000	0.000	0.012	Unconnected pavement, sidewalk	
0.000	0.070	0.000	0.000	0.000	0.070	Unconnected pavement,sidewalk	
1.839	**0.229**	**0.000**	**0.000**	**0.000**	**2.067**	**TOTAL AREA**	

Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1P	11.40	11.33	14.0	0.0050	0.013	12.0	0.0	0.0
2	5P	9.70	7.13	95.0	0.0271	0.013	12.0	0.0	0.0
3	6P	7.54	7.40	27.0	0.0052	0.013	12.0	0.0	0.0
4	7P	7.03	6.89	34.0	0.0041	0.013	12.0	0.0	0.0
5	8P	6.89	6.77	31.0	0.0039	0.013	12.0	0.0	0.0
6	9P	7.40	7.38	5.0	0.0040	0.013	12.0	0.0	0.0
7	15P	7.38	7.04	68.0	0.0050	0.013	12.0	0.0	0.0
8	16P	7.04	6.89	30.0	0.0050	0.013	12.0	0.0	0.0
9	17P	5.58	5.33	82.0	0.0030	0.013	12.0	0.0	0.0
10	AEI 6	6.77	5.88	96.0	0.0093	0.013	12.0	0.0	0.0
11	AEI 7	5.83	5.58	85.0	0.0029	0.013	12.0	0.0	0.0
12	CB 4433	14.38	13.99	121.0	0.0032	0.013	24.0	0.0	0.0
13	CB 4435	13.99	15.41	100.0	-0.0142	0.013	24.0	0.0	0.0
14	CB 4560	14.92	14.38	42.8	0.0126	0.013	24.0	0.0	0.0

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 ES6: Court Street Runoff Area=2,751 sf 100.00% Impervious Runoff Depth>4.24"
Flow Length=121' Tc=1.5 min CN=98 Runoff=0.47 cfs 0.022 af

Subcatchment ES7: Court Street Runoff Area=1,263 sf 100.00% Impervious Runoff Depth>4.24"
Flow Length=49' Slope=0.0051 '/' Tc=0.6 min CN=98 Runoff=0.22 cfs 0.010 af

Subcatchment ES8: Court Street Runoff Area=4,051 sf 100.00% Impervious Runoff Depth>4.24"
Flow Length=143' Slope=0.0098 '/' Tc=1.2 min CN=98 Runoff=0.71 cfs 0.033 af

Subcatchment PS1: Runoff Area=10,582 sf 69.34% Impervious Runoff Depth>2.57"
Flow Length=189' Tc=4.7 min CN=80 Runoff=1.22 cfs 0.052 af

Subcatchment PS1a: Offsite Runoff Area=667 sf 0.00% Impervious Runoff Depth>1.15"
Tc=0.0 min CN=61 Runoff=0.04 cfs 0.001 af

Subcatchment PS2: Existing Building Runoff Area=10,300 sf 100.00% Impervious Runoff Depth>4.24"
Tc=0.0 min CN=98 Runoff=1.84 cfs 0.084 af

Subcatchment PS4: Runoff Area=7,681 sf 54.26% Impervious Runoff Depth>1.84"
Flow Length=114' Slope=0.0200 '/' Tc=0.7 min CN=71 Runoff=0.72 cfs 0.027 af

Subcatchment PS4a: Offsite Runoff Area=1,231 sf 0.00% Impervious Runoff Depth>1.15"
Tc=0.0 min CN=61 Runoff=0.07 cfs 0.003 af

Subcatchment PS5: Runoff Area=31,135 sf 89.11% Impervious Runoff Depth>3.71"
Flow Length=361' Slope=0.0208 '/' Tc=2.1 min CN=92 Runoff=4.88 cfs 0.221 af

Subcatchment PS5a: New Building Roof Runoff Area=6,560 sf 100.00% Impervious Runoff Depth>4.24"
Tc=5.0 min CN=98 Runoff=1.05 cfs 0.053 af

Subcatchment PS5aa: Landscaped Walk Runoff Area=4,139 sf 35.59% Impervious Runoff Depth>1.09"
Tc=5.0 min CN=60 Runoff=0.20 cfs 0.009 af

Subcatchment PS5aaa: Landscaped Walk Runoff Area=1,478 sf 18.81% Impervious Runoff Depth>0.55"
Tc=5.0 min CN=50 Runoff=0.03 cfs 0.002 af

Subcatchment PS5b: New Building Roof Runoff Area=5,413 sf 100.00% Impervious Runoff Depth>4.24"
Tc=5.0 min CN=98 Runoff=0.87 cfs 0.044 af

Subcatchment PS5bb: Landscaped Walk Runoff Area=2,809 sf 14.24% Impervious Runoff Depth>0.41"
Tc=5.0 min CN=47 Runoff=0.04 cfs 0.002 af

Pond 1P: OCS # 1 / SYSTEM # 1 Peak Elev=12.72' Storage=0.026 af Inflow=1.27 cfs 0.063 af
Discarded=0.01 cfs 0.018 af Primary=0.34 cfs 0.035 af Outflow=0.35 cfs 0.053 af

Pond 5P: CB#1 Peak Elev=10.28' Inflow=1.22 cfs 0.052 af
12.0" Round Culvert n=0.013 L=95.0' S=0.0271 '/' Outflow=1.22 cfs 0.052 af

Pond 6P: CB#5 Peak Elev=9.80' Inflow=4.88 cfs 0.221 af
12.0" Round Culvert n=0.013 L=27.0' S=0.0052 '/' Outflow=4.88 cfs 0.221 af

Pond 7P: CB#2 Peak Elev=10.01' Inflow=1.81 cfs 0.079 af
12.0" Round Culvert n=0.013 L=34.0' S=0.0041 '/' Outflow=1.81 cfs 0.079 af

Pond 8P: CB#3 Peak Elev=9.97' Inflow=3.68 cfs 0.213 af
12.0" Round Culvert n=0.013 L=31.0' S=0.0039 '/' Outflow=3.68 cfs 0.213 af

Pond 9P: OCS # 2 / SYSTEM # 2 Peak Elev=8.20' Storage=0.023 af Inflow=0.90 cfs 0.046 af
Discarded=0.02 cfs 0.021 af Primary=0.18 cfs 0.015 af Outflow=0.20 cfs 0.036 af

Pond 15P: DMH#1 Peak Elev=10.00' Inflow=0.48 cfs 0.050 af
12.0" Round Culvert n=0.013 L=68.0' S=0.0050 '/' Outflow=0.48 cfs 0.050 af

Pond 16P: CB#6 Peak Elev=9.99' Inflow=2.00 cfs 0.134 af
12.0" Round Culvert n=0.013 L=30.0' S=0.0050 '/' Outflow=2.00 cfs 0.134 af

Pond 17P: Peak Elev=7.72' Inflow=3.68 cfs 0.213 af
12.0" Round Culvert n=0.013 L=82.0' S=0.0030 '/' Outflow=3.68 cfs 0.213 af

Pond AEI 6: CB#4 - Discharge Point 3 (Off Site Drainage) Peak Elev=9.70' Inflow=3.68 cfs 0.213 af
12.0" Round Culvert n=0.013 L=96.0' S=0.0093 '/' Outflow=3.68 cfs 0.213 af

Pond AEI 7: Peak Elev=8.82' Inflow=3.68 cfs 0.213 af
12.0" Round Culvert n=0.013 L=85.0' S=0.0029 '/' Outflow=3.68 cfs 0.213 af

Pond CB 4433: Peak Elev=15.90' Inflow=0.93 cfs 0.043 af
24.0" Round Culvert n=0.013 L=121.0' S=0.0032 '/' Outflow=0.94 cfs 0.043 af

Pond CB 4435: Peak Elev=15.90' Inflow=1.41 cfs 0.065 af
24.0" Round Culvert n=0.013 L=100.0' S=-0.0142 '/' Outflow=1.41 cfs 0.065 af

Pond CB 4560: Peak Elev=15.91' Inflow=0.71 cfs 0.033 af
24.0" Round Culvert n=0.013 L=42.8' S=0.0126 '/' Outflow=0.71 cfs 0.033 af

Link 1L: Discharge Point 1 (Combined Sewer) Inflow=4.88 cfs 0.221 af
Primary=4.88 cfs 0.221 af

Link 2L: Discharge Point 2 (Court Street Drainage) Inflow=1.41 cfs 0.065 af
Primary=1.41 cfs 0.065 af

Link 3L: Discharge Point 4 (DP4) Inflow=0.07 cfs 0.003 af
Primary=0.07 cfs 0.003 af

Link 4L: Discharge Point 5 (DP5) Inflow=0.04 cfs 0.001 af
Primary=0.04 cfs 0.001 af

Total Runoff Area = 2.067 ac Runoff Volume = 0.563 af Average Runoff Depth = 3.27"
20.34% Pervious = 0.421 ac 79.66% Impervious = 1.647 ac

Summary for Subcatchment ES6: Court Street

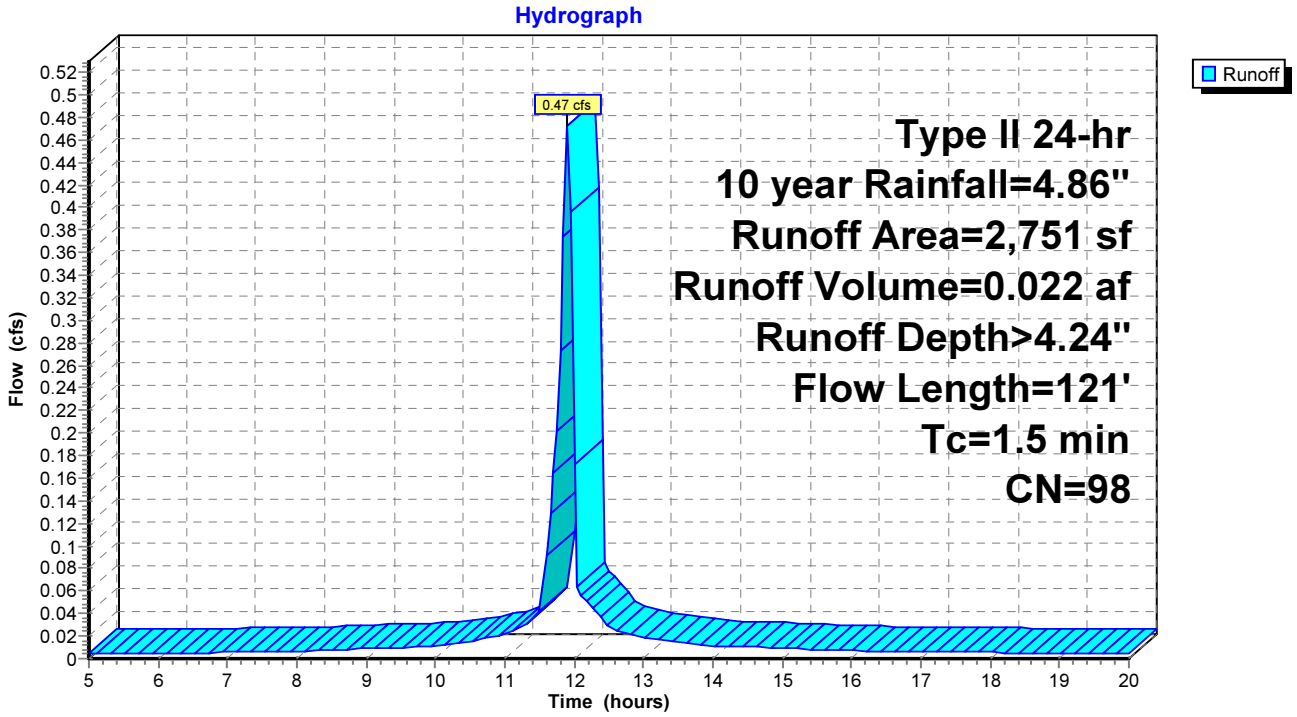
Runoff = 0.47 cfs @ 11.90 hrs, Volume= 0.022 af, Depth> 4.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.86"

	Area (sf)	CN	Description
	2,556	98	Paved parking, HSG B
*	195	98	Unconnected pavement, sidewalk, HSG B
	2,751	98	Weighted Average
	2,751		100.00% Impervious Area
	195		7.09% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	26	0.0096	0.69		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	95	0.0078	1.79		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.5	121	Total			

Subcatchment ES6: Court Street



Summary for Subcatchment ES7: Court Street

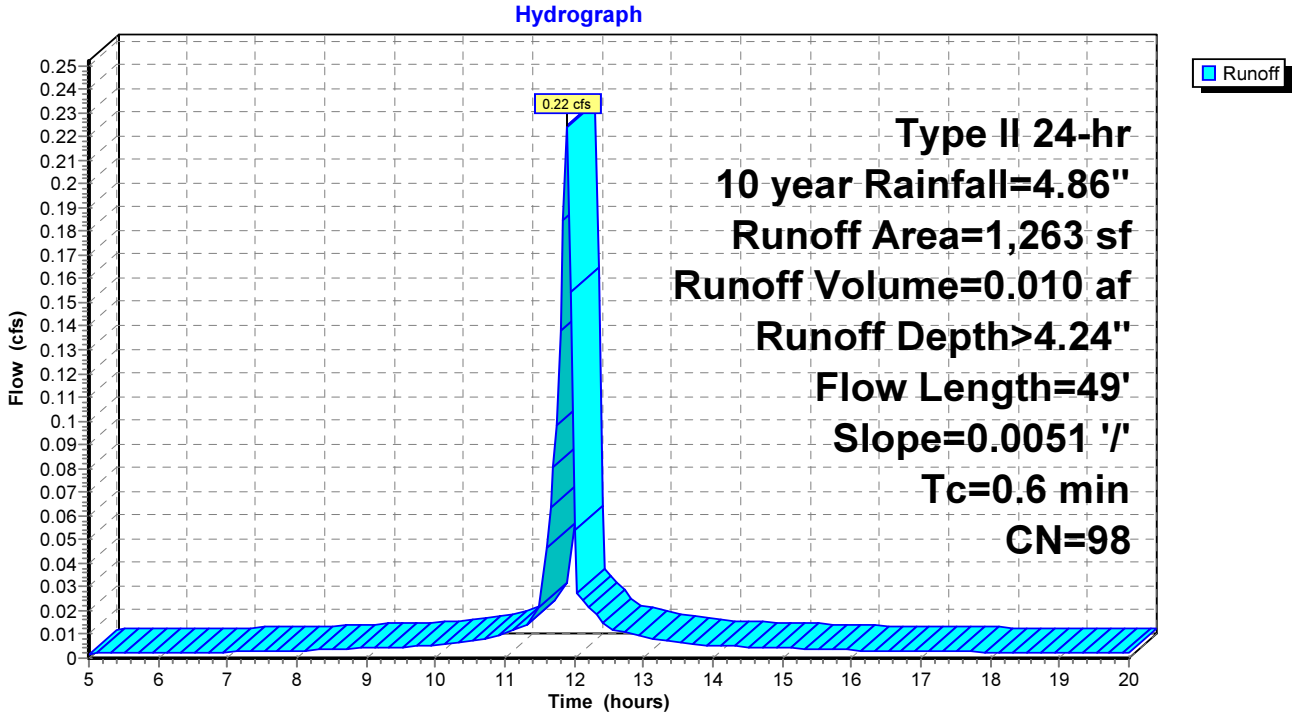
Runoff = 0.22 cfs @ 11.89 hrs, Volume= 0.010 af, Depth> 4.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.86"

	Area (sf)	CN	Description
	922	98	Paved parking, HSG B
*	341	98	Unconnected pavement, sidewalk, HSG B
	1,263	98	Weighted Average
	1,263		100.00% Impervious Area
	341		27.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	49	0.0051	1.45		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps

Subcatchment ES7: Court Street



Summary for Subcatchment ES8: Court Street

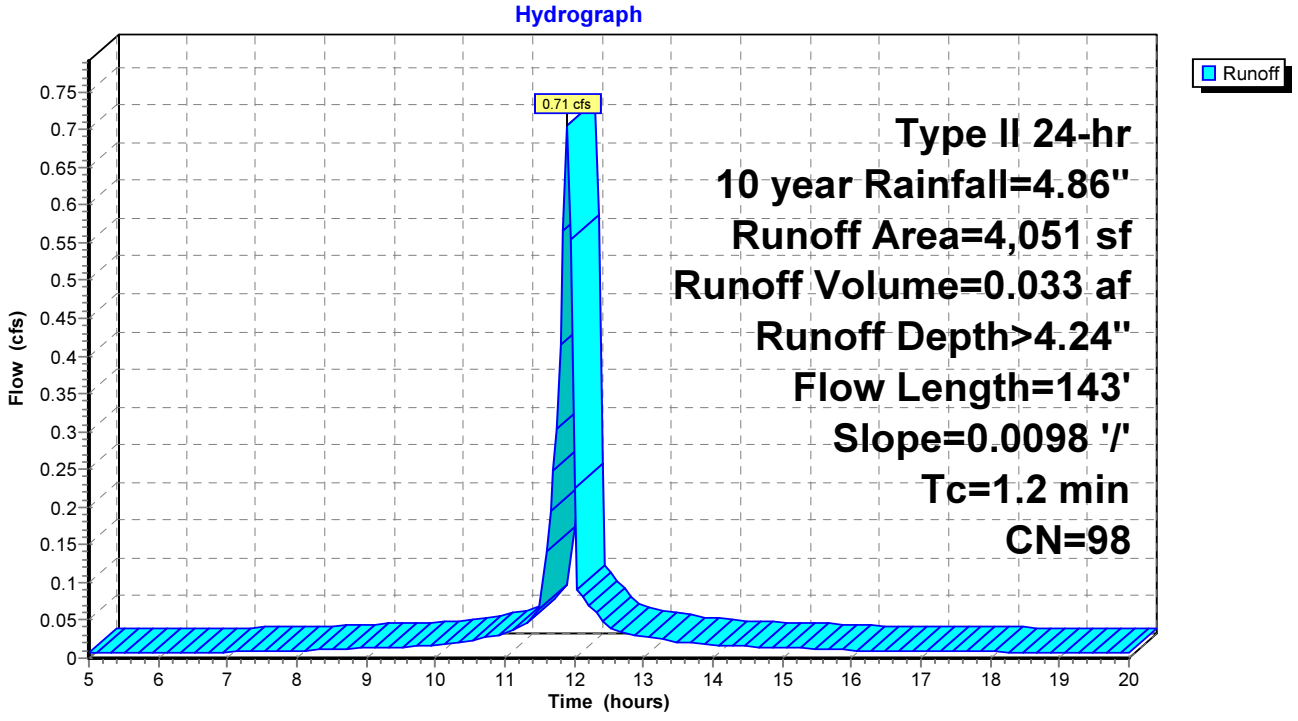
Runoff = 0.71 cfs @ 11.90 hrs, Volume= 0.033 af, Depth> 4.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.86"

	Area (sf)	CN	Description
	1,014	98	Paved parking, HSG B
*	3,037	98	Unconnected pavement,sidewalk, HSG B
	4,051	98	Weighted Average
	4,051		100.00% Impervious Area
	3,037		74.97% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	143	0.0098	2.01		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps

Subcatchment ES8: Court Street



Summary for Subcatchment PS1:

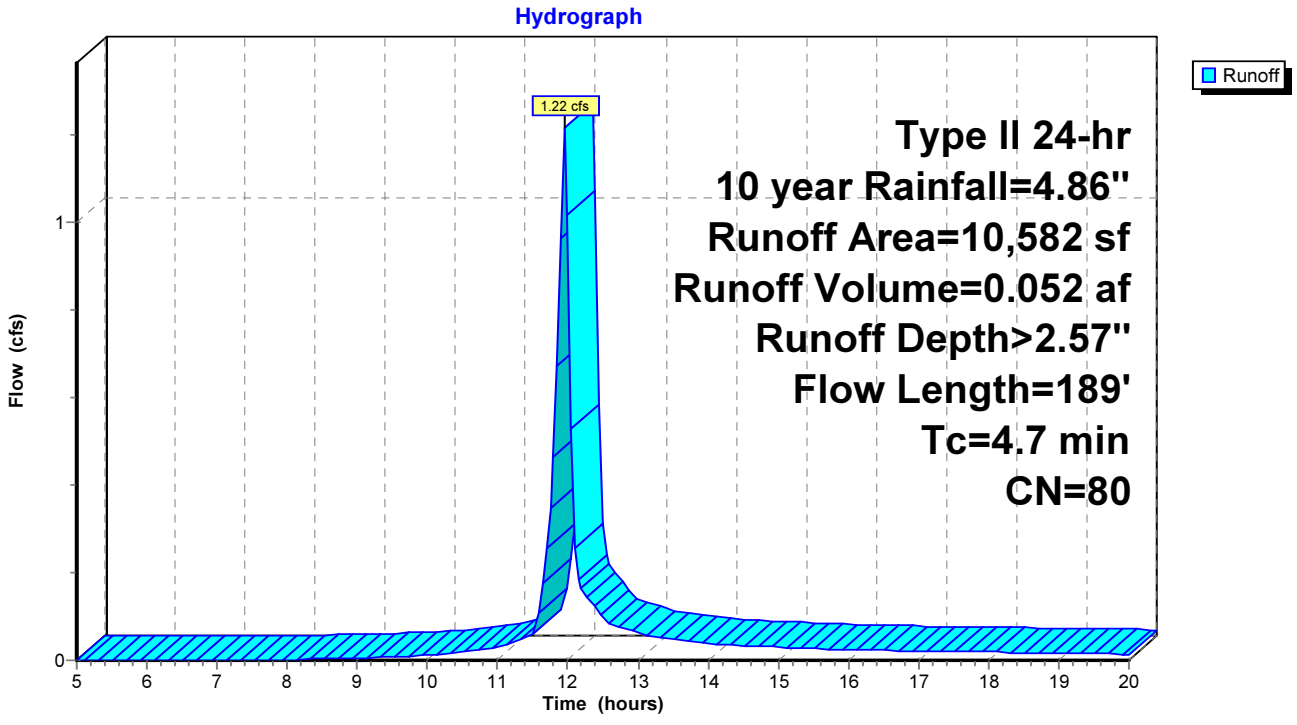
Runoff = 1.22 cfs @ 11.95 hrs, Volume= 0.052 af, Depth> 2.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.86"

	Area (sf)	CN	Description
	6,399	98	Paved parking, HSG A
*	939	98	Paved sidewalks w/curbs & sewers, HSG A
	3,244	39	>75% Grass cover, Good, HSG A
	10,582	80	Weighted Average
	3,244		30.66% Pervious Area
	7,338		69.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	32	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.21"
0.8	157	0.0287	3.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.7	189	Total			

Subcatchment PS1:



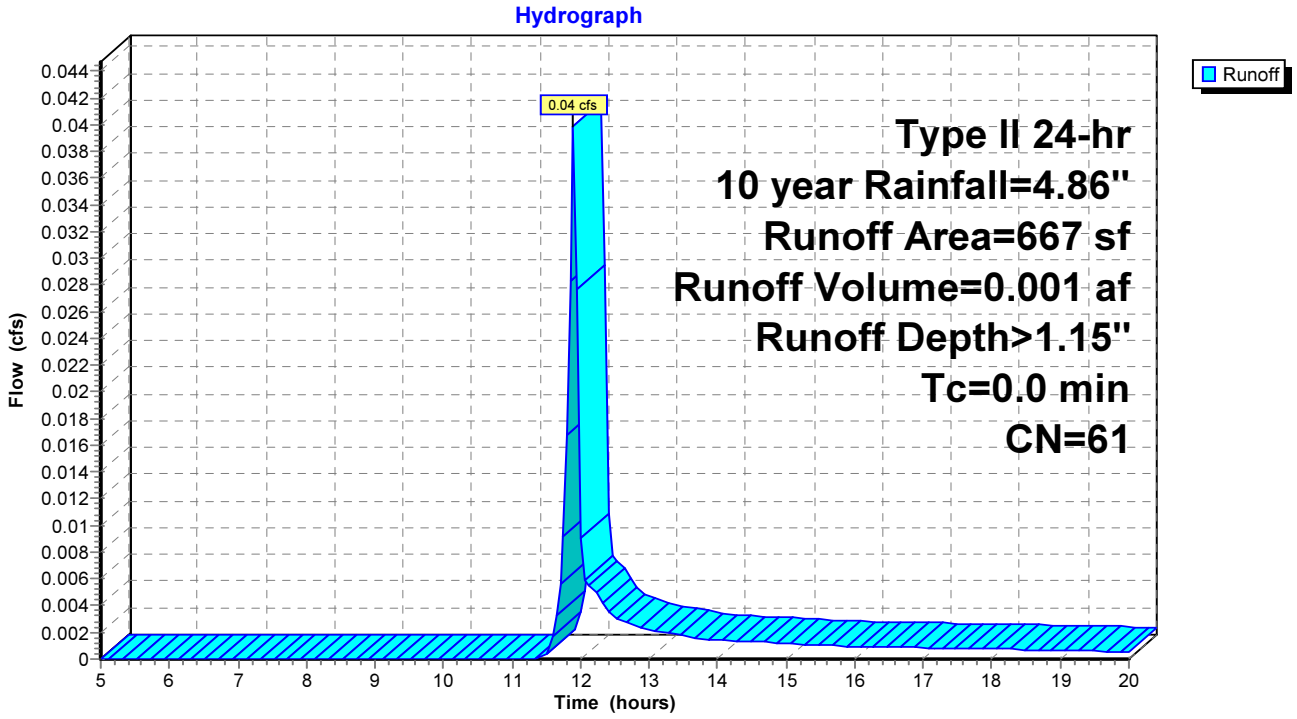
Summary for Subcatchment PS1a: Offsite

Runoff = 0.04 cfs @ 11.90 hrs, Volume= 0.001 af, Depth> 1.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.86"

Area (sf)	CN	Description
667	61	>75% Grass cover, Good, HSG B
667		100.00% Pervious Area

Subcatchment PS1a: Offsite



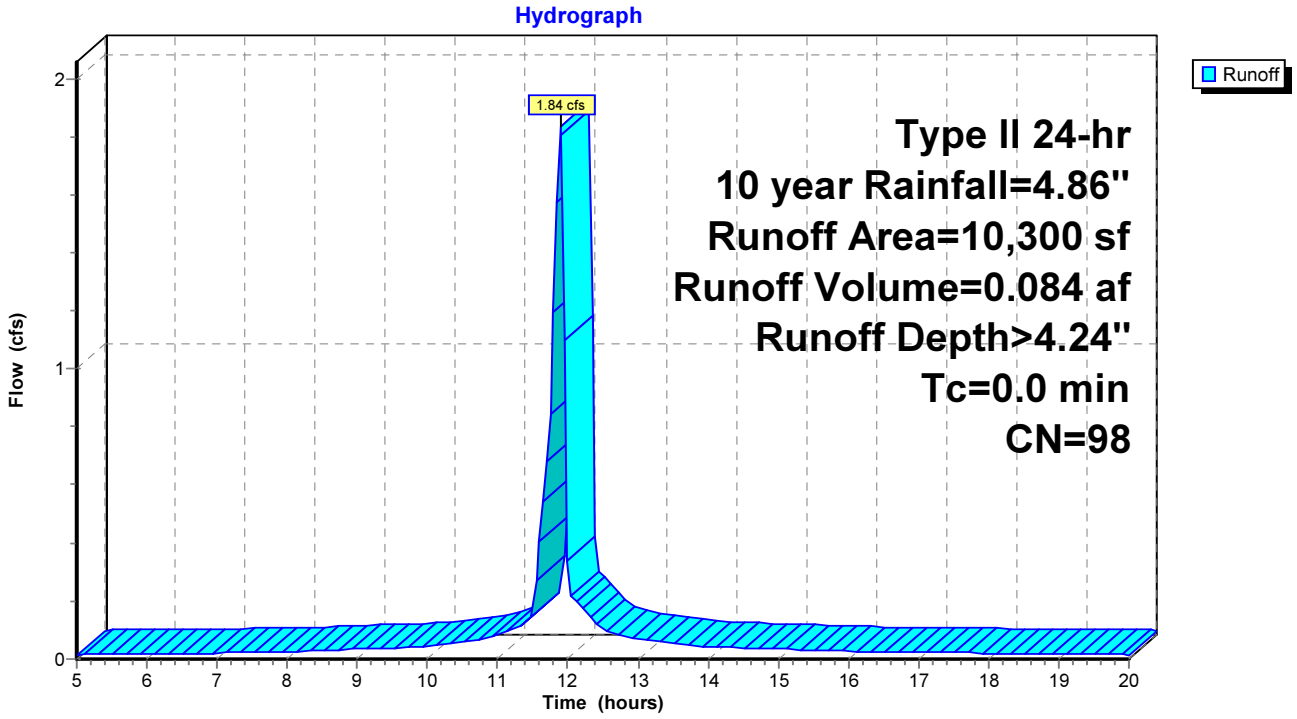
Summary for Subcatchment PS2: Existing Building Roof Drain

Runoff = 1.84 cfs @ 11.89 hrs, Volume= 0.084 af, Depth> 4.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.86"

Area (sf)	CN	Description
10,300	98	Roofs, HSG A
10,300		100.00% Impervious Area

Subcatchment PS2: Existing Building Roof Drain



Summary for Subcatchment PS4:

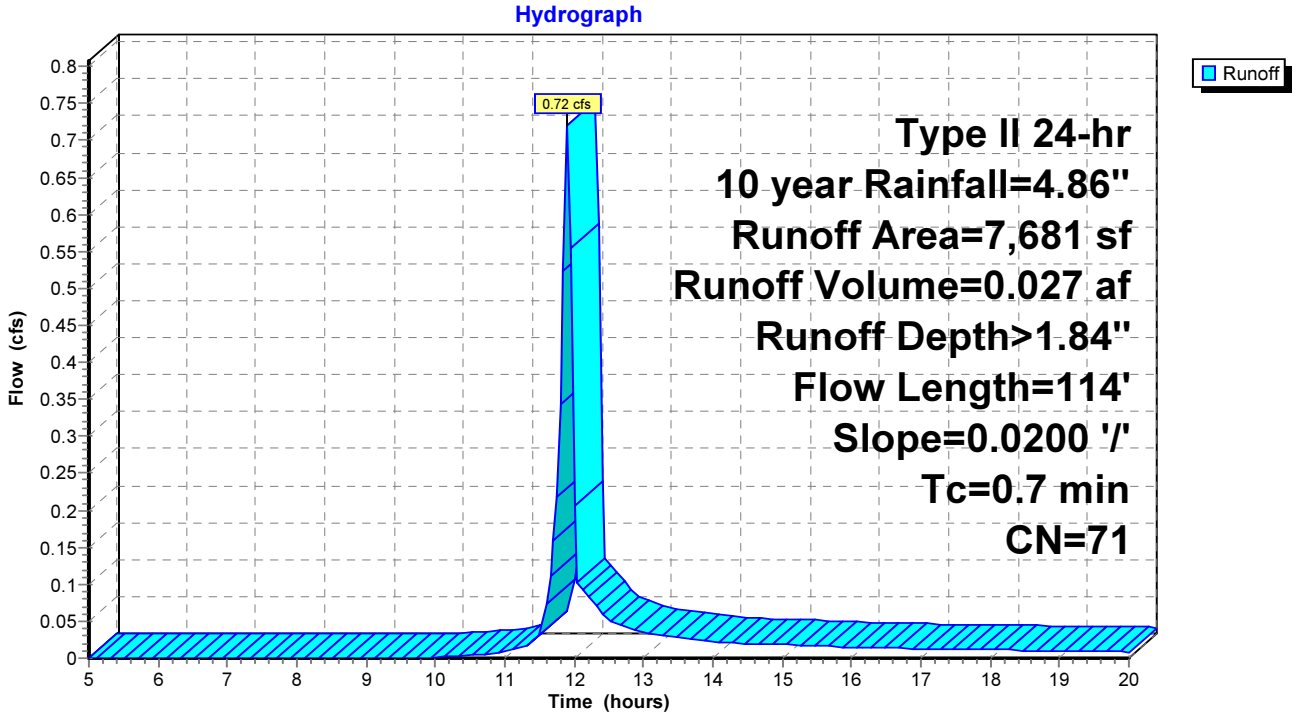
Runoff = 0.72 cfs @ 11.90 hrs, Volume= 0.027 af, Depth> 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.86"

Area (sf)	CN	Description
3,513	39	>75% Grass cover, Good, HSG A
4,168	98	Paved roads w/curbs & sewers, HSG A
7,681	71	Weighted Average
3,513		45.74% Pervious Area
4,168		54.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	114	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps

Subcatchment PS4:



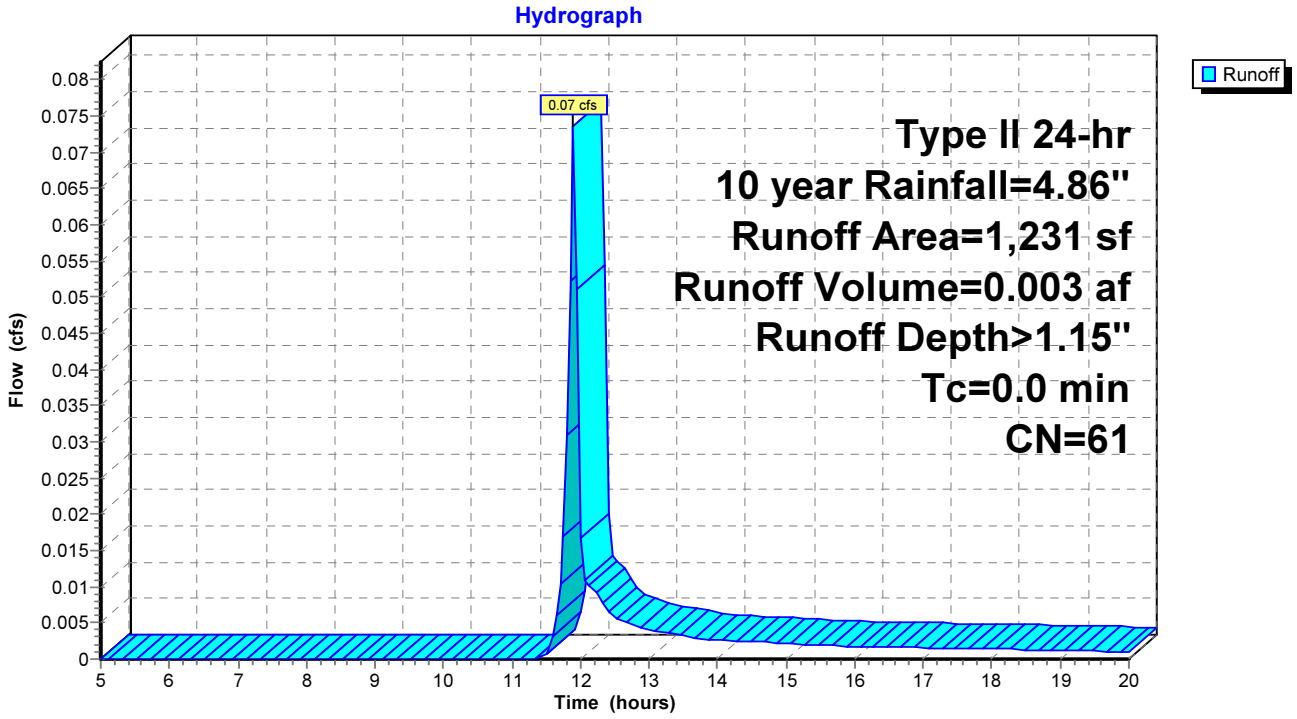
Summary for Subcatchment PS4a: Offsite

Runoff = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Depth> 1.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.86"

Area (sf)	CN	Description
1,231	61	>75% Grass cover, Good, HSG B
1,231		100.00% Pervious Area

Subcatchment PS4a: Offsite



Summary for Subcatchment PS5:

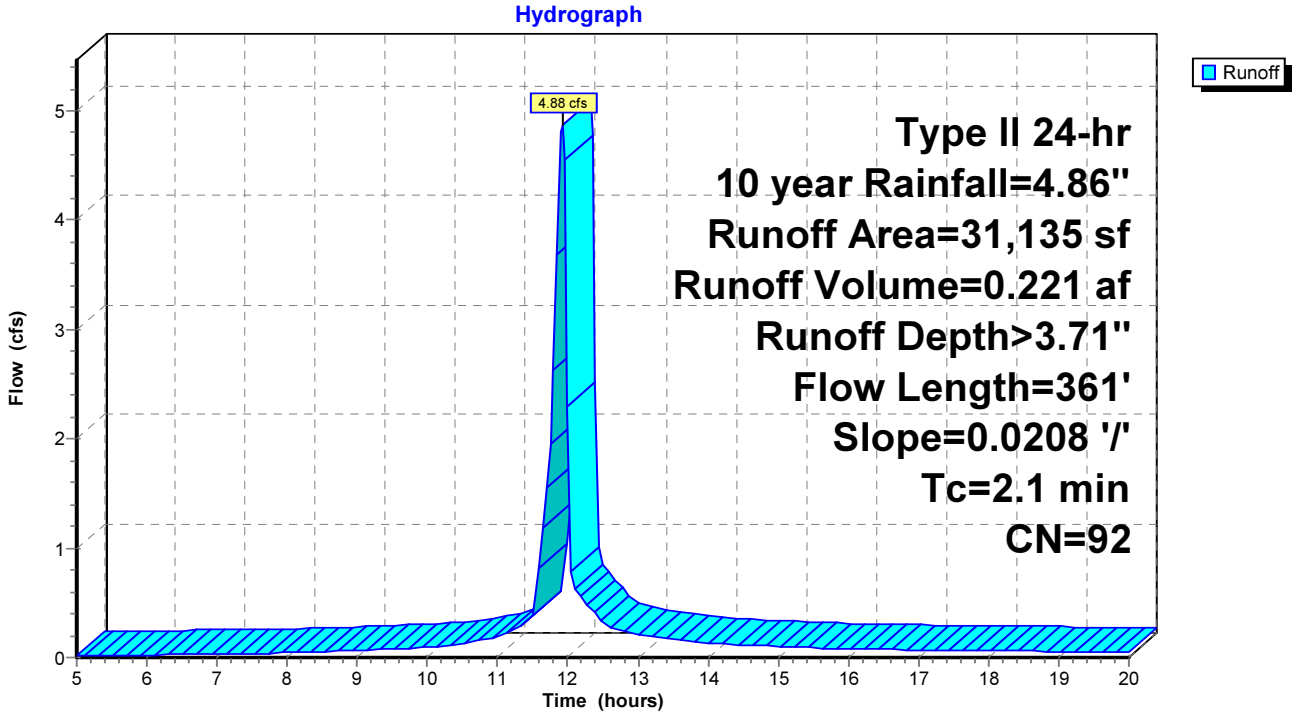
Runoff = 4.88 cfs @ 11.92 hrs, Volume= 0.221 af, Depth> 3.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.86"

	Area (sf)	CN	Description
	19,373	98	Paved roads w/curbs & sewers, HSG A
*	1,796	98	Paved sidewalks w/curbs & sewers, HSG A
	388	98	Roofs, HSG A
	6,186	98	Roofs, HSG A
	3,392	39	>75% Grass cover, Good, HSG A
	31,135	92	Weighted Average
	3,392		10.89% Pervious Area
	27,743		89.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	361	0.0208	2.93		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps

Subcatchment PS5:



Summary for Subcatchment PS5a: New Building Roof Drain

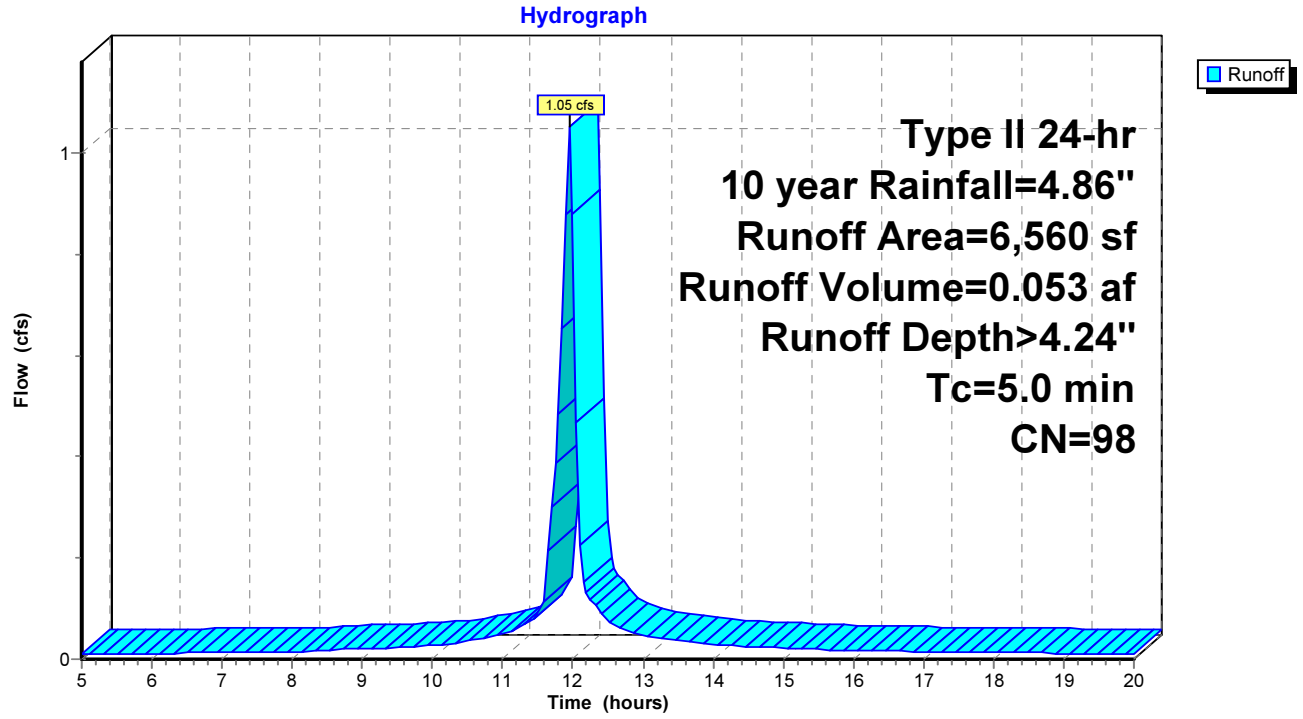
Runoff = 1.05 cfs @ 11.95 hrs, Volume= 0.053 af, Depth> 4.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.86"

Area (sf)	CN	Description
6,560	98	Roofs, HSG A
6,560		100.00% Impervious Area

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

Subcatchment PS5a: New Building Roof Drain



Summary for Subcatchment PS5aa: Landscaped Walk

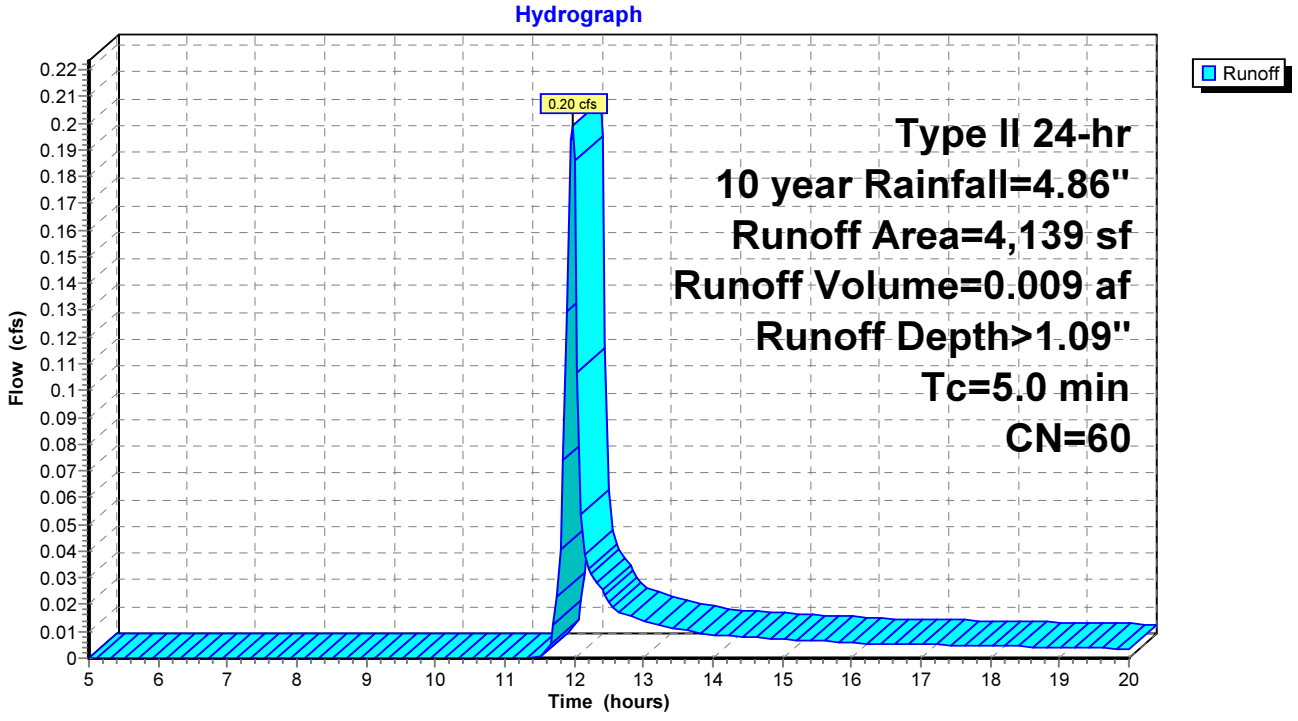
Runoff = 0.20 cfs @ 11.97 hrs, Volume= 0.009 af, Depth> 1.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.86"

