PROPOSED SITE PLAN
PORTSMOUTH MAPLE MASJID
686 MAPLEWOOD AVENUE

PORTSMOUTH, NEW HAMPSHIRE

PERMIT PLAN

OWNER/APPLICANT:

ISLAMIC SOCIETY OF
THE SEACOAST AREA
42N DOVER POINT ROAD
DOVER, NH 03820

CIVIL ENGINEER & LAND SURVEYOR:

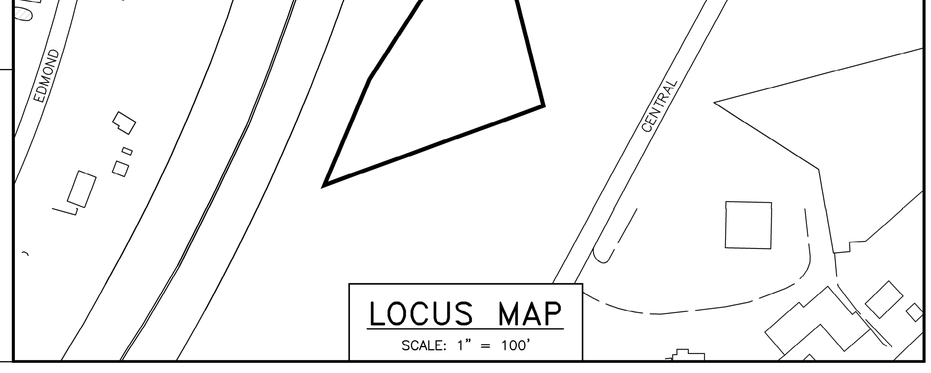
AMBIT ENGINEERING, INC.
200 GRIFFIN ROAD, UNIT 3
PORTSMOUTH, N.H. 03801
Tel. (603) 430-9282
Fax (603) 436-2315

BUILDING DESIGNER:

LIVING SPACES, INC.
1247 WASHINGTON ROAD
RYE, NH, 03870
Tel. (603) 964-5180

LANDSCAPE DESIGNER:

KRIS ROMANIAK
20 BRADFORD STREET
DERRY, NH, 03038
Tel. (617) 576-2129



LOCUS MAP
SCALE: 1" = 100'

Legend

Character Districts
- Character-Based Zoning Area (Refer to Zoning Map Sheet 2 of 2 Character Districts Regulating Plan)

Residential Districts
- R Rural
- SRA Single Residence A
- SRB Single Residence B
- GRA General Residence A
- GRB General Residence B
- GRC General Residence C
- GA/MH Garden Apartment/Mobile Home Park

Mixed Residential Districts
- MRO Mixed Residential Office
- MRB Mixed Residential Business

INDEX OF SHEETS

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 _____

UTILITY CONTACTS

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

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

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

SEWER & WATER:
PORTSMOUTH DEPARTMENT OF PUBLIC WORKS
680 PEVERLY HILL ROAD
PORTSMOUTH, N.H. 03801
Tel. (603) 766-1438 ATTN: JIM TOW

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

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
S	SMH	SEWER MANHOLE
D	DMH	DRAIN MANHOLE
T	TMH	TELEPHONE MANHOLE
14	14	PARKING SPACE COUNT
PM		PARKING METER
LSA		LANDSCAPED AREA
TBD	TBD	TO BE DETERMINED
CI	CI	CAST IRON PIPE
COP	COP	COPPER PIPE
DI	DI	DUCTILE IRON PIPE
PVC	PVC	POLYVINYL CHLORIDE PIPE
RCP	RCP	REINFORCED CONCRETE PIPE
AC	–	ASBESTOS CEMENT PIPE
VC	VC	VITRIFIED CLAY PIPE
EP	EP	EDGE OF PAVEMENT
EL.	EL.	ELEVATION
FF	FF	FINISHED FLOOR
INV	INV	INVERT
S =	S =	SLOPE FT/FT
TBM	TBM	TEMPORARY BENCH MARK
TYP	TYP	TYPICAL

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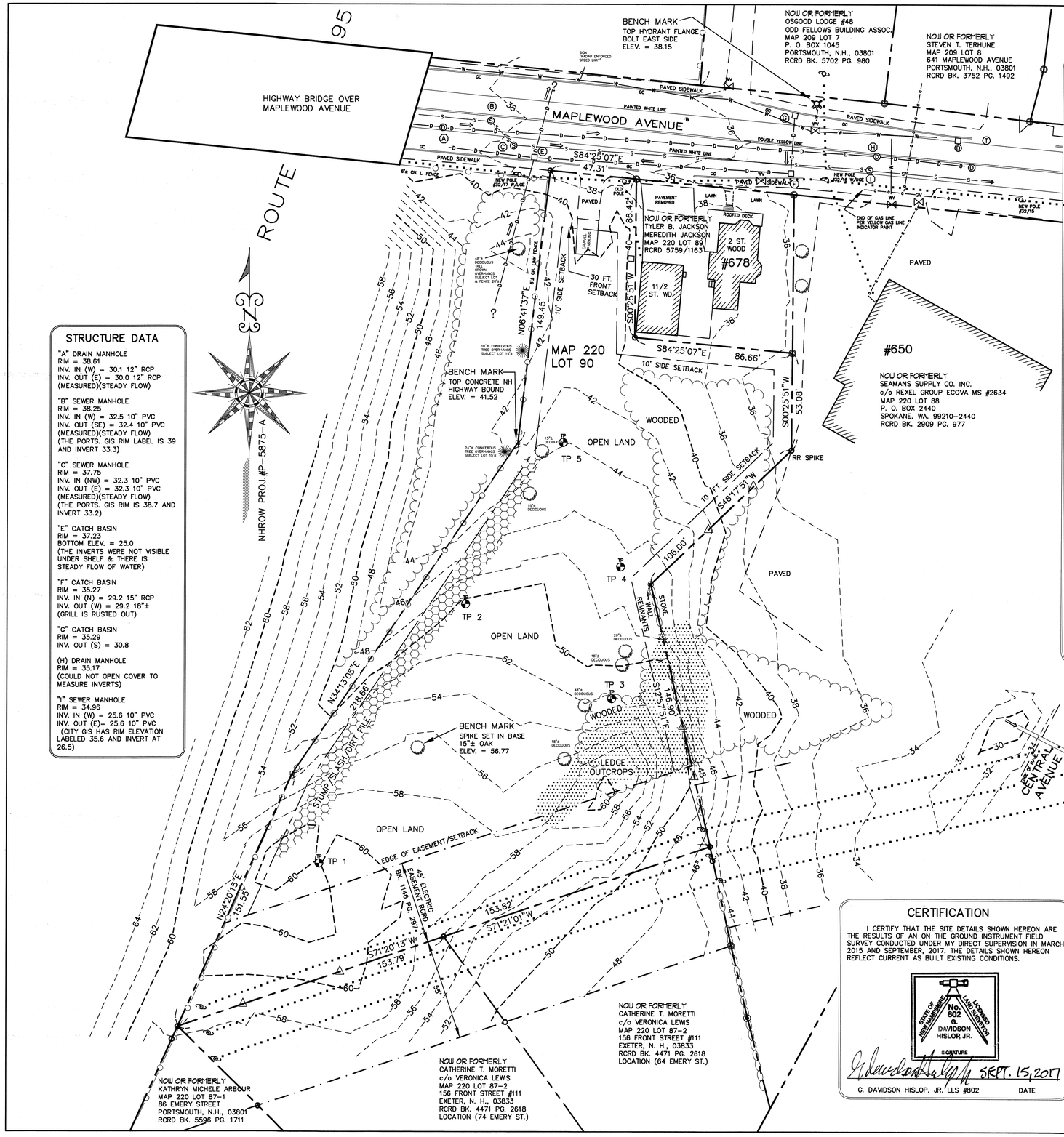
PORTSMOUTH MAPLE MASJID
686 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

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: 11 APRIL 2019



STRUCTURE DATA

"A" DRAIN MANHOLE
RIM = 38.61
INV. IN (W) = 30.1 12" RCP
INV. OUT (E) = 30.0 12" RCP
(MEASURED)(STEADY FLOW)

"B" SEWER MANHOLE
RIM = 38.25
INV. IN (W) = 32.5 10" PVC
INV. OUT (SE) = 32.4 10" PVC
(MEASURED)(STEADY FLOW)
(THE PORTS. GIS RIM LABEL IS 39 AND INVERT 33.3)

"C" SEWER MANHOLE
RIM = 37.75
INV. IN (NW) = 32.3 10" PVC
INV. OUT (E) = 32.3 10" PVC
(MEASURED)(STEADY FLOW)
(THE PORTS. GIS RIM IS 38.7 AND INVERT 33.2)

"E" CATCH BASIN
RIM = 37.23
BOTTOM ELEV. = 25.0
(THE INVERTS WERE NOT VISIBLE UNDER SHELF & THERE IS STEADY FLOW OF WATER)

"F" CATCH BASIN
RIM = 35.27
INV. IN (N) = 29.2 15" RCP
INV. OUT (W) = 29.2 18"±
(GRILL IS RUSTED OUT)

"G" CATCH BASIN
RIM = 35.29
INV. OUT (S) = 30.8

(H) DRAIN MANHOLE
RIM = 35.17
(COULD NOT OPEN COVER TO MEASURE INVERTS)

"I" SEWER MANHOLE
RIM = 34.96
INV. IN (W) = 25.6 10" PVC
INV. OUT (E)= 25.6 10" PVC
(CITY GIS HAS RIM ELEVATION LABELED 35.6 AND INVERT AT 26.5)

GENERAL NOTES:

1.) ZONING DISTRICT-"SRB" SINGLE RESIDENCE "B"
MIN. LOT AREA = 15,000 S.F.
MIN. FRONTAGE = 100'
MIN. LOT DEPTH = 100'
BUILDING SETBACKS
FRONT SETBACK = 30'
REAR SETBACK = 30'
SIDE SETBACK = 10'
WETLANDS SETBACK = 100' (10,000 S.F. OR GREATER)
WET LIMITED CUT ZONE = 50' (10,000 S.F. OR GREATER)
WET VEGETATED BUFFER = 25' (10,000 S.F. OR GREATER)
BUILDING RESTRICTIONS
MAX. HEIGHT = 35'
MAX. BUILDING COVERAGE = 20%
MIN OPEN SPACE = 40%

2.) THIS IS AN AS-BUILT PLAN DEPICTING EXISTING CONDITIONS AS OF APRIL 2015 AND UPDATED SEPTEMBER 2017. THE LOT CORNER/LOT LINE MONUMENT LOCATIONS WERE HELD AS SHOWN ON THIS PLAN. THE BEARINGS AND DISTANCES MAY VARY SLIGHTLY FROM THE CALCULATED RECORDED DISTANCE AND BEARINGS PER REFERENCE PLAN #4 (RORD D-38016). THE BEARING BASE IS NH GRID NORTH PER ABOVE PLAN REF. #1 (NH PROJ. P-5875-A). THIS AUTOCAD DRAWING HAS BEEN SHIFTED ONTO PORTSMOUTH GIS COORDINATES NH NAD83 GRID NORTH AS DIRECTED BY PORTSMOUTH GIS DEPT..

3.) THE ELEVATION DATUM BASE IS NAVD88 ESTABLISHED USING THE HYDRANT FLANGE BOLT BENCH MARK ON MYRTLE AVENUE. THIS IS DEPICTED AS TBM-1 ELEVATION 45.86 ON RECORDED PLAN RCRD PLAN # D-37764. PLAN D-37664 NOTES ELEVATION DATUM ESTABLISHED BY SURVEY GRADE GPS READINGS.

4.) THE ABUTTER HOUSE AND GARAGE/APARTMENT AT 678 MAPLEWOOD IS SERVCED BY CITY SEWER AND WATER. PORTSMOUTH COMPUTERIZED GIS UTILITY INFORMATION WAS OBTAINED FROM PORTSMOUTH DPW. THE DIAGRAM INDICATES SEWER, DRAIN AND WATER IS IN THE STREET. THE GIS DIAGRAM DOES NOT INDICATE HOW SUBJECT LOT HOUSE AND GARAGE APARTMENT ARE HOOKED INTO WATER AND SEWER. THE PORTS. WATER/SEWER DIVISION FOREMAN JOHN ADAMS DOES NOT KNOW OF ANY UTILITY RECORDS AVAILABLE TO SHOW THE LOCATION OF THE UTILITY SERVICE CONNECTIONS. THIS APARTMENT (FORMER GARAGE) HAS BEEN GUTTED AND NEW INTERIOR ROOMS ARE CURRENTLY UNDER CONSTRUCTION. THE CARPENTER INDICATED THAT SEWER AND WATER SERVICE WAS FROM THE BIG HOUSE BETWEEN BUILDINGS.

5.) SUBJECT PROPERTIES DO NOT LIE IN A FLOOD HAZARD ZONE AS SHOWN ON ROCKINGHAM COUNTY FLOOD INSURANCE RATE MAP (FIRM) FOR CITY OF PORTSMOUTH COMMUNITY #330139, PANEL #0259, SUFFIX "E" AND KNOWN AS MAP #33015C0259E WITH AN EFFECTIVE DATE OF MAY 17, 2005.

6.) ABUTTING PROPERTY AT #678 MAPLEWOOD HAS A TWO STORY HOUSE AND A SEPARATE GARAGE (GARAGE NOW BEING REFRAMED WITH ABOVE APARTMENT). A VARIANCE WAS GRANTED APRIL 10, 1979 TO ALLOW CONVERSION OF THE SECOND FLOOR OF AN EXISTING GARAGE INTO AN APARTMENT IN A SINGLE RESIDENCE II DISTRICT. A BUILDING PERMIT WAS GIVEN APRIL 25, 1979.

7.) SUBJECT LOT MAP 220 LOT 90 IS A VACANT LOT PARTLY WOODED. THIS PROPERTY IS REFERED TO AS #686 MAPLEWOOD AVENUE IN A DRIVEWAY PERMIT APPLICATION DATED 7-31-12. THE PAVED SIDEWALK CURBING WAS REMOVED WHERE THE PAVED DRIVEWAY IS NOW LOCATED AS SHOWN HEREON.

8.) THE UNDERGROUND GAS SERVICE SHOWN HEREON IN FRONT OF 650 MAPLEWOOD AVE. WAS PLOTTED FROM YELLOW GAS LINE PAINT MARKINGS LOCATED BY FIELD SURVEY. THE GAS PAINT MARKS INDICATES THE GAS LINE ENDS BEFORE CROSSING IN FRONT OF SUBJECT LOT AS SHOWN.

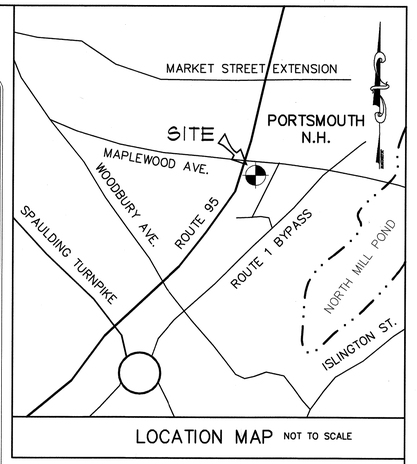
9.) UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE, BEING PLOTTED FROM OBSERVED ABOVE GROUND STRUCTURES AND PAINT MARKS.

10.) SUBJECT LOT 90 SUBJECT TO AN ELECTRIC EASEMENT PER RCRD BK. 1146 PG. 297. THIS EASEMENT IS ON THE REAR 45 FEET OF SUBJECT LOT 90 ADJOINING THE MORETTI PROPERTIES AS SHOWN AND ALLOWS FOR THE ELECTRIC TRANSMISSION LINES OPERATION AND MAINTENANCE. THERE IS CURRENTLY AN OVERHEAD ELECTRIC LINE CROSSING SUBJECT LOT AS SHOWN.

11.) SUBJECT LOT SUBJECT TO AN EASEMENT TO PERMIT THE STAIRWAY AND DECK ON APARTMENT BUILDING THAT ENCROACH SUBJECT LOT 90 PER RCRD BK. 5759 PG. 1160. THIS EASEMENT TO EXTINGUISH UPON REMOVAL OF ENCROACHING DECK AND STAIRS IF NOT REPLACED WITHIN 6 MONTHES OF REMOVAL. THE ENCROACHING STAIRS AND DECK ON THE WEST SIDE OF THE APARTMENT (GARAGE) BUILDING WERE REMOVED AS OF SEPT. 7, 2017.

12.) JOSEPH W. NOEL, N.H. CERTIFIED WETLAND SCIENTIST #086, (207-384-5587) INVESTIGATED THE SUBJECT PROPERTIES LOT 89 & LOT 90 APRIL 4, 2015 AND THERE WERE NO WETLANDS.

13.) PER PORTSMOUTH PLANNING DEPT. SUBJECT PROPERTY MAP 220 LOT 90 AT 686 MAPLEWOOD AVENUE RECEIVED A VARIANCE ON FEB. 21, 2017 TO PERMIT THE CONSTRUCTION OF A 4,000 SQ. FOOT PLACE OF WORSHIP AND A VARIANCE FOR REQUIRED FRONTAGE.



LOCATION MAP NOT TO SCALE

PLAN REFERENCES:

1.) STATE OF N. H. DEPT. OF PUBLIC WORKS AND HIGHWAYS FEDERAL AID RIGHT OF WAY PROJECT #1-95-1(9)14, INTERSTATE ROUTE 95 N. H. PROJECT #P-5875-A RCRD PLAN #D-2229-6.

2.) STATE OF N. H. DEPT. OF PUBLIC WORKS AND HIGHWAYS FEDERAL AID RIGHT OF WAY PROJECT #1-95-1(10)14, INTERSTATE ROUTE 95 N. H. PROJECT #P-5875-B, RCRD PLAN #D-2498-3.

3.) "PROPOSED DIVISION OF LAND OF CATHERINE T. MORETTI, PHASE 2 - MYRTLE AVENUE & CENTRAL AVENUE PORTSMOUTH, ROCKINGHAM COUNTY, NEW HAMPSHIRE" BY CIVIL CONSULTANTS ENGINEERS, REVISED 5-30-2014, RCRD PLAN #D-38286. (SEE ALSO EARLIER PLAN RCRD PLAN #D-37764)

4.) "CORRECTION PLAN, LAND BOUNDARY SURVEY PLAN DEPICTING LAND OWNED BY INDEPENDENT ORDER OF ODD FELLOWS, OSGOOD LODGE #48 KNOWN AS TAX MAP 209 LOT 6/#651 MAPLEWOOD AVE. AND DEPICTING LAND OWNED BY WARREN V. STEARNS & HELEN W. STEARNS KNOWN AS TAX MAP 220 LOT 89/#678 MAPLEWOOD AVE AND DEPICTING LAND OWNED BY WARREN V. STEARNS KNOWN AS TAX MAP 220 LOT 90" BY KNIGHT HILL LAND SURVEYING SERVICES, INC. DATED OCT., 2003, REVISED NOV. 19, 2013, RCRD PLAN #D-38016.

SITE DATA
TAX MAP 220 LOT 90

OWNER OF RECORD:
ISLAMIC SOCIETY OF THE SEACOAST AREA
42N DOVER POINT ROAD
DOVER, N. H., 03820

DEED: RCRD BK. 5806 PG. 2816

AREA: 1.44 ACRE

CERTIFICATION

I CERTIFY THAT THE SITE DETAILS SHOWN HEREON ARE THE RESULTS OF AN ON THE GROUND INSTRUMENT FIELD SURVEY CONDUCTED UNDER MY DIRECT SUPERVISION IN MARCH 2015 AND SEPTEMBER, 2017. THE DETAILS SHOWN HEREON REFLECT CURRENT AS BUILT EXISTING CONDITIONS.

STATE OF NEW HAMPSHIRE — No. 802 — G. DAVIDSON HISLOP, JR. — LICENSED LAND SURVEYOR — SIGNATURE

G. DAVIDSON HISLOP, JR. LLS #802 — SEPT. 15, 2017 — DATE

LEGEND

PROPERTY LINE
EDGE OF PAVEMENT
IRON PIPE OR PIN
DRILL HOLE IN STONE WALL
N. H. HIGHWAY BOUND
EDGE OF EASEMENT
APROX. EDGE OF WOODS
STONE WALL
CATCH BASIN
WATER SHUT OFF VALVE
BELL MANHOLE
SEWER MANHOLE
UTILITY POLE
OVERHEAD ELECTRIC
APPROX. UNDERGROUND DRAIN
SIGN
SETBACK
ROCKINGHAM COUNTY REGISTRY OF DEEDS — RCRD
DECIDUOUS TREE
CONIFEROUS TREE
DRAIN MANHOLE
GAS SHUT OFF VALVE
CHAIN LINK FENCE
STUMP/DIRT/SLASH PILE
APROX. UNDERGROUND SEWER
GRANITE CURB
APPROX. UNDERGROUND WATER
APPROX. UNDERGROUND GAS
LEDGE OUTCROP AREA
2 FOOT CONTOUR
CONTOUR AT EVEN 10 FOOT
TALL STAKE SET ON LOT LINE

EXISTING CONDITIONS & TOPOGRAPHY PLAN

for vacant lot known as

TAX MAP 220 LOT 90

owned by

ISLAMIC SOCIETY OF THE SEACOAST AREA

located at

686 MAPLEWOOD AVENUE
PORTSMOUTH, NEW HAMPSHIRE
ROCKINGHAM COUNTY

DATE: SEPT. 14, 2017 SCALE: 1" = 30' PROJECT # 1938ASBUILT

PREPARED FOR:
ISLAMIC SOCIETY OF THE SEACOAST AREA
42N DOVER POINT RD.
DOVER, N. H., 03820
c/o MOHAMMED EBRAHIM, PH.D., P.E.
attn: DOUG LAROSA
dj@ambitengineering.com
603-430-9282 (312)

PREPARED BY:
KNIGHT HILL LAND SURVEYING SERVICES, INC.
c/o DAVE HISLOP
34 OLD POST ROAD
NEWINGTON, N. H. 03801
(603) 436-1330
dave@khlandsurveying.com

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

1938PNTS

2360

DEMOLITION NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
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) ALL SEWER CONSTRUCTION SHALL COMPLY WITH THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES (NHDES) STANDARDS OF DESIGN AND CONSTRUCTION FOR SEWERAGE AND WASTEWATER TREATMENT FACILITIES, LATEST EDITION.

5) ALL CONSTRUCTION SHALL MEET THE MINIMUM CONSTRUCTION STANDARDS OF THE CITY OF PORTSMOUTH AND THE N.H.D.O.T STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE, LATEST EDITION. THE MORE STRINGENT SPECIFICATIONS SHALL GOVERN.

6) CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF DEMOLITION DEBRIS.

7) CLEAN AND COAT VERTICAL FACE OF EXISTING PAVEMENT AT SAWCUT LINE WITH BITUMEN EMULSION RS-1 IMMEDIATELY PRIOR TO PLACING NEW BITUMINOUS CONCRETE.

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

9) COORDINATE ANY DEMOLITION WORK WITHIN CITY RIGHT-OF-WAY WITH THE CITY OF PORTSMOUTH.

10) OWNER SHALL ARRANGE FOR LAND SURVEYOR TO SET ADDITIONAL BENCHMARKS PRIOR TO ANY SITE CONSTRUCTION.

PORTSMOUTH MAPLE MASJID
686 MAPLEWOOD AVENUE PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	10/15/18

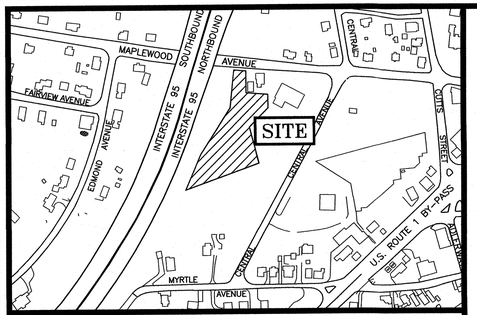
REVISIONS

JOHN R. T. CHAGNON No. 7801 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

SCALE: 1" = 30' MARCH 2018

DEMOLITION PLAN C1

2360



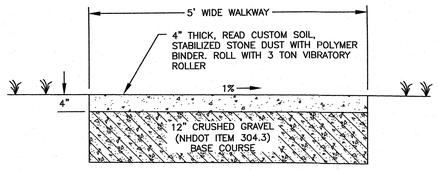
LOCATION MAP SCALE 1"=300'

LEGEND:
SEE SHEET C1

IMPERVIOUS SURFACE AREAS
(TO PROPERTY LINE)

STRUCTURE	PRE-CONSTRUCTION IMPERVIOUS (S.F.)	POST-CONSTRUCTION IMPERVIOUS (S.F.)
MAIN STRUCTURE	0	3,880
PAVEMENT	306	30,860
GRAVEL	219	0
RETAINING WALLS	0	820
STEPS AND LANDINGS	0	131
ENTRANCE PAD & PADS	0	769
5' WIDE SIDEWALK*	0	4885
TOTAL	525	41,345
LOT SIZE	62,776	62,776
% LOT COVERAGE*	0.8%	65.9%

* SIDEWALKS COUNTED AS OPEN SPACE



CROSS SECTION

1 / C2 STONEDUST WALKWAY
NTS

APPROVAL 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.

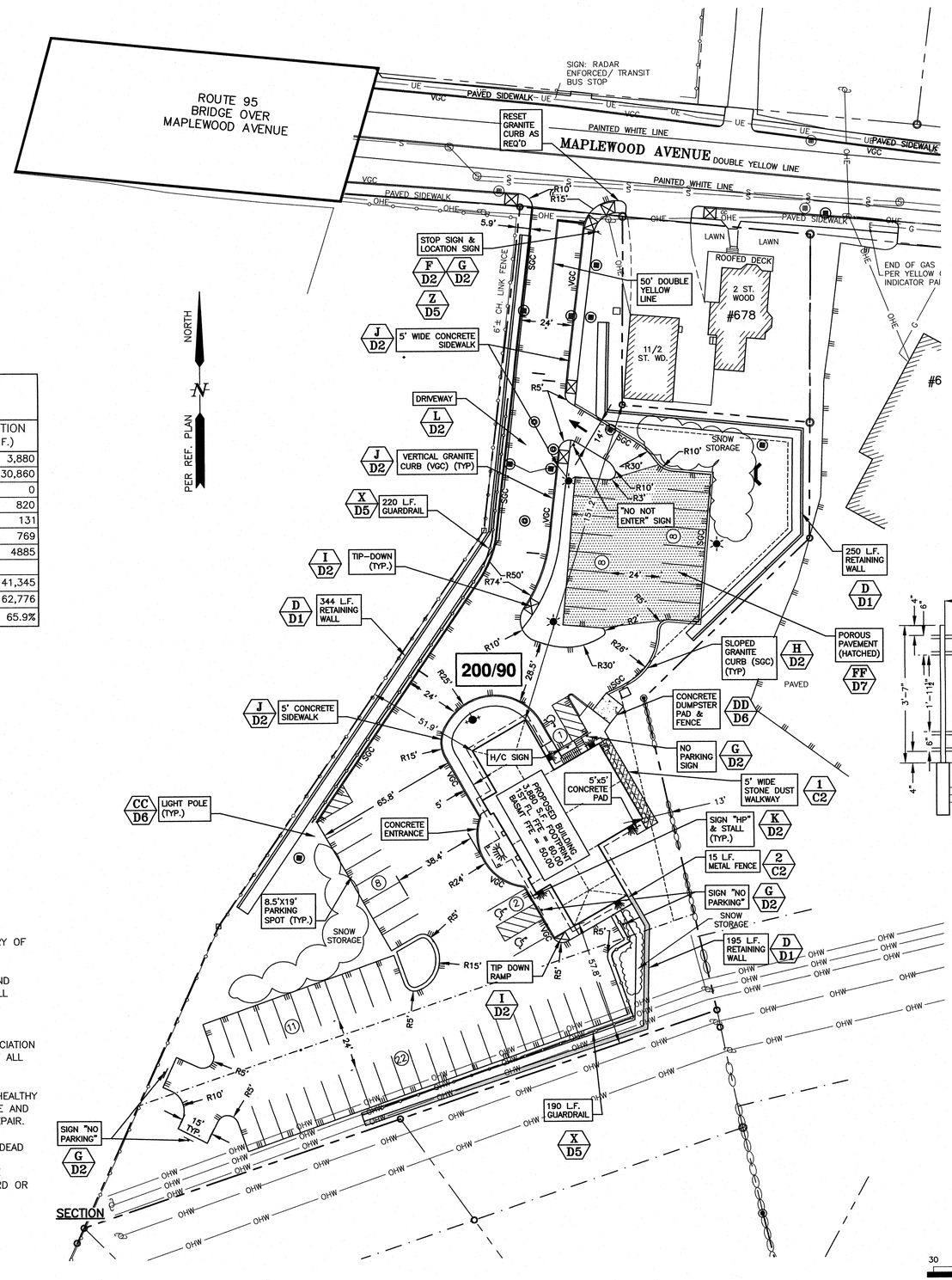
3) THE OWNER OF RECORD AND SUBSEQUENTLY THE CONDOMINIUM UNIT ASSOCIATION SHALL BE RESPONSIBLE FOR THE MAINTENANCE, REPAIR AND REPLACEMENT OF ALL REQUIRED SCREENING AND LANDSCAPE MATERIALS.

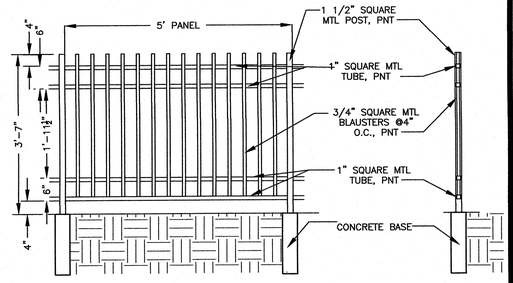
4) ALL REQUIRED PLANT MATERIALS SHALL BE TENDED AND MAINTAINED IN A HEALTHY GROWING CONDITION, REPLACED WHEN NECESSARY, AND KEPT FREE OF REFUSE AND DEBRIS. ALL REQUIRED FENCES AND WALLS SHALL BE MAINTAINED IN GOOD REPAIR.

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.

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN _____ DATE _____





ELEVATION SECTION

2 / C2 METAL FENCE DETAILS
NTS

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

DIMENSIONAL REQUIREMENTS:

SRB: SINGLE RESIDENCE "B"

	REQUIRED	EXISTING	PROPOSED
MIN. FRONT YARD:	30 FEET	NA	151.2 FEET
MIN. SIDE YARD:	10 FEET	NA	13.0 FEET
MIN. REAR YARD:	30 FEET	NA	57.8 FEET
CONTINUAL STREET FRONTAGE:	100 FEET	47.2 FEET	*47.2 FEET
DEPTH:	100 FEET	>100 FEET	>100 FEET
MAX. STRUCTURE HEIGHT:	35 FEET	0 FEET	<35 FEET
ROOF APPURTENANCE:	8 FEET	0 FEET	8 FEET
MAX. BUILDING COVERAGE:	20%	0%	6.2%
MIN. LOT AREA:	15,000 SF	62,776 SF	62,776 SF
MIN. OPEN SPACE COVERAGE:	40%	99.6%	40.3%*

*SIDEWALKS COUNTED AS OPEN SPACE.

VARIANCES GRANTED (2/21/2017):

*CASE #2-4: "THE BOARD VOTED, IN SEPARATE MOTIONS, TO GRANT THE SPECIAL EXCEPTION AND VARIANCE AS PRESENTED AND ADVERTISED,"
1) A SPECIAL EXCEPTION FOR SECTION 10.440 TO ALLOW A RELIGIOUS PLACE OF ASSEMBLY IN A DISTRICT WHERE THE USE IS ONLY ALLOWED BY SPECIAL EXCEPTION.
2) A VARIANCE FROM SECTION 10.521 TO ALLOW 47'± OF CONTINUOUS STREET FRONTAGE WHERE 100' IS REQUIRED.

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 LOCATED ON 686 MAPLEWOOD AVENUE IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 220 AS LOT 90.

2) OWNER OF RECORD:
ISLAMIC SOCIETY OF SEACOAST AREA
PO BOX 684
DOVER, NH 03821
5806/2816

3) SITE AREA IS 62,776 S.F. (1.44 ACRES)

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

5) PARCEL ARE LOCATED IN THE SINGLE RESIDENCE "B" (SRB) ZONING DISTRICT.

6) THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED LAYOUT OF SITE DEVELOPMENT ON TAX MAP 220 LOT 90.

7) VERTICAL DATUM IS MEAN SEA LEVEL NAVD88. SEE PLAN REFERENCE #1.

8) BUILDING NUMBERING TO BE COORDINATED WITH 911.

9) EXCESS SNOW SHALL BE TRUCKED FROM SITE

10) THE PLAN FOR SOLID WASTE REMOVAL IS TO PROVIDE DUMPSTERS FOR WEEKLY PICKUP.

11) STORMWATER MANAGEMENT INSTALLATIONS SHALL BE INSPECTED BY DPW DURING CONSTRUCTION AND AN ANNUAL REPORT SHALL BE SUBMITTED TO THE DPW DEPARTMENT REGARDING THE FUNCTION OF THE DESIGN.

