PROPOSED DEVELOPMENT
145 BREWERY LANE
PORTSMOUTH, NEW HAMPSHIRE
PERMIT PLANS

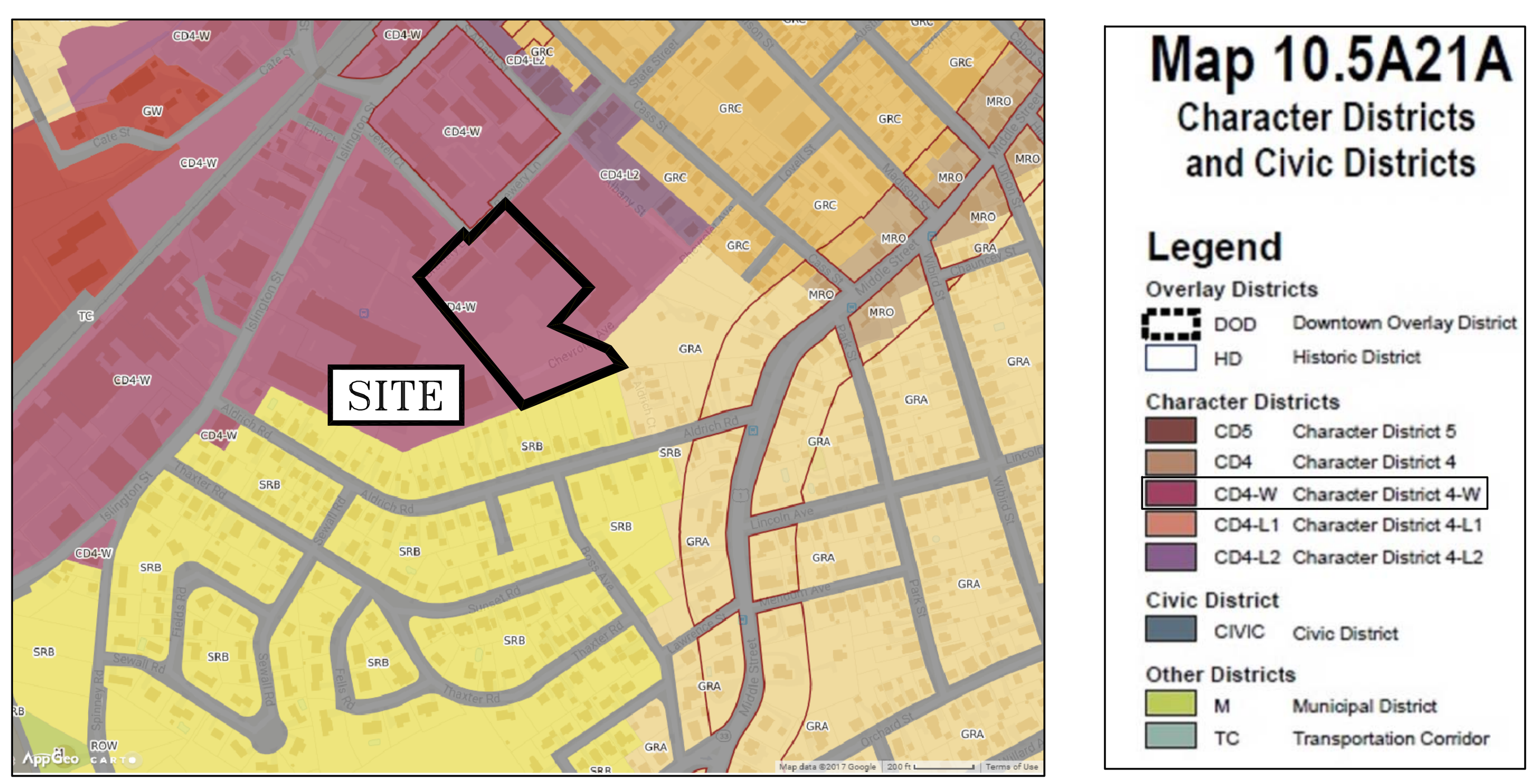
PERMIT LIST:
NHDES AOT: TO BE SUBMITTED
NHDES SEWER DISCHARGE PERMIT: TO BE SUBMITTED

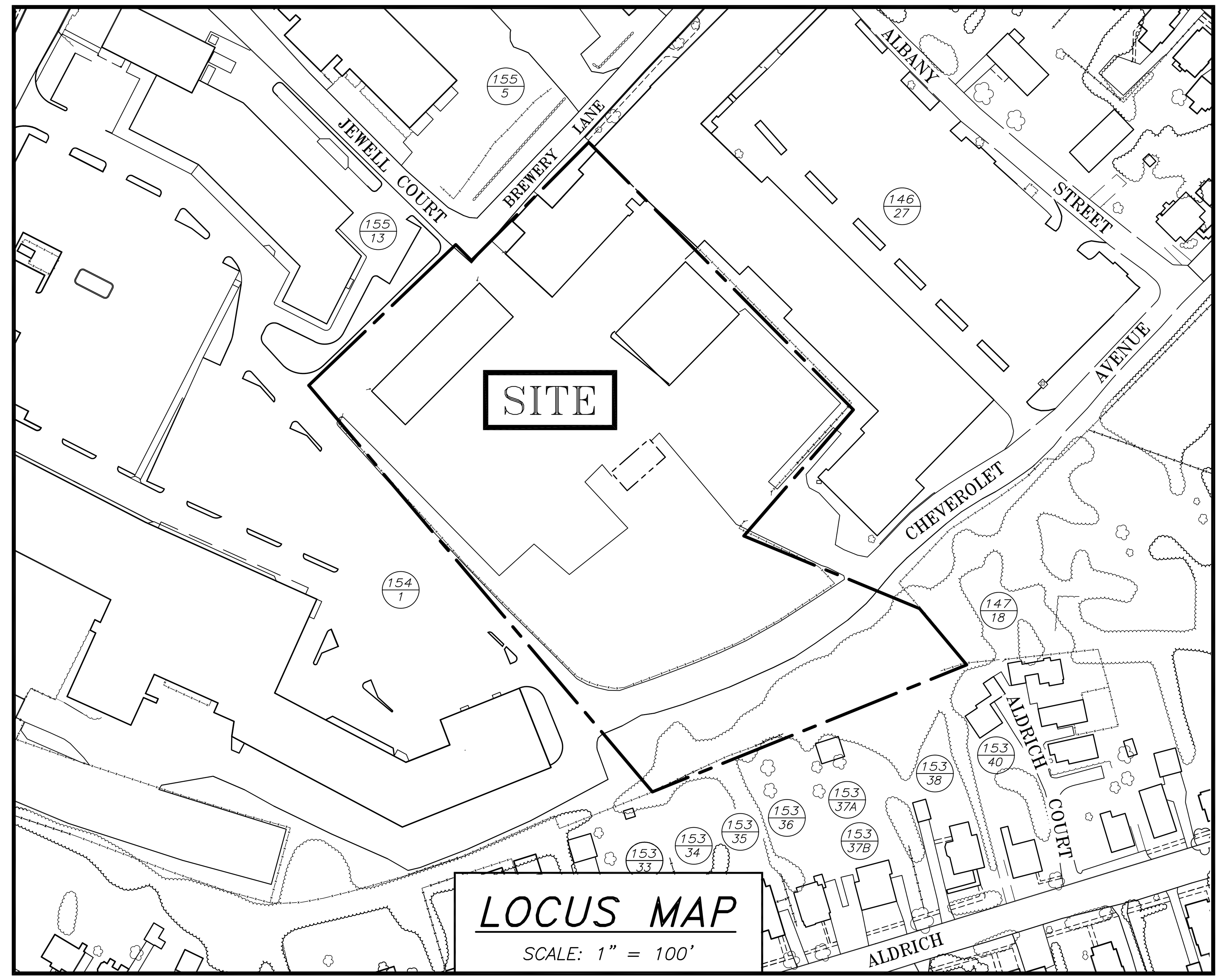
OWNER/APPLICANT/BUILDER:
PORTSMOUTH WEST END DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857
TEL. (603) 868-5995

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

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





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

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
	SMH	SEWER MANHOLE
	DMH	DRAIN MANHOLE
	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

INDEX OF SHEETS

UTILITY CONTACTS

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

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: JOHN ADAMS (SEWER)
ATTN: TERRY DESMARAIS (WATER)

COMMUNICATIONS:
CONSOLIDATED
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

PROPOSED DEVELOPMENT
145 BREWERY LANE
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: 20 MARCH 2018

830.01

J:\JOBS\JN800s\JN830s\JN830\2017 Site Plans Chinburg\Plans & Specs\Site\830.01CV01.dwg, COVER

EASEMENTS OF RECORD:

1. A POSSIBLE PARTY WALL AGREEMENT WITH THE OWNER OF LOT U-46/27 (SHOWN ON THE SURVEY PLAN AS BEING OWNED BY GARY DZIAMA, TRUSTEE OF THE MALT HOUSE EXCHANGE REALTY TRUST).
2. RIGHTS, IF ANY, OF UNKNOWN PARTIES, FOR RAILROAD LINES AND/OR RAILROAD SPUR TRACKS, THE LOCATION OF THE TRACKS AND SPURS BEING SHOWN ON A PLAN ENTITLED "PROPERTY OF THE FRANK JONES BREWING CO., LTD., PORTSMOUTH, NH" DATED OCTOBER, 1926, PREPARED BY JOHN W. DURGIN, AND RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAN #0308.
3. THE RIGHTS REFERENCED IN PARAGRAPH TWO ARE CURRENTLY THE SUBJECT OF A PETITION TO QUIET TITLE AND/OR EMINENT DOMAIN PROCEEDINGS.
4. RIGHTS TO BE RESERVED BY THE CITY OF PORTSMOUTH TO OCCUPY THE PROPERTY PURSUANT TO THE TERMS OF A LEASE EXECUTED BY THE CITY AND THE SACO AVENUE PROFESSIONAL BUILDING, INC.
5. A RESERVATION TO THE CITY OF PORTSMOUTH OF A PERMANENT EASEMENT FOR PEDEATRIAN OR VEHICULAR ACCESS AS WELL AS THE PLACEMENT OF UTILITIES AND FOR ALL RELATED PURPOSES ACROSS THE FOLLOWING DESCRIBED PARCELS OF LAND. (SEE DEED SCHEDULE A & B) THE CITY RESERVES THE RIGHT, AT ITS SOLE DISCRETION, TO HAVE THE ABOVE DESCRIBED PARCELS DEDICATED AND ACCEPTED AS PUBLIC STREETS.
6. THE CITY OF PORTSMOUTH RESERVES A PERMANENT EASEMENT TO ENTER ONTO THE PROPERTY FOR MAINTENANCE OF THE WATER/SEWER MAINS. ABUTTING PROPERTIES THAT PRESENTLY FLOW SANITARY OR STORM DRAINAGE ACROSS THE PROPERTY INTO THESE MAINS SHALL HAVE THE RIGHT TO CONTINUE TO DO SO. SHOULD PROJECT DEVELOPMENT REQUIRE THAT THE MAINS BE RELOCATED, THEN THIS EXPENSE SHALL BE BORNE SOLELY BY SACO AVENUE PROFESSIONAL BUILDING, INC, AND THE RELOCATION SHALL BE SUBJECT TO THE APPROVAL OF CITY OF PORTSMOUTH.
7. SIREN EASEMENT AGREEMENT: RCRD 3910/694 TO FPL ENERGY SEABROOK, LLC. RIGHT TO INSTALL, MAINTAIN REPAIR AND REMOVE SIREN EQUIPMENT W/ASSOCIATED ELECTRIC LINES AND EQUIPMENT ON THE WESTERLY SIDE OF PROPERTY.
8. UTILITY EASEMENT RCRD 3528/1129 TO VERIZON NEW ENGLAND, INC. A 10' X 15' AREA ADJACENT TO VERIZON MANHOLE #6042 FOR THE PURPOSE OF CONSTRUCTING A CONCRETE PAD AND INTERFACE CABINET AND 15' WIDE STRIPS OF LAND FOR LAYING OF CABLES.
9. TEMPORARY UTILITY EASEMENT 5046/1105
10. AMENDMENT TO CONSERVATION EASEMENT 5126/942
12. SIDEWALK EASEMENT 5288/112, D-37118

CONSERVATION EASEMENT NOTES:

1. CONSERVATION PURPOSES

A. THE PROPERTY WHICH IS THE SUBJECT OF THIS EASEMENT IS TO BE USED IN PERPETUITY EXCLUSIVELY FOR THE FOLLOWING CONSERVATION PURPOSES:
I. THE PROPERTY WILL BE RETAINED FOREVER IN ITS UNDEVELOPED, NATURAL VEGETATIVE STATE AND OPEN SPACE CONDITION.
II. THE PREMISES IS DESIGNED TO ACT AS BOTH A VISUAL AND NOISE BUFFER BETWEEN PROPERTY TO BE CONVEYED TO SACO AVENUE PROFESSIONAL BUILDING, INC. BY THE CITY OF PORTSMOUTH AND RESIDENTIAL PROPERTIES WHICH ABUT IT AND WHICH ARE LOCATED ON ALDRICH STREET AND ALDRICH COURT.
THE CONSERVATION RESTRICTIONS WHICH WILL ENCUMBER THE PROPERTY ARE AS FOLLOWS:

2. USE LIMITATIONS AND DUTIES

A. THE PROPERTY WHICH IS SUBJECT TO THIS EASEMENT SHALL BE MAINTAINED IN PERPETUITY AS OPEN SPACE WITHOUT THERE BEING CONDUCTED THEREON ANY INDUSTRIAL OR COMMERCIAL ACTIVITIES; SUCH ACTIVITIES SHALL INCLUDE BUT NOT LIMITED TO, PARKING OR STORAGE OF MAN MADE OR NATURAL MATERIALS.
B. THE PROPERTY SHALL NOT BE SUBDIVIDED OR OTHERWISE DIVIDED INTO PARCELS OF SEPARATE DISTINCT OWNERSHIP.
C. NO STRUCTURE OR IMPROVEMENT SHALL BE CONSTRUCTED ON THE LAND.
D. NO REMOVAL, FILLING, OR OTHER DISTURBANCES OF SOIL SURFACE, NOR ANY CHANGES IN TOPOGRAPHY, SURFACE OR SUBSURFACE WATER SYSTEMS, WETLANDS, OR NATURAL HABITATS SHALL BE ALLOWED.
E. NO OUTDOOR ADVERTISING STRUCTURES, SUCH AS SIGNS AND BILLBOARDS SHALL BE DISPLAYED ON THE PROPERTY.
F. THERE SHALL BE NO MINING, QUARRYING, EXCAVATION OR EXTRACTION OF ROCKS, MINERALS, GRAVEL, SAND, TOPSOIL, OR OTHER SIMILAR MATERIALS ON THE PROPERTY. NO SUCH ROCKS, MINERALS, GRAVEL, SAND, TOPSOIL, OR OTHER SIMILAR MATERIALS SHALL BE REMOVED FROM THE PROPERTY.
G. THERE SHALL BE NO DUMPING, INJECTION, BURNING, OR BURIAL OF MAN MADE MATERIALS OR MATERIALS THEN KNOWN TO BE ENVIRONMENTALLY HAZARDOUS (INCLUDING VEHICLE BODIES OR PARTS). NO NEW CEMETERIES OR BURIAL GROUNDS SHALL BE LOCATED ON THE PROPERTY.
H. THE USE OF ALL MOTOR VEHICLES SHALL BE PROHIBITED. IN ADDITION, ALL WALKWAYS, SEATING AREAS, AND RECREATIONAL AREAS SHALL BE PROHIBITED.
I. NO TREE CUTTING OF ANY KIND SHALL TAKE PLACE, NOR SHALL THE VEGETATIVE UNDERGROWTH BE REMOVED, NOR SHALL THE TREE BRANCHES BE LIMBED SO AS TO FORM A CANOPY OF TREES. THE SOLE EXCEPTION TO THIS RULE IS WHEN, PURSUANT TO THE ADVICE OF A QUALIFIED ARBORIST, A RECOMMENDATION IS MADE TO CUT DEAD TREES OR LIMBS IN ORDER TO PROTECT THE SAFETY OF THE PUBLIC. NO CUTTING SHALL BE DONE EXCEPT WITH THE APPROVAL OF THE CITY OF PORTSMOUTH. ADDITIONAL PLANTS MAY BE INCORPORATED INTO THE EXISTING VEGETATIVE STATE, HOWEVER, THESE SHALL ONLY BE PERMITTED WITHIN TWENTY FEET OF THE AREA DEPICTED AS CHEVROLET AVENUE.
J. THE CITY OF PORTSMOUTH SHALL MAINTAIN THE PREMISES SO AS TO KEEP IT REASONABLY CLEAR OF DEBRIS AND RUBBISH.

3. BENEFITS AND BURDENS

A. THE BURDEN OF THE USE OF LIMITATIONS AND DUTIES CREATED HEREBY SHALL RUN WITH THE PROPERTY AND SHALL BE ENFORCEABLE AGAINST ALL FUTURE OWNERS, AND TENANTS IN PERPETUITY. THE RESTRICTIONS SHALL BE ENFORCEABLE BY THE RESIDENTS OF ALDRICH STREET/ALDRICH COURT AND/OR THE CITY OF PORTSMOUTH THROUGH ITS CITY COUNCIL.

4. MISCELLANEOUS

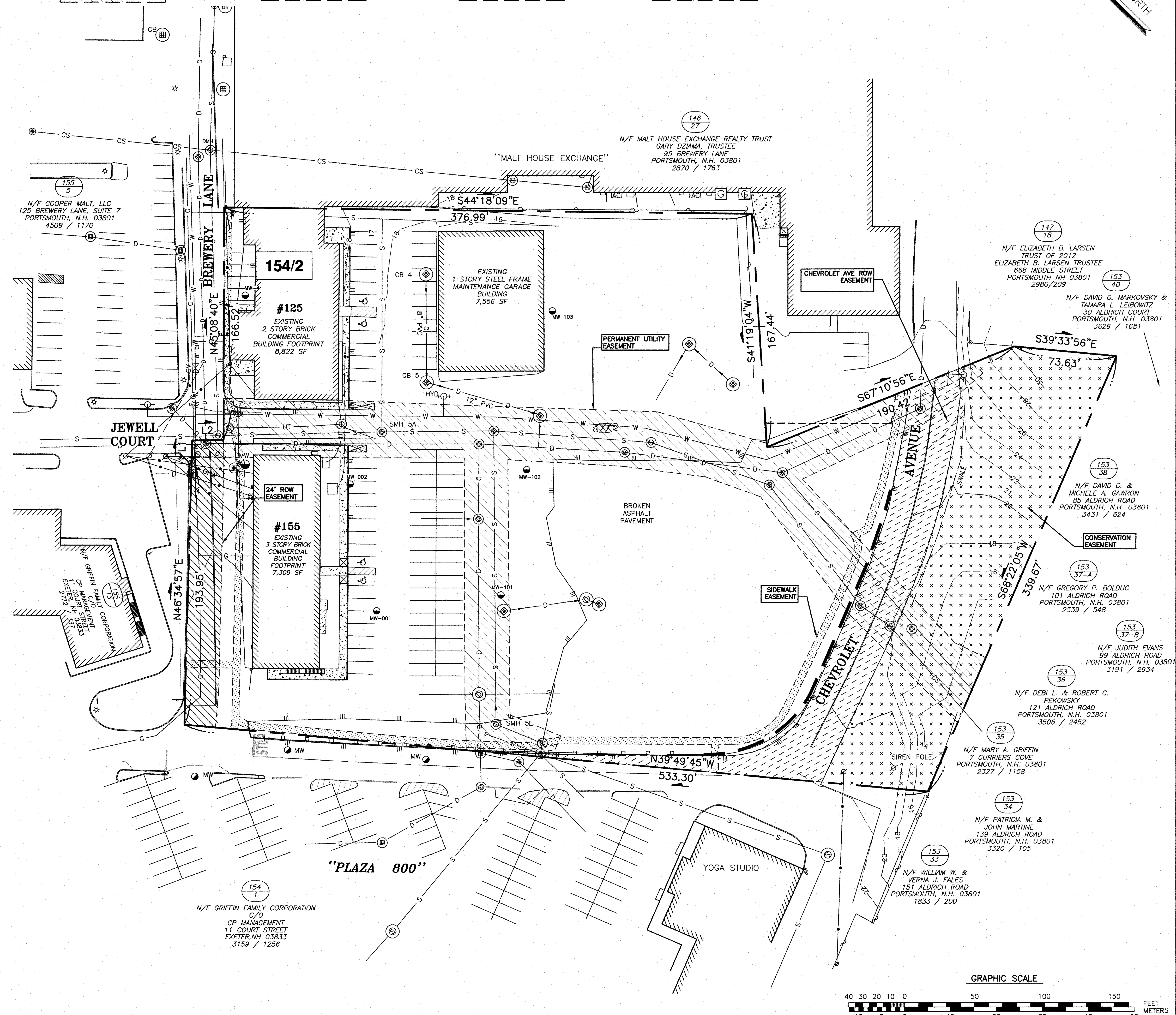
A. THE CITY OF PORTSMOUTH SHALL HAVE THE RIGHT TO INSPECT THE SUBJECT PROPERTY FROM TIME TO TIME TO ASCERTAIN COMPLIANCE WITH THE EASEMENT. REASONABLE NOTICE SHALL BE GIVEN TO THE SACO AVENUE PROFESSIONAL BUILDING, INC. PRIOR TO CONDUCTING THE INSPECTION.

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN ____________________ DATE ____________________

RESTRICTIONS TO PROPERTY:

PERMANENT UTILITY EASEMENT RCRD 5489/0257 D-37968	CONSERVATION EASEMENT RCRD 3396/1709 D-40505	24' ROW EASEMENT RCRD 3396/1704 SCHEDULE "B" D-27228	CHEVROLET AVENUE ROW RCRD 3396/1704 SCHEDULE "A" D-27228	SIDEWALK EASEMENT RCRD 5288/0112 D-37118



NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 154 AS LOT 2.

2) OWNER OF RECORD/APPLICANT/BUILDERS:
PORTSMOUTH WEST END DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03867
5882/19

3) PARCEL IS NOT WITHIN THE 100 YEAR FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 33015C0259E, EFFECTIVE DATE MAY 17. 2005.

4) EXISTING LOT AREA: 206,319 S.F./ 4.7364 ACRES

5) PARCEL IS LOCATED IN THE CHARACTER DISTRICT 4-W (CD4-W) AND WEST END INCENTIVE OVERLAY DISTRICT (WEI OVERLAY).

6) DIMENSIONAL REQUIREMENTS:
SEE SHEET C5

7) BOUNDARY SHOWN HEREON TAKEN FROM PLAN REFERENCE #2.

RIGHT OF WAY RELEASES:

(FORMER EXTENSION OF "JEWELL COURT")
RCRD: 3450/1650
3450/1652
4126/101
4126/103
THE CITY COUNCIL VOTED ON JANUARY 25, 1999 TO DISCONTINUE THE AREA AS A PUBLIC STREET.

PLAN REFERENCES:

1. PROPERTY OF THE FRANK JONES BREWING CO., LTD., 1" = 50', OCTOBER 1926 BY JOHN W. DURGIN, CIVIL ENGINEER. RCRD 0308.
2. PUBLIC WORKS FACILITY, 700 ISLINGTON STREET, PORTSMOUTH, NEW HAMPSHIRE FOR CITY OF PORTSMOUTH, 1" = 40', 6/22/98 BY JAMES VERRA AND ASSOCIATES, INC. RCRD D-27228.

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

CHINBURG PROPERTIES 145 BREWERY LANE PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR APPROVAL	12/5/17

REVISIONS

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

SCALE: 1" = 40' DECEMBER 2017

BOUNDARY AND EASEMENT PLAN

C1

FB168, PG 11

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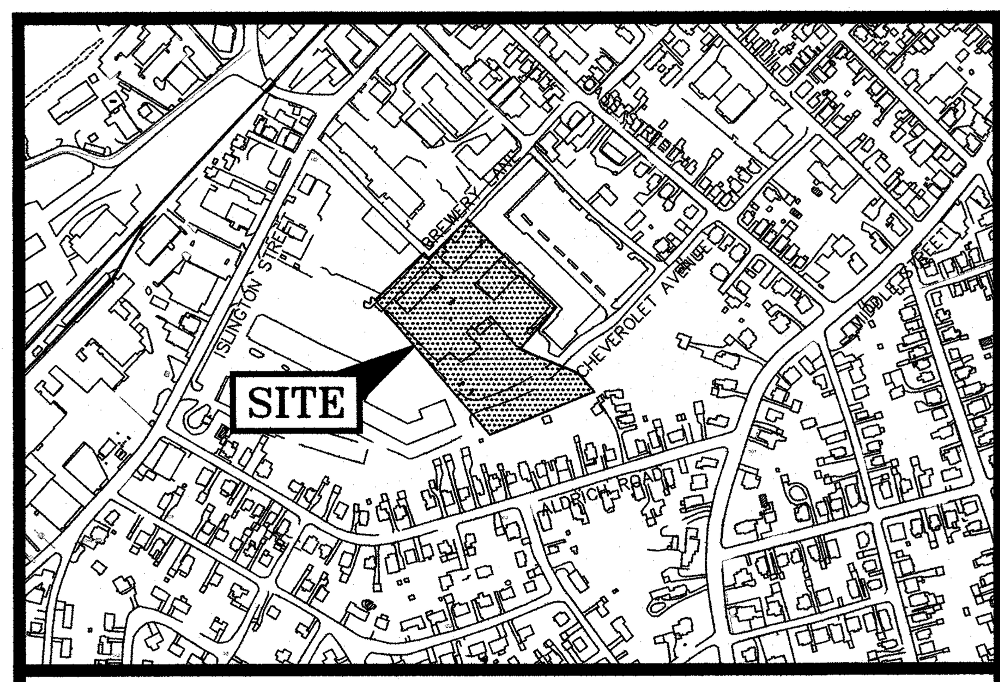


LOCATION MAP SCALE 1"=500'

TEST PIT #1, ELEV: 14.8

Date: 3/16/18
Logged by: DOUG LAROSA D-849
ESHWT: 46" MOTTLES, MANY, COARSE, DISTINCT, 10R 5/6 RED, NO ROOTS
Observed Water: 48"
Restrictive layer: 48"

DEPTH	DESCRIPTION
0"–4"	ASPHALT
4"–16"	10Y 5/6 YELLOWISH BROWN, MEDIUM SAND & 10% GRAVEL, GRANULAR, FRIABLE
16"–45"	10YR 4/4 DARK YELLOWISH BROWN, MEDIUM SAND, GRANULAR, FRIABLE
45"–72"	10YR 2/1 BLACK, VERY FINE SILT LOAM, MASSIVE, FRIABLE

NOTES: PERFORMED NEXT TO DRAINAGE AND SEWER PIPES

TEST PIT #2, ELEV: 15.0

Date: 3/16/18
Logged by: DOUG LAROSA D-849
ESHWT: 40" MOTTLES, MANY, COARSE, DISTINCT, 10R 5/6 RED, NO ROOTS
Observed Water: 44"
Restrictive layer: 44"

DEPTH	DESCRIPTION
0"–2"	ASPHALT
2"–10"	10Y 6/6 BROWNISH YELLOW MEDIUM SAND & 5% GRAVEL, GRANULAR, FRIABLE
10"–36"	10YR 4/4 DARK YELLOWISH BROWN, MEDIUM SAND, GRANULAR, FRIABLE
36"–44"	10YR 4/3 BROWN, FINE SANDY LOAM, MASSIVE, FRIABLE
44"–58"	10YR 2/2 VERY DARK BROWN, VERY FINE SILTY LOAM, MASSIVE, FRIABLE

TEST PIT #3, ELEV: 14.9

Date: 3/16/18
Logged by: DOUG LAROSA D-849
ESHWT: 29" 2% MOTTLES, MANY, COMMON DISTINCT, NO ROOTS
Observed Water: 33"
Restrictive layer: 31"

DEPTH	DESCRIPTION
0"–4"	ASPHALT
4"–16"	10Y 5/6 YELLOWISH BROWN, MEDIUM SAND & 5% GRAVEL, GRANULAR, FRIABLE
16"–31"	10YR 4/6 DARK YELLOWISH BROWN, MEDIUM SAND, GRANULAR, FRIABLE
31"–44"	10YR 42/1 BLACK, VERY FINE SILTY LOAM, MASSIVE, FRIABLE

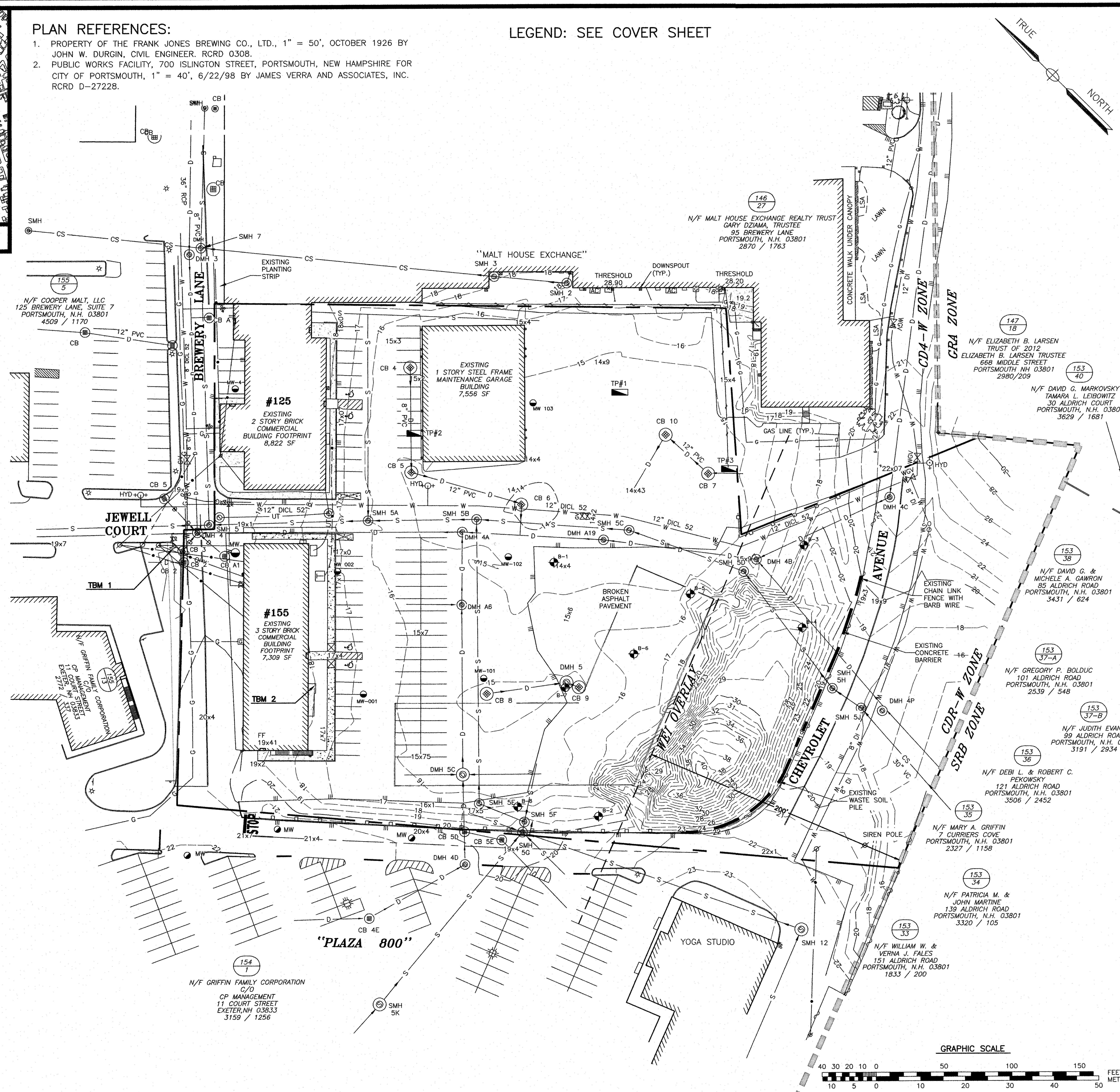
APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN ______ DATE ______

PLAN REFERENCES:

1. PROPERTY OF THE FRANK JONES BREWING CO., LTD., 1" = 50', OCTOBER 1926 BY JOHN W. DURGIN, CIVIL ENGINEER. RCRD 0308.
2. PUBLIC WORKS FACILITY, 700 ISLINGTON STREET, PORTSMOUTH, NEW HAMPSHIRE FOR CITY OF PORTSMOUTH, 1" = 40', 6/22/98 BY JAMES VERRA AND ASSOCIATES, INC. RCRD D-27228.

LEGEND: SEE COVER SHEET



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) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 154, LOT 2.

2) OWNER OF RECORD/APPLICANT:
PORTSMOUTH WEST END DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857
5882/19

3) REFERENCE BENCHMARK & VERTICAL DATUM: CITY OF PORTSMOUTH SEWER DATUM. CHISELED "X" IN RIM OF SEWER MANHOLE #1360. ELEVATION = 22.67. THE CONTOUR INTERVAL IS 1'.

4) PARCEL IS NOT WITHIN THE 100 YEAR FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 33015C0259E, EFFECTIVE DATE MAY 17, 2005.

5) EXISTING LOT AREA: 206,319 S.F./4.7364 ACRES

6) BOUNDARY SHOWN HEREON TAKEN FROM PLAN REFERENCE #2.

7) ON-SITE BENCHMARKS: (SEE PLAN FOR LOCATIONS)
TBM 1: TOP SPINDLE ON HYDRANT: ELEV. = 22.41
TBM 2: DRILL HOLE IN NORTHEAST CORNER OF CONCRETE PAD: ELEV. = 19.15
TBM 3: SPIKE IN PSNH SIREN POLE P005: ELEV. = 18.14

8) DEVELOPER SHALL GRANT CITY OF PORTSMOUTH AN ACCESS EASEMENT FOR THE CITY TO MONITORING WELLS 4,001, 002,103. MONITORING WELLS 101 & 102 TO BE ABANDONED (SEE PLAN FOR LOCATIONS) IN ACCORDANCE WITH NHDES REGULATIONS. DEVELOPER TO COORDINATE WITH CITY ON POTENTIAL RELOCATIONS OF WELLS 101 & 102.

9) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT ALL 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.

CHINBURG PROPERTIES
145 BREWERY LANE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	GAS, WATER, TEST PITS, OFFSITE ADDED	3/20/18
0	ISSUED FOR COMMENT	12/5/17

REVISIONS

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

SCALE: 1" = 40' DECEMBER 2017

EXISTING CONDITIONS PLAN

C2

FB168, PG 11 830.01

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DRAIN STRUCTURE TABLE 1

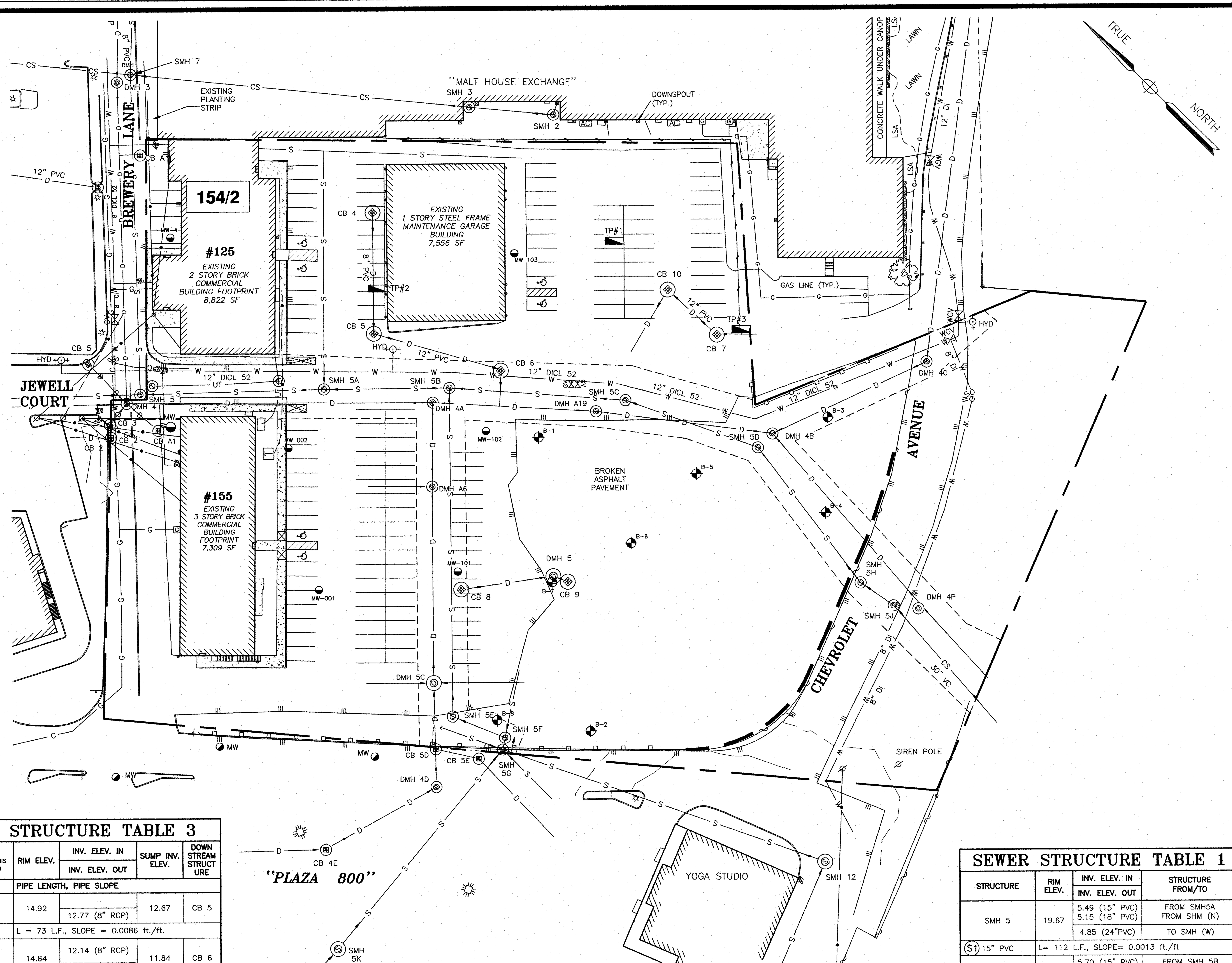
STRUCTURE / PIPE	RIM ELEV. / PIPE LENGTH, PIPE SLOPE	INV. ELEV. IN / INV. ELEV. OUT	SUMP INV. ELEV.	DOWN STREAM STRUCTURE
CB 4E	20.56	10.90 10.15 (18" RCP)	–	DMH 4D
D1 18" RCP	L = 81 L.F., SLOPE = .0019 ft./ft.			
DMH 4D	20.12	10.00 (18" RCP) 10.18 (18" RCP)	–	CB 5D
D2 18" 4D	L = 25 L.F., SLOPE = 0.003 ft./ft.			
CB 5E	19.34	– 15.57 (12" RCP)	13.64	CB 5D
D3 12" PVC	L = 28', SLOPE = 0.008 ft./ft.			
CB 5D	19.63	15.29 (12"RCP) 10.11 (18"RCP) 10.24 (18"RCP)	7.73	DMH 5C **PDMH1**
D4 18" HDPE	L = 37 L.F., SLOPE = 0.01 ft./ft.			
DMH 5C	15.55	9.63 (18" RCP) 11.49 (12" CPP) 10.97 (12" CPP) 9.37 (24" RCP)	–	DMH A6
D5 24" RCP	L = 126± L.F., SLOPE = 0.0015 ft./ft.			
DMH A6	15.35	11.25 24" RCP 8.50 (24" RCP)	–	DMH 4A
D6 24" RCP	L = 44 L.F., SLOPE = 0.002 FT./FT.			
DMH 4C	22.51	14.20 36" RCP 14.33 36" RCP	–	DMH 4B
D7A 36" RCP	L = 108 L.F., SLOPE = 0.0544 ft./ft.			
DMH 4P	17.19	30" RCP 30" RCP	7.00	DMH 4B

DRAIN STRUCTURE TABLE 2

STRUCTURE / PIPE	RIM ELEV. / PIPE LENGTH, PIPE SLOPE	INV. ELEV. IN / INV. ELEV. OUT	SUMP INV. ELEV.	DOWN STREAM STRUCTURE
D7B 30" RCP	L = 114 L.F., SLOPE = UNKNOWN			
DMH 4B	16.55	8.25 (36" RCP) 8.80 (30" RCP) 7.95 (36" RCP)	–	DMH A19
D8 36" RCP	L = 106', SLOPE = 0.0028 ft./ft.			
DMH A19	14.52 **(16.12)**	8.18 (36"RCP) 10.92 (12"CPP) 8.17 (36" RCP)	–	DMH 4A
D9 36" RCP	L = 195 L.F., SLOPE = 0.01 ft./ft.			
DMH 4A	14.75 **(16.37)**	7.87 (36" RCP) 8.40 (24" RCP) 7.87 (36" RCP)	–	DMH 4
D10 36" RCP	L = 186 L.F., SLOPE = 0.005 ft./ft.			
CB 5 JEWELL CT	19.15	12.95 (12" RCP) 30' S=? ft./ft.	–	DMH 4
CB 2	19.38	16.78 8" PVC	16.58	–
CB 3	19.36	14.86 12" CCP	12.16	DMH 4
CB A1	19.36	PS (12" RCP) 17' S=UNK	–	DMH 4
DMH 3	18.83	11.55 (24" RCP) 11.50 (30" RCP)	–	DMH 4
D11 30" RCP	L = 196 L.F., SLOPE = 0.021 ft./ft.			
DMH 4	19.66	13.34 (12" SE) 13.20 (12" SW) 13.46 (12" NW) 7.35 (30" RCP) 6.94 (36" RCP) 6.93 (42" RCP)	–	DMH1
(###) = ADJUSTED RIM ELEVATION, XXX = NEW STRUCTURE				

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE



LEGEND: SEE COVER SHEET

GRAPHIC SCALE

40 30 20 10 0 50 100 150 FEET

10 5 0 10 20 30 40 50 METERS

DRAIN STRUCTURE TABLE 3

STRUCTURE (ALL STRUCTURES ON THIS PAGE TO BE REMOVED) / PIPE	RIM ELEV. / PIPE LENGTH, PIPE SLOPE	INV. ELEV. IN / INV. ELEV. OUT	SUMP INV. ELEV.	DOWN STREAM STRUCTURE
CB 4	14.92	– 12.77 (8" RCP)	12.67	CB 5
D12 8" RCP	L = 73 L.F., SLOPE = 0.0086 ft./ft.			
CB 5 (SITE)	14.84	12.14 (8" RCP) 12.09 (10" RCP)	11.84	CB 6
D13 36" RCP	L = 106', SLOPE = 0.0007 ft./ft.			
CB 6	13.84	10.94 (10"PVC) 10.94 (10"PVC) 9.94 (12" RCP)	8.09	CB A13
D14 12" RCP	(PLUGGED)			
CB 9	14.80	– 10.01 (12" RCP)	7.80	DMH 5
D15 12" RCP	L = 3 L.F., SLOPE = 0.276 ft./ft.			
CB 8	14.75	– 12.55 (8" AC)	12.15	DMH 5
D16 8" AC	L = 55 L.F., SLOPE = 0.111 ft./ft.			
DMH 5	11.93	8.63 (8" E) 6.47 (12" W) 8.73 (8" RCP)	–	UNK
CB 7	14.51	REMOVED (12")	–	CB 10
CB 10	14.51	14.51 12" PVC 12.22 (12" PVC)	9.31	–

SEWER STRUCTURE TABLE 1

STRUCTURE	RIM ELEV.	INV. ELEV. IN / INV. ELEV. OUT	STRUCTURE FROM/TO
SMH 5	19.67	5.49 (15" PVC) 5.15 (18" PVC) 4.85 (24"PVC)	FROM SMH5A FROM SHM (N) TO SMH (W)
S1 15" PVC	L= 112 L.F., SLOPE= 0.0013 ft./ft		
SMH 5A	16.04 **(16.65)**	5.70 (15" PVC) 6.13 (8" PVC) 5.63 (15" PVC)	FROM SMH 5B FROM (N) TO SMH 5
S2 15" PVC	L= 80 L.F., SLOPE= 0 ft./ft.		
SMH 5B	14.45 **(16.62)**	5.70 (15" PVC) 6.12 (12" PVC) 5.70 (15" PVC)	FROM SMH 5C FROM SMH 5E TO SMH 5A
S3 15" PVC	L= 113 L.F., SLOPE= 0.0005 ft./fr.		
SMH 5C	14.47 **(15.73)**	6.17 (15" PVC) 5.76 (15" PVC)	FROM SMH 5D TO SMH 5B
S4 15" PVC	L= 90 L.F., SLOPE= 0.0022 ft./ft.		
SMH 5D	16.57	6.37 (15" PVC) 6.37 (15" PVC)	FROM SMH 5H TO SMH 5C
S5 15" PVC	L= 36 L.F., SLOPE= 0.0005 ft./ft.		
SMH 5E	16.29	8.15 7.98	FROM SMH 5F TO SMH 5B
S6 12" PVC	L= 210 L.F., SLOPE=0.0089 (TO BE FILLED)		
SMH 5F	19.48	13.75 (6" PVC) 9.22 (12' PVC) 9.07 (12" PVC)	FROM NORTH FROM SMH 5G TO SMH 5E
(###) = ADJUSTED RIM ELEVATIONS			

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) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 154, LOT 2.

2) OWNER OF RECORD/APPLICANT:
PORTSMOUTH WEST END DEVELOPERS, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

3) REFERENCE BENCHMARK & VERTICAL DATUM:
CITY OF PORTSMOUTH SEWER DATUM. CHISELED "X" IN RIM OF SEWER MANHOLE #1360. ELEVATION = 22.67. THE CONTOUR INTERVAL IS 1'.

4) PARCEL IS NOT WITHIN THE 100 YEAR FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 33015C0259E, EFFECTIVE DATE MAY 17. 2005.

5) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT ALL 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.

SEWER STRUCTURE TABLE 2

STRUCTURE	RIM ELEV.	INV. ELEV. IN / INV. ELEV. OUT	PIPE SIZE & TYPE
S7 12" PVC	L= 36 L.F., SLOPE= 0.0256 ft./ft.		
SMH 5G	19.46	10.54 (8"CLAY) 10.24 (8" PVC) 10.17 (18"PVC) 13.23 (12"PVC) 9.36 (12" PVC)	(CAP) 8" PVC (E) SMH 5K (SW) (CAP) TO SMH 5F
S8 12" PVC	L= 8 L.F., SLOPE= 0.0039 ft./ft.		
SMH 5H	18.10	10.40 (12"PVC) 10.50 (15"PVC)	FROM SMH 5J TO SMH 5D
S9 12" PVC	L= 108 L.F., SLOPE= 0.0382 ft./ft.		
SMH 5J	17.94	10.62 (12" CV) 10.76 (12"PVC)	FROM OFF SITE TO SMH 5H
S10 12" PVC	L= 26 L.F., SLOPE= 0.0138 ft./ft.		

CHINBURG PROPERTIES
145 BREWERY LANE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
2	ADDED TEST PITS, PIPE CALLOUTS	3/20/18
1	DRAINAGE INVERTS	2/12/18
0	ISSUED FOR COMMENT	12/5/17

REVISIONS

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

SCALE: 1" = 40' DECEMBER 2017

EXISTING UTILITIES PLAN

C3

FB168, PG 11

830.01

J:\JOBS\JN800s\JN830s\JN830\2017 Site Plans Chinburg\Plans & Specs\Site\830.01SITE02.dwg, C3 EXIST UTIL

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).

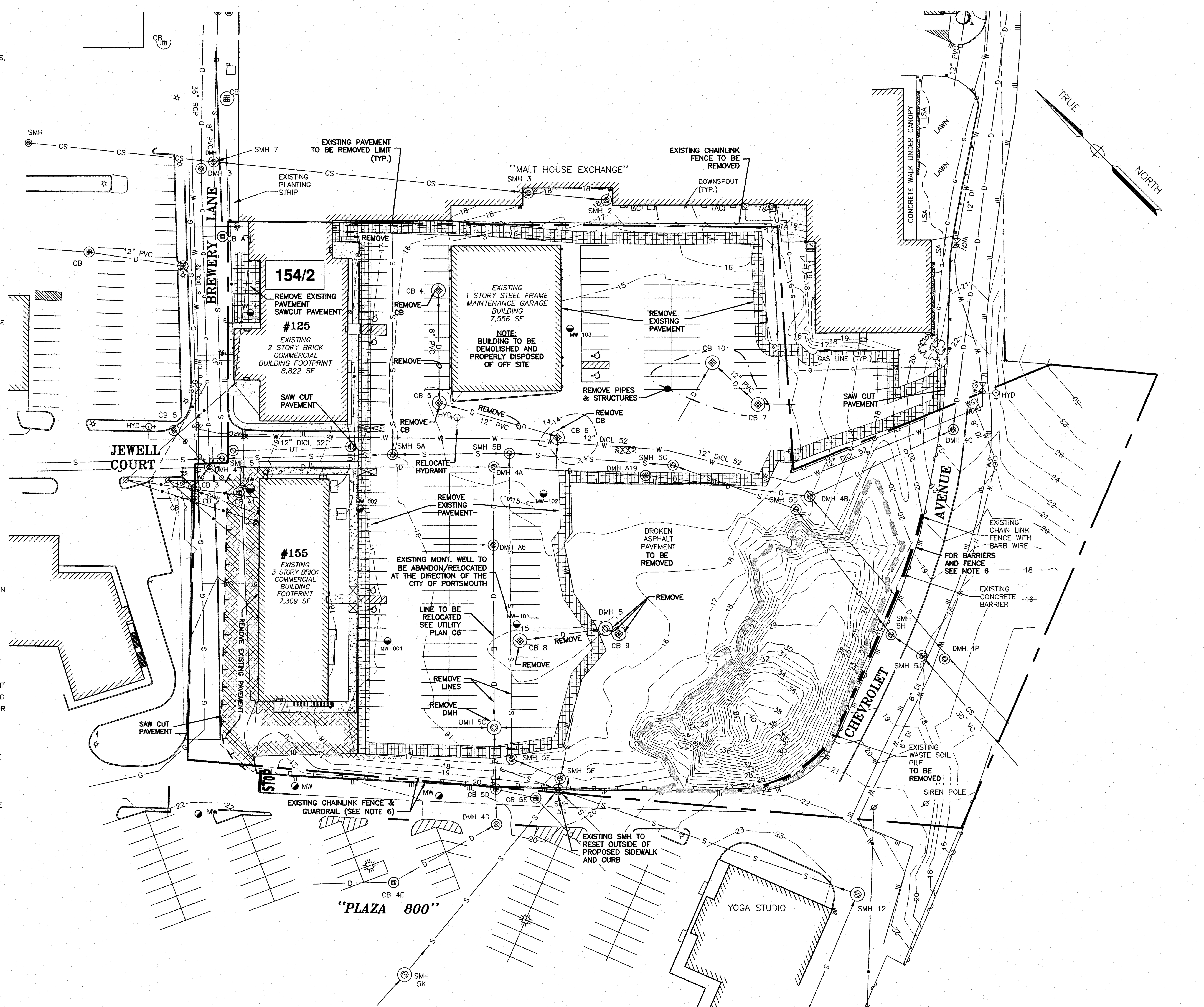
j) REMOVE TREES AND BRUSH AS REQUIRED FOR COMPLETION OF WORK. CONTRACTOR SHALL GRUB AND REMOVE ALL SLUMPS WITHIN LIMITS OF WORK AND DISPOSE OF OFF-SITE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.

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



APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE

J:\JOBS\JN800s\JN830s\JN830\2017 Site Plans Chinburg\Plans & Specs\Site\830.01SITE02.dwg, C4 DEMO

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) EXISTING UTILITY CONNECTIONS SHALL BE ABANDONED IN ACCORDANCE WITH UTILITY COMPANY REQUIREMENTS. UTILITIES THAT ARE TO BE REUSED SHALL BE CUT & CAPPED.

5) CONTRACTOR WILL COORDINATE STREET CLOSINGS, IF ANY, WITH CITY OF PORTSMOUTH.

6) EXISTING FENCING MAY BE UTILIZED FOR SITE FENCING DURING CONSTRUCTION, IF FENCE IS REMOVED PRIOR TO CONSTRUCTION, TEMPORARY FENCING SHALL BE INSTALLED, AS REQUIRED, TO PROTECT THE SITE FROM THE PUBLIC.

7) COORDINATE DEMOLITION WITH CITY OF PORTSMOUTH, PERMITS REQUIRED. PROVIDE TEMPORARY DRAINAGE STRUCTURES, AS REQUIRED, TO KEEP SITE FROM FLOODING DURING CONSTRUCTION.

8) THE APPLICANT SHALL WORK WITH THE CITY'S LEGAL AND PLANNING DEPARTMENTS TO PREPARE A CONSTRUCTION MANAGEMENT AND MITIGATION PLAN AND, SCHEDULE A MEETING TO DISCUSS TIMING AND PHASING OF PROJECTS.

CHINBURG PROPERTIES
145 BREWERY LANE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
2	SIDEWALK, WATER, NOTES	3/20/18
1	DEMOLITION NOTES	2/12/18
0	ISSUED FOR COMMENT	12/5/17

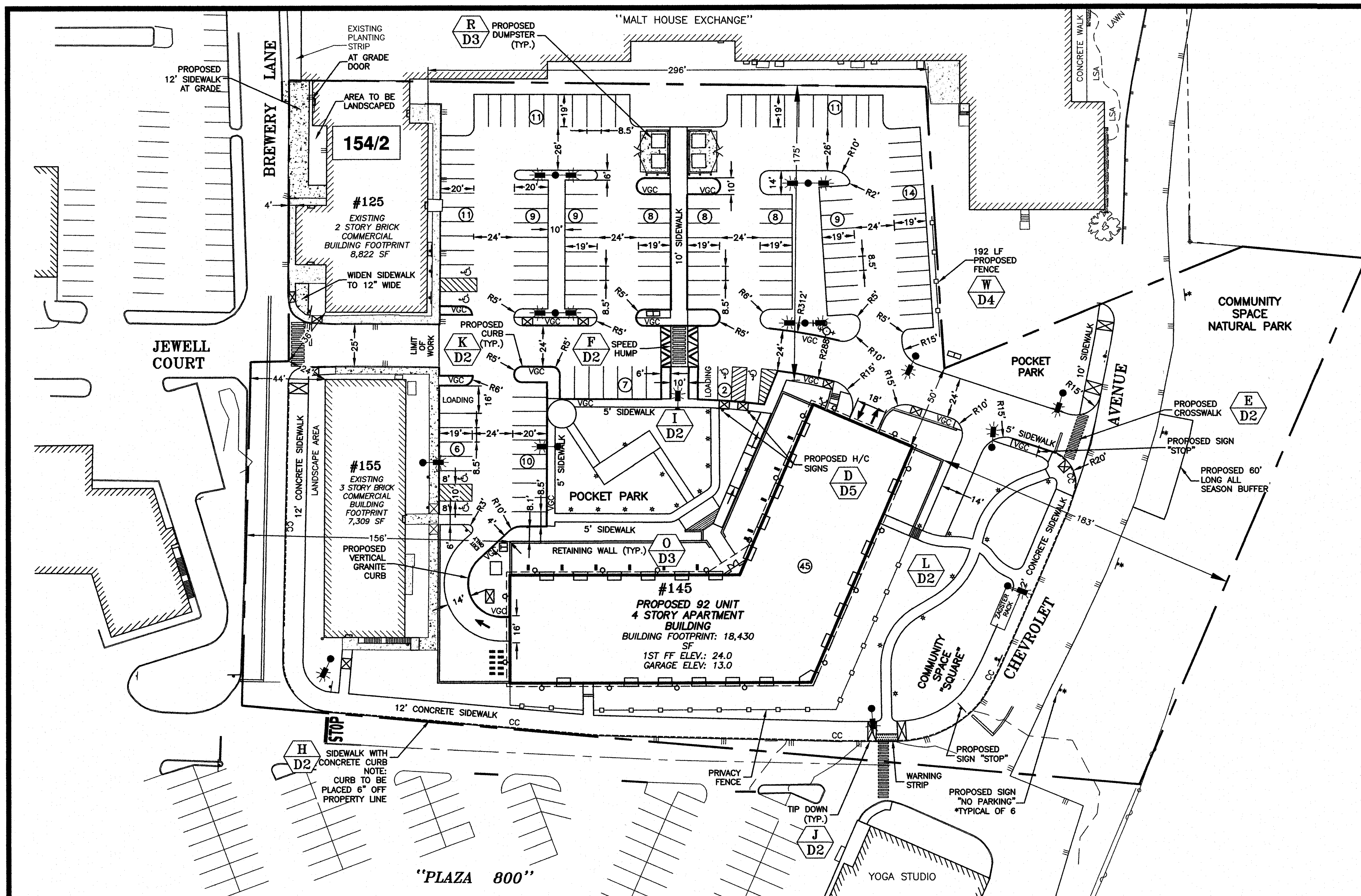
REVISIONS

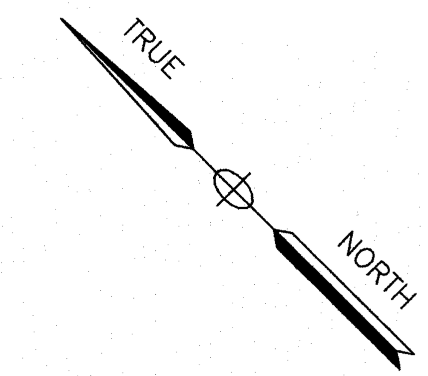
STATE OF NEW HAMPSHIRE — JOHN R. CHAGNON No. 7851 — LICENSED PROFESSIONAL ENGINEER

SCALE: 1" = 40'   DECEMBER 2017

DEMOLITION PLAN   **C4**

FB168, PG 11   830.01





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200 Griffin Road – Unit 3
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Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 154, LOT 2.

2) OWNER OF RECORD/APPLICANT:
PORTSMOUTH WEST END DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

3) PARCEL IS NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 33015C0259E. EFFECTIVE DATE MAY 17, 2005.

4) EXISTING LOT AREA: 206,319 S.F./4.7364 ACRES

5) THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED SITE LAYOUT.

6) VERTICAL DATUM IS MEAN SEA LEVEL NAVD88. BASIS OF VERTICAL DATUM IS NGS PID OC0290 – B 2 1923.

7) PARCELS ARE LOCATED IN THE CHARACTER DISTRICT 4 – W ZONING DISTRICT AND WEST END INCENTIVE OVERLAY DISTRICT (WEI OVERLAY)

8) PROPOSED USE:

PROPOSED USE	BUILDING COVERAGE
#125: 13,373 S.F. BUSINESS OFFICE	8,822 S.F. FOOTPRINT
2,400 S.F. PROFESSIONAL OFFICE	
#145: 92 RESIDENTIAL UNITS	18,430 S.F. FOOTPRINT
#155: 9,117 S.F. BUSINESS OFFICE	
5,892 S.F. YOGA STUDIO	7,309 S.F. FOOTPRINT
30,782 S.F. TOTAL COMMERCIAL	34,561 S.F. TOTAL

BUILDING COVERAGE 34,561/206,319 S.F. X 100 = 16.8%

9) OPEN SPACE:
PROPOSED OPEN SPACE: = 65,086 S.F.
65,086/206,319 S.F. = 31.5%

10) RETAINING WALLS WILL BE GRAVITY BLOCK (OR APPROVED EQUAL)

11) EXCESS SNOW SHALL BE TRUCKED OFF SITE, AND NOT DEPOSITED ON ANY CITY PROPERTY OR IN THE CONSERVATION EASEMENT AREA

12) REQUIRED PARKING COUNT PER SHARED PARKING ANALYSIS = 149 PARKING SPACES. MAXIMUM ALLOWABLE PARKING = REQUIRED X 120% = 178 SPACES

13) PROPOSED PARKING = 123 OUTSIDE SPACES + 45 UNDERGROUND GARAGE SPACES = 168 SPACES TOTAL

14) SEE SHEET D5 FOR SHARED PARKING CALCULATIONS DETAIL.

15) "NO PARKING" SHALL BE PAINTED ON THE DRIVEWAY BETWEEN #125 AND #155.

ZONING DEVELOPMENT STANDARD

CD4-W: CHARACTER DISTRICT 4-WEST END

BUILDING PLACEMENT (PRINCIPLE):

	REQUIRED	EXISTING	PROPOSED
MAX. PRINCIPLE FRONT YARD:	10 FEET	4.2 FEET	NA
MAX. SECONDARY FRONT YD:	15 FEET	0 FEET	NA
MIN. SIDE YARD:	5 FEET	0 FEET	NA
MIN. REAR YARD*:	5 FEET	302 FEET	NA
FRONT LOT LINE BUILDOUT:	50%	73.8%	NA
INCENTIVE OVERLAY DISTRICT			
MAX. BUILDING COVERAGE:	80%	8.6%	15.5%
MAX. BUILDING FOOTPRINT:	20,000 SF	23,549 SF	18,430 SF
MIN. LOT AREA:	2,000 SF	NA t	NA t
MAX. BUILDING HEIGHT:	+1 STORY UP TO 10'	3 STORIES	4 STORIES

BUILDING TYPES:

ALLOWED BUILDING TYPES: APARTMENT

ALLOWED FACADE TYPES: PORCH, STOOP, STEP

BUILDING FORM:

	REQUIRED	EXISTING	PROPOSED
MAX STRUCTURE HEIGHT:	55 FT y	–	49'-11" y
MAX. FINISHED FLOOR SURFACE OF GROUND FLOOR ABOVE SIDEWALK GRADE:	36 INCHES	–	24 INCHES
MIN. GROUND STORY HEIGHT:	12 FEET	–	12 FEET
FACADE GLAZING (WINDOW/PERIMETER):	20–50%	–	TO COMPLY

ROOF TYPE ALLOWED: FLAT

LOT OCCUPATION:

	REQUIRED	EXISTING	PROPOSED
MAX BUILDING BLOCK:	200 FEET	152 FEET	N/A
MAX FACADE MOD. LENGTH:	80 FEET	–	N/A
MIN. ENTRANCE SPACING:	50 FEET	–	N/A
MIN. OPEN SPACE COVERAGE:	15%	12.3%	38.7%
MAX GROUND FLOOR GFA/USET:	15,000 SF	8,822 SF	18,430 SF***

* REAR YARD: THE GREATER OF 5' FROM REAR LOT LINE OR 10' FROM CENTER LINE OF ALLEY.
** COMMUNITY SPACE IS AREA/206,319 X 100
*** BASED ON INCENTIVE OVERLAY DISTRICT MAX BUILDING FOOTPRINT IS 20,000 SF
t NO MINIMUM LOT AREA REQUIRED IN INCENTIVE OVERLAY DISTRICT
y 10' ADDITIONAL BUILDING HEIGHT ALLOWED IN INCENTIVE OVERLAY DISTRICT

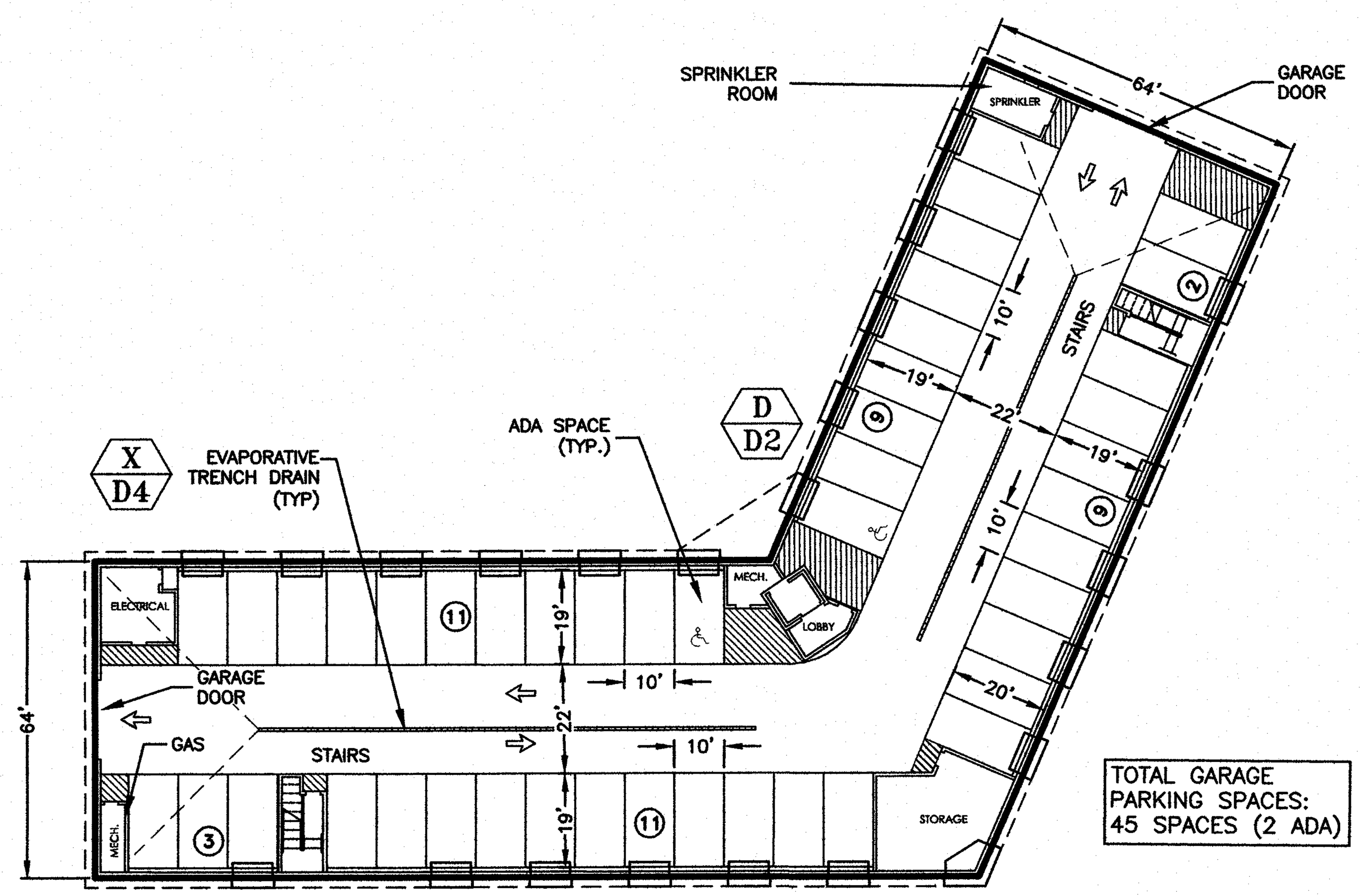
PORTSMOUTH APPROVAL CONDITIONS NOTE:

1) THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.

2) ALL IMPROVEMENTS SHOWN ON THIS SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN PURSUANT TO THE REQUIREMENTS OF THE CITY OF PORTSMOUTH SITE PLAN REVIEW REGULATIONS 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.

APPROVED BY THE PORTSMOUTH PLANNING BOARD

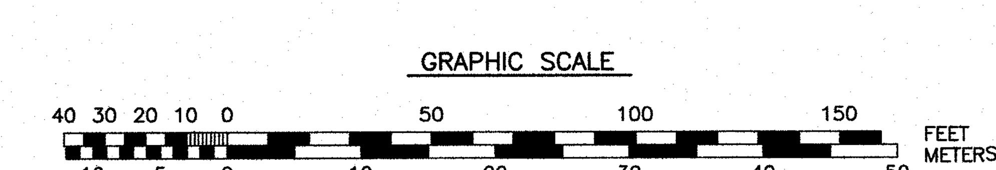
CHAIRMAN DATE



GARAGE LEVEL PARKING PLAN
SCALE: 1"=30'

IMPERVIOUS SURFACE AREAS
(TO PROPERTY LINE)

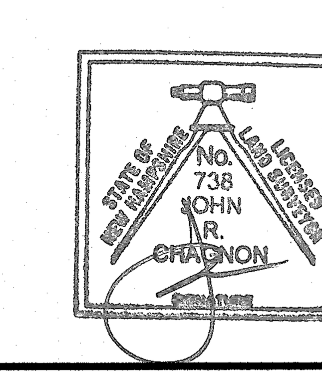
STRUCTURE	PRE-CONSTRUCTION IMPERVIOUS (S.F.)	POST-CONSTRUCTION IMPERVIOUS (S.F.)
MAIN STRUCTURE & DECKS	23,440	49,212
PATIOS	0	9880
PAVEMENT	75,248	53,878
SIDEWALK	3,125	20,519
ROADWAY	21,657	16,218
CURBING	205	144
COMPACT GRAVEL	47,905	0
TOTAL	171,580	149,851
LOT SIZE	206,319	206,319
% LOT COVERAGE	83.2%	72.6%



CHINBURG PROPERTIES
145 BREWERY LANE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
2	SIDEWALK, BUFFER	3/20/18
1	LAYOUT	2/12/18
0	ISSUED FOR COMMENT	12/5/17

REVISIONS



SCALE: 1" = 40' DECEMBER 2017

SITE LAYOUT PLAN C5

FB168, PG 11 830.01

J:\JOBS\JN800s\JN830s\JN830\2017 Site Plans Chinburg\Plans & Specs\Site\830.01SITE02.dwg, C5 SITE

UTILITY NOTES:

A) SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION.
B) COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY.
C) SEE GRADING AND DRAINAGE PLAN FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.
D) ALL WATER MAIN INSTALLATIONS SHALL BE CLASS 52, POLYWRAPPED, CEMENT LINED DUCTILE IRON PIPE.
E) ALL WATERMAIN INSTALLATIONS SHALL BE PRESSURE TESTED AND CHLORINATED AFTER CONSTRUCTION AND BEFORE ACTIVATING THE SYSTEM. CONTRACTOR SHALL COORDINATE WITH THE CITY OF PORTSMOUTH.
F) ALL SEWER PIPE SHALL BE PVC SDR 35 UNLESS OTHERWISE STATED.
G) ALL WORK WITHIN CITY R.O.W. SHALL BE COORDINATED WITH CITY OF PORTSMOUTH
H) CONTRACTOR SHALL MAINTAIN UTILITY SERVICES TO ABUTTING PROPERTIES THROUGHOUT CONSTRUCTION.
I) ANY CONNECTION TO EXISTING WATERMAIN SHALL BE CONSTRUCTED BY THE CITY OF PORTSMOUTH.
J) 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.
K) ALL ELECTRICAL MATERIAL WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST EDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.
L) THE EXACT LOCATION OF NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH BUILDING DRAWINGS AND UTILITY COMPANIES.
M) ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
N) ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
O) 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.
P) 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.
Q) CONTRACTOR SHALL PROVIDE EXCAVATION, BEDDING, BACKFILL AND COMPACTION FOR NATURAL GAS SERVICES.
R) 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.
S) SAWCUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL PROPOSED UTILITIES LOCATED IN EXISTING PAVEMENT AREAS TO REMAIN.
T) GATE VALVES, FITTINGS, ETC. SHALL MEET THE REQUIREMENTS OF THE CITY OF PORTSMOUTH.
U) COORDINATE TESTING OF SEWER CONSTRUCTION WITH THE CITY OF PORTSMOUTH.
V) ALL SEWER PIPES WITH LESS THAN 6' COVER SHALL BE INSULATED.
W) 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.
X) 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.
Y) 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.
Z) CONTRACTOR SHALL CONSTRUCT ALL UTILITIES AND DRAINS TO WITHIN 10' OF THE FOUNDATION WALLS AND CONNECT THESE TO SERVICE STUBS FROM THE BUILDING.
AA) THE CONTRACTOR SHALL INSTALL THE SEWER LINE AND MANHOLE IN CONSULTATION AND COORDINATION WITH DEPARTMENT OF PUBLIC WORKS.
BB) INSTALLATION OF MANHOLE SMH1 SHALL REQUIRE A CONSTRUCTION PLAN FOR BYPASS PUMPING WITH CLOSE CONSULTATION AND COORDINATION WITH DEPARTMENT OF PUBLIC WORKS.
CC) BRASS WEDGES FOR CONTINUITY OF SIGNAL MUST BE INSTALLED ON WATER MAINS PER THE PORTSMOUTH WATER DEPARTMENT
DD) FINAL REVIEW OF ALL UTILITIES SHALL BE MADE DURING THE REQUIRED SEWER CONNECTION PERMIT PROCESS IN COORDINATION WITH DEPARTMENT OF PUBLIC WORKS.
EE) ALL WORK PERFORMED IN THE PUBLIC RIGHT–OF–WAY SHALL BE BUILD TO DEPARTMENT OF PUBLIC WATER WORKS STANDARDS.
FF) WATER, SEWER, AND DRAIN LINES SHALL BE PRIVATE.

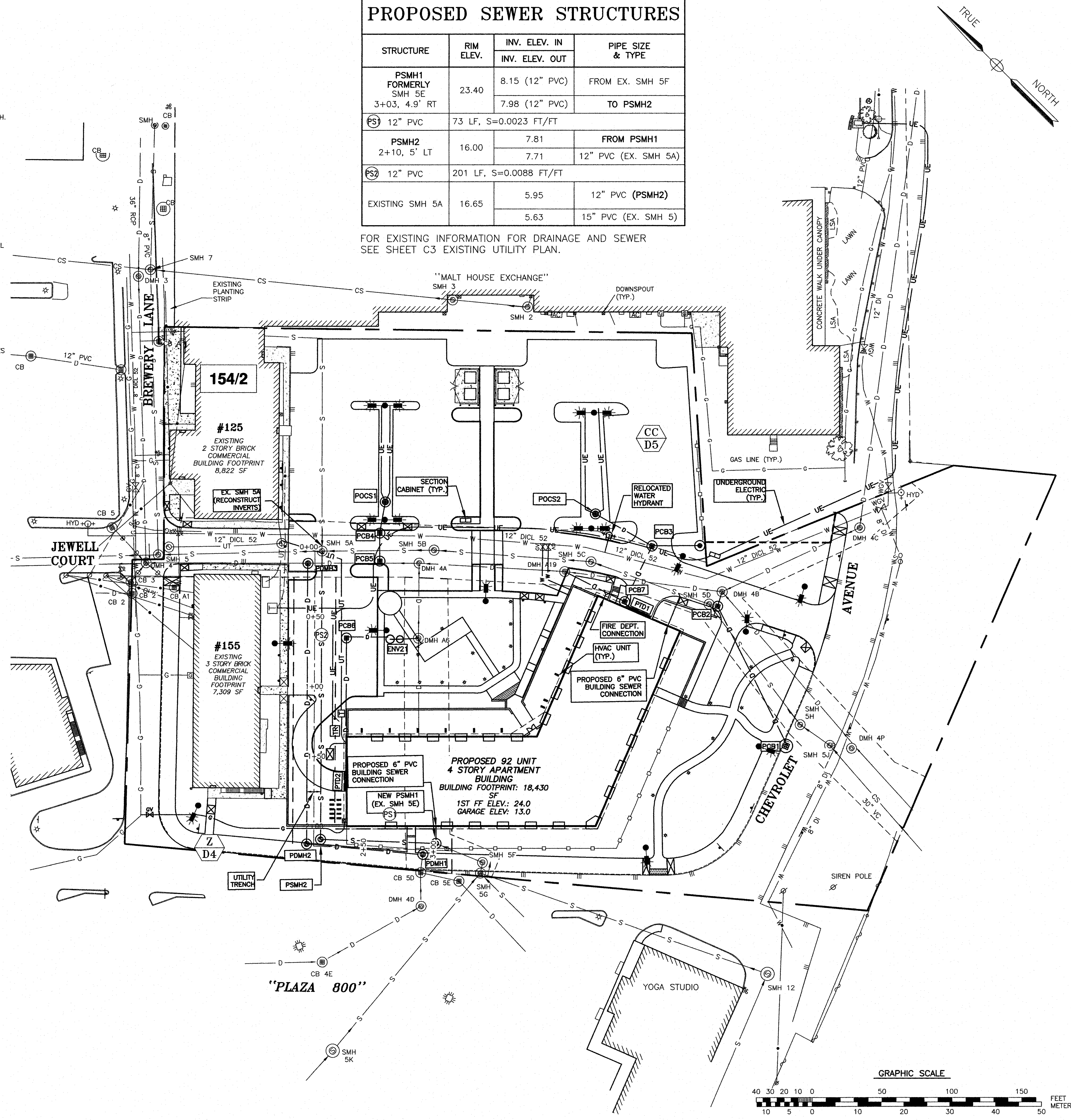
APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE

PROPOSED SEWER STRUCTURES

STRUCTURE	RIM ELEV.	INV. ELEV. IN / INV. ELEV. OUT	PIPE SIZE & TYPE
PSMH1 FORMERLY SMH 5E 3+03, 4.9' RT	23.40	8.15 (12" PVC)	FROM EX. SMH 5F
		7.98 (12" PVC)	TO PSMH2
PS1 12" PVC	73 LF, S=0.0023 FT/FT		
PSMH2 2+10, 5' LT	16.00	7.81	FROM PSMH1
		7.71	12" PVC (EX. SMH 5A)
PS2 12" PVC	201 LF, S=0.0088 FT/FT		
EXISTING SMH 5A	16.65	5.95	12" PVC (PSMH2)
		5.63	15" PVC (EX. SMH 5)

FOR EXISTING INFORMATION FOR DRAINAGE AND SEWER SEE SHEET C3 EXISTING UTILITY PLAN.



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) PROVIDE A NEW FIRE ALARM MASTER BOX & KNOX BOX FOR 145 BREWERY LANE.

5) PROPOSED SEWER FLOW (ADDITIONAL)
2 BEDROOM & 1 BEDROOM UNITS
92 APARTMENTS x 2.33 RESIDENTS/APARTMENT = 214 RESIDENTS
214 RESIDENTS x 70 GPD/RESIDENT = 14,980 GPD
TOTAL PROPOSED FLOW = 14,980 GPD
NHDES SEWER DISCHARGE PERMIT REQUIRED.

6) PROPERTY OWNER IS RESPONSIBLE FOR THE MAINTENANCE OF ALL ONSITE FIRE HYDRANTS. HYDRANTS SHALL BE INSPECTED ANNUALLY AND AN INSPECTION REPORT FILED WITH THE PUBLIC WORKS AND FIRE DEPARTMENTS. THE NOTES ON THE SITE PLANS THAT REFER TO EASEMENTS FOR MAINTAINING THE WATER LINES AND SEWER LINES SHALL IDENTIFY THAT AS A PRIVATE LINE.

7) THE APPLICANT SHALL HAVE A COMMUNICATIONS SITE SURVEY CONDUCTED BY A MOTOROLA COMMUNICATIONS CARRIER APPROVED BY THE CITY'S COMMUNICATIONS DIVISION. THE RADIO COMMUNICATIONS CARRIER MUST BE FAMILIAR AND CONVERSANT WITH THE PORTSMOUTH POLICE AND FIRE RADIO SYSTEMS CONFIGURATION. IF THE SITE SURVEY INDICATES THAT IT IS NECESSARY TO INSTALL A SIGNAL REPEATER EITHER ON OR NEAR THE PROPOSED PROJECT, THOSE COSTS SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER. THE PROPERTY OWNER WILL BE REQUIRED TO MAINTAIN ANY INSTALLED EQUIPMENT. THE PROPERTY OWNER SHALL BE RESPONSIBLE TO PAY FOR THE SITE SURVEY WHETHER OR NOT THE SURVEY INDICATES THAT EQUIPMENT IS NECESSARY. THE OWNER SHALL COORDINATE WITH THE SUPERVISOR OF RADIO COMMUNICATIONS FOR THE CITY. THE SURVEY SHALL BE COMPLETED AND ANY REQUIRED EQUIPMENT INSTALLED, TESTED, AND ACCEPTED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

8) CONTRACTOR SHALL SUPPLY CERTIFICATES OF TESTING COMPLIANCE ON UNDERGROUND WATER PIPING.

CHINBURG PROPERTIES
145 BREWERY LANE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
2	LAYOUT	3/20/18
1	LAYOUT, NOTES	2/12/18
0	ISSUED FOR APPROVAL	12/5/17

REVISIONS

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

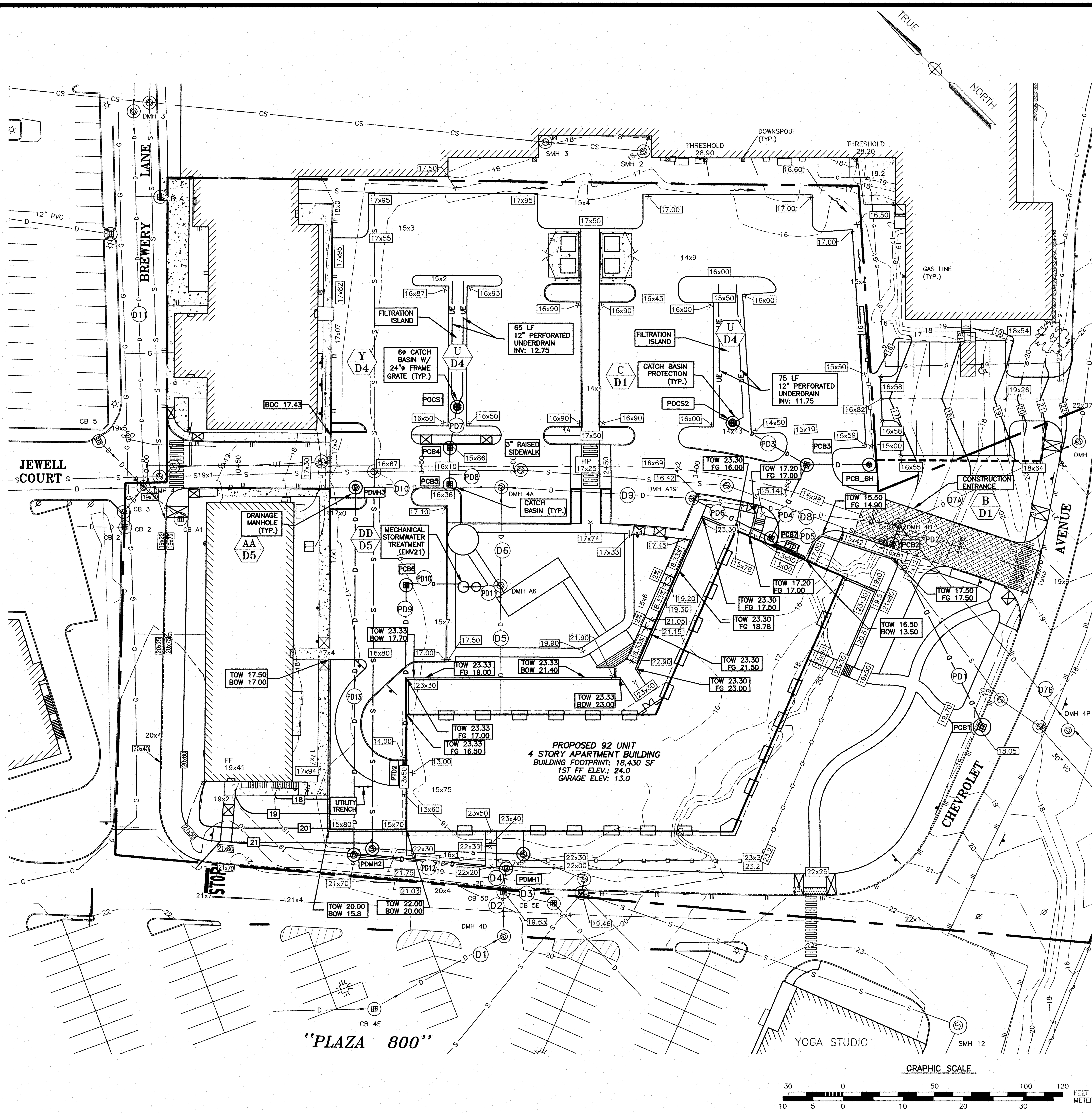
SCALE: 1" = 40' DECEMBER 2017

UTILITY PLAN C6

FB168, PG 11 830.01

PROPOSED DRAIN STRUCTURES

STRUCTURE	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	SUMP INV. ELEV.	DOWN STREAM STRUCTURE
PIPE	PIPE LENGTH, PIPE SLOPE				
PCB1 ON CHEVROLET AVE	18.05	–	14.00 (12" HPDE)	10.00	PCB2
PD1 12" HDPE	L = 109 L.F., SLOPE = 0.02 ft./ft.				
PCB2 4+15, 12' RT	16.42	11.80 (12" HDPE)	11.70 (12" HDPE)	7.80 HOODED	CORE INVERT 11.6 DMH 4B
PD2 12" HDPE	L = 9', SLOPE = 0.011 ft./ft. (DMH 4B)				
POCS2 3+16, 27' RT	14.50	11.00 (2)12" UD	10.90 24" HDPE	6.50	PCB3
PD3 24" HDPE	L = 40', SLOPE = 0.020 ft./ft.				
PCB3 3+55, 16' LT	14.79	10.10 (24"HDPE) 10.10 (24"HDPE)	10.00 (24"HDPE)	6.00 HOODED	PCB7
PD4A 24" HDPE	L = 43', SLOPE = 0.012 ft./ft.				
PCB_BH 3+89, 16' LT (BEEHIVE GRATE)	14.50	–	10.20 (24"HDPE)	6.00 HOODED	PCB3
PD4B 24" HDPE	L = 34', SLOPE = 0.01 ft./ft.				
PTD1 (BOTTOM EXIT) AT RAMP	13.00	–	9.60 (12" HDPE)	–	PCB7
PD5 12" HDPE	L = 3 L.F., SLOPE = 0.033 ft./ft.				
PCB7	13.30	9.50 (12" HDPE) 9.50 (24" HDPE)	9.40 (24" HDPE)	–	CORE INVERT 8.2 DMH A19
PD6 24" HDPE	L = 46'., SLOPE = 0.026 ft./ft.				
POCS1 3+70, 32' LT	15.50	11.00 (2) 12" UD	11.00 24" HDPE	7.50	PCB4
PD7 24" HDPE	L = 46', SLOPE = 0.026 ft./ft.				
PCB4 3+65, 12' LT	15.80	10.30 24" HDPE	10.20 24" HDPE	10.80	PCB5
PD8 24" HDPE	L = 18', SLOPE = 0.005 ft./ft.				
PCB5 3+65, 12' RT BUILT OVER EXIST 36" RCP	15.80	14.60 24" HDPE	7.85 EX. 36" RCP	–	PDMH3
PDMH3 1+04, 12' RT BUILT OVER EXIST 36" RCP	16.30	7.49 36" EXIST 8.49 24" PROP	7.48 36" EXIST	–	EX. DMH 4
EXISTING DMH 4		10.70 24" HDPE NEW IN	SEE EXISTING CHART		
PTD2 AT RAMP	13.00		11.00 (12" HDPE)	–	PDMH6
PD9 12" HDPE	L = 93', SLOPE = 0.016 ft./ft.				
PCB6 0+66, 23' RT	16.40	9.50 12" HDPE	9.40 18" HDPE	8.90	POCS3
PD10 18" HDPE	L = 25, SLOPE = 0.016 FT./FT.				
ENV21 0+66, 54' RT	18.00	9.00 18" HDPE	9.00 18" HDPE	–	EX.DMH A6 RAISE RIM 18.00 INVERT 8.9
PD11 18" HDPE	L = 10, SLOPE = 0.01 ft./ft. (EX DMH A6)				
PDMH1 2+92, 5' RT	21.50	10.14 18" EXIST	10.04 24" PROP	–	PDMH2
PD12 24" HDPE	L = 3, SLOPE = 0.016 ft./ft. (EX DMH A6)				
PDMH2 2+13, 5' RT	21.60	9.15 24" HDPE	9.05 24" HDPE	–	PDMH3
PD13 24" HDPE	L = 196, SLOPE = 0.016 ft./ft.				



APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN

DATE

J:\JOBS\JN800s\JN830s\JN830\2017 Site Plans Chinburg\Plans & Specs\Site\830.01SITE02.dwg, C7 GRADING

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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4) SPEED HUMPS SHALL BE INSTALLED IN A MANNER THAT WILL INSURE THE FREE FLOW OF STORMWATER BETWEEN THE HUMP AND THE CURB LINE.

5) EXISTING DRAINAGE INVERTS CAN BE SEEN ON SHEET EXISTING UTILITIES PLAN – C3.

CHINBURG PROPERTIES
145 BREWERY LANE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
2	LAYOUT, GRADING	3/20/18
1	LAYOUT, GRADING	2/12/18
0	ISSUED FOR APPROVAL	12/5/17

REVISIONS

STATE OF NEW HAMPSHIRE JOHN R. CHAGNON No. 7851 LICENSED PROFESSIONAL ENGINEER

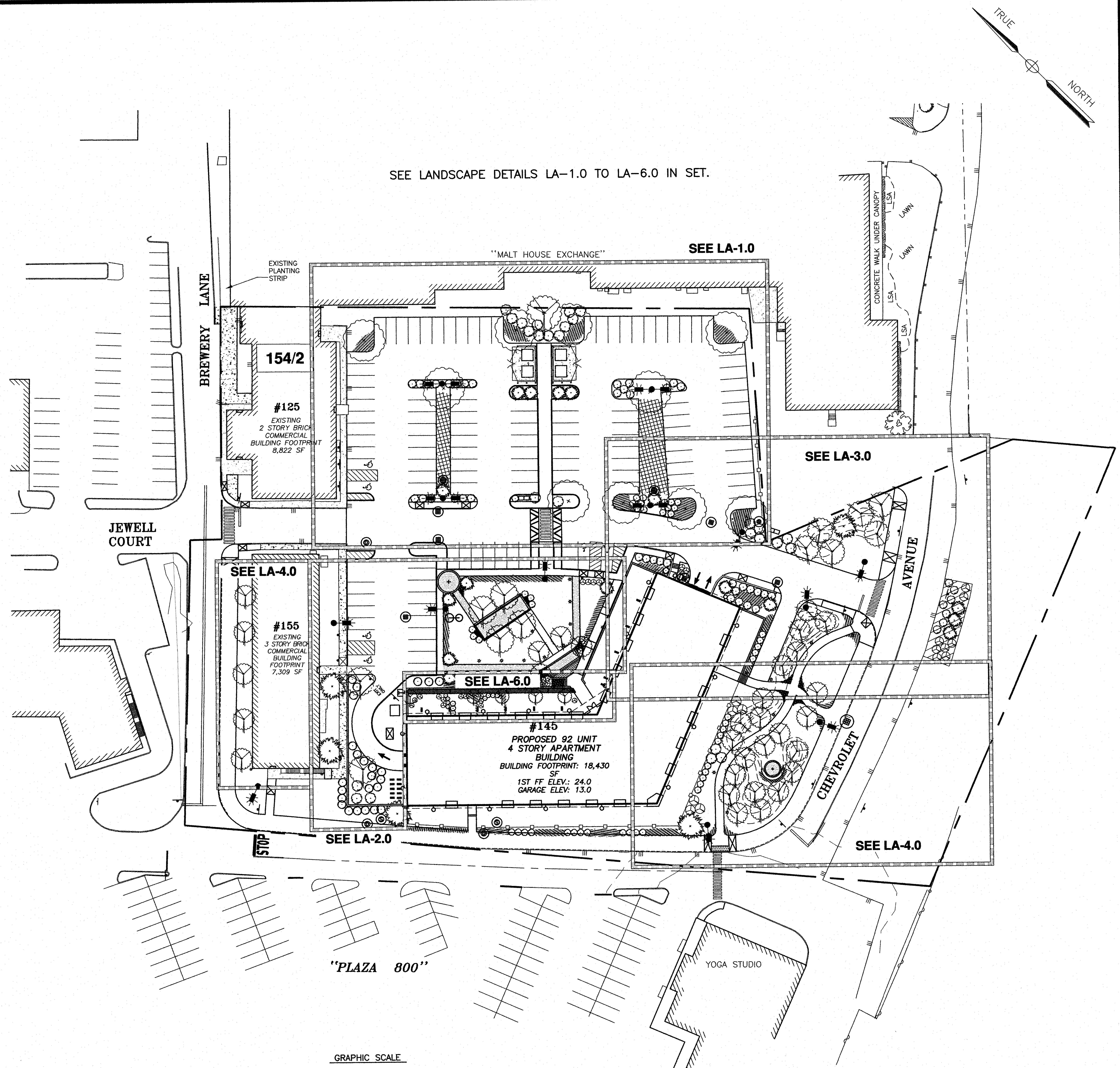
SCALE: 1" = 30'   DECEMBER 2017

GRADING AND EROSION CONTROL PLAN

C7

FB168, PG 11

830.01



APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE

GRAPHIC SCALE

40 30 20 10 0 50 100 150 FEET

10 5 0 10 20 30 40 50 METERS

J:\JOBS\JN800s\JN830s\JN830\2017 Site Plans Chinburg\Plans & Specs\Site\830.01SITE02.dwg, C8 LAND

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CITY OF PORTSMOUTH LANDSCAPE NOTES

1) THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.

2) 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.

3) THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS SHALL BE RESPONSIBLE FOR THE MAINTENANCE, REPAIR AND REPLACEMENT OF ALL REQUIRED SCREENING AND LANDSCAPE MATERIALS.

4) 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.

5) 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.

CHINBURG PROPERTIES
145 BREWERY LANE
PORTSMOUTH, N.H.

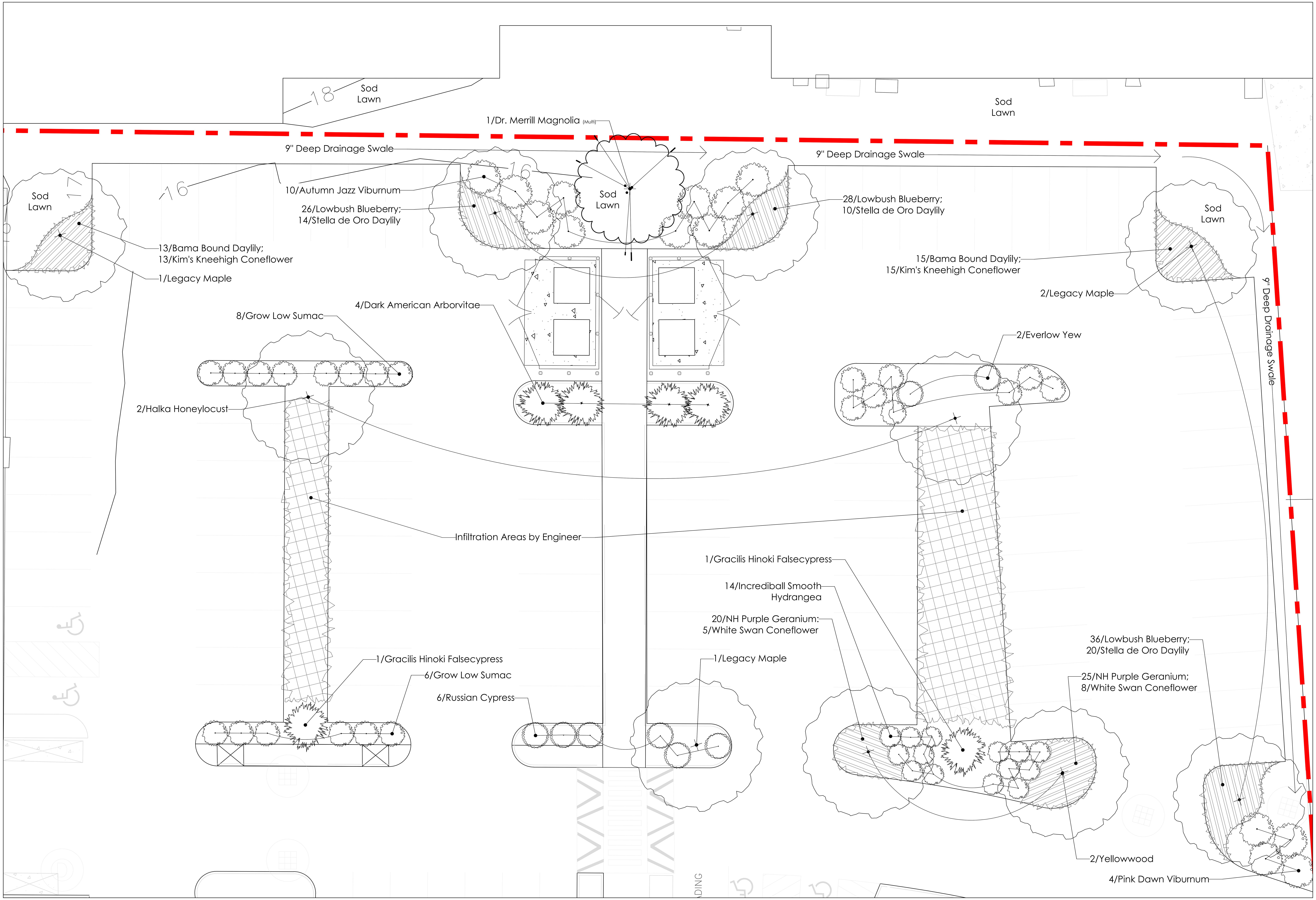
NO.	DESCRIPTION	DATE
1	ISSUED FOR APPROVAL	3/20/18
0	ISSUED FOR COMMENT	2/12/18

REVISIONS

SCALE: 1" = 40' DECEMBER 2017

LANDSCAPE PLAN C8

FB168, PG 11 830.01



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:

145 Brewery Lane

Owner/Applicant:

Portsmouth West End Development, LLC
3 Penstock Way
Newmarket, New Hampshire 03857

For City Approval

registration:

revisions:

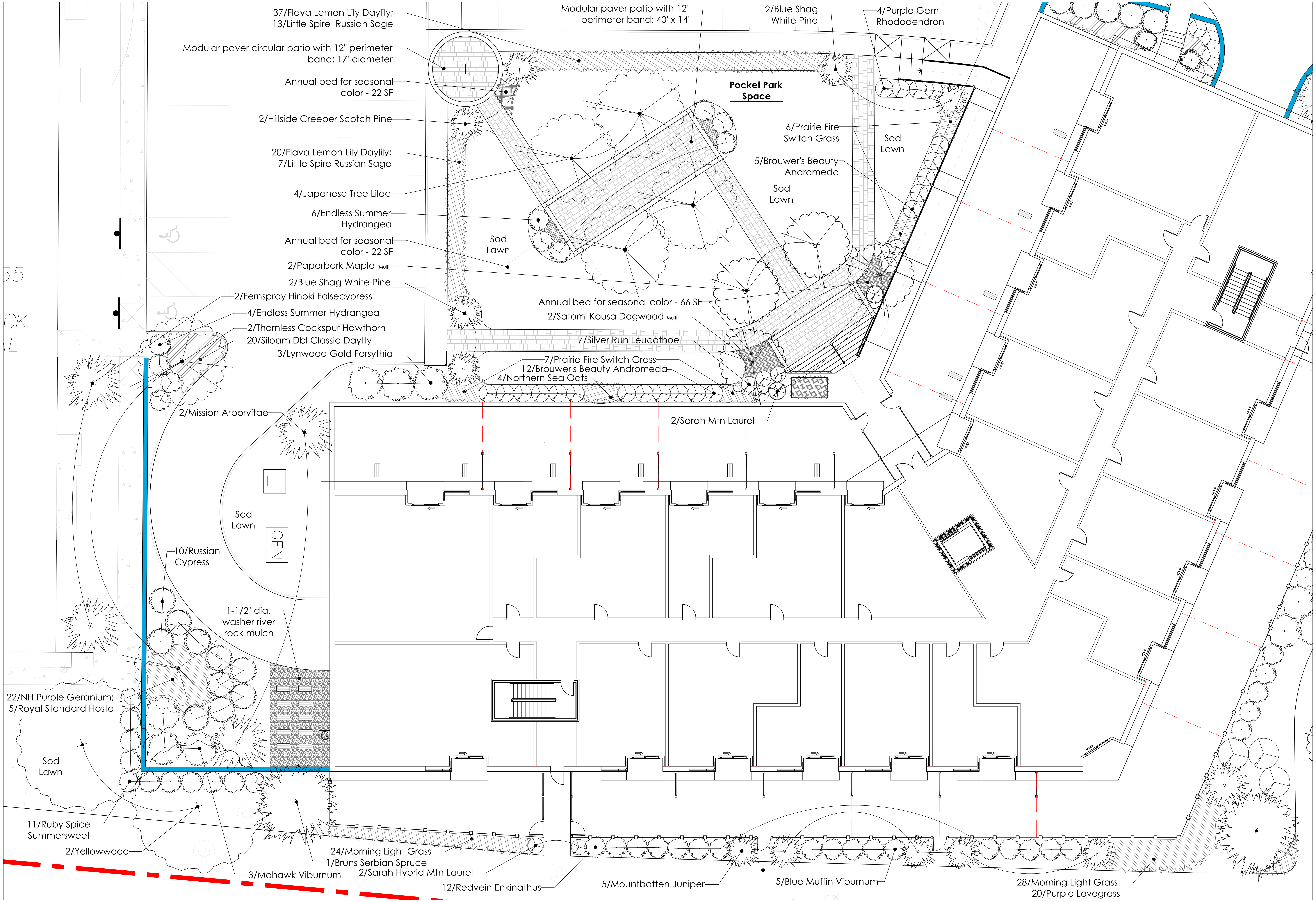
no.	date	issued
1	1/16/18	Update plan set with REV site
2		plan, grading & drainage
3	2/12/18	Update plan set with REV site
4		plan, grading & drainage
5	3/20/18	Update plan set with REV site
6		plan, grading & drainage
7		
8		

project number: 1302.0
scale: 1" = 10'
drawn by: dhg
date: 1/16/2018

sheet title/number:

Landscape Plan

LA-1.0



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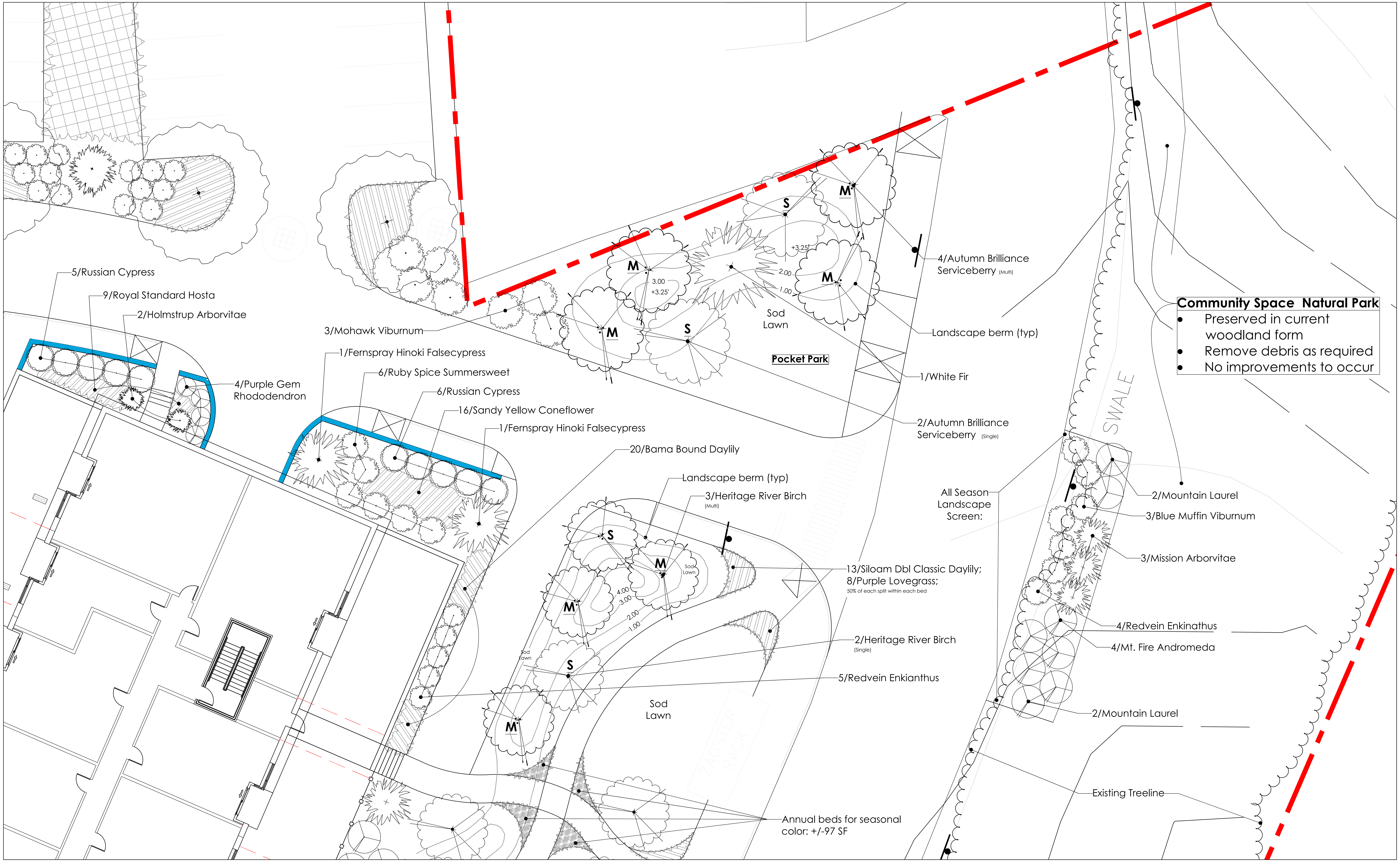
7		
8		

project number: 1302.0
scale: 1" = 10'
drawn by: dhg
date: 1/16/2018

sheet title/number:

Landscape Plan

LA-2.0



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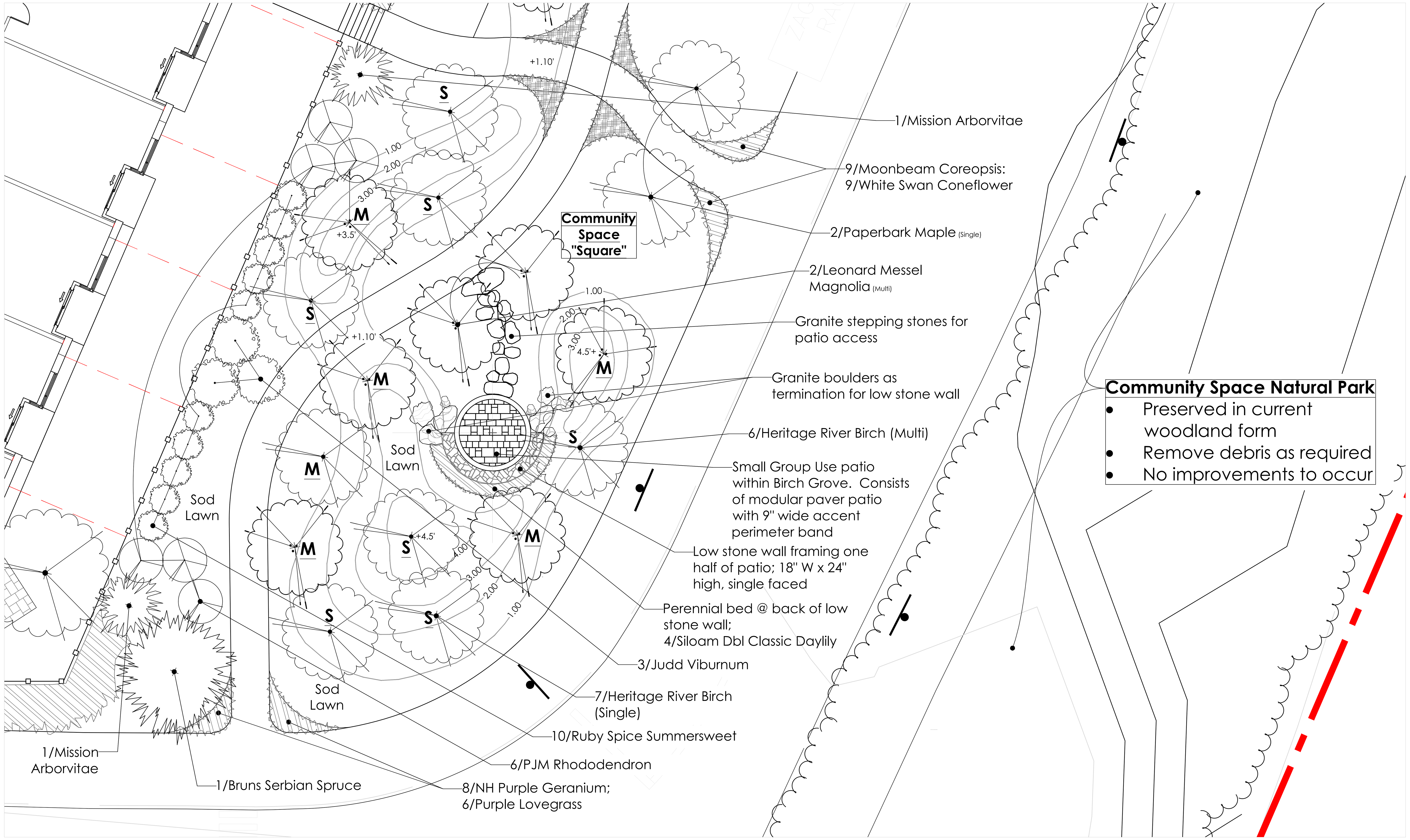
6		plan, grading & drainage
7		
8		

project number: 1302.0
scale: 1" = 10'
drawn by: dhg
date: 1/16/2018

sheet title/number:

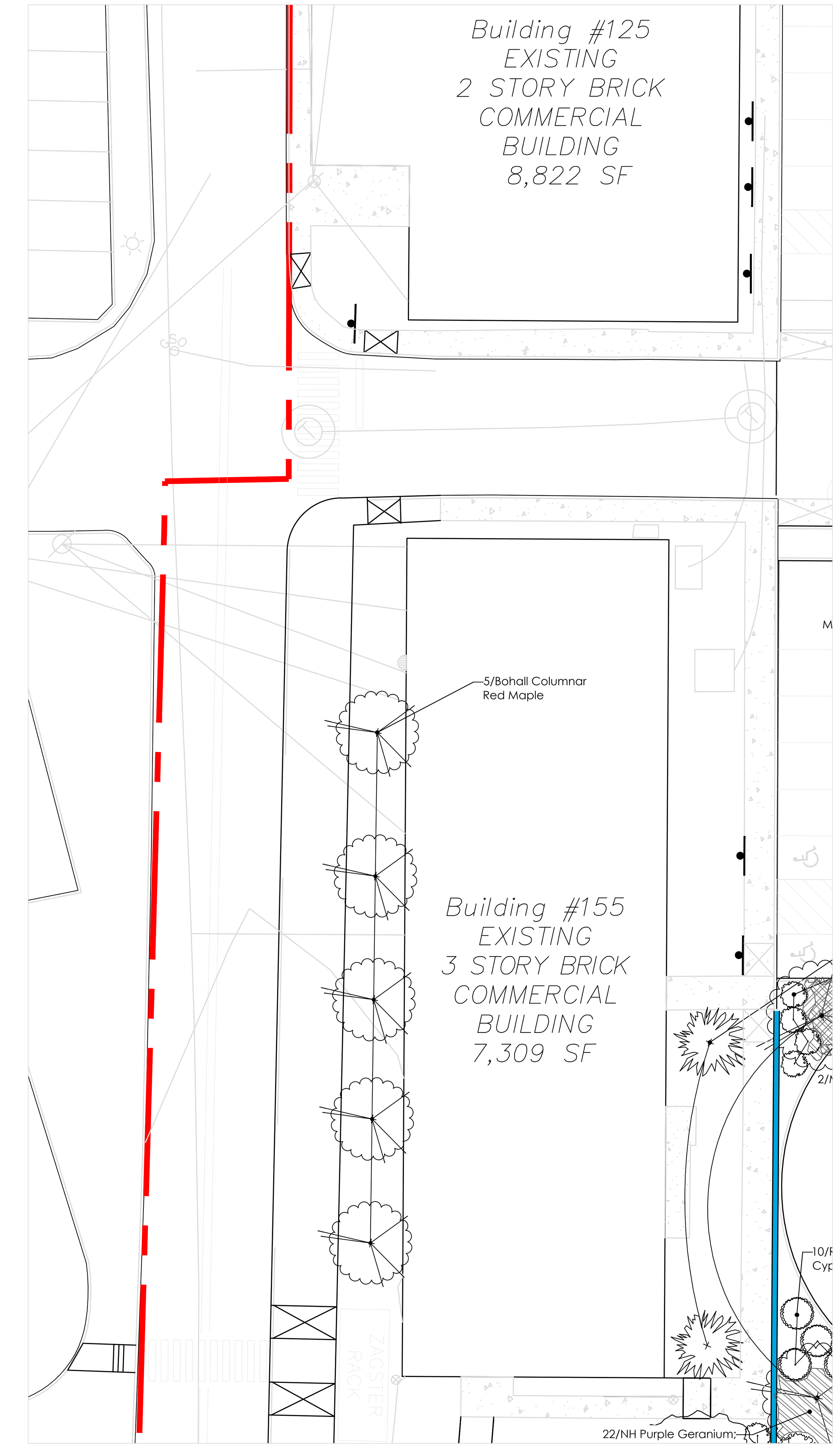
Landscape Plan

LA-3.0



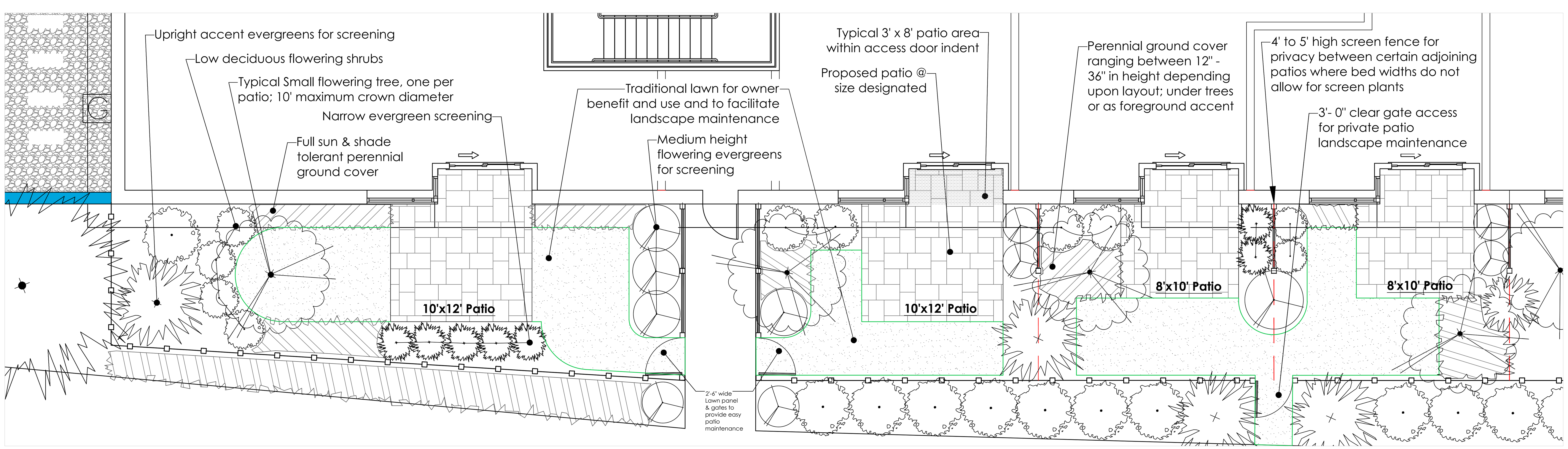
Birch Grove Landscape Plan - Southerly Section

Scale: 1" = 10'-0"



Building 155 Street Trees

Scale: 1" = 20'-0"



Typical Private Patio Landscape Treatment Detail - South Exposure

Scale: 1" = 6'-0"

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:

145 Brewery Lane

Owner/Applicant:

Portsmouth West End
Development, LLC
3 Penstock Way
Newmarket, New Hampshire 03857

For City Approval

registration:

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6		plan, grading & drainage
7		
8		

project number: 1302.0

scale: 1" = 10'

drawn by: dhg

date: 1/16/2018

sheet title/number:

Landscape Plans
& Typical Private
Patio Plantings

LA-4.0

g2+1 LLC
Landscape Architecture Site Planning Graphics

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Salisbury, NH 03268
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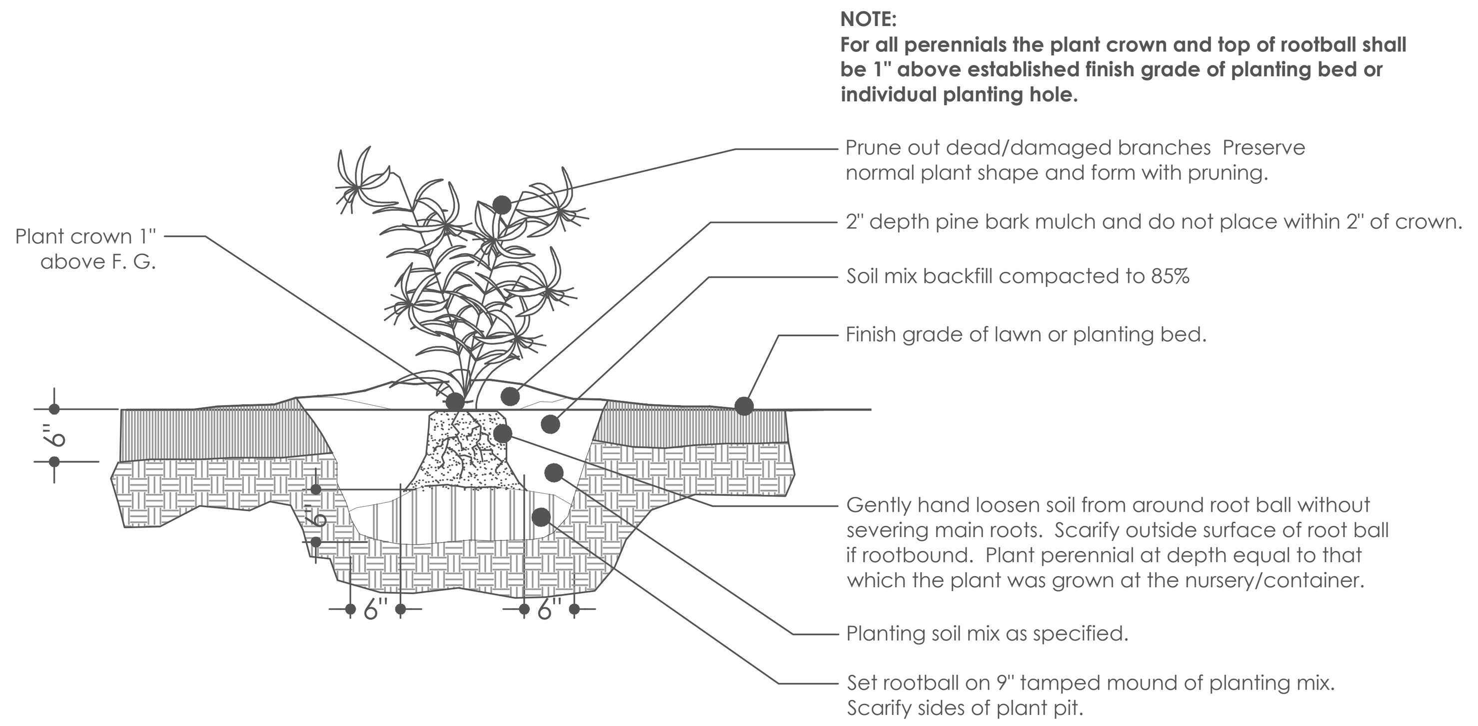
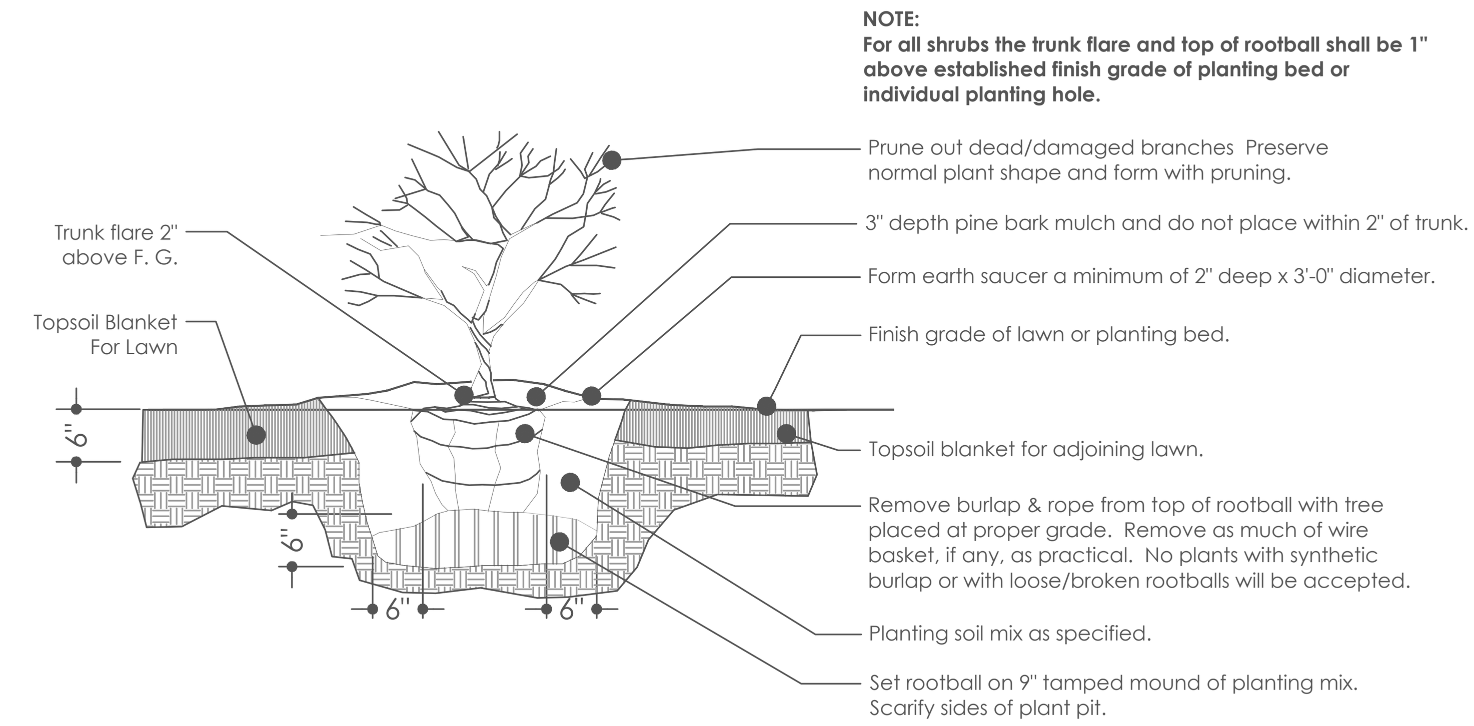
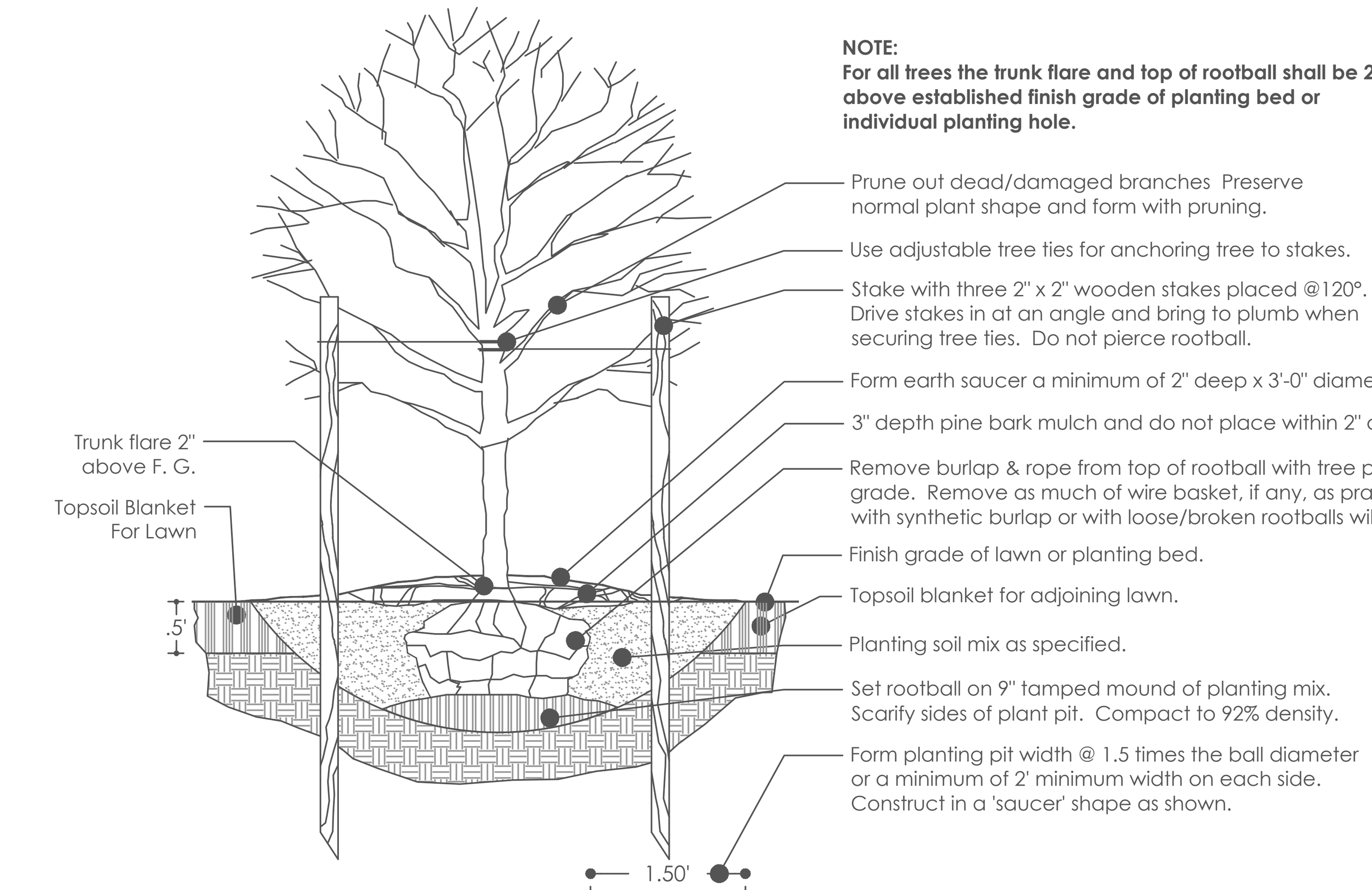


3 / LA–2 Perennial Planting Detail
No Scale



2 / LA–2 Shrub Planting Detail
No Scale

(Shrub Planting Detail applies to Evergreen and Deciduous Shrubs)



1 / LA–2 Tree Planting Detail
No Scale

(Tree Planting Detail applies to Evergreen and Deciduous Trees)

Plant Schedule

Brewery Lane Landscape
Portsmouth, New Hampshire

1/16/2001
Revised: 2/12/2018
Revised: 3/20/2018

Sym	Qty	Common Name	Botanical Name	Zone	Habit of Growth Height	Spread	Installed Size	Type	Notes
Large, Deciduous Trees									
YLW	4	Yellowwood	Cladrastic kentukea	4	30-40'	30-40'	2-1/2" cal.	B&B	Fragrant pendulous flowers, grey bark
HLH	2	Halka Honeylocust	Gleditsia triacanthos inermis 'halka'	4	40'	40'	2-1/2" cal.	B&B	tough
LSM	6	Legacy Sugar Maple	Acer saccharinum 'legacy'	3	50-60'	35-40'	2-1/2" cal.	B&B	hardy, vigorous
HRB.M	9	Heritage River Birch - **MULTI**	Betula nigra 'heritage'	4	40-70'	20-30'	10' ht.	B&B	Creamy white bark, very hardy
HRB.S	9	Heritage River Birch - **SINGLE**	Betula nigra 'heritage'	4	40-70'	20-30'	3" cal.	B&B	Creamy white bark, very hardy
BRM	5	Bohall Red Maple	Acer rubrum 'bohall'	4	40-60'	10-15'	2-1/2" cal.	B&B	Columnar form, street tree tolerant. Red-yellow color
Small, Accent Flowering Trees									
ABS	4	Autumn Brilliance Serviceberry - MULTI	Amelanchier grandiflora 'autumn brilliar	4	25'	15-20'	7'-8' ht.	B&B	clump, shade tolerant, gray bark, white flowers
ABS	2	Autumn Brilliance Serviceberry - SINGLE	Amelanchier grandiflora 'autumn brilliar	4	25'	15-20'	3" cal.	B&B	shade tolerant, gray bark, white flowers
JTL	4	Japanese Tree Lilac	Syringa reticulata	3	20-30'	15-25'	2-1/2" cal.	B&B	tough, full sun
KD	2	Satomi Kousa Dogwood- MULTI	Cornus kousa 'satomi'	5	15-20'	10-15'	8'-10' ht.	B&B	Reddish purple fall foliage, exfoliating bark
TCH	2	Thornless Cockspur Hawthorn	Crataegus crusgalli inermis	3	15-20'	20'	2-1/2" cal.	B&B	low branched, red fruit
DMM	1	Dr. Merrill Magnolia - MULTI	Magnolia loebneri 'merrill'	3	20-25'	25-30'	8'-10' ht.	B&B	Large 3-4" flowers before leaves, Specimen
LMM	2	Leonard Messel Magnolia - MULTI	Magnolia loebneri 'leonard messel'	4	15-20'	10-15'	8'-10' ht.	B&B	Vigorous/hardy, star like petals
PBM	4	Paperbark Maple - MULTI	Acer griseum	4	20-30'	10-20'	8'-10' ht.	B&B	Cinnamon exfoliating bark
PBM	4	Paperbark Maple - SINGLE	Acer griseum	4	20-30'	10-20'	2-1/2" cal.	B&B	Cinnamon exfoliating bark
Evergreen Trees & Accent Evergreens									
DRK	4	Dark American Arborvitae	Thuja occidentalis 'nigra'	4	10-30'	10-12'	6'-7' ht.	B&B	columnar, wide base, shade tolerant
BSS	2	Bruns Serbian Spruce	Picea omorika 'Bruns'	4	20-30'	10-15'	10'-12' ht.	B&B	Pyramidal, specimen form, bluish-green
HLMS	2	Holmstrup Arborvitae	Thuja occidentalis 'holmstrup'	2	10'	3-4'	3'-4' ht.	B&B	columnar, shade tolerant
GHFC	2	Gracilis Hinoki Falsecypress	Chamaecyparis obtusa 'gracilis'	4	15-20'	6-8'	6'-7' ht.	B&B	Pyramidal, specimen form
FSHF	4	Fernspray Hinoki Falsecypress	Chamaecyparis obtusa 'filicoides'	4	15-20'	8-10'	6'-7' ht.	B&B	Thick, curved dense fans of foliage
CNCF	1	White Fir	Abies concolor	3	30-50'	15-30'	6'-7' ht.	B&B	Soft blue green foliage
MSA	7	Mission Arborvitae	Thuja occidentalis 'techney'	3	10-15'	6-8'	6'-7' ht.	B&B	columnar, shade tolerant
MTB	5	Mountbatten Juniper	Juniperus chinensis 'mountbatten'	4	15'	6'	6' ht.	B&B	columnar
Low, Evergreen Ground Cover									
BSGP	4	Blue Shag Pine	Pinus strobus 'blue shag'	3	4-6'	5-7'	6 gal.	CTN	full sun, wetland
SVL	7	Silver Run Leucothoe	Leucothoe fontanesiana 'silver run'	4	2-3'	3-4'	2 gal.	CTN	part shade/shade, white/green/pink foliage
ELY	2	Ever-Low Yew	Taxus media 'ever-low'	4	1.5'	4-6'	18"-24" spd.	B&B	Hardy, shade tolerant
RSCP	46	Russian Cypress	Microbiata decussata	2	1-2'	4-5'	18"-24" spd.	CTN	Sun and shade, arborvitae like foliage
HSCP	2	Hillside Creeper Scotch Pine	Pinus sylvestris 'hillside creeper'	3	1-2'	6-8'	3' spd.	B&B	
Accent/Flowering Evergreen Shrubs									
MTL.4	4	Sarah Hybrid Mountain Laurel	Kalmia latifolia 'sarah'	4	3-1/2'	3-1/2'	5 gal.	CTN	Small Accent
PJM	6	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
BBA	17	Brouwer's Beauty Andromeda	Pieris 'brouwer's beauty'	5	5'	5'	2'-3' ht.	B&B	Dense & compact, buds purplish/red buds in winter
MFA	4	Mountain Fire Andromeda	Pieris japonica 'mountain fire'	5	9-12'	6-8'	7 gal.	CTN	Upright form, Pendulous white flowers
MTL	4	Mountain Laurel	Kalmia latifolia	4	6-8'	6-8'	4'-5' ht.	B&B	sun/shade, Needs some shade from direct sun
Deciduous Flowering Shrubs									
FLH-3	10	Endless Summer Hydrangea	Hydrangea macrophylla 'blushing bride'	4	3-5'	3-5'	5 gal.	CTN	Sun, winter hardy
FLH-2	14	Incrediball Smooth Hydrangea	Hydrangea arborescens 'incrediball'	3	4-5'	4-5'	3 gal.	CTN	Partial shade/summer color
RSSMS	27	Ruby Spice Summersweet	Clethra alnifolia 'ruby spice'	3	4-5'	4-5'	5 gal.	CTN	Fragrant and compact, dense plant
RVE	21	Redvein Enkianthus	Enkianthus campanulatus	4	8-10'	6-8'	4'-5' ht.	B&B	partial shade
GLS	22	Grow Low Sumac	Rhus aromatica 'grow low'	3	2'	6'	2 gal.	CTN	Fragrant small yellow flowers, orange-red fall color
LNGF	3	Lynwood Gold Forsythia	Forsythia 'lynwood gold'	4	6-8'	6-8'	4'-5' ht.	B&B	sun, hardy
AJV	10	Autumn Jazz Viburnum	Viburnum dentatum 'autumn jazz'	3	8-10'	6-8'	4'-5' ht.	B&B	Stunnning blue fruit, Improved native
PNKV	4	Pink Dawn Viburnum	Viburnum bodnantense 'pink dawn'	3	10'	7'	4'-5' ht.	B&B	Upright form
MOV	6	Mohawk Viburnum	Viburnum burkwoodii 'mohawk'	4	6-8'	6-7'	3'-4' ht.	B&B	Hardy and fragrant
JUDD	3	Judd Viburnum	Viburnum dilatatum x juddii	4	6-8'	6-8'	4-5' ht.	B&B	red-veined leaves
BMV	8	Blue Muffin Viburnum	Viburnum dentatum 'blue muffin'	4	6-8'	4-5'	4'-5' ht.	B&B	Pendulous habit, Vase shaped, white flower

Decorative Grasses

Sym	Qty	Common Name	Botanical Name	Zone	Height	spacing	Type	Size	Features
DCGR-4	34	Purple Lovegrass	Eragrostis spectabilis	4	18-24"	30"	1 yr. potted	2 gal.	18"-24", S, Aug/Oct, bronze-red seed heads
DCGR-5	4	Northern Sea Oats	Chasmanthium latifolium	4	24-36"	36"	1 yr. potted	2 gal.	24"-36", S/PSh, Sept/Oct, Tawny and purple
DCGR-6	13	Prairie Fire Switch Grass	Panicum virgatum 'prairie fire'	4	48-60"	36"	1 yr. potted	2 gal.	48"-60", S/PSh, July/Aug, bluish stems & wine red plumes
DCGR-7	49	Morning Light Grass	Miscanthus sinensis 'morning light'	4	36-48"	30"	1 yr. potted	2 gal.	36"-48", S, Aug/Sept, narrow green foliage, red 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-1	48	Daylily	Hemerocallis 'Bama Bound'				1 yr. potted	1 gal.	24", S/PSh, June/July, Deep red/Apple green throat
GC.A-3	57	Daylily	Hemerocallis flava - 'Lemon Lily'				1 yr. potted	1 gal.	36", S/PSh, June/July, Lemon Yellow
GC.A-9	47	Daylily	Hemerocallis flava 'Siloam Dbl. Classic'				1 yr. potted	1 gal.	18", S/PSh, June, Double Soft Salmon Pink
GC.A-11	44	Daylily	Hemerocallis 'Stella de Oro'				1 yr. potted	1 gal.	14", S/PSh, June - Sept, deep golden yellow
GC.B	9	Threadleaf Coreopsis	Coreopsis verticillata, 'Moonbeam'				1 yr. potted	2 qt	24", S, July/Aug, Pale Yellow
GC.C-2	28	Pink Coneflower	Echinacea purpurea 'Kim's Knee High'				1 yr. potted	2 qt	12"-24", S/PSh, July/Sept, Rose Pink
GC.C-3	22	White Coneflower	Echinacea purpurea 'White Swan'				1 yr. potted	2 qt	18"-24", S/PSh, June/Sept, White
GC.C-5	16	Sandy Yellow Coneflower	Echinacea sombrero 'sandy yellow'				1 yr. potted	2 qt	24", S/PSh, July/Aug, peach yellow
GC.H-5	14	Hosta	Hosta 'Royal Standard'				1 yr. potted	1 gal.	24-28", S/Sh, Aug/Sept, White flower, Rich Grn leaf
GC.I	84	Lowbush Blueberry	Vaccinium angustifolium				1 yr. potted	1 qt	12", S, May, Violet-Blue ; 2-1/2" pots
GC.X-3	75	Bloody Cransbill	Geranium sanguineum 'NH Purple'				1 yr. potted	2 qt	9"-12", S/PSh, May/Sept, Magenta Pink
GC.Z-2	20	Little Spire Russian Sage	Perovskia atriplicifolia 'little spire'				1 yr. potted	2 qt	18"-24", S, July-Sept, Light Blue, Poor/Well Drained
	207	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 January 16, 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. Trees shall be set 2" higher than previous grade. No tress shall be planted before acceptance of rough grading.
13. 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.
14. Landscape (weed) fabric is not allowed.
15. All existing trees to remain shall be properly protected during construction. Protection techniques shall be reviewed and approved by the Landscape Architect.
16. Prune trees in accordance to guidelines established for nursery stock published by the American Association of Nurserymen, Inc.
17. 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
18. All landscaped areas shall be irrigated either with pop up spray and/or drip systems.
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.