	Area (sf)	CN	Description
	2,666	39	>75% Grass cover, Good, HSG A
	852	98	Roofs, HSG A
*	621	98	Paved sidewalks w/curbs & sewers, HSG A
	4,139	60	Weighted Average
	2,666		64.41% Pervious Area
	1,473		35.59% Impervious Area

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

Subcatchment PS5aa: Landscaped Walk



Summary for Subcatchment PS5aaa: Landscaped Walk

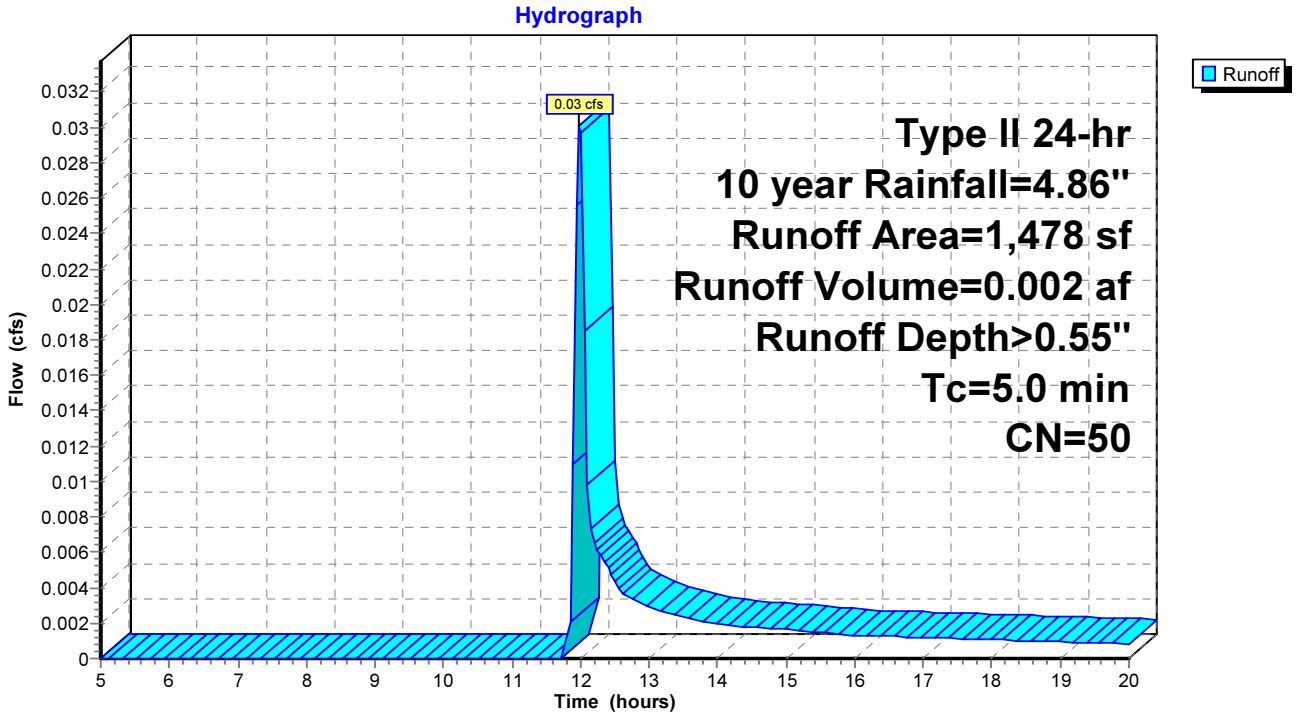
Runoff = 0.03 cfs @ 11.99 hrs, Volume= 0.002 af, Depth> 0.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.86"

	Area (sf)	CN	Description
	1,200	39	>75% Grass cover, Good, HSG A
*	278	98	Paved sidewalk w/curbs & sewers, HSG A
	1,478	50	Weighted Average
	1,200		81.19% Pervious Area
	278		18.81% Impervious Area

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

Subcatchment PS5aaa: Landscaped Walk



Summary for Subcatchment PS5b: New Building Roof Drain

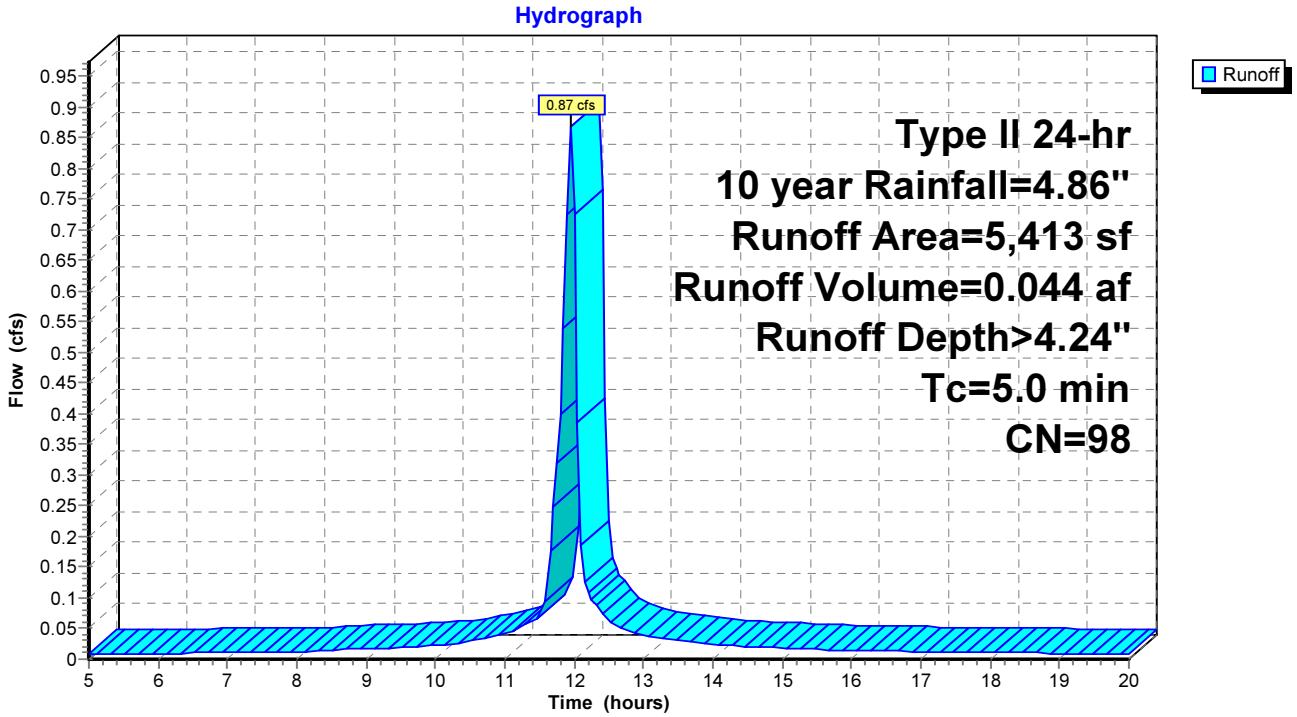
Runoff = 0.87 cfs @ 11.95 hrs, Volume= 0.044 af, Depth> 4.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.86"

Area (sf)	CN	Description
5,413	98	Roofs, HSG A
5,413		100.00% Impervious Area

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

Subcatchment PS5b: New Building Roof Drain



Summary for Subcatchment PS5bb: Landscaped Walk

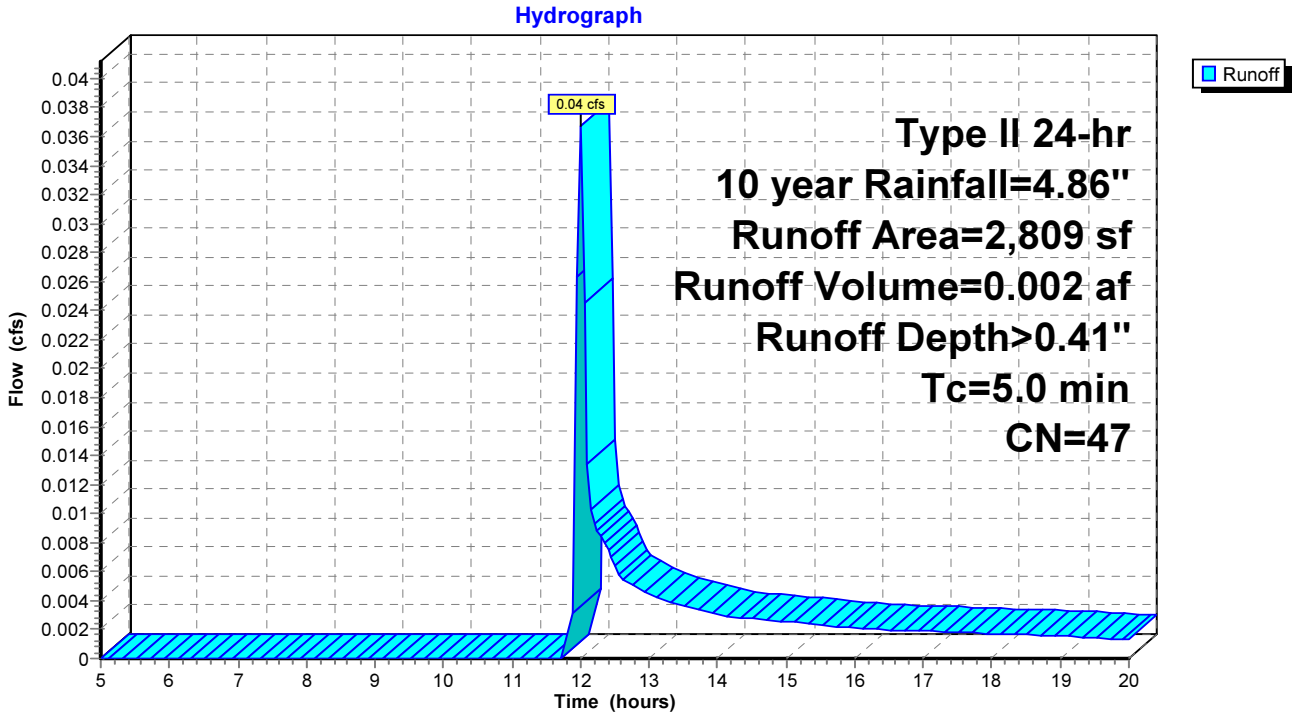
Runoff = 0.04 cfs @ 12.00 hrs, Volume= 0.002 af, Depth> 0.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.86"

	Area (sf)	CN	Description
	2,409	39	>75% Grass cover, Good, HSG A
*	400	98	Paved sidewalk w/curbs & sewers, HSG A
	2,809	47	Weighted Average
	2,409		85.76% Pervious Area
	400		14.24% Impervious Area

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

Subcatchment PS5bb: Landscaped Walk



Summary for Pond 1P: OCS # 1 / SYSTEM # 1

Inflow Area = 0.280 ac, 68.25% Impervious, Inflow Depth > 2.72" for 10 year event
Inflow = 1.27 cfs @ 11.95 hrs, Volume= 0.063 af
Outflow = 0.35 cfs @ 12.10 hrs, Volume= 0.053 af, Atten= 72%, Lag= 8.6 min
Discarded = 0.01 cfs @ 9.00 hrs, Volume= 0.018 af
Primary = 0.34 cfs @ 12.10 hrs, Volume= 0.035 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 12.72' @ 12.10 hrs Surf.Area= 0.015 ac Storage= 0.026 af

Plug-Flow detention time= 82.8 min calculated for 0.053 af (84% of inflow)
Center-of-Mass det. time= 31.7 min (776.3 - 744.5)

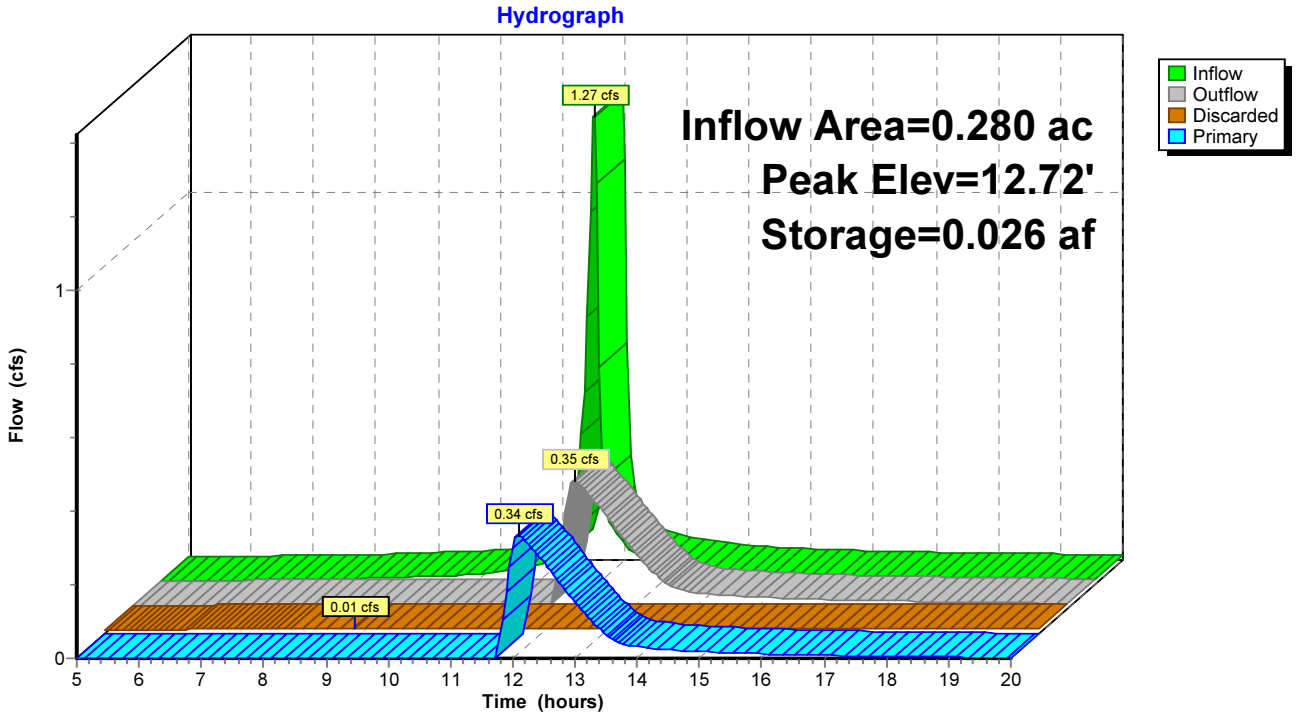
Volume	Invert	Avail.Storage	Storage Description
#1	10.50'	0.014 af	**24.00'W x 27.00'L x 4.00'H Prismatoid** 0.060 af Overall - 0.025 af Embedded = 0.035 af x 40.0% Voids
#2	11.00'	0.025 af	**ADS_StormTech SC-740** x 23 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 6 rows
		0.039 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	11.40'	**12.0" Round Culvert** L= 14.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 11.40' / 11.33' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	11.50'	**2.0" Vert. Orifice/Grate X 3.00** C= 0.600
#3	Device 1	14.50'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Discarded	10.50'	**1.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.01 cfs @ 9.00 hrs HW=10.54' (Free Discharge)
└**4=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.34 cfs @ 12.10 hrs HW=12.72' TW=9.96' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.34 cfs of 2.88 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.34 cfs @ 5.12 fps)
  └**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: OCS # 1 / SYSTEM # 1



Summary for Pond 5P: CB#1

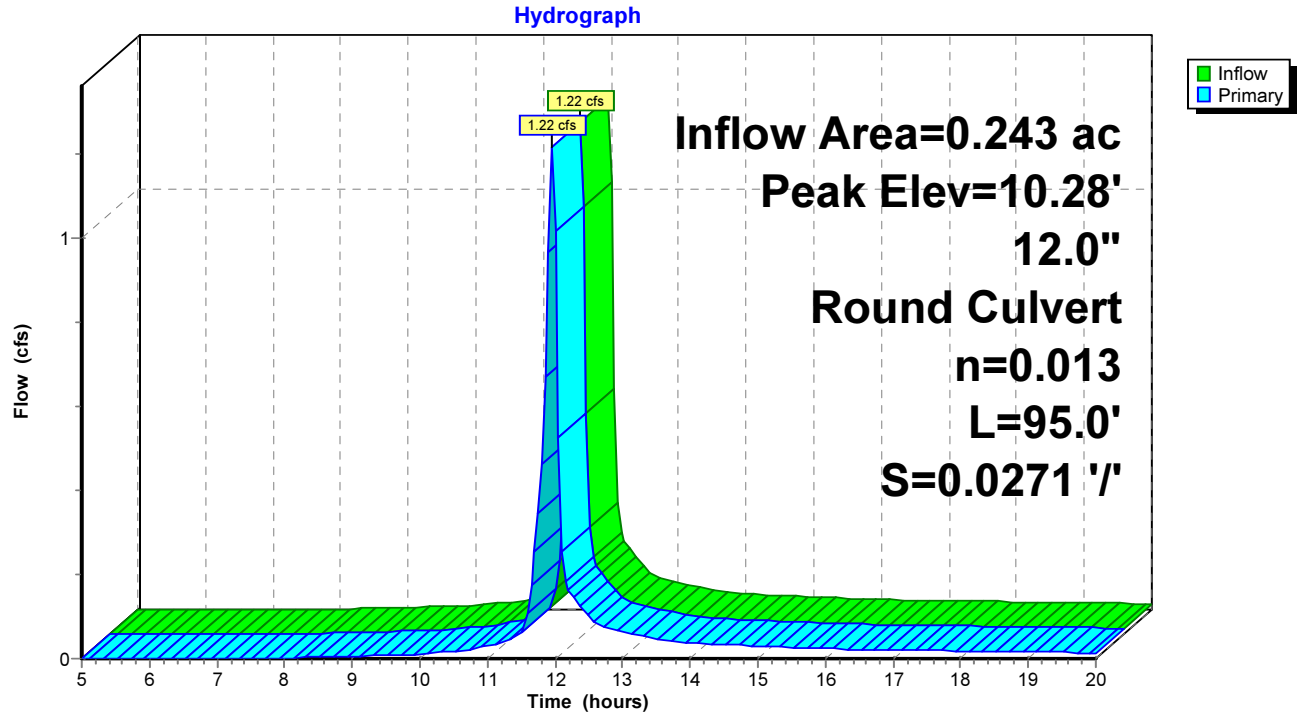
Inflow Area = 0.243 ac, 69.34% Impervious, Inflow Depth > 2.57" for 10 year event
Inflow = 1.22 cfs @ 11.95 hrs, Volume= 0.052 af
Outflow = 1.22 cfs @ 11.95 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min
Primary = 1.22 cfs @ 11.95 hrs, Volume= 0.052 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 10.28' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	9.70'	**12.0" Round Culvert** L= 95.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.70' / 7.13' S= 0.0271 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.20 cfs @ 11.95 hrs HW=10.27' TW=9.09' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.20 cfs @ 2.58 fps)

Pond 5P: CB#1



Summary for Pond 6P: CB#5

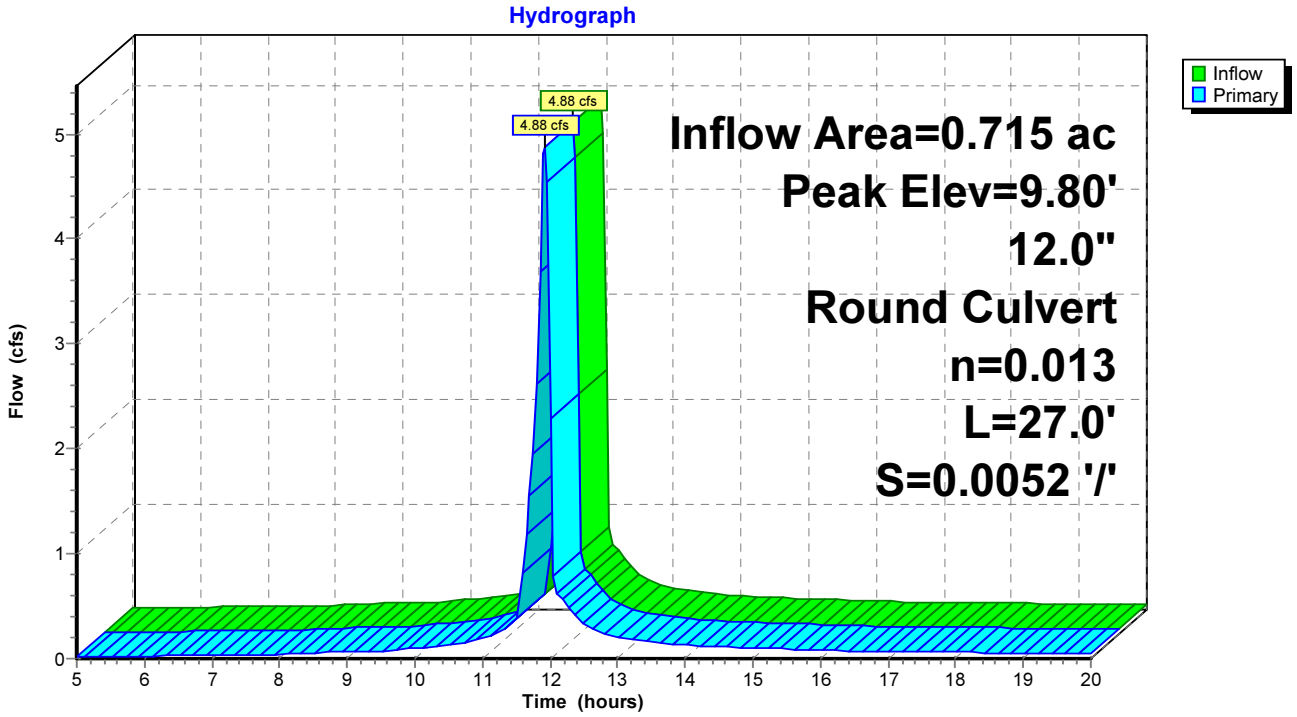
Inflow Area = 0.715 ac, 89.11% Impervious, Inflow Depth > 3.71" for 10 year event
Inflow = 4.88 cfs @ 11.92 hrs, Volume= 0.221 af
Outflow = 4.88 cfs @ 11.92 hrs, Volume= 0.221 af, Atten= 0%, Lag= 0.0 min
Primary = 4.88 cfs @ 11.92 hrs, Volume= 0.221 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 9.80' @ 11.91 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.54'	**12.0" Round Culvert** L= 27.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 7.54' / 7.40' S= 0.0052 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=4.73 cfs @ 11.92 hrs HW=9.72' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 4.73 cfs @ 6.02 fps)

Pond 6P: CB#5



Summary for Pond 7P: CB#2

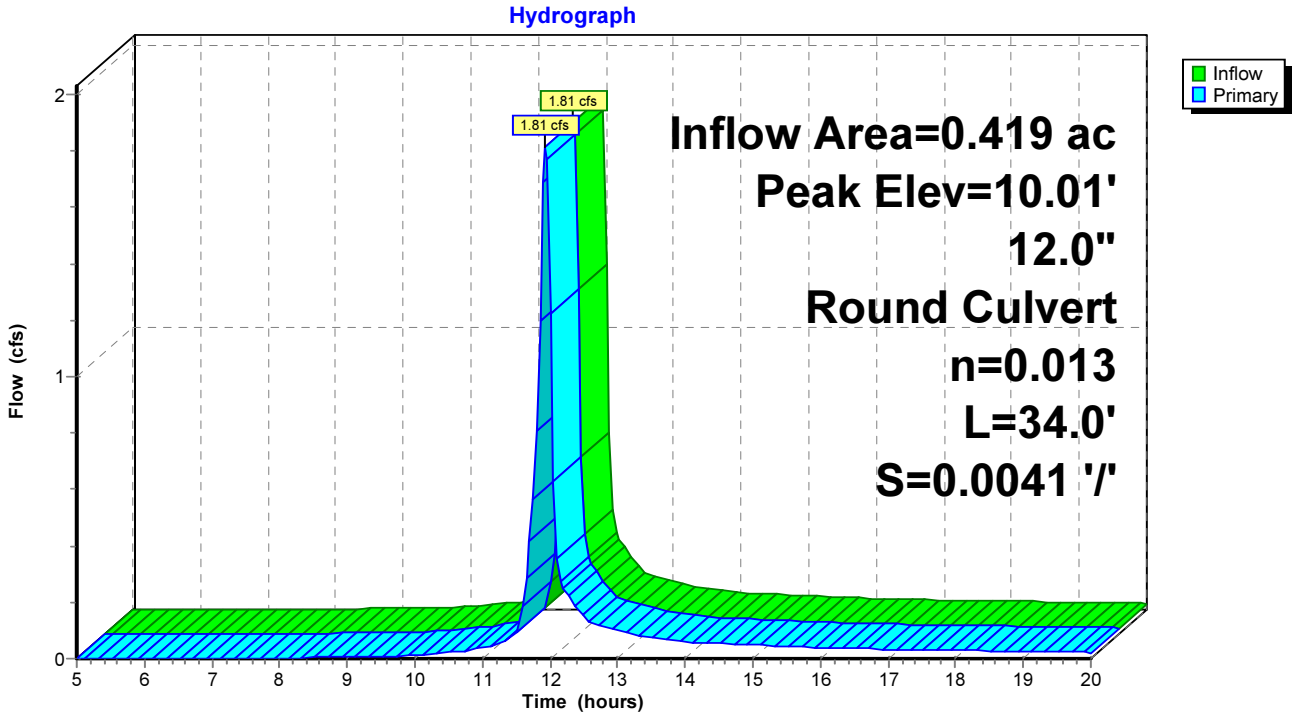
Inflow Area = 0.419 ac, 63.00% Impervious, Inflow Depth > 2.26" for 10 year event
Inflow = 1.81 cfs @ 11.93 hrs, Volume= 0.079 af
Outflow = 1.81 cfs @ 11.93 hrs, Volume= 0.079 af, Atten= 0%, Lag= 0.0 min
Primary = 1.81 cfs @ 11.93 hrs, Volume= 0.079 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 10.01' @ 12.03 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.03'	**12.0" Round Culvert** L= 34.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 7.03' / 6.89' S= 0.0041 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 11.93 hrs HW=8.84' TW=9.38' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Pond 7P: CB#2



Summary for Pond 8P: CB#3

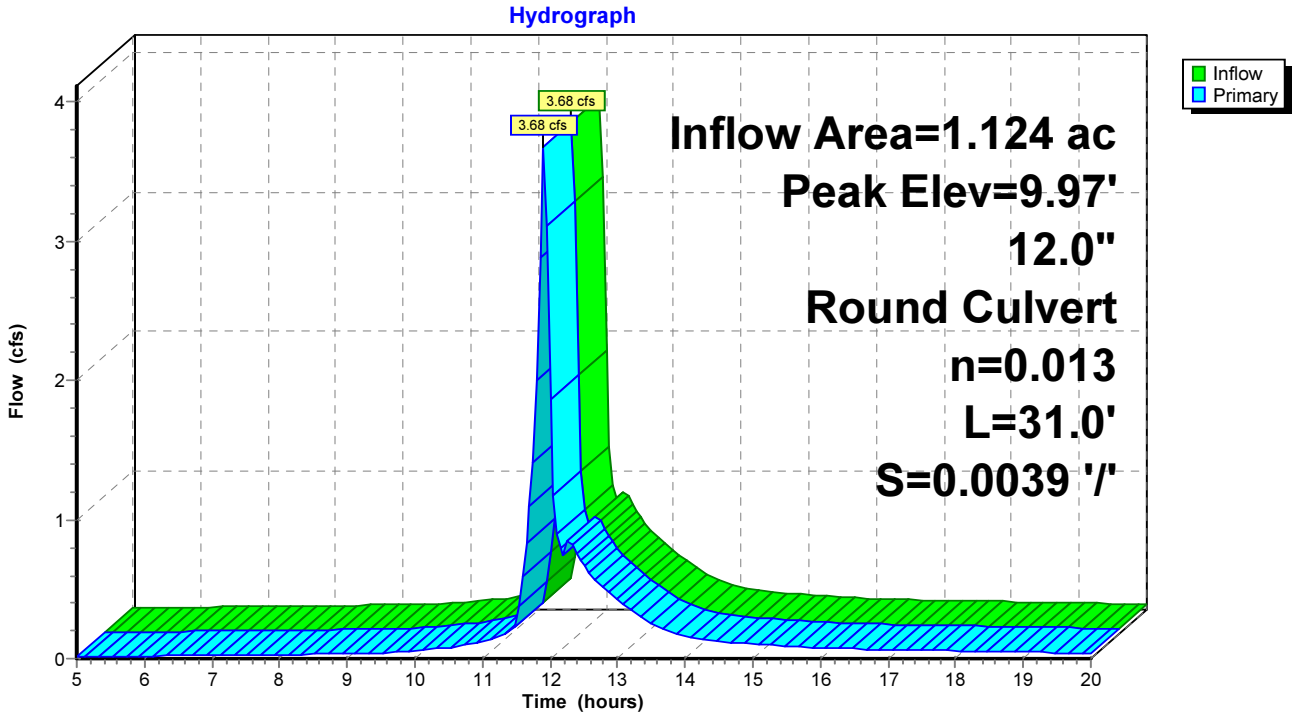
Inflow Area = 1.124 ac, 73.38% Impervious, Inflow Depth > 2.27" for 10 year event
Inflow = 3.68 cfs @ 11.90 hrs, Volume= 0.213 af
Outflow = 3.68 cfs @ 11.90 hrs, Volume= 0.213 af, Atten= 0%, Lag= 0.0 min
Primary = 3.68 cfs @ 11.90 hrs, Volume= 0.213 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 9.97' @ 11.99 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	6.89'	**12.0" Round Culvert** L= 31.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 6.89' / 6.77' S= 0.0039 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 11.90 hrs HW=8.91' TW=9.08' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Pond 8P: CB#3



Summary for Pond 9P: OCS # 2 / SYSTEM # 2

Inflow Area = 0.189 ac, 70.70% Impervious, Inflow Depth > 2.93" for 10 year event
Inflow = 0.90 cfs @ 11.95 hrs, Volume= 0.046 af
Outflow = 0.20 cfs @ 12.31 hrs, Volume= 0.036 af, Atten= 78%, Lag= 21.7 min
Discarded = 0.02 cfs @ 10.45 hrs, Volume= 0.021 af
Primary = 0.18 cfs @ 12.31 hrs, Volume= 0.015 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 8.20' @ 12.24 hrs Surf.Area= 0.019 ac Storage= 0.023 af

Plug-Flow detention time= 110.7 min calculated for 0.036 af (78% of inflow)
Center-of-Mass det. time= 52.2 min (788.0 - 735.9)

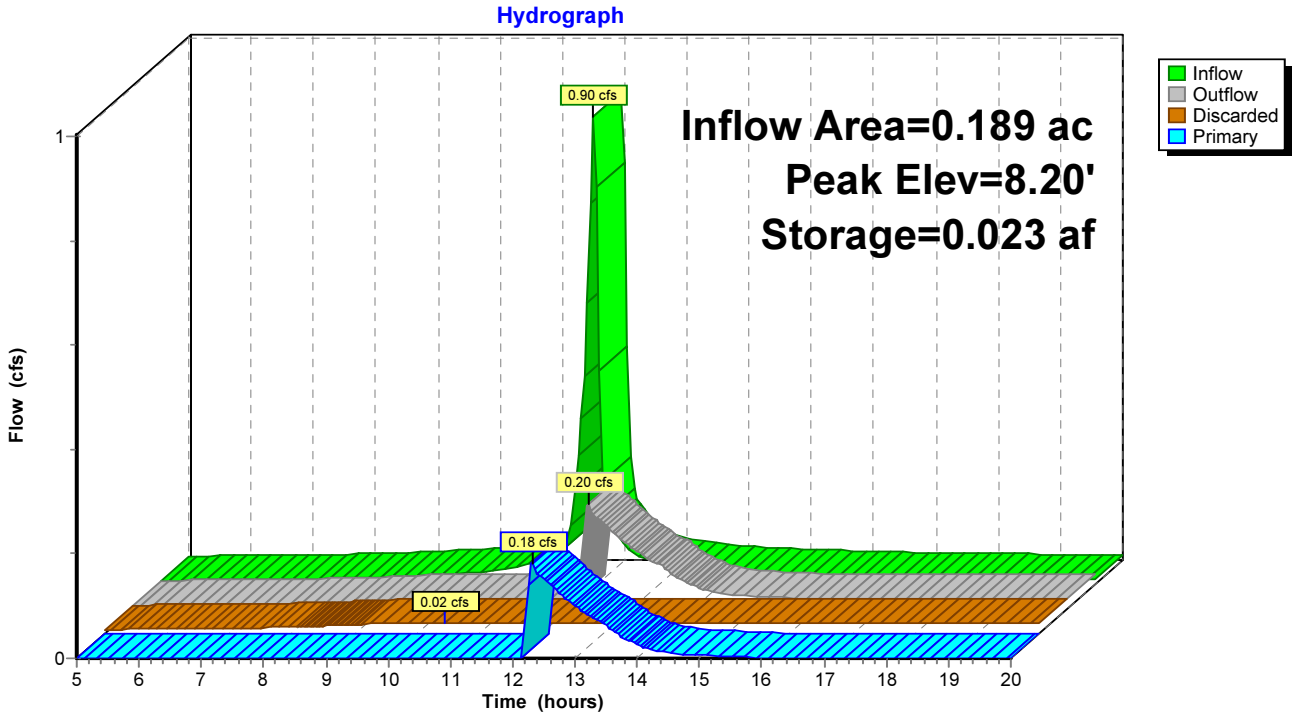
Volume	Invert	Avail.Storage	Storage Description
#1	6.50'	0.019 af	**27.00'W x 30.00'L x 4.00'H Prismatoid** 0.074 af Overall - 0.026 af Embedded = 0.049 af x 40.0% Voids
#2	7.00'	0.026 af	**ADS_StormTech SC-740** x 24 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 7 rows
		0.045 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	7.40'	**12.0" Round Culvert** L= 5.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 7.40' / 7.38' S= 0.0040 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	7.50'	**2.0" Vert. Orifice/Grate X 3.00** C= 0.600
#3	Device 1	10.50'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Discarded	6.50'	**1.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.02 cfs @ 10.45 hrs HW=6.54' (Free Discharge)
└**4=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.18 cfs @ 12.31 hrs HW=8.17' TW=7.86' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.18 cfs of 1.36 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.18 cfs @ 2.68 fps)
  └**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 9P: OCS # 2 / SYSTEM # 2



Summary for Pond 15P: DMH#1

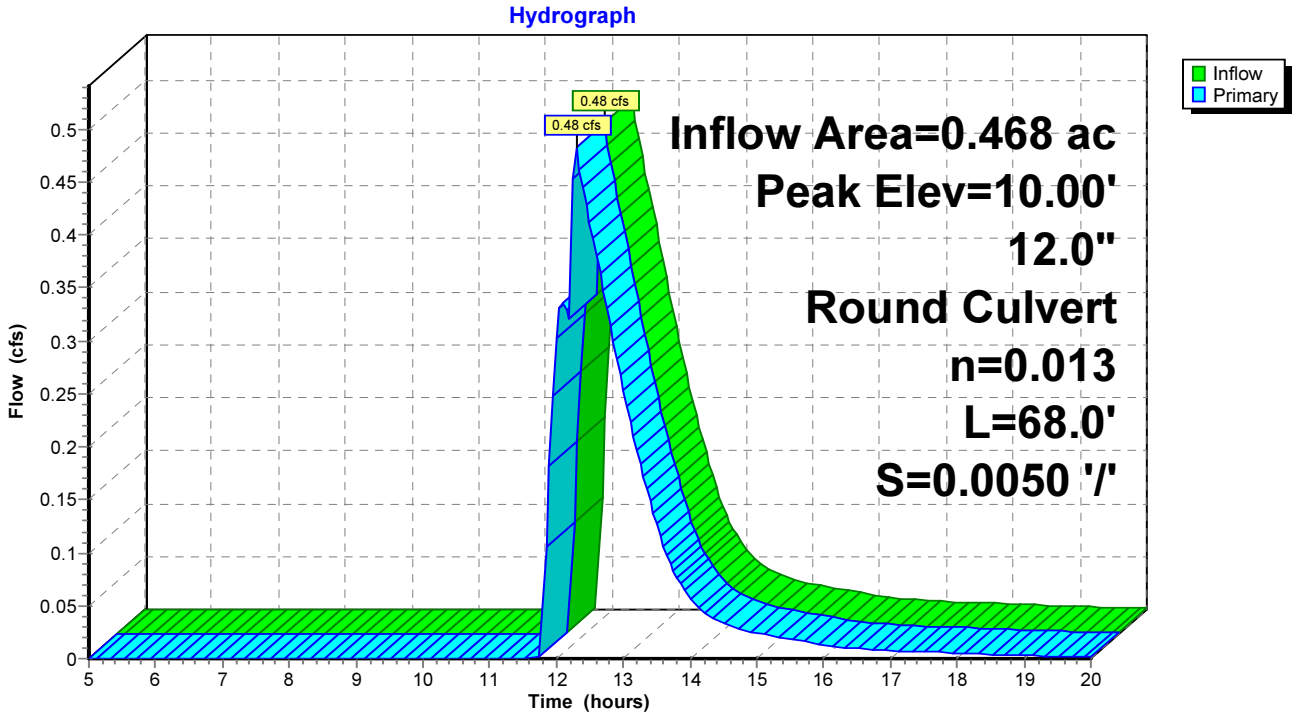
Inflow Area = 0.468 ac, 69.24% Impervious, Inflow Depth > 1.29" for 10 year event
Inflow = 0.48 cfs @ 12.30 hrs, Volume= 0.050 af
Outflow = 0.48 cfs @ 12.30 hrs, Volume= 0.050 af, Atten= 0%, Lag= 0.0 min
Primary = 0.48 cfs @ 12.30 hrs, Volume= 0.050 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 10.00' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.38'	**12.0" Round Culvert** L= 68.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 7.38' / 7.04' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.47 cfs @ 12.30 hrs HW=7.86' TW=7.63' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.47 cfs @ 1.83 fps)

Pond 15P: DMH#1



Summary for Pond 16P: CB#6

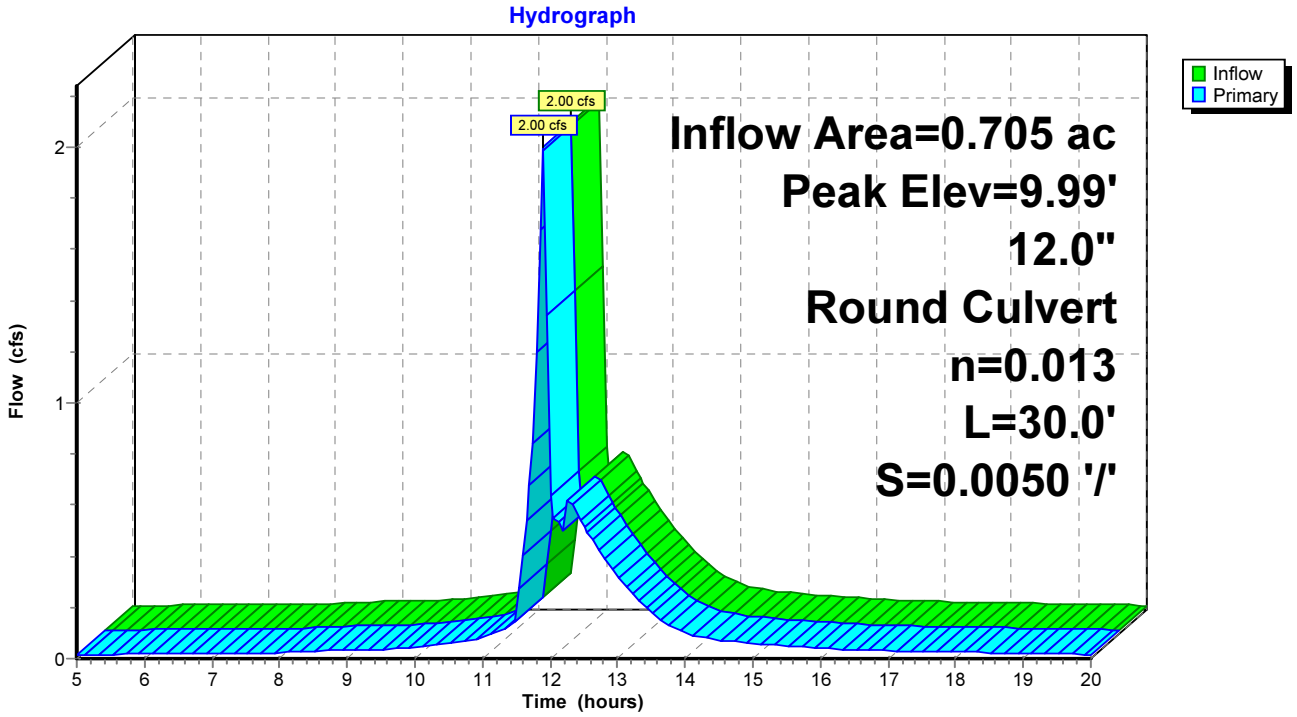
Inflow Area = 0.705 ac, 79.56% Impervious, Inflow Depth > 2.28" for 10 year event
Inflow = 2.00 cfs @ 11.89 hrs, Volume= 0.134 af
Outflow = 2.00 cfs @ 11.89 hrs, Volume= 0.134 af, Atten= 0%, Lag= 0.0 min
Primary = 2.00 cfs @ 11.89 hrs, Volume= 0.134 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 9.99' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.04'	**12.0" Round Culvert** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 7.04' / 6.89' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 11.89 hrs HW=8.48' TW=8.73' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Pond 16P: CB#6



Summary for Pond 17P:

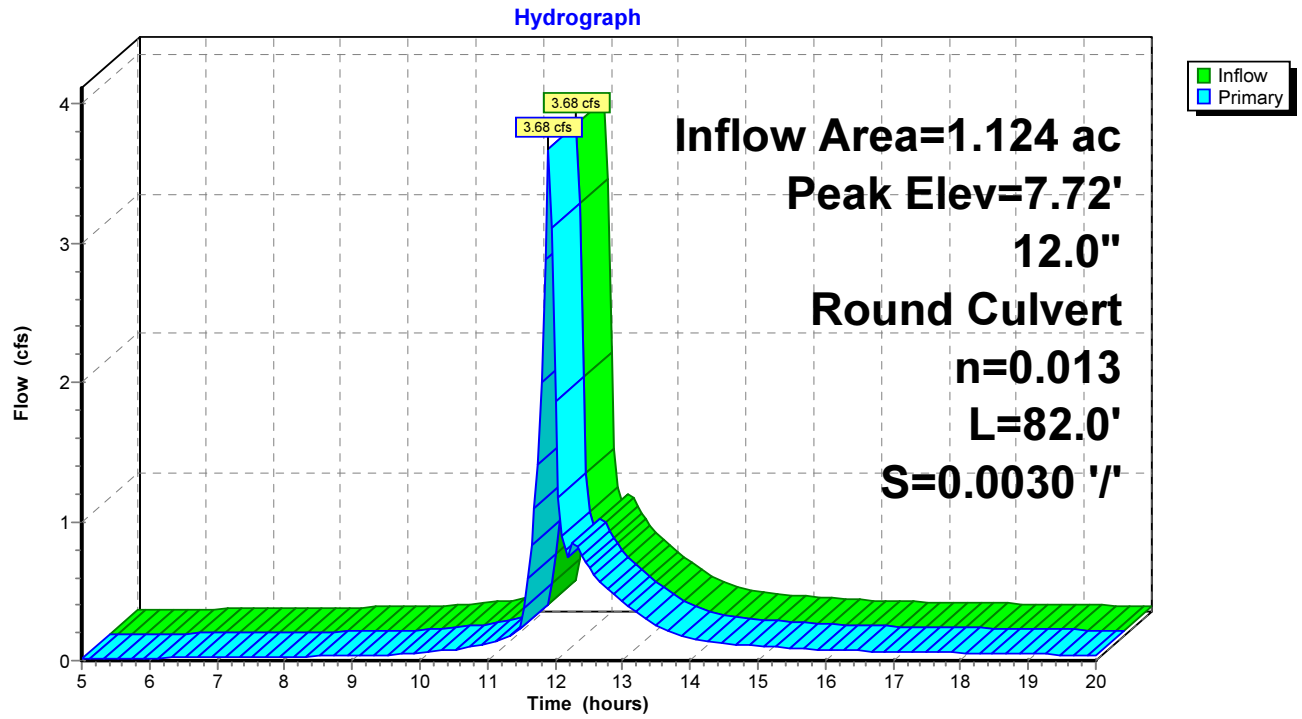
Inflow Area = 1.124 ac, 73.38% Impervious, Inflow Depth > 2.27" for 10 year event
Inflow = 3.68 cfs @ 11.90 hrs, Volume= 0.213 af
Outflow = 3.68 cfs @ 11.90 hrs, Volume= 0.213 af, Atten= 0%, Lag= 0.0 min
Primary = 3.68 cfs @ 11.90 hrs, Volume= 0.213 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 7.72' @ 11.90 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	5.58'	**12.0" Round Culvert** L= 82.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 5.58' / 5.33' S= 0.0030 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.63 cfs @ 11.90 hrs HW=7.68' (Free Discharge)
1=Culvert (Barrel Controls 3.63 cfs @ 4.62 fps)