PARKING ANALYSIS:

A PARKING DEMAND ANALYSIS WAS PERFORMED INDICATING THAT 71 SPACES ARE REQUIRED FOR THIS SITE.

A CONDITIONAL USE PERMIT TO ALLOW 60 PARKING SPACES WHERE 71 ARE REQUIRED BY A PARKING DEMAND ANALYSIS WAS GRANTED BY THE PLANNING BOARD ON JANUARY 17, 2019 WITH CONDITION THAT THE ACTUAL MAXIMUM PARKING BE REPORTED IN 6 MONTHS AND 1 YEAR FROM THE DATE OF OCCUPANCY.

PROPOSED PARKING:

REGULAR SPACES = 57 SPACES
HANDICAP SPACES = 3 SPACES
TOTAL SPACES = 60 TOTAL SPACES

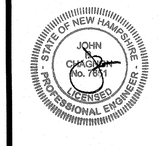
REFERENCE PLAN:

1) "EXISTING CONDITIONS & TOPOGRAPHY PLAN FOR VACANT LOT KNOWN AS TAX MAP 220 LOT 90 OWNED BY ISLAMIC SOCIETY OF THE SEACOAST AREA LOCATED AT 686 MAPLEWOOD AVENUE PORTSMOUTH NH ROCKINGHAM COUNTY" DATE: SEPT. 14, 2017, SCALE: 1" = 30' PREPARED BY: KNIGHT HILL LAND SURVEYING SERVICES, INC. C/O DAVE HISLOP 34 OLD POST ROAD, NEWINGTON NH 03801 (603) 436-1330, dave@khlandsurveying.com

PORTSMOUTH
MAPLE MASJID
686 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
7	EXTEND WALKWAY, ADD DETAIL 2	4/11/19
6	ADD WALKWAY AND PAD TO BACK	4/3/19
5	ADD CB6	4/2/19
4	REV. RWALL, ADD SNOW STORAGE	2/19/19
3	ADD CUP NOTE AND POROUS PAVEMENT	1/22/19
2	ADD SIDEWALK	11/19/18

REVISIONS



SCALE: 1" = 30' AUGUST 2018

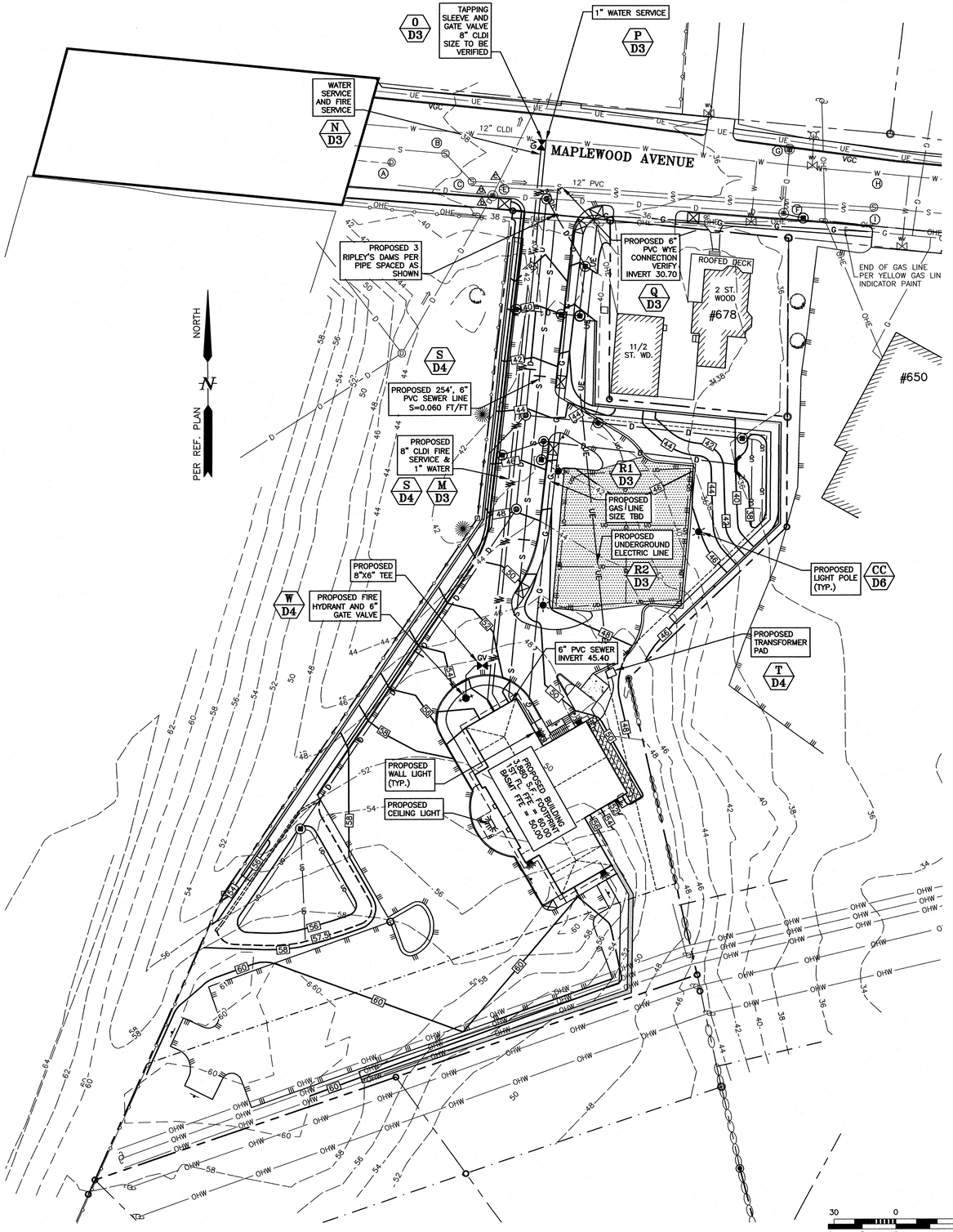
SITE PLAN

C2

2360

UTILITY NOTES:

1) SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION.
2) COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY.
3) SEE GRADING AND DRAINAGE PLAN FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.
4) ALL WATER MAIN INSTALLATIONS SHALL BE CLASS 52, POLYWRAPPED, CEMENT LINED DUCTILE IRON PIPE.
5) ALL WATERMAIN INSTALLATIONS SHALL BE PRESSURE TESTED AND CHLORINATED AFTER CONSTRUCTION AND BEFORE ACTIVATING THE SYSTEM. CONTRACTOR SHALL COORDINATE WITH THE CITY OF PORTSMOUTH.
6) ALL SEWER PIPE SHALL BE PVC SDR 35 UNLESS OTHERWISE STATED.
7) ALL WORK WITHIN CITY R.O.W. SHALL BE COORDINATED WITH CITY OF PORTSMOUTH
8) CONTRACTOR SHALL MAINTAIN UTILITY SERVICES TO ABUTTING PROPERTIES THROUGHOUT CONSTRUCTION.
9) ANY CONNECTION TO EXISTING WATERMAIN SHALL BE CONSTRUCTED BY THE CITY OF PORTSMOUTH.
10) EXISTING UTILITIES TO BE REMOVED SHALL BE CAPPED AT THE MAIN AND MEET THE DEPARTMENT OF PUBLIC WORKS STANDARDS FOR CAPPING OF WATER AND SEWER SERVICES.
11) ALL ELECTRICAL MATERIAL WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST EDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.
12) THE EXACT LOCATION OF NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH BUILDING DRAWINGS AND UTILITY COMPANIES.
13) ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
14) ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
15) THE CONTRACTOR SHALL OBTAIN, PAY FOR, AND COMPLY WITH ALL REQUIRED PERMITS, ARRANGE FOR ALL INSPECTIONS, AND SUBMIT COPIES OF ACCEPTANCE CERTIFICATED TO THE OWNER PRIOR TO THE COMPLETION OF PROJECT.
16) THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED IN THESE DRAWING TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL.
17) CONTRACTOR SHALL PROVIDE EXCAVATION, BEDDING, BACKFILL AND COMPACTION FOR NATURAL GAS SERVICES.
18) A 10-FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18-INCH MINIMUM OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER/SANITARY SEWER CROSSINGS WATER ABOVE SEWER.
19) SAWCUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL PROPOSED UTILITIES LOCATED IN EXISTING PAVED AREAS.
20) GATE VALVES, FITTINGS, ETC. SHALL MEET THE REQUIREMENTS OF THE CITY OF PORTSMOUTH.
21) COORDINATE TESTING OF SEWER CONSTRUCTION WITH THE CITY OF PORTSMOUTH.
22) ALL SEWER PIPES WITH LESS THAN 6' COVER SHALL BE INSULATED.
23) CONTRACTOR SHALL COORDINATE ALL ELECTRIC WORK INCLUDING BUT NOT LIMITED TO: CONDUIT CONSTRUCTION, MANHOLE CONSTRUCTION, UTILITY POLE CONSTRUCTION, OVERHEAD WIRE RELOCATION, AND TRANSFORMER CONSTRUCTION WITH POWER COMPANY.
24) CONTRACTOR SHALL PHASE UTILITY CONSTRUCTION, PARTICULARLY WATER MAIN AND GAS MAIN CONSTRUCTION AS TO MAINTAIN CONTINUOUS SERVICE TO ABUTTING PROPERTIES. CONTRACTOR SHALL COORDINATE TEMPORARY SERVICES TO ABUTTERS WITH UTILITY COMPANY AND AFFECTED ABUTTER.
25) SITE LIGHTING SPECIFICATIONS, CONDUIT LAYOUT AND CIRCUITRY FOR PROPOSED SITE LIGHTING AND SIGN ILLUMINATION SHALL BE PROVIDED BY THE PROJECT ELECTRICAL ENGINEER IN COORDINATION WITH THE SITE CIVIL ENGINEER.
26) CONTRACTOR SHALL CONSTRUCT ALL UTILITIES AND DRAINS TO WITHIN 10' OF THE FOUNDATION WALLS AND CONNECT THESE TO SERVICE STUBS FROM THE BUILDING.
27) THE CONTRACTOR SHALL INSTALL THE SEWER LINE AND MANHOLE IN CONSULTATION AND COORDINATION WITH DEPARTMENT OF PUBLIC WORKS.
28) BRASS WEDGES FOR CONTINUITY OF SIGNAL MUST BE INSTALLED ON WATER MAINS PER THE PORTSMOUTH WATER DEPARTMENT
29) FINAL REVIEW OF ALL UTILITIES SHALL BE MADE DURING THE REQUIRED SEWER CONNECTION PERMIT PROCESS IN COORDINATION WITH DEPARTMENT OF PUBLIC WORKS.
30) ALL WORK PERFORMED IN THE PUBLIC RIGHT-OF-WAY SHALL BE BUILT TO DEPARTMENT OF PUBLIC WATER WORKS STANDARDS.
31) THIRD PARTY UTILITY INSTALLATION INSPECTIONS SHALL BE REQUIRED ON WATER MAIN, SEWER, AND DRAINAGE SYSTEM CONSTRUCTION, AS WELL AS CONSTRUCTION AND REPAIRS TO CITY STREETS.



GRAPHIC SCALE
30 0 50 100 120 FEET
10 5 0 10 20 30 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) INSTALL CATCH BASIN INLET PROTECTION ON ALL EXISTING AND PROPOSED CATCH BASINS UNTIL CONSTRUCTION IS COMPLETED AND THE SITE IS STABILIZED.

5) A JOINT USE AGREEMENT WITH EVERSOURCE REQUIRED FOR PARKING WITHIN THE 45'/55' ELECTRIC EASEMENT (R17715).

6) UTILITY CONNECTIONS IN MAPLEWOOD AVENUE SHALL BE MADE AT LEAST 3 MONTHS PRIOR TO FINAL OVERLAYS OR A MILL AND FILL WILL BE REQUIRED.

7.) ALL WATER MAIN SERVICE WORK SHALL CONFORM TO THE CITY OF PORTSMOUTH STANDARDS.

PORTSMOUTH
MAPLE MASJID
686 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
5	ADDED WALKWAY AND PAD IN BACK	4/11/19
4	REV DRAIN STRUCTURES	4/2/19
3	ADD DRAIN STRUCTURES	3/19/19
2	REV. 1" WATER, ADD DRAIN STUCTURES	1/22/19
1	ADDED HYDRANT, TAPPING, NOTE #7	11/19/18
0	ISSUED FOR COMMENT	10/15/18

REVISIONS

STATE OF NEW HAMPSHIRE - JOHN CHAGNON No. 7961 - LICENSED PROFESSIONAL ENGINEER

SCALE: 1" = 30' MAY 2018

UTILITY PLAN

C3

2360

TEST PIT 1, ELEV. 60.1

Date: 8/18/17
Logged by: DOUG LAROSA
ESHWT: NONE
Observed Water: NONE
Restrictive layer: NONE
REFUSAL: LEDGE AT 24"

DEPTH	DESCRIPTION
0" – 6"	10YR 3/3 FINE SANDY LOAM, MASSIVE, FRIABLE
6" – 24"	10YR 5/6 FINE SANDY LOAM, GRANULAR, FRIABLE

TEST PIT 2, ELEV. 50.1

Date: 8/18/17
Logged by: DOUG LAROSA
ESHWT: NONE
Observed Water: NONE
Restrictive layer: NONE
REFUSAL: LEDGE AT 28"

DEPTH	DESCRIPTION
0" – 5"	10YR 3/3 FINE SANDY LOAM, MASSIVE, FRIABLE
5" – 28"	10YR 5/6 FINE SANDY LOAM, GRANULAR, FRIABLE

TEST PIT 3, ELEV. 52.1

Date: 8/18/17
Logged by: DOUG LAROSA
ESHWT: NONE
Observed Water: NONE
Restrictive layer: NONE
REFUSAL: LEDGE AT 27"

DEPTH	DESCRIPTION
0" – 6"	10YR 3/3 FINE SANDY LOAM, MASSIVE, FRIABLE
6" – 27"	10YR 5/6 FINE SANDY LOAM, GRANULAR, FRIABLE

TEST PIT 4, ELEV. 44.5

Date: 8/18/17
Logged by: DOUG LAROSA
ESHWT: NONE
Observed Water: NONE
Restrictive layer: NONE
REFUSAL: LEDGE AT 30"

DEPTH	DESCRIPTION
0" – 8"	10YR 4/3 FINE SANDY LOAM, MASSIVE, FRIABLE
8" – 30"	10YR 4/6 FINE SANDY LOAM, GRANULAR, FRIABLE

TEST PIT 5, ELEV. 43.5

Date: 8/18/17
Logged by: DOUG LAROSA
ESHWT: NONE
Observed Water: NONE
Restrictive layer: NONE
REFUSAL: LEDGE AT 25"

DEPTH	DESCRIPTION
0" – 5"	10YR 4/3 FINE SANDY LOAM, MASSIVE, FRIABLE
5" – 25"	10YR 5/6 FINE SANDY LOAM, GRANULAR, FRIABLE

EXISTING STRUCTURE DATA

"A" DRAIN MANHOLE
RIM = 38.61
INV. IN (W) = 30.1 12" RCP
INV. OUT (E) = 30.0 12" RCP
(MEASURED)(STEADY FLOW)

"B" SEWER MANHOLE
RIM = 38.25
INV. IN (W) = 32.5 10" PVC
INV. OUT (SE) = 32.4 10" PVC
(MEASURED)(STEADY FLOW)
(THE PORTS. GIS RIM LABEL IS 39 AND INVERT 33.3)

"C" SEWER MANHOLE 98
RIM = 37.75
INV. IN (NW) = 32.3 10" PVC
INV. OUT (E) = 32.3 10" PVC
(MEASURED)(STEADY FLOW)
(THE PORTS. GIS RIM IS 38.7 AND INVERT 33.2)

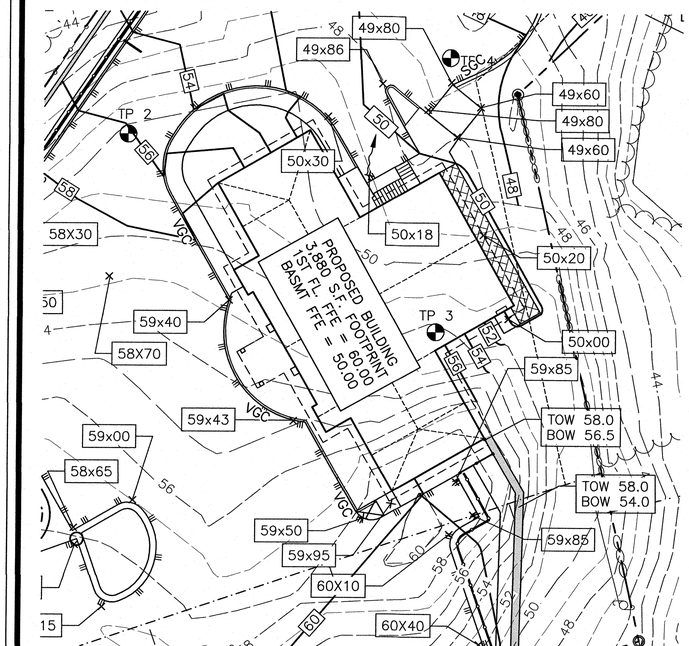
"E" CATCH BASIN (CB–11)
RIM = 37.23
BOTTOM ELEV. = 25.0
INV. a = 26.85 – 15" RCP
INV. b = 25.35 – 15" RCP
INV. c = 25.35 – 42" (SCALED)

"F" CATCH BASIN
RIM = 35.27
INV. IN (N) = 29.2 15" RCP
INV. OUT (W) = 29.2 18"±
(GRILL IS RUSTED OUT)

"G" CATCH BASIN
RIM = 35.29
INV. OUT (S) = 30.8

(H) DRAIN MANHOLE
RIM = 35.17
(COULD NOT OPEN COVER TO MEASURE INVERTS)

"I" SEWER MANHOLE 97
RIM = 34.96
INV. IN (W) = 25.6 10" PVC
INV. OUT (E)= 25.6 10" PVC
(CITY GIS HAS RIM ELEVATION LABELED 35.6 AND INVERT AT 26.5)

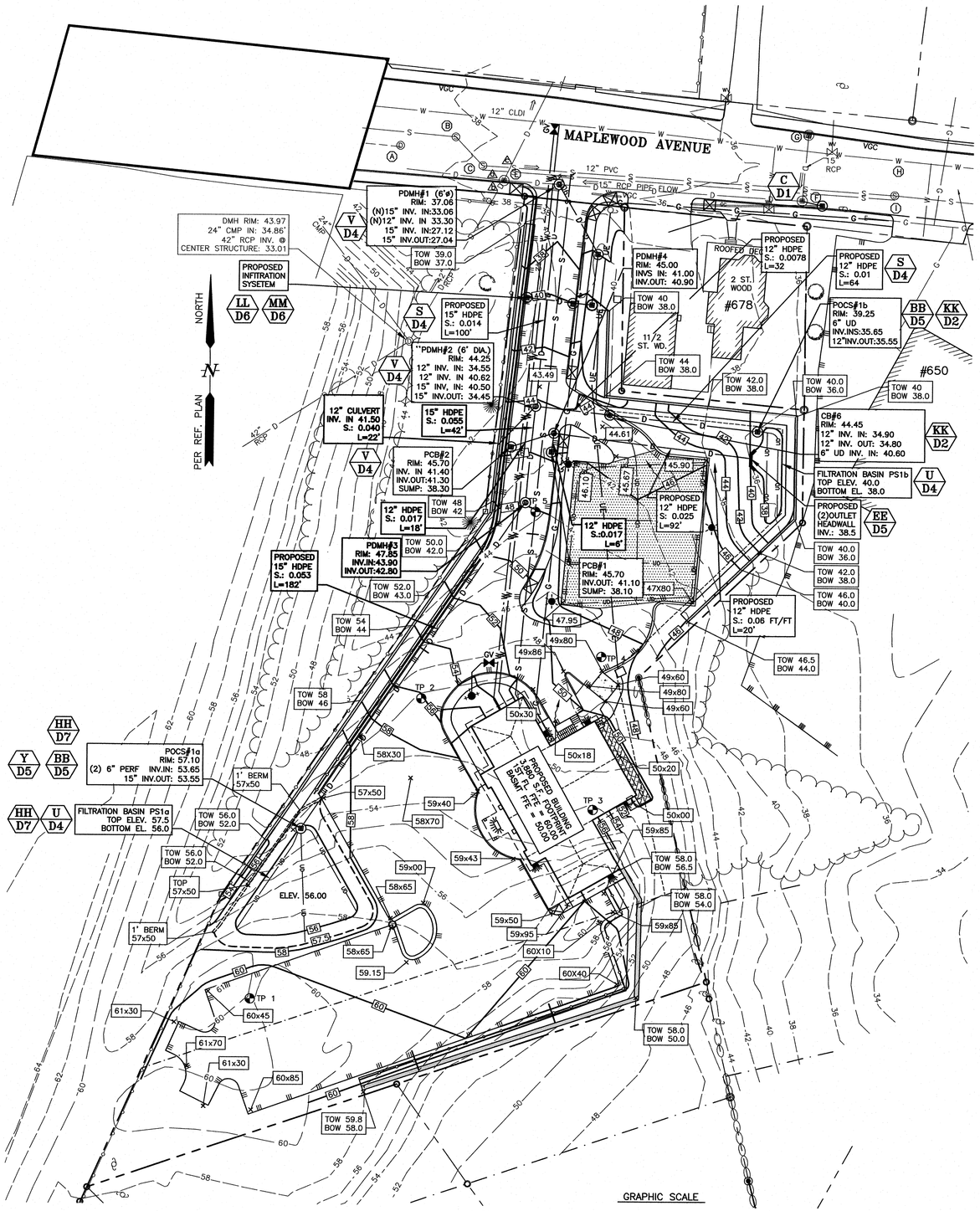


BUILDING SPOT GRADE DETAIL – SCALE: 1" = 20'

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 _____



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

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NOTES:

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

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

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

PORTSMOUTH MAPLE MASJID
686 MAPLEWOOD AVENUE PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
7	GRADED NEW WALKWAY AND PAD	4/11/19
6	REGRADED PARKING, REMOVED SPILLWAY	4/2/19
5	REROUTED OFFSITE, SPILLWAY, INFILTRATION	3/19/19
4	REVISED CULVERT SIZES, CALLOUTS	2/19/19
3	ADDED DRAINAGE STRUCTURES	1/22/19
1	ISSUED FOR COMMENT	10/15/18

REVISIONS

STATE OF NEW HAMPSHIRE JOHN CHAGNON NO. 7894 LICENSED PROFESSIONAL ENGINEER

SCALE: 1" = 30'/20' MAY 2018

GRADING, DRAINAGE AND EROSION CONTROL PLAN

C4

2360

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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 14 FEET, EXCEPT WHERE NOTED.

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

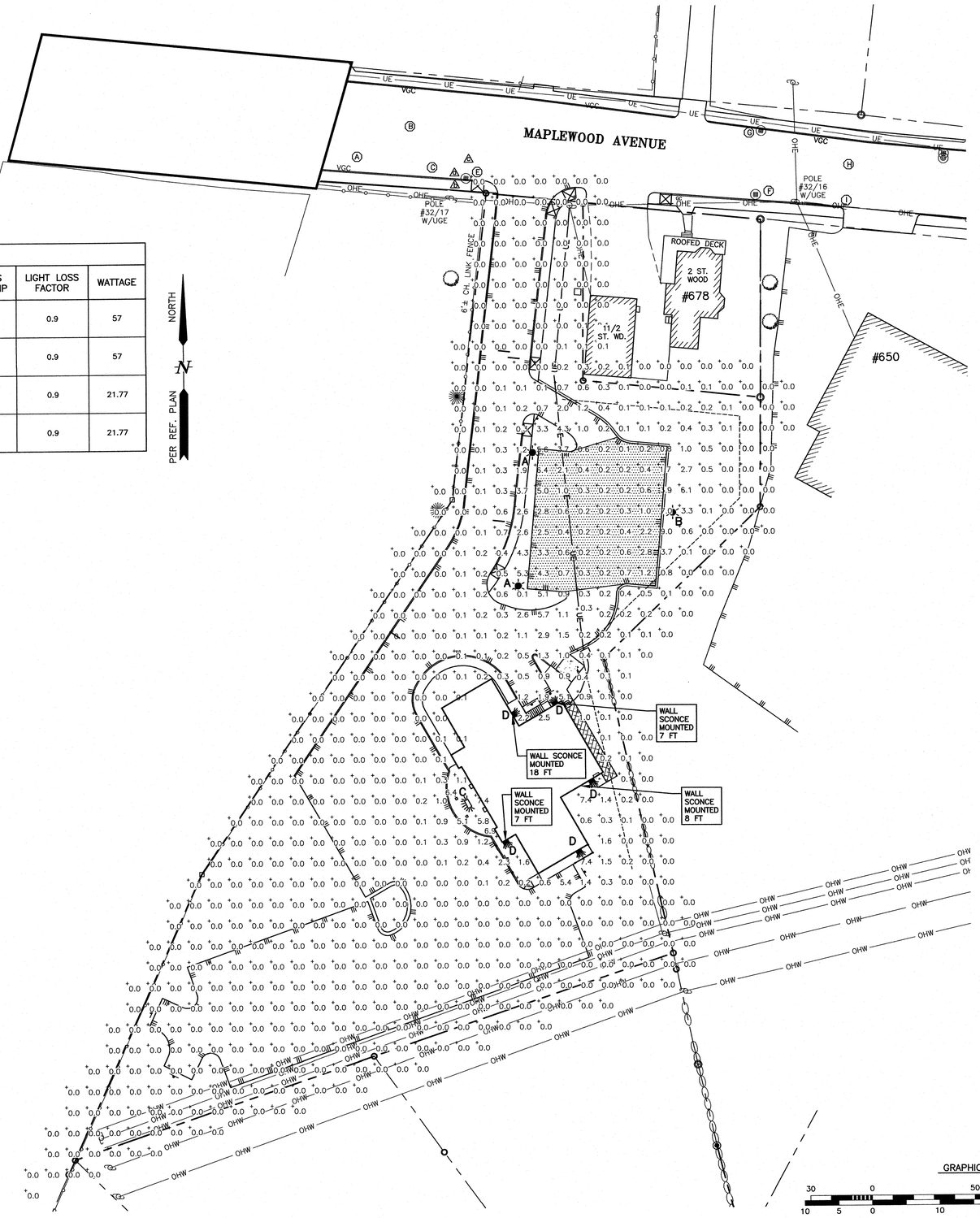
6) LIGHTING PLAN PREPARED USING AGI32 SOFTWARE. LIGHTING DESIGN BASED ON .IES FILES THAT WERE LAB-TESTED OR COMPUTER GENERATED. ACTUAL RESULTS MAY VARY DEPENDING ON FIELD CONDITIONS, AREA GEOMETRY OR CHANGES IN ELECTRICAL SUPPLY VOLTAGE.

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

8.) LIGHTING SHALL HAVE CUT-OFF FEATURES TO SHIELD LIGHT GLARE ONTO THE 678 MAPLEWOOD PROPERTY.

LIGHT FIXTURE TABLE

POLE	QTY.	CATALOG NUMBER	HEIGHT	LAMP	NUMBER LAMPS	LUMENS PER LAMP	LIGHT LOSS FACTOR	WATTAGE
A	2	PRV_A15-D-UNIV-T3-BZ	14 FT	LED	1	6139	0.9	57
B	1	PRV_A15-D-UNIV-T3-BZ-HSS	12 FT	LED	1	5681	0.9	57
C	1	OLWX1-LED-20W-40K-DDB_1	10 FT	LED	1	1841	0.9	21.77
D	5	OLWX1-LED-20W-40K-DDB	SEE PLAN FOR MOUNTING HEIGHTS	LED	1	1841	0.9	21.77



APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN _____ DATE _____

PORTSMOUTH
MAPLE MASJID
686 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
	REVISIONS	
4	ADDED LIGHT TO 1ST FL EGRESS	4/11/19
3	ADDED LIGHT TO PAD IN BACK	4/3/19
2	REVISED POLES AND TABLE	1/22/19
1	REVISED LIGHTS ON POLES & NOTE #8	11/19/18
0	ISSUED FOR COMMENT	10/15/18

STATE OF NEW HAMPSHIRE · JOHN R. CHAGNON No. 7947 LICENSED PROFESSIONAL ENGINEER

SCALE: 1" = 30' MAY 2018

LIGHTING PLAN LT

2360

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 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. THE USE OF HAYBALES IS NOT ALLOWED.

CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE.

PERFORM DEMOLITION.

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

BULLDOZE TOPSOIL INTO STOCKPILES, AND CIRCLE WITH SILT FENCING OR SILTSOXX. IF EROSION IS EXCESSIVE, THEN COVER WITH MULCH.

CONSTRUCT FILTRATION BASINS AND OUTLET, BUT DO NOT ALLOW INFLOW UNTIL ALL CONTRIBUTING AREAS ARE STABILIZED AND EROSION-FREE. ROUGH GRADE SITE. REMOVE AND CRUSH LEDGE. THEN BACKFILL WITH ONSITE SOILS OR GRAVEL IN 12" LIFTS, TYP. ROUGH GRADE SITE, IN LANDSCAPED AREAS OUT OF THE WAY OF SUBSEQUENT CONSTRUCTION ACTIVITY, INSTALL TOPSOIL, MULCH, SEED AND FERTILIZER. STABILIZE STEEPER SLOPES PER DETAILS.

CONSTRUCT FOUNDATIONS.

CONSTRUCT WALLS.

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

CONSTRUCT BUILDING FRAMES.

FINISH GRADE SITE, BACKFILL DRIVEWAY & PARKING SUBBASE GRAVEL IN TWO, COMPACTED LIFTS. PROVIDE TEMPORARY EROSION PROTECTION TO DITCHES AND SWALES IN THE FORM OF MULCHING, JUTE MESH OR DITCH DAMS.

BUILDING EXTERIOR WORK: LIGHT FIXTURES

INSTALL EXTERIOR LIGHT POLE BASES, AND MAKE FINAL CONNECTIONS TO CONDUIT.

ALL PERMANENT FILTRATION BASINS, DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.

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.

LOT DISTURBANCE, OTHER THAN THAT SHOWN ON THE APPROVED PLANS, SHALL NOT COMMENCE UNTIL AFTER THE ROADWAY HAS THE BASE COURSE TO DESIGN ELEVATION AND THE ASSOCIATED DRAINAGE IS COMPLETE AND STABLE.

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.

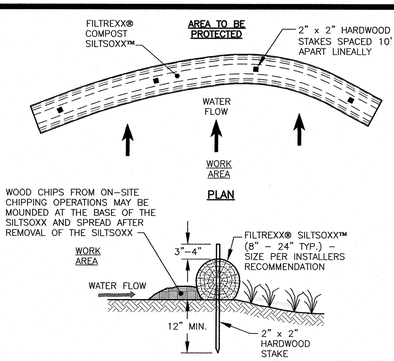
SILT FENCING AND SILTSOXX SHALL BE REMOVED ONCE VEGETATION IS ESTABLISHED, AND DISTURBED AREAS RESULTING FROM SILT FENCE AND SILTSOXX REMOVAL SHALL BE PERMANENTLY SEEDED.

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.

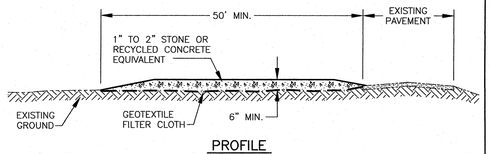
ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

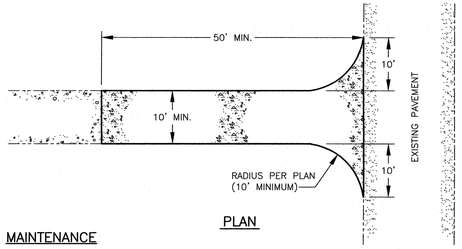
AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.



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 / C4 FILTREXX® SILTSOXX™ FILTRATION SYSTEM
AS NEEDED — NTS





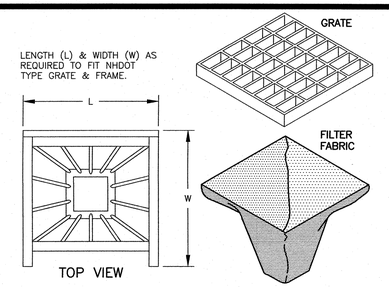
MAINTENANCE

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

B / C4 STABILIZED CONSTRUCTION ENTRANCE
AS NEEDED — NTS



1) INLET BASKETS SHALL BE INSTALLED IMMEDIATELY AFTER CATCH BASIN CONSTRUCTION IS COMPLETE AND SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL PAVEMENT BINDER COURSE IS COMPLETE.

2) FILTER FABRIC SHALL BE PUSHED DOWN AND FORMED TO THE SHAPE OF THE BASKET. THE SHEET OF FABRIC SHALL BE LARGE ENOUGH TO BE SUPPORTED BY THE BASKET FRAME WHEN HOLDING SEDIMENT AND, SHALL EXTEND AT LEAST 6" PAST THE FRAME. THE INLET GRATE SHALL BE PLACED OVER THE BASKET/FRAME AND WILL SERVE AS THE FABRIC ANCHOR.