For City Approval

registration:

revisions:

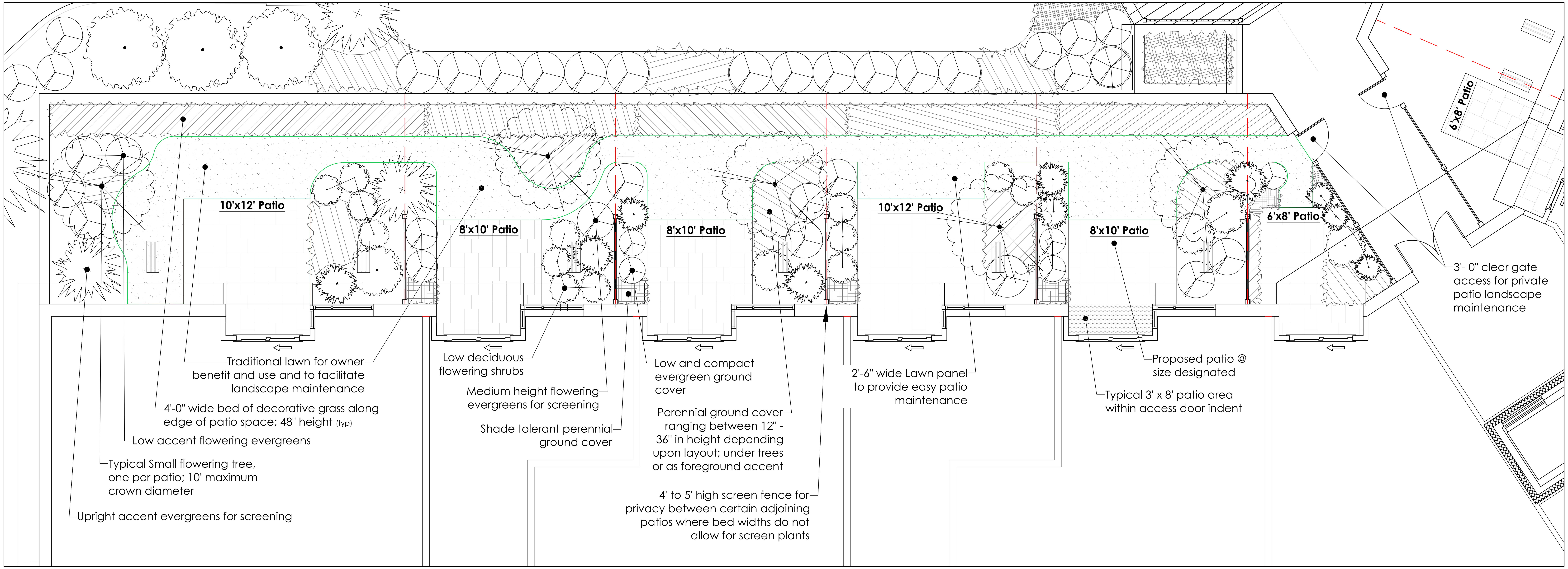
no.	date	issued
1	1/16/18	Update plan set with REV site
2		plan, grading & drainage
3	2/12/18	Update plan set with REV site
4		plan, grading & drainage
5	3/20/18	Update plan set with REV site
6		plan, grading & drainage
7		
8		

project number: 1302.0
scale: 1" = 10'
drawn by: dhg
date: 1/16/2018

sheet title/number:

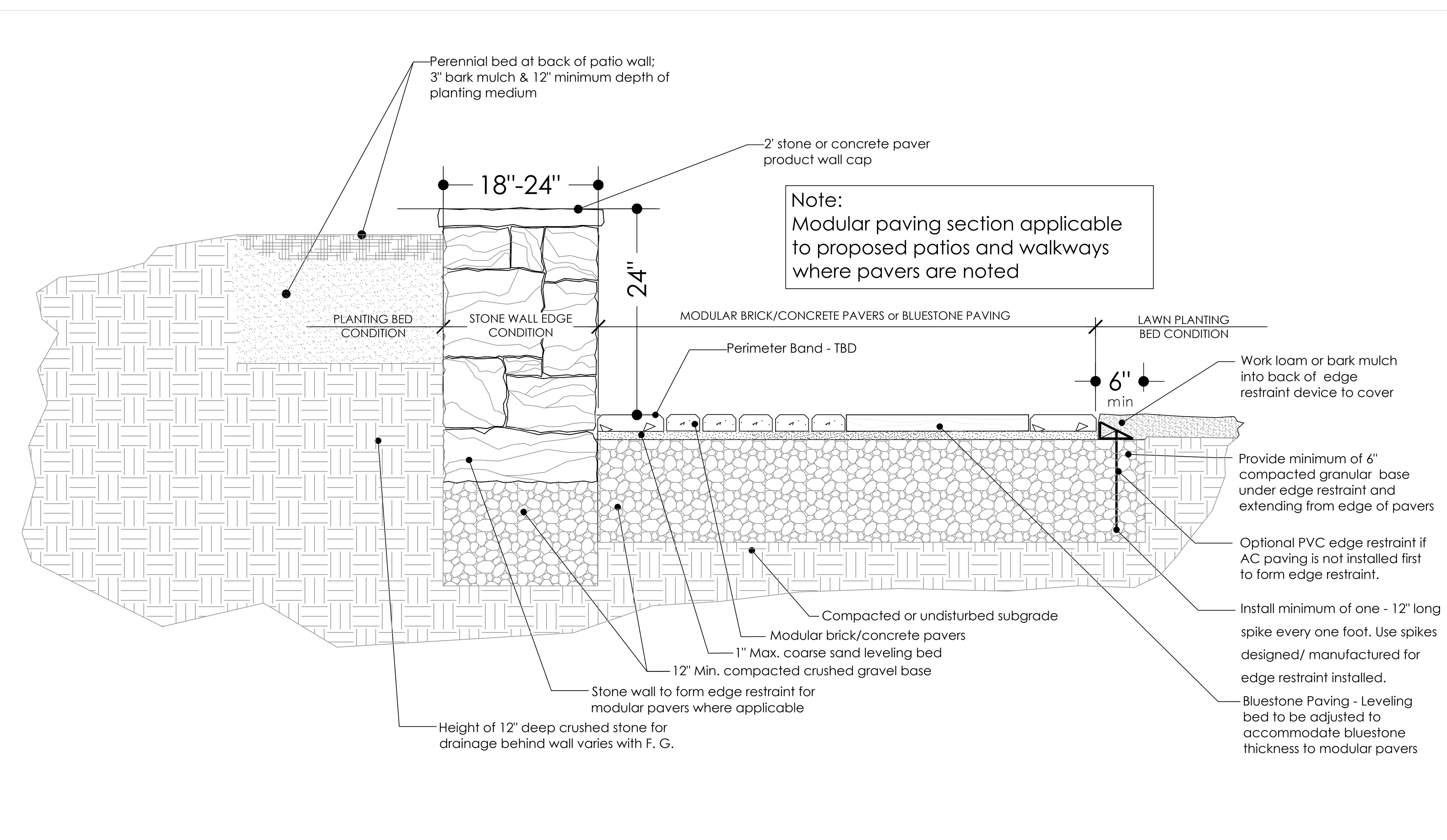
Plant Schedules & Typical Planting Details

LA-5.0



Typical Private Patio Landscape Treatment Detail - Northern Exposure

Scale: 1" = 5'-0"



Typical Low Stone Wall & Modular Paving Section Detail for Small Group Use Patio in Birch Brove

Scale: 1" = 1'-0"

Private Patio Notes:

- Illustrated on this plan are five (5)patio landscape scenarios to show intended treatment of all patios on the North side of the building. See sheet LA-4.0 for illustration of landscape scenarios for South side of building.
- Plant types will be repeated for each side but the species selections will differ when applied to a North and South exposure.
- All patio areas shall include pop spray irrigation to mitigate concerns regarding potential ignition of bark mulched beds and for proposed lawn irrigation.
- Site and configuration of private patios to be determined based on marketing criteria for individual housing units.
- Large decorative grass planted within a 4' wide bed along the retaining wall edge that defines the outside edge of all private patio spaces. By code,this planting bed width allows for no need to install fencing on that edge.
- Selection of patio surface treatment to be determined.
- 4' - 5' high screen fence for privacy between certain adjoining patios where bed widths do not allow for screen plants. In some instances this fencing might be a wrought iron style fencing where plants can provide the majority of screening while fencing provides a sense of security between patios.
- Fencing illustrated at main entry is to provide a barrier between a public entry and adjoining private patio spaces.
- Two gate entries occur at the public entry area for private patio landscape maintenance.
- Final placement plants with regard to outdoor HVAC units within each patio space to be adjusted during construction.

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:

145 Brewery Lane

Owner/Applicant:

Portsmouth West End Development, LLC
3 Penstock Way
Newmarket, New Hampshire 03857

For City Approval

registration:

revisions:

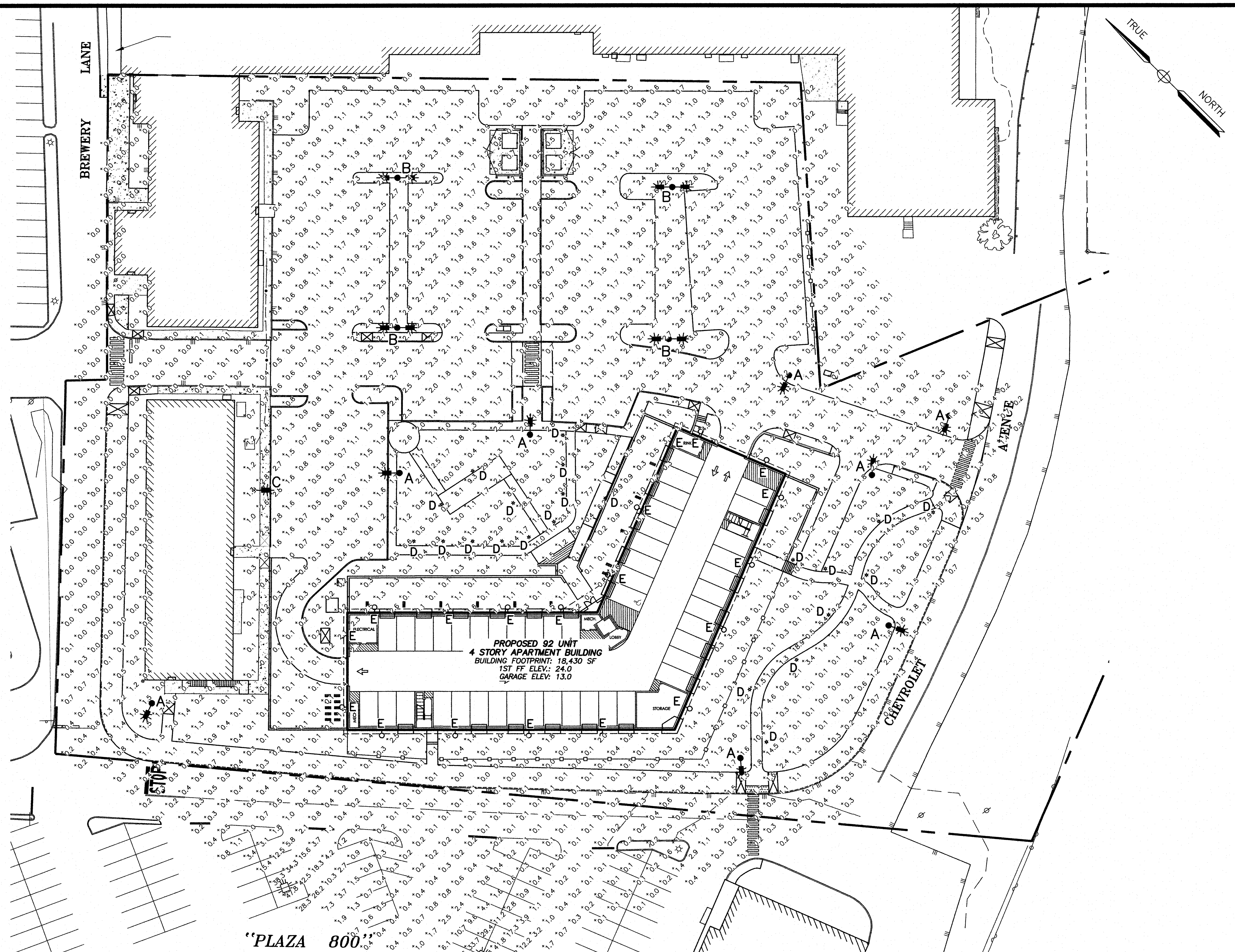
no.	date	issued
1	1/16/18	Update plan set with REV site
2		plan, grading & drainage
3	2/12/18	Update plan set with REV site
4		plan, grading & drainage
5	3/20/18	Update plan set with REV site
6		plan, grading & drainage
7		
8		

project number: 1302.0
scale: 1" = 10'
drawn by: dhg
date: 1/16/2018

sheet title/number:

Typical Private Patio Plantings & Construction Details

LA-6.0



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. ALL LIGHTING SHALL BE DARK SKY FRIENDLY.

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.

9) CHARRON, INC SUPPLIED THE PHOTOMETRICS FOR THE LIGHTS FOR THIS PROJECT.

10) THIS PLAN INCORPORATES LIGHTING FROM THE EXISTING LIGHTS AT THE PLAZA 800 PROPERTY.

CHINBURG PROPERTIES
145 BREWERY LANE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	ISSUED FOR APPROVAL	3/20/18
0	ISSUED FOR COMMENT	2/12/18

REVISIONS

LABEL	SYM	QTY.	CATALOG NUMBER	HEIGHT	LAMP	NUMBER LAMPS	LUMENS PER LAMP	LIGHT LOSS FACTOR	WATTAGE
A		10	PRV_A15-D-UNIV-T3-BZ	20'	LED	1	6192	0.9	57
B		4	PRV_A25-D-UNIV-T5-BZ	20'	LED	2	10627	0.9	87
C		1	PRV_A15-D-UNIV-T2-BZ-HSS	20'	LED	1	5681	0.9	57
D	☆	21	TNA-24LED-NW (BOLLARD)	BOLLARD	LED	24	1684	0.9	26.4
E	♀	19	33592 (BUILDING LIGHT)	24' ABOVE FF GRADE	LED	2	1456	0.9	19.3

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN　　　DATE

GRAPHIC SCALE

30 0 50 100 120 FEET

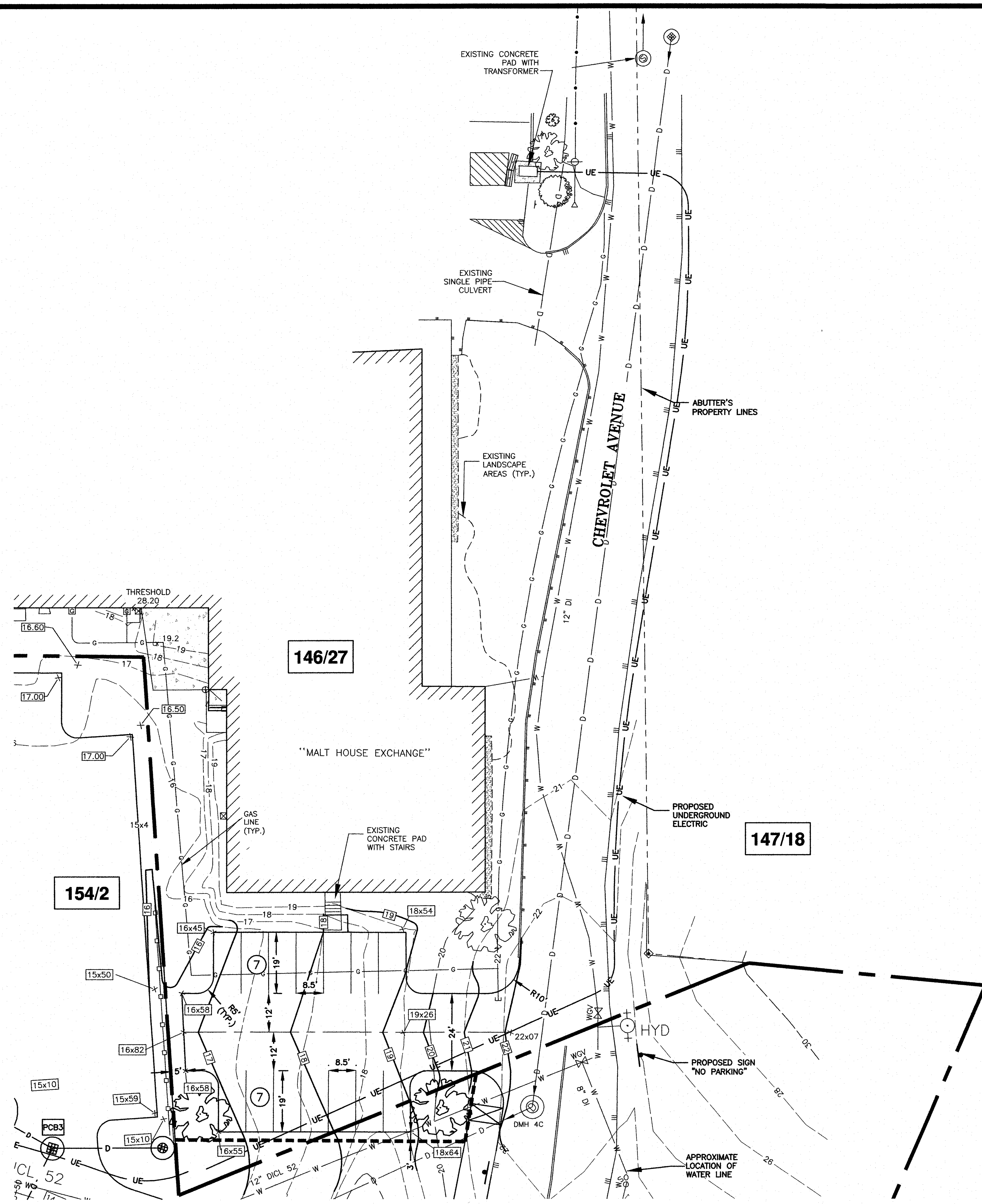
10 5 0 10 20 30 METERS

SCALE: 1" = 30'　　DECEMBER 2017

LIGHTING PLAN　　C9

FB168, PG 11　　830.01

J:\JOBS\JN800s\JN830s\JN830\2017 Site Plans Chinburg\Plans & Specs\Site\830.01SITE02.dwg, C9 LIGHT



APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE

GRAPHIC SCALE

10 0 20 40 60 80 FEET

5 0 5 10 15 20 25 METERS

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) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 154, LOT 2, MAP 146, LOT 27 AND MAP 147, LOT 18

2) OWNERS:
154/2 PORTSMOUTH WEST END DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857
5882/19

146/27 MALT HOUSE EXCHANGE REALTY TRUST
GARY DZIAMA TRUSTEE
95 BREWERY LANE
PORTSMOUTH, NH 03801

147/18 ELIZABETH B. LARSEN TRUST OF 2012
ELIZABETH B. LARSEN TRUSTEE
668 MIDDLE STREET
PORTSMOUTH, NH 03801

3) REFERENCE BENCHMARK & VERTICAL DATUM: CITY OF PORTSMOUTH SEWER DATUM. CHISELED "X" IN RIM OF SEWER MANHOLE #1360. ELEVATION = 22.67. THE CONTOUR INTERVAL IS 1'.

4) PARCEL IS NOT WITHIN THE 100 YEAR FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 33015C0259E, EFFECTIVE DATE MAY 17, 2005.

5) THE PURPOSE OF THIS PLAN IS TO SHOW OFF SITE IMPROVEMENTS

6) 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.

7) 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.

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CHINBURG PROPERTIES
145 BREWERY LANE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	3/20/18

REVISIONS

STATE OF NEW HAMPSHIRE JOHN R. CHAGNON No. 7851 LICENSED PROFESSIONAL ENGINEER

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

SCALE: 1" = 20' MARCH 2018

OFF SITE PLAN

OS

FB168, PG 11

830.01

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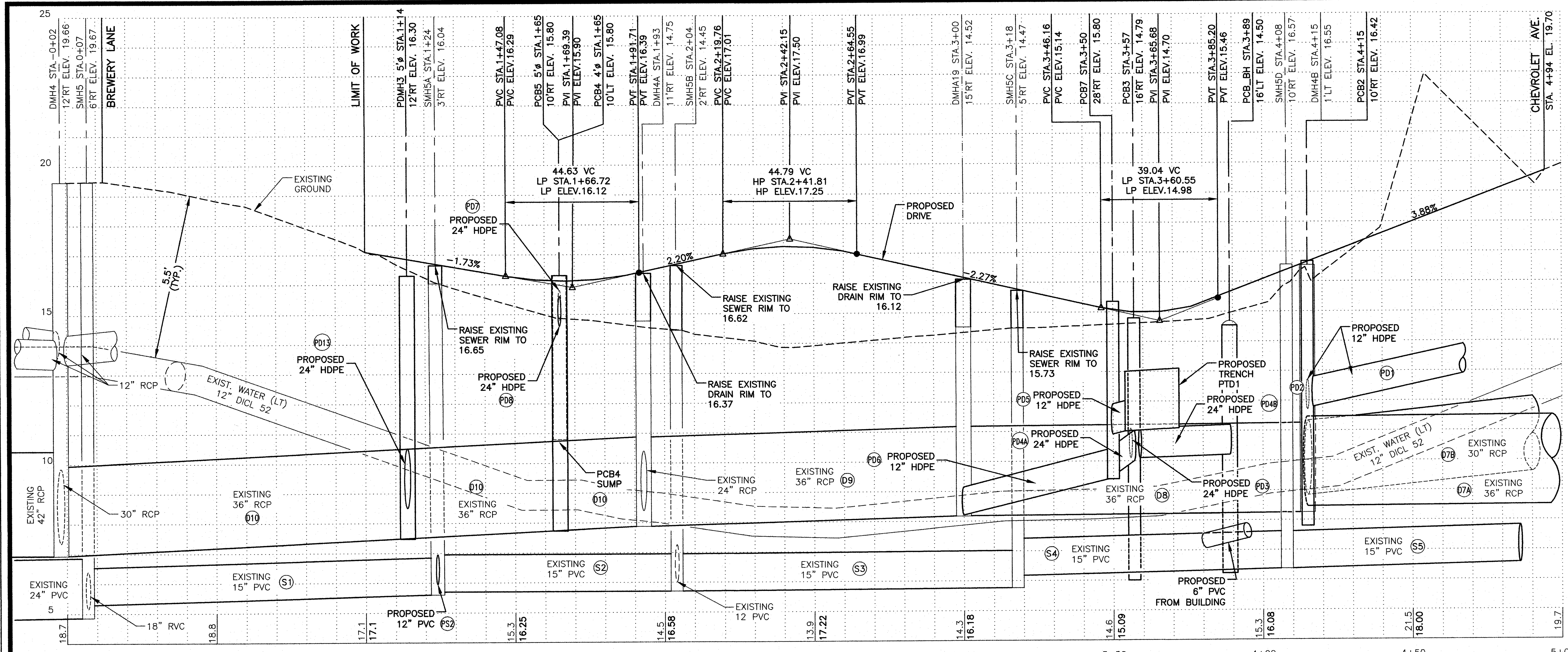
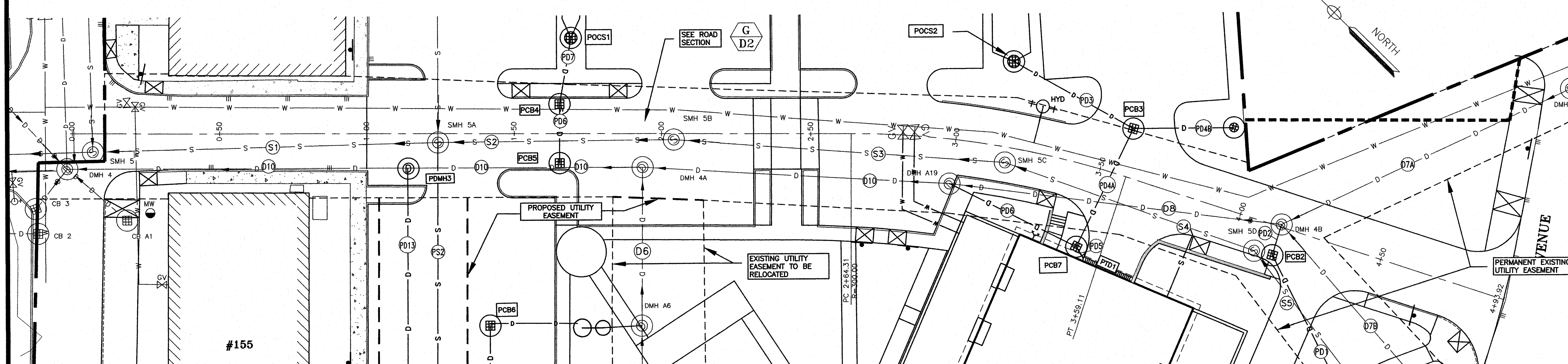


DRIVEWAY PROFILE

GRAPHIC SCALE
1" = 2' VERT.
1" = 20' HOR.



DRIVEWAY PLAN

GRAPHIC SCALE

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

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN

DATE

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

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CHINBURG PROPERTIES
145 BREWERY LANE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
2	PIPE CALL OUTS	3/20/18
1	SCALE OF PLAN	2/12/18
0	ISSUED FOR APPROVAL	12/5/17

REVISIONS

JOHN R. CHAGNON No. 7051 STATE OF NEW HAMPSHIRE LICENSED PROFESSIONAL ENGINEER

SCALE: 1" = 20' DECEMBER 2017

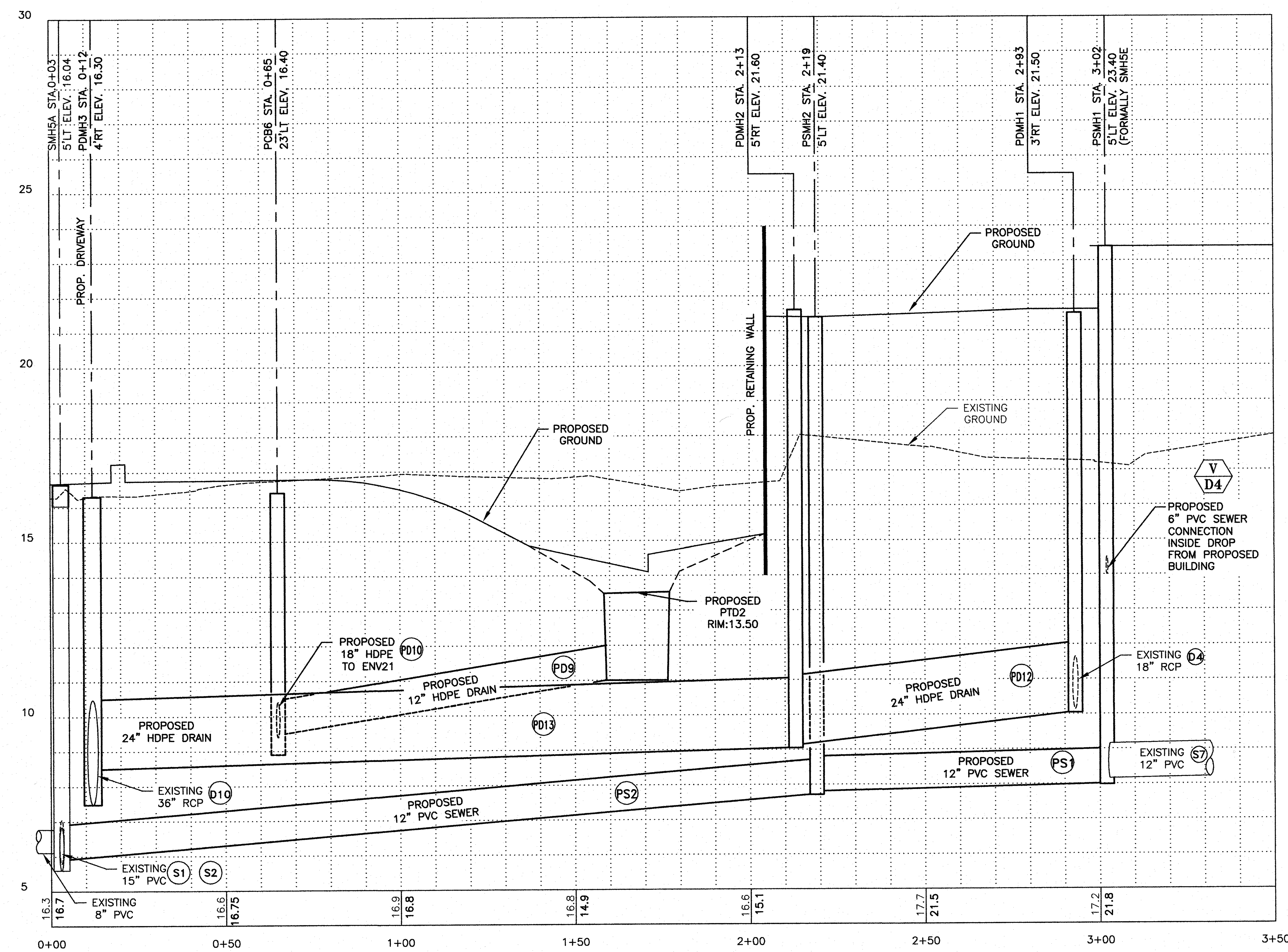
DRIVEWAY PLAN AND PROFILE

P1

FB168, PG 11

830.01

J:\JOBS\JN800s\JN830s\JN830\2017 Site Plans Chinburg\Plans & Specs\Site\830.01SITE02.dwg, P1 DRIVE PROFILE



UTILITY PROFILE

GRAPHIC SCALE
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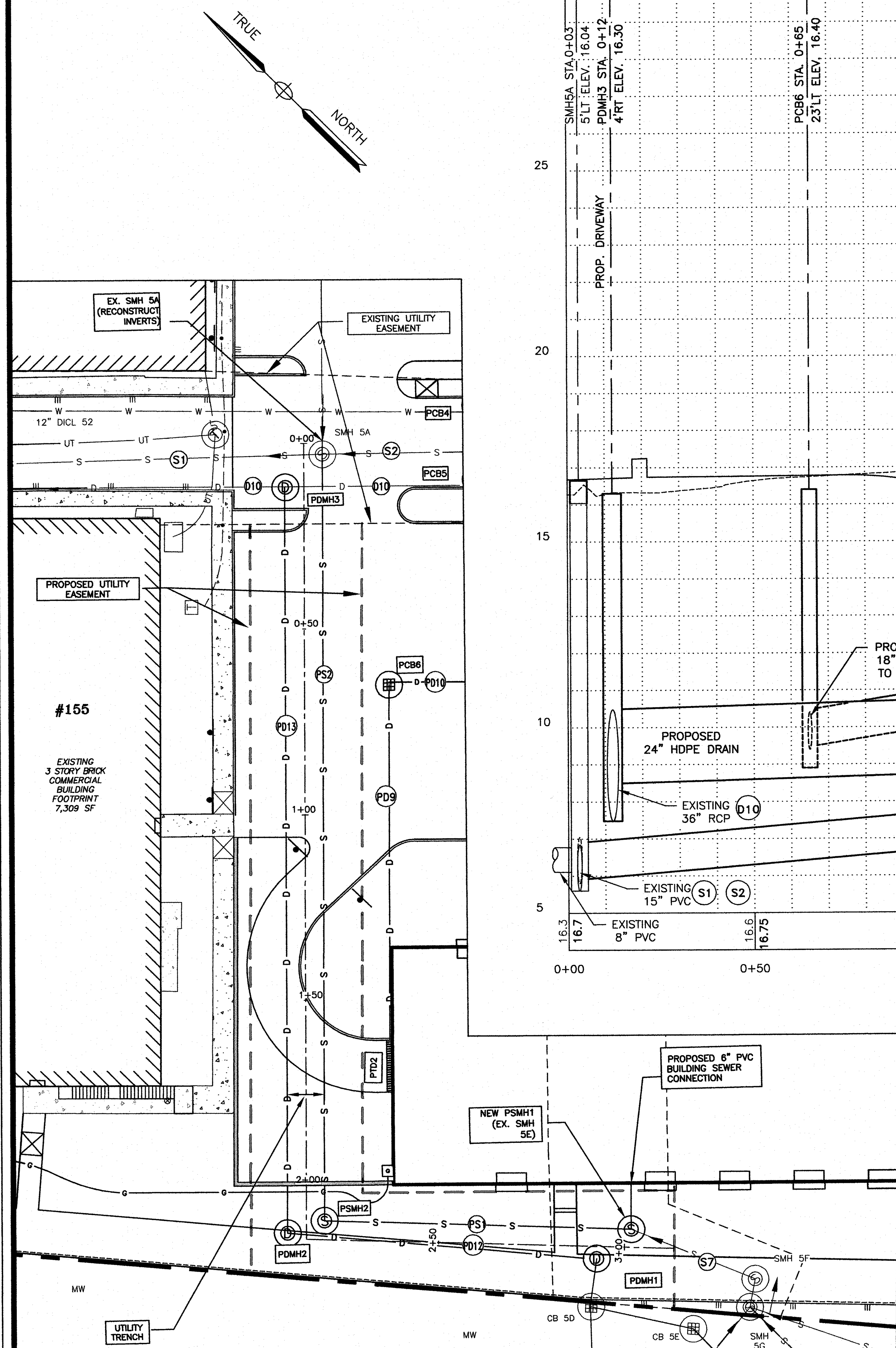
1" = 20' HOR.



UTILITY PLAN

GRAPHIC SCALE

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

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN

DATE

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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CHINBURG PROPERTIES
145 BREWERY LANE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
2	ADDED UTILITY CALLOUTS	3/20/18
1	SCALE OF PLAN	2/12/18
0	ISSUED FOR APPROVAL	12/5/17

REVISIONS

STATE OF NEW HAMPSHIRE JOHN R. CHAGNON No. 7851 LICENSED PROFESSIONAL ENGINEER

SCALE: 1" = 20' DECEMBER 2017

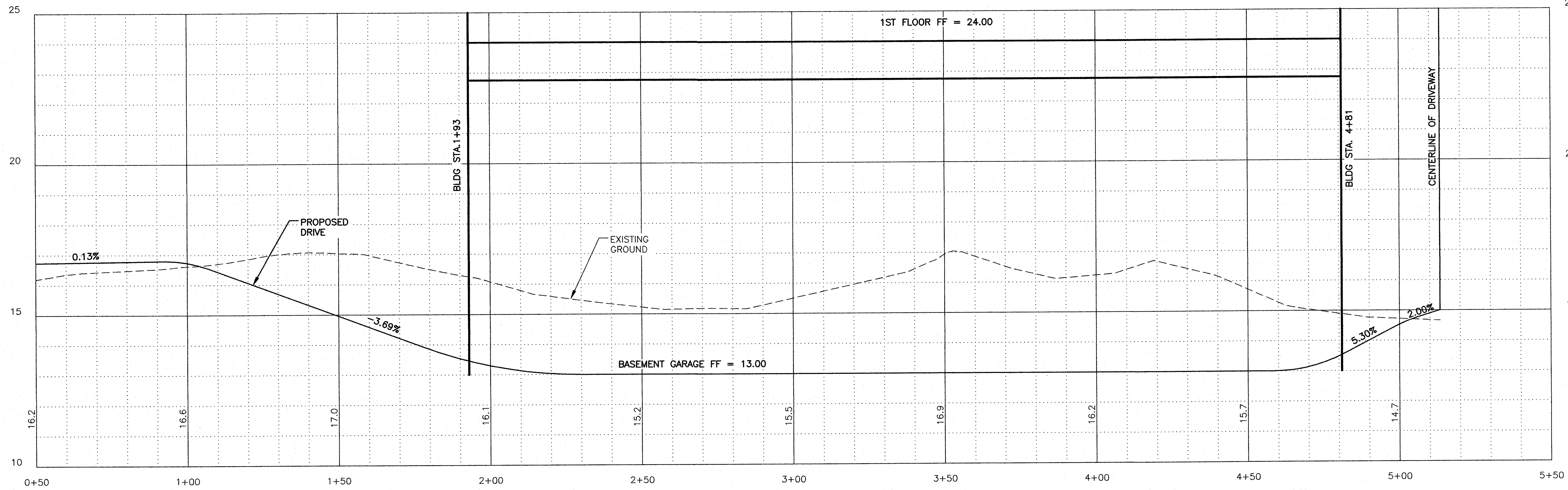
UTILITY PLAN AND PROFILE

P2

FB168, PG 11

830.01

J:\JOBS\JN800s\JN830s\JN830\2017 Site Plans Chinburg\Plans & Specs\Site\830.01SITE02.dwg, P2 UTIL PROFILE



GARAGE PROFILE

GRAPHIC SCALE
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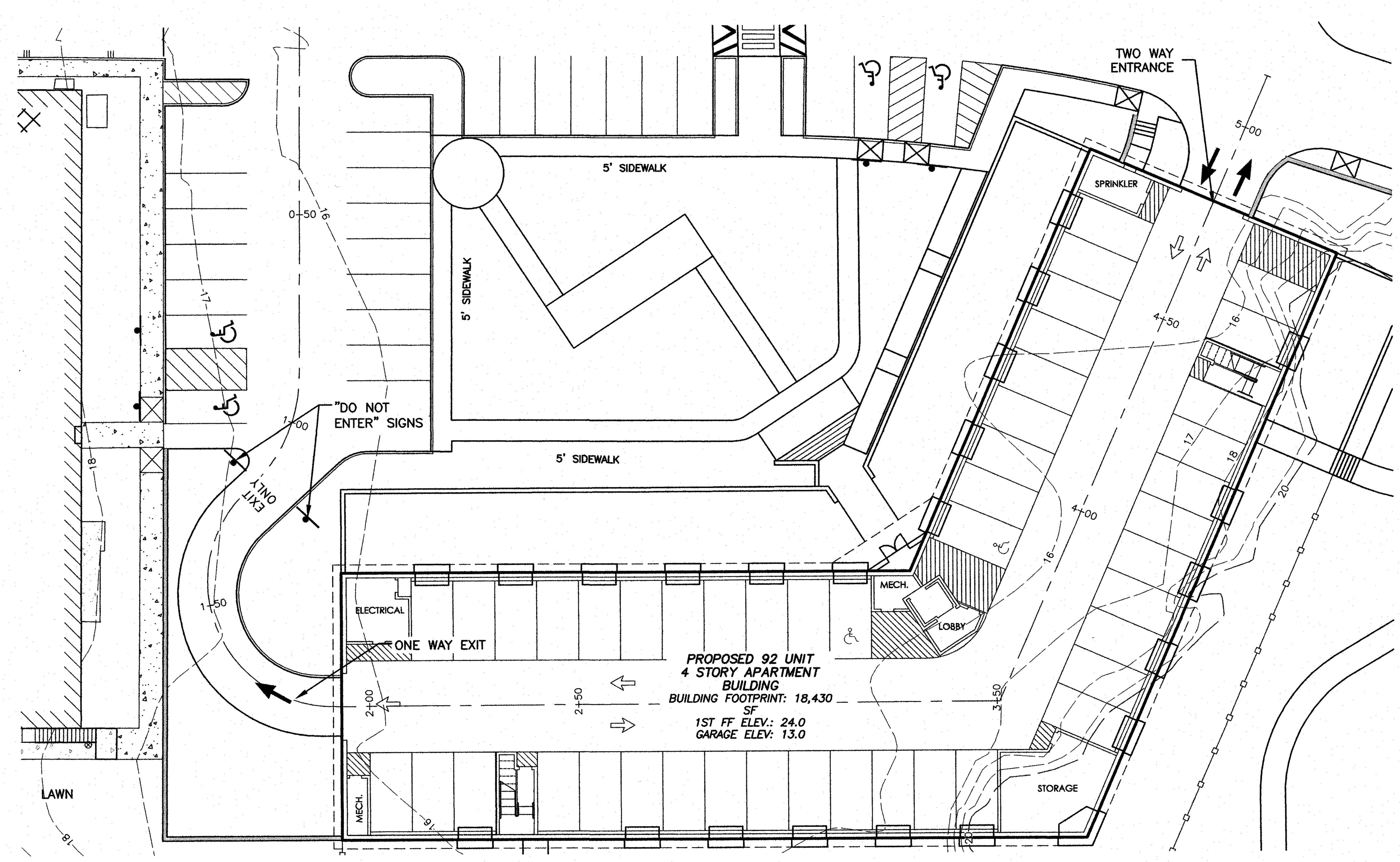
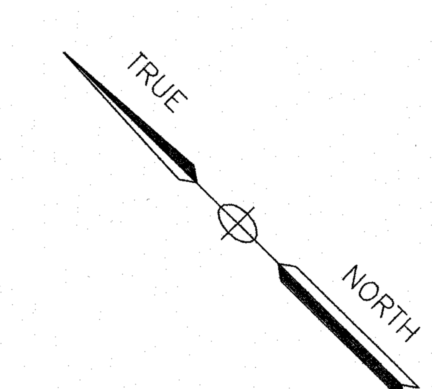
1" = 20' HOR.





GARAGE PLAN

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

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE

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

CHINBURG PROPERTIES 145 BREWERY LANE PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
2	BUILDING EDITS	3/20/18
1	SCALE AND LAYOUT	2/12/18
0	ISSUED FOR APPROVAL	12/5/17

REVISIONS

STATE OF NEW HAMPSHIRE JOHN R. CHAGNON No. 7851 LICENSED PROFESSIONAL ENGINEER

SCALE: 1" = 20' DECEMBER 2017

GARAGE PLAN AND PROFILE

P3

FB168, PG 11

830.01

J:\JOBS\JN800s\JN830s\JN830\2017 Site Plans Chinburg\Plans & Specs\Site\830.01SITE02.dwg, P3 GARAGE PROFILE

EROSION CONTROL NOTES

CONSTRUCTION SEQUENCE

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

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., SILT FENCING OR SILTSOXX AROUND THE LIMITS OF DISTURBANCE BEFORE ANY EARTH MOVING OPERATIONS. PROVIDE CATCH BASIN PROTECTION THE USE OF HAY BALES 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.

REMOVE EXISTING STOCKPILES, AND PROVIDE TEMPORARY SEEDING. INSTALL SILTSOXX. IF EROSION IS PERSISTENT THEN COVER WITH MULCH.

RE-ROUTE SEWER AND DRAINAGE FROM PLAZA 800 AND COMPLETE CONSTRUCTION TO THE POINT OF SWITCHING FLOWS TO NEW PIPES. DEMOLISH/FILL OLD PIPES AND UTILITIES TO BE RELOCATED/REMOVED.

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

ROUGH GRADE SITE, KEEP EXISTING PAVEMENT INTACT AS MUCH AS POSSIBLE.

CONSTRUCT BUILDING.

CONNECT UTILITIES.

CONSTRUCT FILTRATION BASINS. PROVIDE PERIMETER PROTECTION AROUND FILTRATION BASINS UNTIL GRASS IS ESTABLISHED.

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.

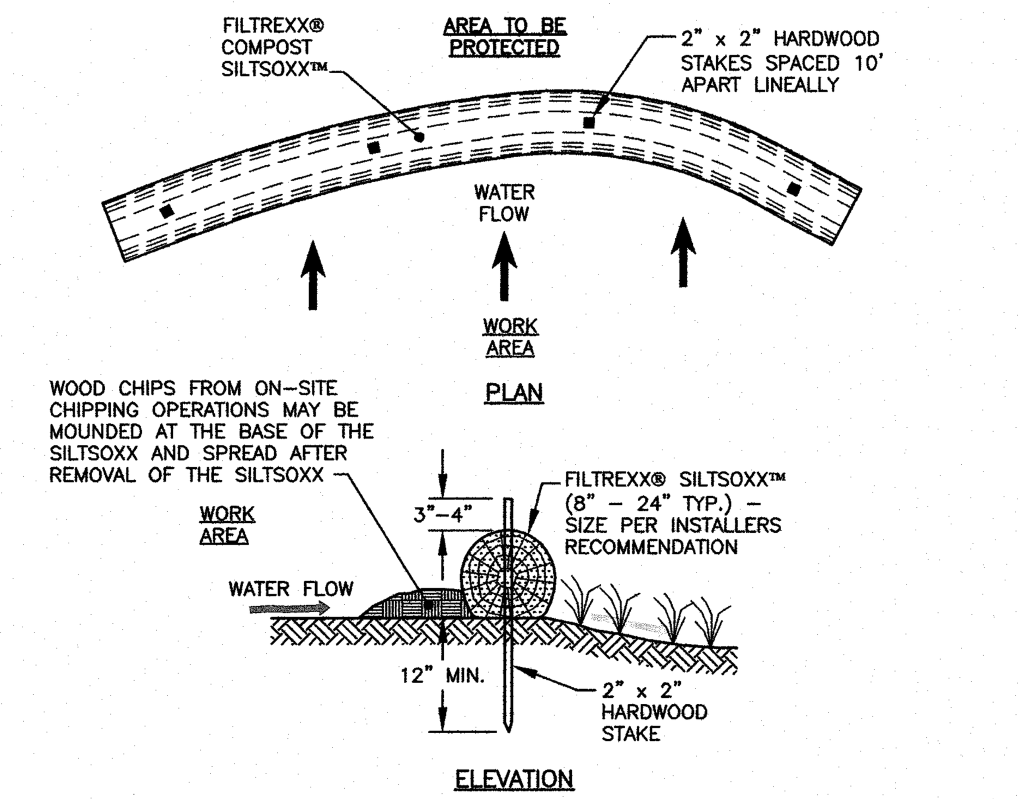
SILT FENCING AND SILTSOXX SHALL BE REMOVED ONCE VEGETATION IS ESTABLISHED, AND DISTURBED AREAS RESULTING FROM SILT FENCE AND SILTSOXX REMOVAL SHALL BE PERMANENTLY SEEDED.

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.

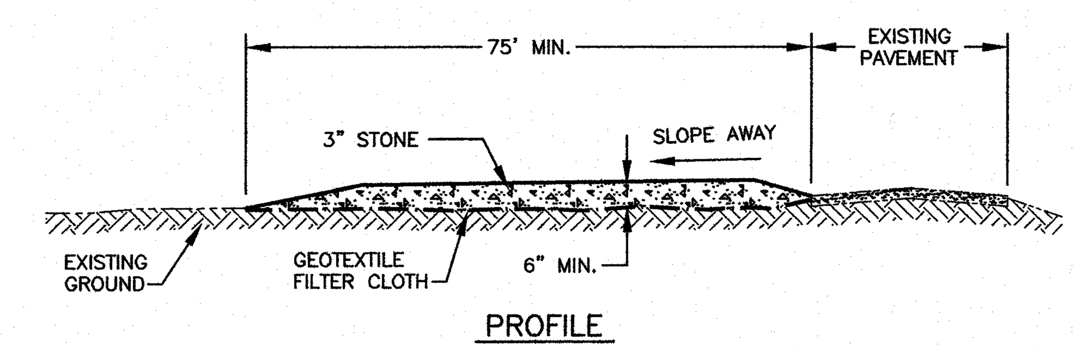
ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

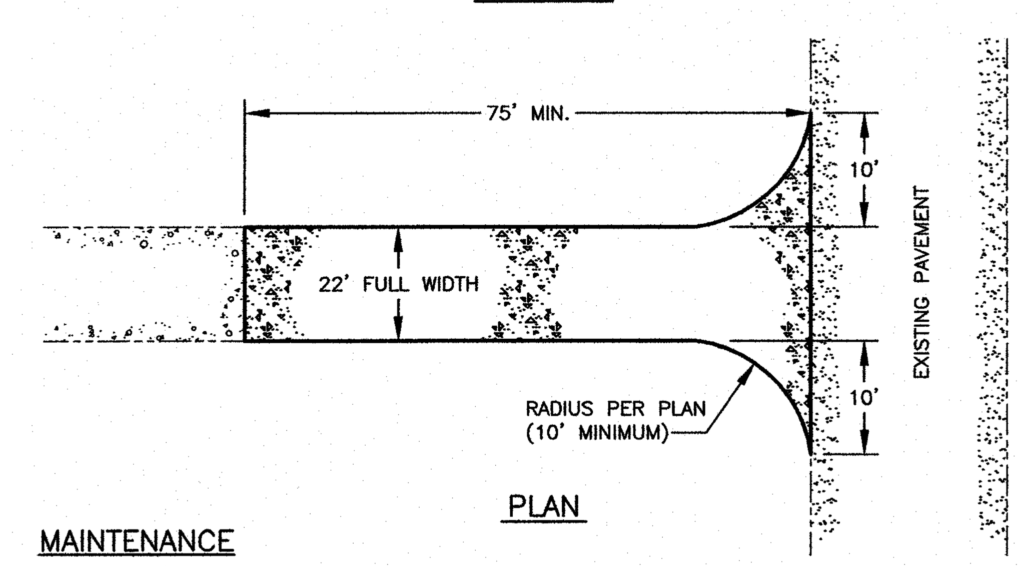
AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.



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





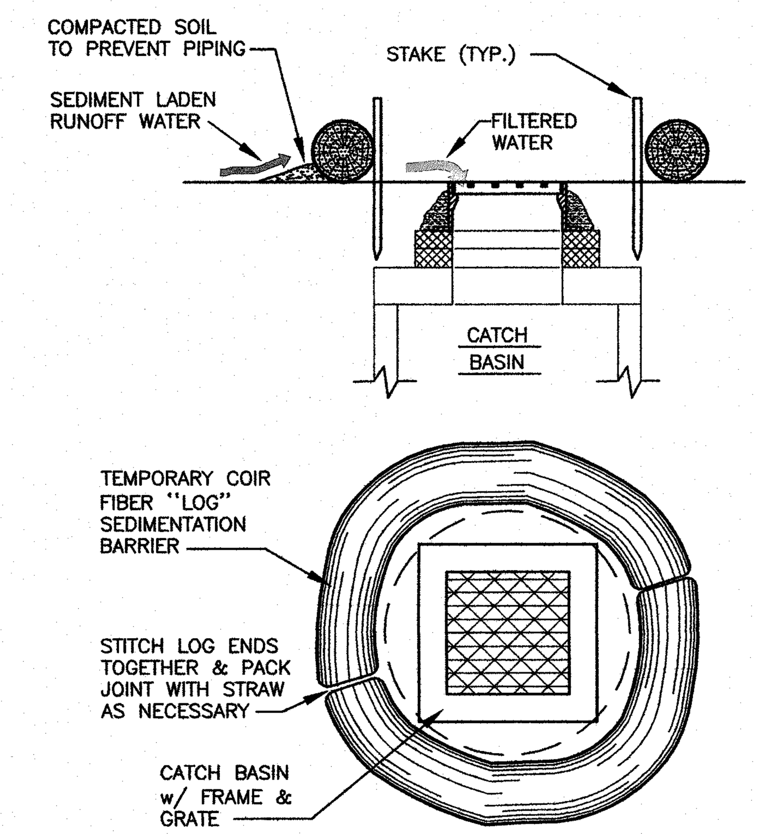
MAINTENANCE

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 3 INCH CRUSHED STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
2) THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 75 FEET.
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 / C7 STABILIZED CONSTRUCTION ENTRANCE
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.

C / C7 "SILT LOG" BARRIER AT CATCH BASIN INLET
(AS NEEDED) NTS

D NOT USED
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.

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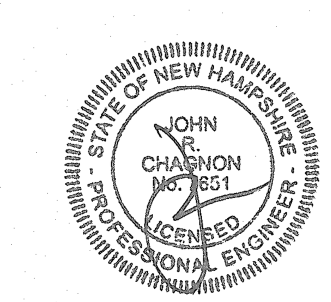
CHINBURG PROPERTIES
145 BREWERY LANE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
2	NOTES	3/20/18
1	NOTES	2/12/18
0	ISSUED FOR COMMENT	12/5/17

REVISIONS



SCALE: AS SHOWN DECEMBER 2017

EROSION PROTECTION NOTES AND DETAILS

D1

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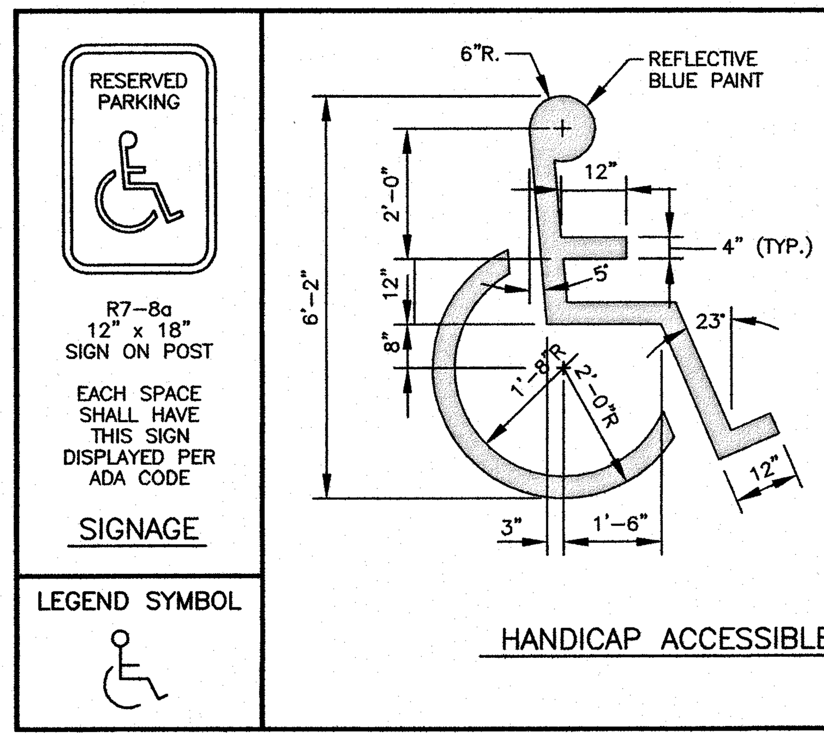
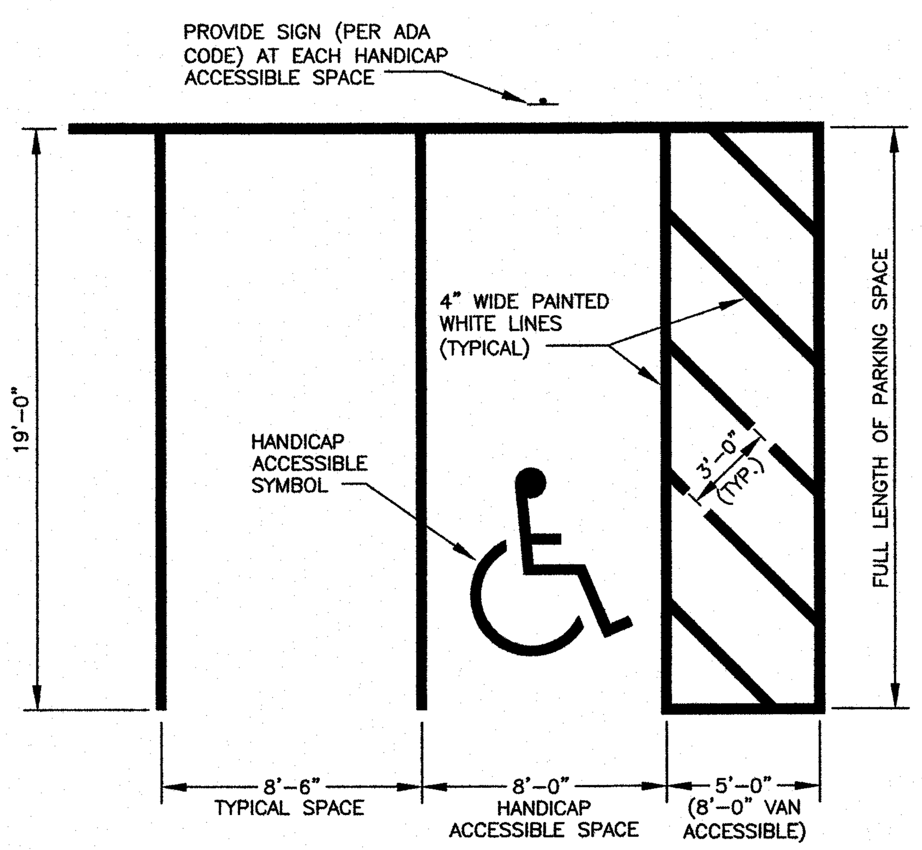


NOTES:

1) SYMBOL TO BE PAINTED IN ALL HANDICAPPED SPACES.

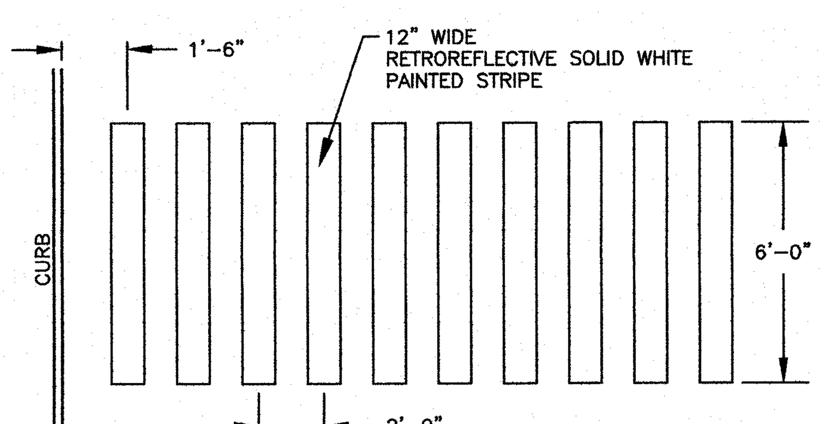
2) SYMBOL, PAINT AND SIGNAGE TO CONFORM TO AMERICANS WITH DISABILITIES ACT (ADA).

3) ALL VAN ACCESSIBLE SPACES SHALL HAVE "VAN ACCESSIBLE" PLATE INSTALLED ON SIGN POST BELOW HANDICAP SIGN.

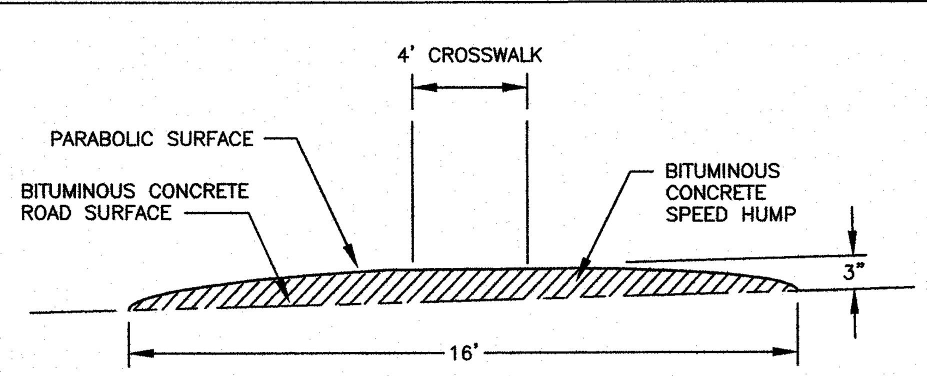


HANDICAP PARKING

D / C5 HANDICAP PARKING DETAILS
NTS

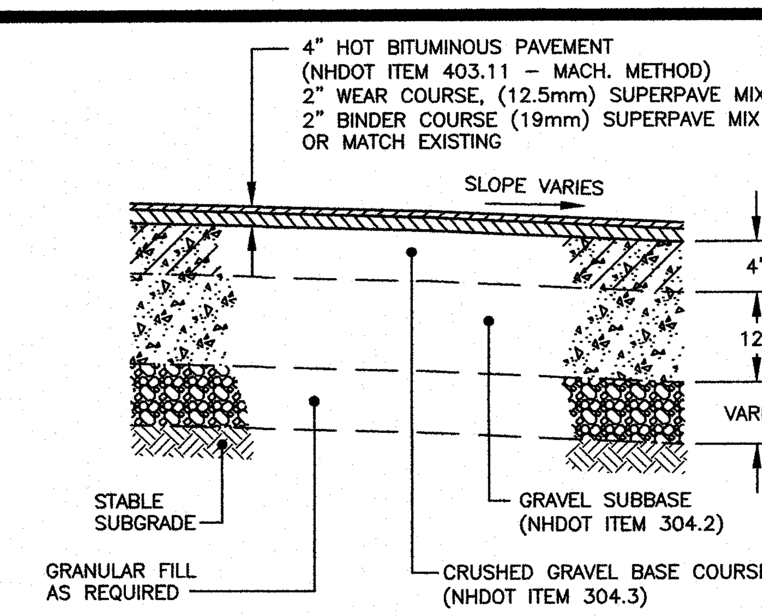


E / C5 PAINTED CROSSWALK DETAIL
NTS

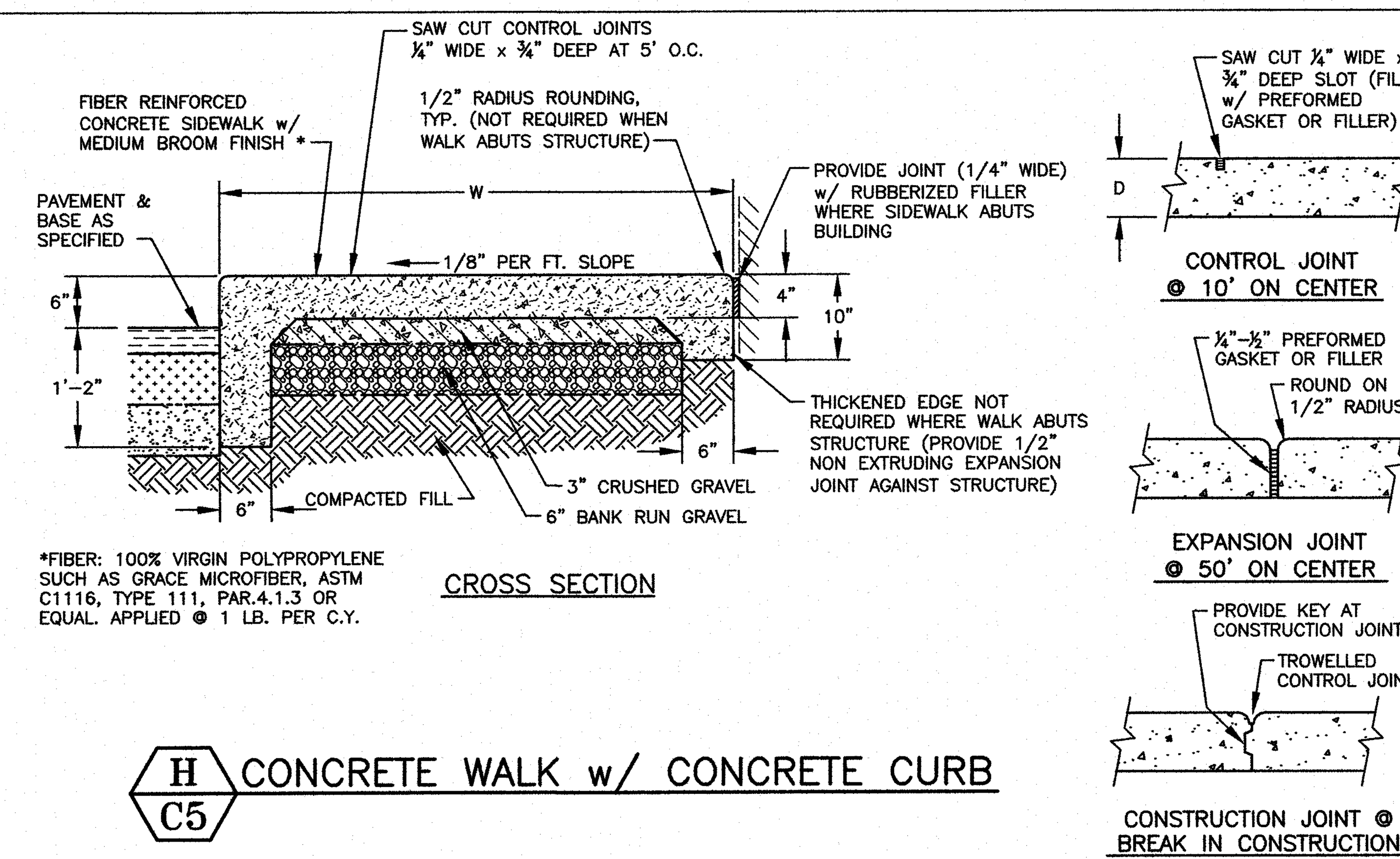


REFERENCE:
MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009, REVISED MAY 2012.

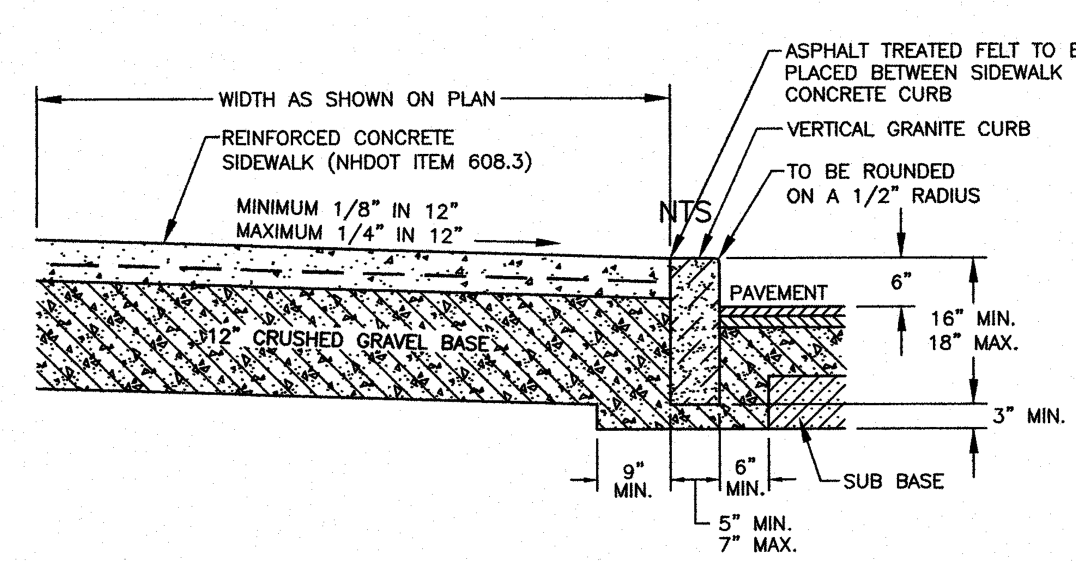
F / C5 SPEED HUMP DETAIL
NTS



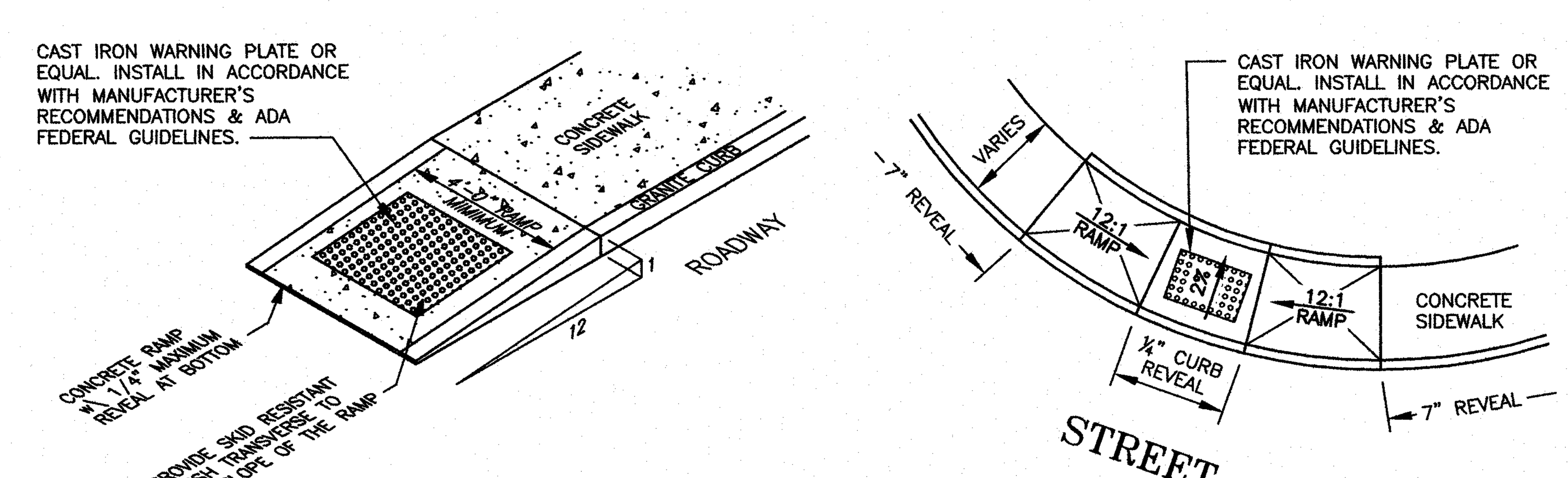
G / P1 TYPICAL PAVEMENT CROSS–SECTION
NTS



H / C5 CONCRETE WALK w/ CONCRETE CURB



I / C5 CONCRETE SIDEWALK w/ VERTICAL GRANITE CURB

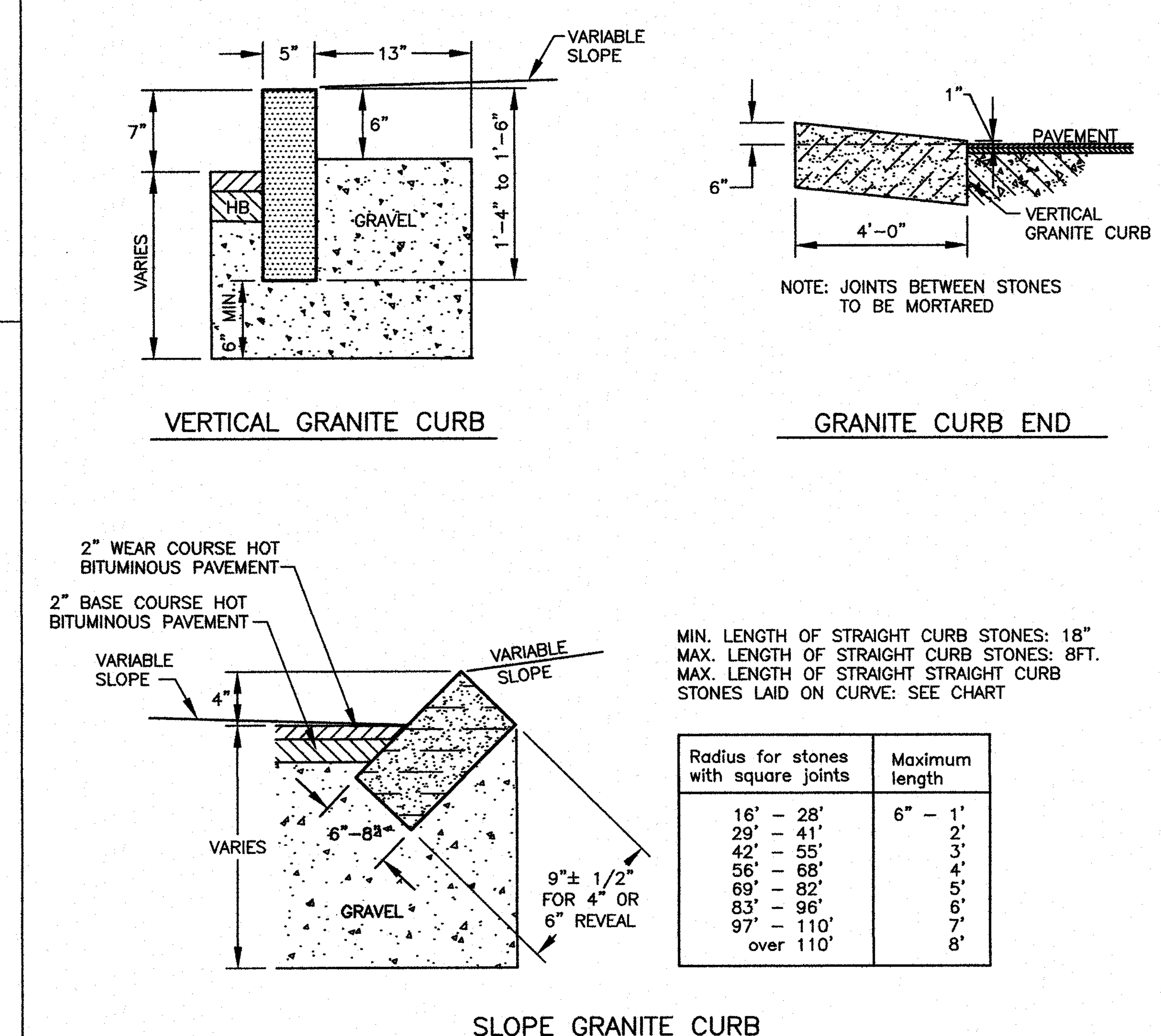


J / C5 TYPICAL SIDEWALK TIP DOWNS
NTS

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.

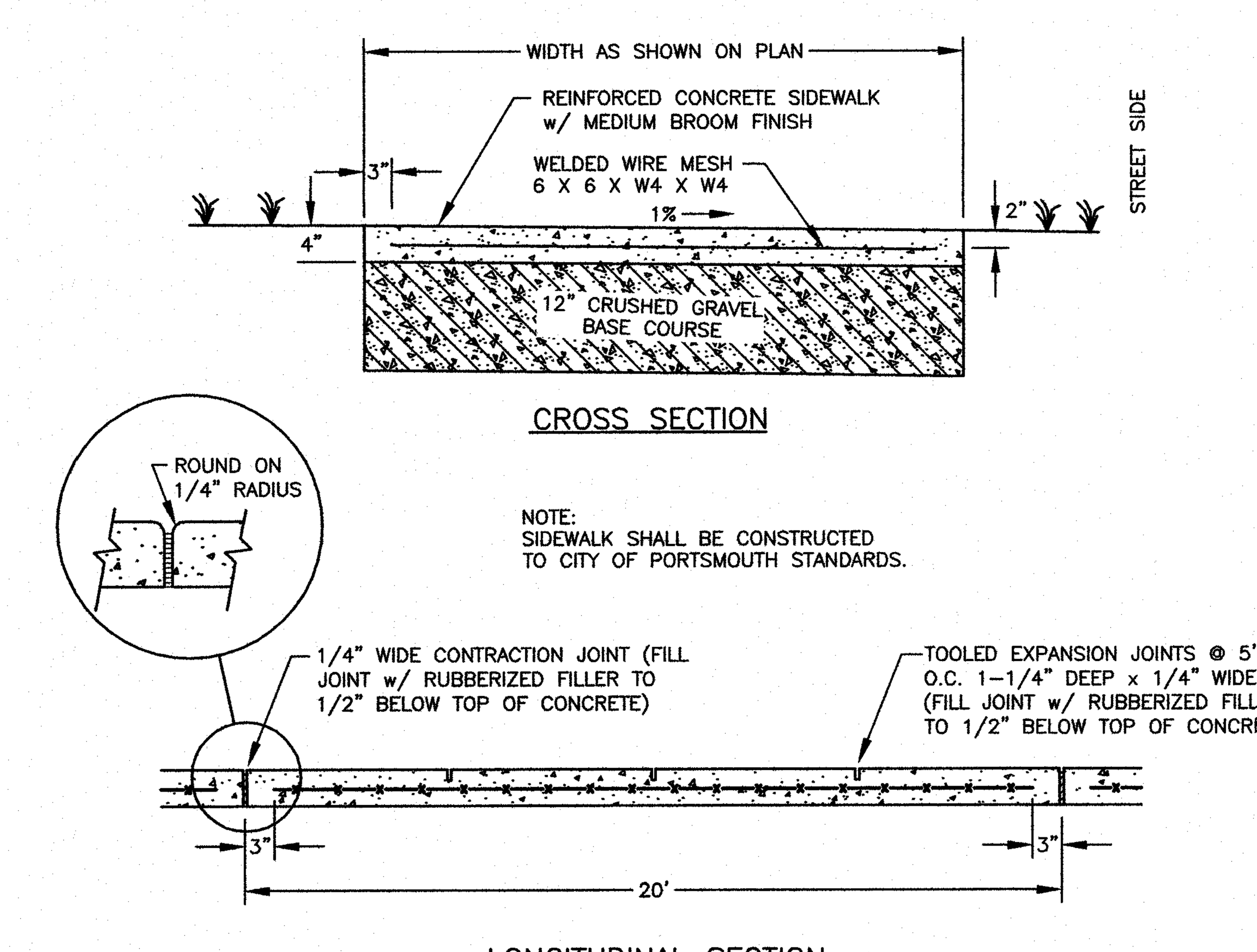
Radius	Max. length
21'	3'
22' – 28'	4'
29' – 35'	5'
36' – 42'	6'
43' – 49'	7'
50' – 56'	8'
57' – 60'	9'
over 60'	10'



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'

K / C5 GRANITE CURBING DETAILS
NTS



NOTE:
SIDEWALK SHALL BE CONSTRUCTED TO CITY OF PORTSMOUTH STANDARDS.

L / C5 CONCRETE SIDEWALK DETAIL
NTS

AMBIT ENGINEERING, INC.
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145 BREWERY LANE
PORTSMOUTH, N.H.

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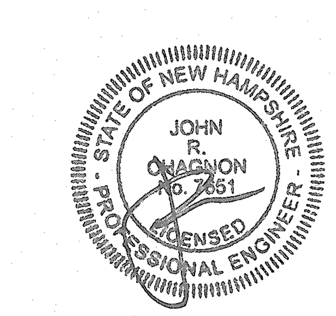

SCALE: AS SHOWN DECEMBER 2017

DETAILS D2

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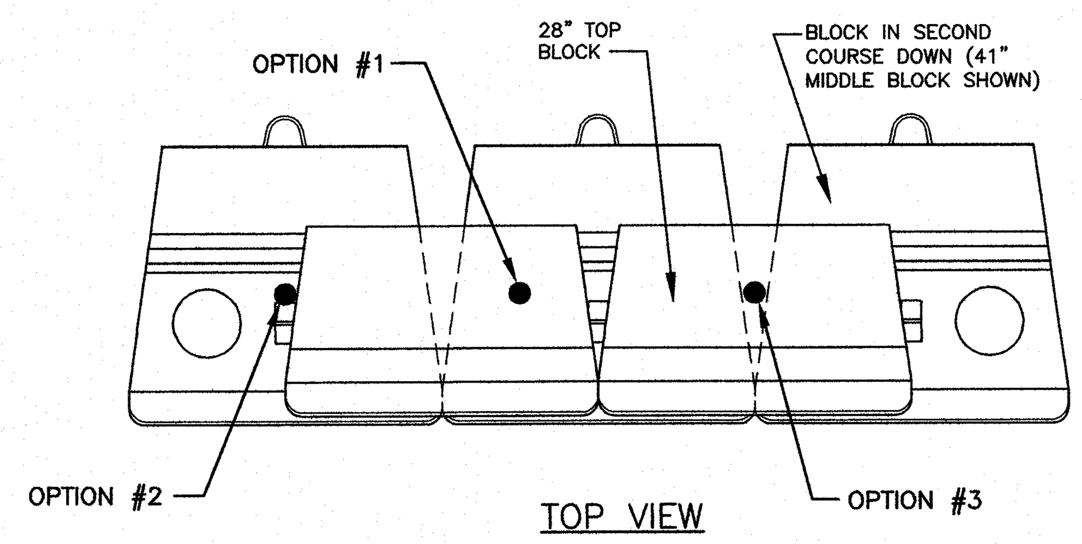
CONNECTION OPTION #1
EXPANSION ANCHOR INTO THE 28" TOP BLOCK
•SPACING AS REQUIRED FOR APPURTENANCE
•MASS OF SINGLE BLOCK AVAILABLE TO RESIST OVERTURNING FORCES

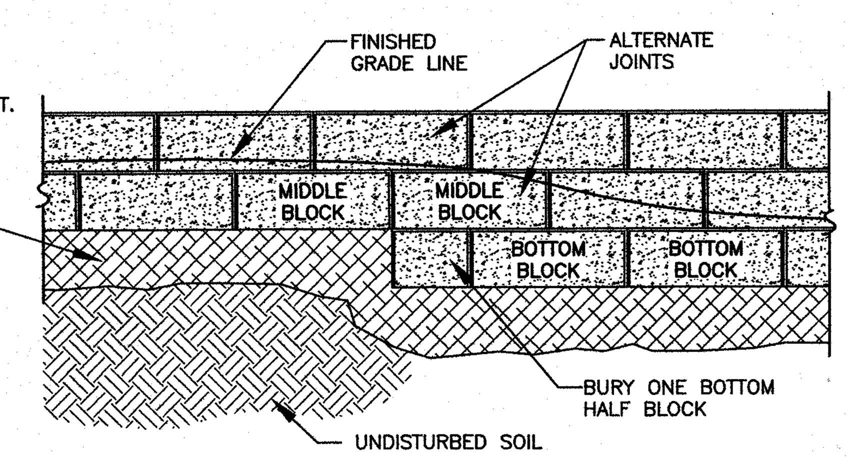
CONNECTION OPTION #2
GROUT POSTS IN V-SHAPED GAP BETWEEN 28" TOP BLOCKS
•SPACING IN MULTIPLES OF 46 1/8" INCREMENTS
•MASS OF 2 ADJACENT BLOCKS AVAILABLE TO RESIST OVERTURNING FORCES

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

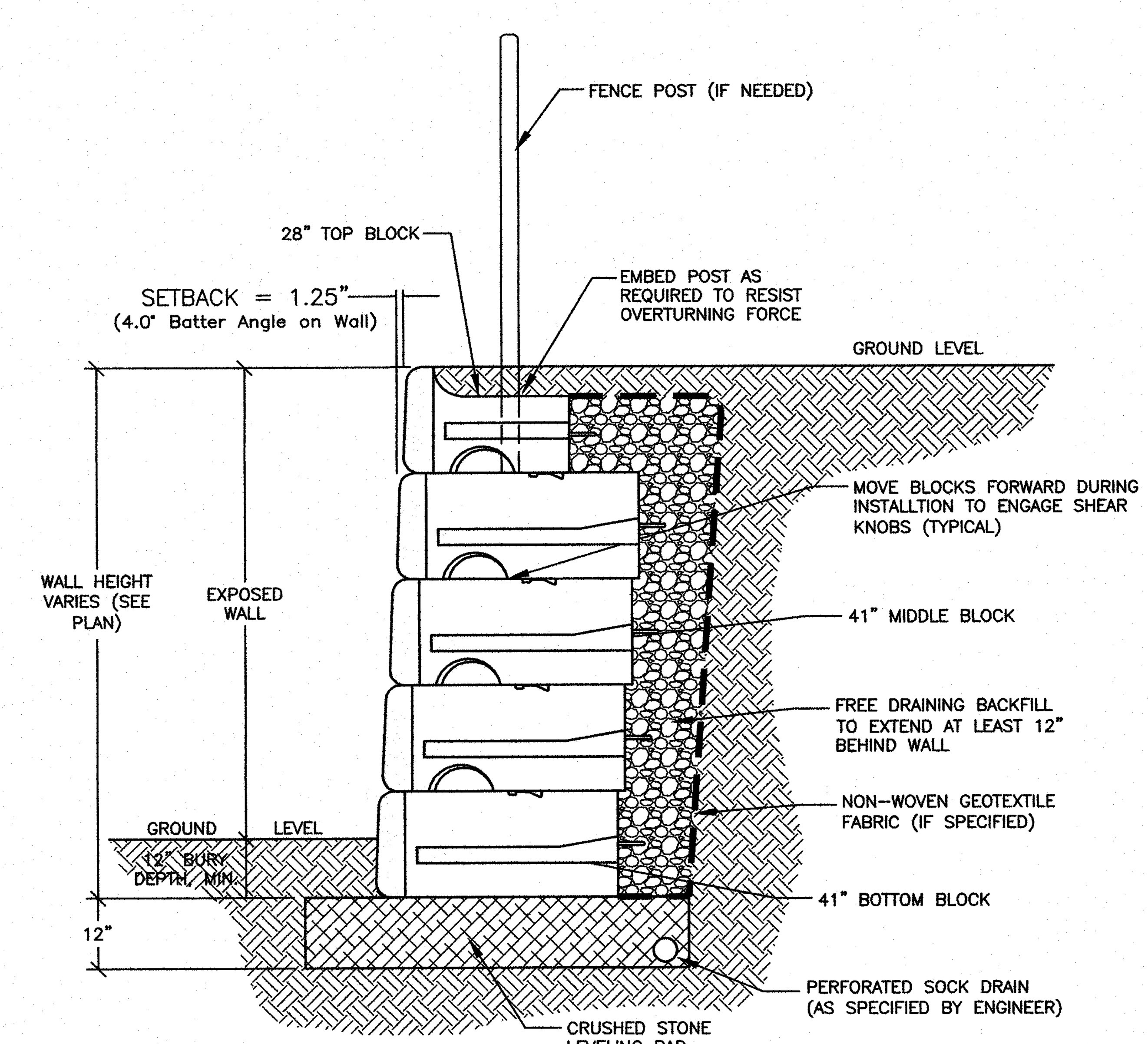


TYPICAL FENCE INSTALLATION ON MODULAR BLOCK WALL
NO SCALE

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



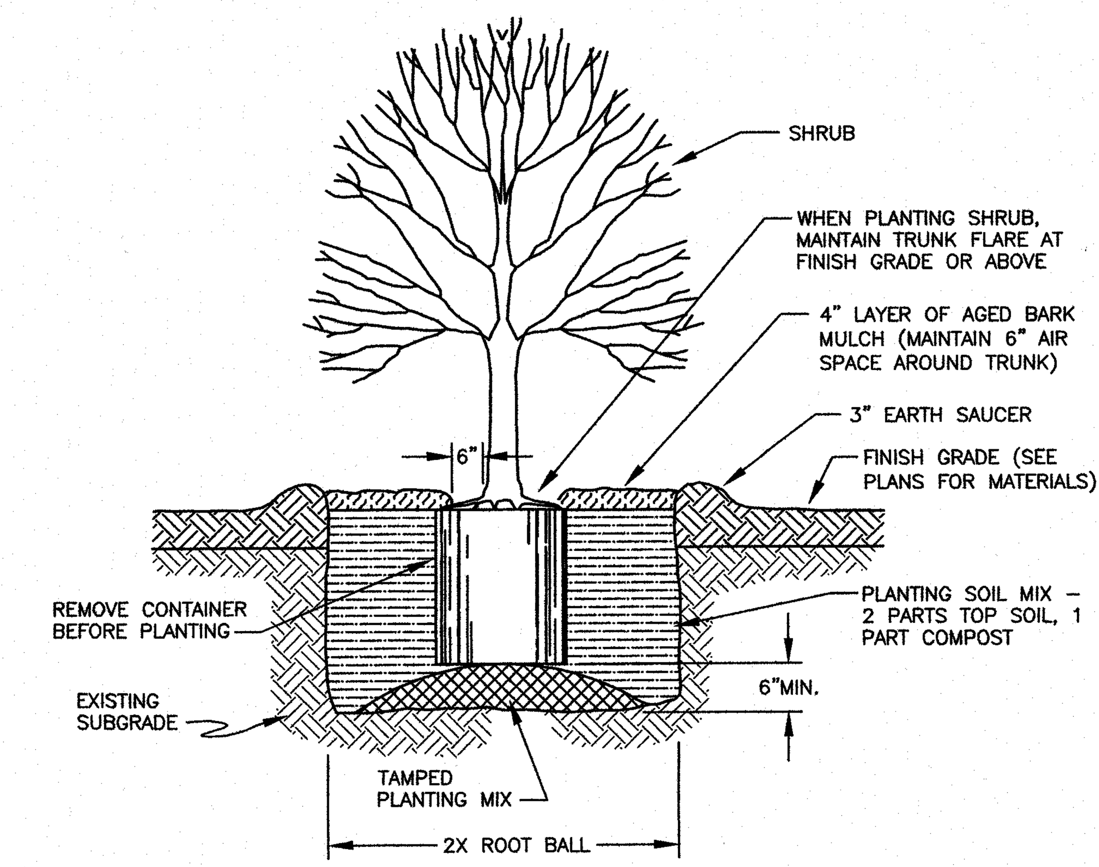
STEPPING BASE DETAIL
NTS



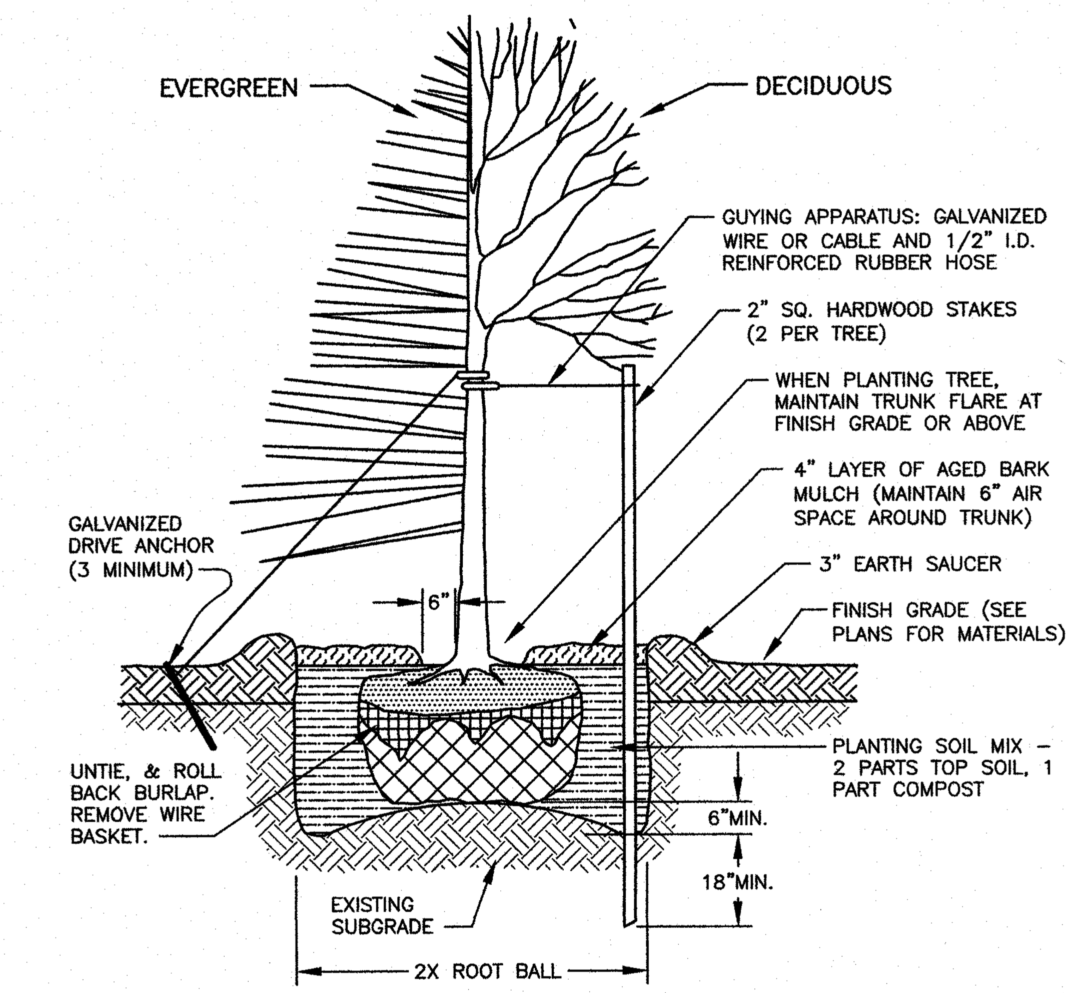
TYPICAL GRAVITY WALL w/ 41" MODULAR BLOCKS
NO SCALE

O / C5 MODULAR BLOCK RETAINING WALL DETAILS REDI-ROCK
NTS

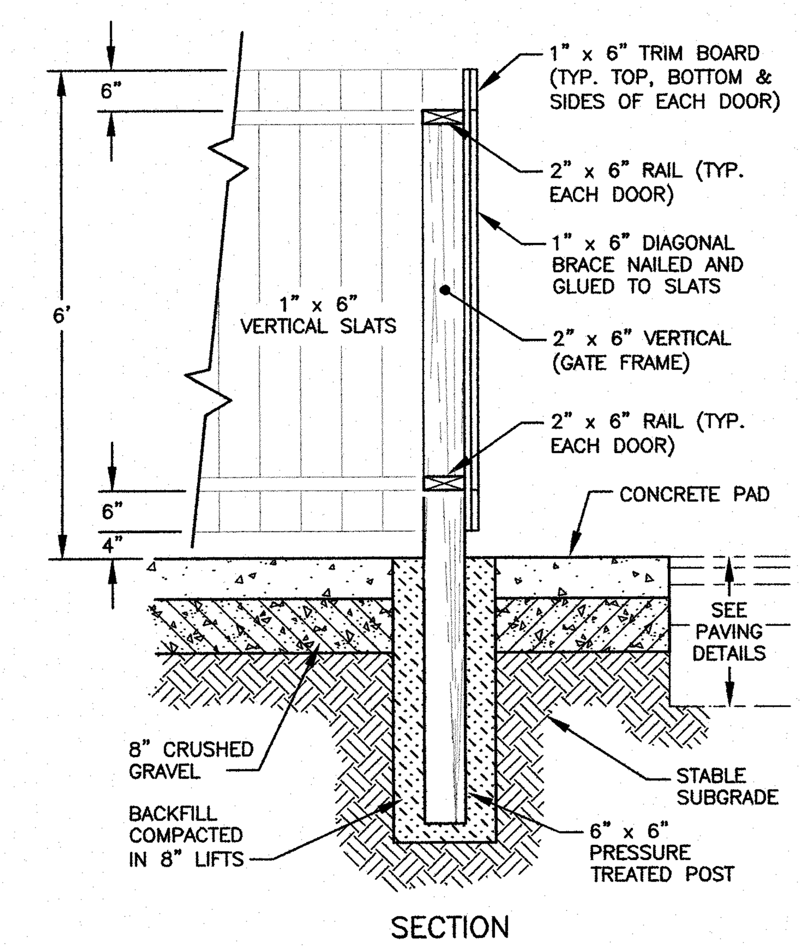
NOTE: STAMPED DESIGN DRAWINGS SHALL BE SUBMITTED TO THE CITY OF PORTSMOUTH FOR APPROVAL PRIOR TO CONSTRUCTION.

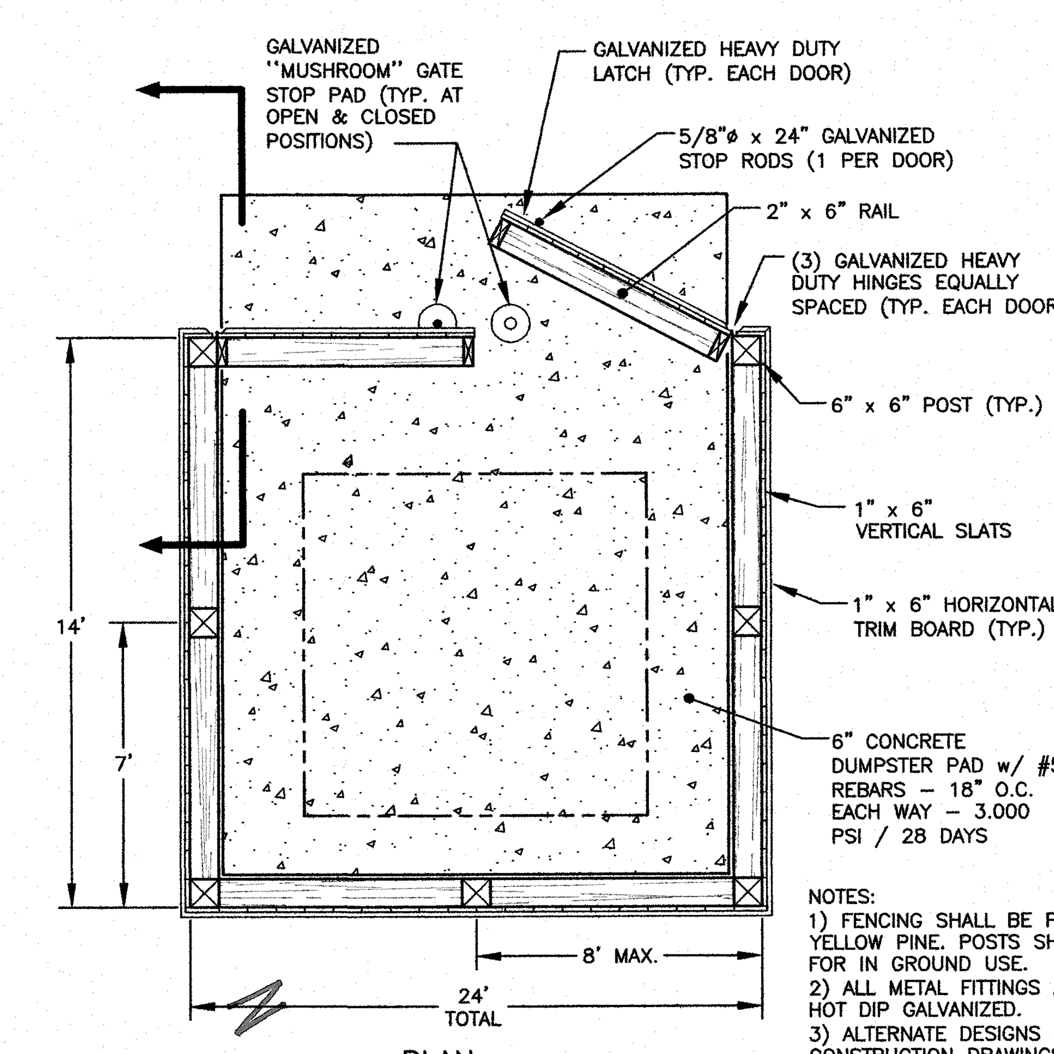


P / – SHRUB PLANTING DETAIL
(SEE LANDSCAPE PLANS) NTS



Q / – TREE PLANTING DETAIL
(SEE LANDSCAPE PLANS) NTS





NOTES:
1) FENCING SHALL BE PRESSURE TREATED SOUTHERN YELLOW PINE. POSTS SHALL BE PRESSURE TREATED FOR IN GROUND USE.
2) ALL METAL FITTINGS AND FASTENERS SHALL BE HOT DIP GALVANIZED.
3) ALTERNATE DESIGNS & MATERIALS MAY BE USED IF CONSTRUCTION DRAWINGS ARE PROVIDED TO, AND APPROVED BY, THE BUILDING INSPECTOR.
4.) EACH ENCLOSURE SHALL HAVE 2 DOORS AS WELL AS A 3' WIDE LOADING OPENING ON THE BACK (SIDEWALK) SIDE.

R / C5 DUMPSTER ENCLOSURE DETAILS
(OR APPROVED EQUAL) 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).

CHINBURG PROPERTIES
145 BREWERY LANE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
2	DETAIL O & R	3/20/18
1	DETAIL O	2/12/18
0	ISSUED FOR COMMENT	12/5/17

REVISIONS

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

SCALE: AS SHOWN DECEMBER 2017

DETAILS D3

FB168, PG 11 830.01

J:\JOBS\JN800s\JN830s\JN830\2017 Site Plans Chinburg\Plans & Specs\Site\830.01DT02.dwg, DETAILS D3

FILTRATION MAINTENANCE
SOILS: VISUALLY INSPECT AND REPAIR EROSION MONTHLY. USE SMALL STONES TO STABILIZE EROSION ALONG DRAINAGE PATHS. CHECK THE pH ONCE OR TWICE A YEAR. APPLY AN ALKALINE PRODUCT, SUCH AS LIMESTONE, IF NEEDED.

IF FILTRATION BASIN FAILS TO EMPTY 72 AFTER A RAINFALL, THE BASIN SHALL BE INSPECTED. IF AFTER INSPECTION IT IS DETERMINED THAT THE ENGINEERED SOIL HAS CLOGGED, THE ENGINEERED SOIL SHALL BE REPLACED. IN THE EVENT OF SOIL REPLACEMENT IN THE FILTRATION BASIN, AN AIRSPADE SHALL BE USED, TO CAREFULLY REMOVE THE SOILS SURROUNDING THE TREE ROOTS. TREE ROOTS ARE TO BE PROTECTED FROM DRYING OUT DURING THE PLACEMENT OF NEW SOILS AND NEW SOILS ARE TO BE REPLACED IMMEDIATELY UPON EXPOSING THE ROOT SYSTEMS.

FILTRATION CONSTRUCTION
SOILS: DO NOT COMPACT SOIL. EXCAVATE BASIN, HAND RAKE STONE, PEA STONE AND MULCH LAYERS.

FILTRATION CONSTRUCTION INSPECTION
INSPECT EACH LAYER OF CONSTRUCTION: CONTACT THE PORTSMOUTH DEPARTMENT OF PUBLIC WORKS FOR INSPECTIONS DURING THE CONSTRUCTION PROCESS. CALL FOR INSPECTION BEFORE FILLING EXCAVATION WITH STONE, PEA STONE AND MULCH.

SAND SPECIFICATION

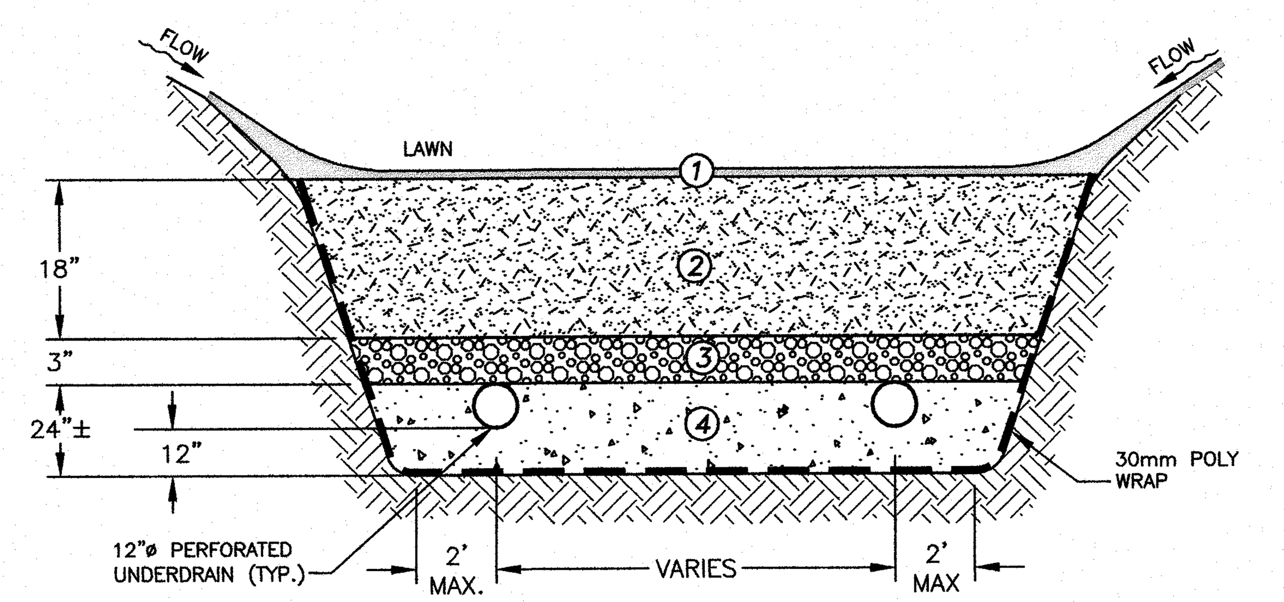
SIEVE SIZE	ASTM C33 FINE AGGREGATE SPECIFICATION
3/8"	100
#4	95–100
#8	80–100
#10	50–85
#16	50–85
#30	25–60
#40	50–85
#50	5–30
#100	0–10

RAIN GARDEN MEDIA

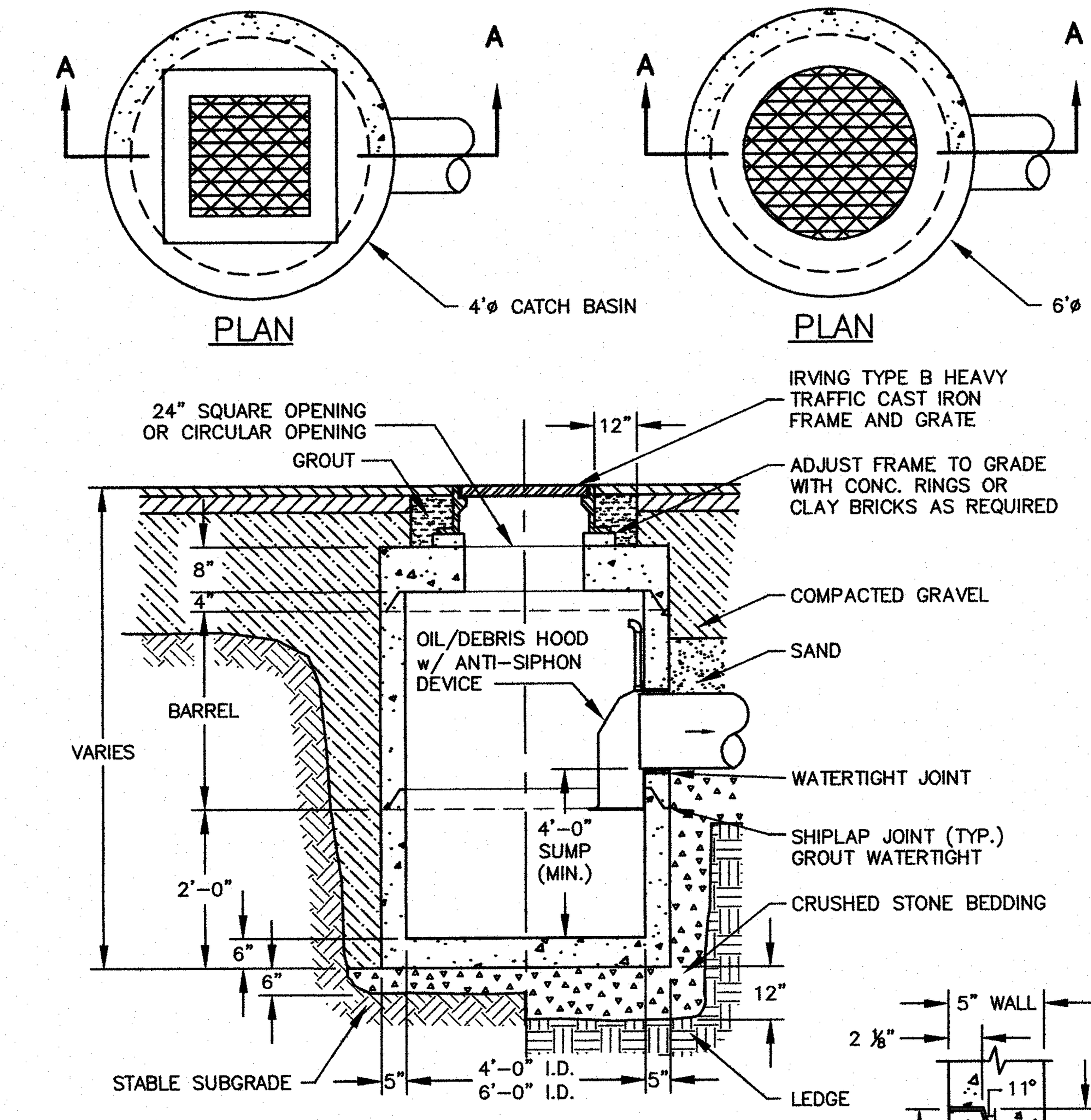
1. BIORETENTION BASIN SEED MIX
2. SOIL FILTER LAYER: 20% – 30% MULCH BY VOLUME, MIXED THOROUGHLY WITH LOAMY, COARSE SAND (70% – 80% BY VOLUME) MEETING THE FOLLOWING GRADATION;

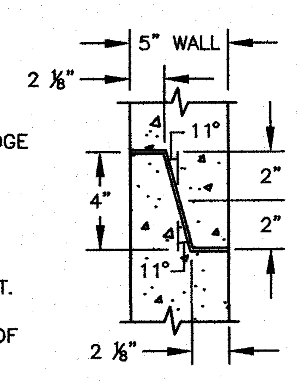
SIEVE NO.	% BY WEIGHT, PASSING
10	85 – 100
20	70 –100
60	15 – 40
200	8 – 15

3. 3/8" PEA STONE
4. 0.75"ø – 1.5"ø CRUSHED STONE, WASHED.



U / C7 UNDERDRAINED FILTRATION ISLAND DETAIL
NTS





NOTES:
1) CONCRETE SHALL BE 4,000 P.S.I. AFTER 28 DAYS.
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.

Y / C7 CATCH BASIN w/ OIL–DEBRIS HOOD
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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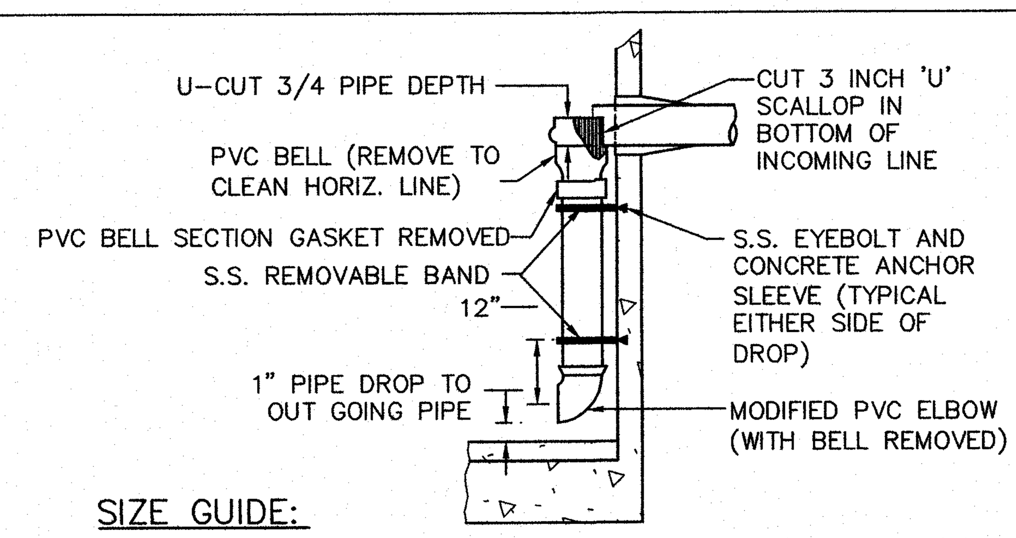
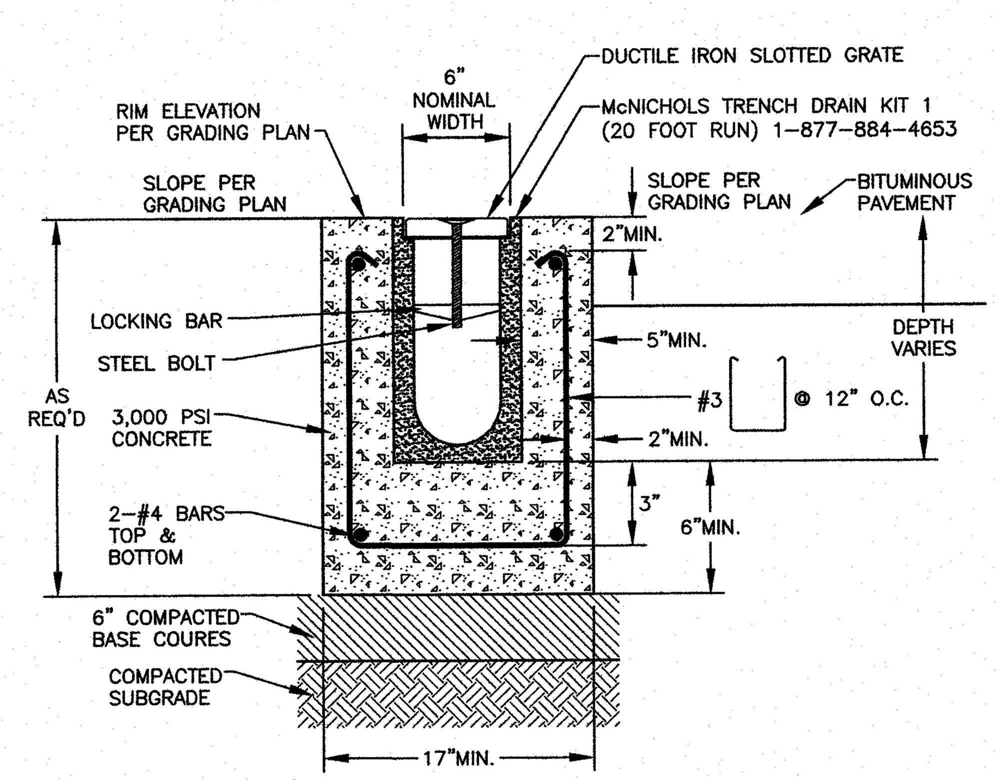
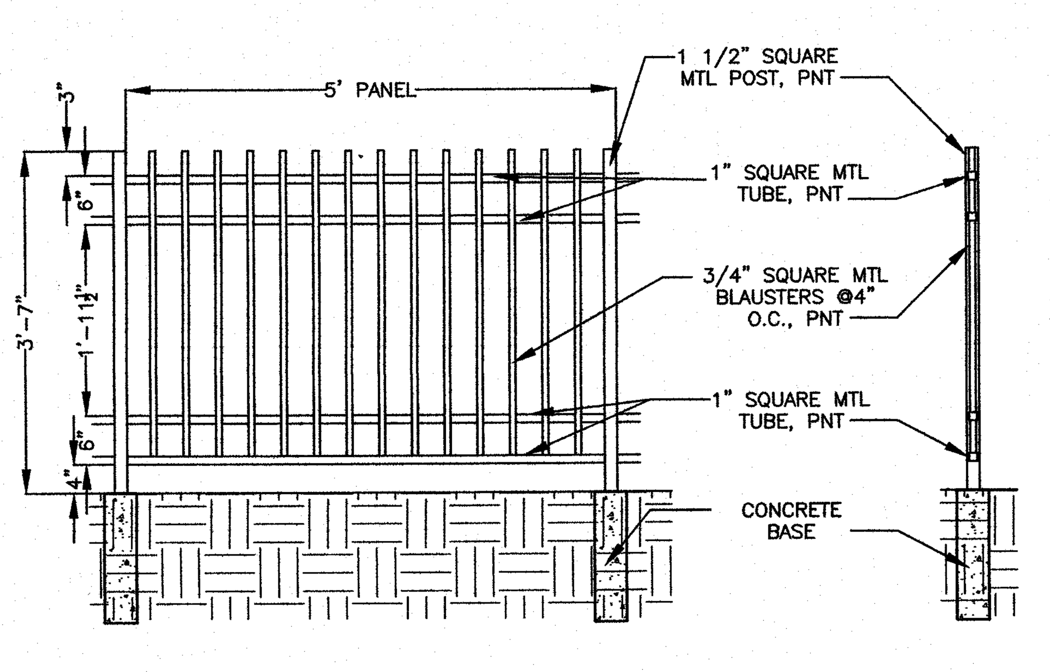


SIZE GUIDE:
1–8" OR 10" DROP: 4'–0" DIA. M.H.
2–8" OR 10" DROP: 5'–0" DIA. M.H.
1–12" DROP: 5'–0" DIA. M.H.
1–15" DROP: 5'–0" DIA. M.H.

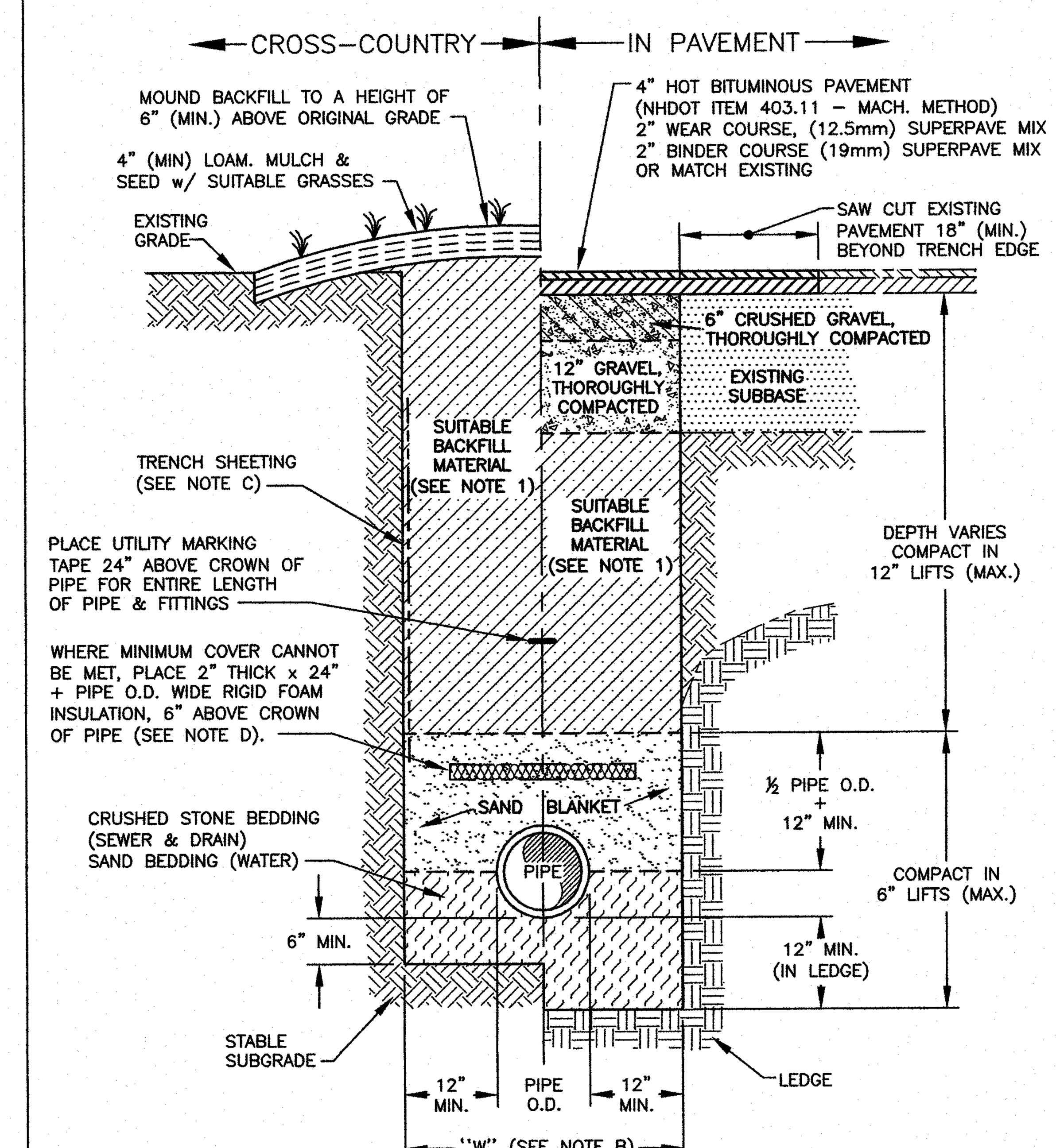
V / P2 DROP MANHOLE CONNECTION
(AS NEEDED)
NTS



X / C5 TRENCH DRAIN DETAIL
NTS



W / C5 METAL FENCE DETAILS
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 GOVERNED 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.

Z / C6 TYPICAL PIPE TRENCH
NTS

CHINBURG PROPERTIES
145 BREWERY LANE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
2	DETAIL U	3/20/18
1	DETAILS T, W, Z	2/12/18
0	ISSUED FOR COMMENT	12/5/17

REVISIONS

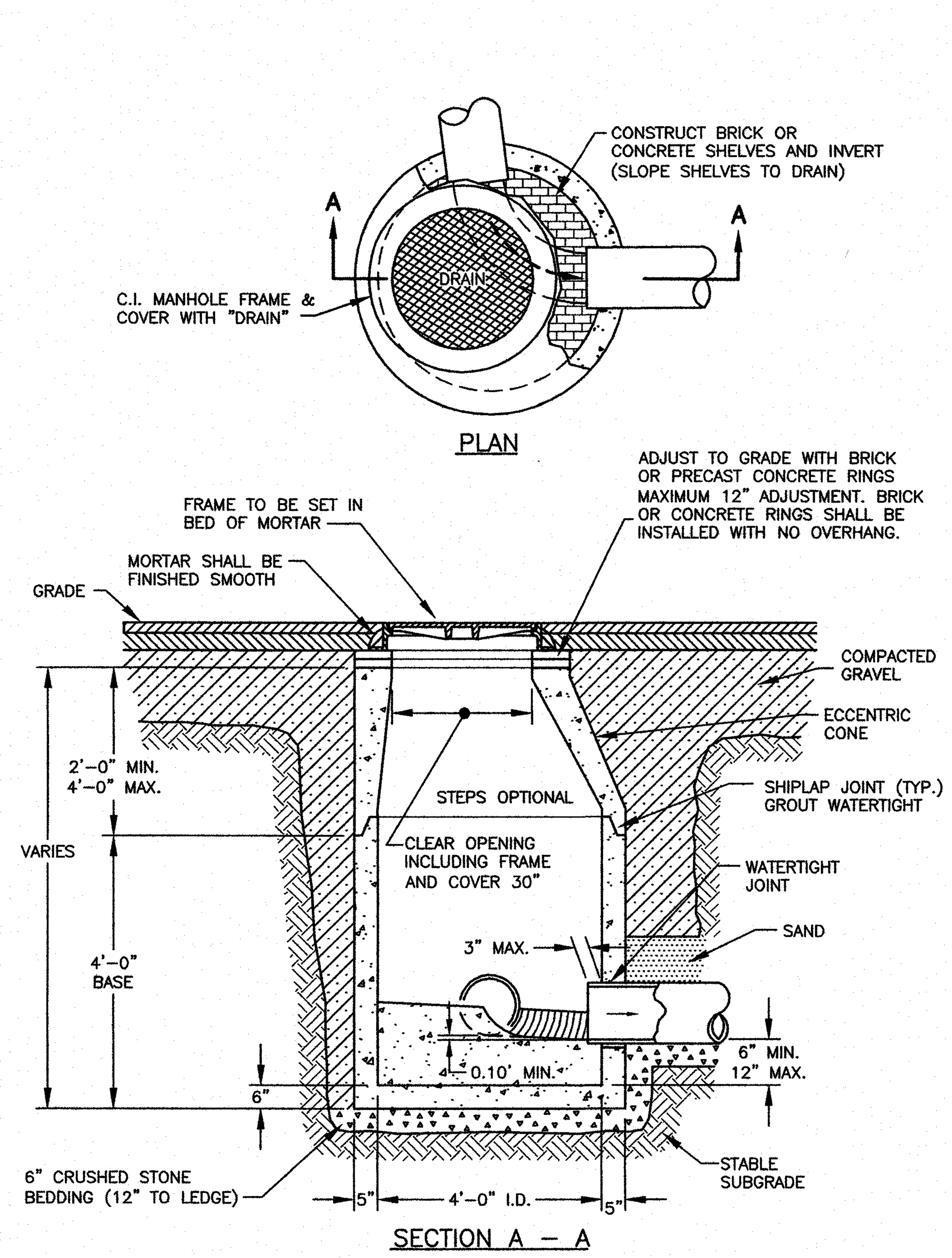
STATE OF NEW HAMPSHIRE
JOHN R. CHAGNON
No. 7551
LICENSED PROFESSIONAL ENGINEER

SCALE: AS SHOWN
DECEMBER 2017

DETAILS
D4

FB168, PG 11
830.01

J:\JOBS\JN800s\JN830s\JN830\2017 Site Plans Chinburg\Plans & Specs\Site\830.01D702.dwg, DETAILS D4



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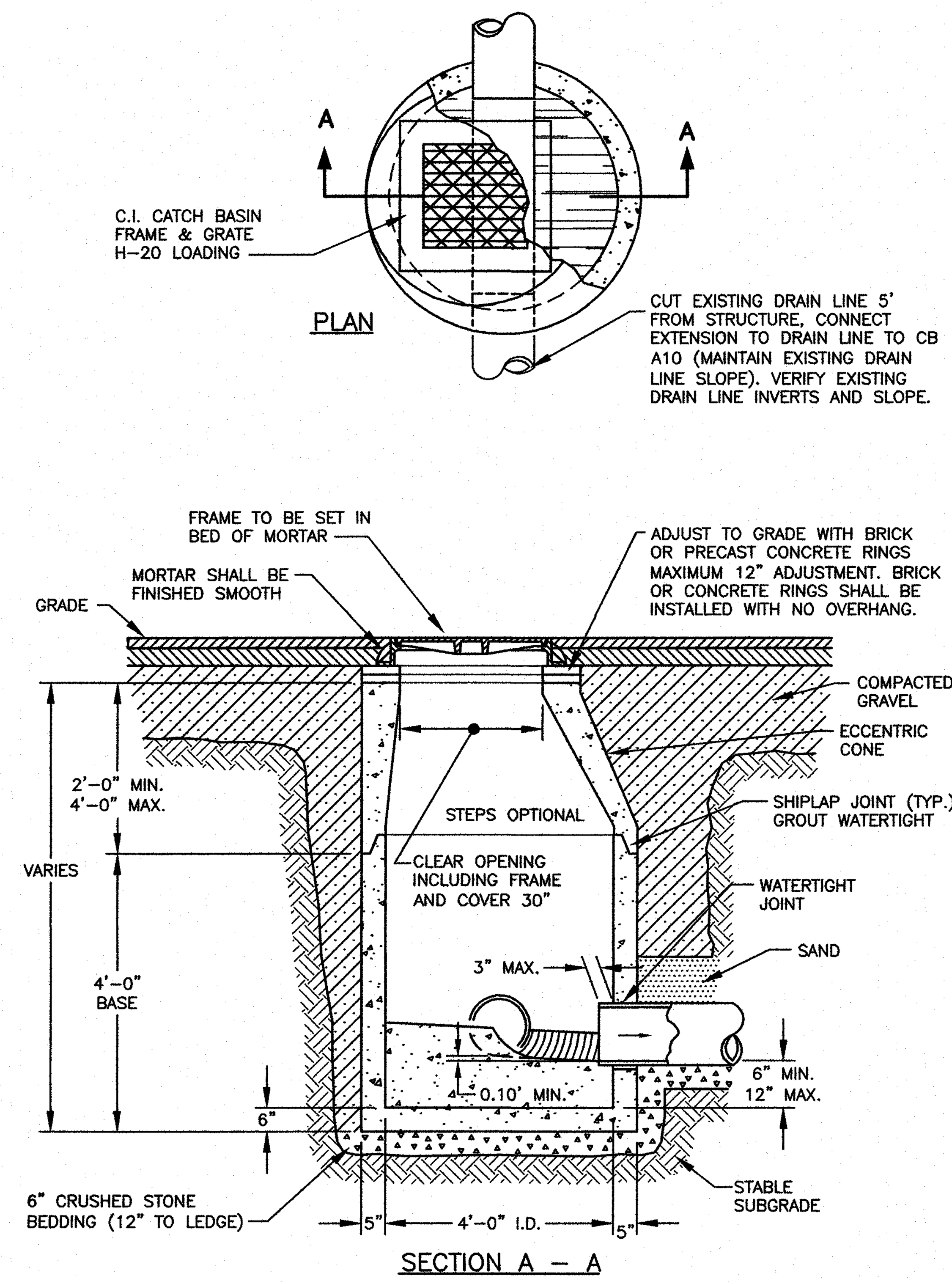
3. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FT..
4. EACH CASTING TO HAVE LIFTING HOLES CAST IN.

AA / C7 DRAIN MANHOLE DETAIL
NTS



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4. EACH CASTING TO HAVE LIFTING HOLES CAST IN.

BB / C– CONNECT TO EXISTING DRAIN
(IF NEEDED) NTS

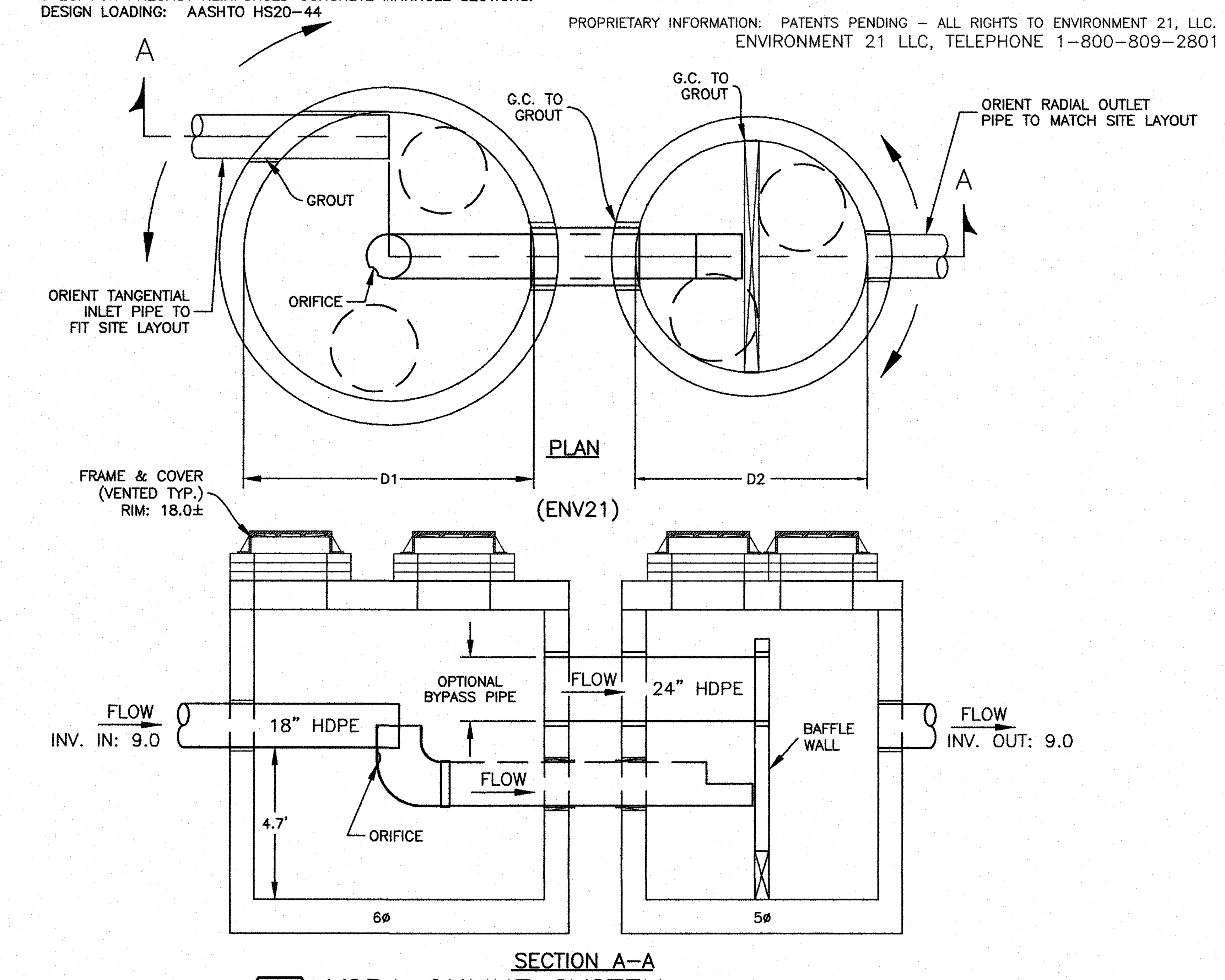
V2B1 SIZING TABLE							
V2B1 MODEL #	D1 (ft.)	D2 (ft.)	S (ft.)	IMPERVIOUS AREA (acres)	INLET PIPE (in.)	TREATMENT FLOW (cfs)	PEAK FLOW (cfs)
3	4	5	4.1±	0.3 –1.3	12	0 – 1	4
4	5	5	4.4±	1.3–2.0	15	1 – 2	6
6	6	5	4.7±	2.0–3.0	18	2 – 3	7
9	7	5	4.9±	3.0–4.0	21	3 – 5	9
11	8	6	5.1±	4.0–5.3	24	5 – 7	16
17	10	8	5.5±	5.3–8.3	30	7 – 10	25
25	12	8	5.9±	8.3–11.7	36	10 – 13	35

GENERAL NOTES:
MANHOLE DESIGN SPECIFICATIONS CONFORM TO LATEST A.S.T.M. C478 SPEC. FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS.
DESIGN LOADING: AASHTO HS20-44

NOTES:
1) RAINFALL INTENSITY USED FOR TREATMENT FLOW = 0.80–1.0 IN/HR
2) MAXIMUM OPERATING LOSS APPROXIMATELY 0.5 FT

MANUFACTURING NOTES:
1) DESIGN OF INTERNAL PVC PIPING PROVIDED TO LICENSED MANUFACTURER BY ENVIRONMENT 21, LLC.
2) LOCATION AND SIZE OF MANHOLE OPENINGS MAY BE ADJUSTED BY LICENSED MANUFACTURER.
3) G.C. TO GROUT INLET AND OUTLET PIPES.
4) CONNECT MANHOLES WITH BOOTED CONNECTIONS.

PROPRIETARY INFORMATION: PATENTS PENDING – ALL RIGHTS TO ENVIRONMENT 21, LLC.
ENVIRONMENT 21 LLC, TELEPHONE 1-800-809-2801



DD / C7 V2B1 ONLINE SYSTEM
NTS

NOTES:
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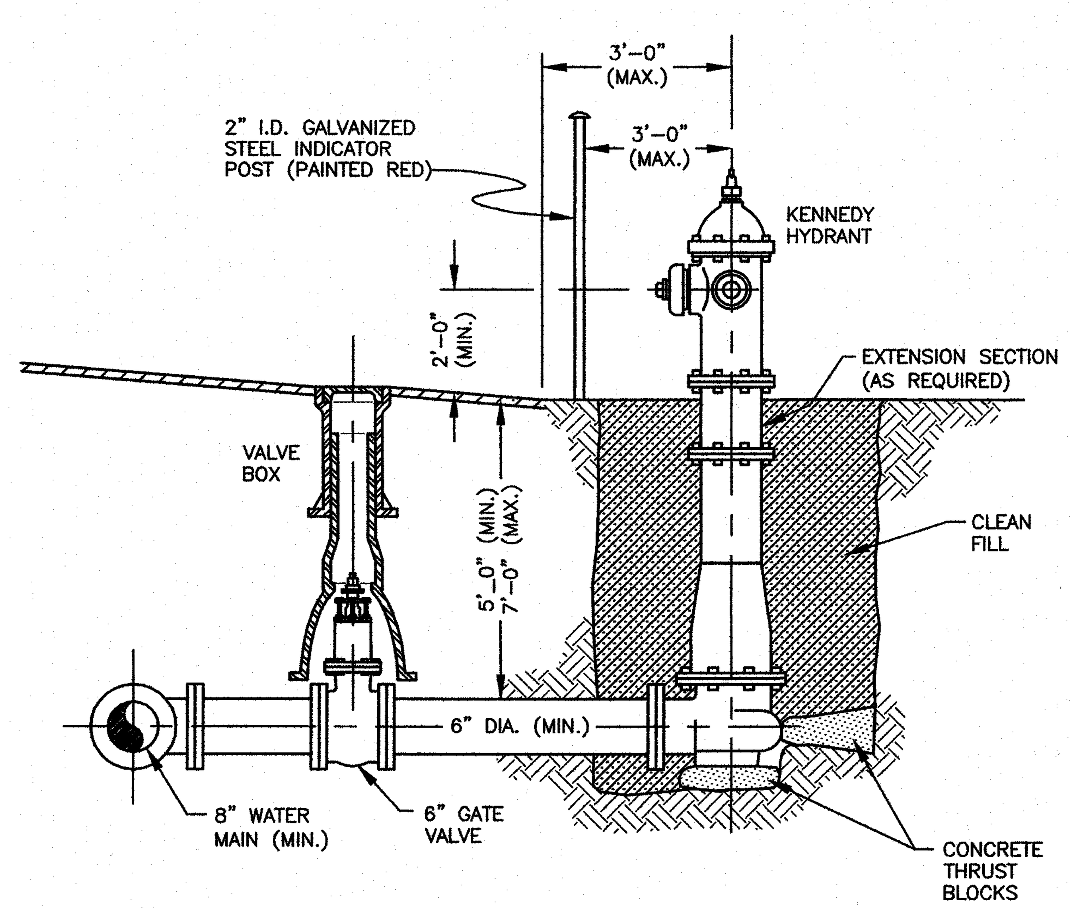

HYDRANT NOTES:
1) HYDRANTS SHALL BE INSTALLED A MAXIMUM DISTANCE OF 3'-0" FROM CURB LINE TO OPERATING NUT.

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.