Pond 17P:



Summary for Pond AEI 6: CB#4 - Discharge Point 3 (Off Site Drainage)

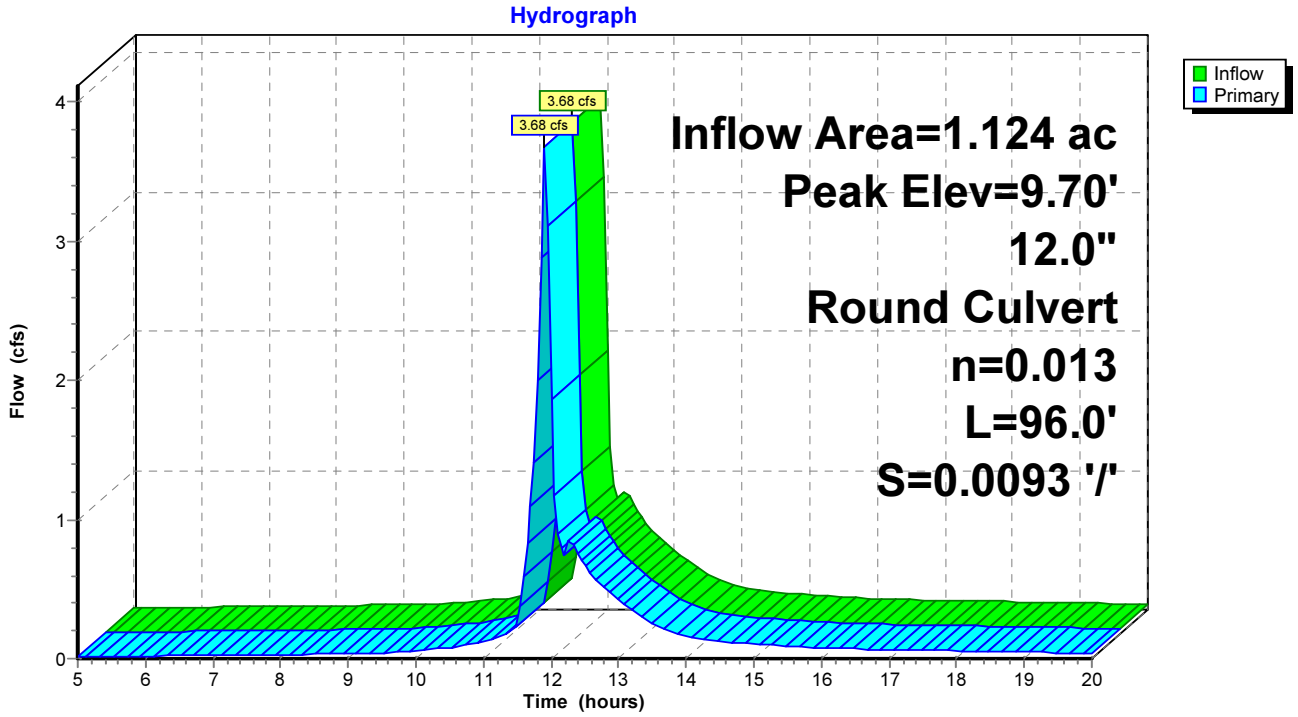
Inflow Area = 1.124 ac, 73.38% Impervious, Inflow Depth > 2.27" for 10 year event
Inflow = 3.68 cfs @ 11.90 hrs, Volume= 0.213 af
Outflow = 3.68 cfs @ 11.90 hrs, Volume= 0.213 af, Atten= 0%, Lag= 0.0 min
Primary = 3.68 cfs @ 11.90 hrs, Volume= 0.213 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 9.70' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	6.77'	**12.0" Round Culvert** L= 96.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 6.77' / 5.88' S= 0.0093 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.03 cfs @ 11.90 hrs HW=9.08' TW=8.61' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.03 cfs @ 2.59 fps)

Pond AEI 6: CB#4 - Discharge Point 3 (Off Site Drainage)



Summary for Pond AEI 7:

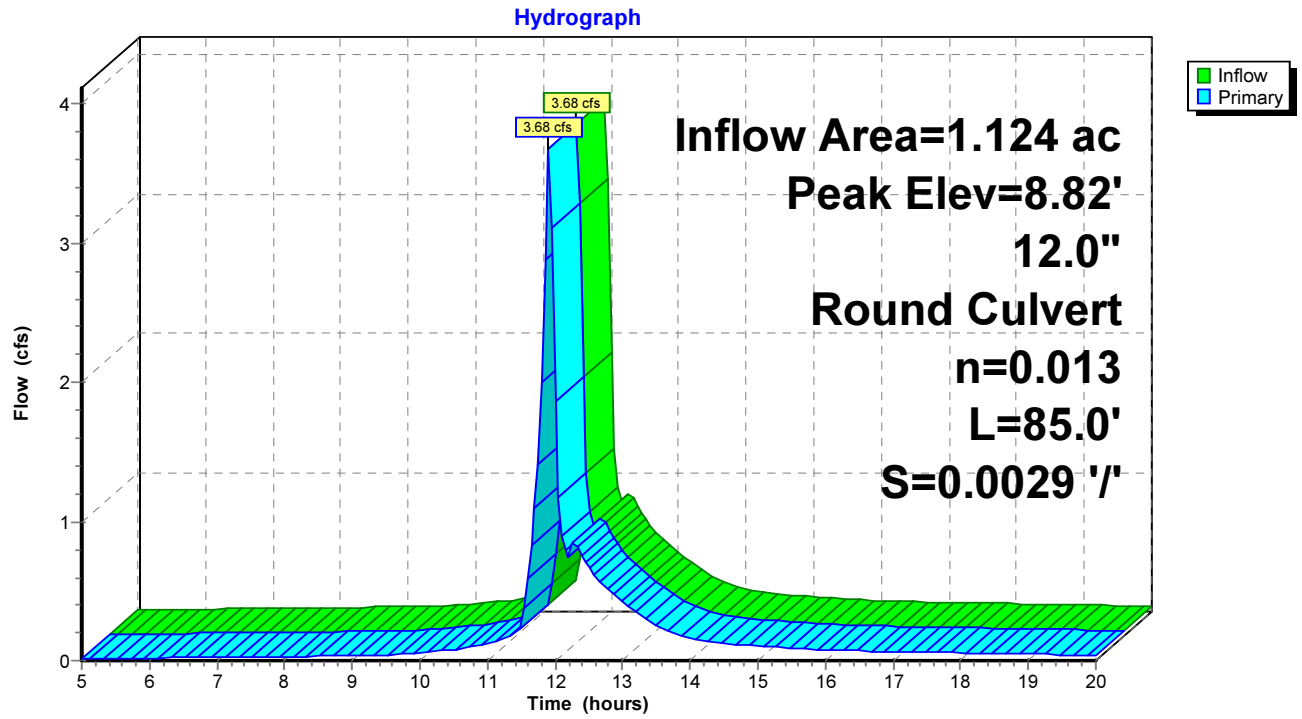
Inflow Area = 1.124 ac, 73.38% Impervious, Inflow Depth > 2.27" for 10 year event
Inflow = 3.68 cfs @ 11.90 hrs, Volume= 0.213 af
Outflow = 3.68 cfs @ 11.90 hrs, Volume= 0.213 af, Atten= 0%, Lag= 0.0 min
Primary = 3.68 cfs @ 11.90 hrs, Volume= 0.213 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 8.82' @ 11.93 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	5.83'	**12.0" Round Culvert** L= 85.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 5.83' / 5.58' S= 0.0029 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.97 cfs @ 11.90 hrs HW=8.61' TW=7.68' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.97 cfs @ 3.79 fps)

Pond AEI 7:



Summary for Pond CB 4433:

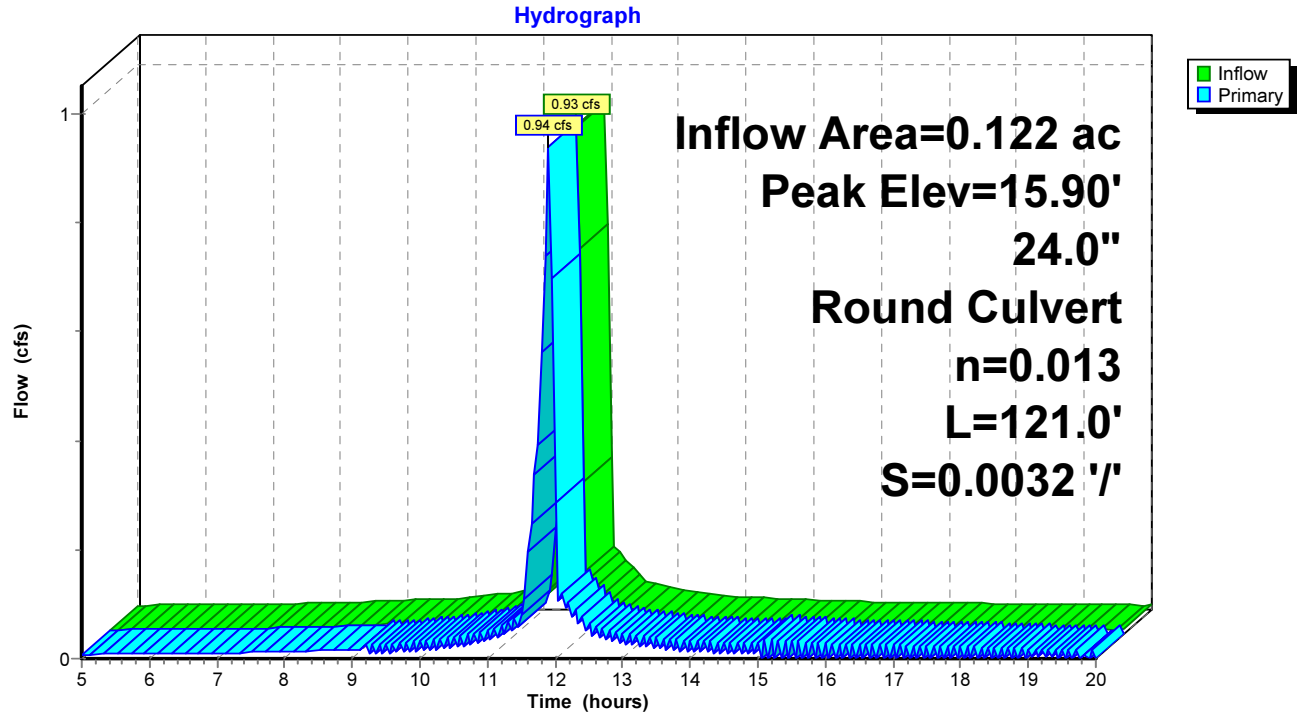
Inflow Area = 0.122 ac,100.00% Impervious, Inflow Depth > 4.24" for 10 year event
Inflow = 0.93 cfs @ 11.90 hrs, Volume= 0.043 af
Outflow = 0.94 cfs @ 11.90 hrs, Volume= 0.043 af, Atten= 0%, Lag= 0.0 min
Primary = 0.94 cfs @ 11.90 hrs, Volume= 0.043 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 15.90' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	14.38'	**24.0" Round Culvert** L= 121.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 14.38' / 13.99' S= 0.0032 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=0.00 cfs @ 11.90 hrs HW=15.85' TW=15.90' (Dynamic Tailwater)
↑**1=Culvert** (Controls 0.00 cfs)

Pond CB 4433:



Summary for Pond CB 4435:

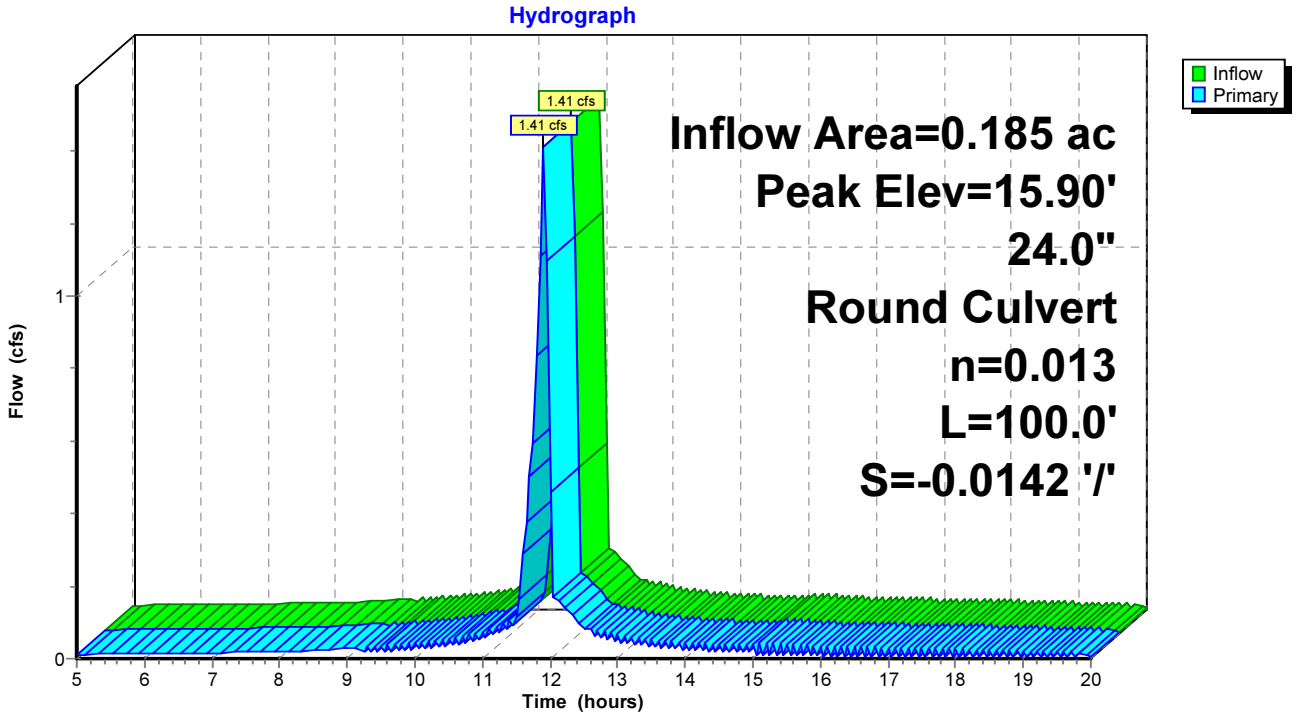
Inflow Area = 0.185 ac,100.00% Impervious, Inflow Depth > 4.24" for 10 year event
Inflow = 1.41 cfs @ 11.90 hrs, Volume= 0.065 af
Outflow = 1.41 cfs @ 11.90 hrs, Volume= 0.065 af, Atten= 0%, Lag= 0.0 min
Primary = 1.41 cfs @ 11.90 hrs, Volume= 0.065 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 15.90' @ 11.90 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	15.41'	**24.0" Round Culvert** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.99' / 15.41' S= -0.0142 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=1.41 cfs @ 11.90 hrs HW=15.90' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.41 cfs @ 2.38 fps)

Pond CB 4435:



Summary for Pond CB 4560:

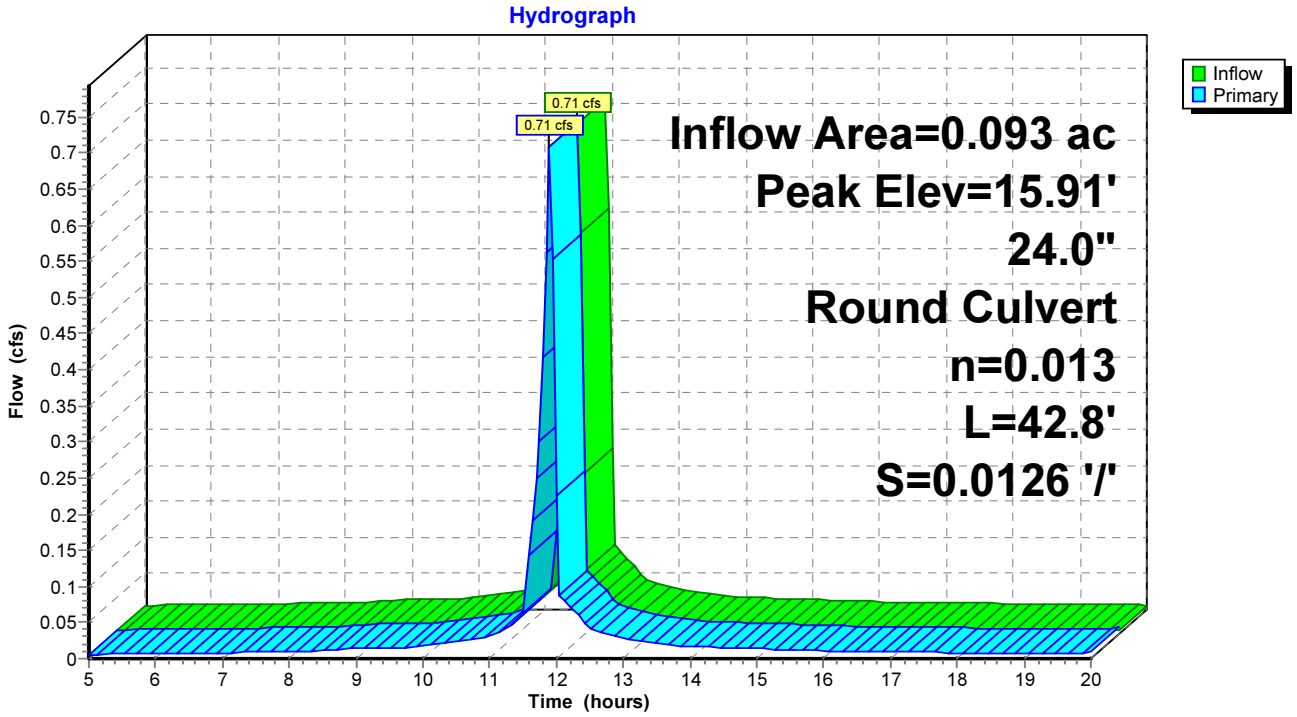
Inflow Area = 0.093 ac,100.00% Impervious, Inflow Depth > 4.24" for 10 year event
Inflow = 0.71 cfs @ 11.90 hrs, Volume= 0.033 af
Outflow = 0.71 cfs @ 11.90 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.0 min
Primary = 0.71 cfs @ 11.90 hrs, Volume= 0.033 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 15.91' @ 11.99 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	14.92'	**24.0" Round Culvert** L= 42.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 14.92' / 14.38' S= 0.0126 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=0.00 cfs @ 11.90 hrs HW=15.81' TW=15.85' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Pond CB 4560:

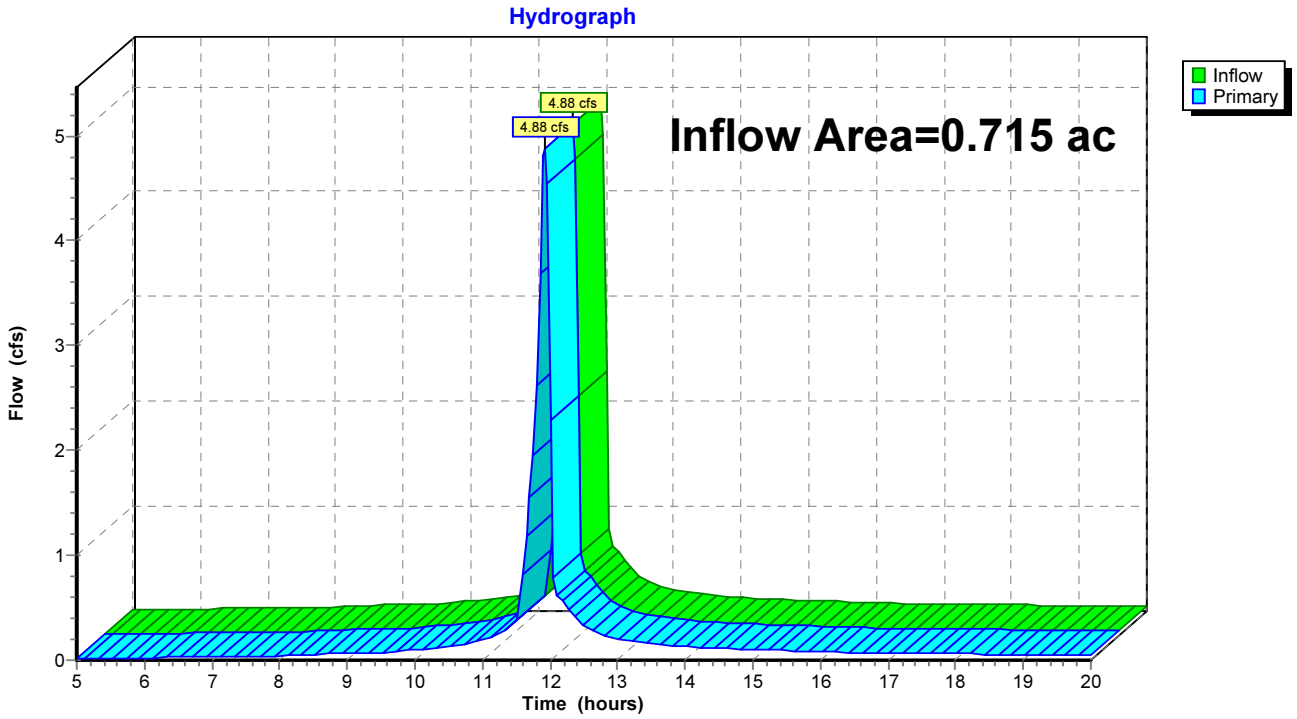


Summary for Link 1L: Discharge Point 1 (Combined Sewer)

Inflow Area = 0.715 ac, 89.11% Impervious, Inflow Depth > 3.71" for 10 year event
Inflow = 4.88 cfs @ 11.92 hrs, Volume= 0.221 af
Primary = 4.88 cfs @ 11.92 hrs, Volume= 0.221 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: Discharge Point 1 (Combined Sewer)

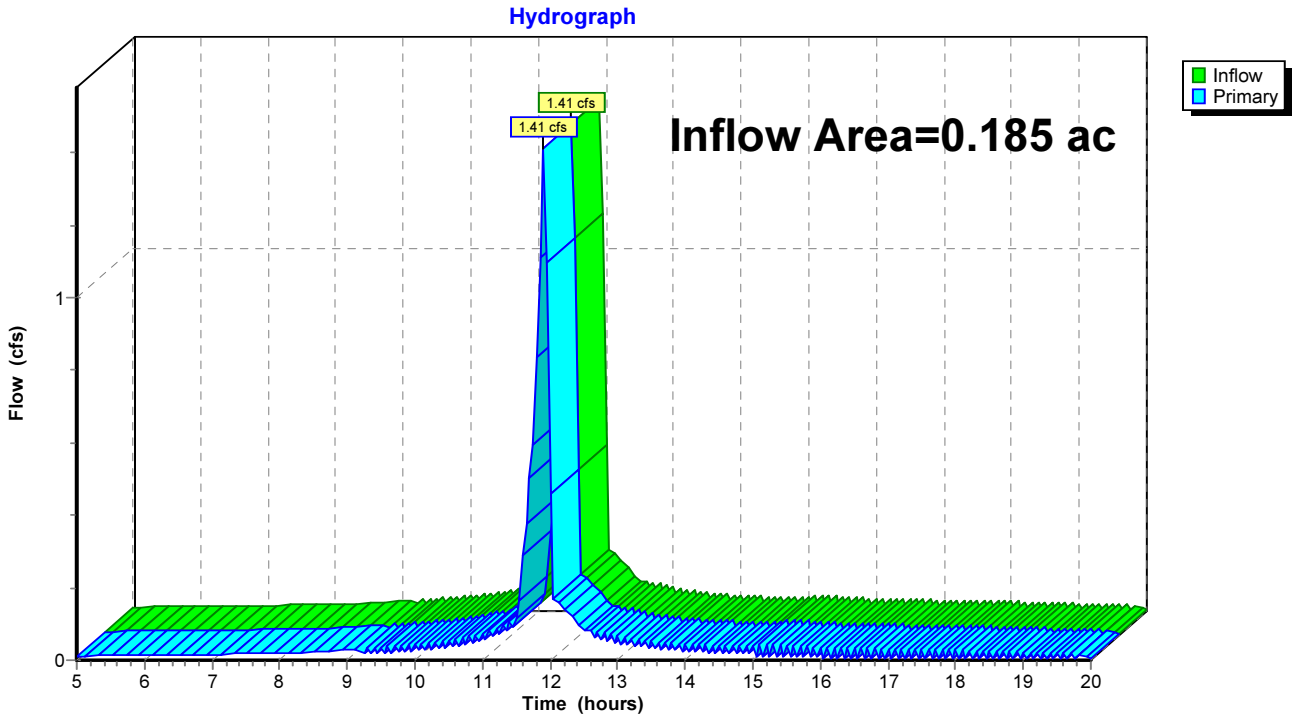


Summary for Link 2L: Discharge Point 2 (Court Street Drainage)

Inflow Area = 0.185 ac,100.00% Impervious, Inflow Depth > 4.24" for 10 year event
Inflow = 1.41 cfs @ 11.90 hrs, Volume= 0.065 af
Primary = 1.41 cfs @ 11.90 hrs, Volume= 0.065 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: Discharge Point 2 (Court Street Drainage)

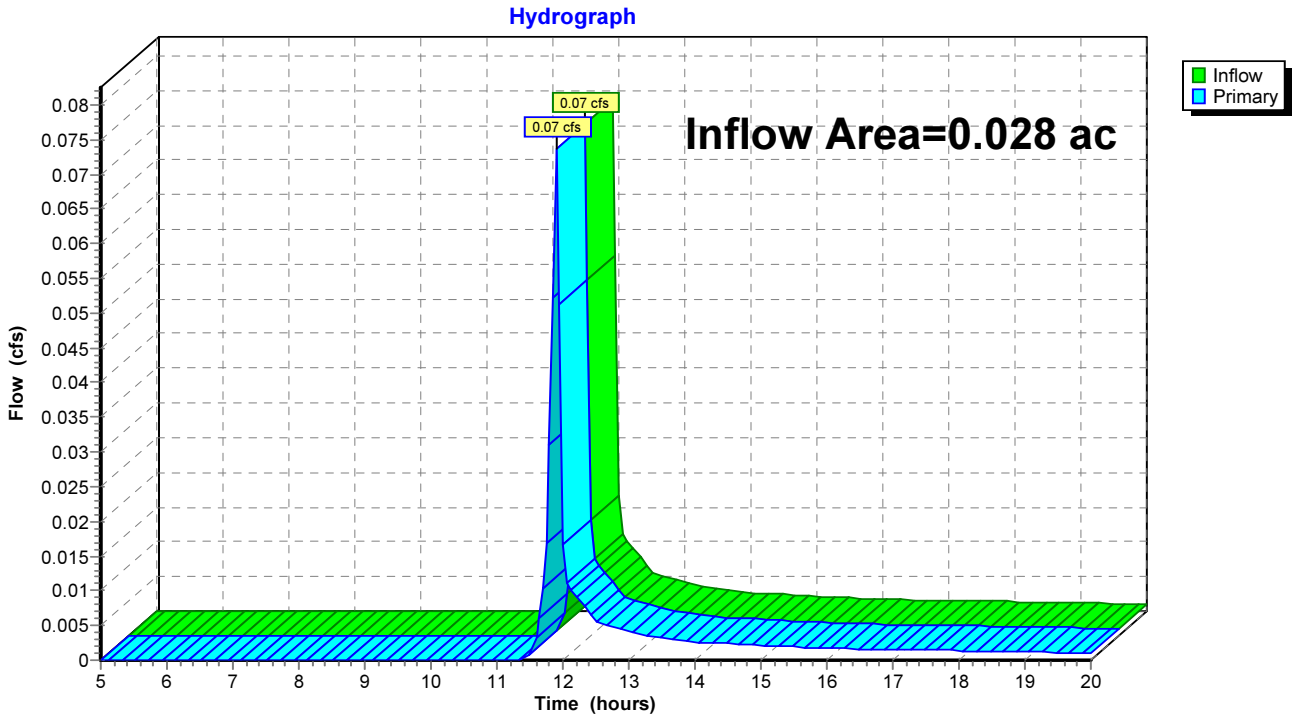


Summary for Link 3L: Discharge Point 4 (DP4)

Inflow Area = 0.028 ac, 0.00% Impervious, Inflow Depth > 1.15" for 10 year event
Inflow = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af
Primary = 0.07 cfs @ 11.90 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: Discharge Point 4 (DP4)

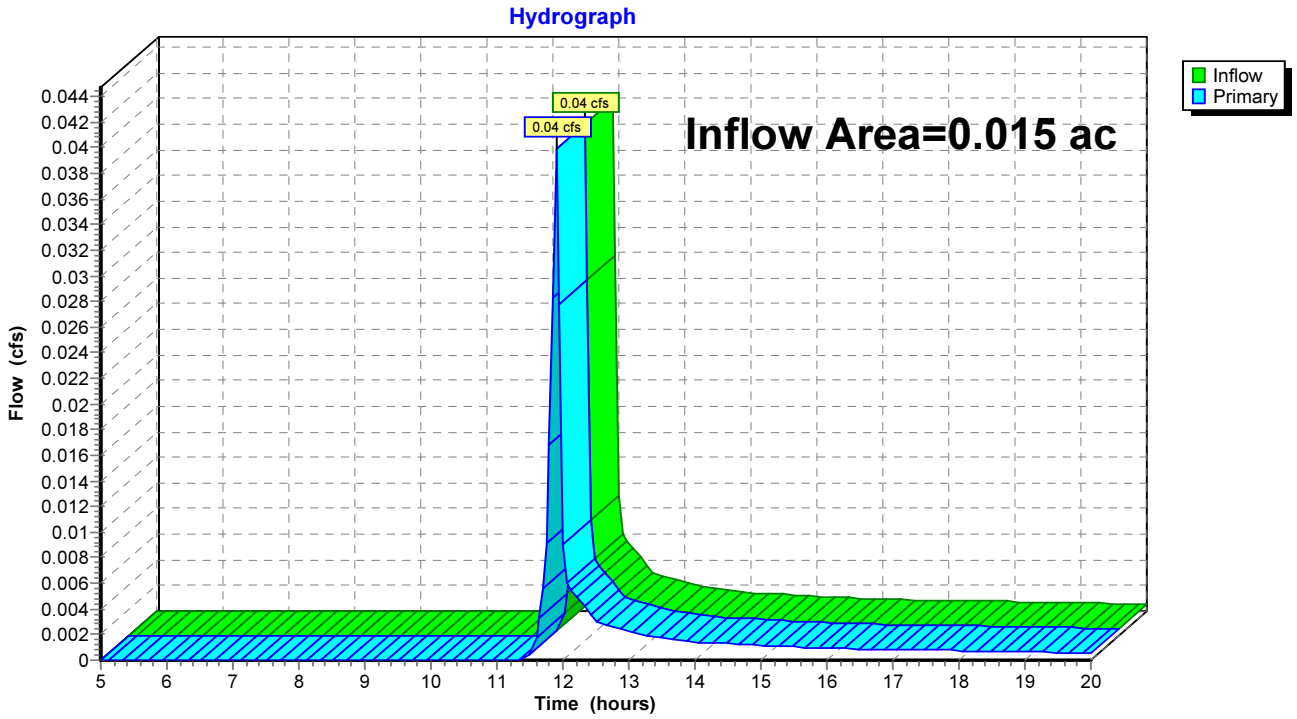


Summary for Link 4L: Discharge Point 5 (DP5)

Inflow Area = 0.015 ac, 0.00% Impervious, Inflow Depth > 1.15" for 10 year event
Inflow = 0.04 cfs @ 11.90 hrs, Volume= 0.001 af
Primary = 0.04 cfs @ 11.90 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 4L: Discharge Point 5 (DP5)



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 ES6: Court Street Runoff Area=2,751 sf 100.00% Impervious Runoff Depth>6.51"
Flow Length=121' Tc=1.5 min CN=98 Runoff=0.72 cfs 0.034 af

Subcatchment ES7: Court Street Runoff Area=1,263 sf 100.00% Impervious Runoff Depth>6.51"
Flow Length=49' Slope=0.0051 '/' Tc=0.6 min CN=98 Runoff=0.34 cfs 0.016 af

Subcatchment ES8: Court Street Runoff Area=4,051 sf 100.00% Impervious Runoff Depth>6.51"
Flow Length=143' Slope=0.0098 '/' Tc=1.2 min CN=98 Runoff=1.08 cfs 0.050 af

Subcatchment PS1: Runoff Area=10,582 sf 69.34% Impervious Runoff Depth>4.72"
Flow Length=189' Tc=4.7 min CN=80 Runoff=2.16 cfs 0.096 af

Subcatchment PS1a: Offsite Runoff Area=667 sf 0.00% Impervious Runoff Depth>2.73"
Tc=0.0 min CN=61 Runoff=0.09 cfs 0.003 af

Subcatchment PS2: Existing Building Runoff Area=10,300 sf 100.00% Impervious Runoff Depth>6.51"
Tc=0.0 min CN=98 Runoff=2.80 cfs 0.128 af

Subcatchment PS4: Runoff Area=7,681 sf 54.26% Impervious Runoff Depth>3.75"
Flow Length=114' Slope=0.0200 '/' Tc=0.7 min CN=71 Runoff=1.43 cfs 0.055 af

Subcatchment PS4a: Offsite Runoff Area=1,231 sf 0.00% Impervious Runoff Depth>2.73"
Tc=0.0 min CN=61 Runoff=0.17 cfs 0.006 af

Subcatchment PS5: Runoff Area=31,135 sf 89.11% Impervious Runoff Depth>6.02"
Flow Length=361' Slope=0.0208 '/' Tc=2.1 min CN=92 Runoff=7.69 cfs 0.358 af

Subcatchment PS5a: New Building Roof Runoff Area=6,560 sf 100.00% Impervious Runoff Depth>6.51"
Tc=5.0 min CN=98 Runoff=1.61 cfs 0.082 af

Subcatchment PS5aa: Landscaped Walk Runoff Area=4,139 sf 35.59% Impervious Runoff Depth>2.63"
Tc=5.0 min CN=60 Runoff=0.49 cfs 0.021 af

Subcatchment PS5aaa: Landscaped Walk Runoff Area=1,478 sf 18.81% Impervious Runoff Depth>1.68"
Tc=5.0 min CN=50 Runoff=0.11 cfs 0.005 af

Subcatchment PS5b: New Building Roof Runoff Area=5,413 sf 100.00% Impervious Runoff Depth>6.51"
Tc=5.0 min CN=98 Runoff=1.32 cfs 0.067 af

Subcatchment PS5bb: Landscaped Walk Runoff Area=2,809 sf 14.24% Impervious Runoff Depth>1.42"
Tc=5.0 min CN=47 Runoff=0.17 cfs 0.008 af

Pond 1P: OCS # 1 / SYSTEM # 1 Peak Elev=15.82' Storage=0.039 af Inflow=2.20 cfs 0.107 af
Discarded=0.01 cfs 0.019 af Primary=1.84 cfs 0.078 af Outflow=1.85 cfs 0.097 af

Pond 5P: CB#1 Peak Elev=17.62' Inflow=2.16 cfs 0.096 af
12.0" Round Culvert n=0.013 L=95.0' S=0.0271 '/' Outflow=2.16 cfs 0.096 af

Pond 6P: CB#5 Peak Elev=12.16' Inflow=7.69 cfs 0.358 af
12.0" Round Culvert n=0.013 L=27.0' S=0.0052 '/' Outflow=7.69 cfs 0.358 af

Pond 7P: CB#2 Peak Elev=17.57' Inflow=3.34 cfs 0.151 af
12.0" Round Culvert n=0.013 L=34.0' S=0.0041 '/' Outflow=3.34 cfs 0.151 af

Pond 8P: CB#3 Peak Elev=17.43' Inflow=6.30 cfs 0.398 af
12.0" Round Culvert n=0.013 L=31.0' S=0.0039 '/' Outflow=6.30 cfs 0.398 af

Pond 9P: OCS # 2 / SYSTEM # 2 Peak Elev=9.63' Storage=0.039 af Inflow=1.49 cfs 0.075 af
Discarded=0.02 cfs 0.023 af Primary=0.44 cfs 0.041 af Outflow=0.46 cfs 0.063 af

Pond 15P: DMH#1 Peak Elev=17.89' Inflow=1.84 cfs 0.118 af
12.0" Round Culvert n=0.013 L=68.0' S=0.0050 '/' Outflow=1.84 cfs 0.118 af

Pond 16P: CB#6 Peak Elev=17.74' Inflow=3.13 cfs 0.247 af
12.0" Round Culvert n=0.013 L=30.0' S=0.0050 '/' Outflow=3.13 cfs 0.247 af

Pond 17P: Peak Elev=10.40' Inflow=6.30 cfs 0.398 af
12.0" Round Culvert n=0.013 L=82.0' S=0.0030 '/' Outflow=6.30 cfs 0.398 af

Pond AEI 6: CB#4 - Discharge Point 3 (Off Site Drainage) Peak Elev=16.35' Inflow=6.30 cfs 0.398 af
12.0" Round Culvert n=0.013 L=96.0' S=0.0093 '/' Outflow=6.30 cfs 0.398 af

Pond AEI 7: Peak Elev=13.63' Inflow=6.30 cfs 0.398 af
12.0" Round Culvert n=0.013 L=85.0' S=0.0029 '/' Outflow=6.30 cfs 0.398 af

Pond CB 4433: Peak Elev=16.03' Inflow=1.42 cfs 0.066 af
24.0" Round Culvert n=0.013 L=121.0' S=0.0032 '/' Outflow=1.41 cfs 0.066 af

Pond CB 4435: Peak Elev=16.02' Inflow=2.13 cfs 0.100 af
24.0" Round Culvert n=0.013 L=100.0' S=-0.0142 '/' Outflow=2.13 cfs 0.100 af

Pond CB 4560: Peak Elev=16.03' Inflow=1.08 cfs 0.050 af
24.0" Round Culvert n=0.013 L=42.8' S=0.0126 '/' Outflow=1.08 cfs 0.050 af

Link 1L: Discharge Point 1 (Combined Sewer) Inflow=7.69 cfs 0.358 af
Primary=7.69 cfs 0.358 af

Link 2L: Discharge Point 2 (Court Street Drainage) Inflow=2.13 cfs 0.100 af
Primary=2.13 cfs 0.100 af

Link 3L: Discharge Point 4 (DP4) Inflow=0.17 cfs 0.006 af
Primary=0.17 cfs 0.006 af

Link 4L: Discharge Point 5 (DP5) Inflow=0.09 cfs 0.003 af
Primary=0.09 cfs 0.003 af

Total Runoff Area = 2.067 ac Runoff Volume = 0.930 af Average Runoff Depth = 5.40"
20.34% Pervious = 0.421 ac 79.66% Impervious = 1.647 ac

Summary for Subcatchment ES6: Court Street

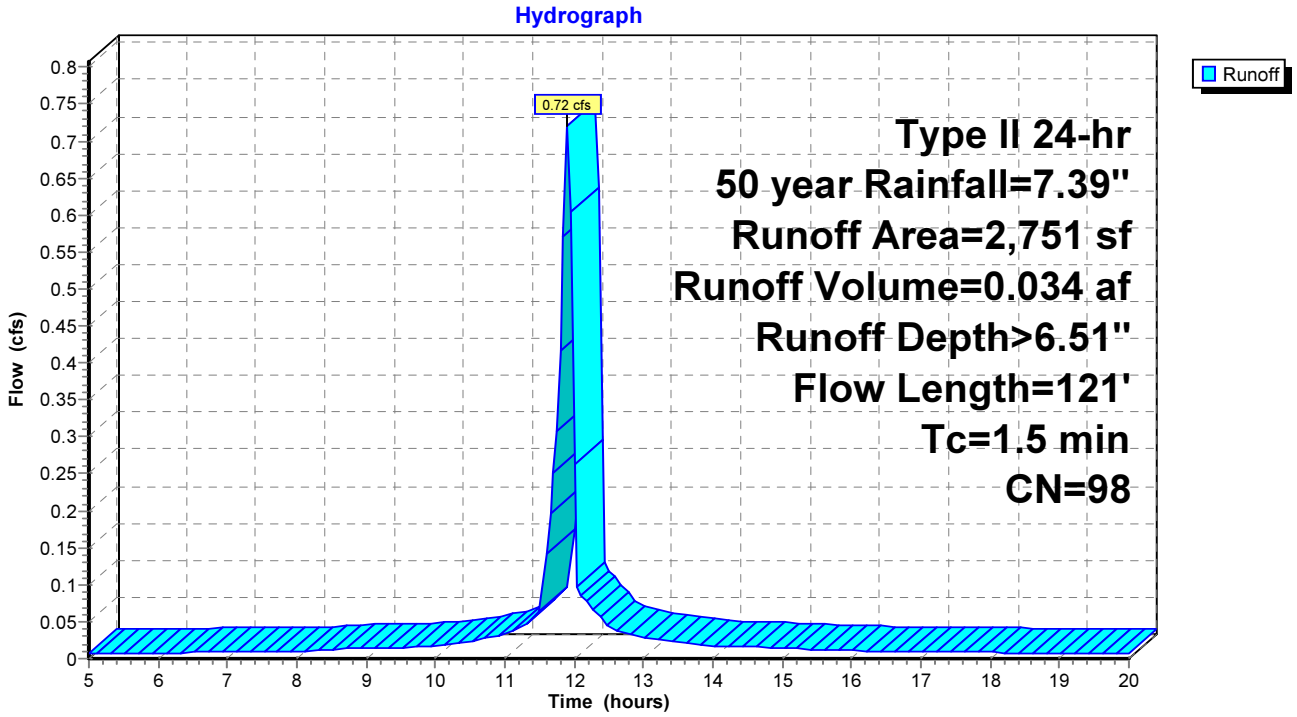
Runoff = 0.72 cfs @ 11.90 hrs, Volume= 0.034 af, Depth> 6.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=7.39"

	Area (sf)	CN	Description
	2,556	98	Paved parking, HSG B
*	195	98	Unconnected pavement, sidewalk, HSG B
	2,751	98	Weighted Average
	2,751		100.00% Impervious Area
	195		7.09% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	26	0.0096	0.69		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	95	0.0078	1.79		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.5	121	Total			

Subcatchment ES6: Court Street



Summary for Subcatchment ES7: Court Street

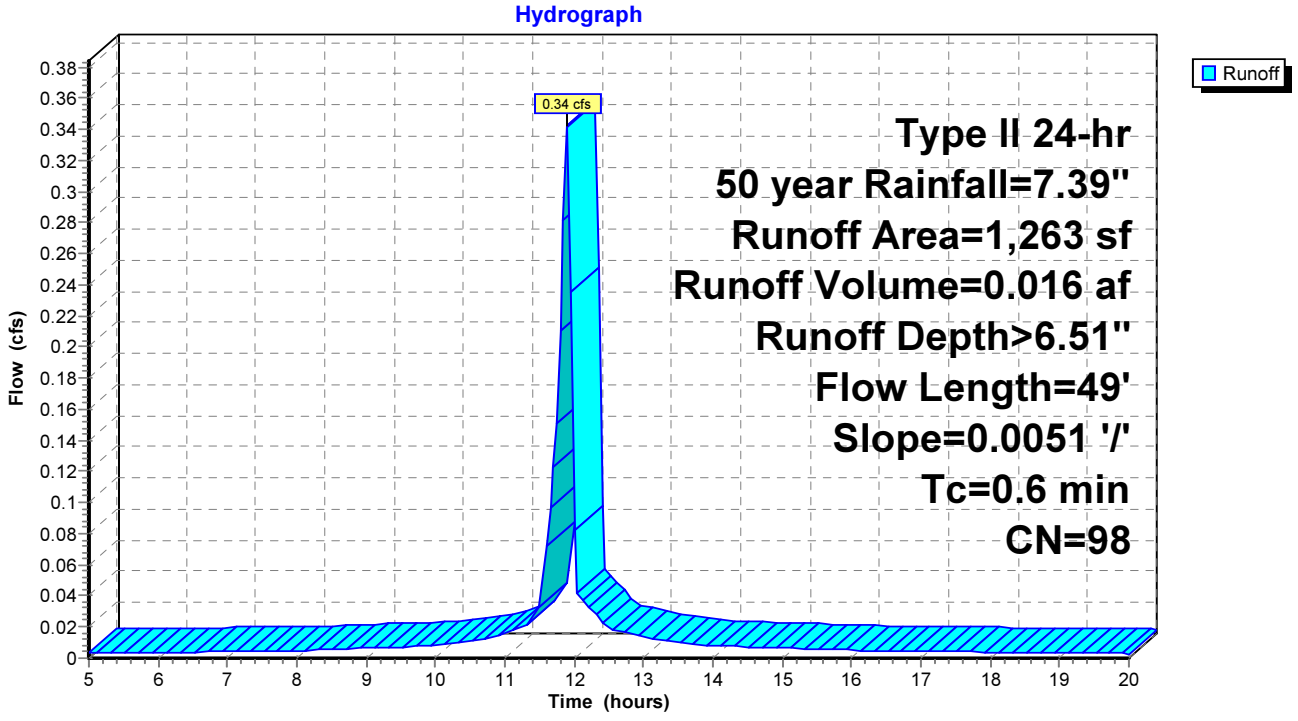
Runoff = 0.34 cfs @ 11.89 hrs, Volume= 0.016 af, Depth> 6.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=7.39"