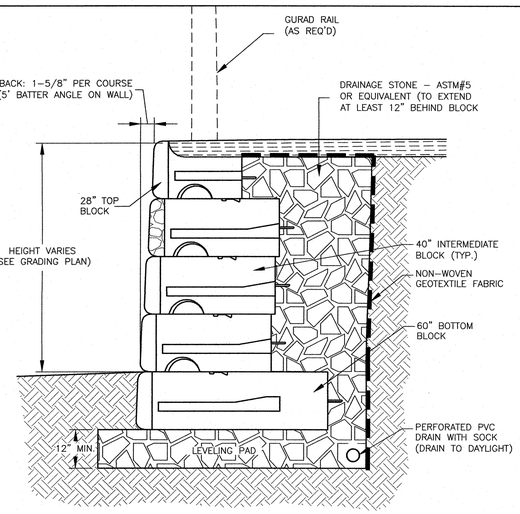
3) THE FILTER FABRIC SHALL BE A GEOTEXTILE FABRIC; POLYESTER, POLYPROPYLENE, STABILIZED NYLON, POLYETHYLENE, OR POLYVINYLIDENE CHLORIDE MEETING THE FOLLOWING SPECIFICATIONS.
- -RAB STRENGTH: 45 LB. MIN. IN ANY PRINCIPAL DIRECTION (ASTM D1682)
- -MULLEN BURST STRENGTH: MIN. 60 psi (ASTM D774)

4) THE FABRIC SHALL HAVE AN OPENING NO GREATER THAN A NUMBER 20 U.S. STANDARD SIEVE AND A MINIMUM PERMEABILITY OF 120 gpm/s.f. (MULTIPLY THE PERMITTIVITY IN SEC.-1 FROM ASTM 54491-85 CONSTANT HEAD TEST USING THE CONVERSION FACTOR OF 74.)

5) THE INLET BASKET SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL OR DAILY DURING EXTENDED PERIODS OF PRECIPITATION. REPAIRS SHALL BE MADE IMMEDIATELY, AS NECESSARY, TO PREVENT PARTICLES FROM REACHING THE DRAINAGE SYSTEM AND/OR CAUSING SURFACE FLOODING.

6) SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT, OR MORE OFTEN IF THE FABRIC BECOMES CLOGGED.

C / C4 CATCH BASIN INLET BASKET — NTS



NOTE:
FINAL STAMPED WALL DESIGN PLANS SHALL BE SUBMITTED TO THE CITY FOR APPROVAL BEFORE CONSTRUCTION. THE DESIGN SHALL ACCOUNT FOR HYDROSTATIC WALL PRESSURE.

D / C2 BLOCK GRAVITY WALL DETAIL
28" REDI ROCK WALL (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) 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.

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

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

PORTSMOUTH
MAPLE MASJID
686 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	DETAIL D	11/19/18
0	ISSUED FOR COMMENT	10/15/18

REVISIONS

JOHN R. CRIGNON NO. 7851 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

SCALE AS NOTED — MAY 2018

EROSION CONTROL NOTES & DETAILS

D1

LANDSCAPE SCHEDULE

Quantity	Botanical Name	Common Name	Size
1	Acer palmatum (Palmatum Group) 'Bloodgood'	BLOODGOOD JAPANESE MAPLE	7-8'
2	Acer rubrum 'Franksred (Red Sunset®)'	FRANKSRED (RED SUNSET®) RED MAPLE	2.5-3" cal
12	Betula nigra 'Cully (Heritage®)'	CULLY (HERITAGE®) RIVER BIRCH	10-12'
18	Calamagrostis x acutiflora 'Karl Foerster'	KARL FOERSTER FEATHER REED GRASS	2gal
1	Cornus florida 'Cherokee Princess'	CHEROKEE PRINCESS FLOWERING DOGWOOD	2.5-3" cal
3	Echinacea purpurea 'Kim's Knee High'	KIM'S KNEE HIGH PURPLE CONEFLOWER	1gal
7	Hemerocallis 'Happy Returns'	HAPPY RETURNS DAYLILY	1gal
6	Hosta 'Sum & Substance'	SUM & SUBSTANCE HOSTA	1gal
5	Hydrangea macrophylla 'Bailmer(Endless Summer®)'	BAILMER(ENDLESS SUMMER®) BIGLEAF HYDRANGEA	3gal
3	Hydrangea paniculata 'ILVOBO' pp#22,792, cpr#4916 (Proven Winners)	BOBO® HARDY HYDRANGEA (Proven Winners)	3gal
3	Hydrangea quercifolia 'Brother Edward' pp#25,413, cpraf (Proven Winners)	GATSBY MOON™ OAKLEAF HYDRANGEA (Proven Winners)	3gal
9	Ilex crenata 'Helleri'	HELLERI JAPANESE HOLLY	5gal
4	Ilex x meserveae 'Blue Princess®'	BLUE PRINCESS® MESERVE HOLLY	4-5
3	Malus x 'Prairifire'	PRAIRIFIRE FLOWERING CRABAPPLE	2.5-3" cal
8	Microbiota decussata	SIBERIAN CYPRESS	2gal
11	Nepeta x faassenii 'Walker's Low'	WALKER'S LOW CATMINT	1gal
10	Pennisetum alopecuroides 'Hamelin'	HAMELIN CHINESE FOUNTAIN GRASS	2gal
6	Picea abies	NORWAY SPRUCE	7-8'
2	Picea omorika	SERBIAN SPRUCE	7-8'
3	Picea pungens 'Fat Albert'	FAT ALBERT COLORADO SPRUCE	7-8'
6	Pieris japonica 'Mt. Fire'	MT. FIRE JAPANESE PIERIS	5gal
9	Rhododendron (subgenus Rhododendron) 'PJM'	PJM RHODODENDRON	5gal
3	Rhododendron degronianum ssp. yakushimanum 'Yaku Princess'	YAKU PRINCESS RHODODENDRON	5gal
6	Rosa 'Radrazz (Knock Out®)'	RADRAZZ (KNOCK OUT®) ROSE	3gal
5	Salvia nemorosa 'Mainacht (May Night)'	MAINACHT (MAY NIGHT) MEADOW SAGE	1gal
9	Syringa reticulata 'Ivory Silk'	IVORY SILK JAPANESE TREE LILAC	2.5-3" cal
9	Thuja occidentalis 'Nigra'	NIGRA AMERICAN ARBORVITAE	7-8'
3	Viburnum plicatum f. tomentosum 'Mariesii'	MARIESII DOUBLEFILE VIBURNUM	3-4'

APPROVAL NOTES:

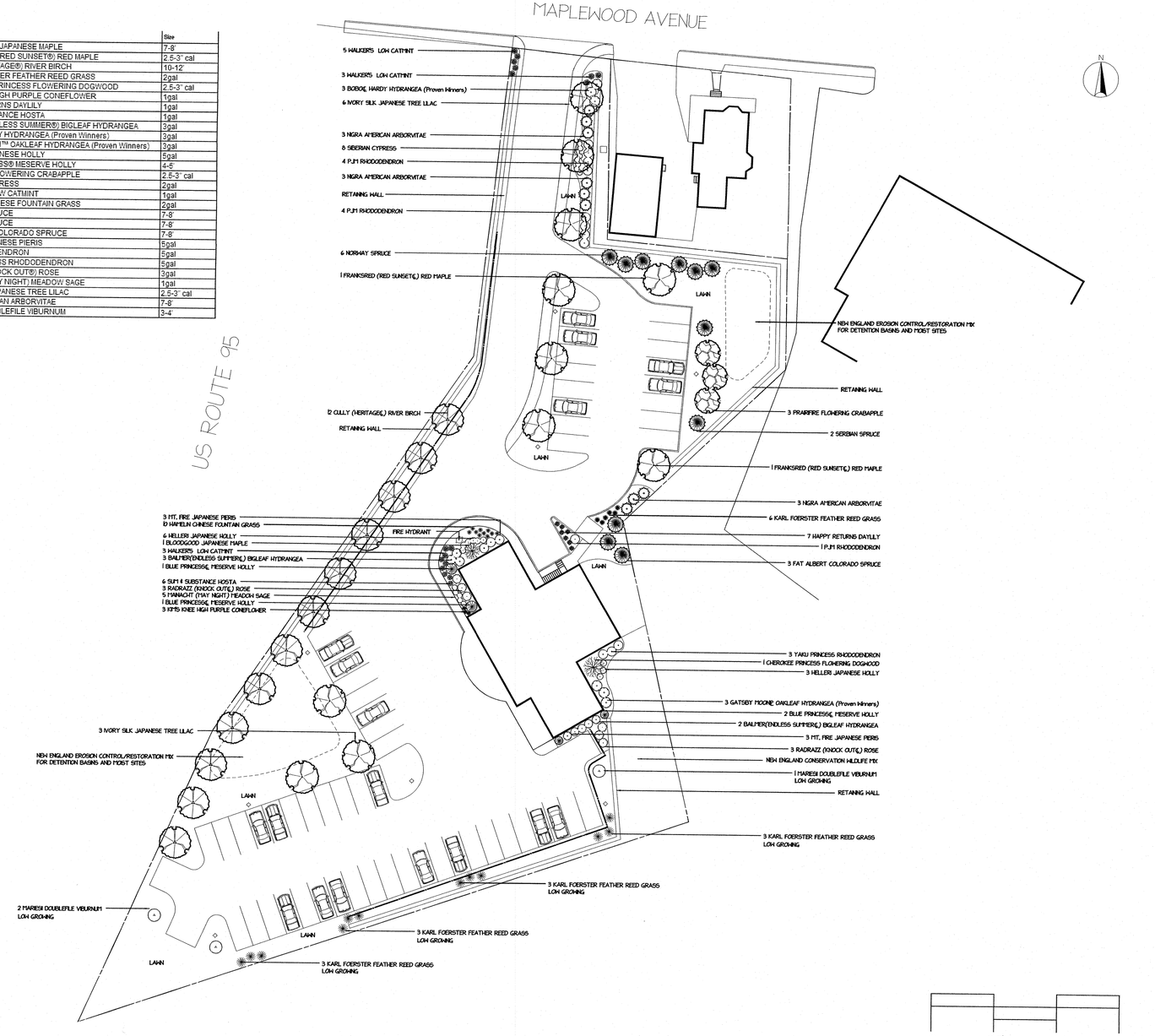
1) THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.

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 OWNER OF RECORD AND SUBSEQUENTLY THE CONDOMINIUM UNIT ASSOCIATION 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.



0 30' 60' 90'

SCALE: 1" = 30'

NOTES

BASE PLANS PROVIDED ELECTRONICALLY BY ENGINEER OF RECORD:

AMBIT ENGINEERING
SHEET C4 DATED: 9/17/18

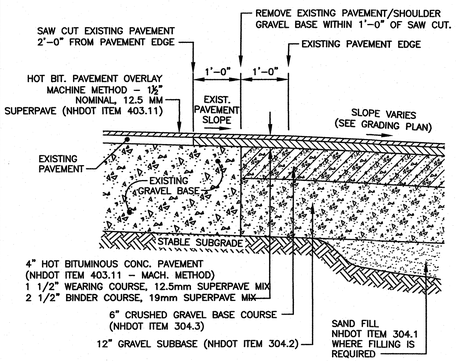
No.	Date	Description
		10/10/18
		REV 11/20/18
REVISIONS		

MAPLE MASJID
686 MAPLEWOOD AVE
PORTSMOUTH, NH

LANDSCAPE PLAN

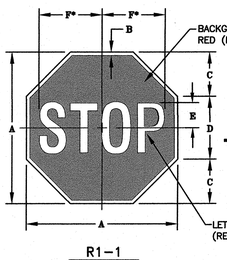
KRIS ROMANIAK
LANDSCAPE DESIGN
20 BRADFORD ST DERRY, NH 03038
617-756-2129

SCALE: 1" =30'	PROJECT NO.
DRAWN BY: KRIS ROMANIAK	
CHECKED BY: KR	SHEET NO. L-1
DATE: 8-9-18	
DATE OF PRINT: 8-9-18	



E / C1 FULL DEPTH PAVEMENT SECTION AND PAVEMENT JOINT DETAIL

NTS



SIGN	DIMENSIONS (Inches)				
	A	B	C	D	E
BICYCLE	18	⅜	6	6C	7¾
MINIMUM	24	⅝	8	8C	10
STD.	30	¾	10	10C	12½
EXPWY.	36	⅞	12	12C	15
SPECIAL	48	1¼	16	16C	20

*REDUCE SPACING 40%

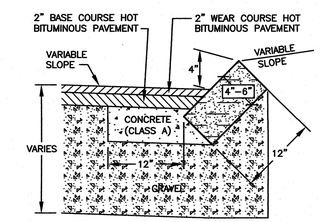
R1–1
A" x A"

F / C2 STOP SIGN DETAIL

NTS

G / C2 SIGN & POST DETAIL

NTS

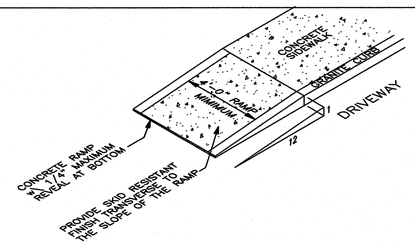


MIN. LENGTH OF STRAIGHT CURB STONES: 18"
MAX. LENGTH OF STRAIGHT CURB STONES: 8FT
MAX. LENGTH OF STRAIGHT CURB STONES LAID ON CURVE: SEE CHART

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

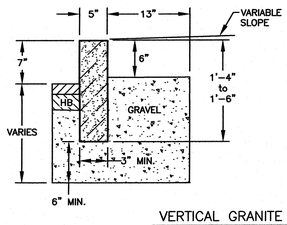
H / C2 SLOPED GRANITE CURBING DETAILS

NTS



I / C2 TYPICAL SIDEWALK TIP DOWN

NTS

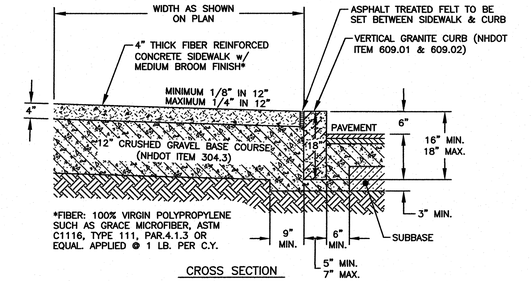


MIN. LENGTH OF CURB STONES: 3FT.
MAX. LENGTH OF CURB STONES: 10FT.
MAX. LENGTH OF STRAIGHT CURB STONES LAID ON CURVE: SEE CHART

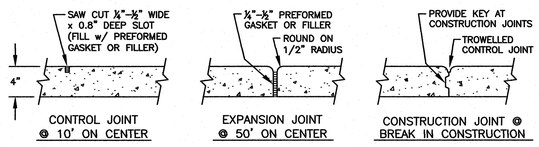
NOTE: ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATE LENGTH.

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

VERTICAL GRANITE CURB

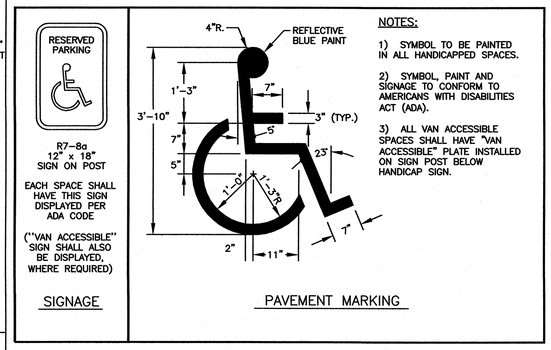


CROSS SECTION



J / C2 PORTLAND CEMENT CONCRETE SIDEWALK (WITH VERTICAL GRANITE CURB)

NTS

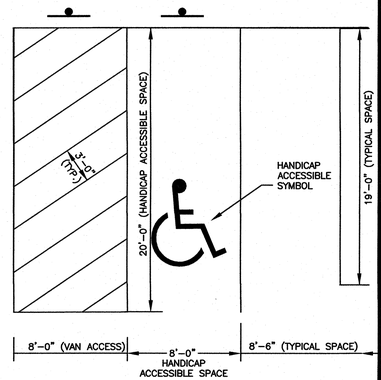


NOTES:

1) SYMBOL TO BE PAINTED IN ALL HANDICAPPED SPACES.

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

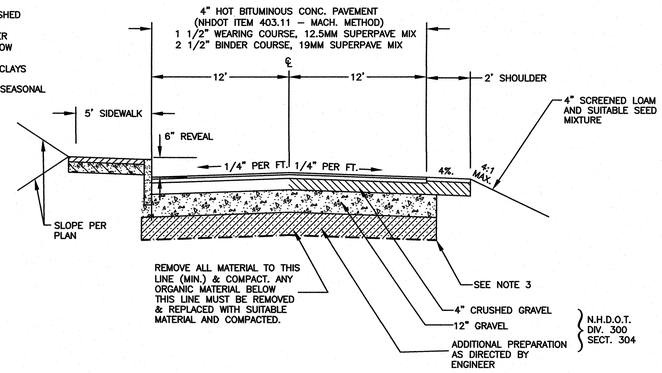
3) ALL VAN ACCESSIBLE SPACES SHALL HAVE "VAN ACCESSIBLE" PLATE INSTALLED ON SIGN POST BELOW HANDICAP SIGN.



K / C2 HANDICAP STALL & HANDICAP SYMBOL

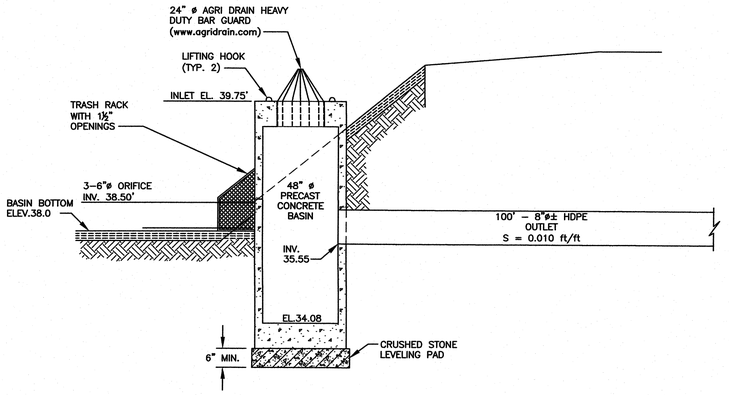
NTS

NOTES:
1) REMOVE LEDGE TO 18" BELOW FINISHED SURFACE.
2) REMOVE CLAY, LOAM AND ANY OTHER UNSUITABLE MATERIALS TO 20" BELOW FINISHED SURFACE.
3) INSTALL GEOTEXTILE FABRIC ABOVE CLAYS AND SILTS OR IN AREAS WHERE EXCAVATION IS BELOW THE SEASONAL HIGH WATER TABLE.



L / C2 TYPICAL DRIVEWAY SECTION

NTS



KK / C4 OUTLET CONTROL STRUCTURE DETAIL BASIN PS1b

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:

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

PORTSMOUTH
MAPLE MASJID
686 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
2	ADDED DETAIL KK	3/19/19
1	REVISED DETAIL L WITH SIDEWALK	11/19/18
0	ISSUED FOR COMMENT	10/15/18

REVISIONS

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

SCALE AS NOTED — MAY 2018

DETAILS

D2

2360

J:\JOBS2\JN2300s\JN 2360\2017 Site Plan\Plans & Specs\Site\2360DT01.dwg, D2 DETAILS

HORIZONTAL ANCHOR DIMENSIONS FOR PIPE INSTALLATION IN ROCK

UP TO 150 P.S.I. WORKING PRESSURE

PIPE SIZE	TEE OR TAP SLEEVE		90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND	
	H	L	H	L	H	L	H	L	H	L
* 4"	0'-9"	1'-0"	0'-9"	1'-0"	0'-9"	1'-0"	0'-9"	1'-0"	0'-9"	1'-0"
6"	0'-9"	1'-0"	0'-9"	1'-0"	0'-9"	1'-0"	0'-9"	1'-0"	0'-9"	1'-0"
8"	1'-2"	1'-2"	1'-2"	1'-2"	1'-0"	1'-0"	0'-9"	1'-0"	0'-9"	1'-0"
10"	1'-4"	1'-4"	1'-4"	1'-4"	1'-0"	1'-0"	0'-9"	1'-0"	0'-9"	1'-0"
12"	1'-8"	1'-8"	1'-8"	1'-8"	1'-3"	1'-3"	1'-0"	1'-0"	0'-9"	1'-0"

* – FOR 3" AND SMALLER PIPES

HORIZONTAL ANCHOR DIMENSIONS FOR AVERAGE SOIL CONDITIONS

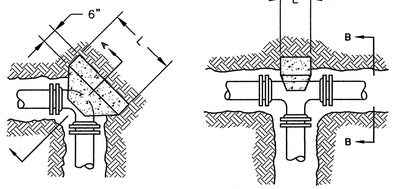
UP TO 150 P.S.I. WORKING PRESSURE

PIPE SIZE	TEE OR TAP SLEEVE		90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND	
	H	L	H	L	H	L	H	L	H	L
* 4"	1'-0"	2'-0"	1'-0"	2'-0"	1'-0"	1'-4"	0'-9"	1'-0"	0'-6"	1'-0"
6"	1'-0"	2'-0"	1'-0"	2'-0"	1'-0"	1'-4"	0'-9"	1'-0"	0'-6"	1'-0"
8"	1'-4"	2'-8"	1'-4"	2'-8"	1'-4"	1'-6"	1'-0"	1'-0"	0'-9"	1'-0"
10"	1'-8"	3'-4"	1'-8"	3'-4"	1'-8"	2'-0"	1'-3"	1'-3"	1'-0"	1'-0"
12"	2'-0"	4'-0"	2'-0"	4'-0"	2'-0"	2'-2"	1'-6"	1'-6"	1'-3"	1'-3"

* – FOR 3" AND SMALLER PIPES

NOTES:
1) TABLES ARE BASED ON AN ALLOWABLE SOIL PRESSURE OF 3000 PSF ON UNDISTURBED EARTH BEHIND THE ANCHOR BLOCK. WHERE SOIL HAS BEEN DISTURBED BY ADJACENT EXCAVATIONS OR WHERE SOIL CANNOT WITHSTAND SUCH A PRESSURE, THE TABLE DOES NOT APPLY.

2) WHERE ENTIRE DEPTH OF PIPE IS BELOW THE TOP SURFACE OF SOUND ROCK, USE "HORIZONTAL ANCHOR DIMENSIONS FOR PIPE INSTALLATION IN ROCK" TABLE.

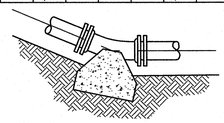


HORIZONTAL ANCHORING

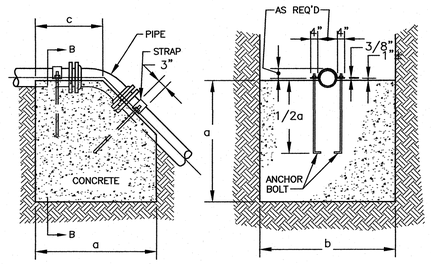
VERTICAL ANCHOR DIMENSIONS

UP TO 150 P.S.I. WORKING PRESSURE

PIPE SIZE	45° BEND				22 1/2° BEND				11 1/4° BEND			
	DIMENSION			ROD DIA.	DIMENSION			ROD DIA.	DIMENSION			ROD DIA.
	a	b	c		a	b	c		a	b	c	
4"	3'-0"	3'-0"	2'-0"	3/4"	2'-6"	2'-3"	1'-8"	3/4"	2'-0"	2'-0"	1'-6"	3/4"
6"	3'-0"	3'-0"	2'-0"	3/4"	2'-6"	2'-3"	1'-6"	3/4"	2'-0"	2'-0"	1'-6"	3/4"
8"	3'-6"	3'-6"	2'-6"	3/4"	3'-0"	3'-0"	1'-9"	3/4"	2'-6"	2'-6"	1'-3"	3/4"
10"	4'-3"	4'-0"	3'-0"	3/4"	3'-6"	3'-3"	2'-0"	3/4"	2'-9"	2'-9"	1'-6"	3/4"
12"	4'-9"	4'-6"	3'-3"	3/4"	4'-0"	3'-9"	2'-6"	3/4"	3'-3"	3'-3"	1'-9"	3/4"

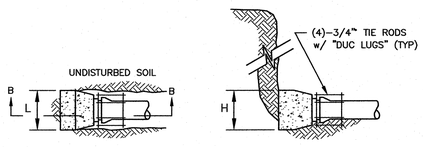


USE SAME DIMENSIONS AS FOR HORIZONTAL BEND ANCHORS



VERTICAL BEND

ALL EXPOSED PORTIONS OF ANCHOR STRAPS TO RECEIVE TWO FIELD COATS (MIN.) OF BITUMASTIC MATERIAL

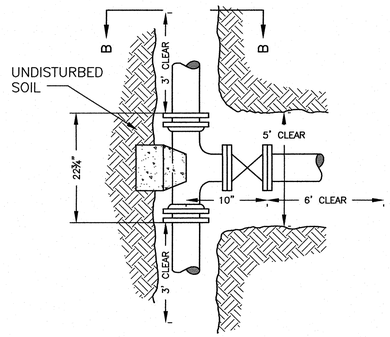


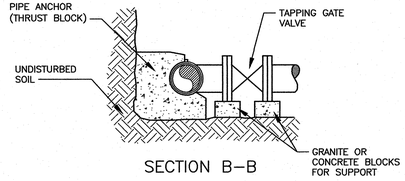
RESTRAINED PLUG OR CAP

NOTE: SEE CHART "HORIZONTAL ANCHOR DIMENSIONS" TIE RODS TO BE PROVIDED IN LIEU OF THRUST BLOCK

VERTICAL ANCHORING

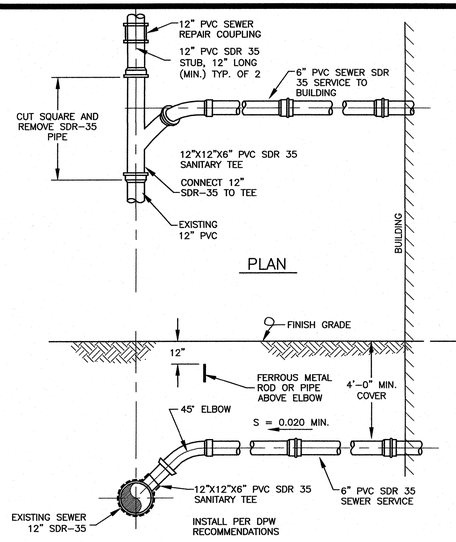
M / C3 PRESSURE PIPE ANCHORING DETAILS
INSTALL PER PORTSMOUTH REQUIREMENTS NTS



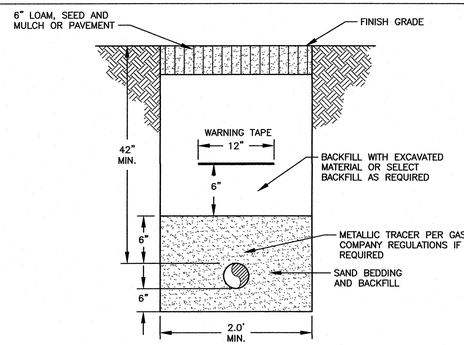


NOTES:
1) ALL MATERIALS SHALL BE APPROVED BY THE PORTSMOUTH WATER DEPARTMENT PRIOR TO INSTALLATION AND USE.
2) ALL JOINTS SHALL BE MECHANICAL.
3) "CLEAR" DIMENSIONS SHOWN ATE REQUIRED FOR WORKSPACE. NO JOINTS ON PIPE BEING TAPPED WITHIN "CLEAR" AREA.
4) FORD TYPE STAINLESS STEEL TAPPING SADDLES OR APPROVED EQUAL ARE ALSO ACCEPTABLE.

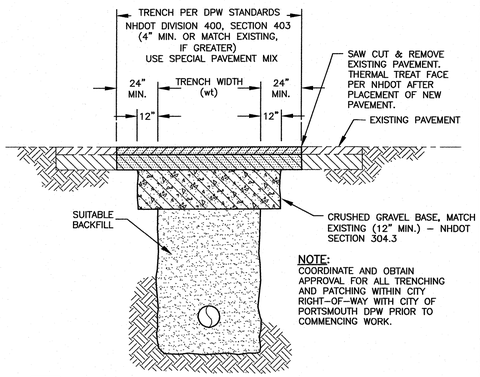
O / C3 TAPPING SLEEVE AND GATE
INSTALL PER PORTSMOUTH REQUIREMENTS NTS



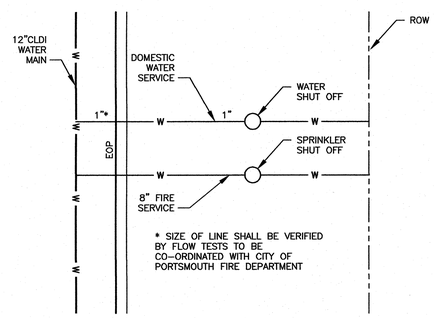
Q / C3 TYPE "A" SEWER SERVICE CONNECTION
NTS

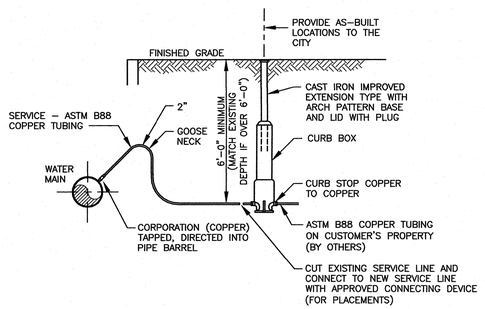


R1 / C3 GAS SERVICE TRENCH
NTS

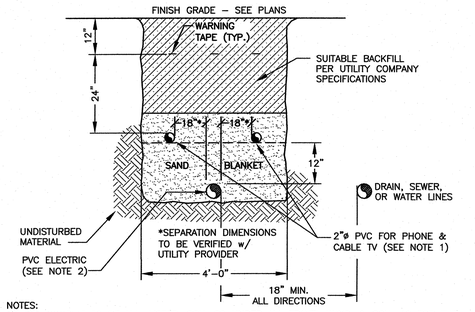


N / C3 TRENCH – PAVEMENT REPLACEMENT
NTS





P / C3 TYPICAL WATER SERVICE CONNECTION
NTS



NOTES:
1) ALL CONDUIT TO BE U.L. LISTED, SCH. 80 UNDER ALL TRAVEL WAYS, & SCH. 40 FOR THE REMAINDER.
2) NORMAL CONDUIT SIZES FOR PSNH ARE 3 INCH FOR SINGLE PHASE PRIMARY AND SECONDARY VOLTAGE CABLES, 4 INCH FOR THREE PHASE SECONDARY, AND 5 INCH FOR THREE PHASE PRIMARY.
3) ALL WORK TO CONFORM TO THE NATIONAL ELECTRICAL CODE (LATEST REVISION)
4) INSTALL A 200# PULL ROPE FOR EACH CONDUIT
5) VERIFY ALL CONDUIT SPECIFICATIONS WITH UTILITY COMPANIES PRIOR TO ANY CONSTRUCTION.

R2 / C3 UTILITY TRENCH
ELECTRIC/PHONE/CABLE 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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4) ALL WATER LINE INSTALLATION WORK SHALL BE TO CITY OF PORTSMOUTH WATER DEPARTMENT STANDARDS. DETAILS MAY OR MAY NOT BE UP–TO–DATE.

PORTSMOUTH
MAPLE MASJID
686 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	REVISED DETAIL Q (NO FERNCO FITTINGS)	11/19/18
0	ISSUED FOR COMMENT	10/15/18

REVISIONS

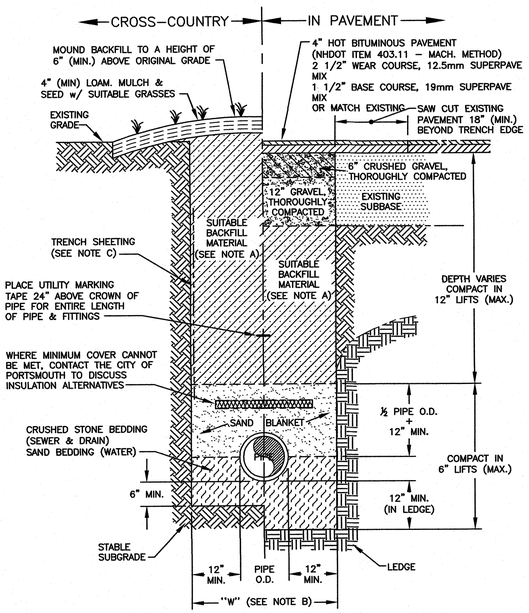
JOHN M. CHAGNON NO. 9851 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

SCALE AS NOTED MAY 2018

DETAILS D3

2360

J:\J0852\JN2360s\JN 2360s\JN 2360\2017 Site Plan\Plans & Specs\Site\2360DT01.dwg, D3 DETAILS



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.