CC / C6 FIRE HYDRANT INSTALLATION DETAIL
NTS

				Weekday				Weekend				Nighttime			
(A) Land Use	Parking Rate per sq. ft. GFA	Gross Floor Floor (Sq. FT)	Required # Spaces	(B) Daytime (8:00 AM–5:00 PM)		(C) Evening (6:00 PM–Midnight)		(D) Daytime (8:00 AM–5:00 PM)		(E) Evening (6:00 PM–Midnight)		(F) Nighttime (Midnight–6:00 AM)		(F) Nighttime (Midnight–6:00 AM)	
Residential 10.1112.31		62,604	104	60%	62.4	100%	104	80%	83	100%	104	100%	104	100%	104
Office/ Industrial	0.00286 1/350 SF GFA	25231	72	100%	72.2	20%	14	10%	7	5%	4	5%	4	5%	4
Recreational Yoga Studio	0.004 1/250 SF GFA	5892	24	60%	14.1	90%	21	100%	24	70%	16	5%	1	5%	1
Hotel/Motel		0	0	70%	-	100%	-	75%	-	100%	-	100%	-	100%	-
Restaurant		0	0	70%	-	100%	-	80%	-	100%	-	10%	-	10%	-
Entertainment		0	0	40%	-	100%	-	80%	-	100%	-	10%	-	10%	-
Conference/ Convention		0	0	100%	-	100%	-	100%	-	100%	-	5%	-	5%	-
Place of Worship*		0	0	10%	-	5%	-	100%	-	50%	-	5%	-	5%	-
Other Institutional		0	0	100%	-	20%	-	10%	-	10%	-	5%	-	5%	-
Totals					149		140		114		124		109		109

Minimum Parking Requirement	149
Maximum allowed Parking is Total x 1.20 (20%)	178
Proposed Parking Spaces	168

Residential Parking Space Calculation			
Apartment Categories By Sq. Ft.	Parking Spaces Required	#Units	Parking Spaces Required
> 500	0.5	25	12.5
500 to 750	1	47	47
Over 750	1.3	20	26
Visitor Parking = 92/5 =			18.4
Totals		92	104

EE / C5 SHARED PARKING CALCULATION

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

CHINBURG PROPERTIES
145 BREWERY LANE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
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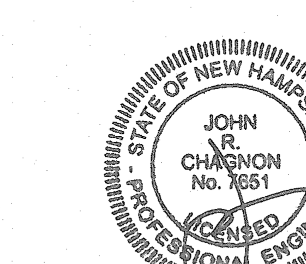
REVISIONS



SCALE: AS SHOWN DECEMBER 2017

DETAILS D5

FB168, PG 11 830.01

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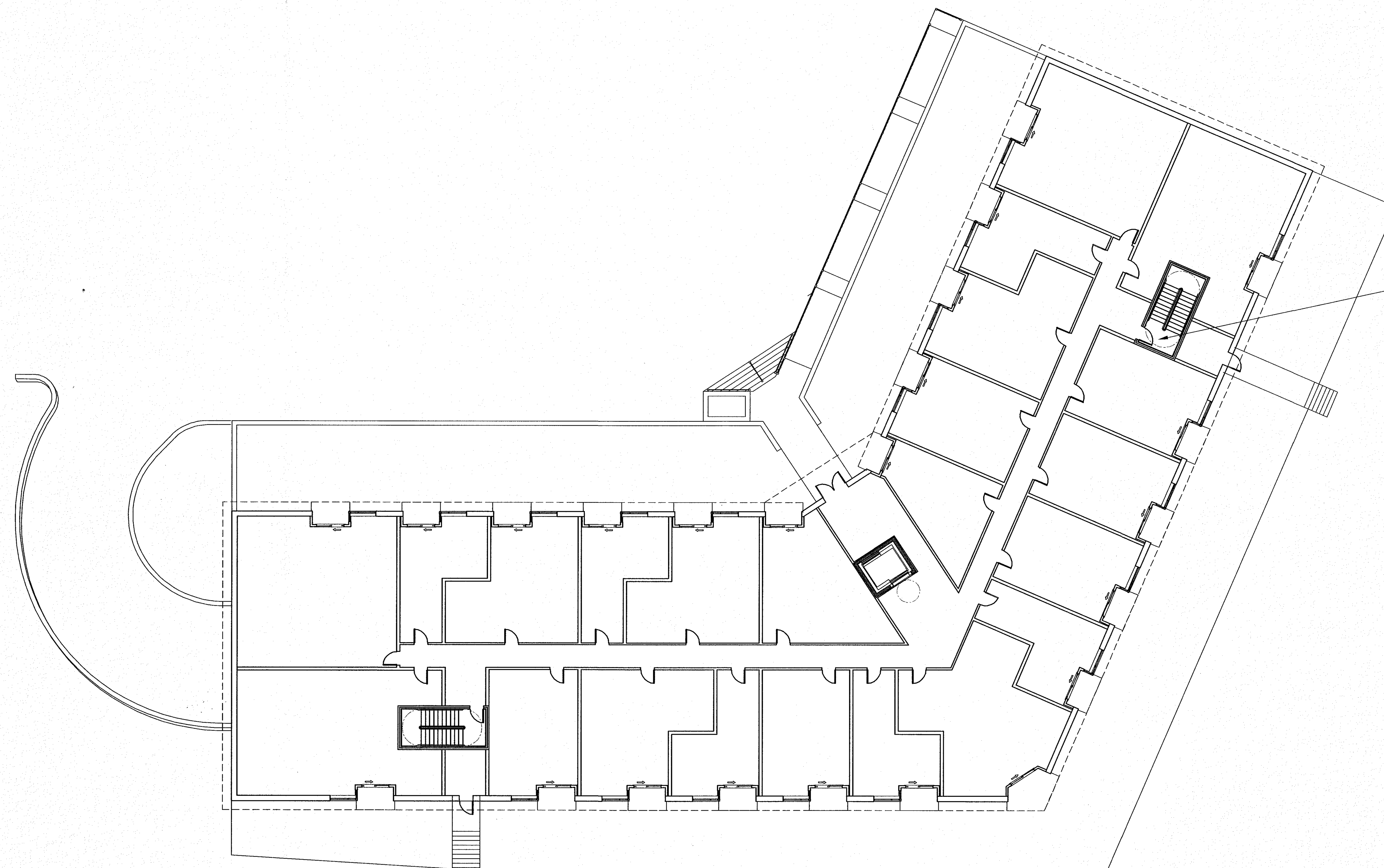


CONSTRUCTION TYPE V-A
WITH AUTOMATIC SPRINKLER SYSTEM

GROSS FLOOR AREA (GFA) PER FLOOR

LOWER LEVEL	(PARKING):	18,430 SF
FIRST FLOOR	(RESIDENTIAL):	18,430 SF*
SECOND FLOOR	(RESIDENTIAL):	18,430 SF*
THIRD FLOOR	(RESIDENTIAL):	18,430 SF*
FOURTH FLOOR	(RESIDENTIAL):	18,430 SF*

*EXCLUDING PATIOS & BALCONIES

RESIDENTIAL DWELLING UNITS

23 DWELLING UNITS PER FLOOR = 92 UNITS TOTAL

FLOOR AREAS	# UNITS	BEDROOMS
LESS THAN 500 SF:	25	STUDIO
500 TO 750 SF:	47	1-BEDROOM
OVER 750 SF:	20	2-BEDROOM

1 PRELIMINARY FIRST FLOOR PLAN
1/16" = 1'-0"

NOT FOR CONSTRUCTION

REVISIONS:
REV 1: 02/12/18

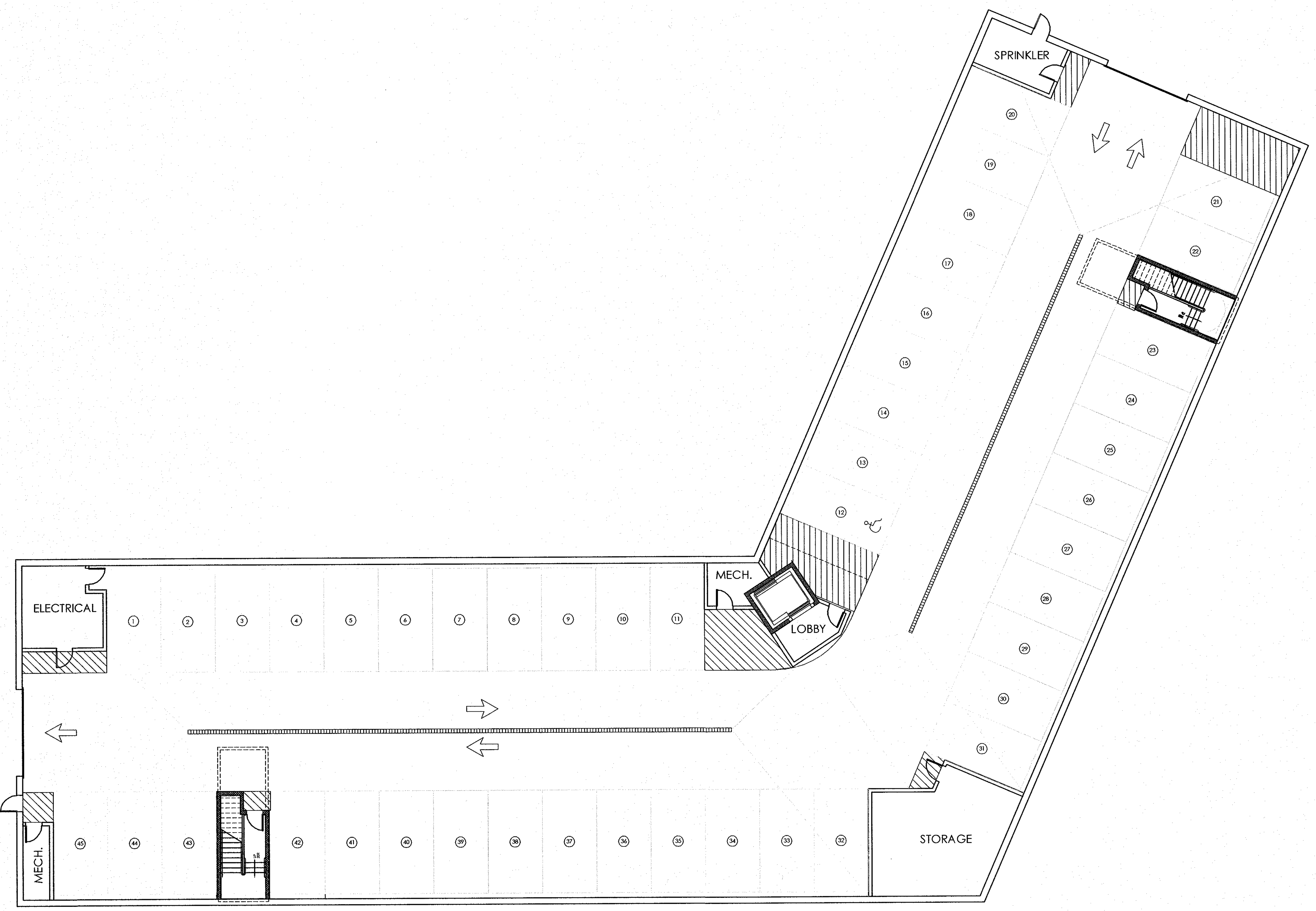
CHINBURG PROPERTIES
145 BREWERY LANE
PORTSMOUTH, NEW HAMPSHIRE

CJ ARCHITECTS
233 VAUGHAN ST. SUITE 101
PORTSMOUTH, NH 03801
(603) 431-2808
www.cjarchitects.net

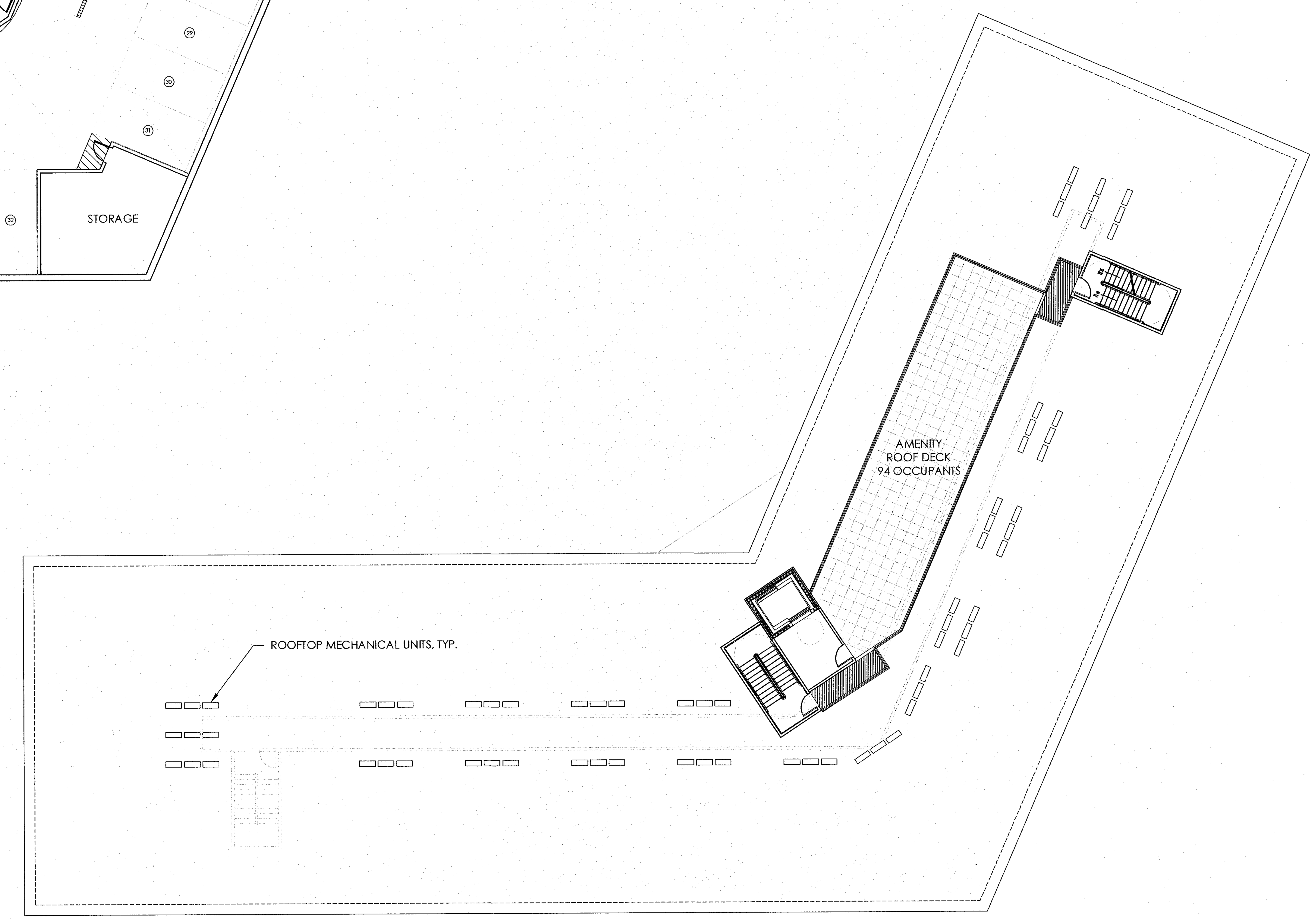
PRELIMINARY
FIRST FLOOR
PLAN

DATE:	12/05/17
DRAWN BY:	WWB
APPROVED BY:	CJG
SCALE:	NOTED
JOB NUMBER:	21723

A1.0



1 PRELIMINARY LOWER LEVEL PLAN
1/16" = 1'-0"



2 PRELIMINARY ROOF PLAN
1/16" = 1'-0"

NOT FOR CONSTRUCTION

REVISIONS:
REV 1: 02/12/18
REV 2: 03/20/18

CHINBURG PROPERTIES
145 BREWERY LANE
PORTSMOUTH, NEW HAMPSHIRE

CJ ARCHITECTS
233 VAUGHAN ST, SUITE 101 (603) 431-2808
PORTSMOUTH, NH 03801 www.cjarchitects.net

PRELIMINARY
LOWER LEVEL
& ROOF PLANS

DATE:	--
DRAWN BY:	WWB
APPROVED BY:	CJG
SCALE:	NOTED
JOB NUMBER:	21723

A1.1

1 LEFT ELEVATION AT NORTH SIDE
1/16" = 1'-0"

2 RIGHT ELEVATION AT NORTH SIDE
1/16" = 1'-0"

3 LEFT ELEVATION AT SOUTH SIDE
1/16" = 1'-0"

4 RIGHT ELEVATION AT SOUTH SIDE
1/16" = 1'-0"

5 EAST ELEVATION
1/16" = 1'-0"

6 WEST ELEVATION
1/16" = 1'-0"

7 3D VIEW

NOT FOR CONSTRUCTION

REVISIONS:
REV 1: 02/12/18

CHINBURG PROPERTIES
145 BREWERY LANE
PORTSMOUTH, NEW HAMPSHIRE

CJ ARCHITECTS
233 VAUGHAN ST, SUITE 101 (603) 431-2808
PORTSMOUTH, NH 03801 www.cjarchitects.net

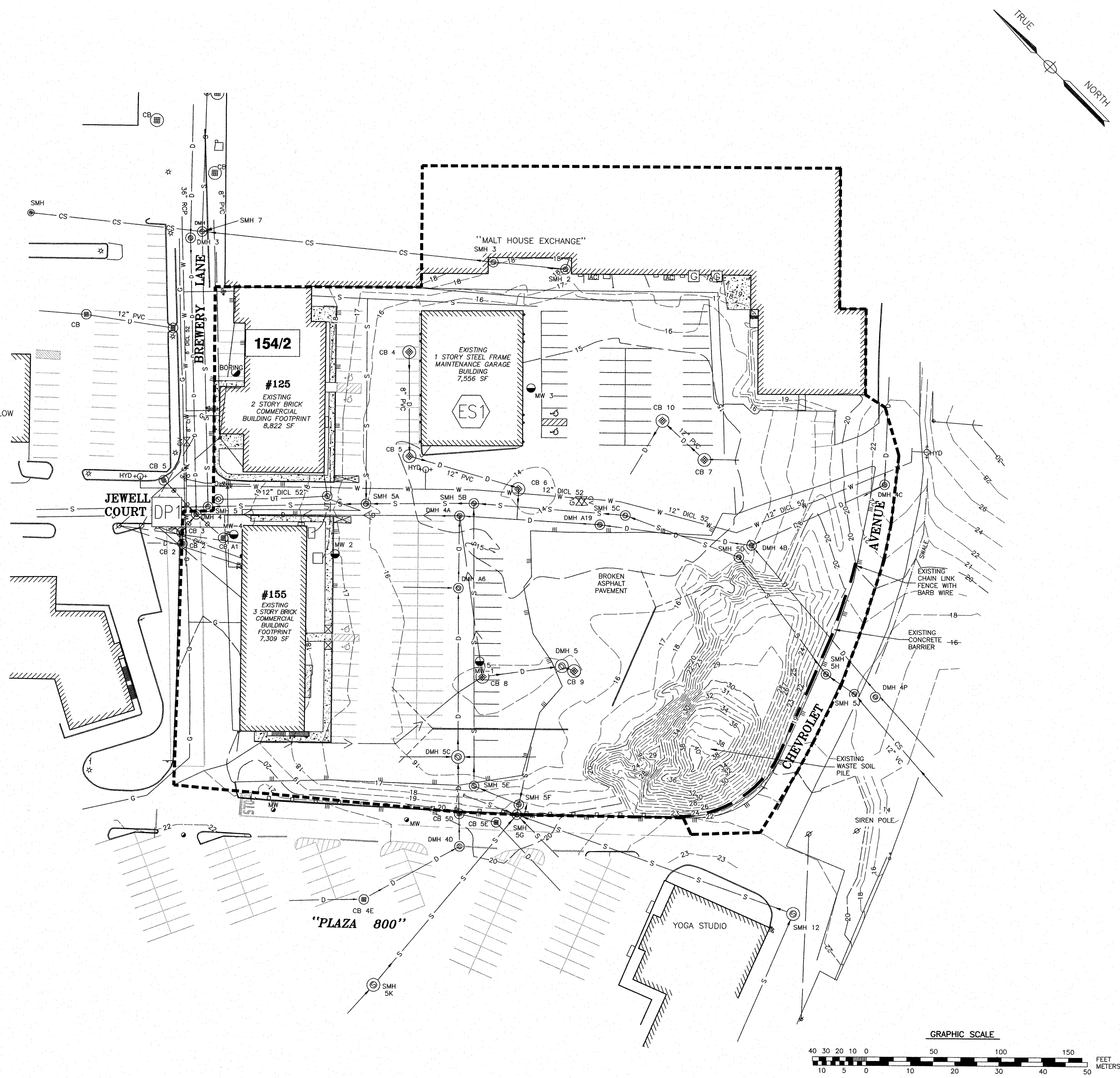
PRELIMINARY ELEVATIONS

DATE:	12/05/17
DRAWN BY:	WWB
APPROVED BY:	CJG
SCALE:	NOTED
JOB NUMBER:	21723

A2.0

LEGEND

EXISTING	PROPOSED	
		PROPERTY LINE
D	D	STORM DRAIN
X X	X X	SILT FENCE
100	100	CONTOUR
97x3	98x0	SPOT ELEVATION
		EDGE OF PAVEMENT (EP)
		SUBCATCHMENT LINE
ES1	PS1	SUBCATCHMENT NUMBER
1234	1234	AREA IN SQUARE FEET
WOODS	WOODS	DESCRIPTION OF COVER
1	1	POND (DESIGN MODEL)
DP1	DP1	REACH (DESIGN MODEL)
		DRAINAGE VECTOR
		EDGE OF WOODS / TREES
		CATCH BASIN
D		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
SF	SF	SHEET FLOW
SCF	SCF	SHALLOW CONCENTRATED FLOW
CHANNEL	CHANNEL	CHANNEL FLOW
HSG	HSG	HYDROLGIC SOIL GROUP



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) THIS PLAN IS FOR RUNOFF ANALYSIS ONLY AND SHALL BE USED ONLY AS A GUIDE FOR CONSTRUCTION.

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE

CHINBURG PROPERTIES
145 BREWERY LANE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	2/12/18

REVISIONS

STATE OF NEW HAMPSHIRE JOSEPH L. MULLIGAN No. 11532 LICENSED PROFESSIONAL ENGINEER

2/12/18

SCALE: 1" = 40' FEBRUARY 2018

EXISTING DRAINAGE PLAN

W1

FB168, PG 11

830.01

LEGEND

EXISTING	PROPOSED	
		PROPERTY LINE
D	D	STORM DRAIN
X X	X X	SILT FENCE
100	100	CONTOUR
97x3	98x0	SPOT ELEVATION
		EDGE OF PAVEMENT (EP)
		SUBCATCHMENT LINE
ES1	PS1	SUBCATCHMENT NUMBER
1234	1234	AREA IN SQUARE FEET
WOODS	WOODS	DESCRIPTION OF COVER
1	1	POND (DESIGN MODEL)
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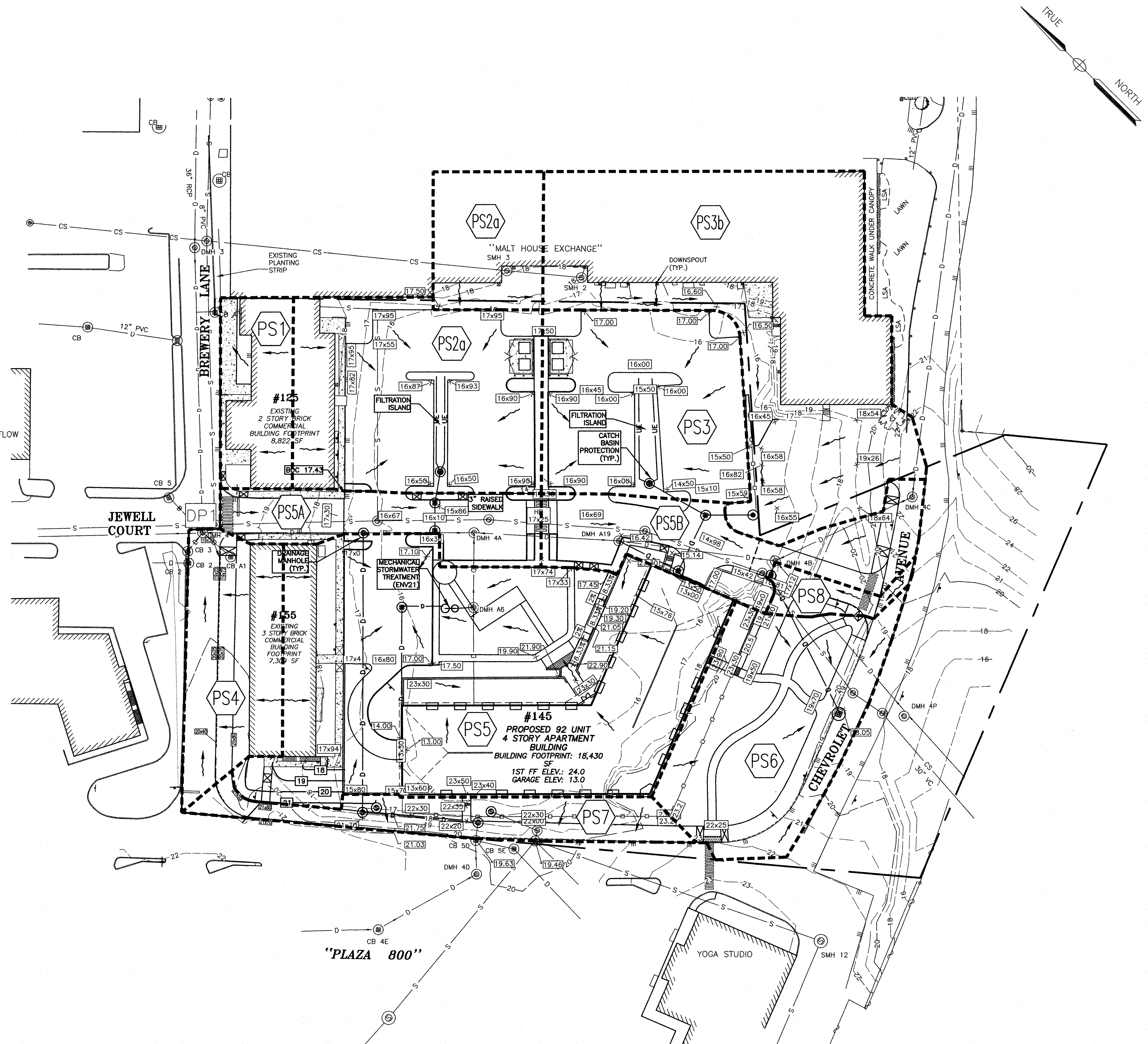
		DRAINAGE VECTOR
		EDGE OF WOODS / TREES
		CATCH BASIN
		DRAIN MANHOLE
W	W	WELL
EL.	EL.	ELEVATION
EP	EP	EDGE OF PAVEMENT
FF	FF	FINISHED FLOOR
INV	INV	INVERT
TBM	TBM	TEMPORARY BENCH MARK
TYP	TYP	TYPICAL
		Tc PATH
SF	SF	SHEET FLOW
SCF	SCF	SHALLOW CONCENTRATED FLOW
CHANNEL	CHANNEL	CHANNEL FLOW
HSG	HSG	HYDROLGIC SOIL GROUP



APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE

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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4) SPEED HUMPS SHALL BE INSTALLED IN A MANNER THAT WILL INSURE THE FREE FLOW OF STORMWATER BETWEEN THE HUMP AND THE CURB LINE.

5) EXISTING DRAINAGE INVERTS CAN BE SEEN ON SHEET EXISTING UTILITIES PLAN - C3.

CHINBURG PROPERTIES 145 BREWERY LANE PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	AREA EDITS, FLOW ARROWS ADDED	3/20/18
0	ISSUED FOR COMMENT	2/12/18

REVISIONS

JOSEPH L. MULLEDY No. 11502 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

3/20/18

SCALE: 1" = 40' FEBRUARY 2018

GRAPHIC SCALE

40 30 20 10 0 50 100 150 FEET

10 5 0 10 20 30 40 50 METERS

PROPOSED DRAINAGE PLAN

W2

FB168, PG 11

830.01

J:\JOBS\JN800s\Jn830s\JN830\2017 Site Plans Chinburg\Plans & Specs\Site\830.01SITE02.dwg, W2

ADDITIONAL SUBMITTAL INFORMATION

FOR

SITE REDEVELOPMENT
Chinburg Properties
145 Brewery Lane

March 20, 2018

- Site Review Application
- Statement of Authorization
- Site Plan Review Application Fee
- Site Cost Estimate
- Will Serve Letter Eversource
- Will Serve Unitil
- Site Access Agreement for Monitoring Wells
- Trip Generation Memo
- Green Space/Community Space Calculation
- Vehicle Turning Exhibits (Firetruck, Garbage Truck, Ambulance)
- Shared Parking Calculation/Residential Parking Calculation
- Drainage Analysis
- Proposed Green Building Components
- R.W. Gillespie. Boring Logs
- Sidewalk Easement/Chris Keenan remedy to dissolve easement
- Historic Griffin Family Corporation Access Letter

AMBIT ENGINEERING, INC. CIVIL ENGINEERS AND LAND SURVEYORS
801 Islington Street, Suite 31, Portsmouth, NH 03801 Phone (603) 430-9282 Fax 436-2315

20 March, 2018

Ms. Juliet Walker, Chair
City of Portsmouth Technical Advisory Committee
1 Junkins Avenue
Portsmouth, NH 03801

RE: Resubmittal for TAC Meeting; Site Plan at 145 Brewery Lane (Map 154 / Lot 2)

Dear Ms. Walker and TAC members:

We hereby resubmit, on behalf of Chinburg Properties dba as Portsmouth West End Development, LLC., the attached Site Plan for consideration at your April 3, 2018, TAC meeting. The site was previously approved for residential apartment use; but those approvals have expired.

The proposed site plan has been modified to comply with the current Character District 4-W (West End) zoning and also utilizes the West End Incentive Overlay District. The proposal is to provide greater than 20% Community Space which allows the project to receive incentives for an additional 10' of building height, a building footprint up to 20,000 square feet, and an increase in the amount of allowable dwelling units.

The project consists of constructing a new 92-unit residential apartment building with underground parking and associated site improvements, landscaping and utilities. The applicant has considered landscaping for storm water treatment, active uses for the community space, easements for those, sidewalk adjustments from 5' to 12', vertical granite curbing along the backs of the buildings, and a raised crosswalk.

The project was reviewed at a TAC Meeting on February 27, 2018. The following are responses to comments from the TAC Meeting (responses are shown in **bold text):**

1. With the high number of pedestrians expected to be generated by the new residential units, the applicant should provide better pedestrian facilities and connectivity to the surrounding neighborhood, including: a sidewalk down Brewery and Albany Streets to Cass Street, a sidewalk on Jewell Court to Islington Street, a sidewalk down Chevrolet Avenue. Note: In a subsequent email the City identified the following:
   Build or contribute funds to City to construct a sidewalk along Jewell Court (on the Sherwin Williams side). We feel this is an essential component of the site's desired strong pedestrian connection to Islington St. TAC's estimate for the sidewalk construction is $60K. We also feel that the Chevrolet Ave connection is an important component of your overall pedestrian connectivity. We would like to recommend a fair share contribution to be used for the City to construct the

sidewalk all the way to Cass Street. We recognize that you are already constructing sidewalks along your frontage, but without the connectivity to Cass St, the benefit of those sidewalks is limited. The total estimated construction costs for the sidewalk to Cass St (excluding Right-of-Way) is about $60K. We recommend that you contribute 1/3 of that cost ($20K). .The City will likely want you to maintain the sidewalks around your site, so we will want to have a maintenance agreement in place as part of this approval.

The developer agrees to fund these off-site improvements with contributions to a designated fund specifically for that purpose. In addition to the extent that the sidewalks remain on the developer's property the developer is agreeable to the maintenance provision.

2. What is the groundwater elevation, and what about infiltration? **Test Pits were performed to determine suitability for infiltration on the site. These test pits indicate that the estimated seasonal high water table varies from elevation 10 to 12, and that infiltration in the parking lot islands is not possible given the permeability of the lower layers of natural soil.**
3. Will the site as proposed need dewatering? **The groundwater elevation at the building is below the garage floor elevation. We do not anticipate dewatering for the new building. We anticipate that temporary dewatering for utilities may be needed.**
4. No metal wire should be placed in sidewalks on public land. **We revised the sidewalk details, removing the metal wire specification.**
5. 3rd Party inspection for all on site utility work. **The utility plan and inspection notes were revised to add 3rd Party inspection.**
6. The plans should show a clear open space layer that includes the proposed community space areas and types (including the SF for each area). The open space figures seem inconsistent between the table and the notes. **We provided a revised exhibit with open space and community space areas clearly indicated. We will provide an easement plan that will be recorded, showing access to the public spaces, as a condition of approval**
7. The entrance spacing should be shown for all buildings. **We added door locations for all buildings on Sheet C5.**
8. The site plan should be changed to remove the outbuilding table as there isn't an accessory or outbuilding in the project. Planning staff has determined that we can treat the rear building as another principal building. **As requested, we have removed the outbuilding from the Table on Sheet C5.**
9. The parking requirements should be fully detailed on the plan set. **The shared parking analysis has been provided on Sheet D5 Detail EE.**
10. Public access easements should be clearly shown for all infrastructure and community space areas. **Public access easements shall be shown on an easement plan to be provided for review and approval as a condition of approval.** Provide easement plan for new utility (sewer, drainage) easement. **An easement plan for the new public utilities shall be provided for review and approval as a condition of approval.**

11. If possible, remove the 5 parking spaces along Brewery Lane as they prevent a sidewalk connection and the vehicles overhang into the street. **The parking spaces along Brewery Lane have been replaced with a 12' wide concrete sidewalk.**
12. How does present design comply with NFPA 1 - Fire Code, Section 18.2.3.2.1 concerning FD access to the building? **As discussed at the 2-27-18 TAC meeting we revised the access width to 14'. The area shall be cleared of snow edge to edge in the winter.**
13. The landscape plan should include the required statements per Section 2.13.4 of the Site Plan Review Regulations. **The Master Landscape Plan, Sheet C8, has been revised with these required notes. We anticipate recording this plan.**
14. The checklist submitted references the supplementary information for information pertaining to where dark sky friendly measures have been implemented. The applicant should clarify where it is addressed in the supplemental info. **We are including catalogue cuts in the Supplemental Information which verifies that the selected fixtures are Dark Sky Compliant.**
15. Clarify building sewer connection to sewer main. Sheet.P2 indicates there is a connection to new PSMH1. Sheet.P1 and Sheet.C6 appear to show second sewer connection to SMH 5B. **We would like to construct 2 sewer connections, given the length of the building. We propose one connection at each end of the structure.**
16. Label proposed utility connections (sewer, water, drainage, roof) on utility plan with pipe type, size, inverts, slopes, etc. **The Utility Plan C7 and Profile Plans, P1-P3 have been updated with corresponding Pipe Labels which lead to the detail information in the tables.**
17. What is groundwater elevation/separation distance from bottom of proposed filtration (infiltration) basins? **Test Pits 1 and 2 beneath the Filtration Islands indicate that the water table is 3.5' to 3.75' below the existing grade. We are proposing to isolate the filtration with a PVC membrane.**
18. Provide design/detail for proposed water quality unit. Show unit on plan. **See Sheet C5 and Detail DD Sheet D5 for plan view and detail.**
19. Clarify PSOC3 shown on Sheet C7. **PSOC3 has been removed and replaced with the Water Quality Unit shown as Detail DD on Sheet D5.**
20. Provide contours/direction of flow arrows for stormwater runoff. **Flow arrows have been shown on Sheet W2 (Proposed Subcatchment Plan).**
21. Provide details for infiltration (filtration) basins including overflow structures, connections to drainage pipes, etc. **Details have been added for the Filtration Islands on Sheet D4, Detail U.**
22. Drainage analysis questions/comments: How is offsite runoff flowing through the considered/modeled? How are filtration basins/ponds modeled? **The offsite flow from Plaza 800 is maintained through a dedicated 24" RCP back to the City Easement at PDMH3. The stormwater from Chevrolet Avenue is picked up in PCB1, then to PCB2, then into Existing DMH 4B. The Filtration Basins are modeled so the storm water flows through them into the existing Storm Water System PCB5 and DMH 19.**

In an email subsequent to the TAC Meeting on February 27 the City identified the following additional comments (with response in **bold text**):

Parking:
1) Eliminate existing 5 spaces next to 125 Brewery Lane, extend sidewalk to 5' minimum width (6' where feasible) and remove / relocate gas meter. **See Response above; done.**
2) Add 6 on-street spaces next to 12' sidewalk along 155 Brewery Lane including street trees along street edge. **Given the addition of parallel parking spaces would reduce the available landscape area to approximately 2 feet in width we prefer to have the expanded planting area available for some street trees. Currently there is no access to the existing building along this face; so we don't feel that adding parking serves this site.**
3) On Chevrolet Ave side, add 6 new on-street parking spaces next to 12' wide sidewalk with street trees along street edge. **The addition of parallel parking spaces would reduce the green area abutting the adjacent neighborhood. We don't feel that adding parking warrants this intrusion in to the buffer.**
4) We would like to be able to gauge on-site parking demand pre and post-construction. That would require a parking usage analysis (by a qualified consultant) prior to construction and then within 1-year after the full occupancy. **The developer is willing to engage a consultant prior to construction as outlined; however the developer is not agreeable to the future study.**

Traffic
1) We feel that a contribution to improving the Bartlett Street signal on Islington Street is warranted. Our recommendation is $25K. **The developer is agreeable to this contribution towards a dedicate fund for that purpose.**

Chevrolet Ave
1) We have not confirmed whether we will want to take Chevrolet over as a city road, so that will require some further discussion. **This project should be allowed to proceed at this time without additional delays.**
2) We would like to discuss options for an all-season buffer (e.g. arborvitae) along the side of Chevrolet Avenue that fronts on the natural space. For the purpose of limiting light trespass to the neighborhood at Aldrich Court. **This has been added to the site landscaping.**

Attached to this application please find copies of supplemental information for this project. We look forward to meeting with you and the Technical Advisory Committee on April 3rd. Please feel free to call to discuss any question there may be about this project in the meantime. We are available to meet prior to the meeting if desired.

Sincerely,

John Chagnon, PE; Ambit Engineering, Inc.

Enclosures: 10 Plan Sets (4 Large, 6 small), PDF of files on a disc, Supplemental Information
CC: Eric Chinburg, CJ Architects, g2 plus 1 LLC, file

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 West End Development LLC Date Submitted: 2/12/2018

Phone Number: Ambit (603) 430-9282 E-mail: jrc@ambitengineering.com

Site Address: 145 Brewery Lane, Portsmouth, NH 03801 Map: 154 Lot: 2

Project: 145 Brewery Lane Zoning District: Character District W-4 Lot area: 206,319 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)**	ON FILE AT CITY	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)**	ON FILE AT CITY	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)**	Supplemental Information	
☑	Gross floor area and dimensions of all buildings and statement of uses and floor area for each floor. **(2.5.3.1B)**	Architectural Plan A1.0	
☑	Tax map and lot number, and current zoning of all parcels under Site Plan Review. **(2.5.3.1C)**	SHEET C1/COVER SHEET	
☑	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	

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)**	SHEET C1	
☑	Names, addresses and telephone numbers of all professionals involved in the site plan design. **(2.5.3.1F)**	COVER SHEET	
☑	List of reference plans. **(2.5.3.1G)**	SHEET C1	
☑	List of names and contact information of all public or private utilities servicing the site. **(2.5.3.1H)**	COVER SHEET	

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
☐	Wetland delineations shall be stamped 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.	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**
	(2.5.4.2C)		
☑	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 SHEET	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)**	SHEET C5	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)**	LANDSACPE PLAN	N/A

Site Plan Specifications – Required Exhibits and Data			
☑	1. **Existing Conditions: (2.5.4.3A)**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	a. Surveyed plan of site showing existing natural and built features;	SHEET C2	
☑	b. Zoning boundaries;	COVER SHEET	
☑	c. Dimensional Regulations;	SHEET C5	
☐	d. Wetland delineation, wetland function and value assessment;	N/A	
☐	e. SFHA, 100-year flood elevation line and BFE data.	N/A	
	2. **Buildings and Structures: (2.5.4.3B)**		
☑	a. Plan view: Use, size, dimensions, footings, overhangs, 1st fl. elevation;	SHEET C5	
☑	b. Elevations: Height, massing, placement, materials, lighting, façade treatments;	Arch Plan A2.0	
☑	c. Total Floor Area;	SHEET C5	
☑	d. Number of Usable Floors;	SHEET C5	
☑	e. Gross floor area by floor and use.	Arch A1.0, SHT C5	
	3. **Access and Circulation: (2.5.4.3C)**		
☑	a. Location/width of access ways within site;	SHEET C5	
☑	b. Location of curbing, right of ways, edge of pavement and sidewalks;	SHEET C5	
☑	c. Location, type, size and design of traffic signing (pavement markings);	SHEET C5	
☑	d. Names/layout of existing abutting streets;	SHEET C5	
☐	e. Driveway curb cuts for abutting prop. and public roads;	N/A	
☐	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).	SHEET C5/ SUPPLEMENTARY INFORMATION	
	4. **Parking and Loading: (2.5.4.3D)**		
☑	a. Location of off street parking/loading areas, landscaped areas/buffers;	SHEET C5	
☑	b. Parking Calculations (# required and the # provided).	SHEET C5	
	5. **Water Infrastructure: (2.5.4.3E)**		
☑	a. Size, type and location of water mains, shut-offs, hydrants & Engineering data;	SHEET C6	
☑	b. Location of wells and monitoring wells (include protective radii).	SHEET C1	
	6. **Sewer Infrastructure: (2.5.4.3F)**		
☑	a. Size, type and location of sanitary sewage facilities & Engineering data.	SHEET C7	
	7. **Utilities: (2.5.4.3G)**		
☑	a. The size, type and location of all above & below ground utilities;	SHEET C6	
☑	b. Size type and location of generator pads, transformers and other fixtures.	SHEET C6	
☐	8. **Solid Waste Facilities: (2.5.4.3H)**		
☑	a. The size, type and location of solid waste facilities.	SHEET C5	
	9. **Storm water Management: (2.5.4.3I)**	**Item Location**	**Waiver Requested**

☑	a. The location, elevation and layout of all storm-water drainage.	SHEET C6	
	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.	SHEET LT1	
☑	**11.** Indicate where dark sky friendly lighting measures have been implemented. **(10.1)**	SUPPLEMENTARY INFORMATION	
	12. Landscaping: (2.5.4.3K)		
☑	a. Identify all undisturbed area, existing vegetation and that which is to be retained;	SHEET C4	
☑	**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.	SHEET C7	
	14. Open Space: (2.5.4.3M)		
☑	a. Type, extent and location of all existing/proposed open space.	SHEET C5	
☑	**15. All easements, deed restrictions and non-public rights of ways. (2.5.4.3N)**	SHEET C1	
☑	**16. Location of snow storage areas and/or off-site snow removal. (2.5.4.3O)**	SHEET C5	
☑	**17. Character/Civic District (All following information shall be included): (2.5.4.3Q)**		
	a. Applicable Building Height (10.5A21.20 & 10.5A43.30);	SHEET C5	
	b. Applicable Special Requirements (10.5A21.30);	SHEET C5	
	c. Proposed building form/type (10.5A43);	SHEET C5	
	d. Proposed community space (10.5A46).	SUPPLEMENTARY INFORMATION	

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)**	SUPPLEMENTARY INFORMATION	
☑	Indicate where Low Impact Development Design practices have been incorporated. **(7.1)**	SUPPLEMENTARY INFORMATION	
☐	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)**	SUPPLEMENTARY INFORMATION	
☑	Calculation of the maximum effective impervious surface as a percentage of the site. **(7.4.3.2)**	SUPPLEMENTARY INFORMATION	
☑	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)**	SUPPLEMENTARY INFORMATION	

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)**	a. NONE b. N/A c. N/A d. N/A e. SHEET C1 f. SHEET C1	
☑	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)**	a. SUPPLEMENTARY INFO b. SHEET C1 c. SUPPLEMENTARY INFO d. SUPPLEMENTARY INFO e. N/A f. SHEET C1 g. SUPPLEMENTARY INFO h. SUPPLEMENTARY INFO i. N/A	
☑	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)**	TO BE PROVIDED	
☑	A list of any required state and federal permit applications required for the project and the status of same. **(2.5.3.2E)**	COVER SHEET	

Applicant's Signature: ____ **Date:** ____________________________

Reviewed by: ____ **Date Reviewed:** ____________________________

16 January, 2018

To Whom It May Concern

RE: Client Representation for a Development at 145 Brewery Lane

This letter is to inform the City of Portsmouth, and other parties in accordance with State Law that Ambit Engineering is authorized to represent the above-mentioned property as our agent in the approval process. This includes signatory powers on any and all applications.

Please feel free to call me if there is any question regarding this authorization.

Sincerely,

Chingburg Properties
Authorized Representative

Penstock Way
Newmarket, NH 03857
603.868.5995

Site Plan Review Application Fee

Project: 145 Brewery Lane **Map/Lot:** 154 / 2

Applicant: Portsmouth West End Development LLC

All development

Base fee $500 $500.00

Plus $5.00 per $1,000 of site costs
Site costs $872,414 + $4,362.07

Plus $10.00 per 1,000 S.F. of site development area
Site development area 135,000 S.F. + $1,350.00

Fee **$6,212.07**

Maximum fee: $15,000.00

Fee received by: ______________________ Date: ______________

Note: Initial application fee may be based on the applicant's estimates of site costs and site development area. Following site plan approval, the application fee will be recalculated based on the approved site plan and site engineer's corresponding site cost estimate as approved by the Department of Public Works, and any additional fee shall be paid prior to the issuance of a building permit.

Revised Construction Cost Estimate

Ambit Engineering

Date: January 15, 2018

Project: Chinburg Properties - 145 Brewery Lane   Job No: 830.01

Location: 145 Brewery Lane, Portsmouth, NH

Scope: **Site Cost Estimate**

ITEM NO.	DESCRIPTION	UNIT	AMOUNT	UNIT COST	TOTAL
1	12" PVC Sewer	LF	274	$80.00	$21,920.00
2	12" HDPE Pipe	LF	482	$70.00	$33,740.00
3	24" HDPE Pipe	LF	199	$70.00	$13,930.00
4	4' Catch Basin	EA	5	$2,500.00	$12,500.00
5	Trench Drain	LF	40	$50.00	$2,000.00
6	4' DMH	EA	4	$3,000.00	$12,000.00
7	4' SMH	EA	2	$3,000.00	$6,000.00
8	Outlet Control Structure	EA	2	$10,000.00	$20,000.00
9	Common Excavation	CY	3100	$20.00	$62,000.00
10	2 1/2 " Base Course	TON	920	$100.00	$92,000.00
11	1 1/2 " Wearing Course	TON	552	$100.00	$55,200.00
12	Reclaim Existing Pavement	LS	1	$5,000.00	$5,000.00
13	Roadbed Excavation	CY	500	$10.00	$5,000.00
14	Electrical Conduit (5")	LF	200	$55.00	$11,000.00
15	Telephone / Cable Conduits (4")	LF	200	$50.00	$10,000.00
16	2" fire Alarm conduit	LF	200	$45.00	$9,000.00
17	Crushed Gravel	CY	1031	$25.00	$25,775.00
18	Bank Run Gravel	CY	2063	$18.00	$37,134.00
19	Dumpster Pad and Enclosure	LS	1	$6,000.00	$6,000.00
20	6" Sidewalk with Curb integrated	SY	1850	$60.00	$111,000.00
21	Landscape Plantings	LS	1	$40,000.00	$40,000.00
22	Lighting Conduit	LF	1200	$18.00	$21,600.00
23	Site Lighting - Fixtures	EA	15	$3,500.00	$52,500.00
24	Concrete Stairs and Steps	LS	1	$75,000.00	$75,000.00
25	HC Striping and Signage	EA	6	$250.00	$1,500.00
26	Crosswalks and Stall Striping	LF	3500	$0.40	$1,400.00
27	Fencing	LF	656	$40.00	$26,240.00
28	Electrical Service	LS	1	$5,000.00	$5,000.00
29	Speed Humps	EA	1	$750.00	$750.00
30	Stormwater	EA	2	$20,000.00	$40,000.00
31	Retaining Walls	SF	1635	$35.00	$57,225.00
	TOTAL				**$872,414**

Note: This is an estimate of construction costs based upon various sources

APPLICATION FEE:

$500 + ($872,414/1000 x $5) + (135000 / 1,000 x $10)= $ 6,212.07

EVERSOURCE ENERGY

Electric Service Support Center PO
Box 330
Manchester, NH 03105
1-800-362-7764

February 5, 2018

Jeff Duchesne
Chinburg Properties
3 Penstock Way
Newmarket NH 03857

Re: 145 Brewery Ln
Portsmouth NH

Dear Mr. Duchesne:

Eversource Energy agrees to provide electric service to the above site in accordance with the Tariff for Electric Service on file with the New Hampshire Public Utilities Commission (NHPUC), subject to the applicable NHPUC rules and regulations, as well as Eversource's "Requirements for Electric Service Connections".

Please keep in mind that all requirements for providing electric service, such as, but not limited to, contracts, licenses, fees, payments, easements and inspections must be provided to Eversource prior to the construction of the electric facilities.

Should you have any questions or concerns, please call us at 1-800-362-7764

Sincerely,

Andrea Hoben
Electric Service Support Center
PO Box 330
Manchester, NH 03105-9989

Unitil

February 7, 2018

Jeff Deschesne
Portsmouth West End Development LLC
3 Penstock Way
Newmarket NH 03857

RE: Natural Gas Availability to 145 Brewery Ln Portsmouth NH

Dear Jeff,

Unitil's natural gas division has reviewed the requested site for natural gas service.

Unitil hereby confirms natural gas service will be available to Portsmouth West End Development LLC at 145 Brewery Ln Portsmouth NH. Installation is pending an authorized installation agreement with Portsmouth West End Development LLC and street opening approval from the City of Portsmouth DPW.

Let me know if you have any questions. You can email me at oliver@unitil.com. My phone number is 603-294-5174.

Sincerely,

Janet Oliver
Business Development Representative

SITE ACCESS AGREEMENT
PERMISSION TO ENTER PROPERTY

This Site Access Agreement ("Agreement") is made by and between Portsmouth West End Development, LLC, a New Hampshire limited liability company ("Owner"), and the City of Portsmouth, a municipal corporation with an address of 1 Junkins Avenue, Portsmouth, New Hampshire regarding the Owner's property located at 125 and 145 Brewery Lane, Portsmouth, New Hampshire ("Site"). The City requests permission to enter the Site for the exclusive purpose of conducting water sampling from four (4) existing monitoring wells located on the Site (the "Investigation Activities").

1. Owner hereby gives permission to the City of Portsmouth's agents, including, but not limited to, the City of Portsmouth's employees, authorized environmental consultants and/or contractors (the "Authorized Parties"), to enter upon the Site to perform investigation activities at the Site. This permission is effective immediately upon the execution of this Agreement by Owner and the City of Portsmouth.

2. The permission granted by Owner under this Agreement is contemplated to be used for the following investigation activities that may be performed by the City of Portsmouth:

   a. Investigation of groundwater, including, but not limited to the logging, gauging and sampling of existing groundwater monitoring wells, any testing or sampling of groundwater, surface water, soil vapor or other material deemed appropriate by the City of Portsmouth.

   b. On-Site observation and oversight of the investigation activities.

   c. Disclosure of environmental information as required by law.

3. Upon completion of the investigation, the Authorized Parties will restore the property as near as practicable to its condition immediately prior to the commencement of such activities.

4. The granting of this permission by the Owner is not intended, nor should it be construed, as an admission of liability on the part of the Owner or the Owner's successors and assigns for any contamination discovered on the Site.

5. The Authorized Parties may enter the Site during normal business hours and may also make special arrangements to enter the Site at other times with agreement from the Owner.

6. The Authorized Parties shall enter upon the Site at their own risk, and Owner shall not be held responsible or liable for injury, damage, or loss incurred by any Authorized Party arising out of or in connection with investigation activities conducted under this Agreement, except to the extent that any injury is caused due to the acts or omissions of Owner, or any employee or agent of the Owner.

7. Each Authorized Party severally hereby indemnifies and holds Owner harmless from any and all claims or causes of action arising out of or related to the acts or omissions of

said Authorized Party in connection with the performance of activities under this Agreement, except to the extent that any injury is caused due to the acts or omissions of Owner, or any employee or agent of Owner.

8. The City of Portsmouth will supply to Owner all information derived from the investigation activities conducted at the Site. The City of Portsmouth may use such information for any purpose at the City of Portsmouth's sole discretion. Information will be held in confidence except as instructed by the Owner, the City of Portsmouth, or as required by law.

9. In exercising its access privileges, the Authorized Parties will take reasonable steps not to interfere with the Owner's operations on the Site.

10. The Authorized Parties will give notice to the Owner at least one (1) week in advance of the start of investigation activities on the Site.

11. Owner ensures that Owner will give Authorized Parties access to the entire Site for the purposes set forth in this Agreement. However, as shown on the proposed Development Plan for the Site, on file with the City of Portsmouth, one of the wells will be either abandoned or relocated. The parties agree to cooperate in the decision to abandon or relocate.

12. Any party to this Agreement may terminate this Agreement by giving six (6) months advanced written notice, or all parties may terminate the Agreement at any time by written agreement.

13. This Agreement shall expire upon the City of Portsmouth's issuance of a letter indicating completion of the project.

For the City of Portsmouth:

____
John P. Bohenko, City Manager

Dated:____________

Pursuant to vote of the City Council on
_________________________.

For Site Owner:
Portsmouth West End Development, LLC
By: Penstock Assets, LLC, Manager

By: ___________________________
Eric J. Chinburg, Authorized Person
to Act on Behalf of Manager

AMBIT ENGINEERING, INC. CIVIL ENGINEERS AND LAND SURVEYORS
200 Griffin Road, Unit 3, Portsmouth, NH 03801 · Phone (603) 430-9282 Fax 436-2315

12 February, 2018

Trip Generation Calculation
Site Redevelopment
145 Brewery Lane,
Portsmouth, NH

The purpose of this calculation is to identify the net change in vehicle trips expected to be generated by the site redevelopment at the 145 Brewery Lane. Currently the site is comprised of a 2 Office/Service buildings at 125 and 155 Brewery Lane as well as the abandoned City of Portsmouth, Public Works Facility.

The plan is to demolish the former Public Works Facility and construct a 130 space parking area with associated walkways and parks. The parking area will service the proposed 92 Unit apartment building (which has an additional 40 parking space in the below grade garage).

This site has been recently rezoned to the Character District 4-West End and is also in the West End Incentive Overlay District.

In developing the expected trips Ambit Engineering considered the standard trip generation rates and equations published in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition (2012). The land use category that best correlates with the existing use is Office Use (ITE Land Use Code 710) and "Health and Fitness" (ITE Land Use Code 492). The land use category that best correlates with the proposed use isApartment H (ITE Land Use Code 92) and "apartment" (ITE Land Use Code 220) The trip rates, based upon the number of dwelling units of the buildings are summarized below for the **Weekday AM and PM Peak Hour**:

Trip Generation Summary

Existing – AM Peak Hour

Yoga (0.51 trips per 1000 sq. ft.)	1.41 x 5.9units = 8 trips
General Office (1.56 trips per 1,000 sq. ft.)	1.56 x 25.2 units = 39 trip
Total	47 trips

Proposed – AM Peak Hour

Apartments (0.51 trips per dwelling unit)	0.51 x 92 units = 47 trips
Yoga (1.41 trips per 1000 sq. ft.)	1.41 x 5.9 units = 8 trips
General Office (1.56 trips per 1,000 sq. ft.)	1.56 x 25.2 units = 39 trip
Total	95 trips

Existing – PM Peak Hour

Yoga (3.53 trips per 1000 sq. ft.)	3.53 x 5.9units = 21trips
General Office (1.49 trips per 1,000 sq. ft.)	1.49 x 25.2 units = 38 trip
Total	59 trips

Proposed – PM Peak Hour

Apartments (0.51 trips per dwelling unit)	0.62 x 92 units = 57 trips
Yoga (3.53 trips per 1000 sq. ft.)	3.53 x 5.9units = 21trips
General Office (1.49 trips per 1,000 sq. ft.)	1.49 x 25.2 units = 38 trip
Total	116 trips

Trip Generation Impact

The increase anticipated with this project is 57 additional trip in the PM peak hour and 47 additional trips in the AM peak hour. The anticipated increase in traffic will be divided between the Brewery Lane entrance and the Chevrolet Ave Entrance and does not substantially alter the traffic conditions. Chevrolet Avenue and Brewery Lane are designed for uses such as the proposed project.

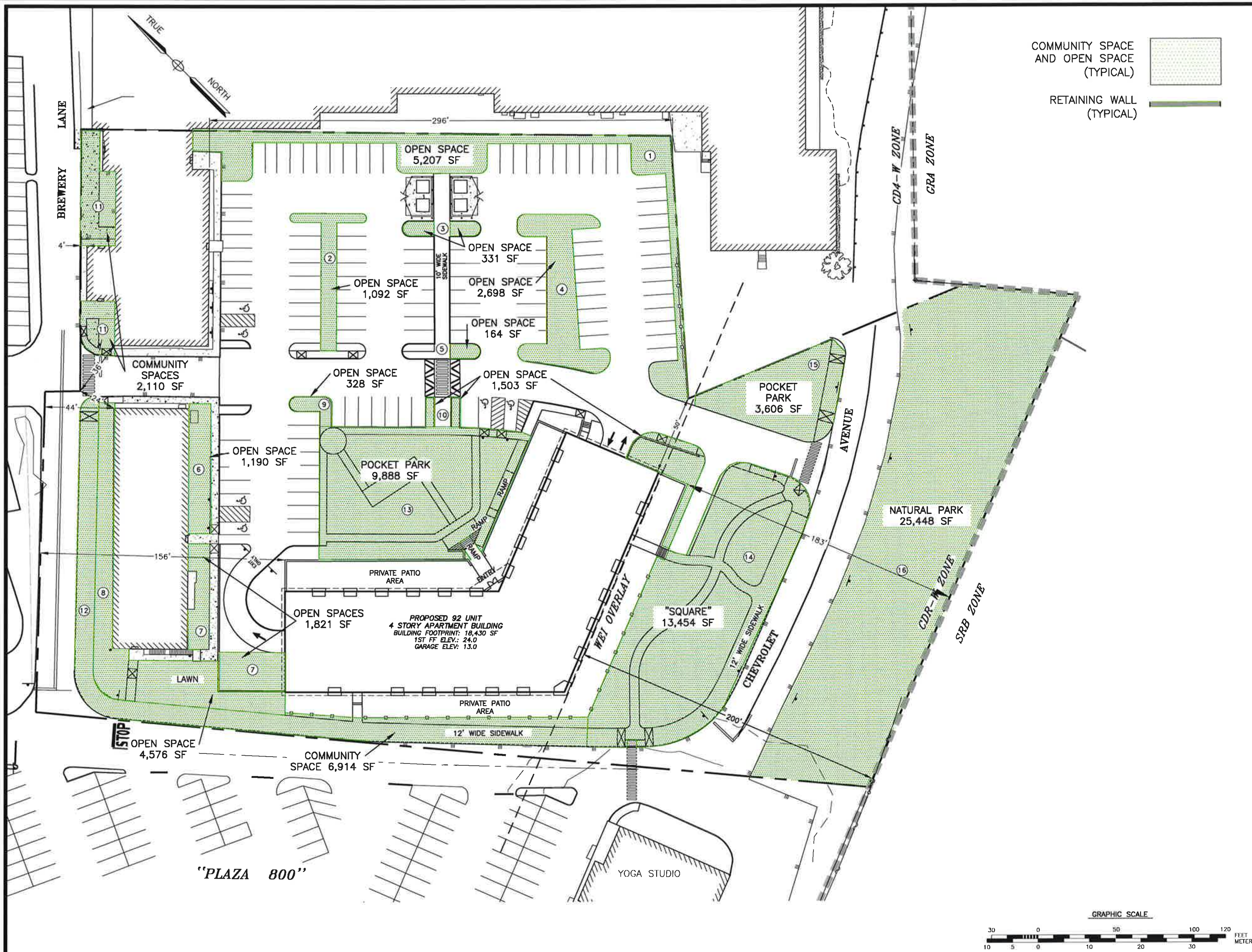
Please feel free to call if you have any questions or comments.

Sincerely,

Douglas J. LaRosa

Douglas J. LaRosa, Project Manager

Submission: City Site Plan Review Application Package



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

OPEN SPACE AREA

SPACE	OPEN	COMMUNITY
1	5,207	0
2	1,092	0
3	331	0
4	2,698	0
5	164	0
6	1,190	0
7	1,046	0
8	4,576	0
9	1,829	0
10	1,503	0
11	0	2,110
12	0	6,914
13	0	9,888
14	0	13,454
15	0	3,549
16	0	25,448
SUBTOTAL	19,636	61,363
TOTAL	80,999	OPEN AND COMMUNITY SPACE
LOT SIZE	206,319	206,319
% OPEN SPACE	39.3	29.7

CHINBURG PROPERTIES
145 BREWERY LANE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	3/20/18

REVISIONS

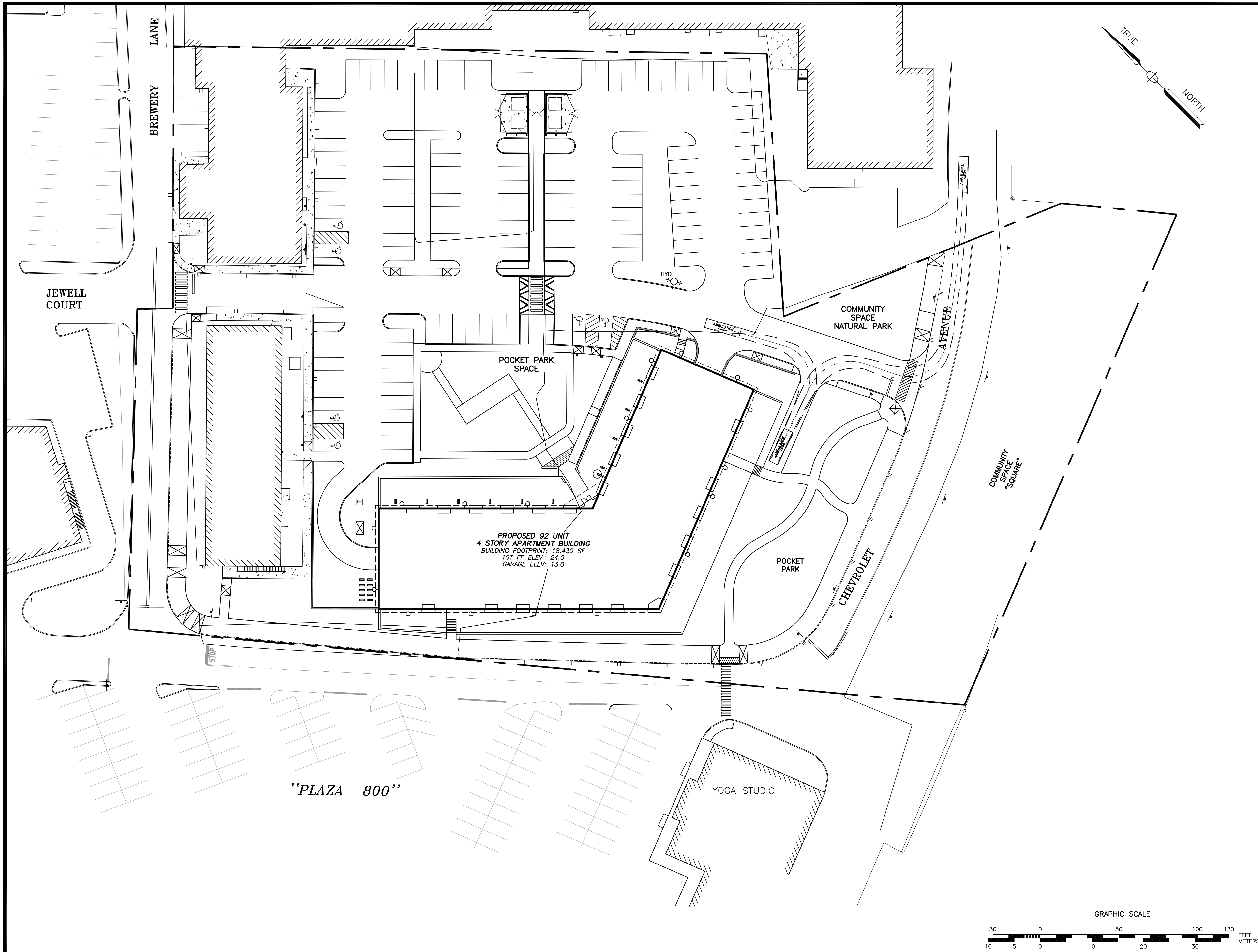
SCALE: 1" = 30' MARCH 2018

OPEN & COMMUNITY SPACE CALCULATIONS

OC

FB168, PG 11

830.01



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

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE

CHINBURG PROPERTIES
145 BREWERY LANE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	2/12/18

REVISIONS

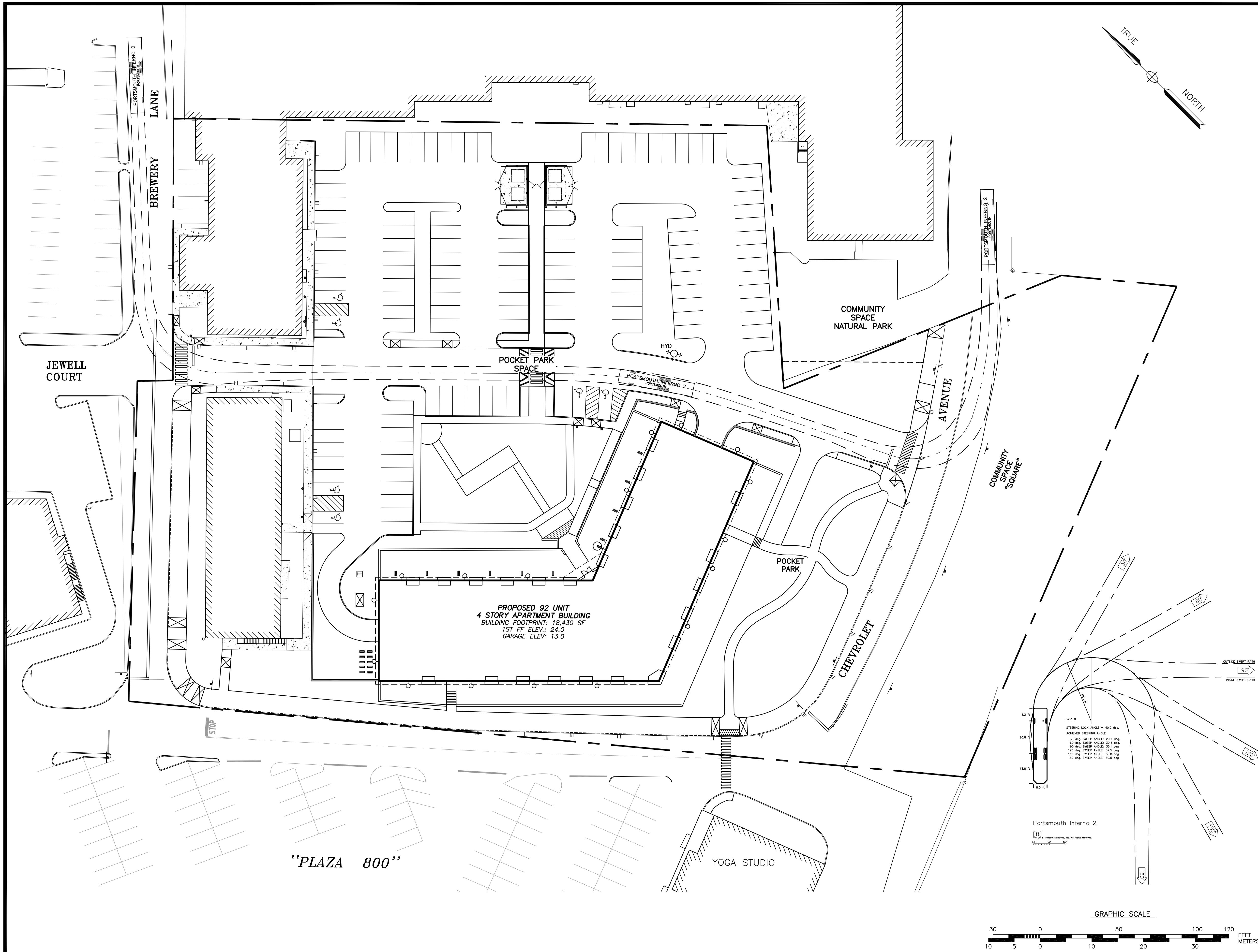
SCALE: 1" = 30' FEBRUARY 2018

AMBULANCE VICHICLE TURN

V1

FB168, PG 11

830.01



AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
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Tel (603) 430-9282
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APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE

CHINBURG PROPERTIES
145 BREWERY LANE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	2/12/18

REVISIONS

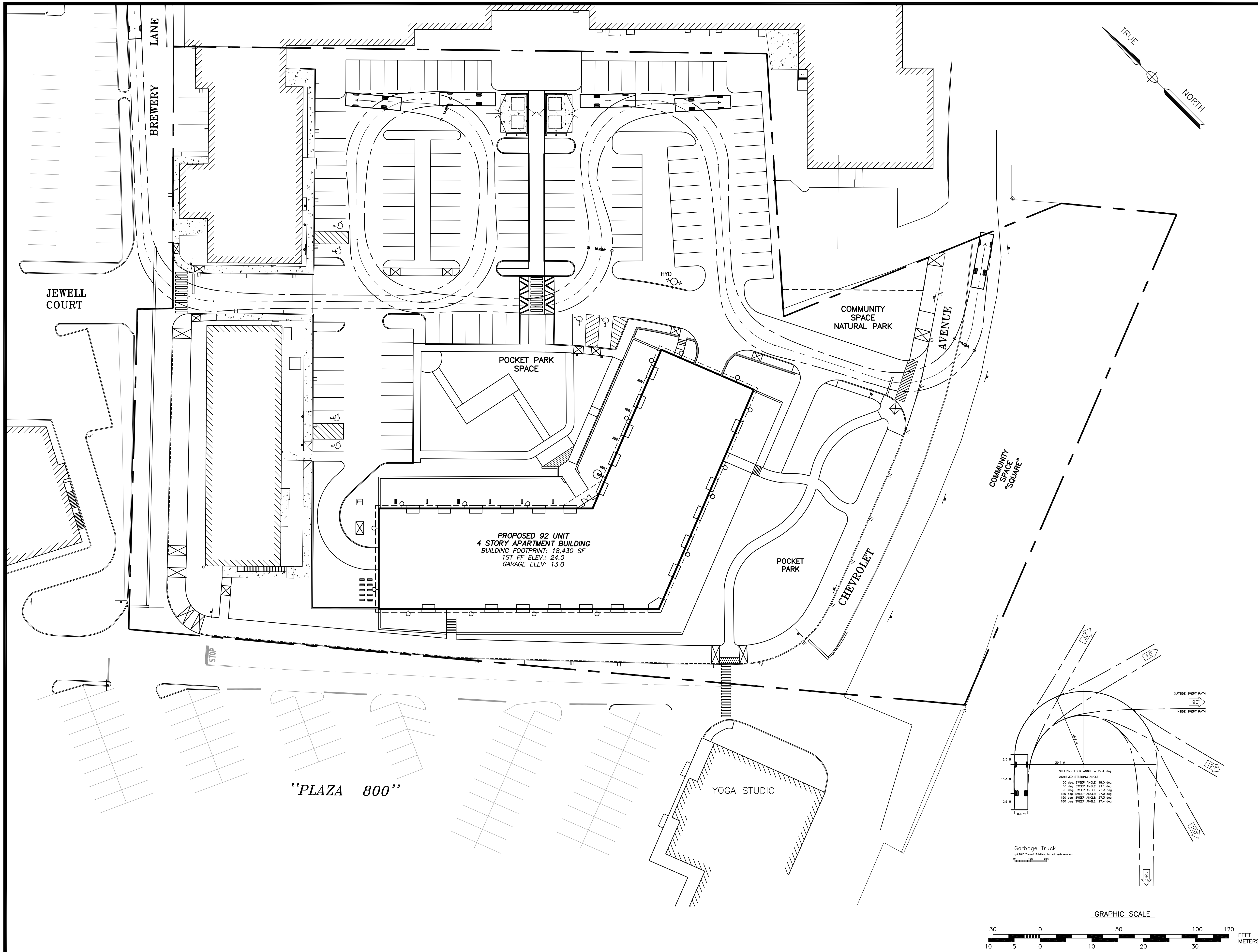
SCALE: 1" = 30' FEBRUARY 2018

PORTSMOUTH INFERNO 2
VEHICLE TURN

V2

FB168, PG 11

830.01



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200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
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APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE

CHINBURG PROPERTIES
145 BREWERY LANE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	2/12/18

REVISIONS

SCALE: 1" = 30' FEBRUARY 2018

GARBAGE TRUCK VEHICLE TURN

V3

FB168, PG 11

830.01

125, 145 & 155 Brewery Lane, Shared Parking Analysis

12-Feb-18

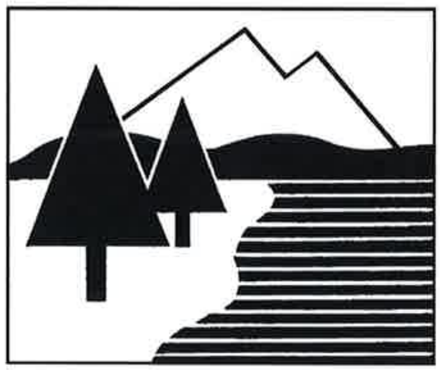
				Weekday				Weekend				Nighttime			
(A) Land Use	Parking Rate per sq. ft. GFA	Gross Floor Floor (Sq. FT)	Required # Spaces	(B) Daytime (8:00 AM–5:00 PM)		(C) Evening (6:00 PM–Midnight)		(D) Daytime (8:00 AM–5:00 PM)		(E) Evening (6:00 PM–Midnight)		(F) Nighttime (Midnight–6:00 AM)		(F) Nighttime (Midnight–6:00 AM)	
Residential 10.1112.31		62,604	104	60%	62.4	100%	104	80%	83	100%	104	100%	104	100%	104
Office/ Industrial	0.00286 1/350 SF GFA	25231	72	100%	72.2	20%	14	10%	7	5%	4	5%	4	5%	4
Recreational Yoga Studio	0.004 1/250 SF GFA	5892	24	60%	14.1	90%	21	100%	24	70%	16	5%	1	5%	1
Hotel/Motel		0	0	70%	-	100%	-	75%	-	100%	-	100%	-	100%	-
Restaurant		0	0	70%	-	100%	-	80%	-	100%	-	10%	-	10%	-
Entertainment		0	0	40%	-	100%	-	80%	-	100%	-	10%	-	10%	-
Conference/ Convention		0	0	100%	-	100%	-	100%	-	100%	-	5%	-	5%	-
Place of Worship*		0	0	10%	-	5%	-	100%	-	50%	-	5%	-	5%	-
Other Institutional		0	0	100%	-	20%	-	10%	-	10%	-	5%	-	5%	-
Totals					149		140		114		124		109		109

Minimum Parking Requirement	149
Maximum allowed Parking is Total x 1.20 (20%)	178
Proposed Parking Spaces	167

Residential Parking Space Calculation			
Apartment Categories By Sq. Ft.	Parking Spaces Required	#Units	Parking Spaces Required
> 500	0.5	25	12.5
500 to 750	1	47	47
Over 750	1.3	20	26
Visitor Parking = 92/5 =			18.4
Totals		92	104

DRAINAGE ANALYSIS
SITE DEVELOPMENT

MAP 154, LOT 2
BREWERY LANE
PORTSMOUTH, NH
For
CHINBURG PROPERTIES / PORTSMOUTH WEST END DEVELOPMENT, LLC



February 12, 2018

Revised: March 19, 2018

STATE OF NEW HAMPSHIRE
JOSEPH
L
MULLEDY
No. 11502
LICENSED
PROFESSIONAL ENGINEER

2/19/18

Ambit Engineering, Inc.

Civil Engineers and Land Surveyors
200 Griffin Road, Unit 3
Portsmouth, NH 03801
Phone: 603.430.9282; Fax: 436.2315
E-mail: jlm@ambitengineering.com

TABLE OF CONTENTS

DRAINAGE ANALYSIS

EXECUTIVE SUMMARY

This analysis is meant to be used by Town officials, the developer, builders, earthwork contractors and other interested parties to better understand the assumptions and intent of the drainage management and treatment scheme. This drainage analysis examines and compares the existing and proposed conditions stormwater drainage patterns for a Site Development on Brewery Lane in the City of Portsmouth, at Assessor's Map 154, Lot 2. The total lot size is 5.03 acres including areas of off-site watershed that flows onto the parcel and is included in the drainage analysis. Because of the project size, the applicant is required to obtain an NHDES Alteration of Terrain permit which require that stormwater runoff be treated prior to its discharge off the property. This will be achieved by the use of stormwater treatment BMP's and best management practices.

The "existing" conditions site plan show the condition immediately before development (i.e., as it exists today). Runoff amounts from this existing state are a function of the land cover, vegetation and soils; together those factors produce what is known as the Curve Number. The "existing" or pre-developed curve number for the area consisting of one subcatchment is 97. Typically, highly developed areas with a substantial amount impervious area will have curve numbers approaching 90, whereas undisturbed or undeveloped areas can have curve numbers as low as 30 if the soils are well-drained and covered with forest. The proposed development's curve number decreases to 93. Because we have reduced the total amount of impervious surface on the site, the chance of an increase in runoff is very low. For this reason, only treatment practices are proposed at this time to meet State permitting requirements (Alteration of Terrain).

Because the overall impervious surface area has been decreased in the proposed condition, peak rates of runoff can be maintained without on site detention. However, the runoff will require treatment. Deep sump catch basins with water quality elbows will provide secondary stormwater treatment. Primary treatment will be achieved by the use of two filtration systems and an "Environment 21" (V2B1 Model #6) system. The filtration systems treat runoff by filtering it through a layer of engineered soil that removes pollutants through filtering and absorption. The rate of outflow through these ponds is primarily a function of the filter media porosity and the perforated underdrain within that filter media. The two filtration systems are located inside of the islands within the parking lot on the north side of the site. The water quality unit will be located within the community patio in front of the building. A NHDES Alteration of Terrain permit application will be filed for the project because the disturbed areas will exceed 100,000 square-feet.

Treatment of stormwater runoff is required for the "first-flush" runoff (or Water Quality Volume) and is defined by NHDES as a continuous storm with a rainfall of 1". Statistically, 90% of all storm events in the State of New Hampshire in any given year produce 1" or less rainfall during a 24 hour period. These storms are assumed to carry the majority of the pollutants associated with stormwater runoff. The water quality volume (WQV) is calculated based on this small storm and that volume is treated in the BMP (in this case the filter ponds). Larger storms are also passed through these BMP's but since the majority of the pollutants have already been removed there is no need to treat the entire volume of runoff. For these storms, the volume above and beyond the water quality volume is " by-passed" through the outlet structure untreated.

There is one design point on this parcel which are used to compare pre and post-developed runoff amounts. The design point is labeled DP1 and is located within a drain manhole within the intersection of Jewell Court and Brewery Lane.

The 2, 10, 25 and 50 year, 24 hour storm events are used to compare the peak runoff amounts at the design point.

The following table summarizes the pre and post developed peak runoff flows at the one Design Point:

Comparison of Pre and Post Developed Discharge Rates

Design Point	Existing 2 yr/10 yr/25 yr/50 yr Peak Flow (cfs)	Proposed 2 yr/10 yr/25 yr/50 yr Peak Flow (cfs)	Change 2 yr/10 yr/25 yr/50 yr Peak Flow (cfs)
DP1	18.0/27.6/35.2/42.2	15.7/25.3/32.7/39.6	-2.3/-2.3/-2.5/-2.6

As the above chart shows, flows are either maintained or reduced in the proposed condition. The following table summarizes the pre and post developed stormwater volumes at the Design Point:

Comparison of Pre and Post Developed Stormwater Volumes

Design Point	Existing 2 yr/10 yr/25 yr/50 yr Volume (af)	Proposed 2 yr/10 yr/25 yr/50 yr Volume (af)	Change 2 yr/10 yr/25 yr/50 yr Volume (af)
DP1	1.1/1.8/2.3/2.7	0.9/1.5/2.0/02.5	-0.2/-0.3/-0.3/-0.2

As the above table shows, volumes are either maintained or reduced at the Design Point. This meets Alteration of Terrain Permit requirements as well as City of Portsmouth requirements.

DRAINAGE ANALYSIS
SITE DEVELOPMENT

MAP 154, LOT 2
125 BREWERY LANE
PORTSMOUTH, NH
For
CHINBURG PROPERTIES / PORTSMOUTH WEST END DEVELOPMENT, LLC

INTRODUCTION

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 City of Portsmouth Assessor's Map 154 as Lot 2. The proposed project is for the redevelopment of a 4.7 acre parcel for additional residential use.

This report includes information about the existing site and the proposed development as necessary to analyze stormwater runoff treatment and management. The report includes maps of existing and proposed subcatchments and calculations of runoff. The report will provide a brief narrative description of the storm water 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. To fully understand the proposed site development the reader should review plans W1 and W2 which graphically show the assumptions used in the HydroCad stormwater model (Note: these plans are not meant to be used for construction purposes).

In order to maintain or reduce developed peak-runoff amounts to pre-developed levels, the applicants will have to provide for detention of runoff. This will be achieved by the use of two filtration systems and a water quality unit (WQU). The filteration basins treat runoff by filtering it through a layer of engineered soil that removes pollutants through filtering and absorption. The rate of outflow through these basins is primarily a function of the filter media porosity. The two filtration systems are located inside of the islands within the parking lot on the north side of the site. The water quality unit will be located within the community patio in front of the building. A NHDES Alteration of Terrain permit application will be filed for the project because the disturbed areas will exceed 100,000 square-feet.

Treatment of stormwater runoff is required for the "first-flush" runoff (or Water Quality Volume) and is defined by NHDES as a continuous storm with a rainfall of 1". Statistically, 90% of all storm events in the State of New Hampshire in any given year produce 1" or less rainfall during a 24 hour period. These storms are assumed to carry the majority of the pollutants associated with stormwater runoff. The water quality volume (WQV) is calculated based on this small storm and that volume is treated in the BMP (in this case the filter ponds). Larger storms are also passed through these BMP's (or should be) but since the majority of the pollutants have already been removed there is no need to treat the entire volume of runoff. For larger storms, the volume above and beyond the water quality volume is " by-passed" through the outlet structure untreated.

METHODOLOGY

This report uses the US Soil Conservation Service Method for prediction of storm water runoff. The SCS method is published in The National Engineering Handbook, Section 4 "Hydrology", in Technical Release No. 20, (TR-20) "Computer Program for Project Formulation Hydrology", and Technical Release-55 (TR-55) "Urban Hydrology for Small Watersheds". This report uses the HydroCAD program, written by Applied Microcomputer Systems, Chocorua, N.H., to apply these methods. Rainfall data are taken from the Extreme Precipitation Tables published by the Northeast Climate Center.

SITE SPECIFIC INFORMATION

Located on Brewery Lane in Portsmouth, this site the location of a former DPW garage and two brick structures.

The site is bound by Cheverolet ave to the southeast, Brewery Lane to the northwest, Plaza 800 to the southwest and existing Malt House buildings to the northeast.

The majority of Soils on this site are of the Urban Land "Canton Complex". These soils can be described as being well-drained. A waiver is requested from the requirement for a site specific soil report as is required by State Alteration of Terrain permitting, because the soil is “made” land.

DRAINAGE ANALYSIS

This drainage analysis consists of two sections, an analysis of the stormwater runoff from the site in the existing condition, and an analysis of the stormwater runoff from the same area with the proposed development. Areas and drainage information were taken from an existing conditions plan and site topographic map prepared by this office. Soils information was taken from the Soil Conservation Service (SCS) Web Soil Survey. Vegetative cover information was determined by on-site inspection as well as aerial orthophotography.

There is one discharge point identified for analysis of stormwater runoff for this project. This is the same point in the existing and proposed conditions. This discharge point is located inside an existing drain manhole within the intersection of Brewery Lane and Jewell Court.

Existing or Pre-Developed Site Runoff

In order to study the site in greater detail, design closed systems and estimate peak stormwater runoff, it is necessary to divide the site into watershed subcatchments. There is a single subcatchment in the existing analysis. The design point is an existing drain manhole (DMH 4) located in the intersection of Brewery Lane and Jewell Court. The large majority of these discharges are sheet flow.

Subcatchment Summaries

Subcatchment ES1*: This Subcatchment comprises 100% of the total area including runon from offsite (5.035 ac). Existing groundcover is largely impervious surfaces consisting of paved parking and rooftops with some small areas of compacted gravel surface. Runoff from this subcatchment flows to the municipal drainage system along Jewett Court.

*Runoff volumes are based on the 2 year storm event for comparison purposes only.

The following table summarizes the existing subcatchments. The total rainfall amounts for the 2, 10, 25 and 50 year storm are 3.21", 4.87", 6.17" and 7.39". These are the rainfall amounts promulgated by NHDES and are taken from the Northeast Regional Climate Center website.

Table 1: Existing Watershed Subcatchment Runoff Results.

Subcatchment	Area Sf	Tc min.	CN	2 Year Peak cfs	10 Year Peak cfs	25 Year Peak cfs	50 Year Peak cfs
ES1	219,330	5.0	97	18.0	27.6	35.2	42.2

Consistent with TR-55 methodology, a minimum Time of Concentration of 5.0 minutes was set in the HydroCAD modeling software. See "Plan of Proposed Subcatchments" – W1.

Proposed or Post-Developed Site Runoff

There are eight subcatchments in the proposed analysis including runoff from off site. The same Design Point is utilized for the developed state. Subcatchments PS1, PS2 , PS3, PS4, PS5, PS6, PS7 andPS8 all flow to Discharge Point 1 (DP1).

The following is a description of the various subcatchments:

Subcatchment PS1 is the northwest corner of the lot and represents an existing building on site, a small amount of landscaping, sidewalk and pavement within Brewery Lane. Flow from this subcatchment discharges directly to design point DP1.

Subcatchment PS2 represents the majority of runoff from the rear of the building in PS1 as well as pavement, sidewalk and landscaping. The flow from this subcatchment is captured and treated in Filter Pond #1.

Subcatchment PS2a represents offsite rooftop runoff that will be captured in a swale/underdrain system that will bypass the onsite treatment.

Subcatchment PS3 is the northwest corner of the lot and is largely pavement with smaller amounts of sidewalk and landscape area. The flow from this subcatchment is captured and treated in Filter Pond #2.

Subcatchment PS3a represents offsite rooftop runoff that will be captured in a swale/underdrain system that will bypass the onsite treatment.

Subcatchement PS4 is the located in the southwest corner of the property and represents runoff from an existing building on site, a small amount of landscaping, sidewalk and pavement within Brewery Lane. Flow from this subcatcheent discharges directly to design point DP1.

Subcatchment PS5 is contains the majority of the area for the entire lot and is comprised of the entire rooftop from the proposed sidewalk, pavement and landscaped areas. Runoff from this subcatchment will be treated in a Water Quaility Unit (WQU) located within the community patio in the front of the building.

Subcatchment PS5A is contains sidewalk, pavement and landscaped areas.

Subcatchment PS5B is contains sidewalk, pavement and landscaped areas.

Subcatchment PS5C is contains the majority of the area for the entire entire rooftop from the proposed building.

Subcatchement PS6 is located along Cheverolet Avenue to the rear of the proposed building and is comprised of pavement, sidewalk and landscaped area.

Subcatchement PS7 is located adjacent to the parking lot of Plaza 800 and is comprised of pavement, sidewalk and landscaped area.

Subcatchments PS8 represent runoff from a small part of the property that flows to proposed catch basin PCB2.

All proposed subcatchments flow to and are analyzed at design point DP 1 (DMH 4).

Table 2: Proposed or Developed Conditions

Subcatchment	Area Sf	Tc min *	Weighted CN	2 Year Peak cfs	10 Year Peak cfs	25 Year Peak cfs	50 Year Peak cfs
PS1	7,157	5.0	97	0.6	0.9	1.1	1.4
PS2a	20,584	5.0	93	1.6	2.5	3.2	3.9
PS2b	11,747	5.0	94	0.9	1.4	1.8	2.2
PS3a	19,589	5.0	94	1.5	2.4	3.1	3.7
PS3b	40,960	5.0	92	3.0	4.9	6.3	7.7
PS4	12,006	5.0	94	0.9	1.5	1.9	2.3
PS5	34,260	5.0	91	2.5	4.0	5.2	6.4
PS5A	9,298	5.0	97	0.8	1.2	1.5	1.8
PS5B	13,605	5.0	92	1.0	1.6	2.1	2.5
PS5C	18,430	5.0	98	1.5	2.3	3.0	3.6
PS6	20,527	5.0	88	1.3	2.3	3.0	3.7
PS7	8,740	5.0	94	0.7	1.1	1.4	1.7
PS8	2,398	5.0	94	0.2	0.3	0.4	0.5
Totals							

See "Plan of Proposed Subcatchments" – W2.

*Consistent with TR-55 methodology, a minimum Time of Concentration of 5.0 minutes was set in the HydroCAD modeling software.

**By inspection, the Time of Concentration for several small subcatchements was "Direct Entered" with a Tc of 5.0 minutes.

Stormwater Quality BMP's

We understand the City is in process of generating requirements for stormwater treatment, the applicant is preparing an NHDES Alteration of Terrain (NHDES AoT) permit application and is required to treat stormwater runoff as part of that approval process.

The State recognizes many different "BMP's" (best management practices) for purposes of treating stormwater runoff. This project proposes several different BMPs to accomplish the goals of the Alteration of Terrain permit:

1. Filtration Basins are proposed for several reasons: a) The runoff can be filtered. b) Filter ponds provide good treatment and cooling of stormwater runoff and c) Filter ponds can be designed to regulate outflow so that channel protection requirements are met. On this site, filtration ponds have been chosen for their ease of construction, maintenance and cost.

2. Environment 21 V2B1 Model #6.

Peak Flow Rates

One of the main goals of any stormwater runoff analysis has to do with maintaining peak runoff amounts to pre-developed levels. The following table summarizes and compares the peak runoff amounts for the existing and proposed conditions, at the Design Point:

Comparison of Pre and Post Developed Discharge Rates

Design Point	Existing 2 yr/10 yr/25 yr/50 yr Peak Flow (cfs)	Proposed 2 yr/10 yr/25 yr/50 yr Peak Flow (cfs)	Change 2 yr/10 yr/25 yr/50 yr Peak Flow (cfs)
DP1	18.0/27.6/35.2/42.2	15.7/25.3/32.7/39.6	-2.3/-2.3/-2.5/-2.6

Discussion: The design of the stormwater management system is such that no increases in peak flow are seen at the design point.

Channel Protection Requirements

Meeting the Channel Protection Requirements (Env-Wq 1507-05) for this project was achieved at design point DP1.

The following table summarizes the pre and post developed stormwater volumes at the five Design Point:

Comparison of Pre and Post Developed Stormwater Volumes

Design Point	Existing 2 yr/10 yr/25 yr/50 yr Volume (af)	Proposed 2 yr/10 yr/25 yr/50 yr Volume (af)	Change 2 yr/10 yr/25 yr/50 yr Volume (af)
DP1	1.1/1.8/2.3/2.7	0.9/1.5/2.0/02.5	-0.2/-0.3/-0.3/-0.2

Discussion: As the above table shows, volumes are either maintained or reduced for all subcatchments. This meets Alteration of Terrain Permit requirements as well as requirements of the City of Portsmouth.

Conclusion

The new development can be built without increasing the risk of flooding or erosion onto neighboring properties or overburdening the existing City of Portsmouth stormwater system. Given the results of the preceding analysis and compliance with known state and city requirements noted above, it is our opinion that this project will not have downstream impact to the existing storm drain system.

INSPECTION & MAINTENANCE PLAN

FOR

Chinburg Properties / Portsmouth West End Development, LLC

Site Redevelopment

125 Brewery Lane

Portsmouth, NH

Introduction

The intent of this plan is to provide Chingurg Properties / Portsmouth West End Devleopment, LLC (herein referred to as "owner") with a list of procedures that document the inspection and maintenance requirements of the stormwater management system for this development. Specifically, the detention ponds, infiltration system and associated structures on the project site (collectively referred to as the "Stormwater Management System").

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, the owner will be able to maintain the functional design of the stormwater management system and maximize its ability to remove sediment and other contaminants from site generated stormwater runoff.

Annual Report

The owner shall prepare an annual Inspection & Maintenance Report. The report shall include a summary of the system's maintenance and repair by transmission of the Inspection & Maintenance Log and other information as required. A copy of the report shall be delivered annually to the City of Portsmouth Code Enforcement Officer.

Inspection & Maintenance Checklist/Log

The following pages contain a Stormwater Management System Inspection & Maintenance Checklist and a blank copy of the Stormwater Management System Inspection & Maintenance Log. These forms are provided to the owner 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.

STORMWATER MANAGEMENT SYSTEM COMPONENTS

The Stormwater Management System is designed to mitigate both the quantity and quality of site-generated stormwater runoff. As a result, the design includes the following elements:

Non-Structural BMP's

Non-Structural best management practices (BMP's) include temporary and permanent measures that typically require less labor and capital inputs and are intended to provide protection against erosion of soils. Examples of non-structural BMP's on this project include but are not limited to: temporary and permanent mulching, temporary and permanent grass cover, trees, shrubs and ground covers, miscellaneous landscape plantings, dust control, tree protection, topsoiling, sediment barriers, and a stabilized construction entrance.

Structural BMP's

Structural BMP's are more labor and capital intensive structures or installations that require more specialized personnel to install. Examples on this project include but are not limited to: storm drains, the micro detention ponds and associated outlet control structures, and the infiltration trench system.

Inspection and Maintenance Requirements

The following summarizes the inspection and maintenance requirements for the various BMP's that may be found on this project.

1. **Grassed areas:** After each rain event of 0.5" or more during a 24 hour period, inspect grassed areas for signs of disturbance, such as erosion. If damaged areas are discovered, immediately repair the damage. Repairs may include adding new topsoil, lime, seed, fertilizer and mulch.
2. **Plantings**: Planting and landscaping (trees, shrubs) shall be monitored bi-monthly during the first year to insure viability and vigorous growth. Replace dead or dying vegetation with new stock and make adjustments to the conditions that caused the dead or dying vegetation. During dryer times of the year, provide weekly watering or irrigation during the establishment period of the first year. Make the necessary adjustments to ensure long-term health of the vegetated covers, i.e. provide more permanent mulch or compost or other means of protection.
3. **Storm Drain Structures (POCS):** Monitor drain inlets and outlets for excessive accumulation of sediments or missing stone/riprap. Remove sediments as required.
4. **Filtration Basin:** After acceptance of the Filtration Basin, perform the following inspections on a semi-annual basis or after significant rainfall events (10 year, 24 hour storms, or back to back 2 year, 24 hour storms):
   a. Monitor Filtration Basin for 72 hours following a rain storm. If the Filtration Basin fails to fully drain within this period time, the engineered soil may have become plugged. Inspect for other causes of blockage. If it's determined that the soil has become plugged and is no longer functioning as engineered, then replacement of soils shall be required. Contractor shall use care in removing soil around tree roots. An airspade shall be used to remove soils around tree roots.
   b. Monitor for excessive or concentrated accumulations of debris, or excessive erosion. Remove debris as required.

c. Monitor the outfall structure for problems with clogged pipes. Repair or remove clogs as required, and determine cause of clogging. Pipes should be inspected annually and after every major rainstorm. Broken or damaged pipes should be repaired or replaced as necessary.

d. Monitor side slopes of ponds for damages or erosion—repair as necessary.

e. Monitor turf health and keep protected from fire, grazing, traffic and dense weed growth. Lime and fertilizer should be applied as necessary to promote good growth as determined by soil tests. Mowing the vegetated areas of the basin should be carried out as necessary.

f. Sediment accumulation should be continually checked in the basin. Sediment should be removed as it is discovered. Particularly if it has accumulated near the outlet of the basin.

g. The outlet control structure should be inspected annually and after every major rainstorm. The outlet control structure has within it a weir structure with various size orifices for controlling flow out of the basin. These orifices should be kept clear and unclogged. Any sediment or debris that has built up inside the outlet control structure should be removed when discovered.

h. The use of sand shall be prohibited and the use of salt shall be limited.

Invasive Species

Monitor Stormwater Management System for signs of invasive species growth. If caught earlier enough, their eradication is much easier. The most likely places where invasions start are in wetter, disturbed soils or detention ponds. Species such as phragmites and purple loose-strife are common invaders in these wetter areas. If they are found then the owner shall contact a wetlands scientist with experience in invasive species control to implement a plan of action to eradicate the invaders. Measures that do not require the application of chemical herbicides should be the first line of defense.

Stormwater Management System

Inspection & Maintenance Checklist for Post Construction Condition—for Chinburg Properties / Portsmouth West End Devlopment, 125 Brewery Lane, Portsmouth, NH

BMP/System Component	Minimum Inspection Frequency	Minimum Inspection Requirements	Maintenance/Cleanout Threshold
Closed Drainage System			
Drainage Pipes	Yearly	*Check for sediment clogging, or soiled runoff.*	Clean entire drainage system and remove all sediments if discovered in piping.
Filtration Basin	2 X Annually	*Check for sediment clogging, excessive weed growth and standing water*	Remove any weeds, trash, debris and accumulated sediment. If trench does not drain within 72 hours following a rain event, a qualified professional should assess the condition of the facility to determine restoration measures.
Environment 21 **V2B1 Model #6**	See Attached	*See Attached*	See Attached
Annual Report	Yearly	*Prepare Annual Report, including all Inspection & Maintenance Logs. Provide to Town (if required).*	N/A

Inspection & Maintenance Log—for Chinburg Properties / Portsmouth West End Devlopment, 125 Brewery Lane, Portsmouth, NH

BMP/System Component	**Date Inspected**	**Inspector**	**Problems Noted, Required Maintenance** ***(List Items/Comments)***	**Date of Maintenance**	**Performed By**

CJ ARCHITECTS

CHINBURG PROPERTIES
145 BREWERY LANE
FEBRUARY 12, 2018

PROPOSED GREEN BUILDING COMPONENTS

LOCATION AND TRANSPORTATION

1. Public Transportation - A bus stop is located adjacent to the site at Plaza 800.
2. Walkable Amenities - There are numerous businesses located within a 1-mile radius, including a grocery store, pharmacies, restaurants and retail shops.
3. Bicycle Storage - Bicycle storage will be provided for building occupants, and a location for a Zagster bicycle sharing rack is proposed on the site.
4. Increased Density - The project will provide increased residential density in a previously developed location, reducing sprawl by reducing the need for development in undeveloped areas.

SITE

5. Adaptive Reuse - Redevelopment of an existing urban site for infill development.
6. Reduce Impervious Surfaces - Impervious surfaces have been reduced significantly, with increased areas for landscaping and community green space.
7. Stormwater Design - The stormwater system has been designed using Low Impact Design techniques, such as infiltration parking islands.
8. Parking - Parking calculations have been performed using the City's shared parking requirements.

WATER

9. Plumbing Fixtures - Dual flush or low-flow toilets and other low-flow fixtures will be provided where possible.
10. Domestic Hot Water - Will be designed to exceed code requirements.

ENERGY

11. Building Envelope - The building envelope will be designed as a high performance assembly to significantly exceed minimum Energy Code requirements and minimize heating and cooling costs, while achieving a high standard of occupant comfort.
12. HVAC Units - High-efficiency Air Source Heat Pumps controlled by the apartment tenant.
13. High-Efficiency Lighting - Efficient LED lighting will be used for interior and exterior fixtures where possible.
14. Energy Star Appliances - Appliances provided by Owner will be Energy Star rated where possible.
15. Roofing - Flat roofing will be of a light-colored, reflective membrane roofing to reduce the heat island effect.

MATERIALS AND RESOURCES

16. Minimize Waste - Material waste will be minimized as much as possible during construction.

INDOOR ENVIRONMENTAL QUALITY

17. Low-VOC Materials - Building materials with low volatile organic compound levels will be specified where possible.
18. Indoor Air Quality - Residential dwelling units will have operable windows for access to fresh air.
19. Daylight - Habitable spaces will have access to windows for daylight.
20. Thermal Comfort - Each residential unit will have a dedicated HVAC controlled by the apartment tenant.
21. Acoustic Comfort - Acoustic and vibration separations will be provided between dwelling units at demising walls and floors.

Note: Green building components reflect proposed project features and are subject to feasibility of construction.

Griffin Family Corporation

800 Islington St. Plaza 800 • P O Box 149 • Portsmouth, NH 03802-0149 • 603-436-3020 • Fax: 603-436-5601

October 4, 2005

David M. Holden, Planning Director
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

RE: Site Review Application, Property located at 125 Brewery Lane, Map 154/Lot 2

Dear Mr. Holden:

On behalf of Griffin Family Corporation I want to inform you and the Site Review Technical Advisory Committee that the proposed crosswalks and minor sidewalk adjustments on property owned by Griffin Family Corporation (shown as Tax Map 154 Lot 1 and Tax Map 155 Lot 13) which are depicted on Sheet C4, Revision 4, dated September 22, 2005, of the "The Brewyard Terraces" site plans prepared by Ambit Engineering are acceptable to Griffin Family Corporation.

We understand that the work will be performed by the applicant, Saco Avenue Professional Building, as a part of the above-mentioned project. We will grant Saco Avenue Professional Building permission to enter onto our property to perform the work pursuant to the terms of an "Access Agreement", to include indemnification provisions. We understand that after the work is completed and accepted by the City of Portsmouth, under the "Site Review Agreement" document, that the new sidewalks located on the property of Griffin Family Corporation will belong to Griffin Family Corporation.

Please feel free to call me if you have any questions or comments.

Sincerely,
Griffin Family Corporation

Mary M. Griffin

Mary M. Griffin
President

CC: Mr. King Weinstein, Saco Ave. Professional Building
Chris Keenan, Esq.
John Chagnon, Ambit Engineering
Thomas Burack, Esq.

LAW OFFICES OF
CHRISTOPHER W. KEENAN, P.C.
125 BREWERY LANE, SUITE 7
PORTSMOUTH, NH 03801-4996
603-433-1884
FAX 603-433-1885

CHRISTOPHER W. KEENAN
ADMITTED TO PRACTICE IN ME & NH

Chris@cwkeenanlaw.com

December 2, 2011

Hand-Delivered

Suzanne Woodland, Esq.
Assistant City Attorney
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

RE: Brewyard Terrace

Dear Suzanne:

Enclosed please find the fully executed Sidewalk Easement Deed from Saco Avenue Professional Building, Inc. by its' president, King Weinstein.

As you know, on several occasions I asked that this Easement Deed be held in escrow until such time as the project is actually built. If the easement is recorded prior to the building of the project, with a recorded easement in place, the public technically has a right to walk the area of the easement. That is not a tenable situation.

I presume the City will help the landowner enforce the right to prohibit the public from using the easement until such time as the project is completed and the sidewalk actually built.

In light of the City's reluctance to hold the Deed in escrow, I do request a statement in writing from your office that if the project is not built, the landowner may make a simple request that the City file the necessary documents to negate the sidewalk easement.

Thank you very much for your attention to this matter. If you have any questions or concerns, please do not hesitate to contact me. You should note that the plan number for Ambits Sidewalk Easement Plan will need to be inserted in the Easement Deed when recorded.

Very truly yours,

Christopher W. Keenan, Esq

CWK/dmg
cc: King Weinstein
John Chagnon, Ambit Engineering

Return to:
City of Portsmouth, Legal Department
1 Junkins Avenue
Portsmouth, NH 03801

SIDEWALK EASEMENT DEED

Saco Avenue Professional Building, Inc. a corporation registered to business in the State of New Hampshire with a mailing address of 198 Saco Avenue, PO Box W, Old Orchard Beach, Maine 04064, hereinafter Grantor," for consideration paid, grants to the CITY OF PORTSMOUTH, a municipal corporation with a principal place of business of 1 Junkins Avenue, Portsmouth, New Hampshire 03801, hereinafter Grantee, with QUITCLAIM COVENANTS, the following:

A permanent easement over a portion of land of Grantor situate 125 Brewery Lane, Portsmouth, County of Rockingham New Hampshire as shown on a plan of land entitled EASEMENT PLAN TAX MAP 154 - LOT 2 SACO AVENUE PROFESSIONAL BUILDING, INC, TO THE CITY OF PORTSMOUTH" and marked thereon as PROPOSED SIDEWALK EASEMENT TO THE CITY OF PORTSMOUTH " dated July 2011, prepared by Ambit Engineering, Inc. recorded herewith as Plan No.#: _______, (hereinafter referred to as the Plan). The easement is more particularly bounded and described as follows:

An area five feet wide running from the entrance to the Brewyard Apartments on the easterly side of Chevrolet Avenue to the intersection with land of the Griffin Family Corporation the so-called Plaza 800 parking lot; thence turning Westerly along the land of the Grantor and land of the Griffin Family Corporation to Brewery Lane; thence turning and running in a Northerly direction along the Easterly side of Brewery Lane to the North East property corner of land of Grantee.

<u>Purpose and Rights.</u> The Grantee, its successors and assigns, shall have a perpetual, permanent, uninterrupted and unobstructed exclusive easement and right of way in, under, across and over the easement area for the purpose of installing and maintaining a public sidewalk. The Grantor shall not make any improvements to, or make any use of the easement area that would interfere with the Grantees use thereof.

<u>Easements to Run with Land.</u> 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, executors, successors and assigns of the Grantee and the Grantor and shall run with the land.

MEANING AND INTENDING to convey a permanent easement over a portion of the premises conveyed to the within Grantor by deed of May 27, 1999 and recorded in Book 3396, Page 1704 of the Rockingham County Registry of Deeds.

This is an exempt transfer per RSA 78-B:2(I).

DATED this 16 day of Sept, 2011

Saco Avenue Professional Building, Inc.

By: [signature]

King Weinstein, President

STATE OF NEW HAMPSHIRE
COUNTY OF Rockingham

The foregoing instrument was acknowledged before me this 16 day of September, 2011 by King Weinstein.

Justice of the Peace/Notary Public
Printed Name:
My Commission Expires:

CHRISTOPHER W. KEENAN
Justice of the Peace
State of New Hampshire
My Commission Expires May 2, 2012

h\smw\city hall\planning\125 Brewery Lane Permanent Easement

APPENDIX A

EXPLORATION LOGS

Geotechnical Investigation
The Brewyard Terraces
Portsmouth, New Hampshire

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering• Geohydrology •Materials Testing Services

Project:	Brewyard Terrace	Boring Log:	B-1
Location:	Portsmouth, New Hampshire	Surface Elevation:	15.0
Client:	Saco Avenue Professional Building, Inc.	Observed Water Depth:	4.5
Project No.	235-1039	Date Completed:	11/29/04

DEPTH, FT.	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0	S-1	TOPSOIL AND ORGANIC MATERIAL (6 inches).	20	3 3 5 5	8		
		FILL; Gravelly Sand with Silt: Loose to medium dense, moist to wet, coarse to fine sand, some gravel, little silt, brown.					
5	S-2	TOPSOIL; Old ground surface.	24	1 1 2 4	3		
		SILTY CLAY (CL); Stiff, moist, olive brown.					
10	S-3	Pocket Penetrometer: Undrained Shear Strength: Su = 2.5 ksf.	24	3 4 5 6	9		
15	S-4	Becomes soft, gray.	24	WOH/ 12" 1 1	1		
20	S-5	Becomes stratified with thin (<2") sand seams.	24	WOH/ 24"	WOH		
25		Probed with "A" rod and hammer from 24' to 35'.					
30							
35		Glacial Till (logged from change in resistance and hammer blow count).					
		Bottom of Exploration at 35'; Probe refusal.					

Depth (ft)	Blows
24 - 25	WOH
25 - 26	WOH
26 - 27	WOH
27 - 28	WOH
28 - 29	1
29 - 30	6
30 - 31	7
31 - 32	4
32 - 33	7
33 - 34	39
34 - 35	40
35 - 35	50+

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering • Geohydrology • Materials Testing Services

Project:	Brewyard Terrace	Boring Log:	B-2
Location:	Portsmouth, New Hampshire	Surface Elevation:	17.0
Client:	Saco Avenue Professional Building, Inc.	Observed Water Depth:	4
Project No.	235-1039	Date Completed:	11/29/04

DEPTH, FT.	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0	S-1	FILL; Silty Sand with Gravel: Medium dense, moist, coarse to fine sand, some silt, little gravel, occasional cobble, trace to little organics, black - dark brown.	12	9 18 25/0"	43		
5	S-2		4	9 4 3 4	7		
		SILTY CLAY (CL); Stiff, moist, olive brown.					
10	S-3	Pocket Penetrometer: Undrained Shear Strength: Su = 3.25 ksf.	12	9 10 14 16	24		
15	S-4	Becomes soft, wet, gray.	24	WOH/ 24"	WOH		
20	S-5	Becomes stratified with thin (<3") sand seams.		1 1/18"	1		
		Probed with "A" rod and hammer from 22' to 34'.					
25							
30							
35		Glacial Till (logged from change in resistance and hammer blow count).					
		Bottom of Exploration at 34'; Not refusal.					

Depth (ft)	Blows
22 - 23	WOH
23 - 24	1
24 - 25	1
25 - 26	1
26 - 27	1
27 - 28	4
28 - 29	14
29 - 30	18
30 - 31	26
31 - 32	46
32 - 33	51
33 - 34	58

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering• Geohydrology •Materials Testing Services

Project: Brewyard Terrace
Location: Portsmouth, New Hampshire
Client: Saco Avenue Professional Building, Inc.
Project No. 235-1039

Boring Log: B-3
Surface Elevation: 17.0
Observed Water Depth: 4.5
Date Completed: 11/29/04

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	FILL; Gravelly Sand with Silt: Medium dense to dense, moist, coarse to fine sand, some gravel, little to trace silt, brown to black.	19	24 47 19 8	66		
5			S-2	SILTY CLAY (CL); Stiff, moist, olive brown. Pocket Penetrometer: Undrained Shear Strength: Su = 3.5 ksf.	20	2 2 5 7	7		
10			S-3	Pocket Penetrometer: Undrained Shear Strength: Su = 2 ksf.	24	3 3 4 4	7		
15			S-4	Becomes soft, wet, gray.	24	WOR/ 24"	WOR		
20			S-5	Becomes stratified with thin (<2") sand seams.	24	1/24"	1		
25				Probed with "A" rod and hammer from 25' to 33'.					
30									
35				Glacial Till (logged from change in resistance and hammer blow count). Bottom of Exploration at 33'; Not refusal.					

Depth (ft)	Blows
25 - 26	WOH
26 - 27	1
27 - 28	3
28 - 29	3
29 - 30	3
30 - 31	23
31 - 32	46
32 - 33	72

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering • Geohydrology • Materials Testing Services

Project:	Brewyard Terrace	Boring Log:	B-4
Location:	Portsmouth, New Hampshire	Surface Elevation:	17.0
Client:	Saco Avenue Professional Building, Inc.	Observed Water Depth:	4.5
Project No.	235-1039	Date Completed:	11/29/04

DEPTH, FT.	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0	S-1	FILL; Gravelly Sand with Silt: Medium dense to dense, moist, coarse to fine sand, some gravel, little silt, brown.	20	15 16 18 10	34		
5	S-2	TOPSOIL; Old ground surface.	20	2 2 4 7	6		
		SILTY CLAY (CL); Hard, moist, olive brown. Pocket Penetrometer: Undrained Shear Strength: Su = 4.0 ksf.					
10	S-3		24	3 3 3 3	6		
15	FV	Field Vane: Undrained Shear Strength: Su = 0.48 ksf, residual = 0.03 ksf.					
	FV	Field Vane: Undrained Shear Strength: Su = 0.41 ksf, residual = 0.07 ksf.					
20	FV	Field Vane: Undrained Shear Strength: Su = 0.40 ksf, residual = 0.02 ksf.					
	FV	Field Vane: Undrained Shear Strength: Su = 0.48 ksf, residual = 0.04 ksf.					
25	FV	Field Vane: Undrained Shear Strength: Su = 0.47 ksf, residual = 0.07 ksf.					
	FV	Field Vane: Undrained Shear Strength: Su = 0.57 ksf, residual = 0.07 ksf.					
30							
	S-4	GRAVELLY SAND WITH SILT (SM); Dense, wet, coarse to fine sand, some gravel, little silt, gray.	7	21 50/1"	100+		
		Bottom of Exploration at 32.6'; Spoon refusal.					
35							

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering• Geohydrology •Materials Testing Services

Project:	Brewyard Terrace	Boring Log:	B-5
Location:	Portsmouth, New Hampshire	Surface Elevation:	15.0
Client:	Saco Avenue Professional Building, Inc.	Observed Water Depth:	5
Project No.	235-1039	Date Completed:	11/29/04

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	FILL; Gravelly Sand with Silt: Medium dense, moist, coarse to fine sand, some gravel, little silt, brown.	20	8 13 7 5	20		
5			S-2	TOPSOIL; Old ground surface.	24	1 1 2 3	3		
				SILTY CLAY (CL); Medium stiff to stiff, moist, olive brown.					
10			S-3	Pocket Penetrometer: Undrained Shear Strength: Su = 2.0 ksf.	24	2 3 4 4	7		
15			S-4	Becomes soft, wet, gray.	24	WOR/ 12" 1/12"	1		
20			S-5	Becomes stratified with thin (<2") sand seams.	24	1/24"	1		
				Bottom of Exploration at 22'; Not refusal.					
25									
30									
35									

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering • Geohydrology • Materials Testing Services

Project: Brewyard Terrace
Location: Portsmouth, New Hampshire
Client: Saco Avenue Professional Building, Inc.
Project No. 235-1039

Boring Log: B-6
Surface Elevation: 15.0
Observed Water Depth: 5
Date Completed: 11/30/04

DEPTH, FT.	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0	S-1	FILL; Gravelly Sand with Silt, medium dense, moist, coarse to fine sand, some gravel, little silt, brown to black.	20	12 19 10 8	29		
		TOPSOIL; Old ground surface.					
5	S-2	SILTY CLAY (CL); Medium stiff, moist, olive brown.	24	1 3 5 7	8		
10	U-1		18				
15	U-2	Becomes soft, wet, gray.	22			42 46 44 42	CO GV MC
20	U-3		24			47 44 41 40	CO GV MC
25	U-4	Becomes stratified with thin sand seams.	2				
	S-3		24	WOR/ 24"	WOR		
30	S-4		24	WOR/ 12" 3 4	3		
		SAND (SP-SM); Dense to very dense, wet, medium to fine sand, little to trace silt, trace gravel, gray.					
35	S-5		20	32 33 25 20	58		

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering• Geohydrology•Materials Testing Services

Project:	Brewyard Terrace	Boring Log:	B-6
Location:	Portsmouth, New Hampshire	Surface Elevation:	15.0
Client:	Saco Avenue Professional Building, Inc.	Observed Water Depth:	5
Project No.	235-1039	Date Completed:	11/30/04

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
				Proved with "N" rod and rotary wash from 37' to 45'.					
40									
				Becomes gravelly.					
45									
				Bottom of Exploration at 45' Not refusal.					
50									
55									
60									
65									
70									
75									

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering• Geohydrology •Materials Testing Services

Project: Brewyard Terrace
Location: Portsmouth, New Hampshire
Client: Saco Avenue Professional Building, Inc.
Project No. 235-1039

Boring Log: B-7
Surface Elevation: 15.0
Observed Water Depth: 5
Date Completed: 11/30/04

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	ASPHALTIC PAVEMENT (2 inches). FILL; Gravelly Sand with Silt, medium dense, moist, coarse to fine sand, some gravel, little silt, trace bricks, asphalt, brown to black.	24	19 16 10 8	26		
5			S-2	SILTY CLAY (CL); Medium stiff, moist, olive brown. Pocket Penetrometer: Undrained Shear Strength: Su = 2.0 ksf.	24	3 7 7 9	14		
10			S-3		24	4 4 6 6	10		
15			S-4		24	WOR/ 24"	WOR		
20			S-5	Becomes stratified with thin (<2") sand seams.	24	WOR 2 1/12"	2		
				Bottom of Exploration at 22'; Not refusal.					
25									
30									
35									

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering• Geohydrology•Materials Testing Services

Project: Brewyard Terrace
Location: Portsmouth, New Hampshire
Client: Saco Avenue Professional Building, Inc.
Project No. 235-1039

Boring Log: B-8
Surface Elevation: 16.0
Observed Water Depth: 5
Date Completed: 11/30/04

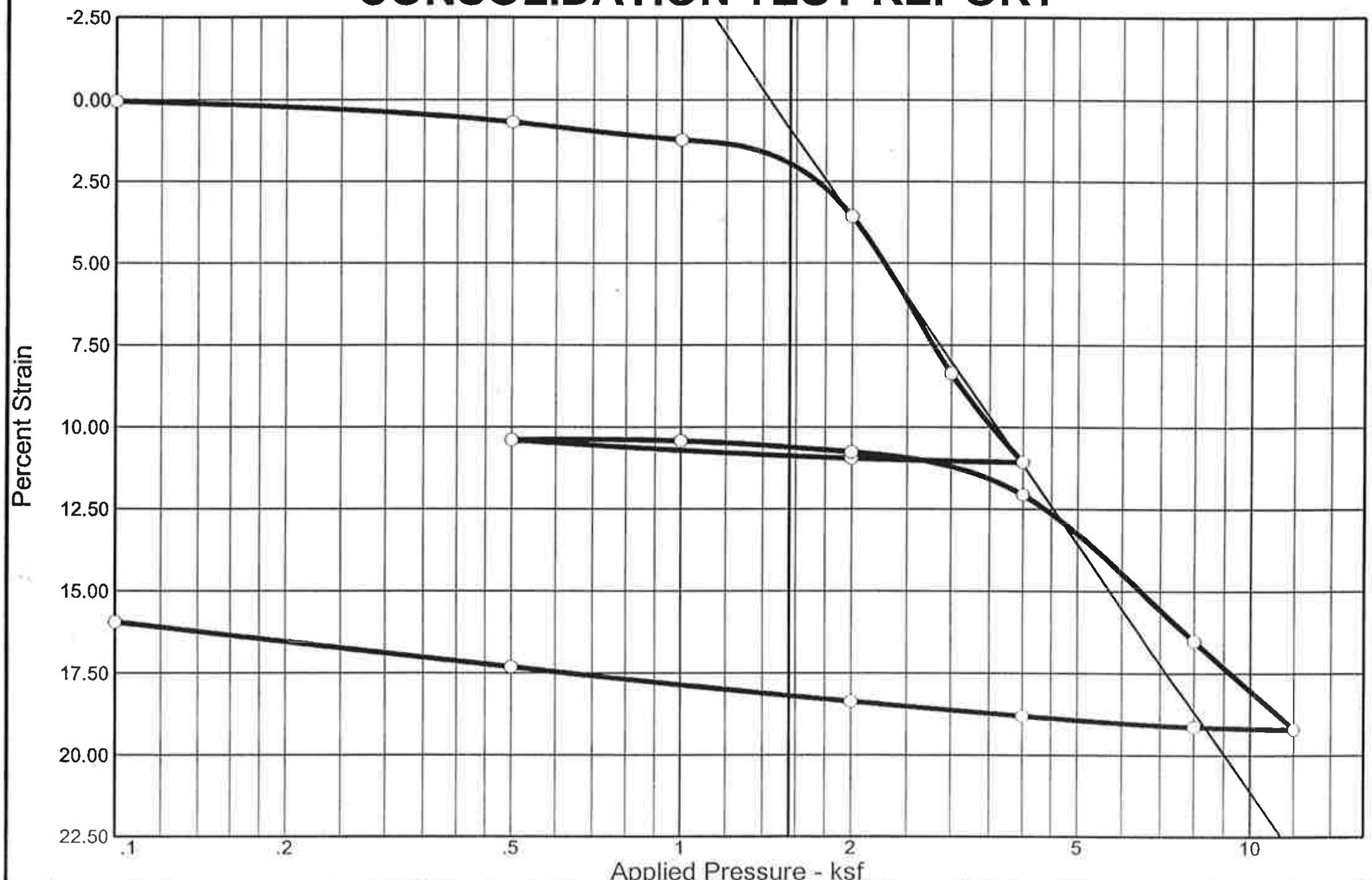
DEPTH, FT.	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0	S-1	ASPHALTIC PAVEMENT (2 inches). FILL: Gravelly Sand with Silt, medium dense, moist, coarse to fine sand, some gravel, trace to little silt, brown. FILL; Ashes, bricks and silt, trace organics.	18	8 9 7 5	16		
5	S-2	SILTY CLAY (CL); Stiff, moist, olive brown. Pocket Penetrometer: Undrained Shear Strength: Su = 3.5 ksf.	24	2 4 7 8	11		
10	S-3		24	3 2 2 3	4		
15	S-4	Becomes soft, wet, gray, stratified with thin (<4") sand seams.	24	WOR WOH 5 2	5		
20	S-5	GRAVELLY SAND WITH SILT (SM); Medium dense, moist to wet, coarse to fine sand, some gravel, little silt, gray. -GLACIAL TILL DEPOSITS-	8	5 10 17 15	27		
25	S-6		16	10 11 10 12	21		
		Bottom of Exploration at 27'; Not refusal.					
30							
35							

APPENDIX B

LABORATORY TESTING

Geotechnical Investigation
The Brewyard Terraces
Portsmouth, New Hampshire

CONSOLIDATION TEST REPORT



Coefficients of Consolidation and Secondary Consolidation

No.	Load (ksf)	C_v (ft.^{2}/day)	C_α	No.	Load (ksf)	C_v (ft.^{2}/day)	C_α	No.	Load (ksf)	C_v (ft.^{2}/day)	C_α
1	0.10	0.60		13	12.00	0.12					
2	0.50	0.70		14	8.00	0.86					
3	1.00	0.62		15	4.00	0.86					
4	2.00	0.24		16	2.00	0.41					
5	3.00	0.02		17	0.50	0.17					
6	4.00	0.02		18	0.10	0.08					
7	2.00	1.18									
8	0.50	0.43									
9	1.00	0.15									
10	2.00	0.62									
11	4.00	0.32									
12	8.00	0.15									

Natural Saturation	Natural Moisture	Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (ksf)	P_c (ksf)	C_c	C_r	Initial Void Ratio
92.4 %	39.7 %	78.9			2.77		1.76	0.55	0.03	1.191

MATERIAL DESCRIPTION	USCS	AASHTO
Silty Clay		

Project No. 235-1039 **Client:** Saco Ave. Prof. Bldg., Inc.

Project: Brewyard Terrace

Source: 7605a **Sample No.:** U-2 **Elev./Depth:** 16.0'

Remarks:

CONSOLIDATION TEST REPORT

R.W. Gillespie & Associates, Inc.

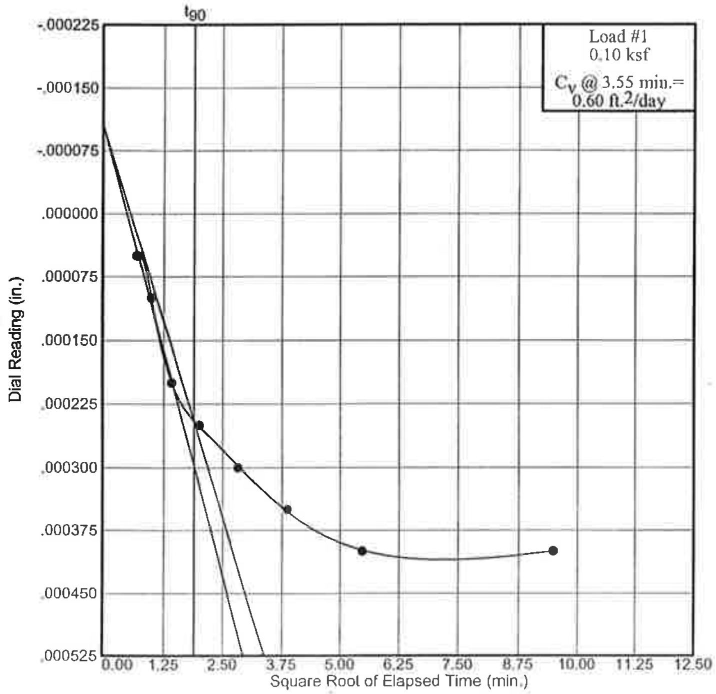
MTG

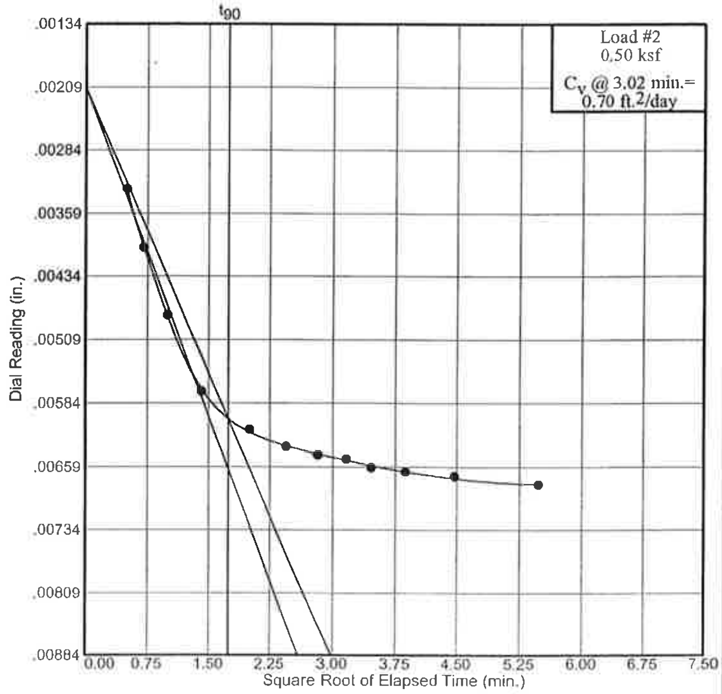
Lab No. 7605a

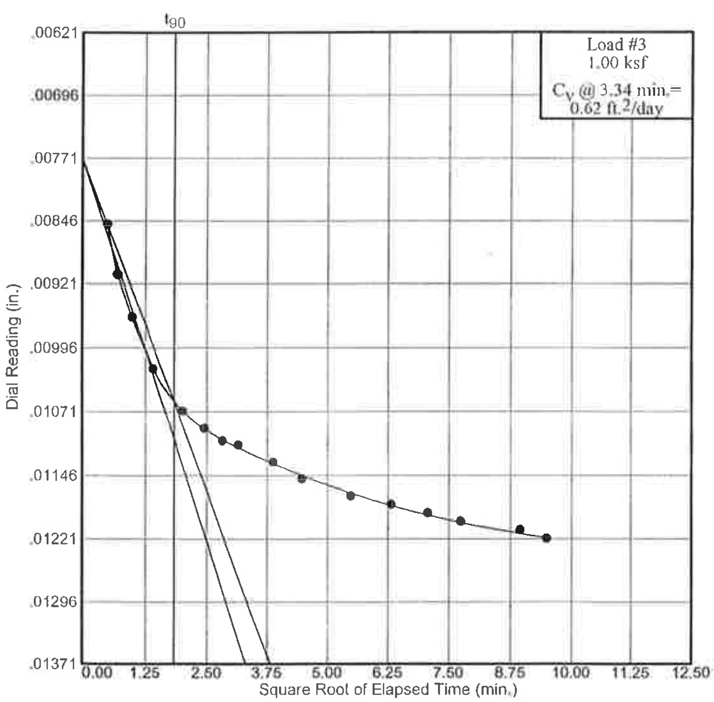
Dial Reading vs. Time

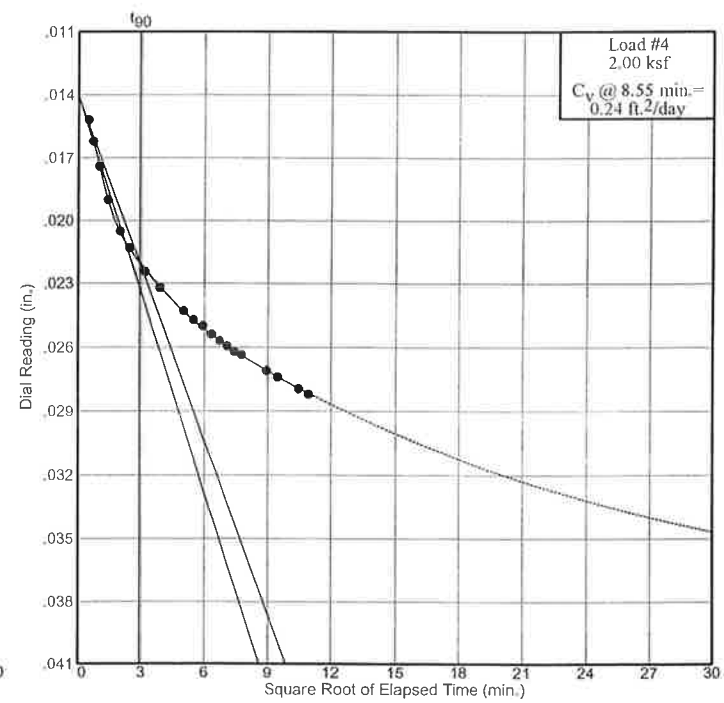
Project No.: 235-1039
Project: Brewyard Terrace

Source: 7605a | Sample No.: U-2 | Elev./Depth: 16.0'









Dial Reading vs. Time

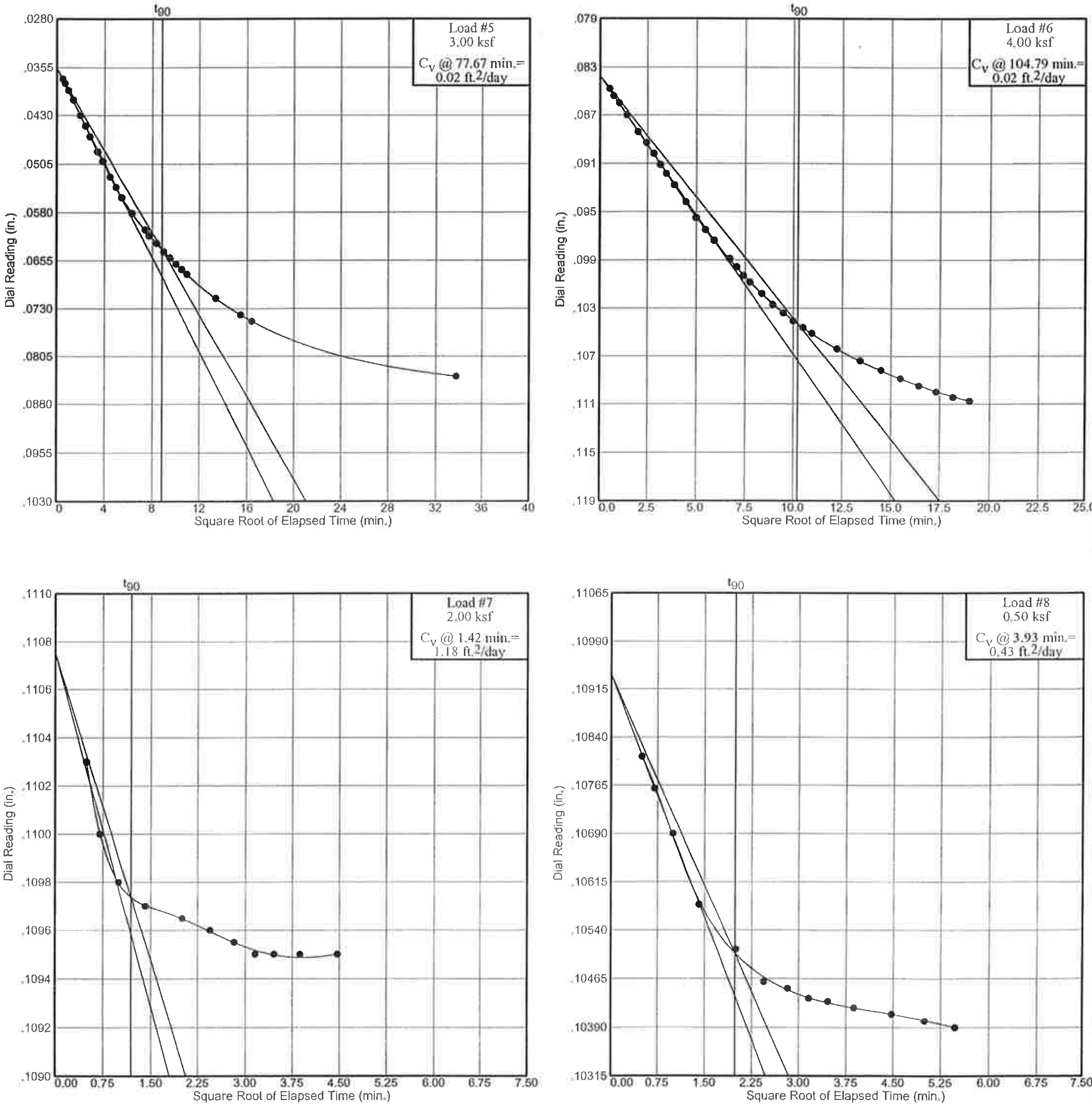
R.W. Gillespie & Associates, Inc.

Lab No. 7606a

Dial Reading vs. Time

Project No.: 235-1039
Project: Brewyard Terrace

Source: 7605a | Sample No.: U-2 | Elev./Depth: 16.0'



Dial Reading vs. Time

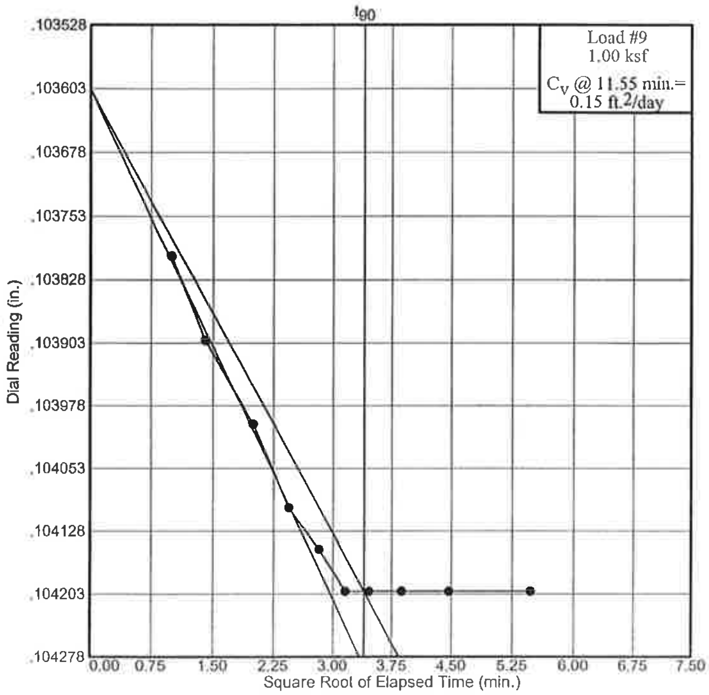
R.W. Gillespie & Associates, Inc.

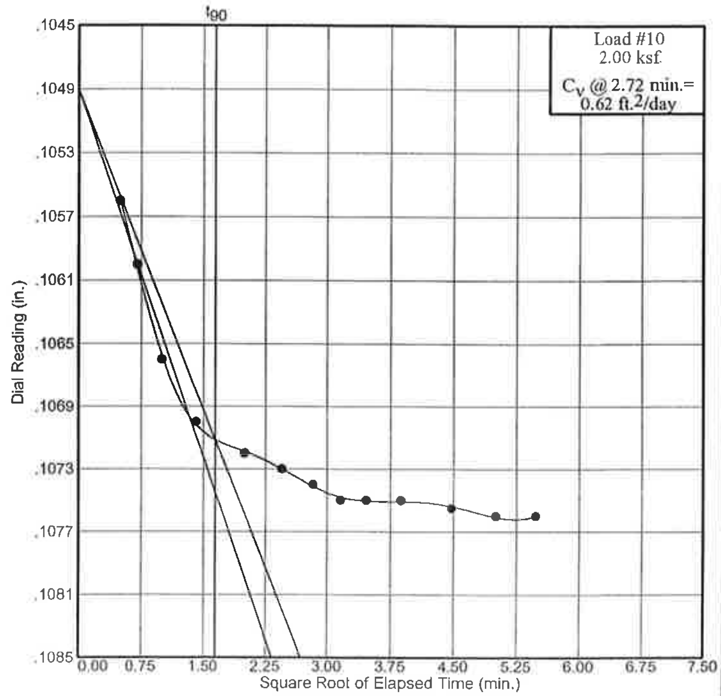
Lab No. 7607a

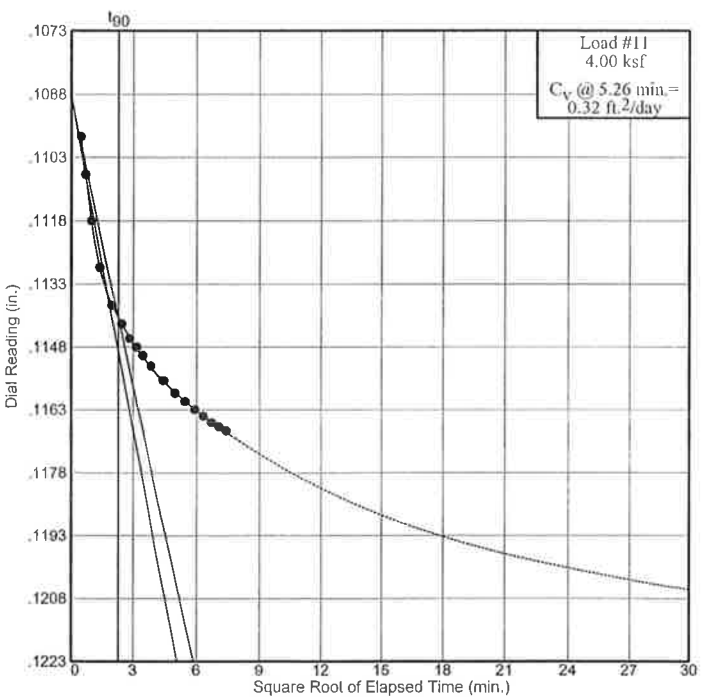
Dial Reading vs. Time

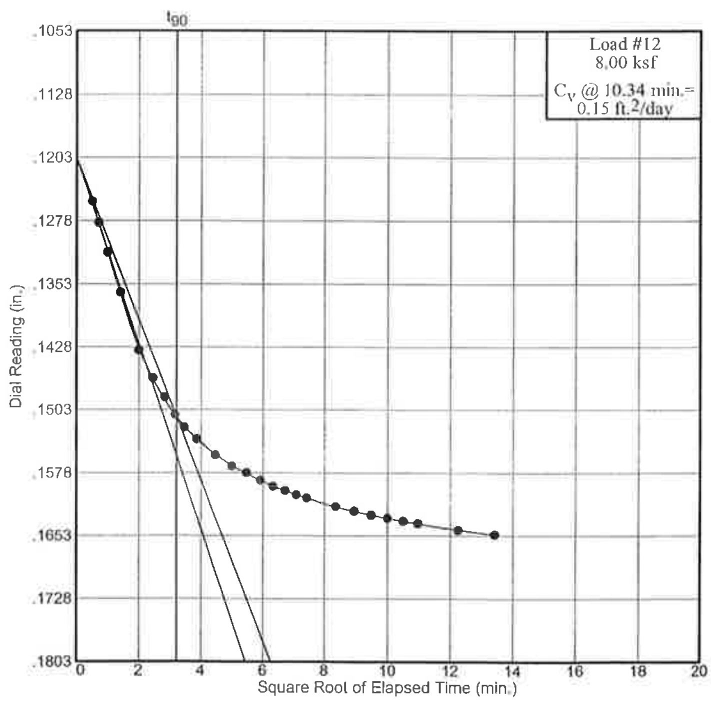
Project No.: 235-1039
Project: Brewyard Terrace

Source: 7605a | Sample No.: U-2 | Elev./Depth: 16.0'









Dial Reading vs. Time

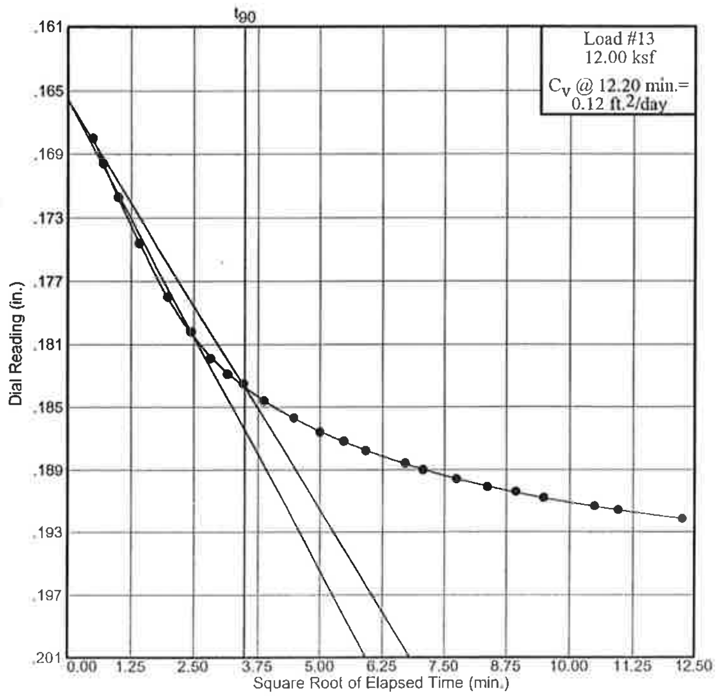
R.W. Gillespie & Associates, Inc.