	Area (sf)	CN	Description
	922	98	Paved parking, HSG B
*	341	98	Unconnected pavement, sidewalk, HSG B
	1,263	98	Weighted Average
	1,263		100.00% Impervious Area
	341		27.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	49	0.0051	1.45		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps

Subcatchment ES7: Court Street



Summary for Subcatchment ES8: Court Street

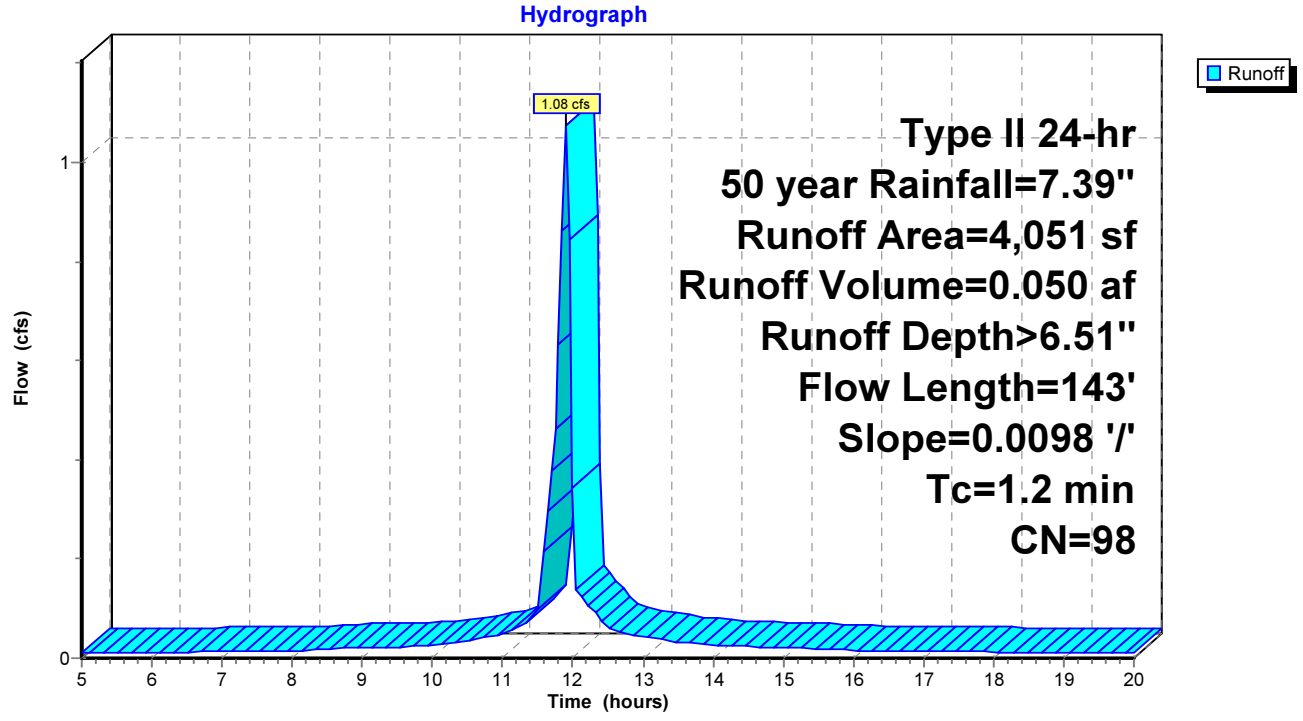
Runoff = 1.08 cfs @ 11.90 hrs, Volume= 0.050 af, Depth> 6.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=7.39"

	Area (sf)	CN	Description
	1,014	98	Paved parking, HSG B
*	3,037	98	Unconnected pavement,sidewalk, HSG B
	4,051	98	Weighted Average
	4,051		100.00% Impervious Area
	3,037		74.97% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	143	0.0098	2.01		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps

Subcatchment ES8: Court Street



Summary for Subcatchment PS1:

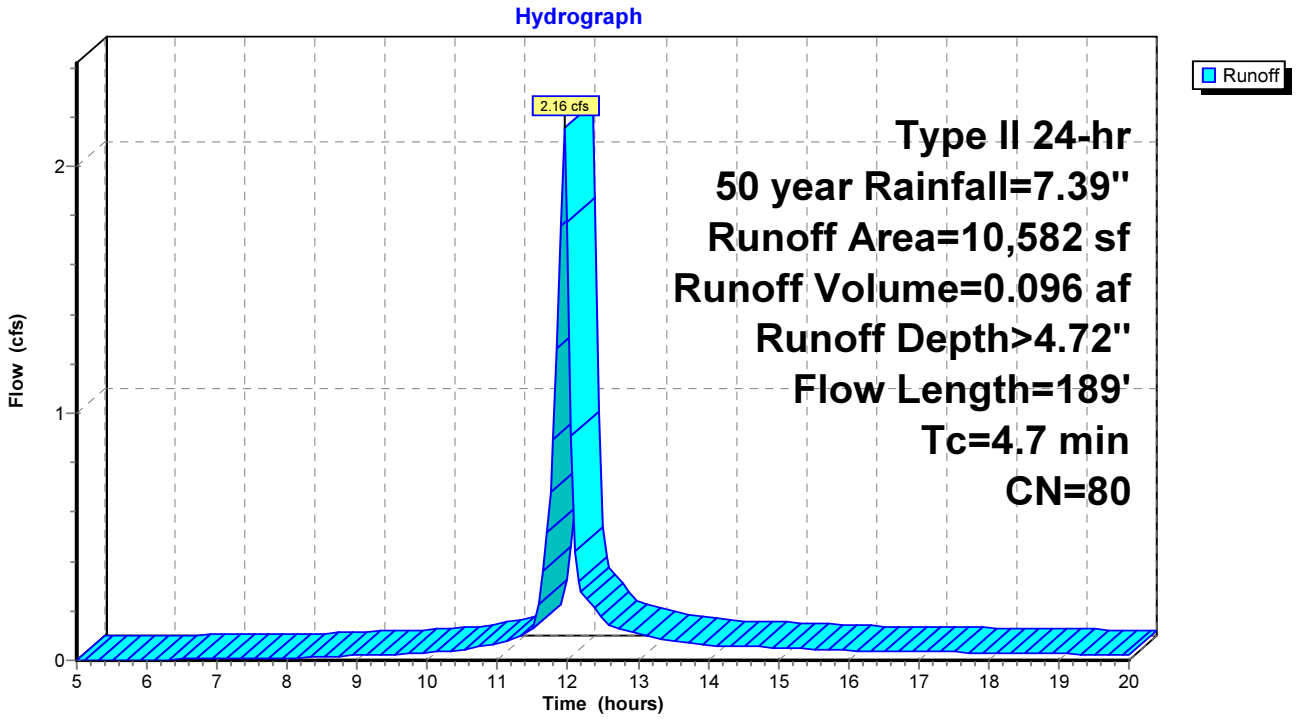
Runoff = 2.16 cfs @ 11.95 hrs, Volume= 0.096 af, Depth> 4.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=7.39"

	Area (sf)	CN	Description
	6,399	98	Paved parking, HSG A
*	939	98	Paved sidewalks w/curbs & sewers, HSG A
	3,244	39	>75% Grass cover, Good, HSG A
	10,582	80	Weighted Average
	3,244		30.66% Pervious Area
	7,338		69.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	32	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.21"
0.8	157	0.0287	3.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.7	189	Total			

Subcatchment PS1:



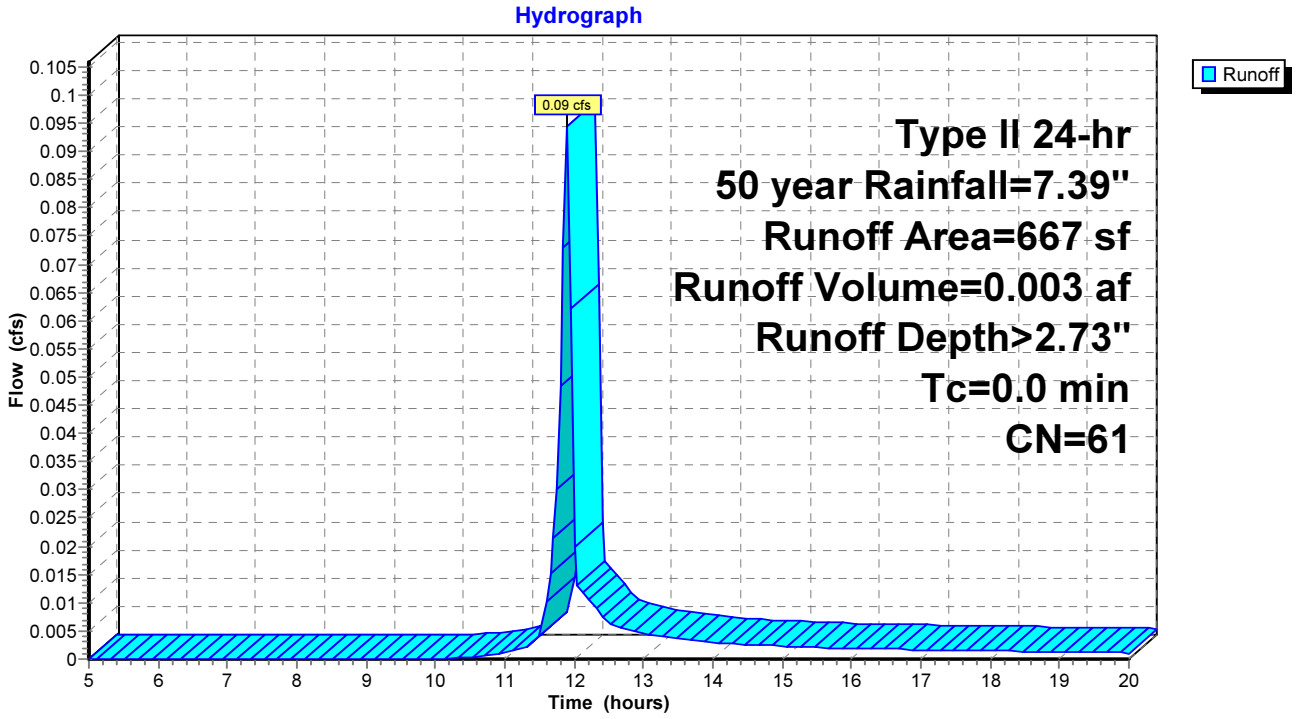
Summary for Subcatchment PS1a: Offsite

Runoff = 0.09 cfs @ 11.89 hrs, Volume= 0.003 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=7.39"

Area (sf)	CN	Description
667	61	>75% Grass cover, Good, HSG B
667		100.00% Pervious Area

Subcatchment PS1a: Offsite



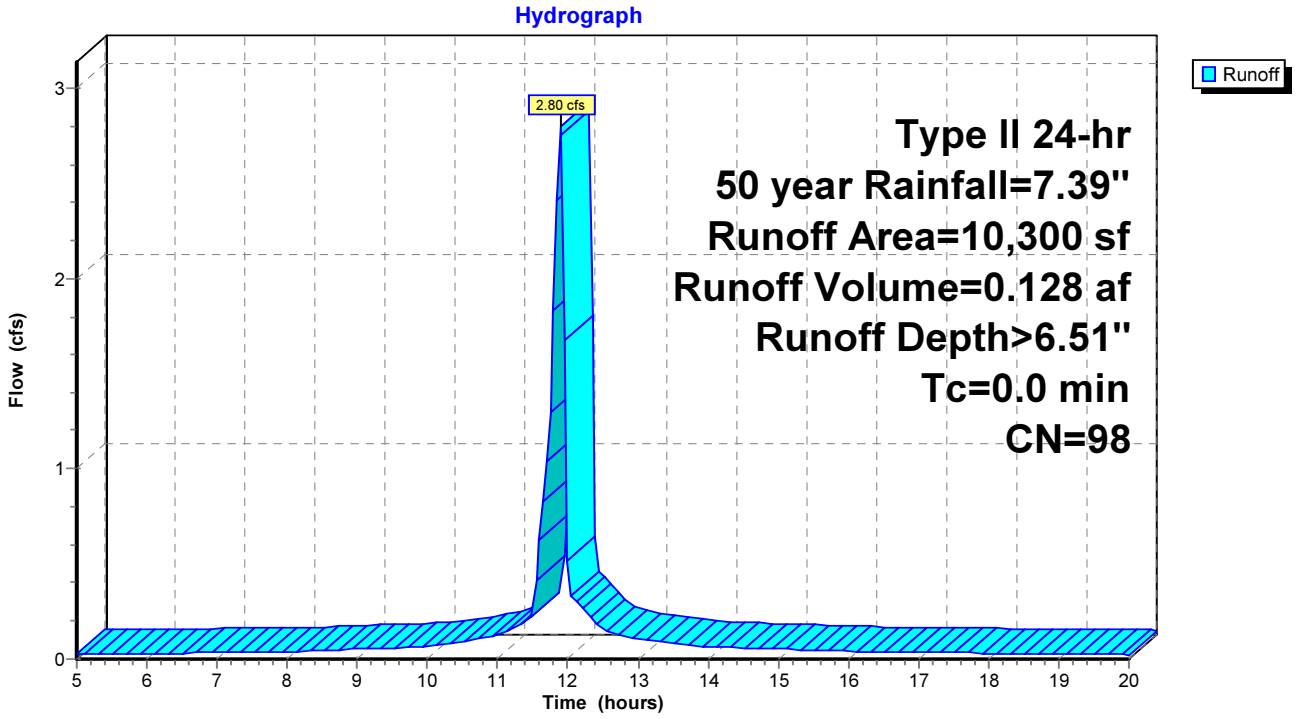
Summary for Subcatchment PS2: Existing Building Roof Drain

Runoff = 2.80 cfs @ 11.89 hrs, Volume= 0.128 af, Depth> 6.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=7.39"

Area (sf)	CN	Description
10,300	98	Roofs, HSG A
10,300		100.00% Impervious Area

Subcatchment PS2: Existing Building Roof Drain



Summary for Subcatchment PS4:

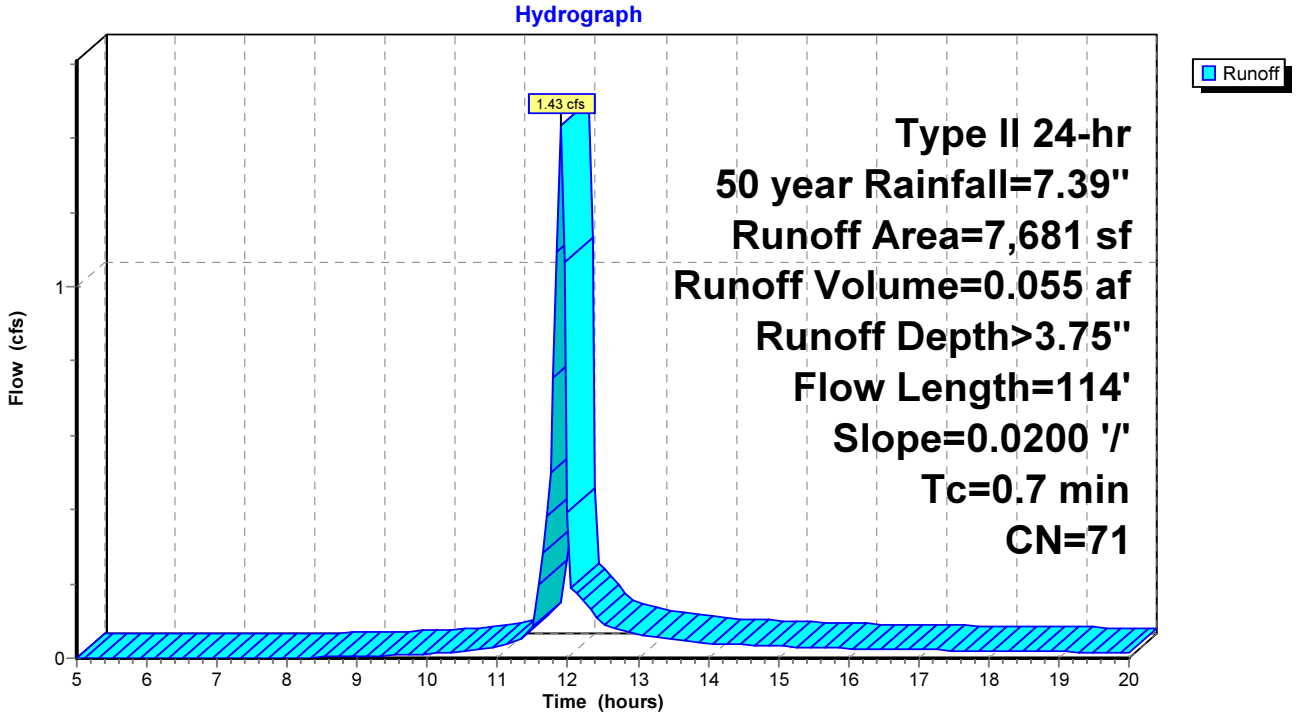
Runoff = 1.43 cfs @ 11.90 hrs, Volume= 0.055 af, Depth> 3.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=7.39"

Area (sf)	CN	Description
3,513	39	>75% Grass cover, Good, HSG A
4,168	98	Paved roads w/curbs & sewers, HSG A
7,681	71	Weighted Average
3,513		45.74% Pervious Area
4,168		54.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	114	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps

Subcatchment PS4:



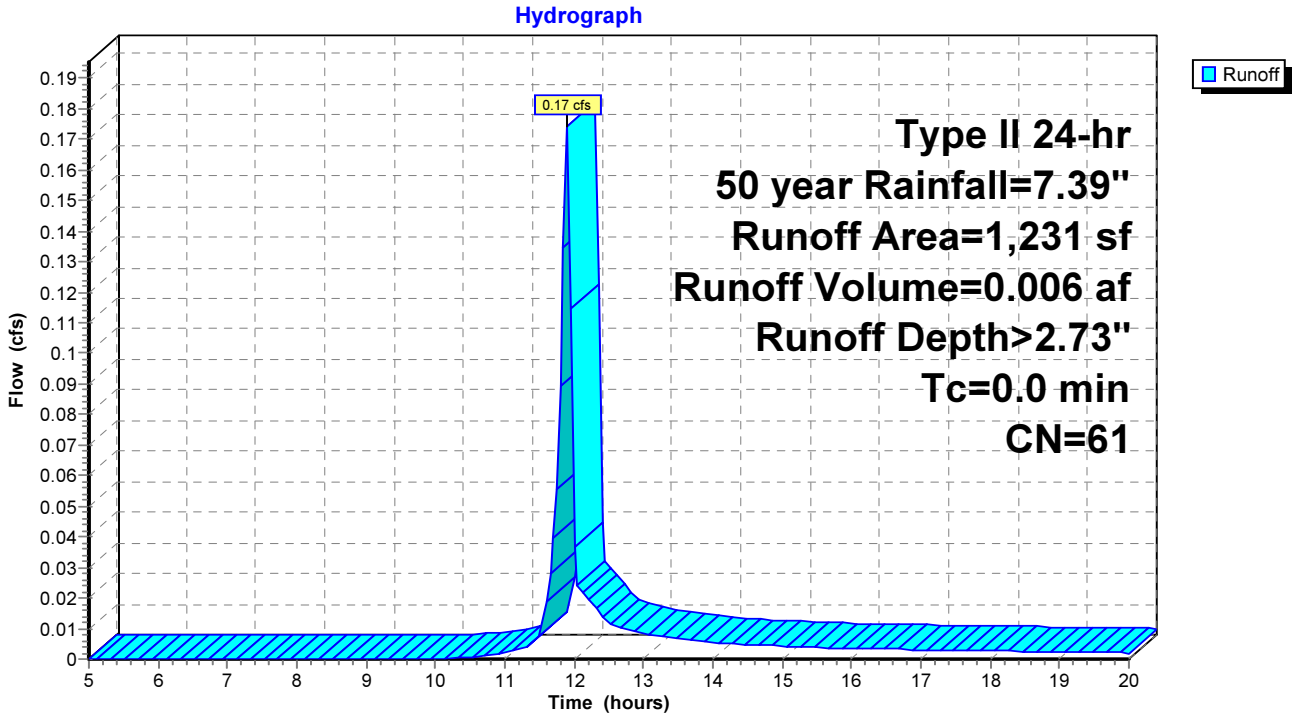
Summary for Subcatchment PS4a: Offsite

Runoff = 0.17 cfs @ 11.89 hrs, Volume= 0.006 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=7.39"

Area (sf)	CN	Description
1,231	61	>75% Grass cover, Good, HSG B
1,231		100.00% Pervious Area

Subcatchment PS4a: Offsite



Summary for Subcatchment PS5:

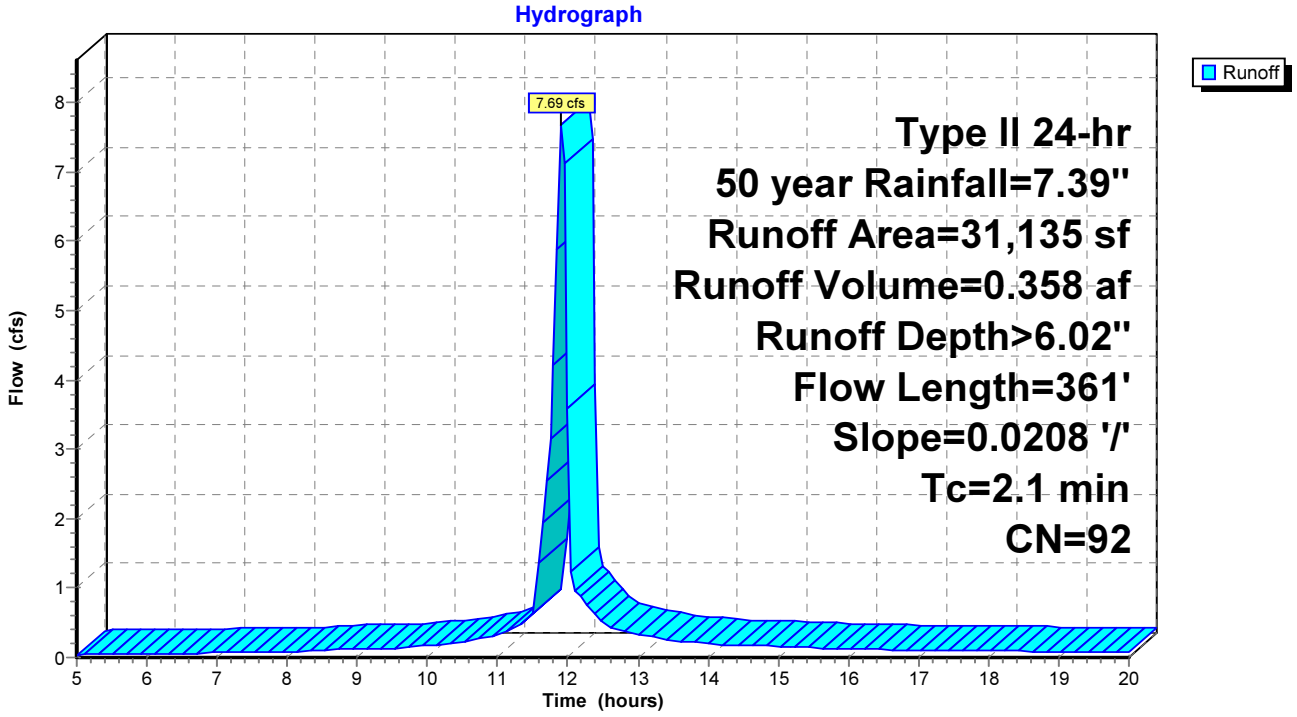
Runoff = 7.69 cfs @ 11.91 hrs, Volume= 0.358 af, Depth> 6.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=7.39"

	Area (sf)	CN	Description
	19,373	98	Paved roads w/curbs & sewers, HSG A
*	1,796	98	Paved sidewalks w/curbs & sewers, HSG A
	388	98	Roofs, HSG A
	6,186	98	Roofs, HSG A
	3,392	39	>75% Grass cover, Good, HSG A
	31,135	92	Weighted Average
	3,392		10.89% Pervious Area
	27,743		89.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	361	0.0208	2.93		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps

Subcatchment PS5:



Summary for Subcatchment PS5a: New Building Roof Drain

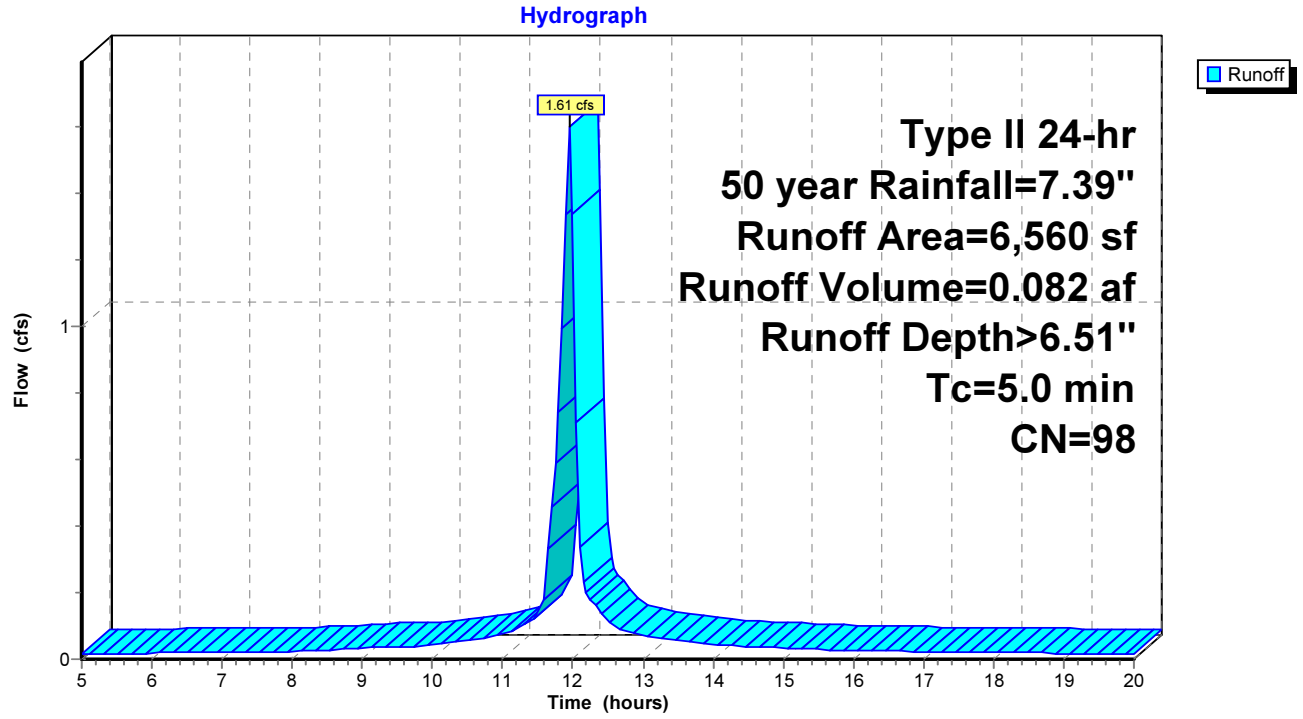
Runoff = 1.61 cfs @ 11.95 hrs, Volume= 0.082 af, Depth> 6.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=7.39"

Area (sf)	CN	Description
6,560	98	Roofs, HSG A
6,560		100.00% Impervious Area

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

Subcatchment PS5a: New Building Roof Drain



Summary for Subcatchment PS5aa: Landscaped Walk

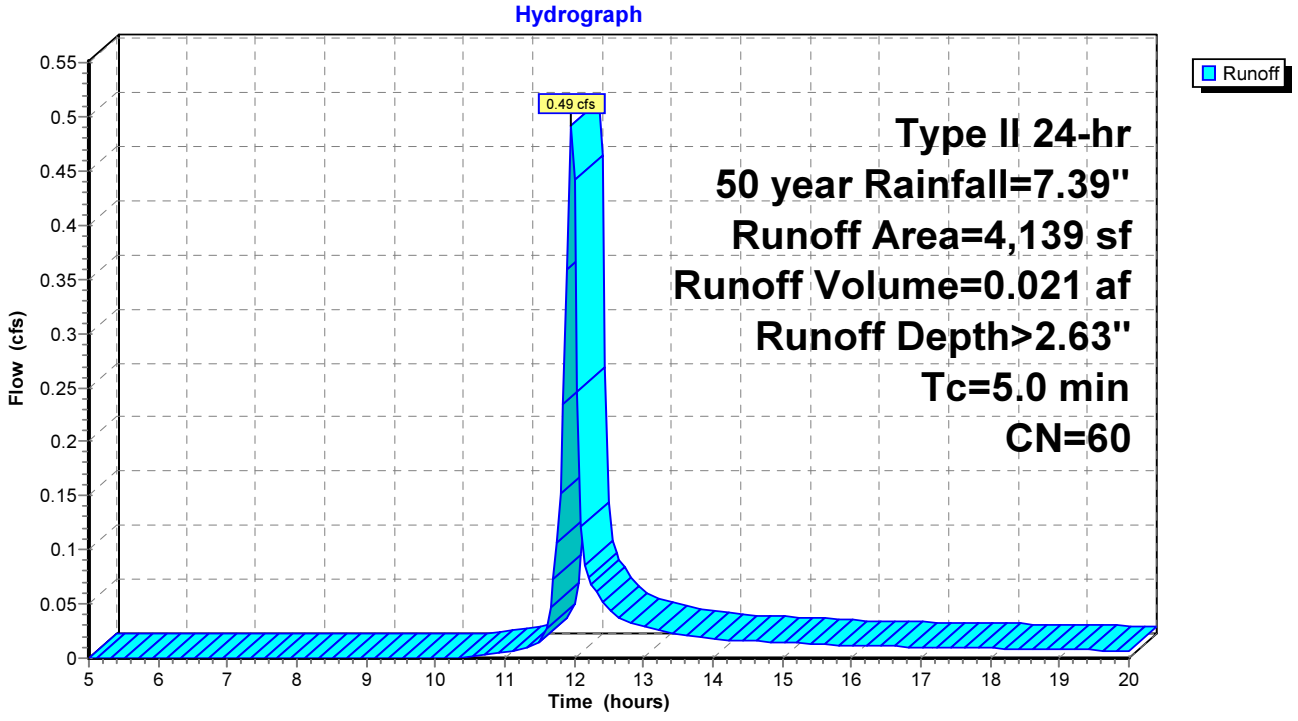
Runoff = 0.49 cfs @ 11.96 hrs, Volume= 0.021 af, Depth> 2.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=7.39"

	Area (sf)	CN	Description
	2,666	39	>75% Grass cover, Good, HSG A
	852	98	Roofs, HSG A
*	621	98	Paved sidewalks w/curbs & sewers, HSG A
	4,139	60	Weighted Average
	2,666		64.41% Pervious Area
	1,473		35.59% Impervious Area

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

Subcatchment PS5aa: Landscaped Walk



Summary for Subcatchment PS5aaa: Landscaped Walk

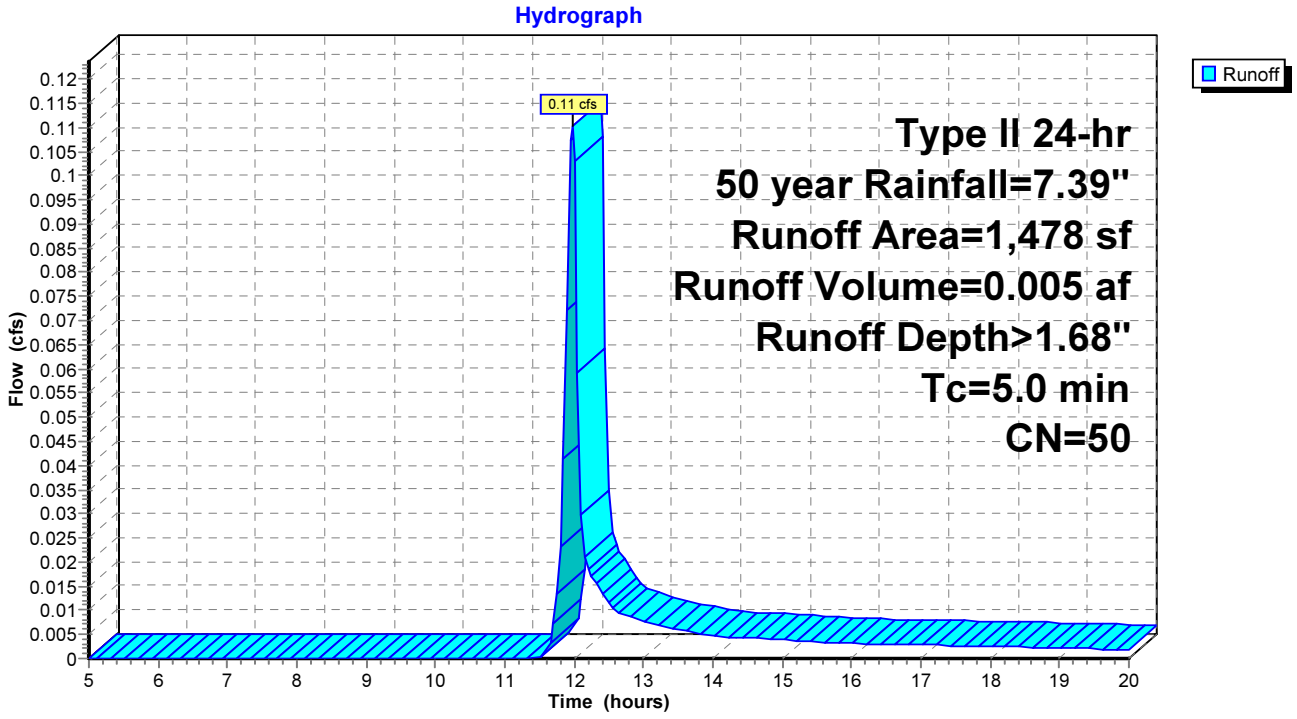
Runoff = 0.11 cfs @ 11.97 hrs, Volume= 0.005 af, Depth> 1.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=7.39"

	Area (sf)	CN	Description
	1,200	39	>75% Grass cover, Good, HSG A
*	278	98	Paved sidewalk w/curbs & sewers, HSG A
	1,478	50	Weighted Average
	1,200		81.19% Pervious Area
	278		18.81% Impervious Area

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

Subcatchment PS5aaa: Landscaped Walk



Summary for Subcatchment PS5b: New Building Roof Drain

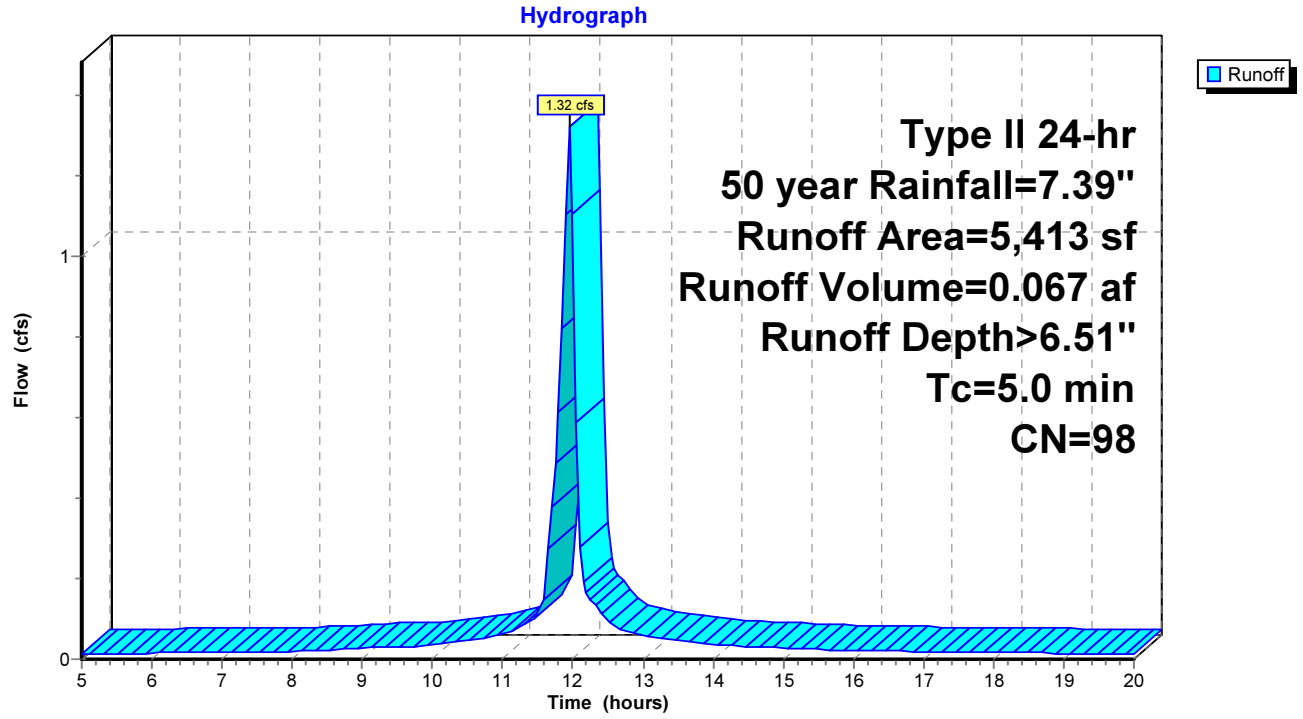
Runoff = 1.32 cfs @ 11.95 hrs, Volume= 0.067 af, Depth> 6.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=7.39"

Area (sf)	CN	Description
5,413	98	Roofs, HSG A
5,413		100.00% Impervious Area

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

Subcatchment PS5b: New Building Roof Drain



Summary for Subcatchment PS5bb: Landscaped Walk

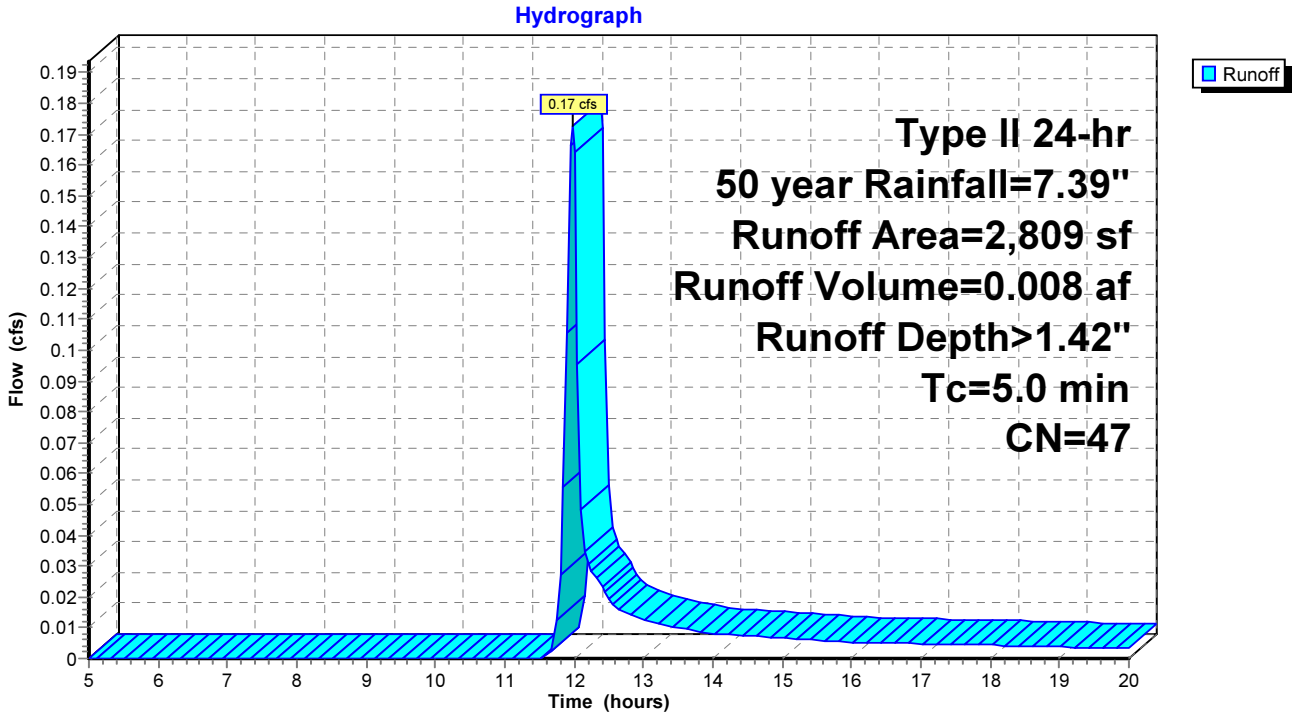
Runoff = 0.17 cfs @ 11.97 hrs, Volume= 0.008 af, Depth> 1.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=7.39"

	Area (sf)	CN	Description
	2,409	39	>75% Grass cover, Good, HSG A
*	400	98	Paved sidewalk w/curbs & sewers, HSG A
	2,809	47	Weighted Average
	2,409		85.76% Pervious Area
	400		14.24% Impervious Area

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

Subcatchment PS5bb: Landscaped Walk



Summary for Pond 1P: OCS # 1 / SYSTEM # 1

Inflow Area = 0.280 ac, 68.25% Impervious, Inflow Depth > 4.61" for 50 year event
Inflow = 2.20 cfs @ 11.95 hrs, Volume= 0.107 af
Outflow = 1.85 cfs @ 12.04 hrs, Volume= 0.097 af, Atten= 16%, Lag= 5.1 min
Discarded = 0.01 cfs @ 6.20 hrs, Volume= 0.019 af
Primary = 1.84 cfs @ 12.04 hrs, Volume= 0.078 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 15.82' @ 12.20 hrs Surf.Area= 0.015 ac Storage= 0.039 af

Plug-Flow detention time= 73.1 min calculated for 0.096 af (90% of inflow)
Center-of-Mass det. time= 37.8 min (783.5 - 745.7)

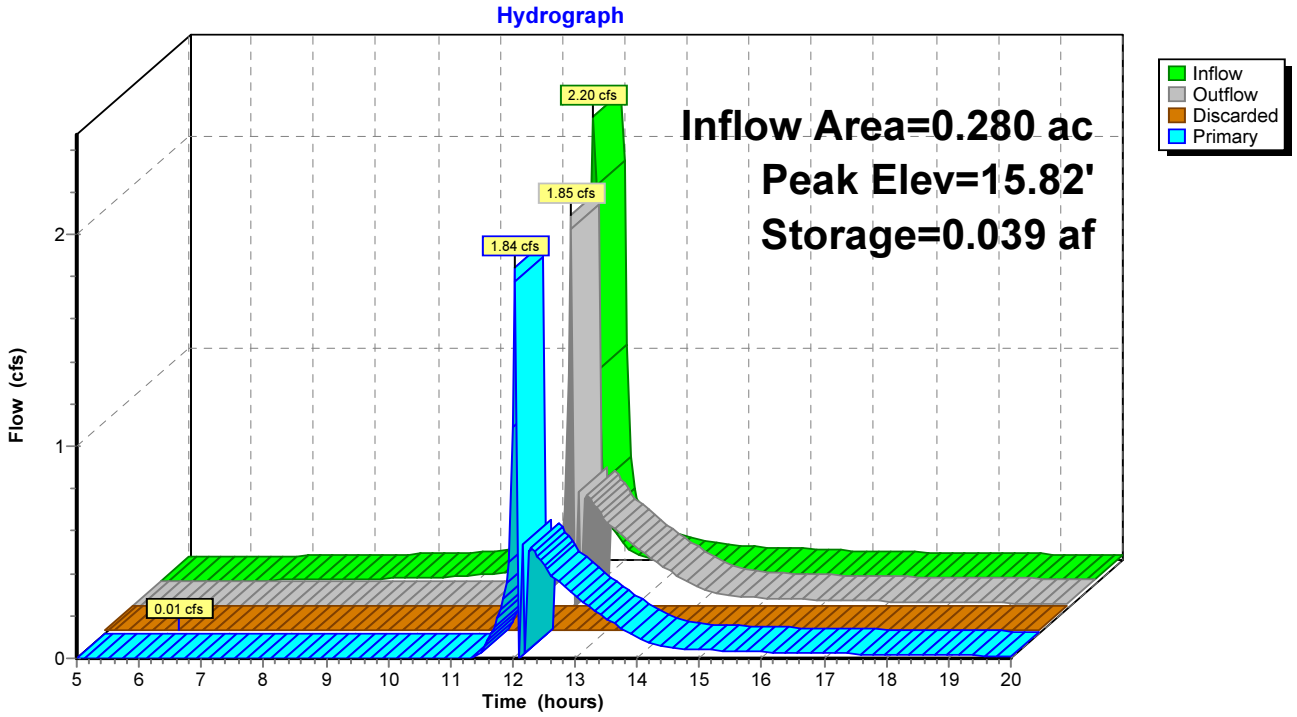
Volume	Invert	Avail.Storage	Storage Description
#1	10.50'	0.014 af	**24.00'W x 27.00'L x 4.00'H Prismatoid** 0.060 af Overall - 0.025 af Embedded = 0.035 af x 40.0% Voids
#2	11.00'	0.025 af	**ADS_StormTech SC-740** x 23 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 6 rows
		0.039 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	11.40'	**12.0" Round Culvert** L= 14.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 11.40' / 11.33' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	11.50'	**2.0" Vert. Orifice/Grate X 3.00** C= 0.600
#3	Device 1	14.50'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Discarded	10.50'	**1.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.01 cfs @ 6.20 hrs HW=10.54' (Free Discharge)
└**4=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 12.04 hrs HW=14.77' TW=16.76' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)
  ├**2=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: OCS # 1 / SYSTEM # 1