S C4 TYPICAL PIPE TRENCH
NTS

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

FILTRATION BASIN MEDIA

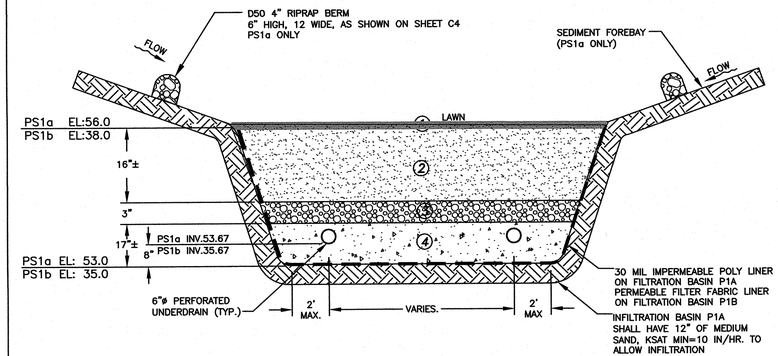
① WET MEADOW SEED MIX

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 C4 UNDERDRAINED FILTRATION BASIN DETAIL
NTS

FILL BELOW FILTERATION BASIN
SOILS: SOILS PLACED BELOW FILTER BASIN SHALL BE BANK RUN GRAVEL, MANUFACTURED SAND OR MODIFIED 304.1 BEDDING THE MATERIAL SHALL BE TESTED FOR HYDRAULIC CONDUCTMITY IN TWO PLACES BY A EITHER BOREHOLE TESTING, DOUBLE RING INFILTROMETER TEST, OR AN AMMOZEMETER IN ACCORDANCE WITH NHDES REGULATIONS ENV–WQ 1500. TO ENSURE THE MIN. KSAT = 10 IN/HR).

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.

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.

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:

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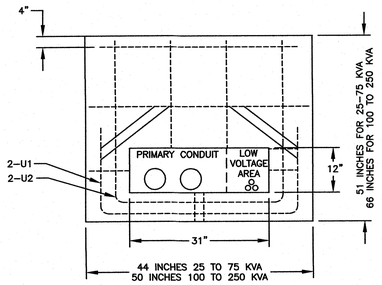
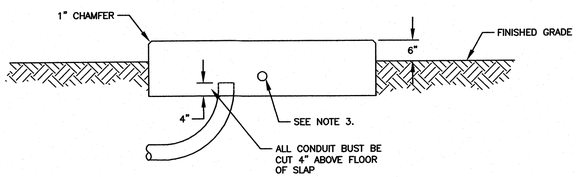
2) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1–888–DIG–SAFE (1–888–344–7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

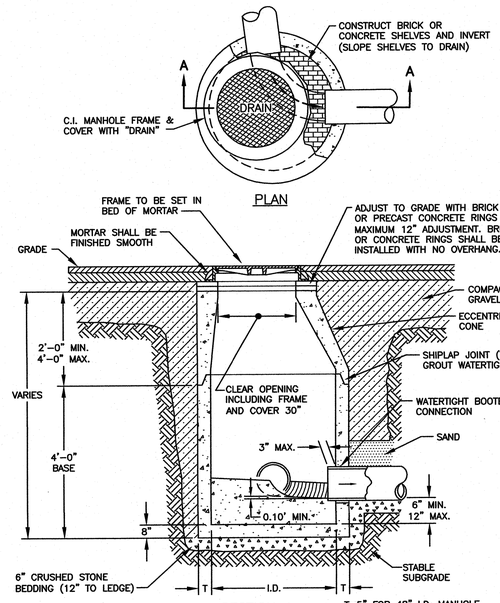
3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).





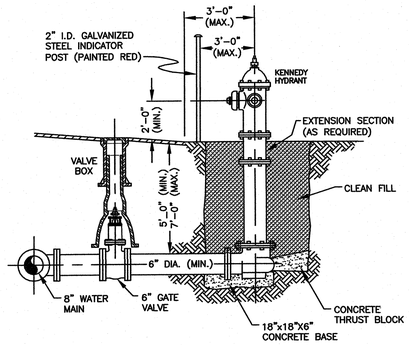
NOTES
1. SEE SHEET "REQUIREMENTS FOR PAD MOUNTED TRANSFORMER SLAB DETAILS", EVERSOURCE SPECIFICATIONS.
2. SEE DTR 56.223 FOR GROUNDING GRID.
3. 1" PVC CONDUIT SLEEVE FOR GROUND GRID LEADS.
4. ALL REBAR TO BE #6.
5. CONDUITS CUT 4" ABOVE SLAB BASE.

T C3 TRANSFORMER FOUNDATION SINGLE PHASE
EVERSOURCE
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 FOOT IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE 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 FOOT.
4. EACH CASTING TO HAVE LIFTING HOLES CAST IN.
5. ALL MANHOLES SHALL BE 48" I.D. UNLESS SPECIFIED OTHERWISE ON THE PLANS.
6. MANHOLE SHALL BE DESIGNED AND CONSTRUCTED TO WITHSTAND H–20 LOADING.

V C4 DRAIN MANHOLE DETAIL
NTS



NOTES:
1. HYDRANTS SHALL BE INSTALLED A MAXIMUM DISTANCE OF 3 FEET CURB LINE TO OPERATING NUT.
2. THE PUMPER OUTLET NOZZLE SHALL FACE THE STREET.
3. CENTERLINE OF NOZZLES SHALL BE A MINIMUM OF 2 FEET 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 INCHES 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 FOOT RADIUS CLEAR AREA ALL AROUND THE OPERATING NUT OF THE HYDRANT.
12. THERE SHALL ALSO BE AN INDICATOR POST FABRICATED FROM 2 INCH INSIDE DIAMETER GALVANIZED STEEL PIPE, 7 FEET ABOVE FINISHED GRADE, AND SET 2 FEET BELOW GRADE IN CLASS "A" CONCRETE CONCRETE 6 INCHES 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 FEET 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 INCHES ABOVE GRADE AND SHALL BE PAINTED ORANGE FOR HIGH VISIBILITY.

W C3 FIRE HYDRANT INSTALLATION DETAIL
CITY OF PORTSMOUTH STANDARDS AS SPECIFIED BY DPW
NTS

PORTSMOUTH
MAPLE MASJID
686 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
3	ADDED KSAT TEST DETAIL U	3/19/19
2	ADDED FIRE HYDRANT DETAIL W	11/19/18
1	ISSUED FOR APPROVAL	10/15/18
0	ISSUED FOR COMMENT	5/8/18

REVISIONS

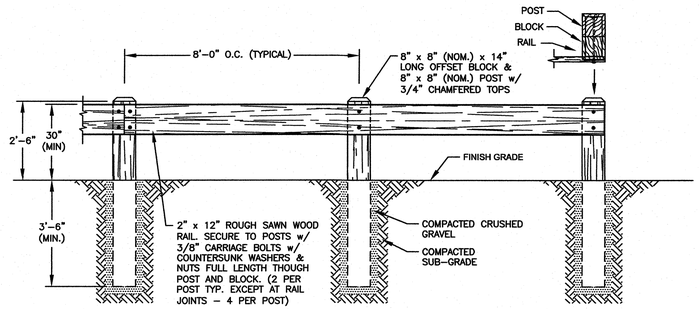
STATE OF NEW HAMPSHIRE – JOHN R. CHAGNON No. 7851 – LICENSED PROFESSIONAL ENGINEER

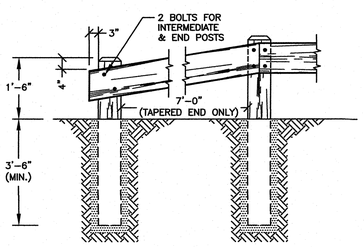
AS NOTED — MAY 2018

DETAILS — D4

2360

J:\JOBS2\JN2300s\JN 2360s\JN 2360\2017 Site Plan\Plans & Specs\Site\2360DT01.dwg, D4 DETAILS





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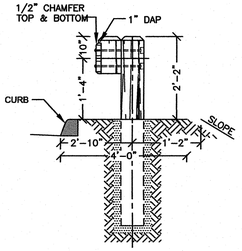
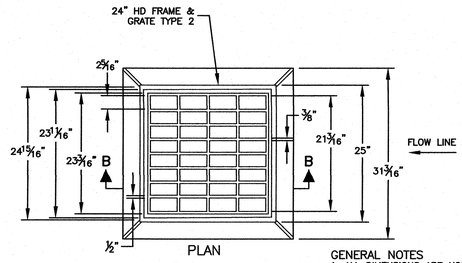


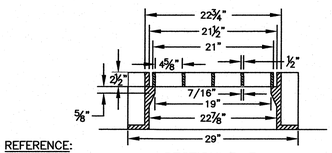
GUARD RAIL BEHIND CURB

NOTE:
1) ALL METAL COMPONENTS SHALL BE HOT DIPPED GALVANIZED AND ALL WOOD SHALL BE PRESSURE TREATED.
2) TYPE OF MATERIALS AND METHOD OF INSTALLATION SHALL BE IN ACCORDANCE WITH N.H.D.O.T. STANDARD SPECIFICATIONS.

X/C2 WOOD BEAM GUARD RAIL DETAIL
NTS



PLAN

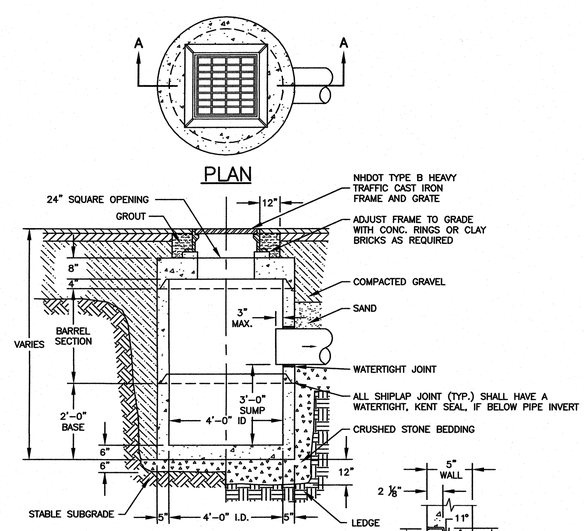


REFERENCE:
NHDOT STANDARD PLAN DR-1 PLATE 2 UPDATED 2015

SECTION B-B

GENERAL NOTES
1. ALL DIMENSIONS ARE NOMINAL.
2. FRAMES USING NARROWER DIMENSIONS FOR THICKNESS ARE ALLOWED PROVIDED:
   A. THE FRAMES MEET OR EXCEED THE SPECIFIED LOAD RATING.
   B. THE INTERIOR PERIMETER (SEAT AREA) DIMENSIONS OF THE FRAMES REMAIN THE SAME TO ALLOW CONTINUED USE OF EXISTING GRATES/COVERS AS THE EXISTING FRAME ALLOW, WITHOUT SHIMS OR OTHER MODIFICATIONS OR ACCOMMODATIONS.
   C. ALL OTHER PERTINENT REQUIREMENTS ARE MET.
3. FRAME AVAILABLE IN 4" OR 8" HEIGHTS.
4. FREE OPEN AREA =2.55 SF
5. USE 3-FLANGE FRAME IS INSTALLED ADJACENT TO GRANITE CURB.

AA/C4 NHDOT GRATE TYPE B
EJPRESCOTT, INC. NTS



SECTION A - A

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.
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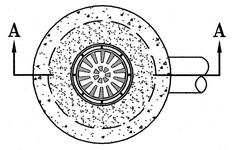
4. EACH CASTING TO HAVE LIFTING HOLES CAST IN.

AA/C4 CATCH BASIN
NTS



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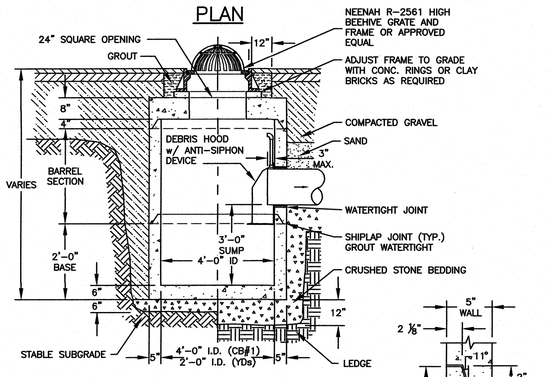

SECTION A - A

NOTES:
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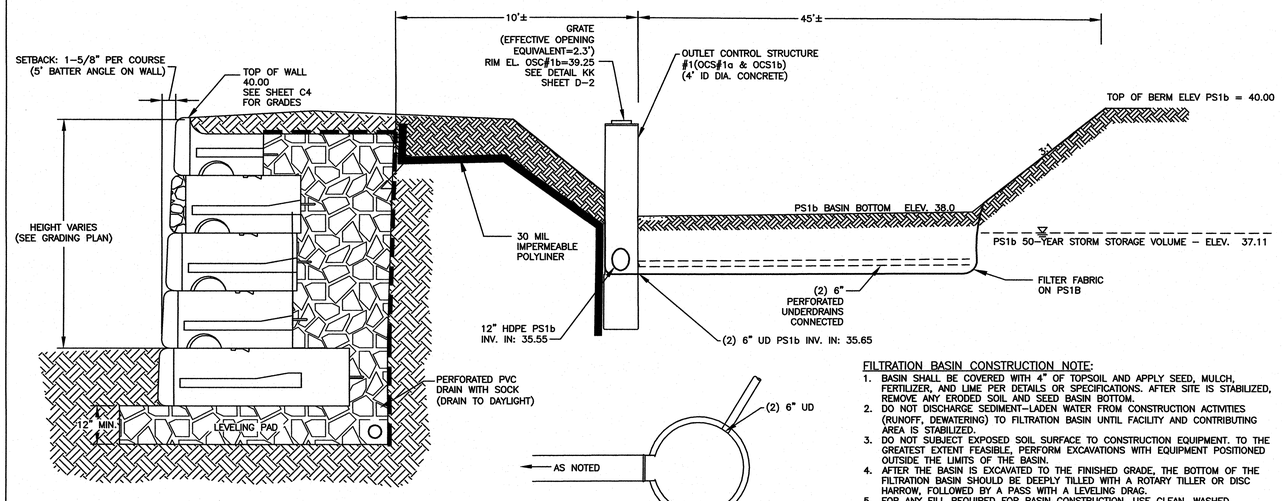
4. EACH CASTING TO HAVE LIFTING HOLES CAST IN.

Y/C4 CATCH BASIN w/ BEEHIVE GRATE
NTS



FILTRATION BASIN CONSTRUCTION NOTE:
1. BASIN SHALL BE COVERED WITH 4" OF TOPSOIL AND APPLY SEED, MULCH, FERTILIZER, AND LIME PER DETAILS OR SPECIFICATIONS. AFTER SITE IS STABILIZED, REMOVE ANY ERODED SOIL AND SEED BASIN BOTTOM.
2. DO NOT DISCHARGE SEDIMENT-LADEN WATER FROM CONSTRUCTION ACTIVITIES (RUNOFF, DEWATERING) TO FILTRATION BASIN UNTIL FACILITY AND CONTRIBUTING AREA IS STABILIZED.
3. DO NOT SUBJECT EXPOSED SOIL SURFACE TO CONSTRUCTION EQUIPMENT. TO THE GREATEST EXTENT FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE BASIN.
4. AFTER THE BASIN IS EXCAVATED TO THE FINISHED GRADE, THE BOTTOM OF THE FILTRATION BASIN SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW, FOLLOWED BY A PASS WITH A LEVELING DRAG.
5. FOR ANY FILL REQUIRED FOR BASIN CONSTRUCTION, USE CLEAN, WASHED, WELL-SORTED AGGREGATE.

STRUCTURE NOTES:
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BB/C4 UNDERDRAINED FILTRATION BASIN DETAIL (GRADING & OUTLET)
PROFILE VIEW NTS

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
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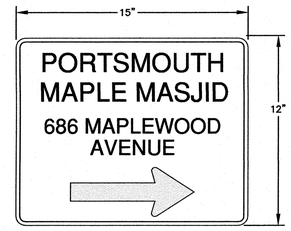


Z/C2 LOCATION SIGN DETAIL
NTS

PORTSMOUTH MAPLE MASJID 686 MAPLEWOOD AVENUE PORTSMOUTH, N.H.

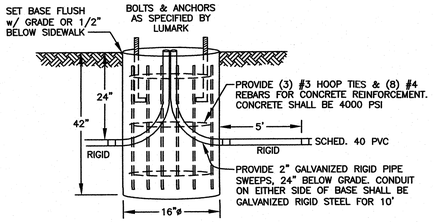
NO.	DESCRIPTION	DATE
	REVISIONS	
4	DETAIL BB	4/2/19
3	DETAIL BB	3/19/19
2	DETAIL BB	2/19/19
1	DETAIL Z	11/19/18
0	ISSUED FOR COMMENTS	10/15/18

AS NOTED MAY 2018

DETAILS D5

2360

J:\JOBS2\JN2300s\JN 2360s\JN 2360\2017 Site Plan\Plans & Specs\Site\2360DT01.dwg, D5 DETAILS

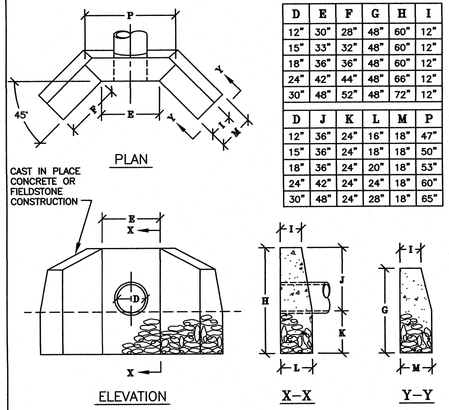


LIGHT POLE BASE DETAIL

NOTES:
1. ELECTRICAL INSTALLATION SHALL BE BY A LICENSED ELECTRICIAN.
2. LIGHTS SHALL BE WIRED IN ACCORDANCE WITH NEC AND CITY OR PORTSMOUTH ORDINANCES
3. AN ELECTRICAL PERMIT IS REQUIRED FOR ALL CONDUIT AND ELECTRICAL WORK.

CC C2 LIGHT POLE BASE DETAILS

NTS

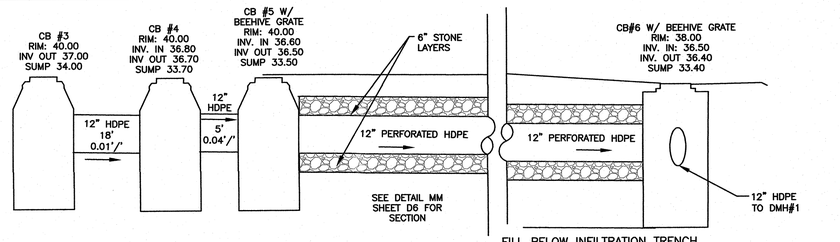


D	E	F	G	H	I
12"	30"	28"	48"	60"	12"
15"	33"	32"	48"	60"	12"
18"	36"	36"	48"	60"	12"
24"	42"	44"	48"	66"	12"
30"	48"	52"	48"	72"	12"

D	J	K	L	M	P
12"	36"	24"	16"	18"	47"
15"	36"	24"	18"	18"	50"
18"	36"	24"	20"	18"	53"
24"	42"	24"	24"	18"	60"
30"	48"	24"	28"	18"	65"

EE C4 HEADWALL DETAIL

NTS

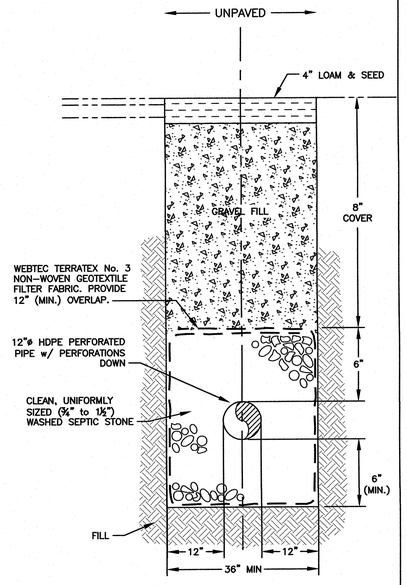


FILL BELOW INFILTRATION TRENCH

SOILS: SOILS PLACED BELOW INFILTRATION TRENCH SHALL BE BANK RUN GRAVEL, MANUFACTURED SAND OR MODIFIED 304.1 BEDDING. THE MATERIAL SHALL BE TESTED FOR HYDRAULIC CONDUCTIVITY IN TWO PLACES BY A EITHER BOREHOLE TESTING, DOUBLE RING INFILTROMETER TEST, OR AN AMMOZEMETER IN ACCORDANCE WITH NHDES REGULATIONS ENV–WQ 1500 TO ENSURE THE MIN. KSAT = 10 IN/HR).

LL C4 INFILTRATION TRENCH DETAIL

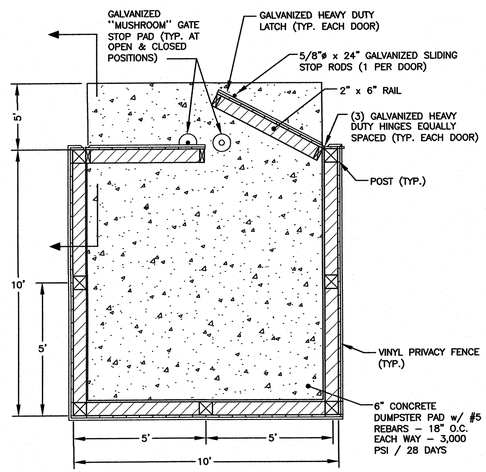
NTS



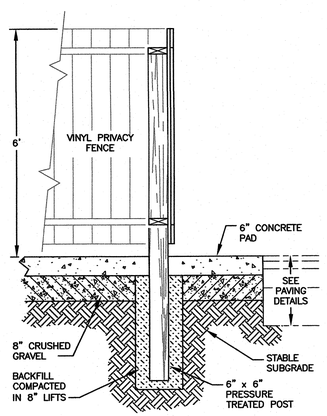
MM C5 INFILTRATION PIPE DETAIL

(BETWEEN CB#5 AND CB #6) NTS

(SEE DETAIL LL FOR PROFILE SHEET D6)



PLAN



SECTION

NOTES:
1) FENCING SHALL BE VINYL PRIVACY FENCE
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.

DD C2 DUMPSTER ENCLOSURE DETAILS

NTS

INSPECTION AND MAINTENANCE PLAN

FOR

MAPLE MAJID SITE REDEVELOPMENT

686 MAPLEWOOD AVENUE, PORTSMOUTH NH

INTRODUCTION

THE INTENT OF THIS IS TO PROVIDE MAPLE MAJID AND THE ISLAMIC SOCIETY OF THE SEACOAST AREA WITH A LIST OF PROCEDURES THAT DOCUMENT THE INSPECTION AND MAINTENANCE REQUIREMENTS OF THE STORMWATER MANAGEMENT SYSTEM FOR THIS DEVELOPMENT. SPECIFICALLY, THE FILTRATION BASINS AND ASSOCIATED STRUCTURES ON THE PROJECT SITE (COLLECTIVELY REFERRED TO 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 MAXIMIZED ITS ABILITY TO REMOVE SEDIMENT AND OTHER CONTAMINANTS FROM THE SITE GENERATED STORMWATER RUNOFF.

ANNUAL REPORT

THE OWNER SHALL PREPARE AN ANNUAL INSPECTION & MAINTENANCE REPORT. THE REPORT SHALL INCLUDE A SUMMER OF THE SYSTEMS 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 BUILDING INSPECTOR.

STORMWATER MANAGEMENT SYSTEM COMPONENTS

THE STORMWATER MANAGEMENT SYSTEM IS DESIGNED TO MITIGATE BOTH THE QUANTITY AND QUALITY OF SITE–GENERATED RUNOFF. AS THE RESULT, THE DESIGN INCLUDES THE FOLLOWING ELEMENTS:

NON–STRUCTUAL 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 OVERS, MISCELLANEOUS LANDSCAPE PLANTINGS, DUST CONTROL, TREE PROTECTION, TOPSOILING, SEDIMENT BARRIERS, AND DURING CONSTRUCTION, A STABILIZED CONSTRUCTION ENTRANCE.

STRUCTURAL BMP'S

STRUCTURAL BMP'S REQUIRE MORE SPECIALIZED PERSONNEL TO INSTALL. EXAMPLES ON THE PROJECT INCLUDE BUT ARE NOT LIMITED TO: STORM DRAINS, THE DETENTION POND, AND ASSOCIATED OUTLET CONTROL STRUCTURES, AND INFILTRATION TRENCH DETAIL.

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 EVEN 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, PROVIDED WEEKLY WATERING OR IRRIGATION DURING THE ESTABLISHMENT PERIOD OF THE FIRST YEAR. MAKE NECESSARY ADJUSTMENTS TO ENSURE LONG–TERM HEALTH OF VEGETATED COVER, I.E. PROVIDE MORE PERMANENT MULCH OR COMPOST OR OTHER MEANS OF PROTECTION.
3. STORM DRAIN OUTLETS AND OUTLET CONTROL STRUCTURES: MONITOR DRAIN INLETS AND OUTLET APRONS FOR EXCESSIVE ACCUMULATION OF SEDIMENTS OR MISSING STONE/RIPRAP. REMOVE SEDIMENTS AS REQUIRED TO MAINTAIN FILTERING CAPABILITIES OF THE STONE. REPLACE MISSING RIPRAP
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 HR STORMS, OR BACK TO BACK 2 YEAR, 24 HOUR STORMS):
   a. MONITOR FOR EXCESSIVE OR CONCENTRATED ACCUMULATIONS OF DEBRIS, OR EXCESSIVE EROSION. REMOVE DEBRIS AS REQUIRED.
   b. 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 DAMAGE PIPES SHOULD BE REPAIRED OR REPLACED AS NECESSARY.
   c. MONITOR SIDE SLOPES OF POND FOR DAMAGES OR EROSION – REPAIR AS NECESSARY.
   d. 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.
   e. 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.
   f. THE OUTLET CONTROL STRUCTURE SHOULD BE INSPECTED ANNUALLY AND AFTER EVERY MAJOR RAINSTORM.
   THE OUTLET CONTROL STRUCTURE HAS WITHIN IT A WIER STRUCTURE WITH VARIOUS SIZE ORIFICES FOR CONTROLLING FLOW OUT OF BASIN. THESE ORIFICES SHOULD BE KEPT CLEAR AND UNCLOGGED. ANY SEDIMENT OR DEBRIS THAT HS BUILT UP INSIDE THE OUTLET CONTROL STRUCTURE SHOULD BE REMOVED WHEN DISCOVERED.
5. POROUS PAVEMENT:
   POROUS PAVEMENT: AFTER PLACEMENT OF THE FINAL SURFACE OF POROUS ASPHALT PAVEMENT, INSPECT THE AREA FOR SIGNS THAT RAINFALL IS FLOWING THROUGH THE SURFACE AND NOT RUNNING OFF OF THE SURFACE. SWEEP AND / OR VACUUM AS NEEDED.
6. 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 WETLAND SCIENTIST WITH EXPERIENCE IN INVASIVE SPEIES 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.

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:

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

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

PORTSMOUTH
MAPLE MASJID
686 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
4	REV. DETAIL EE	4/2/19
3	ADDED DETAIL LL & MM	3/19/19
2	REVISED DETAIL EE, I & M PLAN	2/19/19
1	REVISED DETAIL CC	11/19/18
0	ISSUED FOR COMMENT	10/15/18

REVISIONS

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

AS NOTED — MAY 2018

DETAILS — D6

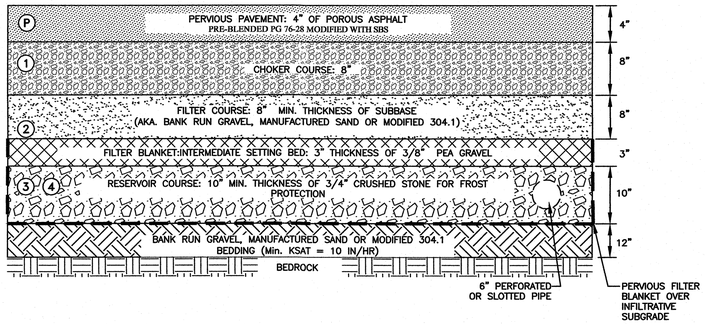
2360

J:\JOBS2\JN2300s\JN 2360s\JN 2360\2017 Site Plan\Plans & Specs\Site\2360DT01.dwg, D6 DETAILS

AASHTO GRADATION TABLE

①		②		③		④	
CHOKER COURSE AASHTO NO. 57/67*		FILTER COURSE (MANUFACTURED SAND/MODIFIED NHDOT 304.1)		RESERVOIR COURSE (AASHTO NO.3)		RESERVOIR COURSE ALTERNATIVE ** (AASHTO NO.5)	
SIEVE SIZE	PASSING BY WEIGHT (%)	SIEVE SIZE	PASSING BY WEIGHT (%)	SIEVE SIZE	PASSING BY WEIGHT (%)	SIEVE SIZE	PASSING BY WEIGHT (%)
1.5" (37.5 mm)	100	6" (150 mm)	100	2.5" (63mm)	100	1.5" (37.5 mm)	100
1" (25 mm)	95–100	No. 4 (4.75mm)	70–100	2" (50mm)	90–100	1" (25 mm)	90–100
1/2" (12.5mm)	10–30	No. 200 (.075mm)	0+6***	1–1/2" (37.5mm)	35–70	3/4" (19 mm)	20–55
No. 4 (4.75mm)	0–10			1" (25 mm)	0–15	1/2" (12.5mm)	0–10
No. 8 (2.36mm)	0–5			1/2" (12.5mm)	0–5	3/8" (9.5 mm)	0–5

* ALTERNATE GRADATIONS (E.G. AASHTO No. 37) MAY BE ACCEPTED UPON ENGINEER'S APPROVAL
** ALTERNATE GRADATIONS (E.G. AASHTO No. 6) MAY BE ACCEPTED UPON ENGINEER'S APPROVAL
*** PREFERABLE LESS THAN 4% FINES

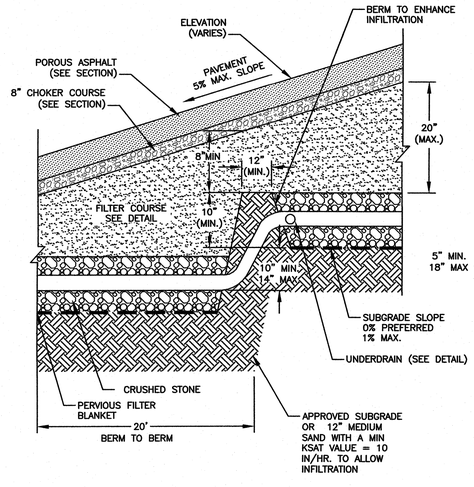


MATERIAL FOR THE CHOKER COURSE AND RESERVOIR COURSE SHALL HAVE THE AASHTO NO.57 AND AASHTO NO.3 GRADATIONS, RESPECTIVELY, AS SPECIFIED IN TABLE. IF THE AASHTO NO.3 GRADATION CANNOT BE MET, AASHTO NO. 5 IS ACCEPTABLE WITH APPROVAL OF THE ENGINEER. AASHTO NO 3 IS ALSO SUITABLE FOR THE CHOKER COURSE.

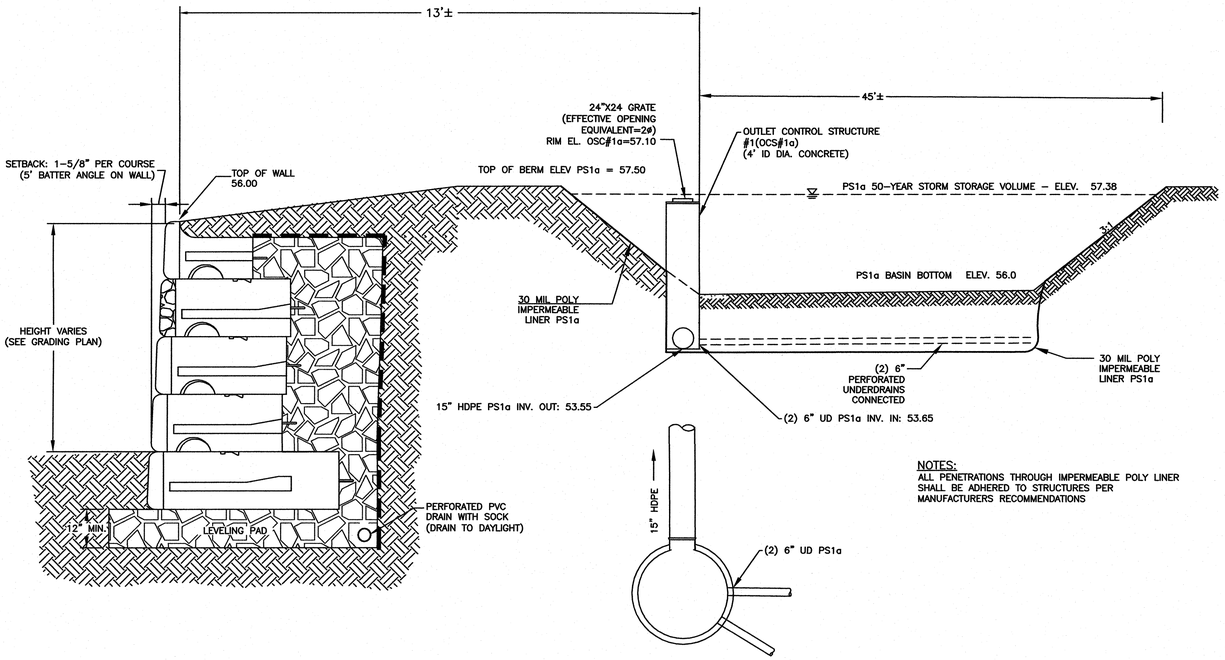
FF / C2 POROUS PAVEMENT SYSTEM DETAILS
WITH IMPERVIOUS LINER — NTS

FILL BELOW POROUS PAVEMENT

SOILS: SOILS PLACED BELOW POROUS PAVEMENT SHALL BE BANK RUN GRAVEL, MANUFACTURED SAND OR MODIFIED 304.1 BEDDING. THE MATERIAL SHALL BE TESTED FOR HYDRAULIC CONDUCTIVITY IN TWO PLACES BY A EITHER BOREHOLE TESTING, DOUBLE RING INFILTROMETER TEST, OR AN AMMOZEMETER IN ACCORDANCE WITH NHDES REGULATIONS ENV-WQ 1500 TO ENSURE THE MIN. KSAT = 10 IN/HR).