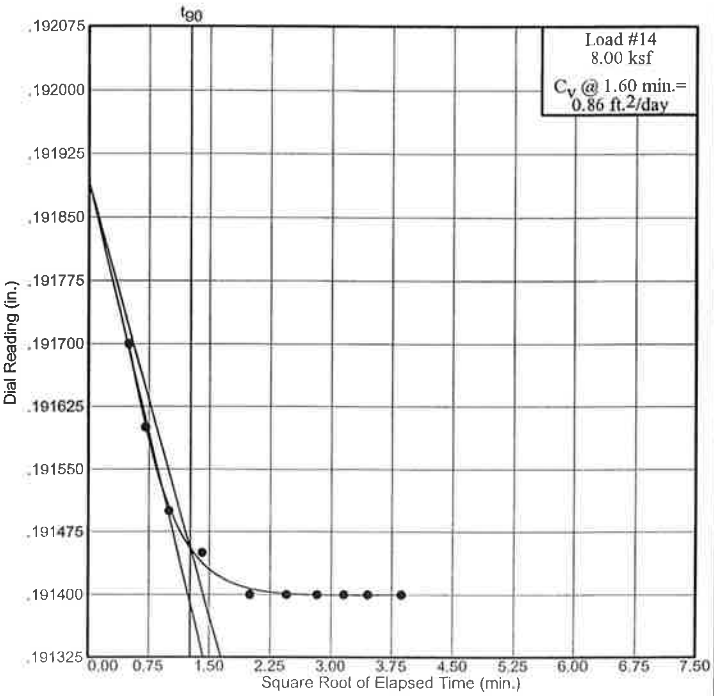
Lab No. 7608a

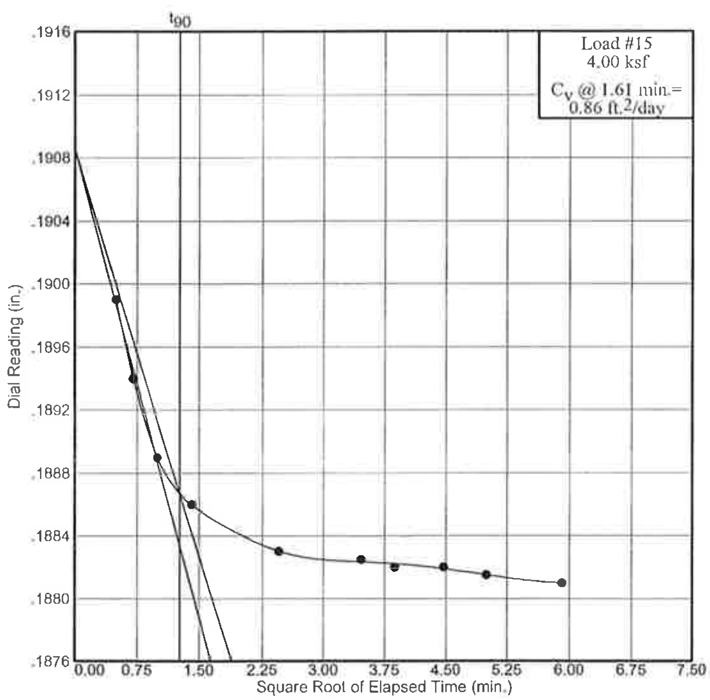
Dial Reading vs. Time

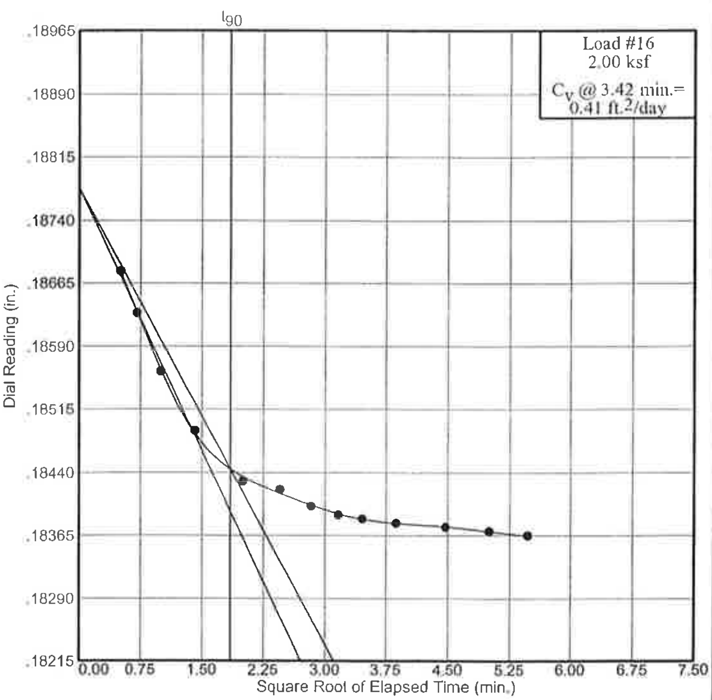
Project No.: 235-1039
Project: Brewyard Terrace

Source: 7605a Sample No.: U-2 Elev./Depth: 16.0'









Dial Reading vs. Time

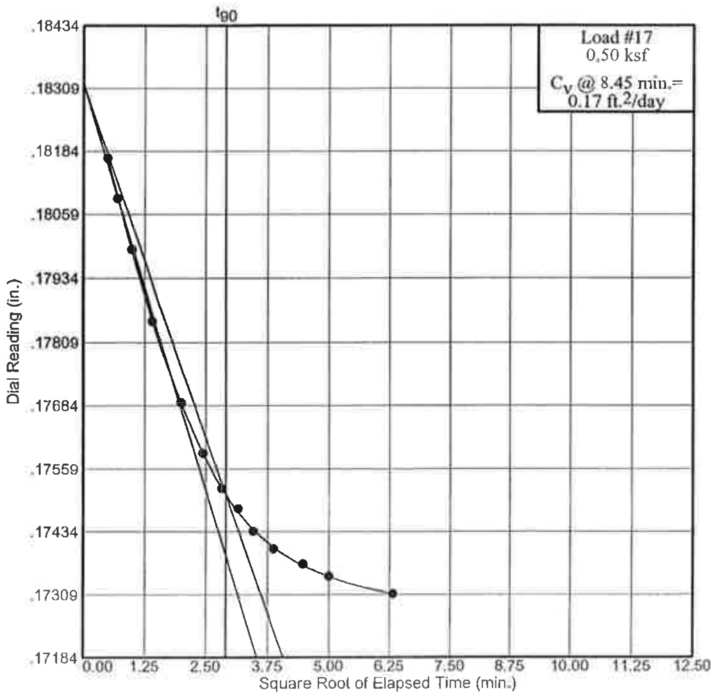
R.W. Gillespie & Associates, Inc.

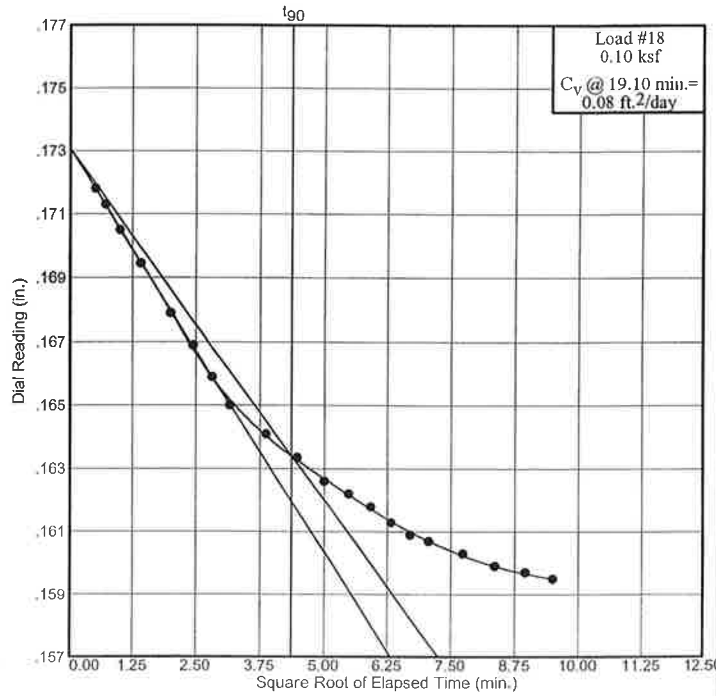
Lab No. 7609a

Dial Reading vs. Time

Project No.: 235-1039
Project: Brewyard Terrace

Source: 7605a Sample No.: U-2 Elev./Depth: 16.0'





Laboratory Vane Shear Test Results

Project: Brewyard Terrace **Client:** Saco Avenue Professional Building, Inc.

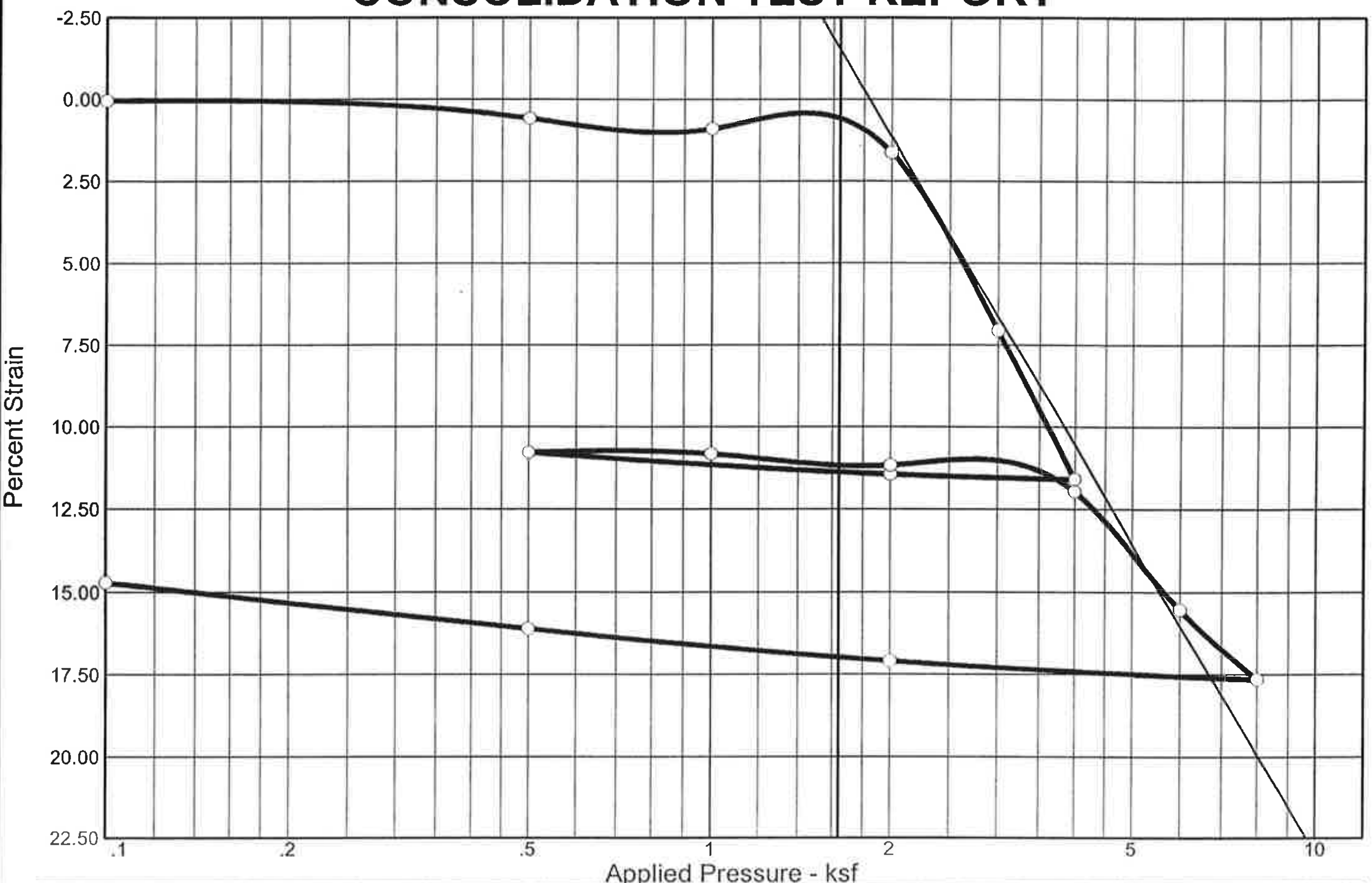
Project No.: 235-1039

Boring No.	B-6	**Lab No.**	7605A
Sample No.	U-2	**Depth**	15' to 17'
Test No.	**S_u (Undisturbed)**	**S_u (Residual)**	**Moisture Content**
1	560 psf	60 psf	41.7%
2	480 psf	100 psf	45.7%
3	420 psf	60 psf	43.7%
4	420 psf	60 psf	41.9%

Checked By: MTG

G:\PROJECTS\9235\9235-1000\9235-1039\Lab\235-1039 Lab No. 7605 vanes.wpd

CONSOLIDATION TEST REPORT



Coefficients of Consolidation and Secondary Consolidation											
No.	Load (ksf)	C_V (ft.^{2}/day)	C_α	No.	Load (ksf)	C_V (ft.^{2}/day)	C_α	No.	Load (ksf)	C_V (ft.^{2}/day)	C_α
1	0.10	1.45		13	8.00	0.02					
2	0.50	1.08		14	2.00	0.44					
3	1.00	1.34		15	0.50	0.14					
4	2.00	1.19		16	0.10	0.03					
5	3.00	0.01									
6	4.00	0.01									
7	2.00	1.08									
8	0.50	0.26									
9	1.00	0.45									
10	2.00	0.79									
11	4.00	0.48									
12	6.00	0.04									

Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (ksf)	P_c (ksf)	C_c	C_r	Initial Void Ratio
Saturation	Moisture									
90.6 %	40.1 %	77.6			2.77		1.95	0.69	0.03	1.227

MATERIAL DESCRIPTION	USCS	AASHTO
Silty Clay		

Project No. 235-1039 **Client:** Saco Ave. Prof. Bldg., Inc.

Project: Brewyard Terrace

Source: 7605b **Sample No.:** U-3 **Elev./Depth:** 21.0'

CONSOLIDATION TEST REPORT

R.W. Gillespie & Associates, Inc.

Remarks:

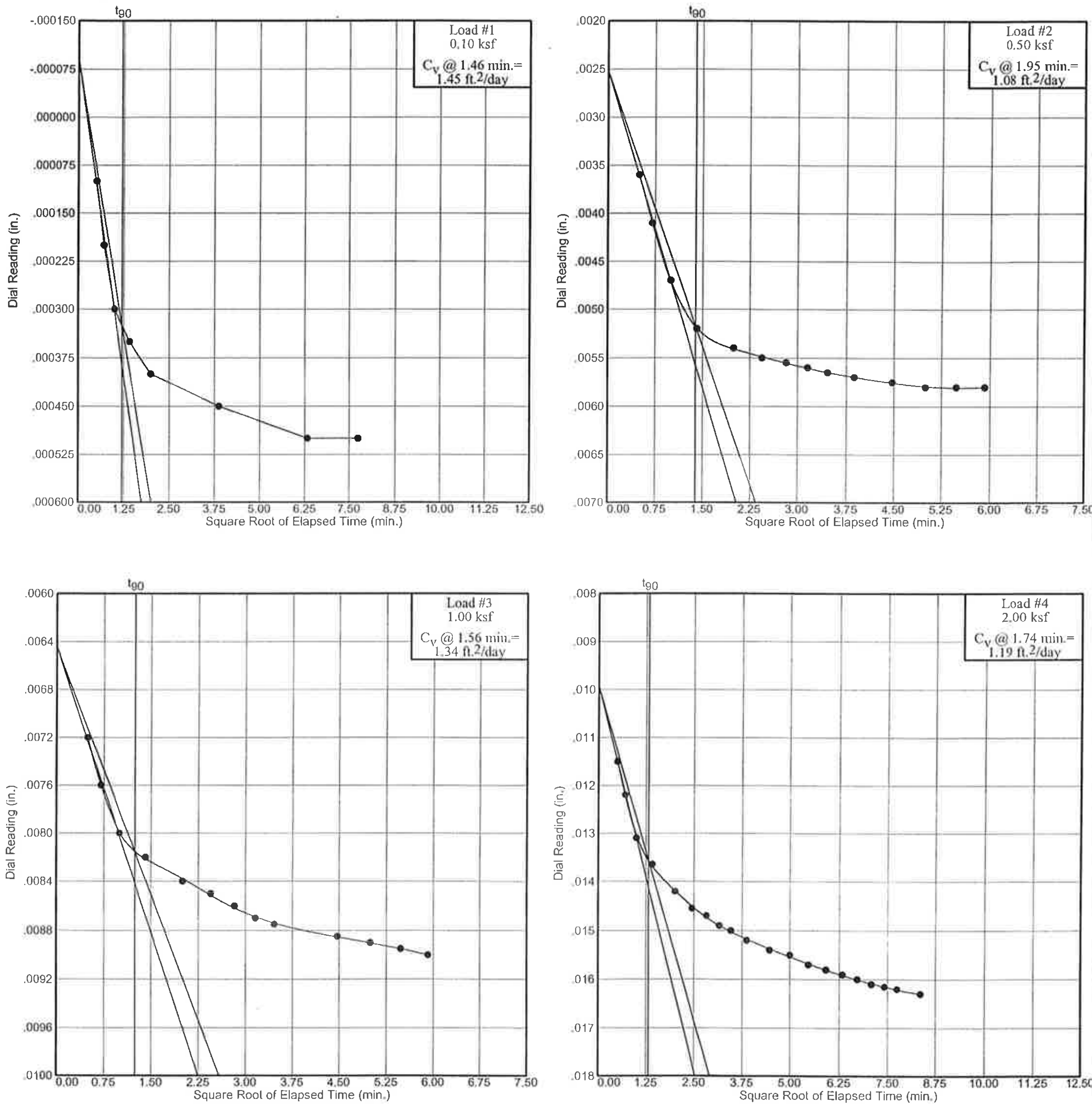
MTG

Lab No. 7605b

Dial Reading vs. Time

Project No.: 235-1039
Project: Brewyard Terrace

Source: 7605b   Sample No.: U-3   Elev./Depth: 21.0'



Dial Reading vs. Time

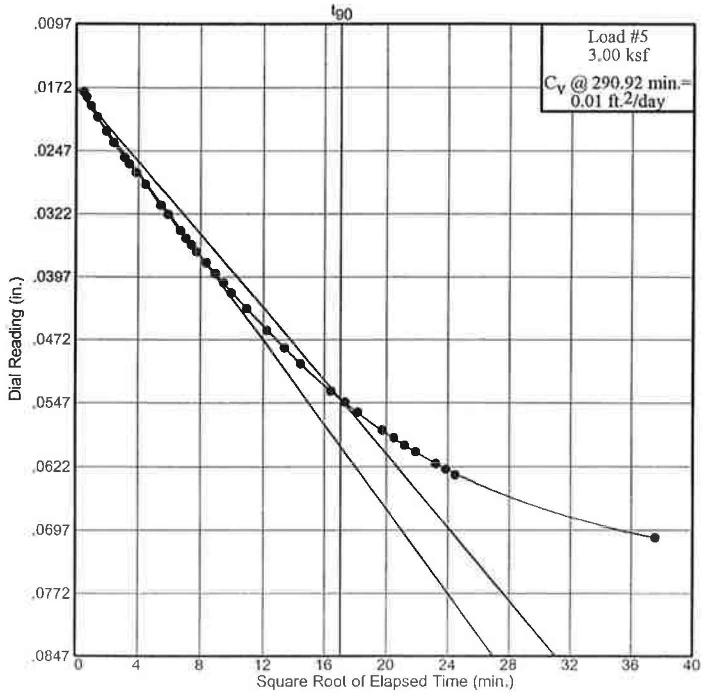
R.W. Gillespie & Associates, Inc.

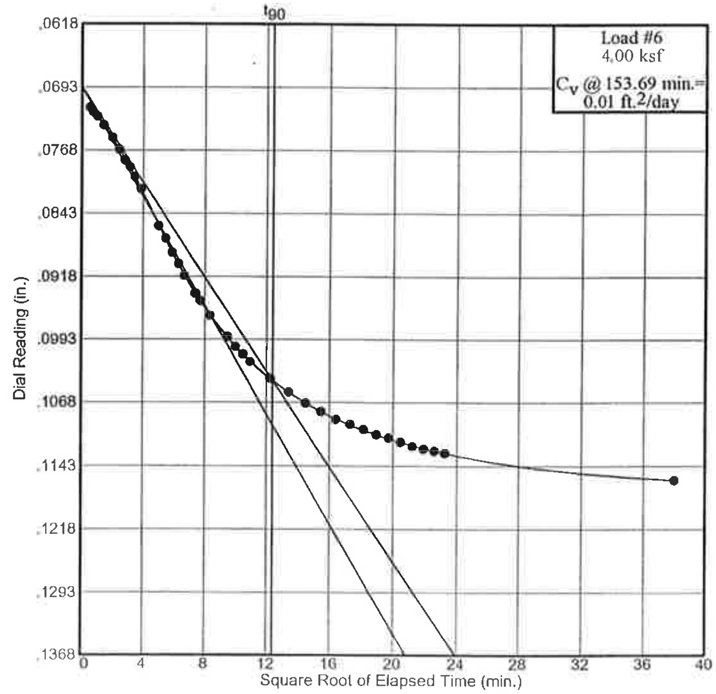
Lab No. 7606b

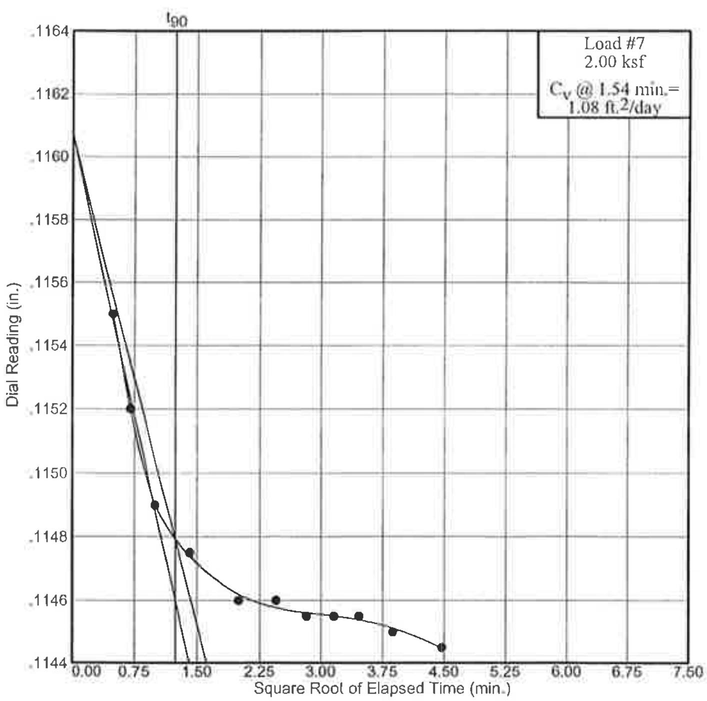
Dial Reading vs. Time

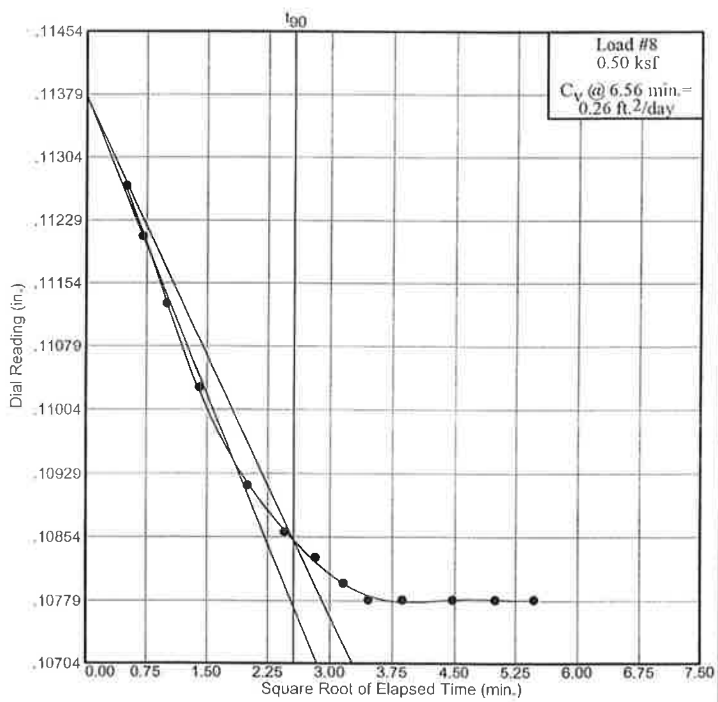
Project No.: 235-1039
Project: Brewyard Terrace

Source: 7605b | Sample No.: U-3 | Elev./Depth: 21.0'









Dial Reading vs. Time

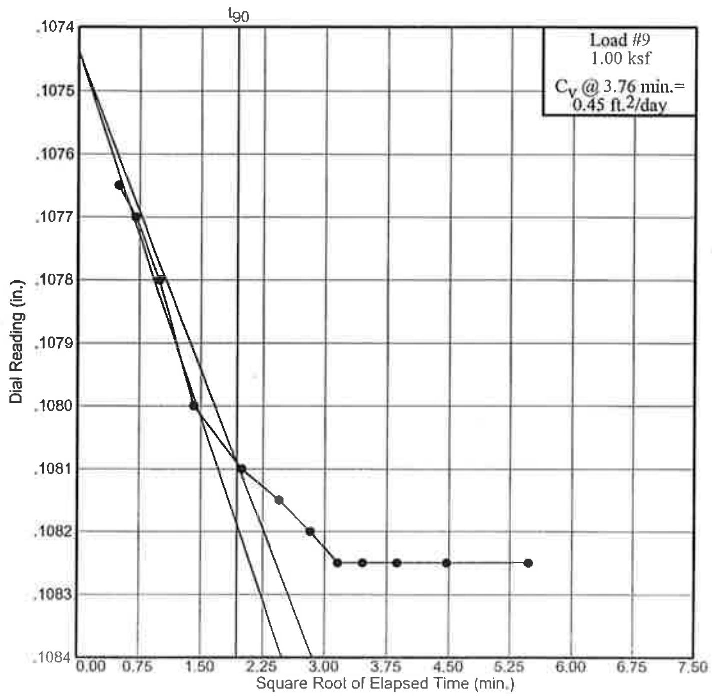
R.W. Gillespie & Associates, Inc.

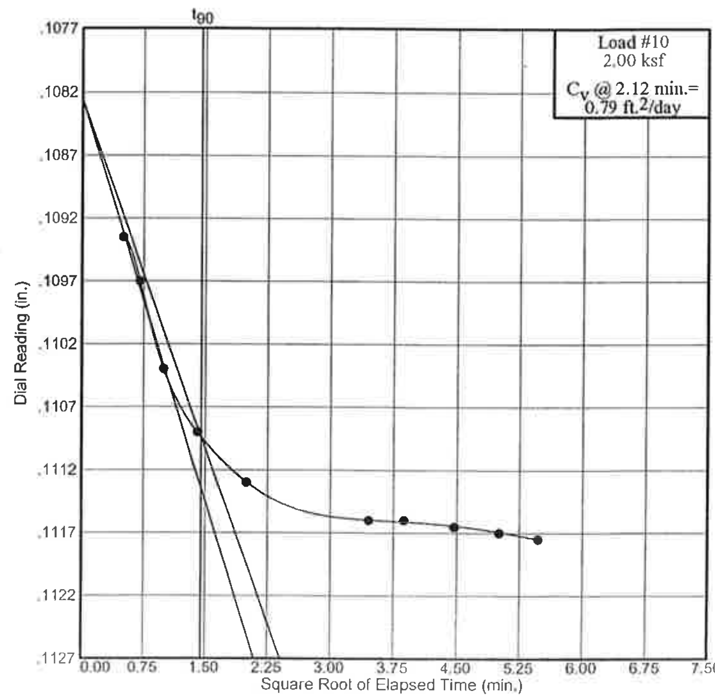
Lab No. 7607b

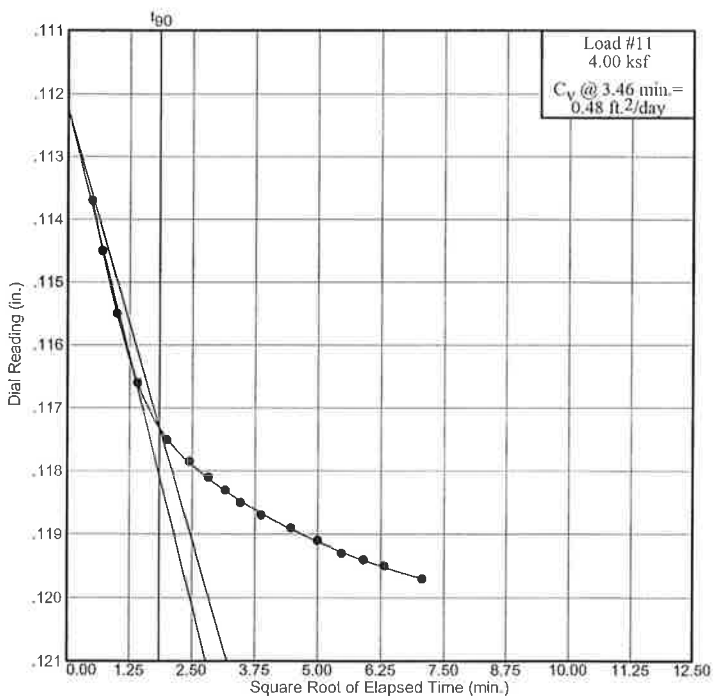
Dial Reading vs. Time

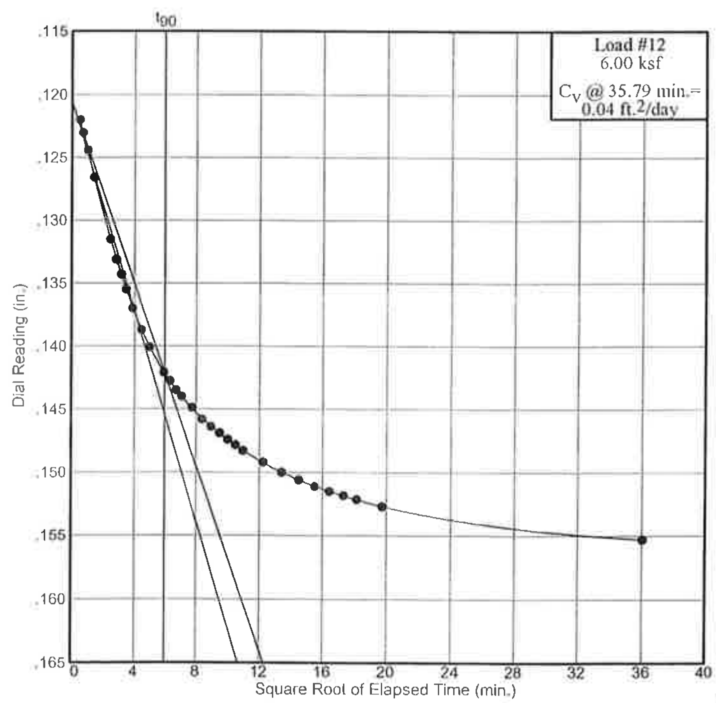
Project No.: 235-1039
Project: Brewyard Terrace

Source: 7605b | Sample No.: U-3 | Elev./Depth: 21.0'









Dial Reading vs. Time

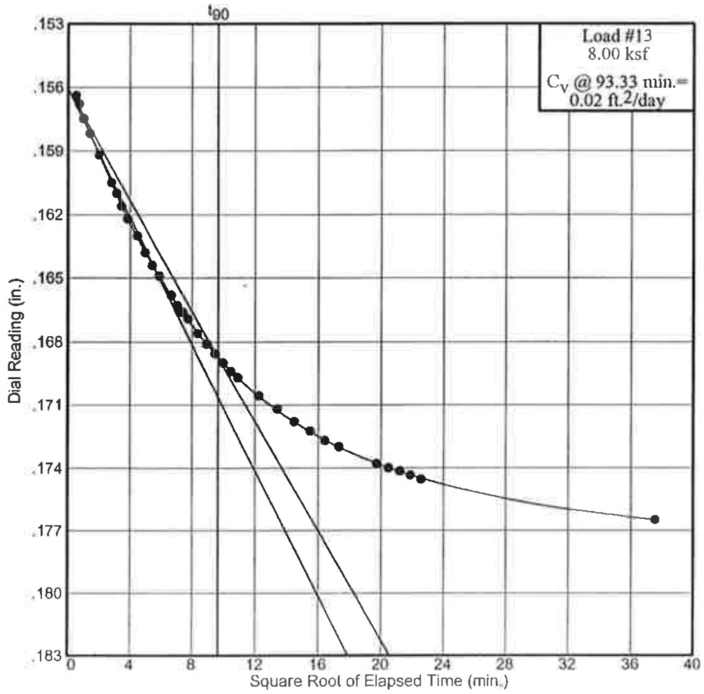
R.W. Gillespie & Associates, Inc.

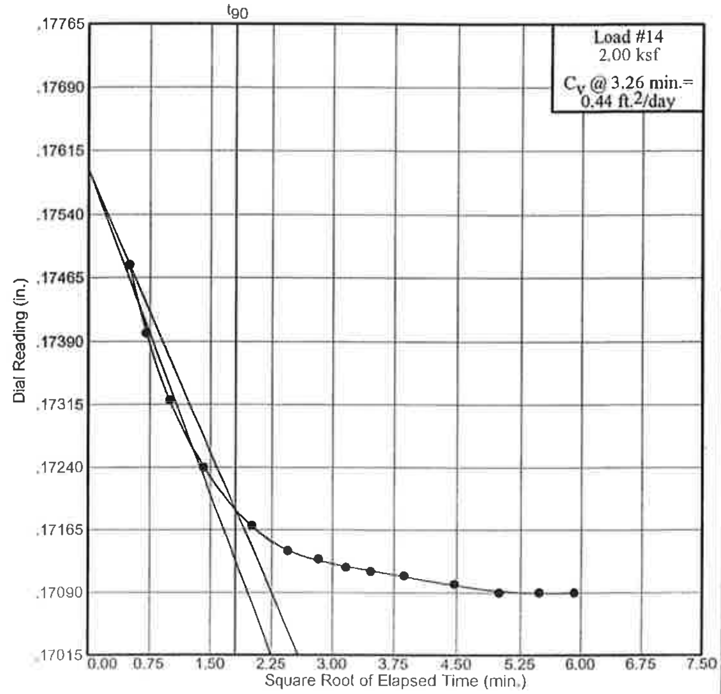
Lab No. 7608b

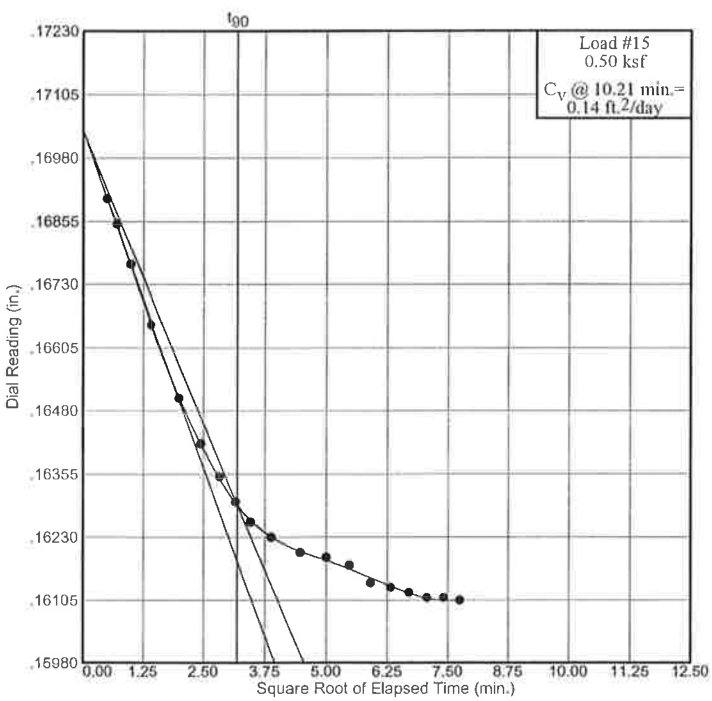
Dial Reading vs. Time

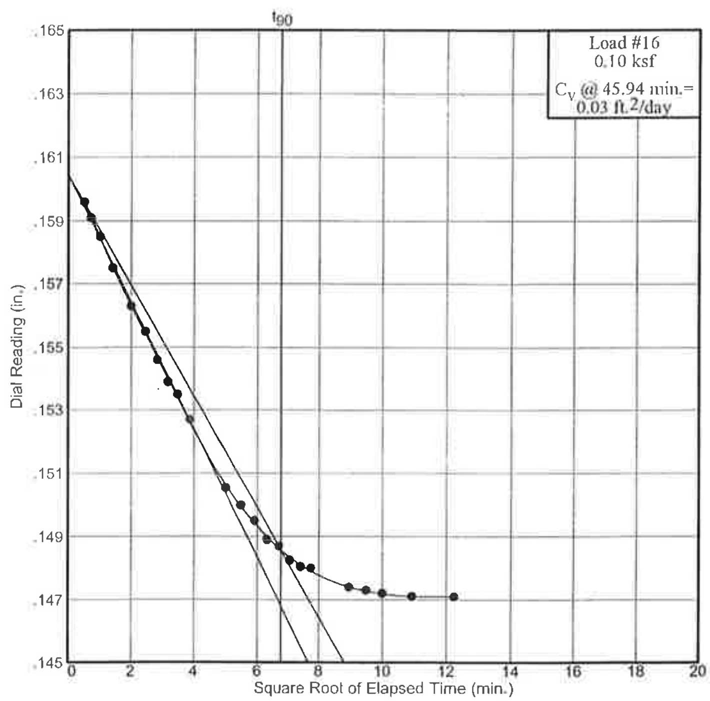
Project No.: 235-1039
Project: Brewyard Terrace

Source: 7605b | Sample No.: U-3 | Elev./Depth: 21.0'









Dial Reading vs. Time

R.W. Gillespie & Associates, Inc.

Lab No. 7609b

Laboratory Vane Shear Test Results

Project: Brewyard Terrace **Client:** Saco Avenue Professional Building, Inc.

Project No.: 235-1039

Boring No.	B-6	**Lab No.**	7605A
Sample No.	U-3	**Depth**	20' to 22'
Test No.	**S_u (Undisturbed)**	**S_u (Residual)**	**Moisture Content**
1	460 psf	70 psf	47.4%
2	420 psf	60 psf	44.1%
3	460 psf	60 psf	40.7%
4	420 psf	60 psf	40.4%

Checked By: MTG

G:\PROJECTS\9235\9235-1000\9235-1039\Lab\235-1039 Lab No. 7605B vanes.wpd

DRAINAGE ANALYSIS
SITE DEVELOPMENT

MAP 154, LOT 2
BREWERY LANE
PORTSMOUTH, NH
For
CHINBURG PROPERTIES / PORTSMOUTH WEST END DEVELOPMENT, LLC

February 12, 2018

Revised: March 19, 2018

STATE OF NEW HAMPSHIRE
JOSEPH
L.
MULLEDY
No. 11502
LICENSED
PROFESSIONAL ENGINEER

2/19/18

Ambit Engineering, Inc.

Civil Engineers and Land Surveyors
200 Griffin Road, Unit 3
Portsmouth, NH 03801
Phone: 603.430.9282; Fax: 436.2315
E-mail: jlm@ambitengineering.com

TABLE OF CONTENTS

DRAINAGE ANALYSIS

EXECUTIVE SUMMARY

This analysis is meant to be used by Town officials, the developer, builders, earthwork contractors and other interested parties to better understand the assumptions and intent of the drainage management and treatment scheme. This drainage analysis examines and compares the existing and proposed conditions stormwater drainage patterns for a Site Development on Brewery Lane in the City of Portsmouth, at Assessor's Map 154, Lot 2. The total lot size is S.03 acres including areas of off-site watershed that flows onto the parcel and is included in the drainage analysis. Because of the project size, the applicant is required to obtain an NHDES Alteration of Terrain permit which require that stormwater runoff be treated prior to its discharge off the property. This will be achieved by the use of stormwater treatment BMP's and best management practices.

The "existing" conditions site plan show the condition immediately before development (i.e., as it exists today). Runoff amounts from this existing state are a function of the land cover, vegetation and soils; together those factors produce what is known as the Curve Number. The "existing" or pre-developed curve number for the area consisting of one subcatchment is 97. Typically, highly developed areas with a substantial amount impervious area will have curve numbers approaching 90, whereas undisturbed or undeveloped areas can have curve numbers as low as 30 if the soils are well-drained and covered with forest. The proposed development's curve number decreases to 93. Because we have reduced the total amount of impervious surface on the site, the chance of an increase in runoff is very low. For this reason, only treatment practices are proposed at this time to meet State permitting requirements (Alteration of Terrain).

Because the overall impervious surface area has been decreased in the proposed condition, peak rates of runoff can be maintained without on site detention. However, the runoff will require treatment. Deep sump catch basins with water quality elbows will provide secondary stormwater treatment. Primary treatment will be achieved by the use of two filtration systems and an "Environment 21" (V2B1 Model #6) system. The filtration systems treat runoff by filtering it through a layer of engineered soil that removes pollutants through filtering and absorption. The rate of outflow through these ponds is primarily a function of the filter media porosity and the perforated underdrain within that filter media. The two filtration systems are located inside of the islands within the parking lot on the north side of the site. The water quality unit will be located within the community patio in front of the building. A NHDES Alteration of Terrain permit application will be filed for the project because the disturbed areas will exceed 100,000 square-feet.

Treatment of stormwater runoff is required for the "first-flush" runoff (or Water Quality Volume) and is defined by NHDES as a continuous storm with a rainfall of 1". Statistically, 90% of all storm events in the State of New Hampshire in any given year produce 1" or less rainfall during a 24 hour period. These storms are assumed to carry the majority of the pollutants associated with stormwater runoff. The water quality volume (WQV) is calculated based on this small storm and that volume is treated in the BMP (in this case the filter ponds). Larger storms are also passed through these BMP's but since the majority of the pollutants have already been removed there is no need to treat the entire volume of runoff. For these storms, the volume above and beyond the water quality volume is " by-passed" through the outlet structure untreated.

There is one design point on this parcel which are used to compare pre and post-developed runoff amounts. The design point is labeled DP1 and is located within a drain manhole within the intersection of Jewell Court and Brewery Lane.

The 2, 10, 25 and 50 year, 24 hour storm events are used to compare the peak runoff amounts at the design point.

The following table summarizes the pre and post developed peak runoff flows at the one Design Point:

Comparison of Pre and Post Developed Discharge Rates

Design Point	Existing 2 yr/10 yr/25 yr/50 yr Peak Flow (cfs)	Proposed 2 yr/10 yr/25 yr/50 yr Peak Flow (cfs)	Change 2 yr/10 yr/25 yr/50 yr Peak Flow (cfs)
DP1	18.0/27.6/35.2/42.2	15.7/25.3/32.7/39.6	-2.3/-2.3/-2.5/-2.6

As the above chart shows, flows are either maintained or reduced in the proposed condition. The following table summarizes the pre and post developed stormwater volumes at the Design Point:

Comparison of Pre and Post Developed Stormwater Volumes

Design Point	Existing 2 yr/10 yr/25 yr/50 yr Volume (af)	Proposed 2 yr/10 yr/25 yr/50 yr Volume (af)	Change 2 yr/10 yr/25 yr/50 yr Volume (af)
DP1	1.1/1.8/2.3/2.7	0.9/1.5/2.0/02.5	-0.2/-0.3/-0.3/-0.2

As the above table shows, volumes are either maintained or reduced at the Design Point. This meets Alteration of Terrain Permit requirements as well as City of Portsmouth requirements.

DRAINAGE ANALYSIS
SITE DEVELOPMENT

MAP 154, LOT 2
125 BREWERY LANE
PORTSMOUTH, NH
For
CHINBURG PROPERTIES / PORTSMOUTH WEST END DEVELOPMENT, LLC

INTRODUCTION

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 City of Portsmouth Assessor's Map 154 as Lot 2. The proposed project is for the redevelopment of a 4.7 acre parcel for additional residential use.

This report includes information about the existing site and the proposed development as necessary to analyze stormwater runoff treatment and management. The report includes maps of existing and proposed subcatchments and calculations of runoff. The report will provide a brief narrative description of the storm water 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. To fully understand the proposed site development the reader should review plans W1 and W2 which graphically show the assumptions used in the HydroCad stormwater model (Note: these plans are not meant to be used for construction purposes).

In order to maintain or reduce developed peak-runoff amounts to pre-developed levels, the applicants will have to provide for detention of runoff. This will be achieved by the use of two filtration systems and a water quality unit (WQU). The filteration basins treat runoff by filtering it through a layer of engineered soil that removes pollutants through filtering and absorption. The rate of outflow through these basins is primarily a function of the filter media porosity. The two filtration systems are located inside of the islands within the parking lot on the north side of the site. The water quality unit will be located within the community patio in front of the building. A NHDES Alteration of Terrain permit application will be filed for the project because the disturbed areas will exceed 100,000 square-feet.

Treatment of stormwater runoff is required for the "first-flush" runoff (or Water Quality Volume) and is defined by NHDES as a continuous storm with a rainfall of 1". Statistically, 90% of all storm events in the State of New Hampshire in any given year produce 1" or less rainfall during a 24 hour period. These storms are assumed to carry the majority of the pollutants associated with stormwater runoff. The water quality volume (WQV) is calculated based on this small storm and that volume is treated in the BMP (in this case the filter ponds). Larger storms are also passed through these BMP's (or should be) but since the majority of the pollutants have already been removed there is no need to treat the entire volume of runoff. For larger storms, the volume above and beyond the water quality volume is " by-passed" through the outlet structure untreated.

METHODOLOGY

This report uses the US Soil Conservation Service Method for prediction of storm water runoff. The SCS method is published in The National Engineering Handbook, Section 4 "Hydrology", in Technical Release No. 20, (TR-20) "Computer Program for Project Formulation Hydrology", and Technical Release-55 (TR-55) "Urban Hydrology for Small Watersheds". This report uses the HydroCAD program, written by Applied Microcomputer Systems, Chocorua, N.H., to apply these methods. Rainfall data are taken from the Extreme Precipitation Tables published by the Northeast Climate Center.

SITE SPECIFIC INFORMATION

Located on Brewery Lane in Portsmouth, this site the location of a former DPW garage and two brick structures.

The site is bound by Cheverolet ave to the southeast, Brewery Lane to the northwest, Plaza 800 to the southwest and existing Malt House buildings to the northeast.

The majority of Soils on this site are of the Urban Land "Canton Complex". These soils can be described as being well-drained. A waiver is requested from the requirement for a site specific soil report as is required by State Alteration of Terrain permitting, because the soil is "made" land.

DRAINAGE ANALYSIS

This drainage analysis consists of two sections, an analysis of the stormwater runoff from the site in the existing condition, and an analysis of the stormwater runoff from the same area with the proposed development. Areas and drainage information were taken from an existing conditions plan and site topographic map prepared by this office. Soils information was taken from the Soil Conservation Service (SCS) Web Soil Survey. Vegetative cover information was determined by on-site inspection as well as aerial orthophotography.

There is one discharge point identified for analysis of stormwater runoff for this project. This is the same point in the existing and proposed conditions. This discharge point is located inside an existing drain manhole within the intersection of Brewery Lane and Jewell Court.

Existing or Pre-Developed Site Runoff

In order to study the site in greater detail, design closed systems and estimate peak stormwater runoff, it is necessary to divide the site into watershed subcatchments. There is a single subcatchment in the existing analysis. The design point is an existing drain manhole (DMH 4) located in the intersection of Brewery Lane and Jewell Court. The large majority of these discharges are sheet flow.

Subcatchment Summaries

Subcatchment ES1*: This Subcatchment comprises 100% of the total area including runon from offsite (5.035 ac). Existing groundcover is largely impervious surfaces consisting of paved parking and rooftops with some small areas of compacted gravel surface. Runoff from this subcatchment flows to the municipal drainage system along Jewett Court.

*Runoff volumes are based on the 2 year storm event for comparison purposes only.

The following table summarizes the existing subcatchments. The total rainfall amounts for the 2, 10, 25 and 50 year storm are 3.21", 4.87", 6.17" and 7.39". These are the rainfall amounts promulgated by NHDES and are taken from the Northeast Regional Climate Center website.

Table 1: Existing Watershed Subcatchment Runoff Results.

Subcatchment	Area Sf	Tc min.	CN	2 Year Peak cfs	10 Year Peak cfs	25 Year Peak cfs	50 Year Peak cfs
ES1	219,330	5.0	97	18.0	27.6	35.2	42.2

Consistent with TR-55 methodology, a minimum Time of Concentration of 5.0 minutes was set in the HydroCAD modeling software. See "Plan of Proposed Subcatchments" – W1.

Proposed or Post-Developed Site Runoff

There are eight subcatchments in the proposed analysis including runoff from off site. The same Design Point is utilized for the developed state. Subcatchments PS1, PS2 , PS3, PS4, PS5, PS6, PS7 andPS8 all flow to Discharge Point 1 (DP1).

The following is a description of the various subcatchments:

Subcatchment PS1 is the northwest corner of the lot and represents an existing building on site, a small amount of landscaping, sidewalk and pavement within Brewery Lane. Flow from this subcatchment discharges directly to design point DP1.

Subcatchment PS2 represents the majority of runoff from the rear of the building in PS1 as well as pavement, sidewalk and landscaping. The flow from this subcatchment is captured and treated in Filter Pond #1.

Subcatchment PS2a represents offsite rooftop runoff that will be captured in a swale/underdrain system that will bypass the onsite treatment.

Subcatchment PS3 is the northwest corner of the lot and is largely pavement with smaller amounts of sidewalk and landscape area. The flow from this subcatchment is captured and treated in Filter Pond #2.

Subcatchment PS3a represents offsite rooftop runoff that will be captured in a swale/underdrain system that will bypass the onsite treatment.

Subcatchement PS4 is the located in the southwest corner of the property and represents runoff from an existing building on site, a small amount of landscaping, sidewalk and pavement within Brewery Lane. Flow from this subcatcheent discharges directly to design point DP1.

Subcatchment PS5 is contains the majority of the area for the entire lot and is comprised of the entire rooftop from the proposed sidewalk, pavement and landscaped areas. Runoff from this subcatchment will be treated in a Water Quaility Unit (WQU) located within the community patio in the front of the building.

Subcatchment PS5A is contains sidewalk, pavement and landscaped areas.

Subcatchment PS5B is contains sidewalk, pavement and landscaped areas.

Subcatchment PS5C is contains the majority of the area for the entire entire rooftop from the proposed building.

Subcatchement PS6 is located along Cheverolet Avenue to the rear of the proposed building and is comprised of pavement, sidewalk and landscaped area.

Subcatchement PS7 is located adjacent to the parking lot of Plaza 800 and is comprised of pavement, sidewalk and landscaped area.

Subcatchments PS8 represent runoff from a small part of the property that flows to proposed catch basin PCB2.

All proposed subcatchments flow to and are analyzed at design point DP 1 (DMH 4).

Table 2: Proposed or Developed Conditions

Subcatchment	Area 5f	Tc min *	Weighted CN	2 Year Peak cfs	10 Year Peak cfs	25 Year Peak cfs	50 Year Peak cfs
PS1	7,157	5.0	97	0.6	0.9	1.1	1.4
P52a	20,584	5.0	93	1.6	2.5	3.2	3.9
PS2b	11,747	5.0	94	0.9	1.4	1.8	2.2
P53a	19,589	5.0	94	1.5	2.4	3.1	3.7
PS3b	40,960	5.0	92	3.0	4.9	6.3	7.7
PS4	12,006	5.0	94	0.9	1.5	1.9	2.3
P55	34,260	5.0	91	2.5	4.0	5.2	6.4
PS5A	9,298	5.0	97	0.8	1.2	1.5	1.8
PS5B	13,605	5.0	92	1.0	1.6	2.1	2.5
P55C	18,430	5.0	98	1.5	2.3	3.0	3.6
PS6	20,527	5.0	88	1.3	2.3	3.0	3.7
PS7	8,740	5.0	94	0.7	1.1	1.4	1.7
P58	2,398	5.0	94	0.2	0.3	0.4	0.5
Totals							

See "Plan of Proposed Subcatchments" – W2.

*Consistent with TR-55 methodology, a minimum Time of Concentration of 5.0 minutes was set in the HydroCAD modeling software.

**By inspection, the Time of Concentration for several small subcatchements was "Direct Entered" with a Tc of 5.0 minutes.

Stormwater Quality BMP's

We understand the City is in process of generating requirements for stormwater treatment, the applicant is preparing an NHDES Alteration of Terrain (NHDES AoT) permit application and is required to treat stormwater runoff as part of that approval process.

The State recognizes many different "BMP's" (best management practices) for purposes of treating stormwater runoff. This project proposes several different BMPs to accomplish the goals of the Alteration of Terrain permit:

1. Filtration Basins are proposed for several reasons: a) The runoff can be filtered. b) Filter ponds provide good treatment and cooling of stormwater runoff and c) Filter ponds can be designed to regulate outflow so that channel protection requirements are met. On this site, filtration ponds have been chosen for their ease of construction, maintenance and cost.

2. Environment 21 V2B1 Model #6.

Peak Flow Rates

One of the main goals of any stormwater runoff analysis has to do with maintaining peak runoff amounts to pre-developed levels. The following table summarizes and compares the peak runoff amounts for the existing and proposed conditions, at the Design Point:

Comparison of Pre and Post Developed Discharge Rates

Design Point	Existing 2 yr/10 yr/25 yr/50 yr Peak Flow (cfs)	Proposed 2 yr/10 yr/25 yr/50 yr Peak Flow (cfs)	Change 2 yr/10 yr/25 yr/50 yr Peak Flow (cfs)
DP1	18.0/27.6/35.2/42.2	15.7/25.3/32.7/39.6	-2.3/-2.3/-2.5/-2.6

Discussion: The design of the stormwater management system is such that no increases in peak flow are seen at the design point.

Channel Protection Requirements

Meeting the Channel Protection Requirements (Env-Wq 1507-05) for this project was achieved at design point DP1.

The following table summarizes the pre and post developed stormwater volumes at the five Design Point:

Comparison of Pre and Post Developed Stormwater Volumes

Design Point	Existing 2 yr/10 yr/25 yr/50 yr Volume (af)	Proposed 2 yr/10 yr/25 yr/50 yr Volume (af)	Change 2 yr/10 yr/25 yr/50 yr Volume (af)
DP1	1.1/1.8/2.3/2.7	0.9/1.5/2.0/02.5	-0.2/-0.3/-0.3/-0.2

Discussion: As the above table shows, volumes are either maintained or reduced for all subcatchments. This meets Alteration of Terrain Permit requirements as well as requirements of the City of Portsmouth.

Conclusion

The new development can be built without increasing the risk of flooding or erosion onto neighboring properties or overburdening the existing City of Portsmouth stormwater system. Given the results of the preceding analysis and compliance with known state and city requirements noted above, it is our opinion that this project will not have downstream impact to the existing storm drain system.

INSPECTION & MAINTENANCE PLAN

FOR

Chinburg Properties / Portsmouth West End Development, LLC

Site Redevelopment

125 Brewery Lane

Portsmouth, NH

Introduction

The intent of this plan is to provide Chingurg Properties / Portsmouth West End Devleopment, LLC (herein referred to as "owner") with a list of procedures that document the inspection and maintenance requirements of the stormwater management system for this development. Specifically, the detention ponds, infiltration system and associated structures on the project site (collectively referred to as the "Stormwater Management System").

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, the owner will be able to maintain the functional design of the stormwater management system and maximize its ability to remove sediment and other contaminants from site generated stormwater runoff.

Annual Report

The owner shall prepare an annual Inspection & Maintenance Report. The report shall include a summary of the system's maintenance and repair by transmission of the Inspection & Maintenance Log and other information as required. A copy of the report shall be delivered annually to the City of Portsmouth Code Enforcement Officer.

Inspection & Maintenance Checklist/Log

The following pages contain a Stormwater Management System Inspection & Maintenance Checklist and a blank copy of the Stormwater Management System Inspection & Maintenance Log. These forms are provided to the owner 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.

STORMWATER MANAGEMENT SYSTEM COMPONENTS

The Stormwater Management System is designed to mitigate both the quantity and quality of site-generated stormwater runoff. As a result, the design includes the following elements:

Non-Structural BMP's

Non-Structural best management practices (BMP's) include temporary and permanent measures that typically require less labor and capital inputs and are intended to provide protection against erosion of soils. Examples of non-structural BMP's on this project include but are not limited to: temporary and permanent mulching, temporary and permanent grass cover, trees, shrubs and ground covers, miscellaneous landscape plantings, dust control, tree protection, topsoiling, sediment barriers, and a stabilized construction entrance.

Structural BMP's

Structural BMP's are more labor and capital intensive structures or installations that require more specialized personnel to install. Examples on this project iuclude but are not limited to: storm drains, the micro detentiou ponds and associated outlet control structures, and the infiltration trench system.

Inspection and Maintenance Requirements

The following summarizes the inspection and maintenance requirements for the various BMP's that may be found on this project.

1. **Grassed areas:** After each rain event of 0.5" or more during a 24 hour period, inspect grassed areas for signs of disturbance, such as erosion. If damaged areas are discovered, immediately repair the damage. Repairs may iuclude adding new topsoil, lime, seed, fertilizer and mulch.
2. **Plantings**: Planting and landscaping (trees, shrubs) shall be monitored bi-monthly during the first year to insure viability and vigorous growth. Replace dead or dying vegetation with new stock and make adjustments to the conditions that caused the dead or dying vegetation. During dryer times of the year, provide weekly watering or irrigation during the establishment period of the first year. Make the necessary adjustments to ensure long-term health of the vegetated covers, i.e. provide more permanent mulch or compost or other means of protection.
3. **Storm Drain Structures (POCS):** Monitor drain inlets and outlets for excessive accumulation of sediments or missing stone/riprap. Remove sediments as required.
4. **Filtration Basin:** After acceptance of the Filtration Basiu, perform the following inspections on a semi-annual basis or after significant rainfall events (10 year, 24 hour storms, or back to back 2 year, 24 hour storms):
   a. Monitor Filtration Basin for 72 hours following a rain storm. If the Filtration Basin fails to fully drain within this period time, the engineered soil may have become plugged. Inspect for other causes of blockage. If it's determined that the soil has become plugged and is no longer functioning as engineered, then replacement of soils shall be required. Coutractor shall use care in removing soil around tree roots. An airspade shall be used to remove soils around tree roots.
   b. Monitor for excessive or concentrated accumulations of debris, or excessive erosion. Remove debris as required.

c. Monitor the outfall structure for problems with clogged pipes. Repair or remove clogs as required, and determine cause of clogging. Pipes should be inspected annually and after every major rainstorm. Broken or damaged pipes should be repaired or replaced as necessary.
d. Monitor side slopes of ponds for damages or erosion—repair as necessary.
e. Monitor turf health and keep protected from fire, grazing, traffic and dense weed growth. Lime and fertilizer should be applied as necessary to promote good growth as determined by soil tests. Mowing the vegetated areas of the basin should be carried out as necessary.
f. Sediment accumulation should be continually checked in the basin. Sediment should be removed as it is discovered. Particularly if it has accumulated near the outlet of the basin.
g. The outlet control structure should be inspected annually and after every major rainstorm. The outlet control structure has within it a weir structure with various size orifices for controlling flow out of the basin. These orifices should be kept clear and unclogged. Any sediment or debris that has built up inside the outlet control structure should be removed when discovered.
h. The use of sand shall be prohibited and the use of salt shall be limited.

Invasive Species

Monitor Stormwater Management System for signs of invasive species growth. If caught earlier enough, their eradication is much easier. The most likely places where invasions start are in wetter, disturbed soils or detention ponds. Species such as phragmites and purple loose-strife are common invaders in these wetter areas. If they are found then the owner shall contact a wetlands scientist with experience in invasive species control to implement a plan of action to eradicate the invaders. Measures that do not require the application of chemical herbicides should be the first line of defense.

Stormwater Management System

Inspection & Maintenance Checklist for Post Construction Condition—for Chinburg Properties / Portsmouth West End Devlopment, 125 Brewery Lane, Portsmouth, NH

BMP/System Component	Minimum Inspection Frequency	Minimum Inspection Requirements	Maintenance/Cleanout Threshold
Closed Drainage System			
Drainage Pipes	Yearly	*Check for sediment clogging, or soiled runoff.*	Clean entire drainage system and remove all sediments if discovered in piping.
Filtration Basin	2 X Annually	*Check for sediment clogging, excessive weed growth and standing water*	Remove any weeds, trash, debris and accumulated sediment. If trench does not drain within 72 hours following a rain event, a qualified professional should assess the condition of the facility to determine restoration measures.
Environment 21 **V2B1 Model #6**	See Attached	*See Attached*	See Attached
Annual Report	Yearly	*Prepare Annual Report, including all Inspection & Maintenance Logs. Provide to Town (if required).*	N/A

Stormwater Management System Maintenance Summary

Inspection & Maintenance Log—for Chinburg Properties / Portsmouth West End Devlopment, 125 Brewery Lane, Portsmouth, NH

BMP/System Component	Date Inspected	Inspector	Problems Noted, Required Maintenance (List Items/Comments)	Date of Maintenance	Performed By

Data Sheets

V2B1® SYSTEM MAINTENANCE

1.0 REQUIRED MAINTENANCE FREQUENCY

1.1 The required maintenance practice for the V2B1® System is to initially plan on quarterly inspections and an annual pump-out. After experience is gained, the schedule may be more accurately determined.

1.2 It is recommended that the V2B1® System should be pumped out when the sediment storage depth in the first structure is at 50% of the design sediment storage depth. Refer to the project design package for the design sediment storage depth.

1.3 Oil Sheen and floating debris are retained in the first two chambers of the V2B1® System. Annual accumulation is estimated at less than 0.50 inches; however, it is dependent on the site.

2.0 CONDITIONS THAT CAUSE THE NEED FOR MAINTENANCE

2.1 The most common cause of poor performance of the V2B1® System is lack of maintenance. The V2B1® System removes pollution from the environment and, if this pollution is not routinely removed from V2B1® System, the effectiveness of the V2B1® System could be compromised. The following are things that trigger the need for maintenance and the consequences of not completing said maintenance.

2.1.1 Sediment build-up in the chambers – As the sediment level increases past the recommended maintenance interval, less sediment will be removed from the runoff. Additionally, a large storm could cause entrainment of some of the sediment that was previously captured.

2.1.2 Excess floatables in the chambers – Similar to sediment build-up, floatables (oil and litter) build up risking the capture of additional floatables.

2.1.3 Obstructed piping/baffles – If the piping or baffles become obstructed due to improper maintenance (timely removal of obstructions), flooding may occur upstream of the V2B1® System.

2.1.4 As with most buried structures, the access covers could be moved out of position during extreme flooding conditions.

2.2 In addition to the V2B1® System internal inspections, frequent site inspections should be conducted. These frequent site inspections are recommended as visual only and do not require tools, equipment, or removal of the access covers. Things to look for during these inspections are signs of flooding at catch basins upstream of the V2B1® System, unexpected loss of outlet flow, out of place access covers, and downstream pollution (oil sheen, litter, etc.).

3.0 ACCESS POINTS AND REQUIRED INSPECTION

3.1 Maintenance access is through access frames (rings), with covers, which are provided in the V2B1® System roof.

3.2 The floatables observation and sediment depth measurement are obtained by removal of the covers and access through the access frames of the V2B1® System.

3.3 Illuminate the water surface in the first stage of the V2B1® System while gently stirring the floatables to estimate the depth of the floatables. Obtain a sample of the floatables, water, or sediment, if required, to determine disposal. The depth of the oil sheen and floatable debris will typically be less than one inch and may be skimmed from the surface prior to the pump-out of the sediment. Organic debris that has become waterlogged and settled to the floor is expected to be present in relatively small quantities that will be removed during the pump-out of the mineral sediment.

3.4 Inspect all surfaces, which can be seen, of the V2B1® System for wear (e.g., cracking, spalling, etc.). Also, examine the inlet and elbow pipes for wear, blockage, and damage (cracks, etc.). Report signs of degradation to the proper authorities (i.e., property owner, municipality, etc.) as required,

3.5 Lower a measuring rod into the first chamber of the V2B1® System until a slight resistance is noticed. The measuring rod is now at the top of the sediment pile. Obtain a measurement by sighting the measure increments on the rod to a point on the access frame. Repeat this several times at different locations of the sediment pile in the first chamber of the V2B1® System to verify the measurement. This is Measurement A.

3.6 While the measuring rod is on top of the sediment pile, force it down through the sediment pile using a twisting motion until the measuring rod reaches the floor of the chamber (verify the expected elevation using the project submittal drawings). Obtain a measurement by sighting the measure increments on the rod to the same point on the access frame as was used in Step 3.5. This is Measurement B.

3.7 Refer to the Environment 21 system specific design package for the design sediment storage depth. This is measurement C.

3.8 Plug the numbers obtained from the previous three steps into the following equation to obtain the percent full sediment depth of the first chamber of the V2B1® System:

$$((B - A)/C) * 100$$

3.9 Complete Steps 3.2 through 3.8 for all chambers of the V2B1® System.

3.10 Contact the following for approval and notification of the intent to pump out the V2B1® System.

3.10.1 Obtain permission from the property owner to pump out the contents of the V2B1® System.

3.10.2 Verify the disposal requirements with the local regulatory agency.

3.10.3 Contract with an approved vendor to pump out the V2B1® System. If the pump-out will be completed without a contracted vendor, go to Step 3.11, otherwise go to Step 3.16.

3.11 Obtain a standard truck-mounted sewer and catch basin cleaner with proper pump-out equipment (e.g., positive displacement rotary lobe vacuum pump). This equipment will be used for Steps 3.12 through 3.15.

3.12 Remove the floatables and hydrocarbons from the first chamber of the V2B1® System. Segregate this waste as required.

3.13 Remove the standing water and sediment from the first chamber of the V2B1® System. Segregate this waste as required.

3.14 Wash down the interior surface of the first chamber of the V2B1® System using a clean woter supply. Suction the chamber while washing it. Break up and suspend into the rinse water any solids found in the chamber and verify all solids have been removed.

3.15 Repeat Steps 3.12 through 3.14 for the remaining chambers of the V2B1® System.

3.16 Using a flood light inspect all visible surfaces of the V2B1® System. Check for wear (e.g., cracking, spalling, etc.) on the surfaces. In addition, examine the inlet and elbow pipes for wear, blockage, and damage (e.g., cracks, etc.). Report signs of degradation to the proper authorities (i.e., owner, municipality, etc.) as required.

3.17 Refill the V2B1® System, with clean water, to the inlet/outlet pipe invert elevation.

3.18 Properly dispose of the waste removed from the V2B1® System.

3.19 Verify that no personnel, tools, or equipment are in the V2B1® System.

3.20 Inspect the access frames and covers for damage (e.g., cracks, deformations, etc.).

3.21 Clear the access frames of any extraneous material and carefully replace the covers using proper lifting and rigging techniques and equipment. Verify that the covers are properly seated.

3.22 Remove all tools, equipment, and material used in the inspection/pump-out. Verify that the work area is returned to the pre-work or better condition.

3.23 Complete an inventory of all tools and equipment used for the inspection/pump-out accounting for lost, damaged, or stolen tools or equipment.

3.24 Maintenance is a very important aspect in keeping the V2B1® System performance up to par. Attachment A "V2B1® SYSTEM MAINTENANCE DATA SHEET" is provided and should be used to document the maintenance performed on the V2B1® System.

3.25 Provide a copy of the "V2B1® SYSTEM MAINTENANCE DATA SHEET" to the owner, required government agencies, and Environment 21 LLC.

4.0 IMPORTANT ASPECTS

4.1 Safety is a priority and the most stringent of regulations (OSHA, local, etc.) should be followed while performing maintenance on the V2B1® System.

4.2 An advantage of the design of the V2B1® System is that all of the maintenance may be completed without personnel entry into the V2B1® System. In the remote chance that an entry into the V2B1®

System is needed, refer to regulations (OSHA, Confined Space, local, etc.) for requirements and definitions.

4.3 A running inventory of all tools and equipment used for completion of this procedure should be maintained while performing maintenance on the V2B1® System.

4.4 The V2B1® System is normally equipped with cast iron access frames and vented covers to provide approach to all chambers. The accesses are normally at ground level so the work area should be staged properly to prevent anyone or anything from inadvertently falling through any of the accesses of the V2B1® System.

4.5 After maintenance is complete on the V2B1® System, the access covers must be set securely in place, all materials and equipment should be removed, and the area should be cleared of slip and trip hazards.

4.6 This document and the project specific data capture the requirements for maintenance of the V2B1® System. Any additional maintenance and product information may be obtained by calling Environment 21, LLC at 800-809-2801.

5.0 REQUIRED EQUIPMENT

5.1 The recommended tools/equipment for completing the work outlined in this procedure include but are not limited to a flood light, proper lifting and rigging equipment, hose that supplies clean water with sufficient pressure (≥ 40 psi) and volume (≥ 5 GPM), and a rigid measuring rod (increments in inches marked on the rod) that will reach the floor of the V2B1® System and still extend a minimum of 2' above the access frames.

5.2 Environment 21, LLC should be contacted if any repairs are required so that the system will be restored to proper operation.

environment21
Global Stormwater Solutions
P.O. Box 55 | East Pembroke | NY 14056
Phone: 1-800 809-2801 | Fax: 1-585-815-4701
www.env21.com | enveng@env21.com
Technology That Separates

V2B1 SYSTEM MAINTENANCE DATA SHEET

SITE NAME:____

LOCATION:____________________________INSTALLATION DATE:________________

OWNER NAME:________________________________CHANGE SINCE LAST INS.? Y N

ADDRESS:________________________________PHONE NUMBER________________

CITY:________________________________STATE______ZIP CODE____________

SITE STATUS:____

DATE:____________TIME__________SITE CONDITIONS________________________

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SITE INSPECTION

Inspection Frequency Key: A=annual; M=monthly; S=after major storms

Inspection Items	Inspection Frequency	Inspected (Yes/NO)	Maintenance Needed? (Yes/No)	Comments/Descriptions
Debris Removal				
Adjacent area free of debris?	M			
Inlets and Outlets free of debris?	M			
Facility (internally) free of debris?	M			
Vegetation				
Surrounding area fullly stabilized (no evidence of eroding material into proprietary BMP)				
Grass mowed?	M			
Water retention where required				
Water holding chambers at normal pool?	M			
Evidence of erosion?				
Sediment Deposition				
50% full?	A			

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Structural Components				
Any evidence of structural deterioration?	A			
Grates in good condition	A			
Spalling or cracking of structural parts?	A			
Outlet/Overflow Spillway	A			
Other				
Noticeable odors?	A			
Evidence of flow bypassing facility?	A			

Inspector Comments:____

Overall Condition of Facility: ☐ Acceptable ☐ Unacceptable

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V2B1® SYSTEM INSPECTION

OWNER NOTIFIED AS REQUIRED.	☐	
LOCAL AGENCIES NOTIFIED AS REQUIRED.	☐	
PIPING	**YES**	**NO**
ANY VISIBLE CRACKS/DAMAGE	☐	☐
ANY VISIBLE DISPLACEMENT/LEAKS	☐	☐
ANY VISIBLE OBSTRUCTIONS	☐	☐
STRUCTURE	**YES**	**NO**
ANY VISIBLE CRACKS/SPALLING/DAMAGE	☐	☐
ANY VISIBLE CRACKS/SPALLING/DAMAGE	☐	☐
ANY VISIBLE LEAKS	☐	☐
ANY VISIBLE SURFACE WEAR	☐	☐

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FRAMES/COVERS — YES / NO

	YES	NO
ANY VISIBLE CRACKS/DAMAGE	☐	☐
ANY VISIBLE SEAT SURFACE OBSTRUCTIONS	☐	☐
COVERS PROPERLY SEATED	☐	☐

DATE	SEDIMENT PILE DEPTH			OIL SHEEN YES/NO			FLOATABLE DEPTH			PUMPOUT REQUIRED YES/NO		
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd			

DATE	SAMPLED YES/NO			SAMPLE RESULTS		
	1st	2nd	3rd	1st	2nd	3rd

The next routine inspection is scheduled for approximately: ______________________
(DATE)

NOTE: 1st, 2nd, and 3rd refer to the V2B1 chambers.

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WORK COMPLETION

	YES	NO
ALL CAST IRON COVERS HAVE BEEN PROPERLY REPLACED.	☐	☐
NO HAZARDOUS CONDITIONS EXIST AS A RESULT OF THE MAINTENANCE WORK.	☐	☐
ALL PPE, TOOLS, AND EQUIPMENT HAVE BEEN INVENTORIED AND REMOVED FROM THE SITE.	☐	☐
THE WORK AREA HAS BEEN RETURNED TO A SAFE PRE-WORK CONDITION.	☐	☐
ALL NOTIFICATIONS HAVE BEEN MADE, AS REQUIRED, THAT THE WORK IS COMPLETED.	☐	☐

Corrective Actions Taken: ____

____

____

INSPECTED BY: (signature)____

INSPECTED BY: (printed)____

FILTRATION PRACTICE DESIGN CRITERIA
(Env-Wq 1508.07)

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

Type/Node Name: POCS1

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable

Yes		Have you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a)?	
0.47	ac	A = Area draining to the practice	
0.37	ac	A_I = Impervious area draining to the practice	
0.79	decimal	I = percent impervious area draining to the practice, in decimal form	
0.76	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.36	ac-in	WQV= 1" x Rv x A	
1,294	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
324	cf	25% x WQV (check calc for sediment forebay volume)	
971	cf	75% x WQV (check calc for surface sand filter volume)	
Sedimentation		Method of Pretreatment? (not required for clean or roof runoff)	
324	cf	V_{SED} = sediment forebay volume, if used for pretreatment	← ≥ 25%WQV
1,511	sf	A_{SA} = surface area of the practice	
-	iph	I_{DESIGN} = design infiltration rate[1]	
Yes	Yes/No	If I_{DESIGN} is < 0.50 iph, has an underdrain been provided?	
-	hours	T_{DRAIN} = drain time = V / (A_{SA} * I_{DESIGN})	← ≤ 72-hrs
14.00	feet	E_{FC} = elevation of the bottom of the filter course material[2]	
12.75	feet	E_{UD} = invert elevation of the underdrain (UD), if applicable	
11.67	feet	E_{SHWT} = elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
10.17	feet	E_{ROCK} = elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
1.25	feet	$D_{FC\ to\ UD}$ = depth to UD from the bottom of the filter course	← ≥ 1'
3.83	feet	$D_{FC\ to\ ROCK}$ = depth to bedrock from the bottom of the filter course	← ≥ 1'
2.33	feet	$D_{FC\ to\ SHWT}$ = depth to SHWT from the bottom of the filter course	← ≥ 1'
14.75	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
15.50	ft	Elevation of the top of the practice	
YES		50 peak elevation ≤ Elevation of the top of the practice	← yes

If a surface sand filter or underground sand filter is proposed:

YES	ac	Drainage Area check.	← < 10 ac
	cf	V = volume of storage[3] (attach a stage-storage table)	← ≥ 75%WQV
	inches	D_{FC} = filter course thickness	← 18", or 24" if within GPA
Sheet		Note what sheet in the plan set contains the filter course specification	
	Yes/No	Access grate provided?	← yes

If a bioretention area is proposed:

YES	ac	Drainage Area no larger than 5 ac?	← yes
	cf	V = volume of storage[3] (attach a stage-storage table)	← ≥ WQV
	inches	D_{FC} = filter course thickness	← 18", or 24" if within GPA
Sheet		Note what sheet in the plan set contains the filter course specification	
	:1	Pond side slopes	← ≥3:1
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	

If porous pavement is proposed:

		Type of pavement proposed (concrete? Asphalt? Pavers? Etc)	
	acres	A_{SA} = surface area of the pervious pavement	
1.0	:1	ratio of the contributing area to the pervious surface area	← 5:1
	inches	D_{FC} = filter course thickness	← 12", or 18" if within GPA
Sheet		Note what sheet in the plan set contains the filter course spec.	← 304.1 sand

1. Rate of the limiting layer (either the filter course or the underlying soil). See Env-Wq 1504.14 for guidance on determining the infiltration rate.

2. See lines 34, 40 and 48 for required depths of filter media.

3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet stucture, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes: ______________________________

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.07)

Type/Node Name: POCS2

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable

Yes		Have you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a)?	
0.45	ac	A = Area draining to the practice	
0.37	ac	A_I = Impervious area draining to the practice	
0.82	decimal	I = percent impervious area draining to the practice, in decimal form	
0.79	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.36	ac-in	WQV= 1" x Rv x A	
1,290	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
323	cf	25% x WQV (check calc for sediment forebay volume)	
968	cf	75% x WQV (check calc for surface sand filter volume)	
Sedimentation		Method of Pretreatment? (not required for clean or roof runoff)	
323	cf	V_{SED} = sediment forebay volume, if used for pretreatment	← ≥ 25%WQV
2,683	sf	A_{SA} = surface area of the practice	
-	iph	I_{DESIGN} = design infiltration rate[1]	
Yes	Yes/No	If I_{DESIGN} is < 0.50 iph, has an underdrain been provided?	
-	hours	T_{DRAIN} = drain time = V / (A_{SA} * I_{DESIGN})	← ≤ 72-hrs
13.00	feet	E_{FC} = elevation of the bottom of the filter course material[2]	
11.75	feet	E_{UD} = invert elevation of the underdrain (UD), if applicable	
10.97	feet	E_{SHWT} = elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
8.80	feet	E_{ROCK} = elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
1.25	feet	$D_{FC\ to\ UD}$ = depth to UD from the bottom of the filter course	← ≥ 1'
4.20	feet	$D_{FC\ to\ ROCK}$ = depth to bedrock from the bottom of the filter course	← ≥ 1'
2.03	feet	$D_{FC\ to\ SHWT}$ = depth to SHWT from the bottom of the filter course	← ≥ 1'
14.24	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
14.50	ft	Elevation of the top of the practice	
YES		50 peak elevation ≤ Elevation of the top of the practice	← yes

If a surface sand filter or underground sand filter is proposed:

YES	ac	Drainage Area check.	← < 10 ac
	cf	V = volume of storage[3] (attach a stage-storage table)	← ≥ 75%WQV
	inches	D_{FC} = filter course thickness	← 18", or 24" if within GPA
Sheet		Note what sheet in the plan set contains the filter course specification	
	Yes/No	Access grate provided?	← yes

If a bioretention area is proposed:

YES	ac	Drainage Area no larger than 5 ac?	← yes
	cf	V = volume of storage[3] (attach a stage-storage table)	← $\geq$ WQV
	inches	D_{FC} = filter course thickness	← 18", or 24" if within GPA
Sheet		Note what sheet in the plan set contains the filter course specification	
	:1	Pond side slopes	← $\geq$3:1
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	

If porous pavement is proposed:

		Type of pavement proposed (concrete? Asphalt? Pavers? Etc)	
	acres	A_{SA} = surface area of the pervious pavement	
1.0	:1	ratio of the contributing area to the pervious surface area	← 5:1
	inches	D_{FC} = filter course thickness	← 12", or 18" if within GPA
Sheet		Note what sheet in the plan set contains the filter course spec.	← 304.1 sand

1. Rate of the limiting layer (either the filter course or the underlying soil). See Env-Wq 1504.14 for guidance on determining the infiltration rate.

2. See lines 34, 40 and 48 for required depths of filter media.

3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet stucture, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes:

FILTRATION PRACTICE DESIGN CRITERIA
(Env-Wq 1508.07)

Type/Node Name: ENV 21

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable

Yes		Have you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a)?	
0.79	ac	A = Area draining to the practice	
0.54	ac	A_I = Impervious area draining to the practice	
0.68	decimal	I = percent impervious area draining to the practice, in decimal form	
0.67	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.53	ac-in	WQV= 1" x Rv x A	
1,908	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
477	cf	25% x WQV (check calc for sediment forebay volume)	
1,431	cf	75% x WQV (check calc for surface sand filter volume)	
		Method of Pretreatment? (not required for clean or roof runoff)	
	cf	V_{SED} = sediment forebay volume, if used for pretreatment	← ≥ 25%WQV
	sf	A_{SA} = surface area of the practice	
-	iph	I_{DESIGN} = design infiltration rate[1]	
	Yes/No	If I_{DESIGN} is < 0.50 iph, has an underdrain been provided?	
-	hours	T_{DRAIN} = drain time = V / (A_{SA} * I_{DESIGN})	← ≤ 72-hrs
	feet	E_{FC} = elevation of the bottom of the filter course material[2]	
	feet	E_{UD} = invert elevation of the underdrain (UD), if applicable	
	feet	E_{SHWT} = elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
	feet	E_{ROCK} = elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
-	feet	$D_{FC\ to\ UD}$ = depth to UD from the bottom of the filter course	← ≥ 1'
-	feet	$D_{FC\ to\ ROCK}$ = depth to bedrock from the bottom of the filter course	← ≥ 1'
-	feet	$D_{FC\ to\ SHWT}$ = depth to SHWT from the bottom of the filter course	← ≥ 1'
	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
	ft	Elevation of the top of the practice	
-		50 peak elevation ≤ Elevation of the top of the practice	← yes

If a surface sand filter or underground sand filter is proposed:

YES	ac	Drainage Area check.	← < 10 ac
	cf	V = volume of storage[3] (attach a stage-storage table)	← ≥ 75%WQV
	inches	D_{FC} = filter course thickness	← 18", or 24" if within GPA
Sheet		Note what sheet in the plan set contains the filter course specification	
	Yes/No	Access grate provided?	← yes

If a bioretention area is proposed:

YES	ac	Drainage Area no larger than 5 ac?	← yes
	cf	V = volume of storage[3] (attach a stage-storage table)	← ≥ WQV
	inches	D_{FC} = filter course thickness	← 18", or 24" if within GPA
Sheet		Note what sheet in the plan set contains the filter course specification	
	:1	Pond side slopes	← ≥3:1
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	

If porous pavement is proposed:

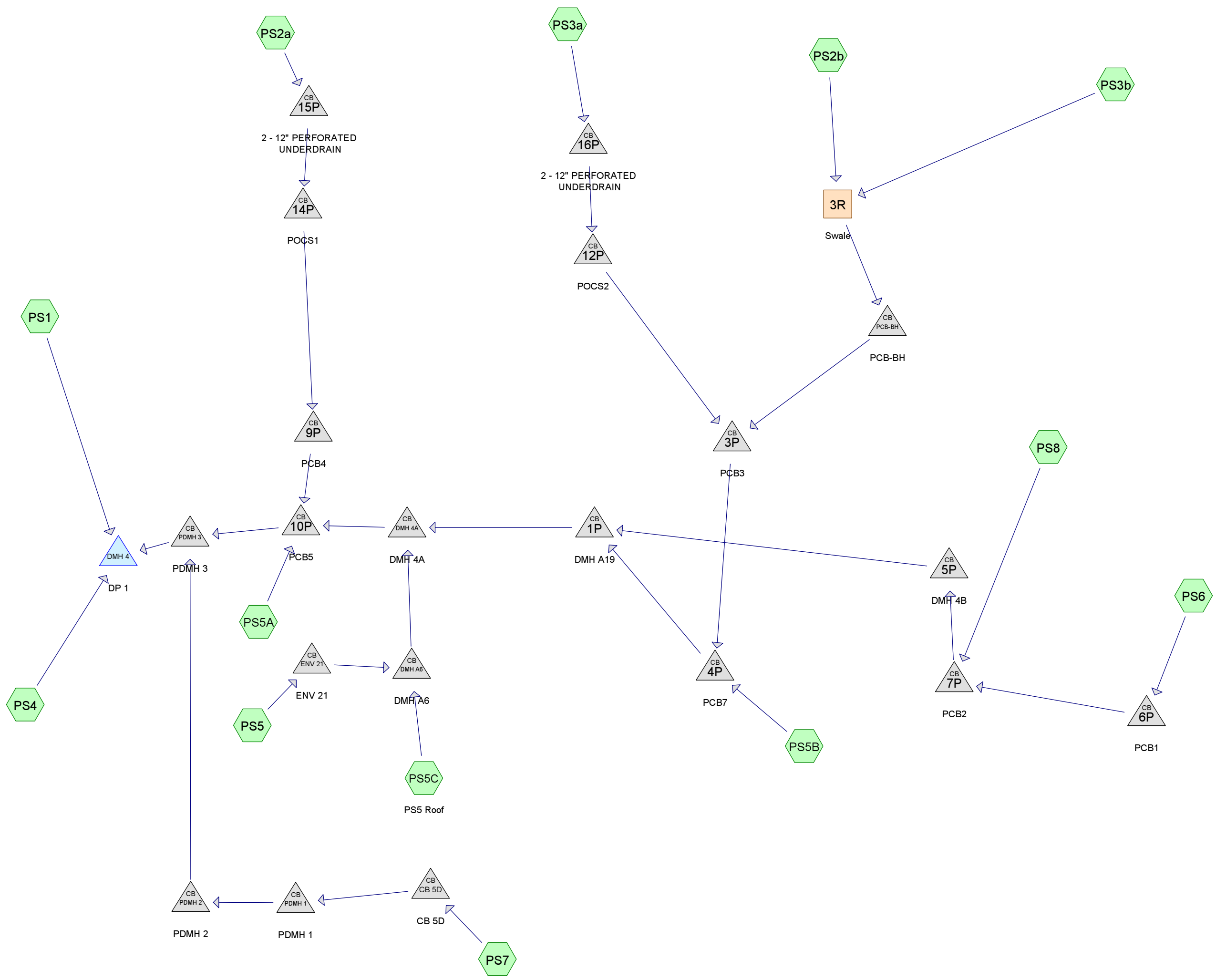
		Type of pavement proposed (concrete? Asphalt? Pavers? Etc)	
	acres	A_{SA} = surface area of the pervious pavement	
1.0	:1	ratio of the contributing area to the pervious surface area	← 5:1
	inches	D_{FC} = filter course thickness	← 12", or 18" if within GPA
Sheet		Note what sheet in the plan set contains the filter course spec.	← 304.1 sand

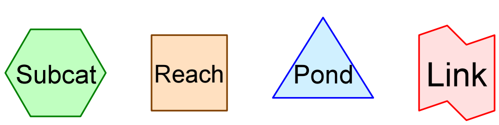
1. Rate of the limiting layer (either the filter course or the underlying soil). See Env-Wq 1504.14 for guidance on determining the infiltration rate.

2. See lines 34, 40 and 48 for required depths of filter media.

3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet stucture, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes:





Routing Diagram for Proposed Conditions
Prepared by Ambit Engineering, Inc., Printed 3/19/2018
HydroCAD® 10.00 s/n 00801 © 2013 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.104	74	>75% Grass cover, Good, HSG C (PS1, PS2a, PS2b, PS3a, PS3b, PS4, PS5, PS5A, PS5B, PS6, PS7, PS8)
2.024	98	Paved parking, HSG C (PS1, PS2a, PS3a, PS3b, PS4, PS5, PS5A, PS5B, PS6, PS7, PS8)
1.577	98	Roofs, HSG C (PS1, PS2b, PS3b, PS4, PS5, PS5C, PS6, PS7)
0.329	98	Sidewalks, HSG C (PS1, PS2a, PS4, PS5, PS5A, PS5B, PS6, PS7)
5.034	**93**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
5.034	HSG C	PS1, PS2a, PS2b, PS3a, PS3b, PS4, PS5, PS5A, PS5B, PS5C, PS6, PS7, PS8
0.000	HSG D	
0.000	Other	
5.034		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	1.104	0.000	0.000	1.104	>75% Grass cover, Good	PS1, PS2a, PS2b, PS3a, PS3b, PS4, PS5, PS5A, PS5B, PS6, PS7, PS8
0.000	0.000	2.024	0.000	0.000	2.024	Paved parking	PS1, PS2a, PS3a, PS3b, PS4, PS5, PS5A, PS5B, PS6, PS7, PS8
0.000	0.000	1.577	0.000	0.000	1.577	Roofs	PS1, PS2b, PS3b, PS4, PS5, PS5C, PS6, PS7
0.000	0.000	0.329	0.000	0.000	0.329	Sidewalks	PS1, PS2a, PS4, PS5, PS5A, PS5B, PS6, PS7
0.000	**0.000**	**5.034**	**0.000**	**0.000**	**5.034**	**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	8.17	7.87	106.0	0.0028	0.012	36.0	0.0	0.0
2	3P	10.00	9.52	43.0	0.0112	0.013	24.0	0.0	0.0
3	4P	9.40	8.20	46.0	0.0261	0.013	24.0	0.0	0.0
4	5P	8.25	8.18	104.0	0.0007	0.012	36.0	0.0	0.0
5	6P	14.00	11.80	109.0	0.0202	0.013	12.0	0.0	0.0
6	7P	11.70	11.60	9.0	0.0111	0.013	12.0	0.0	0.0
7	9P	10.20	10.11	18.0	0.0050	0.013	24.0	0.0	0.0
8	10P	7.85	7.49	45.0	0.0080	0.013	36.0	0.0	0.0
9	12P	10.90	10.10	40.0	0.0200	0.013	24.0	0.0	0.0
10	14P	11.00	10.30	46.0	0.0152	0.013	24.0	0.0	0.0
11	15P	13.50	13.50	65.0	0.0000	0.013	12.0	0.0	0.0
12	16P	13.00	13.00	75.0	0.0000	0.013	12.0	0.0	0.0
13	CB 5D	10.24	9.87	37.0	0.0100	0.013	12.0	0.0	0.0
14	DMH 4A	7.85	7.74	23.0	0.0048	0.012	36.0	0.0	0.0
15	DMH A6	8.50	8.41	44.0	0.0020	0.012	24.0	0.0	0.0
16	ENV 21	9.00	8.90	10.0	0.0100	0.013	18.0	0.0	0.0
17	PCB-BH	10.20	10.10	34.0	0.0029	0.013	12.0	0.0	0.0
18	PDMH 1	10.04	9.15	78.0	0.0114	0.013	12.0	0.0	0.0
19	PDMH 2	9.05	8.49	196.0	0.0029	0.013	24.0	0.0	0.0
20	PDMH 3	7.48	6.94	110.0	0.0049	0.012	36.0	0.0	0.0

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 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 PS1: Runoff Area=7,157 sf 95.88% Impervious Runoff Depth=3.34"
Tc=5.0 min CN=97 Runoff=0.6 cfs 0.046 af

Subcatchment PS2a: Runoff Area=20,584 sf 77.98% Impervious Runoff Depth=2.92"
Tc=5.0 min CN=93 Runoff=1.6 cfs 0.115 af

Subcatchment PS2b: Runoff Area=11,747 sf 83.79% Impervious Runoff Depth=3.02"
Tc=5.0 min CN=94 Runoff=0.9 cfs 0.068 af

Subcatchment PS3a: Runoff Area=19,589 sf 82.66% Impervious Runoff Depth=3.02"
Tc=5.0 min CN=94 Runoff=1.5 cfs 0.113 af

Subcatchment PS3b: Runoff Area=40,960 sf 73.37% Impervious Runoff Depth=2.82"
Tc=5.0 min CN=92 Runoff=3.0 cfs 0.221 af

Subcatchment PS4: Runoff Area=12,006 sf 85.32% Impervious Runoff Depth=3.02"
Tc=5.0 min CN=94 Runoff=0.9 cfs 0.069 af

Subcatchment PS5: Runoff Area=34,260 sf 68.76% Impervious Runoff Depth=2.72"
Tc=5.0 min CN=91 Runoff=2.5 cfs 0.178 af

Subcatchment PS5A: Runoff Area=9,298 sf 93.79% Impervious Runoff Depth=3.34"
Tc=5.0 min CN=97 Runoff=0.8 cfs 0.059 af

Subcatchment PS5B: Runoff Area=13,605 sf 74.26% Impervious Runoff Depth=2.82"
Tc=5.0 min CN=92 Runoff=1.0 cfs 0.073 af

Subcatchment PS5C: PS5 Roof Runoff Area=18,430 sf 100.00% Impervious Runoff Depth=3.46"
Tc=5.0 min CN=98 Runoff=1.5 cfs 0.122 af

Subcatchment PS6: Runoff Area=20,527 sf 57.17% Impervious Runoff Depth=2.44"
Tc=5.0 min CN=88 Runoff=1.3 cfs 0.096 af

Subcatchment PS7: Runoff Area=8,740 sf 85.26% Impervious Runoff Depth=3.02"
Tc=5.0 min CN=94 Runoff=0.7 cfs 0.051 af

Subcatchment PS8: Runoff Area=2,398 sf 81.98% Impervious Runoff Depth=3.02"
Tc=5.0 min CN=94 Runoff=0.2 cfs 0.014 af

Reach 3R: Swale Avg. Flow Depth=0.49' Max Vel=1.60 fps Inflow=3.9 cfs 0.289 af
n=0.030 L=380.0' S=0.0050 '/' Capacity=16.9 cfs Outflow=3.5 cfs 0.289 af

Pond 1P: DMH A19 Peak Elev=9.92' Inflow=7.4 cfs 0.585 af
36.0" Round Culvert n=0.012 L=106.0' S=0.0028 '/' Outflow=7.4 cfs 0.585 af

Pond 3P: PCB3 Peak Elev=11.04' Inflow=4.9 cfs 0.402 af
24.0" Round Culvert n=0.013 L=43.0' S=0.0112 '/' Outflow=4.9 cfs 0.402 af

Pond 4P: PCB7 Peak Elev=10.47' Inflow=5.9 cfs 0.475 af
24.0" Round Culvert n=0.013 L=46.0' S=0.0261 '/' Outflow=5.9 cfs 0.475 af

Pond 5P: DMH 4B Peak Elev=9.92' Inflow=1.5 cfs 0.110 af
36.0" Round Culvert n=0.012 L=104.0' S=0.0007 '/' Outflow=1.5 cfs 0.110 af

Pond 6P: PCB1 Peak Elev=14.61' Inflow=1.3 cfs 0.096 af
12.0" Round Culvert n=0.013 L=109.0' S=0.0202 '/' Outflow=1.3 cfs 0.096 af

Pond 7P: PCB2 Peak Elev=12.47' Inflow=1.5 cfs 0.110 af
12.0" Round Culvert n=0.013 L=9.0' S=0.0111 '/' Outflow=1.5 cfs 0.110 af

Pond 9P: PCB4 Peak Elev=10.82' Inflow=1.6 cfs 0.115 af
24.0" Round Culvert n=0.013 L=18.0' S=0.0050 '/' Outflow=1.6 cfs 0.115 af

Pond 10P: PCB5 Peak Elev=9.64' Inflow=13.6 cfs 1.060 af
36.0" Round Culvert n=0.013 L=45.0' S=0.0080 '/' Outflow=13.6 cfs 1.060 af

Pond 12P: POCS2 Peak Elev=11.42' Inflow=1.5 cfs 0.113 af
24.0" Round Culvert n=0.013 L=40.0' S=0.0200 '/' Outflow=1.5 cfs 0.113 af

Pond 14P: POCS1 Peak Elev=11.52' Inflow=1.6 cfs 0.115 af
24.0" Round Culvert n=0.013 L=46.0' S=0.0152 '/' Outflow=1.6 cfs 0.115 af

Pond 15P: 2 - 12" PERFORATED UNDERDRAIN Peak Elev=14.21' Inflow=1.6 cfs 0.115 af
12.0" Round Culvert x 2.00 n=0.013 L=65.0' S=0.0000 '/' Outflow=1.6 cfs 0.115 af

Pond 16P: 2 - 12" PERFORATED UNDERDRAIN Peak Elev=13.72' Inflow=1.5 cfs 0.113 af
12.0" Round Culvert x 2.00 n=0.013 L=75.0' S=0.0000 '/' Outflow=1.5 cfs 0.113 af

Pond CB 5D: CB 5D Peak Elev=10.74' Inflow=0.7 cfs 0.051 af
12.0" Round Culvert n=0.013 L=37.0' S=0.0100 '/' Outflow=0.7 cfs 0.051 af

Pond DMH 4: DP 1 Inflow=15.7 cfs 1.225 af
Primary=15.7 cfs 1.225 af

Pond DMH 4A: DMH 4A Peak Elev=9.82' Inflow=11.3 cfs 0.885 af
36.0" Round Culvert n=0.012 L=23.0' S=0.0048 '/' Outflow=11.3 cfs 0.885 af

Pond DMH A6: DMH A6 Peak Elev=9.88' Inflow=4.0 cfs 0.300 af
24.0" Round Culvert n=0.012 L=44.0' S=0.0020 '/' Outflow=4.0 cfs 0.300 af

Pond ENV 21: ENV 21 Peak Elev=9.92' Inflow=2.5 cfs 0.178 af
18.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=2.5 cfs 0.178 af

Pond PCB-BH: PCB-BH Peak Elev=11.89' Inflow=3.5 cfs 0.289 af
12.0" Round Culvert n=0.013 L=34.0' S=0.0029 '/' Outflow=3.5 cfs 0.289 af

Pond PDMH 1: PDMH 1 Peak Elev=10.46' Inflow=0.7 cfs 0.051 af
12.0" Round Culvert n=0.013 L=78.0' S=0.0114 '/' Outflow=0.7 cfs 0.051 af

Pond PDMH 2: PDMH 2 Peak Elev=9.52' Inflow=0.7 cfs 0.051 af
24.0" Round Culvert n=0.013 L=196.0' S=0.0029 '/' Outflow=0.7 cfs 0.051 af

Pond PDMH 3: PDMH 3 Peak Elev=9.13' Inflow=14.2 cfs 1.110 af
36.0" Round Culvert n=0.012 L=110.0' S=0.0049 '/' Outflow=14.2 cfs 1.110 af

Total Runoff Area = 5.034 ac Runoff Volume = 1.225 af Average Runoff Depth = 2.92"
21.93% Pervious = 1.104 ac 78.07% Impervious = 3.930 ac

Summary for Subcatchment PS1:

[49] Hint: Tc<2dt may require smaller dt

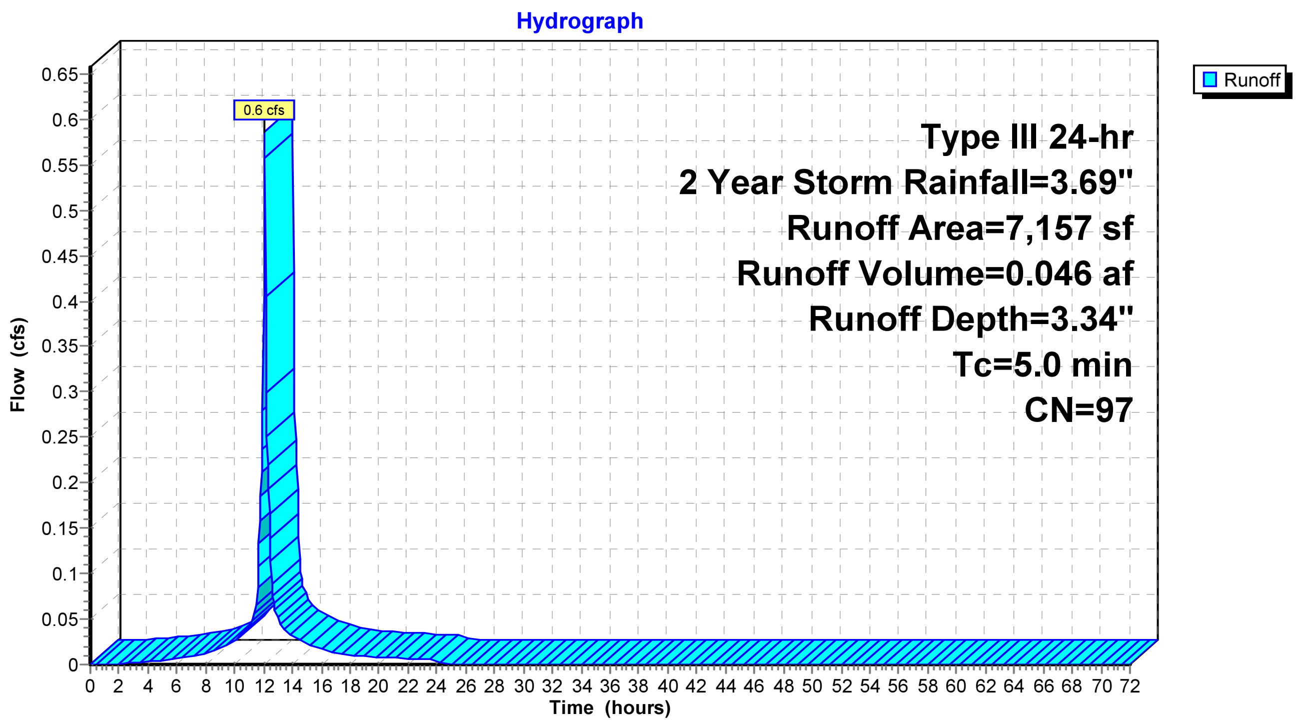
Runoff = 0.6 cfs @ 12.07 hrs, Volume= 0.046 af, Depth= 3.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Storm Rainfall=3.69"

	Area (sf)	CN	Description
	1,344	98	Paved parking, HSG C
*	544	98	Sidewalks, HSG C
	4,974	98	Roofs, HSG C
	295	74	>75% Grass cover, Good, HSG C
	7,157	97	Weighted Average
	295		4.12% Pervious Area
	6,862		95.88% Impervious Area

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

Subcatchment PS1:



Summary for Subcatchment PS2a:

[49] Hint: Tc<2dt may require smaller dt

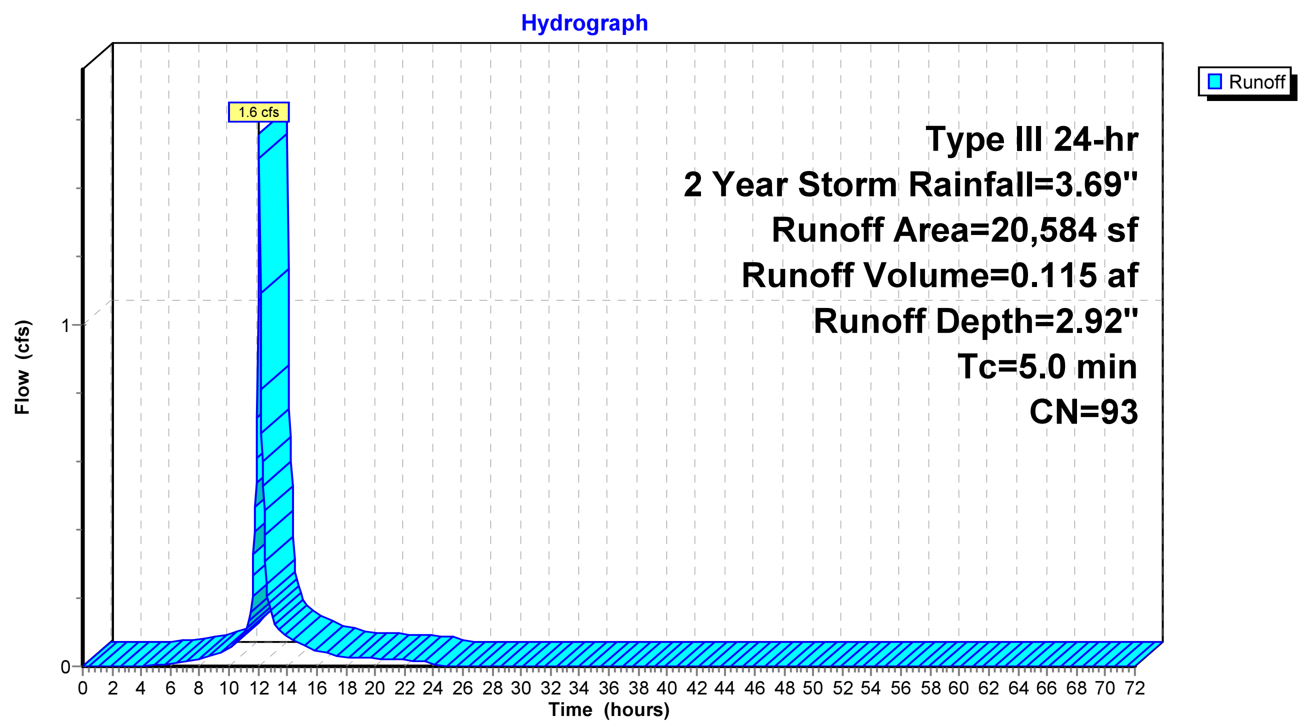
Runoff = 1.6 cfs @ 12.07 hrs, Volume= 0.115 af, Depth= 2.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Storm Rainfall=3.69"

	Area (sf)	CN	Description
	15,319	98	Paved parking, HSG C
*	733	98	Sidewalks, HSG C
	4,532	74	>75% Grass cover, Good, HSG C
	20,584	93	Weighted Average
	4,532		22.02% Pervious Area
	16,052		77.98% Impervious Area

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

Subcatchment PS2a:



Summary for Subcatchment PS2b:

[49] Hint: Tc<2dt may require smaller dt

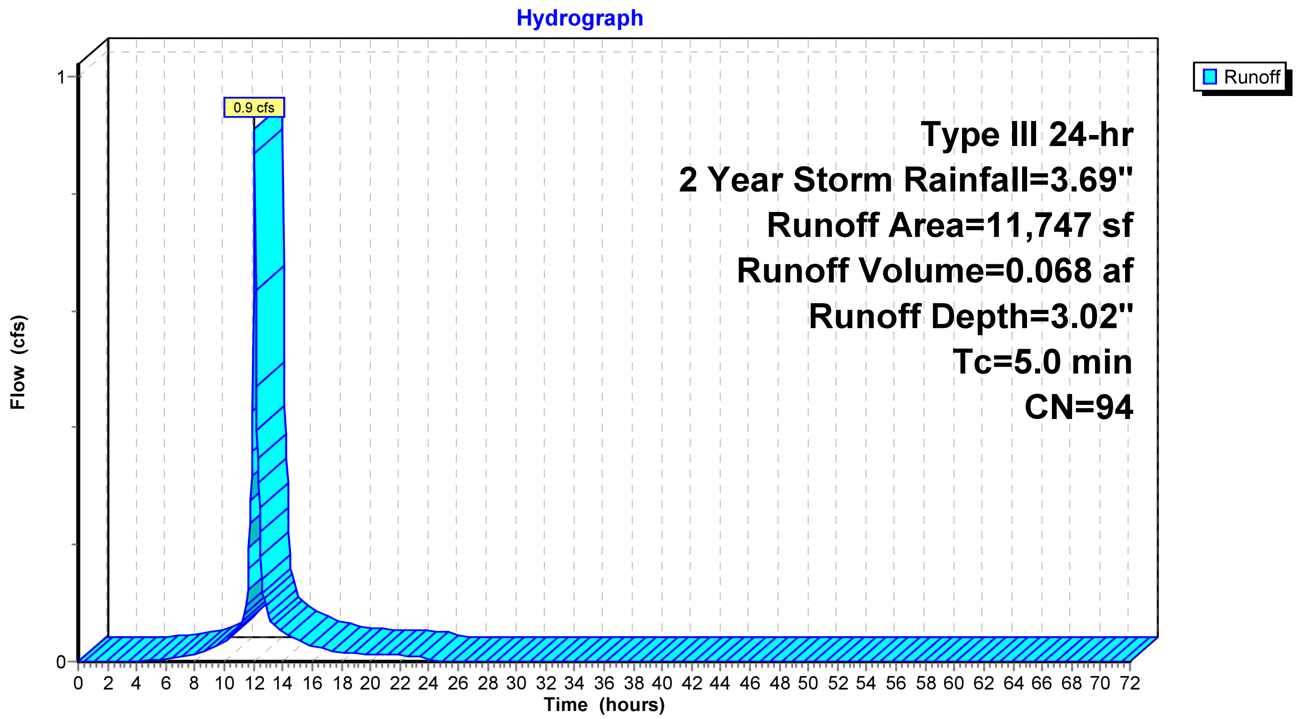
Runoff = 0.9 cfs @ 12.07 hrs, Volume= 0.068 af, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Storm Rainfall=3.69"

Area (sf)	CN	Description
9,843	98	Roofs, HSG C
1,904	74	>75% Grass cover, Good, HSG C
11,747	94	Weighted Average
1,904		16.21% Pervious Area
9,843		83.79% Impervious Area

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

Subcatchment PS2b:



Summary for Subcatchment PS3a:

[49] Hint: Tc<2dt may require smaller dt

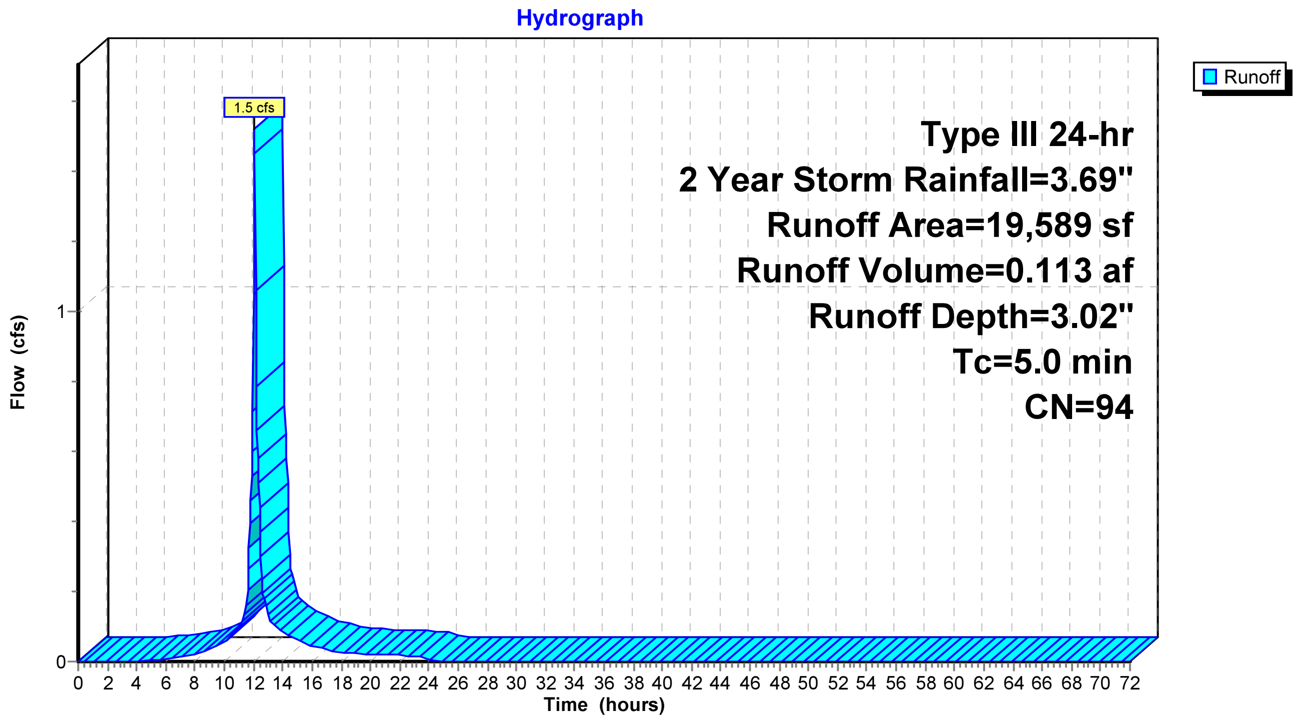
Runoff = 1.5 cfs @ 12.07 hrs, Volume= 0.113 af, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Storm Rainfall=3.69"

Area (sf)	CN	Description
16,192	98	Paved parking, HSG C
3,397	74	>75% Grass cover, Good, HSG C
19,589	94	Weighted Average
3,397		17.34% Pervious Area
16,192		82.66% Impervious Area

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

Subcatchment PS3a:



Summary for Subcatchment PS3b:

[49] Hint: Tc<2dt may require smaller dt

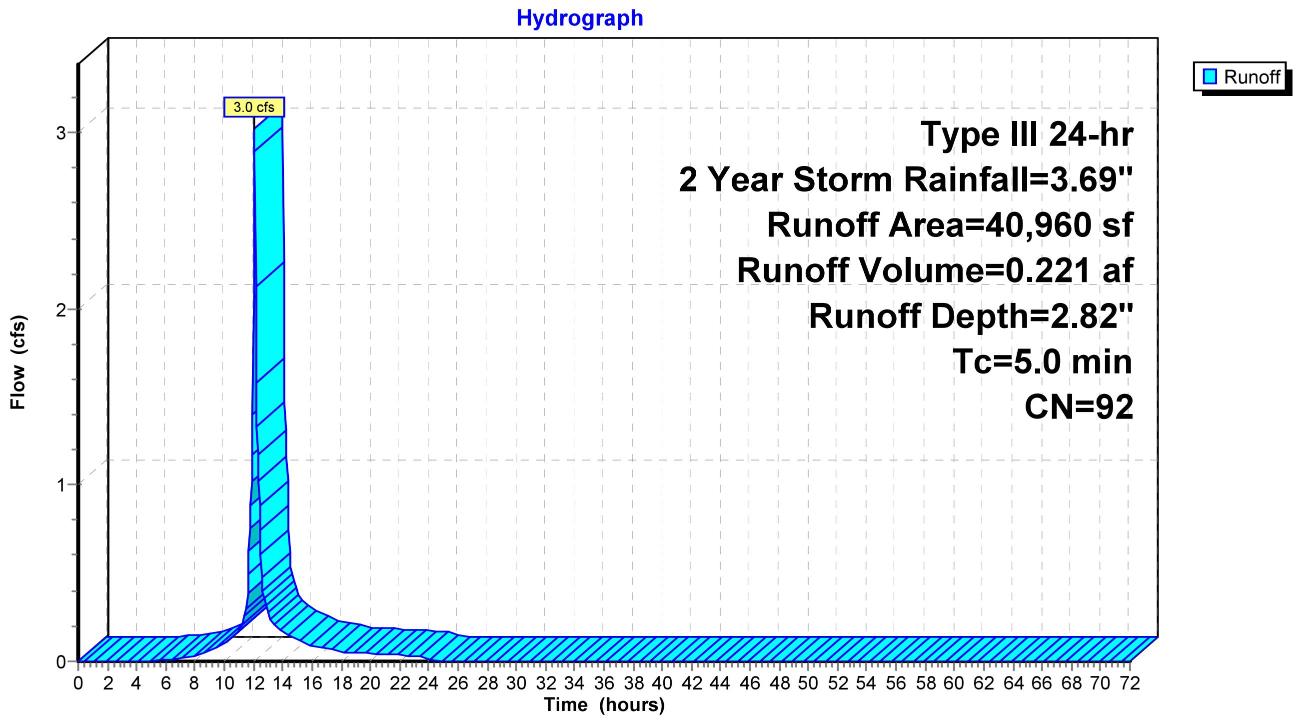
Runoff = 3.0 cfs @ 12.07 hrs, Volume= 0.221 af, Depth= 2.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Storm Rainfall=3.69"

Area (sf)	CN	Description
24,825	98	Roofs, HSG C
10,906	74	>75% Grass cover, Good, HSG C
5,229	98	Paved parking, HSG C
40,960	92	Weighted Average
10,906		26.63% Pervious Area
30,054		73.37% Impervious Area

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

Subcatchment PS3b:



Summary for Subcatchment PS4:

[49] Hint: Tc<2dt may require smaller dt

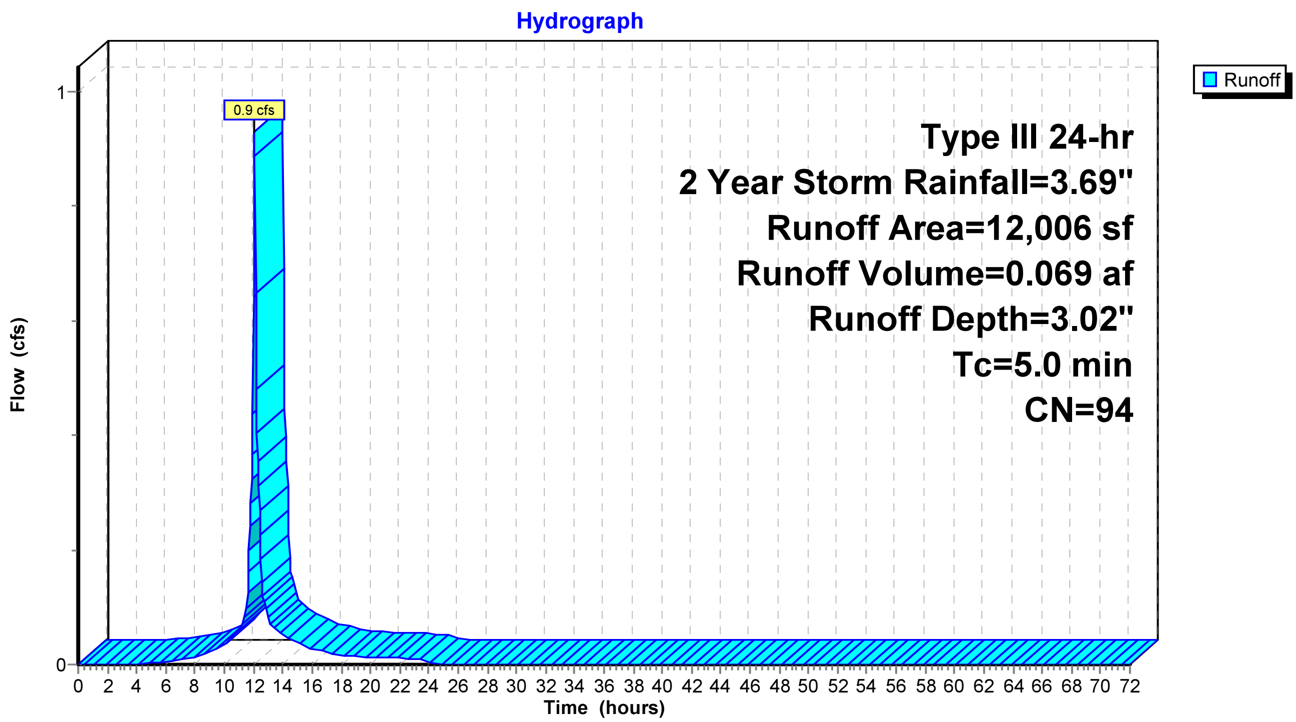
Runoff = 0.9 cfs @ 12.07 hrs, Volume= 0.069 af, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Storm Rainfall=3.69"

	Area (sf)	CN	Description
	4,504	98	Paved parking, HSG C
*	2,085	98	Sidewalks, HSG C
	3,654	98	Roofs, HSG C
	1,763	74	>75% Grass cover, Good, HSG C
	12,006	94	Weighted Average
	1,763		14.68% Pervious Area
	10,243		85.32% Impervious Area

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

Subcatchment PS4:



Summary for Subcatchment PS5:

[49] Hint: Tc<2dt may require smaller dt

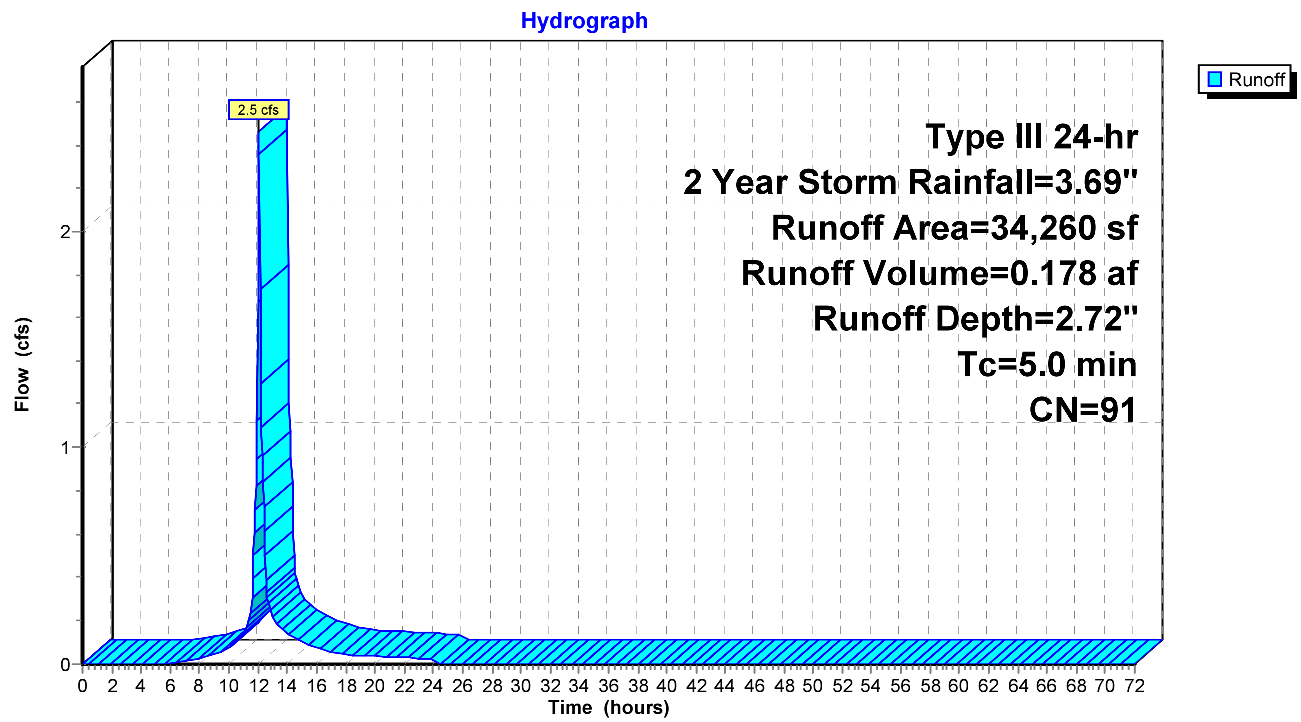
Runoff = 2.5 cfs @ 12.07 hrs, Volume= 0.178 af, Depth= 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Storm Rainfall=3.69"

	Area (sf)	CN	Description
	21,695	98	Paved parking, HSG C
*	310	98	Sidewalks, HSG C
	1,551	98	Roofs, HSG C
	10,704	74	>75% Grass cover, Good, HSG C
	34,260	91	Weighted Average
	10,704		31.24% Pervious Area
	23,556		68.76% Impervious Area

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

Subcatchment PS5:



Summary for Subcatchment PS5A:

[49] Hint: Tc<2dt may require smaller dt

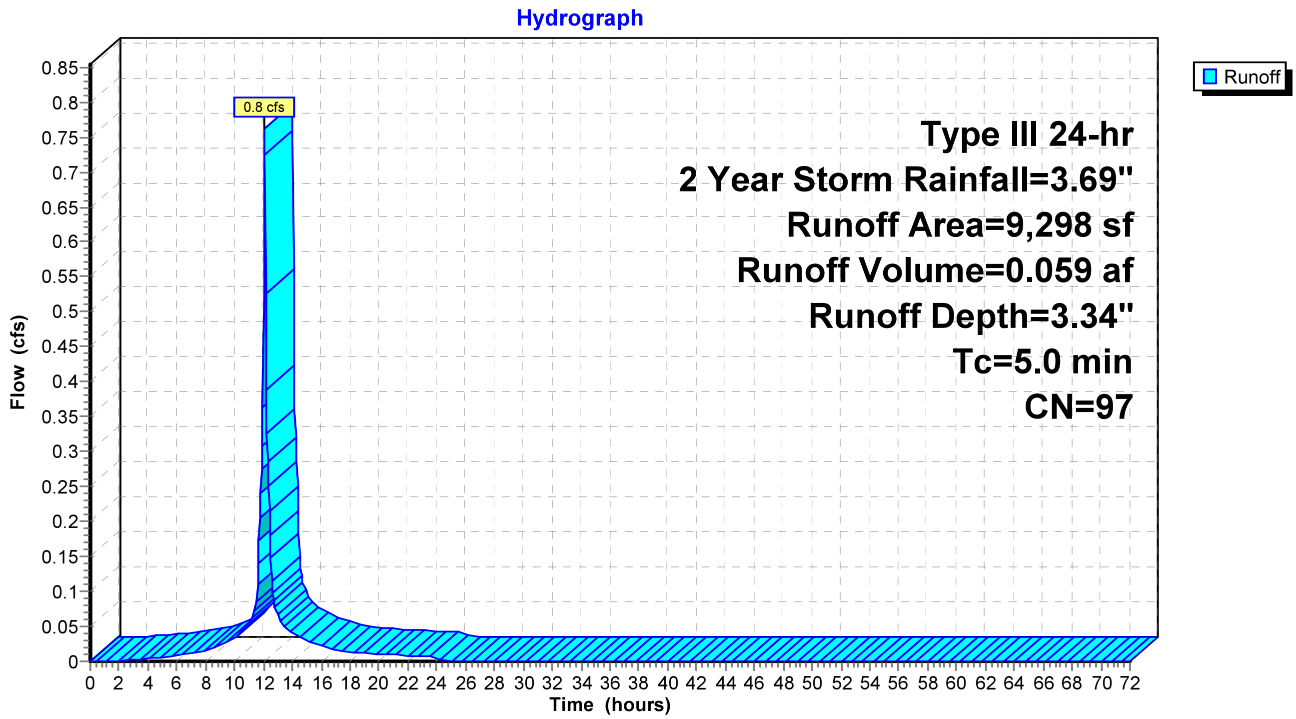
Runoff = 0.8 cfs @ 12.07 hrs, Volume= 0.059 af, Depth= 3.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Storm Rainfall=3.69"

	Area (sf)	CN	Description
	7,491	98	Paved parking, HSG C
*	1,230	98	Sidewalks, HSG C
	577	74	>75% Grass cover, Good, HSG C
	9,298	97	Weighted Average
	577		6.21% Pervious Area
	8,721		93.79% Impervious Area

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

Subcatchment PS5A:



Summary for Subcatchment PS5B:

[49] Hint: Tc<2dt may require smaller dt

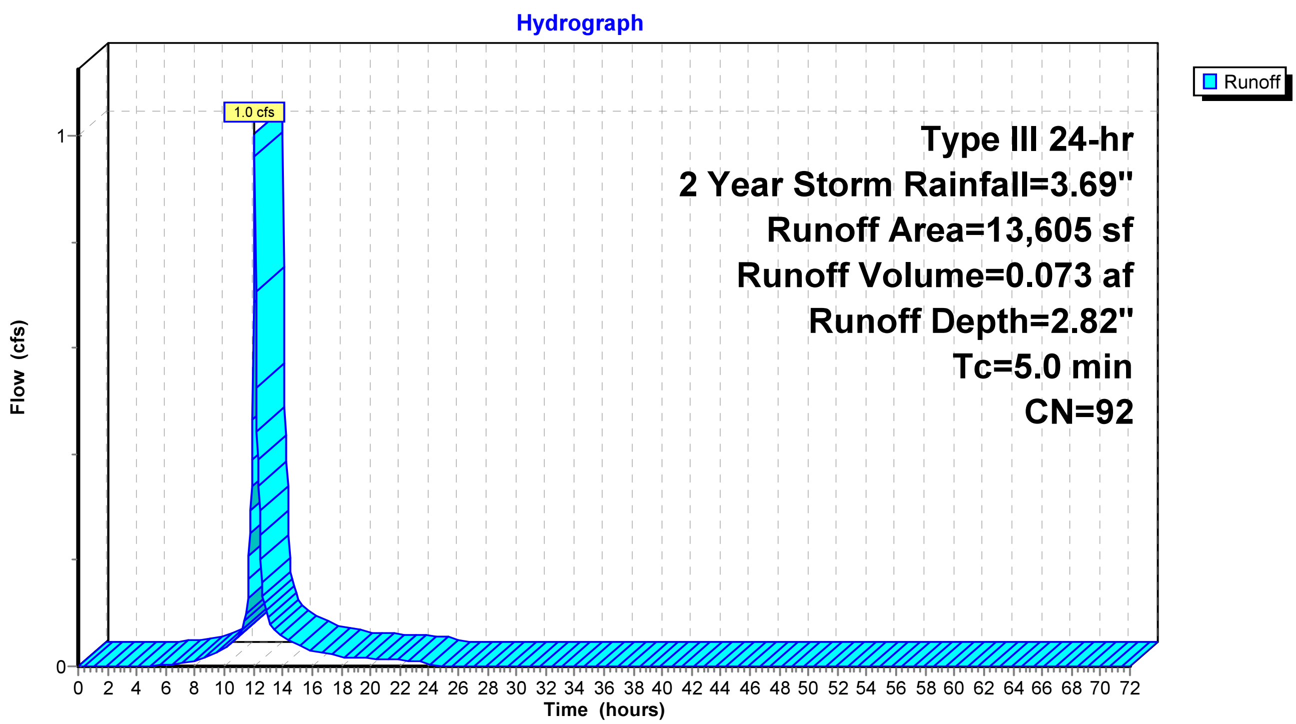
Runoff = 1.0 cfs @ 12.07 hrs, Volume= 0.073 af, Depth= 2.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Storm Rainfall=3.69"

	Area (sf)	CN	Description
	7,275	98	Paved parking, HSG C
*	2,828	98	Sidewalks, HSG C
	3,502	74	>75% Grass cover, Good, HSG C
	13,605	92	Weighted Average
	3,502		25.74% Pervious Area
	10,103		74.26% Impervious Area

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

Subcatchment PS5B:



Summary for Subcatchment PS5C: PS5 Roof

[49] Hint: Tc<2dt may require smaller dt

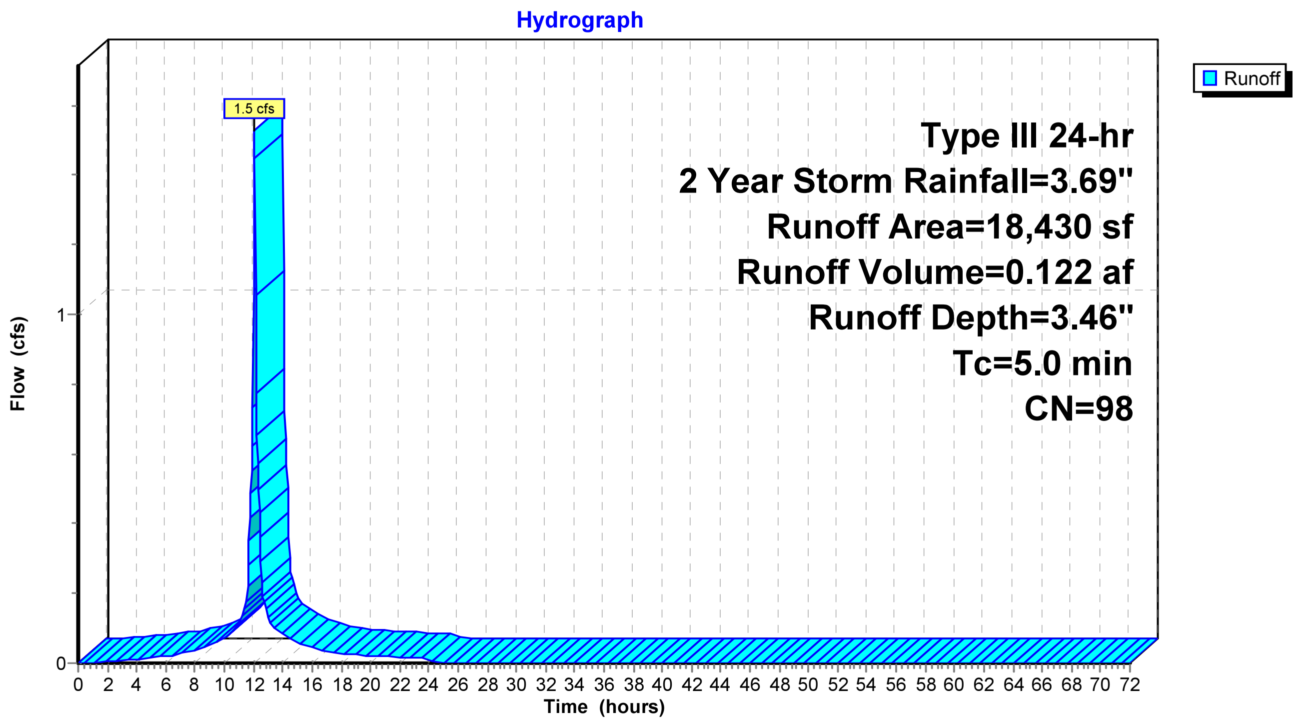
Runoff = 1.5 cfs @ 12.07 hrs, Volume= 0.122 af, Depth= 3.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Storm Rainfall=3.69"

Area (sf)	CN	Description
18,430	98	Roofs, HSG C
18,430		100.00% Impervious Area

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

Subcatchment PS5C: PS5 Roof



Summary for Subcatchment PS6:

[49] Hint: Tc<2dt may require smaller dt

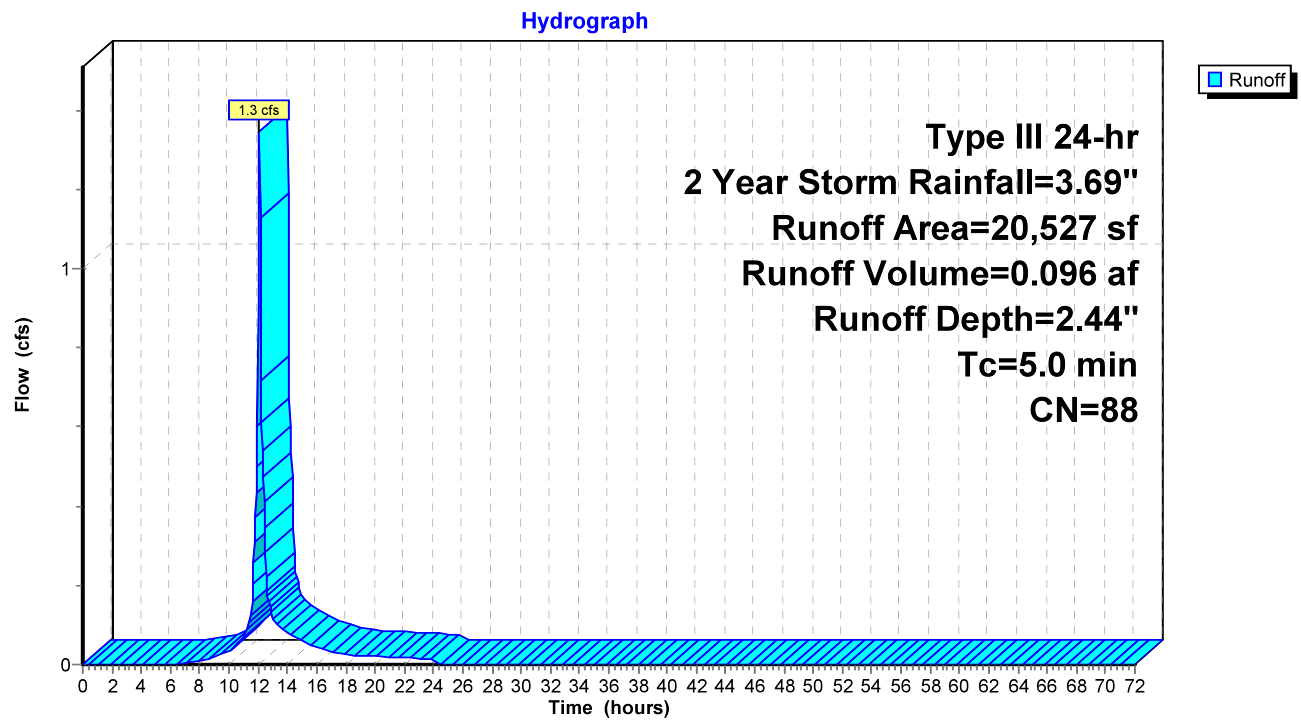
Runoff = 1.3 cfs @ 12.07 hrs, Volume= 0.096 af, Depth= 2.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Storm Rainfall=3.69"

	Area (sf)	CN	Description
	6,762	98	Paved parking, HSG C
*	2,312	98	Sidewalks, HSG C
	2,662	98	Roofs, HSG C
	8,791	74	>75% Grass cover, Good, HSG C
	20,527	88	Weighted Average
	8,791		42.83% Pervious Area
	11,736		57.17% Impervious Area

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

Subcatchment PS6:



Summary for Subcatchment PS7:

[49] Hint: Tc<2dt may require smaller dt

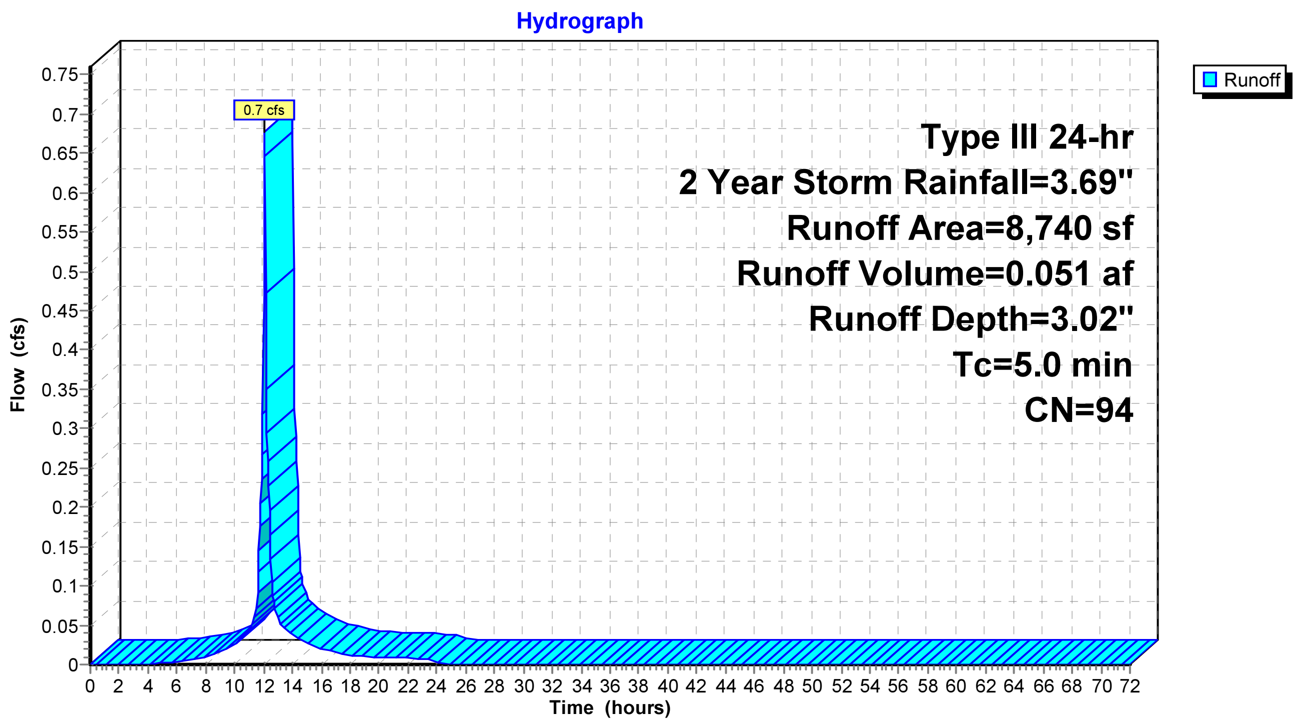
Runoff = 0.7 cfs @ 12.07 hrs, Volume= 0.051 af, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Storm Rainfall=3.69"

	Area (sf)	CN	Description
	410	98	Paved parking, HSG C
*	4,272	98	Sidewalks, HSG C
	2,770	98	Roofs, HSG C
	1,288	74	>75% Grass cover, Good, HSG C
	8,740	94	Weighted Average
	1,288		14.74% Pervious Area
	7,452		85.26% Impervious Area

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

Subcatchment PS7:



Summary for Subcatchment PS8:

[49] Hint: Tc<2dt may require smaller dt

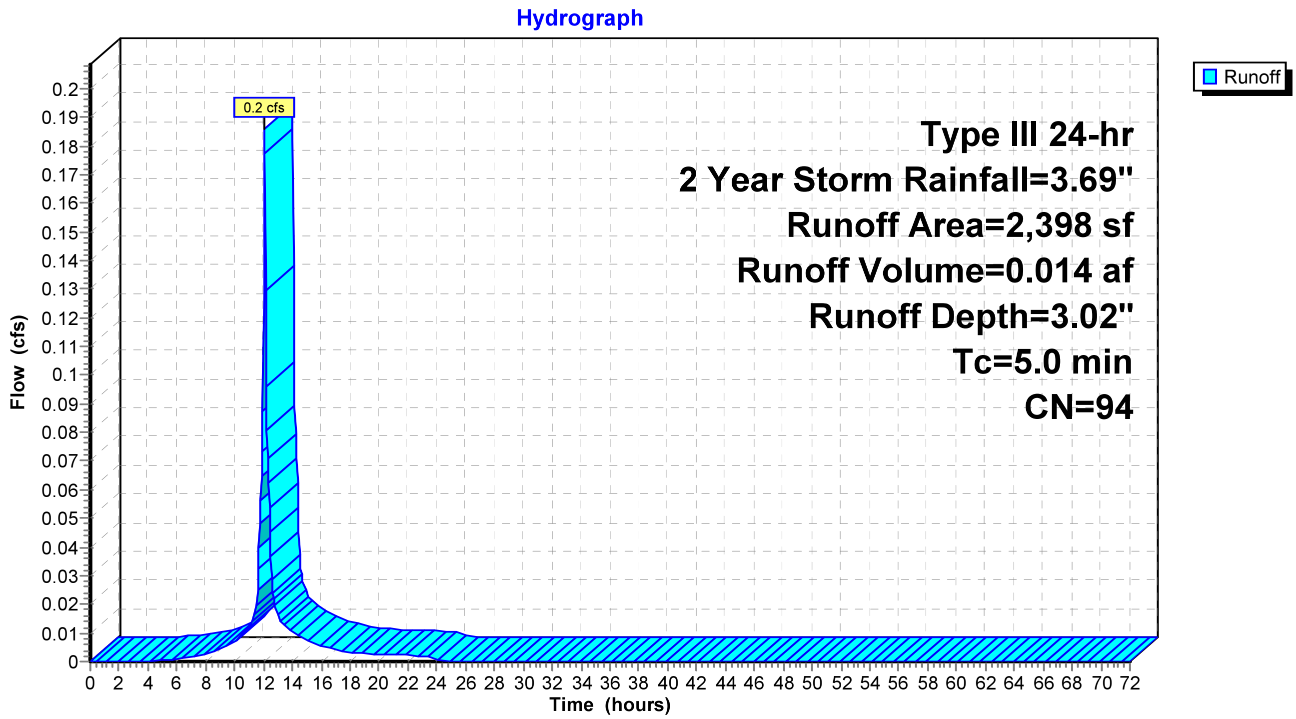
Runoff = 0.2 cfs @ 12.07 hrs, Volume= 0.014 af, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Storm Rainfall=3.69"