Summary for Pond 5P: CB#1

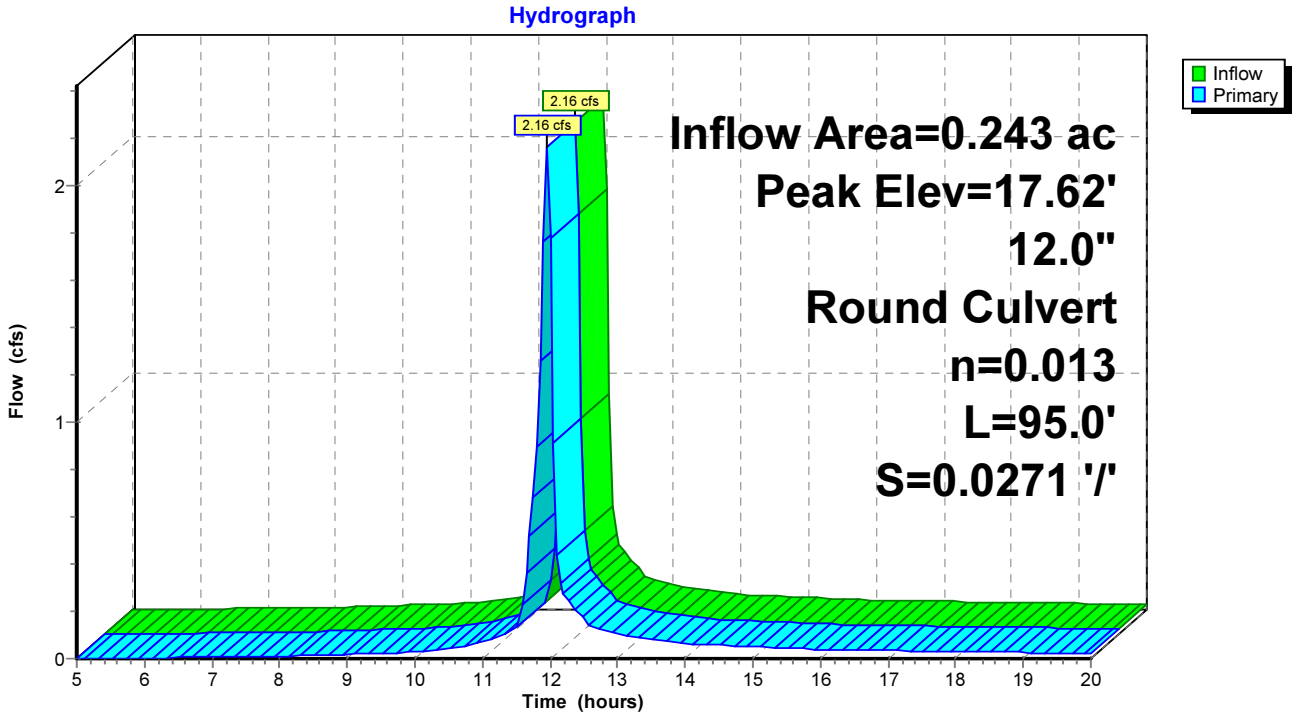
Inflow Area = 0.243 ac, 69.34% Impervious, Inflow Depth > 4.72" for 50 year event
Inflow = 2.16 cfs @ 11.95 hrs, Volume= 0.096 af
Outflow = 2.16 cfs @ 11.95 hrs, Volume= 0.096 af, Atten= 0%, Lag= 0.0 min
Primary = 2.16 cfs @ 11.95 hrs, Volume= 0.096 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 17.62' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	9.70'	**12.0" Round Culvert** L= 95.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.70' / 7.13' S= 0.0271 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 11.95 hrs HW=12.00' TW=14.91' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Pond 5P: CB#1



Summary for Pond 6P: CB#5

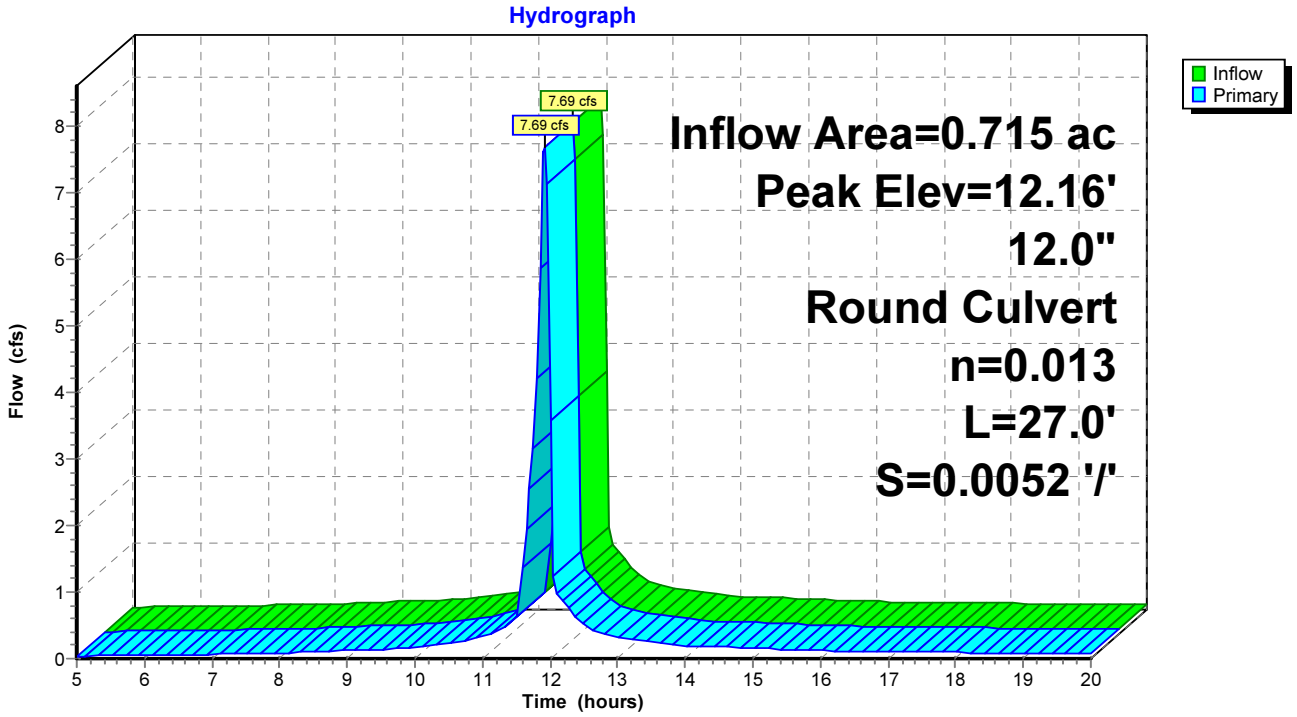
Inflow Area = 0.715 ac, 89.11% Impervious, Inflow Depth > 6.02" for 50 year event
Inflow = 7.69 cfs @ 11.91 hrs, Volume= 0.358 af
Outflow = 7.69 cfs @ 11.91 hrs, Volume= 0.358 af, Atten= 0%, Lag= 0.0 min
Primary = 7.69 cfs @ 11.91 hrs, Volume= 0.358 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 12.16' @ 11.91 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.54'	**12.0" Round Culvert** L= 27.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 7.54' / 7.40' S= 0.0052 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=7.47 cfs @ 11.91 hrs HW=11.94' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 7.47 cfs @ 9.51 fps)

Pond 6P: CB#5



Summary for Pond 7P: CB#2

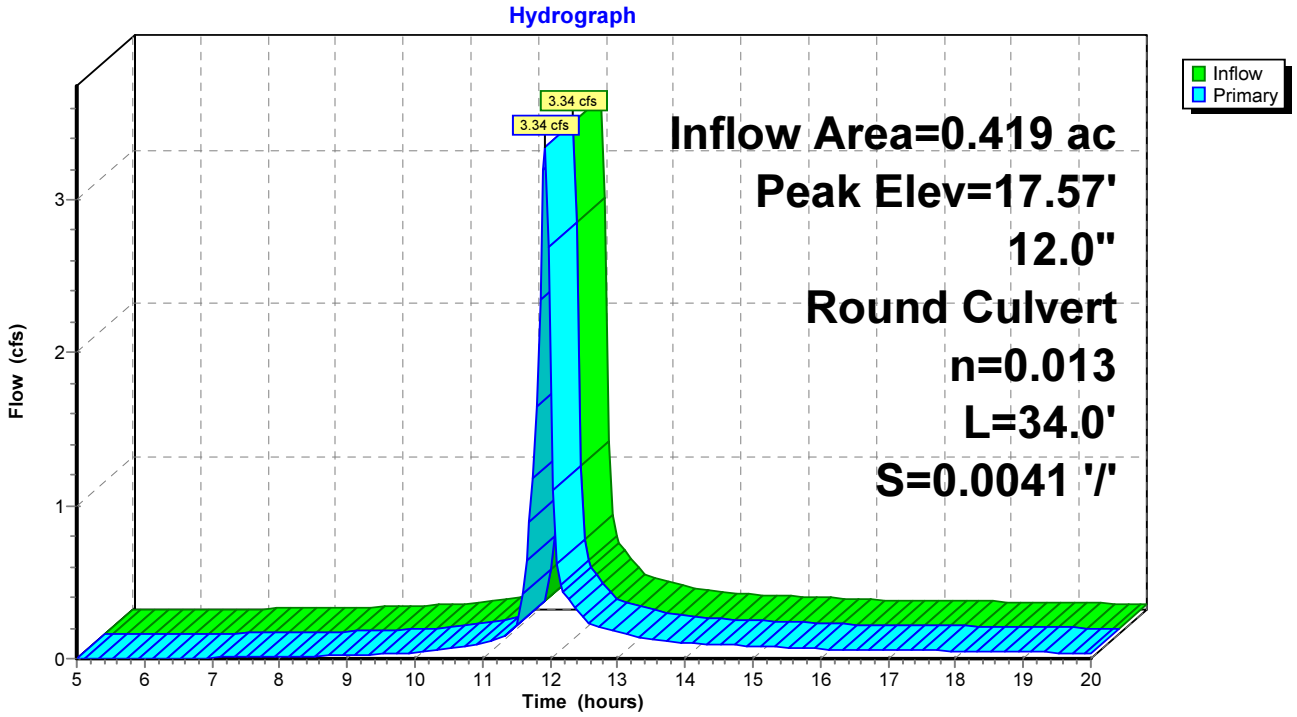
Inflow Area = 0.419 ac, 63.00% Impervious, Inflow Depth > 4.32" for 50 year event
Inflow = 3.34 cfs @ 11.93 hrs, Volume= 0.151 af
Outflow = 3.34 cfs @ 11.93 hrs, Volume= 0.151 af, Atten= 0%, Lag= 0.0 min
Primary = 3.34 cfs @ 11.93 hrs, Volume= 0.151 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 17.57' @ 12.03 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.03'	**12.0" Round Culvert** L= 34.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 7.03' / 6.89' S= 0.0041 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 11.93 hrs HW=13.27' TW=15.62' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Pond 7P: CB#2



Summary for Pond 8P: CB#3

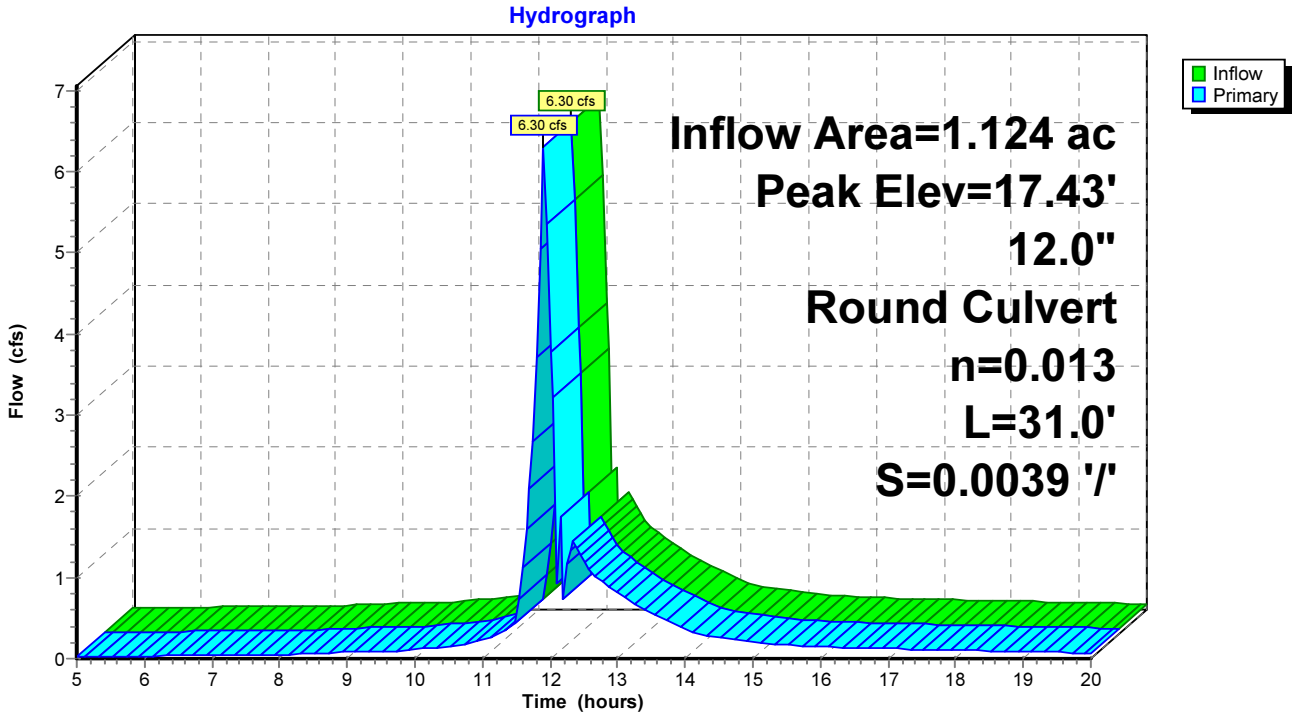
Inflow Area = 1.124 ac, 73.38% Impervious, Inflow Depth > 4.24" for 50 year event
Inflow = 6.30 cfs @ 11.90 hrs, Volume= 0.398 af
Outflow = 6.30 cfs @ 11.90 hrs, Volume= 0.398 af, Atten= 0%, Lag= 0.0 min
Primary = 6.30 cfs @ 11.90 hrs, Volume= 0.398 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 17.43' @ 11.99 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	6.89'	**12.0" Round Culvert** L= 31.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 6.89' / 6.77' S= 0.0039 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 11.90 hrs HW=14.35' TW=15.01' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Pond 8P: CB#3



Summary for Pond 9P: OCS # 2 / SYSTEM # 2

Inflow Area = 0.189 ac, 70.70% Impervious, Inflow Depth > 4.77" for 50 year event
Inflow = 1.49 cfs @ 11.95 hrs, Volume= 0.075 af
Outflow = 0.46 cfs @ 12.15 hrs, Volume= 0.063 af, Atten= 69%, Lag= 11.8 min
Discarded = 0.02 cfs @ 8.85 hrs, Volume= 0.023 af
Primary = 0.44 cfs @ 12.15 hrs, Volume= 0.041 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 9.63' @ 12.29 hrs Surf.Area= 0.019 ac Storage= 0.039 af

Plug-Flow detention time= 98.4 min calculated for 0.063 af (84% of inflow)
Center-of-Mass det. time= 48.8 min (786.5 - 737.6)

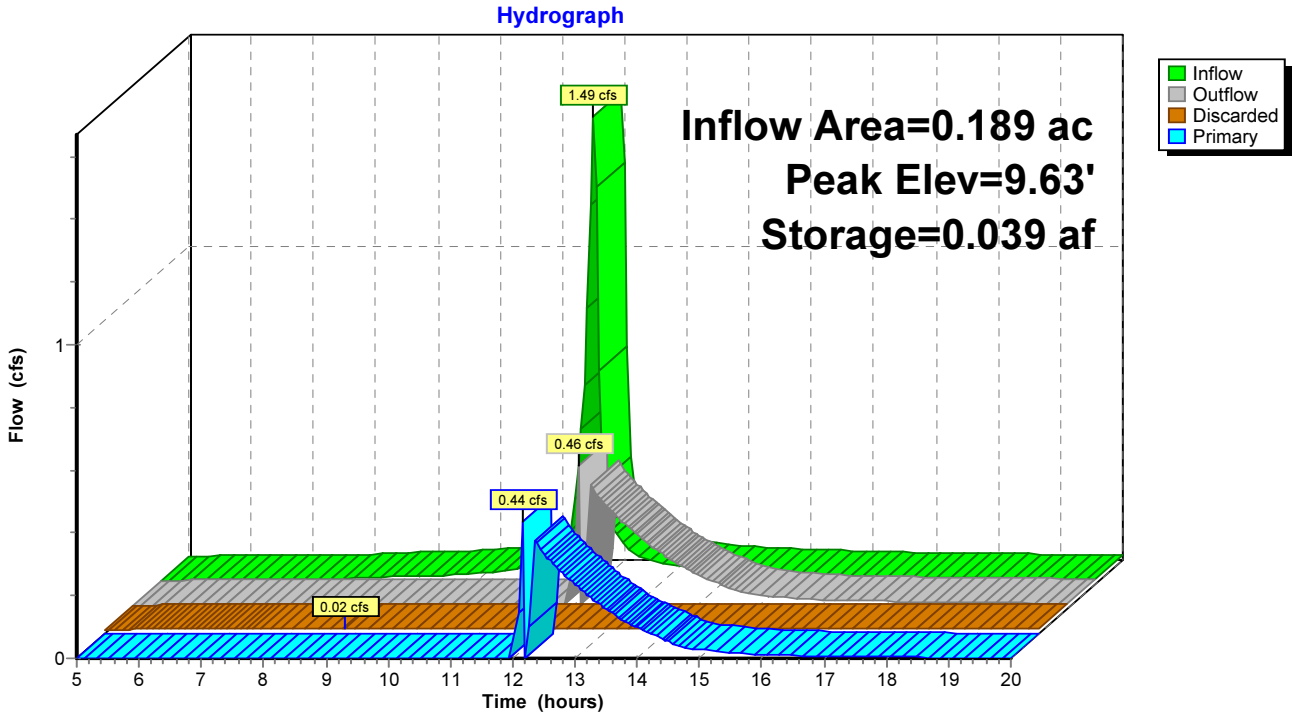
Volume	Invert	Avail.Storage	Storage Description
#1	6.50'	0.019 af	**27.00'W x 30.00'L x 4.00'H Prismatoid** 0.074 af Overall - 0.026 af Embedded = 0.049 af x 40.0% Voids
#2	7.00'	0.026 af	**ADS_StormTech SC-740** x 24 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 7 rows
		0.045 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	7.40'	**12.0" Round Culvert** L= 5.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 7.40' / 7.38' S= 0.0040 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	7.50'	**2.0" Vert. Orifice/Grate X 3.00** C= 0.600
#3	Device 1	10.50'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Discarded	6.50'	**1.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.02 cfs @ 8.85 hrs HW=6.54' (Free Discharge)
└**4=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 12.15 hrs HW=9.52' TW=15.82' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)
  ├**2=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 9P: OCS # 2 / SYSTEM # 2



Summary for Pond 15P: DMH#1

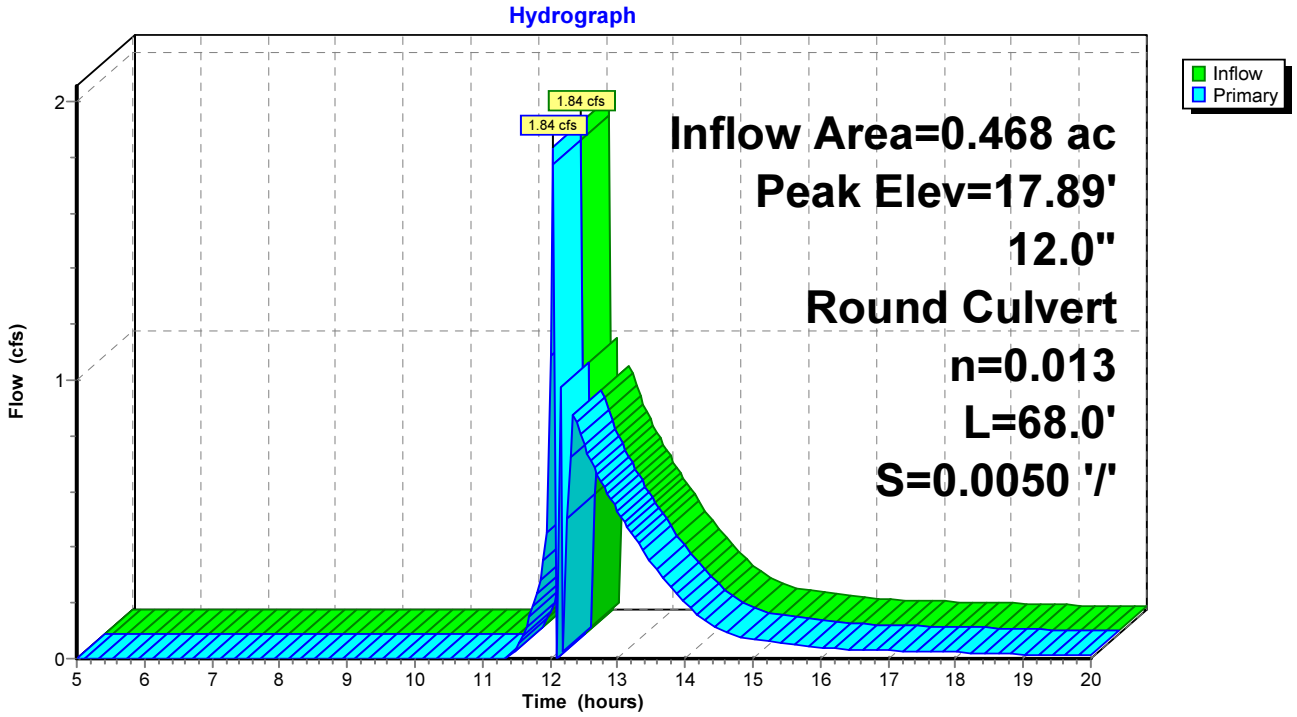
Inflow Area = 0.468 ac, 69.24% Impervious, Inflow Depth > 3.04" for 50 year event
Inflow = 1.84 cfs @ 12.04 hrs, Volume= 0.118 af
Outflow = 1.84 cfs @ 12.04 hrs, Volume= 0.118 af, Atten= 0%, Lag= 0.0 min
Primary = 1.84 cfs @ 12.04 hrs, Volume= 0.118 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 17.89' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.38'	**12.0" Round Culvert** L= 68.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 7.38' / 7.04' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.04 hrs HW=16.76' TW=17.53' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Pond 15P: DMH#1



Summary for Pond 16P: CB#6

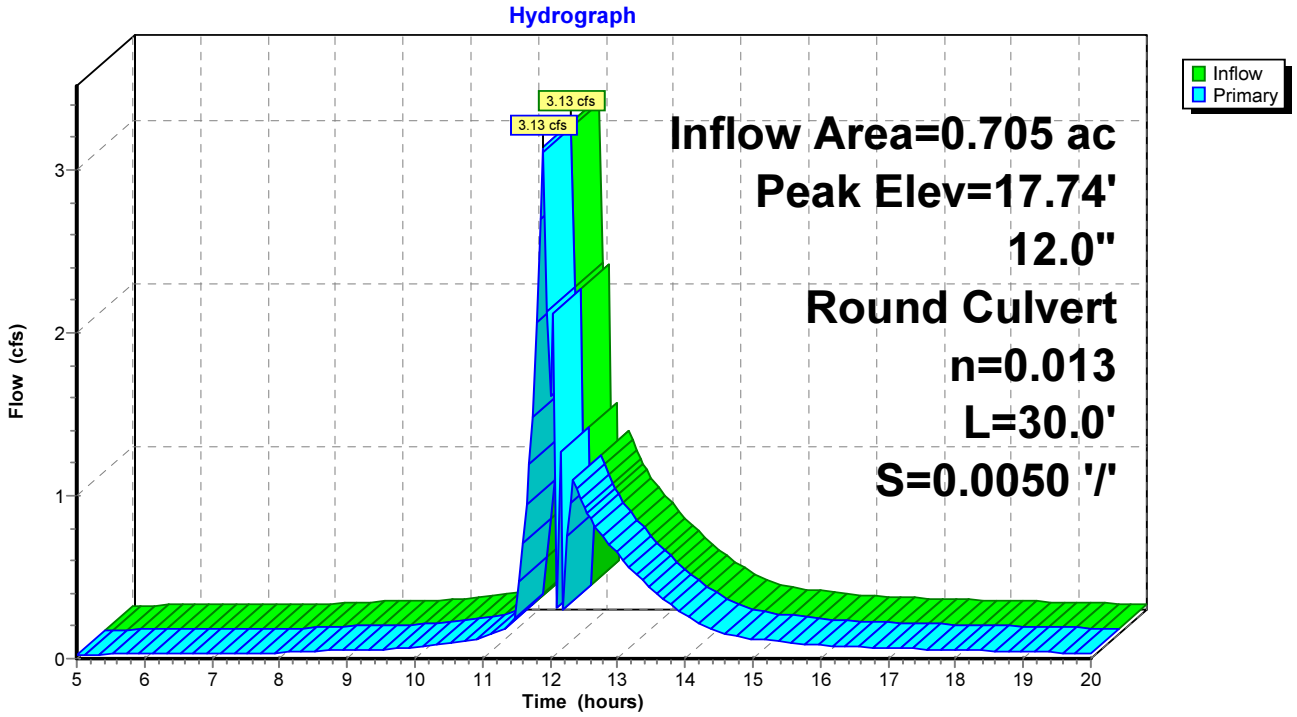
Inflow Area = 0.705 ac, 79.56% Impervious, Inflow Depth > 4.20" for 50 year event
Inflow = 3.13 cfs @ 11.89 hrs, Volume= 0.247 af
Outflow = 3.13 cfs @ 11.89 hrs, Volume= 0.247 af, Atten= 0%, Lag= 0.0 min
Primary = 3.13 cfs @ 11.89 hrs, Volume= 0.247 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 17.74' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.04'	**12.0" Round Culvert** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 7.04' / 6.89' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 11.89 hrs HW=10.98' TW=13.46' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Pond 16P: CB#6



Summary for Pond 17P:

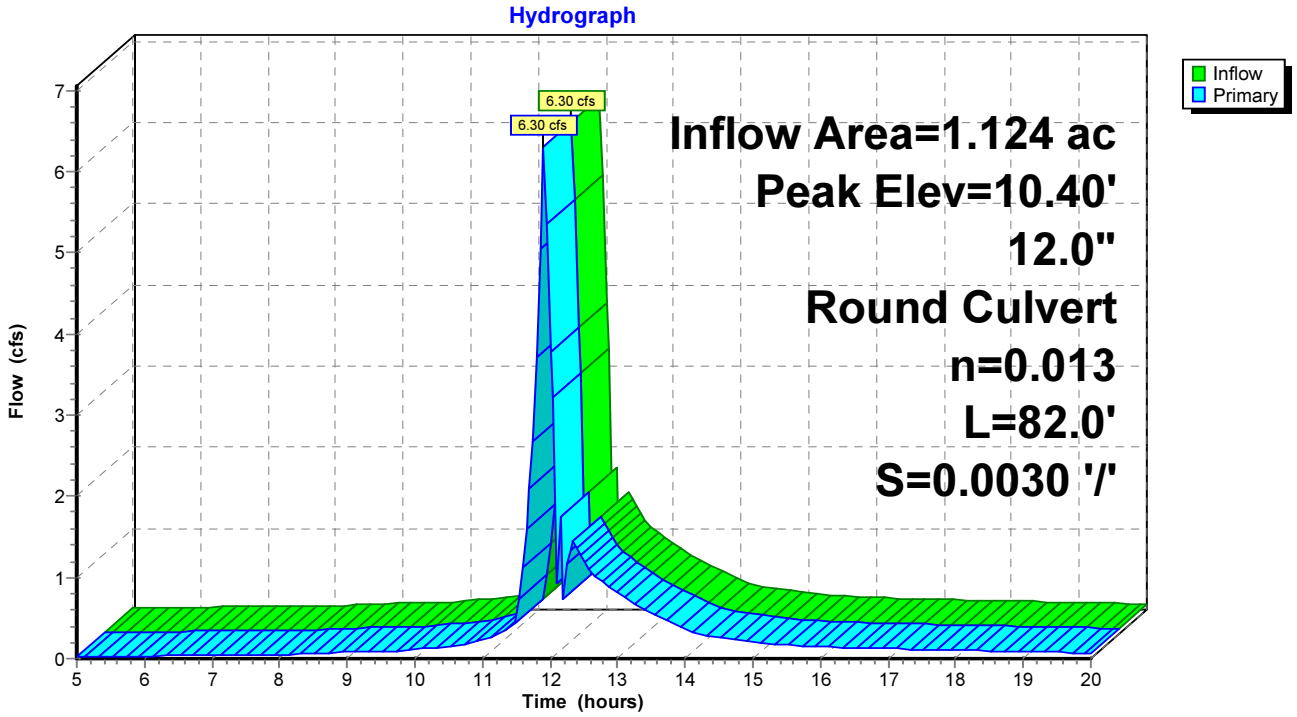
Inflow Area = 1.124 ac, 73.38% Impervious, Inflow Depth > 4.24" for 50 year event
Inflow = 6.30 cfs @ 11.90 hrs, Volume= 0.398 af
Outflow = 6.30 cfs @ 11.90 hrs, Volume= 0.398 af, Atten= 0%, Lag= 0.0 min
Primary = 6.30 cfs @ 11.90 hrs, Volume= 0.398 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 10.40' @ 11.90 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	5.58'	**12.0" Round Culvert** L= 82.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 5.58' / 5.33' S= 0.0030 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=6.24 cfs @ 11.90 hrs HW=10.32' (Free Discharge)
1=Culvert (Barrel Controls 6.24 cfs @ 7.94 fps)

Pond 17P:



Summary for Pond AEI 6: CB#4 - Discharge Point 3 (Off Site Drainage)

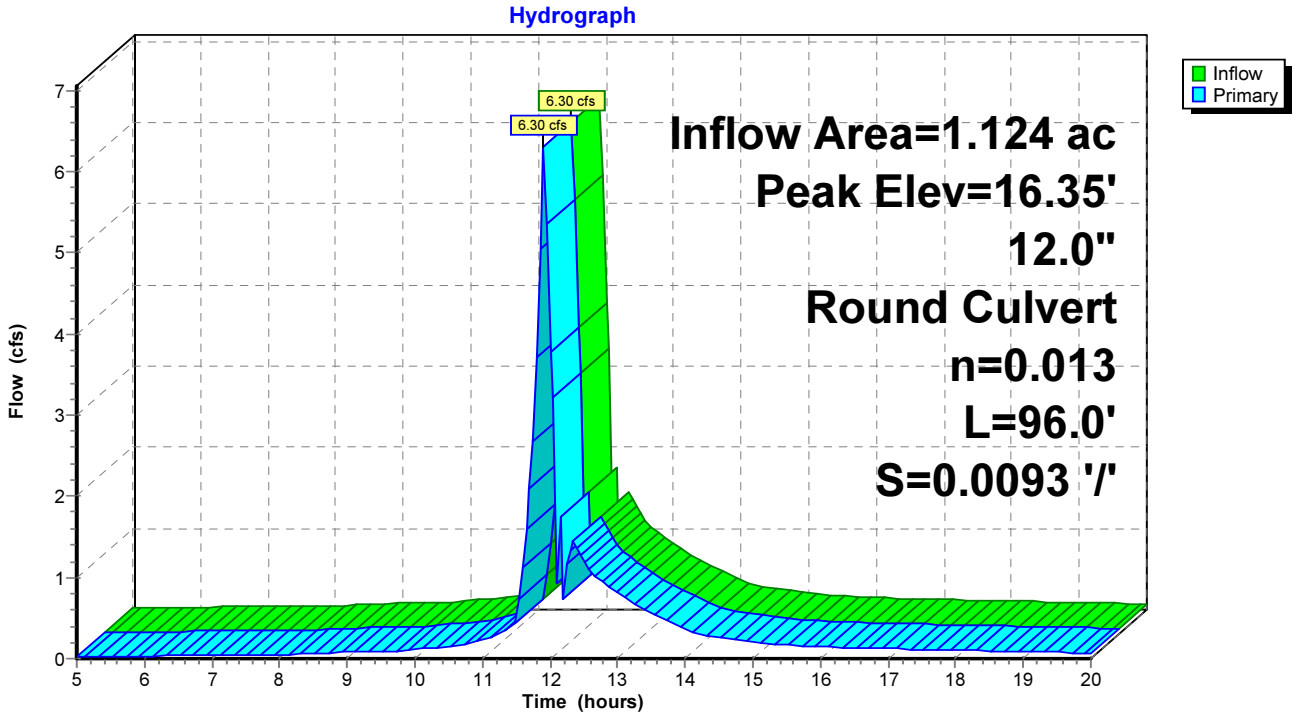
Inflow Area = 1.124 ac, 73.38% Impervious, Inflow Depth > 4.24" for 50 year event
Inflow = 6.30 cfs @ 11.90 hrs, Volume= 0.398 af
Outflow = 6.30 cfs @ 11.90 hrs, Volume= 0.398 af, Atten= 0%, Lag= 0.0 min
Primary = 6.30 cfs @ 11.90 hrs, Volume= 0.398 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 16.35' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	6.77'	**12.0" Round Culvert** L= 96.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 6.77' / 5.88' S= 0.0093 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=4.08 cfs @ 11.90 hrs HW=15.01' TW=13.12' (Dynamic Tailwater)
1=Culvert (Outlet Controls 4.08 cfs @ 5.19 fps)

Pond AEI 6: CB#4 - Discharge Point 3 (Off Site Drainage)



Summary for Pond AEI 7:

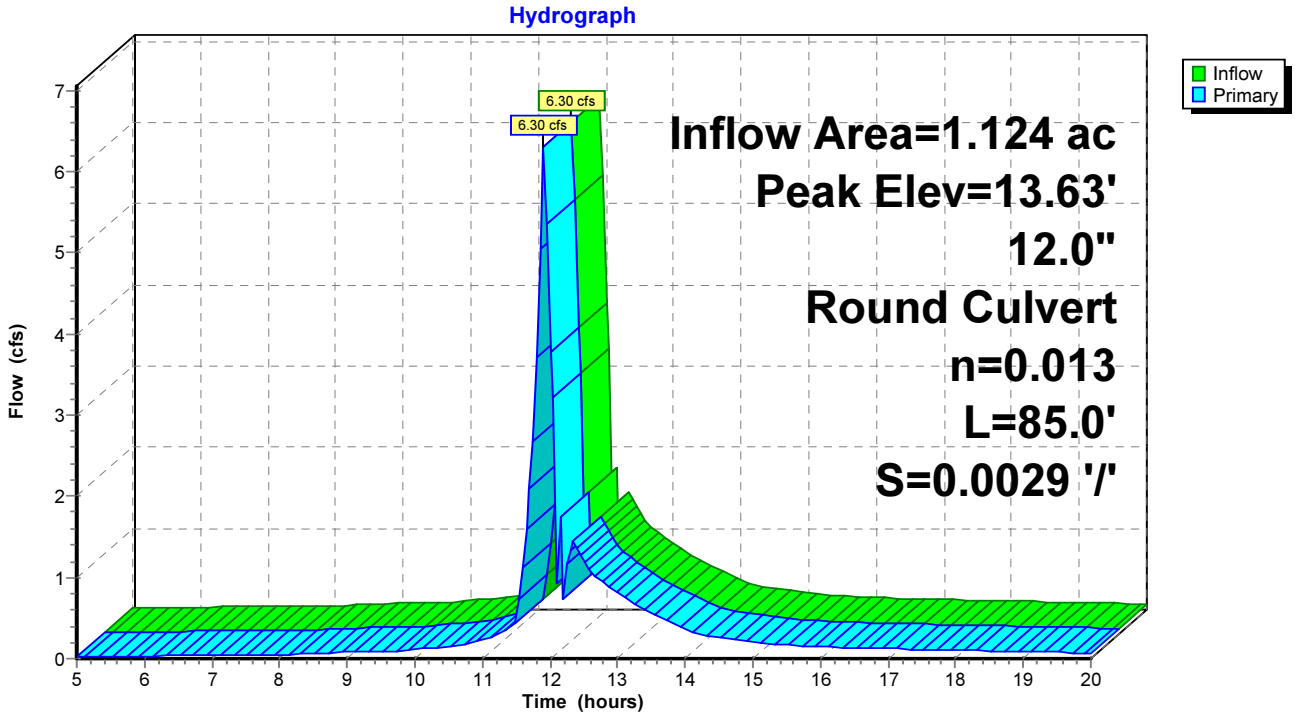
Inflow Area = 1.124 ac, 73.38% Impervious, Inflow Depth > 4.24" for 50 year event
Inflow = 6.30 cfs @ 11.90 hrs, Volume= 0.398 af
Outflow = 6.30 cfs @ 11.90 hrs, Volume= 0.398 af, Atten= 0%, Lag= 0.0 min
Primary = 6.30 cfs @ 11.90 hrs, Volume= 0.398 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 13.63' @ 11.93 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	5.83'	**12.0" Round Culvert** L= 85.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 5.83' / 5.58' S= 0.0029 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=5.17 cfs @ 11.90 hrs HW=13.12' TW=10.32' (Dynamic Tailwater)
1=Culvert (Outlet Controls 5.17 cfs @ 6.58 fps)

Pond AEI 7:



Summary for Pond CB 4433:

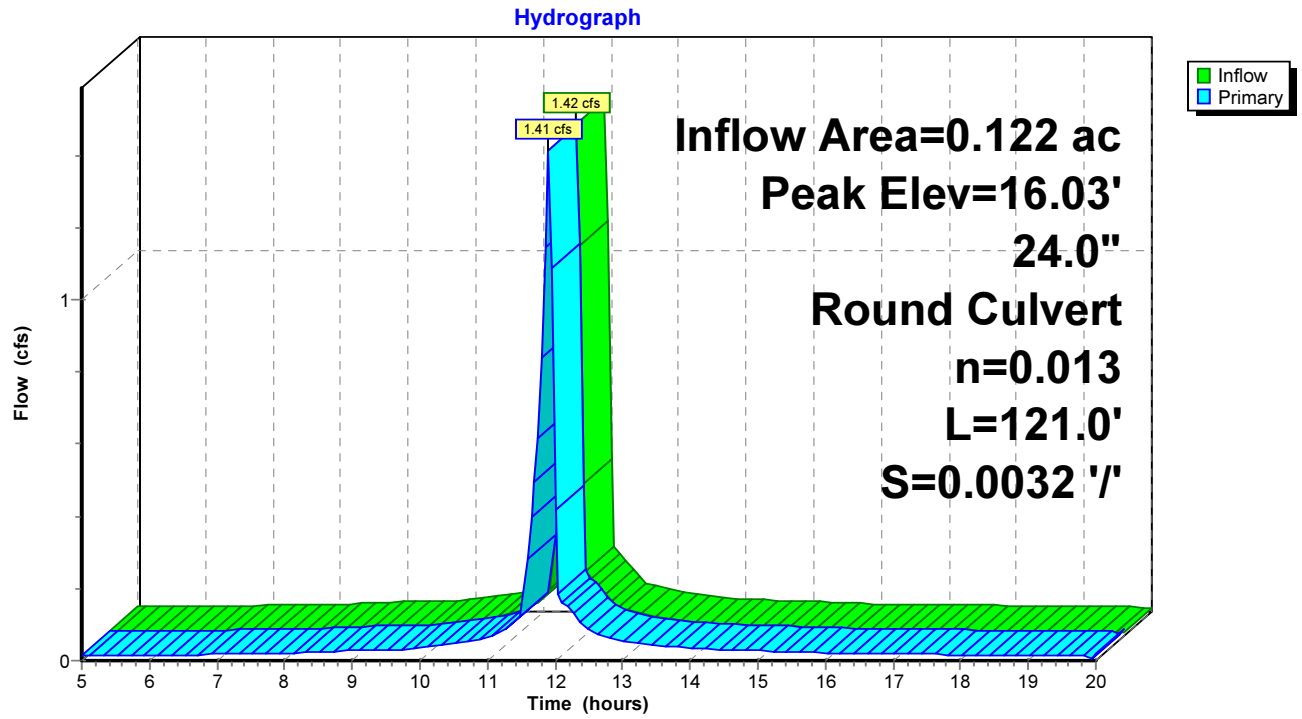
Inflow Area = 0.122 ac,100.00% Impervious, Inflow Depth > 6.51" for 50 year event
Inflow = 1.42 cfs @ 11.90 hrs, Volume= 0.066 af
Outflow = 1.41 cfs @ 11.90 hrs, Volume= 0.066 af, Atten= 0%, Lag= 0.0 min
Primary = 1.41 cfs @ 11.90 hrs, Volume= 0.066 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 16.03' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	14.38'	**24.0" Round Culvert** L= 121.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 14.38' / 13.99' S= 0.0032 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=0.00 cfs @ 11.90 hrs HW=15.97' TW=16.01' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Pond CB 4433:



Summary for Pond CB 4435:

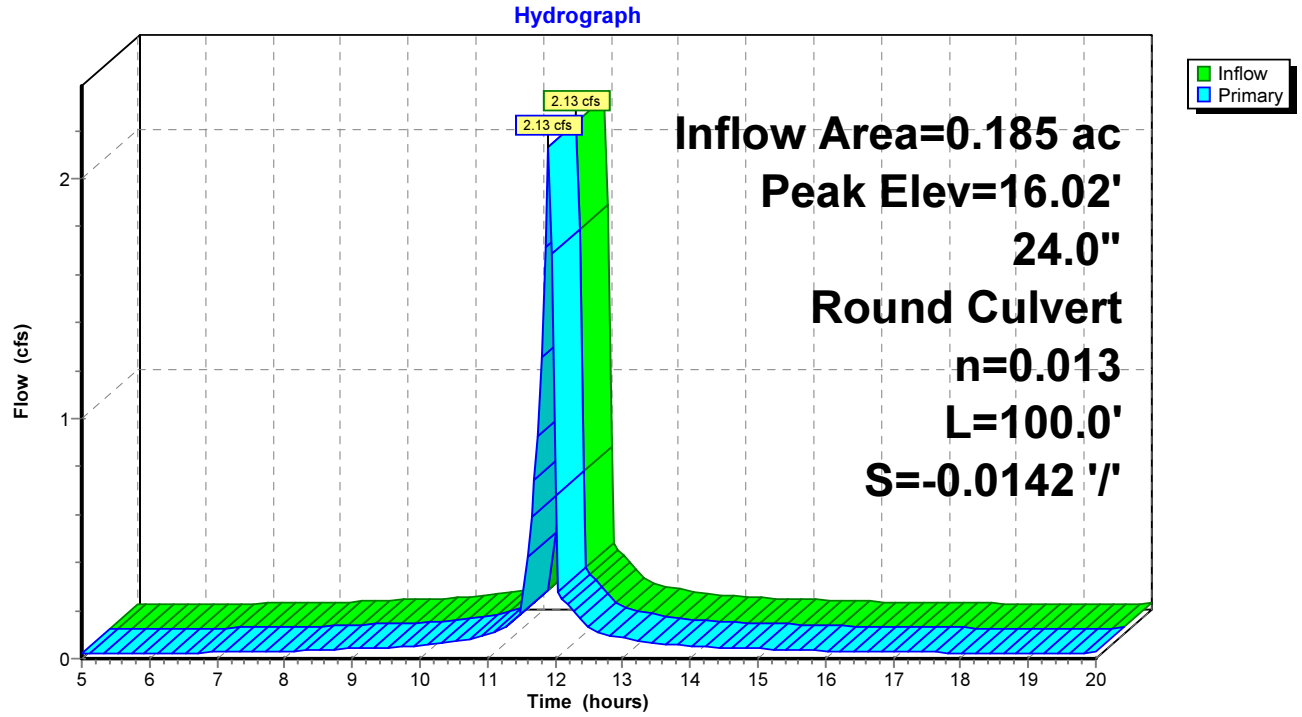
Inflow Area = 0.185 ac,100.00% Impervious, Inflow Depth > 6.51" for 50 year event
Inflow = 2.13 cfs @ 11.90 hrs, Volume= 0.100 af
Outflow = 2.13 cfs @ 11.90 hrs, Volume= 0.100 af, Atten= 0%, Lag= 0.0 min
Primary = 2.13 cfs @ 11.90 hrs, Volume= 0.100 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 16.02' @ 11.90 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	15.41'	**24.0" Round Culvert** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.99' / 15.41' S= -0.0142 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=2.13 cfs @ 11.90 hrs HW=16.02' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.13 cfs @ 2.65 fps)