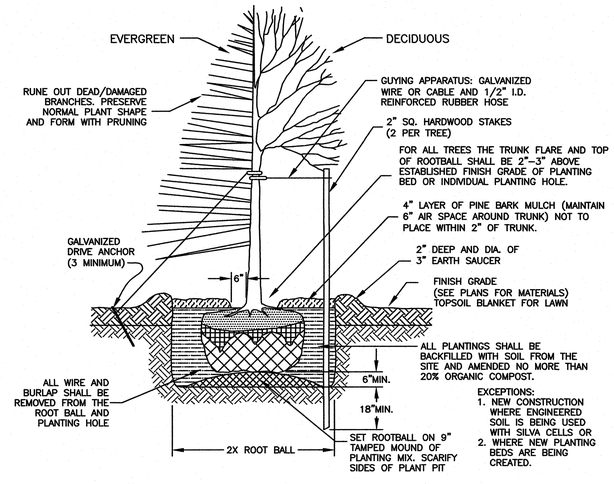
FF / C2 SLOPED POROUS PAVEMENT PROFILE
SLOPED SECTIONS WITH PERVIOUS LINER — NTS



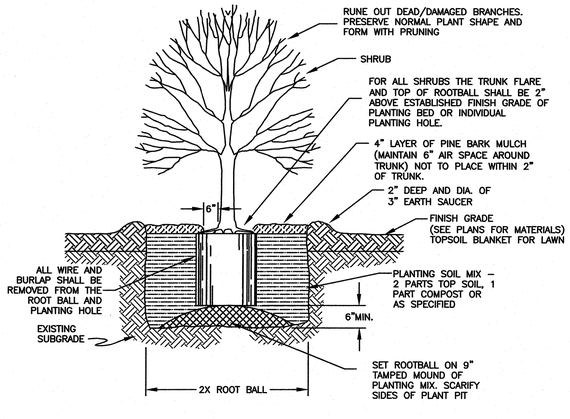
NOTES:
ALL PENETRATIONS THROUGH IMPERMEABLE POLY LINER SHALL BE ADHERED TO STRUCTURES PER MANUFACTURERS RECOMMENDATIONS

HH / C4 WALL SECTION & FILTRATION BASIN PS1a
NTS

NOTE: PROVIDE STAMPED WALL DRAWINGS TO BUILDING INSPECTION DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.



II / L1 TREE PLANTING DETAIL
(TREE PLANTING DETAIL APPLIES TO EVERGREEN AND DECIDUOUS SHRUBS) — NTS



JJ / L1 SHRUB PLANTING DETAIL
(SHRUB PLANTING DETAIL APPLIES TO EVERGREEN AND DECIDUOUS SHRUBS) — NTS

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

NO.	DESCRIPTION	DATE
4	REVISED PLANTING DETAILS II, JJ, FF, HH	3/19/19
3	ADDED PLANTING DETAILS II, JJ	2/28/19
2	REVISED DETAIL HH, EE, FF	2/19/19
1	ISSUED FOR COMMENT	1/22/19

REVISIONS

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

AS NOTED — MAY 2018

DETAILS — D7

2360

J:\JOBS2_JN2300s\JN 2360s\JN 2360\2017 Site Plan\Plans & Specs\Site\2360DT01.dwg, D7 DETAILS

FRONT ELEVATION

1/4"=1'-0"

Reduced Size
Not to Scale

PROJECT:
Maple Masjid of Portsmouth
686 Maplewood Ave., Portsmouth, NH

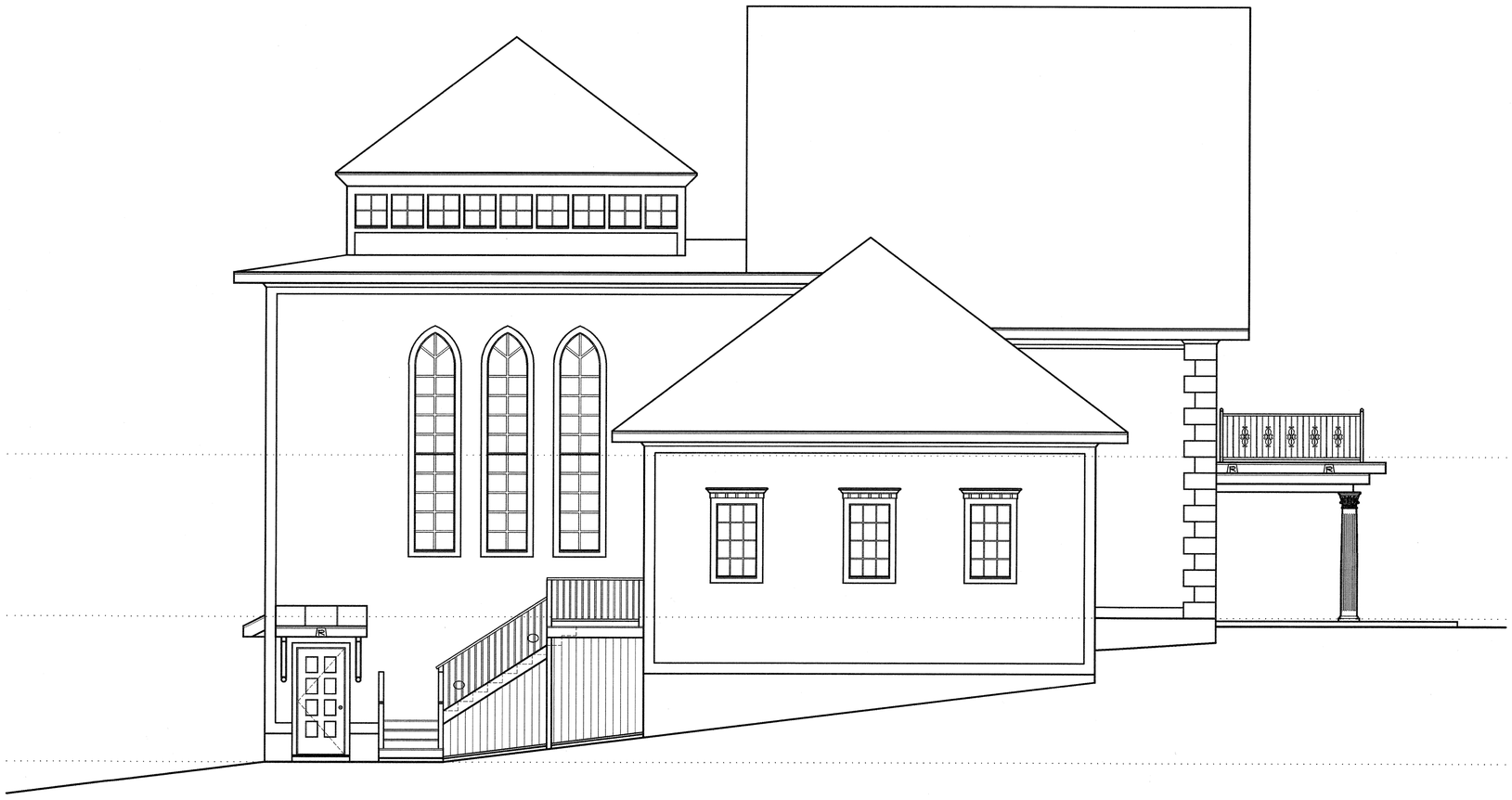
Living Spaces, Inc.
Phone: 603-364-5180
Fax: 603-364-2008
Email: livingspacesllc@comcast.net
1247 Washington Road
Rye NH 03870

DATE: 4-11-19

REVISED:

DWG. NO. 1

C:\LSI\2018\Mosque80



LEFT ELEVATION

¼"=1'-0"

Reduced Size
Not to Scale

PROJECT:
Maple Masjid of Portsmouth
686 Maplewood Ave., Portsmouth, NH

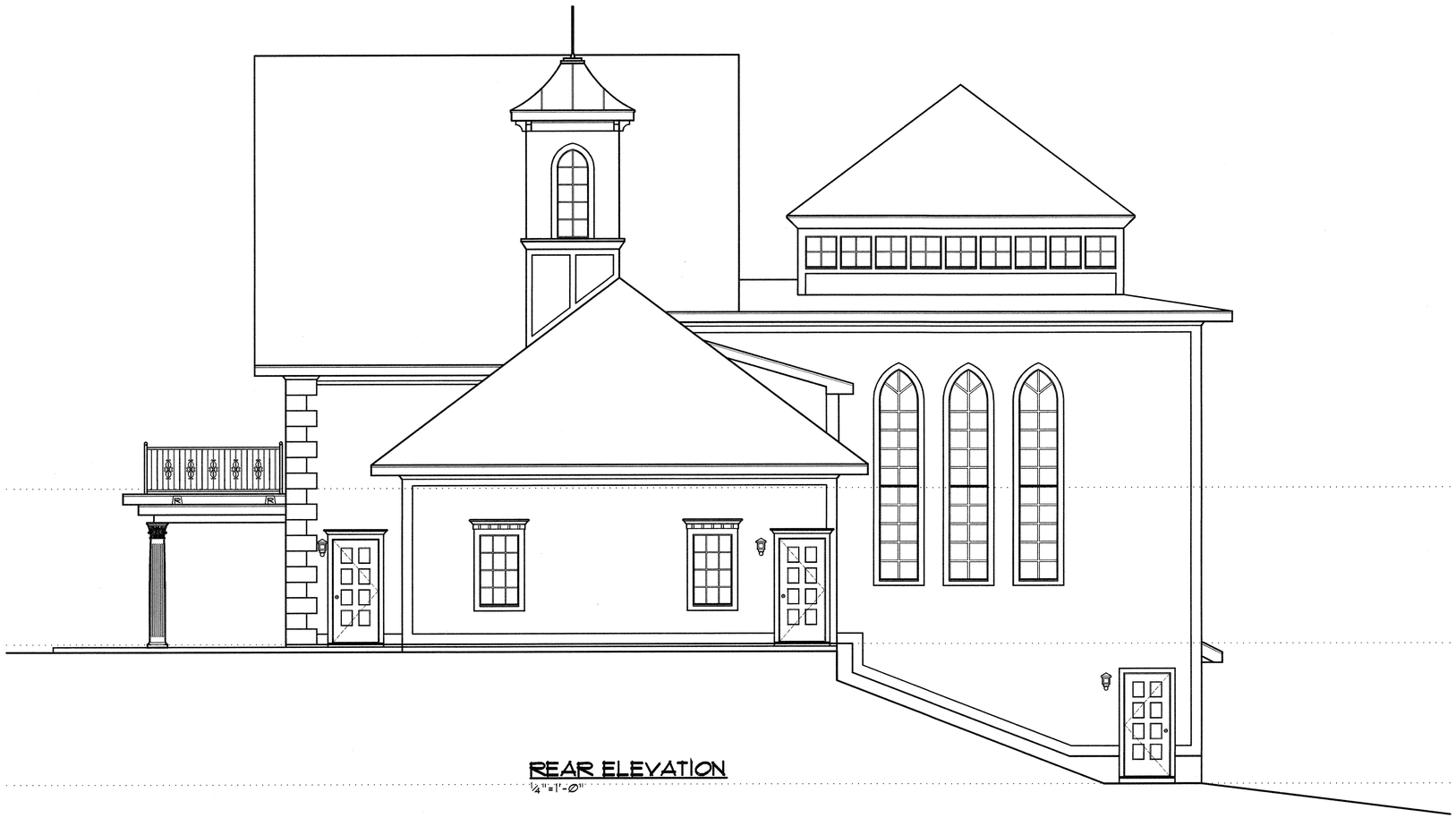
Phone: 603-364-5180
Fax: 603-364-2008
Living Spaces, Inc.
Email: livingspacesllc@comcast.net
1247 Washington Road
Rye NH 03870

DATE: 4-11-19

REVISED:

DWG. NO. 2

C:\LSI\2018\Masque80



REAR ELEVATION

1/4"=1'-0"

Reduced Size
Not to Scale

PROJECT:
Maple Masjid of Portsmouth
686 Maplewood Ave., Portsmouth, NH

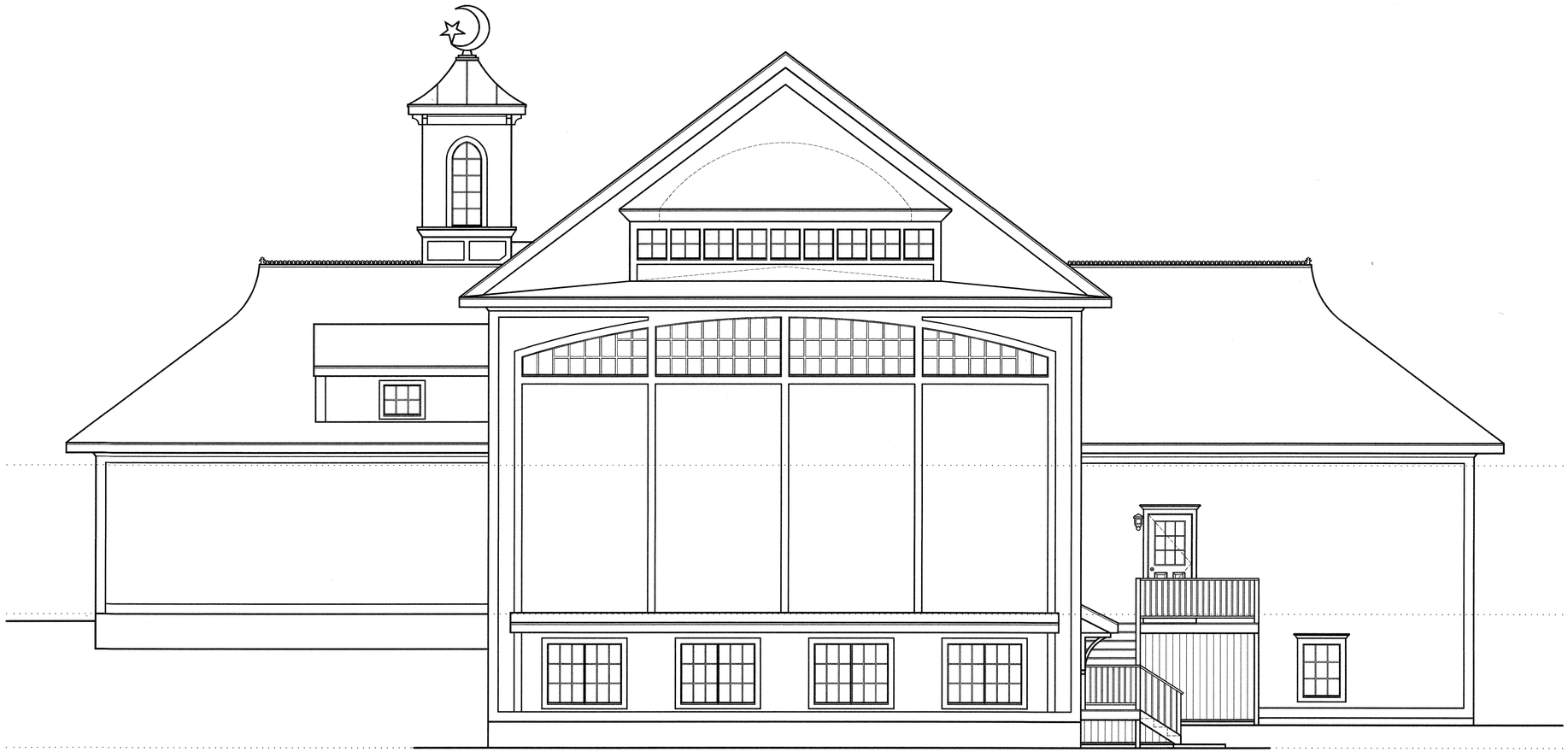
Phone: 603-364-5180
Fax: 603-364-2008
Living Spaces, Inc.
Email: livingspaces@comcast.net
247 Washington Road Rye NH 03870

DATE: 4-11-19

REVISED:

DWG. NO. 3

C:\LSI\2018\Mosque80



REAR ELEVATION

1/4"=1'-0"

Reduced Size
Not to Scale

C:\LSI\2018\Mosque80

PROJECT:
Maple Masjid of Portsmouth
686 Maplewood Ave., Portsmouth, NH

Phone: 603-964-5180
Fax: 603-964-2008
Living Spaces, Inc.
Email: livingspacesllc@comcast.net
1247 Washington Road Rye NH 03870

DATE: 4-11-19
REVISED:
DWG.NO. 4

93'
26'-6"
40'
26'-6"
23'-6"
59'
28'
7'-6"
MIHRAB
PRAYER HALL-1
39'-Ø" x 30'-Ø"
DECK
12'-Ø" x 6'-Ø"
HALL
MEN'S RM.
DN
CL.
OFFICE
10'-Ø" x 16'-3"
BOOKS
SEAT
PRAYER HALL-2
39'-Ø" x 16'-Ø"
UP
SHOE RACK
SHOE RACK
UP
FOYER
48'-Ø" x 10'-Ø"
ELEV.
SEAT
PORCH
10'-Ø" x 8'-6"
SAHN
UP
WOMEN'S RM.
REF.
FUNCTION RM.
21'-6" x 14'-Ø"
PATIO
22'-Ø" x 11'-Ø"
RAMP
22'
49'
22'
93'

FIRST FLOOR PLAN

1/4" = 1'-Ø"

Reduced Size
Not to Scale

TOTAL FINISHED S.F.
FIRST FLOOR = 3,878 S.F.
SECOND FLOOR = 1,455 S.F.
5,333 S.F.

C:\LSI\2018\Mosque80

PROJECT:
Maple Masjid of Portsmouth
686 Maplewood Ave., Portsmouth, NH

Living Spaces, Inc.
Phone: 603-964-5180
Fax: 603-964-2008
Email: livingspacesllc@comcast.net
241 Washington Road Rye NH 03870

DATE: 4-11-19
REVISED:
DWG. NO. 5

93'
26'-6"
40'
26'-6"
23'-6"
59'
28'
7'-6"
BALCONY
DN
DN
DN
PRAYER HALL-3
39'-0" x 28'-0"
ELEV.
SEAT
DECK
W/ RAIL
SECOND FLOOR PLAN
1/4"=1'-0"
22'
49'
22'
93'

Reduced Size
Not to Scale

C:\LSI\2018\Mosque850

PROJECT:
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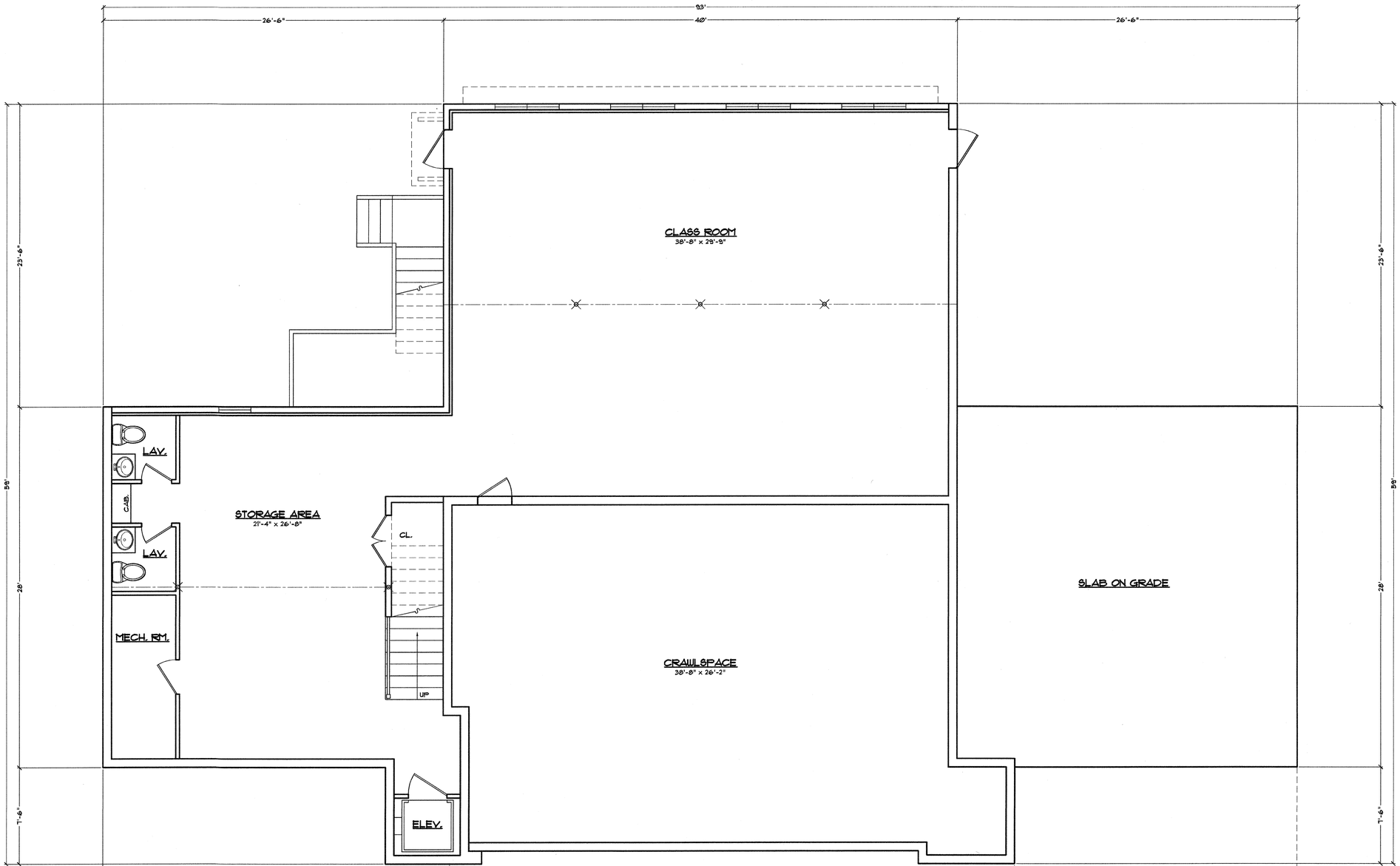
Fax: 603-964-2008
Email: livingspacesllc@comcast.net
1247 Washington Road
Rye NH 03870

DATE: 4-11-19
REVISED:
DWG. NO. 6



BASEMENT PLAN

1/4"=1'-0"

Reduced Size
Not to Scale

TOTAL FINISHED S.F.
BASEMENT = 2032 S.F.

PROJECT:
Maple Masjid of Portsmouth
686 Maplewood Ave., Portsmouth, NH

Living Spaces, Inc.
Phone: 603-964-5180
Fax: 603-964-2008
Email: livingspacesllc@comcast.net
1247 Washington Road
Rye NH 03870

DATE: 4-11-19
REVISED:
DWG. NO. 7

C:\LSI\2018\Mosque90

ADDITIONAL SUPPLEMENTAL INFORMATION

FOR

MAPLE MASJID
686 MAPLEWOOD AVENUE
PORTSMOUTH, NH

OCTOBER 15, 2018, REVISED; NOVEMBER 20, 2018
REVISED March 19, 2019

- Response to TAC Comments Letter
- Statement of Authorization
- SITE Plan Application
- Site Plan Review Application Fee
- Site Cost Estimate
- Site Plan Application Checklist
- Statement Regarding Green Building Components
- Will Serve Eversource Letter
- Will Serve Unitil Letter
- Occupancy Review Letter
- Fire Truck Exhibit
- Open Space Exhibit

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

February 19, 2019

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

RE: Response to TAC Comments for 686 Maplewood Ave Project

Dear Ms. Walker and TAC members:

We hereby submit, on behalf of ISSA, the attached for consideration at your March 5, 2019 TAC meeting. This letter is in response to comments received on December 3, 2019.

Below please see Ambit Engineering's responses in **bold.**

1. Occupancy calculations provided in previous TAC package identify considerably higher occupancy numbers for the mosque than the stated maximum occupancy of 240 identified on the site plan. Please explain the difference. Occupancy calculations provided in previous TAC package identify considerably higher occupancy numbers for the mosque than the stated maximum occupancy of 240 identified on the site plan. Please explain the difference.
   We have received a Conditional Use permit allowing 60 spaces where 71 spaces are required. We propose removing this note from the plan.

2. Landscape plan must be modified to eliminate any blockage of Fire Department Connection or hydrant on north side of building. The yard hydrant seems very close to the building, please review with Fire Department **We have removed any plantings within 5' of the Hydrant. Please see sheet L1.**

3. The U-shaped sidewalk on the north side of the building does not appear to have a tip down ramp to connect to the sidewalk coming up the driveway, or for the single handicap parking space. **The design intent is to provide a handicap entrance to the basement where there is an interior elevator. We have graded the entrance so that from the handicap space it is accessible to this door (there is no curbing, or no step proposed). The U shaped walkway is not handicap accessible. The handicap access and parking for the first floor are shown at the southwest corner of the building with a tip down ramp.**

4. Detail D on sheet D1 is inadequate. The intent is to show how the stormwater pond will be constructed to prevent ponded water from leaking down and blowing out the wall. **Detail HH on sheet D& has been added showing a 30 Mil impermeable liner that removes water from the area before it gets to the wall.**

5. Please show the intended light fixtures and how light will be screened from the neighboring residential development. **We have omitted lighting adjacent to the abutters and at the top of the hill to remove the possibility of nuisance lighting. The understand that the lower parking area will be sufficient for evening activities.**

6. Details E & L are incorrect. They are showing very thin binder pavements and thick top course pavements. **Detail Sheets E & L show 2 inch thick binder and 2 inch thick wearing course.**

7. The drainage system has not been revised to pick up the offsite flow as requested. **We have revised our drainage study to pick up run-off from the NHDOT Route 95 Side slope. We are requesting a meeting with the 3rd Party reviewer to ensure that the proposed drainage is acceptable.**

8. No revised drainage study was received. No review of the new study has been completed. **Please find revised drainage analysis attached addressing the #3rd Party reviewers concerns.**

9. Detail Q on D3 is still wrong. No PVC repair coupling was shown for the wye connection. **Detail Q, Sheet D3 has been revised with a repair coupling**

10. Copper water service lines don't use tapping sleeves. **The tapping sleeve note has been removed.**

11. Due to the size of the fire service and height above Maplewood, this fire line will likely collect a lot of air. The applicant will need to provide a maintenance plan for the hydrant. **We propose flushing the hydrant as recommended by the Fire Department.**

12. Add a note to the Site Plan per Section 2.5.4.2E. **The site plan has been revised as requested.**

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

19 February 2019

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

RE: Response to CMA Stormwater Review Letter dated November 19, 2019.

Dear Ms. Walker and Technical Advisory Committee members:

In response to CMA stormwater and Drainage Review we have added our comments below each CMA item in bold.

1. Section 4.3.1: *Every effort shall be made to use pervious parking and pathway surfaces as an alternative to impervious asphalt or concrete for overflow parking areas, except in cases where it is determined that a traditional impervious parking lot with engineered stormwater systems renders greater protection of surface and groundwater resources than pervious pavement.*

The proposed plan includes no pervious parking or pathway surfaces. The applicant should describe why pervious surfaces are not viable for this project.
Test Pits were performed on-site and indicate that the depth to ledge varies from 24" – 36". Due to the shallow depth to ledge, previous surfaces are viable in area of fill. The site driveway is 8%. Pervious pavement is not recommended on slopes greater than 5%. The "lower" parking area is a fill area. The proposed slope is 3.5%. We have revised the plans with porous pavement in this area.

2. Section 7.1: *Applicants shall incorporate Low Impact Development (LID) design practices and techniques in all aspects of the site's development.*

The applicant has proposed two filtrations basins, which appear to be undersized (to be confirmed with revised calculations requested in General Comments). Significant portions of impervious area (PS1c) leave the site untreated. **We have confirmed with the attached drainage analysis that the filtration basins are adequately sized. We have broken up Drainage Area Ps1c, added two deep sump catch basins CB1 and CB2 and directed the flow into Filtration Basin Ps1b to increase the area of impervious that is treated prior to leaving the site.**

3. Section 7.4.2.4: *Snow storage areas shall be located such that no direct discharges to receiving waters are possible from the storage site. Runoff from snow storage areas shall enter treatment areas to remove suspended solids and other contaminants before being discharged to receiving waters or preferably be allowed to infiltrate into the groundwater.*

The snow storage areas shown on the Site Plans (sheet C2) are upgradient from the filtration basins; however, we question whether the areas shown are adequate. If these areas are inadequate, it is likely snow will be pushed into the filtration basins. **We have added a snow storage area to the east of the building. Note #8 on sheet C2 states "Excess snow shall be trucked from site."**

4. *Section 7.4.2.8: Measures shall be taken to control the post-development peak rate of runoff so that it does not exceed pre-development runoff for the 2, 10, 25, and 50-year, 24-hour storm event.*

The reported post development runoff rates are less than pre-development peak flow rates because the applicant used incorrect time of concentrations (see General Comments below). **We have revised time of concentration (TC). We have not added extended TC to the filtration basins as recommended by the UNHSC reports.**

5. *Section 7.4.2.10: For a storm event of ½ inch or less, the applicant shall demonstrate that stormwater management practices will remove contaminants from the stormwater runoff that leaves the site. The use of oil and grit traps in manholes, on-site vegetated waterways, and vegetated buffer strips along waterways and drainage swales, and the reduction in use of deicing salts and fertilizers may be required by the Planning Board.*

This information is not provided and there are significant areas of impervious area (PS1c) leave the site untreated (see comment 2). **Please find attached the Post Construction Drainage Analysis indicating that 0.07 CFS or less leaves the site in ½ inch or less Storm Event. This small amount of run-off includes the site driveway, a portion of Maplewood Avenue, 678 Maplewood Avenue: Garage, Drive, a portion of the lot and ½ of the house. Every site requires a driveway for access. This site slopes toward Maplewood Avenue and some untreated runoff is normal and customary.**

6. *Section 7.4.3.1: All applications shall minimize the area of impervious surfaces and address the potential negative impact of impervious surfaces on surface and groundwater resources.*

The proposed development increases the impervious area from 3.6% to 59%. **The area of impervious in the revised drainage model increases from 8.9% to 60%. We believe the amount of lot impervious is the minimum necessary to achieve the project goals and is under the allowable impervious coverage in the zoning ordinance.**

7. Section 7.4.1.1: *Adequate provisions shall be made for the collection, treatment and/or disposal of all stormwater that runs off the site.*

Areas of the proposed development (subcatchment PS1c) discharge stormwater onto Maplewood Avenue with no treatment. **An area of driveway below CB1 and CB2 runs off the site untreated. Currently the entire Drainage Area ES1 including the existing driveway, gravel and run-off the site untreated. Given the site constraints we believe we have made adequate provisions.**

City Ordinances, Chapter 16, Article II, Regulation of Discharges into Storm Water Drainage System

Under this ordinance, Section 16.207.A, the applicant is required to obtain a permit from the City to connect to the Stormwater drainage system.