Area (sf)	CN	Description
1,966	98	Paved parking, HSG C
432	74	>75% Grass cover, Good, HSG C
2,398	94	Weighted Average
432		18.02% Pervious Area
1,966		81.98% Impervious Area

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

Subcatchment PS8:



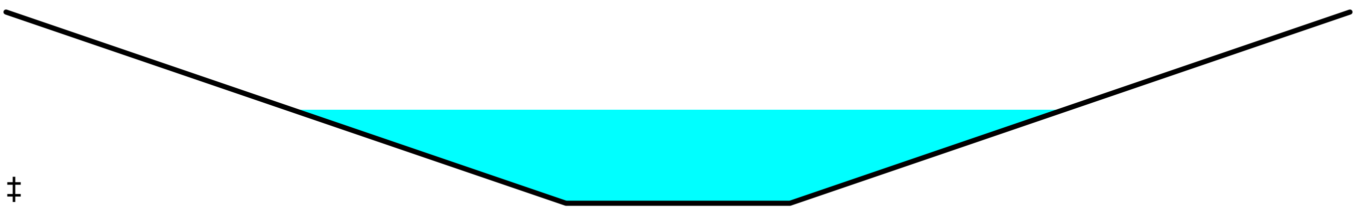
Summary for Reach 3R: Swale

Inflow Area = 1.210 ac, 75.70% Impervious, Inflow Depth = 2.86" for 2 Year Storm event
Inflow = 3.9 cfs @ 12.07 hrs, Volume= 0.289 af
Outflow = 3.5 cfs @ 12.12 hrs, Volume= 0.289 af, Atten= 11%, Lag= 2.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.60 fps, Min. Travel Time= 3.9 min
Avg. Velocity = 0.47 fps, Avg. Travel Time= 13.4 min

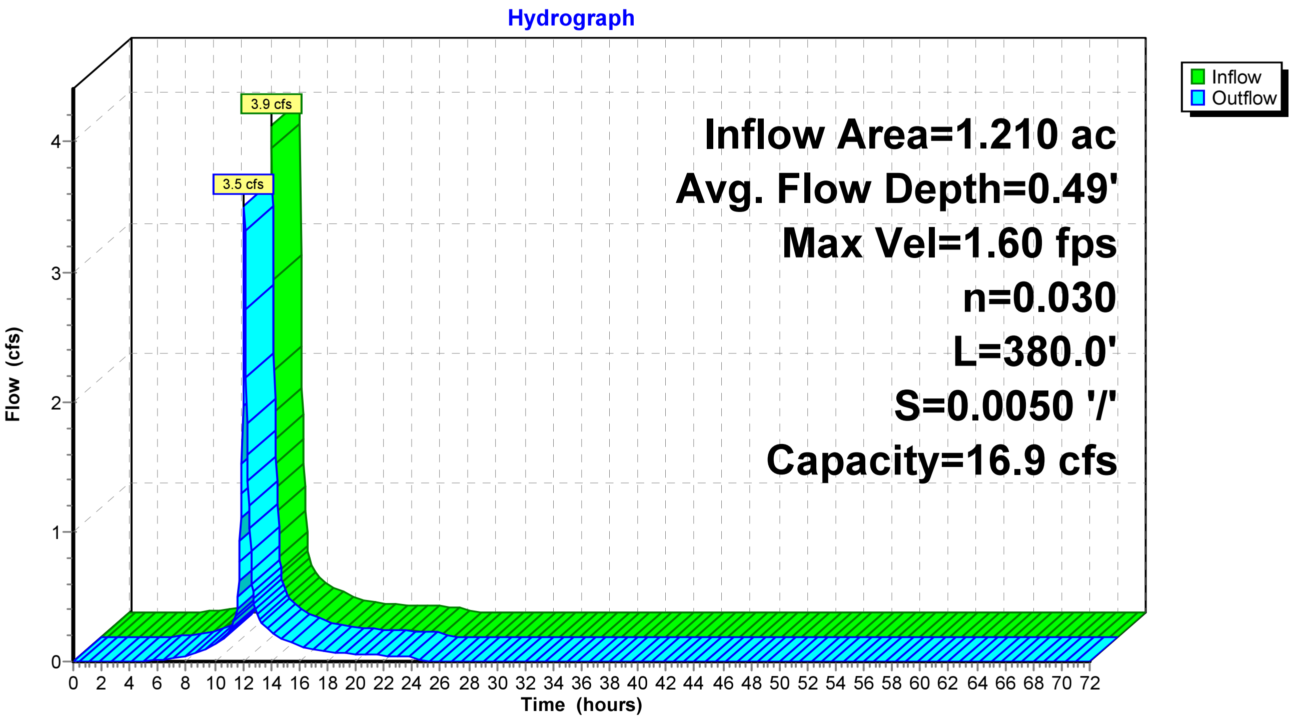
Peak Storage= 828 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.49'
Bank-Full Depth= 1.00' Flow Area= 7.0 sf, Capacity= 16.9 cfs

2.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 5.0 '/' Top Width= 12.00'
Length= 380.0' Slope= 0.0050 '/'
Inlet Invert= 17.15', Outlet Invert= 15.25'



‡

Reach 3R: Swale



Summary for Pond 1P: DMH A19

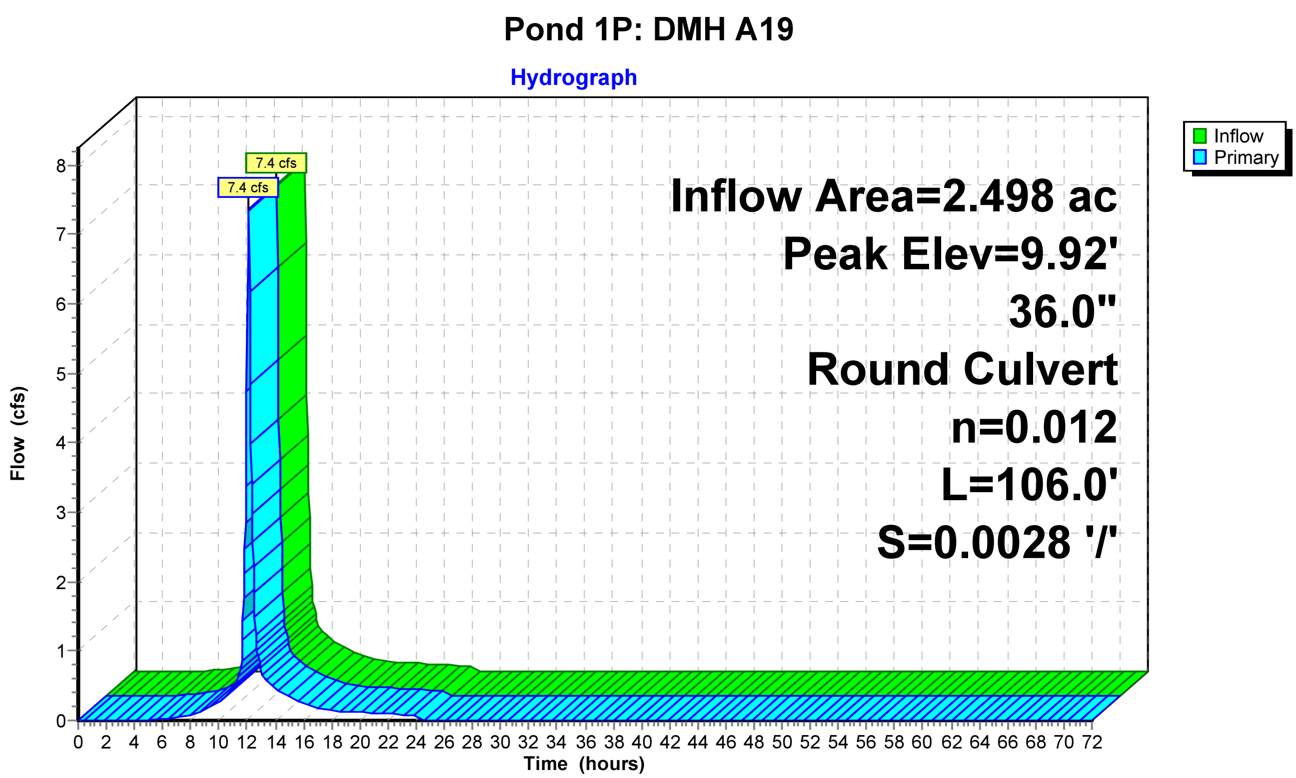
[57] Hint: Peaked at 9.92' (Flood elevation advised)
[80] Warning: Exceeded Pond 5P by 0.19' @ 12.05 hrs (4.7 cfs 0.103 af)

Inflow Area =	2.498 ac, 73.41% Impervious, Inflow Depth = 2.81"	for 2 Year Storm event	
Inflow =	7.4 cfs @ 12.09 hrs, Volume=	0.585 af	
Outflow =	7.4 cfs @ 12.09 hrs, Volume=	0.585 af,	Atten= 0%, Lag= 0.0 min
Primary =	7.4 cfs @ 12.09 hrs, Volume=	0.585 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 9.92' @ 12.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	8.17'	**36.0" Round Culvert** L= 106.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 8.17' / 7.87' S= 0.0028 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 7.07 sf

Primary OutFlow Max=2.9 cfs @ 12.09 hrs HW=9.77' TW=9.72' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 2.9 cfs @ 1.09 fps)



Summary for Pond 3P: PCB3

[57] Hint: Peaked at 11.04' (Flood elevation advised)

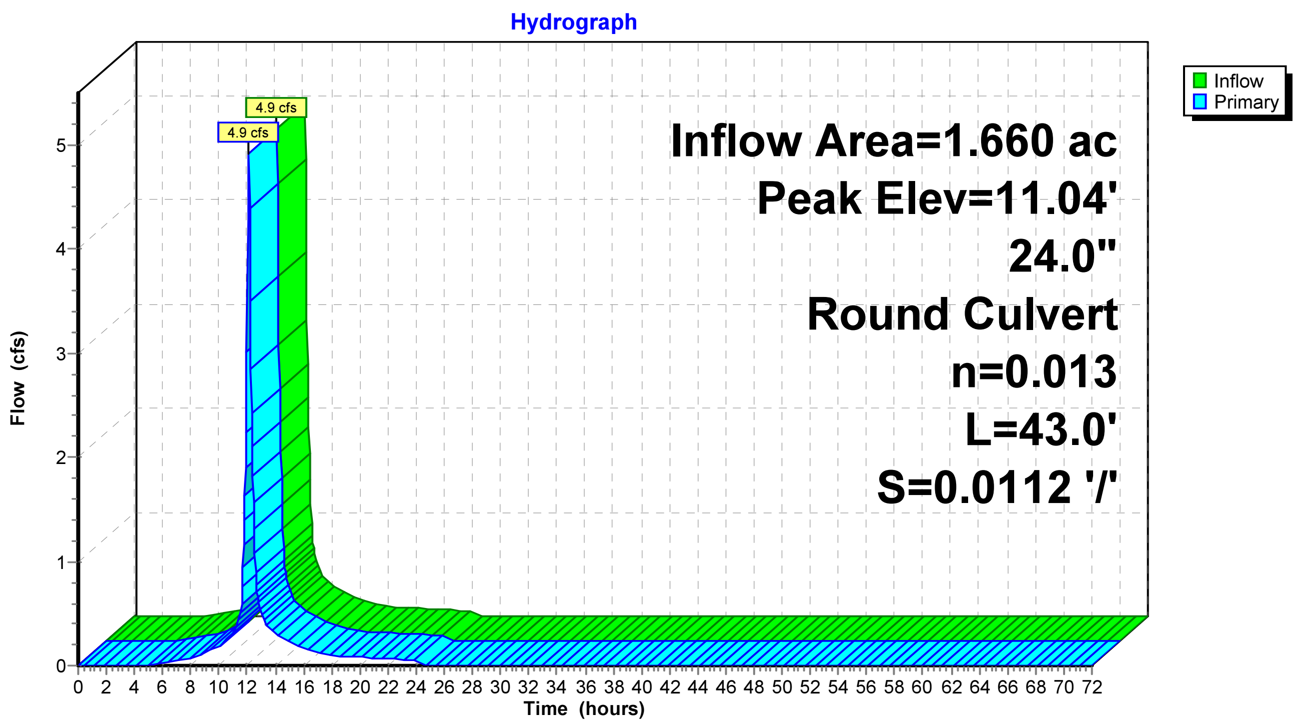
Inflow Area =	1.660 ac, 77.58% Impervious,	Inflow Depth = 2.91"	for 2 Year Storm event	
Inflow =	4.9 cfs @	12.10 hrs, Volume=	0.402 af	
Outflow =	4.9 cfs @	12.10 hrs, Volume=	0.402 af,	Atten= 0%, Lag= 0.0 min
Primary =	4.9 cfs @	12.10 hrs, Volume=	0.402 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.04' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.00'	**24.0" Round Culvert** L= 43.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.00' / 9.52' S= 0.0112 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=4.6 cfs @ 12.10 hrs HW=11.03' TW=10.46' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 4.6 cfs @ 4.11 fps)

Pond 3P: PCB3



Summary for Pond 4P: PCB7

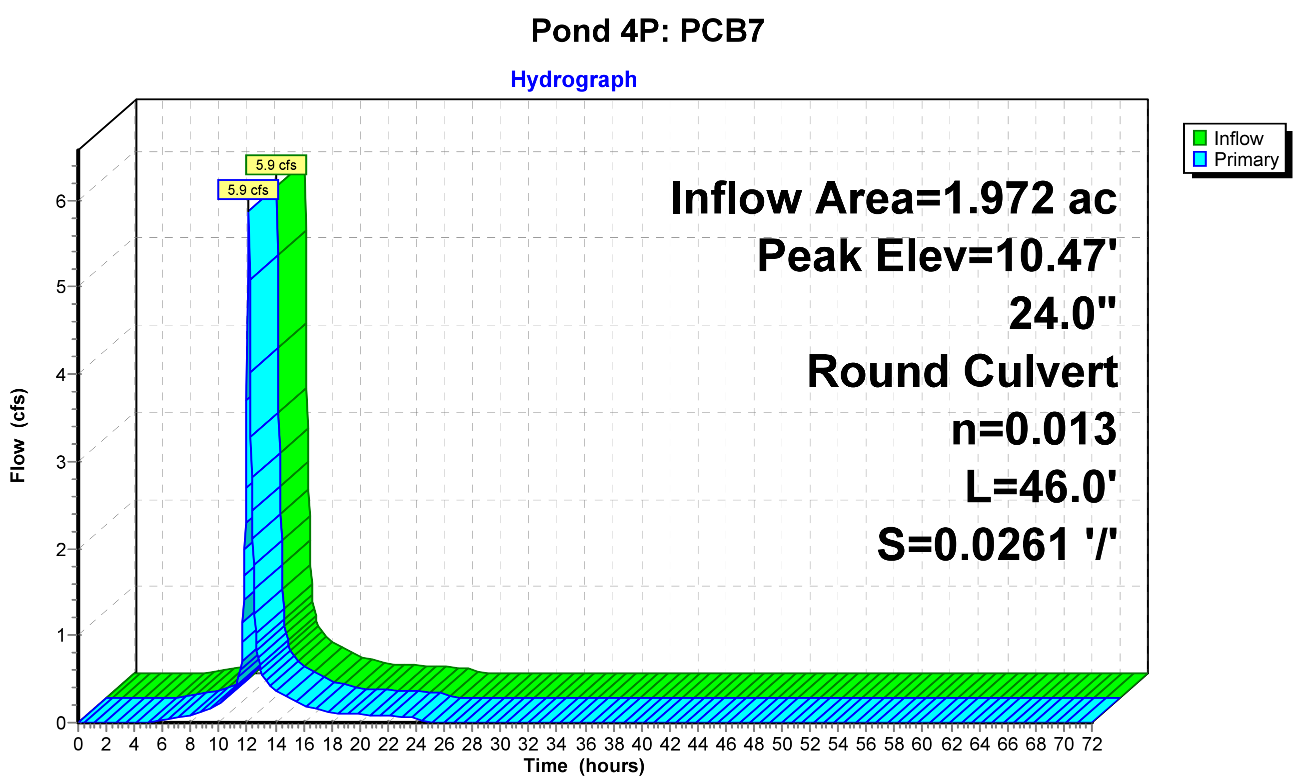
[57] Hint: Peaked at 10.47' (Flood elevation advised)

Inflow Area = 1.972 ac, 77.06% Impervious, Inflow Depth = 2.89" for 2 Year Storm event
Inflow = 5.9 cfs @ 12.10 hrs, Volume= 0.475 af
Outflow = 5.9 cfs @ 12.10 hrs, Volume= 0.475 af, Atten= 0%, Lag= 0.0 min
Primary = 5.9 cfs @ 12.10 hrs, Volume= 0.475 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 10.47' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	9.40'	**24.0" Round Culvert** L= 46.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.40' / 8.20' S= 0.0261 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=5.1 cfs @ 12.10 hrs HW=10.46' TW=9.79' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 5.1 cfs @ 4.42 fps)



Summary for Pond 5P: DMH 4B

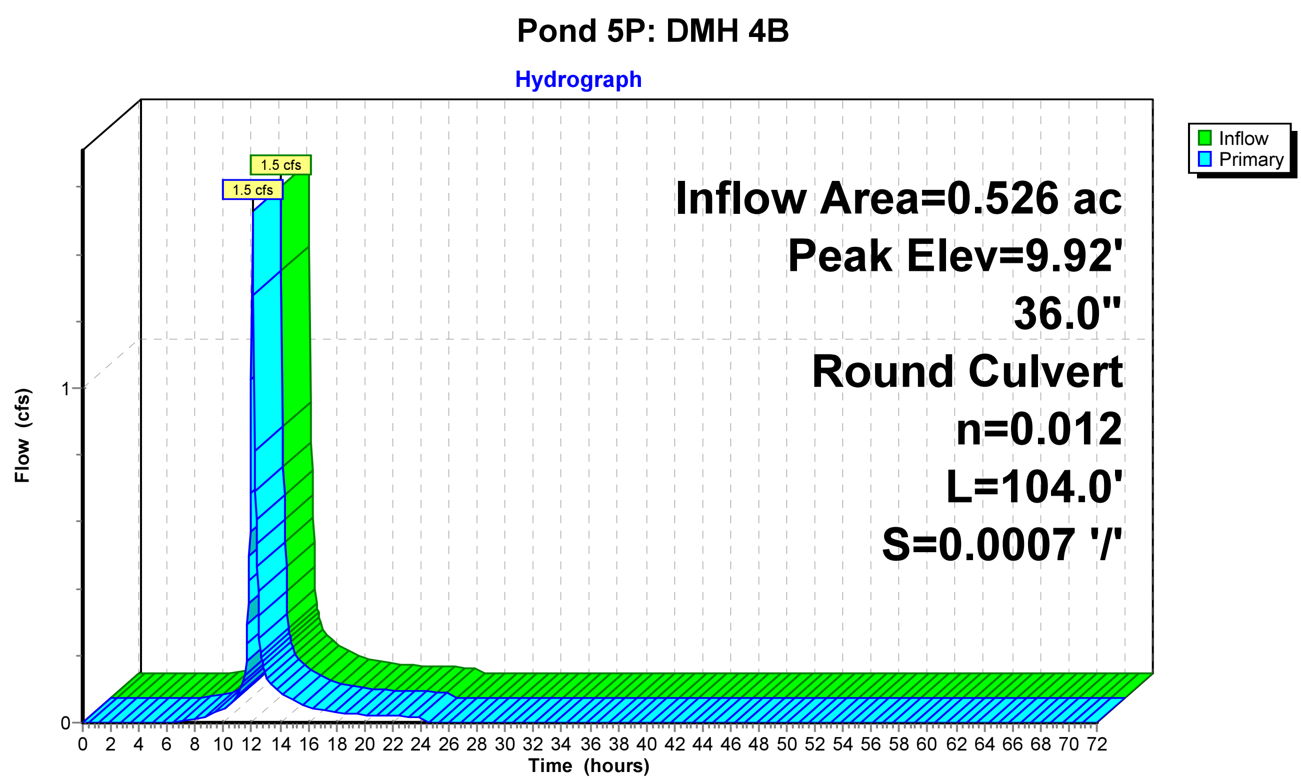
[57] Hint: Peaked at 9.92' (Flood elevation advised)

Inflow Area =	0.526 ac,	59.77% Impervious,	Inflow Depth = 2.50"	for 2 Year Storm event
Inflow =	1.5 cfs @	12.07 hrs, Volume=	0.110 af	
Outflow =	1.5 cfs @	12.07 hrs, Volume=	0.110 af,	Atten= 0%, Lag= 0.0 min
Primary =	1.5 cfs @	12.07 hrs, Volume=	0.110 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 9.92' @ 12.22 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	8.25'	**36.0" Round Culvert** L= 104.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 8.25' / 8.18' S= 0.0007 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 7.07 sf

Primary OutFlow Max=0.0 cfs @ 12.07 hrs HW=9.50' TW=9.69' (Dynamic Tailwater)
└─**1=Culvert** (Controls 0.0 cfs)



Summary for Pond 6P: PCB1

[57] Hint: Peaked at 14.61' (Flood elevation advised)

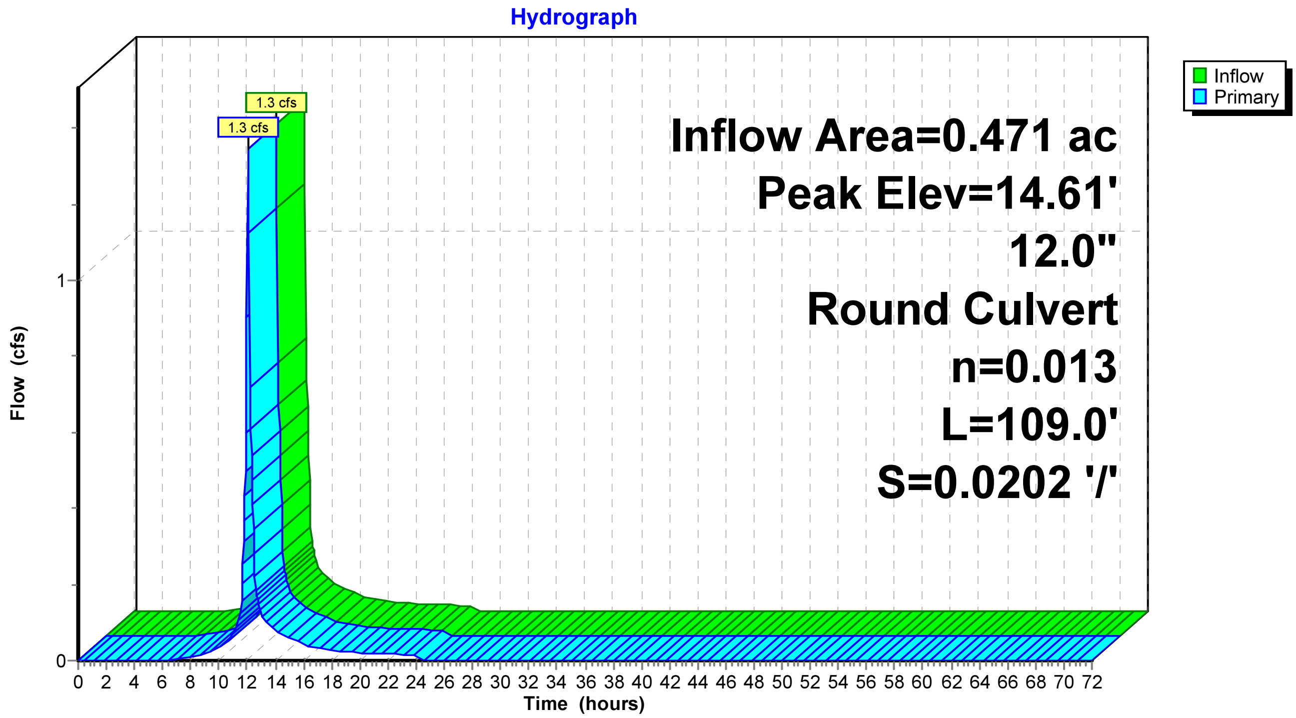
Inflow Area =	0.471 ac, 57.17% Impervious, Inflow Depth = 2.44" for 2 Year Storm event			
Inflow =	1.3 cfs @	12.07 hrs, Volume=	0.096 af	
Outflow =	1.3 cfs @	12.07 hrs, Volume=	0.096 af,	Atten= 0%, Lag= 0.0 min
Primary =	1.3 cfs @	12.07 hrs, Volume=	0.096 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 14.61' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	14.00'	**12.0" Round Culvert** L= 109.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 14.00' / 11.80' S= 0.0202 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.3 cfs @ 12.07 hrs HW=14.60' TW=12.45' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 1.3 cfs @ 2.64 fps)

Pond 6P: PCB1



Summary for Pond 7P: PCB2

[57] Hint: Peaked at 12.47' (Flood elevation advised)

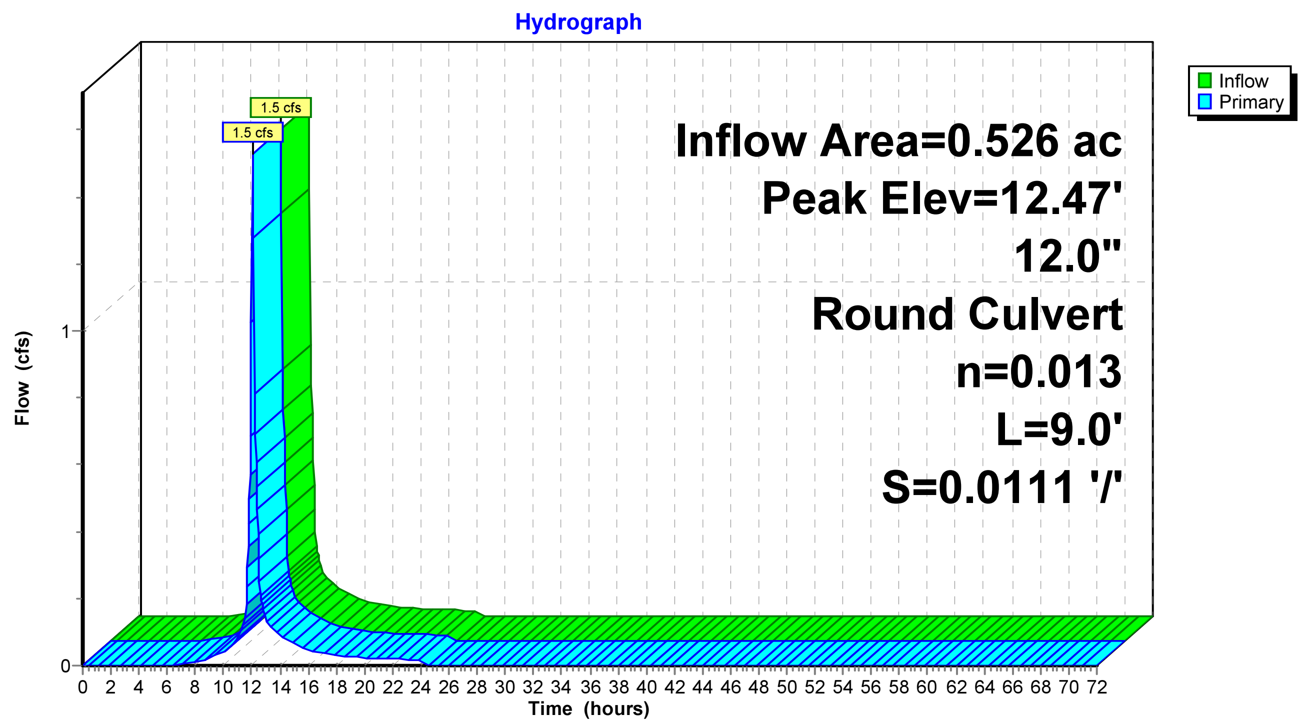
Inflow Area =	0.526 ac,	59.77% Impervious,	Inflow Depth = 2.50"	for 2 Year Storm event	
Inflow =	1.5 cfs @	12.07 hrs,	Volume=	0.110 af	
Outflow =	1.5 cfs @	12.07 hrs,	Volume=	0.110 af,	Atten= 0%, Lag= 0.0 min
Primary =	1.5 cfs @	12.07 hrs,	Volume=	0.110 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 12.47' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	11.70'	**12.0" Round Culvert** L= 9.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 11.70' / 11.60' S= 0.0111 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.5 cfs @ 12.07 hrs HW=12.45' TW=9.50' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 1.5 cfs @ 3.24 fps)

Pond 7P: PCB2



Summary for Pond 9P: PCB4

[57] Hint: Peaked at 10.82' (Flood elevation advised)

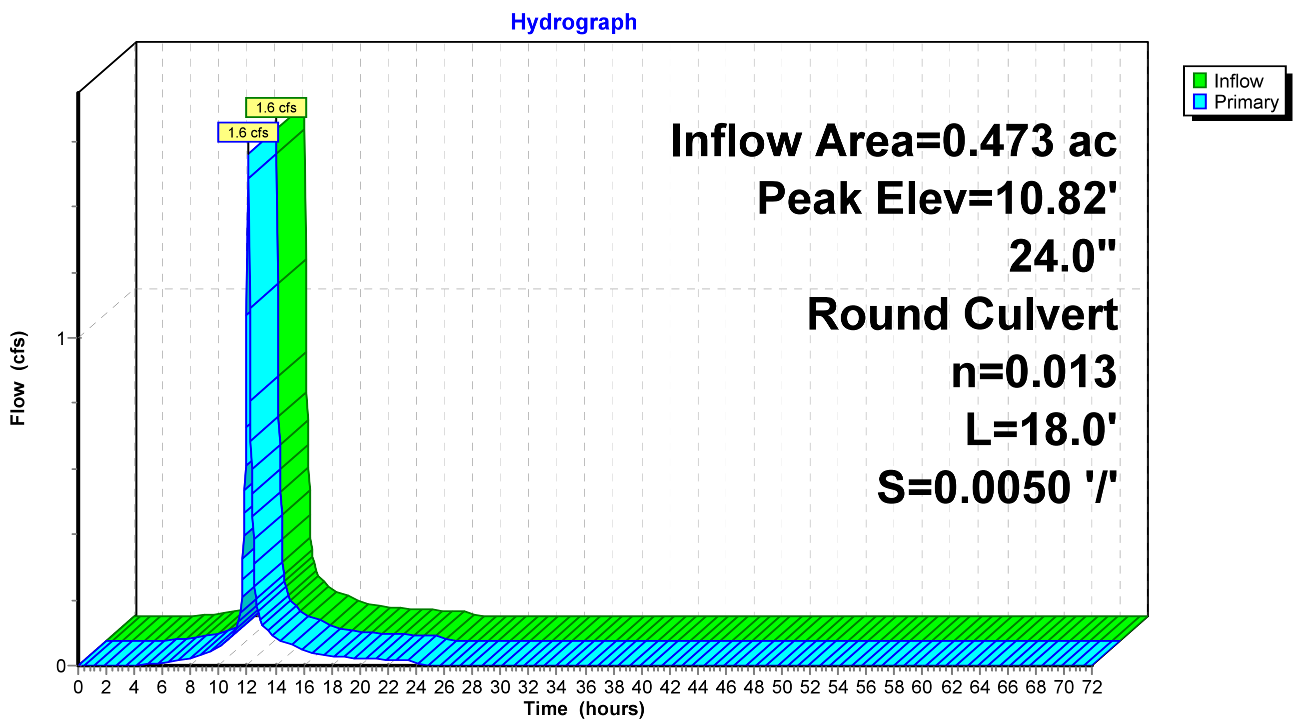
Inflow Area = 0.473 ac, 77.98% Impervious, Inflow Depth = 2.92" for 2 Year Storm event
Inflow = 1.6 cfs @ 12.07 hrs, Volume= 0.115 af
Outflow = 1.6 cfs @ 12.07 hrs, Volume= 0.115 af, Atten= 0%, Lag= 0.0 min
Primary = 1.6 cfs @ 12.07 hrs, Volume= 0.115 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 10.82' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.20'	**24.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.20' / 10.11' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=1.5 cfs @ 12.07 hrs HW=10.81' TW=9.54' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 1.5 cfs @ 2.79 fps)

Pond 9P: PCB4



Summary for Pond 10P: PCB5

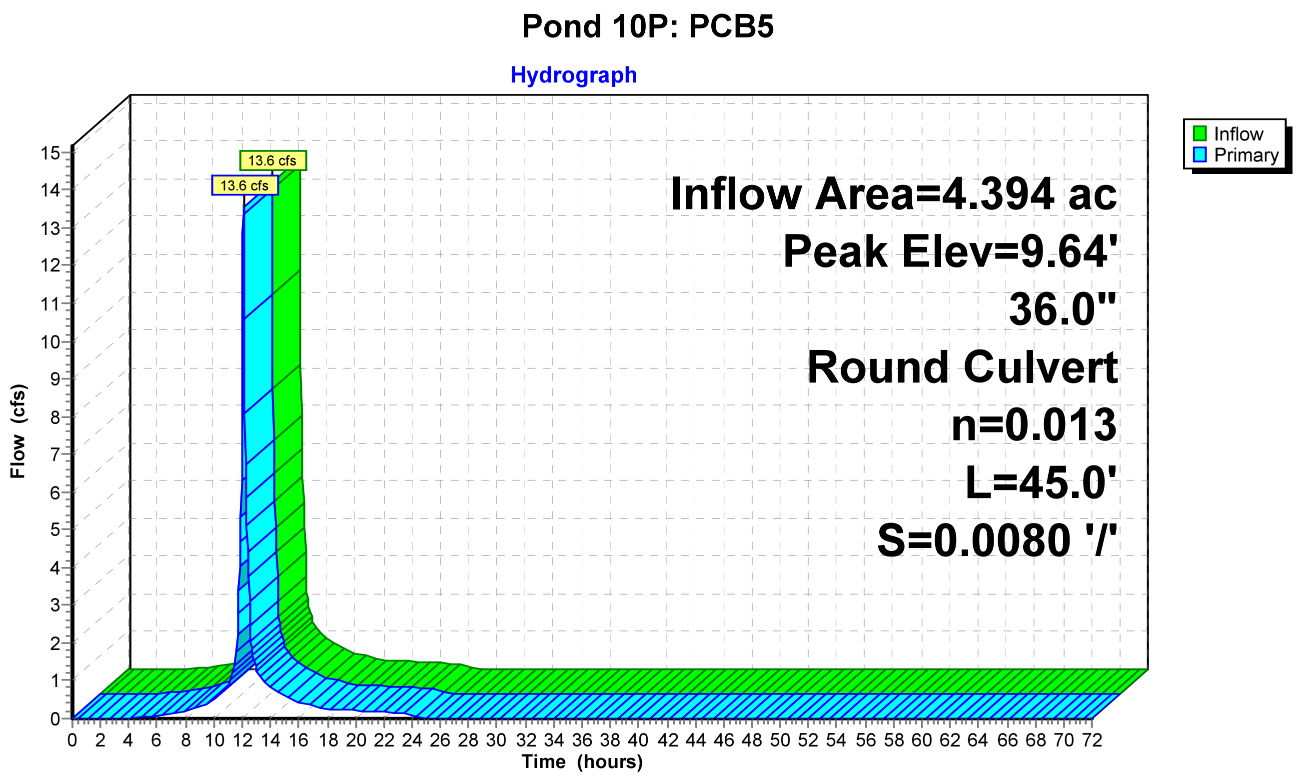
[57] Hint: Peaked at 9.64' (Flood elevation advised)

Inflow Area =	4.394 ac, 76.62% Impervious, Inflow Depth = 2.89"	for 2 Year Storm event	
Inflow =	13.6 cfs @ 12.08 hrs, Volume=	1.060 af	
Outflow =	13.6 cfs @ 12.08 hrs, Volume=	1.060 af,	Atten= 0%, Lag= 0.0 min
Primary =	13.6 cfs @ 12.08 hrs, Volume=	1.060 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 9.64' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.85'	**36.0" Round Culvert** L= 45.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 7.85' / 7.49' S= 0.0080 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 7.07 sf

Primary OutFlow Max=11.8 cfs @ 12.08 hrs HW=9.58' TW=9.11' (Dynamic Tailwater)
1=Culvert (Outlet Controls 11.8 cfs @ 4.03 fps)



Summary for Pond 12P: POCS2

[57] Hint: Peaked at 11.42' (Flood elevation advised)

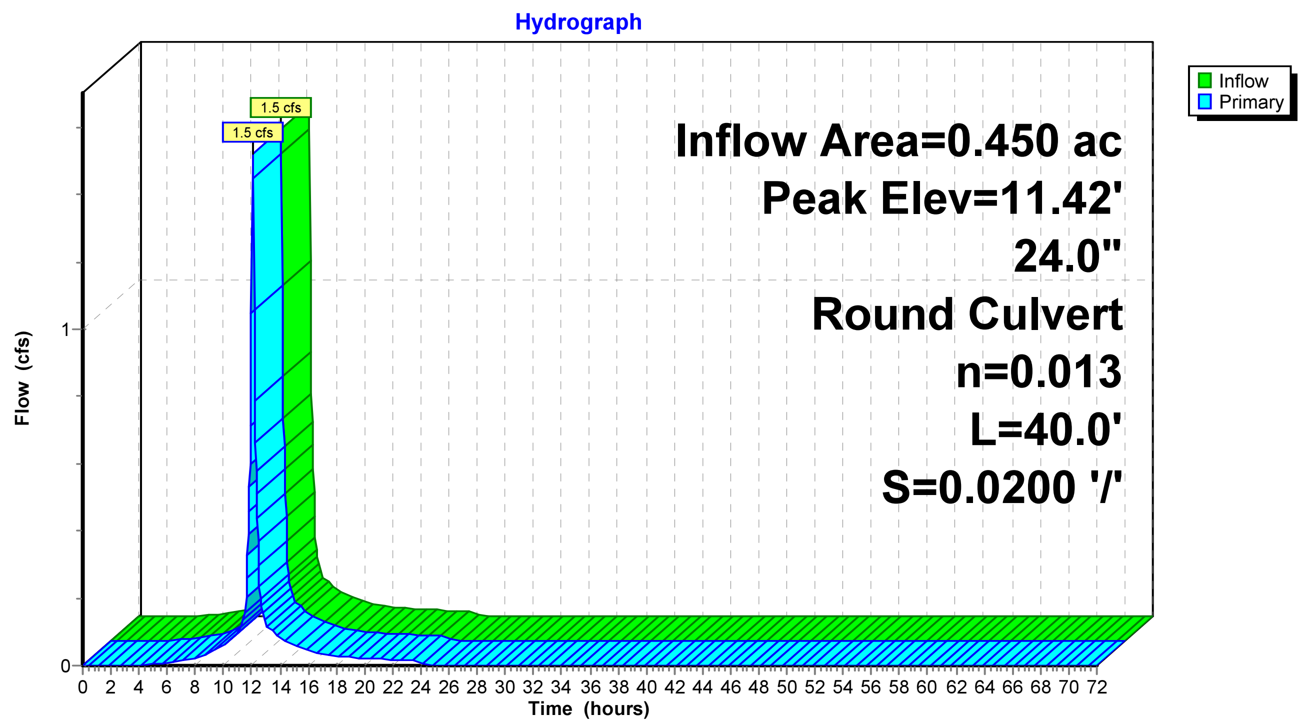
Inflow Area = 0.450 ac, 82.66% Impervious, Inflow Depth = 3.02" for 2 Year Storm event
Inflow = 1.5 cfs @ 12.07 hrs, Volume= 0.113 af
Outflow = 1.5 cfs @ 12.07 hrs, Volume= 0.113 af, Atten= 0%, Lag= 0.0 min
Primary = 1.5 cfs @ 12.07 hrs, Volume= 0.113 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.42' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.90'	**24.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.90' / 10.10' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=1.3 cfs @ 12.07 hrs HW=11.41' TW=10.97' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 1.3 cfs @ 3.13 fps)

Pond 12P: POCS2



Summary for Pond 14P: POCS1

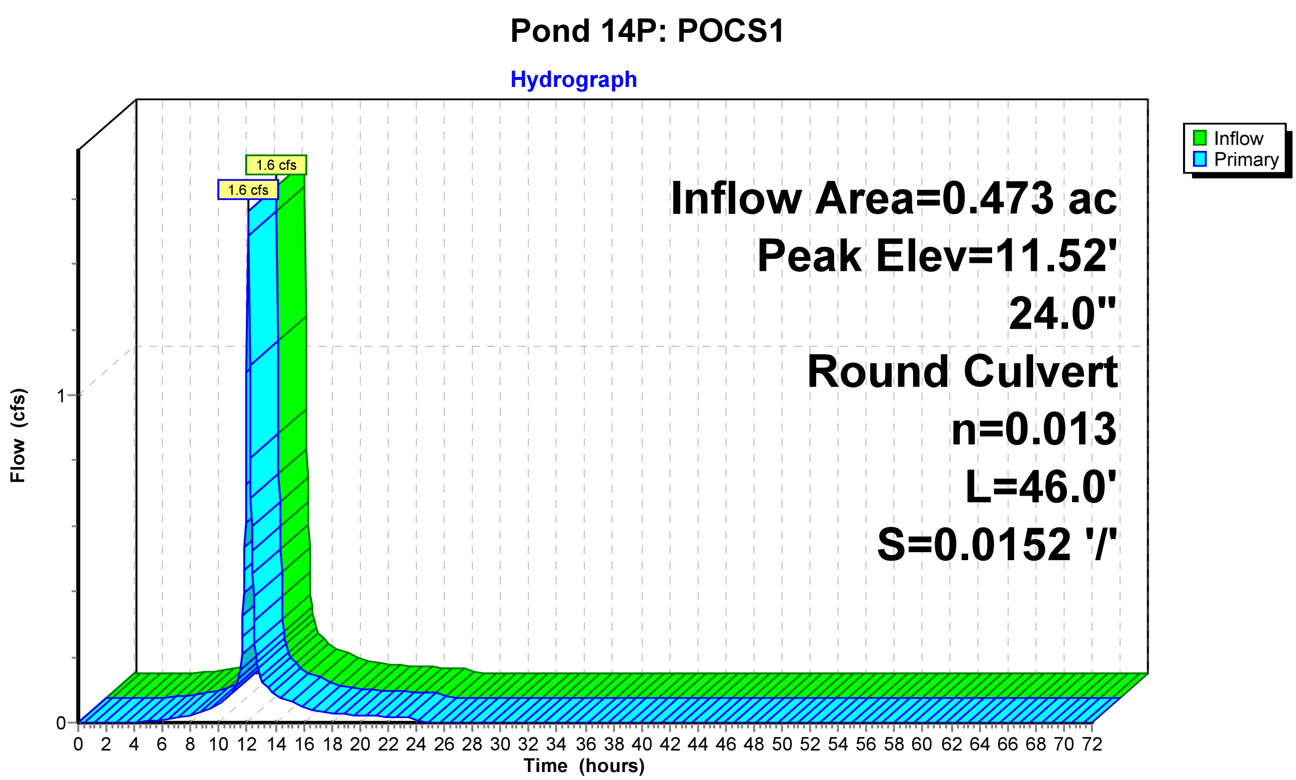
[57] Hint: Peaked at 11.52' (Flood elevation advised)

Inflow Area =	0.473 ac, 77.98% Impervious, Inflow Depth = 2.92"	for 2 Year Storm event	
Inflow =	1.6 cfs @ 12.07 hrs, Volume=	0.115 af	
Outflow =	1.6 cfs @ 12.07 hrs, Volume=	0.115 af, Atten= 0%, Lag= 0.0 min	
Primary =	1.6 cfs @ 12.07 hrs, Volume=	0.115 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.52' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	11.00'	**24.0" Round Culvert** L= 46.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 11.00' / 10.30' S= 0.0152 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=1.5 cfs @ 12.07 hrs HW=11.50' TW=10.81' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 1.5 cfs @ 2.42 fps)



Summary for Pond 15P: 2 - 12" PERFORATED UNDERDRAIN

[57] Hint: Peaked at 14.21' (Flood elevation advised)

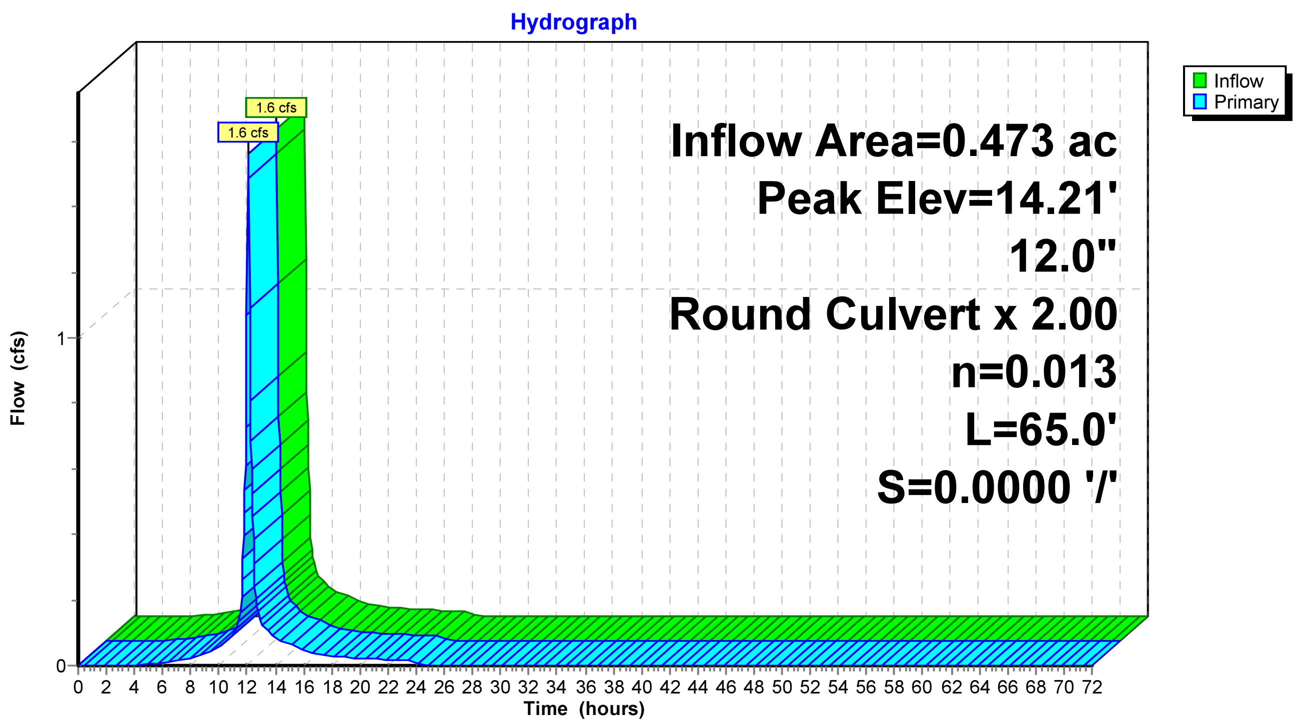
Inflow Area =	0.473 ac, 77.98% Impervious, Inflow Depth = 2.92"	for 2 Year Storm event	
Inflow =	1.6 cfs @ 12.07 hrs, Volume=	0.115 af	
Outflow =	1.6 cfs @ 12.07 hrs, Volume=	0.115 af, Atten= 0%, Lag= 0.0 min	
Primary =	1.6 cfs @ 12.07 hrs, Volume=	0.115 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 14.21' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	13.50'	**12.0" Round Culvert X 2.00** L= 65.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.50' / 13.50' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.5 cfs @ 12.07 hrs HW=14.20' TW=11.50' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 1.5 cfs @ 1.80 fps)

Pond 15P: 2 - 12" PERFORATED UNDERDRAIN



Summary for Pond 16P: 2 - 12" PERFORATED UNDERDRAIN

[57] Hint: Peaked at 13.72' (Flood elevation advised)

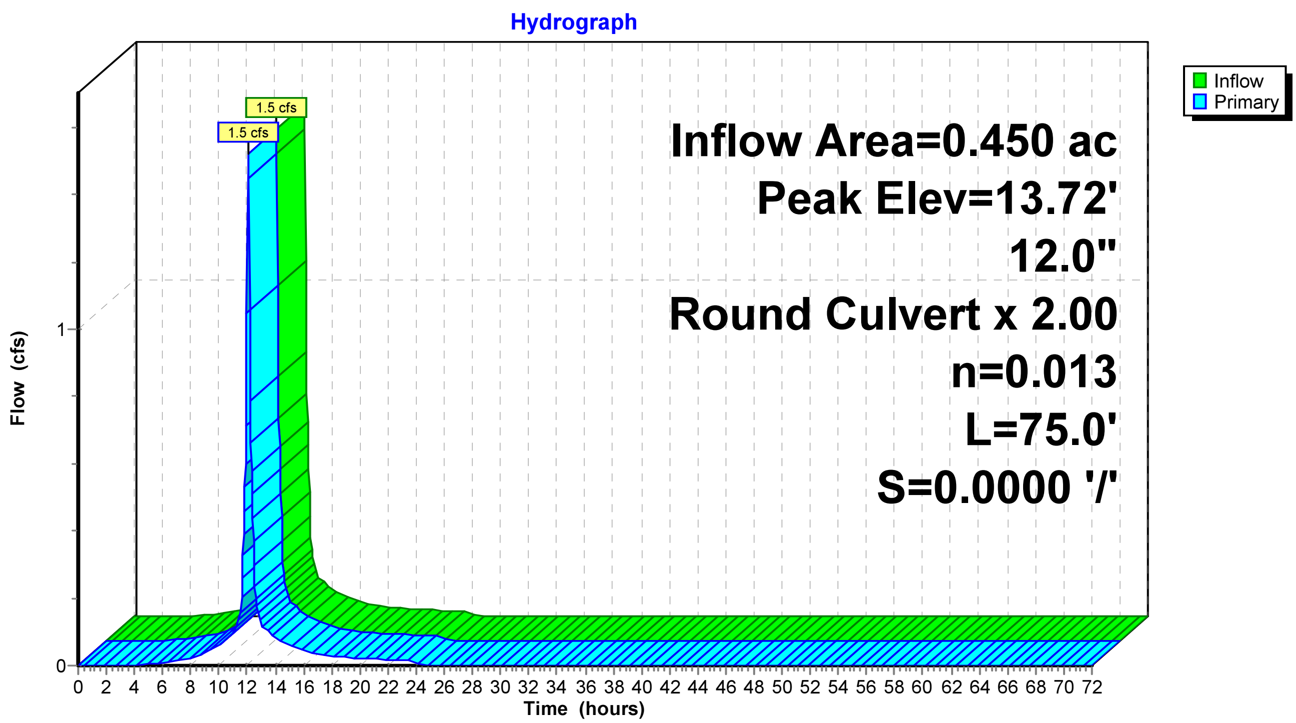
Inflow Area =	0.450 ac, 82.66% Impervious,	Inflow Depth =	3.02"	for 2 Year Storm event
Inflow =	1.5 cfs @ 12.07 hrs,	Volume=	0.113 af	
Outflow =	1.5 cfs @ 12.07 hrs,	Volume=	0.113 af,	Atten= 0%, Lag= 0.0 min
Primary =	1.5 cfs @ 12.07 hrs,	Volume=	0.113 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 13.72' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	13.00'	**12.0" Round Culvert X 2.00** L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.00' / 13.00' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.5 cfs @ 12.07 hrs HW=13.70' TW=11.41' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 1.5 cfs @ 1.74 fps)

Pond 16P: 2 - 12" PERFORATED UNDERDRAIN



Summary for Pond CB 5D: CB 5D

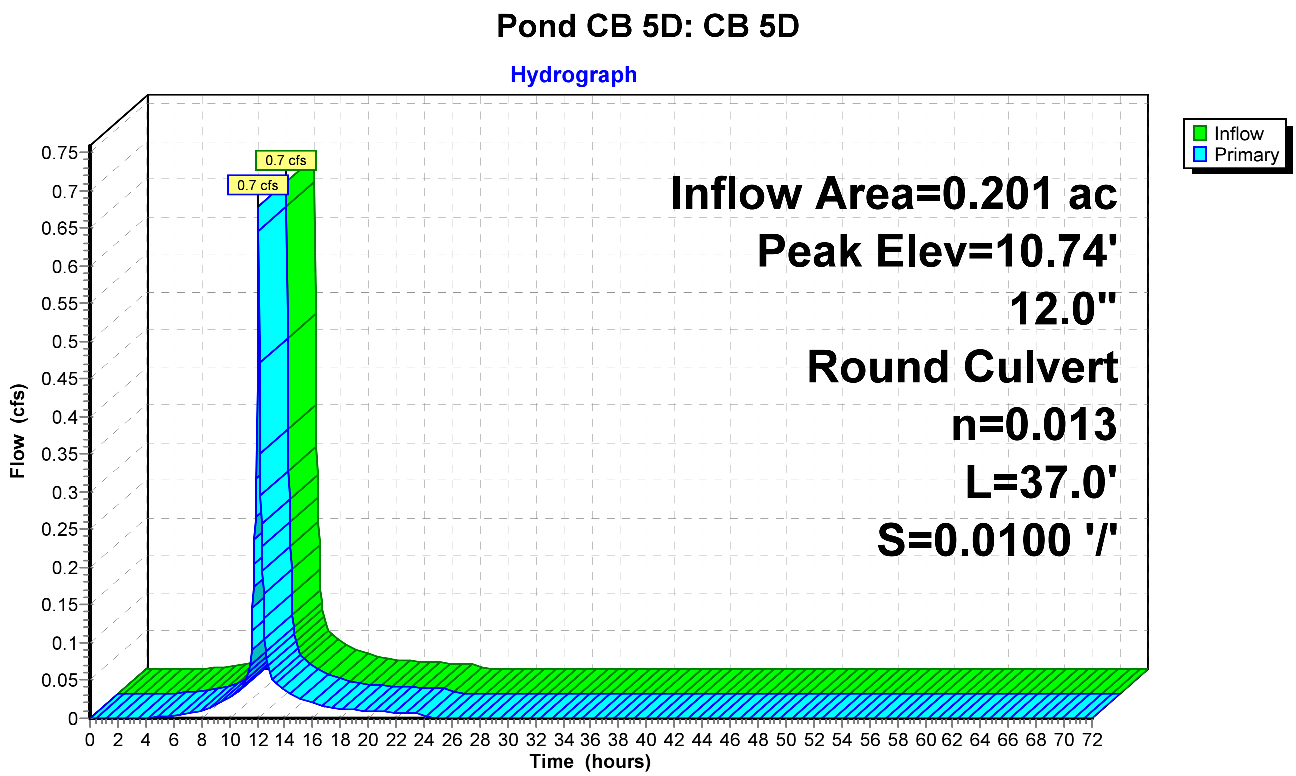
[57] Hint: Peaked at 10.74' (Flood elevation advised)

Inflow Area =	0.201 ac, 85.26% Impervious, Inflow Depth =	3.02"	for 2 Year Storm event
Inflow =	0.7 cfs @ 12.07 hrs, Volume=	0.051 af	
Outflow =	0.7 cfs @ 12.07 hrs, Volume=	0.051 af,	Atten= 0%, Lag= 0.0 min
Primary =	0.7 cfs @ 12.07 hrs, Volume=	0.051 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 10.74' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.24'	**12.0" Round Culvert** L= 37.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.24' / 9.87' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.6 cfs @ 12.07 hrs HW=10.72' TW=10.45' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 0.6 cfs @ 2.40 fps)

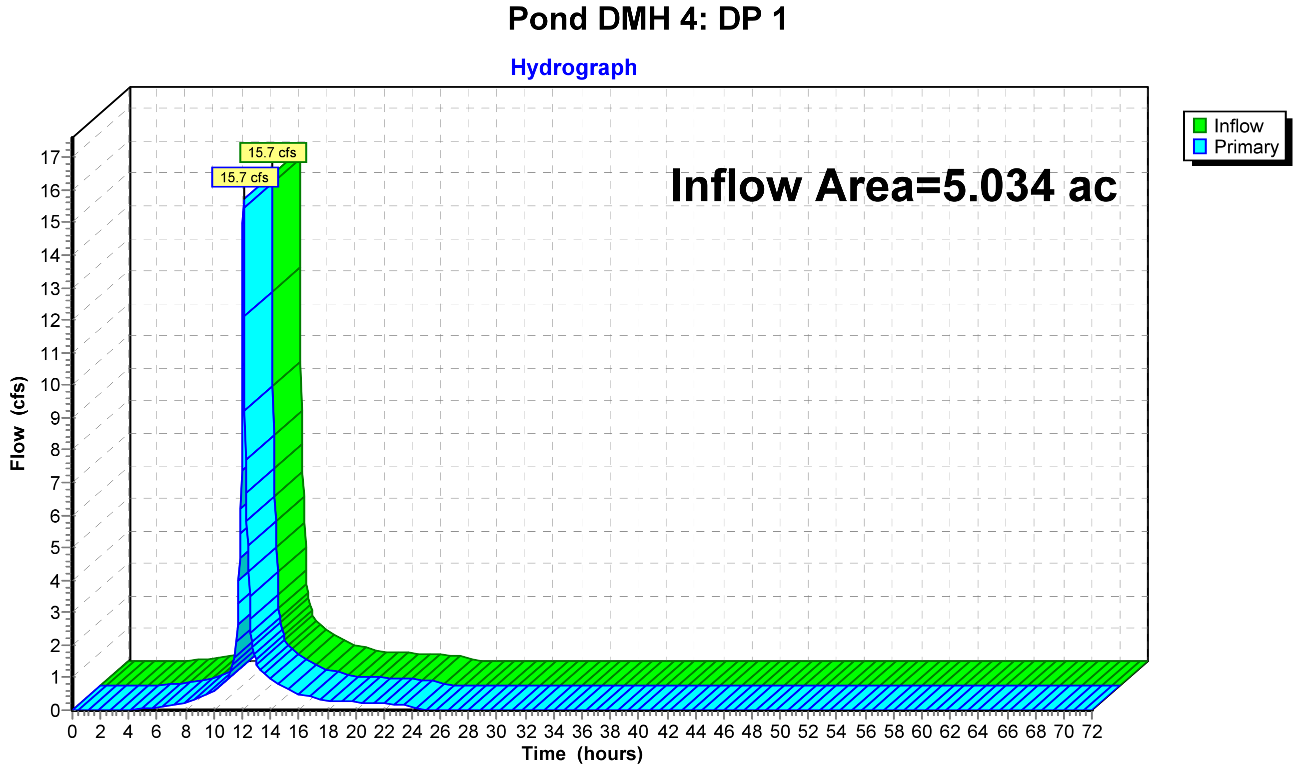


Summary for Pond DMH 4: DP 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area =	5.034 ac, 78.07% Impervious, Inflow Depth = 2.92"	for 2 Year Storm event	
Inflow =	15.7 cfs @ 12.08 hrs, Volume=	1.225 af	
Primary =	15.7 cfs @ 12.08 hrs, Volume=	1.225 af, Atten= 0%, Lag= 0.0 min	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs



Summary for Pond DMH 4A: DMH 4A

[57] Hint: Peaked at 9.82' (Flood elevation advised)
[80] Warning: Exceeded Pond DMH A6 by 0.01' @ 12.10 hrs (0.8 cfs 0.003 af)

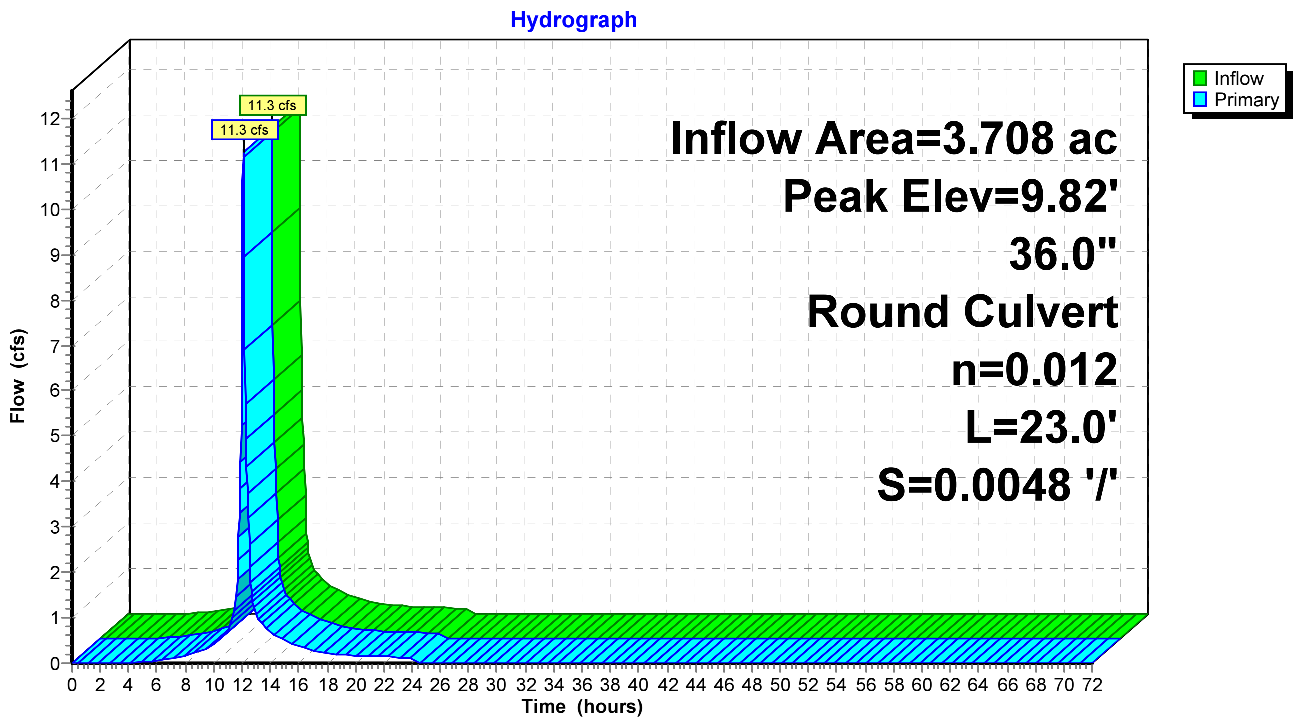
Inflow Area =	3.708 ac, 75.46% Impervious,	Inflow Depth = 2.87"	for 2 Year Storm event
Inflow =	11.3 cfs @ 12.08 hrs,	Volume=	0.885 af
Outflow =	11.3 cfs @ 12.08 hrs,	Volume=	0.885 af, Atten= 0%, Lag= 0.0 min
Primary =	11.3 cfs @ 12.08 hrs,	Volume=	0.885 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 9.82' @ 12.14 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.85'	**36.0" Round Culvert** L= 23.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 7.85' / 7.74' S= 0.0048 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 7.07 sf

Primary OutFlow Max=6.4 cfs @ 12.08 hrs HW=9.69' TW=9.59' (Dynamic Tailwater)
1=Culvert (Outlet Controls 6.4 cfs @ 2.01 fps)

Pond DMH 4A: DMH 4A



Summary for Pond DMH A6: DMH A6

[57] Hint: Peaked at 9.88' (Flood elevation advised)

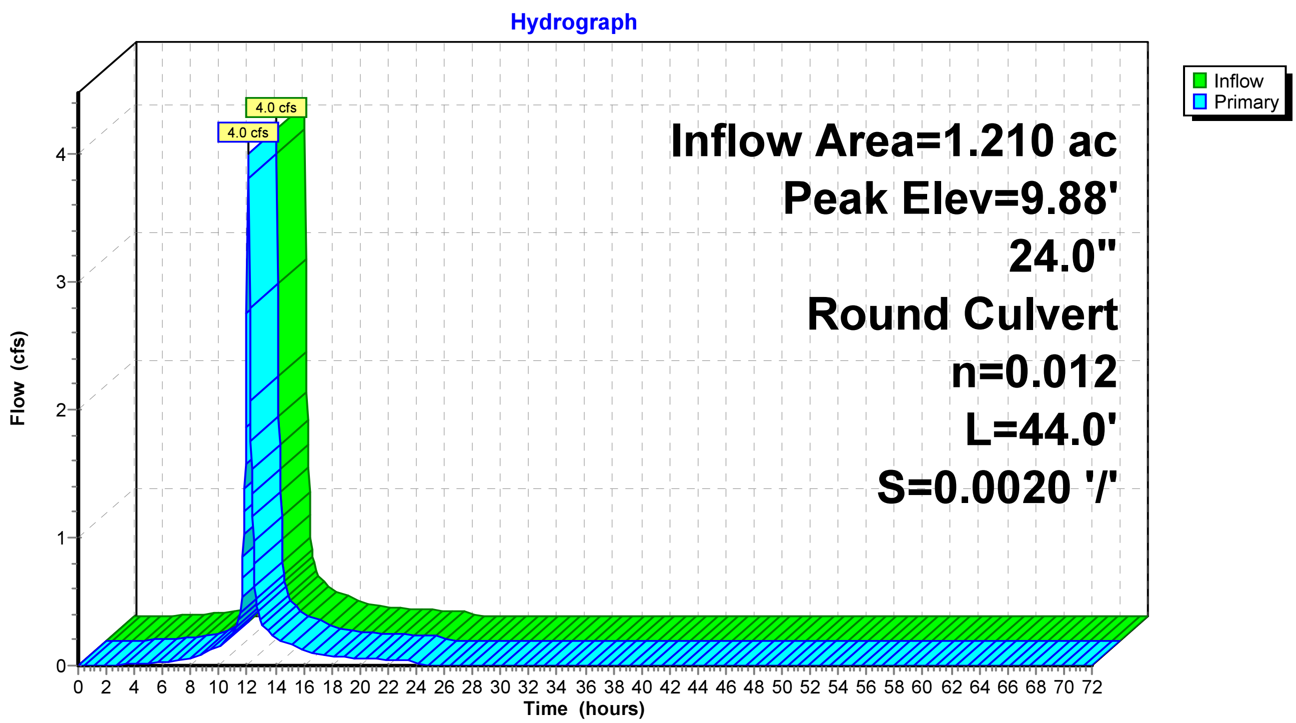
Inflow Area = 1.210 ac, 79.68% Impervious, Inflow Depth = 2.98" for 2 Year Storm event
Inflow = 4.0 cfs @ 12.07 hrs, Volume= 0.300 af
Outflow = 4.0 cfs @ 12.07 hrs, Volume= 0.300 af, Atten= 0%, Lag= 0.0 min
Primary = 4.0 cfs @ 12.07 hrs, Volume= 0.300 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 9.88' @ 12.18 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	8.50'	**24.0" Round Culvert** L= 44.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 8.50' / 8.41' S= 0.0020 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf

Primary OutFlow Max=1.2 cfs @ 12.07 hrs HW=9.66' TW=9.63' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 1.2 cfs @ 0.93 fps)

Pond DMH A6: DMH A6



Summary for Pond ENV 21: ENV 21

[57] Hint: Peaked at 9.92' (Flood elevation advised)

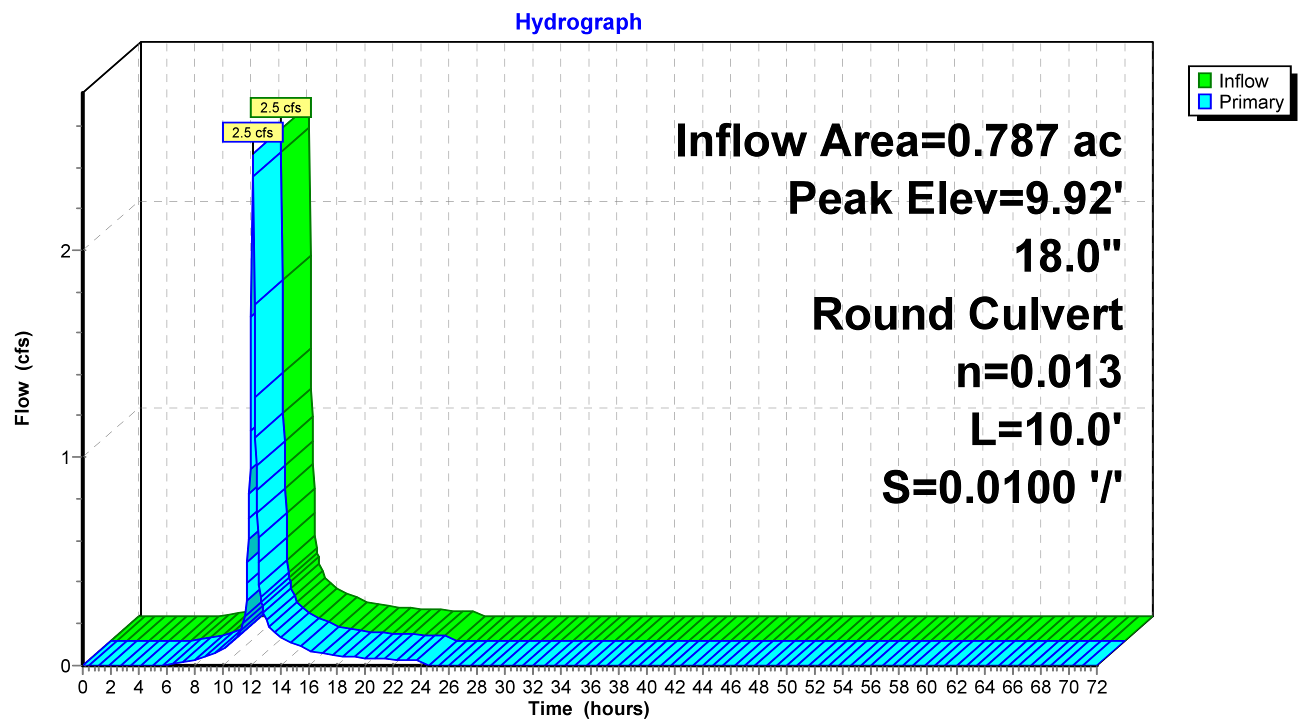
Inflow Area =	0.787 ac, 68.76% Impervious, Inflow Depth = 2.72"	for 2 Year Storm event	
Inflow =	2.5 cfs @ 12.07 hrs, Volume=	0.178 af	
Outflow =	2.5 cfs @ 12.07 hrs, Volume=	0.178 af, Atten= 0%, Lag= 0.0 min	
Primary =	2.5 cfs @ 12.07 hrs, Volume=	0.178 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 9.92' @ 12.21 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	9.00'	**18.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.00' / 8.90' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.9 cfs @ 12.07 hrs HW=9.85' TW=9.66' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 1.9 cfs @ 2.64 fps)

Pond ENV 21: ENV 21



Summary for Pond PCB-BH: PCB-BH

[57] Hint: Peaked at 11.89' (Flood elevation advised)

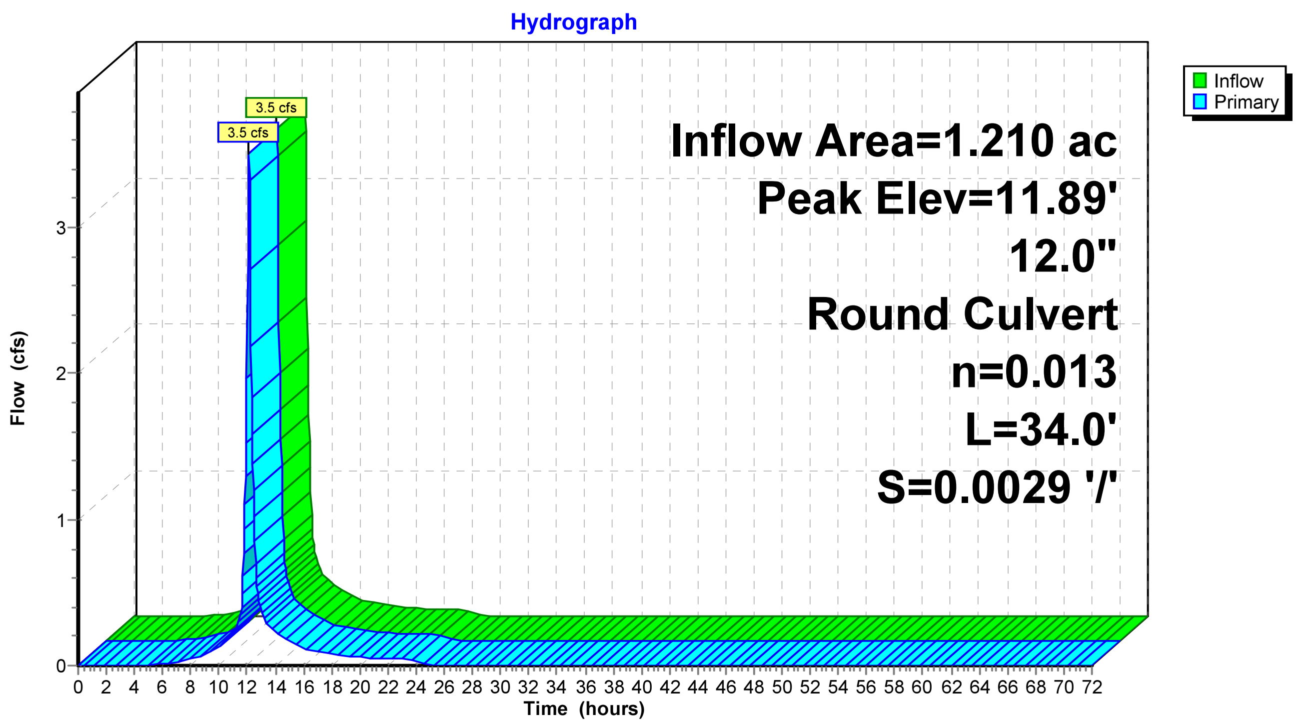
Inflow Area =	1.210 ac, 75.70% Impervious, Inflow Depth = 2.86"	for 2 Year Storm event	
Inflow =	3.5 cfs @ 12.12 hrs, Volume=	0.289 af	
Outflow =	3.5 cfs @ 12.12 hrs, Volume=	0.289 af, Atten= 0%, Lag= 0.0 min	
Primary =	3.5 cfs @ 12.12 hrs, Volume=	0.289 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.89' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.20'	**12.0" Round Culvert** L= 34.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.20' / 10.10' S= 0.0029 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.4 cfs @ 12.12 hrs HW=11.85' TW=11.03' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 3.4 cfs @ 4.35 fps)

Pond PCB-BH: PCB-BH



Summary for Pond PDMH 1: PDMH 1

[57] Hint: Peaked at 10.46' (Flood elevation advised)

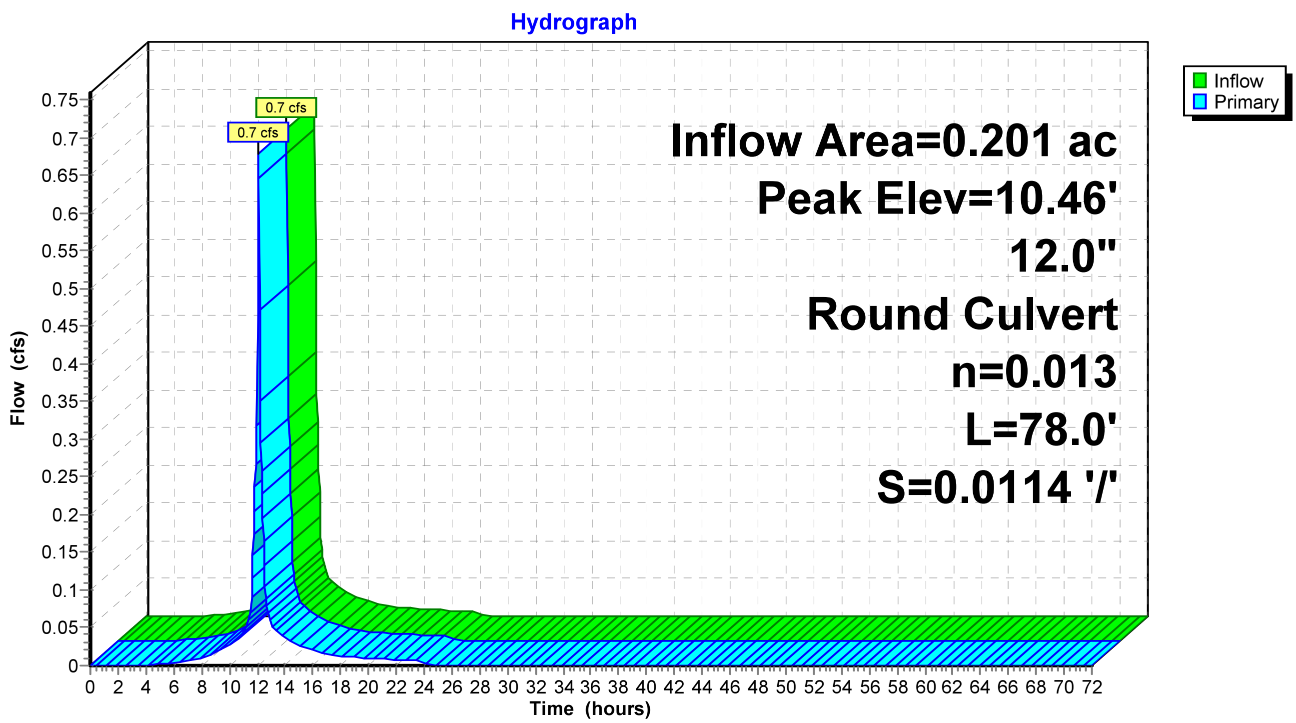
Inflow Area =	0.201 ac, 85.26% Impervious,	Inflow Depth = 3.02"	for 2 Year Storm event	
Inflow =	0.7 cfs @	12.07 hrs, Volume=	0.051 af	
Outflow =	0.7 cfs @	12.07 hrs, Volume=	0.051 af,	Atten= 0%, Lag= 0.0 min
Primary =	0.7 cfs @	12.07 hrs, Volume=	0.051 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 10.46' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.04'	**12.0" Round Culvert** L= 78.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.04' / 9.15' S= 0.0114 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.7 cfs @ 12.07 hrs HW=10.45' TW=9.49' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.7 cfs @ 2.17 fps)

Pond PDMH 1: PDMH 1



Summary for Pond PDMH 2: PDMH 2

[57] Hint: Peaked at 9.52' (Flood elevation advised)

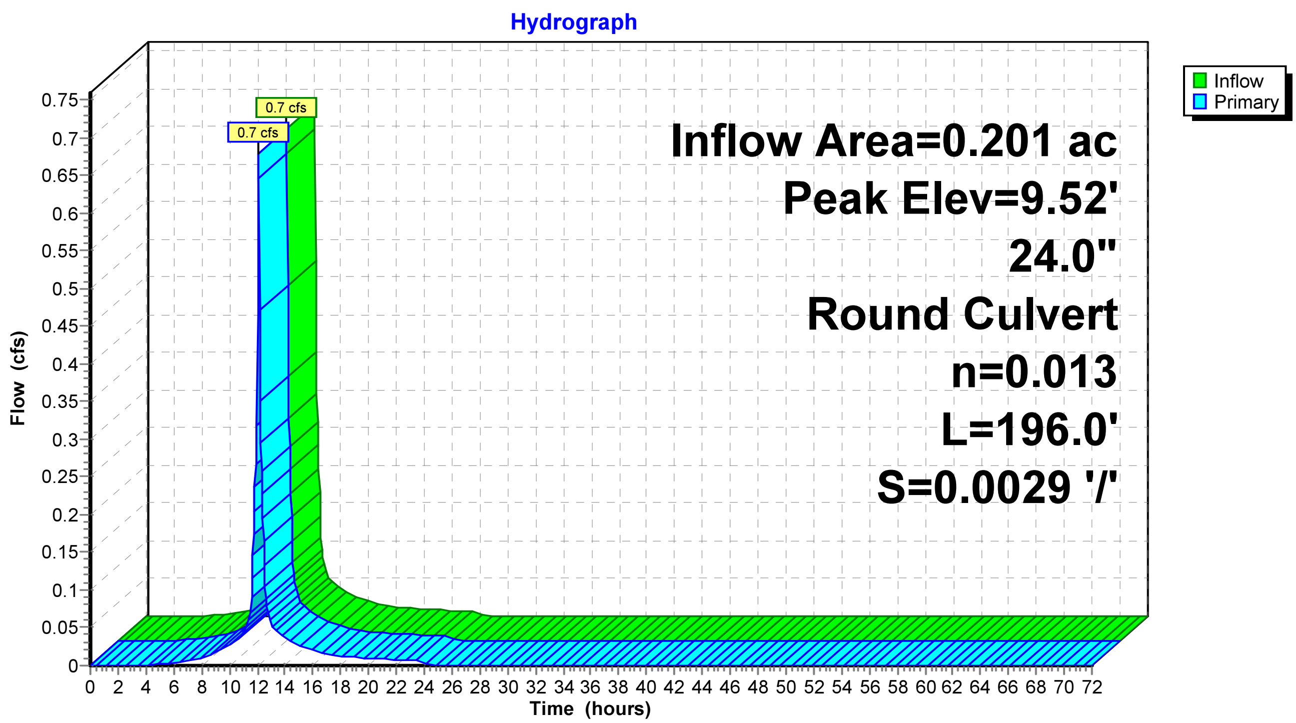
Inflow Area = 0.201 ac, 85.26% Impervious, Inflow Depth = 3.02" for 2 Year Storm event
Inflow = 0.7 cfs @ 12.07 hrs, Volume= 0.051 af
Outflow = 0.7 cfs @ 12.07 hrs, Volume= 0.051 af, Atten= 0%, Lag= 0.0 min
Primary = 0.7 cfs @ 12.07 hrs, Volume= 0.051 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 9.52' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	9.05'	**24.0" Round Culvert** L= 196.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.05' / 8.49' S= 0.0029 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=0.6 cfs @ 12.07 hrs HW=9.49' TW=9.10' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 0.6 cfs @ 1.62 fps)

Pond PDMH 2: PDMH 2



Summary for Pond PDMH 3: PDMH 3

[57] Hint: Peaked at 9.13' (Flood elevation advised)

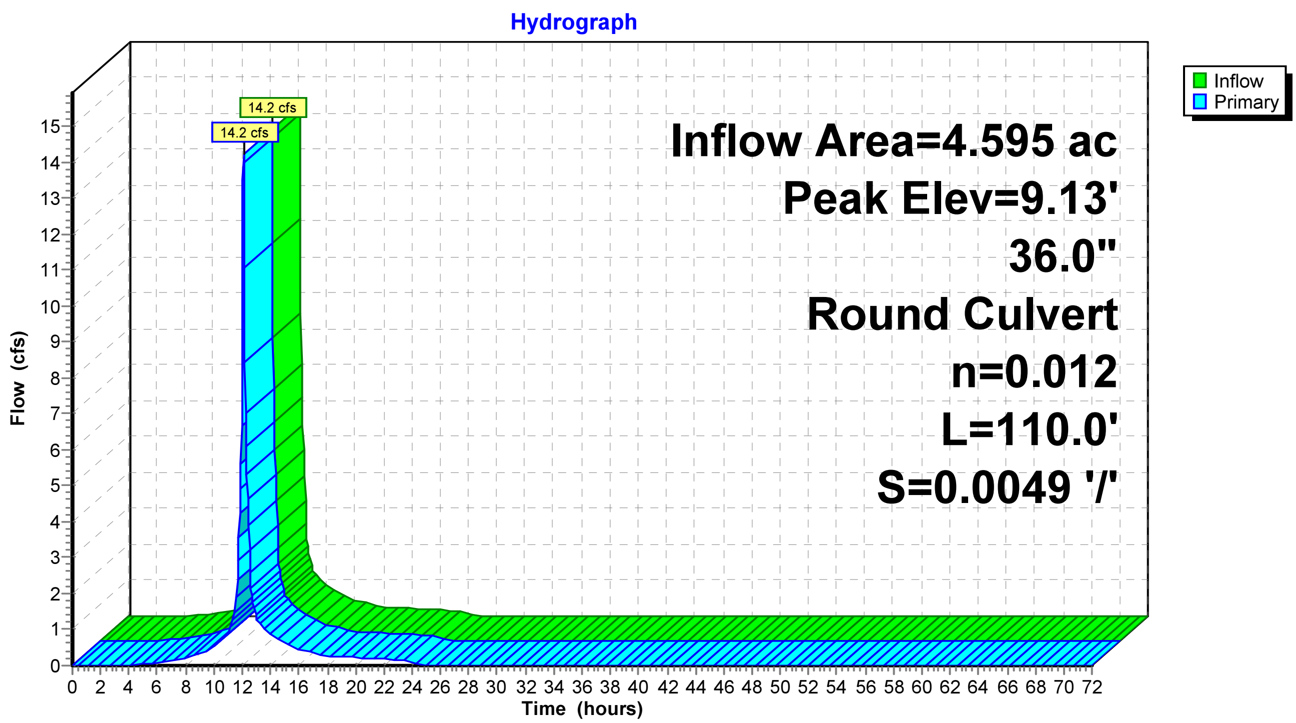
Inflow Area =	4.595 ac,	77.00% Impervious,	Inflow Depth = 2.90"	for 2 Year Storm event	
Inflow =	14.2 cfs @	12.08 hrs,	Volume=	1.110 af	
Outflow =	14.2 cfs @	12.08 hrs,	Volume=	1.110 af,	Atten= 0%, Lag= 0.0 min
Primary =	14.2 cfs @	12.08 hrs,	Volume=	1.110 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 9.13' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.48'	**36.0" Round Culvert** L= 110.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 7.48' / 6.94' S= 0.0049 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 7.07 sf

Primary OutFlow Max=13.8 cfs @ 12.08 hrs HW=9.11' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 13.8 cfs @ 5.12 fps)

Pond PDMH 3: PDMH 3



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 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 PS1: Runoff Area=7,157 sf 95.88% Impervious Runoff Depth=5.25"
Tc=5.0 min CN=97 Runoff=0.9 cfs 0.072 af

Subcatchment PS2a: Runoff Area=20,584 sf 77.98% Impervious Runoff Depth=4.79"
Tc=5.0 min CN=93 Runoff=2.5 cfs 0.189 af

Subcatchment PS2b: Runoff Area=11,747 sf 83.79% Impervious Runoff Depth=4.90"
Tc=5.0 min CN=94 Runoff=1.4 cfs 0.110 af

Subcatchment PS3a: Runoff Area=19,589 sf 82.66% Impervious Runoff Depth=4.90"
Tc=5.0 min CN=94 Runoff=2.4 cfs 0.184 af

Subcatchment PS3b: Runoff Area=40,960 sf 73.37% Impervious Runoff Depth=4.68"
Tc=5.0 min CN=92 Runoff=4.9 cfs 0.366 af

Subcatchment PS4: Runoff Area=12,006 sf 85.32% Impervious Runoff Depth=4.90"
Tc=5.0 min CN=94 Runoff=1.5 cfs 0.113 af

Subcatchment PS5: Runoff Area=34,260 sf 68.76% Impervious Runoff Depth=4.57"
Tc=5.0 min CN=91 Runoff=4.0 cfs 0.299 af

Subcatchment PS5A: Runoff Area=9,298 sf 93.79% Impervious Runoff Depth=5.25"
Tc=5.0 min CN=97 Runoff=1.2 cfs 0.093 af

Subcatchment PS5B: Runoff Area=13,605 sf 74.26% Impervious Runoff Depth=4.68"
Tc=5.0 min CN=92 Runoff=1.6 cfs 0.122 af

Subcatchment PS5C: PS5 Roof Runoff Area=18,430 sf 100.00% Impervious Runoff Depth=5.36"
Tc=5.0 min CN=98 Runoff=2.3 cfs 0.189 af

Subcatchment PS6: Runoff Area=20,527 sf 57.17% Impervious Runoff Depth=4.24"
Tc=5.0 min CN=88 Runoff=2.3 cfs 0.167 af

Subcatchment PS7: Runoff Area=8,740 sf 85.26% Impervious Runoff Depth=4.90"
Tc=5.0 min CN=94 Runoff=1.1 cfs 0.082 af

Subcatchment PS8: Runoff Area=2,398 sf 81.98% Impervious Runoff Depth=4.90"
Tc=5.0 min CN=94 Runoff=0.3 cfs 0.022 af

Reach 3R: Swale Avg. Flow Depth=0.62' Max Vel=1.83 fps Inflow=6.3 cfs 0.477 af
n=0.030 L=380.0' S=0.0050 '/' Capacity=16.9 cfs Outflow=5.7 cfs 0.477 af

Pond 1P: DMH A19 Peak Elev=10.59' Inflow=12.0 cfs 0.971 af
36.0" Round Culvert n=0.012 L=106.0' S=0.0028 '/' Outflow=12.0 cfs 0.971 af

Pond 3P: PCB3 Peak Elev=11.44' Inflow=8.0 cfs 0.660 af
24.0" Round Culvert n=0.013 L=43.0' S=0.0112 '/' Outflow=8.0 cfs 0.660 af

Pond 4P: PCB7 Peak Elev=10.95' Inflow=9.5 cfs 0.782 af
24.0" Round Culvert n=0.013 L=46.0' S=0.0261 '/' Outflow=9.5 cfs 0.782 af

Pond 5P: DMH 4B Peak Elev=10.59' Inflow=2.6 cfs 0.189 af
36.0" Round Culvert n=0.012 L=104.0' S=0.0007 '/' Outflow=2.6 cfs 0.189 af

Pond 6P: PCB1 Peak Elev=14.86' Inflow=2.3 cfs 0.167 af
12.0" Round Culvert n=0.013 L=109.0' S=0.0202 '/' Outflow=2.3 cfs 0.167 af

Pond 7P: PCB2 Peak Elev=12.79' Inflow=2.6 cfs 0.189 af
12.0" Round Culvert n=0.013 L=9.0' S=0.0111 '/' Outflow=2.6 cfs 0.189 af

Pond 9P: PCB4 Peak Elev=11.00' Inflow=2.5 cfs 0.189 af
24.0" Round Culvert n=0.013 L=18.0' S=0.0050 '/' Outflow=2.5 cfs 0.189 af

Pond 10P: PCB5 Peak Elev=10.27' Inflow=21.9 cfs 1.741 af
36.0" Round Culvert n=0.013 L=45.0' S=0.0080 '/' Outflow=21.9 cfs 1.741 af

Pond 12P: POCS2 Peak Elev=11.64' Inflow=2.4 cfs 0.184 af
24.0" Round Culvert n=0.013 L=40.0' S=0.0200 '/' Outflow=2.4 cfs 0.184 af

Pond 14P: POCS1 Peak Elev=11.66' Inflow=2.5 cfs 0.189 af
24.0" Round Culvert n=0.013 L=46.0' S=0.0152 '/' Outflow=2.5 cfs 0.189 af

Pond 15P: 2 - 12" PERFORATED UNDERDRAIN Peak Elev=14.42' Inflow=2.5 cfs 0.189 af
12.0" Round Culvert x 2.00 n=0.013 L=65.0' S=0.0000 '/' Outflow=2.5 cfs 0.189 af

Pond 16P: 2 - 12" PERFORATED UNDERDRAIN Peak Elev=13.92' Inflow=2.4 cfs 0.184 af
12.0" Round Culvert x 2.00 n=0.013 L=75.0' S=0.0000 '/' Outflow=2.4 cfs 0.184 af

Pond CB 5D: CB 5D Peak Elev=10.88' Inflow=1.1 cfs 0.082 af
12.0" Round Culvert n=0.013 L=37.0' S=0.0100 '/' Outflow=1.1 cfs 0.082 af

Pond DMH 4: DP 1 Inflow=25.3 cfs 2.008 af
Primary=25.3 cfs 2.008 af

Pond DMH 4A: DMH 4A Peak Elev=10.48' Inflow=18.3 cfs 1.459 af
36.0" Round Culvert n=0.012 L=23.0' S=0.0048 '/' Outflow=18.3 cfs 1.459 af

Pond DMH A6: DMH A6 Peak Elev=10.54' Inflow=6.4 cfs 0.488 af
24.0" Round Culvert n=0.012 L=44.0' S=0.0020 '/' Outflow=6.4 cfs 0.488 af

Pond ENV 21: ENV 21 Peak Elev=10.58' Inflow=4.0 cfs 0.299 af
18.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=4.0 cfs 0.299 af

Pond PCB-BH: PCB-BH Peak Elev=13.60' Inflow=5.7 cfs 0.477 af
12.0" Round Culvert n=0.013 L=34.0' S=0.0029 '/' Outflow=5.7 cfs 0.477 af

Pond PDMH 1: PDMH 1 Peak Elev=10.58' Inflow=1.1 cfs 0.082 af
12.0" Round Culvert n=0.013 L=78.0' S=0.0114 '/' Outflow=1.1 cfs 0.082 af

Pond PDMH 2: PDMH 2 Peak Elev=9.81' Inflow=1.1 cfs 0.082 af
24.0" Round Culvert n=0.013 L=196.0' S=0.0029 '/' Outflow=1.1 cfs 0.082 af

Pond PDMH 3: PDMH 3 Peak Elev=9.68' Inflow=22.9 cfs 1.823 af
36.0" Round Culvert n=0.012 L=110.0' S=0.0049 '/' Outflow=22.9 cfs 1.823 af

Total Runoff Area = 5.034 ac Runoff Volume = 2.008 af Average Runoff Depth = 4.79"
21.93% Pervious = 1.104 ac 78.07% Impervious = 3.930 ac

Summary for Subcatchment PS1:

[49] Hint: Tc<2dt may require smaller dt

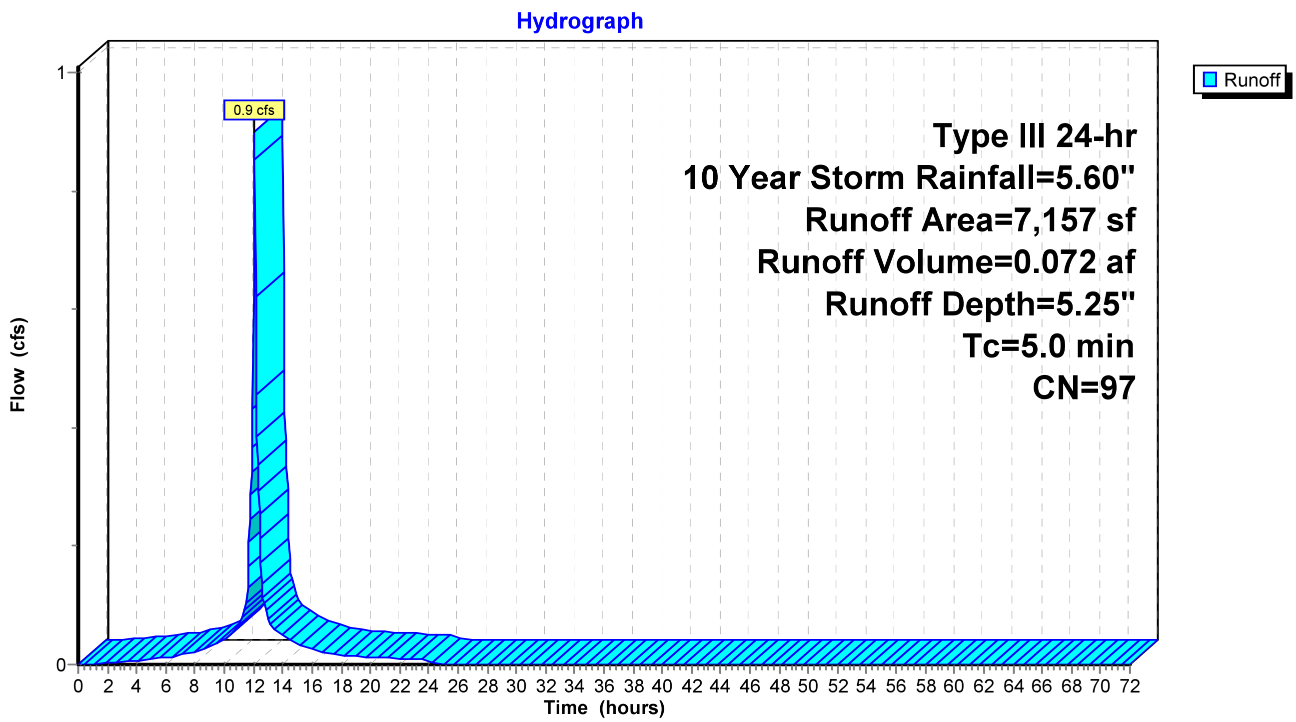
Runoff = 0.9 cfs @ 12.07 hrs, Volume= 0.072 af, Depth= 5.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Storm Rainfall=5.60"

	Area (sf)	CN	Description
	1,344	98	Paved parking, HSG C
*	544	98	Sidewalks, HSG C
	4,974	98	Roofs, HSG C
	295	74	>75% Grass cover, Good, HSG C
	7,157	97	Weighted Average
	295		4.12% Pervious Area
	6,862		95.88% Impervious Area

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

Subcatchment PS1:



Summary for Subcatchment PS2a:

[49] Hint: Tc<2dt may require smaller dt

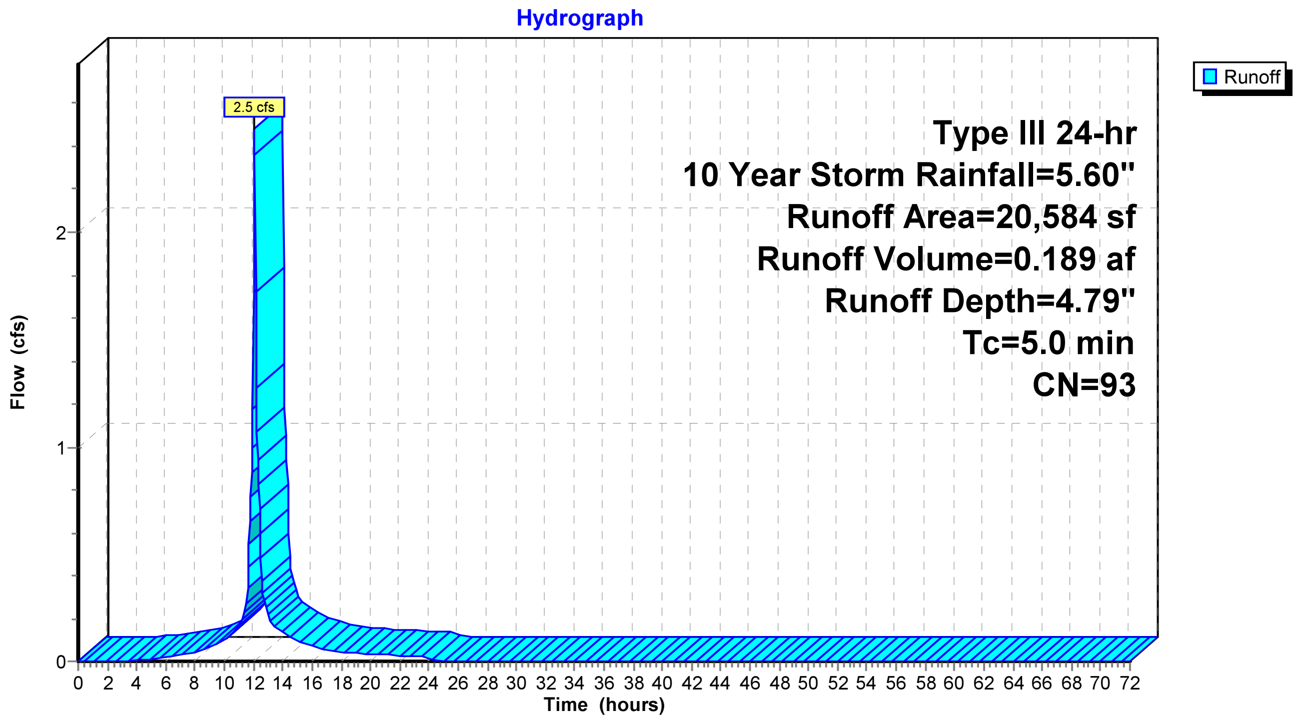
Runoff = 2.5 cfs @ 12.07 hrs, Volume= 0.189 af, Depth= 4.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Storm Rainfall=5.60"

	Area (sf)	CN	Description
	15,319	98	Paved parking, HSG C
*	733	98	Sidewalks, HSG C
	4,532	74	>75% Grass cover, Good, HSG C
	20,584	93	Weighted Average
	4,532		22.02% Pervious Area
	16,052		77.98% Impervious Area

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

Subcatchment PS2a:



Summary for Subcatchment PS2b:

[49] Hint: Tc<2dt may require smaller dt

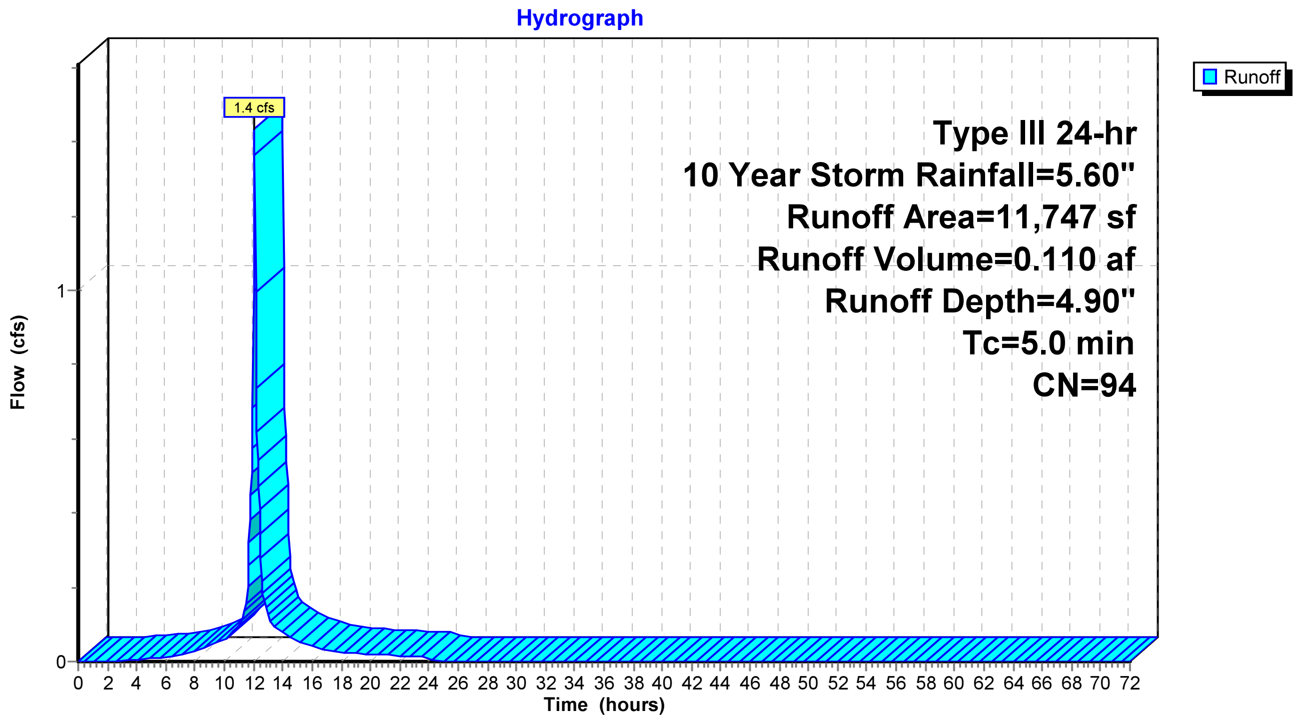
Runoff = 1.4 cfs @ 12.07 hrs, Volume= 0.110 af, Depth= 4.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Storm Rainfall=5.60"

Area (sf)	CN	Description
9,843	98	Roofs, HSG C
1,904	74	>75% Grass cover, Good, HSG C
11,747	94	Weighted Average
1,904		16.21% Pervious Area
9,843		83.79% Impervious Area

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

Subcatchment PS2b:



Summary for Subcatchment PS3a:

[49] Hint: Tc<2dt may require smaller dt

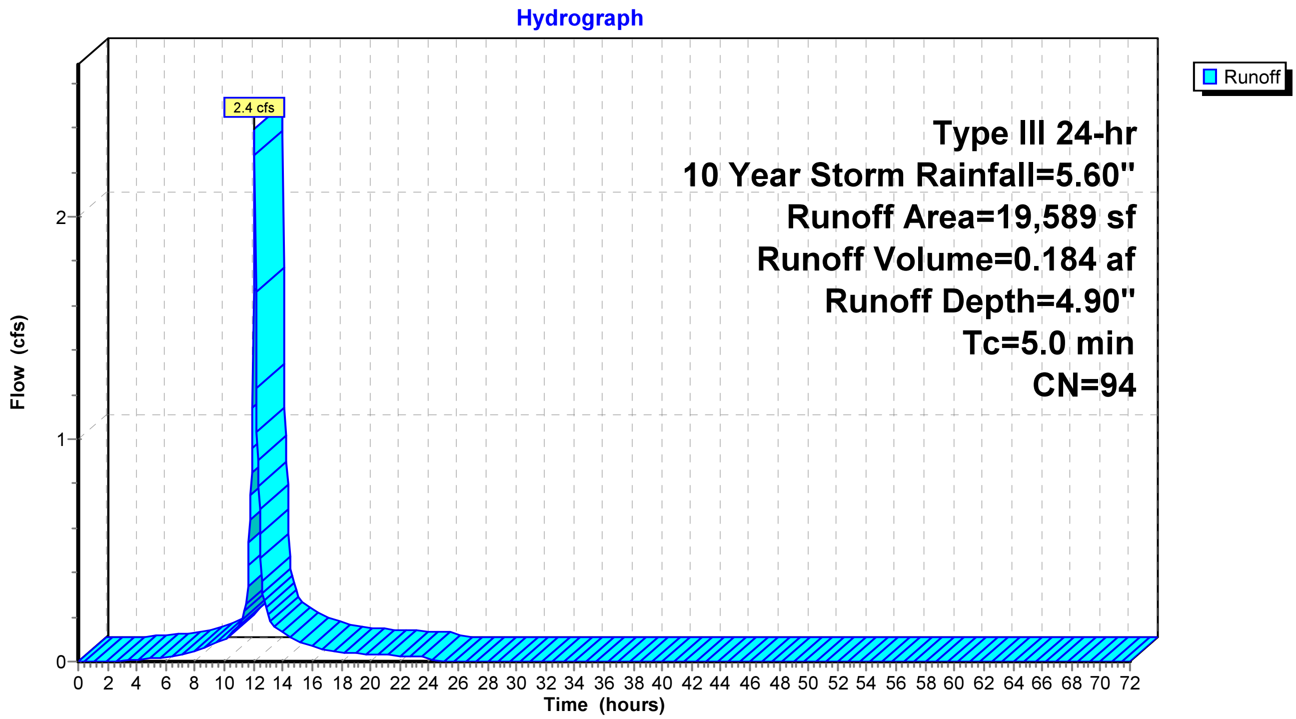
Runoff = 2.4 cfs @ 12.07 hrs, Volume= 0.184 af, Depth= 4.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Storm Rainfall=5.60"

Area (sf)	CN	Description
16,192	98	Paved parking, HSG C
3,397	74	>75% Grass cover, Good, HSG C
19,589	94	Weighted Average
3,397		17.34% Pervious Area
16,192		82.66% Impervious Area

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

Subcatchment PS3a:



Summary for Subcatchment PS3b:

[49] Hint: Tc<2dt may require smaller dt

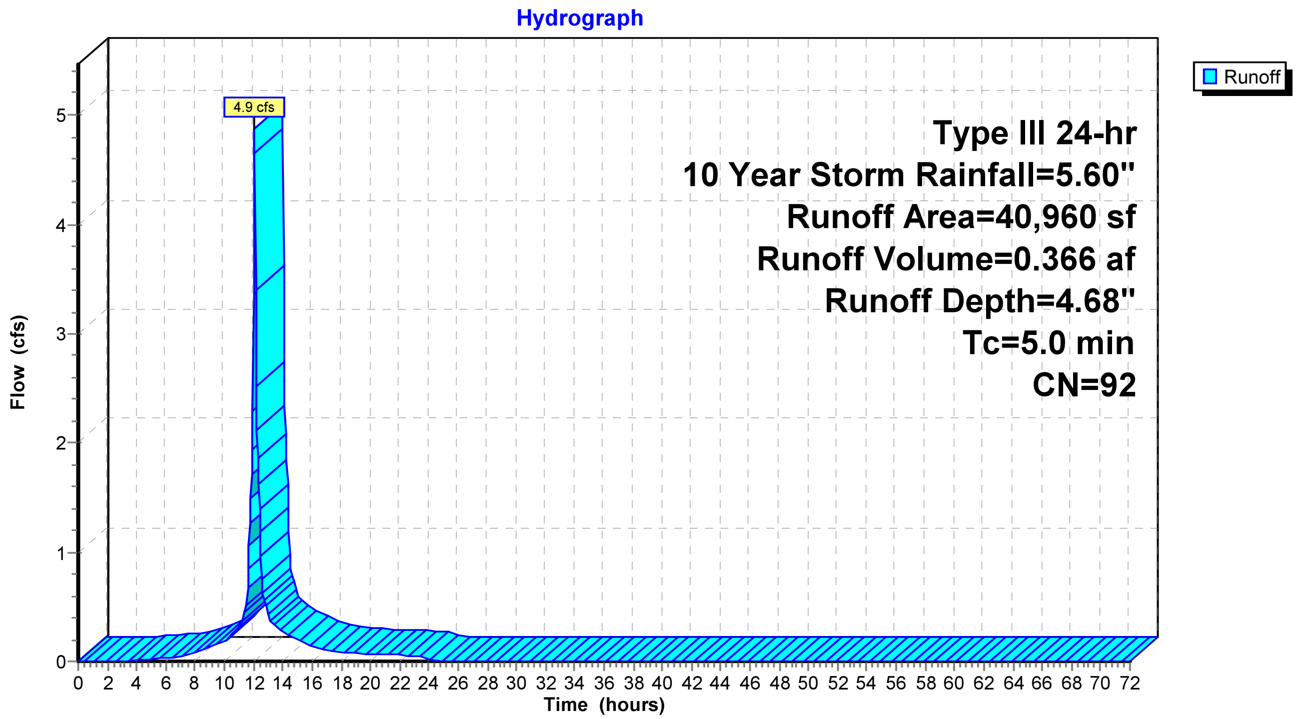
Runoff = 4.9 cfs @ 12.07 hrs, Volume= 0.366 af, Depth= 4.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Storm Rainfall=5.60"

Area (sf)	CN	Description
24,825	98	Roofs, HSG C
10,906	74	>75% Grass cover, Good, HSG C
5,229	98	Paved parking, HSG C
40,960	92	Weighted Average
10,906		26.63% Pervious Area
30,054		73.37% Impervious Area

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

Subcatchment PS3b:



Summary for Subcatchment PS4:

[49] Hint: Tc<2dt may require smaller dt

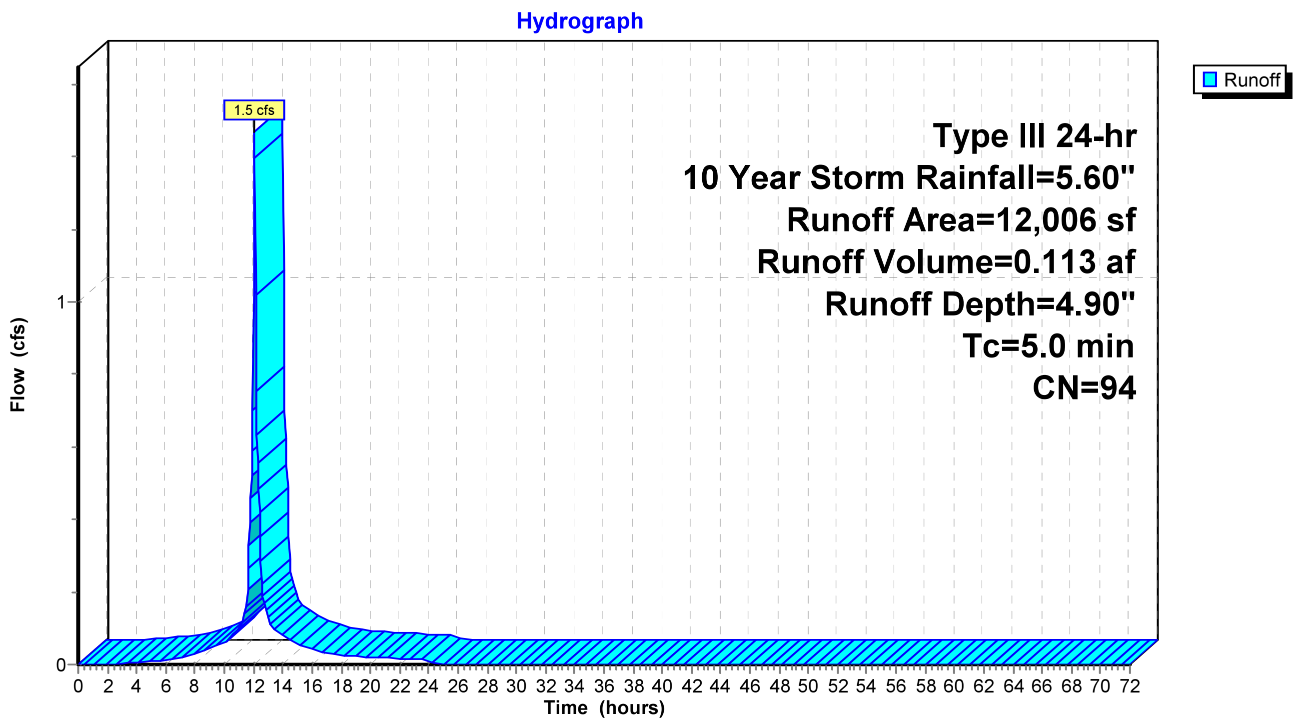
Runoff = 1.5 cfs @ 12.07 hrs, Volume= 0.113 af, Depth= 4.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Storm Rainfall=5.60"

	Area (sf)	CN	Description
	4,504	98	Paved parking, HSG C
*	2,085	98	Sidewalks, HSG C
	3,654	98	Roofs, HSG C
	1,763	74	>75% Grass cover, Good, HSG C
	12,006	94	Weighted Average
	1,763		14.68% Pervious Area
	10,243		85.32% Impervious Area

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

Subcatchment PS4:



Summary for Subcatchment PS5:

[49] Hint: Tc<2dt may require smaller dt

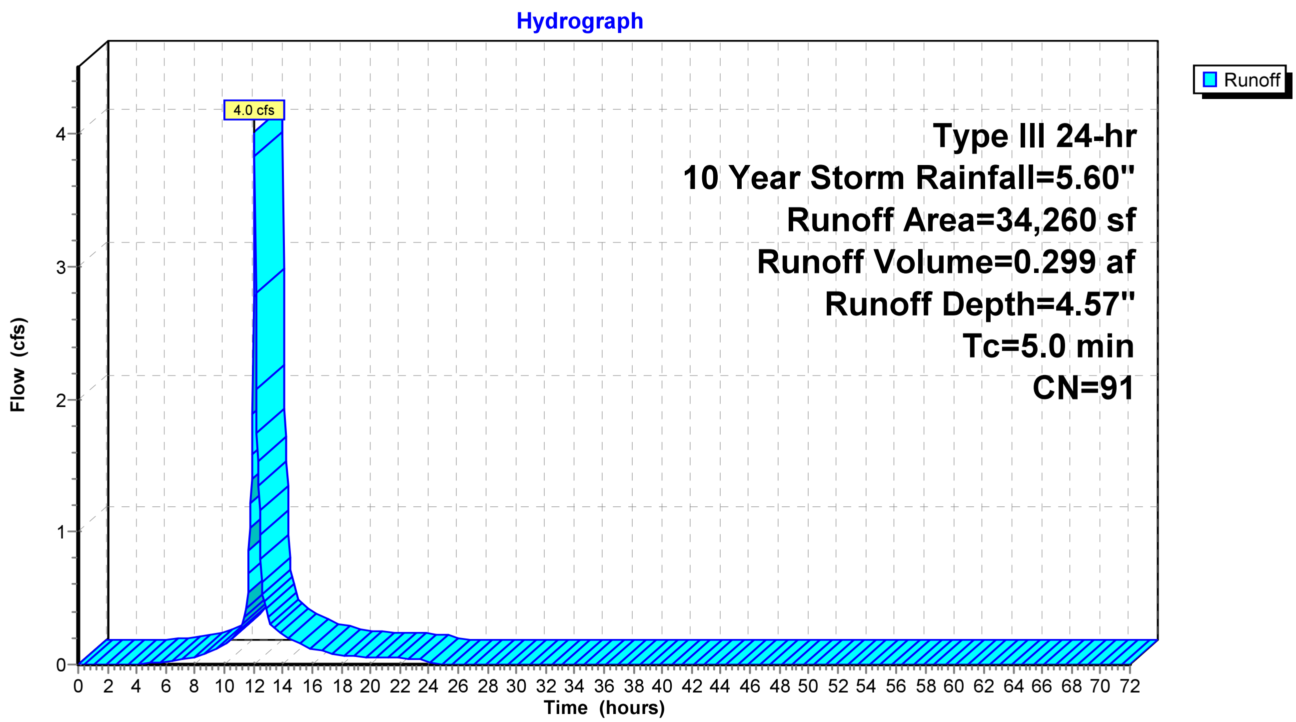
Runoff = 4.0 cfs @ 12.07 hrs, Volume= 0.299 af, Depth= 4.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Storm Rainfall=5.60"

	Area (sf)	CN	Description
	21,695	98	Paved parking, HSG C
*	310	98	Sidewalks, HSG C
	1,551	98	Roofs, HSG C
	10,704	74	>75% Grass cover, Good, HSG C
	34,260	91	Weighted Average
	10,704		31.24% Pervious Area
	23,556		68.76% Impervious Area

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

Subcatchment PS5:



Summary for Subcatchment PS5A:

[49] Hint: Tc<2dt may require smaller dt

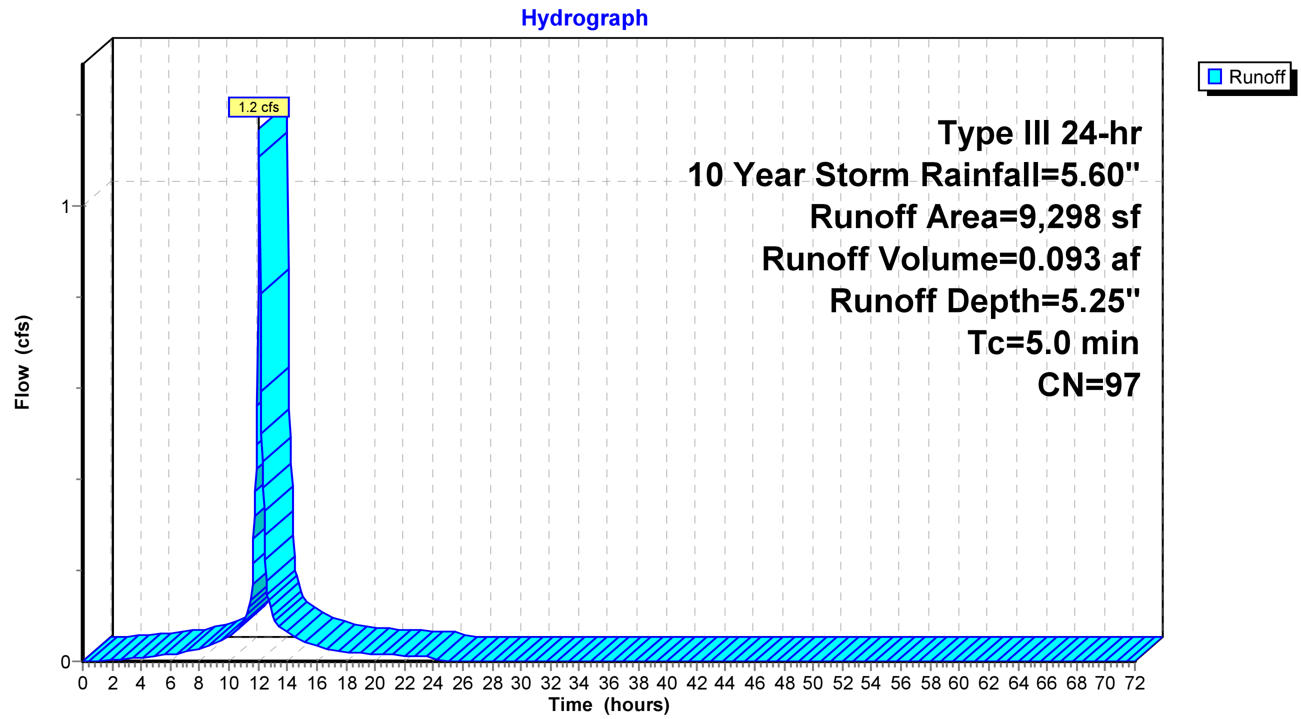
Runoff = 1.2 cfs @ 12.07 hrs, Volume= 0.093 af, Depth= 5.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Storm Rainfall=5.60"

	Area (sf)	CN	Description
	7,491	98	Paved parking, HSG C
*	1,230	98	Sidewalks, HSG C
	577	74	>75% Grass cover, Good, HSG C
	9,298	97	Weighted Average
	577		6.21% Pervious Area
	8,721		93.79% Impervious Area

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

Subcatchment PS5A:



Summary for Subcatchment PS5B:

[49] Hint: Tc<2dt may require smaller dt

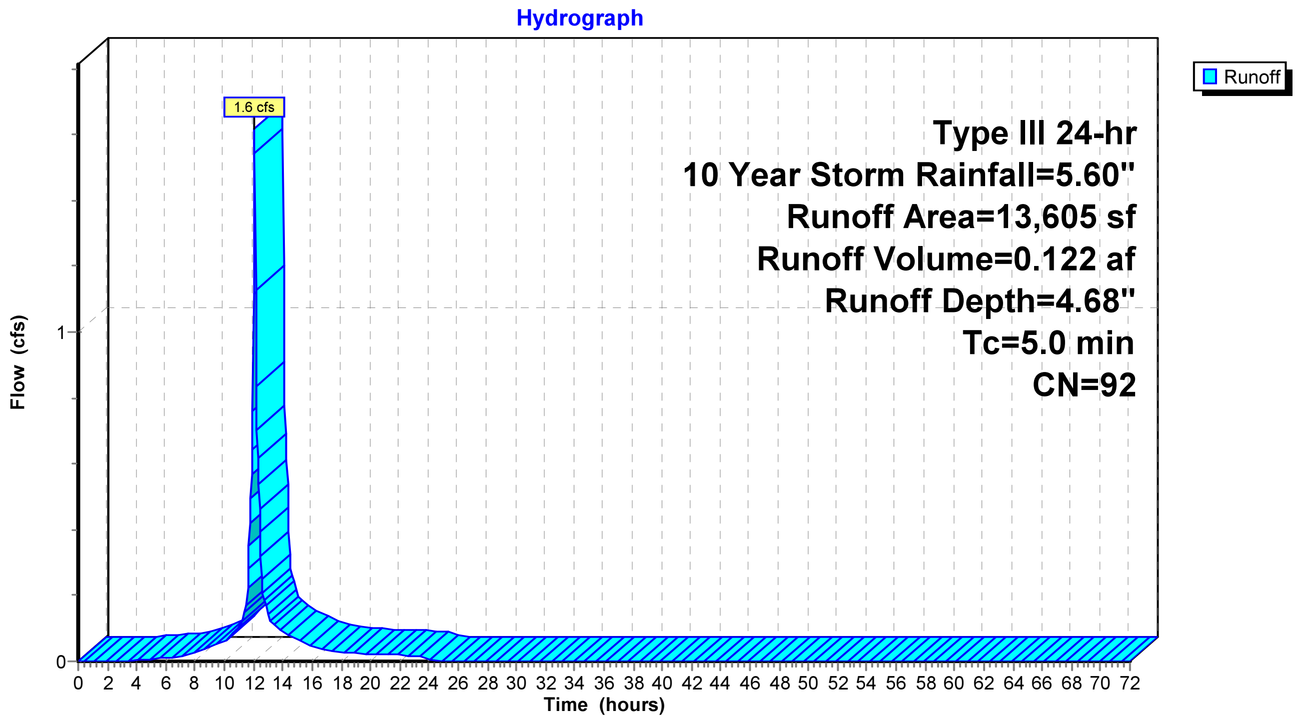
Runoff = 1.6 cfs @ 12.07 hrs, Volume= 0.122 af, Depth= 4.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Storm Rainfall=5.60"

	Area (sf)	CN	Description
	7,275	98	Paved parking, HSG C
*	2,828	98	Sidewalks, HSG C
	3,502	74	>75% Grass cover, Good, HSG C
	13,605	92	Weighted Average
	3,502		25.74% Pervious Area
	10,103		74.26% Impervious Area

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

Subcatchment PS5B:



Summary for Subcatchment PS5C: PS5 Roof

[49] Hint: Tc<2dt may require smaller dt

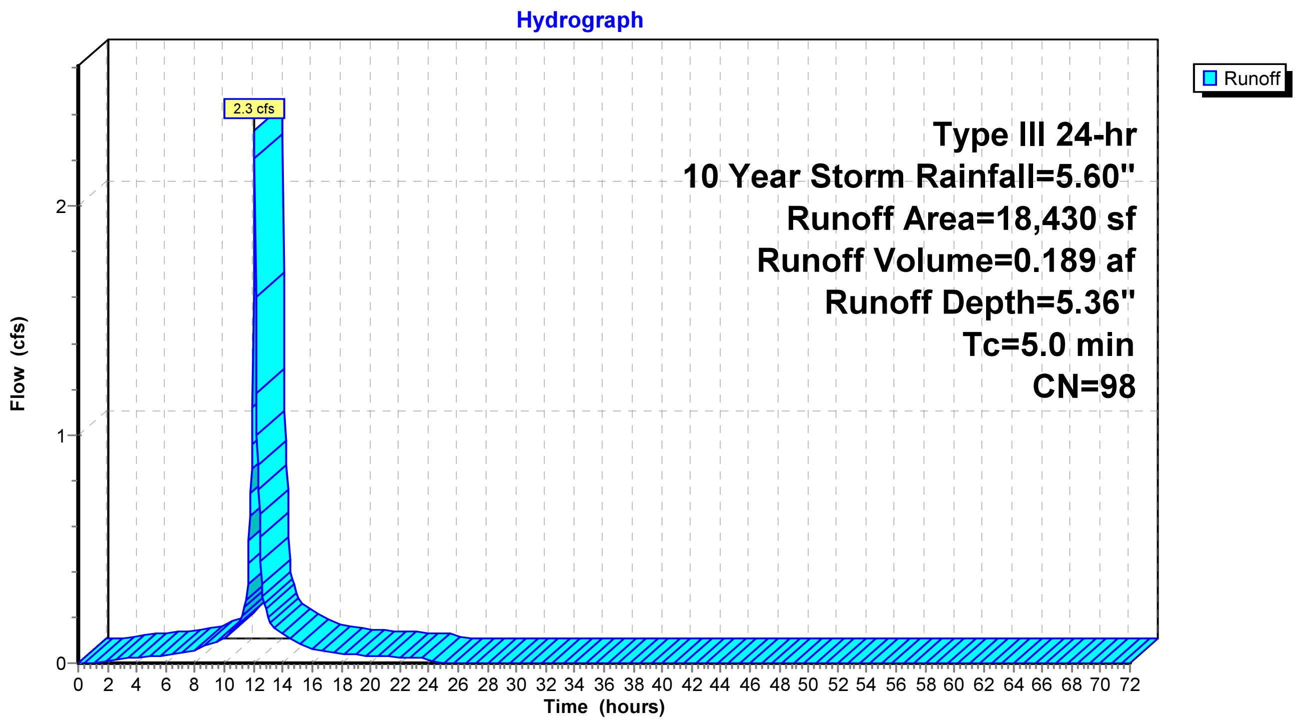
Runoff = 2.3 cfs @ 12.07 hrs, Volume= 0.189 af, Depth= 5.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Storm Rainfall=5.60"

Area (sf)	CN	Description
18,430	98	Roofs, HSG C
18,430		100.00% Impervious Area

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

Subcatchment PS5C: PS5 Roof



Summary for Subcatchment PS6:

[49] Hint: Tc<2dt may require smaller dt

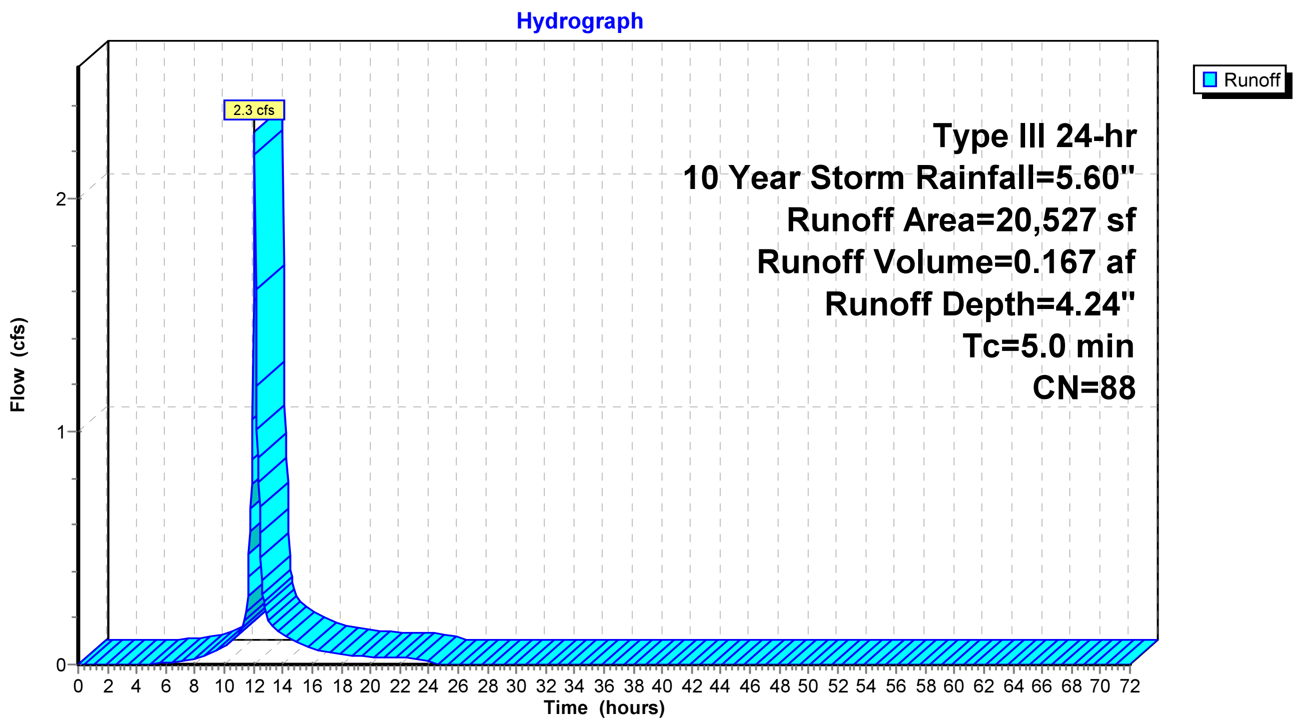
Runoff = 2.3 cfs @ 12.07 hrs, Volume= 0.167 af, Depth= 4.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Storm Rainfall=5.60"

	Area (sf)	CN	Description
	6,762	98	Paved parking, HSG C
*	2,312	98	Sidewalks, HSG C
	2,662	98	Roofs, HSG C
	8,791	74	>75% Grass cover, Good, HSG C
	20,527	88	Weighted Average
	8,791		42.83% Pervious Area
	11,736		57.17% Impervious Area

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

Subcatchment PS6:



Summary for Subcatchment PS7:

[49] Hint: Tc<2dt may require smaller dt

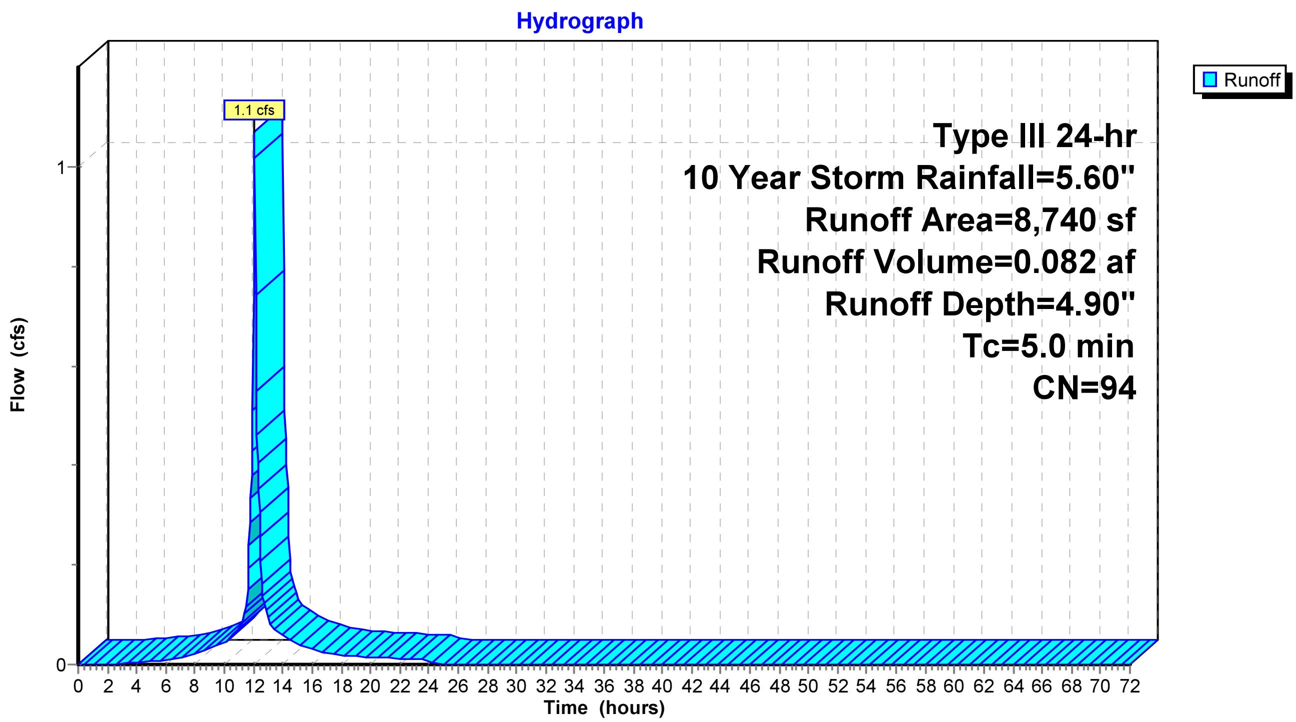
Runoff = 1.1 cfs @ 12.07 hrs, Volume= 0.082 af, Depth= 4.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Storm Rainfall=5.60"

	Area (sf)	CN	Description
	410	98	Paved parking, HSG C
*	4,272	98	Sidewalks, HSG C
	2,770	98	Roofs, HSG C
	1,288	74	>75% Grass cover, Good, HSG C
	8,740	94	Weighted Average
	1,288		14.74% Pervious Area
	7,452		85.26% Impervious Area

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

Subcatchment PS7:



Summary for Subcatchment PS8:

[49] Hint: Tc<2dt may require smaller dt

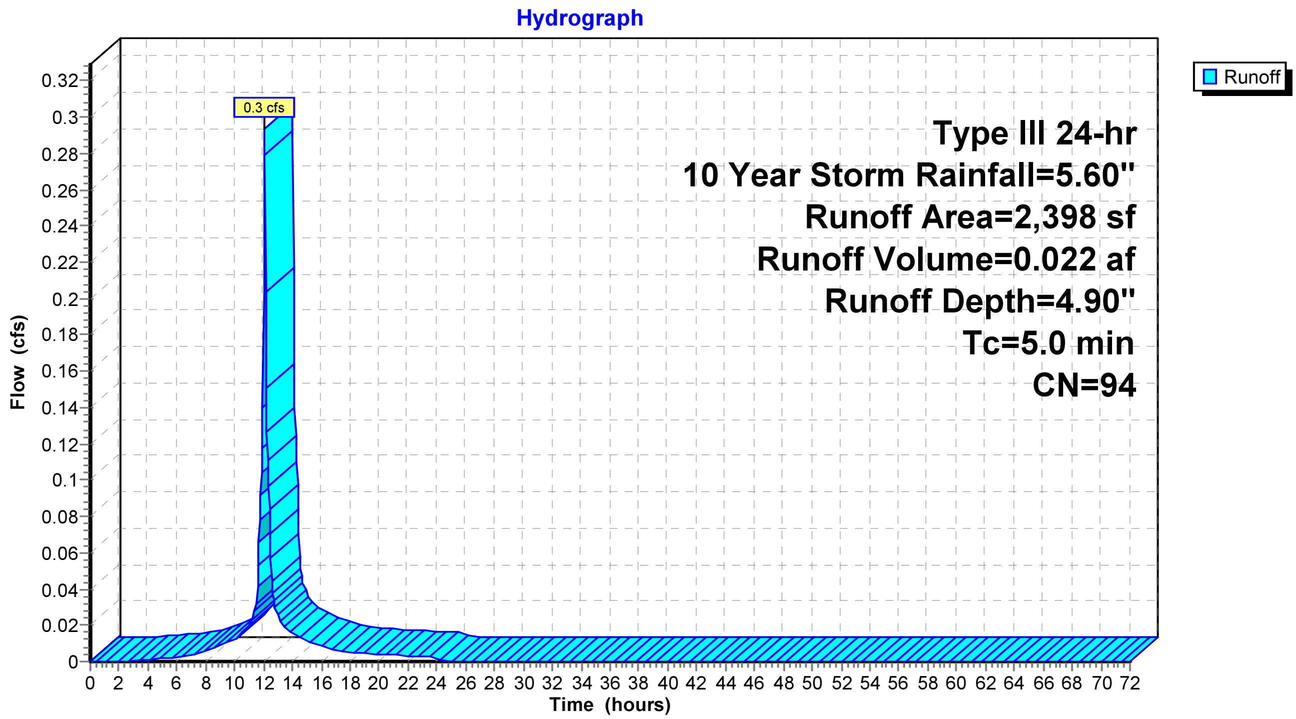
Runoff = 0.3 cfs @ 12.07 hrs, Volume= 0.022 af, Depth= 4.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Storm Rainfall=5.60"

Area (sf)	CN	Description
1,966	98	Paved parking, HSG C
432	74	>75% Grass cover, Good, HSG C
2,398	94	Weighted Average
432		18.02% Pervious Area
1,966		81.98% Impervious Area

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

Subcatchment PS8:



Summary for Reach 3R: Swale

Inflow Area = 1.210 ac, 75.70% Impervious, Inflow Depth = 4.73" for 10 Year Storm event
Inflow = 6.3 cfs @ 12.07 hrs, Volume= 0.477 af
Outflow = 5.7 cfs @ 12.11 hrs, Volume= 0.477 af, Atten= 9%, Lag= 2.4 min