Pond CB 4435:



Summary for Pond CB 4560:

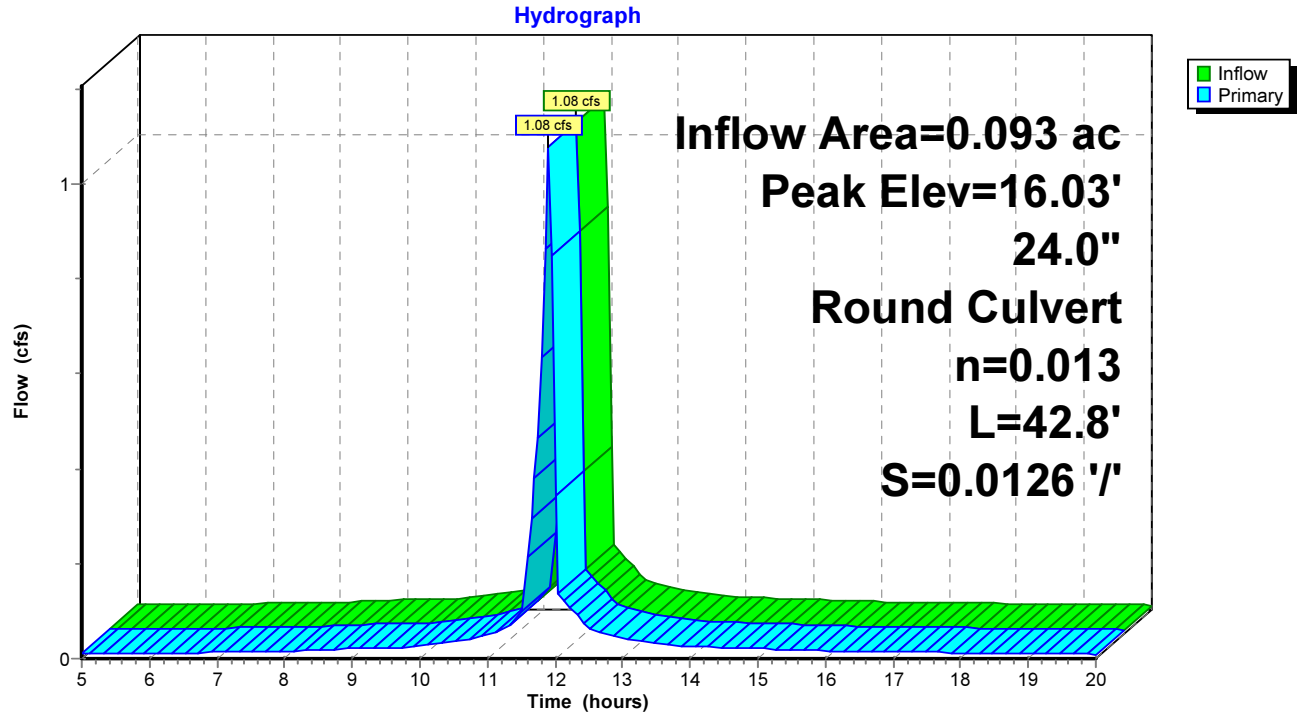
Inflow Area = 0.093 ac,100.00% Impervious, Inflow Depth > 6.51" for 50 year event
Inflow = 1.08 cfs @ 11.90 hrs, Volume= 0.050 af
Outflow = 1.08 cfs @ 11.90 hrs, Volume= 0.050 af, Atten= 0%, Lag= 0.0 min
Primary = 1.08 cfs @ 11.90 hrs, Volume= 0.050 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 16.03' @ 11.99 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	14.92'	**24.0" Round Culvert** L= 42.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 14.92' / 14.38' S= 0.0126 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=0.00 cfs @ 11.90 hrs HW=15.92' TW=15.97' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Pond CB 4560:

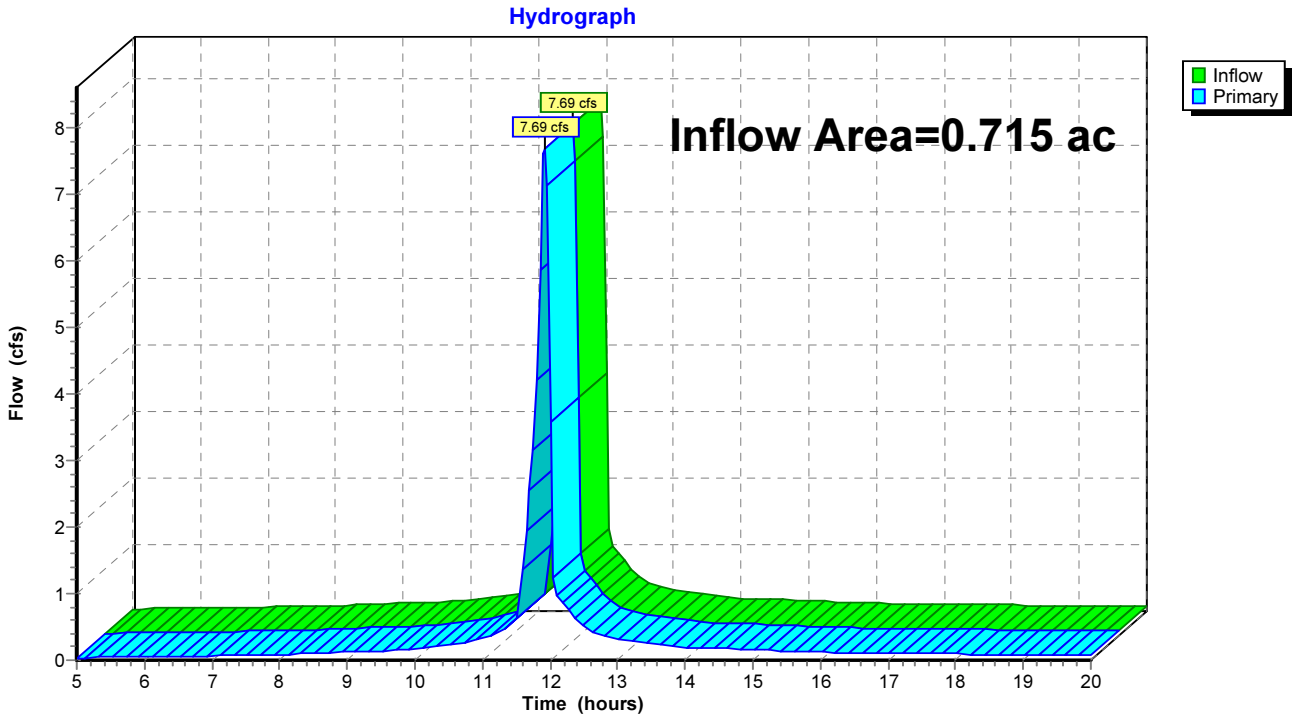


Summary for Link 1L: Discharge Point 1 (Combined Sewer)

Inflow Area = 0.715 ac, 89.11% Impervious, Inflow Depth > 6.02" for 50 year event
Inflow = 7.69 cfs @ 11.91 hrs, Volume= 0.358 af
Primary = 7.69 cfs @ 11.91 hrs, Volume= 0.358 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: Discharge Point 1 (Combined Sewer)

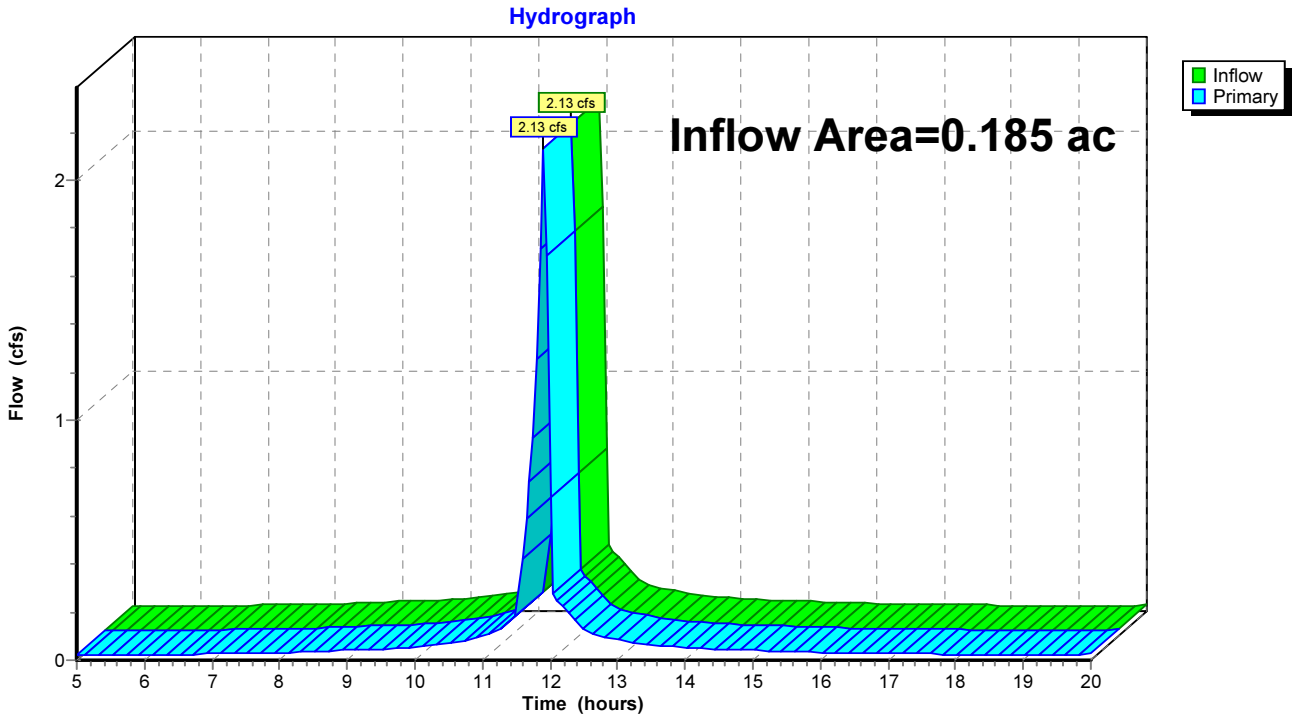


Summary for Link 2L: Discharge Point 2 (Court Street Drainage)

Inflow Area = 0.185 ac,100.00% Impervious, Inflow Depth > 6.51" for 50 year event
Inflow = 2.13 cfs @ 11.90 hrs, Volume= 0.100 af
Primary = 2.13 cfs @ 11.90 hrs, Volume= 0.100 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: Discharge Point 2 (Court Street Drainage)

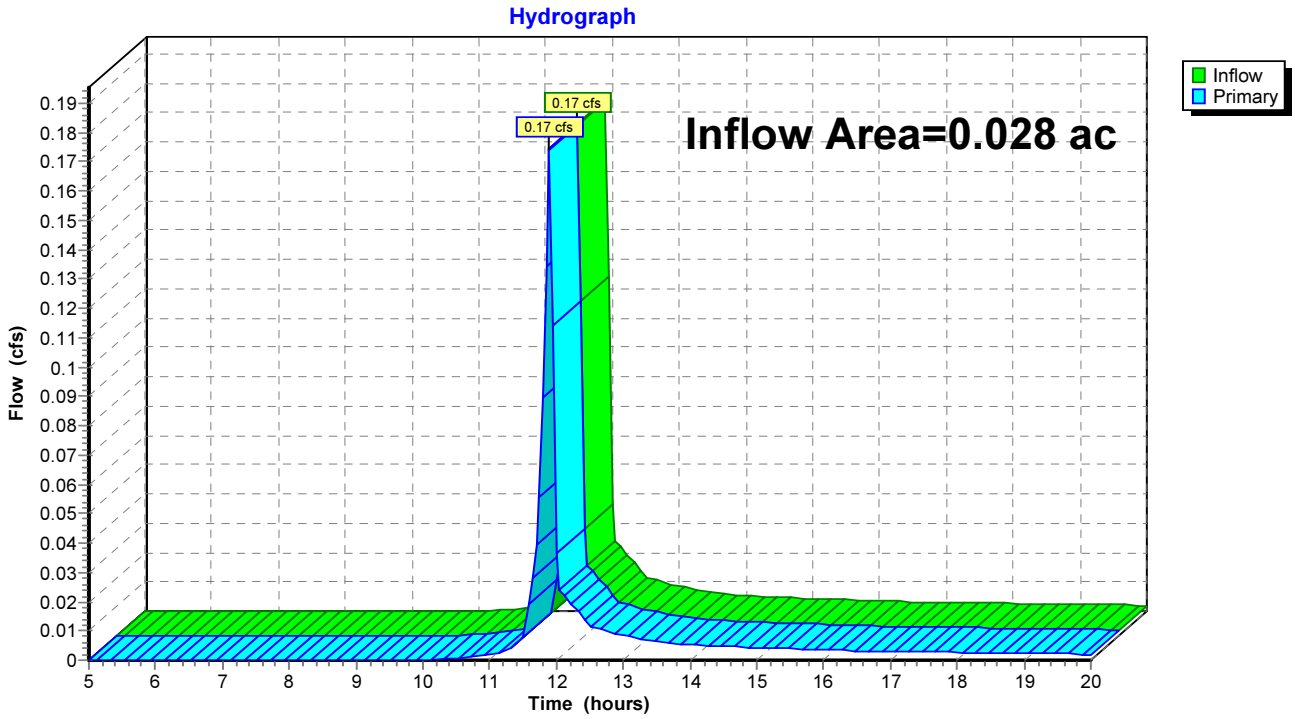


Summary for Link 3L: Discharge Point 4 (DP4)

Inflow Area = 0.028 ac, 0.00% Impervious, Inflow Depth > 2.73" for 50 year event
Inflow = 0.17 cfs @ 11.89 hrs, Volume= 0.006 af
Primary = 0.17 cfs @ 11.89 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: Discharge Point 4 (DP4)

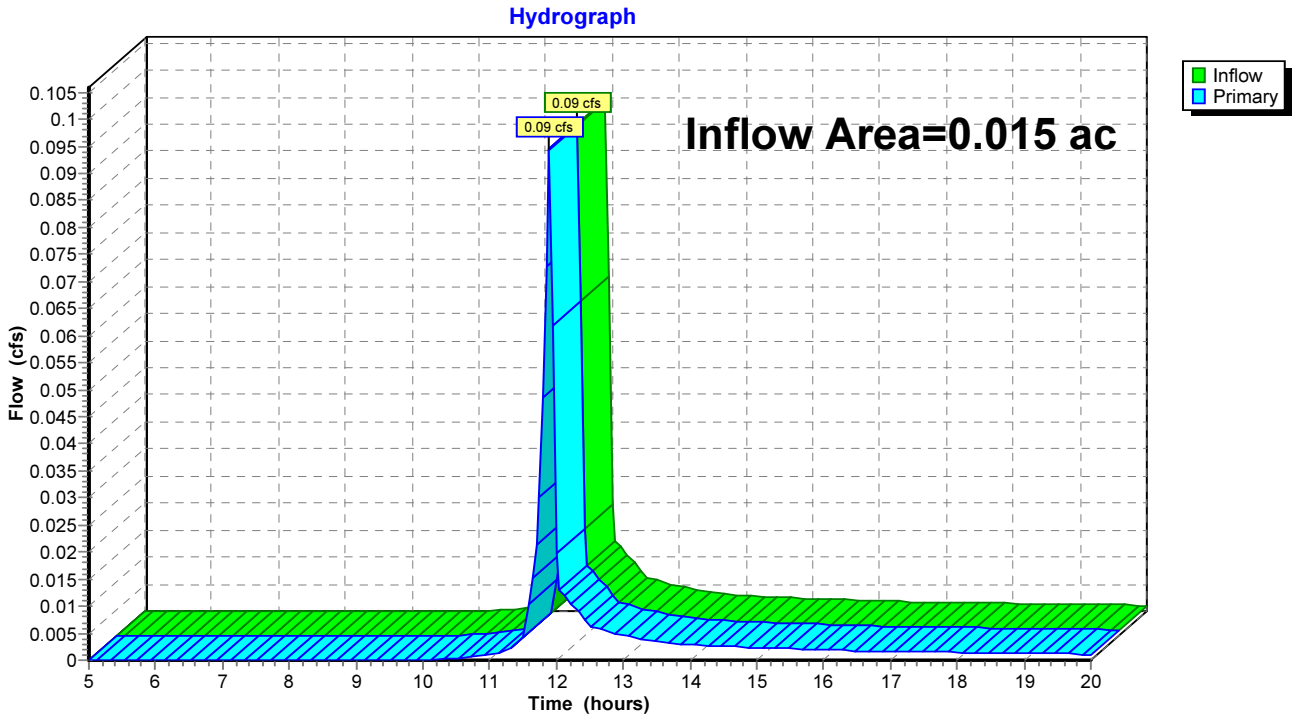


Summary for Link 4L: Discharge Point 5 (DP5)

Inflow Area = 0.015 ac, 0.00% Impervious, Inflow Depth > 2.73" for 50 year event
Inflow = 0.09 cfs @ 11.89 hrs, Volume= 0.003 af
Primary = 0.09 cfs @ 11.89 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 4L: Discharge Point 5 (DP5)



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 Rockingham County, New Hampshire

June 15, 2018

Preface

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

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

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

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

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

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

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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: 1:877 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 10 20 40 60

Feet: 0 40 80 160 240

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: Rockingham County, New Hampshire
Survey Area Data: Version 19, Sep 11, 2017

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

Date(s) aerial images were photographed: Dec 31, 2009—Jun 26, 2016

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
699	Urban land	2.0	100.0%
Totals for Area of Interest		**2.0**	**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.

Rockingham County, New Hampshire

699—Urban land

Map Unit Composition

Urban land: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Minor Components

Not named

Percent of map unit: 15 percent
Hydric soil rating: No

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

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

STORMWATER MANAGEMENT
INSPECTION & MAINTENANCE PLAN
FOR
PORTSMOUTH HOUSING AUTHORITY
140 COURT STREET, PORTSMOUTH, NH

Introduction

The intent of this plan is to provide Portsmouth Housing Authority located at 140 Court Street, Portsmouth, NH with a list of procedures that cover the inspection and maintenance requirements of the stormwater management system for the proposed redevelopment at the site.

The following inspection and maintenance program is necessary to keep the stormwater management system functioning properly. These measures will also help minimize potential environmental impacts. By following the enclosed procedures, Portsmouth Housing Authority will be able to maintain the functional design of the stormwater management system. By installing and maintaining the drainage as shown on the approved site plan, Portsmouth Housing Authority will be able to maximize the system's ability to control the volume of runoff and remove sediment from site generated stormwater runoff.

Stormwater Management System Components

The Stormwater Management System is designed to comply with RSA 483 – B:9 V(g)(2). As a result, the design includes the following elements:

StormTech Subsurface Stormwater System

Roof runoff from the proposed structure and a portion of the parking lot will be captured in catch basins and directed to the proposed StormTech Subsurface Stormwater System located between the existing Portsmouth Housing Authority Building located at 140 Court Street and a new building to be constructed to the east. The design calls for two separate systems (System # 1 and System #2) that utilize 24 and 23 StormTech SC-740 chambers respectively with a single isolator row as recommended by StormTech design criteria. The system will release the stormwater to infiltrate 100% of the Water Quality Volume (WQV, also referred to as the "first flush") into the ground. It is also designed to attenuate peak flows for the Q10 and Q50 storm events as required by the City of Portsmouth.

Inspection & Maintenance Checklist/Log

The following pages contain maintenance specifications, a Stormwater Management System Inspection & Maintenance Checklist, and a

blank copy of the Stormwater Management System Inspection & Maintenance Log. The forms are provided to Portsmouth Housing Authority and will serve as a guideline for performing the inspection and maintenance of the Stormwater Management System. This is a guideline and should be periodically reviewed for conformance with current practice and standards.

STORMTECH SUBSURFACE STORMWATER SYSTEM MAINTENANCE

In general, the intent of a subsurface leaching system is to provide for infiltration of runoff from developed areas, in this case the roof and driveway runoff. This system is designed to accept and infiltrate the first inch of rainfall from a storm event. The system is also designed to slow the peak runoff from a 50 year frequency rainfall event (7.39" of rain in a 24 hour period). In order to keep the subsurface leaching system functioning properly, it is important to keep the system porous and unplugged by debris. Installation of a StormTech subsurface leaching systems would typically include an "Isolator Row". This is a row of chambers dedicated to settling out particulate matter in the stormwater run-off stream before the water reaches the rest of the subsurface system. The system should perform for many years without clogging. Regular inspection of the Isolator Row should be performed to avoid the need for system cleaning beyond the Isolator Row.

Specific Maintenance Procedures

Inspections- The subsurface leaching system is designed to infiltrate site generated stormwater runoff in to the ground. The bottom of the subsurface leaching system may become clogged with sediment, and organic matter with time. The receiving layer (bottom) of the subsurface leaching system may be ineffective if sediment buildup is occurring and infiltration is being diminished.

Twice per year, during regular rains (less than 1 inch in 24 hours) inspect the overflow outlet to see if water is exiting the system. Run off exiting the system would indicate that the system is clogged and in need of replacement. Review the pipe outlet for any signs of erosion and stabilize if necessary. Some water may be exiting the system, which is not designed for heavy rain events, though heavy rains after long periods of drought may infiltrate into the soil and not show up. Lack of water exiting the system may indicate that the overflow pipe is clogged and not functioning. Check for animal activity and / or vegetation blockages. Extended periods of wetness at the ground surface above the chambers can also be a sign of system failure.

If the subsurface leaching system is not functioning the system would be repaired by the removal of accumulated debris including sand and silt(s) to return the subsurface leaching system to a functioning condition. Accumulated sediment can be removed with culvert cleaning device which will allow the removal of the accumulated debris by power washing the material back to the open end of the system for removal.

Stormwater Management System
for
Portsmouth Housing Authority
140 Court Street, Portsmouth, NH

Inspection & Maintenance Checklist

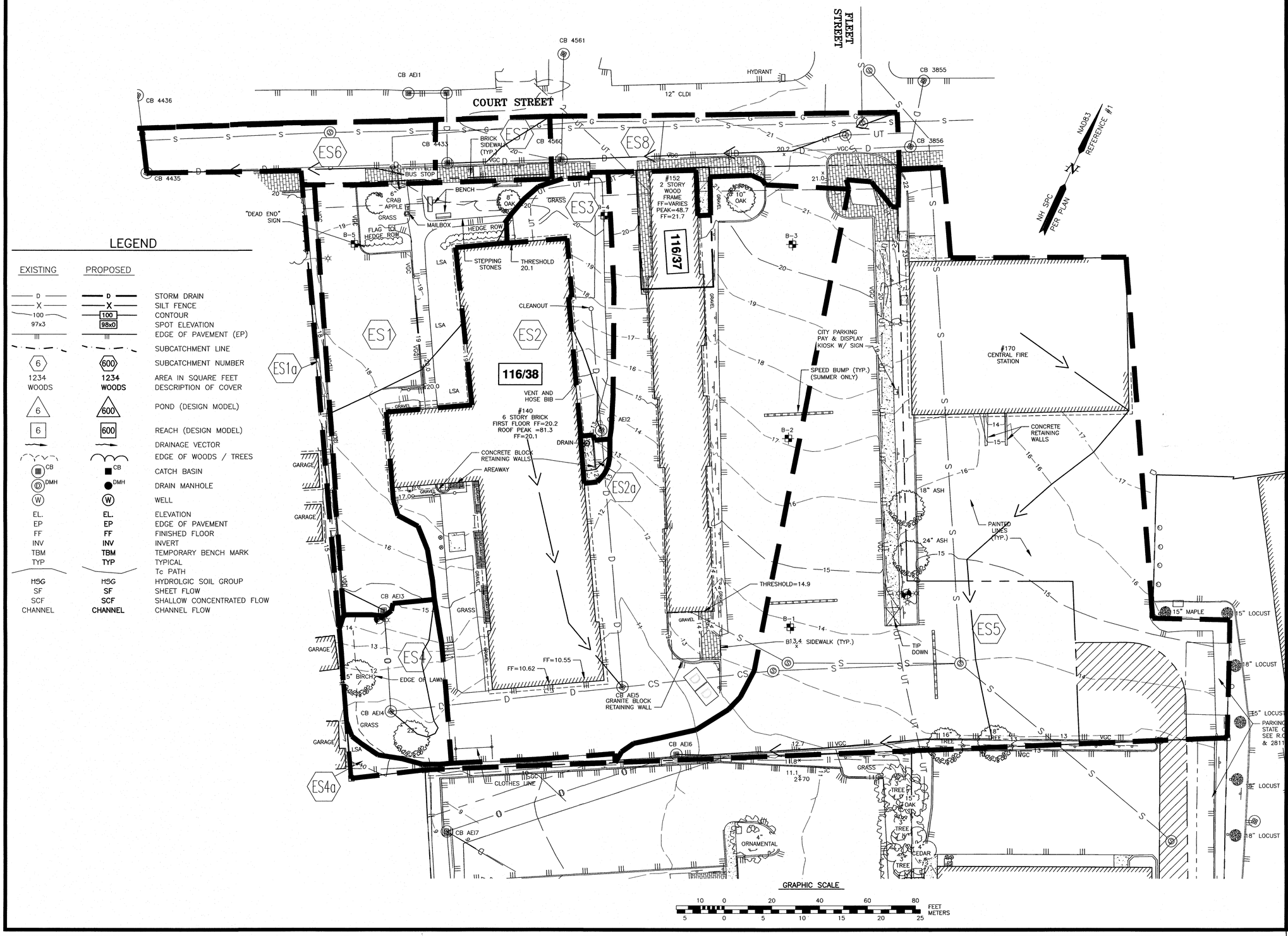
BMP/System Component	Minimum Inspection Frequency	Minimum Inspection Requirements	Maintenance/Cleanout Threshold
Stormtech Subsurface Chamber System	2 times per year	During Light Rains Inspect Outlet Functioning	Repair / Clean as needed
Catch Basins	Twice Yearly	Remove sediment and debris	Sediment within 6” of outlet pipe
Street Sweeping and Litter / Trash Removal	Twice Yearly	Visual Determination of Surface Conditions	Mechanical or Manual Sweeping as Needed

Stormwater Management System
for
Portsmouth Housing Authority
140 Court Street, Portsmouth, NH

Inspection & Maintenance Log

(This log is to be submitted to the City of Dover Engineering Department on an annual basis, not later than December 15th of each year. The owner of record will be responsible for this ongoing maintenance and reporting.)

BMP/System Component	**Date Inspected**	**Inspector**	**Cleaning/Repair Needed *(List Items/Comments)***	**Date of Cleaning/Repair**	**Performed By**



LEGEND

EXISTING	PROPOSED	
D	D	STORM DRAIN
X	X	SILT FENCE
100	100	CONTOUR
97x3	98x0	SPOT ELEVATION
		EDGE OF PAVEMENT (EP)
		SUBCATCHMENT LINE
6	600	SUBCATCHMENT NUMBER
1234	1234	AREA IN SQUARE FEET
WOODS	WOODS	DESCRIPTION OF COVER
6	600	POND (DESIGN MODEL)
6	600	REACH (DESIGN MODEL)
		DRAINAGE VECTOR
		EDGE OF WOODS / TREES
CB	CB	CATCH BASIN
DMH	DMH	DRAIN MANHOLE
W	W	WELL
EL.	EL.	ELEVATION
EP	EP	EDGE OF PAVEMENT
FF	FF	FINISHED FLOOR
INV	INV	INVERT
TBM	TBM	TEMPORARY BENCH MARK
TYP	TYP	TYPICAL
		Tc PATH
HSG	HSG	HYDROLGIC SOIL GROUP
SF	SF	SHEET FLOW
SCF	SCF	SHALLOW CONCENTRATED FLOW
CHANNEL	CHANNEL	CHANNEL FLOW

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

PROJECT LOCATION
140 COURT STREET
PORTSMOUTH, NH

PARCEL ID:
CITY OF PORTSMOUTH ASSESSOR'S MAP 116, LOTS 38 AND LOT 37.

OWNERS OF RECORD:
116/38
PORTSMOUTH HOUSING AUTHORITY
245 MIDDLE STREET
PORTSMOUTH, NH 03801
R.C.R.D BK 1736, PG 386, BK 1797 PG 20 AND BK 1920, PG 47

116/37
ED PAC, LLC
242 CENTRAL AVENUE
DOVER, NH 03820
BK 4679, PG 151

PARCEL 116/38 AND 116/37 ARE NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 3301SC0259E. EFFECTIVE 5/17/2005

NOTES:

1) THIS PLAN IS INTENDED FOR RUNOFF ANALYSIS ONLY AND SHALL NOT BE USED FOR CONSTRUCTION.

2) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

3) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

4) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

PORTSMOUTH HOUSING AUTHORITY 140 COURT STREET PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	6/18/18

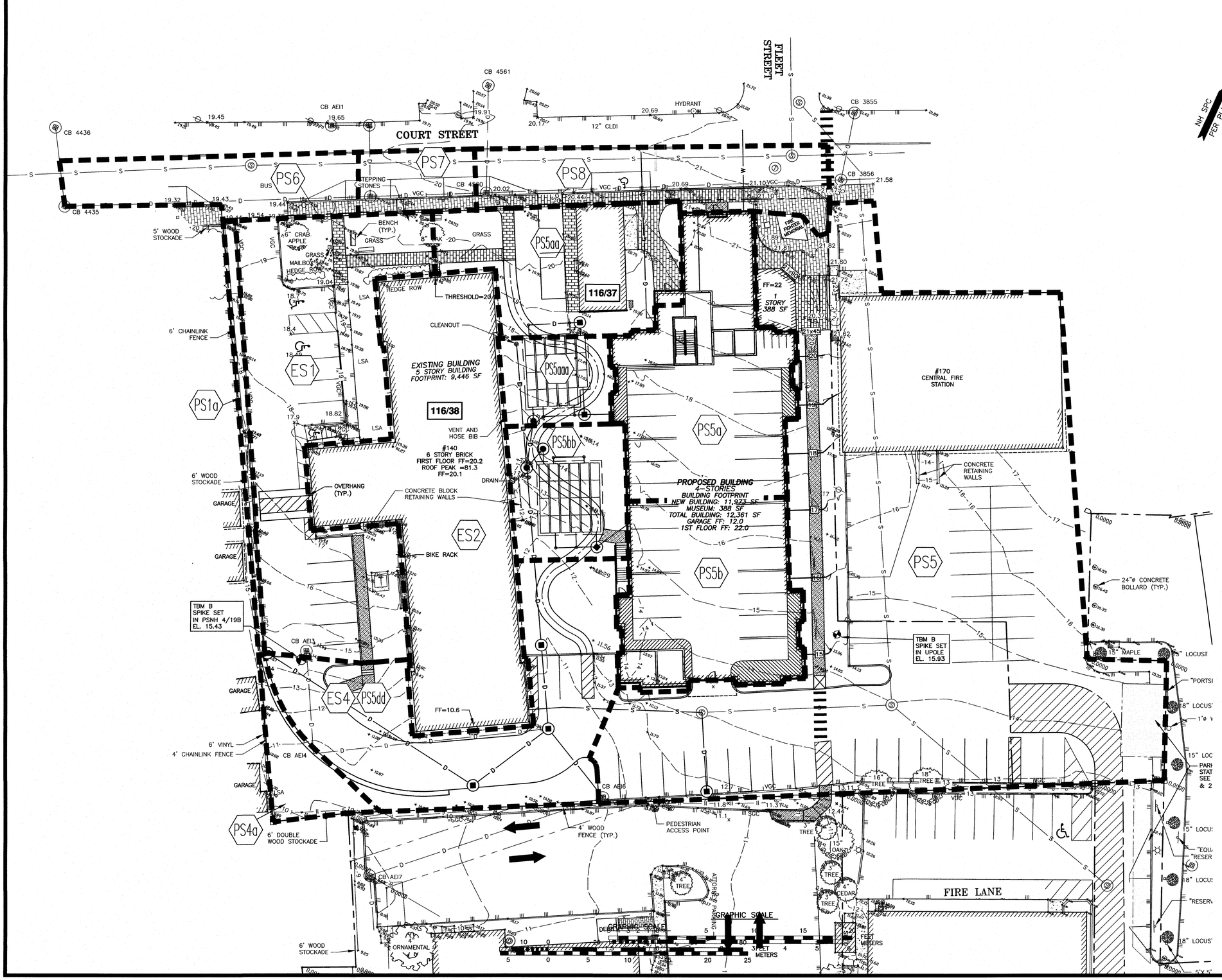
REVISIONS

SCALE: 1" = 20'

PLAN OF EXISTING SUBCATCHMENTS

W1

2790



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PORTSMOUTH HOUSING AUTHORITY 140 COURT STREET PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	6/18/18

REVISIONS

SCALE: 1" = 20'

PLAN OF PROPOSED SUBCATCHMENTS

W2

2790

CITY OF PORTSMOUTH
NEW HAMPSHIRE

SITE REVIEW APPLICATION

Building Permit Application Number _____

Case Number _____

Fee _____

Map 116 Lot 38 Zone CD 4 Wetlands: Inland _____ Coastal _____ Lot Area 62,559 SF

Date of Approvals (Indicate if Pending)

Conservation Commission N/A Conditional Use Pending Board of Adjustment May 15, 2018

Historic District Commission Pending Subdivision Pending Other _____

Street Address _____

Description of Project including all use(s) Proposed 64 Unit Workforce Housing Building with associated site improvements including Community Open Space

Building(s) Footprint 11,500 +/- Gross Floor Area 60,000 +/- #of Stories 5

# of Dwelling Units 64 Number of Parking Spaces: Existing _____ Proposed _____

Print Information Below

Property Owner's Name Portsmouth Housing Authority

Street Address 245 Middle Street City/Town Portsmouth State NH Zip 03801

(603) 436-4310 craigwelch@nh-pha.com

Telephone # | Cell Phone # | Fax # | Email Address

Print Information Below

Applicant's / Developer's Name Same as owner

Street Address _____ City/Town _____ State _____ Zip _____

Telephone # | Cell Phone # | Fax # | Email Address

Print Information Below (Include Additional Contact Information on Next Page)

Check One: Owner's Attorney ☐ Applicant's Attorney ☐ Engineer ☒ Surveyor ☐ Other ☐ If other, state relationship _____

Representative's Name John Chagnon, Ambit Engineering

Street Address 200 Griffin Road, Unit 3 City/Town Portsmouth State NH Zip 03801

603-430-9282 603-436-2315 jrc@ambitengineering.com

Telephone # | Cell Phone # | Fax # | Email Address

I hereby apply for Site Review and acknowledge that I will comply with all the ordinances and any stipulations of the Site Review Committee of the City of Portsmouth in the development and construction of this project.

Craig W. Welch — Craig W. Welch for Portsmouth Housing Authority — 6/18/18

Owner's Signature | Print Owner's Name | Date

_____

Applicant's/Developer's Signature | Print Applicant's/Developer's Name | Date

Print Information Below

Check One: Owner's Attorney ☐ Applicant's Attorney ☐ Engineer ☐ Surveyor ☐ Other ☐ If other, state relationship Architect

Representative's Name CJ Architects

Street Address 233 Vaughn Street City/Town Portsmouth State NH Zip 03801

(603) 431-2808

Telephone # Cell Phone # Fax # Email Address

Print Information Below

Check One: Owner's Attorney ☐ Applicant's Attorney ☐ Engineer ☐ Surveyor ☐ Other ☐ If other, state relationship Landscape Architect

Representative's Name G2+1 LLC

Street Address 70 New Road City/Town Salisbury State NH Zip 03268

(603) 648-6434

Telephone # Cell Phone # Fax # Email Address

Print Information Below

Check One: Owner's Attorney ☒ Applicant's Attorney ☐ Engineer ☐ Surveyor ☐ Other ☐ If other, state relationship

Representative's Name Bosen & Associates, P.L.L.C.

Street Address 266 Middle Street City/Town Portsmouth State NH Zip 03801

(603) 427-5500 (603) 427-5510

Telephone # Cell Phone # Fax # Email Address

Attachments

The following materials must be submitted to the Planning Department along with the completed Application Form:

- ☐ Site Plan Application Checklist
- ☐ Ten (10) stamped and folded copies of the site plan – four (4) full-size (22" x 34") and six (6) reduced (11" x 17")
- ☐ Digital copy of any plans and/or exhibits (in PDF format)
- ☐ Application Fee
- ☐ Any required State or Federal Permits

AUTHORIZATION
Court Street, Portsmouth, New Hampshire

I, Craig Welch, as Executive Director of the PHA Housing Development, Ltd., hereby authorize representatives of Ambit Engineering, Inc., CJ Architects and Bosen & Associates, PLLC to represent its interests before the Portsmouth Planning Board, Historic District Commission and Zoning Board of Adjustment and to submit any and all applications and materials related thereto on its behalf.

Date: 4/11/18

Craig Welch, PHA Housing Development, Ltd.

AUTHORIZATION
Court Street Project, Portsmouth, New Hampshire

I, Earl S. Cheney, as a member of ED PAC, LLC, hereby authorize representatives of Portsmouth Housing Development, Ltd., Ambit Engineering, Inc., CJ Architects and Bosen & Associates, PLLC to represent the interests of the ED PAC LLC before the Portsmouth Planning Board, Historic District Commission and Zoning Board of Adjustment and to submit any and all applications and materials related thereto on its behalf as it relates to the Portsmouth Housing Authority 140 Court Street Project.

Date: 3/7/18

Signature

BY: Member

Title

Original Signed Authorization on File with ZBA Application

PHA Court Street Cost Estimate					
140 Court Street					6/18/2018
Portsmouth, NH					
Item No.	DESCRIPTION	Units	Quantity	Unit Cost	Total
1	**Demolition - Building**	LS	1	6500	$ 6,500
2	**Demolition - Site**	SY	4,521	2	$ 9,042
3	**Sidewalk - Concrete**	SF	713	14	$ 9,982
4	**Brick Paving / Sidewalks**	SF	144	15	$ 2,160
	Walkway - Other	SF	1,085	12	$ 13,020
5	**Lighting**	LS	1	12000	$ 12,000
6	**Electrical Service**	LS	1	15000	$ 15,000
7	**Gas Service**	LF	60	50	$ 3,000
8	**Water Services**	LF	66	100	$ 6,600
	Paving	SY	1,400	25	$ 35,000
9	**Bike Racks**	EA	4	250	$ 1,000
10	**Landscaping**	LS	1	28000	$ 28,000
	Retaining Wall	LF	210	36	$ 7,560
11	**Saw Cutting**	LF	107	5	$ 535
	Catch Basins	EA	7	2500	$ 17,500
12	**Removing-existing granite curb**	LF	386	5	$ 1,930
	Sewer Man Holes	EA	1	3500	$ 3,500
13	**Sewer Line**	LF	71	75	$ 5,325
	Drainage Treatment	LS	2	12000	$ 24,000
14	**Pavement Marking and Signs**	LS	1	1000	$ 1,000
15	**Removing- 8" drainage line**	LF	63	15	$ 945
16	**Removing-Catch Basins**	EA	2	500	$ 1,000
17	**General site out to waste off-site**	CY	3,676	20	$ 73,520
18	**Drain Structures**	EA	4	4500	$ 18,000
19	**12" HDPE Pipe**	LF	212	75	$ 15,900
20	**12" HDPE pipe- drainage line to building**	LF	86	75	$ 6,450
23	**Site Electric for lighting**	LF	425	35	$ 14,875
24	**Speed Bump**	EA	1	1200	$ 1,200
25	**4" Gate Valve**	EA	2	1000	$ 2,000
Total					$ 336,544

Site Review Fee: $500 plus ($336,544 Site Cost X $5/$1,000) plus (65,000 SF Disturbance X $10/1,000 SF)
FEE: $2,832.72

City of Portsmouth, New Hampshire

Site Plan Application Checklist

This site plan application checklist is a tool designed to assist the applicant in the planning process and for preparing the application for Planning Board review. A pre-application conference with a member of the planning department is strongly encouraged as additional project information may be required depending on the size and scope. The applicant is cautioned that this checklist is only a guide and is not intended to be a complete list of all site plan review requirements. Please refer to the Site Plan review regulations for full details.

Applicant Responsibilities (Section 2.5.2): Applicable fees are due upon application submittal along with required attachments. The application shall be complete as submitted and provide adequate information for evaluation of the proposed site development. Waiver requests must be submitted in writing with appropriate justification.

Name of Owner/Applicant: Portsmouth Housing Authority Date Submitted: 6/18/2018

Phone Number: _____ E-mail: craigwelch@nh-pha.com

Site Address: 140 Court Street, Portsmouth NH, 03801 Map: 116 Lot: 38

Zoning District: CD 4 Lot area: 62,559 sq. ft.