General Comments

1. The Drainage Analysis cover has 386 Maplewood Avenue, which should be corrected to 686 Maplewood Avenue. **The cover title has been corrected.**

2. There is a reference to porous pavement on page 6 in the Drainage Analysis report; there does not appear to be any porous pavement proposed. **We have revised the site to include some porous pavement.**

3. The Drainage Design Points DP1 and DP2 are not configured correctly. In the existing conditions analysis, DP2 should not be connected to DP1. In the proposed condition, it does not appear there is any flow to DP2 (all the flow goes to DP1). **We have performed additional research and additional offsite field survey work to refine our pre and post drainage areas.**

4. The time of concentration for existing subcatchment ES1 has not been calculated correctly. The time of concentration for the subcatchment should start at the furthest point, flow overland (100') to the existing channel (offsite), then down the channel to Maple Wood Avenue. **We have revised the TC for ES1 as recommended.**

5. The time of concentrations for proposed subcatchment PS1a and PS1b are not calculated correctly. The time should be specific to the characteristics of the subcatchment (likely the 5 minutes minimum allowable) and not include the time for flow through the filtration basins. The applicant should calculate the peak runoff from the subcatchment
to ensure the filtration basins have adequate capacity to accept and infiltrated these flows. **We have revised the TC calculations as recommended. We are providing revised peak rate run-off calculations showing that the filtration basins have adequate capacity.**

6. Confirm how the 6 in/hr. exfiltration rate was calculated for the filtration basins. Based on the test pits, ledge is 2-2.5' below finished grade. **We have revised the Ksat values. Filtration Basin Ps1a has an impermeable liner. A 10 inch per hour Ksat value is acceptable to NHDES AoT Bureau in filtration basins with impermeable liners. Filtration Basin PS1b and the proposed porous pavement are designed if fill. We have specified the fill to have a minimum Ksat value of 10 inches per hour.**

7. The proposed grading appears to trap drainage coming off the highway embankment in a lot point adjacent to the entrance drive at propose grade contour 48/existing grade contour 42. **We have performed additional off-site survey work to refine the area where drainage may be trapped. We have added a 12" box culvert under the wall at the low point to allow drainage to pass into the site drainage system.**

8. Confirm with the Eversource that the proposed grades (up to 8' of fill) and proposed light poles provide adequate clearance under the high voltage transmission lines. **Attached please find correspondence with Eversource. Eversource will allow the added fill with the caveat that the owners provide a check for $50,000 for design and construction of upgraded poles and that a joint use agreement is signed.**

9. Confirm retaining wall adjacent to filtration basin 1b is designed to handle the hydraulic loading it will experience from the surface runoff and flow through the filtration basin. **We have corresponded with Shea Concrete. They have stated that "The filtration pond will not have an impact on the wall given the distance from the face of wall to the pond". We have revised the wall details so that the retaining walls shall be designed and stamped by a Structural Engineer and reviewed by the Building Department prior to construction.**

10. Confirm adequate clearance from the face of the block gravity wall to the property lines. The detail shows 5'+ required for some wall heights for the

excavation/installation **Since the low side of the wall is adjacent to the property line, we can excavate and construct from the high side and not impact the adjacent property.**

11. If the pavement section is going to be 4" total, it should be 1.5" wearing course (12 mm)/2.5" binder course (19 mm). **We have revised detail L on Sheet D2 to indicate 1.5" of wearing course and 2.5" of binder course as requested.**

We would like to meet to review your review of the revised plans and report at your earliest convenience.

Sincerely,

Douglas J. LaRosa; Ambit Engineering, Inc.
Enclosures: 1 large, Drainage Analysis
CC: Issa, File

J:\JOBS2\JN2300s\JN 2360s\JN 2360\2017 Site Plan\Applications\City of Portsmouth\Peer Review and TAC Comments\2360 CMA Response Letter 2.19.2019.doc

Sincerely,

Ambit Engineering, Inc.
Douglas LaRosa
Project Manager

5 March, 2018

To Whom It May Concern

RE: Client Representation for a Development at 686 Maplewood Avenue

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 relative to this property. The owner of the property, ISSA, reserves the right to cancel this authorization at any time.

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

Sincerely,

Mohamed Ebrahim

ISSA, Islamic Society of the Seacoast Area
Authorized Representative
M. Ebrahim, Director

42N Dover Point Road
Dover NH, 03820
603-750-4060

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

Construction/Site Cost Estimate					
Maple Majid, 686 Maplewood Ave.					10/12/2018
Portsmouth, NH					
Item No.	DESCRIPTION	Units	Quantity	Unit Cost	Total
1	**Site - Earthwork**	LS	1	$ 95,000	$ 95,000
2	**Site - Landscaping**	LS	1	$ 22,000	$ 22,000
3	**Site - Asphalt**	TON	540	$ 100	$ 54,000
4	**Site -Vertical Granite Curb**	LF	120	$ 25	$ 3,000
5	**Site - Retaining Wall**	SF	3600	$ 50	$ 180,000
6	**Site - Fence (Dumpster)**	LF	40	$ 50	$ 2,000
7	**Site - Concrete Sidewalk**	SY	170	$ 25	$ 4,250
8	**Site - Sloped Granite Curb**	LF	210	$ 20	$ 4,200
9	**Site - Ledge Removal**	CY	150	$ 50	$ 7,500
10	**Utility - Underdrains**	LF	120	$ 10	$ 1,200
11	**Utility - Drain Pipes - 12" HDPE**	LF	460	$ 40	$ 18,400
12	**Utility - Portsmouth Lights**	EA	7	$ 2,800	$ 19,600
13	**Utility - Drain Manhole/Catch Basin**	EA	7	$ 3,250	$ 22,750
14	**Utility - Sewer Pipes**	LF	260	$ 25	$ 6,500
15	**Utility - Fire Service**	LF	250	$ 40	$ 10,000
16	**Utility - Electric, Phone, Cable**	LF	250	$ 12	$ 3,000
17	**Utility - Water Service**	LF	250	$ 8	$ 2,000
18	**Drainage - 2 Filtration Basins**	SF	3050	$ 10	$ 30,500
19	**Drainage - Forebay**	SF	400	$ 5	$ 2,000
20	**Drainage - riprap**	SF	100	$ 7	$ 700
21	**Erosion Control**	LS	1	$ 4,000	$ 4,000
Sub-Total					$ 492,600

APPLICATION FEE:

$500 + ($385,700/1000 x $5) + (62,000/ 1,000 x $10)= $ 3,299.00

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: Islamic Society of the Seacost Area Date Submitted: November 20, 2018

Phone Number: (603) 750-4060 E-mail: http://www.issa-nh.org/

Site Address: 686 Maplewood Avenue Map: 220 Lot: 90

Zoning District: SRB Lot area: 62,726 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)**	Attached	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)**	Attached	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)**	See Supplemental	☐
✔	Gross floor area and dimensions of all buildings and statement of uses and floor area for each floor. **(2.5.3.1B)**	See Sheet 5 Architectural	N/A
✔	Tax map and lot number, and current zoning of all parcels under Site Plan Review. **(2.5.3.1C)**	See Supplemental	N/A
✔	Owner's name, address, telephone number, and signature. Name, address, and telephone number of applicant if different from owner. **(2.5.3.1D)**	See Supplemental	N/A

Site Plan Review Application Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
✔	Names and addresses (including Tax Map and Lot number and zoning districts) of all direct abutting property owners (including properties located across abutting streets) and holders of existing conservation, preservation or agricultural preservation restrictions affecting the subject property. **(2.5.3.1E)**	Existing Conditions	N/A
✔	Names, addresses and telephone numbers of all professionals involved in the site plan design. **(2.5.3.1F)**	Cover Sheet	N/A
✔	List of reference plans. **(2.5.3.1G)**	Existing Conditions Plan & Sheet C2	N/A
✔	List of names and contact information of all public or private utilities servicing the site. **(2.5.3.1H)**	Cover Sheet	N/A

Site Plan Specifications			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
✔	Full size plans shall not be larger than 22 inches by 34 inches with match lines as required, unless approved by the Planning Director. Submittals shall be a minimum of 11 inches by 17 inches as specified by Planning Dept. staff. **(2.5.4.1A)**	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)**	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)**	On all plan sheets. See North Arrow	N/A
✔	Plans shall be drawn to scale. **(2.5.4.1D)**	On all plan sheets	N/A
✔	Plans shall be prepared and stamped by a NH licensed civil engineer. **(2.5.4.1D)**	On all plan sheets	N/A
✔	Wetlands shall be delineated by a NH certified wetlands scientist. **(2.5.4.1E)**	No Wetlands within 50' of site see drainage	N/A
✔	Title (name of development project), north point, scale, legend. **(2.5.4.2A)**	On all plan sheets	N/A
✔	Date plans first submitted, date and explanation of revisions. **(2.5.4.2B)**	On all plan sheets	N/A
✔	Individual plan sheet title that clearly describes the information that is displayed. **(2.5.4.2C)**	On all plan sheets	N/A

Site Plan Specifications			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
✔	Source and date of data displayed on the plan. **(2.5.4.2D)**	Required on all plan sheets	N/A
✔	A note shall be provided on the Site Plan stating: "All conditions on this Plan shall remain in effect in perpetuity pursuant to the requirements of the Site Plan Review Regulations." **(2.5.4.2E)**	Required on all plan sheets	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 L1	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)**	Sheet L1 and Sheet C2	N/A

Site Plan Specifications – Required Exhibits and Data			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
	1. Existing Conditions: (2.5.4.3A)		
✔	a. Surveyed plan of site showing existing natural and built features;	Exist. Cond & Topo Plan	☐
✔	b. Zoning boundaries;	Cover Sheet	☐
✔	c. Dimensional Regulations;	Existing Conditions Plan	☐
✔	d. Wetland delineation, wetland function and value assessment;	Supp. Rpt- No Wetlands	☐
✔	e. SFHA, 100-year flood elevation line and BFE data.	Exist. Cond & Topo Plan	☐
	2. Buildings and Structures: (2.5.4.3B)		
✔	a. Plan view: Use, size, dimensions, footings, overhangs, 1st fl. elevation;	C2, C3, 5 Architectural	☐
✔	b. Elevations: Height, massing, placement, materials, lighting, façade treatments;	Sheet 1, Architectural	☐
✔	c. Total Floor Area;	Sheet 5, Architectural	☐
✔	d. Number of Usable Floors;	Basement, 1st, 2nd (3)	☐
✔	e. Gross floor area by floor and use.	Sheet 5, Architectural	☐
	3. Access and Circulation: (2.5.4.3C)		
✔	a. Location/width of access ways within site;	Sheet C2	☐
✔	b. Location of curbing, right of ways, edge of pavement and sidewalks;	Sheets C2, C3	☐
✔	c. Location, type, size and design of traffic signing (pavement markings);	Sheet C2	☐
✔	d. Names/layout of existing abutting streets;	Sheets C1, C2	☐
✔	e. Driveway curb cuts for abutting prop. and public roads;	Sheet C2	☐
✔	f. If subdivision; Names of all roads, right of way lines and easements noted;	Existing Conditions Plan	☐
✔	g. AASHTO truck turning templates, description of minimum vehicle allowed being a WB-50 (unless otherwise approved by TAC).	Fire Truck Exhibit	☐
	4. Parking and Loading: (2.5.4.3D)		
✔	a. Location of off street parking/loading areas, landscaped areas/buffers;	Sheet C2	☐
✔	b. Parking Calculations (# required and the # provided).	Sheet C2	☐
	5. Water Infrastructure: (2.5.4.3E)		
✔	a. Size, type and location of water mains, shut-offs, hydrants & Engineering data;	Sheet C3	☐
✔	b. Location of wells and monitoring wells (include protective radii).	N/A	☐
	6. Sewer Infrastructure: (2.5.4.3F)		
✔	a. Size, type and location of sanitary sewage facilities & Engineering data.	Sheet C3	☐
	7. Utilities: (2.5.4.3G)		
✔	a. The size, type and location of all above & below ground utilities;	Sheet C3	☐
✔	b. Size type and location of generator pads, transformers and other fixtures.	Sheet C3	☐

Site Plan Specifications – Required Exhibits and Data			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
✔	**8. Solid Waste Facilities: (2.5.4.3H)**		
	a. The size, type and location of solid waste facilities.	Sheet C3	
	9. Storm water Management: (2.5.4.3I)		
✔	a. The location, elevation and layout of all storm-water drainage.	Sheet C4	
	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)**	Sheet LT1	☐
	12. Landscaping: (2.5.4.3K)		
✔	a. Identify all undisturbed area, existing vegetation and that which is to be retained;	N/A	☐
✔	**b.** Location of any irrigation system and water source.	N/A	
	13. Contours and Elevation: (2.5.4.3L)		
✔	a. Existing/Proposed contours (2 foot minimum) and finished grade elevations.	Existing Cond. & Sheet C4	☐
	14. Open Space: (2.5.4.3M)		
✔	a. Type, extent and location of all existing/proposed openspace.	Open Space Exhibit	
✔	**15. All easements, deed restrictions and non-public rights of ways. (2.5.4.3N)**	Existing Cond. Plan	☐
✔	**16. Location of snow storage areas and/or off-site snow removal. (2.5.4.3O)**	Sheet C2, Note 9	☐
✔	**17. Character/Civic District (All following information shall be included): (2.5.4.3Q)**	N/A	☐
	a. Applicable Building Height (10.5A21.20 & 10.5A43.30);		
	b. Applicable Special Requirements (10.5A21.30);		
	c. Proposed building form/type (10.5A43);		
	d. Proposed community space (10.5A46).		

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)**	Conditional Use Permit in Progress	☐
☑	Indicate where Low Impact Development Design practices have been incorporated. **(7.1)**	Sheet C4	☐
☑	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)**	Sheet C4 and Open Space Exhibit	☐
☑	Calculation of the maximum effective impervious surface as a percentage of the site. **(7.4.3.2)**	Sheet C2	☐
☑	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)**	In Drainage Analysis	☐

Final Site Plan Approval Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	All local approvals, permits, easements and licenses required, including but not limited to: a. Waivers; b. Driveway permits; c. Special exceptions; d. Variances granted; e. Easements; f. Licenses. **(2.5.3.2A)**	Sheet C2	☐
☑	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)**	See Drainage Analysis, Supplemental, Received Conditional Use Permit for 60 Parking Spaces	☐

Final Site Plan Approval Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	A document from each of the required private utility service providers indicating approval of the proposed site plan and indicating an ability to provide all required private utilities to the site. **(2.5.3.2D)**	See Supplemental	☐
☑	A list of any required state and federal permit applications required for the project and the status of same. **(2.5.3.2E)**	EPA- CGP, Prior to Construction	☐

Applicant's Signature: _____ **Date:** 2/19/2019

ISSA Maple Majid
686 Maplewood Avenue
October 15, 2018

PROPOSED GREEN BUILDING COMPONENTS

LOCATION AND TRANSPORTATION

1. **Public Transportation** - Bus stops are located in front of the site on Maplewood Avenue.
2. **Nearby Amenities** - There are numerous businesses located nearby, including a grocery store, pharmacies, restaurants and retail shops that can be used and incorporated in the same trip reducing number of total vehicle trips.
3. **Increased Use** - The project will provide increased development in a developed, reducing sprawl by reducing the need for development in undeveloped areas.

SITE

4. **Adaptive Reuse** - Redevelopment of an existing urban site for infill development.
5. **Stormwater Design** - The stormwater system has been designed using Low Impact Design techniques, such as filtration basins and deep sump catch basins.
6. **Parking** - Parking calculations have been performed using the City's new parking requirements.

WATER

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

ENERGY

9. **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.
10. **HVAC Units** - High-efficiency HVAC units will be employed where possible.
11. **High-Efficiency Lighting** - Efficient LED lighting will be used for interior and exterior fixtures where possible.
12. **Energy Star Appliances** – Appliances will be Energy Star rated where possible.
13. **Roofing** - Roofing will be of a light-colored roofing to reduce the heat island effect were possible.

MATERIALS AND RESOURCES

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

INDOOR ENVIRONMENTAL QUALITY

15. Low-VOC Materials - Building materials with low volatile organic compound levels will be specified where possible.
16. Indoor Air Quality – The building will have operable windows for access to fresh air.
17. Daylight - Spaces will have access to windows for daylight.

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

EVERSOURCE
ENERGY

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

10/11/2018

Douglas Larosa
200 Griffin Rd.
Portsmouth, NH 03801

Re: 4000 sq. ft place of worship
686 Maplewood Ave.
Portsmouth, NH 03801

Dear Doug:

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,

Tom Eger
Electric Service Support Center
PO Box 330
Manchester, NH 03105-9989

Unitil

October 9, 2018

Islamic Society of the Seacoast Area
42N Dover Point Rd
Dover NH 03820

RE: Natural Gas Availability to Maple Majid, 686 Maplewood Ave Portsmouth NH

Dear Sir/Madam

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

Unitil hereby confirms natural gas service will be available to 686 Maplewood Ave, Portsmouth, NH. Installation is pending an authorized installation agreement with Islamic Society of the Seacoast Area 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

CUSTOMER ENERGY SOLUTIONS
325 West Road
Portsmouth, NH 03801

T 888.486.4845 www.unitil.com

JS CONSULTING ENGINEERS LLC
Fire Protection Engineering | Building & Accessibility Code Consulting

October 16, 2018

Mr. Ralf Amsden
Living Space Inc.
1247 Washington Road
Rye, New Hampshire 03870

RE: Life Safety Drawing Review Letter
Maple Masjid Mosque – Portsmouth, NH

Dear Mr. Amsden:

As requested, JS Consulting Engineers, LLC (JSCE) has review the current architectural floor plans (dated September 4, 2018) for the Maple Masjid Mosque to be constructed at 686 Maplewood Avenue in Portsmouth, New Hampshire for compliance with the life safety / means of egress requirements of the New Hampshire State Building and Fire Codes. The new mosque is proposed to be a 2-story building with a basement level. The building will include Men's and Women's Prayer Halls, a function room, classroom space and office space.

Our scope of work is limited to the review of Life Safety and means of egress code compliance. This includes documenting the use, occupancy and means of egress serving the building. In addition, JSCE has reviewed the proposed plumbing fixture count relative to the proposed occupant load of the building. JSCE's current scope of work does not include full building code consulting services; accessibility consulting services; fire alarm system or sprinkler system engineering design services; zoning consulting; and energy performance consulting.

1. APPLICABLE CODES AND STANDARDS

The following codes and standards are applicable to the design and construction of the new mosque.

Accessibility – NHSBC Chapter 11, ICC/ANSI A117.1 as adopted by the NHSBC, and the 2010 Americans with Disabilities Act Standards (ADAS)

Building – New Hampshire State Building Code (NHSBC), which is an amended version of the 2009 International Building Code

Fire Prevention – Saf-C 6000 which is an amended version of NFPA 1, *The National Fire Code* 2009 Edition (NFPA 1) and NFPA 101, *The Life Safety Code* 2015 Edition (LSC-15).

Mechanical - International Mechanical Code (IMC), 2009, as adopted and amended by NH State Building Code Manuals Rules Bcr 300.

Plumbing - International Plumbing Code (IPC), 2009, as adopted and amended by NH State Building Code Manuals Rules Bcr 300 (NHSPC)

Other Additional selected National Fire Protection Association (NFPA) Standards as referenced by NHSBC and Saf-C 6000

This report addresses the major life safety and means of egress code requirements of NHSBC and LSC-15.

Office: 603.327.8650
Web: www.jsfirecode.com
224 Main Street | Suite 2C
Salem, NH 03079

2. OCCUPANT LOAD AND EXIT CAPACITY

The tables below summarize the calculated egress occupant load and available exit capacity calculated for each floor of the building (LSC-15 Table 7.3.1.2, §7.3, §12.2.3 and NHSBC §1004.1, §1005.1).

2.1. BASEMENT LEVEL

There are two (2) exits serving the Basement Level; an exit door direct to the exterior at grade level (Basement Exit Door) and an Exit Stair to the 1st Floor (Basement Stair). From the 1st Floor occupants using the Basement Stair have access to the Back Exit Door serving the 1st Floor.

Table 1. Basement Level Exit Capacity

Exit	Door Clear Width (in)	Exit Capacity Factor Door (in/pp)	Door Capacity (ppl)	Stair Width (in)	Exit Capacity Factor Stair (in/pp)	Stair Capacity (ppl)	Total Exit Capacity[1] (ppl)
Basement Exit Door	33	0.20	165	N/A	0.30	N/A	165
Basement Stair	N/A	0.20	N/A	40	0.30	133	133
TOTAL EXIT CAPACITY BASEMENT LEVEL (ppl)							**298**

Table 2. Basement Level Egress Occupant Load

Room / Space	Gross Area (sf)	Occupant Load Factor (sf/pp)	Egress Occupant Load (ppl)
Classroom[2]	1,160	15	78
Unfinished/ Storage	618	300	3
TOTAL EGRESS OCCUPANT LOAD BASEMENT LEVEL (ppl)			**81**

Based on the exit capacity and calculated egress occupant load of the Basement Level; there is sufficient exit capacity provided to serve the Basement Level.

2.2. 1ST FLOOR

There are three (3) exits serving the 1st Floor; the Main Entry/Exit Door from the Foyer, the Back Exit Door near the Men's Room and the Patio Exit Door[3]. All three (3) exits discharge directly to the exterior and the Main Entry/ Exit and Back Exit Door are remotely located.

1 Based on the calculated capacity of the limiting egress element that is part of the exit.

2 It is assumed that the Classroom area on the Basement Level is the entire 1,160sf area adjacent to the Basement Exit Door. Also, it is assumed that the area will be used as a classroom and multi-purpose area with flexible table and chair seating. As such the occupant load factor of 15nsf/pp for a multi-use assembly space was used in the calculation.

3 It is assumed that the patio is level with the surrounding grade and will not be enclosed such that occupants have access to the public way along an accessible route from the Patio without requiring re-entry into the building.

Table 3. 1st Floor Exit Capacity

Exit	Door Clear Width (in)	Exit Capacity Factor Door (in/pp)	Door Capacity (ppl)	Stair Width (in)	Exit Capacity Factor Stair (in/pp)	Stair Capacity (ppl)	Total Exit Capacity[4] (ppl)
Main Entry/Exit Door	92	0.20	306	N/A	0.30	N/A	306
Back Exit Door	33	0.20	165	40	0.30	133	133
Patio Exit Door	33	0.20	165	N/A	0.30	N/A	165
TOTAL EXIT CAPACITY 1ST FLOOR (ppl)							**604**

Table 4. 1st Floor Egress Occupant Load

Room / Space[5]	Gross Area (sf)	Occupant Load Factor (sf/pp)	Egress Occupant Load (ppl)
Prayer Hall 1 & 2	1,819	5	364
Office	151	100	2
Function Room	296	5	60
Prayer Area (adj. Women's Room)	132	5	27
Foyer[6]	219	15	15
Circulation Space[7]	595	100	6
TOTAL EGRESS OCCUPANT LOAD 1ST FLOOR (ppl)			**474**

The egress occupant load is calculated conservatively by loading the Prayer Hall, Prayer Area and Function Room simultaneously using a standing assembly load factor (5sf/pp) over the gross area of these rooms and spaces. However, even based on these conservative loading conditions; there is sufficient exit capacity provided to serve the 1st Floor.

The Main Entry/Exit Door is required by LSC-15 §12.2.3.6.2(2) to provide exit capacity for at least 50% of the total occupant load. The total occupant load of the three (3) floors equals 789-people (50%=395-people). The exit capacity of the Main Entry/Exit Door is 306-people, which is less than 50% of the total occupant load. However, since the Patio Exit door is also located off the Foyer; LSC-15 §12.2.3.6.5 allows the capacity of the Patio Exit Door to be added to the capacity of the Main Entry/Exit Door for a total capacity of 471-people.

2.3. 2ND FLOOR

There are two (2) exits unenclosed exit access stairs serving the 2nd Floor. Both stairs discharge to the interior of the building in the 1st Floor Foyer. The two (2) means of egress serving the 2nd Floor are remotely located.

4 Based on the calculated capacity of the limiting egress element that is part of the exit.

5 An egress occupant load was not calculated for the Patio as it is assumed that there is unobstructed access (e.g., no fence or change in elevation, benches, planters, etc.) directly from the Patio to the public way without requiring people to re-enter the building to exit.

6 It is envisioned that the Foyer will serve as a "pre-function" area for the Mosque. The occupant load of the Foyer is calculated as an unconcentrated assembly space over 50% of the floor area.

7 Circulation Space includes: Hall, Men's Room, Women's Room

Table 5. 2nd Floor Exit Capacity

Exit	Door Clear Width (in)	Exit Capacity Factor Door (in/pp)	Door Capacity (ppl)	Stair Width (in)	Exit Capacity Factor Stair (in/pp)	Stair Capacity (ppl)	Total Exit Capacity[8] (ppl)
Exit Access Stair 1	N/A	0.20	N/A	48	0.30	160	160
Exit Access Stair 2	N/A	0.20	N/A	48	0.30	160	160
TOTAL EXIT CAPACITY 2ND FLOOR (ppl)							**320**

Table 6. 2nd Floor Egress Occupant Load

Room / Space[9]	Gross Area (sf)	Occupant Load Factor (sf/pp)	Egress Occupant Load (ppl)
Women's Prayer Hall	1,154	5	231
Attic / Storage	778[10]	300	3
TOTAL EGRESS OCCUPANT LOAD 2ND FLOOR (ppl)			**234**

Based on the exit capacity and calculated egress occupant load of the Basement Level; there is sufficient exit capacity provided to serve the Basement Level.

3. MEANS OF EGRESS COMPONENTS

The following table summarizes some of the major means of egress criteria prescribed by NHSBC and LSC-15 based on the building's classification as a Group A-3, Assembly occupancy and as a fully sprinklered. This is not a comprehensive list; NHSBC Chapter 10, LSC-15 Chapter 7, ICC/ ANSI A117.1 and the ADAS should be referenced to determine all applicable requirements (LSC §7.1.5, §7.3.4, §12.2.5.1.2, §12.2.5.1.3, §12.2.6 and NHSBC §1003.2, §1014.3, §1016.1, §1018.2; ICC ANSI A117.1, ADAS).

Means of Egress Element	Prescriptive Code Requirement
Travel Distance	250-feet
Common Path of Travel	20-feet (rooms or spaces with +50ppl) 75-feet (rooms or spaces with <50ppl)
Maximum Dead-End Distance	20-feet
Minimum Headroom Height	7-feet 6-inches
Minimum Door Clear Width	32-inches[11]
Minimum Door Pull Side Maneuvering Clearance[12]	18-inches adjacent to the latch plus 60-inches of clear floor space measured perpendicular to the width of the door plus the 18-inches

8 Based on the calculated capacity of the limiting egress element that is part of the exit.

9 It is assumed there is no access to the Deck Area above the entry portico.

10 Aggregate area of both attic spaces

11 Not less than the width required to serve the occupant load. Refer to the exit capacity and occupant load tables in this Report.

12 Assumes forward approach

Means of Egress Element	Prescriptive Code Requirement
Minimum Door Push Side Maneuvering Clearance (where a closer and latch are provided)[12]	12-inches adjacent to the latch plus 48-inches of clear floor space measured perpendicular to the width of the door plus the 18-inches
Minimum Corridor Width	44-inches[11]
Minimum Width Accessible Route	36-inches[11]

4. PLUMBING FIXTURE COUNTS

A Men's and Women's multi-stall bathroom is proposed on the 1st Floor. The bathrooms are intended to serve all occupants of the building. While the calculated egress occupant load of the building is 789-people; the program load anticipated by the Mosque is 400-people. The program load represents the building operating under a peak loading scenario with a full parking lot.

The proposed bathrooms currently provide the following fixtures: four (4) Men's Toilets, three (3) Men's Sinks, (3) Women's Toilets, and three (3) Women's sinks.

New Hampshire State Plumbing Code (NHSPC), which is an amended version of the 2009 International Plumbing Code, prescribes factors to calculate the number of fixtures required to serve a population. In calculating required fixture counts the NHSPC assumes the population being served is equally divided with 50% men and 50% women. The factors for bathrooms serving a place of worship are as follows (NHSPC Table 403.1).

Table 7. Plumbing Fixture Factors – Assembly Occupancy: House of Worship

Men's Toilets	Men's Sinks	Women's Toilets	Women's Sinks	Drinking Fountains	Service Sink
1/150	1/200	1/75	1/200	1/1,000	1

Based on the proposed number of fixtures and the prescribed fixture factors the Mosque bathrooms have capacity to serve a total population of 450-people based on the limiting factor, Women's Toilets[13].

While the NHSPC §403.1 indicates that plumbing fixtures should be provided to serve the occupant load calculated by the NHSBC; with the approval of the Building Official and / or Plumbing Inspector (AHJ's) the fixture demand could be based on a reasonable peak program load. If approve by the AHJ's, the current number of fixtures is sufficient to serve 450-people meeting the peak program load of 400-people.

13 Three (3) Women's toilets at a factor of 1/75 women = 3 x 75 = 225 women. Based on the assumption that the population is split 50% male and 50% female, the total population served is 450-people (225 x 2 = 450).

5. DRAWING REVIEW

Based on our review of the Architectural plans for compliance with the means of egress and life safety requirements of the NHSBC and LSC-15; the following non-conformities were identified.

No.	Drawing	Comment
1.	General	Life Safety Plans submitted to the Portsmouth Building or Fire Departments should be separate from the architectural floor plans and should include the following information: • Architectural Floor plan of each building floor/story with all rooms labeled with use classification and area • General information regarding the use classification and construction type of the building. General description of the fire protection systems serving the building (e.g., sprinkler, fire alarm, smoke detection, etc.). • Information identifying the egress occupant load, location of all exits, egress capacity, location of main entrance/ exit, maximum travel distance, • Site plan showing where exits discharge to the exterior and the path of travel to the public way. • Identify walls and partitions required to be of fire resistance rated construction (or smoke barriers) • Where seating will be provided in an Assembly Occupancy seating plans showing seating layout(s) should be provided. The location and width of aisles, and aisle accessways should be identified As the design develops in more detail separate life safety plans should be prepared.
2.	General	All means of egress doors and exit doors throughout the building serving the Basement Level Classroom space, the 1st Floor or the Women's Prayer Hall on the 2nd Floor are required to be equipped with panic hardware in accordance with NHSBC §1008.1.10 and LSC-15 §7.2.1 and §12.2.2.2.3.
3.	Basement Level	There are two (2) exits serving the Basement Level; the exit door to the exterior at grade and an exit stair to the 1st Floor. Both the NHBC and the LSC-15 require exits serving a floor to be remotely located at least one-third the overall diagonal distance of the floor[14] (LSC-15 §7.5.1.3.3, §7.7.3.1, NHSBC §1015.2.1). While these two (2) exits are remotely located on the Basement Level; remoteness is an issue at the point of exit discharge. The stair serving the Basement discharge to the interior of the building on the 1st Floor. The stair discharge is near the Back Exit Door. As such it is assumed that occupants traveling up from the Basement Level would exit the building at the Back Exit Door. However, the Back Exit Door and the Basement Exit Door both discharge at roughly the same location along the building's exterior. The point of discharge of the two (2) exits serving the Basement Level are not remotely located. Consideration should be given to altering the Basement stair so that it discharges in a location on the 1st Floor that would direct occupants to the Main Entrance/Exit door to allow for sufficient exit remoteness.

[14] The diagonal distance of the Basement Level is 83.17-feet. One-third of this distance is 27.72-feet. The two (2) exits serving the Basement Level are separated by more than 27.72-feet on the Basement Level. Exit remoteness is acceptable.

4. Basement Level — The Basement Stair is shown on the floor plans as approximately 40-inches wide. The egress occupant load of the Basement is calculated above at 81-people. Per NHBC §1009.1 and LSC-15 Table 7.2.2.2.1.1(a) the minimum width of an exit stair serving and occupant load of more than 50-people is required to be 44-inches. Confirm the proposed width of the Basement Stair and modify it as required to provide a minimum 44-inch stair width.

5. 1st Floor — The 1st Floor is served by two (2) building exits. The main entry/exit door at the Foyer and an exit door to the back side of the building near the Men's Bathroom. The grade of the site slopes at the back of the building. As such there are stairs at the Back Exit door providing access to grade level. However, LSC-15 §7.5.4.3, §7.7.1 and NHSBC §1007.2 both require exits in new construction to provide an accessible route from the point of exit discharge to the public way. The exterior stair should be replaced with a ramp to grade level. At the base of the ramp a walkway to the public way (e.g., parking lot, public sidewalk, etc.) should also be provided[15]. If a ramp is not feasible an exterior area rescue assistance provided in accordance with LSC §7.2.12.2.3 and NHSBC §1007.6, §1007.7 is required.

6. 1st Floor — The floor plans do not show a drinking fountain or service sink; however, both are required by the NHSPC §403.1. The plans should be modified accordingly to include a service sink and an accessible drinking fountain. Per the requirements of ICC ANSI A117.1 and the ADAS an accessible drinking fountain should include a double bowl providing a high and low height spout. In addition, the fountain should be installed in a niche or similar wall recess so that the fountain does not create an excessive projection along an egress route. Use of the Kitchenette sink, water cooler or other alternative means for drinking water must be reviewed and approved by the AHJ and is required to be accessible.

7. 1st Floor — The exterior stair at the discharge of the Back Exit Stair is shown on the floor plans as approximately 40-inches wide. The egress occupant load of the 1st Floor is greater than 50-people. Per NHBC §1009.1 and LSC-15 Table 7.2.2.2.1.1(a) the minimum width of an exit stair serving and occupant load of more than 50-people is required to be 44-inches. Confirm the proposed width of the stair and modify it as required to provide a minimum 44-inch stair width.