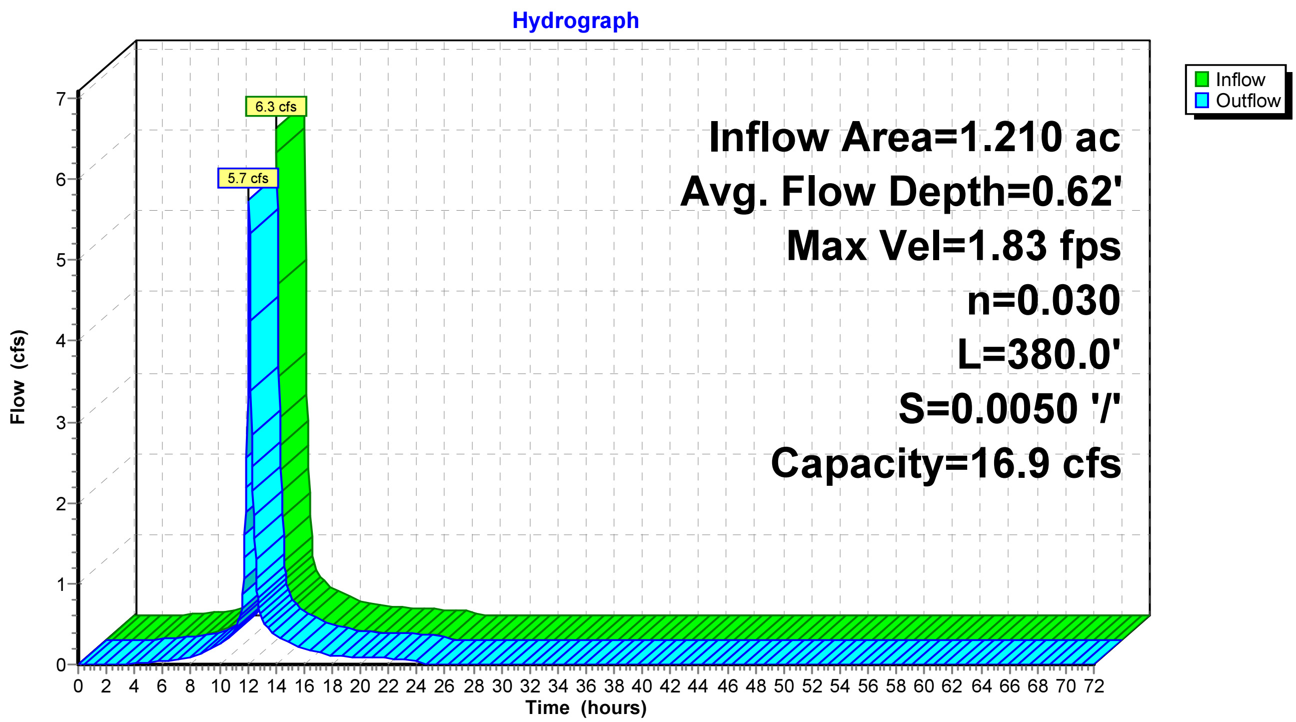
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.83 fps, Min. Travel Time= 3.5 min
Avg. Velocity = 0.55 fps, Avg. Travel Time= 11.6 min

Peak Storage= 1,190 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.62'
Bank-Full Depth= 1.00' Flow Area= 7.0 sf, Capacity= 16.9 cfs

2.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 5.0 '/' Top Width= 12.00'
Length= 380.0' Slope= 0.0050 '/'
Inlet Invert= 17.15', Outlet Invert= 15.25'

‡

Reach 3R: Swale



Summary for Pond 1P: DMH A19

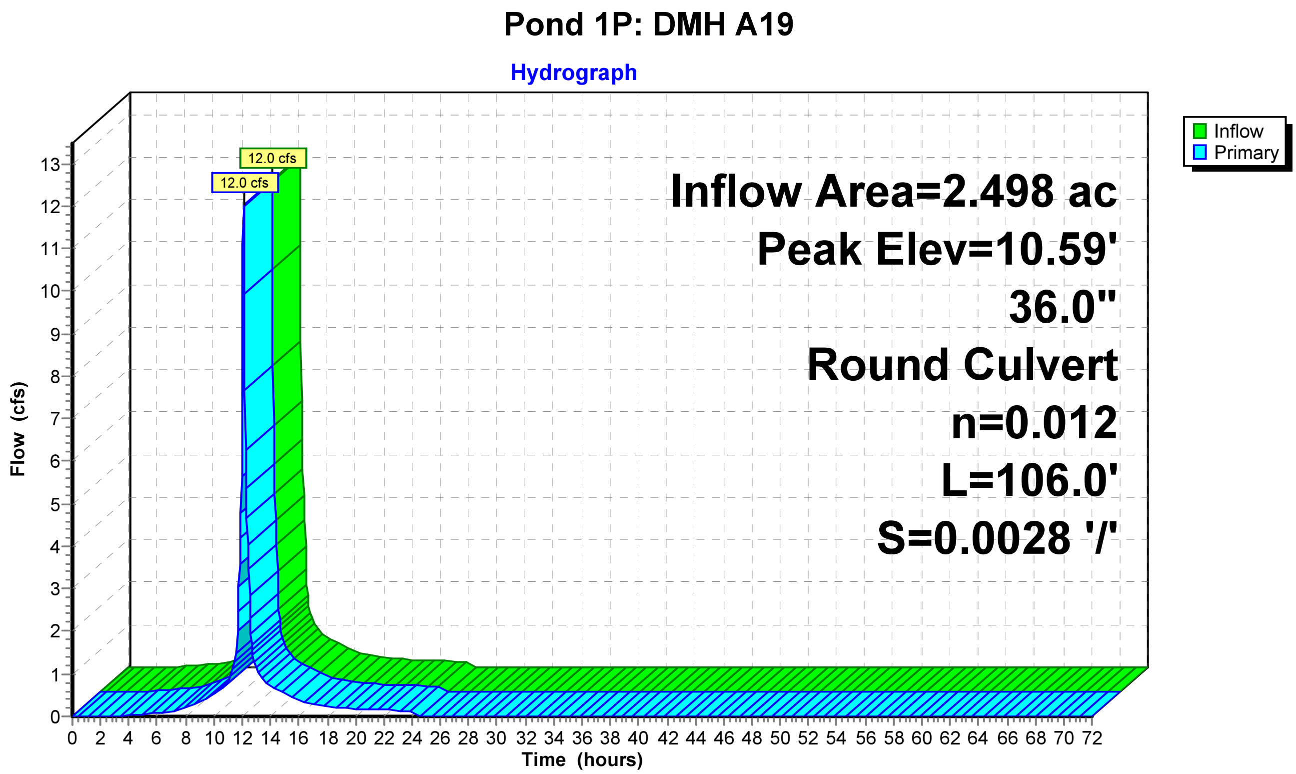
[57] Hint: Peaked at 10.59' (Flood elevation advised)
[80] Warning: Exceeded Pond 5P by 0.27' @ 12.10 hrs (10.8 cfs 0.222 af)

Inflow Area =	2.498 ac, 73.41% Impervious,	Inflow Depth = 4.66"	for 10 Year Storm event	
Inflow =	12.0 cfs @	12.09 hrs, Volume=	0.971 af	
Outflow =	12.0 cfs @	12.09 hrs, Volume=	0.971 af,	Atten= 0%, Lag= 0.0 min
Primary =	12.0 cfs @	12.09 hrs, Volume=	0.971 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 10.59' @ 12.18 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	8.17'	**36.0" Round Culvert** L= 106.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 8.17' / 7.87' S= 0.0028 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 7.07 sf

Primary OutFlow Max=0.0 cfs @ 12.09 hrs HW=10.31' TW=10.32' (Dynamic Tailwater)
1=Culvert (Controls 0.0 cfs)



Summary for Pond 3P: PCB3

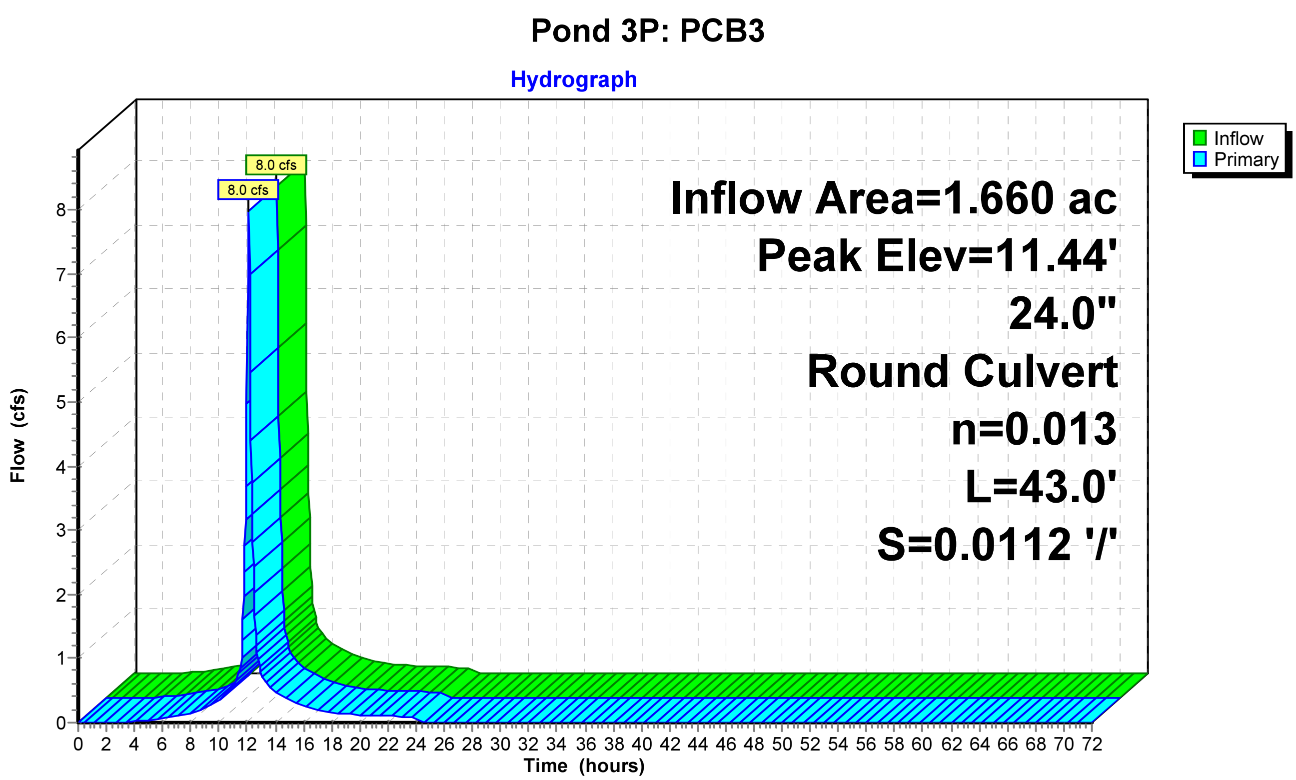
[57] Hint: Peaked at 11.44' (Flood elevation advised)

Inflow Area =	1.660 ac, 77.58% Impervious, Inflow Depth = 4.77"	for 10 Year Storm event	
Inflow =	8.0 cfs @ 12.10 hrs, Volume=	0.660 af	
Outflow =	8.0 cfs @ 12.10 hrs, Volume=	0.660 af, Atten= 0%, Lag= 0.0 min	
Primary =	8.0 cfs @ 12.10 hrs, Volume=	0.660 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.44' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.00'	**24.0" Round Culvert** L= 43.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.00' / 9.52' S= 0.0112 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=6.8 cfs @ 12.10 hrs HW=11.42' TW=10.92' (Dynamic Tailwater)
1=Culvert (Outlet Controls 6.8 cfs @ 4.02 fps)



Summary for Pond 4P: PCB7

[57] Hint: Peaked at 10.95' (Flood elevation advised)

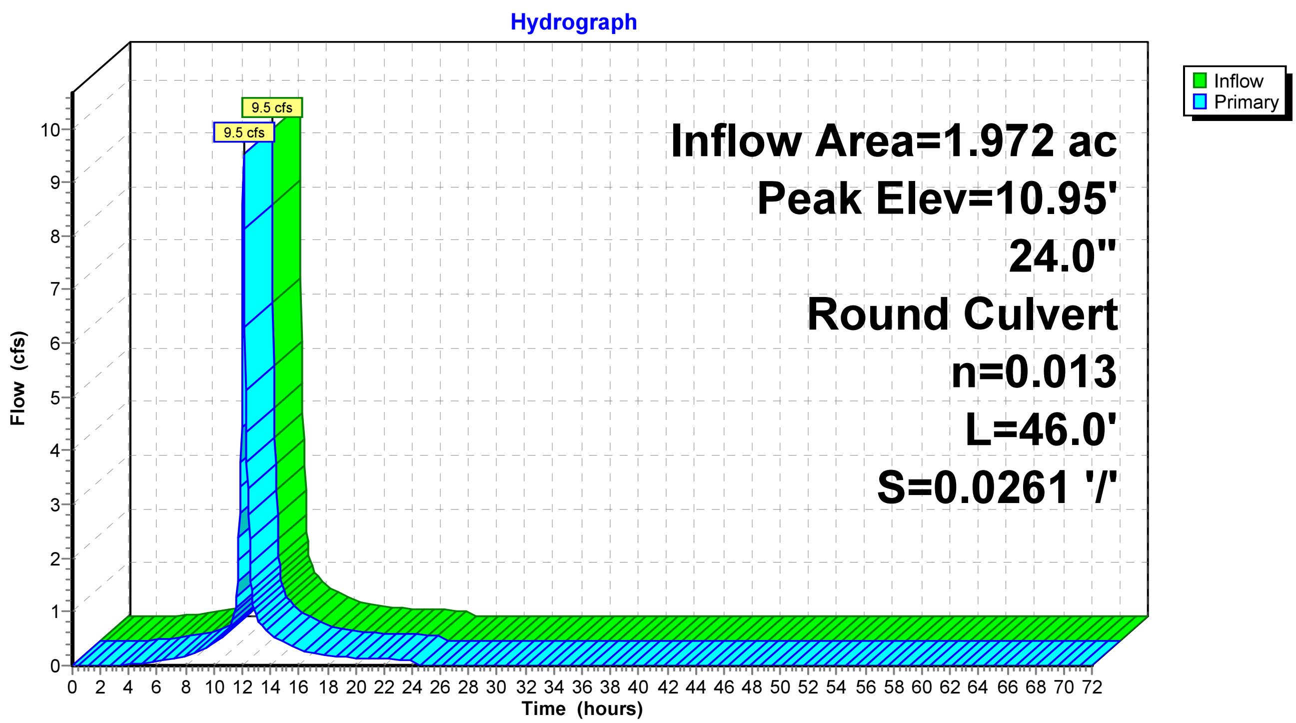
Inflow Area =	1.972 ac, 77.06% Impervious, Inflow Depth = 4.76"	for 10 Year Storm event	
Inflow =	9.5 cfs @ 12.10 hrs, Volume=	0.782 af	
Outflow =	9.5 cfs @ 12.10 hrs, Volume=	0.782 af,	Atten= 0%, Lag= 0.0 min
Primary =	9.5 cfs @ 12.10 hrs, Volume=	0.782 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 10.95' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	9.40'	**24.0" Round Culvert** L= 46.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.40' / 8.20' S= 0.0261 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=7.7 cfs @ 12.10 hrs HW=10.90' TW=10.34' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 7.7 cfs @ 4.22 fps)

Pond 4P: PCB7



Summary for Pond 5P: DMH 4B

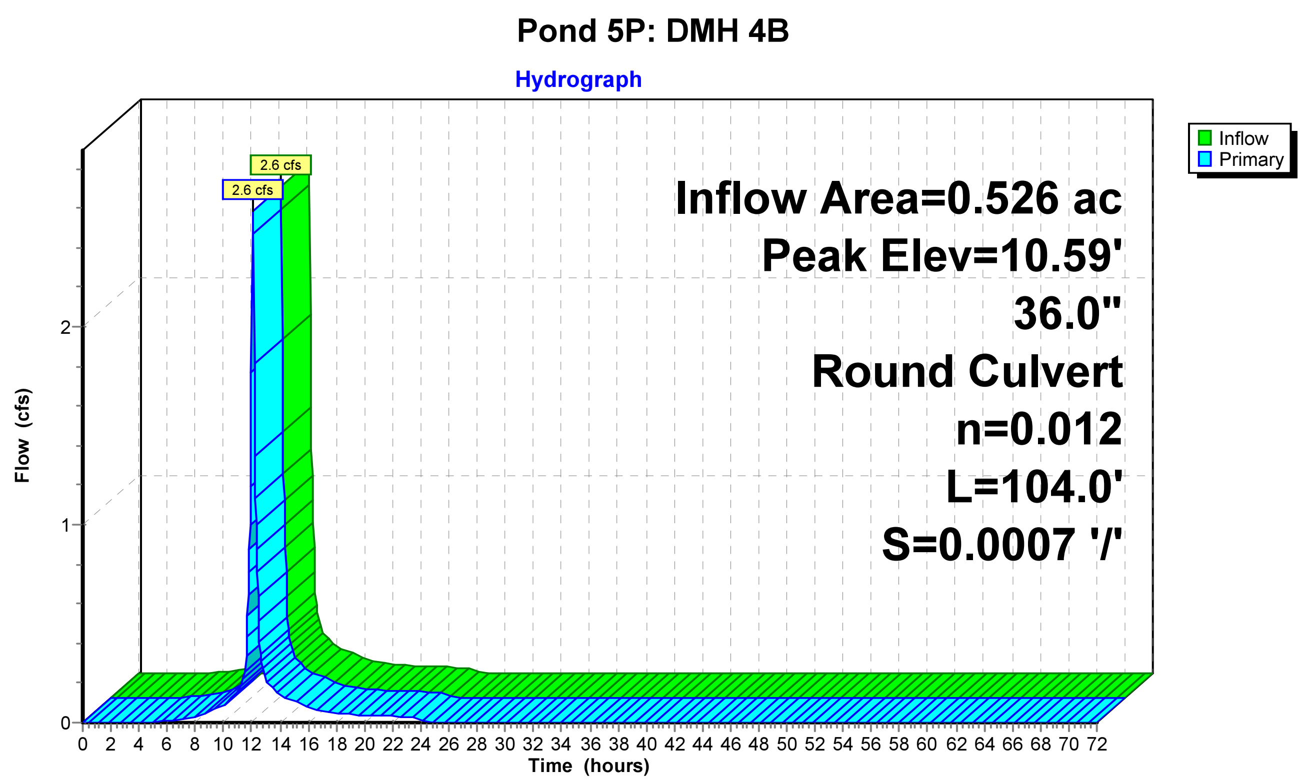
[57] Hint: Peaked at 10.59' (Flood elevation advised)

Inflow Area =	0.526 ac, 59.77% Impervious,	Inflow Depth = 4.31"	for 10 Year Storm event	
Inflow =	2.6 cfs @	12.07 hrs, Volume=	0.189 af	
Outflow =	2.6 cfs @	12.07 hrs, Volume=	0.189 af,	Atten= 0%, Lag= 0.0 min
Primary =	2.6 cfs @	12.07 hrs, Volume=	0.189 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 10.59' @ 12.23 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	8.25'	**36.0" Round Culvert** L= 104.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 8.25' / 8.18' S= 0.0007 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 7.07 sf

Primary OutFlow Max=0.0 cfs @ 12.07 hrs HW=9.95' TW=10.21' (Dynamic Tailwater)
└─**1=Culvert** (Controls 0.0 cfs)



Summary for Pond 6P: PCB1

[57] Hint: Peaked at 14.86' (Flood elevation advised)

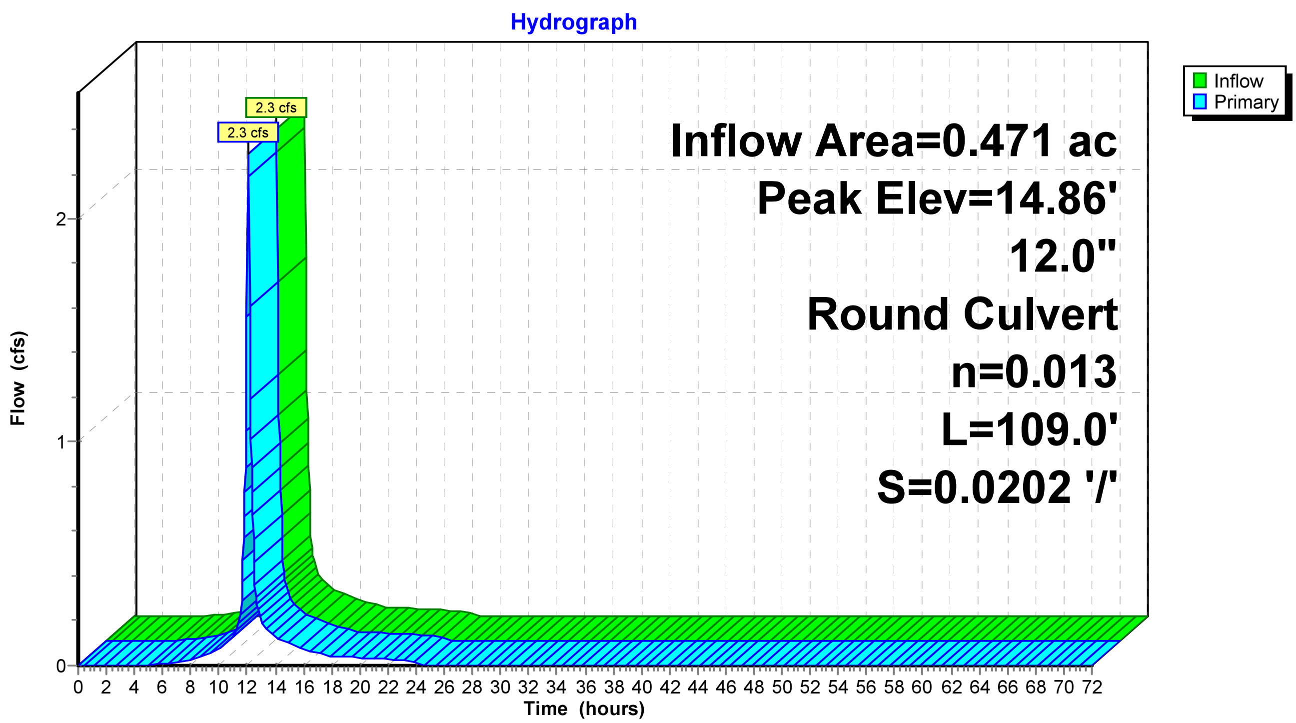
Inflow Area =	0.471 ac, 57.17% Impervious, Inflow Depth = 4.24"	for 10 Year Storm event	
Inflow =	2.3 cfs @ 12.07 hrs, Volume=	0.167 af	
Outflow =	2.3 cfs @ 12.07 hrs, Volume=	0.167 af, Atten= 0%, Lag= 0.0 min	
Primary =	2.3 cfs @ 12.07 hrs, Volume=	0.167 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 14.86' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	14.00'	**12.0" Round Culvert** L= 109.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 14.00' / 11.80' S= 0.0202 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.2 cfs @ 12.07 hrs HW=14.84' TW=12.76' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 2.2 cfs @ 3.12 fps)

Pond 6P: PCB1



Summary for Pond 7P: PCB2

[57] Hint: Peaked at 12.79' (Flood elevation advised)

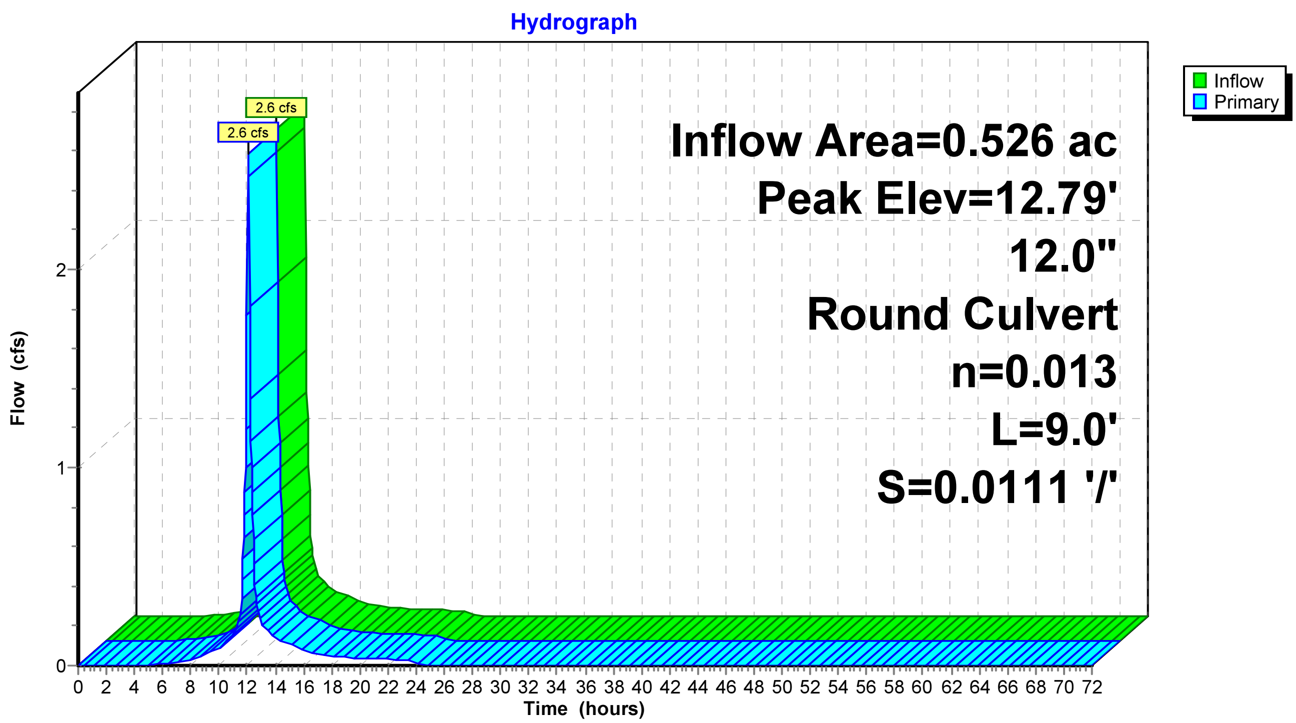
Inflow Area = 0.526 ac, 59.77% Impervious, Inflow Depth = 4.31" for 10 Year Storm event
Inflow = 2.6 cfs @ 12.07 hrs, Volume= 0.189 af
Outflow = 2.6 cfs @ 12.07 hrs, Volume= 0.189 af, Atten= 0%, Lag= 0.0 min
Primary = 2.6 cfs @ 12.07 hrs, Volume= 0.189 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 12.79' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	11.70'	**12.0" Round Culvert** L= 9.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 11.70' / 11.60' S= 0.0111 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.5 cfs @ 12.07 hrs HW=12.76' TW=9.95' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.5 cfs @ 3.70 fps)

Pond 7P: PCB2



Summary for Pond 9P: PCB4

[57] Hint: Peaked at 11.00' (Flood elevation advised)

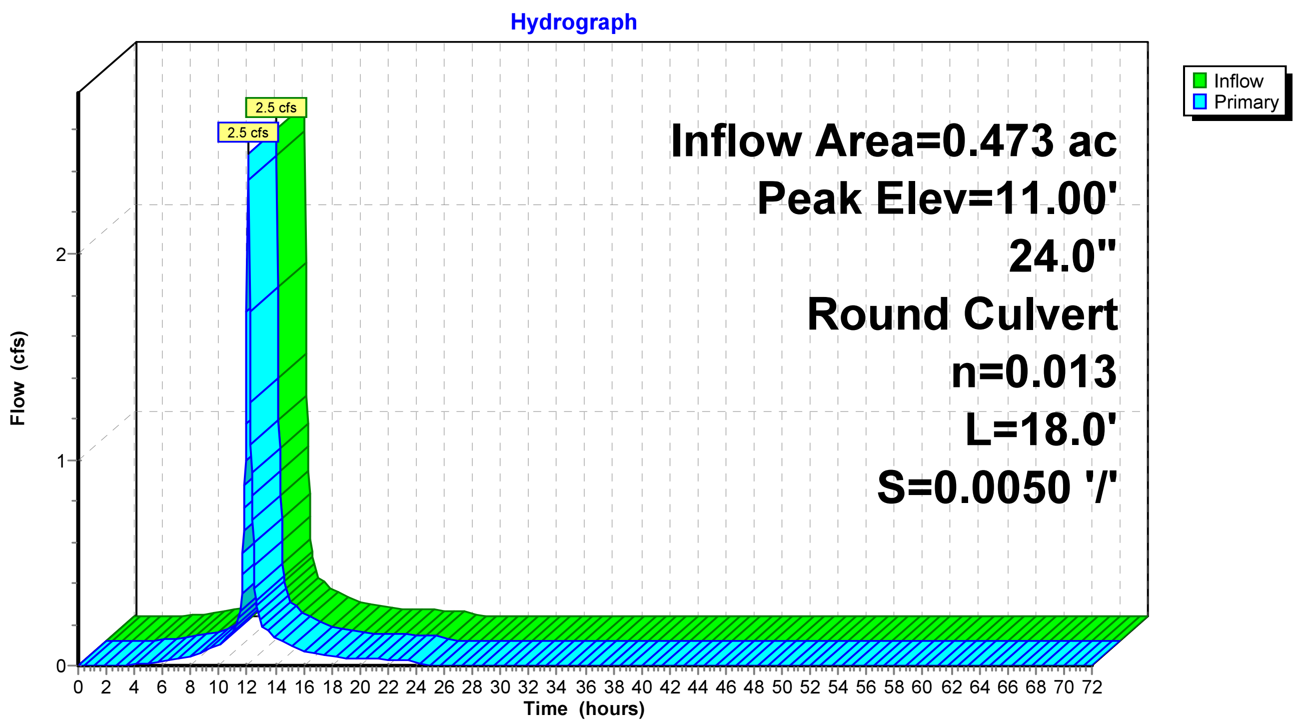
Inflow Area =	0.473 ac,	77.98% Impervious,	Inflow Depth = 4.79"	for 10 Year Storm event
Inflow =	2.5 cfs @	12.07 hrs, Volume=	0.189 af	
Outflow =	2.5 cfs @	12.07 hrs, Volume=	0.189 af,	Atten= 0%, Lag= 0.0 min
Primary =	2.5 cfs @	12.07 hrs, Volume=	0.189 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.00' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.20'	**24.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.20' / 10.11' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=2.4 cfs @ 12.07 hrs HW=10.98' TW=10.12' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 2.4 cfs @ 3.12 fps)

Pond 9P: PCB4



Summary for Pond 10P: PCB5

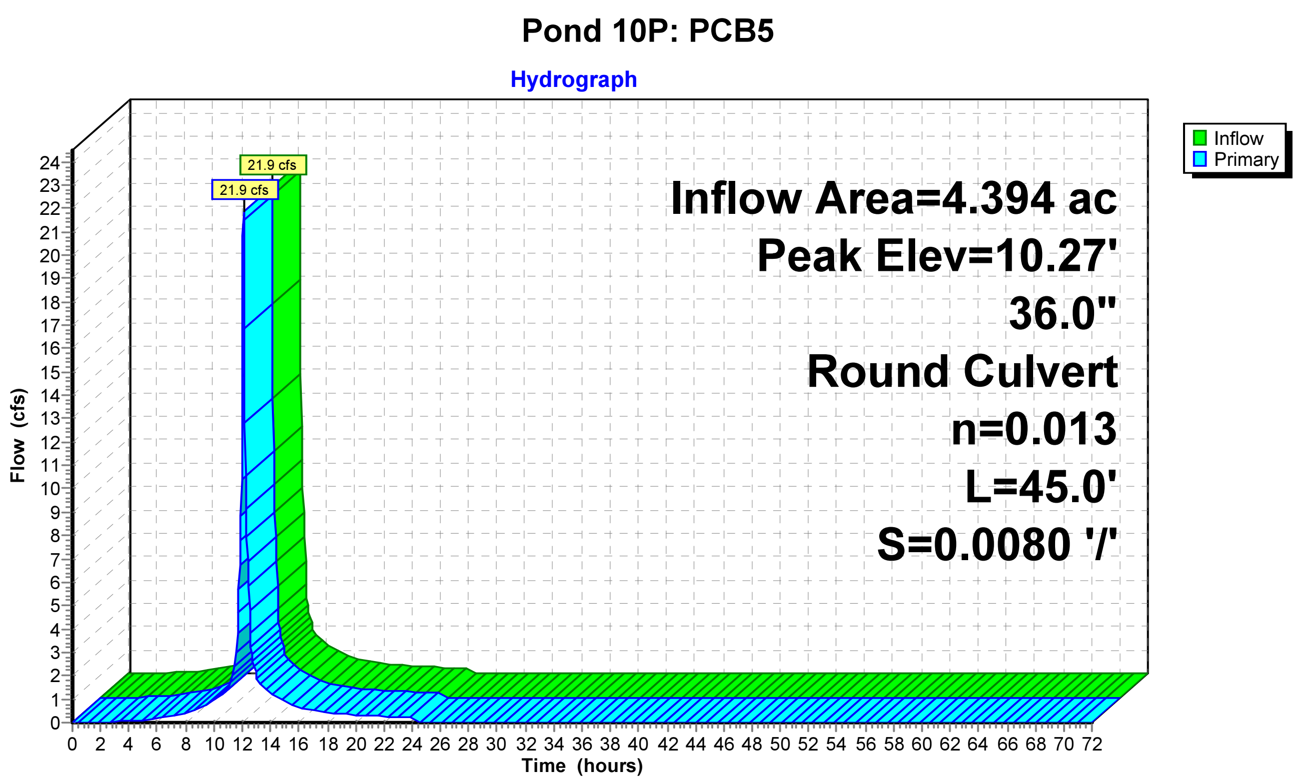
[57] Hint: Peaked at 10.27' (Flood elevation advised)

Inflow Area =	4.394 ac, 76.62% Impervious, Inflow Depth = 4.76"	for 10 Year Storm event	
Inflow =	21.9 cfs @ 12.08 hrs, Volume=	1.741 af	
Outflow =	21.9 cfs @ 12.08 hrs, Volume=	1.741 af, Atten= 0%, Lag= 0.0 min	
Primary =	21.9 cfs @ 12.08 hrs, Volume=	1.741 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 10.27' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.85'	**36.0" Round Culvert** L= 45.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 7.85' / 7.49' S= 0.0080 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 7.07 sf

Primary OutFlow Max=18.5 cfs @ 12.08 hrs HW=10.17' TW=9.64' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 18.5 cfs @ 4.36 fps)



Summary for Pond 12P: POCS2

[57] Hint: Peaked at 11.64' (Flood elevation advised)

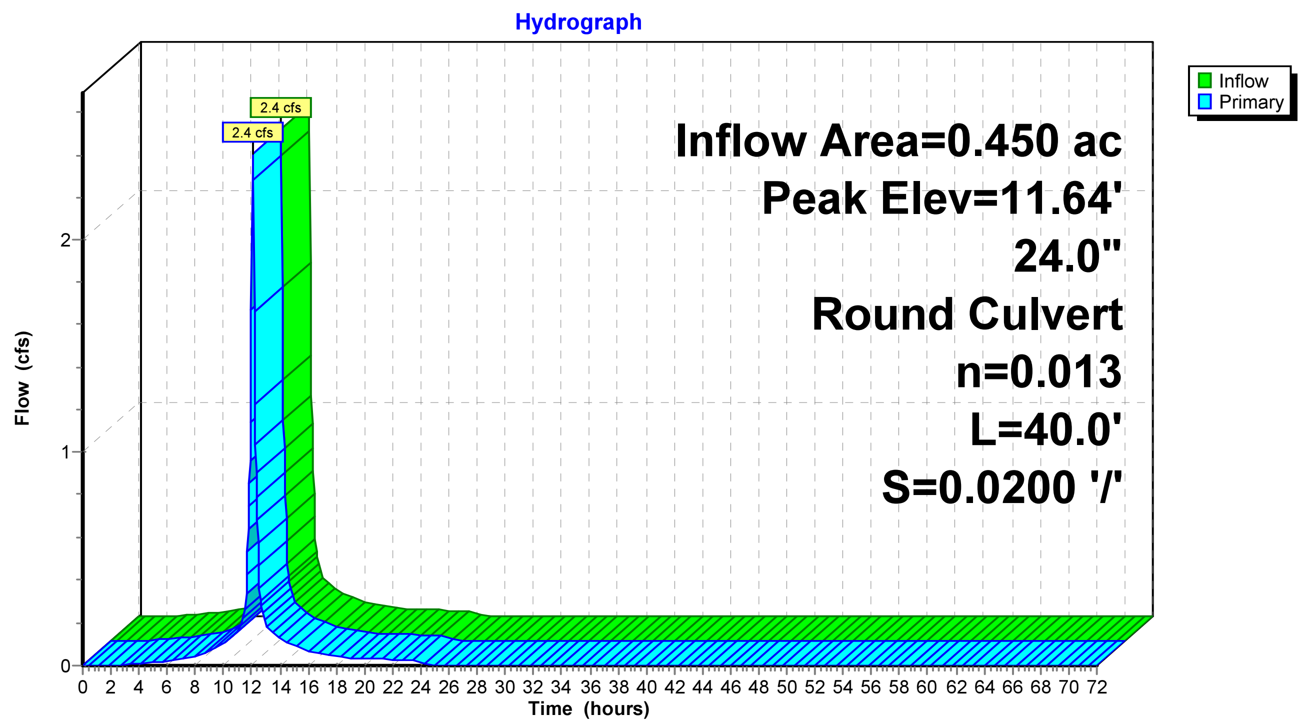
Inflow Area = 0.450 ac, 82.66% Impervious, Inflow Depth = 4.90" for 10 Year Storm event
Inflow = 2.4 cfs @ 12.07 hrs, Volume= 0.184 af
Outflow = 2.4 cfs @ 12.07 hrs, Volume= 0.184 af, Atten= 0%, Lag= 0.0 min
Primary = 2.4 cfs @ 12.07 hrs, Volume= 0.184 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.64' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.90'	**24.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.90' / 10.10' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=1.8 cfs @ 12.07 hrs HW=11.60' TW=11.32' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 1.8 cfs @ 2.70 fps)

Pond 12P: POCS2



Summary for Pond 14P: POCS1

[57] Hint: Peaked at 11.66' (Flood elevation advised)

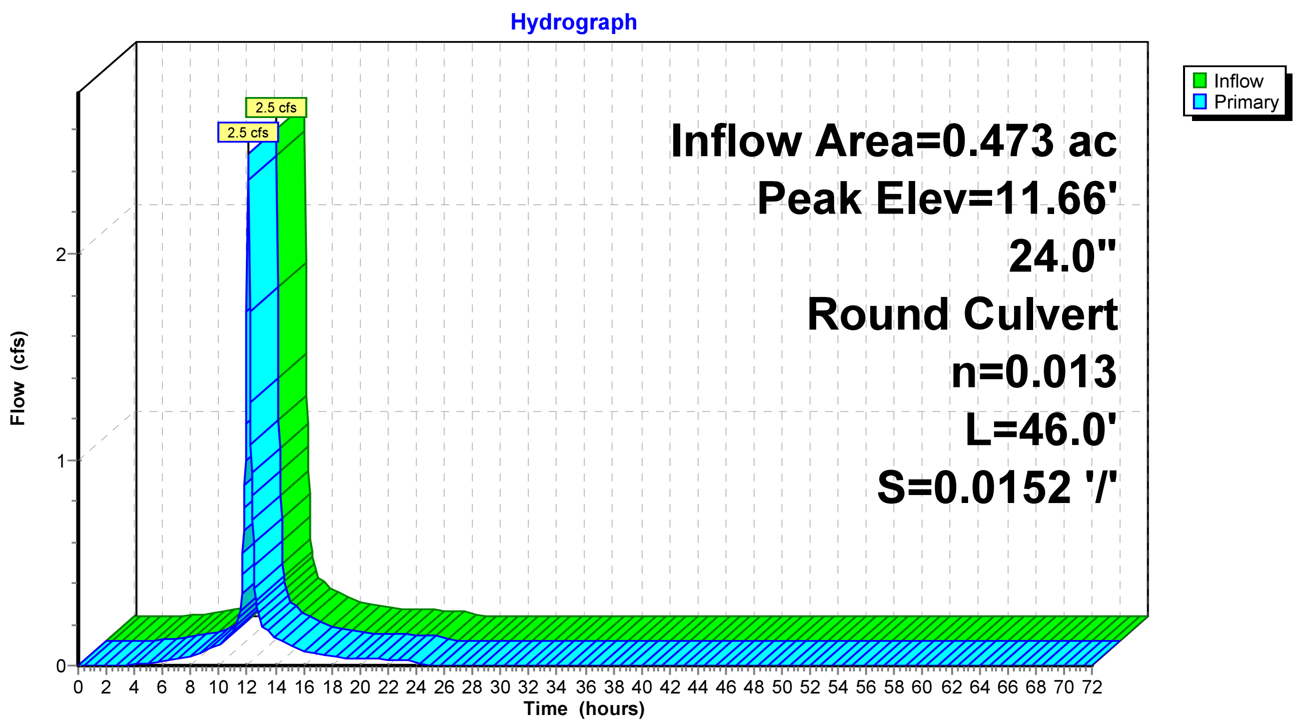
Inflow Area =	0.473 ac, 77.98% Impervious,	Inflow Depth = 4.79"	for 10 Year Storm event	
Inflow =	2.5 cfs @	12.07 hrs, Volume=	0.189 af	
Outflow =	2.5 cfs @	12.07 hrs, Volume=	0.189 af,	Atten= 0%, Lag= 0.0 min
Primary =	2.5 cfs @	12.07 hrs, Volume=	0.189 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.66' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	11.00'	**24.0" Round Culvert** L= 46.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 11.00' / 10.30' S= 0.0152 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=2.4 cfs @ 12.07 hrs HW=11.65' TW=10.98' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 2.4 cfs @ 3.99 fps)

Pond 14P: POCS1



Summary for Pond 15P: 2 - 12" PERFORATED UNDERDRAIN

[57] Hint: Peaked at 14.42' (Flood elevation advised)

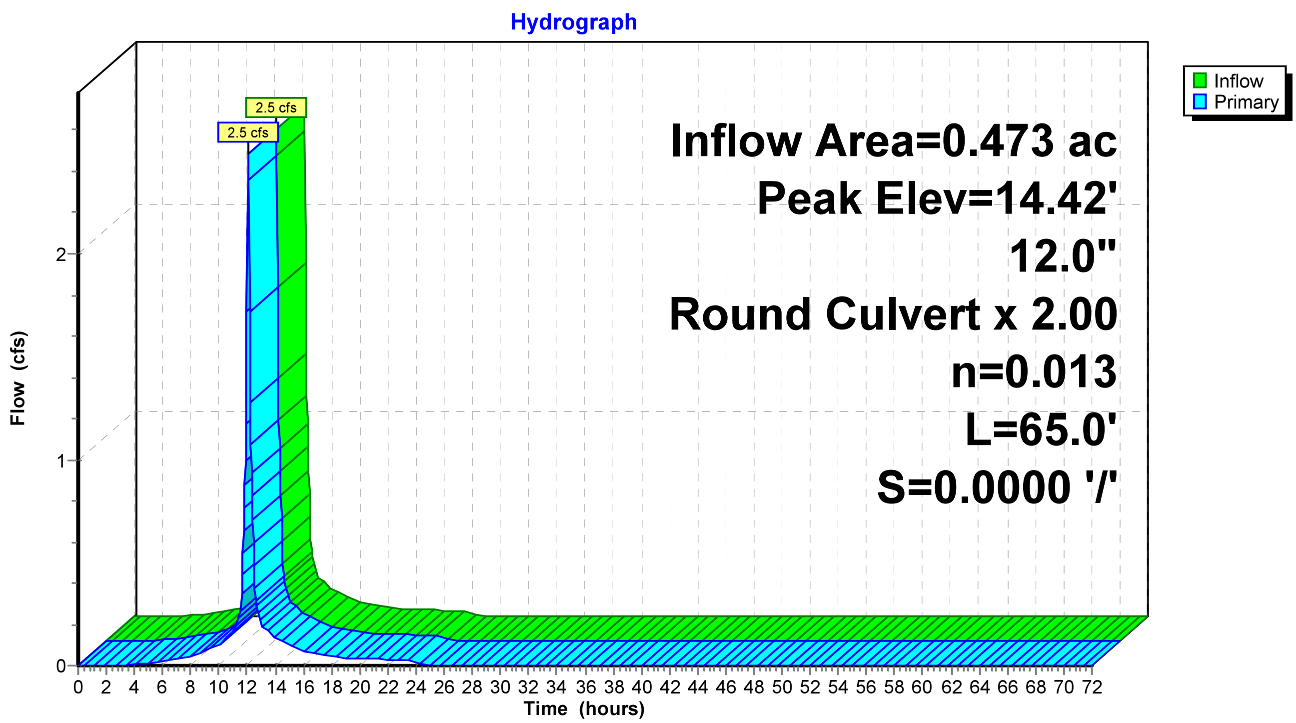
Inflow Area =	0.473 ac, 77.98% Impervious, Inflow Depth = 4.79"	for 10 Year Storm event	
Inflow =	2.5 cfs @ 12.07 hrs, Volume=	0.189 af	
Outflow =	2.5 cfs @ 12.07 hrs, Volume=	0.189 af, Atten= 0%, Lag= 0.0 min	
Primary =	2.5 cfs @ 12.07 hrs, Volume=	0.189 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 14.42' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	13.50'	**12.0" Round Culvert X 2.00** L= 65.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.50' / 13.50' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.4 cfs @ 12.07 hrs HW=14.40' TW=11.65' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 2.4 cfs @ 2.14 fps)

Pond 15P: 2 - 12" PERFORATED UNDERDRAIN



Summary for Pond 16P: 2 - 12" PERFORATED UNDERDRAIN

[57] Hint: Peaked at 13.92' (Flood elevation advised)

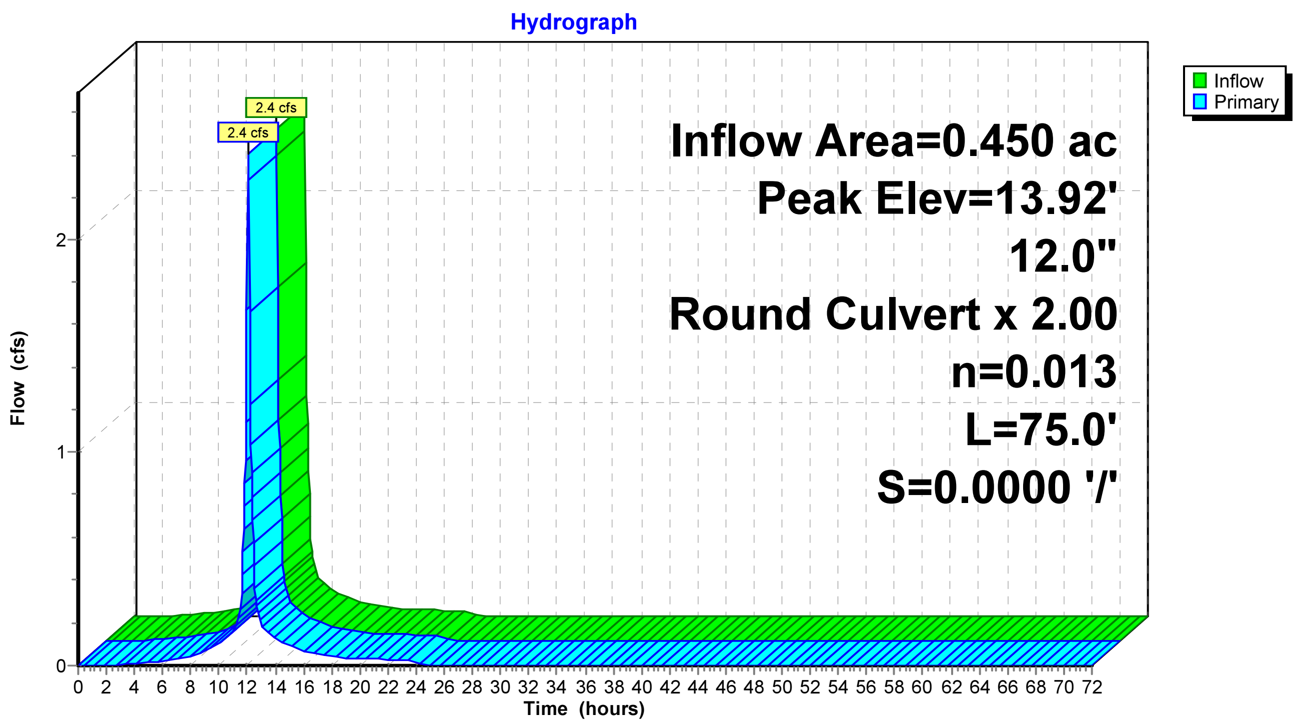
Inflow Area =	0.450 ac,	82.66% Impervious,	Inflow Depth = 4.90"	for 10 Year Storm event
Inflow =	2.4 cfs @	12.07 hrs, Volume=	0.184 af	
Outflow =	2.4 cfs @	12.07 hrs, Volume=	0.184 af,	Atten= 0%, Lag= 0.0 min
Primary =	2.4 cfs @	12.07 hrs, Volume=	0.184 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 13.92' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	13.00'	**12.0" Round Culvert X 2.00** L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.00' / 13.00' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.3 cfs @ 12.07 hrs HW=13.90' TW=11.60' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.3 cfs @ 2.06 fps)

Pond 16P: 2 - 12" PERFORATED UNDERDRAIN



Summary for Pond CB 5D: CB 5D

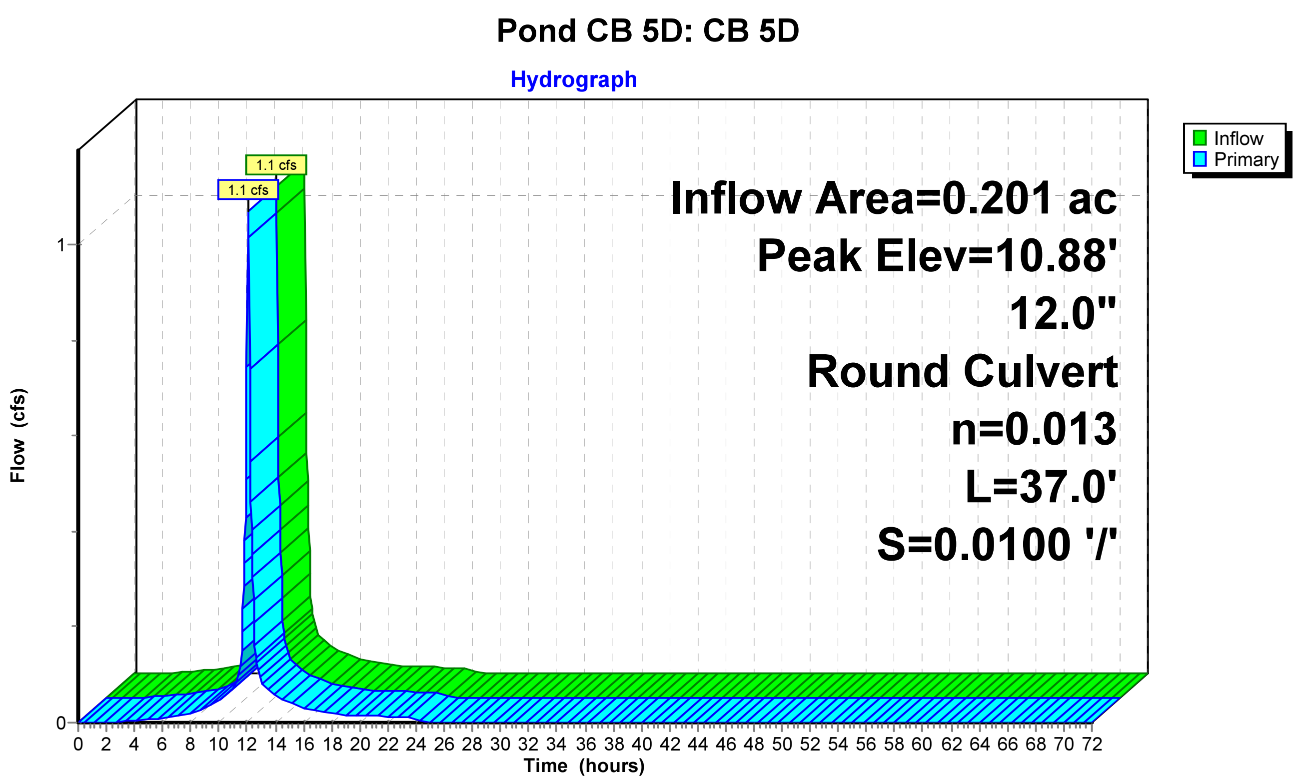
[57] Hint: Peaked at 10.88' (Flood elevation advised)

Inflow Area = 0.201 ac, 85.26% Impervious, Inflow Depth = 4.90" for 10 Year Storm event
Inflow = 1.1 cfs @ 12.07 hrs, Volume= 0.082 af
Outflow = 1.1 cfs @ 12.07 hrs, Volume= 0.082 af, Atten= 0%, Lag= 0.0 min
Primary = 1.1 cfs @ 12.07 hrs, Volume= 0.082 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 10.88' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.24'	**12.0" Round Culvert** L= 37.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.24' / 9.87' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.0 cfs @ 12.07 hrs HW=10.86' TW=10.57' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 1.0 cfs @ 2.65 fps)



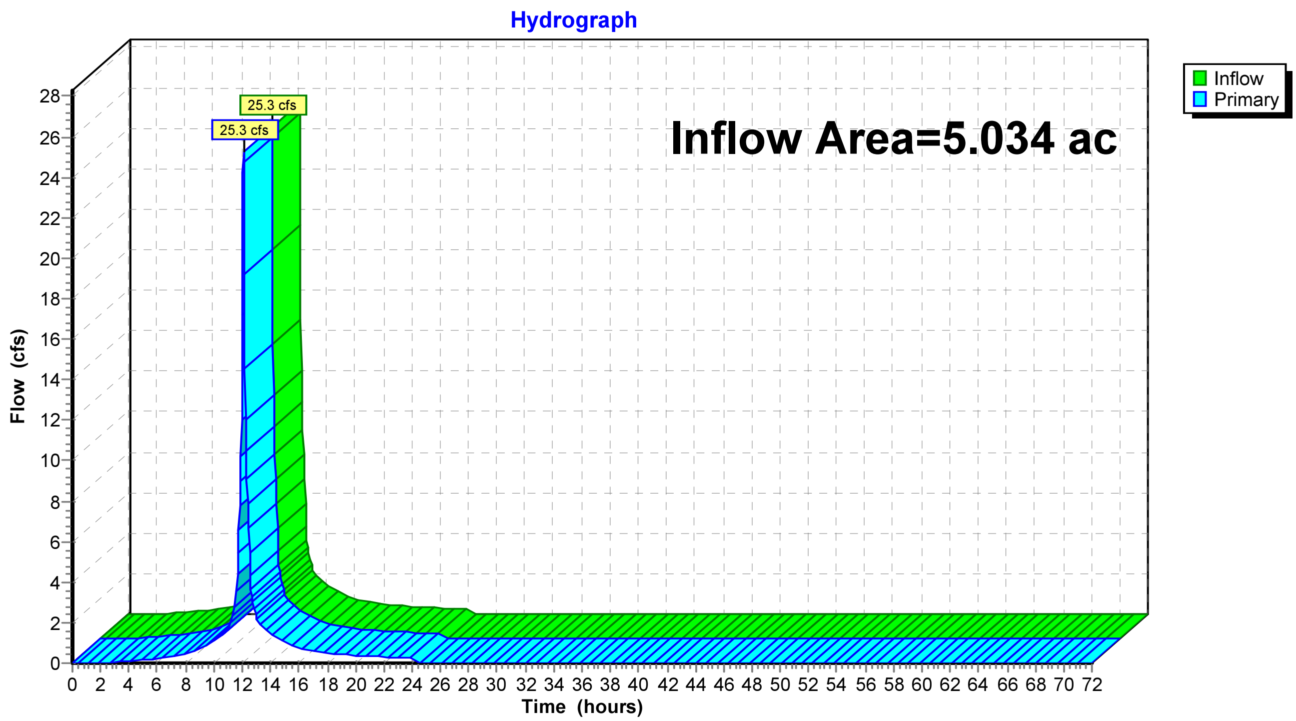
Summary for Pond DMH 4: DP 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 5.034 ac, 78.07% Impervious, Inflow Depth = 4.79" for 10 Year Storm event
Inflow = 25.3 cfs @ 12.08 hrs, Volume= 2.008 af
Primary = 25.3 cfs @ 12.08 hrs, Volume= 2.008 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DMH 4: DP 1



Summary for Pond DMH 4A: DMH 4A

[57] Hint: Peaked at 10.48' (Flood elevation advised)
[80] Warning: Exceeded Pond 1P by 0.02' @ 12.10 hrs (2.7 cfs 0.011 af)
[80] Warning: Exceeded Pond DMH A6 by 0.10' @ 12.10 hrs (4.4 cfs 0.030 af)

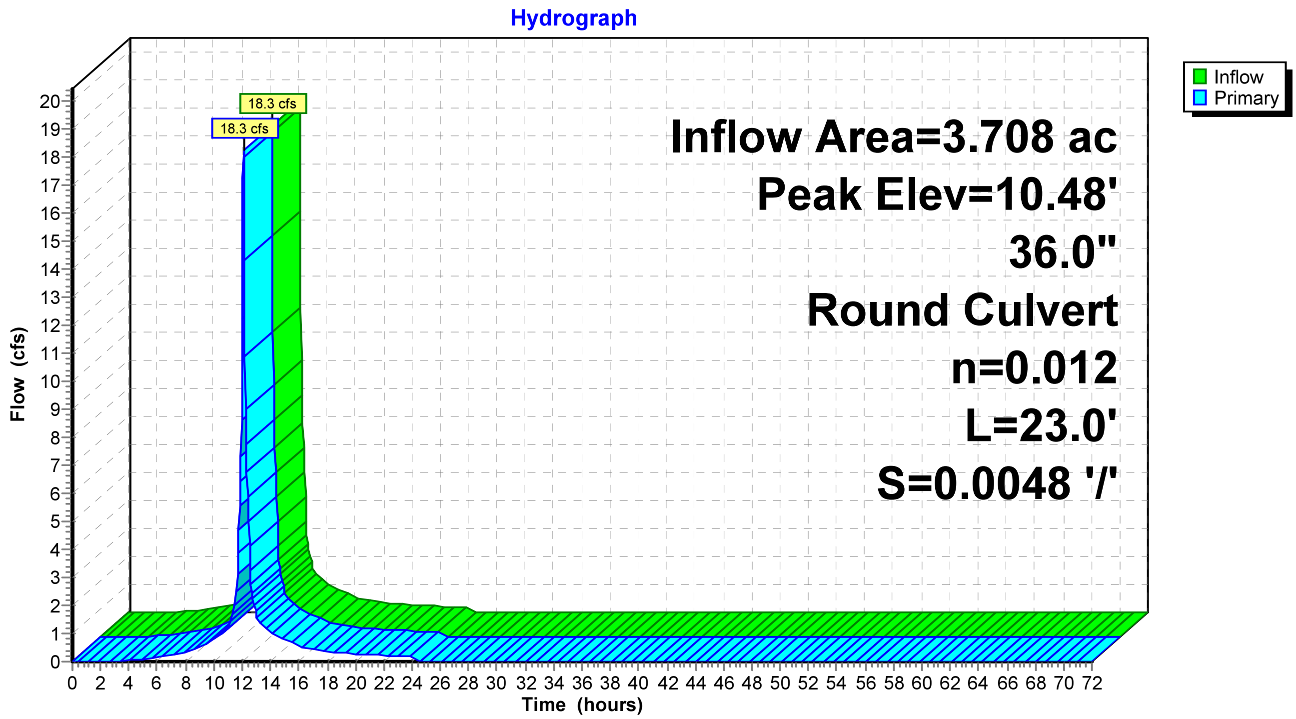
Inflow Area = 3.708 ac, 75.46% Impervious, Inflow Depth = 4.72" for 10 Year Storm event
Inflow = 18.3 cfs @ 12.08 hrs, Volume= 1.459 af
Outflow = 18.3 cfs @ 12.08 hrs, Volume= 1.459 af, Atten= 0%, Lag= 0.0 min
Primary = 18.3 cfs @ 12.08 hrs, Volume= 1.459 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 10.48' @ 12.14 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.85'	**36.0" Round Culvert** L= 23.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 7.85' / 7.74' S= 0.0048 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 7.07 sf

Primary OutFlow Max=8.9 cfs @ 12.08 hrs HW=10.28' TW=10.18' (Dynamic Tailwater)
1=Culvert (Outlet Controls 8.9 cfs @ 1.98 fps)

Pond DMH 4A: DMH 4A



Summary for Pond DMH A6: DMH A6

[57] Hint: Peaked at 10.54' (Flood elevation advised)
[80] Warning: Exceeded Pond ENV 21 by 0.07' @ 12.15 hrs (2.3 cfs 0.010 af)

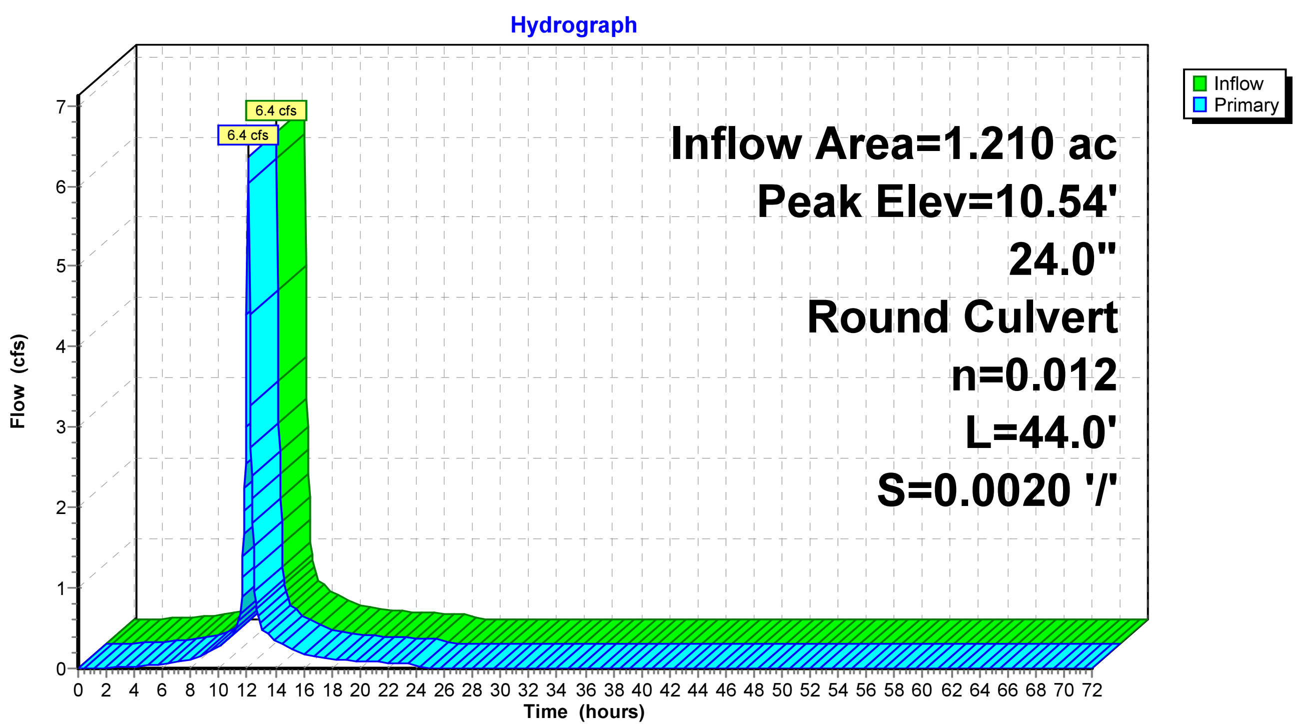
Inflow Area =	1.210 ac,	79.68% Impervious,	Inflow Depth = 4.84"	for 10 Year Storm event
Inflow =	6.4 cfs @	12.07 hrs,	Volume=	0.488 af
Outflow =	6.4 cfs @	12.07 hrs,	Volume=	0.488 af, Atten= 0%, Lag= 0.0 min
Primary =	6.4 cfs @	12.07 hrs,	Volume=	0.488 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 10.54' @ 12.18 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	8.50'	**24.0" Round Culvert** L= 44.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 8.50' / 8.41' S= 0.0020 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf

Primary OutFlow Max=0.0 cfs @ 12.07 hrs HW=10.14' TW=10.20' (Dynamic Tailwater)
└─**1=Culvert** (Controls 0.0 cfs)

Pond DMH A6: DMH A6



Summary for Pond ENV 21: ENV 21

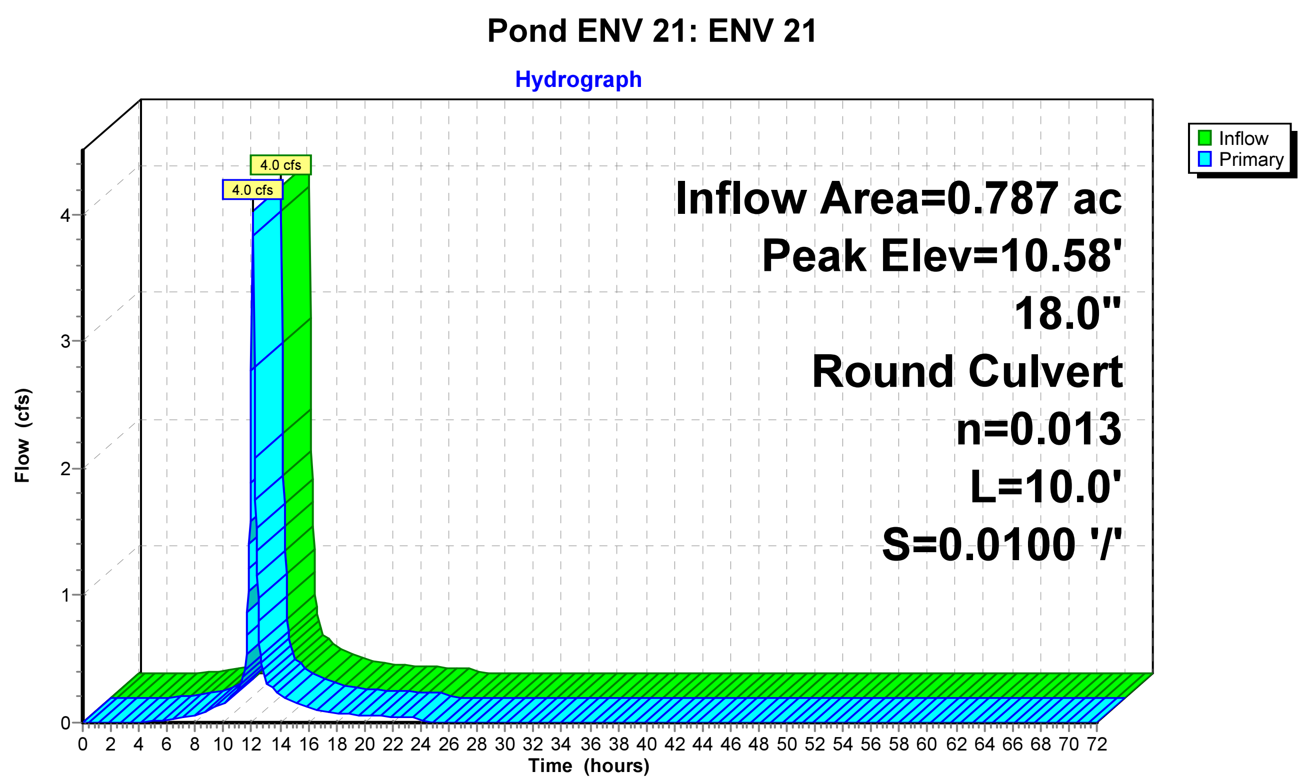
[57] Hint: Peaked at 10.58' (Flood elevation advised)

Inflow Area = 0.787 ac, 68.76% Impervious, Inflow Depth = 4.57" for 10 Year Storm event
Inflow = 4.0 cfs @ 12.07 hrs, Volume= 0.299 af
Outflow = 4.0 cfs @ 12.07 hrs, Volume= 0.299 af, Atten= 0%, Lag= 0.0 min
Primary = 4.0 cfs @ 12.07 hrs, Volume= 0.299 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 10.58' @ 12.23 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	9.00'	**18.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.00' / 8.90' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.7 cfs @ 12.07 hrs HW=10.20' TW=10.14' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.7 cfs @ 1.50 fps)



Summary for Pond PCB-BH: PCB-BH

[57] Hint: Peaked at 13.60' (Flood elevation advised)

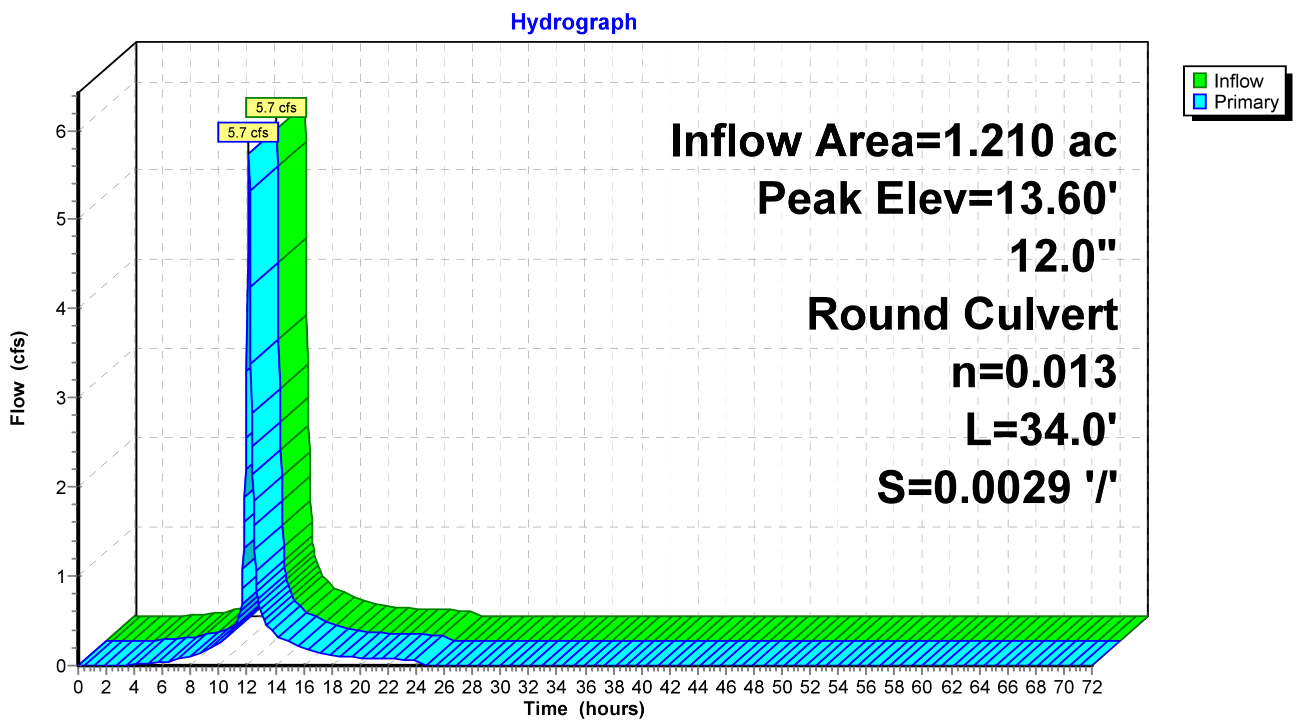
Inflow Area =	1.210 ac, 75.70% Impervious, Inflow Depth = 4.73"	for 10 Year Storm event
Inflow =	5.7 cfs @ 12.11 hrs, Volume=	0.477 af
Outflow =	5.7 cfs @ 12.11 hrs, Volume=	0.477 af, Atten= 0%, Lag= 0.0 min
Primary =	5.7 cfs @ 12.11 hrs, Volume=	0.477 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 13.60' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.20'	**12.0" Round Culvert** L= 34.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.20' / 10.10' S= 0.0029 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=5.4 cfs @ 12.11 hrs HW=13.49' TW=11.42' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 5.4 cfs @ 6.92 fps)

Pond PCB-BH: PCB-BH



Summary for Pond PDMH 1: PDMH 1

[57] Hint: Peaked at 10.58' (Flood elevation advised)

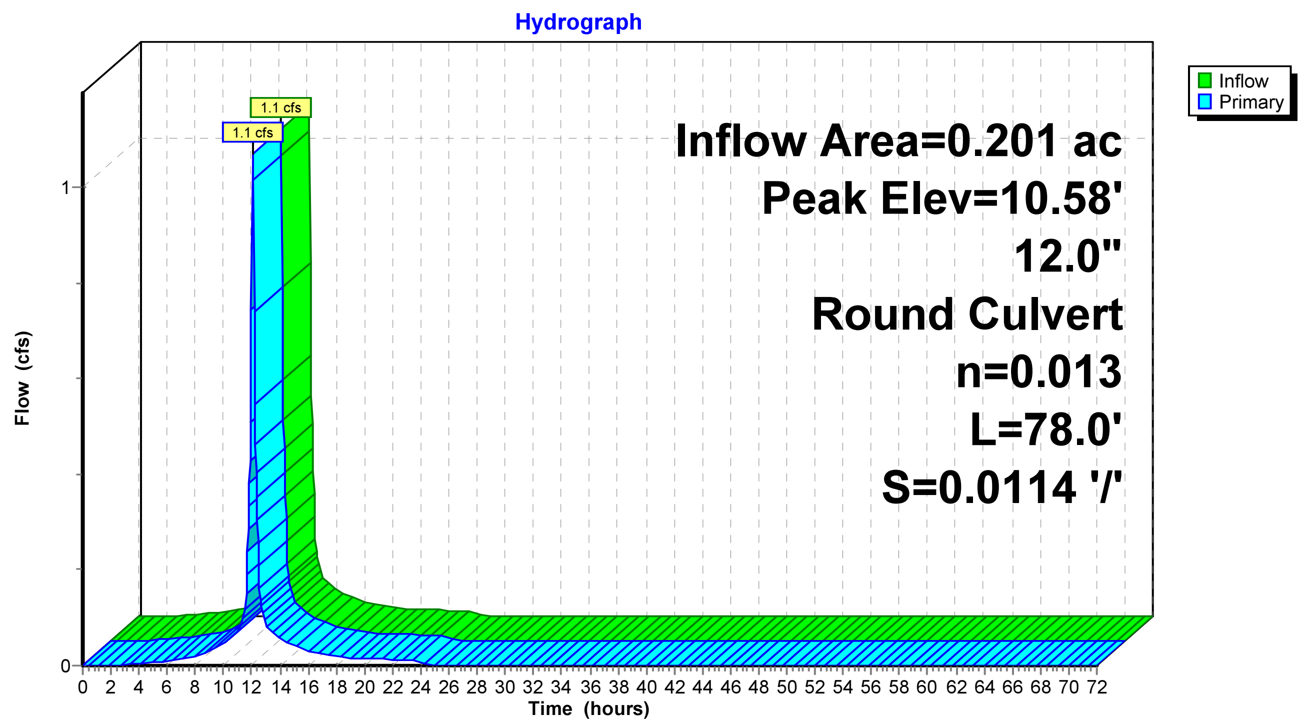
Inflow Area =	0.201 ac,	85.26% Impervious,	Inflow Depth =	4.90"	for 10 Year Storm event
Inflow =	1.1 cfs @	12.07 hrs,	Volume=	0.082 af	
Outflow =	1.1 cfs @	12.07 hrs,	Volume=	0.082 af,	Atten= 0%, Lag= 0.0 min
Primary =	1.1 cfs @	12.07 hrs,	Volume=	0.082 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 10.58' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.04'	**12.0" Round Culvert** L= 78.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.04' / 9.15' S= 0.0114 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.0 cfs @ 12.07 hrs HW=10.57' TW=9.71' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 1.0 cfs @ 3.47 fps)

Pond PDMH 1: PDMH 1



Summary for Pond PDMH 2: PDMH 2

[57] Hint: Peaked at 9.81' (Flood elevation advised)

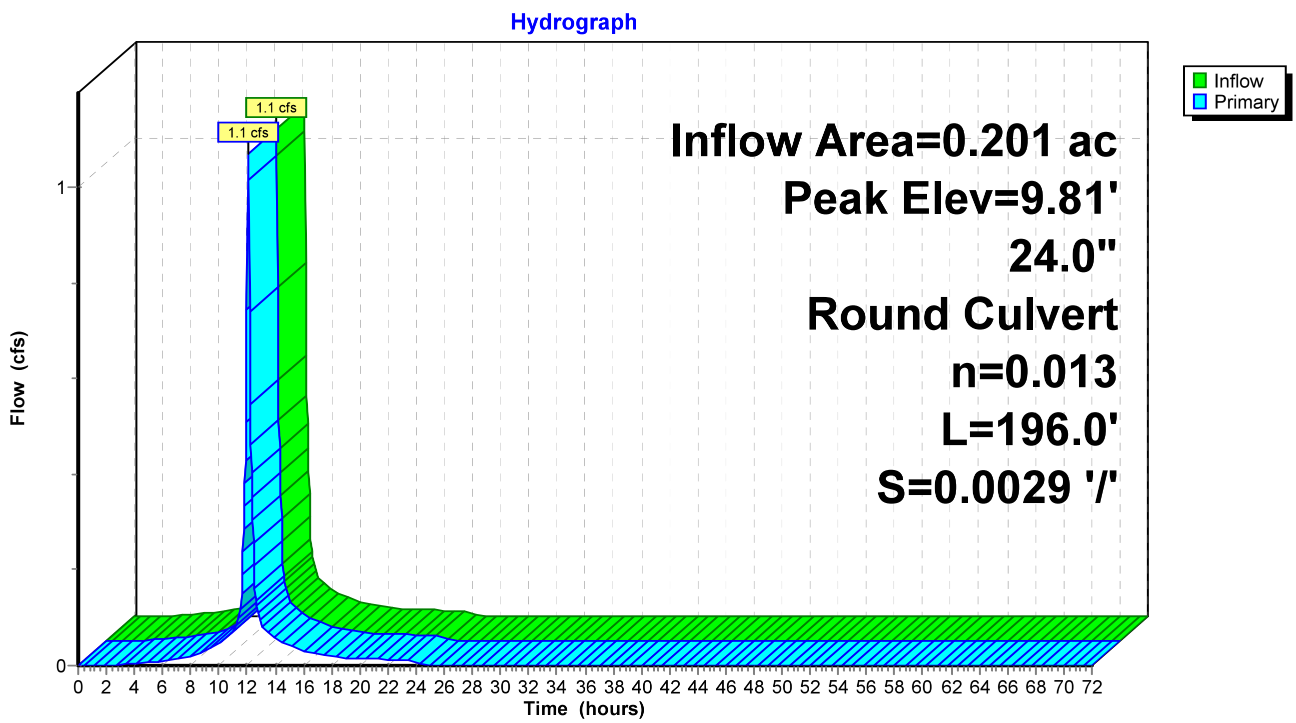
Inflow Area =	0.201 ac, 85.26% Impervious, Inflow Depth = 4.90"	for 10 Year Storm event	
Inflow =	1.1 cfs @ 12.07 hrs, Volume=	0.082 af	
Outflow =	1.1 cfs @ 12.07 hrs, Volume=	0.082 af, Atten= 0%, Lag= 0.0 min	
Primary =	1.1 cfs @ 12.07 hrs, Volume=	0.082 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 9.81' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	9.05'	**24.0" Round Culvert** L= 196.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.05' / 8.49' S= 0.0029 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=0.5 cfs @ 12.07 hrs HW=9.71' TW=9.64' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 0.5 cfs @ 0.87 fps)

Pond PDMH 2: PDMH 2



Summary for Pond PDMH 3: PDMH 3

[57] Hint: Peaked at 9.68' (Flood elevation advised)

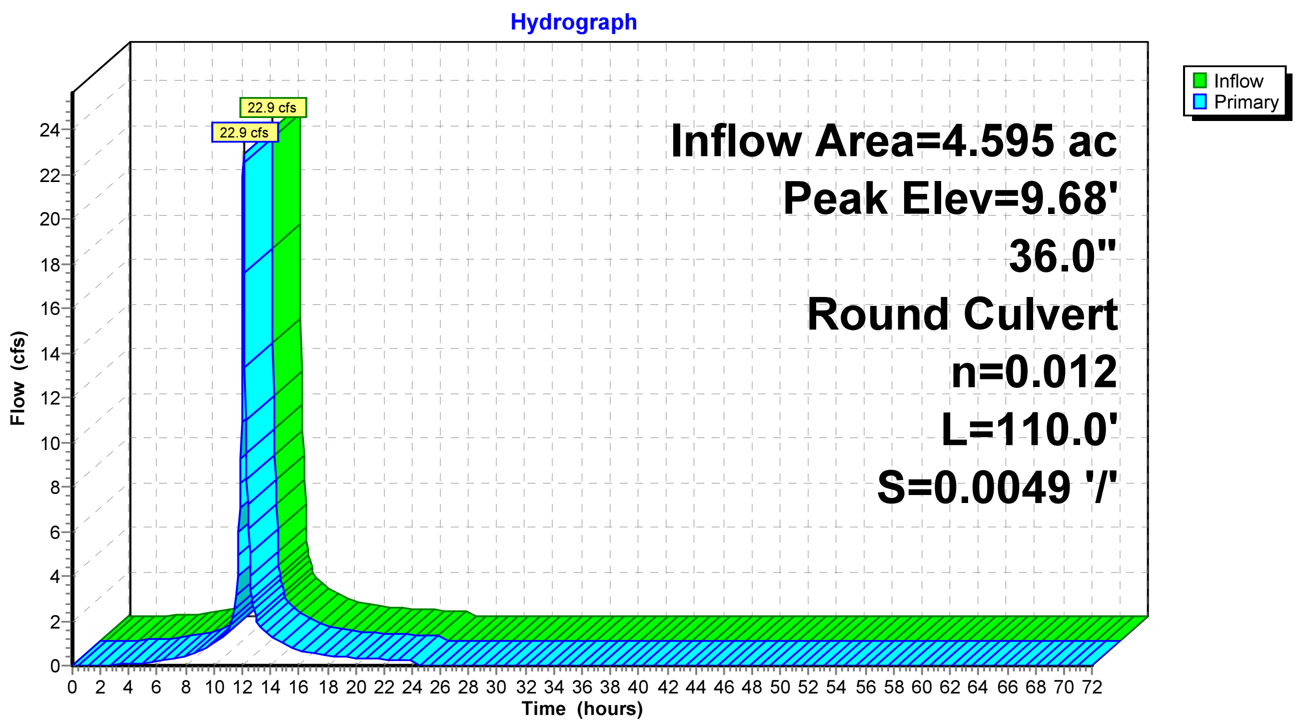
Inflow Area =	4.595 ac,	77.00% Impervious,	Inflow Depth = 4.76"	for 10 Year Storm event
Inflow =	22.9 cfs @	12.08 hrs, Volume=	1.823 af	
Outflow =	22.9 cfs @	12.08 hrs, Volume=	1.823 af,	Atten= 0%, Lag= 0.0 min
Primary =	22.9 cfs @	12.08 hrs, Volume=	1.823 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 9.68' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.48'	**36.0" Round Culvert** L= 110.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 7.48' / 6.94' S= 0.0049 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 7.07 sf

Primary OutFlow Max=22.3 cfs @ 12.08 hrs HW=9.64' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 22.3 cfs @ 5.71 fps)

Pond PDMH 3: PDMH 3



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 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 PS1: Runoff Area=7,157 sf 95.88% Impervious Runoff Depth=6.74"
Tc=5.0 min CN=97 Runoff=1.1 cfs 0.092 af

Subcatchment PS2a: Runoff Area=20,584 sf 77.98% Impervious Runoff Depth=6.27"
Tc=5.0 min CN=93 Runoff=3.2 cfs 0.247 af

Subcatchment PS2b: Runoff Area=11,747 sf 83.79% Impervious Runoff Depth=6.39"
Tc=5.0 min CN=94 Runoff=1.8 cfs 0.144 af

Subcatchment PS3a: Runoff Area=19,589 sf 82.66% Impervious Runoff Depth=6.39"
Tc=5.0 min CN=94 Runoff=3.1 cfs 0.239 af

Subcatchment PS3b: Runoff Area=40,960 sf 73.37% Impervious Runoff Depth=6.15"
Tc=5.0 min CN=92 Runoff=6.3 cfs 0.482 af

Subcatchment PS4: Runoff Area=12,006 sf 85.32% Impervious Runoff Depth=6.39"
Tc=5.0 min CN=94 Runoff=1.9 cfs 0.147 af

Subcatchment PS5: Runoff Area=34,260 sf 68.76% Impervious Runoff Depth=6.04"
Tc=5.0 min CN=91 Runoff=5.2 cfs 0.396 af

Subcatchment PS5A: Runoff Area=9,298 sf 93.79% Impervious Runoff Depth=6.74"
Tc=5.0 min CN=97 Runoff=1.5 cfs 0.120 af

Subcatchment PS5B: Runoff Area=13,605 sf 74.26% Impervious Runoff Depth=6.15"
Tc=5.0 min CN=92 Runoff=2.1 cfs 0.160 af

Subcatchment PS5C: PS5 Roof Runoff Area=18,430 sf 100.00% Impervious Runoff Depth=6.86"
Tc=5.0 min CN=98 Runoff=3.0 cfs 0.242 af

Subcatchment PS6: Runoff Area=20,527 sf 57.17% Impervious Runoff Depth=5.69"
Tc=5.0 min CN=88 Runoff=3.0 cfs 0.223 af

Subcatchment PS7: Runoff Area=8,740 sf 85.26% Impervious Runoff Depth=6.39"
Tc=5.0 min CN=94 Runoff=1.4 cfs 0.107 af

Subcatchment PS8: Runoff Area=2,398 sf 81.98% Impervious Runoff Depth=6.39"
Tc=5.0 min CN=94 Runoff=0.4 cfs 0.029 af

Reach 3R: Swale Avg. Flow Depth=0.70' Max Vel=1.96 fps Inflow=8.2 cfs 0.626 af
n=0.030 L=380.0' S=0.0050 '/' Capacity=16.9 cfs Outflow=7.5 cfs 0.626 af

Pond 1P: DMH A19 Peak Elev=11.14' Inflow=15.7 cfs 1.278 af
36.0" Round Culvert n=0.012 L=106.0' S=0.0028 '/' Outflow=15.7 cfs 1.278 af

Pond 3P: PCB3 Peak Elev=11.77' Inflow=10.4 cfs 0.865 af
24.0" Round Culvert n=0.013 L=43.0' S=0.0112 '/' Outflow=10.4 cfs 0.865 af

Pond 4P: PCB7 Peak Elev=11.37' Inflow=12.4 cfs 1.025 af
24.0" Round Culvert n=0.013 L=46.0' S=0.0261 '/' Outflow=12.4 cfs 1.025 af

Pond 5P: DMH 4B Peak Elev=11.14' Inflow=3.4 cfs 0.253 af
36.0" Round Culvert n=0.012 L=104.0' S=0.0007 '/' Outflow=3.4 cfs 0.253 af

Pond 6P: PCB1 Peak Elev=15.13' Inflow=3.0 cfs 0.223 af
12.0" Round Culvert n=0.013 L=109.0' S=0.0202 '/' Outflow=3.0 cfs 0.223 af

Pond 7P: PCB2 Peak Elev=13.13' Inflow=3.4 cfs 0.253 af
12.0" Round Culvert n=0.013 L=9.0' S=0.0111 '/' Outflow=3.4 cfs 0.253 af

Pond 9P: PCB4 Peak Elev=11.12' Inflow=3.2 cfs 0.247 af
24.0" Round Culvert n=0.013 L=18.0' S=0.0050 '/' Outflow=3.2 cfs 0.247 af

Pond 10P: PCB5 Peak Elev=10.73' Inflow=28.4 cfs 2.282 af
36.0" Round Culvert n=0.013 L=45.0' S=0.0080 '/' Outflow=28.4 cfs 2.282 af

Pond 12P: POCS2 Peak Elev=11.87' Inflow=3.1 cfs 0.239 af
24.0" Round Culvert n=0.013 L=40.0' S=0.0200 '/' Outflow=3.1 cfs 0.239 af

Pond 14P: POCS1 Peak Elev=11.77' Inflow=3.2 cfs 0.247 af
24.0" Round Culvert n=0.013 L=46.0' S=0.0152 '/' Outflow=3.2 cfs 0.247 af

Pond 15P: 2 - 12" PERFORATED UNDERDRAIN Peak Elev=14.57' Inflow=3.2 cfs 0.247 af
12.0" Round Culvert x 2.00 n=0.013 L=65.0' S=0.0000 '/' Outflow=3.2 cfs 0.247 af

Pond 16P: 2 - 12" PERFORATED UNDERDRAIN Peak Elev=14.07' Inflow=3.1 cfs 0.239 af
12.0" Round Culvert x 2.00 n=0.013 L=75.0' S=0.0000 '/' Outflow=3.1 cfs 0.239 af

Pond CB 5D: CB 5D Peak Elev=10.99' Inflow=1.4 cfs 0.107 af
12.0" Round Culvert n=0.013 L=37.0' S=0.0100 '/' Outflow=1.4 cfs 0.107 af

Pond DMH 4: DP 1 Inflow=32.7 cfs 2.628 af
Primary=32.7 cfs 2.628 af

Pond DMH 4A: DMH 4A Peak Elev=11.03' Inflow=23.7 cfs 1.916 af
36.0" Round Culvert n=0.012 L=23.0' S=0.0048 '/' Outflow=23.7 cfs 1.916 af

Pond DMH A6: DMH A6 Peak Elev=11.11' Inflow=8.2 cfs 0.638 af
24.0" Round Culvert n=0.012 L=44.0' S=0.0020 '/' Outflow=8.2 cfs 0.638 af

Pond ENV 21: ENV 21 Peak Elev=11.19' Inflow=5.2 cfs 0.396 af
18.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=5.2 cfs 0.396 af

Pond PCB-BH: PCB-BH Peak Elev=15.47' Inflow=7.5 cfs 0.626 af
12.0" Round Culvert n=0.013 L=34.0' S=0.0029 '/' Outflow=7.5 cfs 0.626 af

Pond PDMH 1: PDMH 1 Peak Elev=10.66' Inflow=1.4 cfs 0.107 af
12.0" Round Culvert n=0.013 L=78.0' S=0.0114 '/' Outflow=1.4 cfs 0.107 af

Pond PDMH 2: PDMH 2 Peak Elev=10.14' Inflow=1.4 cfs 0.107 af
24.0" Round Culvert n=0.013 L=196.0' S=0.0029 '/' Outflow=1.4 cfs 0.107 af

Pond PDMH 3: PDMH 3 Peak Elev=10.08' Inflow=29.7 cfs 2.389 af
36.0" Round Culvert n=0.012 L=110.0' S=0.0049 '/' Outflow=29.7 cfs 2.389 af

Total Runoff Area = 5.034 ac Runoff Volume = 2.628 af Average Runoff Depth = 6.26"
21.93% Pervious = 1.104 ac 78.07% Impervious = 3.930 ac

Summary for Subcatchment PS1:

[49] Hint: Tc<2dt may require smaller dt

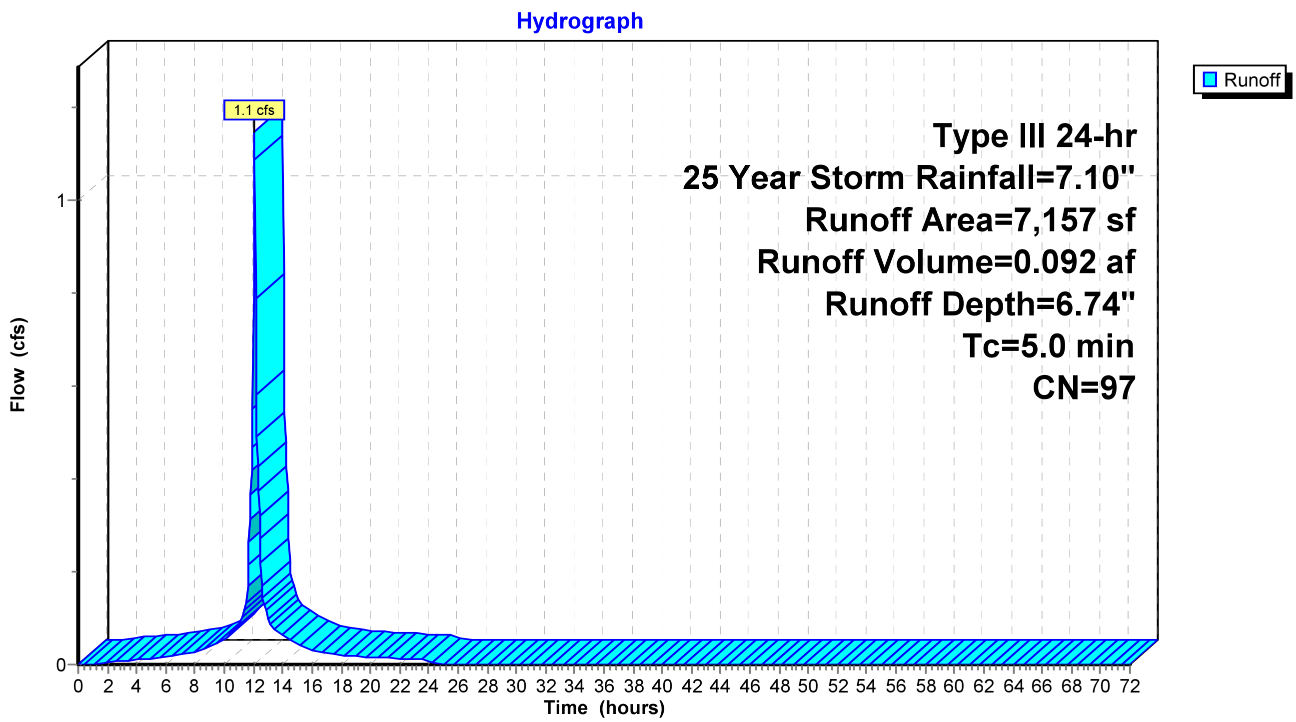
Runoff = 1.1 cfs @ 12.07 hrs, Volume= 0.092 af, Depth= 6.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Rainfall=7.10"

	Area (sf)	CN	Description
	1,344	98	Paved parking, HSG C
*	544	98	Sidewalks, HSG C
	4,974	98	Roofs, HSG C
	295	74	>75% Grass cover, Good, HSG C
	7,157	97	Weighted Average
	295		4.12% Pervious Area
	6,862		95.88% Impervious Area

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

Subcatchment PS1:



Summary for Subcatchment PS2a:

[49] Hint: Tc<2dt may require smaller dt

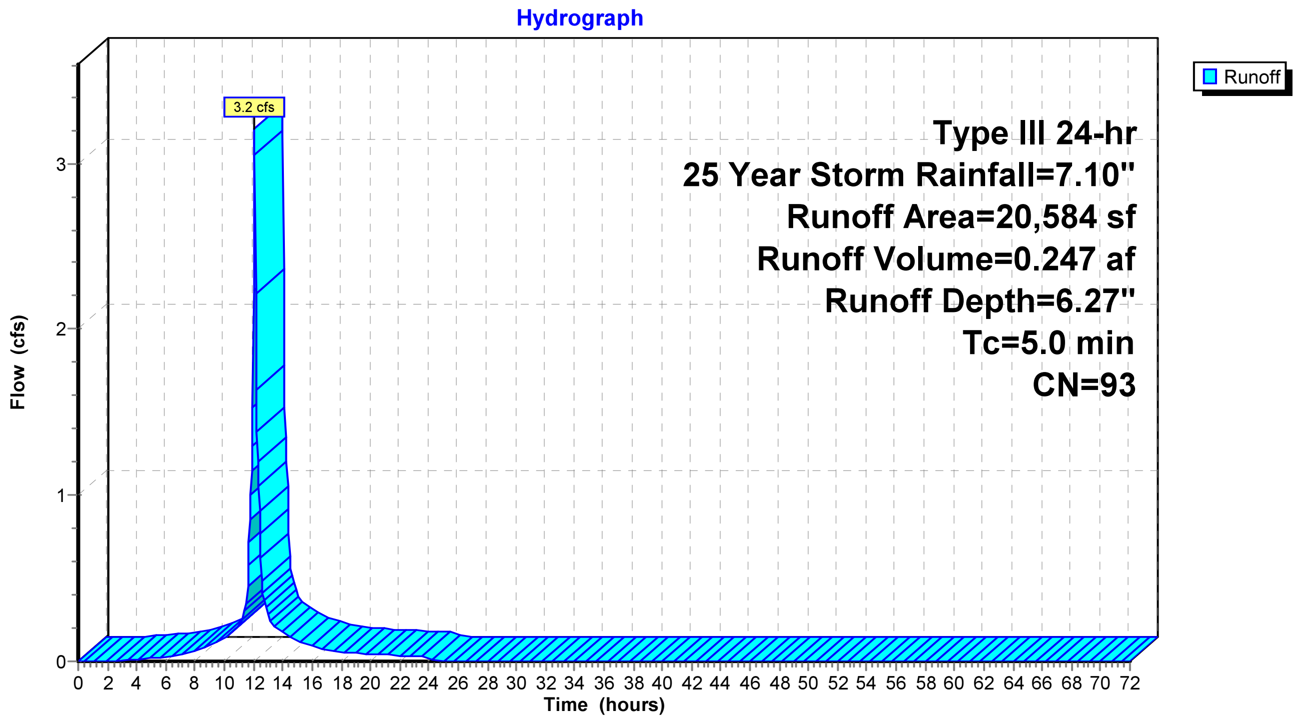
Runoff = 3.2 cfs @ 12.07 hrs, Volume= 0.247 af, Depth= 6.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Rainfall=7.10"

	Area (sf)	CN	Description
	15,319	98	Paved parking, HSG C
*	733	98	Sidewalks, HSG C
	4,532	74	>75% Grass cover, Good, HSG C
	20,584	93	Weighted Average
	4,532		22.02% Pervious Area
	16,052		77.98% Impervious Area

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

Subcatchment PS2a:



Summary for Subcatchment PS2b:

[49] Hint: Tc<2dt may require smaller dt

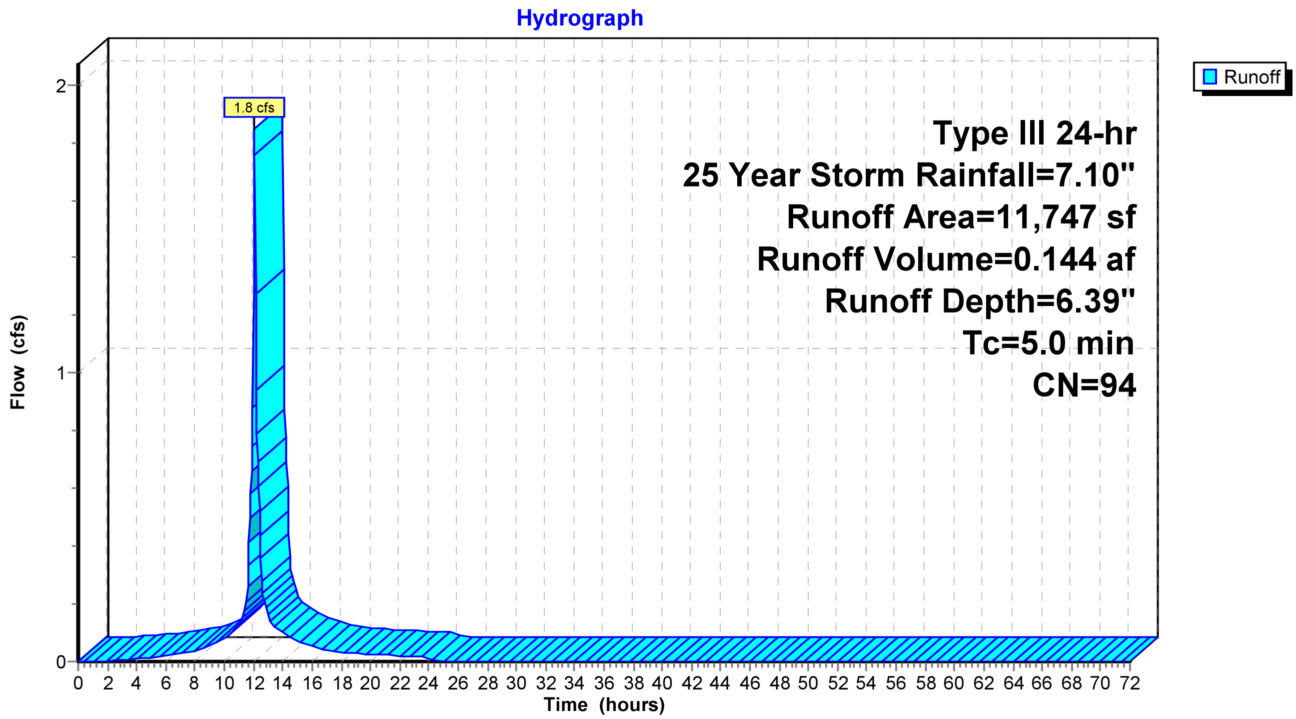
Runoff = 1.8 cfs @ 12.07 hrs, Volume= 0.144 af, Depth= 6.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Rainfall=7.10"

Area (sf)	CN	Description
9,843	98	Roofs, HSG C
1,904	74	>75% Grass cover, Good, HSG C
11,747	94	Weighted Average
1,904		16.21% Pervious Area
9,843		83.79% Impervious Area

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

Subcatchment PS2b:



Summary for Subcatchment PS3a:

[49] Hint: Tc<2dt may require smaller dt

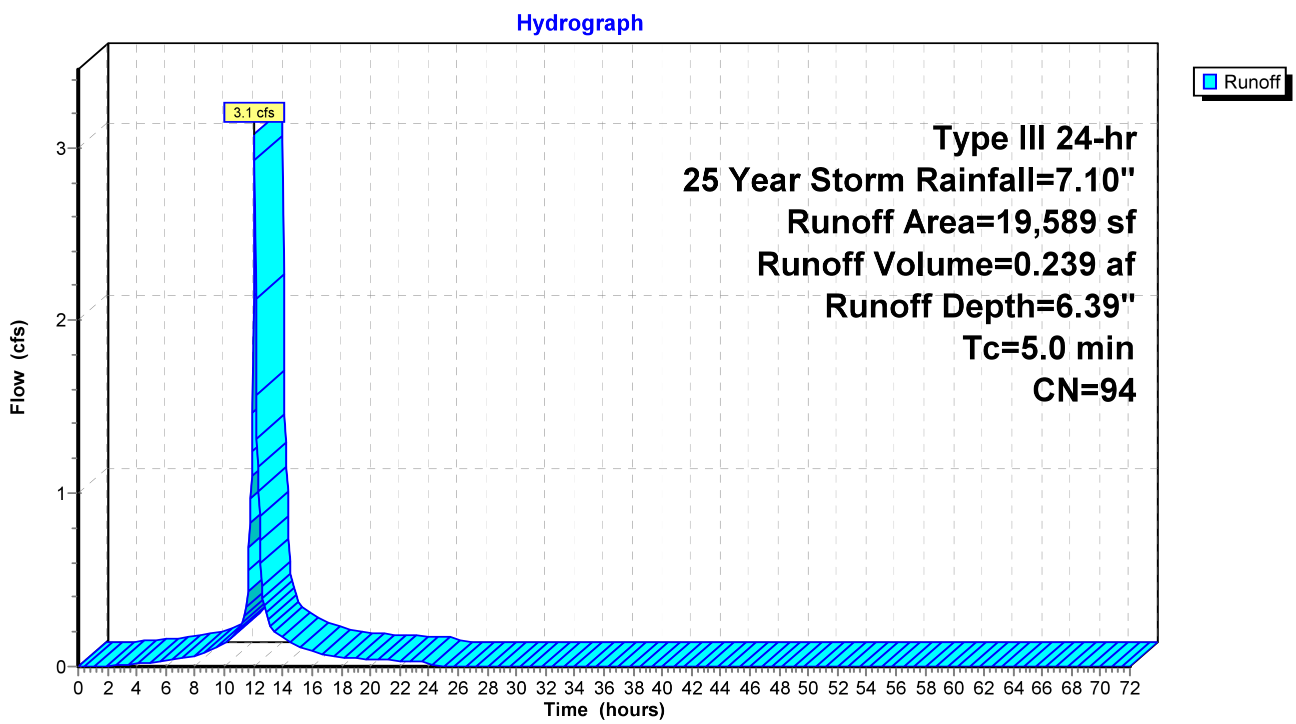
Runoff = 3.1 cfs @ 12.07 hrs, Volume= 0.239 af, Depth= 6.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Rainfall=7.10"

Area (sf)	CN	Description
16,192	98	Paved parking, HSG C
3,397	74	>75% Grass cover, Good, HSG C
19,589	94	Weighted Average
3,397		17.34% Pervious Area
16,192		82.66% Impervious Area

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

Subcatchment PS3a:



Summary for Subcatchment PS3b:

[49] Hint: Tc<2dt may require smaller dt

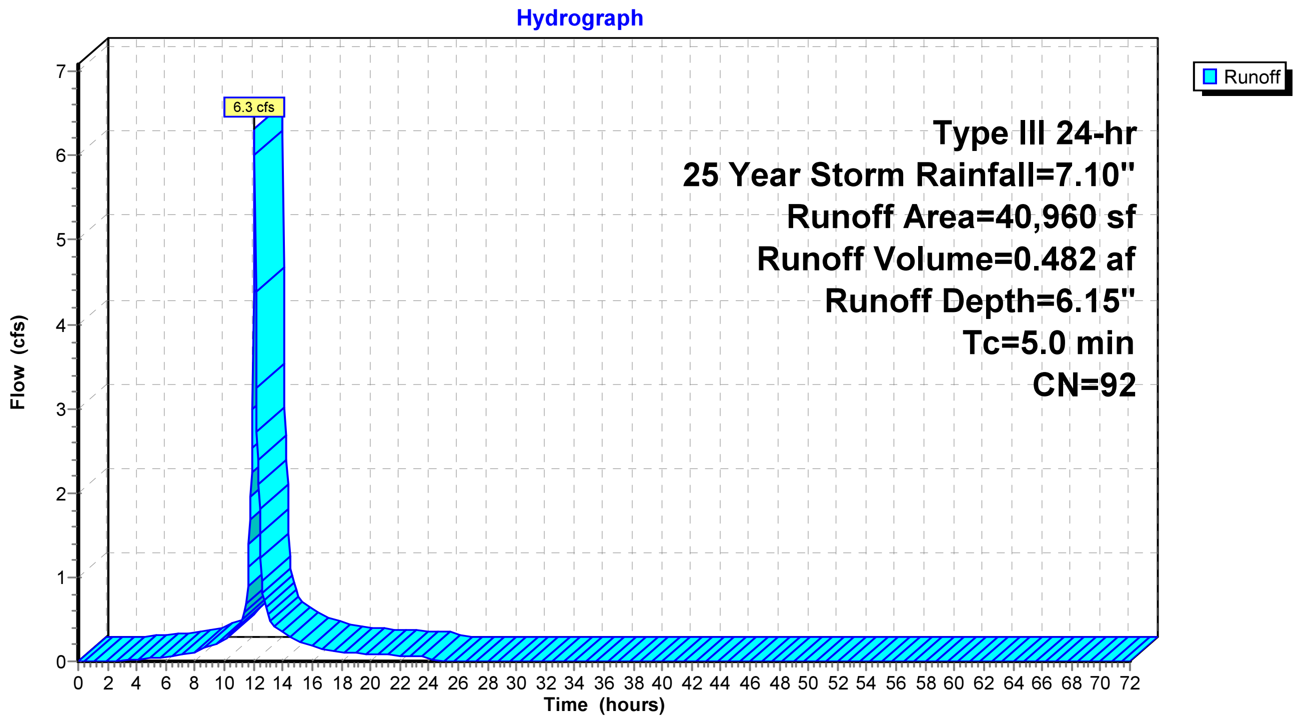
Runoff = 6.3 cfs @ 12.07 hrs, Volume= 0.482 af, Depth= 6.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Rainfall=7.10"

Area (sf)	CN	Description
24,825	98	Roofs, HSG C
10,906	74	>75% Grass cover, Good, HSG C
5,229	98	Paved parking, HSG C
40,960	92	Weighted Average
10,906		26.63% Pervious Area
30,054		73.37% Impervious Area

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

Subcatchment PS3b:



Summary for Subcatchment PS4:

[49] Hint: Tc<2dt may require smaller dt

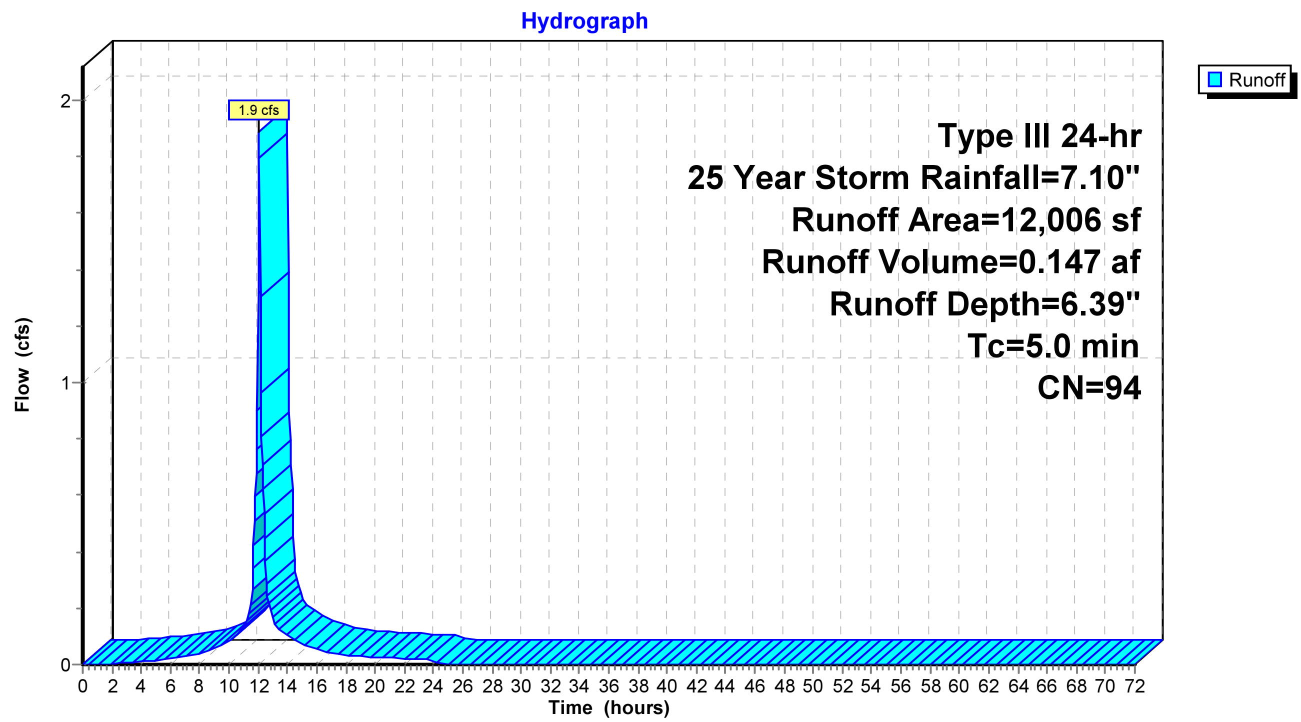
Runoff = 1.9 cfs @ 12.07 hrs, Volume= 0.147 af, Depth= 6.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Rainfall=7.10"

	Area (sf)	CN	Description
	4,504	98	Paved parking, HSG C
*	2,085	98	Sidewalks, HSG C
	3,654	98	Roofs, HSG C
	1,763	74	>75% Grass cover, Good, HSG C
	12,006	94	Weighted Average
	1,763		14.68% Pervious Area
	10,243		85.32% Impervious Area

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

Subcatchment PS4:



Summary for Subcatchment PS5:

[49] Hint: Tc<2dt may require smaller dt

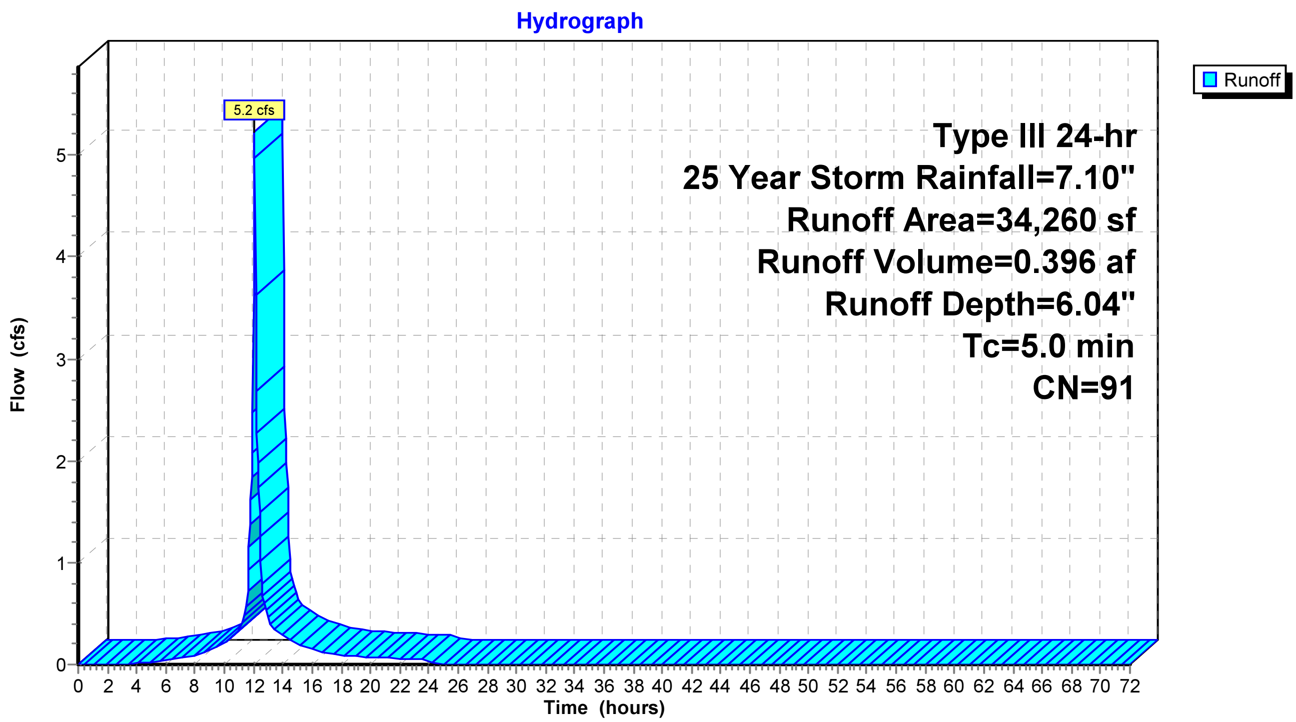
Runoff = 5.2 cfs @ 12.07 hrs, Volume= 0.396 af, Depth= 6.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Rainfall=7.10"

	Area (sf)	CN	Description
	21,695	98	Paved parking, HSG C
*	310	98	Sidewalks, HSG C
	1,551	98	Roofs, HSG C
	10,704	74	>75% Grass cover, Good, HSG C
	34,260	91	Weighted Average
	10,704		31.24% Pervious Area
	23,556		68.76% Impervious Area

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

Subcatchment PS5:



Summary for Subcatchment PS5A:

[49] Hint: Tc<2dt may require smaller dt

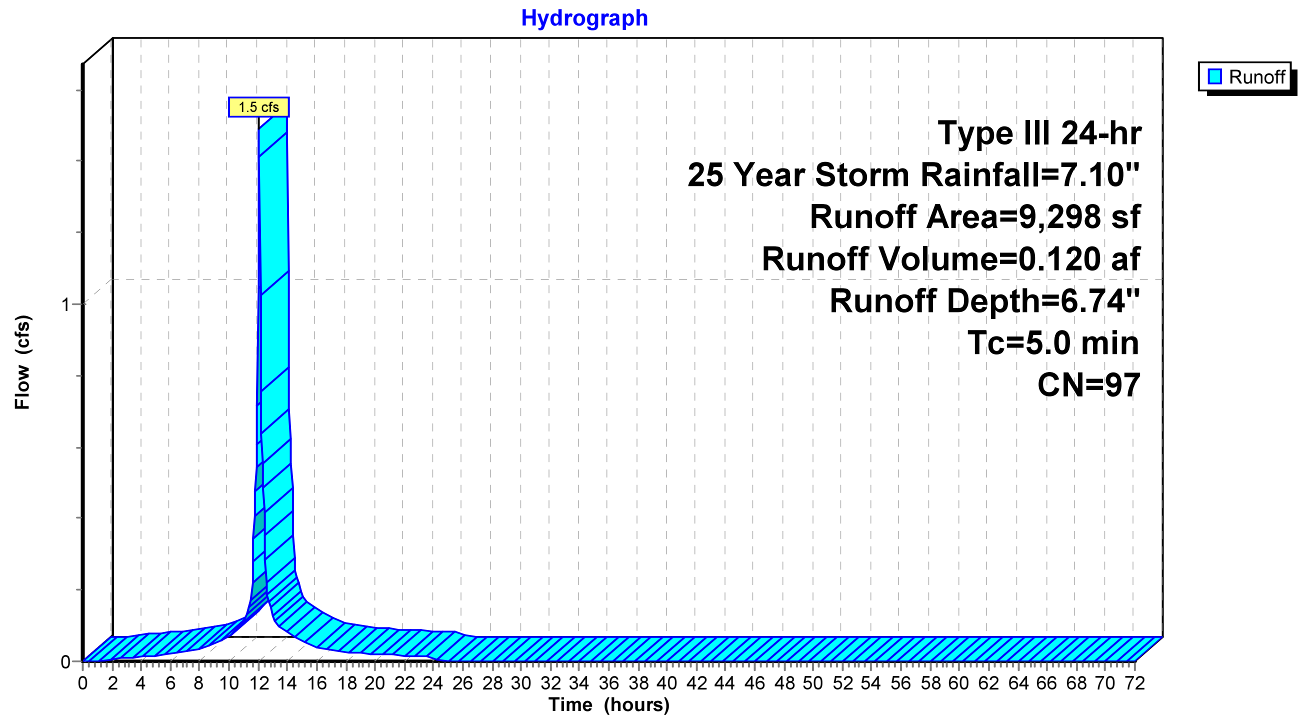
Runoff = 1.5 cfs @ 12.07 hrs, Volume= 0.120 af, Depth= 6.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Rainfall=7.10"

	Area (sf)	CN	Description
	7,491	98	Paved parking, HSG C
*	1,230	98	Sidewalks, HSG C
	577	74	>75% Grass cover, Good, HSG C
	9,298	97	Weighted Average
	577		6.21% Pervious Area
	8,721		93.79% Impervious Area

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

Subcatchment PS5A:



Summary for Subcatchment PS5B:

[49] Hint: Tc<2dt may require smaller dt

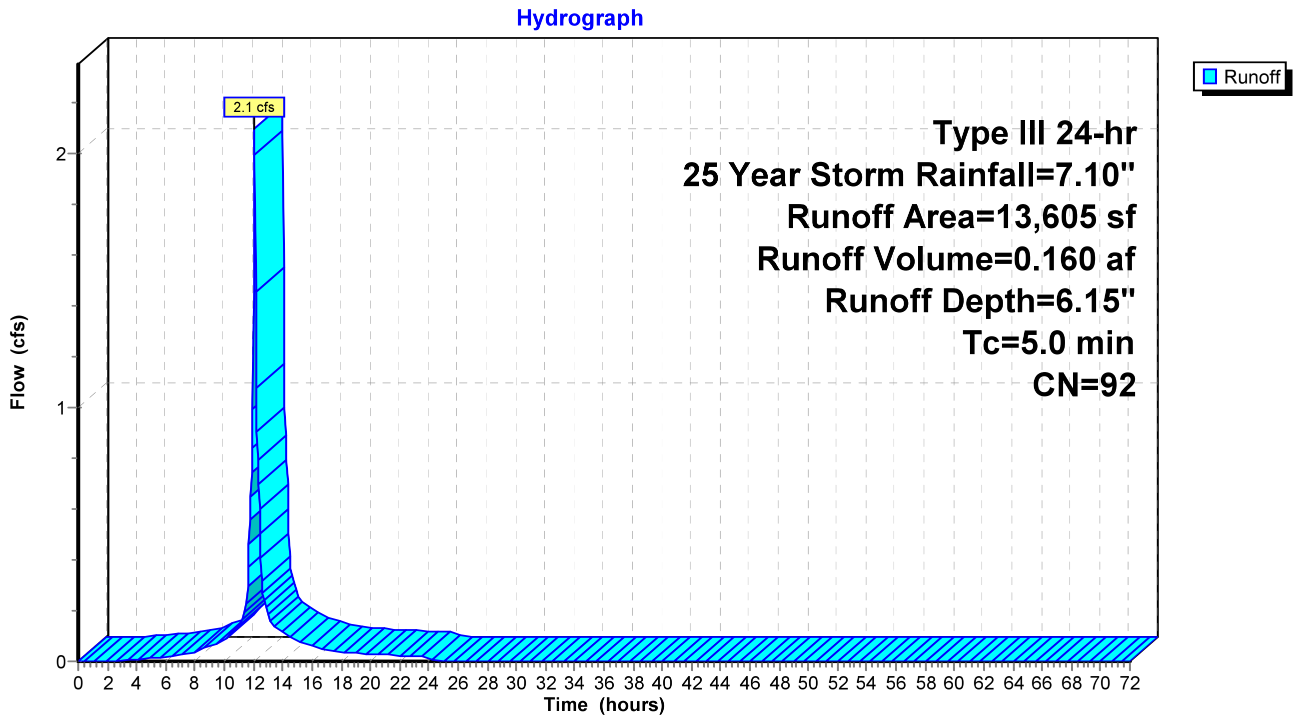
Runoff = 2.1 cfs @ 12.07 hrs, Volume= 0.160 af, Depth= 6.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Rainfall=7.10"

	Area (sf)	CN	Description
	7,275	98	Paved parking, HSG C
*	2,828	98	Sidewalks, HSG C
	3,502	74	>75% Grass cover, Good, HSG C
	13,605	92	Weighted Average
	3,502		25.74% Pervious Area
	10,103		74.26% Impervious Area

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

Subcatchment PS5B:



Summary for Subcatchment PS5C: PS5 Roof

[49] Hint: Tc<2dt may require smaller dt

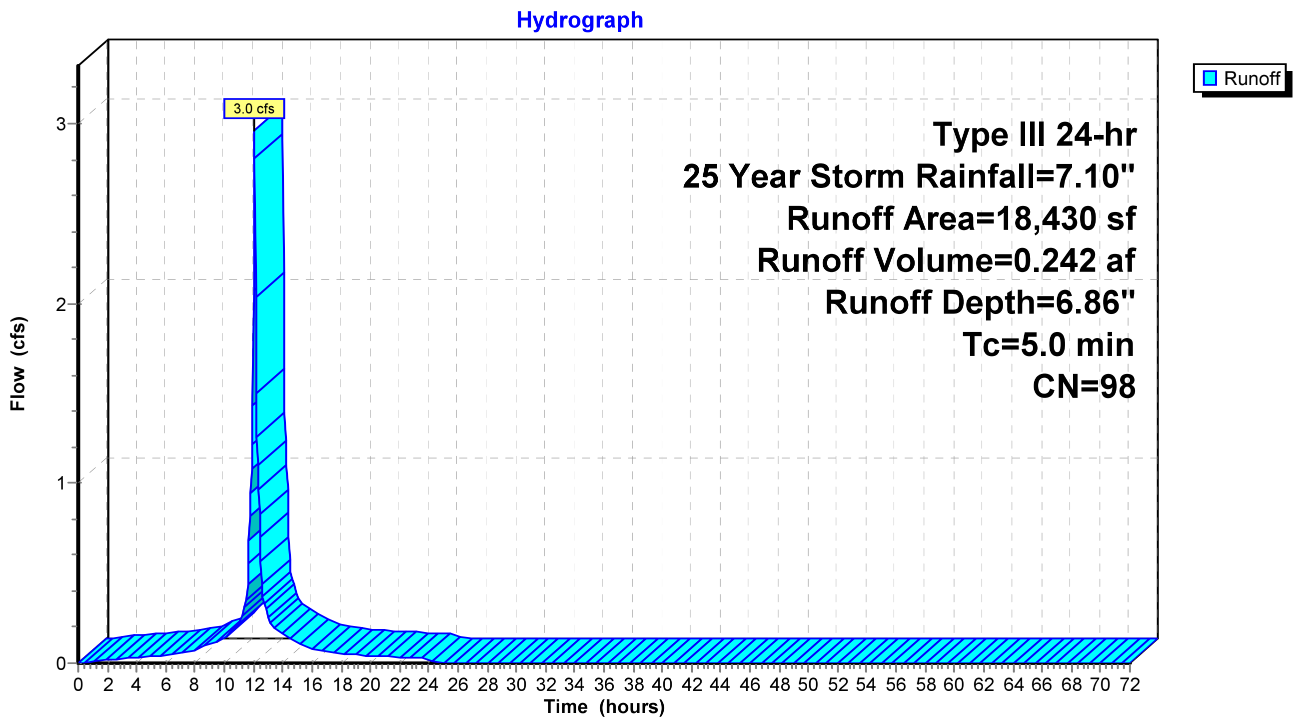
Runoff = 3.0 cfs @ 12.07 hrs, Volume= 0.242 af, Depth= 6.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Rainfall=7.10"

Area (sf)	CN	Description
18,430	98	Roofs, HSG C
18,430		100.00% Impervious Area

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

Subcatchment PS5C: PS5 Roof



Summary for Subcatchment PS6:

[49] Hint: Tc<2dt may require smaller dt

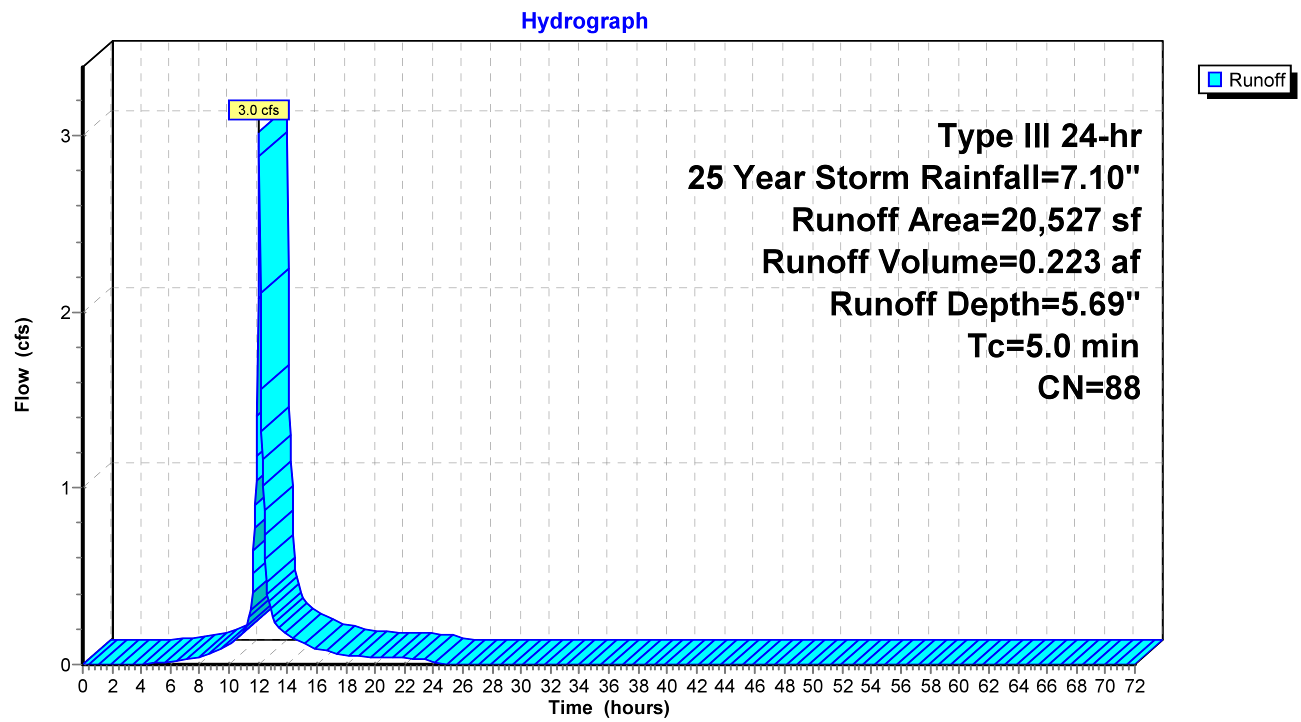
Runoff = 3.0 cfs @ 12.07 hrs, Volume= 0.223 af, Depth= 5.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Rainfall=7.10"

	Area (sf)	CN	Description
	6,762	98	Paved parking, HSG C
*	2,312	98	Sidewalks, HSG C
	2,662	98	Roofs, HSG C
	8,791	74	>75% Grass cover, Good, HSG C
	20,527	88	Weighted Average
	8,791		42.83% Pervious Area
	11,736		57.17% Impervious Area

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

Subcatchment PS6:



Summary for Subcatchment PS7:

[49] Hint: Tc<2dt may require smaller dt

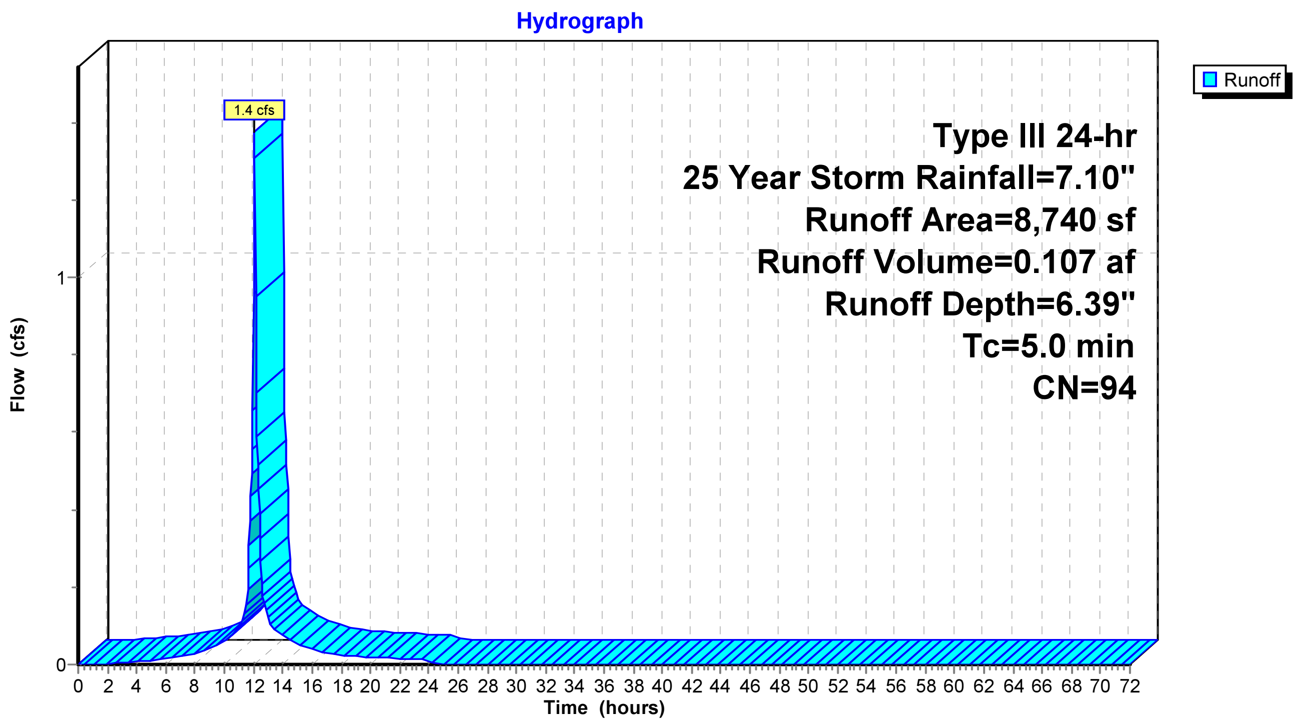
Runoff = 1.4 cfs @ 12.07 hrs, Volume= 0.107 af, Depth= 6.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Rainfall=7.10"

	Area (sf)	CN	Description
	410	98	Paved parking, HSG C
*	4,272	98	Sidewalks, HSG C
	2,770	98	Roofs, HSG C
	1,288	74	>75% Grass cover, Good, HSG C
	8,740	94	Weighted Average
	1,288		14.74% Pervious Area
	7,452		85.26% Impervious Area

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

Subcatchment PS7:



Summary for Subcatchment PS8:

[49] Hint: Tc<2dt may require smaller dt

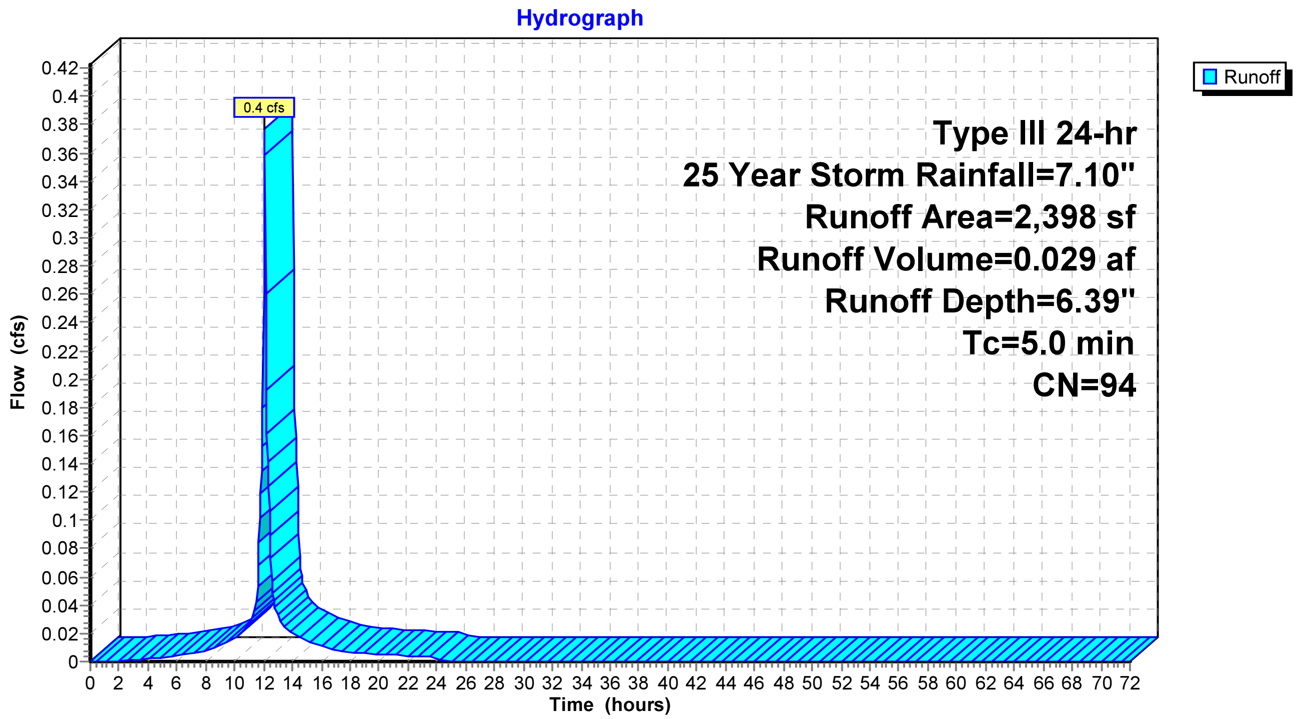
Runoff = 0.4 cfs @ 12.07 hrs, Volume= 0.029 af, Depth= 6.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Rainfall=7.10"

Area (sf)	CN	Description
1,966	98	Paved parking, HSG C
432	74	>75% Grass cover, Good, HSG C
2,398	94	Weighted Average
432		18.02% Pervious Area
1,966		81.98% Impervious Area

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

Subcatchment PS8:



Summary for Reach 3R: Swale

Inflow Area = 1.210 ac, 75.70% Impervious, Inflow Depth = 6.21" for 25 Year Storm event
Inflow = 8.2 cfs @ 12.07 hrs, Volume= 0.626 af
Outflow = 7.5 cfs @ 12.11 hrs, Volume= 0.626 af, Atten= 8%, Lag= 2.3 min

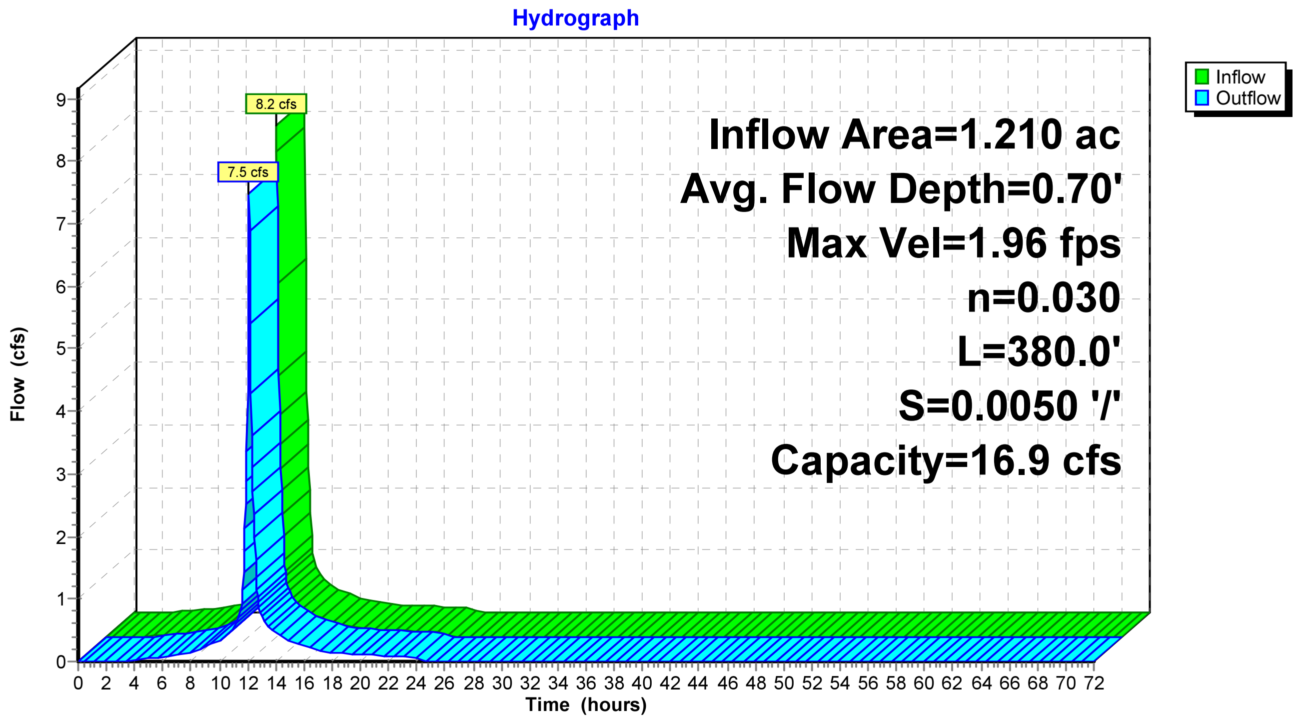
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.96 fps, Min. Travel Time= 3.2 min
Avg. Velocity = 0.59 fps, Avg. Travel Time= 10.7 min

Peak Storage= 1,450 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.70'
Bank-Full Depth= 1.00' Flow Area= 7.0 sf, Capacity= 16.9 cfs

2.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 5.0 '/' Top Width= 12.00'
Length= 380.0' Slope= 0.0050 '/'
Inlet Invert= 17.15', Outlet Invert= 15.25'