Application Requirements			
☑	**Required Items for Submittal**	**Item Location (e.g. Page or Plan Sheet/Note #)**	**Waiver Requested**
✓	Fully executed and signed Application form. **(2.5.2.3)**		N/A
✓	All application documents, plans, supporting documentation and other materials provided in digital Portable Document Format (PDF) on compact disc, DVD or flash drive. **(2.5.2.8)**		N/A

Site Plan Review Application Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
✓	Statement that lists and describes "green" building components and systems. **(2.5.3.1A)**	Attached- CJ Architects	☐
✓	Gross floor area and dimensions of all buildings and statement of uses and floor area for each floor. **(2.5.3.1B)**	C4	N/A
✓	Tax map and lot number, and current zoning of all parcels under Site Plan Review. **(2.5.3.1C)**	C3	N/A
✓	Owner's name, address, telephone number, and signature. Name, address, and telephone number of applicant if different from owner. **(2.5.3.1D)**	Cover Sheet	N/A

Site Plan Review Application Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	Names and addresses (including Tax Map and Lot number and zoning districts) of all direct abutting property owners (including properties located across abutting streets) and holders of existing conservation, preservation or agricultural preservation restrictions affecting the subject property. **(2.5.3.1E)**	C1	N/A
☑	Names, addresses and telephone numbers of all professionals involved in the site plan design. **(2.5.3.1F)**	Cover Sheet	N/A
☑	List of reference plans. **(2.5.3.1G)**	LLR Plan	N/A
☑	List of names and contact information of all public or private utilities servicing the site. **(2.5.3.1H)**	Cover Sheet	N/A

Site Plan Specifications			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	Full size plans shall not be larger than 22 inches by 34 inches with match lines as required, unless approved by the Planning Director. Submittals shall be a minimum of 11 inches by 17 inches as specified by Planning Dept. staff. **(2.5.4.1A)**	Required on all plan sheets	N/A
☑	Scale: Not less than 1 inch = 60 feet and a graphic bar scale shall be included on all plans. **(2.5.4.1B)**	Required on all plan sheets	N/A
☑	GIS data should be referenced to the coordinate system New Hampshire State Plane, NAD83 (1996), with units in feet. **(2.5.4.1C)**	Required on all plan sheets	N/A
☑	Plans shall be drawn to scale. **(2.5.4.1D)**	Required on all plan sheets	N/A
☑	Plans shall be prepared and stamped by a NH licensed civil engineer. **(2.5.4.1D)**	Required on all plan sheets	N/A
☐	Wetlands shall be delineated by a NH certified wetlands scientist. **(2.5.4.1E)**	N/A	N/A
☑	Title (name of development project), north point, scale, legend. **(2.5.4.2A)**	Required on all plan sheets	N/A
☑	Date plans first submitted, date and explanation of revisions. **(2.5.4.2B)**	Required on all plan sheets	N/A
☑	Individual plan sheet title that clearly describes the information that is displayed. **(2.5.4.2C)**	Required on all plan sheets	N/A

Site Plan Specifications			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
✓	Source and date of data displayed on the plan. **(2.5.4.2D)**	Required on all plan sheets	N/A
✓	A note shall be provided on the Site Plan stating: "All conditions on this Plan shall remain in effect in perpetuity pursuant to the requirements of the Site Plan Review Regulations." **(2.5.4.2E)**	Required on all plan sheets COVER	N/A
✓	Plan sheets submitted for recording shall include the following notes: a. "This Site Plan shall be recorded in the Rockingham County Registry of Deeds." b. "All improvements shown on this Site Plan shall be constructed and maintained in accordance with the Plan by the property owner and all future property owners. No changes shall be made to this Site Plan without the express approval of the Portsmouth Planning Director." **(2.13.3)**	Page TBD	N/A
✓	Plan sheets showing landscaping and screening shall also include the following additional notes: a. "The property owner and all future property owners shall be responsible for the maintenance, repair and replacement of all required screening and landscape materials." b. "All required plant materials shall be tended and maintained in a healthy growing condition, replaced when necessary, and kept free of refuse and debris. All required fences and walls shall be maintained in good repair." c. "The property owner shall be responsible to remove and replace dead or diseased plant materials immediately with the same type, size and quantity of plant materials as originally installed, unless alternative plantings are requested, justified and approved by the Planning Board or Planning Director." **(2.13.4)**	LA 1.0-4.0	N/A

Site Plan Specifications – Required Exhibits and Data			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
	1. Existing Conditions: (2.5.4.3A)		
✓	a. Surveyed plan of site showing existing natural and built features;	C1	☐
✓	b. Zoning boundaries;	C1	☐
✓	c. Dimensional Regulations;	C1	☐
✓	d. Wetland delineation, wetland function and value assessment;	N/A	☐
✓	e. SFHA, 100 year flood elevation line and BFE data.	C1	☐
	2. Buildings and Structures: (2.5.4.3B)		
✓	a. Plan view: Use, size, dimensions, footings, overhangs, 1st fl. elevation;	7.0	☐
✓	b. Elevations: Height, massing, placement, materials, lighting, façade treatments;	8.0	☐
✓	c. Total Floor Area;	C4	☐
✓	d. Number of Usable Floors;	C4	☐
✓	e. Gross floor area by floor and use.	C4	☐
	3. Access and Circulation: (2.5.4.3C)		
✓	a. Location/width of access ways within site;	C3	☐
✓	b. Location of curbing, right of ways, edge of pavement and sidewalks;	C3	☐
✓	c. Location, type, size and design of traffic signing (pavement markings);	D1	☐
✓	d. Names/layout of existing abutting streets;	C3	☐
✓	e. Driveway curb cuts for abutting prop. and public roads;	C3	☐
✓	f. If subdivision; Names of all roads, right of way lines and easements noted;	N/A	☐
✓	g. AASHTO truck turning templates, description of minimum vehicle allowed being a WB-50 (unless otherwise approved by TAC).	Supplemental	☐
	4. Parking and Loading: (2.5.4.3D)		
✓	a. Location of off street parking/loading areas, landscaped areas/buffers;	C4	☐
✓	b. Parking Calculations (# required and the # provided).	C4	☐
	5. Water Infrastructure: (2.5.4.3E)		
✓	a. Size, type and location of water mains, shut-offs, hydrants & Engineering data;	C5	☐
✓	b. Location of wells and monitoring wells (include protective radii).	N/A	☐
	6. Sewer Infrastructure: (2.5.4.3F)		
✓	a. Size, type and location of sanitary sewage facilities & Engineering data.	C5	☐
	7. Utilities: (2.5.4.3G)		
✓	a. The size, type and location of all above & below ground utilities;	C5	☐
✓	b. Size type and location of generator pads, transformers and other fixtures.	C5	☐

Site Plan Specifications – Required Exhibits and Data			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	**8. Solid Waste Facilities: (2.5.4.3H)**		
☑	a. The size, type and location of solid waste facilities.	C4	☐
	9. Storm water Management: (2.5.4.3I)		
☑	a. The location, elevation and layout of all storm-water drainage.	C5	☐
	10. Outdoor Lighting: (2.5.4.3J)		
☑	a. Type and placement of all lighting (exterior of building, parking lot and any other areas of the site) and; b. photometric plan.	C7	☐
☑	**11. Indicate where dark sky friendly lighting measures have been implemented. (10.1)**	Supplemental	☐
	12. Landscaping: (2.5.4.3K)		
☑	a. Identify all undisturbed area, existing vegetation and that which is to be retained;	LA 1.0-4.0	☐
☑	**b.** Location of any irrigation system and water source.	TBD	☐
	13. Contours and Elevation: (2.5.4.3L)		
☑	a. Existing/Proposed contours (2 foot minimum) and finished grade elevations.	C6	☐
	14. Open Space: (2.5.4.3M)		
☑	a. Type, extent and location of all existing/proposed open space.	C4	☐
☑	**15. All easements, deed restrictions and non-public rights of ways. (2.5.4.3N)**	LLR Plan	☐
☑	**16. Location of snow storage areas and/or off-site snow removal. (2.5.4.3O)**	C3	☐
☑	**17. Character/Civic District (All following information shall be included): (2.5.4.3Q)**		☐
	a. Applicable Building Height (10.5A21.20 & 10.5A43.30);	C3	
	b. Applicable Special Requirements (10.5A21.30);	C3	
	c. Proposed building form/type (10.5A43);	C3	
	d. Proposed community space (10.5A46).	C4	

Other Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	Traffic Impact Study or Trip Generation Report, as required. *(Four (4) hardcopies of the full study/report and Six (6) summaries to be submitted with the Site Plan Application)* **(3.2.1-2)**	Supplemental	☐
☑	Indicate where Low Impact Development Design practices have been incorporated. **(7.1)**	Supplemental	☐
☐	Indicate whether the proposed development is located in a wellhead protection or aquifer protection area. Such determination shall be approved by the Director of the Dept. of Public Works. **(7.3.1)**	N/A	☐
☑	Indicate where measures to minimize impervious surfaces have been implemented. **(7.4.3)**	Drain Analysis	☐
☑	Calculation of the maximum effective impervious surface as a percentage of the site. **(7.4.3.2)**	C3	☐
☑	Stormwater Management and Erosion Control Plan. *(Four (4) hardcopies of the full plan/report and Six (6) summaries to be submitted with the Site Plan Application)* **(7.4.4.1)**	Drain Analysis	☐

Final Site Plan Approval Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	All local approvals, permits, easements and licenses required, including but not limited to: a. Waivers; b. Driveway permits; c. Special exceptions; d. Variances granted; e. Easements; f. Licenses. **(2.5.3.2A)**		☐
☐	Exhibits, data, reports or studies that may have been required as part of the approval process, including but not limited to: a. Calculations relating to stormwater runoff; b. Information on composition and quantity of water demand and wastewater generated; c. Information on air, water or land pollutants to be discharged, including standards, quantity, treatment and/or controls; d. Estimates of traffic generation and counts pre- and post-construction; e. Estimates of noise generation; f. A Stormwater Management and Erosion Control Plan; g. Endangered species and archaeological / historical studies; h. Wetland and water body (coastal and inland) delineations; i. Environmental impact studies. **(2.5.3.2B)**		☐

Final Site Plan Approval Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	A document from each of the required private utility service providers indicating approval of the proposed site plan and indicating an ability to provide all required private utilities to the site. **(2.5.3.2D)**		☐
☐	A list of any required state and federal permit applications required for the project and the status of same. **(2.5.3.2E)**		☐

Applicant's Signature: _____ **Date:** 6-18-18

CJ ARCHITECTS

PORTSMOUTH HOUSING AUTHORITY
COURT STREET DEVELOPMENT

Square Foot Area Summary

Floor	Unit Number	Unit SF Area	1 BR	2 BR	Accessible	<500 SF	>500 SF	Floor GSF
GARAGE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12,006
FIRST	101	667		1			1	12,373
	102	549	1				1	
	103	593	1				1	
	104	539	1				1	
	105	492	1			1		
	106	492	1			1		
	107	491	1			1		
	108	491	1			1		
	109	491	1			1		
	110	559	1		1		1	
	111	492	1			1		
	112	692		1			1	
	113	593	1				1	
	114	653		1			1	
	115	629		1			1	
SECOND	201	499	1			1		11,916
	202	499	1				1	
	203	667		1			1	
	204	566	1				1	
	205	593	1				1	
	206	602	1				1	
	207	492	1			1		
	208	492	1			1		
	209	491	1			1		
	210	491	1			1		
	211	491	1			1		
	212	559	1		1		1	
	213	492	1			1		
	214	785		1			1	
	215	593	1				1	
	216	653		1			1	
	217	629		1			1	

THIRD	301	499	1			1		11,916
	302	499	1				1	
	303	667		1			1	
	304	566	1				1	
	305	593	1				1	
	306	602	1				1	
	307	492	1			1		
	308	492	1			1		
	309	491	1			1		
	310	491	1			1		
	311	491	1			1		
	312	559	1		1		1	
	313	492	1			1		
	314	785		1			1	
	315	593	1				1	
	316	653		1			1	
	317	629		1			1	
FOURTH	401	667		1			1	10,764
	402	566	1				1	
	403	593	1				1	
	404	602	1				1	
	405	492	1			1		
	406	492	1			1		
	407	491	1			1		
	408	491	1			1		
	409	491	1			1		
	410	559	1		1		1	
	411	492	1			1		
	412	785		1			1	
	413	593	1				1	
	414	653		1			1	
	415	629		1			1	
	TOTALS:		48	16	4	26	38	58,975
			64					

Floor	Unit Number	Unit SF Area	1 BR	2 BR	Accessible	<500 SF	>500 SF	Floor GSF

GREEN BUILDING COMPONENTS AND SYSTEMS

REQUIREMENT:
CITY OF PORTSMOUTH, NEW HAMPSHIRE
SITE PLAN REVIEW REGULATIONS
2.5.3 Site Plan Review Application Required Information
1. The following information shall be included with the Site Plan Review application:
(a) Detailed statement that lists and describes "green" building components and systems, including, but not limited to, whether the project is certifiable as demonstrated by a completed LEED (Leadership in Energy and Environmental Design) checklist. For example, building orientation, HVAC efficiencies, reductions in water usage, landscaping, source of building materials, production of on-site electricity, on-site rainwater recovery systems, energy efficient lighting, "cool" roof products, "green" refrigerant and plumbing systems, and energy efficient windows.

The following project information is based on the Leadership in Energy and Environmental Design (LEED) Version v4 Project Checklist for New Construction and Major Renovation. Green building components and systems reflect proposed features and are subject to development feasibility.

LOCATION AND TRANSPORTATION (LT)

1. LEED For Neighborhood Development Location
   The building is located on an appropriate site to reduce vehicle travel, enhance livability and to encourage daily physical activity. The surrounding neighborhood is not certified under LEED for Neighborhood development.

2. Sensitive Land Protection
   The proposed building is being located on land that had previously been developed.

3. High-Priority Site
   The proposed building will be located on an existing parking lot in the historic district.

4. Surrounding Density and Diverse Uses
   The proposed building will be constructed on a site that has publicly diverse uses located within a 1-mile radius. (Refer to the attached Walkable Amenities Map)

5. Access to Quality Transit
   Multiple bus stops are located within a five-minute walking radius. (Refer to the attached Walkable Amenities Map)

6. Bicycle Facilities
   Both outdoor and indoor bicycle storage will be provided for building tenants. There are also "Zagster" bicycle sharing facilities on site.

7. Reduced Parking Footprint
   The parking capacity being provided with the proposed building will not exceed the minimum local code requirements for parking capacity.

8. Green Vehicles
   Parking spaces for green vehicles will be identified.

SUSTAINABLE SITE (SS)

1. Construction Activity Pollution Prevention
   An erosion and sedimentation plan will be created and implemented during construction.

2. Site Assessment
   A site assessment will be completed for the proposed site.

3. Site Development – Protect or Restore Habitat
   A portion of the existing impervious parking lot will be replaced by a 40-foot x 135-foot public green space.

4. Open Space
   A total of 20 percent of the site will be open space available to the public and building tenants.

5. Rainwater Management
   Outside the footprint of the proposed building a combination of pervious landscape elements and a subgrade stormwater retention area are being proposed.

6. Heat Island Reduction
   Heat island effect will be reduced by replacing a portion of the existing impervious parking lot with a 40-foot x 180-foot public green space.

7. Light Pollution Reduction
   Full cut-off LED light fixtures are being proposed for both building and site lighting bollards.

WATER EFFICIENCY (WE)

1. Outdoor Water Use Reduction
   A drip irrigation system is being proposed for a portion of the landscaping requiring periodic watering.

2. Indoor Water Use Reduction
   Dual flush or low-flow toilets and other low-flow fixtures will be provided. Energy Star

3. Water Metering
   Meters will be provided for both domestic water and irrigation systems.

ENERGY AND ATMOSPHERE (EA)

1. Fundamental Commissioning and Verification
   During the design process for building systems, the level of commissioning will be established based on minimum energy performance criteria, NHHFA Technical Design and Construction Standards.

2. Minimum Energy Performance
   The project will meet or exceed minimum energy performance criteria.

3. Building-Level Energy Metering
   Once building systems are designed, building-level meters or submeters will be provided to monitor building energy and utility use.

4. Fundamental Refrigerant Management
   Any proposed refrigerants will meet the minimum criteria for refrigerant management.

5. Optimize Energy Performance
   The building envelope will be designed as a high-performance assembly to exceed minimum Energy Code requirements and minimize heating and cooling costs, while achieving a high standard of occupant comfort.

   High-Efficiency LED lighting will be used for interior and exterior fixtures.

   Energy Star Program Standards relating to indoor air quality, HVAC systems, air sealing, insulation, lighting and appliances will be required for this project.

MATERIALS AND RESOURCES (MR)

1. Storage and Collection of Recyclables
   Dedicated space in the lower level of the building will be dedicated to trash and recycling storage and processing

2. Construction and Demolition Waste Management Planning
   Construction waste will be minimized by salvaging and/or recycling materials during construction.

INDOOR ENVIRONMENTAL QUALITY (EQ)

1. Minimum Indoor Air Quality Performance
   Minimum indoor air quality performance criteria will be met ASHRAE and NHHFA standards.

2. Environmental Tobacco Smoke Control
   Smoking will be prohibited inside the building and within 25 feet from all entries, outdoor intakes and operable windows.

3. Enhanced Indoor Air Quality Strategies
   Enhanced indoor air quality strategies such as entryway systems, air filtration, and natural ventilation will be employed wherever possible.

   Residential dwelling units will have operable windows for access to fresh air.

4. Low-Emitting Materials
   Building materials with low volatile organic compound levels will be specified.

5. Construction Indoor Air Quality Management Plan
   A construction indoor air quality management plan will be developed and implemented during construction to promote the well-being of construction workers and building occupants by minimizing indoor air quality problems associated with construction.

6. Thermal Comfort
   Each residential dwelling unit will have HVAC system control by the apartment tenant.

7. Interior Lighting
   Building tenants will have individual control of lighting systems.

8. Daylight
   Habitable spaces will have access to windows for daylight.

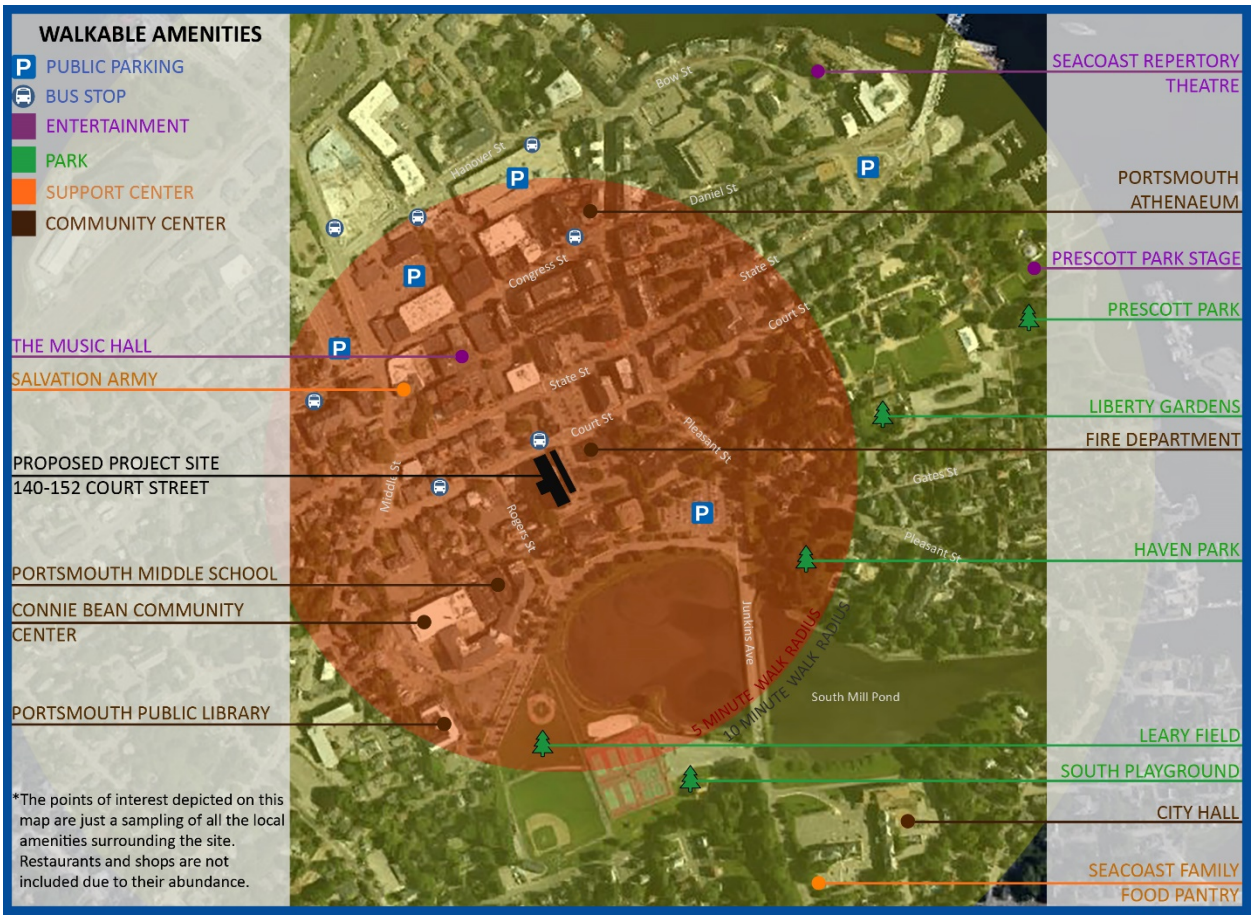
9. Quality Views
   Each residential dwelling unit will have access to views.

10. Acoustic Performance
    Acoustic and vibration separations will be provided between dwelling units at demising walls and floors.

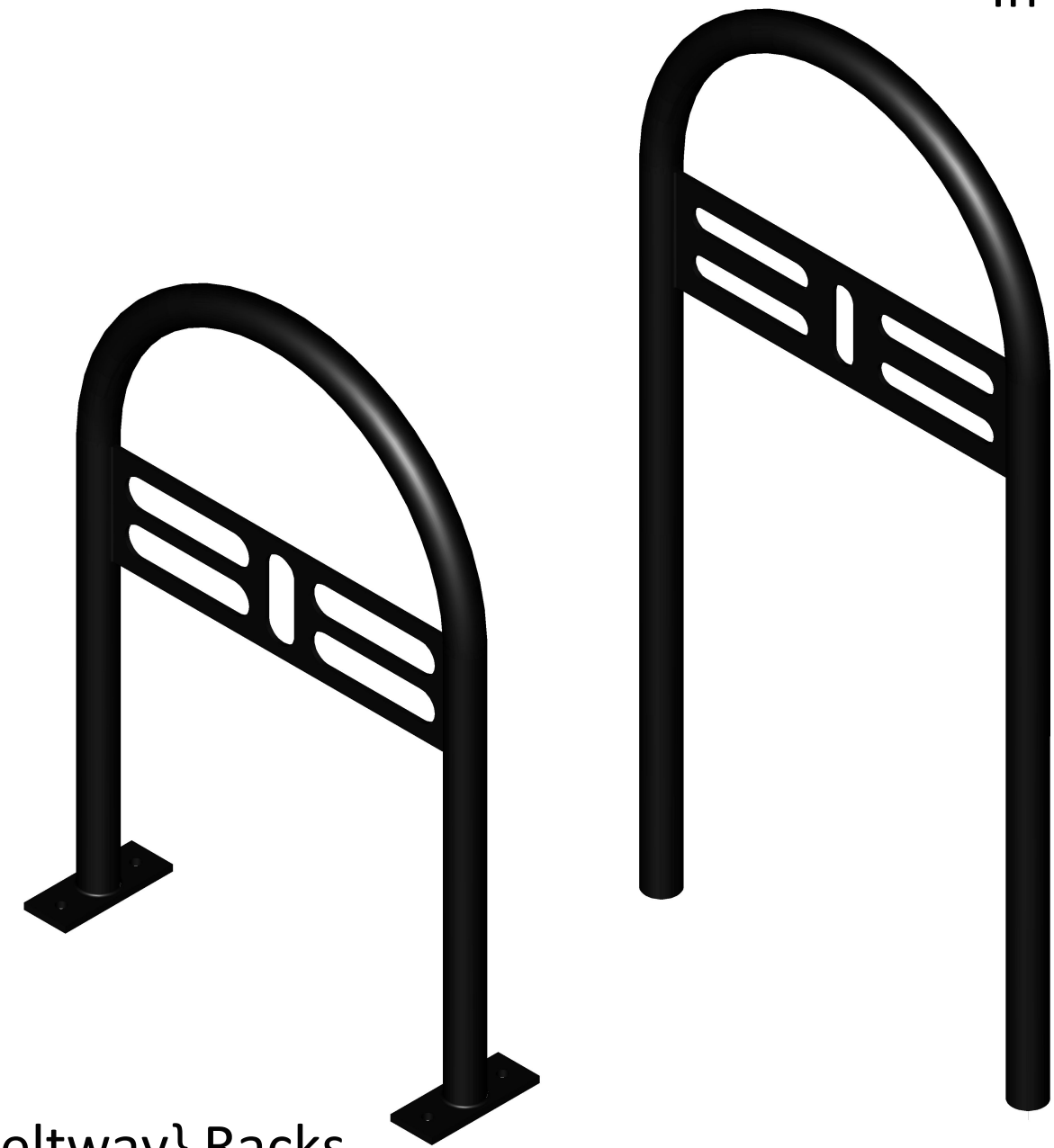
CJ ARCHITECTS

140 COURT STREET DEVELOPMENT
PORTSMOUTH HOUSING AUTHORITY
PORTSMOUTH, NH
June 18, 2018

WALKABLE AMENITIES MAP FOR 140 COURT STREET



In Ground #12116
Surface #12145



Modern {Beltway} Racks
Surface Mount / In Ground Mount

CycleSafe®
SECURE BICYCLE PARKING
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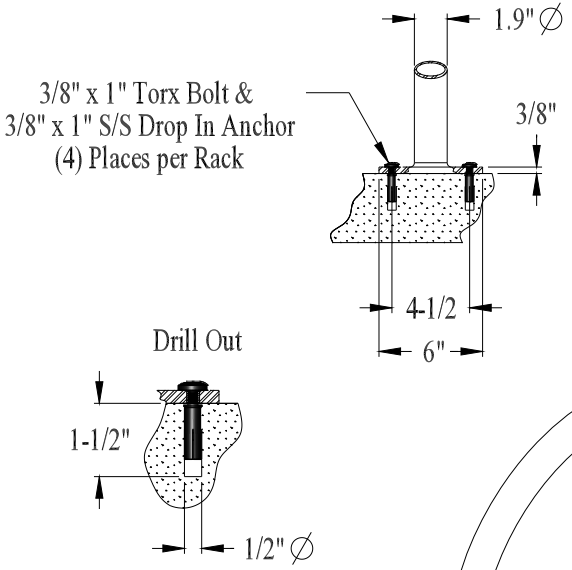
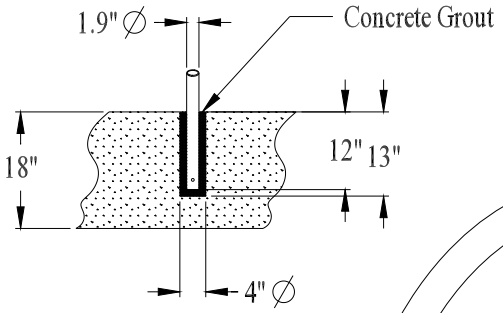
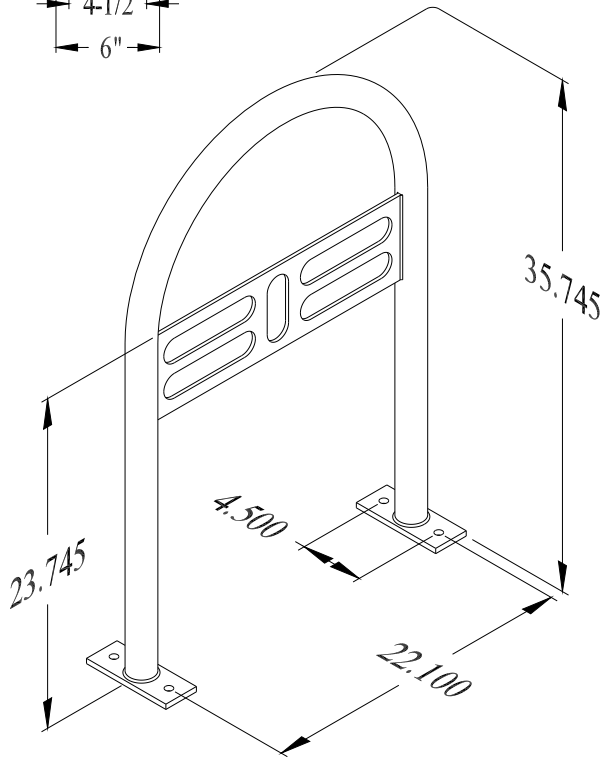
In Ground #12116
Surface #12145

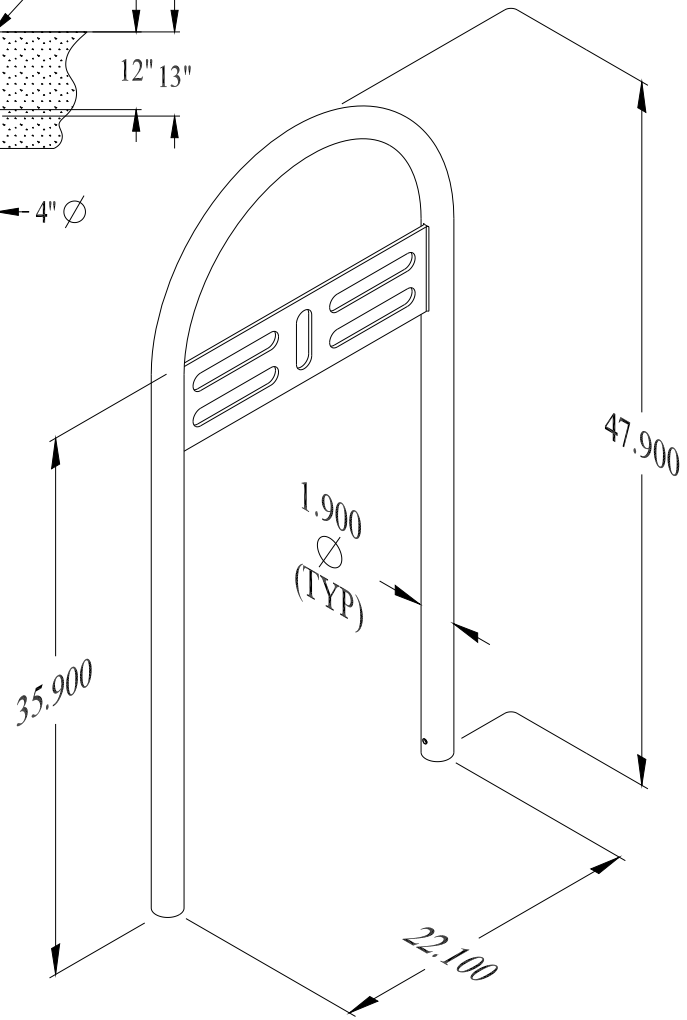
SURFACE MOUNT



IN GROUND MOUNT







Modern {Beltway} Racks
Surface Mount / In Ground Mount {Dims}

CycleSafe
SECURE BICYCLE PARKING
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auroralight™

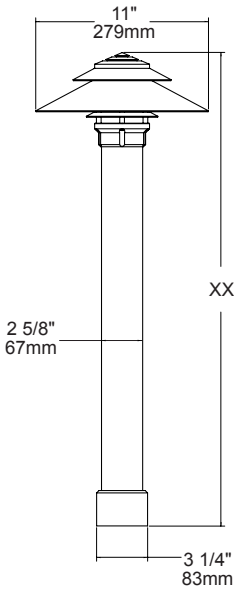
auroralight lifetime WARRANTY

Architectural SERIES™

TYPE:
CAT. #: LBD350-C11-GTL

LBD350-C11-GTL CYRANOS

GL-BLP



The **LBD350** series of LED Bollards is the latest addition to our growing line of innovative and exquisite area light luminaires. This series is available in seven elegant shade designs with three progressive sizes intended to complement our new series of LML Pendants and LWM Wall Sconces. Coupled to a brass body, our Thermally Integrated™ and Field Serviceable LED module provides superior heat dissipation, longer life and higher performance. Ideal for illuminating broad paths, driveways and open exterior spaces.

See LBD250 and LBD400 for additional size and configuration options.

Features include:

- 12 or 15 Watts
- Cree XLAMP® High Intensity (XP-L) LED
- 2700, 3000 or 4500K (CRI 80 typ.)
- Thermally Integrated™, Field Serviceable LED Module
- TRIAC Dimming to <10% typ.
- 12 VAC Electronic or Magnetic Source Compatible (or 120 VAC)
- Solid Copper and Brass Construction

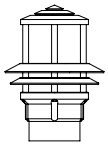
Powered by CREE LEDs

LED

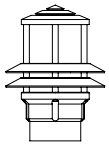
12V 120V

ida APPROVED

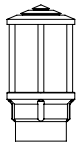
CORE STYLES



[GL] Graduated Louvers



[SL] Stacked Louvers



[NL] No Louvers

ORDERING GUIDE LBD350-C11-GTL: L (LED) BD (BOLLARD) 350 (SERIES) C (CONICAL) 11 (INCHES) GTL (GLIMMER TOP W/ LOUVER)

RED INDICATES REQUIRED FIELD

CORE
[GL] Graduated Louvers
[SL] Stacked Louvers
[NL] No Louvers

WATTAGE
[12] 12W
[15] 15W

LED
[27D] 2700K
[30D] 3000K
[45D] 4500K
[D] = Dimmable

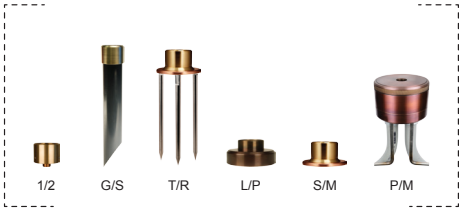
HEIGHT
[26] 26"
[32] 32"
[XX] Specify
Min: 12" Max: 48"

VOLTAGE
[12] 12V
[120]120V

BD MOUNT
[1/2] 1/2" Male Thread
[G/S] Ground Stake
[T/R] 12" Trident Spike
[S/M] Surface Mount
[L/P] Leveling Pedestal
[P/M] Pedestal Mount

NOTE: See BD Mount Guide for more options

FINISH
[NAT] Natural
[BLP] Bronze Living Patina
[BLP-XD] BLP Extra Dark
[NI] Nickel PVD



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Architectural SERIES™

TYPE:
CAT. #: LWM350-C11-GTL

LWM350-C11-GTL CYRANOS

MWM-BLP

The **LWM350** series of LED Wall Sconces is the latest addition to our growing line of innovative and exquisite wall mount luminaires. This series is available in four elegant shade designs and two progressive sizes. Its timeless design enhances architecture and garden elements such as pergolas or gazebos. Provide design continuity and use in conjunction with our LBD Bollard and LML Pendant Light series to create the perfect transition between landscape and architecture.

See LWM250 for additional size and configuration options.

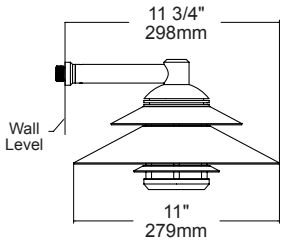
Powered by CREE LEDs

LED

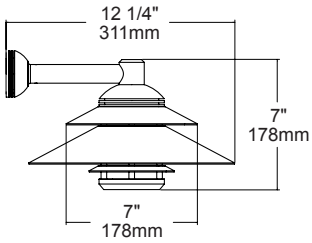
12V

Features include:

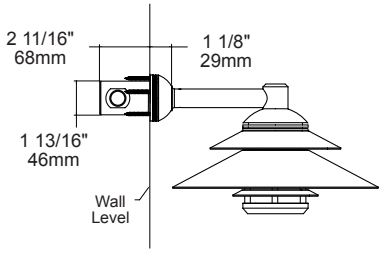
- 20 Watts
- Cree XLAMP® Extreme High Power (XHP) LED
- 2700, 3000 or 4500K (CRI 80 typ.)
- Thermally Integrated™ and Field Serviceable LED Module
- TRIAC Dimming to <10% typ.
- 12 VAC Electronic or Magnetic Source Compatible
- Solid Copper and Brass Construction



Standard Configuration



With optional MWM



With optional MJB

ORDERING GUIDE LWM350-C11-GTL: L (LED) WM (WALL MOUNT) 350 (SERIES) C (CONICAL) 11 (INCHES) GTL (GLIMMER TOP W/ LOUVER)

RED INDICATES REQUIRED FIELD

LED

[27D] 2700K
[30D] 3000K
[45D] 4500K

[D] = Dimmable

MOUNT

[MWM] Micro Wall Mount
[MJB] Micro Wall Mount w/ Micro J-Box
Provides 3 ports for multi-conduit entries

1/2 NPS CANOPIES:

[CP4] 4" Cover Plate*
[CP45] 4 1/2" Cover Plate *
[MC45] 4 1/2" Mount Canopy*
[PC60] Power Canopy (Inc. 60W 120-12V trans.)*
[SMJB] 3 1/2" Surface Mount J-Box

*Brass Escutcheon is standard. Add "C" for Copper

FINISH

[NAT] Natural
[BLP] Bronze Living Patina
[BLP-XD] BLP Extra Dark
[NI] Nickel PVD*

*When NI is selected underside will match

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StormTech® Subsurface Stormwater Management

The advanced design of StormTech's chambers allows stormwater professionals to create more profitable, environmentally sound installations. Compared with other subsurface systems, StormTech's innovative chambers offer lower overall installed costs, superior design flexibility and enhanced long-term performance.

Superior Design Flexibility for Optimal Land Use

StormTech chambers are ideal for commercial, municipal and residential applications. One of the key advantages of the StormTech chamber system is design flexibility. StormTech chambers can be configured into beds or trenches, in centralized or decentralized layouts to fit on nearly any site.

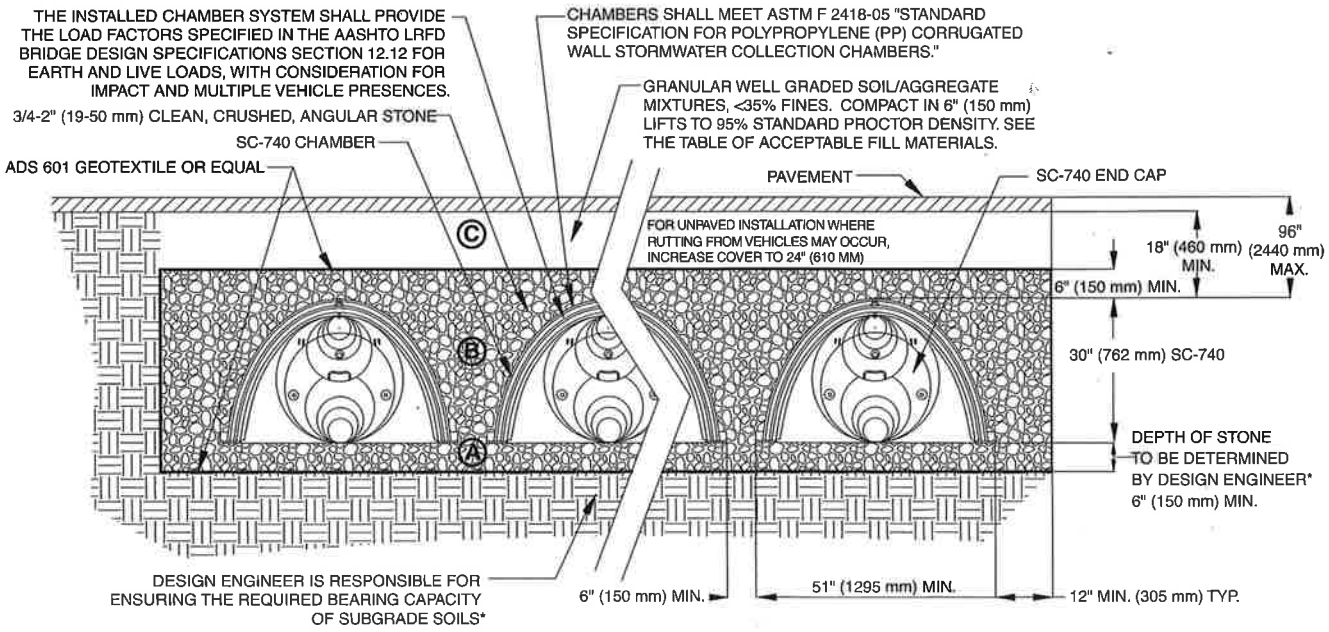
L to R: SC-310 chamber and SC-740 chamber

Product Features and Benefits

The advanced features and innovative technology of StormTech chambers streamline installations while lowering overall installed costs. StormTech chambers offer these unique advantages:

- Lightweight, two people can install chambers quickly and easily, saving time and money
- Extensive product research & development and rigorous testing ensure long term reliability and performance
- Versatile product design accommodates a wide range of site constraints with cost-effective system designs
- The chamber length can be cut in 6.5" (165 mm) increments – reducing waste and optimizing the use of available space
- Injection molded polypropylene ensures precise control of wall thickness and product consistency
- Isolator Row – a patent pending technique to inexpensively enhance total suspended solids (TSS) removal and provide easy access for inspection and maintenance
- Corrugated Arch Design – a proven geometry for structural integrity under H-20 live loads and deep burial loads, also provides high storage capacity

Typical Cross Section Detail (not to scale)



Detention-Retention-Recharge

The StormTech SC-740 chamber optimizes storage volumes in relatively small footprints by providing 2.2 ft³/ft² (0.67 m³/m²) (minimum) of storage. This can decrease excavation, backfill and associated costs. The StormTech SC-310 chamber is ideal for systems requiring low-rise and wide-span solutions. The chamber allows the storage of large volumes, 1.3 ft³/ft² (0.4 m³/m²) (minimum), at minimum depths.

StormTech SC-740 Chamber
(not to scale)

Nominal Chamber Specifications

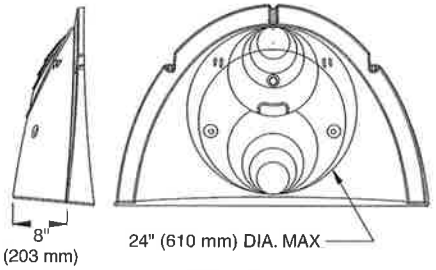
Size (L x W x H)
85.4" x 51.0" x 30.0"
(2170 x 1295 x 762 mm)

Chamber Storage
45.9 ft³ (1.30 m³)

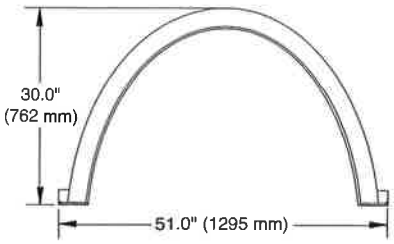
Minimum Installed Storage*
74.9 ft³ (2.12 m³)

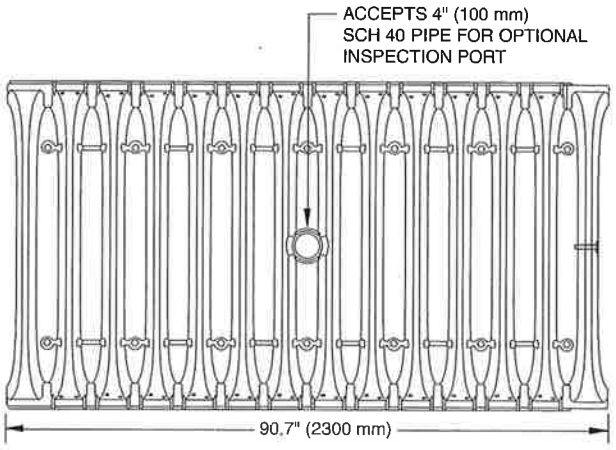
Weight
74.0 lbs (33.6 kg)

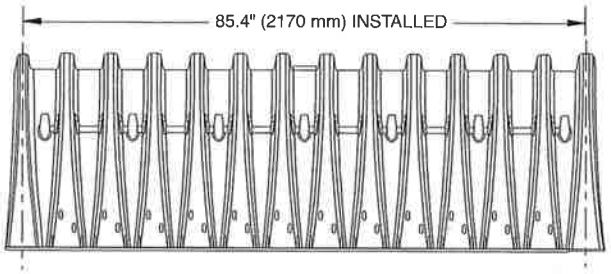
Shipping
30 chambers/pallet
60 end caps/pallet
12 pallets/truck



SC-740 end cap







SC-740 chamber

StormTech SC-310 Chamber
(not to scale)

Nominal Chamber Specifications

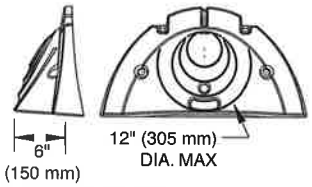
Size (L x W x H)
85.4" x 34.0" x 16.0"
(2170 x 864 x 406 mm)

Chamber Storage
14.7 ft³ (0.42 m³)

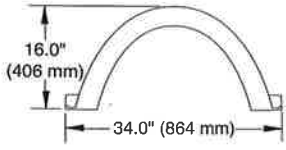
Minimum Installed Storage*
31.0 ft³ (0.88 m³)

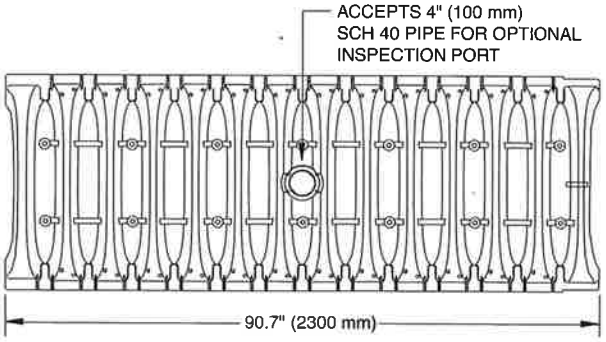
Weight
37.0 lbs (16.8 kg)

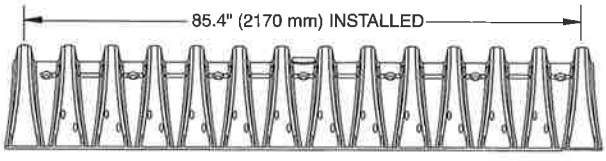
Shipping
41 chambers/pallet
108 end caps/pallet
18 pallets/truck



SC-310 end cap







SC-310 chamber

*This assumes a minimum of 6 inches (150 mm) of stone below, above and between chamber rows.

StormTech®

Detention • Retention • Recharge

Subsurface Stormwater Management℠

Isolator™ Row O&M Manual

StormTech® Chamber System for Stormwater Management

1.0 The Isolator™ Row

1.1 INTRODUCTION

An important component of any Stormwater Pollution Prevention Plan is inspection and maintenance. The StormTech Isolator Row is a patent pending technique to inexpensively enhance Total Suspended Solids (TSS) removal and provide easy access for inspection and maintenance.

Looking down the Isolator Row from the manhole opening, woven geotextile is shown between the chamber and stone base.

1.2 THE ISOLATOR™ ROW

The Isolator Row is a row of StormTech chambers, either SC-740 or SC-310 models, that is surrounded with filter fabric and connected to a closely located manhole for easy access. The fabric-wrapped chambers provide for settling and filtration of sediment as storm water rises in the Isolator Row and ultimately passes through the filter fabric. The open bottom chambers and perforated sidewalls allow storm water to flow both vertically and horizontally out of the chambers. Sediments are captured in the Isolator Row protecting the storage areas of the adjacent stone and chambers from sediment accumulation.

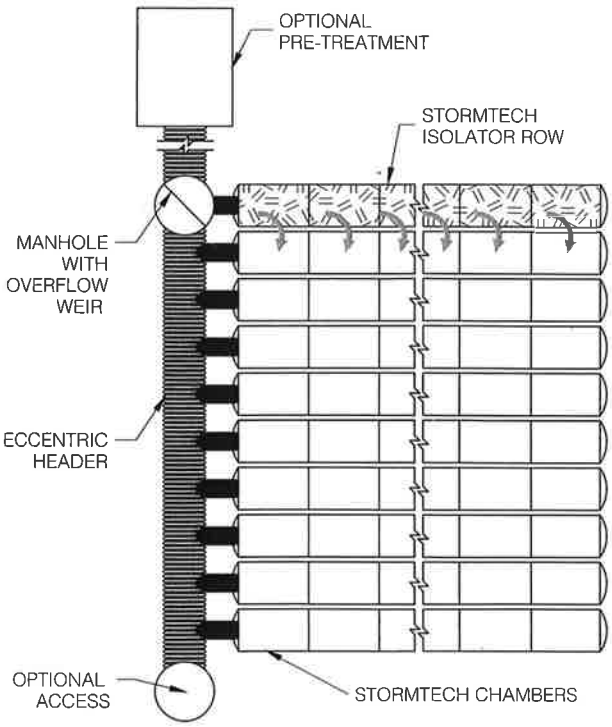
Two different fabrics are used for the Isolator Row. A woven geotextile fabric is placed between the stone and the Isolator Row chambers. The tough geotextile provides a media for storm water filtration and provides a durable surface for maintenance operations. It is also designed to prevent scour of the underlying stone and remain intact during high pressure jetting. A non-woven fabric is placed over the chambers to provide a filter media for flows passing through the perforations in the sidewall of the chamber.