8. 2nd Floor — The 2nd Floor is a story of the building and not a mezzanine of the 1st Floor Prayer Hall. A mezzanine is considered part of the room or space it is open to and is limited in size to one-third of the open area in which the mezzanine is located per NHBC §505.2 and LSC-15 §8.6.10.2. The area of the Women's Prayer Hall on the 2nd Floor is 1,154sf. The aggregate area of Prayer Hall 1 and 2 on the 1st Floor is 1,819sf. One-third of 1,819sf is 606sf. Also, the attic storage spaces are not a mezzanine of the Prayer Hall.

   As such the 2nd Floor is required to be served by two (2) independent building exits. Of which only 50% of the exits serving the 2nd Floor are permitted to discharge to the interior of the building (LSC-15 §7.7.2, NHSBC §1027.1). The other 50% of exits are required to discharge direct to the exterior.

   In addition, the 2nd Floor is served by two (2) unenclosed stairs that both discharge to the Foyer on the 1st Floor. LSC-15 does not permit a story of a building to be served by unenclosed exit access stairs. NHSBC §1016.1 Ex. 3 and 4 would only permit one (1) unenclosed exit access stair to serve the 2nd Floor. In addition, because the two (2) exit access stairs both discharge to the same location in the Foyer; there is insufficient exit remoteness.

   Exit access serving the 2nd Floor should be modified. At least one (1) enclosed exit stair that discharges directly to the exterior is required. Consideration should be given to providing an enclosed exit that runs through one (1) of the attic spaces and discharge to the exterior on one side of the building.

[15] JSCE did not receive a site plan for review and it is assumed the site plan has not been developed as of the date of our review.

The second exit serving the 2nd Floor could be a stair that discharges to the interior of the building in the 1st Floor Foyer; however, the stair should be enclosed in 1-hour construction. Note both codes would allow the stair to be open on the 1st Floor if enclosed at the top of the stair on the 2nd Floor.

9. 2nd Floor — The 2nd Floor is one level above the level of exit discharge. As such NHSBC §1007.8 requires a two-way communication system be installed at the 2nd Floor elevator landing. As the design develops further, a two-way communication system should be included.

Prepared by JS Consulting Engineers, LLC:

Jennifer I. Sapochetti, P.E.
Principal

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
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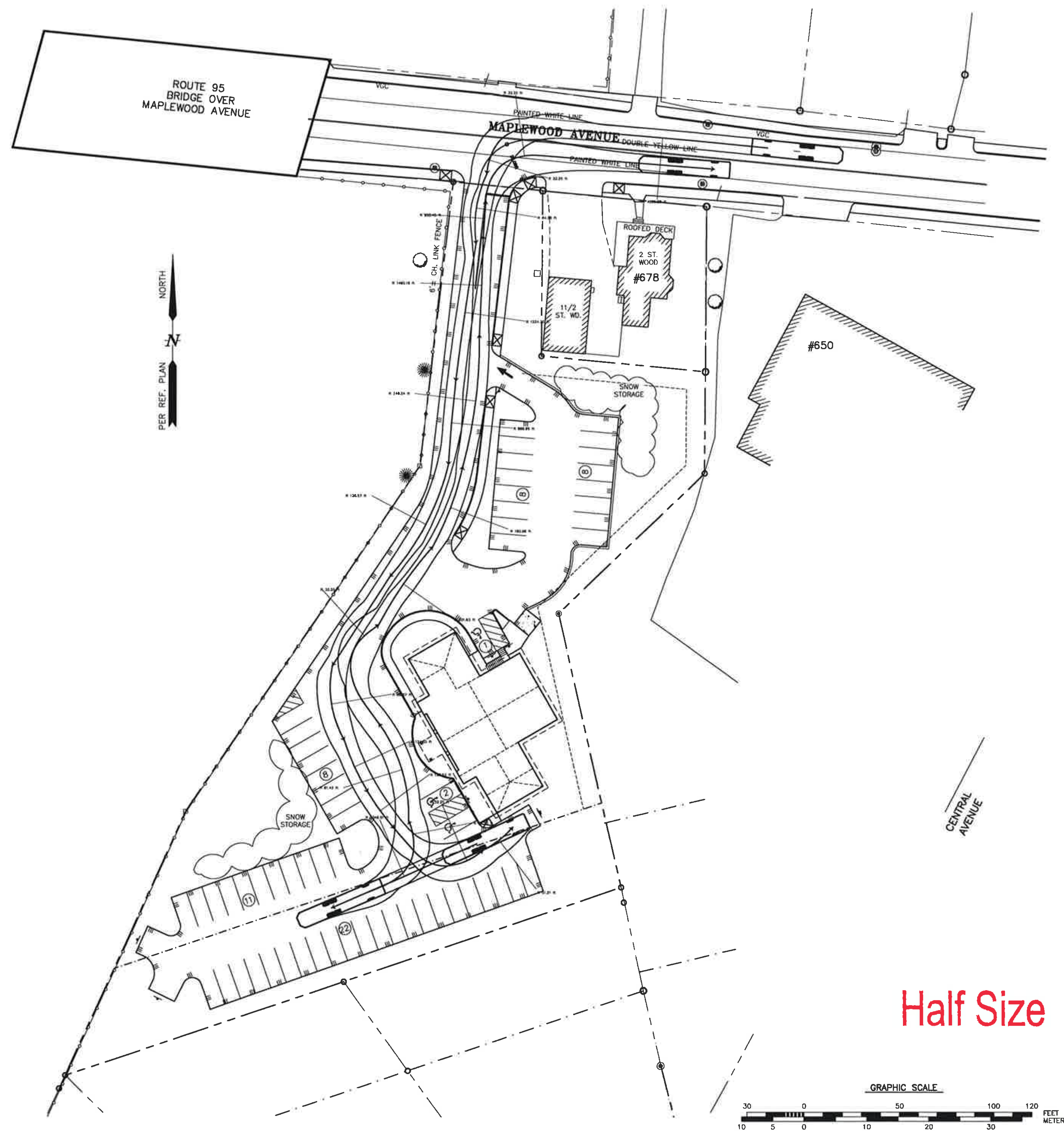
Tel (603) 430-9282
Fax (603) 436-2315



Half Size

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).

APPROVAL 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 OWNER OF RECORD AND SUBSEQUENTLY THE CONDOMINIUM UNIT ASSOCIATION 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.

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN ____________________ DATE ____________________

J:\JN 2300\JN 2360s\JN 2360\2017 Site Plan\Plans & Specs\Site\2360SITE01.dwg, ROAD TURN

PORTSMOUTH MAPLE MASJID
686 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

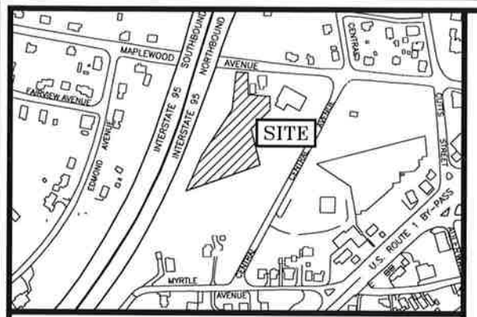
NO.	DESCRIPTION	DATE
1	ADDED SIDEWALK	11/19/18
0	ISSUED FOR COMMENT	10/30/18

REVISIONS

SCALE: 1" = 30'   MAY 2018

TRUCK TURNING EXHIBIT   **RT**

2360

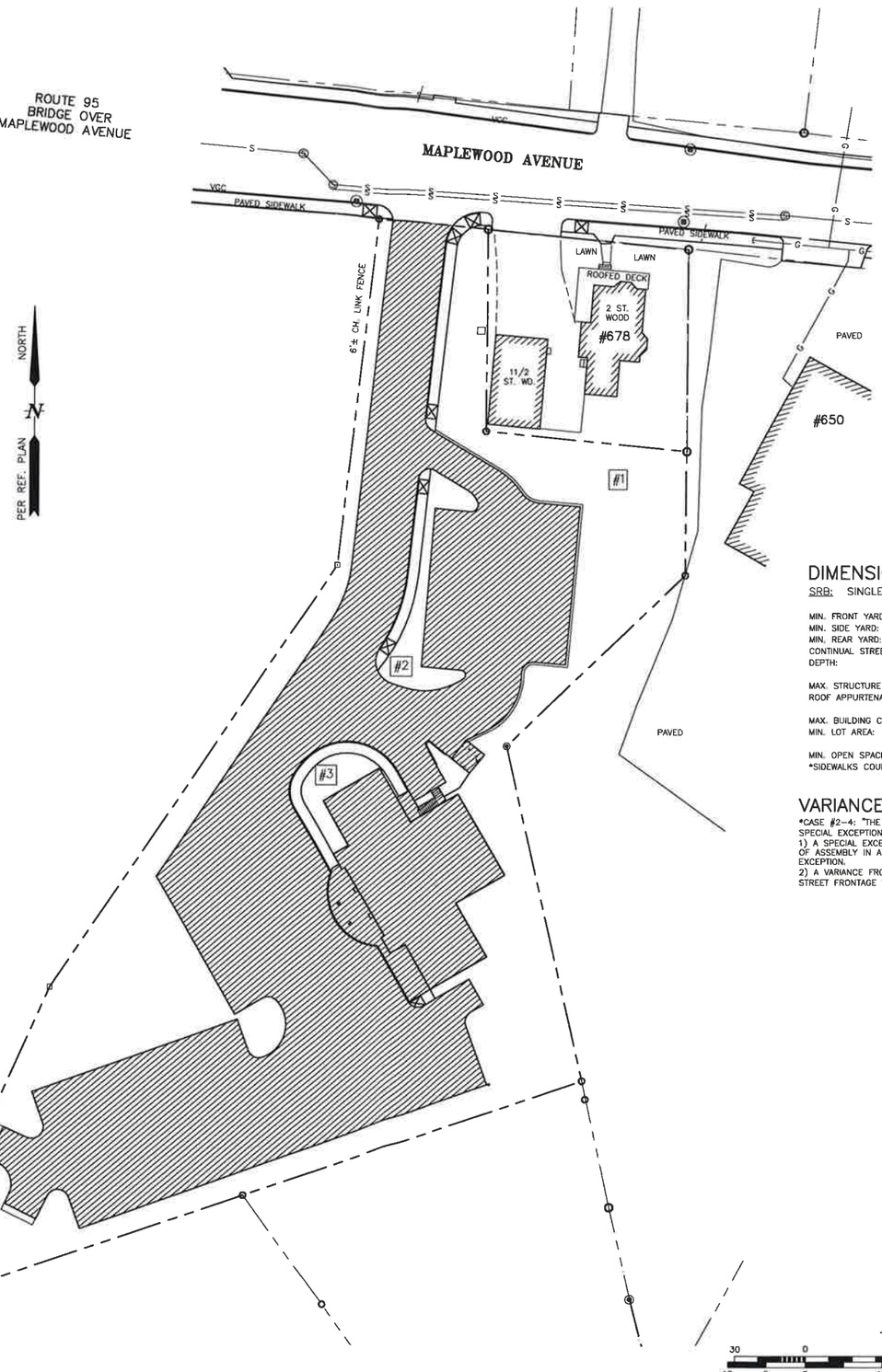


LOCATION MAP SCALE 1"=300'

LEGEND:
SEE SHEET C1

OPEN SPACE AREAS	
DESCRIPTION	AREA (SQUARE FEET)
#1	22,709
#2	1,465
#3	1125
TOTAL OPEN SPACE	25299
LOT SIZE	62,776
% OPEN SPACE	40.3%

ROUTE 95
BRIDGE OVER
MAPLEWOOD AVENUE



DIMENSIONAL REQUIREMENTS:

SRB: SINGLE RESIDENCE "B"

	REQUIRED	EXISTING	PROPOSED
MIN. FRONT YARD:	30 FEET	NA	151.2 FEET
MIN. SIDE YARD:	10 FEET	NA	13.0 FEET
MIN. REAR YARD:	30 FEET	NA	57.8 FEET
CONTINUAL STREET FRONTAGE:	100 FEET	47.2 FEET	*47.2 FEET
DEPTH:	100 FEET	>100 FEET	>100 FEET
MAX. STRUCTURE HEIGHT:	35 FEET	0 FEET	<35 FEET
ROOF APPURTENANCE:	8 FEET	0 FEET	8 FEET
MAX. BUILDING COVERAGE:	20%	0%	6.2%
MIN. LOT AREA:	15,000 SF	62,776 SF	62,776 SF
MIN. OPEN SPACE COVERAGE:	40%	99.6%	40.3%*

*SIDEWALKS COUNTED AS OPEN SPACE.

VARIANCES GRANTED (2/21/2017):

*CASE #2-4: "THE BOARD VOTED, IN SEPARATE MOTIONS, TO GRANT THE SPECIAL EXCEPTION AND VARIANCE AS PRESENTED AND ADVERTISED."
1) A SPECIAL EXCEPTION FOR SECTION 10.440 TO ALLOW A RELIGIOUS PLACE OF ASSEMBLY IN A DISTRICT WHERE THE USE IS ONLY ALLOWED BY SPECIAL EXCEPTION.
2) A VARIANCE FROM SECTION 10.521 TO ALLOW 47'± OF CONTINUOUS STREET FRONTAGE WHERE 100' IS REQUIRED.

Half Size

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

APPROVAL 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 OWNER OF RECORD AND SUBSEQUENTLY THE CONDOMINIUM UNIT ASSOCIATION 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.

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) PARCEL LOCATED ON 686 MAPLEWOOD AVENUE IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 220 AS LOT 90.

2) OWNER OF RECORD:
ISLAMIC SOCIETY OF SEACOAST AREA
PO BOX 684
DOVER, NH 03821
5806/2816

3) SITE AREA IS 62,776 S.F. (1.44 ACRES)

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

5) PARCEL ARE LOCATED IN THE SINGLE RESIDENCE "B" (SRB) ZONING DISTRICT.

6) THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED LAYOUT OF SITE DEVELOPMENT ON TAX MAP 220 LOT 90.

7) VERTICAL DATUM IS MEAN SEA LEVEL NAVD88.
SEE PLAN REFERENCE #1.

8) BUILDING NUMBERING TO BE COORDINATED WITH 911.

9) EXCESS SNOW SHALL BE TRUCKED FROM SITE

10) THE PLAN FOR SOLID WASTE REMOVAL IS TO PROVIDE DUMPSTERS FOR WEEKLY PICKUP.

11) STORMWATER MANAGEMENT INSTALLATIONS SHALL BE INSPECTED BY DPW DURING CONSTRUCTION AND AN ANNUAL REPORT SHALL BE SUBMITTED TO THE DPW DEPARTMENT REGARDING THE FUNCTION OF THE DESIGN.

PARKING ANALYSIS:

PLACE OF ASSEMBLY: 1 PER 4 PERSONS MAXIMUM OCCUPANCY OF ASSEMBLY AREA: 60 PARKING SPACES PROPOSED: PROPOSED MAXIMUM OCCUPANCY = 240 PEOPLE.

A CONDITIONAL USE PERMIT TO ALLOW 60 PARKING SPACES WHERE THE MAXIMUM POSSIBLE OCCUPANT LOAD BASED ON SF CALCULATIONS IS 704 WILL BE REQUESTED.

PROPOSED PARKING:

REGULAR SPACES = 57 SPACES
HANDICAP SPACES = 3 SPACES
TOTAL SPACES = 60 TOTAL SPACES

REFERENCE PLAN:

1) "EXISTING CONDITIONS & TOPOGRAPHY PLAN FOR VACANT LOT KNOWN AS TAX MAP 220 LOT 90 OWNED BY ISLAMIC SOCIETY OF THE SEACOAST AREA LOCATED AT 686 MAPLEWOOD AVENUE PORTSMOUTH NH ROCKINGHAM COUNTY" DATE: SEPT. 14, 2017, SCALE: 1" = 30' PREPARED BY: KNIGHT HILL LAND SURVEYING SERVICES, INC. C/O DAVE HISLOP 34 OLD POST ROAD, NEWINGTON NH 03801 (603) 436-1330, dave@khlandsurveying.com

PORTSMOUTH
MAPLE MASJID
686 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
2	ADD SIDEWALK	11/19/18
1	ISSUED FOR APPROVAL	10/15/18
0	ISSUED FOR COMMENT	8/29/18

REVISIONS

SCALE: 1" = 30' AUGUST 2018

OPEN SPACE

OS

2360

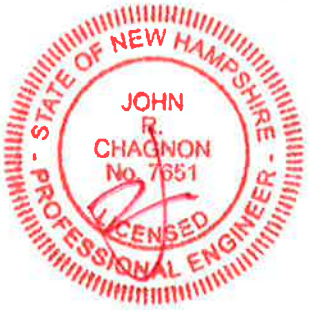
DRAINAGE ANALYSIS

SITE REDEVELOPMENT MAPLE MAJID

686 Maplewood Avenue
PORTSMOUTH, NH

October 15, 2018, Revised February 2019, March 2019

Revised April 2019



Ambit Engineering, Inc.

Civil Engineers and Land Surveyors
200 Griffin Road, Unit 3
Portsmouth, NH 03801
Phone: 603.430.9282; Fax: 603.436.2315
E-mail: djl@ambitengineering.com
(Ambit Job Number 2360)

TABLE OF CONTENTS

EXECUTIVE SUMMARY

This drainage analysis examines the pre-development (existing) and post-development (proposed) stormwater drainage patterns for the proposed development which includes a place of worship building at 686 Maplewood Avenue in Portsmouth, NH. The site is shown on the City of Portsmouth Assessor's Tax Map 220 as Lot 90. The lot size is 62,726 square-feet (1.44 acres).

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

The hydrologic modeling uses the "Extreme Precipitation" values from The Northeast Regional Climate Center (Cornell University) for modeling purposes. Because Portsmouth is in the Seacoast area, we have increased these values by 15% and incorporated these values in this report.

SITE REDEVELOPMENT

Portsmouth Maple Majid, 686 Maplewood Avenue

PORTSMOUTH, NH

INTRODUCTION / PROJECT DESCRIPTION

This drainage report is designed to assist the owner, planning board, contractor, regulatory reviewer, and others in understanding the impact of the proposed development project on local surface water runoff and quality. The project site is shown on the City of Portsmouth, NH Assessor's Tax Map 220 Lot 90.

Bounding the site to the northeast is Maplewood Avenue. Bounding the site to the West is the Interstate Route 95. Bounding the site to the south-east are vacant lots that have received variances for two family homes along Emery Street which are also to the rear of the lot. Bounding the Site to the East is Seamans Supply Co which is in the Business Zone. The subject property is situated in the Single Residence B zone (SRB). A vicinity map is included in the Appendix to this report.

The proposed development plan is to construct a new place of worship, 60 parking spaces, and other associated improvements such as a utilities and landscaping. The project is anticipated to begin construction in the spring of 2019 and be substantially completed by the summer of 2020.

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

METHODOLOGY

This report uses the US Soil Conservation Service (SCS) Method for estimating stormwater runoff. The SCS method is published in The National Engineering Handbook (NEH), Section 4 “Hydrology” and includes the Technical Release No. 20, (TR-20) "Computer Program for Project Formulation Hydrology", and Technical Release No. 55 (TR-55) “Urban Hydrology for Small Watersheds” methods. This report uses the HydroCAD version 10.0 program, written by HydroCAD Software Solutions LLC, Chocorua, N.H., to apply these methods for the calculation of runoff and for pond modeling. Hydrologic modeling employs the “Extreme Precipitation” values from The Northeast Regional Climate Center (Cornell University) increased by 15%. These values have been used and are included in this report.

Time of Concentration (Tc) is calculated by entering measured flow path data such as flow path type, length, slope and surface characteristics into the HydroCAD program. For the purposes of this report, and as directed by TR55, a minimum time of concentration of 5 minutes is used.

The storm events used for the calculations in this report are the 2-year, 10-year and 50-year (24-hour) storms. Watershed basin boundaries have been delineated and subsequently revised using topographic maps prepared and updated by Ambit Engineering survey data, record plans and field observations to confirm.

SITE SPECIFIC INFORMATION

Based on the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), Soil Survey of Rockingham County, New Hampshire, the site is made up of one soil type:

799 – Urban land – Canton Complex (3-15% slopes), well drained with a typical depth to restrictive feature of more than 80 inches. This soil has a Hydrologic Soil Group (HSG) classification of B, with a Low runoff class. Offsite run-off is not calculated using this value.

Five (5) test pits performed around the perimeter of the sit indicate that the soil within the property is not a well-drained soil. The test pits indicate that the soil is moderately well drained soil with a typical depth to restrictive features of 24” – 36: This soil has a Hydraulic Soil Group classification of C (HSG)

The physical characteristics of the site consist of (3-15%) grades that generally slope downward from Rear of (back) towards Maplewood Avenue. Elevations on the site range from 36 to 60 feet above sea level. The existing site is undeveloped and includes a paved driveway and gravel drive. Vegetation around the developed portion of the lot consists of established grasses, shrubs and trees. Currently the site is being used as a laydown yard for Road Construction.

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

PRE-DEVELOPMENT DRAINAGE

The existing site drains via overland flow from a localized high point from the rear of the property towards the rear, front and sides of the site, including the area adjacent to Interstate Route 95. Runoff flows overland toward Maplewood Avenue until it enters a closed storm sewer system at Existing Catch Basin E, in front of 678 Maplewood Ave. We have placed the design point at the end of the existing 15" RCP, entering into Catch Basin F. There is no existing stormwater detention or treatment on the site (aside from the minimal treatment achieved from infiltration that occurs).

In the pre-development condition, the site has been analyzed as three watershed basins (ES1, ES2 and ES3) based on localized topography and discharge location. ES1 flows overland directly to the existing driveway of the lot, into the Maplewood Avenue Municipal storm water catch basin F. It includes the area of Maplewood Avenue that flows off of a portion of 678 Maplewood Avenue, including the house garage and driveway. It then flows into Catch Basin E and back to Catch Basin F through a 15" RCP drain pipe. We are designating the 15" RCP into Catch Basin F as Discharge Point 1 (DP1). ES2 flows overland toward the front and east side of the property into Design Point 2. ES3 flows from the highpoint to the south/rear of the property into Design point 3. The runoff curve number (CN) for Subcatchment ES1 is calculated to be 75 with impervious coverage of 9.01%. The runoff curve number (CN) for Subcatchment ES2 is 74 with impervious coverage of 11.60%. The runoff curve number (CN) for Subcatchment ES3 is 72 with impervious coverage of 0.00%.

Table 1: Pre-Development Watershed Basin Summary

Watershed Basin ID	Basin Area (SF)	Tc (MIN)	CN	2-Year Runoff (CFS)	10-Year Runoff (CFS)	50-Year Runoff (CFS)	Design Point
ES1	65,161	13.1	75	2.90	6.03	11.14	DP1
ES2	28,750	8.4	74	1.45	3.04	5.64	DP2
ES3	9,546	9.0	72	0.42	0.92	1.76	DP3

POST-DEVELOPMENT DRAINAGE

The proposed development has been designed to match the pre-development drainage patterns to the greatest extent feasible. In the post-development condition, the site has been analyzed as thirteen (13) separate watersheds (PS1a, PS1b, PS1c, Ps1d, Ps1e, Ps1f, Ps1g, Ps1h, Ps1i, Ps1j, PS1, Ps2 and Ps3) based on localized topography and discharge locations. Basins PS1a, the majority of the top level, flows into a filtration basin PS1a. From Basin Ps1a it enters an outlet control structure and through three (3) drainage manholes back into the exiting city 15" RCP in Maplewood Avenue. The middle of the development, PS1b flows through an area of Porous Pavement, into a catch basin and then into Filtration Basin PS1b. Basin Ps1b treats the storm water and discharges into the closed drainage system that exits the site to the north to DP1. Basin PS1c is the area east of the Route 95 curb, which is the highway side slope. Ps1c flows into a proposed system starting with a 12" culvert, into DMH2, then DMH4 then it is culverted to, DMH1 and then back into the exiting city 15" RCP in Maplewood Avenue. Ps1d is the area west of the center line of the entrance drive that discharges to CB2 and then to Filtration Pond Ps1b. Ps1e is the area east of the center line of the entrance drive that discharges to CB1 and then to Filtration Pond Ps1b. Ps1f is the area below CB3 and CB4 including a portion of Maplewood Avenue and a portion of 678 Maplewood Avenue Lot, house, drive and garage. Ps1g is the grassed area that is upslope of and flows into Basin Ps1b. Ps1h is the area that flows into CB3. Ps1i is the area that flows into CB4. CB3 and CB4 flow into an infiltration system which flows back into DMH1. PS2 flows to design point DP2 to the east side of the site. PS3 is the remaining grass area that flow to the south to DP3. All runoff from the sub-watershed basins Ps1a, Ps1b and Ps1c, Ps1d, Ps1e, Ps1f and Ps1fg, Ps1j. Ps1i, and Ps1j are discharged to Design Point 1 (DP1). This allows for a direct review of Design Points to show the comparison of runoff from the site in the pre-development and post-development conditions.

The runoff curve number (CN), Time of Concentration (TC), % Impervious, and Peak Flow Rate (CFS) for the Post Development Watersheds are shown in Table 2: Post Development Water Shed Summary below.

Table 2: Post-Development Watershed Basin Summary

Watershed Basin ID	Basin Area (SF)	Tc (MIN)	% Imp.	CN	1st Flush CFS	2 Year Runoff (CFS)	10-Year Runoff (CFS)	50-Year Runoff (CFS)	Design Point
PS1a	24,080	5	73.63	89		2.48	4.13	6.59	DP1
PS1b	12,245	5	50.07	94		1.43	2.24	3.47	DP1
PS1c	33,590	9.9	1.88	72		1.45	3.18	6.06	DP1
PS1d	2,967	5	65.99	85		0.27	0.47	0.78	DP1
Ps1e	1,486	5	100.00	98		0.18	0.28	0.43	DP1
Ps1f	11,452	5	81.45	94	0.07	1.33	2.10	3.24	DP1
Ps1g	3,974.	5	0.00	61		0.10	0.29	0.65	DP1
PS1i	1,059	5	76.49	92		0.12	0.19	0.30	DP1
Ps1h	1,737	5	55.67	87		0.17	0.29	0.47	DP1
Ps1j	520	5	60.77	83		0.04	0.08	0.13	DP1
Ps2	5,767	5.0	18.66	78		0.40	0.78	1.38	DP2
PS3	4,580	5.0	3.78	62		0.12	0.35	0.77	DP3

The overall impervious coverage of the area analyzed in this report for all basins **increases** from 9,205 square feet (8.90%) in the pre-development condition to 41,390 square feet (40.01%) in the post-development condition. Since the site represents an increase in impervious area, the project proposes the construction of deep sump catch basins for pretreatment and porous pavement and 2 stormwater filter basins and an infiltration trench provide treatment and storage of parking lot and roof run-off. Since no treatment or dedicated stormwater storage systems currently exist for the site, providing the proposed treatment by means of the porous pavement and filtration basin represents an improvement on the water quality of the runoff.

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

Table 3: Pre-Development to Post-Development Comparison

	Q2 (CFS)		Q10 (CFS)		Q25 (CFS)		Q50 (CFS)	
Design Point	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**
DP1	2.90	2.54	6.03	4.11	8.63	5.41	11.14	6.70
DP2	1.45	0.40	3.04	0.78	4.36	1.09	5.64	1.38
DP3	0.42	0.12	0.92	0.35	1.35	0.56	1.76	0.77

EROSION AND SEDIMENT CONTROL PRACTICES

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

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

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

CONCLUSION

The proposed development has been designed to have less peak rate run-off in post development compared with the pre-development drainage peak run-off. With the design of porous pavement in the lower parking area as well as routing the majority of the impervious storm water run-off through two filtration basins slowing the release of storm water, the post-development runoff rates are reduced to be below the pre-development runoff rates and will provide treatment. Erosion and sediment control practices will be implemented for both the temporary condition during construction and for final stabilization after construction. The conclusion is that there are

no negative impacts to downstream receptors or adjacent properties anticipated as a result of this project. There is also no negative impact to the City of Portsmouth storm drainage system.

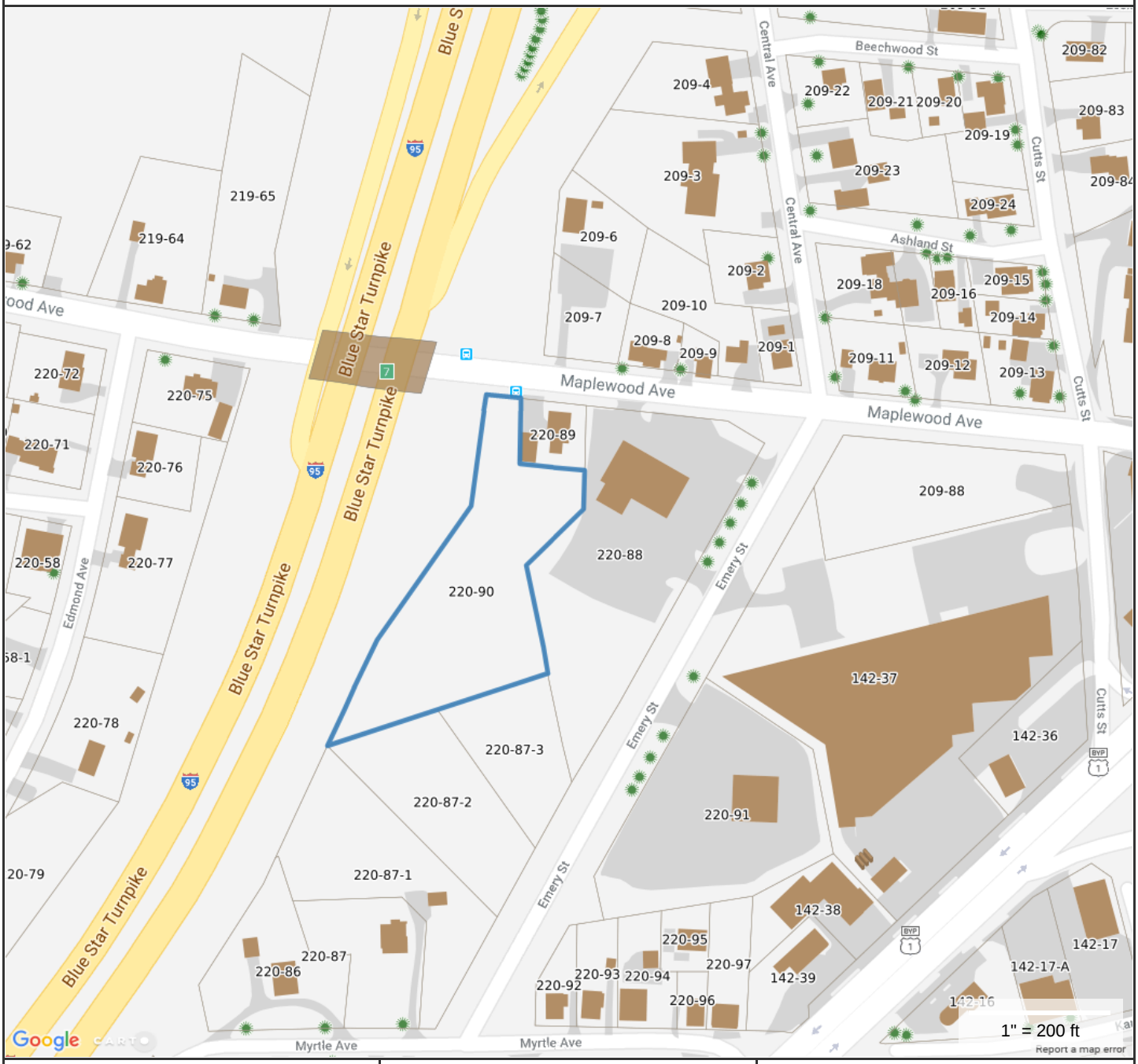
REFERENCES

1. City of Portsmouth, NH. Site Plan Review Regulations amended September 15, 2016.
2. Comprehensive Environmental Inc. and New Hampshire Department of Environmental Services. *New Hampshire Stormwater Manual (Volumes 1, 2 and 3)*, December 2008 (Revision 1.0).
3. Minnick, E.L. and H.T. Marshall. *Stormwater Management and Erosion and Sediment Control Handbook for Urban and Developing Areas in New Hampshire*, prepared by Rockingham County Conservation District, prepared for New Hampshire Department of Environmental Services, in cooperation with USDA Soil Conservation Service, August 1992.
4. HydroCAD Software Solution, LLC. *HydroCAD Stormwater Modeling System Version 10.0* copyright 2013. HydroCAD Software Solution, LLC. *HydroCAD Stormwater Modeling System Version 10.0* copyright 2013.
5. University of New Hampshire Stormwater Center 2009 Biannual Report, Pages 14-21 for references to Lag time (TC) for Porous Pavement and Filtration Basins.

APPENDIX A

VICINITY (TAX) MAP

Vicinity Map - Maple Majid, 686 Maplewood Avenue



Property Information

Property ID	0220-0090-0000
Location	686 MAPLEWOOD AVE
Owner	ISLAMIC SOCIETY OF THE SEACOAST AREA

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

City of Portsmouth, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Parcels updated 01/04/2018
Properties updated 09/13/2018

APPENDIX B

TABLES, CHARTS, ETC.