‡

Reach 3R: Swale



Summary for Pond 1P: DMH A19

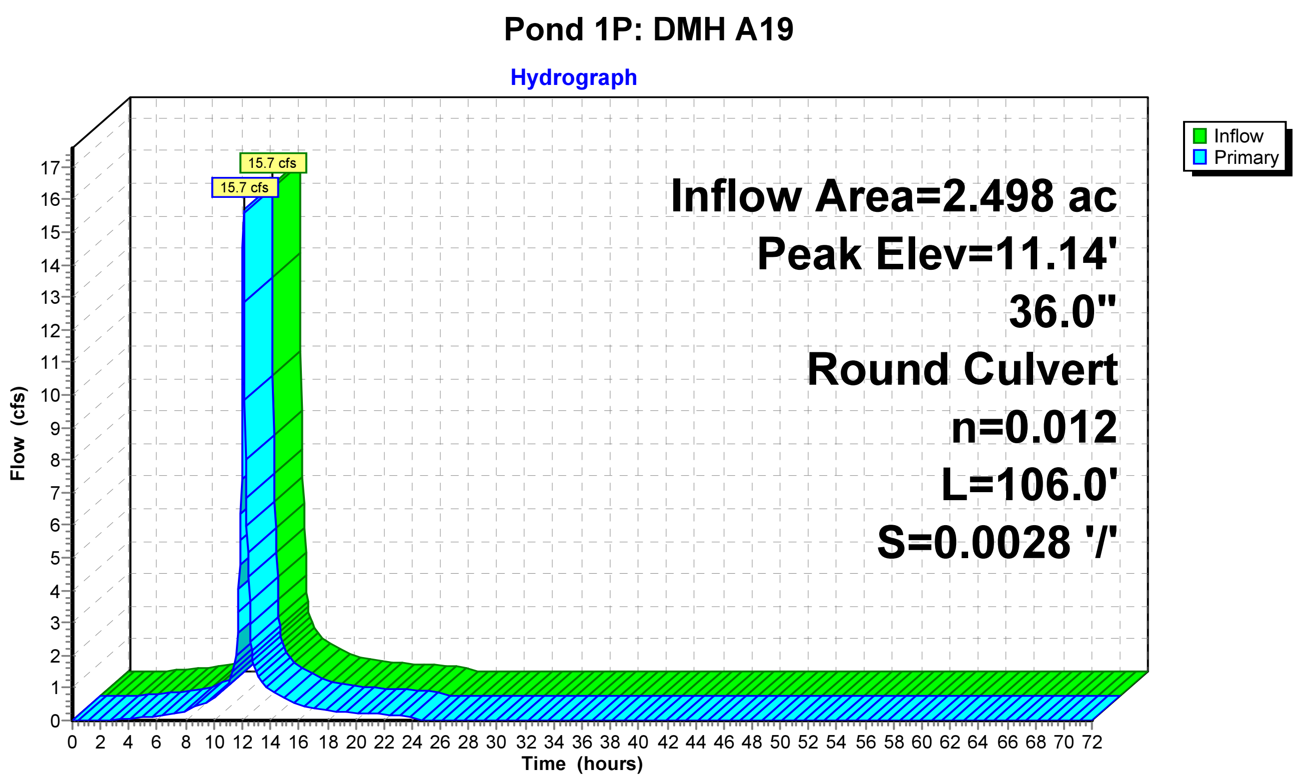
[57] Hint: Peaked at 11.14' (Flood elevation advised)
[80] Warning: Exceeded Pond 5P by 0.33' @ 12.10 hrs (15.1 cfs 0.337 af)

Inflow Area = 2.498 ac, 73.41% Impervious, Inflow Depth = 6.14" for 25 Year Storm event
Inflow = 15.7 cfs @ 12.09 hrs, Volume= 1.278 af
Outflow = 15.7 cfs @ 12.09 hrs, Volume= 1.278 af, Atten= 0%, Lag= 0.0 min
Primary = 15.7 cfs @ 12.09 hrs, Volume= 1.278 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.14' @ 12.18 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	8.17'	**36.0" Round Culvert** L= 106.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 8.17' / 7.87' S= 0.0028 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 7.07 sf

Primary OutFlow Max=0.0 cfs @ 12.09 hrs HW=10.70' TW=10.79' (Dynamic Tailwater)
1=Culvert (Controls 0.0 cfs)



Summary for Pond 3P: PCB3

[57] Hint: Peaked at 11.77' (Flood elevation advised)

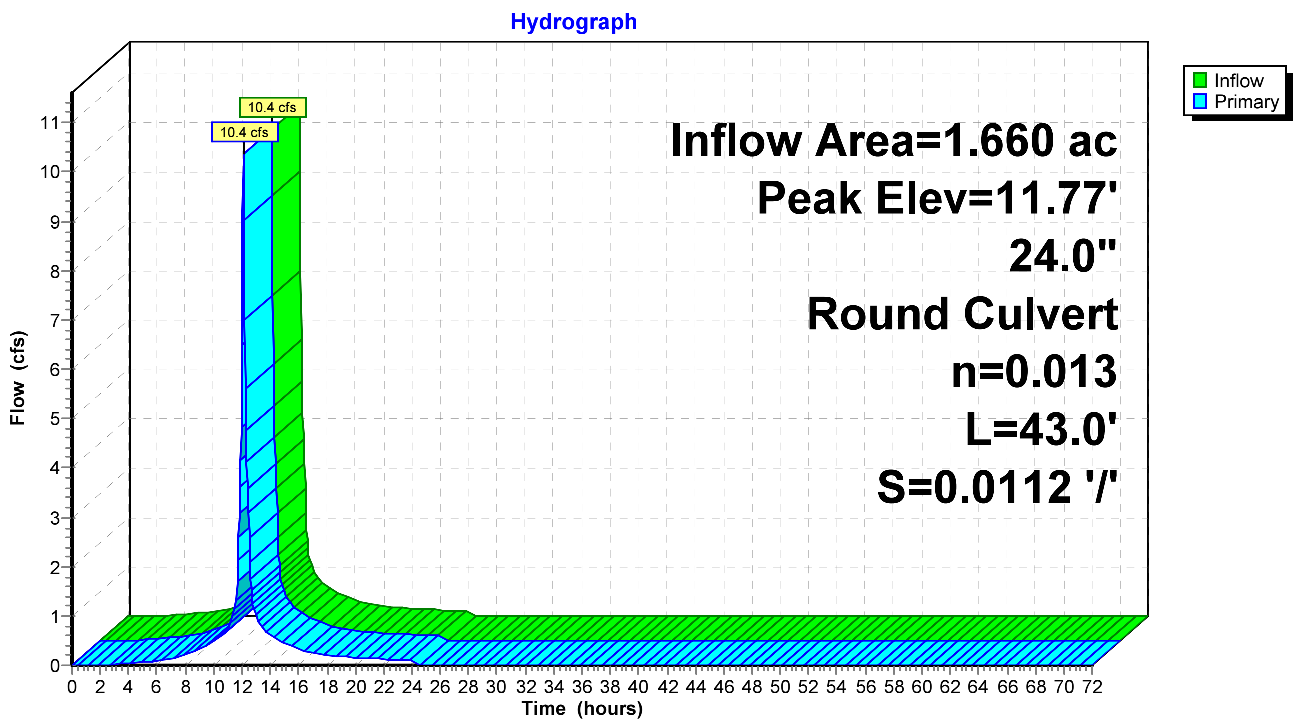
Inflow Area =	1.660 ac, 77.58% Impervious, Inflow Depth = 6.25"	for 25 Year Storm event	
Inflow =	10.4 cfs @ 12.10 hrs, Volume=	0.865 af	
Outflow =	10.4 cfs @ 12.10 hrs, Volume=	0.865 af, Atten= 0%, Lag= 0.0 min	
Primary =	10.4 cfs @ 12.10 hrs, Volume=	0.865 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.77' @ 12.14 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.00'	**24.0" Round Culvert** L= 43.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.00' / 9.52' S= 0.0112 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=8.4 cfs @ 12.10 hrs HW=11.72' TW=11.26' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 8.4 cfs @ 3.91 fps)

Pond 3P: PCB3



Summary for Pond 4P: PCB7

[57] Hint: Peaked at 11.37' (Flood elevation advised)

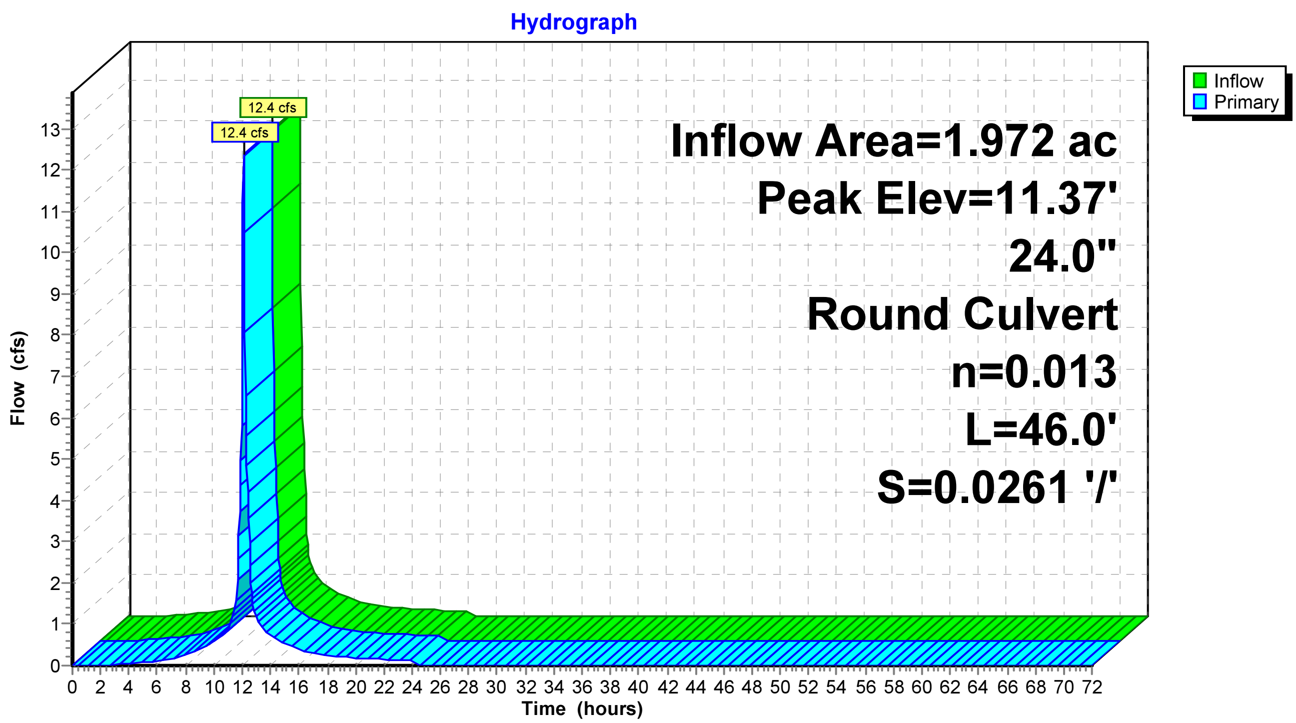
Inflow Area =	1.972 ac, 77.06% Impervious,	Inflow Depth = 6.24"	for 25 Year Storm event	
Inflow =	12.4 cfs @	12.09 hrs, Volume=	1.025 af	
Outflow =	12.4 cfs @	12.09 hrs, Volume=	1.025 af,	Atten= 0%, Lag= 0.0 min
Primary =	12.4 cfs @	12.09 hrs, Volume=	1.025 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.37' @ 12.20 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	9.40'	**24.0" Round Culvert** L= 46.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.40' / 8.20' S= 0.0261 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=9.4 cfs @ 12.09 hrs HW=11.24' TW=10.73' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 9.4 cfs @ 4.08 fps)

Pond 4P: PCB7



Summary for Pond 5P: DMH 4B

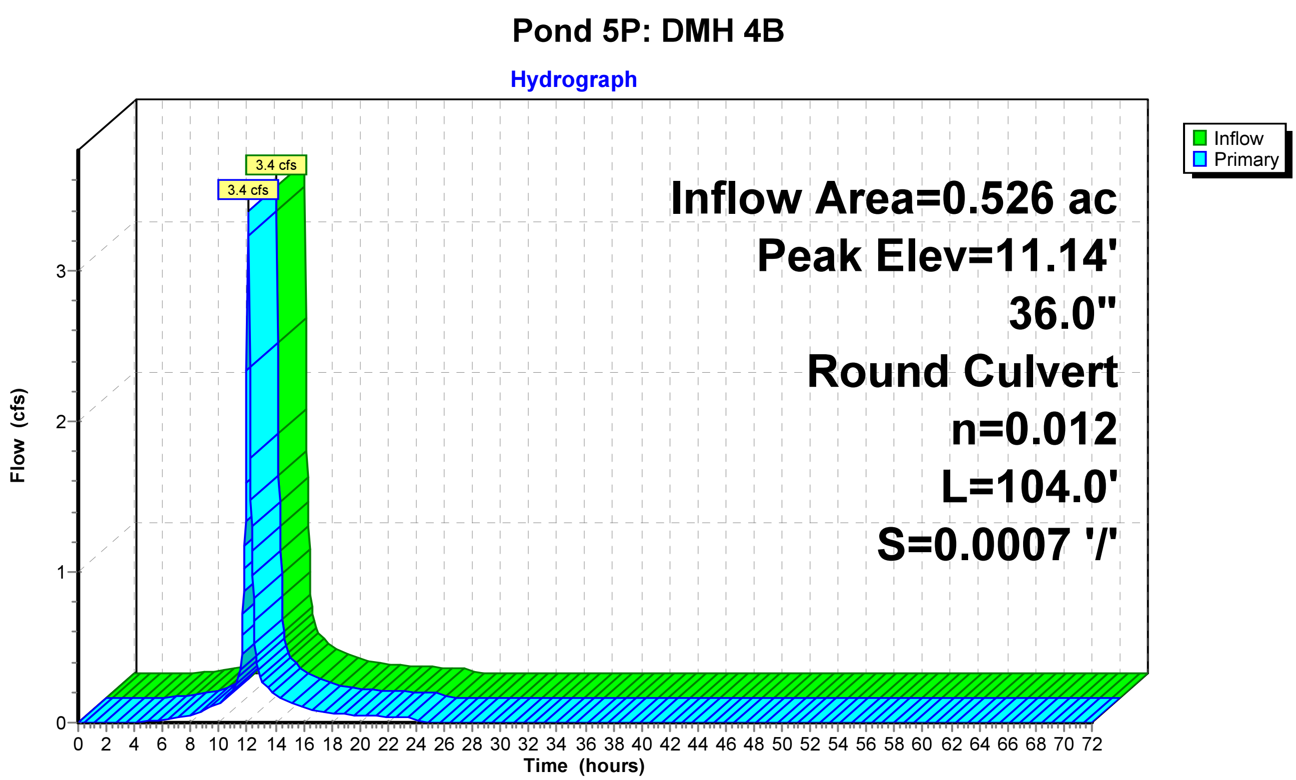
[57] Hint: Peaked at 11.14' (Flood elevation advised)

Inflow Area =	0.526 ac, 59.77% Impervious,	Inflow Depth = 5.76"	for 25 Year Storm event	
Inflow =	3.4 cfs @	12.07 hrs, Volume=	0.253 af	
Outflow =	3.4 cfs @	12.07 hrs, Volume=	0.253 af,	Atten= 0%, Lag= 0.0 min
Primary =	3.4 cfs @	12.07 hrs, Volume=	0.253 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.14' @ 12.23 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	8.25'	**36.0" Round Culvert** L= 104.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 8.25' / 8.18' S= 0.0007 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 7.07 sf

Primary OutFlow Max=0.0 cfs @ 12.07 hrs HW=10.26' TW=10.58' (Dynamic Tailwater)
└─**1=Culvert** (Controls 0.0 cfs)



Summary for Pond 6P: PCB1

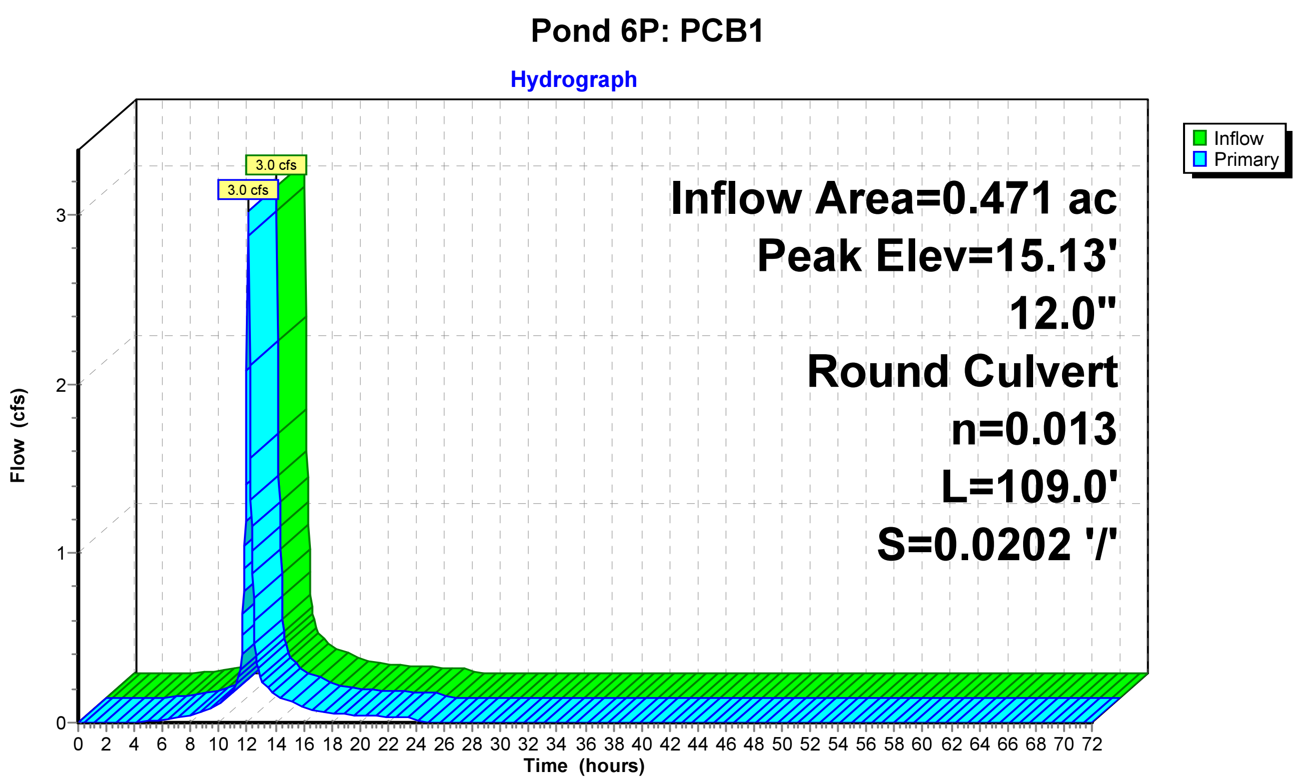
[57] Hint: Peaked at 15.13' (Flood elevation advised)

Inflow Area =	0.471 ac, 57.17% Impervious, Inflow Depth = 5.69"	for 25 Year Storm event	
Inflow =	3.0 cfs @ 12.07 hrs, Volume=	0.223 af	
Outflow =	3.0 cfs @ 12.07 hrs, Volume=	0.223 af, Atten= 0%, Lag= 0.0 min	
Primary =	3.0 cfs @ 12.07 hrs, Volume=	0.223 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 15.13' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	14.00'	**12.0" Round Culvert** L= 109.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 14.00' / 11.80' S= 0.0202 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.9 cfs @ 12.07 hrs HW=15.09' TW=13.08' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 2.9 cfs @ 3.71 fps)



Summary for Pond 7P: PCB2

[57] Hint: Peaked at 13.13' (Flood elevation advised)

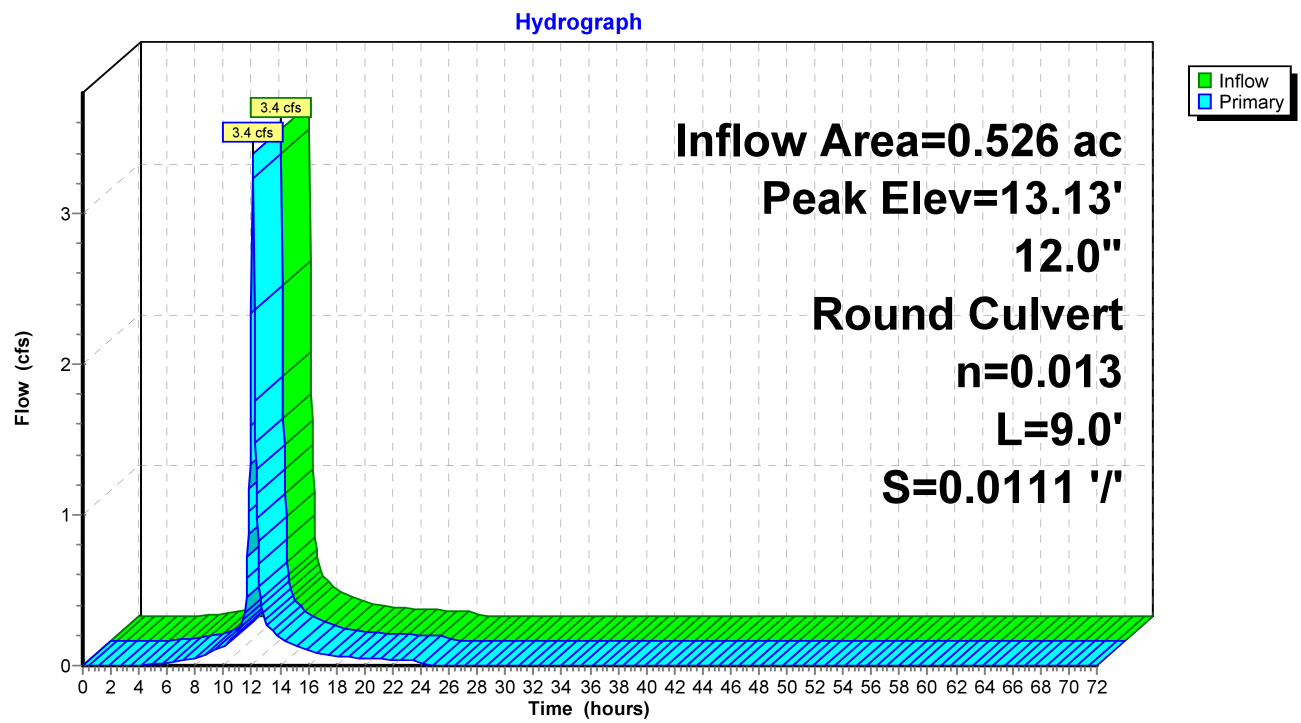
Inflow Area = 0.526 ac, 59.77% Impervious, Inflow Depth = 5.76" for 25 Year Storm event
Inflow = 3.4 cfs @ 12.07 hrs, Volume= 0.253 af
Outflow = 3.4 cfs @ 12.07 hrs, Volume= 0.253 af, Atten= 0%, Lag= 0.0 min
Primary = 3.4 cfs @ 12.07 hrs, Volume= 0.253 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 13.13' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	11.70'	**12.0" Round Culvert** L= 9.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 11.70' / 11.60' S= 0.0111 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.3 cfs @ 12.07 hrs HW=13.08' TW=10.26' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 3.3 cfs @ 4.17 fps)

Pond 7P: PCB2



Summary for Pond 9P: PCB4

[57] Hint: Peaked at 11.12' (Flood elevation advised)

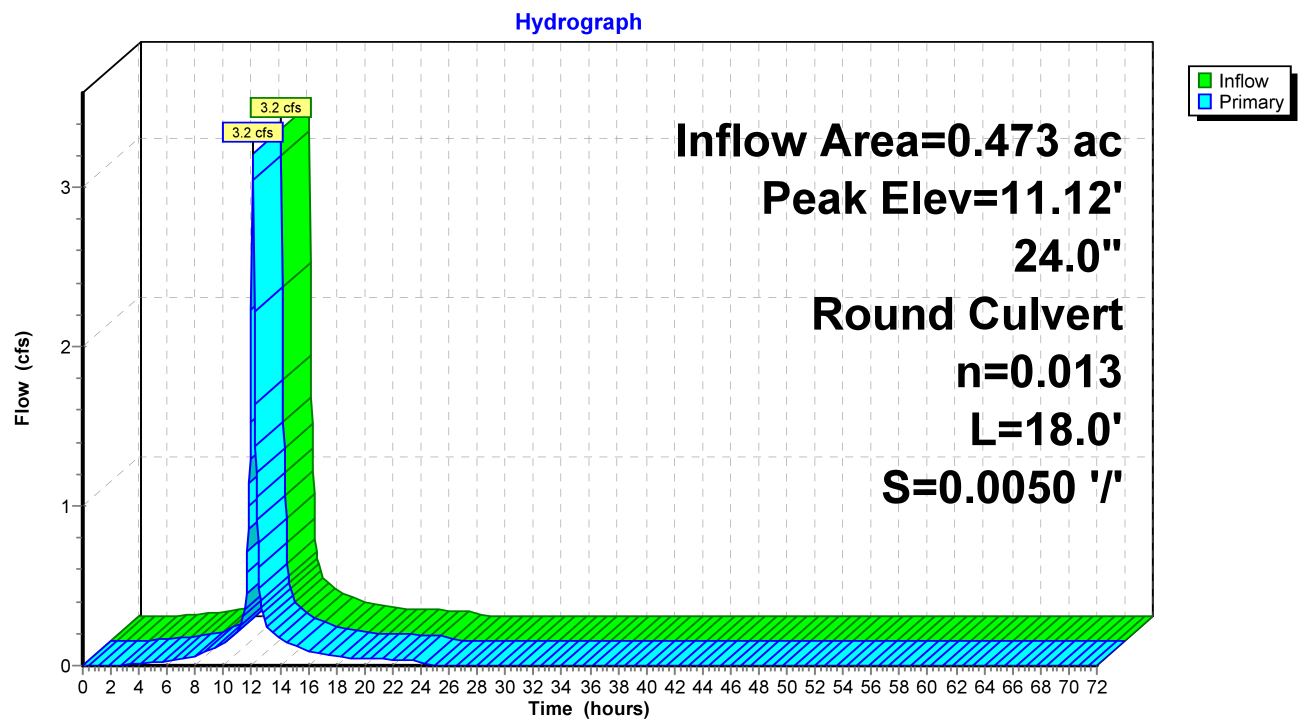
Inflow Area =	0.473 ac, 77.98% Impervious, Inflow Depth = 6.27"		for 25 Year Storm event
Inflow =	3.2 cfs @ 12.07 hrs, Volume=	0.247 af	
Outflow =	3.2 cfs @ 12.07 hrs, Volume=	0.247 af, Atten= 0%, Lag= 0.0 min	
Primary =	3.2 cfs @ 12.07 hrs, Volume=	0.247 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.12' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.20'	**24.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.20' / 10.11' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=3.1 cfs @ 12.07 hrs HW=11.10' TW=10.54' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 3.1 cfs @ 3.33 fps)

Pond 9P: PCB4



Summary for Pond 10P: PCB5

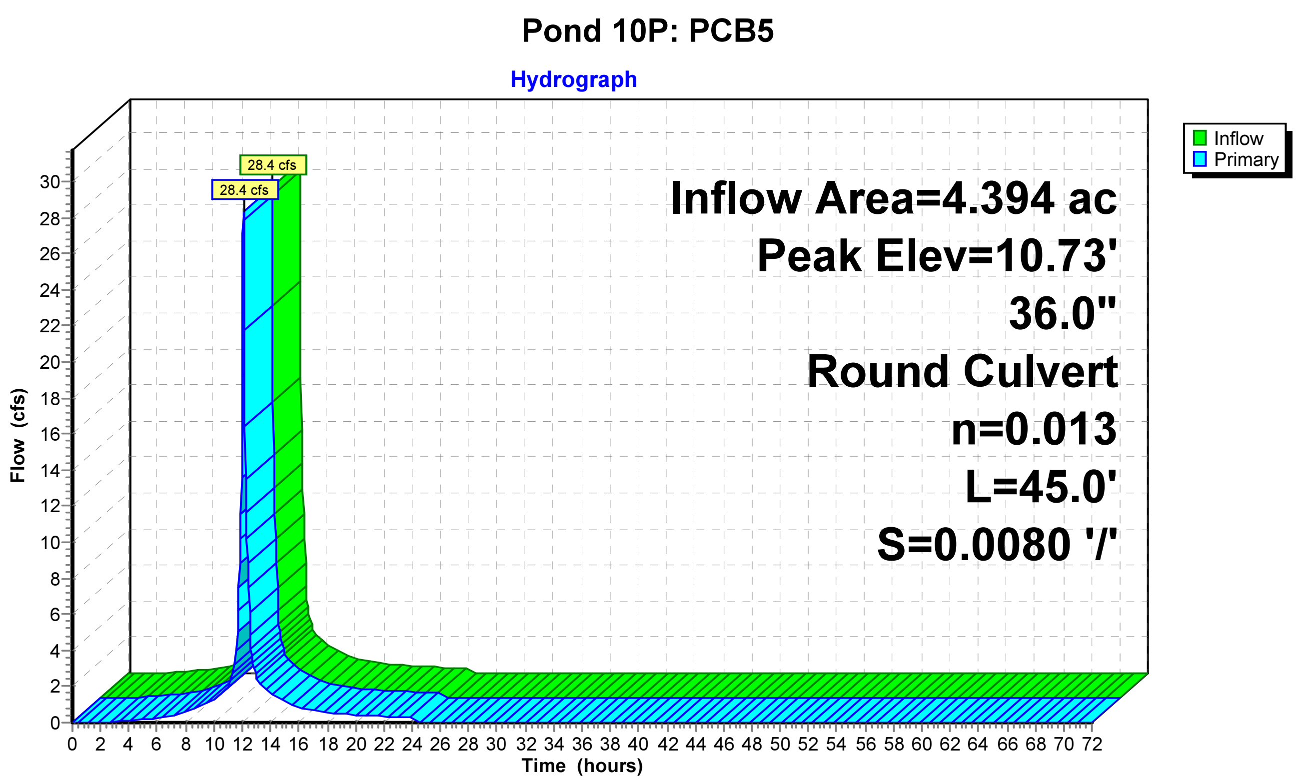
[57] Hint: Peaked at 10.73' (Flood elevation advised)

Inflow Area =	4.394 ac, 76.62% Impervious, Inflow Depth = 6.23"	for 25 Year Storm event	
Inflow =	28.4 cfs @ 12.08 hrs, Volume=	2.282 af	
Outflow =	28.4 cfs @ 12.08 hrs, Volume=	2.282 af,	Atten= 0%, Lag= 0.0 min
Primary =	28.4 cfs @ 12.08 hrs, Volume=	2.282 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 10.73' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.85'	**36.0" Round Culvert** L= 45.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 7.85' / 7.49' S= 0.0080 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 7.07 sf

Primary OutFlow Max=23.6 cfs @ 12.08 hrs HW=10.60' TW=10.03' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 23.6 cfs @ 4.55 fps)



Summary for Pond 12P: POCS2

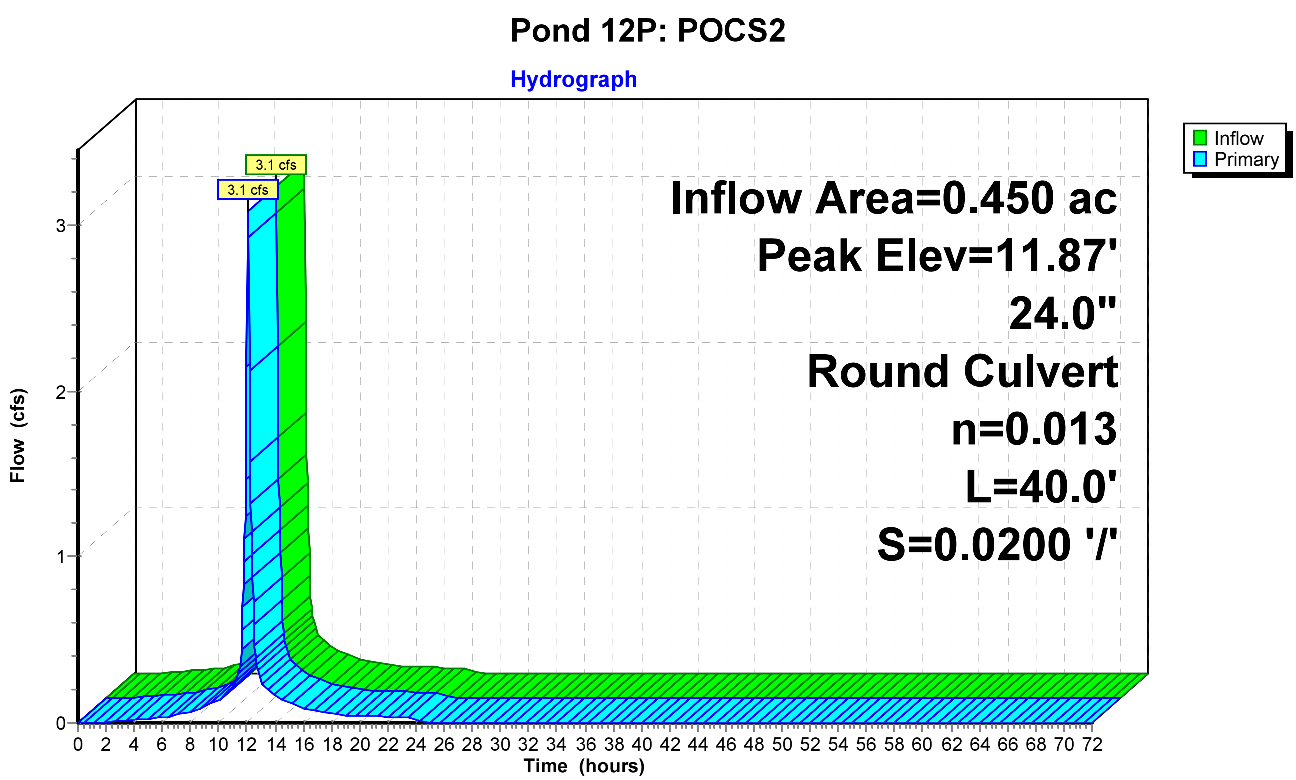
[57] Hint: Peaked at 11.87' (Flood elevation advised)

Inflow Area =	0.450 ac,	82.66% Impervious,	Inflow Depth = 6.39"	for 25 Year Storm event	
Inflow =	3.1 cfs @	12.07 hrs,	Volume=	0.239 af	
Outflow =	3.1 cfs @	12.07 hrs,	Volume=	0.239 af,	Atten= 0%, Lag= 0.0 min
Primary =	3.1 cfs @	12.07 hrs,	Volume=	0.239 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.87' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.90'	**24.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.90' / 10.10' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=1.8 cfs @ 12.07 hrs HW=11.75' TW=11.59' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.8 cfs @ 2.13 fps)



Summary for Pond 14P: POCS1

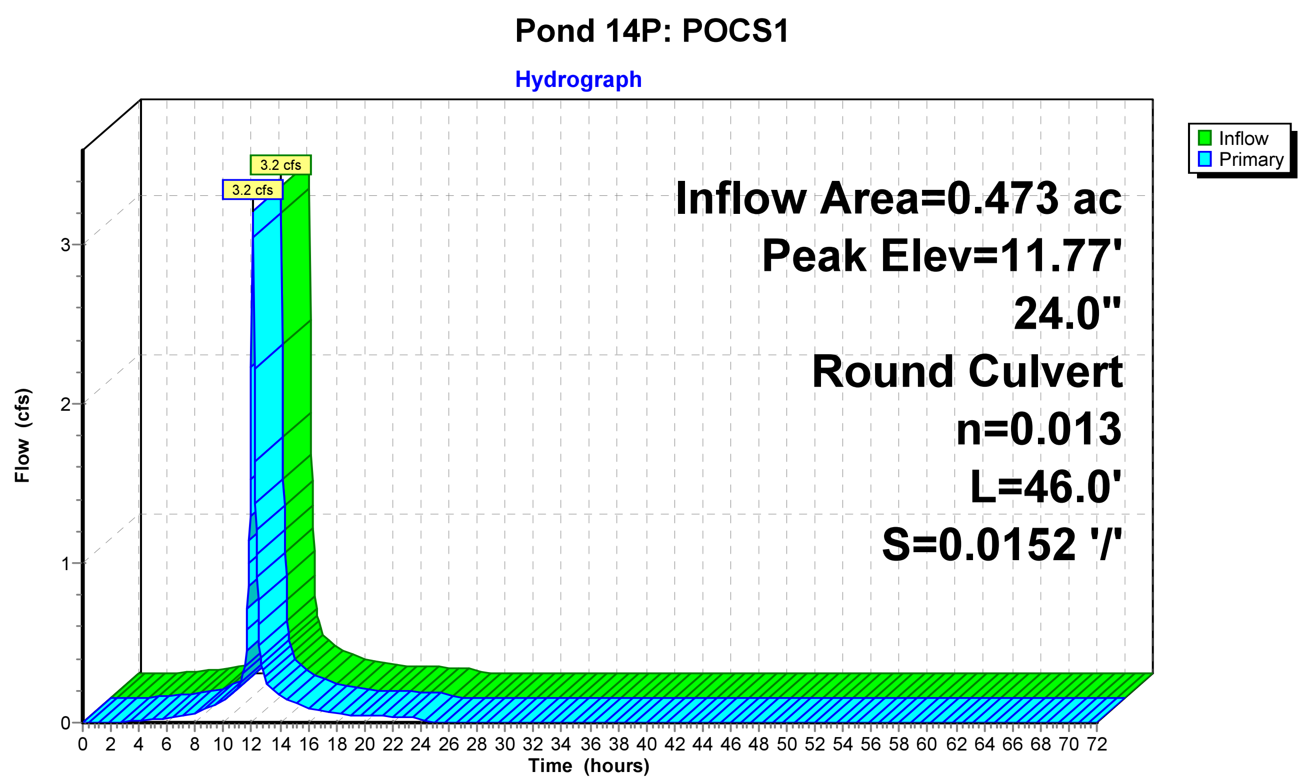
[57] Hint: Peaked at 11.77' (Flood elevation advised)

Inflow Area =	0.473 ac, 77.98% Impervious, Inflow Depth = 6.27"	for 25 Year Storm event	
Inflow =	3.2 cfs @ 12.07 hrs, Volume=	0.247 af	
Outflow =	3.2 cfs @ 12.07 hrs, Volume=	0.247 af,	Atten= 0%, Lag= 0.0 min
Primary =	3.2 cfs @ 12.07 hrs, Volume=	0.247 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.77' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	11.00'	**24.0" Round Culvert** L= 46.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 11.00' / 10.30' S= 0.0152 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=3.0 cfs @ 12.07 hrs HW=11.75' TW=11.10' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.0 cfs @ 4.09 fps)



Summary for Pond 15P: 2 - 12" PERFORATED UNDERDRAIN

[57] Hint: Peaked at 14.57' (Flood elevation advised)

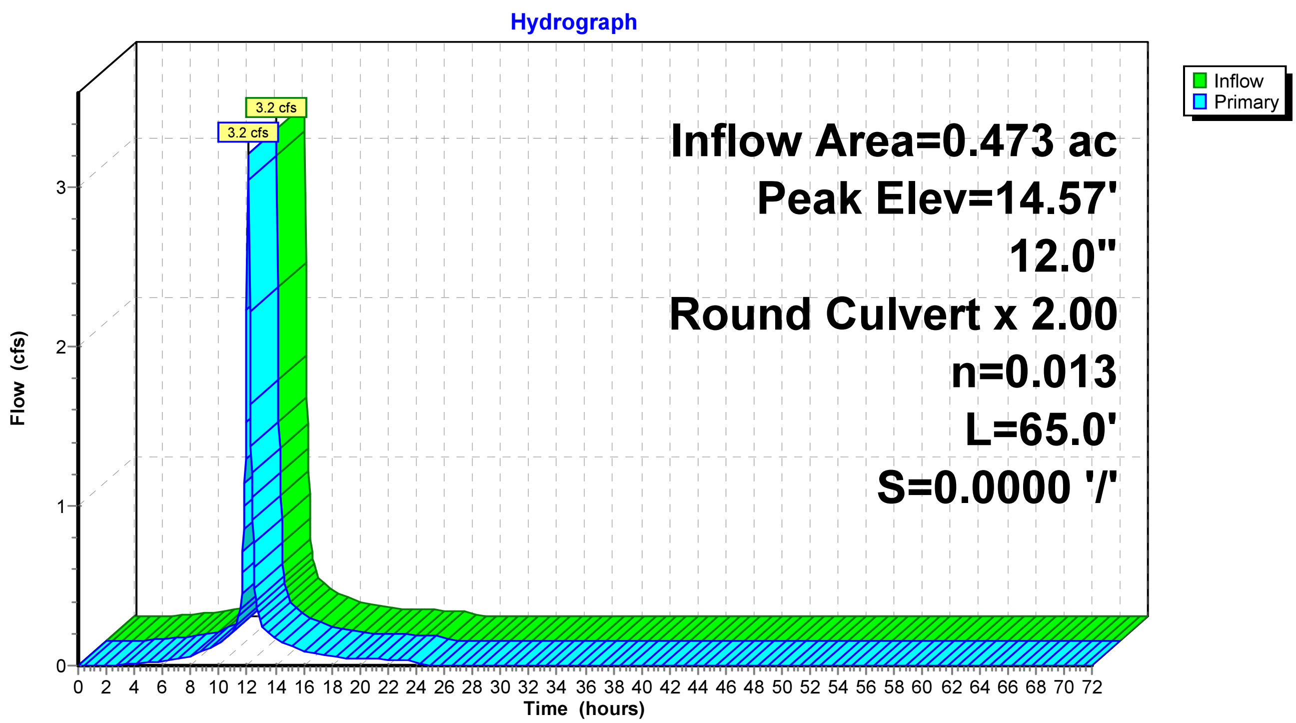
Inflow Area =	0.473 ac,	77.98% Impervious,	Inflow Depth = 6.27"	for 25 Year Storm event	
Inflow =	3.2 cfs @	12.07 hrs,	Volume=	0.247 af	
Outflow =	3.2 cfs @	12.07 hrs,	Volume=	0.247 af,	Atten= 0%, Lag= 0.0 min
Primary =	3.2 cfs @	12.07 hrs,	Volume=	0.247 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 14.57' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	13.50'	**12.0" Round Culvert X 2.00** L= 65.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.50' / 13.50' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.1 cfs @ 12.07 hrs HW=14.55' TW=11.75' (Dynamic Tailwater)
1=Culvert (Barrel Controls 3.1 cfs @ 2.34 fps)

Pond 15P: 2 - 12" PERFORATED UNDERDRAIN



Summary for Pond 16P: 2 - 12" PERFORATED UNDERDRAIN

[57] Hint: Peaked at 14.07' (Flood elevation advised)

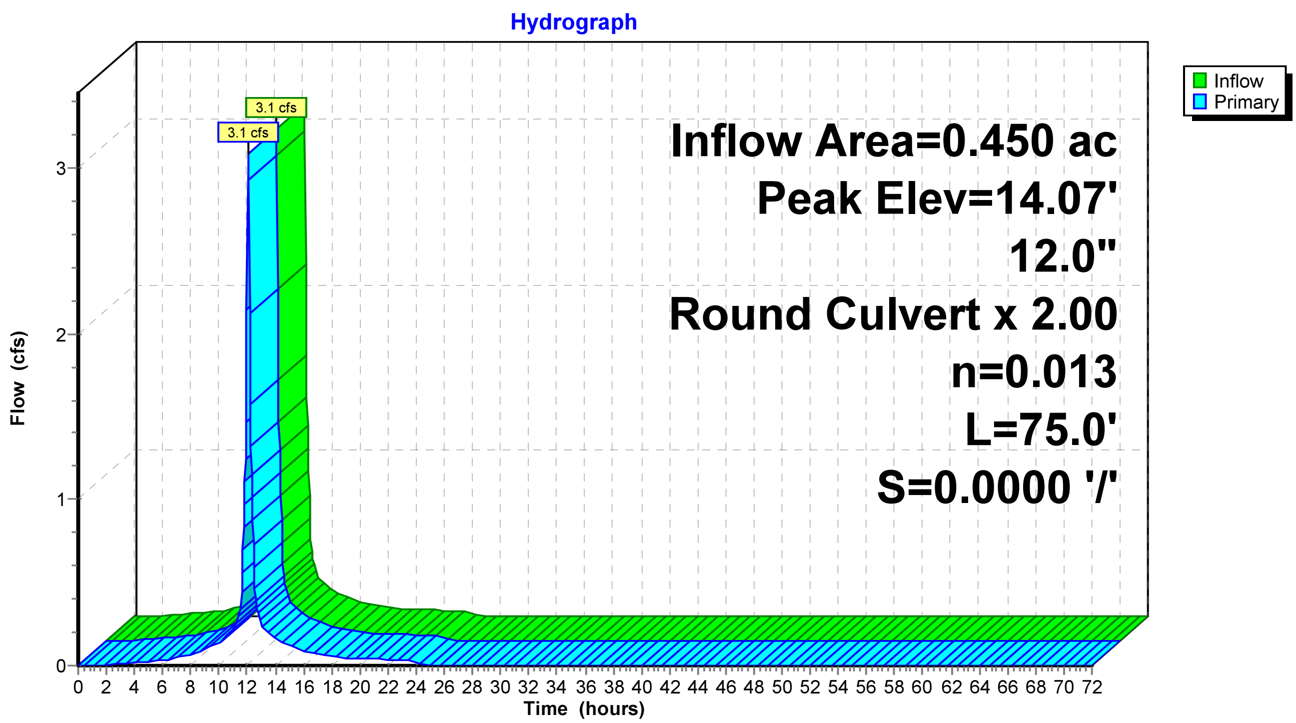
Inflow Area = 0.450 ac, 82.66% Impervious, Inflow Depth = 6.39" for 25 Year Storm event
Inflow = 3.1 cfs @ 12.07 hrs, Volume= 0.239 af
Outflow = 3.1 cfs @ 12.07 hrs, Volume= 0.239 af, Atten= 0%, Lag= 0.0 min
Primary = 3.1 cfs @ 12.07 hrs, Volume= 0.239 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 14.07' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	13.00'	**12.0" Round Culvert X 2.00** L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.00' / 13.00' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.0 cfs @ 12.07 hrs HW=14.04' TW=11.75' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 3.0 cfs @ 2.25 fps)

Pond 16P: 2 - 12" PERFORATED UNDERDRAIN



Summary for Pond CB 5D: CB 5D

[57] Hint: Peaked at 10.99' (Flood elevation advised)

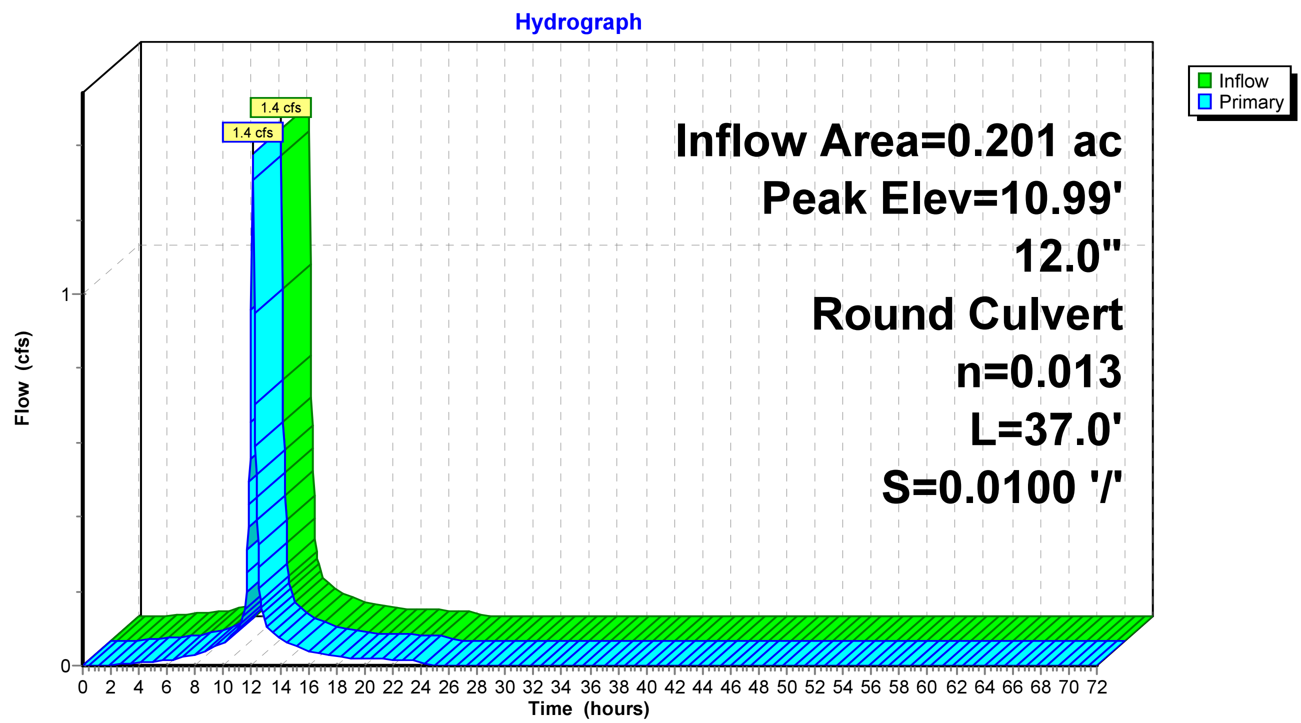
Inflow Area = 0.201 ac, 85.26% Impervious, Inflow Depth = 6.39" for 25 Year Storm event
Inflow = 1.4 cfs @ 12.07 hrs, Volume= 0.107 af
Outflow = 1.4 cfs @ 12.07 hrs, Volume= 0.107 af, Atten= 0%, Lag= 0.0 min
Primary = 1.4 cfs @ 12.07 hrs, Volume= 0.107 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 10.99' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.24'	**12.0" Round Culvert** L= 37.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.24' / 9.87' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.2 cfs @ 12.07 hrs HW=10.96' TW=10.65' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 1.2 cfs @ 2.77 fps)

Pond CB 5D: CB 5D



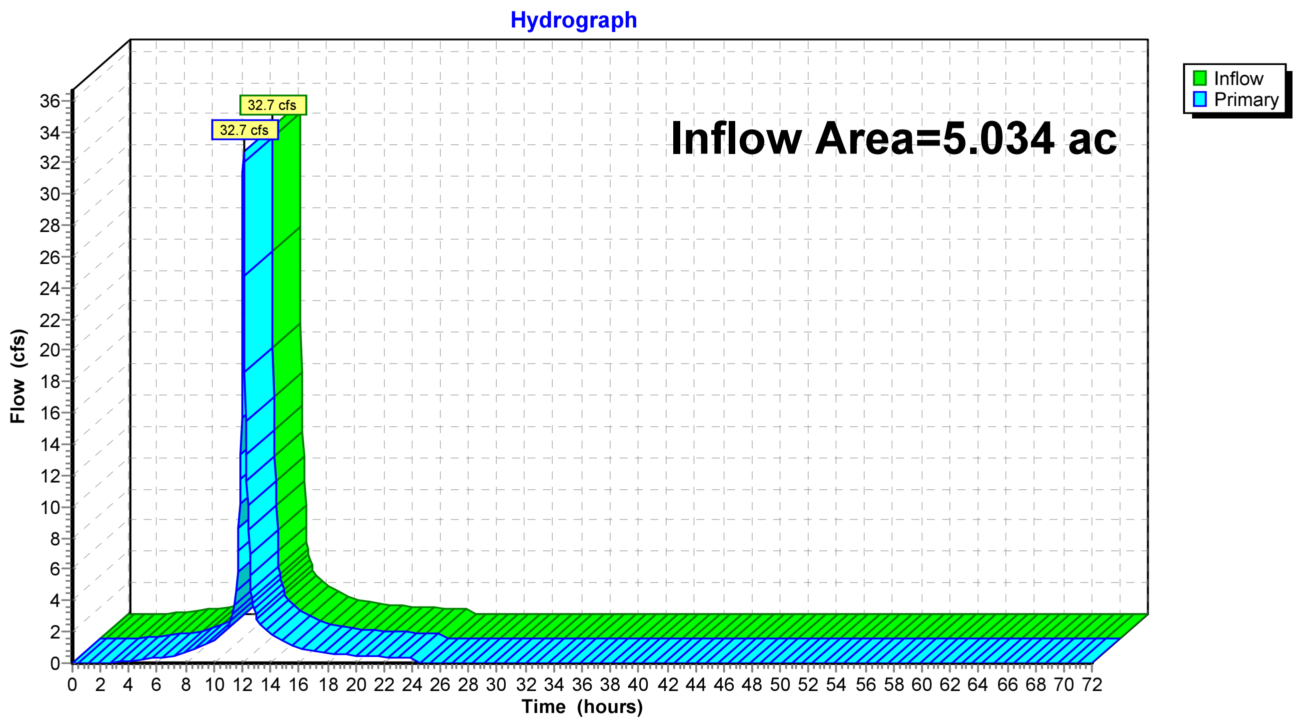
Summary for Pond DMH 4: DP 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area =	5.034 ac, 78.07% Impervious, Inflow Depth = 6.26"	for 25 Year Storm event	
Inflow =	32.7 cfs @ 12.08 hrs, Volume=	2.628 af	
Primary =	32.7 cfs @ 12.08 hrs, Volume=	2.628 af, Atten= 0%, Lag= 0.0 min	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DMH 4: DP 1



Summary for Pond DMH 4A: DMH 4A

[57] Hint: Peaked at 11.03' (Flood elevation advised)
[80] Warning: Exceeded Pond 1P by 0.10' @ 12.10 hrs (9.3 cfs 0.053 af)
[80] Warning: Exceeded Pond DMH A6 by 0.17' @ 12.10 hrs (6.1 cfs 0.044 af)

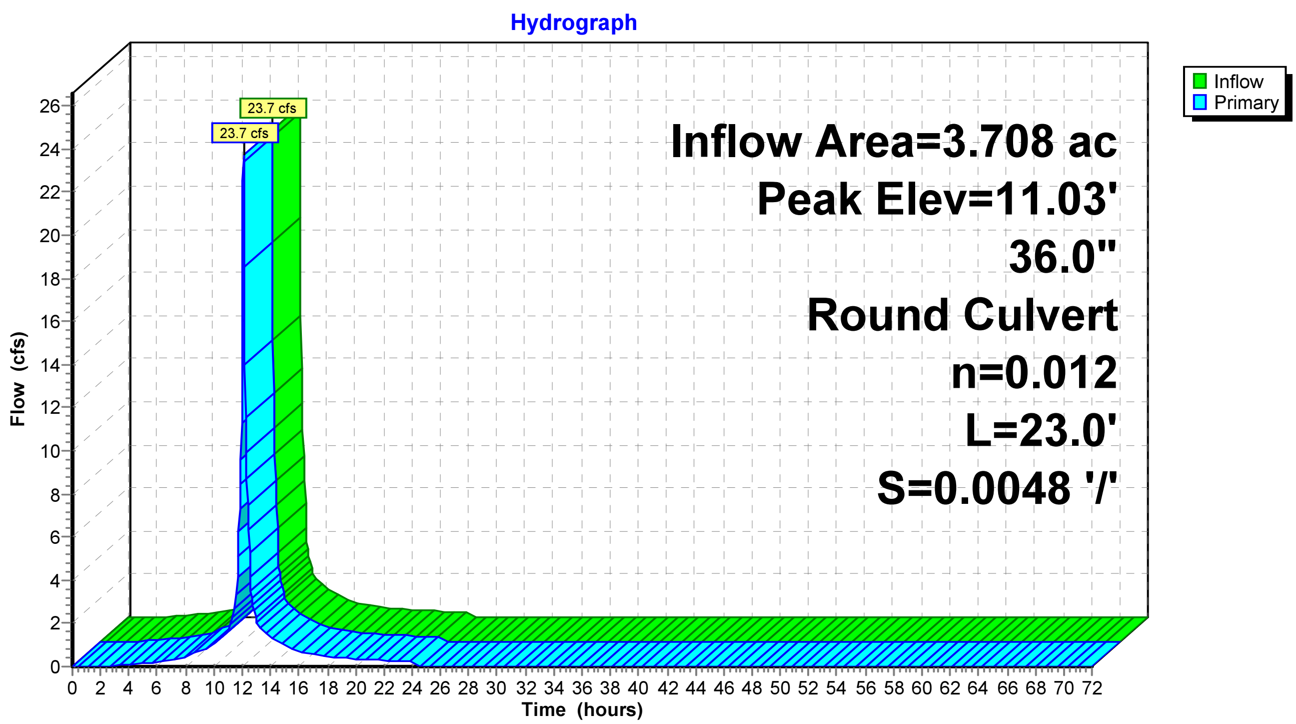
Inflow Area = 3.708 ac, 75.46% Impervious, Inflow Depth = 6.20" for 25 Year Storm event
Inflow = 23.7 cfs @ 12.08 hrs, Volume= 1.916 af
Outflow = 23.7 cfs @ 12.08 hrs, Volume= 1.916 af, Atten= 0%, Lag= 0.0 min
Primary = 23.7 cfs @ 12.08 hrs, Volume= 1.916 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.03' @ 12.14 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.85'	**36.0" Round Culvert** L= 23.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 7.85' / 7.74' S= 0.0048 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 7.07 sf

Primary OutFlow Max=11.4 cfs @ 12.08 hrs HW=10.73' TW=10.61' (Dynamic Tailwater)
1=Culvert (Inlet Controls 11.4 cfs @ 1.64 fps)

Pond DMH 4A: DMH 4A



Summary for Pond DMH A6: DMH A6

[57] Hint: Peaked at 11.11' (Flood elevation advised)
[80] Warning: Exceeded Pond ENV 21 by 0.12' @ 12.15 hrs (3.0 cfs 0.016 af)

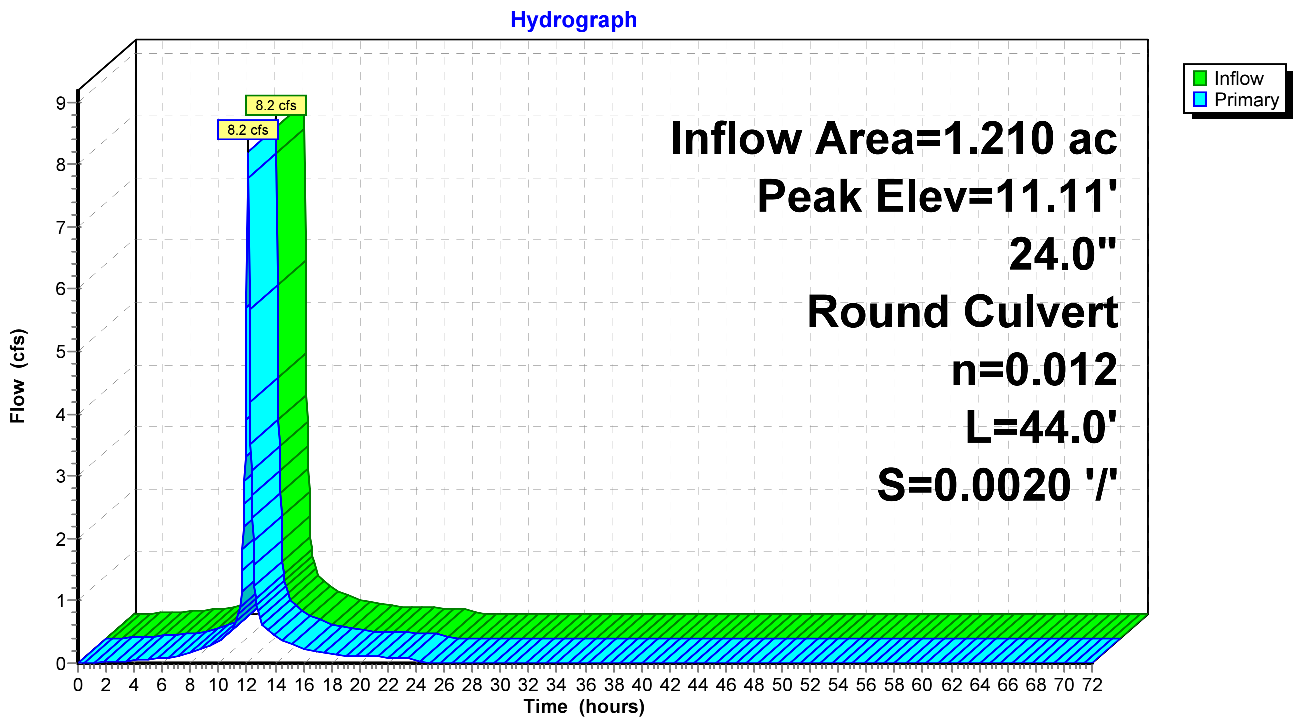
Inflow Area =	1.210 ac,	79.68% Impervious,	Inflow Depth = 6.33"	for 25 Year Storm event
Inflow =	8.2 cfs @	12.07 hrs,	Volume=	0.638 af
Outflow =	8.2 cfs @	12.07 hrs,	Volume=	0.638 af, Atten= 0%, Lag= 0.0 min
Primary =	8.2 cfs @	12.07 hrs,	Volume=	0.638 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.11' @ 12.18 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	8.50'	**24.0" Round Culvert** L= 44.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 8.50' / 8.41' S= 0.0020 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf

Primary OutFlow Max=0.0 cfs @ 12.07 hrs HW=10.51' TW=10.63' (Dynamic Tailwater)
└─**1=Culvert** (Controls 0.0 cfs)

Pond DMH A6: DMH A6



Summary for Pond ENV 21: ENV 21

[57] Hint: Peaked at 11.19' (Flood elevation advised)

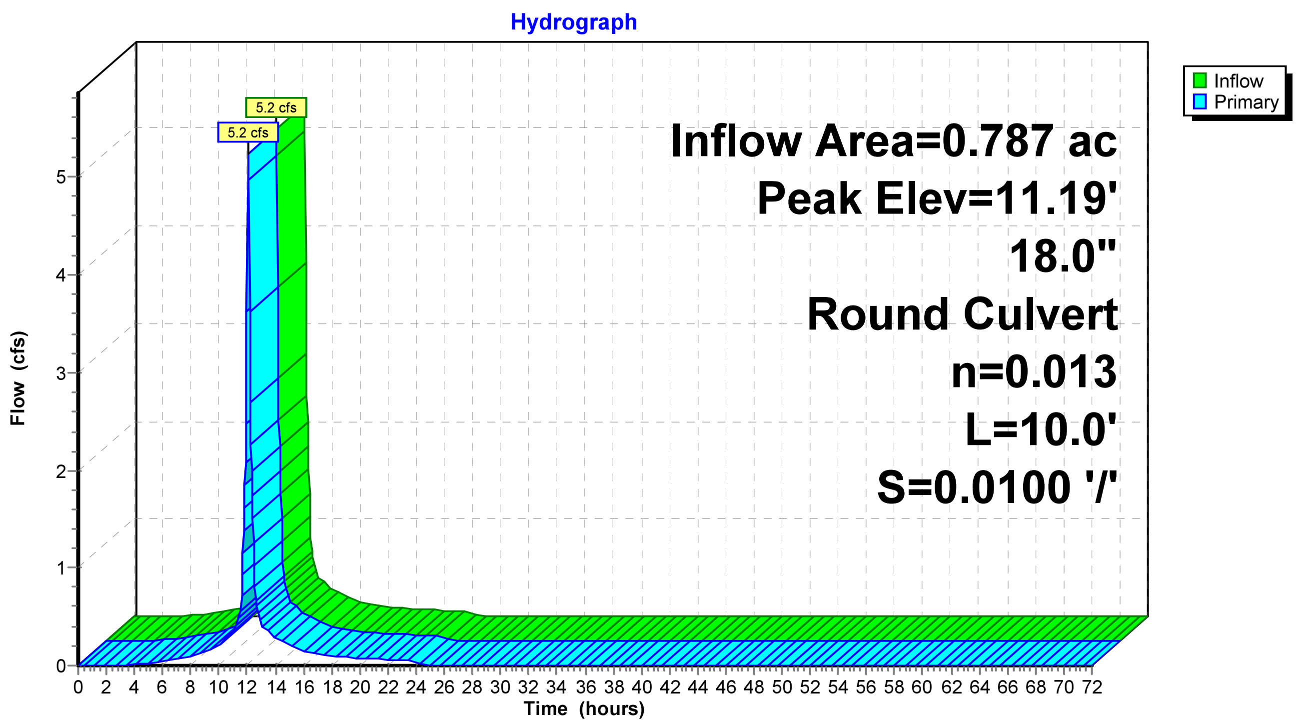
Inflow Area = 0.787 ac, 68.76% Impervious, Inflow Depth = 6.04" for 25 Year Storm event
Inflow = 5.2 cfs @ 12.07 hrs, Volume= 0.396 af
Outflow = 5.2 cfs @ 12.07 hrs, Volume= 0.396 af, Atten= 0%, Lag= 0.0 min
Primary = 5.2 cfs @ 12.07 hrs, Volume= 0.396 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.19' @ 12.23 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	9.00'	**18.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.00' / 8.90' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.3 cfs @ 12.07 hrs HW=10.53' TW=10.51' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.3 cfs @ 0.71 fps)

Pond ENV 21: ENV 21



Summary for Pond PCB-BH: PCB-BH

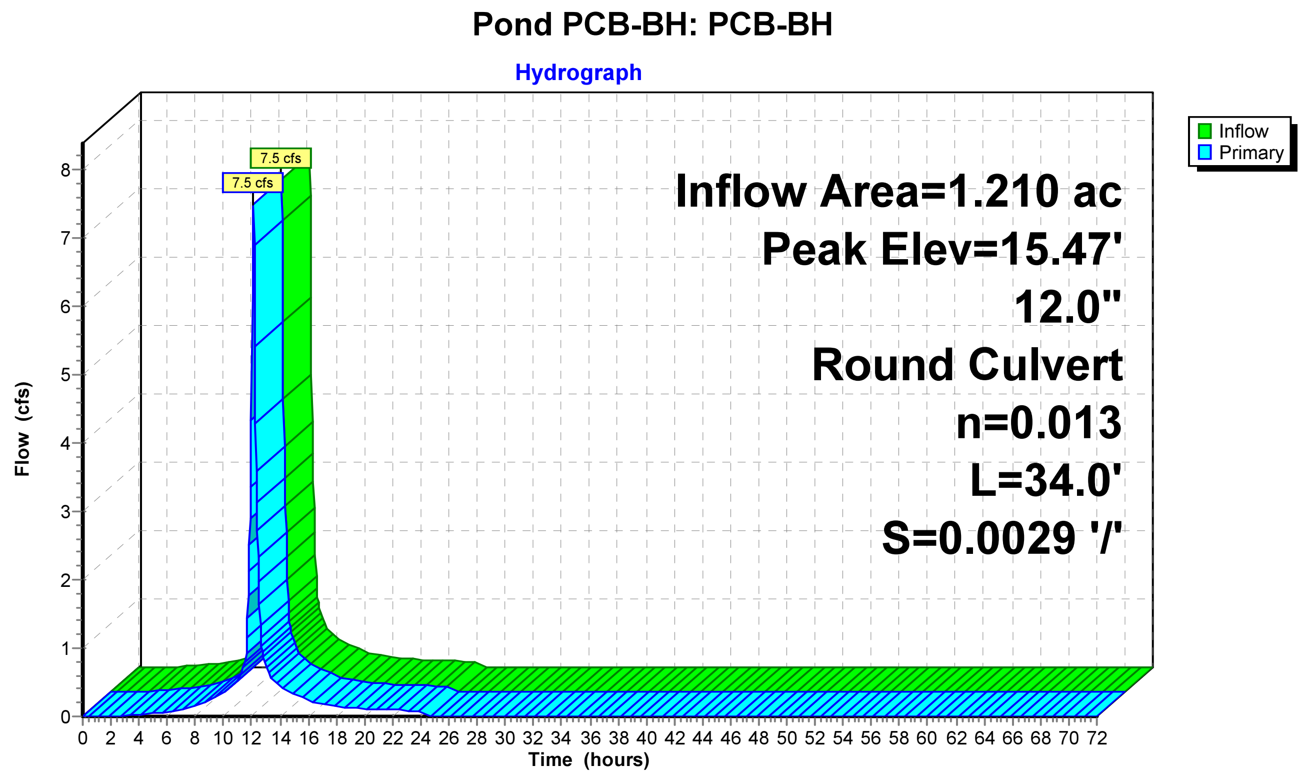
[57] Hint: Peaked at 15.47' (Flood elevation advised)
[61] Hint: Exceeded Reach 3R outlet invert by 0.12' @ 12.10 hrs

Inflow Area =	1.210 ac, 75.70% Impervious, Inflow Depth = 6.21"	for 25 Year Storm event	
Inflow =	7.5 cfs @ 12.11 hrs, Volume=	0.626 af	
Outflow =	7.5 cfs @ 12.11 hrs, Volume=	0.626 af,	Atten= 0%, Lag= 0.0 min
Primary =	7.5 cfs @ 12.11 hrs, Volume=	0.626 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 15.47' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.20'	**12.0" Round Culvert** L= 34.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.20' / 10.10' S= 0.0029 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=7.1 cfs @ 12.11 hrs HW=15.31' TW=11.74' (Dynamic Tailwater)
1=Culvert (Inlet Controls 7.1 cfs @ 9.10 fps)



Summary for Pond PDMH 1: PDMH 1

[57] Hint: Peaked at 10.66' (Flood elevation advised)

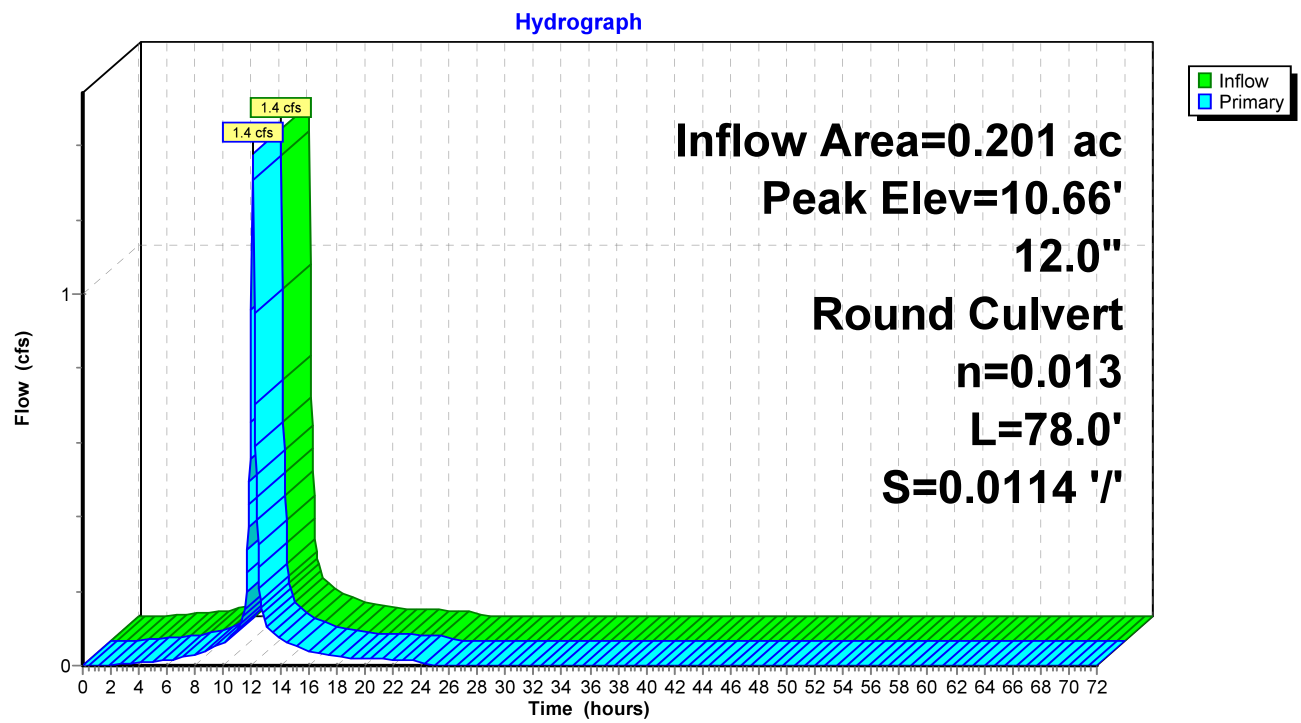
Inflow Area = 0.201 ac, 85.26% Impervious, Inflow Depth = 6.39" for 25 Year Storm event
Inflow = 1.4 cfs @ 12.07 hrs, Volume= 0.107 af
Outflow = 1.4 cfs @ 12.07 hrs, Volume= 0.107 af, Atten= 0%, Lag= 0.0 min
Primary = 1.4 cfs @ 12.07 hrs, Volume= 0.107 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 10.66' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.04'	**12.0" Round Culvert** L= 78.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.04' / 9.15' S= 0.0114 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.2 cfs @ 12.07 hrs HW=10.65' TW=9.93' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 1.2 cfs @ 3.36 fps)

Pond PDMH 1: PDMH 1



Summary for Pond PDMH 2: PDMH 2

[57] Hint: Peaked at 10.14' (Flood elevation advised)

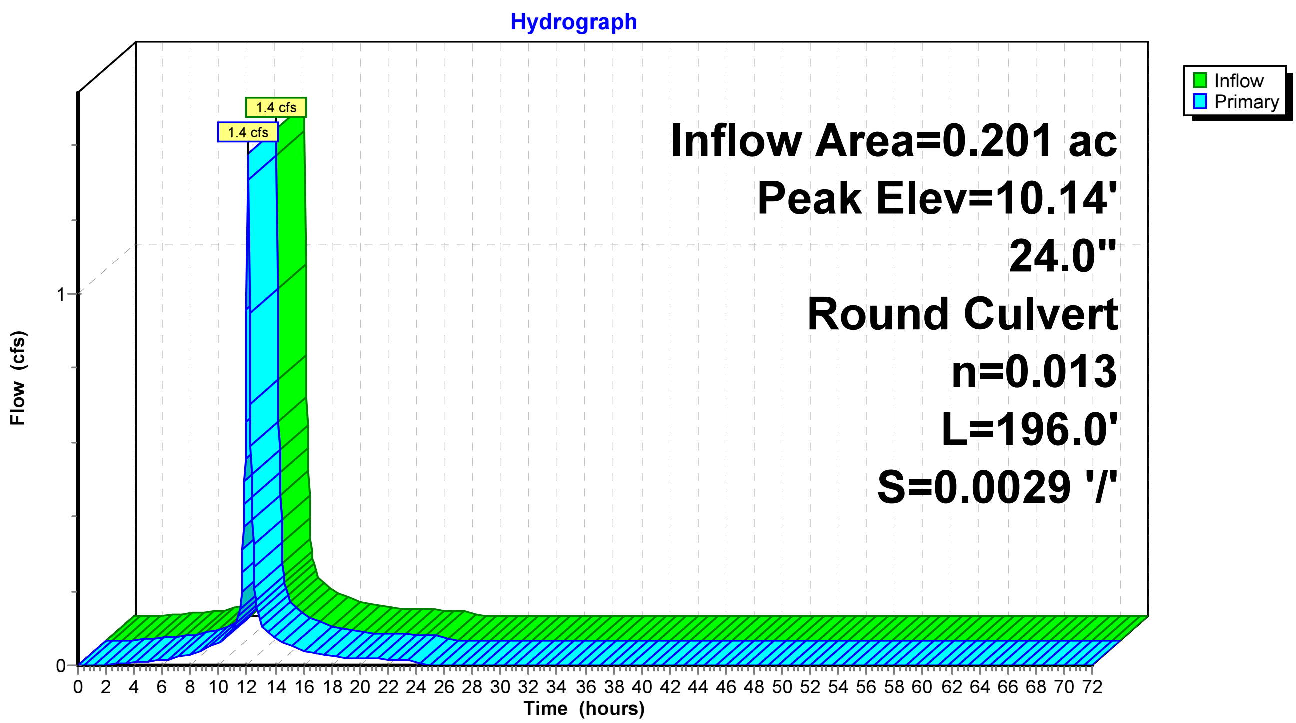
Inflow Area =	0.201 ac, 85.26% Impervious, Inflow Depth =	6.39"	for 25 Year Storm event
Inflow =	1.4 cfs @ 12.07 hrs, Volume=	0.107 af	
Outflow =	1.4 cfs @ 12.07 hrs, Volume=	0.107 af, Atten= 0%, Lag= 0.0 min	
Primary =	1.4 cfs @ 12.07 hrs, Volume=	0.107 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 10.14' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	9.05'	**24.0" Round Culvert** L= 196.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.05' / 8.49' S= 0.0029 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=0.0 cfs @ 12.07 hrs HW=9.93' TW=10.03' (Dynamic Tailwater)
└─**1=Culvert** (Controls 0.0 cfs)

Pond PDMH 2: PDMH 2



Summary for Pond PDMH 3: PDMH 3

[57] Hint: Peaked at 10.08' (Flood elevation advised)
[80] Warning: Exceeded Pond PDMH 2 by 0.19' @ 12.05 hrs (1.6 cfs 0.007 af)

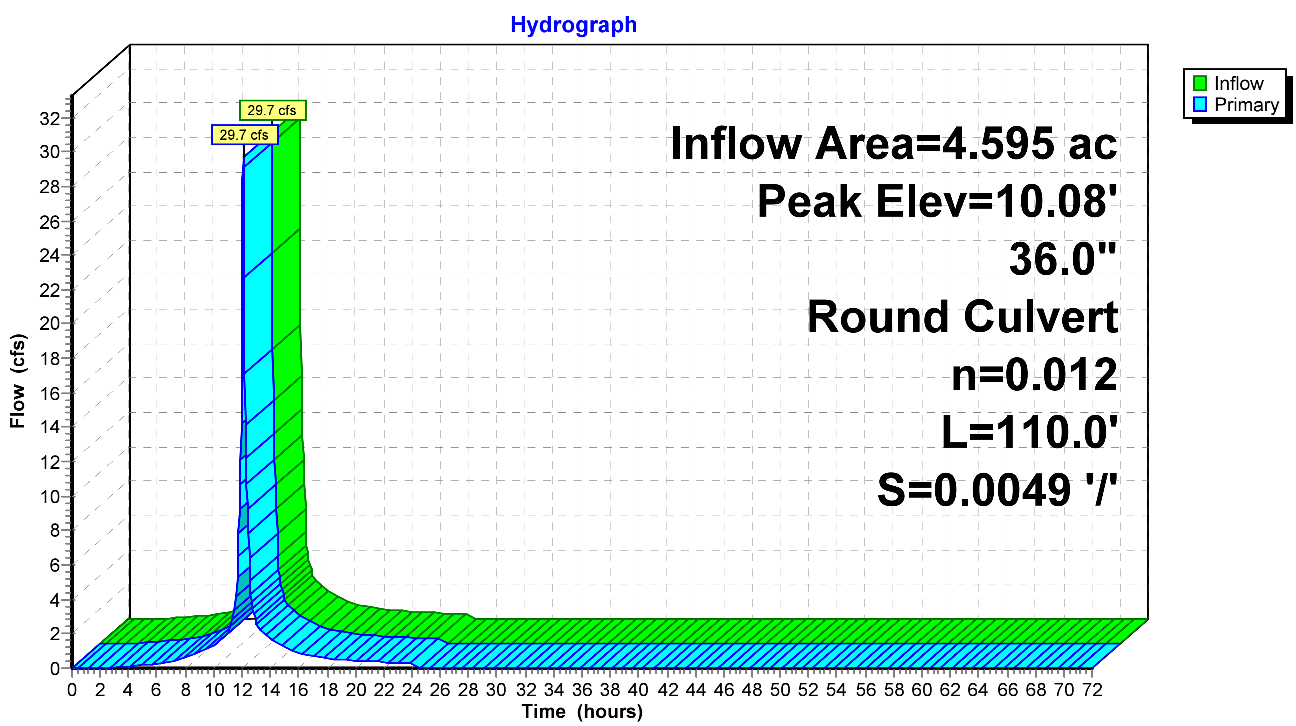
Inflow Area =	4.595 ac, 77.00% Impervious, Inflow Depth = 6.24"	for 25 Year Storm event	
Inflow =	29.7 cfs @ 12.08 hrs, Volume=	2.389 af	
Outflow =	29.7 cfs @ 12.08 hrs, Volume=	2.389 af,	Atten= 0%, Lag= 0.0 min
Primary =	29.7 cfs @ 12.08 hrs, Volume=	2.389 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 10.08' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.48'	**36.0" Round Culvert** L= 110.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 7.48' / 6.94' S= 0.0049 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 7.07 sf

Primary OutFlow Max=28.9 cfs @ 12.08 hrs HW=10.03' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 28.9 cfs @ 6.06 fps)

Pond PDMH 3: PDMH 3



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 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 PS1: Runoff Area=7,157 sf 95.88% Impervious Runoff Depth=8.14"
Tc=5.0 min CN=97 Runoff=1.4 cfs 0.111 af

Subcatchment PS2a: Runoff Area=20,584 sf 77.98% Impervious Runoff Depth=7.66"
Tc=5.0 min CN=93 Runoff=3.9 cfs 0.302 af

Subcatchment PS2b: Runoff Area=11,747 sf 83.79% Impervious Runoff Depth=7.78"
Tc=5.0 min CN=94 Runoff=2.2 cfs 0.175 af

Subcatchment PS3a: Runoff Area=19,589 sf 82.66% Impervious Runoff Depth=7.78"
Tc=5.0 min CN=94 Runoff=3.7 cfs 0.292 af

Subcatchment PS3b: Runoff Area=40,960 sf 73.37% Impervious Runoff Depth=7.54"
Tc=5.0 min CN=92 Runoff=7.7 cfs 0.591 af

Subcatchment PS4: Runoff Area=12,006 sf 85.32% Impervious Runoff Depth=7.78"
Tc=5.0 min CN=94 Runoff=2.3 cfs 0.179 af

Subcatchment PS5: Runoff Area=34,260 sf 68.76% Impervious Runoff Depth=7.42"
Tc=5.0 min CN=91 Runoff=6.4 cfs 0.486 af

Subcatchment PS5A: Runoff Area=9,298 sf 93.79% Impervious Runoff Depth=8.14"
Tc=5.0 min CN=97 Runoff=1.8 cfs 0.145 af

Subcatchment PS5B: Runoff Area=13,605 sf 74.26% Impervious Runoff Depth=7.54"
Tc=5.0 min CN=92 Runoff=2.5 cfs 0.196 af

Subcatchment PS5C: PS5 Roof Runoff Area=18,430 sf 100.00% Impervious Runoff Depth=8.26"
Tc=5.0 min CN=98 Runoff=3.6 cfs 0.291 af

Subcatchment PS6: Runoff Area=20,527 sf 57.17% Impervious Runoff Depth=7.06"
Tc=5.0 min CN=88 Runoff=3.7 cfs 0.277 af

Subcatchment PS7: Runoff Area=8,740 sf 85.26% Impervious Runoff Depth=7.78"
Tc=5.0 min CN=94 Runoff=1.7 cfs 0.130 af

Subcatchment PS8: Runoff Area=2,398 sf 81.98% Impervious Runoff Depth=7.78"
Tc=5.0 min CN=94 Runoff=0.5 cfs 0.036 af

Reach 3R: Swale Avg. Flow Depth=0.76' Max Vel=2.06 fps Inflow=9.9 cfs 0.766 af
n=0.030 L=380.0' S=0.0050 '/' Capacity=16.9 cfs Outflow=9.1 cfs 0.766 af

Pond 1P: DMH A19 Peak Elev=11.92' Inflow=19.1 cfs 1.566 af
36.0" Round Culvert n=0.012 L=106.0' S=0.0028 '/' Outflow=19.1 cfs 1.566 af

Pond 3P: PCB3 Peak Elev=12.37' Inflow=12.6 cfs 1.057 af
24.0" Round Culvert n=0.013 L=43.0' S=0.0112 '/' Outflow=12.6 cfs 1.057 af

Pond 4P: PCB7 Peak Elev=12.22' Inflow=15.0 cfs 1.253 af
24.0" Round Culvert n=0.013 L=46.0' S=0.0261 '/' Outflow=15.0 cfs 1.253 af

Pond 5P: DMH 4B Peak Elev=11.92' Inflow=4.2 cfs 0.313 af
36.0" Round Culvert n=0.012 L=104.0' S=0.0007 '/' Outflow=4.2 cfs 0.313 af

Pond 6P: PCB1 Peak Elev=15.45' Inflow=3.7 cfs 0.277 af
12.0" Round Culvert n=0.013 L=109.0' S=0.0202 '/' Outflow=3.7 cfs 0.277 af

Pond 7P: PCB2 Peak Elev=13.38' Inflow=4.2 cfs 0.313 af
12.0" Round Culvert n=0.013 L=9.0' S=0.0111 '/' Outflow=4.2 cfs 0.313 af

Pond 9P: PCB4 Peak Elev=11.44' Inflow=3.9 cfs 0.302 af
24.0" Round Culvert n=0.013 L=18.0' S=0.0050 '/' Outflow=3.9 cfs 0.302 af

Pond 10P: PCB5 Peak Elev=11.36' Inflow=34.4 cfs 2.790 af
36.0" Round Culvert n=0.013 L=45.0' S=0.0080 '/' Outflow=34.4 cfs 2.790 af

Pond 12P: POCS2 Peak Elev=12.38' Inflow=3.7 cfs 0.292 af
24.0" Round Culvert n=0.013 L=40.0' S=0.0200 '/' Outflow=3.7 cfs 0.292 af

Pond 14P: POCS1 Peak Elev=11.86' Inflow=3.9 cfs 0.302 af
24.0" Round Culvert n=0.013 L=46.0' S=0.0152 '/' Outflow=3.9 cfs 0.302 af

Pond 15P: 2 - 12" PERFORATED UNDERDRAIN Peak Elev=14.75' Inflow=3.9 cfs 0.302 af
12.0" Round Culvert x 2.00 n=0.013 L=65.0' S=0.0000 '/' Outflow=3.9 cfs 0.302 af

Pond 16P: 2 - 12" PERFORATED UNDERDRAIN Peak Elev=14.24' Inflow=3.7 cfs 0.292 af
12.0" Round Culvert x 2.00 n=0.013 L=75.0' S=0.0000 '/' Outflow=3.7 cfs 0.292 af

Pond CB 5D: CB 5D Peak Elev=11.08' Inflow=1.7 cfs 0.130 af
12.0" Round Culvert n=0.013 L=37.0' S=0.0100 '/' Outflow=1.7 cfs 0.130 af

Pond DMH 4: DP 1 Inflow=39.6 cfs 3.210 af
Primary=39.6 cfs 3.210 af

Pond DMH 4A: DMH 4A Peak Elev=11.79' Inflow=28.8 cfs 2.344 af
36.0" Round Culvert n=0.012 L=23.0' S=0.0048 '/' Outflow=28.8 cfs 2.344 af

Pond DMH A6: DMH A6 Peak Elev=11.91' Inflow=9.9 cfs 0.777 af
24.0" Round Culvert n=0.012 L=44.0' S=0.0020 '/' Outflow=9.9 cfs 0.777 af

Pond ENV 21: ENV 21 Peak Elev=12.02' Inflow=6.4 cfs 0.486 af
18.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=6.4 cfs 0.486 af

Pond PCB-BH: PCB-BH Peak Elev=17.60' Inflow=9.1 cfs 0.766 af
12.0" Round Culvert n=0.013 L=34.0' S=0.0029 '/' Outflow=9.1 cfs 0.766 af

Pond PDMH 1: PDMH 1 Peak Elev=10.79' Inflow=1.7 cfs 0.130 af
12.0" Round Culvert n=0.013 L=78.0' S=0.0114 '/' Outflow=1.7 cfs 0.130 af

Pond PDMH 2: PDMH 2 Peak Elev=10.49' Inflow=1.7 cfs 0.130 af
24.0" Round Culvert n=0.013 L=196.0' S=0.0029 '/' Outflow=1.7 cfs 0.130 af

Pond PDMH 3: PDMH 3 Peak Elev=10.46' Inflow=36.0 cfs 2.920 af
36.0" Round Culvert n=0.012 L=110.0' S=0.0049 '/' Outflow=36.0 cfs 2.920 af

Total Runoff Area = 5.034 ac Runoff Volume = 3.210 af Average Runoff Depth = 7.65"
21.93% Pervious = 1.104 ac 78.07% Impervious = 3.930 ac

Summary for Subcatchment PS1:

[49] Hint: Tc<2dt may require smaller dt

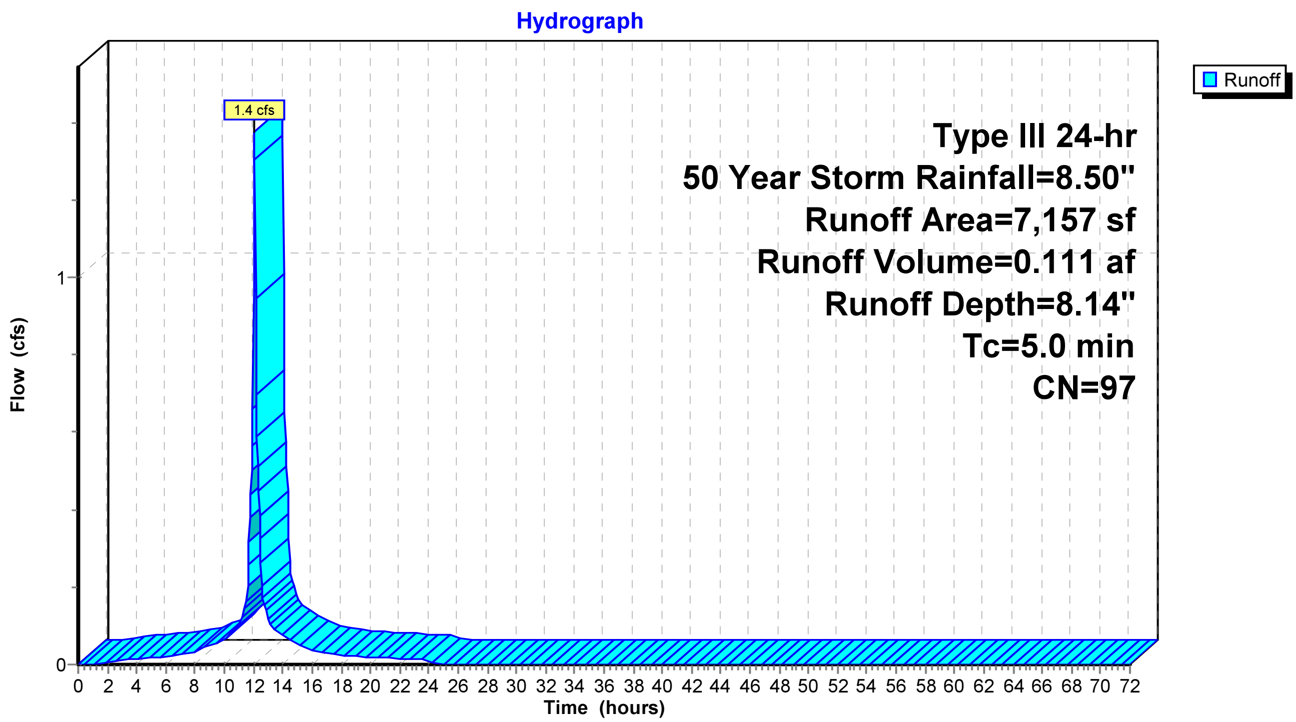
Runoff = 1.4 cfs @ 12.07 hrs, Volume= 0.111 af, Depth= 8.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Year Storm Rainfall=8.50"

	Area (sf)	CN	Description
	1,344	98	Paved parking, HSG C
*	544	98	Sidewalks, HSG C
	4,974	98	Roofs, HSG C
	295	74	>75% Grass cover, Good, HSG C
	7,157	97	Weighted Average
	295		4.12% Pervious Area
	6,862		95.88% Impervious Area

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

Subcatchment PS1:



Summary for Subcatchment PS2a:

[49] Hint: Tc<2dt may require smaller dt

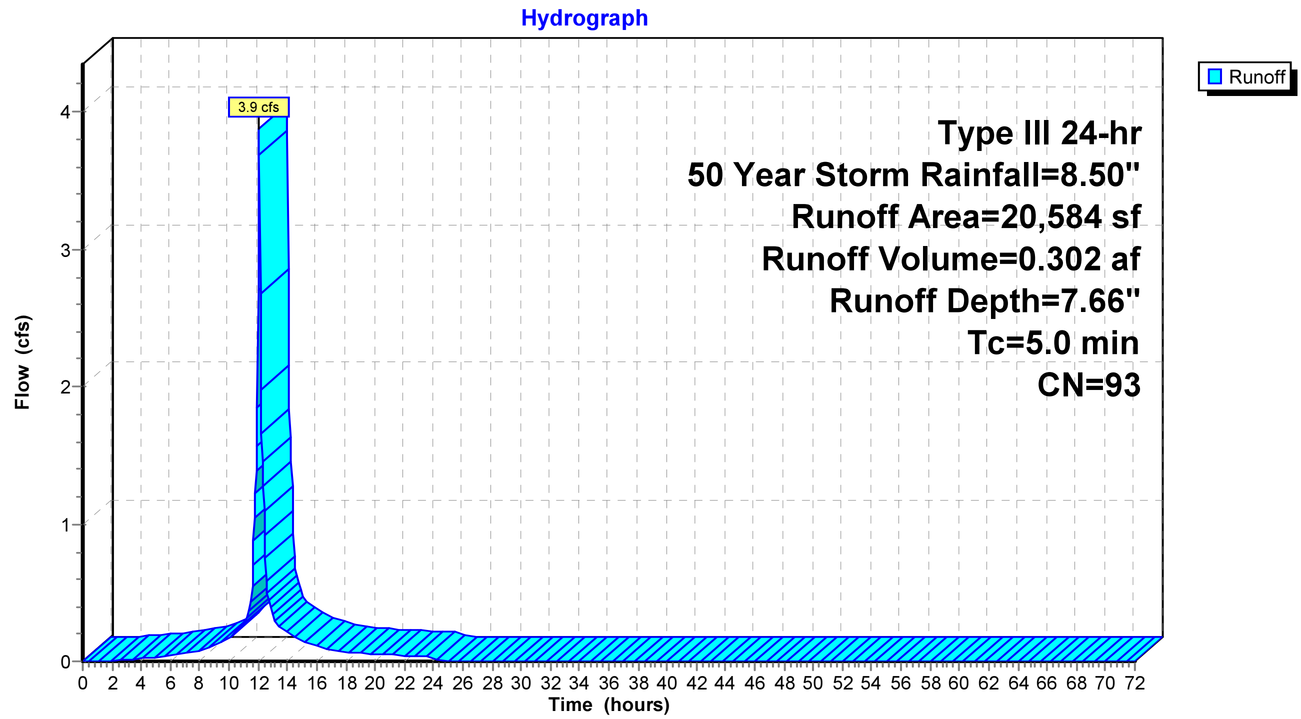
Runoff = 3.9 cfs @ 12.07 hrs, Volume= 0.302 af, Depth= 7.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Year Storm Rainfall=8.50"

	Area (sf)	CN	Description
	15,319	98	Paved parking, HSG C
*	733	98	Sidewalks, HSG C
	4,532	74	>75% Grass cover, Good, HSG C
	20,584	93	Weighted Average
	4,532		22.02% Pervious Area
	16,052		77.98% Impervious Area

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

Subcatchment PS2a:



Summary for Subcatchment PS2b:

[49] Hint: Tc<2dt may require smaller dt

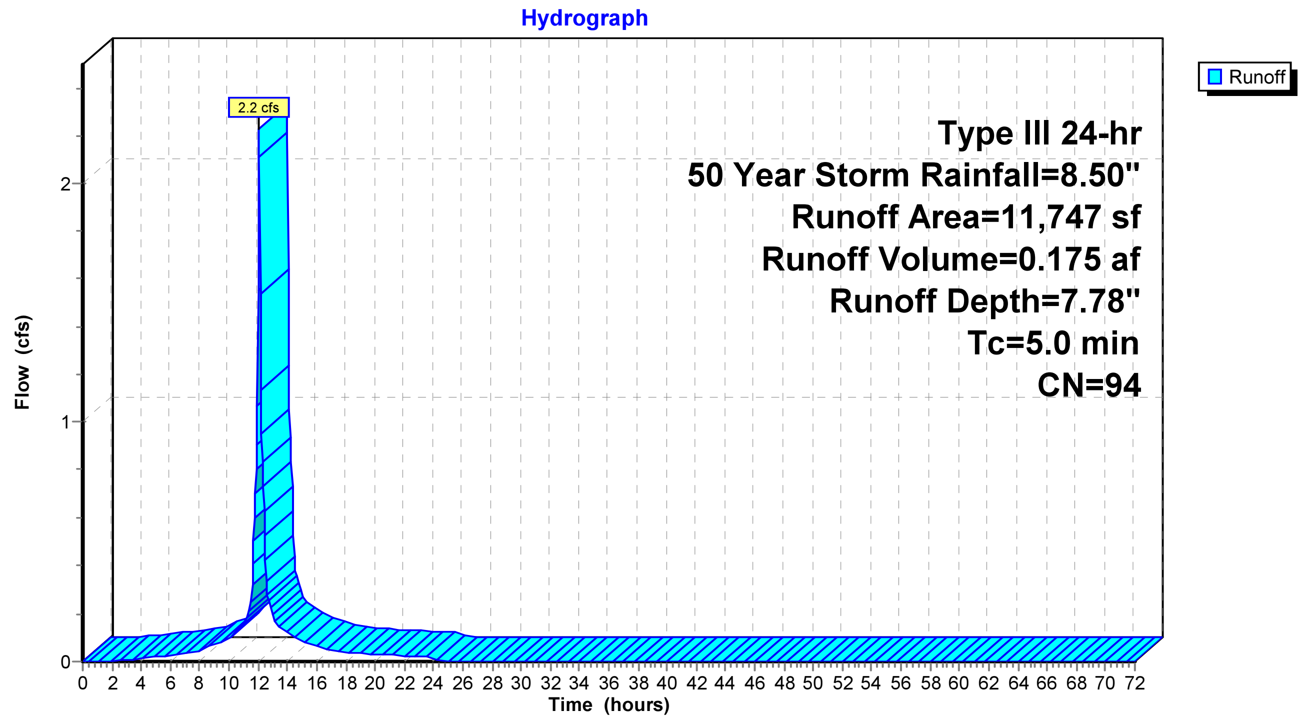
Runoff = 2.2 cfs @ 12.07 hrs, Volume= 0.175 af, Depth= 7.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Year Storm Rainfall=8.50"

Area (sf)	CN	Description
9,843	98	Roofs, HSG C
1,904	74	>75% Grass cover, Good, HSG C
11,747	94	Weighted Average
1,904		16.21% Pervious Area
9,843		83.79% Impervious Area

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

Subcatchment PS2b:



Summary for Subcatchment PS3a:

[49] Hint: Tc<2dt may require smaller dt

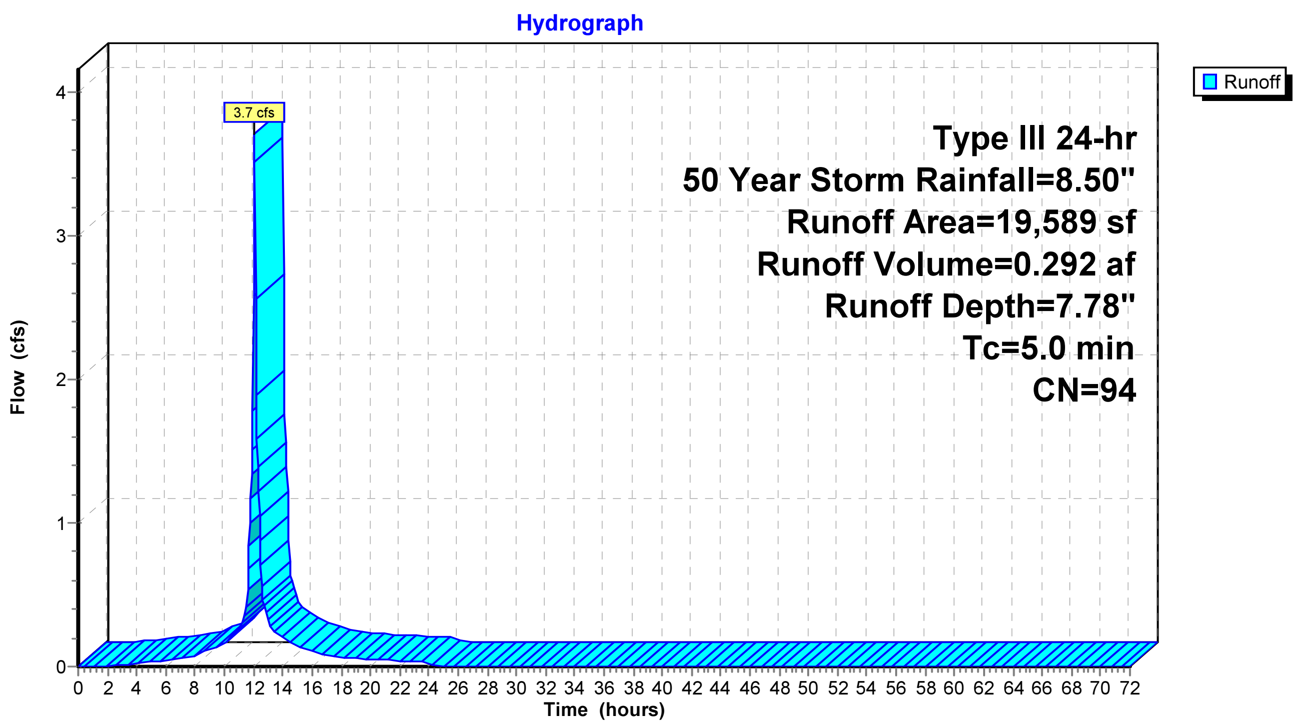
Runoff = 3.7 cfs @ 12.07 hrs, Volume= 0.292 af, Depth= 7.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Year Storm Rainfall=8.50"

Area (sf)	CN	Description
16,192	98	Paved parking, HSG C
3,397	74	>75% Grass cover, Good, HSG C
19,589	94	Weighted Average
3,397		17.34% Pervious Area
16,192		82.66% Impervious Area

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

Subcatchment PS3a:



Summary for Subcatchment PS3b:

[49] Hint: Tc<2dt may require smaller dt

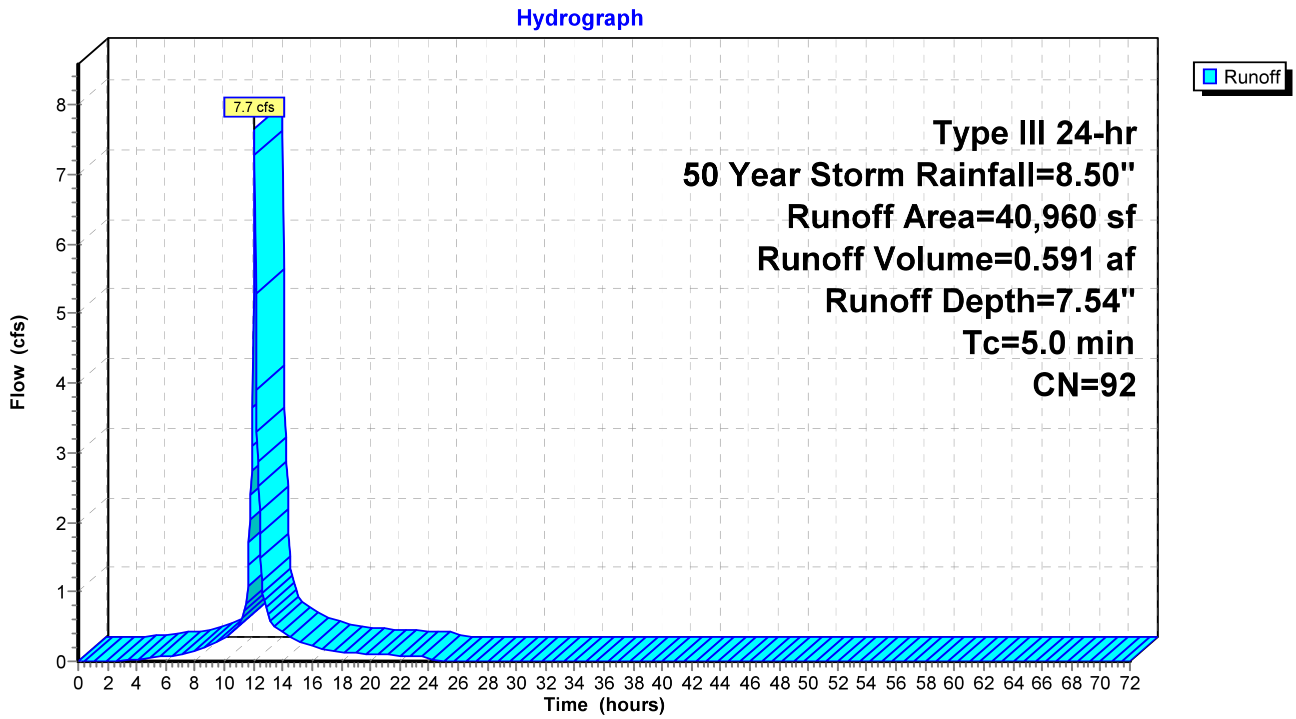
Runoff = 7.7 cfs @ 12.07 hrs, Volume= 0.591 af, Depth= 7.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Year Storm Rainfall=8.50"

Area (sf)	CN	Description
24,825	98	Roofs, HSG C
10,906	74	>75% Grass cover, Good, HSG C
5,229	98	Paved parking, HSG C
40,960	92	Weighted Average
10,906		26.63% Pervious Area
30,054		73.37% Impervious Area

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

Subcatchment PS3b:



Summary for Subcatchment PS4:

[49] Hint: Tc<2dt may require smaller dt

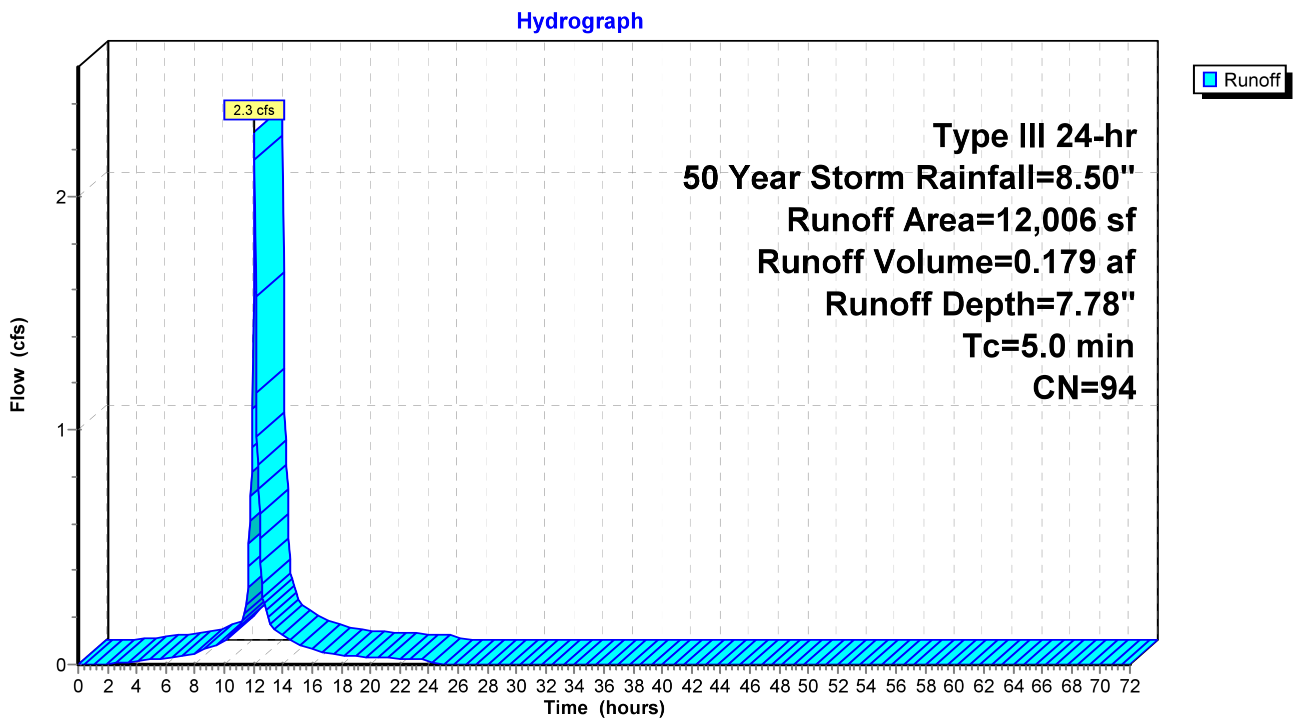
Runoff = 2.3 cfs @ 12.07 hrs, Volume= 0.179 af, Depth= 7.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Year Storm Rainfall=8.50"

	Area (sf)	CN	Description
	4,504	98	Paved parking, HSG C
*	2,085	98	Sidewalks, HSG C
	3,654	98	Roofs, HSG C
	1,763	74	>75% Grass cover, Good, HSG C
	12,006	94	Weighted Average
	1,763		14.68% Pervious Area
	10,243		85.32% Impervious Area

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

Subcatchment PS4:



Summary for Subcatchment PS5:

[49] Hint: Tc<2dt may require smaller dt

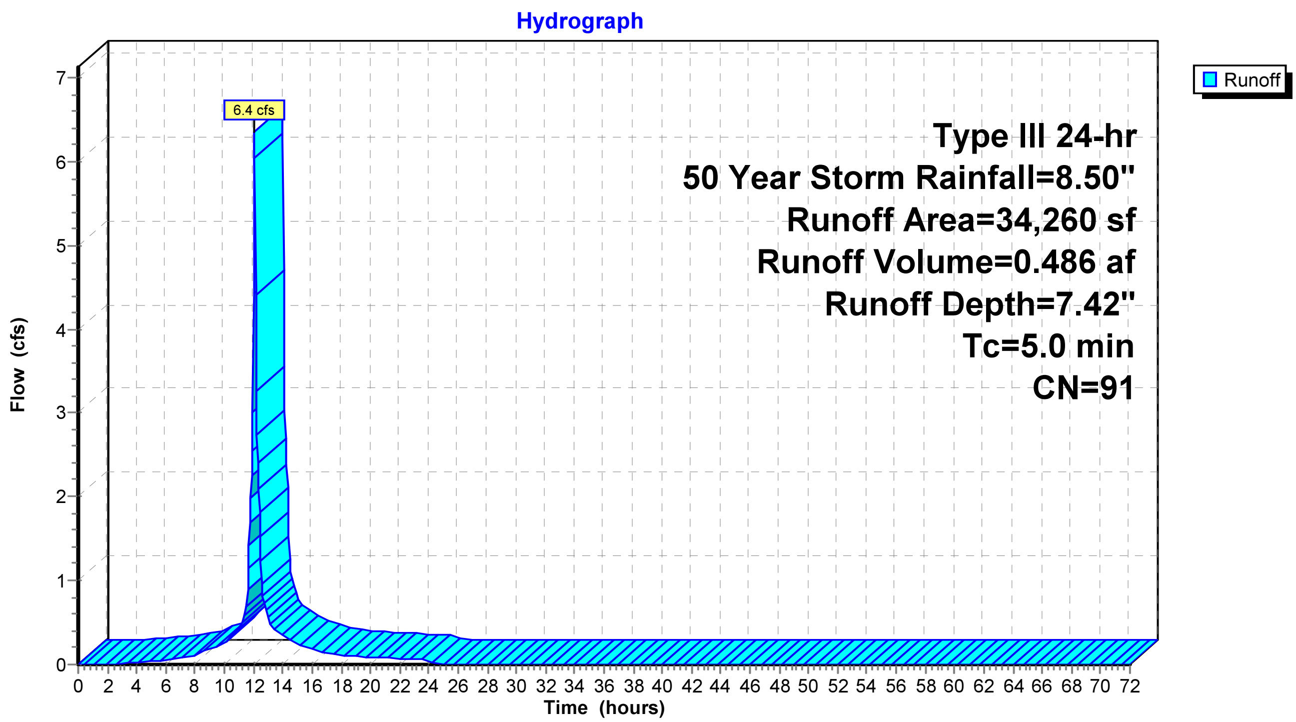
Runoff = 6.4 cfs @ 12.07 hrs, Volume= 0.486 af, Depth= 7.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Year Storm Rainfall=8.50"

	Area (sf)	CN	Description
	21,695	98	Paved parking, HSG C
*	310	98	Sidewalks, HSG C
	1,551	98	Roofs, HSG C
	10,704	74	>75% Grass cover, Good, HSG C
	34,260	91	Weighted Average
	10,704		31.24% Pervious Area
	23,556		68.76% Impervious Area

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

Subcatchment PS5:



Summary for Subcatchment PS5A:

[49] Hint: Tc<2dt may require smaller dt

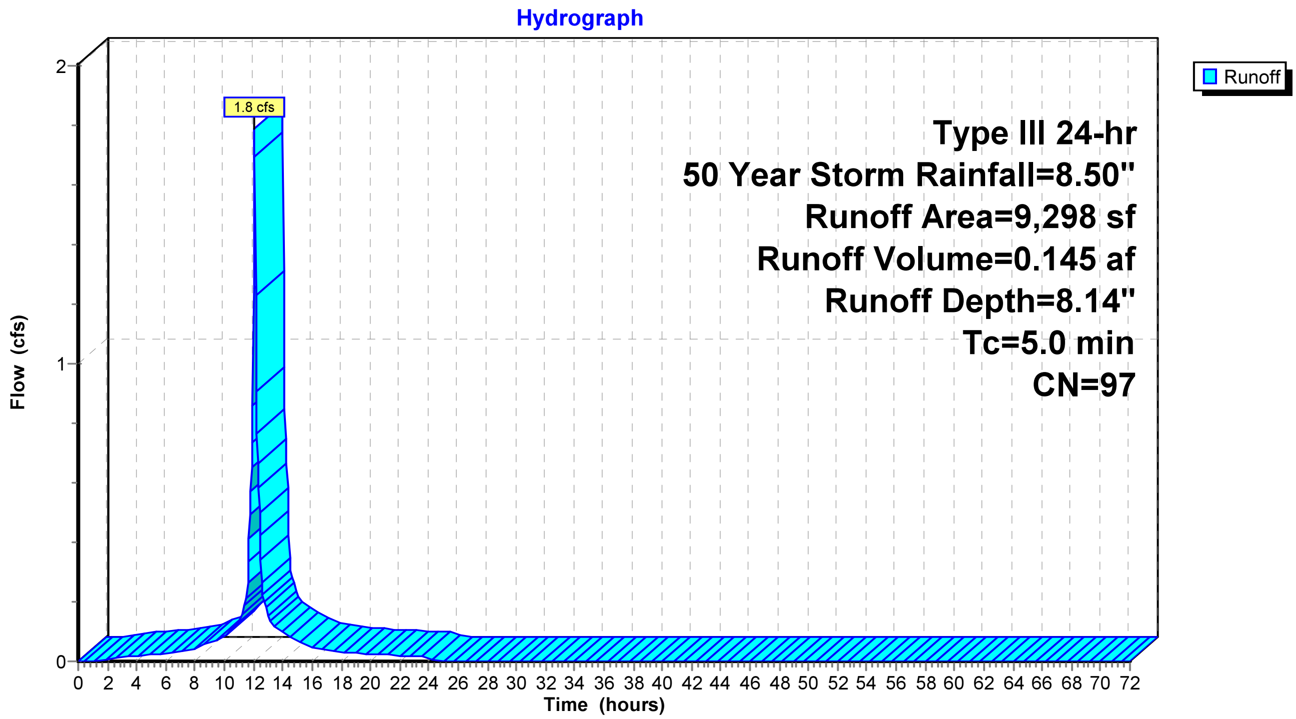
Runoff = 1.8 cfs @ 12.07 hrs, Volume= 0.145 af, Depth= 8.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Year Storm Rainfall=8.50"

	Area (sf)	CN	Description
	7,491	98	Paved parking, HSG C
*	1,230	98	Sidewalks, HSG C
	577	74	>75% Grass cover, Good, HSG C
	9,298	97	Weighted Average
	577		6.21% Pervious Area
	8,721		93.79% Impervious Area

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

Subcatchment PS5A:



Summary for Subcatchment PS5B:

[49] Hint: Tc<2dt may require smaller dt

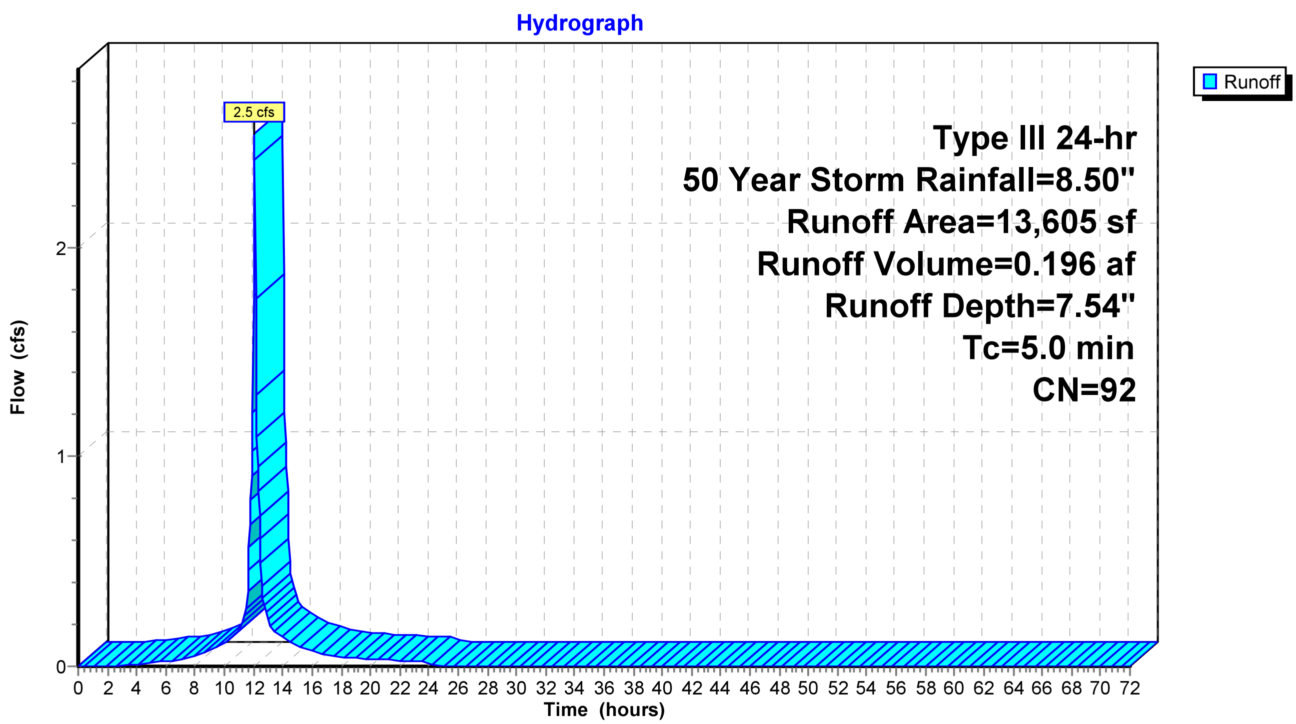
Runoff = 2.5 cfs @ 12.07 hrs, Volume= 0.196 af, Depth= 7.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Year Storm Rainfall=8.50"

	Area (sf)	CN	Description
	7,275	98	Paved parking, HSG C
*	2,828	98	Sidewalks, HSG C
	3,502	74	>75% Grass cover, Good, HSG C
	13,605	92	Weighted Average
	3,502		25.74% Pervious Area
	10,103		74.26% Impervious Area

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

Subcatchment PS5B:



Summary for Subcatchment PS5C: PS5 Roof

[49] Hint: Tc<2dt may require smaller dt

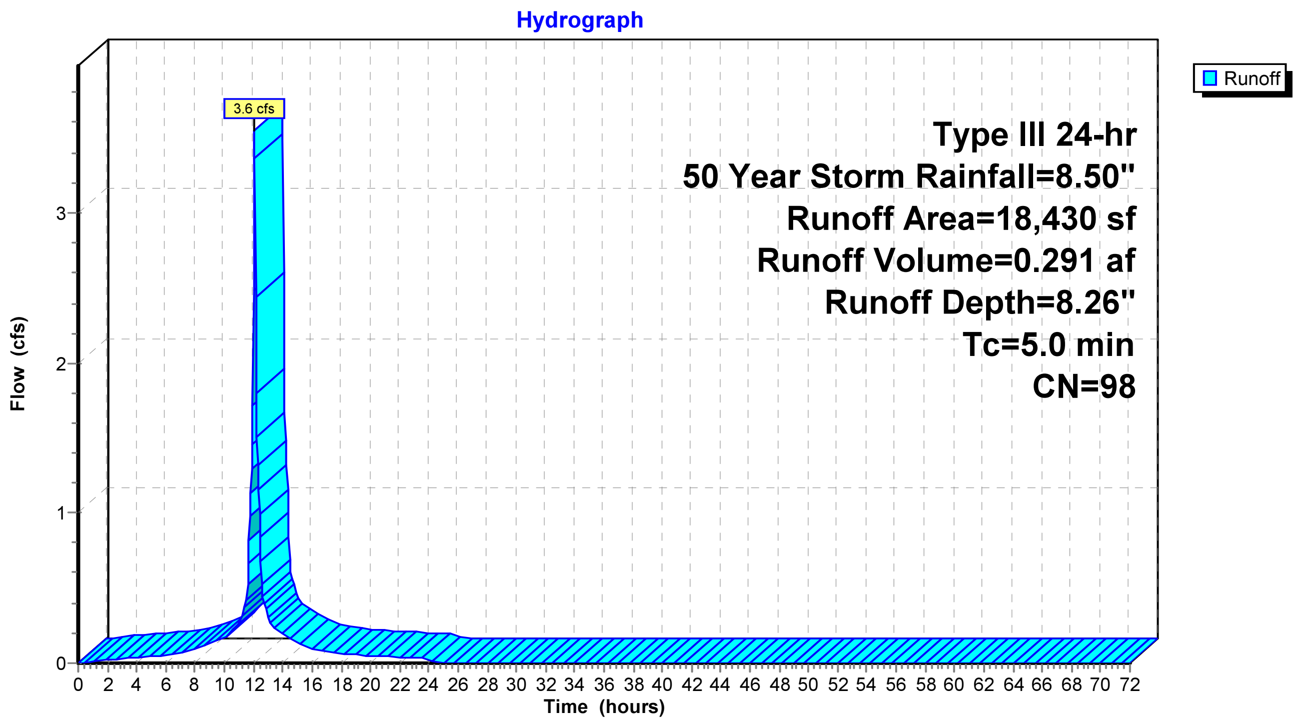
Runoff = 3.6 cfs @ 12.07 hrs, Volume= 0.291 af, Depth= 8.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Year Storm Rainfall=8.50"

Area (sf)	CN	Description
18,430	98	Roofs, HSG C
18,430		100.00% Impervious Area

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

Subcatchment PS5C: PS5 Roof



Summary for Subcatchment PS6:

[49] Hint: Tc<2dt may require smaller dt

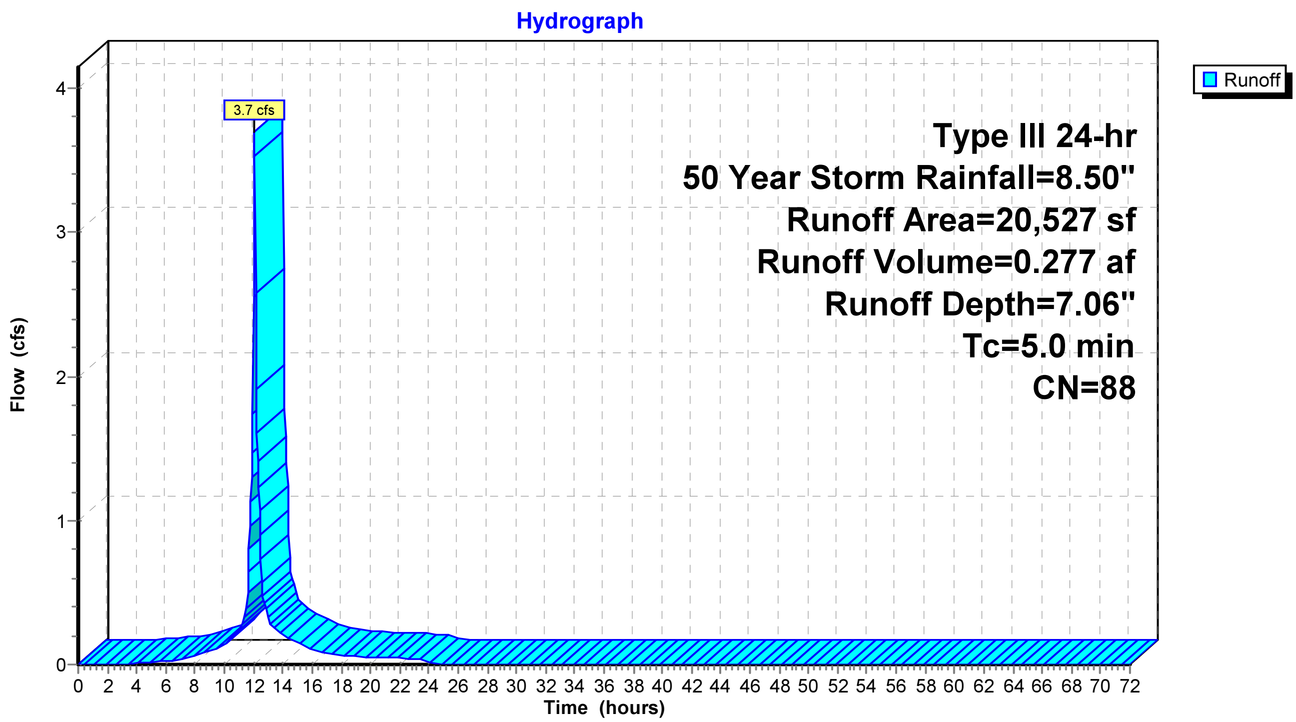
Runoff = 3.7 cfs @ 12.07 hrs, Volume= 0.277 af, Depth= 7.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Year Storm Rainfall=8.50"

	Area (sf)	CN	Description
	6,762	98	Paved parking, HSG C
*	2,312	98	Sidewalks, HSG C
	2,662	98	Roofs, HSG C
	8,791	74	>75% Grass cover, Good, HSG C
	20,527	88	Weighted Average
	8,791		42.83% Pervious Area
	11,736		57.17% Impervious Area

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

Subcatchment PS6:



Summary for Subcatchment PS7:

[49] Hint: Tc<2dt may require smaller dt

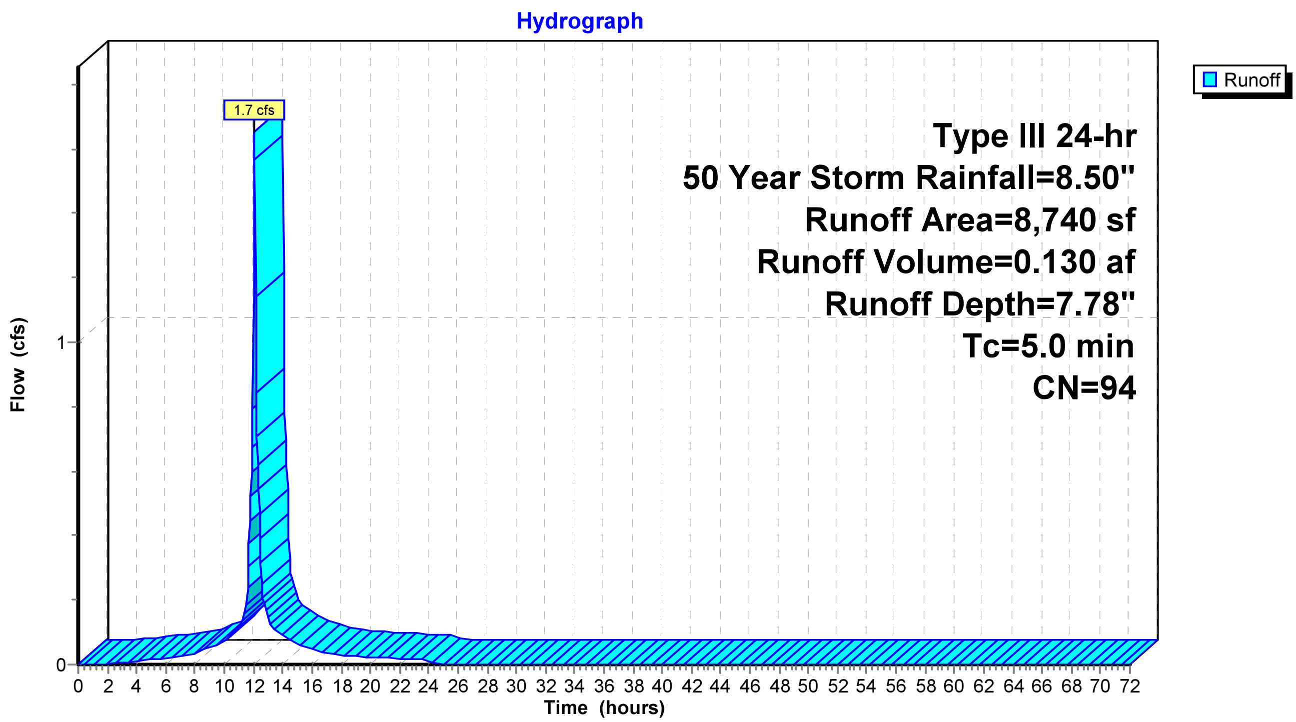
Runoff = 1.7 cfs @ 12.07 hrs, Volume= 0.130 af, Depth= 7.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Year Storm Rainfall=8.50"

	Area (sf)	CN	Description
	410	98	Paved parking, HSG C
*	4,272	98	Sidewalks, HSG C
	2,770	98	Roofs, HSG C
	1,288	74	>75% Grass cover, Good, HSG C
	8,740	94	Weighted Average
	1,288		14.74% Pervious Area
	7,452		85.26% Impervious Area

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

Subcatchment PS7:



Summary for Subcatchment PS8:

[49] Hint: Tc<2dt may require smaller dt

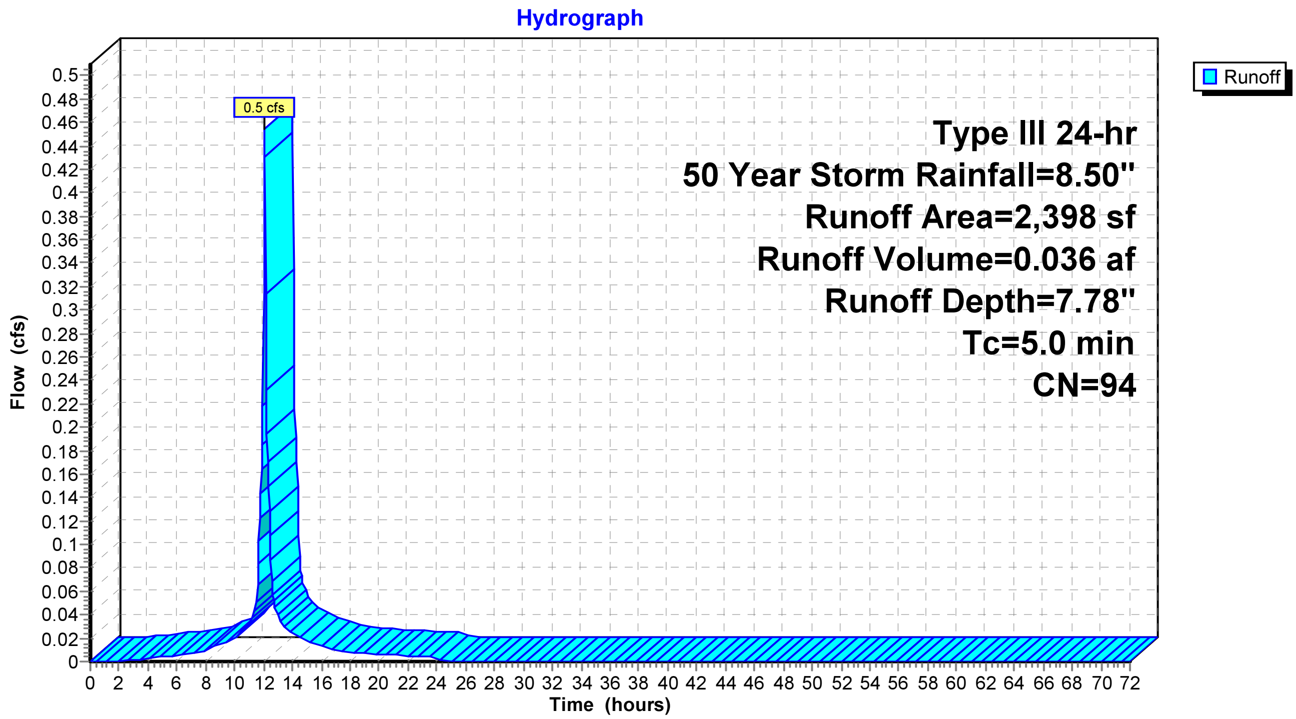
Runoff = 0.5 cfs @ 12.07 hrs, Volume= 0.036 af, Depth= 7.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Year Storm Rainfall=8.50"

Area (sf)	CN	Description
1,966	98	Paved parking, HSG C
432	74	>75% Grass cover, Good, HSG C
2,398	94	Weighted Average
432		18.02% Pervious Area
1,966		81.98% Impervious Area

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

Subcatchment PS8:



Summary for Reach 3R: Swale

Inflow Area = 1.210 ac, 75.70% Impervious, Inflow Depth = 7.59" for 50 Year Storm event
Inflow = 9.9 cfs @ 12.07 hrs, Volume= 0.766 af
Outflow = 9.1 cfs @ 12.11 hrs, Volume= 0.766 af, Atten= 8%, Lag= 2.3 min

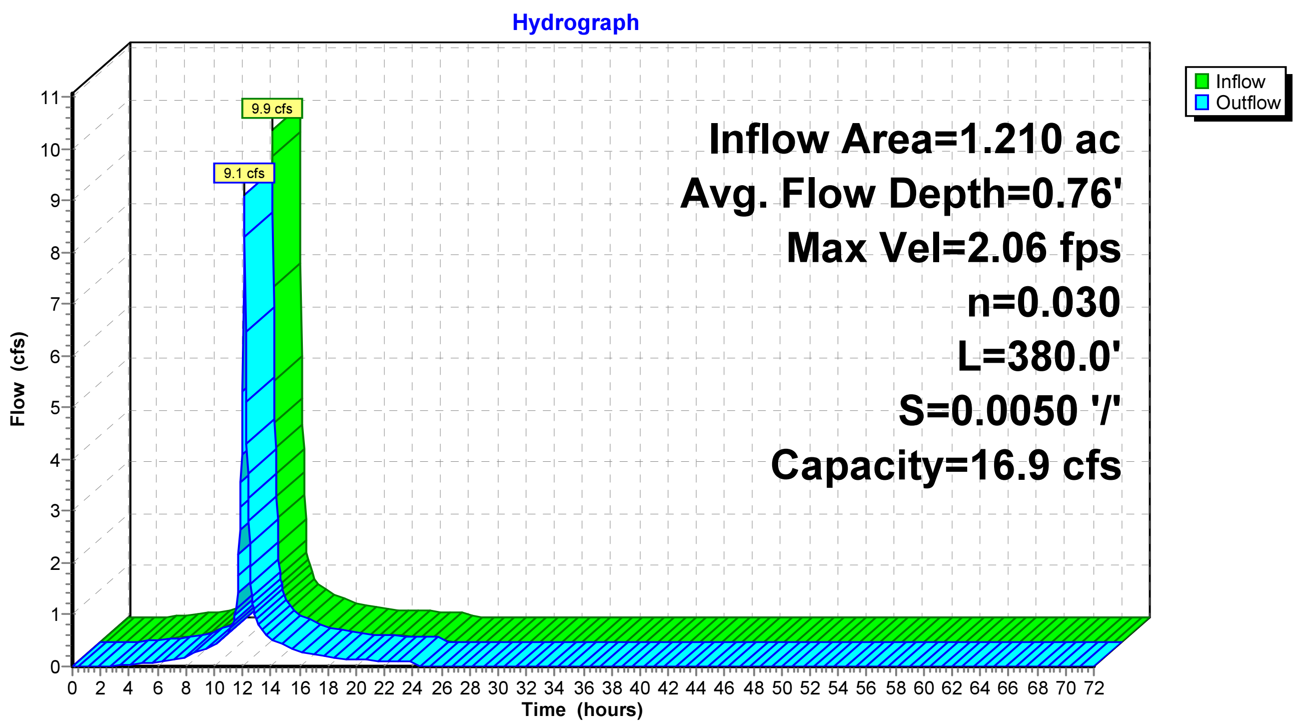
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.06 fps, Min. Travel Time= 3.1 min
Avg. Velocity = 0.63 fps, Avg. Travel Time= 10.1 min

Peak Storage= 1,678 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.76'
Bank-Full Depth= 1.00' Flow Area= 7.0 sf, Capacity= 16.9 cfs

2.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 5.0 '/' Top Width= 12.00'
Length= 380.0' Slope= 0.0050 '/'
Inlet Invert= 17.15', Outlet Invert= 15.25'

‡

Reach 3R: Swale



Summary for Pond 1P: DMH A19

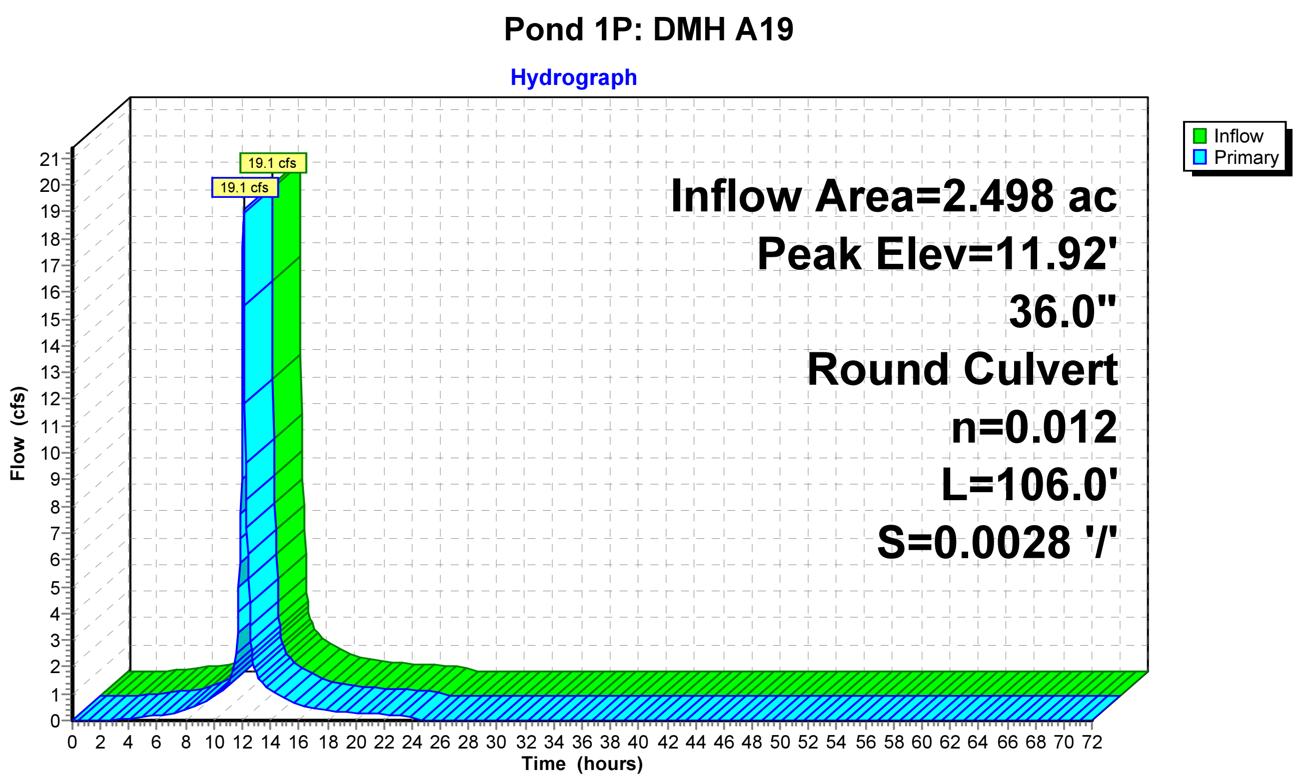
[57] Hint: Peaked at 11.92' (Flood elevation advised)
[80] Warning: Exceeded Pond 5P by 0.48' @ 12.15 hrs (23.6 cfs 0.484 af)