The Isolator Row is typically designed to capture the "first flush" and offers the versatility to be sized on a volume basis or flow rate basis. An upstream manhole not only provides access to the Isolator Row but typically includes a high flow weir such that storm water flowrates or volumes that exceed the capacity of the Isolator Row overtop the over flow weir and discharge through a manifold to the other chambers.

The Isolator Row may also be part of a treatment train. By treating storm water prior to entry into the chamber system, the service life can be extended and pollutants such as hydrocarbons can be captured. Pre-treatment best management practices can be as simple as deep sump catch basins, oil-water separators or can be innovative storm water treatment devices. The design of the treatment train and selection of pretreatment devices by the design engineer is often driven by regulatory requirements. Whether pretreatment is used or not, the Isolator Row is recommended by StormTech as an effective means to minimize maintenance requirements and maintenance costs.

Note: See the StormTech Design Manual for detailed information on designing inlets for a StormTech system, including the Isolator Row.

StormTech Isolator Row with Overflow Spillway
(not to scale)



2.0 Isolator Row Inspection/Maintenance

2.1 INSPECTION

The frequency of Inspection and Maintenance varies by location. A routine inspection schedule needs to be established for each individual location based upon site specific variables. The type of land use (i.e. industrial, commercial residential), anticipated pollutant load, percent imperviousness, climate, etc. all play a critical role in determining the actual frequency of inspection and maintenance practices.

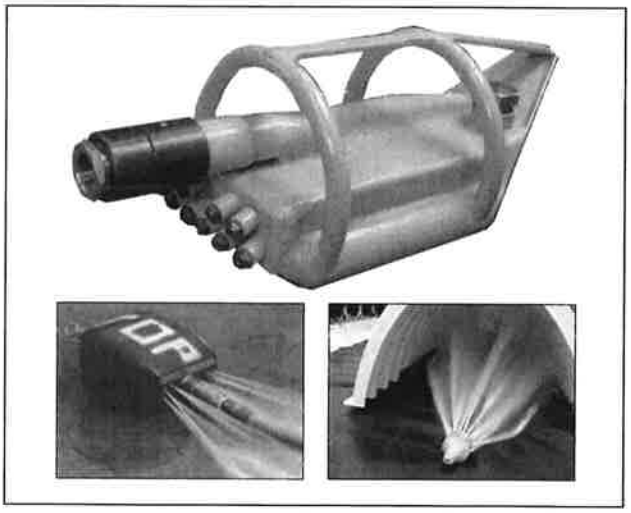
At a minimum, StormTech recommends annual inspections. Initially, the Isolator Row should be inspected every 6 months for the first year of operation. For subsequent years, the inspection should be adjusted based upon previous observation of sediment deposition.

The Isolator Row incorporates a combination of standard manhole(s) and strategically located inspection ports (as needed). The inspection ports allow for easy access to the system from the surface, eliminating the need to perform a confined space entry for inspection purposes.

If upon visual inspection it is found that sediment has accumulated, a stadia rod should be inserted to determine the depth of sediment. When the average depth of sediment exceeds 3 inches throughout the length of the Isolator Row, clean-out should be performed.

2.2 MAINTENANCE

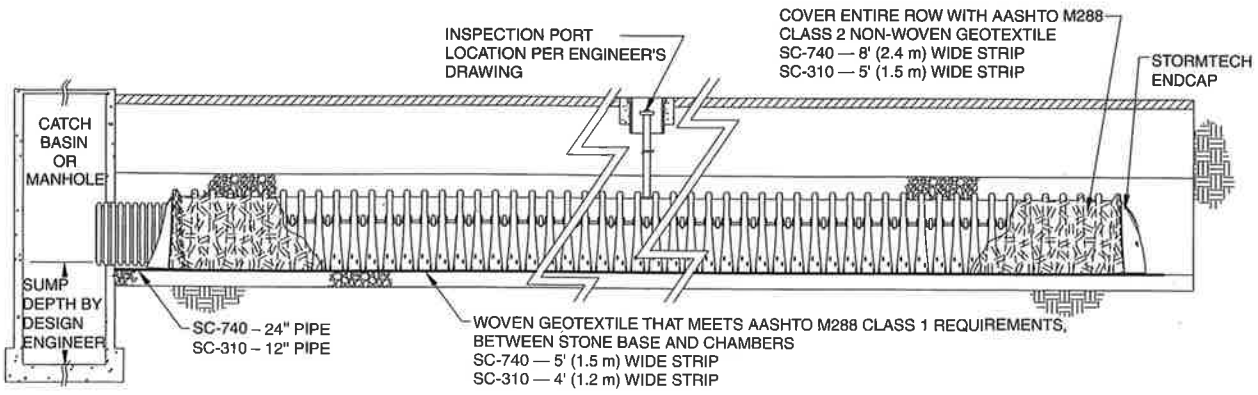
The Isolator Row was designed to reduce the cost of periodic maintenance. By "isolating" sediments to just one row, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout. If entry into the manhole is required, please follow local and OSHA rules for a confined space entries.



Examples of culvert cleaning nozzles appropriate for Isolator Row maintenance. (These are not StormTech products.)

Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45" are best. Most JetVac reels have 400 feet of hose allowing maintenance of an Isolator Row up to 50 chambers long. **The JetVac process shall only be performed on StormTech Isolator Rows that have AASHTO class 1 woven geotextile (as specified by StormTech) over their angular base stone.**

StormTech Isolator Row (not to scale)



3.0 Isolator Row Step By Step Maintenance Procedures

Step 1) Inspect Isolator Row for sediment

A) Inspection ports (if present)

i. Remove lid from floor box frame

ii. Remove cap from inspection riser

iii. Using a flashlight and stadia rod, measure depth of sediment and record results on maintenance log.

iv. If sediment is at, or above, 3 inch depth proceed to Step 2. If not proceed to step 3.

B) All Isolator Rows

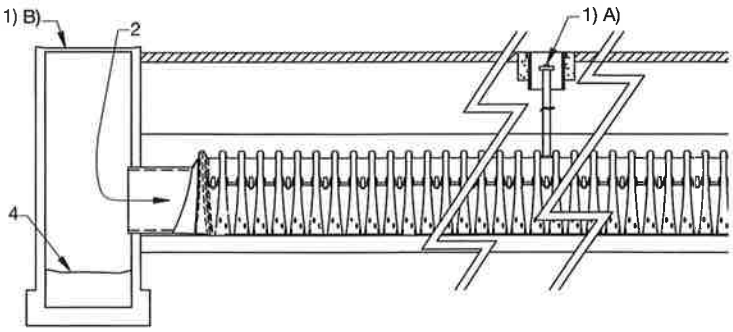
i. Remove cover from manhole at upstream end of Isolator Row

ii. Using a flashlight, inspect down Isolator Row through outlet pipe

1. Mirrors on poles or cameras may be used to avoid a confined space entry
2. Follow OSHA regulations for confined space entry if entering manhole

iii. If sediment is at or above the lower row of sidewall holes (approximately 3 inches) proceed to Step 2. If not proceed to Step 3.

StormTech Isolator Row (not to scale)



Step 2) Clean out Isolator Row using the JetVac process

A) A fixed culvert cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable

B) Apply multiple passes of JetVac until backflush water is clean

C) Vacuum manhole sump as required

Step 3) Replace all caps, lids and covers, record observations and actions

Step 4) Inspect & clean catch basins and manholes upstream of the StormTech system

Sample Maintenance Log

Date	Stadia Rod Readings		Sediment Depth (1) - (2)	Observations/Actions	Inspector
	Fixed point to chamber bottom (1)	Fixed point to top of sediment (2)			
3/15/01	6.3 ft.	none		New installation. Fixed point is CI frame at grade	djm
9/24/01		6.2	0.1 ft.	Some grit felt	sm
6/20/03		5.8	0.5 ft.	Mucky feel, debris visible in manhole and in Isolator row, maintenance due	rv
7/7/03	6.3 ft.		0	System jetted and vacuumed	djm

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20 Beaver Road, Suite 104 | Wethersfield | Connecticut | 06109

860.529.8188 | 888.892.2694 | fax 866.328.8401 | www.stormtech.com

EVERSOURCE
ENERGY

June 13, 2018

1700 Lafayette Road
Portsmouth, NH 03801

Michael J Busby
603-436-7708 x555-5678
michael.busby@eversource.com

Craig Welch
Portsmouth Housing Authority
245 Middle Street
Portsmouth, NH 03801

Dear Mr. Welch:

I am responding to your request to confirm the availability of electric service for the proposed 140 Court Street Workforce Housing project for the Portsmouth Housing Authority in Portsmouth, NH.

The proposed project consists of a 4-story building with 64 residential units and parking space below grade. The proposed development will be constructed along Court Street.

The developer will be responsible for the installation of all underground facilities and infrastructure required to service the new building. The service will be as shown on attached marked up Utility Plan C5. The proposed building service will be fed from a primary loop via two separate overhead poles and will be looped through existing transformers and a new manhole (switch box) as depicted on utility plan C5. The developer will work with Eversource to obtain all necessary easements and licenses for the proposed underground facilities listed above.

This letter serves as confirmation that Eversource has sufficient capacity in the area to provide service to this proposed development. The cost of extending service to the aforementioned location and any associated infrastructure improvements necessary to provide service will be borne by the developer unless otherwise agreed upon.

The attached drawing titled "Sheet C5 Utility Plan" dated 6/1/2018, shows transformer locations to service your proposed project.

Eversource approves the locations shown; assuming the final installed locations meet all clearances, physical protection, and access requirements as outlined in PSNH's "Requirements For Electric Service Connections" pamphlets.

If you require additional information or I can be of further assistance please do not hesitate to contact me at our Portsmouth Office, 603-436-7708 Ext. 555-5678

Respectfully.

Michael J. Busby, PE
NH Eastern Regional Engineering and Design Manager, Eversource

cc: (via e-mail)
Karl Douglas, Eastern Region Operations Manager, Eversource
Mary Jo Hanson, Field Supervisor, Electric Design, Eversource

MAIL TO Bill

Return To:
Legal Department
City Hall
1 Junkins Ave.
Portsmouth, NH 03801

001792

2014 JAN 16 PM 12:09

ROCKINGHAM COUNTY
REGISTRY OF DEEDS

DRAIN EASEMENT DEED

127 Parrott Avenue LLC, a New Hampshire limited liability company with an address of 127 Parrott Avenue, Portsmouth, New Hampshire (hereinafter "Grantor") for consideration paid grants to the **CITY OF PORTSMOUTH**, a municipal body politic, having a mailing address of 1 Junkins Avenue, Portsmouth, New Hampshire (hereinafter "Grantee") with QUITCLAIM COVENANTS, the following permanent easement rights with respect to the Grantor's property situate at 127 and 129 Parrott Avenue Portsmouth, Rockingham County, New Hampshire (the "Premises") (Assessor's Map 115 Lot 3 and 3-1) within the " Easement Area" described herein.

1. Permanent Easement Area: The Permanent Easement Area, as shown on a Plan entitled "Easement Plan Tax Map 115 Lots 3 & 3-1 Property of 127 Parrott Avenue LLC" for property at 127 and 129 Parrott Avenue, Portsmouth, Rockingham County, New Hampshire, owned by 127 Parrott Avenue, LLC, prepared by MSC Civil Engineers & Land Surveyors, Inc. dated October 18, 2013 which is recorded in the Rockingham County Registry of Deeds as Plan D-38097 and being more particularly described as follows:

Beginning at a point along the northwesterly property line that is in common with land now or formerly of the Portsmouth Housing Authority, located S 62° 50' 36" W a distance of 77.72 feet from a granite bound located at the northeasterly corner of land of Grantor and the northwesterly corner of land now or formerly of State of New Hampshire;

Thence running South 46° 16' 29" West a distance of 115.62' to a point;

Thence turning and running South 26° 56' 29" East a distance of 153.84' to the concrete walk on the northwesterly sideline of Parrott Avenue;

Thence turning and running along the Parrott Avenue right of way along a curve to the left with a radius of 1200.00' feet, a chord bearing of South 61° 43' 26" West and an arc length of 15.05 feet to a point;

Thence turning and running North 26° 56' 29' West a distance of 94.02' to a point;

Thence turning and running North 61° 36' 30" East a distance of 1.10' to a point;

Thence turning and running North 28° 24' 50" West a distance of 12.00' to a point;

Thence turning and running North 61° 36' 30" East a distance of 4.99' to a point;

Thence turning and running North 28° 24' 50" West a distance of 10.03'to a point;

Thence turning and running South 61° 35' 10" West a distance of 5.52' to a point;

Thence turning and running North 26° 56' 29" West a distance of 6.96'to a point;

Thence turning and running North 64° 00' 05" East a distance of 1.53' to a granite bound;

Thence running along land now or formerly of Thomas J. Kaufhold, North 28° 33' 25" West a distance of 43.38' to a point;

Thence turning and running, North 46° 16' 28" East a distance of 76.02' to a point along land now or formerly of Portsmouth Housing Authority;

Thence turning and running North 62° 50' 36 East a distance of 52.60' to the point of beginning.

The Easement Area containing 3,732 square feet.

2. Purpose and Rights. The Grantee shall have a non-exclusive perpetual, permanent, uninterrupted and unobstructed easement and right of way in, under, across and over the Permanent Easement Area for the purpose of installing, operating, maintaining, inspecting, removing, repairing and replacing a drain line with its associated pipes, valves and equipment. The Grantee shall have the right to remove obstructions including pavement and curbing interfering with the activities authorized herein and to take such other actions as may be reasonably necessary, useful or convenient for the enjoyment of the easement rights herein granted. The Grantee agrees to coordinate the removal of any obstruction with Grantor and to preserve access to the driveways and parking areas to the extent reasonably possible and to limit disruptions of regular business activities conducted on the Premises.

3. Grantee's Responsibility to Restore. Disturbed areas within the Permanent Easement Area shall be back-filled and restored to pre-disturbance condition. Usual and typical landscaping materials that do not reasonably interfere with the operation of the sewer and drain lines (such as shrubs and grasses) and that are removed by the Grantee during the course of exercising its rights under this instrument shall be restored at the Grantee's expense. Paving and curbing and similar materials shall also be restored at the Grantee's expense.

4. Grantor's Retained Rights. Grantor retains the right to freely use and enjoy its interest in the Permanent Easement Area insofar as the exercise thereof does not endanger or interfere with the purposes of this instrument. Grantor shall not, however, erect any building, shed, deck or other structure other than existing pavement, curbing, sidewalks, lawn and shrubbery within the Permanent Easement Area, substantially change the grade or slope, or install any pipes, within the Permanent Easement Area without prior written consent of Grantee.

5. Personal Property. It is agreed that the pipes, manholes and related sewer or drain appurtenances, installed within the Temporary Easement, whether fixed to the realty or not, shall be and remain the property of the Grantee.

6. Easement to Run with Land. All rights and privileges, obligations and liabilities created by this instrument shall inure to the benefit of, and be binding upon, the heirs, devises, administrators, executor, successors and assignees of the Grantee and of the Grantor, the parties hereto and all subsequent owners of the Premises and shall run with the land.

MEANING AND INTENDING to convey an easement over a portion of the Premises conveyed to the within Grantor by deed of Mark Wentworth Home dated December 18, 2012 and recorded on December 19, 2012 in Book 5390, Page 1204 of the Rockingham County Registry of Deeds.

This is an exempt transfer per RSA 78-B:2(I).

DATED this 4 day of November, 2013.

127 Parrott Avenue, LLC

By: _____
R. Timothy Phoenix, Manager

STATE OF NEW HAMPSHIRE
COUNTY OF ROCKINGHAM

The foregoing instrument was acknowledged before me this 4th day of November, 2013 by its Manager (officer title) R. Timothy Phoenix (name).

_____
Justice of the Peace/Notary Public
Printed Name:
My Commission Expires

SAMANTHA L. WIBEL
NOTARY PUBLIC
STATE OF NEW HAMPSHIRE
MY COMMISSION EXPIRES MAY 25, 2016

H:/jferrini/easements/127ParottAve.

2014 JAN 16 PM 12:09

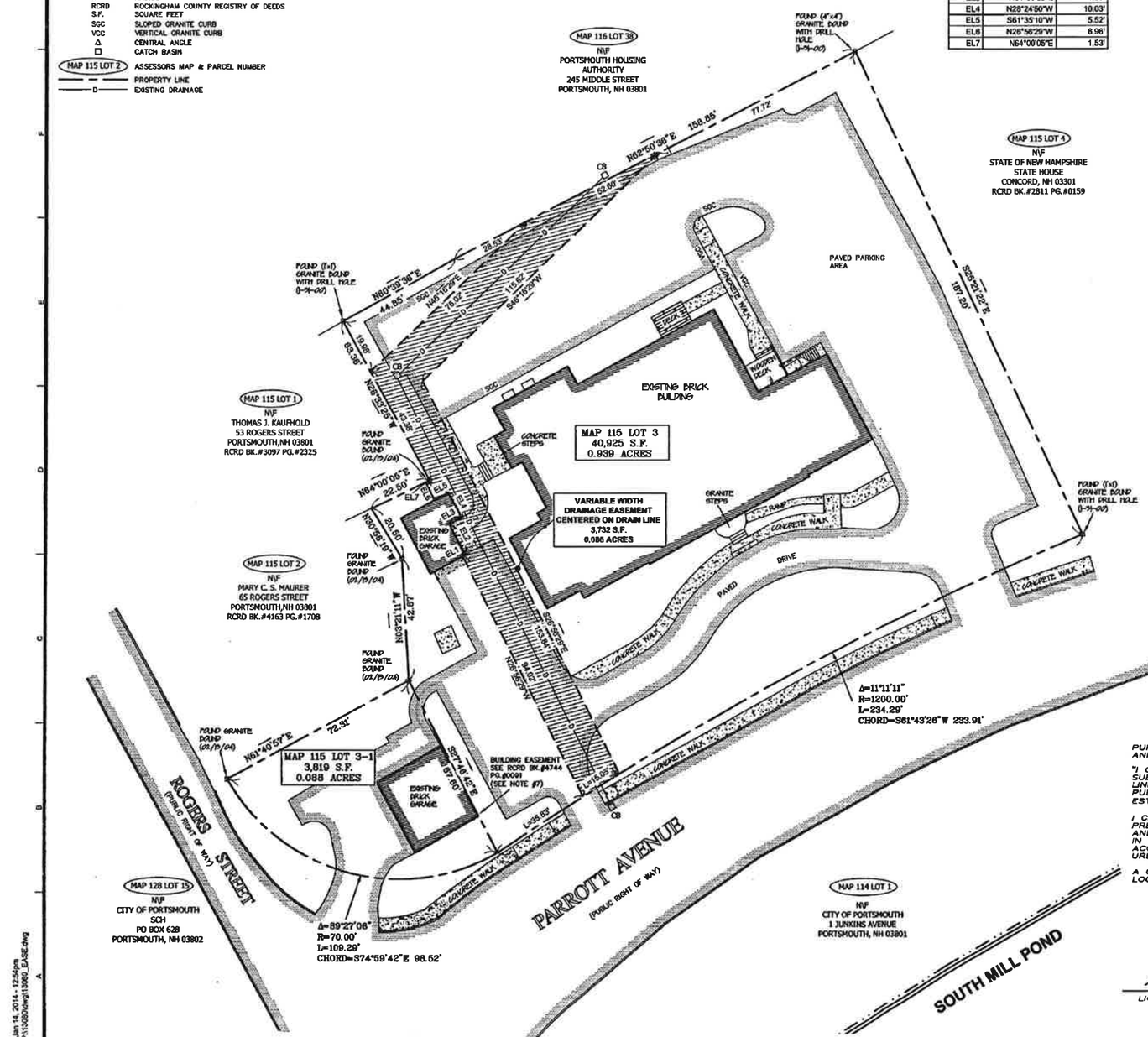
001791

C/H
L-CHIP
ROA235578

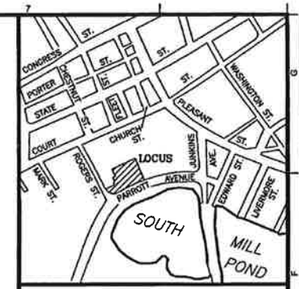
LEGEND

BK.2562/PG.2783	BOOK NO./PAGE NO.
L	LENGTH
CB	CATCH BASIN
N/F	NOW OR FORMERLY
R	RADIUS
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
S.F.	SQUARE FEET
SGC	SLOPED GRANITE CURB
VCC	VERTICAL GRANITE CURB
Δ	CENTRAL ANGLE
□	CATCH BASIN
MAP 115 LOT 2	ASSESSORS MAP & PARCEL NUMBER
	PROPERTY LINE
——D——	EXISTING DRAINAGE

EASEMENT LINE TABLE		
LINE	BEARING	LENGTH
EL1	N61°36'30"E	1.10'
EL2	N28°24'50"W	12.00'
EL3	N61°36'30"E	4.99'
EL4	N28°24'50"W	10.03'
EL5	S61°35'10"W	5.52'
EL6	N26°56'29"W	8.96'
EL7	N64°00'05"E	1.53'



PLAN REFERENCE #1



LOCATION PLAN

NOTES:

1. THE PARCELS ARE LOCATED IN THE MIXED RESIDENTIAL OFFICE (MRO) ZONE AND THE HISTORIC DISTRICT OVERLAY.
2. THE PARCELS ARE AS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 115 AS LOTS 3 & 3-1.
3. THE PARCELS ARE LOCATED IN ZONE X, FLOOD ZONE X & FLOOD HAZARD ZONE AE (ELEV. 9) AS SHOWN ON FLOOD INSURANCE RATE MAP NUMBER 33015C0259E, WITH AN EFFECTIVE DATE OF MAY 17, 2005.
4. OWNER OF RECORD:
   127 PARROTT AVENUE, LLC
   127 PARROTT AVENUE
   PORTSMOUTH, NH 03801
   RCRD BK.#5390 PG.#1204 & BK.#5390 PG.#1206
5. ZONING REQUIREMENTS: ZONE MRO

MINIMUM LOT DIMENSIONS	
LOT AREA	7,500 S.F.
LOT AREA PER DWELLING UNIT	7,500 S.F.
CONTINUOUS STREET FRONTAGE	100'
DEPTH	80'
MINIMUM YARD DIMENSIONS	
FRONT	5'
SIDE	10'
REAR	15'
MAXIMUM STRUCTURE DIMENSIONS	
STRUCTURE HEIGHT	40'
ROOF APPURTENANCE HEIGHT	10'
BUILDING COVERAGE	40%
MINIMUM OPEN SPACE	25%

6. TOTAL PARCEL AREA:

MAP 115 LOT 3	MAP 115 LOT 3-1
40,925 S.F.	3,819 S.F.
0.939 ACRES	0.088 ACRES

7. BUILDING EASEMENT WILL BE NOT APPLICABLE UPON LOT CONSOLIDATION.
8. FEATURES SHOWN HEREON ARE A COMPILATION OF PLAN REFERENCES 10 & 11.

PLAN REFERENCES:

1. "ALTA/ACSM LAND TITLE SURVEY FOR CITIZENS BANK OF NEW HAMPSHIRE, 134 PLEASANT STREET, COUNTY OF ROCKINGHAM, PORTSMOUTH, NH.", BY MILLETTE, SPRAGUE & COLWELL, INC., DATED: JUNE 9, 1998. REVISION 1 DATED: 6/15/98. RCRD PLAN #D-25343.
2. "COURTHOUSE LOT, SUBDIVISION OF LAND PREPARED FOR CITY OF PORTSMOUTH, PORTSMOUTH, NH.", BY THOMAS F. MORAN, INC., DATED: JULY 1, 1988, REVISION 1 DATED: 9/15/88. RCRD PLAN #D-18880.
3. "PLAN OF BOUNDARY LINE PARROT AVENUE PARKING LOT FOR CITY OF PORTSMOUTH IN PORTSMOUTH, NH.", BY PARKER SURVEY ASSOC., INC., DATED: APRIL 1984. RCRD PLAN #C-13957.
4. "PLAN OF LOT FOR PORTSMOUTH TRUST CO., PORTSMOUTH, NH.", BY JOHN W. DURGIN, DATED: AUGUST 1975. PLAN IS NOT RECORDED.
5. "PLAN OF LOTS NOS. 142-146 COURT ST., PORTSMOUTH, N.H.", BY JOHN W. DURGIN CIVIL ENGINEER, DATED: JUNE 1954. RCRD PLAN #02288.
6. "PLAN OF LOT NO. 130 COURT ST., PORTSMOUTH, N.H.", BY JOHN W. DURGIN CIVIL ENGINEER, DATED: JULY 1937. RCRD PLAN #0992.
7. SUSAN J. WENTWORTH EST., PORTSMOUTH, N.H.", BY JOHN W. DURGIN CIVIL ENGINEER, DATED: MARCH 1940. RCRD PLAN #0937.
8. "SKETCH MAP OF LOT NO. 166 COURT ST., PORTSMOUTH, N.H.", BY JOHN W. DURGIN CIVIL ENGINEERS, DATED: MARCH 1942. RCRD PLAN #01098.
9. "PLAN OF LAND, PORTSMOUTH, N.H. FOR HOME FOR AGED WOMEN" BY JOHN W. DURGIN CIVIL ENGINEERS DATED FEBRUARY 1978.
10. "OWNER: MARK WENTWORTH HOME 346 PLEASANT STREET, PORTSMOUTH, NH 03801, APPLICANT: 127 PARROTT AVENUE, LLC, 402 STATE STREET, PORTSMOUTH, NH 03801, PROJECT: THE LAW OFFICE OF HOEFLE PHOENIX, GORMLEY & ROBERTS PA, MAP 115 LOTS 3 & 3-1, 127 & 129 PARROTT AVENUE, PORTSMOUTH, NH 03801, GRADING AND DRAINAGE PLAN ; SHEET NUMBER: C3" BY ALTUS ENGINEERING, INC. DATED NOVEMBER 12, 2012 WITH REVISION 3 DATED 11/12/12.
11. "EXISTING FEATURES PLAN, ALTUS ENGINEERING, INC., TAX MAP 115 LOTS 3 & 3-1, PROPERTY OF MARK WENTWORTH HOME & MARK H. WENTWORTH HOME FOR THE CHRONIC INVALIDS, 127 & 129 PARROTT AVENUE, COUNTY OF ROCKINGHAM, PORTSMOUTH, NEW HAMPSHIRE" BY MSC CIVIL ENGINEERS & LAND SURVEYORS, INC. DATE SEPTEMBER 8, 2009 WITH REVISION 1 DATED 03/20/12.

PURSUANT TO NEW HAMPSHIRE REVISED STATUTES ANNOTATED 676:18, II, III AND IV AND 672:14:

"I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN."

I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED BY THOSE UNDER MY DIRECT SUPERVISION AND ARE THE RESULT OF A FIELD SURVEY CONDUCTED IN OCTOBER, 2013. THIS SURVEY CONFORMS TO THE ACCURACY REQUIREMENTS FOR A NEW HAMPSHIRE URBAN SURVEY.

A COPY OF THIS PLAN HAS BEEN FILED WITH THE LOCAL PLANNING BOARD.

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR
No. 993
STEVEN M. OLES

LICENSED LAND SURVEYOR

1-19-2014
DATE

(IN FEET)

REV.	DATE	REVISED NOTES	DESCRIPTION
1	01/14/2014	DRAWN BY: IID	CHECKED BY: JCC

EASEMENT PLAN
TAX MAP 115 LOTS 3 & 3-1
PROPERTY OF
127 PARROTT AVENUE, LLC
127 PARROTT AVENUE
PORTSMOUTH, NEW HAMPSHIRE
COUNTY OF ROCKINGHAM

MSC
CIVIL ENGINEERS & LAND SURVEYORS, INC.
170 COMMERCE WAY
SUITE 102
PORTSMOUTH, NH 03801
PHONE: 603-431-2222
FAX: 603-431-0910
www.mscengineers.com

PROJECT NO.: 13080
DATE: 10/16/2013
SCALE: 1" = 20'

Jan 14, 2014 - 12:56pm
P:\13080\dwg\13080_EASE.dwg

D-38097

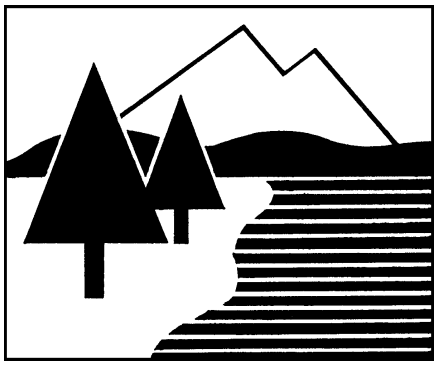
DRAINAGE ANALYSIS

SITE REDEVELOPMENT

140 COURT STREET

PORTSMOUTH HOUSING AUTHORITY

PORTSMOUTH, NH



18 JUNE, 2018

Ambit Engineering, Inc.

Civil Engineers and Land Surveyors
200 Griffin Road, Unit 3
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(Ambit Job Number 2790)

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EXECUTIVE SUMMARY

The hydrologic modeling utilized for this analysis uses the “Extreme Precipitation” values for rainfall from The Northeast Regional Climate Center (Cornell University).

This drainage analysis examines the pre-development (existing) and post-development (proposed) stormwater drainage patterns for the proposed renovation / redevelopment of an existing five story, 9,446 square foot building and the construction of a new 11,973 square foot building and associated site improvements at 140 Court Street in Portsmouth, NH. The site is shown on the City of Portsmouth Assessor’s Tax Map 116 as Lots 38 and 37. The project proposes to relocate the lot lines between the two lots. Portsmouth Housing Authority will retain Lot 38 to support the proposed redevelopment. The total proposed size of new lot 38 is 62,559 square-feet (1.4361 acres). The total proposed size of new lot 37 is 2,004 square-feet (0.0460 acres).

The new and renovated buildings will be serviced by public water and sewer. The development has the potential to increase stormwater runoff to adjacent properties, and therefore must be designed in a manner to prevent that occurrence. This will be done primarily by capturing stormwater runoff and routing it through appropriate stormwater facilities, designed to ensure that there will be no increase in peak runoff from the site as a result of this project.

SITE REDEVELOPMENT

140 COURT STREET

PORTSMOUTH HOUSING AUTHORITY

PORTSMOUTH, NH

INTRODUCTION / PROJECT DESCRIPTION

This drainage report is designed to assist the owner, planning board, contractor, regulatory reviewer, and others in understanding the impact of the proposed development project on local surface water runoff and quality. The project site is shown on the City of Portsmouth, NH Assessor's Tax Map 116 as Lots 38 and 37.

Bounding the site to the north and west are single and multi-family residential properties. Bounding the site to the east is the Portsmouth Fire Department. Bounding the site to the south are the Rockingham County Family Court and the Portsmouth District Court. The property is located in the Character District (CD4). A vicinity map is included in the Appendix to this report.

The proposed development will construct a new residential building, new parking area, and other associated improvements such as a utilities and landscaping.

This report includes information about the existing site and the proposed development necessary to analyze stormwater runoff and to design any required mitigation. The report includes maps of pre-development and post-development watersheds, sub-catchment areas and calculations of runoff. The report will provide a narrative of the stormwater runoff and describe numerically and graphically the surface water runoff patterns for this site. Proposed stormwater management and treatment structures and methods will also be described, as well as erosion and sediment control practices. To fully understand the proposed site development the reader should also review a complete site plan set in addition to this report.

METHODOLOGY

This report uses the US Soil Conservation Service (SCS) Method for estimating stormwater runoff. The SCS method is published in The National Engineering Handbook (NEH), Section 4 "Hydrology" and includes the Technical Release No. 20, (TR-20) "Computer Program for Project Formulation Hydrology", and Technical Release No. 55 (TR-55) "Urban Hydrology for Small Watersheds" methods. This report uses the HydroCAD version 10.0 program, written by

HydroCAD Software Solutions LLC, Chocorua, N.H., to apply these methods for the calculation of runoff and for pond modeling.

Time of Concentration (Tc) is calculated by entering measured flow path data such as flow path type, length, slope and surface characteristics into the HydroCAD program. For the purposes of this report, a minimum time of concentration of 5 minutes is used.

The storm events used for the calculations in this report are the 10-year and 50-year (24-hour) storms. Watershed basin boundaries have been delineated using topographic maps prepared by Ambit Engineering and field observations to confirm.

SITE SPECIFIC INFORMATION

Based on the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), Soil Survey of Rockingham County, New Hampshire, and confirmed by field exploration conducted by Ambit Engineering, Inc., the site is made up of one soil type:

799 – Urban land – Canton Complex (3-15% slopes), well drained with a typical depth to restrictive feature of more than 80 inches. This soil has a Hydrologic Soil Group (HSG) classification of A, with a Low runoff class.

The physical characteristics of the site consist of (3-15%) grades that generally slope from the north to the south. Elevations on the site range from 10 to 20 feet above sea level. The existing site is developed and includes 3 existing buildings with paved parking. Vegetation around the developed portion of the lot consists of established grasses, shrubs and trees.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) number 33015C0259E (effective date May 17, 2005), the project site is located in Zone X and is determined to be outside of the 0.2% annual chance floodplain. A copy of the FIRM map is included in the Appendix.

PRE-DEVELOPMENT DRAINAGE

The majority of the existing site drains via overland flow from the front of the lots along Court Street at the north towards the rear of the site to the south. Runoff is collected in a series of catch basins that enter a closed drainage system and then enter the combined sewer system. There is no existing stormwater detention or treatment on the site. There are portions to the rear of the site that flow to an existing catch basin that flow off site to a private closed drainage system.

In the pre-development condition, the site has been analyzed as ten subcatchments (ES1, ES1a, ES2, ES2a, ES3, ES4, ES5, ES6, ES7 and ES8) based on localized topography and discharge location. Subcatchment ES1 is the western most paved parking and driveway entrance to the site and flows overland directly to a catch basin located at the end of the driveway. Subcatchment

ES2 is the rooftop runoff of the western most building and flows by pipe to a catch basin located at the southeastern corner of this building. Subcatchment ES1a is a small strip of land between an existing curb and the property line to the west. Subcatchment ES2a is a small depressed area within the center driveway between the two existing buildings which flows to a yard drain and into the closed drainage system for the site. Subcatchment ES3 is a combination of grass and paved area in the northeast corner of the western most building and flows to a catch basin within the center driveway which then enters the closed drainage system for the site. Subcatchment ES4 is a grassed yard to the southwest of the western most building and flows to a catch basin within the center driveway which then enters the closed drainage system for the site. Subcatchment ES5 is the eastern most portion of the paved parking to the south and west of the Central Fire Station which flows to a catch basin along the southern boundary of the site which then leaves the site to a private closed drainage system to the south. Subcatchments ES6, ES7 and ES8 flow along the frontage with Court Street which flows off site to the existing closed drainage system in Court Street. The final outflow from ES8 is Discharge Point 2 (DP2).

Table 1: Pre-Development Watershed Basin Summary

Watershed Basin ID	Basin Area (SF)	Tc (MIN)	CN	10-Year Runoff (CFS)	50-Year Runoff (CFS)	Design Point
ES1	8,698	2.8	87	1.26	2.07	DP1
ES1a	667	0.0	61	0.04	0.09	DP5
ES2	32,053	2.5	97	5.26	8.06	DP1
ES2a	196	0.1	98	0.04	0.05	DP1
ES3	2,371	0.9	68	0.19	0.41	DP1
ES4	2,604	0.8	61	0.15	0.36	DP1
ES4a	491	0.0	61	0.03	0.07	DP4
ES5	33,193	2.5	96	5.41	8.31	DP3
ES6	2,738	1.5	98	0.47	0.72	DP2
ES7	1,263	0.6	98	0.22	0.34	DP2
ES8	4,051	1.2	98	0.17	1.08	DP2

POST-DEVELOPMENT DRAINAGE

The proposed development has been designed to match the pre-development drainage patterns to the greatest extent feasible. In the post-development condition, the site has been analyzed as fourteen separate watersheds (PS1, PS1a, PS2, PS4, PS4a PS5, PS5a, PS5aa, PS5aaa, PS5b, PS5bb, PS6, PS7 and PS8 based on localized topography and discharge locations. Basins PS1a and PS4a are small relatively inconsequential areas that drain offsite. PS1 (driveway), PS2 (Existing Rooftop) and PS4 (driveway) are similar in size and area as in the existing condition and discharge to Discharge Point 3 (DP3). Basins PS5a (New Rooftop), PS5aa, PS5aaa (Both Landscaped Areas) all flow to Infiltration System # 1. This system consists of 23 StormTech Chambers (SC-740). Basins PS5b (New Rooftop) and PS5bb (Landscaped Area) flow to Infiltration System # 2. This system consists of 24 StormTech Chambers (SC-740). Outflows from System #1 and System #2 enter a combined system and discharge together with outflows from PS1, PS3 and PS4 to Discharge Point 3 (DP3). Basin PS5 is primarily runoff from the existing Fire Station and parking to the rear of the Fire Station. Basin PS5 flow to Discharge Point 1 (Combined Sewer). Flow from PS6, PS7 and PS8 all flow to a closed drainage system in Court Street and are quantified together at Discharge Point 2 (DP2).

Table 2: Post-Development Watershed Basin Summary

Watershed Basin ID	Basin Area (SF)	Tc (MIN)	CN	10-Year Runoff (CFS)	50-Year Runoff (CFS)	Design Point
PS1a	13,467	520	81	0.09	0.16	DP1
PS1b	5,162	5.0	80	0.40	0.72	DP1
PS1c	2,141	5.0	53	0.03	0.12	DP1
PS1d	4,207	5.0	59	0.12	0.32	DP1
PS1e	2,325	520	91	0.02	0.03	DP1
PS1f	7,076	520	77	0.06	0.12	DP1
Ps1	1,562	5.0	98	0.18	0.27	DP1

Since the existing conditions at the site are predominantly impervious surface, and no treatment or dedicated infiltration systems currently exist for the site, providing the proposed treatment by

means of the two StormTech Stormwater Chamber and infiltration systems represents a vast improvement on the water quality of the runoff.

Table 3 shows a summary of the comparison between pre-developed flows and post-developed flows for the design point.

Table 3: Pre-Development to Post-Development Comparison

	Q10 (CFS)		Q50 (CFS)	
Design Point	**Pre**	**Post**	**Pre**	**Post**
DP 1	6.84	4.88	10.84	7.69
DP2	1.41	1.41	2.12	2.13
DP3	5.41	3.68	8.31	6.30
DP4	0.03	0.07	0.07	0.17
DP5	0.04	0.04	0.09	0.09

EROSION AND SEDIMENT CONTROL PRACTICES

The erosion potential for this site as it exists is low due to the existing vegetation and the built-up nature of the surrounding sites. During construction, the major potential for erosion is wind and stormwater runoff. The contractor will be required to inspect and maintain all necessary erosion control measures, as well as installing any additional measures as required. All erosion control practices shall conform to "The Stormwater Management and Erosion Control Handbook for Urban and Developing Areas in New Hampshire." Some examples of erosion and sediment control measures to be utilized for this project during construction may include:

- Silt Soxx (or approved alternative) located at the toe of disturbed slopes
- Stabilized construction entrance at access point to the site
- Temporary mulching and seeding for disturbed areas
- Spraying water over disturbed areas to minimize wind erosion

After construction, permanent stabilization will be accomplished by permanent seeding, landscaping and surfacing the access drives and parking areas with either compacted gravel or asphalt paving.

CONCLUSION

The proposed development has been designed to be less than the pre-development drainage pattern for the majority of the major flows that are anticipated. There is a very minor increase represented by Discharge Point 5 (DP5). With the design of two Stormwater infiltration systems to slow the release of storm water, the post-development runoff rates are reduced to be below the

pre-development runoff rates and will provide treatment. Erosion and sediment control practices will be implemented for both the temporary condition during construction and for final stabilization after construction. Therefore, there are no negative impacts to downstream receptors or adjacent properties anticipated as a result of this project. There is also no negative impact to the City of Portsmouth storm drainage system.

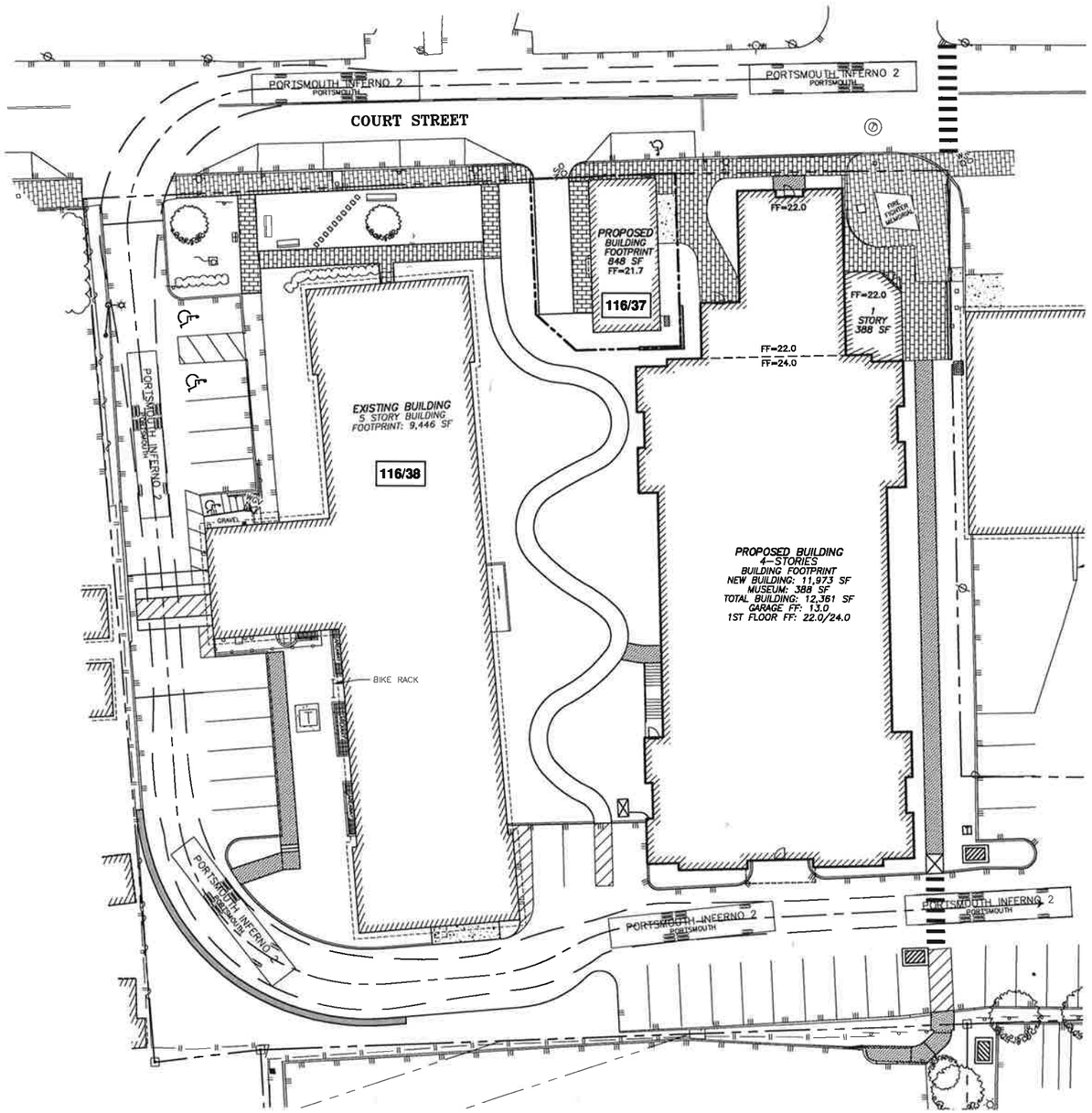
REFERENCES

1. City of Portsmouth, NH. Site Plan Review Regulations amended December 18, 2014.

2. Comprehensive Environmental Inc. and New Hampshire Department of Environmental Services. *New Hampshire Stormwater Manual (Volumes 1, 2 and 3)*, December 2008 (Revision 1.0).

3. Minnick, E.L. and H.T. Marshall. *Stormwater Management and Erosion and Sediment Control Handbook for Urban and Developing Areas in New Hampshire*, prepared by Rockingham County Conservation District, prepared for New Hampshire Department of Environmental Services, in cooperation with USDA Soil Conservation Service, August 1992.

4. HydroCAD Software Solution, LLC. *HydroCAD Stormwater Modeling System Version 10.0* copyright 2013.



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PORTSMOUTH HOUSING AUTHORITY 140 COURT STREET PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	6/18/18

REVISIONS

SCALE: 1'=40' JUNE 2018

PORTSMOUTH FIRETRUCK TURNING EXHIBIT

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