Inflow Area =	2.498 ac, 73.41% Impervious,	Inflow Depth = 7.52"	for 50 Year Storm event
Inflow =	19.1 cfs @ 12.09 hrs,	Volume= 1.566 af	
Outflow =	19.1 cfs @ 12.09 hrs,	Volume= 1.566 af,	Atten= 0%, Lag= 0.0 min
Primary =	19.1 cfs @ 12.09 hrs,	Volume= 1.566 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.92' @ 12.19 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	8.17'	**36.0" Round Culvert** L= 106.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 8.17' / 7.87' S= 0.0028 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 7.07 sf

Primary OutFlow Max=0.0 cfs @ 12.09 hrs HW=11.07' TW=11.31' (Dynamic Tailwater)
1=Culvert (Controls 0.0 cfs)



Summary for Pond 3P: PCB3

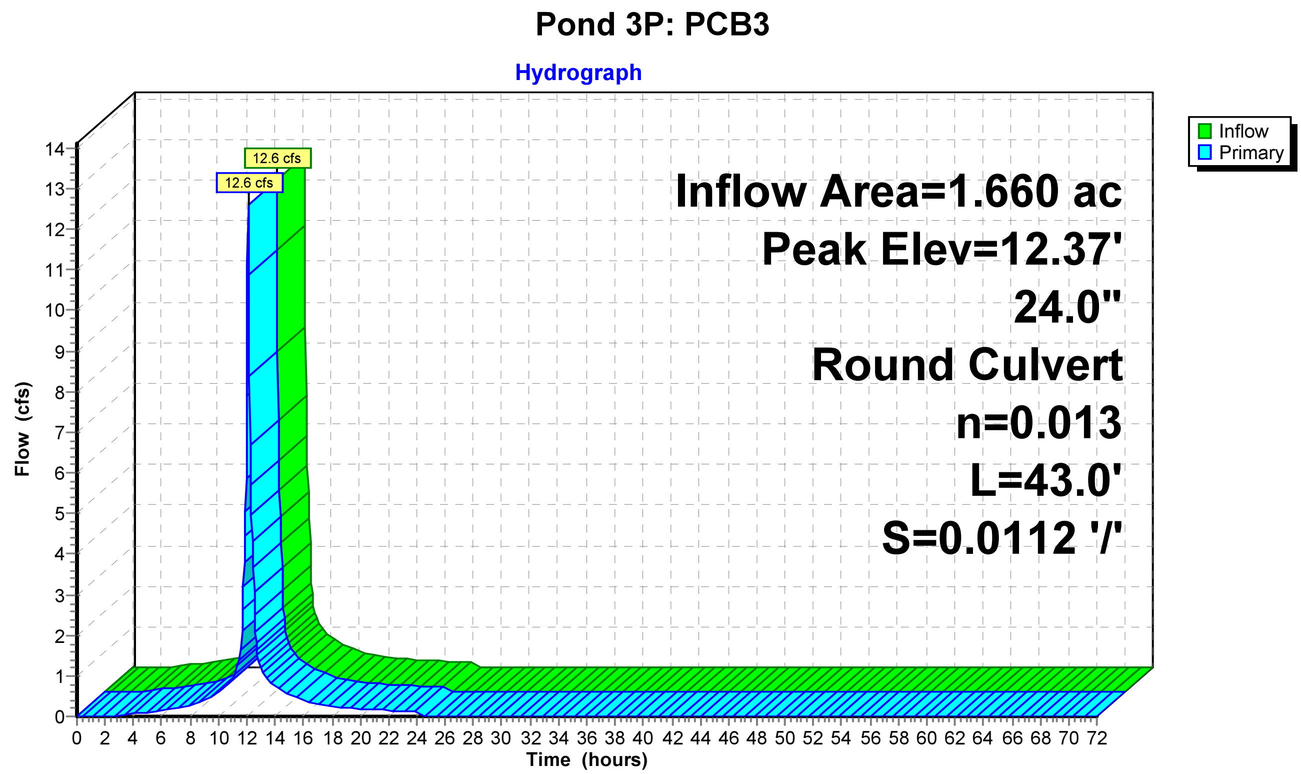
[57] Hint: Peaked at 12.37' (Flood elevation advised)
[80] Warning: Exceeded Pond 12P by 0.10' @ 12.15 hrs (2.8 cfs 0.031 af)

Inflow Area =	1.660 ac, 77.58% Impervious, Inflow Depth = 7.64"	for 50 Year Storm event		
Inflow =	12.6 cfs @	12.10 hrs, Volume=	1.057 af	
Outflow =	12.6 cfs @	12.10 hrs, Volume=	1.057 af,	Atten= 0%, Lag= 0.0 min
Primary =	12.6 cfs @	12.10 hrs, Volume=	1.057 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 12.37' @ 12.28 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.00'	**24.0" Round Culvert** L= 43.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.00' / 9.52' S= 0.0112 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=8.3 cfs @ 12.10 hrs HW=12.01' TW=11.69' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 8.3 cfs @ 3.28 fps)



Summary for Pond 4P: PCB7

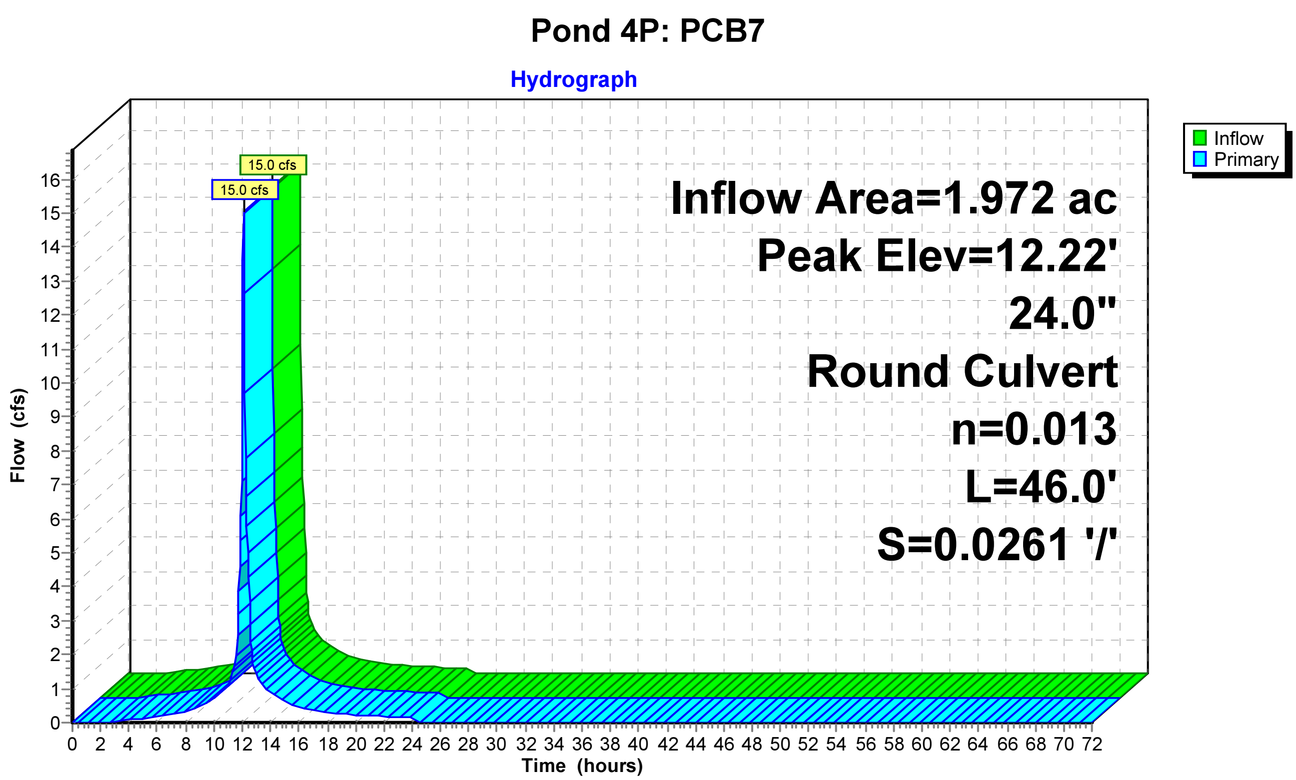
[57] Hint: Peaked at 12.22' (Flood elevation advised)

Inflow Area =	1.972 ac, 77.06% Impervious, Inflow Depth = 7.63"	for 50 Year Storm event		
Inflow =	15.0 cfs @	12.09 hrs, Volume=	1.253 af	
Outflow =	15.0 cfs @	12.09 hrs, Volume=	1.253 af,	Atten= 0%, Lag= 0.0 min
Primary =	15.0 cfs @	12.09 hrs, Volume=	1.253 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 12.22' @ 12.23 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	9.40'	**24.0" Round Culvert** L= 46.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.40' / 8.20' S= 0.0261 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=11.2 cfs @ 12.09 hrs HW=11.66' TW=11.11' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 11.2 cfs @ 3.55 fps)



Summary for Pond 5P: DMH 4B

[57] Hint: Peaked at 11.92' (Flood elevation advised)

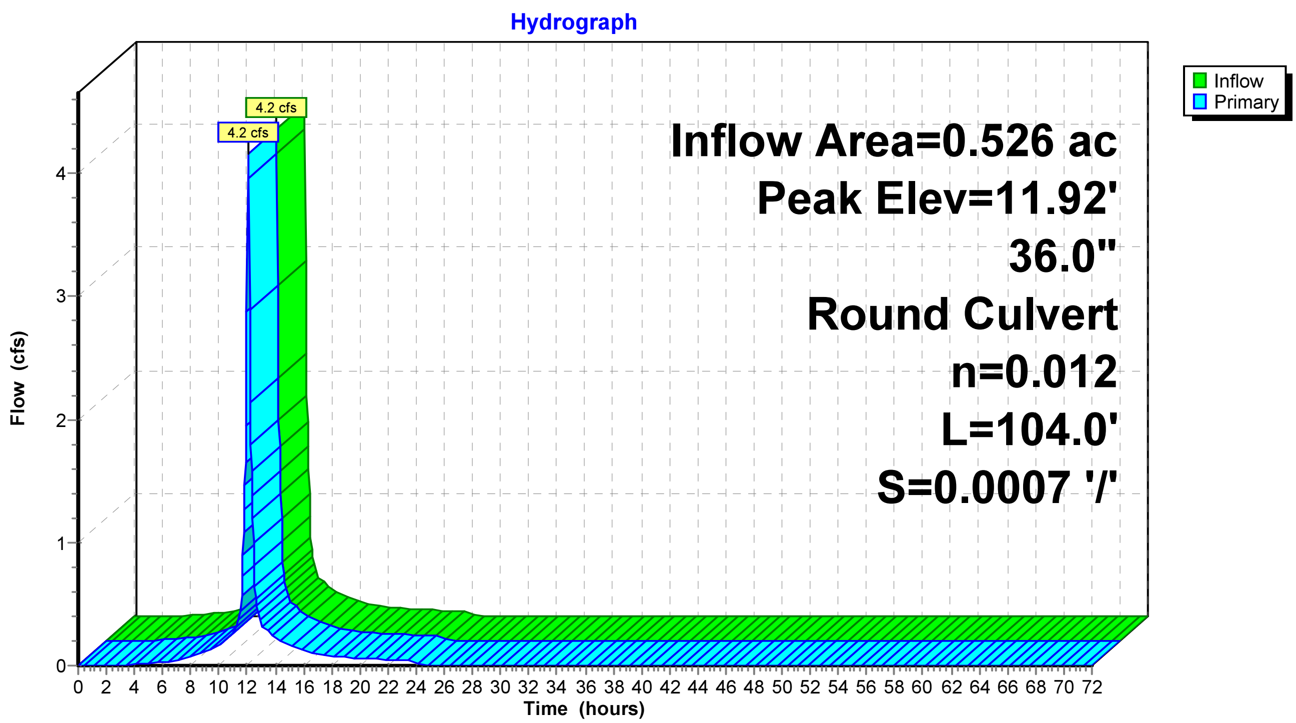
Inflow Area = 0.526 ac, 59.77% Impervious, Inflow Depth = 7.13" for 50 Year Storm event
Inflow = 4.2 cfs @ 12.07 hrs, Volume= 0.313 af
Outflow = 4.2 cfs @ 12.07 hrs, Volume= 0.313 af, Atten= 0%, Lag= 0.0 min
Primary = 4.2 cfs @ 12.07 hrs, Volume= 0.313 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.92' @ 12.24 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	8.25'	**36.0" Round Culvert** L= 104.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 8.25' / 8.18' S= 0.0007 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 7.07 sf

Primary OutFlow Max=0.0 cfs @ 12.07 hrs HW=10.53' TW=10.91' (Dynamic Tailwater)
└─**1=Culvert** (Controls 0.0 cfs)

Pond 5P: DMH 4B



Summary for Pond 6P: PCB1

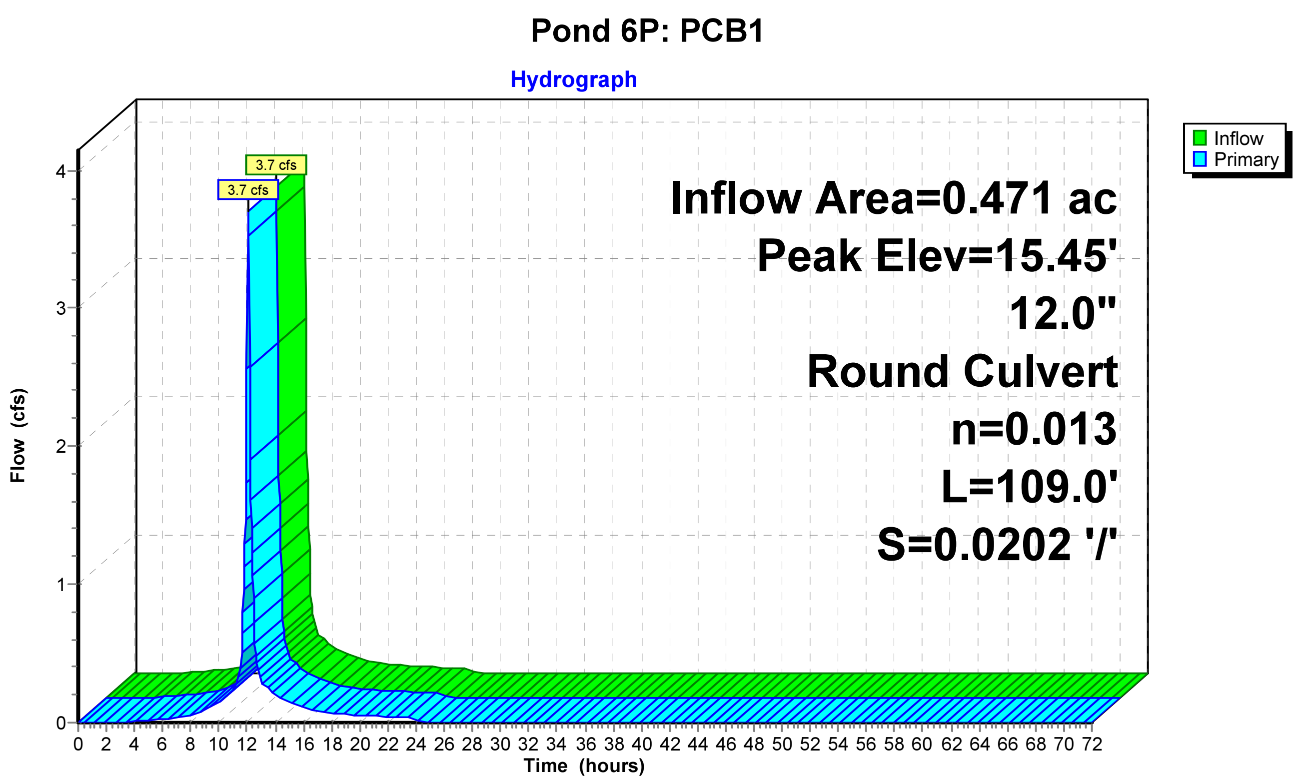
[57] Hint: Peaked at 15.45' (Flood elevation advised)

Inflow Area =	0.471 ac,	57.17% Impervious,	Inflow Depth = 7.06"	for 50 Year Storm event	
Inflow =	3.7 cfs @	12.07 hrs,	Volume=	0.277 af	
Outflow =	3.7 cfs @	12.07 hrs,	Volume=	0.277 af,	Atten= 0%, Lag= 0.0 min
Primary =	3.7 cfs @	12.07 hrs,	Volume=	0.277 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 15.45' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	14.00'	**12.0" Round Culvert** L= 109.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 14.00' / 11.80' S= 0.0202 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.6 cfs @ 12.07 hrs HW=15.39' TW=13.32' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 3.6 cfs @ 4.54 fps)



Summary for Pond 7P: PCB2

[57] Hint: Peaked at 13.38' (Flood elevation advised)

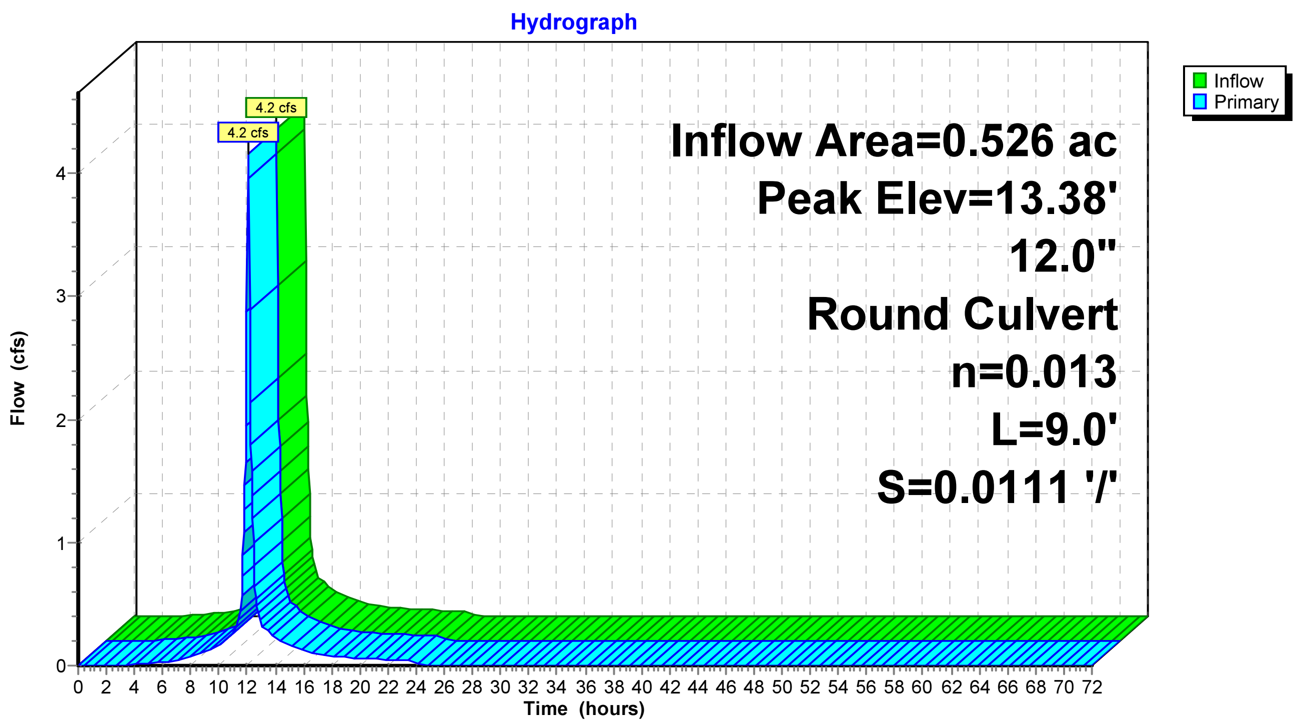
Inflow Area = 0.526 ac, 59.77% Impervious, Inflow Depth = 7.13" for 50 Year Storm event
Inflow = 4.2 cfs @ 12.07 hrs, Volume= 0.313 af
Outflow = 4.2 cfs @ 12.07 hrs, Volume= 0.313 af, Atten= 0%, Lag= 0.0 min
Primary = 4.2 cfs @ 12.07 hrs, Volume= 0.313 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 13.38' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	11.70'	**12.0" Round Culvert** L= 9.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 11.70' / 11.60' S= 0.0111 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=4.0 cfs @ 12.07 hrs HW=13.32' TW=10.53' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 4.0 cfs @ 5.11 fps)

Pond 7P: PCB2



Summary for Pond 9P: PCB4

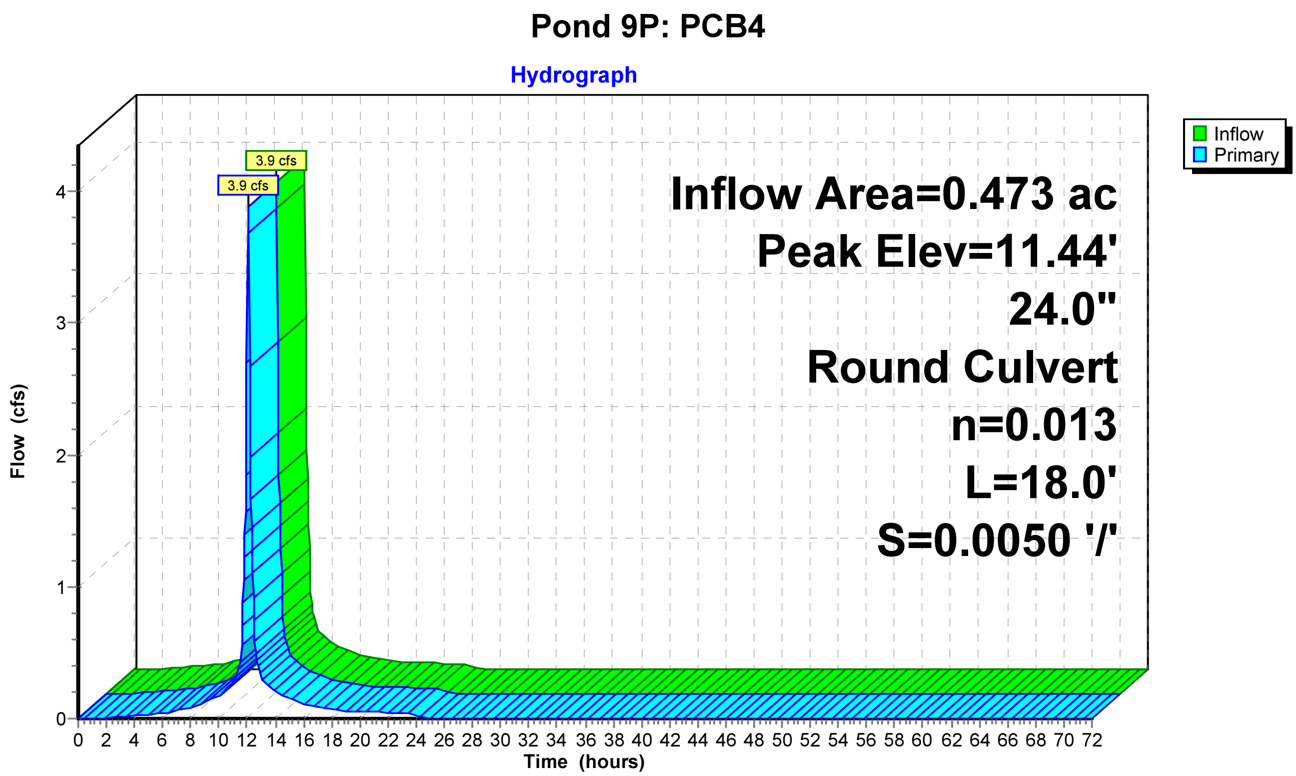
[57] Hint: Peaked at 11.44' (Flood elevation advised)

Inflow Area =	0.473 ac, 77.98% Impervious, Inflow Depth = 7.66"	for 50 Year Storm event	
Inflow =	3.9 cfs @ 12.07 hrs, Volume=	0.302 af	
Outflow =	3.9 cfs @ 12.07 hrs, Volume=	0.302 af, Atten= 0%, Lag= 0.0 min	
Primary =	3.9 cfs @ 12.07 hrs, Volume=	0.302 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.44' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.20'	**24.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.20' / 10.11' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=2.8 cfs @ 12.07 hrs HW=11.20' TW=11.00' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 2.8 cfs @ 2.65 fps)



Summary for Pond 10P: PCB5

[57] Hint: Peaked at 11.36' (Flood elevation advised)
[80] Warning: Exceeded Pond 9P by 0.16' @ 12.10 hrs (3.1 cfs 0.013 af)

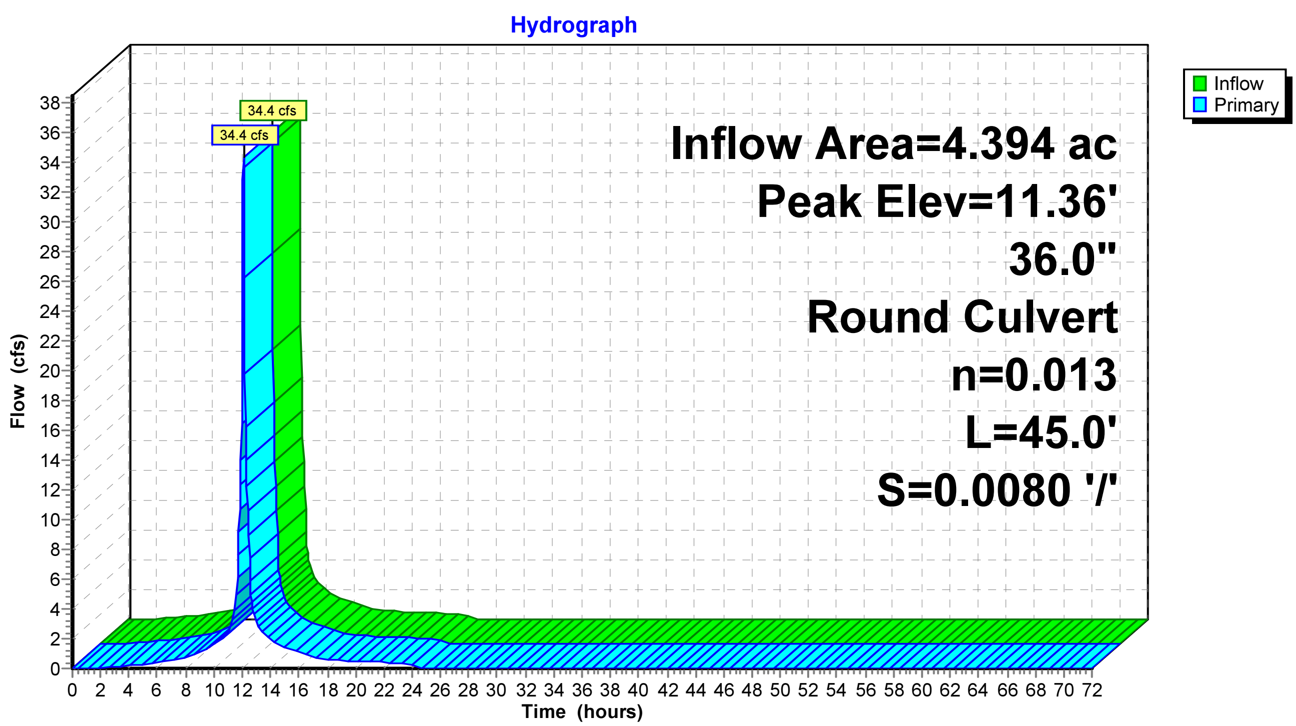
Inflow Area =	4.394 ac, 76.62% Impervious, Inflow Depth = 7.62"	for 50 Year Storm event	
Inflow =	34.4 cfs @ 12.08 hrs, Volume=	2.790 af	
Outflow =	34.4 cfs @ 12.08 hrs, Volume=	2.790 af,	Atten= 0%, Lag= 0.0 min
Primary =	34.4 cfs @ 12.08 hrs, Volume=	2.790 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.36' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.85'	**36.0" Round Culvert** L= 45.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 7.85' / 7.49' S= 0.0080 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 7.07 sf

Primary OutFlow Max=28.9 cfs @ 12.08 hrs HW=11.11' TW=10.40' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 28.9 cfs @ 4.08 fps)

Pond 10P: PCB5



Summary for Pond 12P: POCS2

[57] Hint: Peaked at 12.38' (Flood elevation advised)

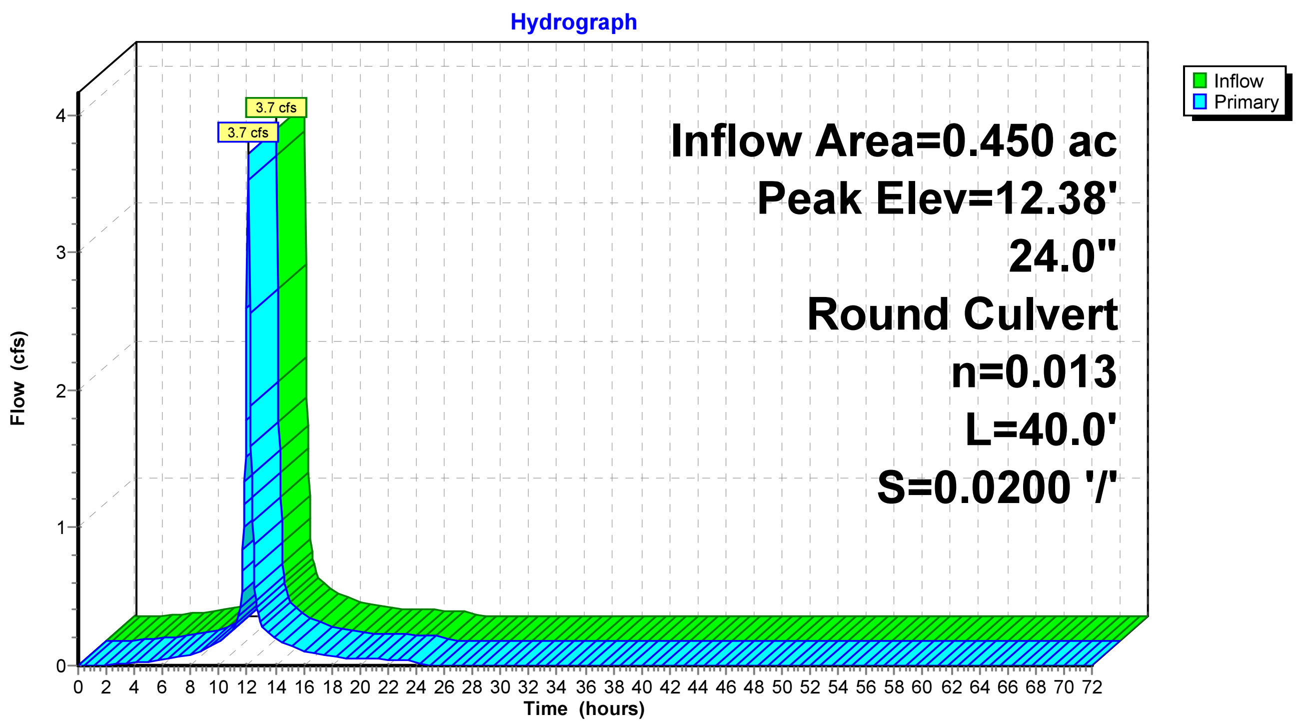
Inflow Area =	0.450 ac, 82.66% Impervious,	Inflow Depth = 7.78"	for 50 Year Storm event	
Inflow =	3.7 cfs @	12.07 hrs, Volume=	0.292 af	
Outflow =	3.7 cfs @	12.07 hrs, Volume=	0.292 af,	Atten= 0%, Lag= 0.0 min
Primary =	3.7 cfs @	12.07 hrs, Volume=	0.292 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 12.38' @ 12.33 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.90'	**24.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.90' / 10.10' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=1.4 cfs @ 12.07 hrs HW=11.91' TW=11.85' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 1.4 cfs @ 1.29 fps)

Pond 12P: POCS2



Summary for Pond 14P: POCS1

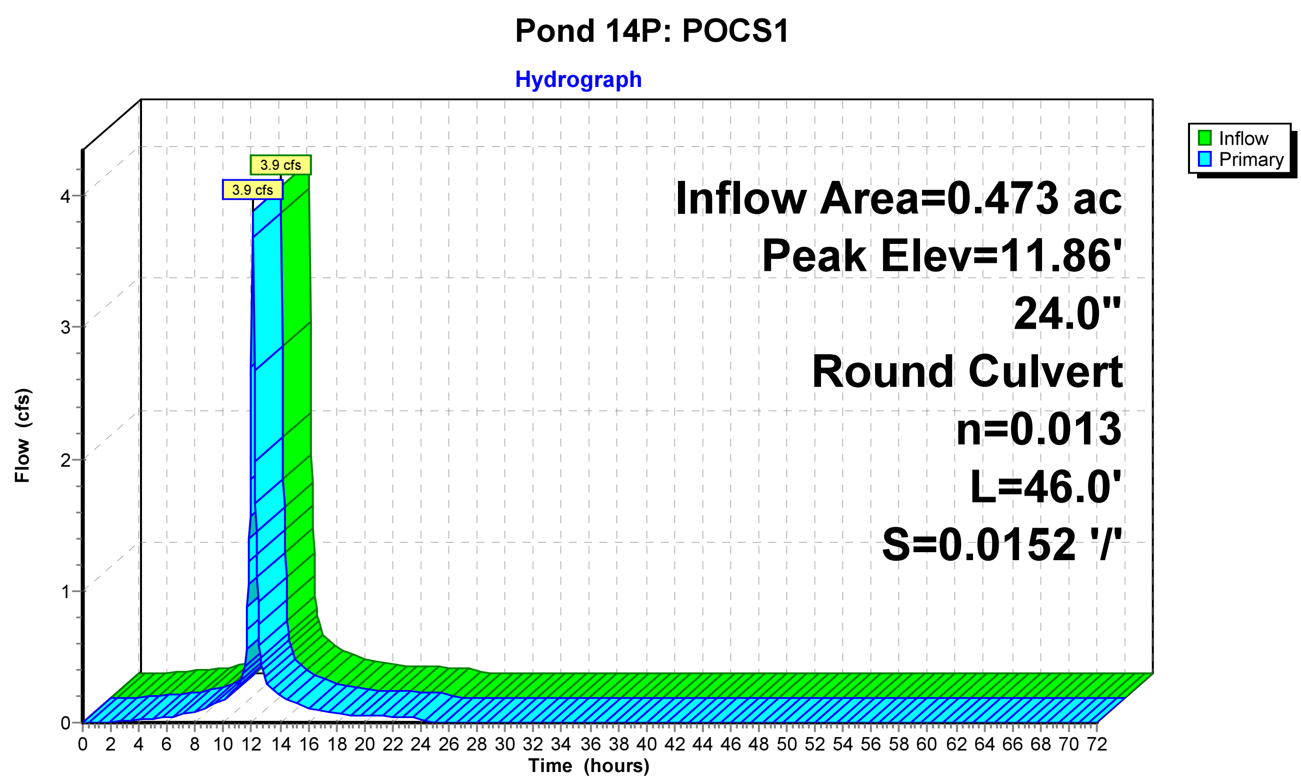
[57] Hint: Peaked at 11.86' (Flood elevation advised)

Inflow Area =	0.473 ac, 77.98% Impervious,	Inflow Depth = 7.66"	for 50 Year Storm event
Inflow =	3.9 cfs @ 12.07 hrs,	Volume=	0.302 af
Outflow =	3.9 cfs @ 12.07 hrs,	Volume=	0.302 af, Atten= 0%, Lag= 0.0 min
Primary =	3.9 cfs @ 12.07 hrs,	Volume=	0.302 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.86' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	11.00'	**24.0" Round Culvert** L= 46.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 11.00' / 10.30' S= 0.0152 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=3.5 cfs @ 12.07 hrs HW=11.84' TW=11.20' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 3.5 cfs @ 4.15 fps)



Summary for Pond 15P: 2 - 12" PERFORATED UNDERDRAIN

[57] Hint: Peaked at 14.75' (Flood elevation advised)

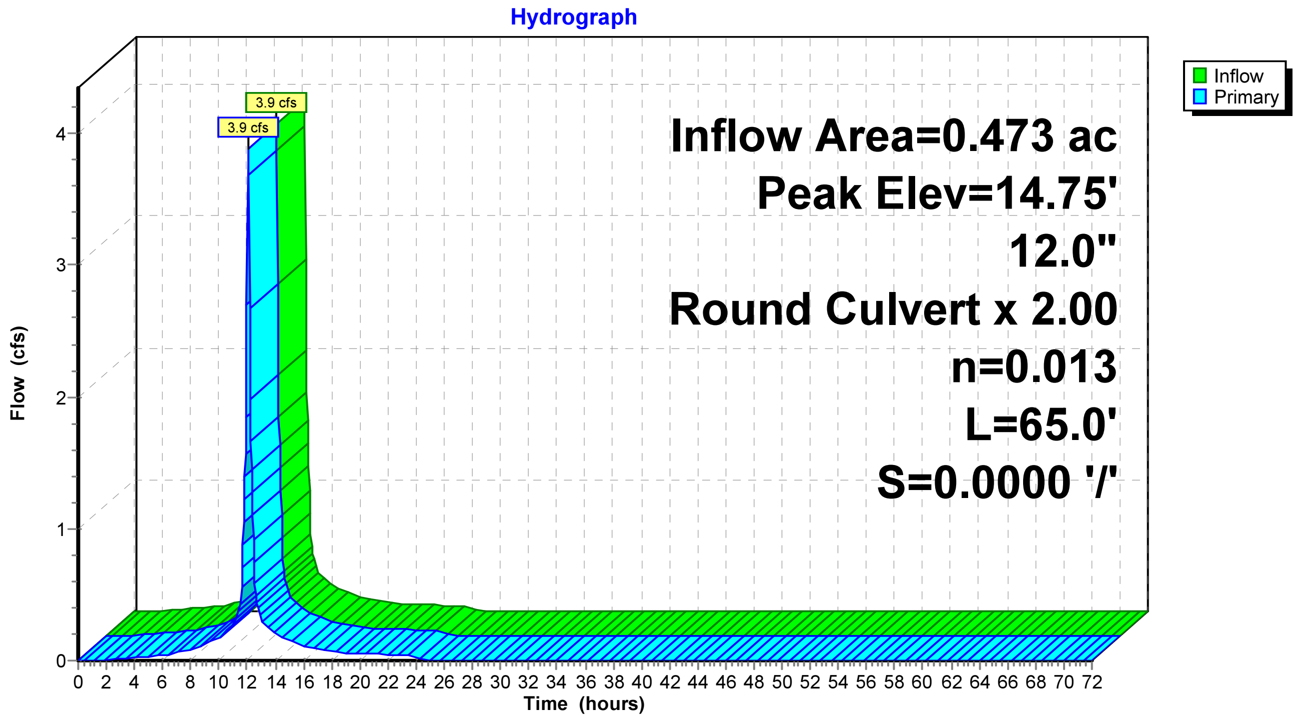
Inflow Area = 0.473 ac, 77.98% Impervious, Inflow Depth = 7.66" for 50 Year Storm event
Inflow = 3.9 cfs @ 12.07 hrs, Volume= 0.302 af
Outflow = 3.9 cfs @ 12.07 hrs, Volume= 0.302 af, Atten= 0%, Lag= 0.0 min
Primary = 3.9 cfs @ 12.07 hrs, Volume= 0.302 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 14.75' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	13.50'	**12.0" Round Culvert X 2.00** L= 65.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.50' / 13.50' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.7 cfs @ 12.07 hrs HW=14.71' TW=11.84' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 3.7 cfs @ 2.50 fps)

Pond 15P: 2 - 12" PERFORATED UNDERDRAIN



Summary for Pond 16P: 2 - 12" PERFORATED UNDERDRAIN

[57] Hint: Peaked at 14.24' (Flood elevation advised)

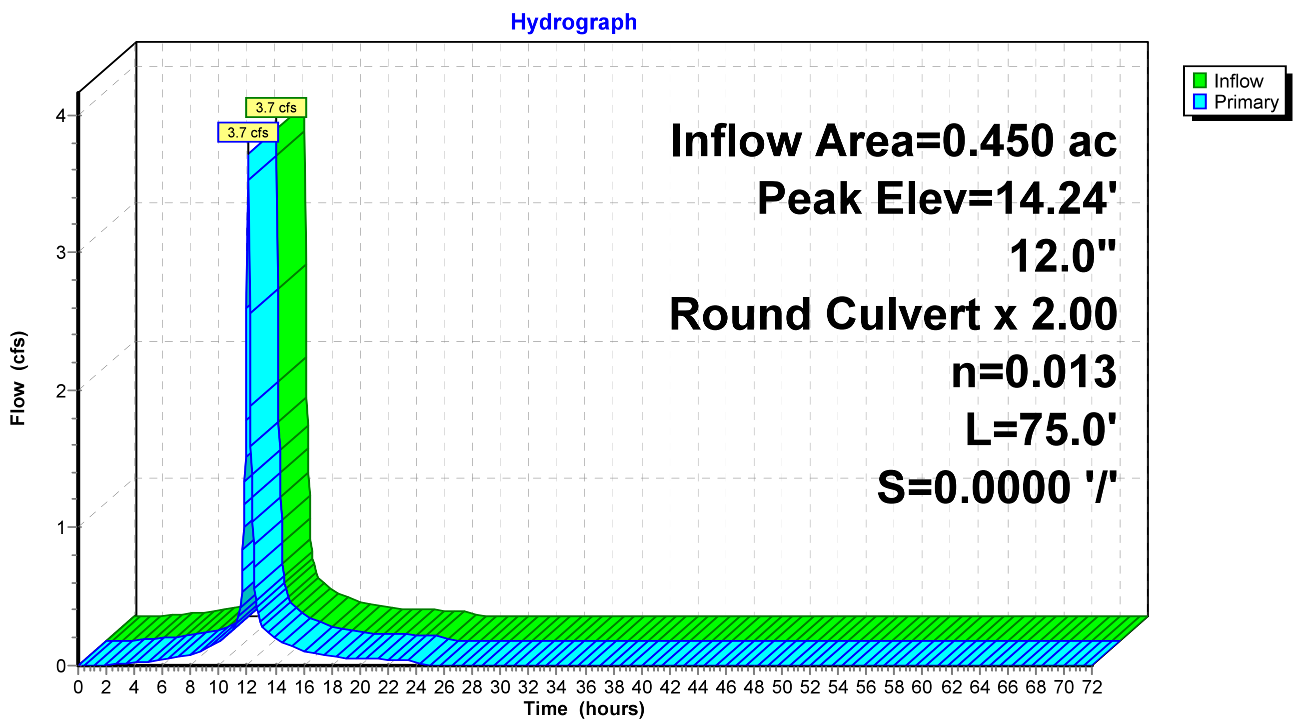
Inflow Area =	0.450 ac, 82.66% Impervious, Inflow Depth = 7.78" for 50 Year Storm event			
Inflow =	3.7 cfs @	12.07 hrs, Volume=	0.292 af	
Outflow =	3.7 cfs @	12.07 hrs, Volume=	0.292 af,	Atten= 0%, Lag= 0.0 min
Primary =	3.7 cfs @	12.07 hrs, Volume=	0.292 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 14.24' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	13.00'	**12.0" Round Culvert X 2.00** L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.00' / 13.00' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.6 cfs @ 12.07 hrs HW=14.20' TW=11.91' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 3.6 cfs @ 2.40 fps)

Pond 16P: 2 - 12" PERFORATED UNDERDRAIN



Summary for Pond CB 5D: CB 5D

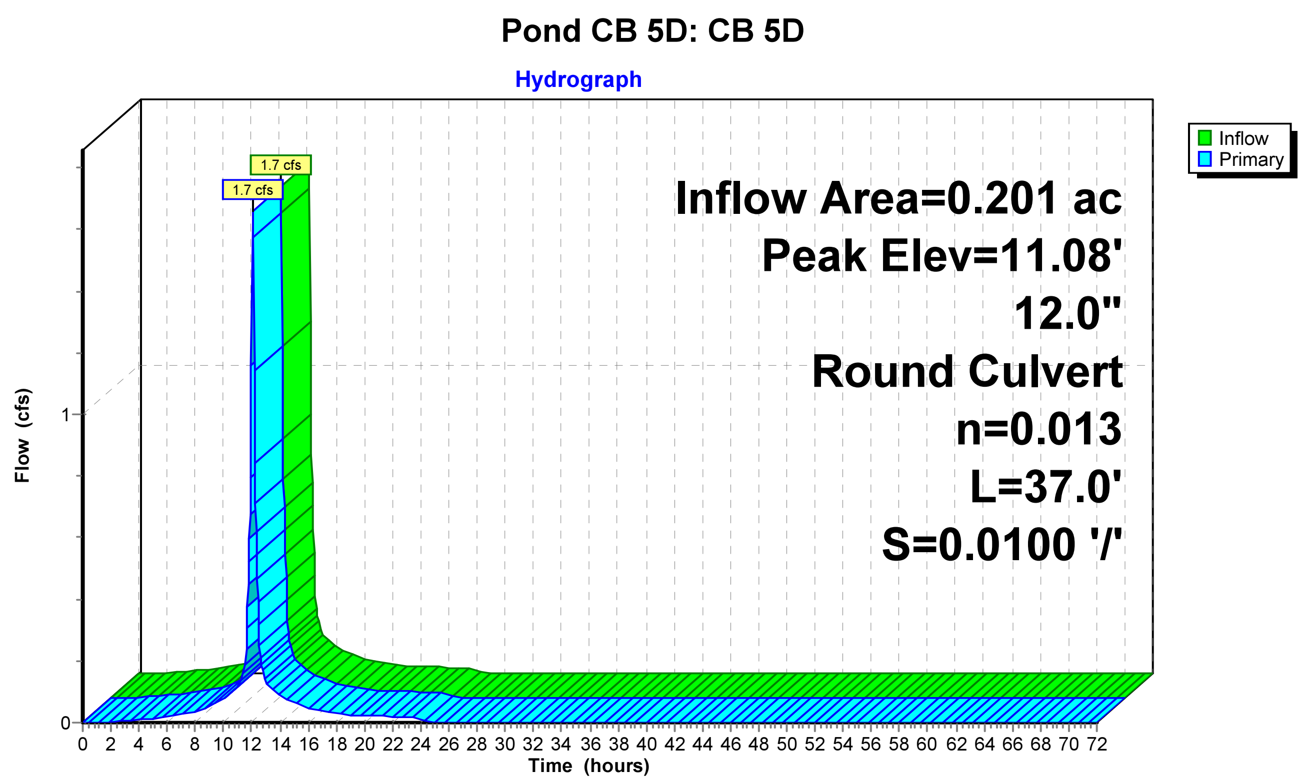
[57] Hint: Peaked at 11.08' (Flood elevation advised)

Inflow Area =	0.201 ac, 85.26% Impervious, Inflow Depth = 7.78" for 50 Year Storm event				
Inflow =	1.7 cfs @	12.07 hrs,	Volume=	0.130 af	
Outflow =	1.7 cfs @	12.07 hrs,	Volume=	0.130 af,	Atten= 0%, Lag= 0.0 min
Primary =	1.7 cfs @	12.07 hrs,	Volume=	0.130 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.08' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.24'	**12.0" Round Culvert** L= 37.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.24' / 9.87' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.4 cfs @ 12.07 hrs HW=11.05' TW=10.74' (Dynamic Tailwater)
└—**1=Culvert** (Outlet Controls 1.4 cfs @ 2.83 fps)



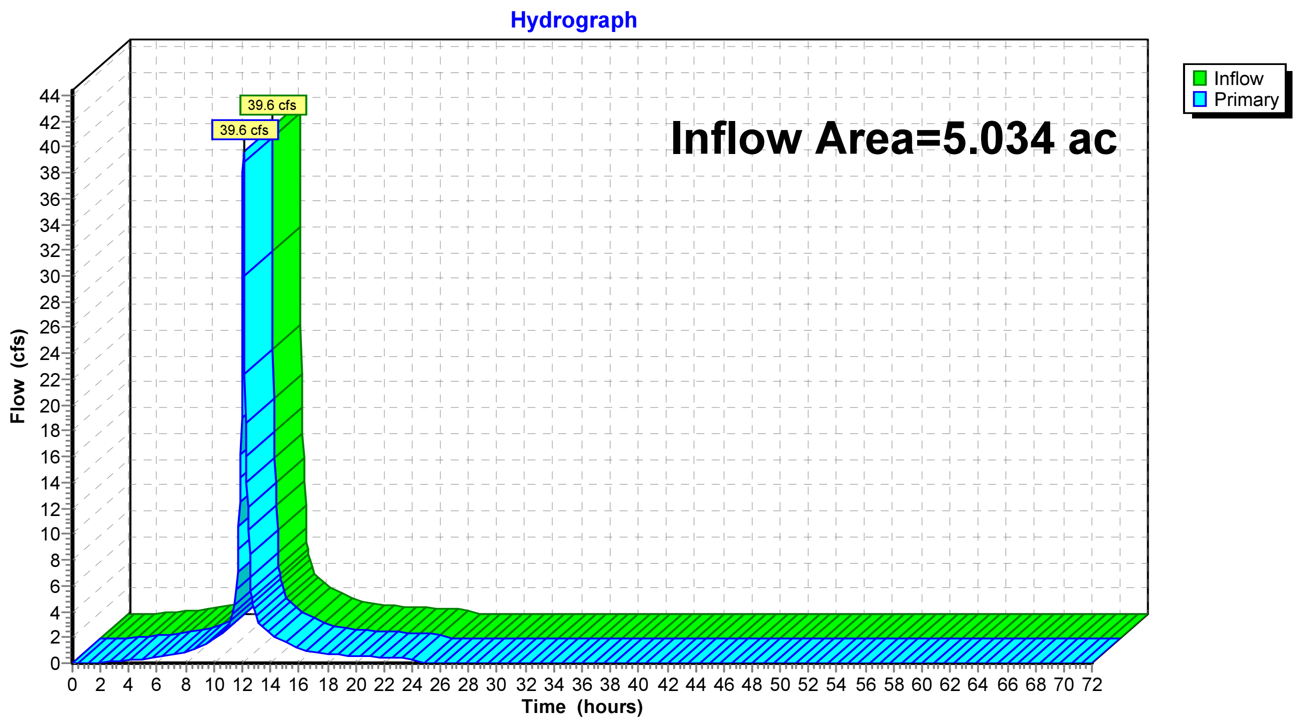
Summary for Pond DMH 4: DP 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area =	5.034 ac, 78.07% Impervious,	Inflow Depth = 7.65"	for 50 Year Storm event	
Inflow =	39.6 cfs @ 12.08 hrs,	Volume=	3.210 af	
Primary =	39.6 cfs @ 12.08 hrs,	Volume=	3.210 af,	Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DMH 4: DP 1



Summary for Pond DMH 4A: DMH 4A

[57] Hint: Peaked at 11.79' (Flood elevation advised)
[80] Warning: Exceeded Pond 1P by 0.28' @ 12.10 hrs (18.0 cfs 0.160 af)
[80] Warning: Exceeded Pond DMH A6 by 0.24' @ 12.10 hrs (7.4 cfs 0.083 af)

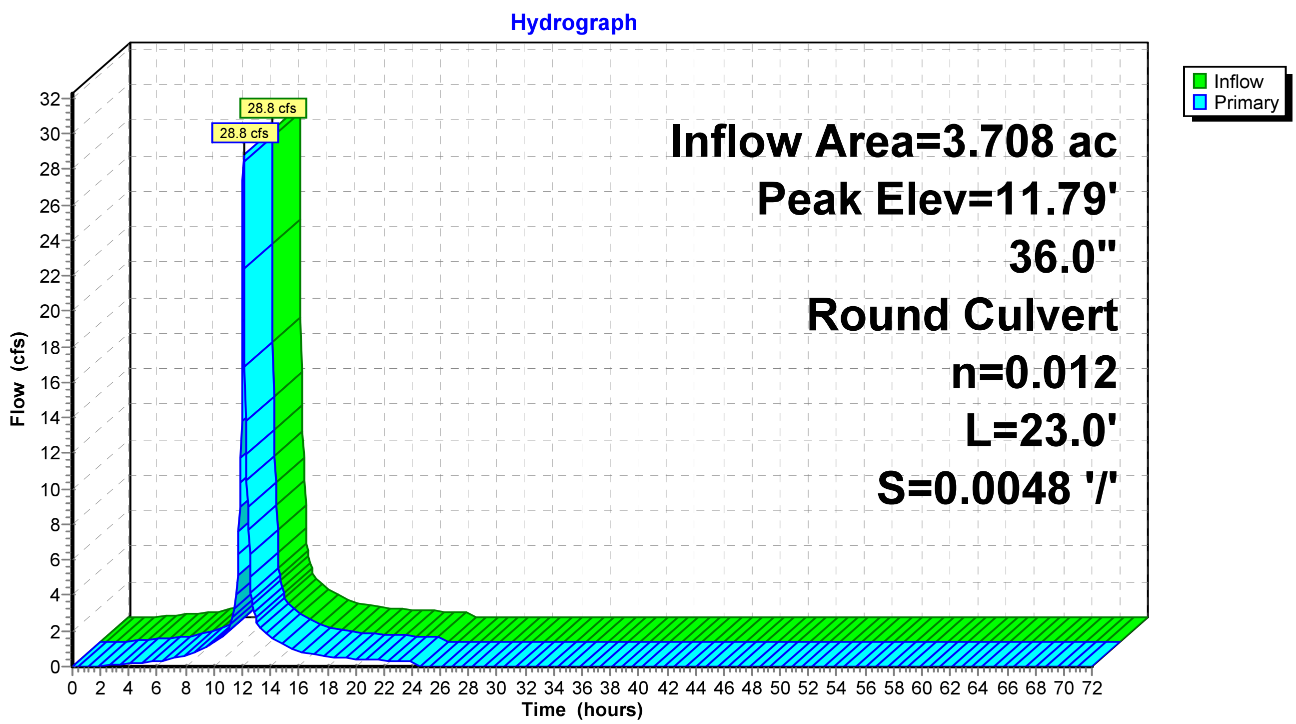
Inflow Area = 3.708 ac, 75.46% Impervious, Inflow Depth = 7.58" for 50 Year Storm event
Inflow = 28.8 cfs @ 12.08 hrs, Volume= 2.344 af
Outflow = 28.8 cfs @ 12.08 hrs, Volume= 2.344 af, Atten= 0%, Lag= 0.0 min
Primary = 28.8 cfs @ 12.08 hrs, Volume= 2.344 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.79' @ 12.14 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.85'	**36.0" Round Culvert** L= 23.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 7.85' / 7.74' S= 0.0048 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 7.07 sf

Primary OutFlow Max=10.2 cfs @ 12.08 hrs HW=11.23' TW=11.14' (Dynamic Tailwater)
1=Culvert (Inlet Controls 10.2 cfs @ 1.44 fps)

Pond DMH 4A: DMH 4A



Summary for Pond DMH A6: DMH A6

[57] Hint: Peaked at 11.91' (Flood elevation advised)
[80] Warning: Exceeded Pond ENV 21 by 0.18' @ 12.15 hrs (3.6 cfs 0.029 af)

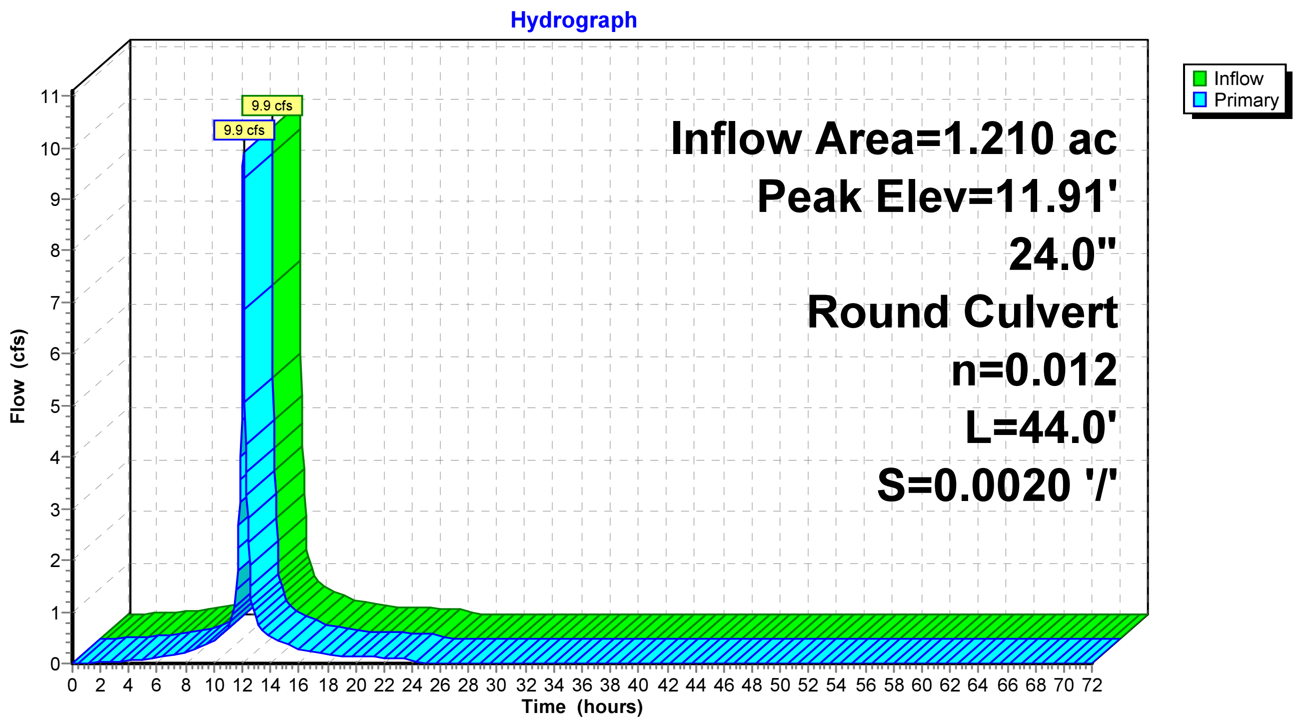
Inflow Area =	1.210 ac, 79.68% Impervious,	Inflow Depth = 7.71"	for 50 Year Storm event	
Inflow =	9.9 cfs @	12.07 hrs, Volume=	0.777 af	
Outflow =	9.9 cfs @	12.07 hrs, Volume=	0.777 af,	Atten= 0%, Lag= 0.0 min
Primary =	9.9 cfs @	12.07 hrs, Volume=	0.777 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.91' @ 12.19 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	8.50'	**24.0" Round Culvert** L= 44.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 8.50' / 8.41' S= 0.0020 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf

Primary OutFlow Max=0.0 cfs @ 12.07 hrs HW=10.91' TW=11.08' (Dynamic Tailwater)
└─**1=Culvert** (Controls 0.0 cfs)

Pond DMH A6: DMH A6



Summary for Pond ENV 21: ENV 21

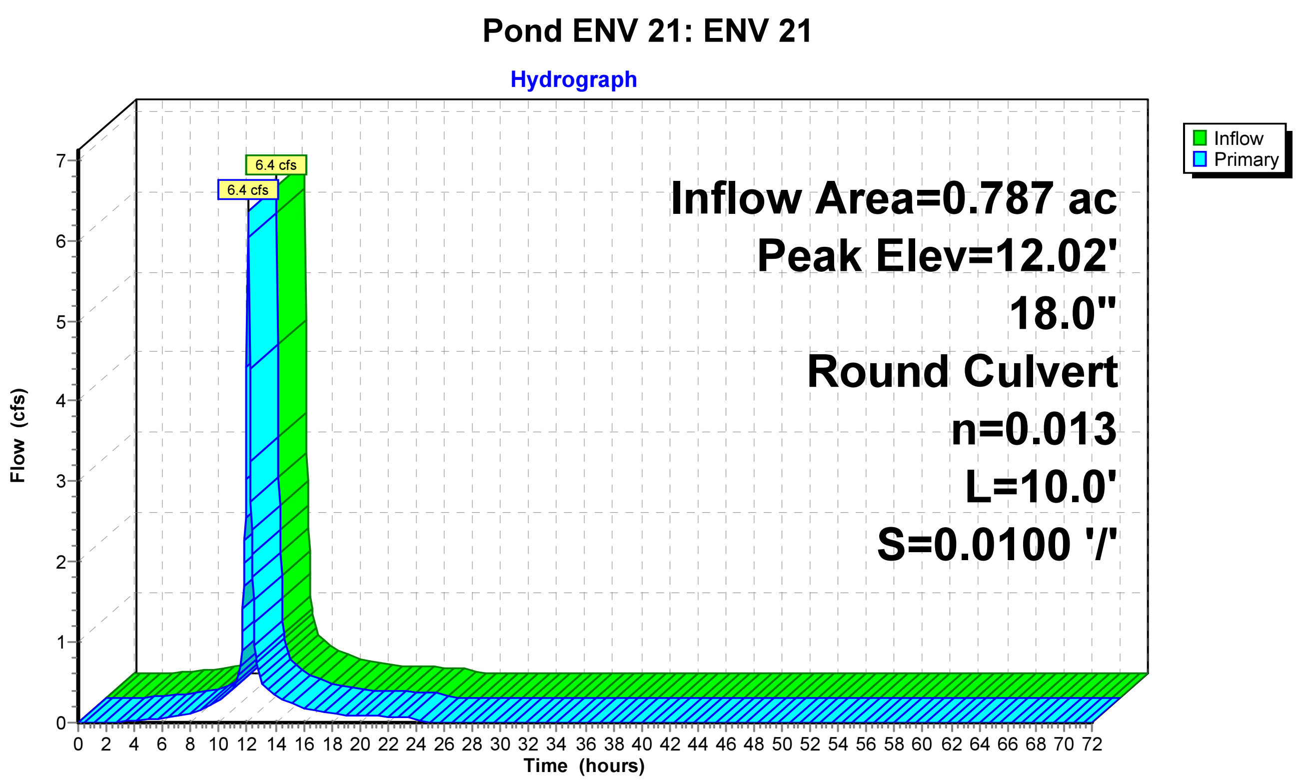
[57] Hint: Peaked at 12.02' (Flood elevation advised)

Inflow Area =	0.787 ac,	68.76% Impervious,	Inflow Depth = 7.42"	for 50 Year Storm event	
Inflow =	6.4 cfs @	12.07 hrs,	Volume=	0.486 af	
Outflow =	6.4 cfs @	12.07 hrs,	Volume=	0.486 af,	Atten= 0%, Lag= 0.0 min
Primary =	6.4 cfs @	12.07 hrs,	Volume=	0.486 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 12.02' @ 12.24 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	9.00'	**18.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.00' / 8.90' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.0 cfs @ 12.07 hrs HW=10.96' TW=10.91' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 2.0 cfs @ 1.12 fps)



Summary for Pond PCB-BH: PCB-BH

[57] Hint: Peaked at 17.60' (Flood elevation advised)
[62] Hint: Exceeded Reach 3R OUTLET depth by 1.49' @ 12.10 hrs

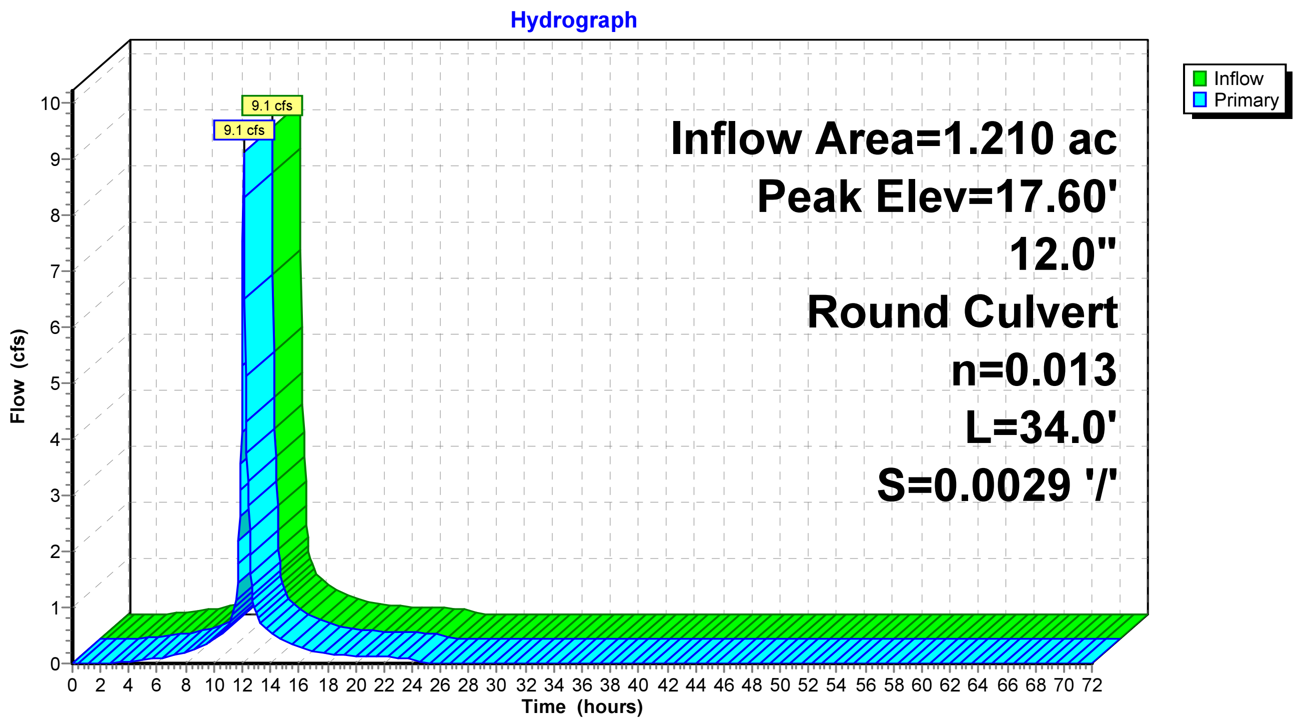
Inflow Area = 1.210 ac, 75.70% Impervious, Inflow Depth = 7.59" for 50 Year Storm event
Inflow = 9.1 cfs @ 12.11 hrs, Volume= 0.766 af
Outflow = 9.1 cfs @ 12.11 hrs, Volume= 0.766 af, Atten= 0%, Lag= 0.0 min
Primary = 9.1 cfs @ 12.11 hrs, Volume= 0.766 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 17.60' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.20'	**12.0" Round Culvert** L= 34.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.20' / 10.10' S= 0.0029 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=8.7 cfs @ 12.11 hrs HW=17.39' TW=12.06' (Dynamic Tailwater)
1=Culvert (Inlet Controls 8.7 cfs @ 11.11 fps)

Pond PCB-BH: PCB-BH



Summary for Pond PDMH 1: PDMH 1

[57] Hint: Peaked at 10.79' (Flood elevation advised)

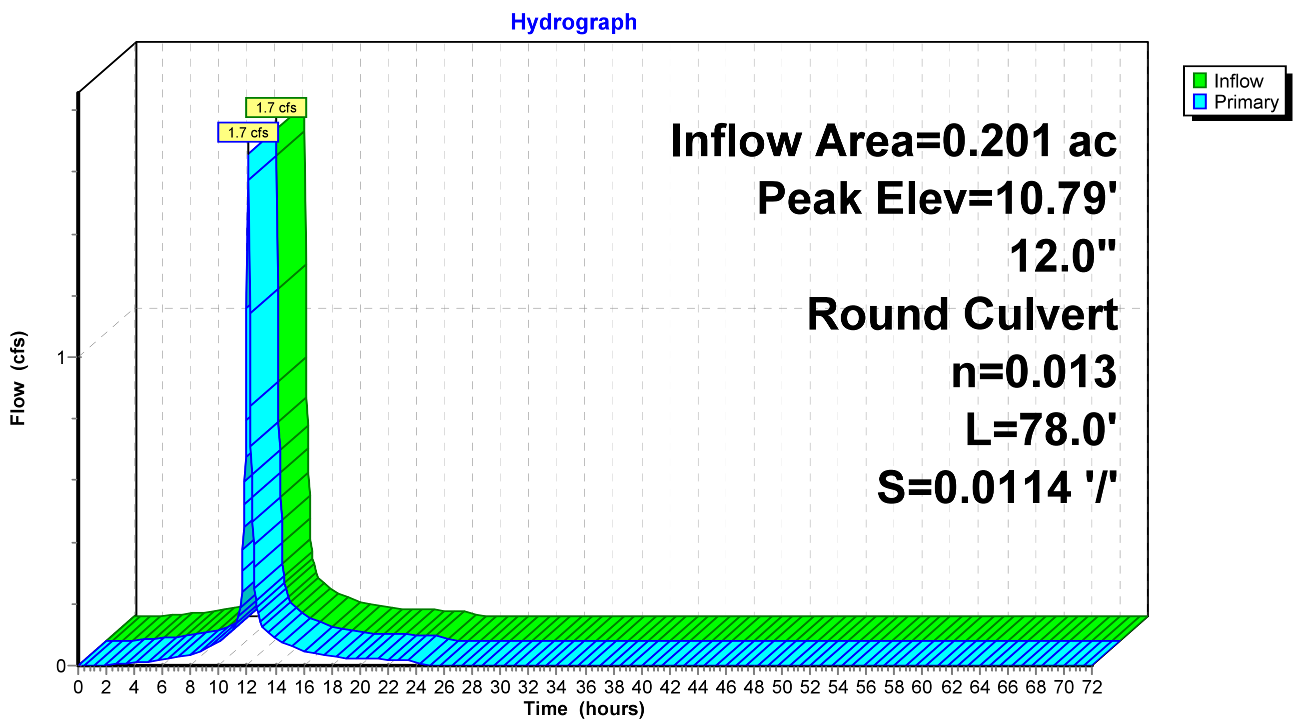
Inflow Area =	0.201 ac, 85.26% Impervious,	Inflow Depth = 7.78"	for 50 Year Storm event	
Inflow =	1.7 cfs @ 12.07 hrs,	Volume=	0.130 af	
Outflow =	1.7 cfs @ 12.07 hrs,	Volume=	0.130 af,	Atten= 0%, Lag= 0.0 min
Primary =	1.7 cfs @ 12.07 hrs,	Volume=	0.130 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 10.79' @ 12.14 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.04'	**12.0" Round Culvert** L= 78.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.04' / 9.15' S= 0.0114 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.3 cfs @ 12.07 hrs HW=10.74' TW=10.17' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 1.3 cfs @ 3.10 fps)

Pond PDMH 1: PDMH 1



Summary for Pond PDMH 2: PDMH 2

[57] Hint: Peaked at 10.49' (Flood elevation advised)

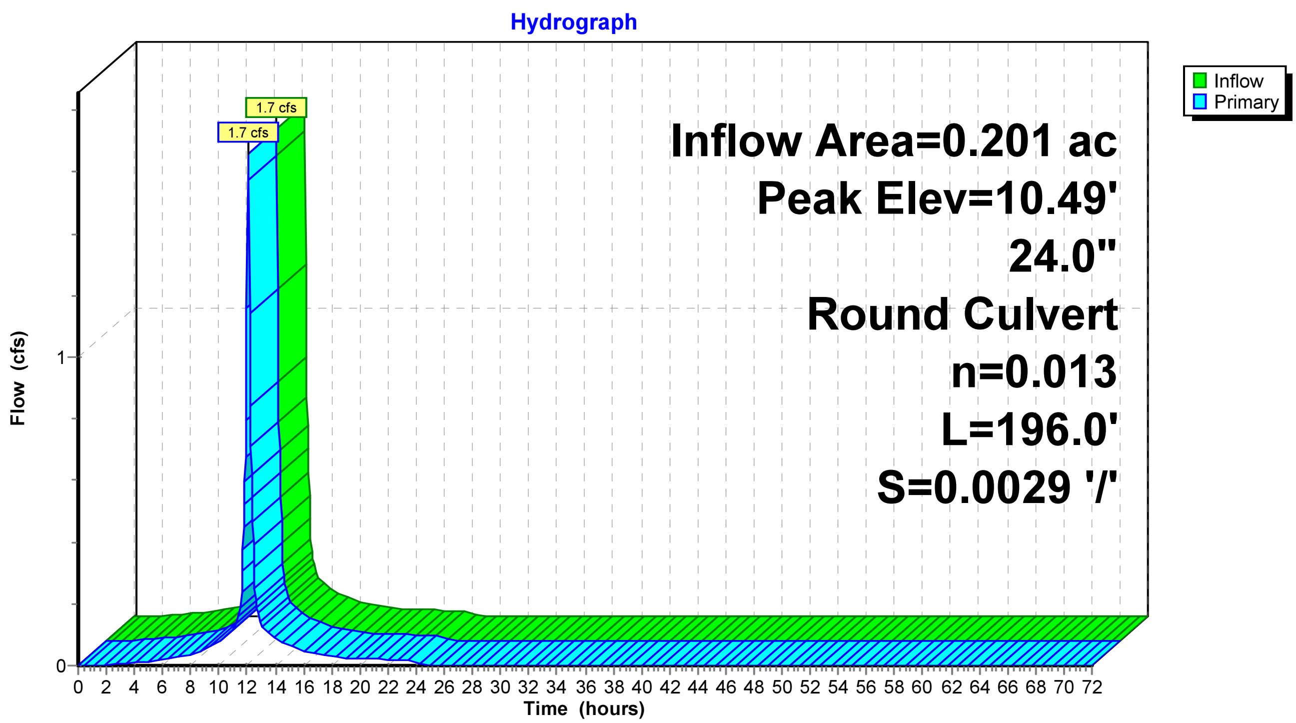
Inflow Area =	0.201 ac,	85.26% Impervious,	Inflow Depth = 7.78"	for 50 Year Storm event	
Inflow =	1.7 cfs @	12.07 hrs,	Volume=	0.130 af	
Outflow =	1.7 cfs @	12.07 hrs,	Volume=	0.130 af,	Atten= 0%, Lag= 0.0 min
Primary =	1.7 cfs @	12.07 hrs,	Volume=	0.130 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 10.49' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	9.05'	**24.0" Round Culvert** L= 196.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.05' / 8.49' S= 0.0029 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=0.0 cfs @ 12.07 hrs HW=10.17' TW=10.39' (Dynamic Tailwater)
└─**1=Culvert** (Controls 0.0 cfs)

Pond PDMH 2: PDMH 2



Summary for Pond PDMH 3: PDMH 3

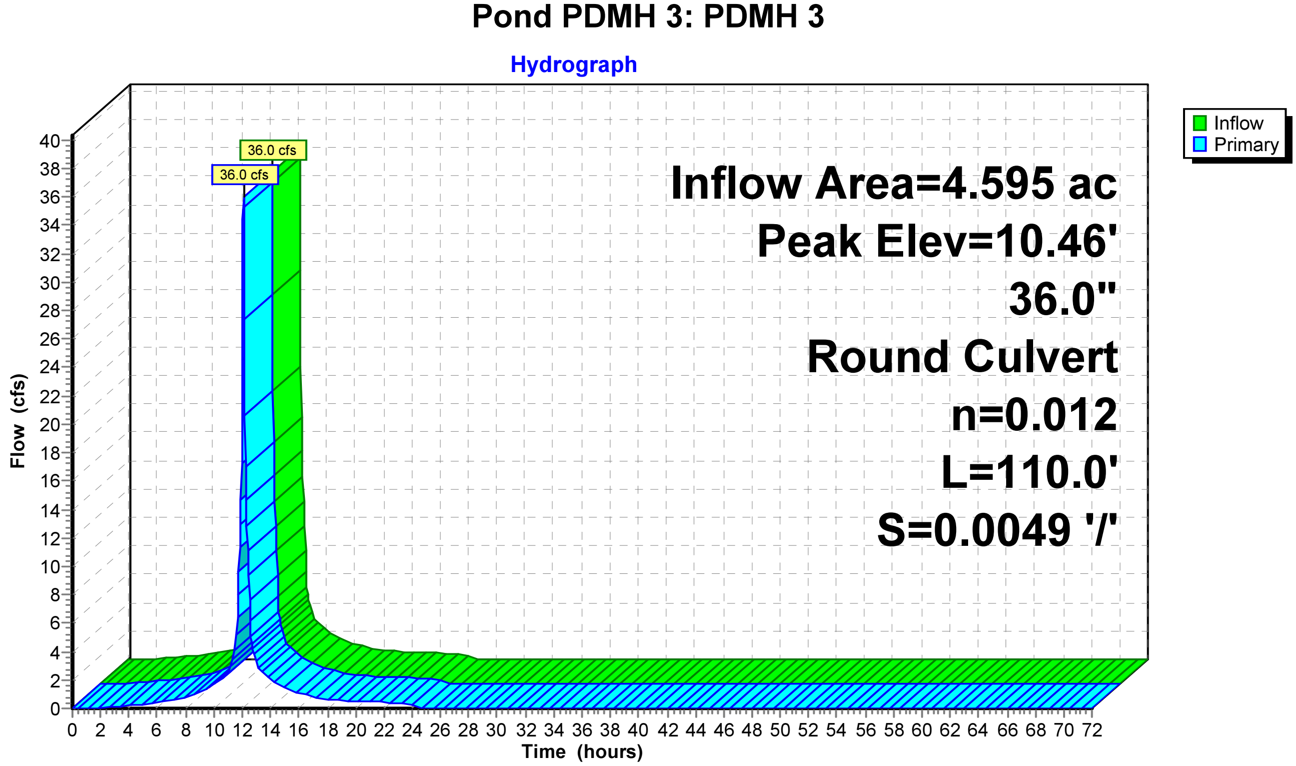
[57] Hint: Peaked at 10.46' (Flood elevation advised)
[80] Warning: Exceeded Pond PDMH 2 by 0.38' @ 12.05 hrs (3.8 cfs 0.018 af)

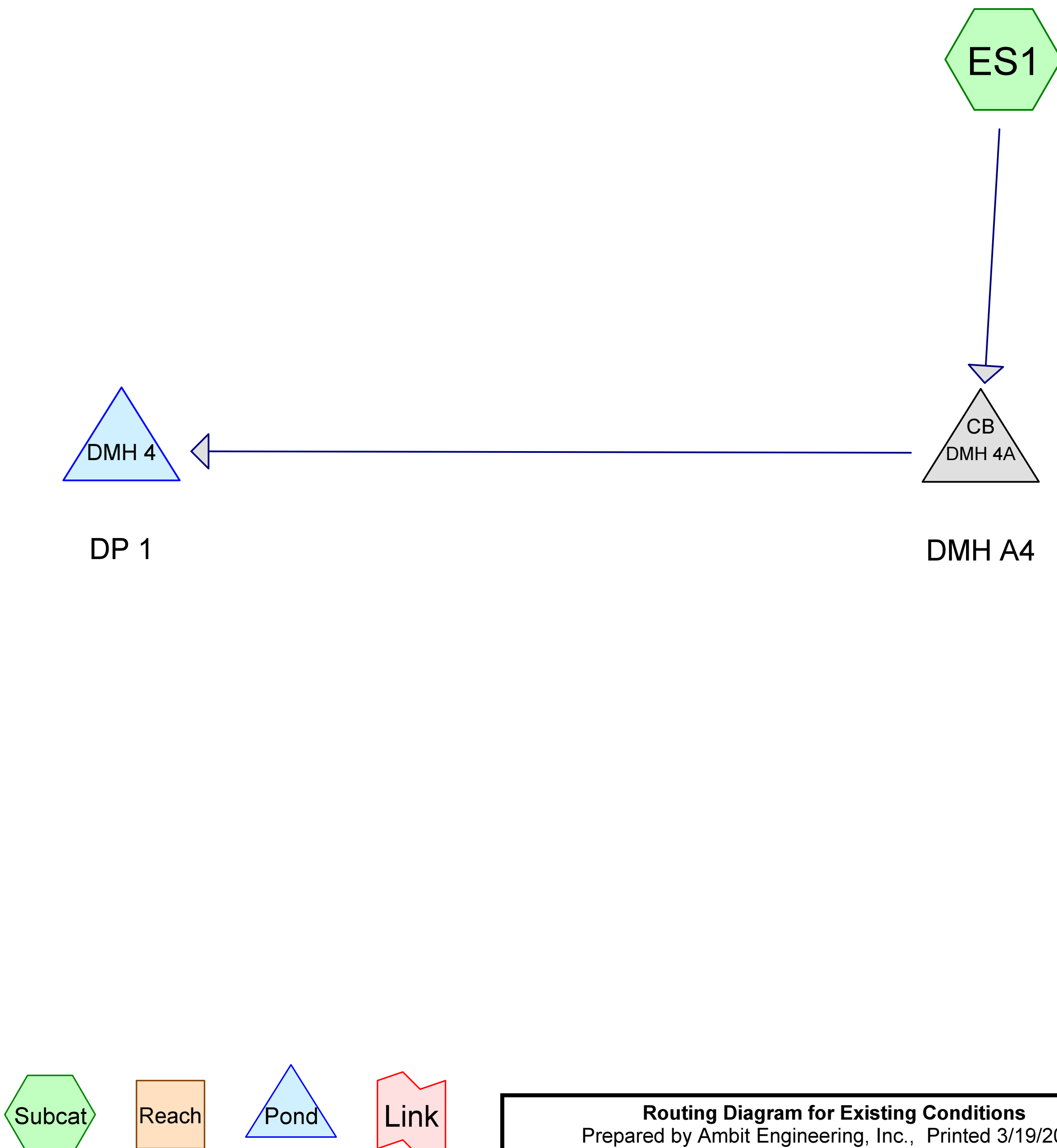
Inflow Area =	4.595 ac, 77.00% Impervious, Inflow Depth = 7.63"	for 50 Year Storm event	
Inflow =	36.0 cfs @ 12.08 hrs, Volume=	2.920 af	
Outflow =	36.0 cfs @ 12.08 hrs, Volume=	2.920 af,	Atten= 0%, Lag= 0.0 min
Primary =	36.0 cfs @ 12.08 hrs, Volume=	2.920 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 10.46' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.48'	**36.0" Round Culvert** L= 110.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 7.48' / 6.94' S= 0.0049 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 7.07 sf

Primary OutFlow Max=35.0 cfs @ 12.08 hrs HW=10.39' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 35.0 cfs @ 6.34 fps)





Routing Diagram for Existing Conditions
Prepared by Ambit Engineering, Inc., Printed 3/19/2018

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.533	96	Gravel surface, HSG C (ES1)
3.502	98	Paved parking, HSG C (ES1)
5.035	**97**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
5.035	HSG C	ES1
0.000	HSG D	
0.000	Other	
5.035		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	1.533	0.000	0.000	1.533	Gravel surface	ES1
0.000	0.000	3.502	0.000	0.000	3.502	Paved parking	ES1
0.000	**0.000**	**5.035**	**0.000**	**0.000**	**5.035**	**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	ES1	0.00	0.00	120.0	0.0050	0.012	12.0	0.0	0.0
2	ES1	0.00	0.00	195.0	0.0100	0.012	12.0	0.0	0.0
3	DMH 4A	7.87	6.94	190.0	0.0049	0.012	36.0	0.0	0.0

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 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=219,330 sf 69.55% Impervious Runoff Depth=3.34"
Flow Length=569' Tc=5.0 min CN=97 Runoff=18.0 cfs 1.403 af

Pond DMH 4: DP 1 Inflow=18.0 cfs 1.403 af
Primary=18.0 cfs 1.403 af

Pond DMH 4A: DMH A4 Peak Elev=9.71' Inflow=18.0 cfs 1.403 af
36.0" Round Culvert n=0.012 L=190.0' S=0.0049 '/' Outflow=18.0 cfs 1.403 af

Total Runoff Area = 5.035 ac Runoff Volume = 1.403 af Average Runoff Depth = 3.34"
30.45% Pervious = 1.533 ac 69.55% Impervious = 3.502 ac

Summary for Subcatchment ES1:

[49] Hint: Tc<2dt may require smaller dt

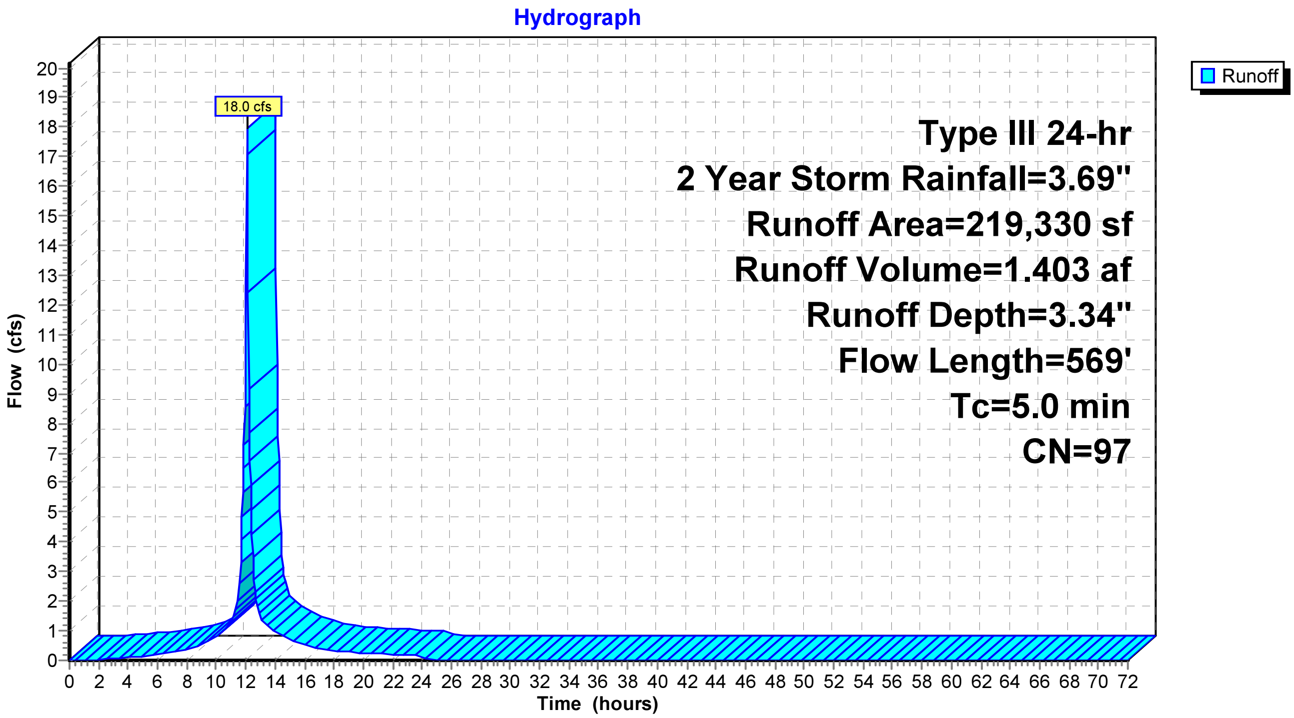
Runoff = 18.0 cfs @ 12.07 hrs, Volume= 1.403 af, Depth= 3.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Storm Rainfall=3.69"

Area (sf)	CN	Description
66,786	96	Gravel surface, HSG C
152,544	98	Paved parking, HSG C
219,330	97	Weighted Average
66,786		30.45% Pervious Area
152,544		69.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	254	0.0276	3.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	120	0.0050	3.47	2.73	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
0.7	195	0.0100	4.91	3.86	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
2.6	569	Total, Increased to minimum Tc = 5.0 min			

Subcatchment ES1:

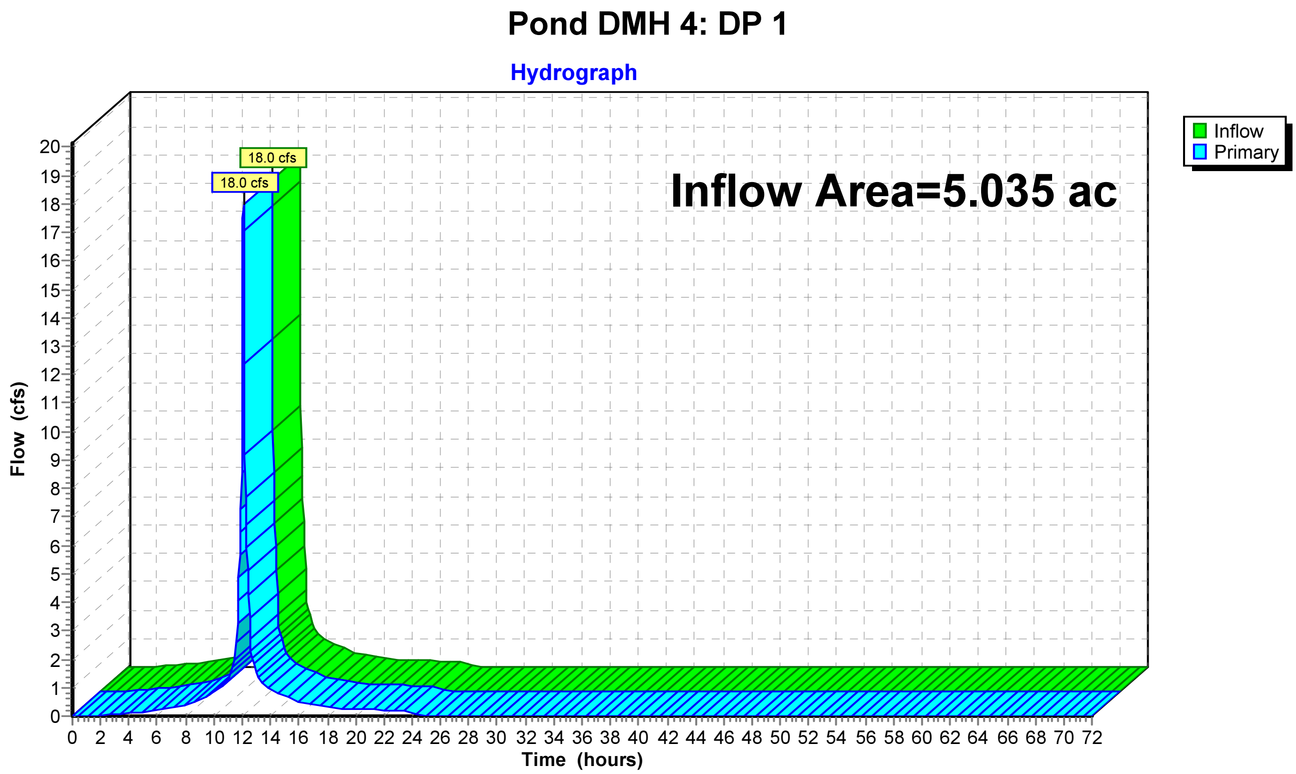


Summary for Pond DMH 4: DP 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area =	5.035 ac, 69.55% Impervious, Inflow Depth = 3.34"			for 2 Year Storm event
Inflow =	18.0 cfs @	12.07 hrs, Volume=	1.403 af	
Primary =	18.0 cfs @	12.07 hrs, Volume=	1.403 af, Atten= 0%, Lag= 0.0 min	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs



Summary for Pond DMH 4A: DMH A4

[57] Hint: Peaked at 9.71' (Flood elevation advised)

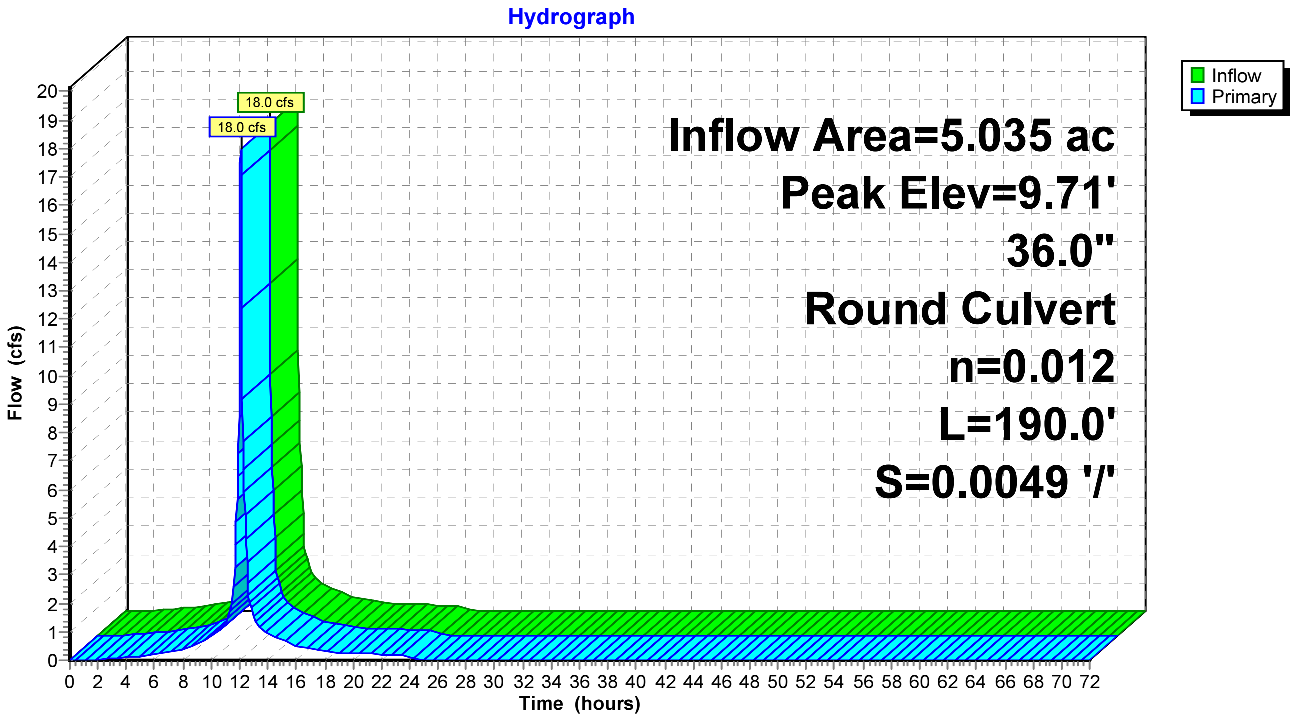
Inflow Area = 5.035 ac, 69.55% Impervious, Inflow Depth = 3.34" for 2 Year Storm event
Inflow = 18.0 cfs @ 12.07 hrs, Volume= 1.403 af
Outflow = 18.0 cfs @ 12.07 hrs, Volume= 1.403 af, Atten= 0%, Lag= 0.0 min
Primary = 18.0 cfs @ 12.07 hrs, Volume= 1.403 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 9.71' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.87'	**36.0" Round Culvert** L= 190.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 7.87' / 6.94' S= 0.0049 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 7.07 sf

Primary OutFlow Max=17.3 cfs @ 12.07 hrs HW=9.67' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 17.3 cfs @ 5.64 fps)

Pond DMH 4A: DMH A4



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 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=219,330 sf 69.55% Impervious Runoff Depth=5.25"
Flow Length=569' Tc=5.0 min CN=97 Runoff=27.6 cfs 2.201 af

Pond DMH 4: DP 1 Inflow=27.6 cfs 2.201 af
Primary=27.6 cfs 2.201 af

Pond DMH 4A: DMH A4 Peak Elev=10.27' Inflow=27.6 cfs 2.201 af
36.0" Round Culvert n=0.012 L=190.0' S=0.0049 '/' Outflow=27.6 cfs 2.201 af

Total Runoff Area = 5.035 ac Runoff Volume = 2.201 af Average Runoff Depth = 5.25"
30.45% Pervious = 1.533 ac 69.55% Impervious = 3.502 ac

Summary for Subcatchment ES1:

[49] Hint: Tc<2dt may require smaller dt

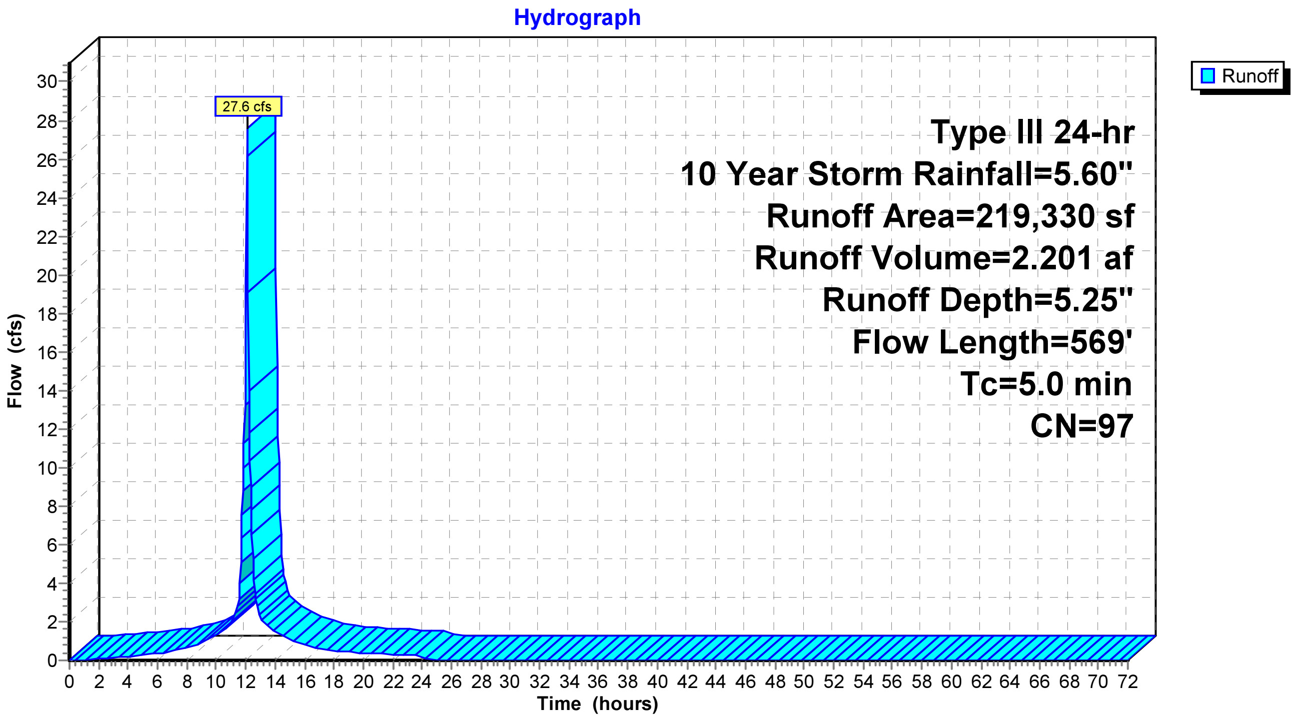
Runoff = 27.6 cfs @ 12.07 hrs, Volume= 2.201 af, Depth= 5.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Storm Rainfall=5.60"

Area (sf)	CN	Description
66,786	96	Gravel surface, HSG C
152,544	98	Paved parking, HSG C
219,330	97	Weighted Average
66,786		30.45% Pervious Area
152,544		69.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	254	0.0276	3.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	120	0.0050	3.47	2.73	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
0.7	195	0.0100	4.91	3.86	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
2.6	569	Total, Increased to minimum Tc = 5.0 min			

Subcatchment ES1:



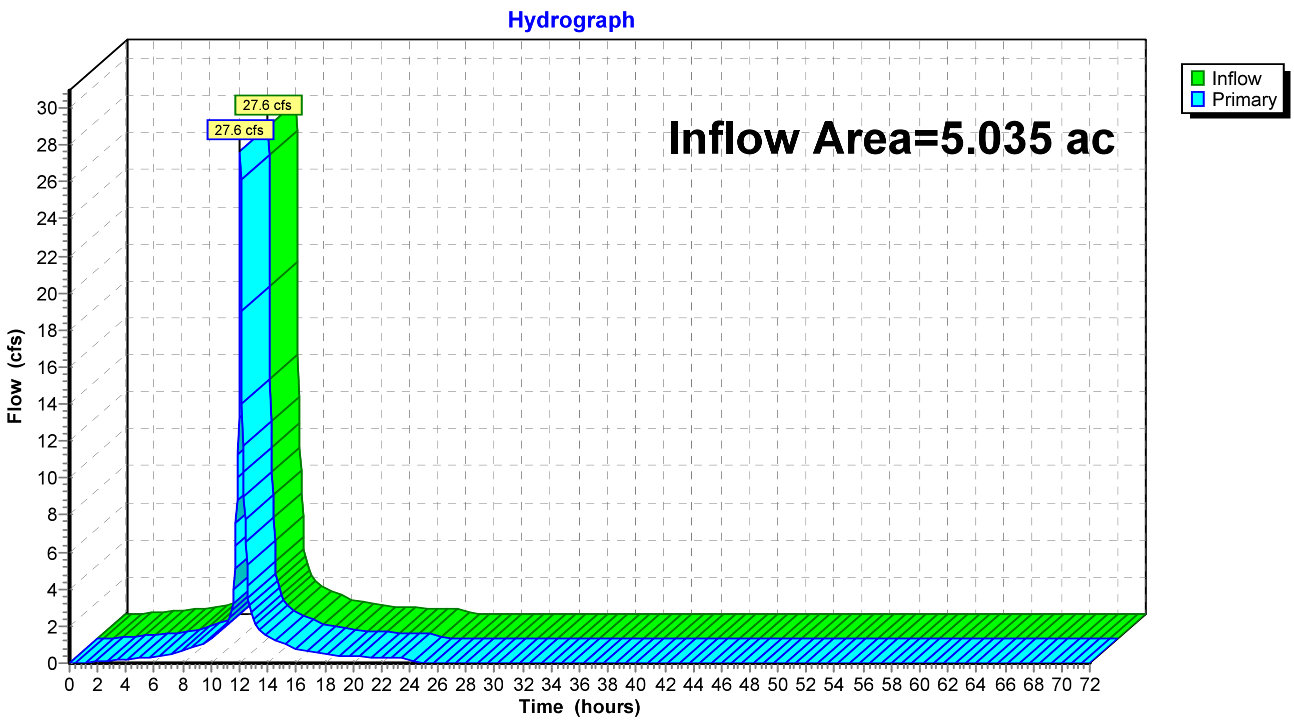
Summary for Pond DMH 4: DP 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area =	5.035 ac, 69.55% Impervious, Inflow Depth = 5.25" for 10 Year Storm event			
Inflow =	27.6 cfs @	12.07 hrs, Volume=	2.201 af	
Primary =	27.6 cfs @	12.07 hrs, Volume=	2.201 af,	Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DMH 4: DP 1



Summary for Pond DMH 4A: DMH A4

[57] Hint: Peaked at 10.27' (Flood elevation advised)

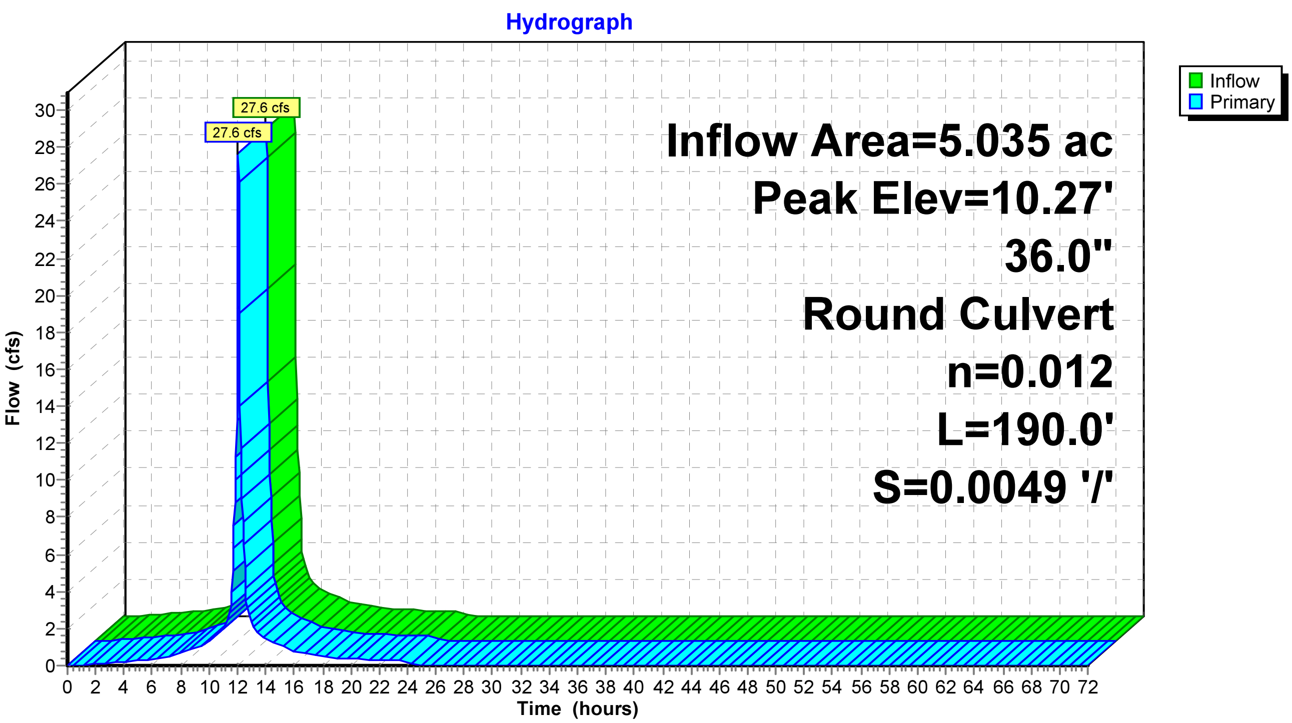
Inflow Area =	5.035 ac, 69.55% Impervious, Inflow Depth =	5.25"	for 10 Year Storm event
Inflow =	27.6 cfs @ 12.07 hrs, Volume=	2.201 af	
Outflow =	27.6 cfs @ 12.07 hrs, Volume=	2.201 af,	Atten= 0%, Lag= 0.0 min
Primary =	27.6 cfs @ 12.07 hrs, Volume=	2.201 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 10.27' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.87'	**36.0" Round Culvert** L= 190.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 7.87' / 6.94' S= 0.0049 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 7.07 sf

Primary OutFlow Max=26.6 cfs @ 12.07 hrs HW=10.21' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 26.6 cfs @ 6.20 fps)

Pond DMH 4A: DMH A4



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 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=219,330 sf 69.55% Impervious Runoff Depth=6.74"
Flow Length=569' Tc=5.0 min CN=97 Runoff=35.2 cfs 2.829 af

Pond DMH 4: DP 1 Inflow=35.2 cfs 2.829 af
Primary=35.2 cfs 2.829 af

Pond DMH 4A: DMH A4 Peak Elev=10.70' Inflow=35.2 cfs 2.829 af
36.0" Round Culvert n=0.012 L=190.0' S=0.0049 '/' Outflow=35.2 cfs 2.829 af

Total Runoff Area = 5.035 ac Runoff Volume = 2.829 af Average Runoff Depth = 6.74"
30.45% Pervious = 1.533 ac 69.55% Impervious = 3.502 ac

Summary for Subcatchment ES1:

[49] Hint: Tc<2dt may require smaller dt

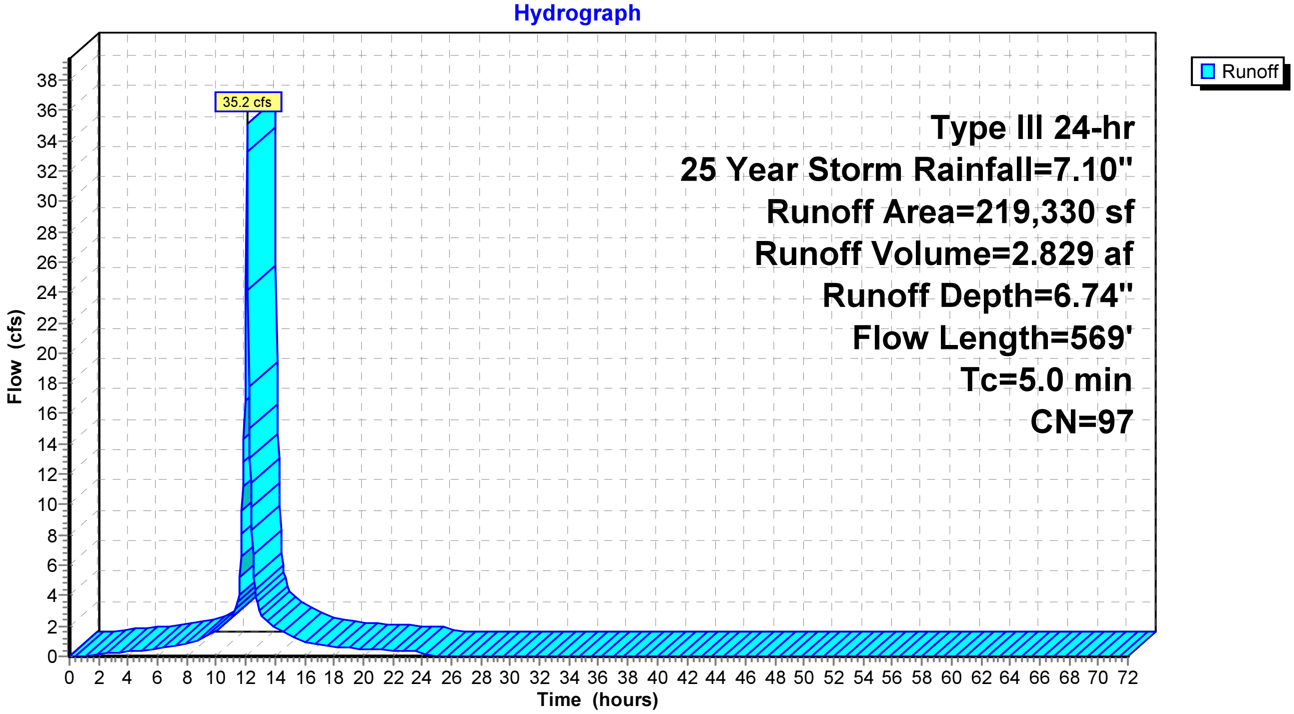
Runoff = 35.2 cfs @ 12.07 hrs, Volume= 2.829 af, Depth= 6.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Rainfall=7.10"

Area (sf)	CN	Description
66,786	96	Gravel surface, HSG C
152,544	98	Paved parking, HSG C
219,330	97	Weighted Average
66,786		30.45% Pervious Area
152,544		69.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	254	0.0276	3.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	120	0.0050	3.47	2.73	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
0.7	195	0.0100	4.91	3.86	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
2.6	569	Total, Increased to minimum Tc = 5.0 min			

Subcatchment ES1:



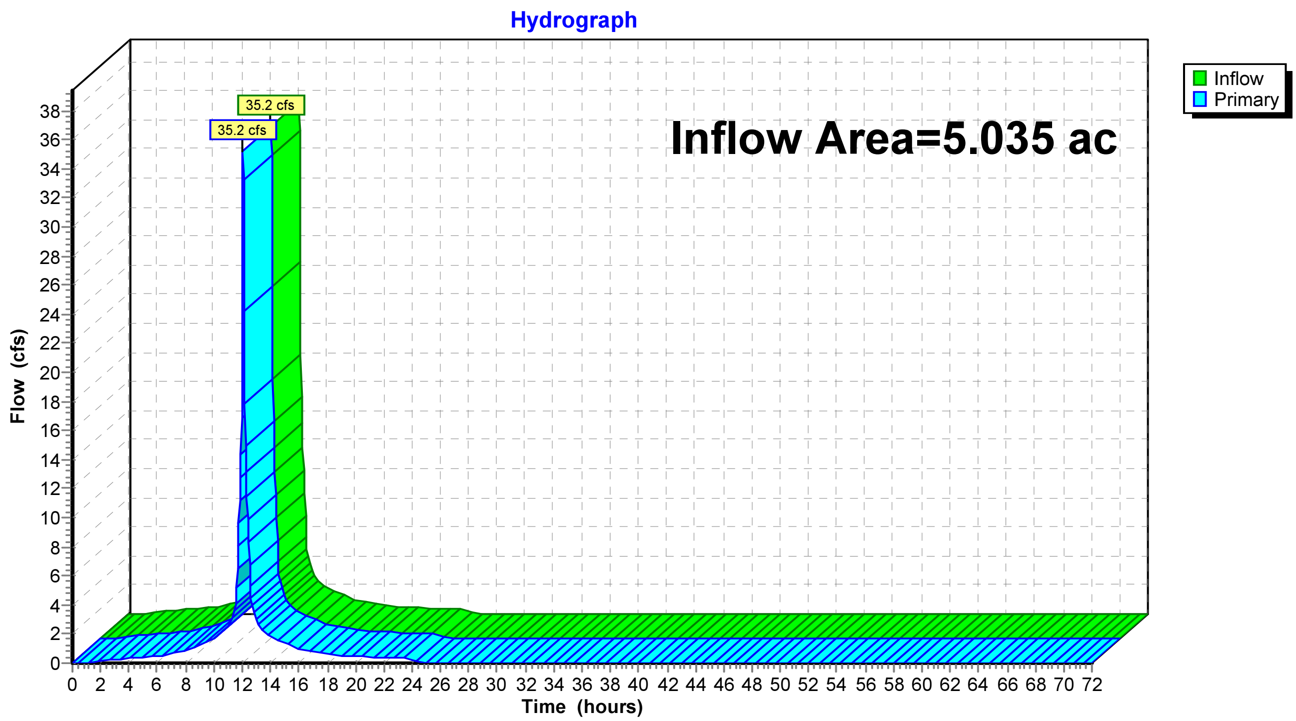
Summary for Pond DMH 4: DP 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area =	5.035 ac, 69.55% Impervious, Inflow Depth = 6.74"	for 25 Year Storm event	
Inflow =	35.2 cfs @ 12.07 hrs, Volume=	2.829 af	
Primary =	35.2 cfs @ 12.07 hrs, Volume=	2.829 af, Atten= 0%, Lag= 0.0 min	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DMH 4: DP 1



Summary for Pond DMH 4A: DMH A4

[57] Hint: Peaked at 10.70' (Flood elevation advised)

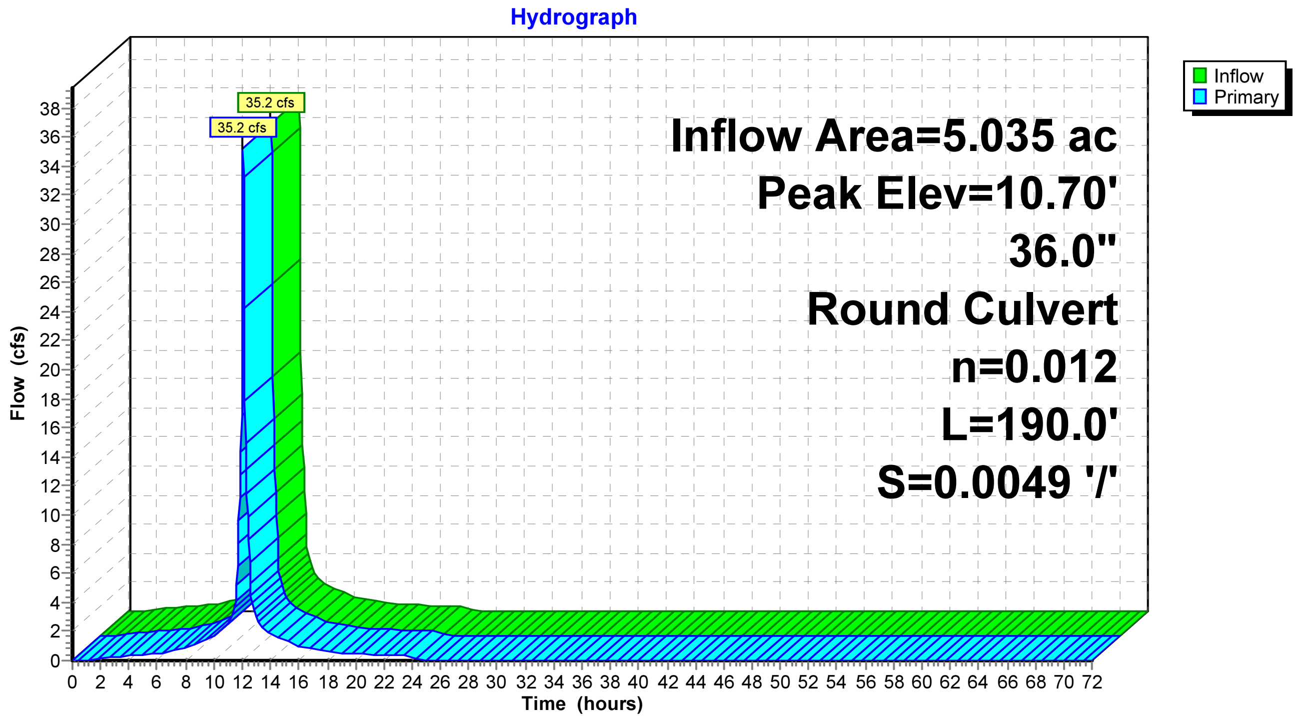
Inflow Area =	5.035 ac, 69.55% Impervious,	Inflow Depth = 6.74"	for 25 Year Storm event	
Inflow =	35.2 cfs @	12.07 hrs, Volume=	2.829 af	
Outflow =	35.2 cfs @	12.07 hrs, Volume=	2.829 af,	Atten= 0%, Lag= 0.0 min
Primary =	35.2 cfs @	12.07 hrs, Volume=	2.829 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 10.70' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.87'	**36.0" Round Culvert** L= 190.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 7.87' / 6.94' S= 0.0049 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 7.07 sf

Primary OutFlow Max=33.9 cfs @ 12.07 hrs HW=10.62' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 33.9 cfs @ 6.53 fps)

Pond DMH 4A: DMH A4



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 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=219,330 sf 69.55% Impervious Runoff Depth=8.14"
Flow Length=569' Tc=5.0 min CN=97 Runoff=42.2 cfs 3.415 af

Pond DMH 4: DP 1 Inflow=42.2 cfs 3.415 af
Primary=42.2 cfs 3.415 af

Pond DMH 4A: DMH A4 Peak Elev=11.12' Inflow=42.2 cfs 3.415 af
36.0" Round Culvert n=0.012 L=190.0' S=0.0049 '/' Outflow=42.2 cfs 3.415 af

Total Runoff Area = 5.035 ac Runoff Volume = 3.415 af Average Runoff Depth = 8.14"
30.45% Pervious = 1.533 ac 69.55% Impervious = 3.502 ac

Summary for Subcatchment ES1:

[49] Hint: Tc<2dt may require smaller dt

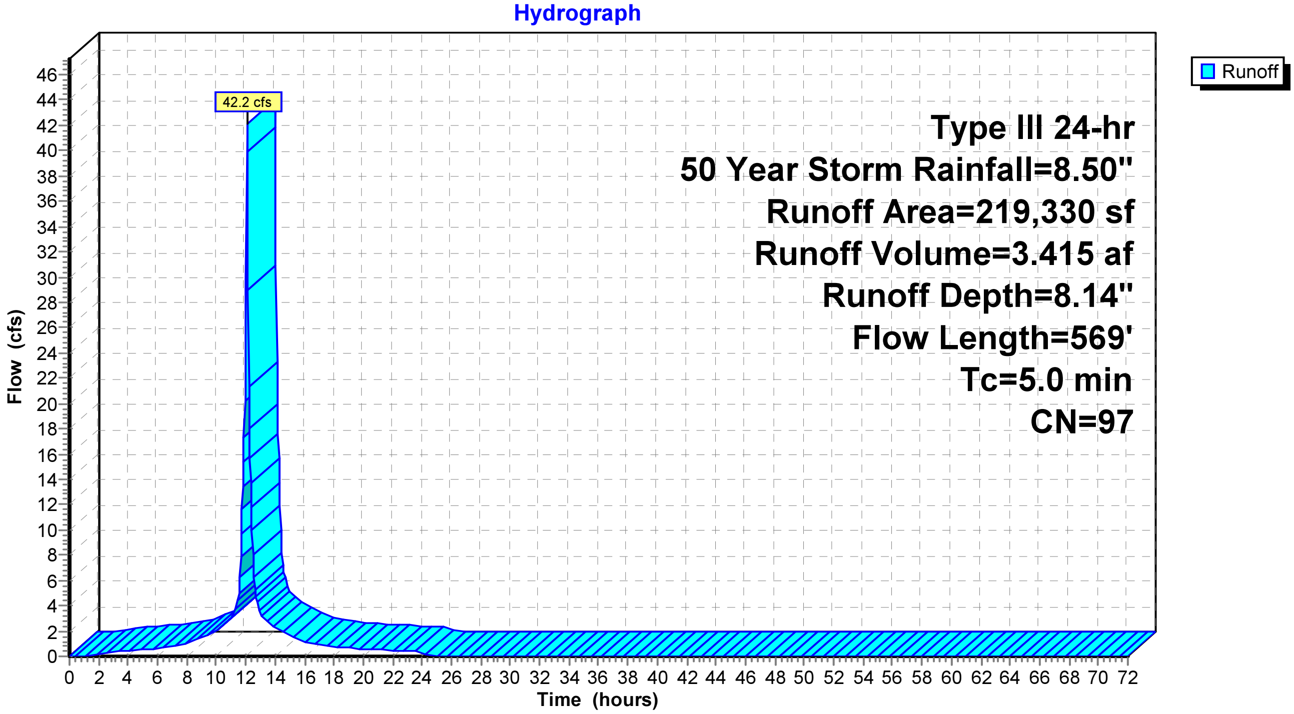
Runoff = 42.2 cfs @ 12.07 hrs, Volume= 3.415 af, Depth= 8.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Year Storm Rainfall=8.50"

Area (sf)	CN	Description
66,786	96	Gravel surface, HSG C
152,544	98	Paved parking, HSG C
219,330	97	Weighted Average
66,786		30.45% Pervious Area
152,544		69.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	254	0.0276	3.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	120	0.0050	3.47	2.73	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
0.7	195	0.0100	4.91	3.86	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
2.6	569	Total, Increased to minimum Tc = 5.0 min			

Subcatchment ES1:



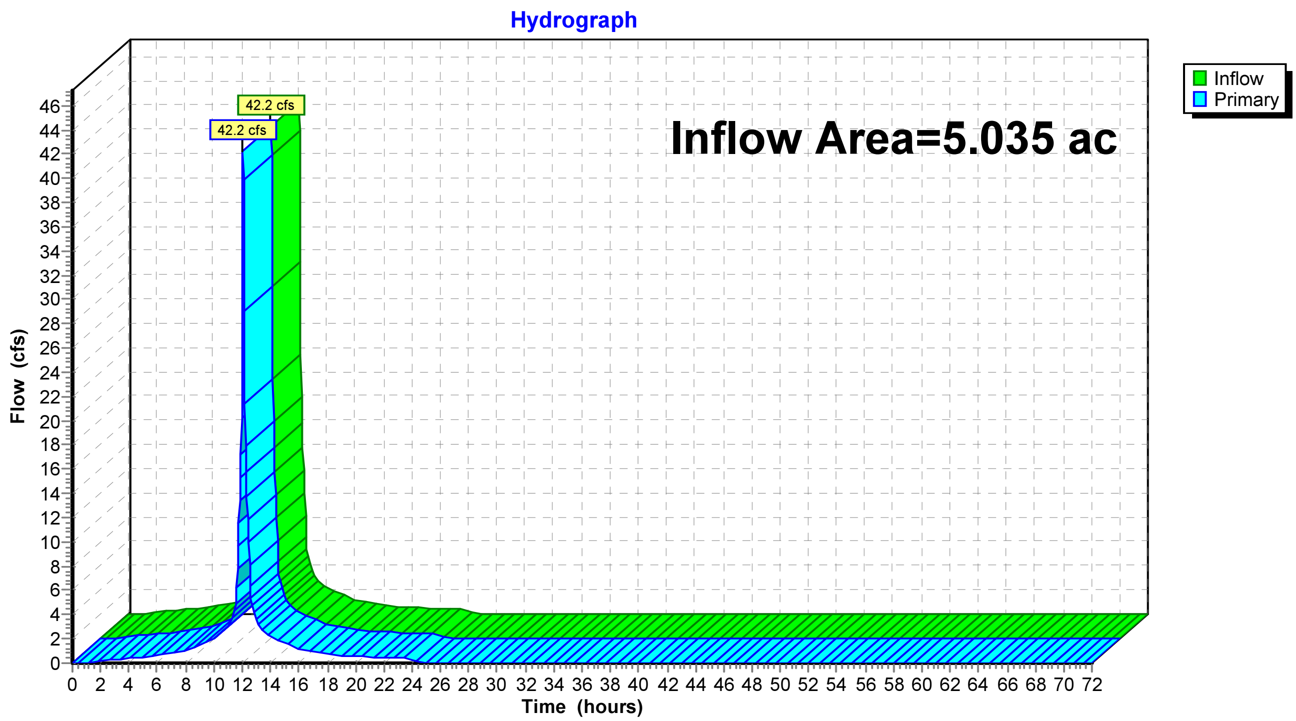
Summary for Pond DMH 4: DP 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area =	5.035 ac, 69.55% Impervious, Inflow Depth = 8.14"	for 50 Year Storm event	
Inflow =	42.2 cfs @ 12.07 hrs, Volume=	3.415 af	
Primary =	42.2 cfs @ 12.07 hrs, Volume=	3.415 af, Atten= 0%, Lag= 0.0 min	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DMH 4: DP 1



Summary for Pond DMH 4A: DMH A4

[57] Hint: Peaked at 11.12' (Flood elevation advised)

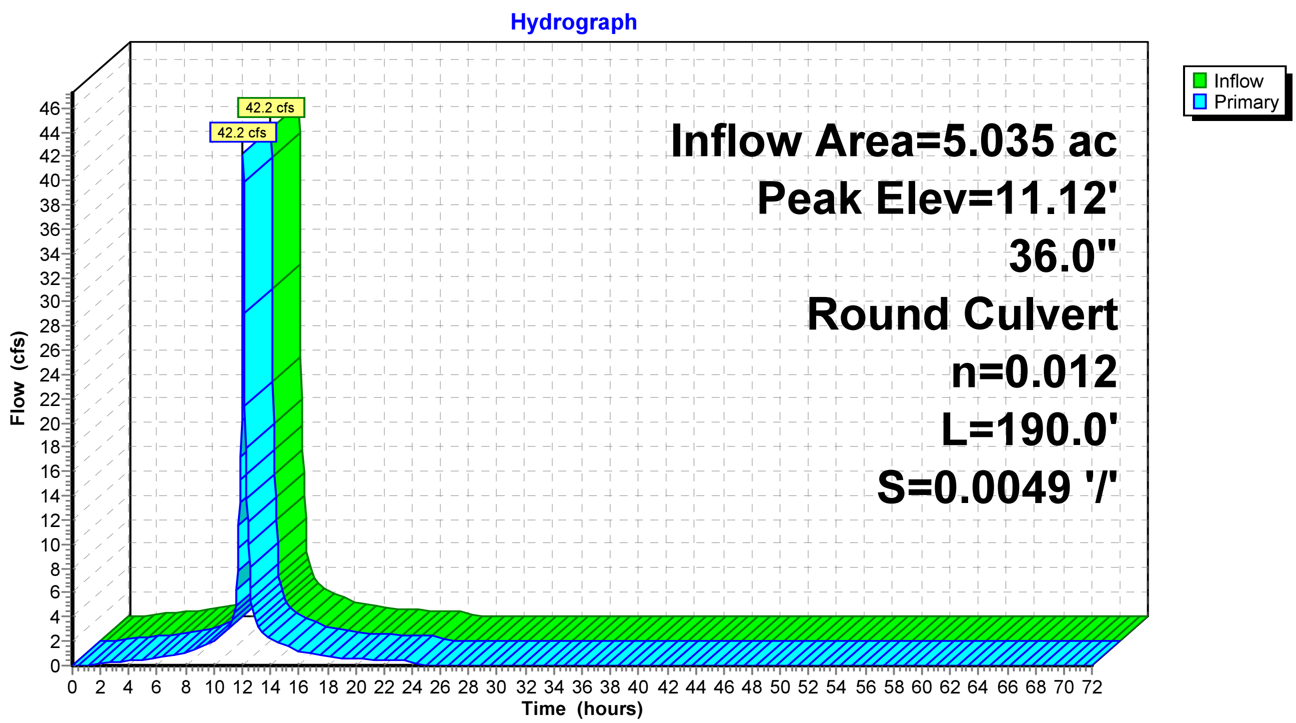
Inflow Area =	5.035 ac, 69.55% Impervious, Inflow Depth = 8.14"			for 50 Year Storm event
Inflow =	42.2 cfs @	12.07 hrs, Volume=	3.415 af	
Outflow =	42.2 cfs @	12.07 hrs, Volume=	3.415 af, Atten= 0%, Lag= 0.0 min	
Primary =	42.2 cfs @	12.07 hrs, Volume=	3.415 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.12' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.87'	**36.0" Round Culvert** L= 190.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 7.87' / 6.94' S= 0.0049 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 7.07 sf

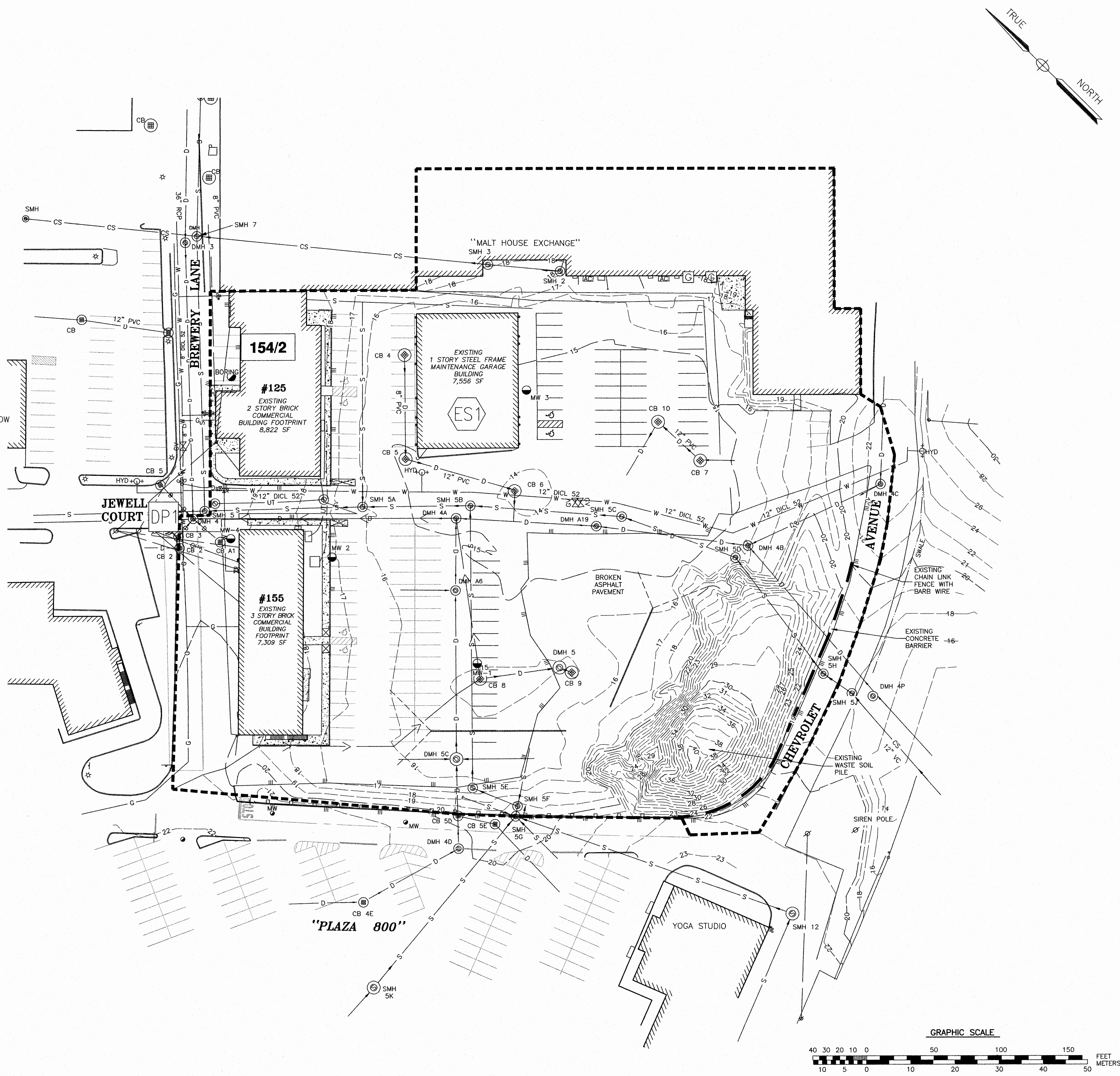
Primary OutFlow Max=40.7 cfs @ 12.07 hrs HW=11.03' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 40.7 cfs @ 6.79 fps)

Pond DMH 4A: DMH A4



LEGEND

EXISTING	PROPOSED	
		PROPERTY LINE
D	D	STORM DRAIN
X X	X X	SILT FENCE
100	100	CONTOUR
97x3	98x0	SPOT ELEVATION
		EDGE OF PAVEMENT (EP)
		SUBCATCHMENT LINE
ES1	PS1	SUBCATCHMENT NUMBER
1234	1234	AREA IN SQUARE FEET
WOODS	WOODS	DESCRIPTION OF COVER
1	1	POND (DESIGN MODEL)
DP1	DP1	REACH (DESIGN MODEL)
		DRAINAGE VECTOR
		EDGE OF WOODS / TREES
		CATCH BASIN
D		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
SF	SF	SHEET FLOW
SCF	SCF	SHALLOW CONCENTRATED FLOW
CHANNEL	CHANNEL	CHANNEL FLOW
HSG	HSG	HYDROLGIC SOIL GROUP



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) THIS PLAN IS FOR RUNOFF ANALYSIS ONLY AND SHALL BE USED ONLY AS A GUIDE FOR CONSTRUCTION.

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN | DATE

CHINBURG PROPERTIES
145 BREWERY LANE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	2/12/18

REVISIONS

STATE OF NEW HAMPSHIRE JOSEPH L. MULLIGY No. 11292 LICENSED PROFESSIONAL ENGINEER

2/12/18

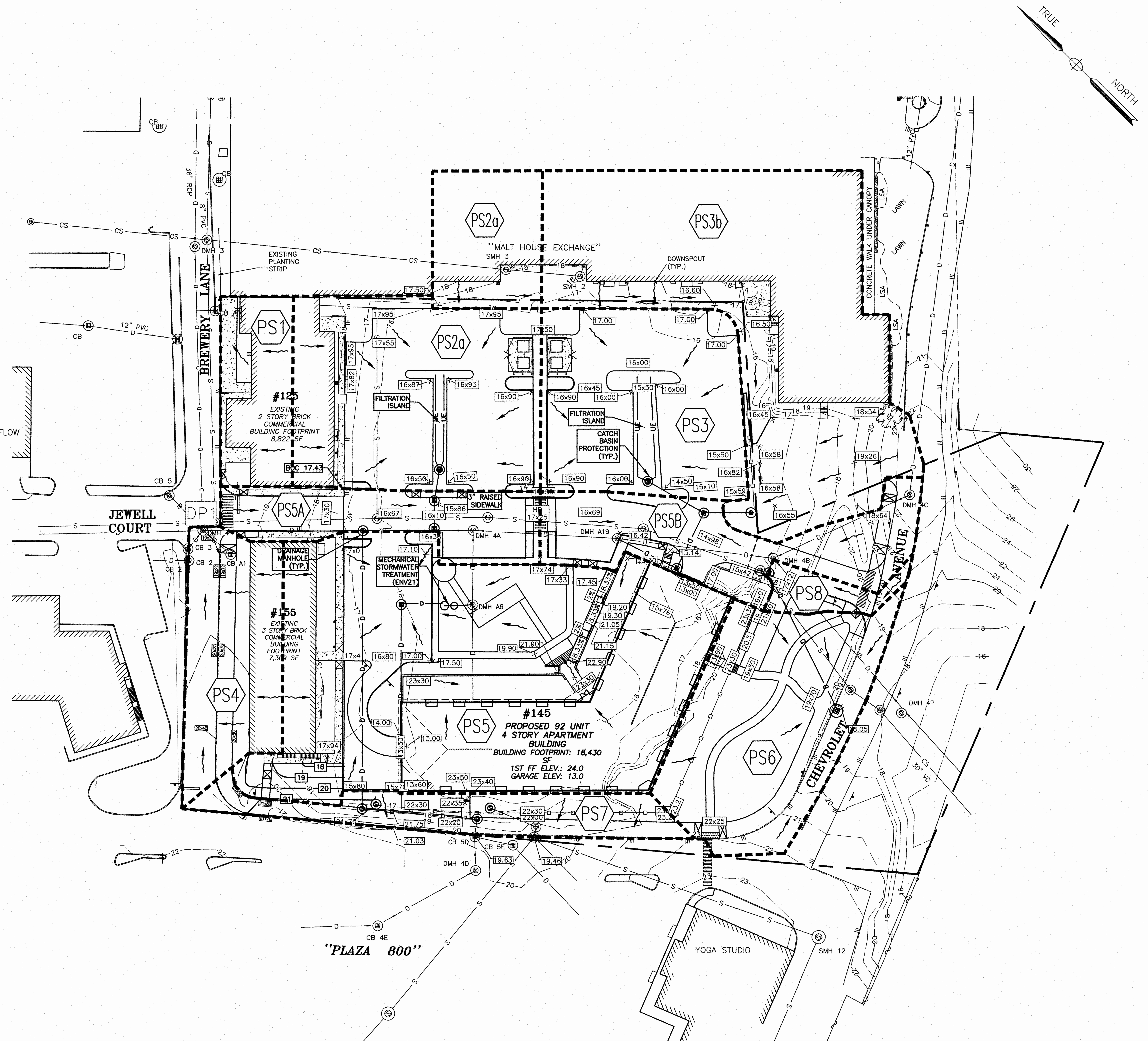
SCALE: 1" = 40' | FEBRUARY 2018

EXISTING DRAINAGE PLAN | W1

FB168, PG 11 | 830.01

LEGEND

EXISTING	PROPOSED	
— —	— —	PROPERTY LINE
—D—	—D—	STORM DRAIN
—x—x—	—x—x—	SILT FENCE
100	100	CONTOUR
97x3	98x0	SPOT ELEVATION
		EDGE OF PAVEMENT (EP)
		SUBCATCHMENT LINE
ES1	PS1	SUBCATCHMENT NUMBER
1234	1234	AREA IN SQUARE FEET
WOODS	WOODS	DESCRIPTION OF COVER
1	1	POND (DESIGN MODEL)
DP1	DP1	REACH (DESIGN MODEL)
		DRAINAGE VECTOR
		EDGE OF WOODS / TREES
		CATCH BASIN
D		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
SF	SF	SHEET FLOW
SCF	SCF	SHALLOW CONCENTRATED FLOW
CHANNEL	CHANNEL	CHANNEL FLOW
HSG	HSG	HYDROLGIC SOIL GROUP



GRAPHIC SCALE

40 30 20 10 0 50 100 150 FEET

10 5 0 10 20 30 40 50 METERS

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE

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) SPEED HUMPS SHALL BE INSTALLED IN A MANNER THAT WILL INSURE THE FREE FLOW OF STORMWATER BETWEEN THE HUMP AND THE CURB LINE.

5) EXISTING DRAINAGE INVERTS CAN BE SEEN ON SHEET EXISTING UTILITIES PLAN – C3.

CHINBURG PROPERTIES 145 BREWERY LANE PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	AREA EDITS, FLOW ARROWS ADDED	3/20/18
0	ISSUED FOR COMMENT	2/12/18

REVISIONS

STATE OF NEW HAMPSHIRE JOSEPH L. MULLEDY No. 11502 LICENSED PROFESSIONAL ENGINEER

3/20/18

SCALE: 1" = 40' FEBRUARY 2018

PROPOSED DRAINAGE PLAN

W2

FB168, PG 11 830.01

J:\JOBS\JN800s\JN830s\JN830\2017 Site Plans Chinburg\Plans & Specs\Site\830.01SITE02.dwg, W2