Extreme Precipitation Tables

Northeast Regional Climate Center

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

Smoothing	Yes
State	New Hampshire
Location	
Longitude	70.768 degrees West
Latitude	43.080 degrees North
Elevation	0 feet
Date/Time	Thu, 13 Sep 2018 14:02:44 -0400

24 Hour Storm Inches x 15% =

2 Year 3.20 x 1.15 = 3.68

10 Year 4.86 x 1.15 = 5.59

50 Year 7.38 x 1.15 = 8.49

25 Year 6.16 x 1.15 = 7.08

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.04	**1yr**	0.70	0.98	1.21	1.56	2.03	2.66	2.92	**1yr**	2.35	2.80	3.21	3.94	4.54	**1yr**
2yr	0.32	0.50	0.62	0.81	1.02	1.30	**2yr**	0.88	1.18	1.52	1.94	2.48	3.20	3.56	**2yr**	2.84	3.43	3.93	4.67	5.32	**2yr**
5yr	0.37	0.58	0.73	0.97	1.25	1.60	**5yr**	1.08	1.46	1.88	2.43	3.13	4.06	4.57	**5yr**	3.59	4.39	5.03	5.92	6.69	**5yr**
10yr	0.41	0.65	0.82	1.11	1.45	1.89	**10yr**	1.25	1.72	2.23	2.89	3.74	4.86	5.52	**10yr**	4.30	5.31	6.07	7.09	7.96	**10yr**
25yr	0.48	0.76	0.96	1.33	1.77	2.33	**25yr**	1.53	2.14	2.77	3.62	4.73	6.16	7.09	**25yr**	5.45	6.81	7.78	9.00	10.03	**25yr**
50yr	0.53	0.86	1.10	1.53	2.06	2.75	**50yr**	1.78	2.52	3.28	4.31	5.65	7.38	8.57	**50yr**	6.53	8.24	9.40	10.79	11.95	**50yr**
100yr	0.59	0.96	1.24	1.76	2.41	3.24	**100yr**	2.08	2.97	3.89	5.14	6.75	8.83	10.36	**100yr**	7.82	9.96	11.35	12.93	14.25	**100yr**
200yr	0.67	1.09	1.42	2.03	2.81	3.82	**200yr**	2.43	3.50	4.60	6.11	8.06	10.59	12.52	**200yr**	9.37	12.04	13.71	15.50	16.99	**200yr**
500yr	0.79	1.31	1.70	2.47	3.46	4.74	**500yr**	2.98	4.36	5.74	7.68	10.19	13.45	16.11	**500yr**	11.90	15.49	17.60	19.72	21.45	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.36	0.44	0.59	0.73	0.88	**1yr**	0.63	0.86	0.92	1.32	1.68	2.22	2.49	**1yr**	1.97	2.39	2.86	3.17	3.87	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.19	**2yr**	0.86	1.16	1.37	1.82	2.34	3.05	3.45	**2yr**	2.70	3.32	3.82	4.54	5.07	**2yr**
5yr	0.35	0.54	0.67	0.92	1.17	1.40	**5yr**	1.01	1.37	1.61	2.12	2.73	3.78	4.18	**5yr**	3.35	4.02	4.71	5.52	6.23	**5yr**
10yr	0.38	0.59	0.73	1.02	1.32	1.60	**10yr**	1.14	1.56	1.81	2.39	3.06	4.36	4.85	**10yr**	3.86	4.67	5.43	6.40	7.18	**10yr**

SCS METHODS

Technical Release - 55 Urban Hydrology for Small Watersheds

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

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

SCS TR-55 Graphical Peak Discharge Method

The peak discharge equation used in this method is:

$$q_p = q_u A_m Q F_p$$

where:

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

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

A_m is the drainage area in square miles.

Q is the runoff from the watershed in inches.

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

Technical Release-20 Computer Program for Project Formulation Hydrology

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

Input Data Required

The following information is required to use TR-20:

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

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

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

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

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

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

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

Output Data

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

Runoff Curve Number (RCN)

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

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

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

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

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

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

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

2. Includes paved streets.

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

Source: USDA Soil Conservation Service

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

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

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

Source: USDA Soil Conservation Service

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

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

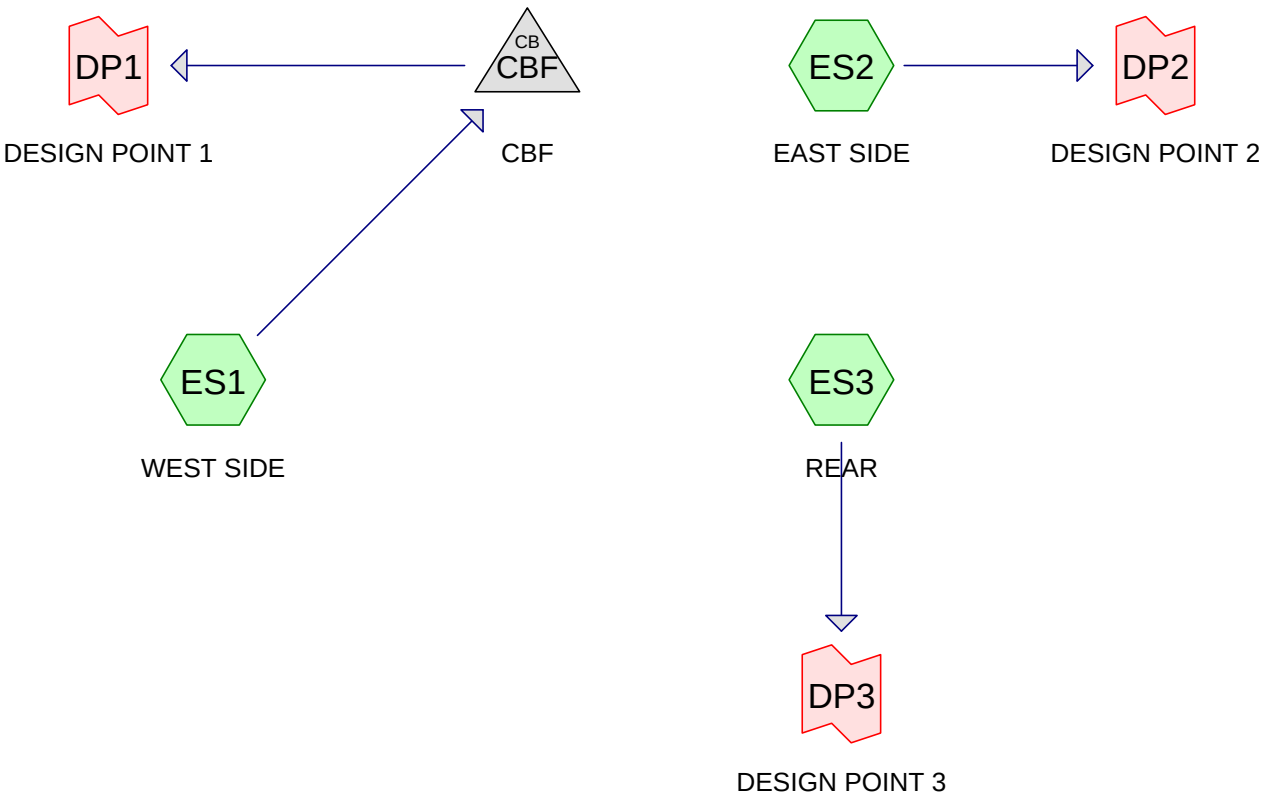
6. Poor hydrologic condition has less than 50 percent ground cover density.
   Fair hydrologic condition has between 50 and 75 percent ground cover density.
   Good hydrologic condition has more than 75 percent ground cover density.

Source: USDA Soil Conservation Service

APPENDIX C

HYDROCAD DRAINAGE

ANALYSIS CALCULATIONS



Subcat Reach Pond Link

Routing Diagram for 2360-Pre
Prepared by AMBIT ENGINEERING, INC

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
2,976	74	>75% Grass cover, Good, HSG C (ES1)
219	96	Gravel surface, HSG C (ES1)
4,104	98	Paved parking, HSG C (ES1)
1,767	98	Roofs, HSG C (ES1)
3,334	98	Unconnected pavement, HSG C (ES2)
91,057	72	Woods/grass comb., Good, HSG C (ES1, ES2, ES3)
103,457	**74**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
103,457	HSG C	ES1, ES2, ES3
0	HSG D	
0	Other	
103,457		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
0	0	2,976	0	0	2,976	>75% Grass cover, Good	
0	0	219	0	0	219	Gravel surface	
0	0	4,104	0	0	4,104	Paved parking	
0	0	1,767	0	0	1,767	Roofs	
0	0	3,334	0	0	3,334	Unconnected pavement	
0	0	91,057	0	0	91,057	Woods/grass comb., Good	
0	**0**	**103,457**	**0**	**0**	**103,457**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	CBF	29.20	26.85	140.0	0.0168	0.013	15.0	0.0	0.0

Time span=0.00-30.00 hrs, dt=0.04 hrs, 751 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: WEST SIDE Runoff Area=65,161 sf 9.01% Impervious Runoff Depth=1.43"
Flow Length=428' Tc=13.1 min CN=75 Runoff=2.90 cfs 7,769 cf

Subcatchment ES2: EAST SIDE Runoff Area=28,750 sf 11.60% Impervious Runoff Depth=1.37"
Flow Length=308' Tc=8.4 min UI Adjusted CN=74 Runoff=1.45 cfs 3,272 cf

Subcatchment ES3: REAR Runoff Area=9,546 sf 0.00% Impervious Runoff Depth=1.24"
Flow Length=65' Tc=9.0 min CN=72 Runoff=0.42 cfs 987 cf

Pond CBF: CBF Peak Elev=30.07' Inflow=2.90 cfs 7,769 cf
Outflow=2.90 cfs 7,769 cf

Link DP1: DESIGN POINT 1 Inflow=2.90 cfs 7,769 cf
Primary=2.90 cfs 7,769 cf

Link DP2: DESIGN POINT 2 Inflow=1.45 cfs 3,272 cf
Primary=1.45 cfs 3,272 cf

Link DP3: DESIGN POINT 3 Inflow=0.42 cfs 987 cf
Primary=0.42 cfs 987 cf

Total Runoff Area = 103,457 sf Runoff Volume = 12,027 cf Average Runoff Depth = 1.40"
91.10% Pervious = 94,252 sf 8.90% Impervious = 9,205 sf

Time span=0.00-30.00 hrs, dt=0.04 hrs, 751 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: WEST SIDE Runoff Area=65,161 sf 9.01% Impervious Runoff Depth=2.94"
Flow Length=428' Tc=13.1 min CN=75 Runoff=6.03 cfs 15,941 cf

Subcatchment ES2: EAST SIDE Runoff Area=28,750 sf 11.60% Impervious Runoff Depth=2.84"
Flow Length=308' Tc=8.4 min UI Adjusted CN=74 Runoff=3.04 cfs 6,812 cf

Subcatchment ES3: REAR Runoff Area=9,546 sf 0.00% Impervious Runoff Depth=2.66"
Flow Length=65' Tc=9.0 min CN=72 Runoff=0.92 cfs 2,117 cf

Pond CBF: CBF Peak Elev=30.87' Inflow=6.03 cfs 15,941 cf
Outflow=6.03 cfs 15,941 cf

Link DP1: DESIGN POINT 1 Inflow=6.03 cfs 15,941 cf
Primary=6.03 cfs 15,941 cf

Link DP2: DESIGN POINT 2 Inflow=3.04 cfs 6,812 cf
Primary=3.04 cfs 6,812 cf

Link DP3: DESIGN POINT 3 Inflow=0.92 cfs 2,117 cf
Primary=0.92 cfs 2,117 cf

Total Runoff Area = 103,457 sf Runoff Volume = 24,870 cf Average Runoff Depth = 2.88"
91.10% Pervious = 94,252 sf 8.90% Impervious = 9,205 sf

Time span=0.00-30.00 hrs, dt=0.04 hrs, 751 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: WEST SIDE Runoff Area=65,161 sf 9.01% Impervious Runoff Depth=4.22"
Flow Length=428' Tc=13.1 min CN=75 Runoff=8.63 cfs 22,915 cf

Subcatchment ES2: EAST SIDE Runoff Area=28,750 sf 11.60% Impervious Runoff Depth=4.11"
Flow Length=308' Tc=8.4 min UI Adjusted CN=74 Runoff=4.36 cfs 9,851 cf

Subcatchment ES3: REAR Runoff Area=9,546 sf 0.00% Impervious Runoff Depth=3.90"
Flow Length=65' Tc=9.0 min CN=72 Runoff=1.35 cfs 3,100 cf

Pond CBF: CBF Peak Elev=31.96' Inflow=8.63 cfs 22,915 cf
Outflow=8.63 cfs 22,915 cf

Link DP1: DESIGN POINT 1 Inflow=8.63 cfs 22,915 cf
Primary=8.63 cfs 22,915 cf

Link DP2: DESIGN POINT 2 Inflow=4.36 cfs 9,851 cf
Primary=4.36 cfs 9,851 cf

Link DP3: DESIGN POINT 3 Inflow=1.35 cfs 3,100 cf
Primary=1.35 cfs 3,100 cf

Total Runoff Area = 103,457 sf Runoff Volume = 35,867 cf Average Runoff Depth = 4.16"
91.10% Pervious = 94,252 sf 8.90% Impervious = 9,205 sf

Time span=0.00-30.00 hrs, dt=0.04 hrs, 751 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: WEST SIDE Runoff Area=65,161 sf 9.01% Impervious Runoff Depth=5.49"
Flow Length=428' Tc=13.1 min CN=75 Runoff=11.14 cfs 29,789 cf

Subcatchment ES2: EAST SIDE Runoff Area=28,750 sf 11.60% Impervious Runoff Depth=5.37"
Flow Length=308' Tc=8.4 min UI Adjusted CN=74 Runoff=5.64 cfs 12,856 cf

Subcatchment ES3: REAR Runoff Area=9,546 sf 0.00% Impervious Runoff Depth=5.13"
Flow Length=65' Tc=9.0 min CN=72 Runoff=1.76 cfs 4,078 cf

Pond CBF: CBF Peak Elev=32.43' Inflow=11.14 cfs 29,789 cf
Outflow=11.14 cfs 29,789 cf

Link DP1: DESIGN POINT 1 Inflow=11.14 cfs 29,789 cf
Primary=11.14 cfs 29,789 cf

Link DP2: DESIGN POINT 2 Inflow=5.64 cfs 12,856 cf
Primary=5.64 cfs 12,856 cf

Link DP3: DESIGN POINT 3 Inflow=1.76 cfs 4,078 cf
Primary=1.76 cfs 4,078 cf

Total Runoff Area = 103,457 sf Runoff Volume = 46,724 cf Average Runoff Depth = 5.42"
91.10% Pervious = 94,252 sf 8.90% Impervious = 9,205 sf

Summary for Subcatchment ES1: WEST SIDE

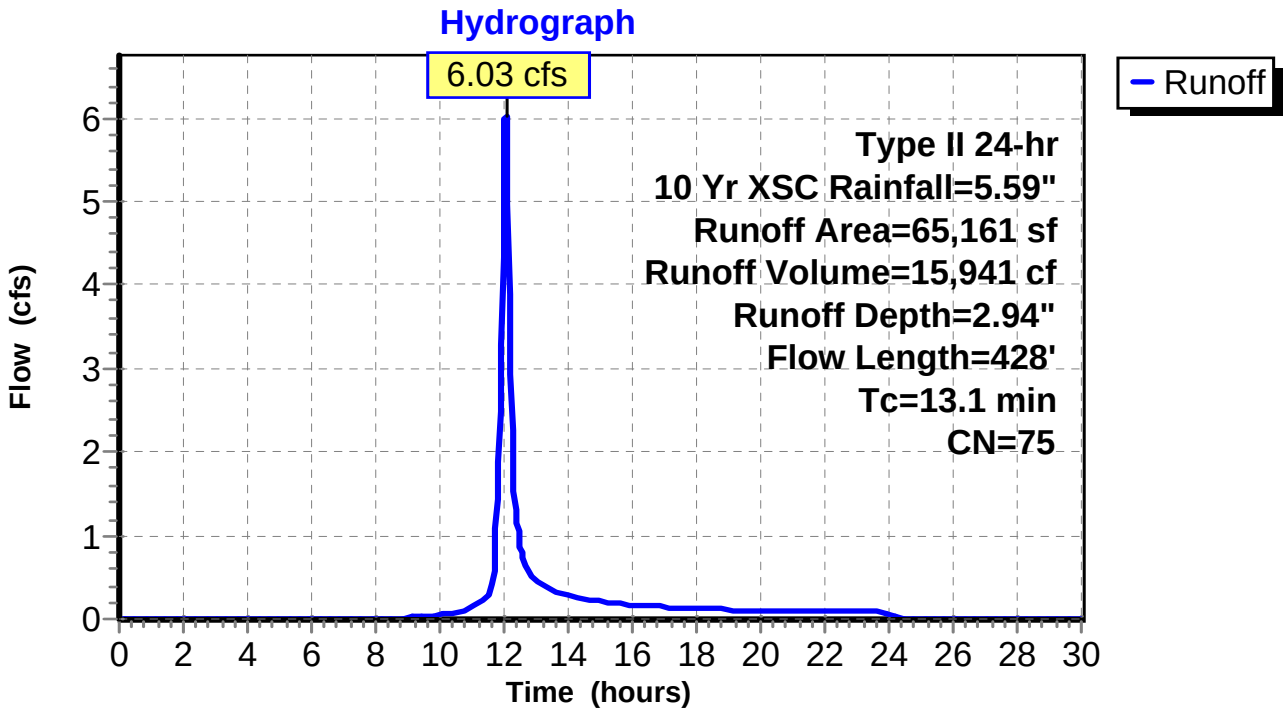
Runoff = 6.03 cfs @ 12.05 hrs, Volume= 15,941 cf, Depth= 2.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.04 hrs
Type II 24-hr 10 Yr XSC Rainfall=5.59"

Area (sf)	CN	Description
4,104	98	Paved parking, HSG C
32,958	72	Woods/grass comb., Good, HSG C
23,137	72	Woods/grass comb., Good, HSG C
1,767	98	Roofs, HSG C
219	96	Gravel surface, HSG C
2,976	74	>75% Grass cover, Good, HSG C
65,161	75	Weighted Average
59,290		90.99% Pervious Area
5,871		9.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	50	0.0466	0.10		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.68"
1.7	149	0.0866	1.47		**Shallow Concentrated Flow, Light Brush Woods** Woodland Kv= 5.0 fps
2.5	111	0.0225	0.75		**Shallow Concentrated Flow, Light Brush Woods** Woodland Kv= 5.0 fps
0.7	118	0.0201	2.88		**Shallow Concentrated Flow, Street Flow** Paved Kv= 20.3 fps
13.1	428	Total			

Subcatchment ES1: WEST SIDE



Summary for Subcatchment ES2: EAST SIDE

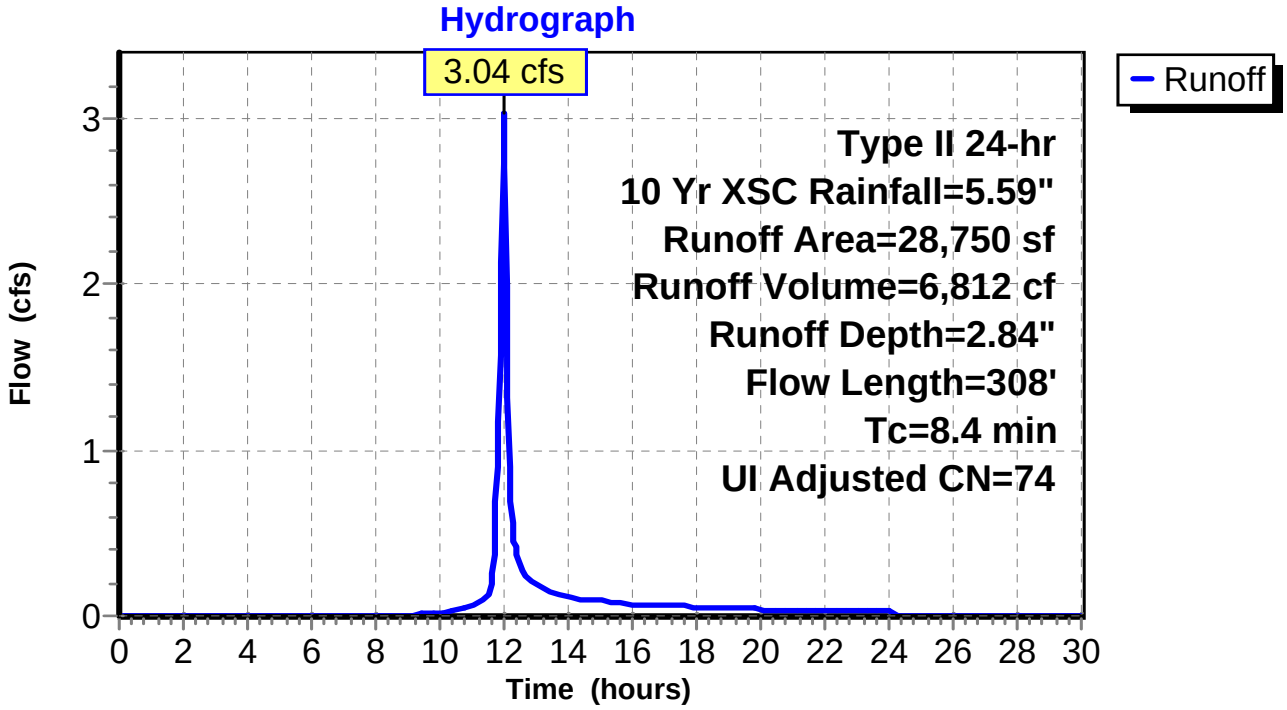
Runoff = 3.04 cfs @ 12.00 hrs, Volume= 6,812 cf, Depth= 2.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.04 hrs
Type II 24-hr 10 Yr XSC Rainfall=5.59"

Area (sf)	CN	Adj	Description
25,416	72		Woods/grass comb., Good, HSG C
3,334	98		Unconnected pavement, HSG C
28,750	75	74	Weighted Average, UI Adjusted
25,416			88.40% Pervious Area
3,334			11.60% Impervious Area
3,334			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	50	0.0708	0.12		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.68"
0.7	155	0.0655	3.84		**Shallow Concentrated Flow, Shallow Concentrated** Grassed Waterway Kv= 15.0 fps
0.8	103	0.0951	2.16		**Shallow Concentrated Flow, Shallow Concentrated** Short Grass Pasture Kv= 7.0 fps
8.4	308	Total			

Subcatchment ES2: EAST SIDE



Summary for Subcatchment ES3: REAR

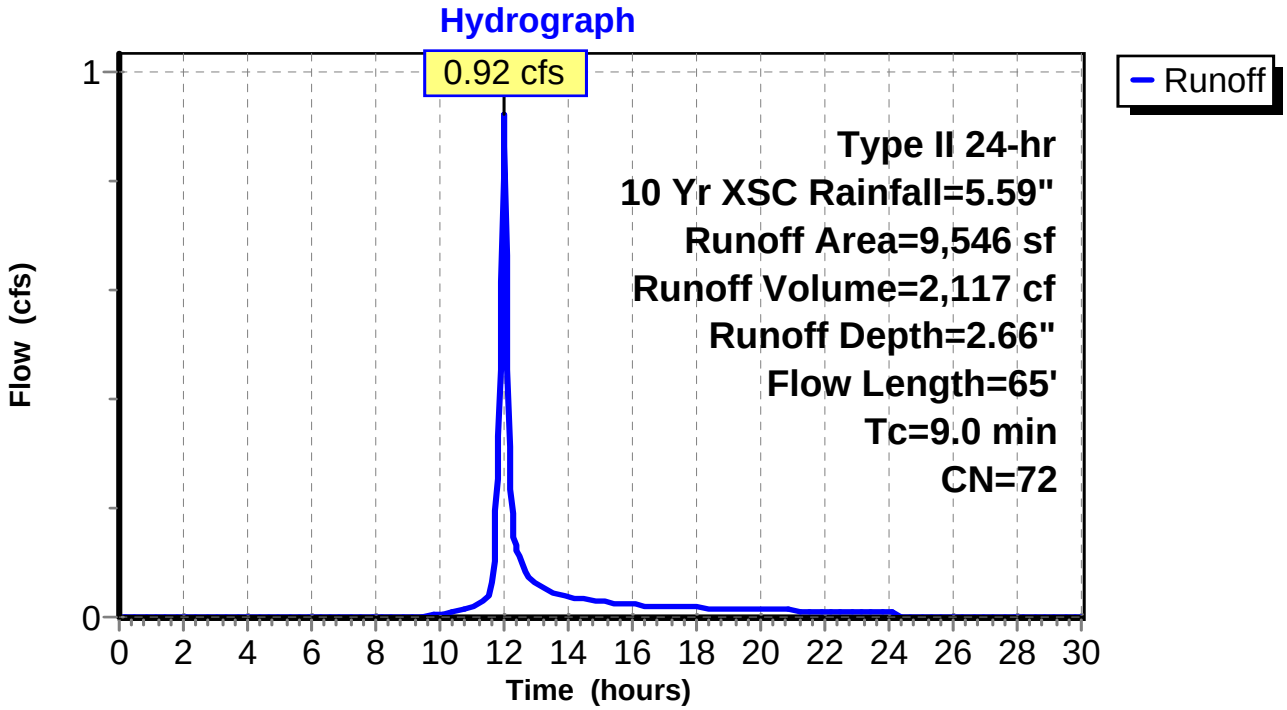
Runoff = 0.92 cfs @ 12.01 hrs, Volume= 2,117 cf, Depth= 2.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.04 hrs
Type II 24-hr 10 Yr XSC Rainfall=5.59"

Area (sf)	CN	Description
9,546	72	Woods/grass comb., Good, HSG C
9,546		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	44	0.0291	0.08		**Sheet Flow, sheet flow** Woods: Light underbrush n= 0.400 P2= 3.68"
0.1	21	0.1695	2.88		**Shallow Concentrated Flow, Shallow Concentrated** Short Grass Pasture Kv= 7.0 fps
9.0	65	Total			

Subcatchment ES3: REAR



Summary for Pond CBF: CBF

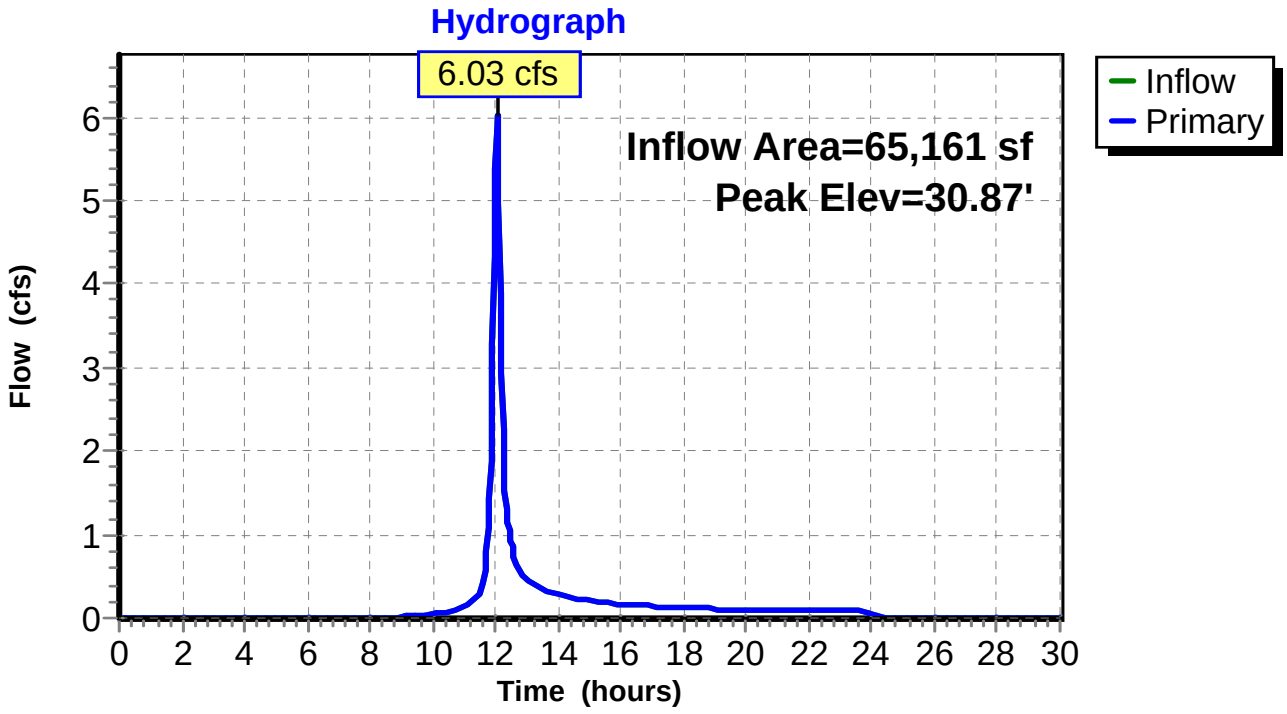
Inflow Area = 65,161 sf, 9.01% Impervious, Inflow Depth = 2.94" for 10 Yr XSC event
Inflow = 6.03 cfs @ 12.05 hrs, Volume= 15,941 cf
Outflow = 6.03 cfs @ 12.05 hrs, Volume= 15,941 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.03 cfs @ 12.05 hrs, Volume= 15,941 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.04 hrs
Peak Elev= 30.87' @ 12.05 hrs
Flood Elev= 35.27'

Device	Routing	Invert	Outlet Devices
#1	Primary	29.20'	**15.0" Round Culvert** L= 140.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 29.20' / 26.85' S= 0.0168 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Primary	32.27'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.95 cfs @ 12.05 hrs HW=30.84' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 5.95 cfs @ 4.85 fps)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Pond CBF: CBF

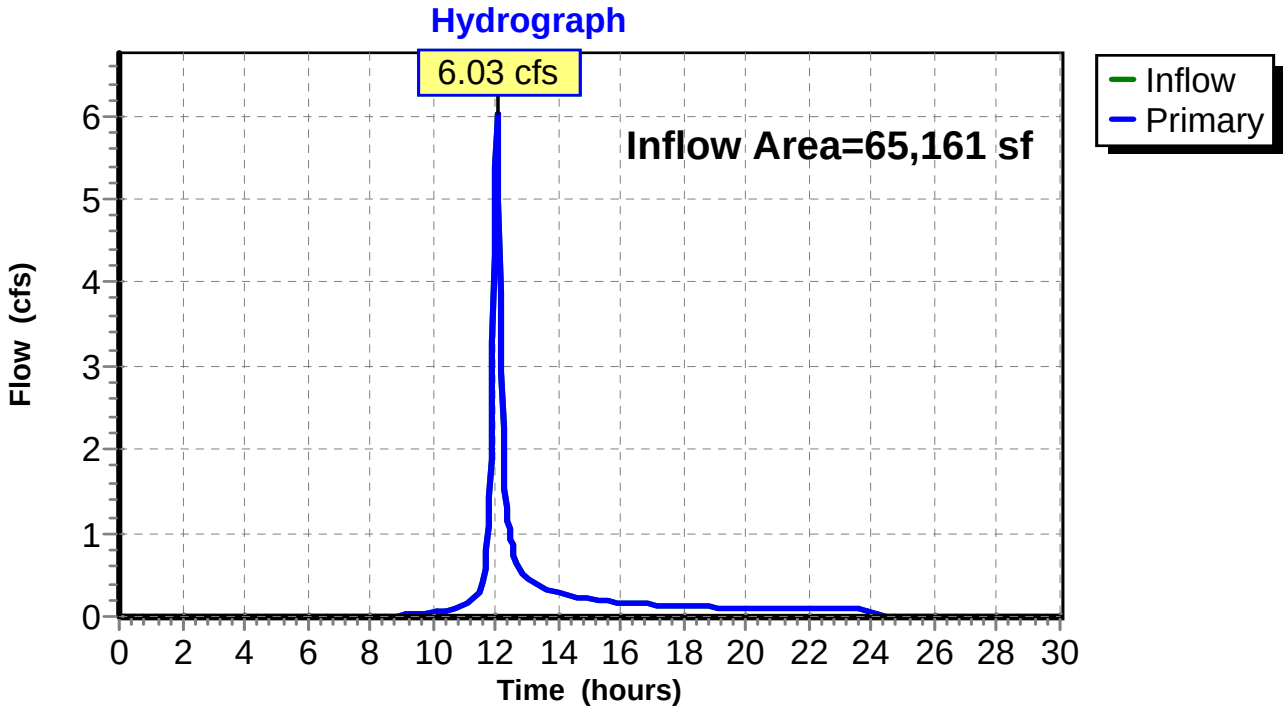


Summary for Link DP1: DESIGN POINT 1

Inflow Area = 65,161 sf, 9.01% Impervious, Inflow Depth = 2.94" for 10 Yr XSC event
Inflow = 6.03 cfs @ 12.05 hrs, Volume= 15,941 cf
Primary = 6.03 cfs @ 12.05 hrs, Volume= 15,941 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.04 hrs

Link DP1: DESIGN POINT 1

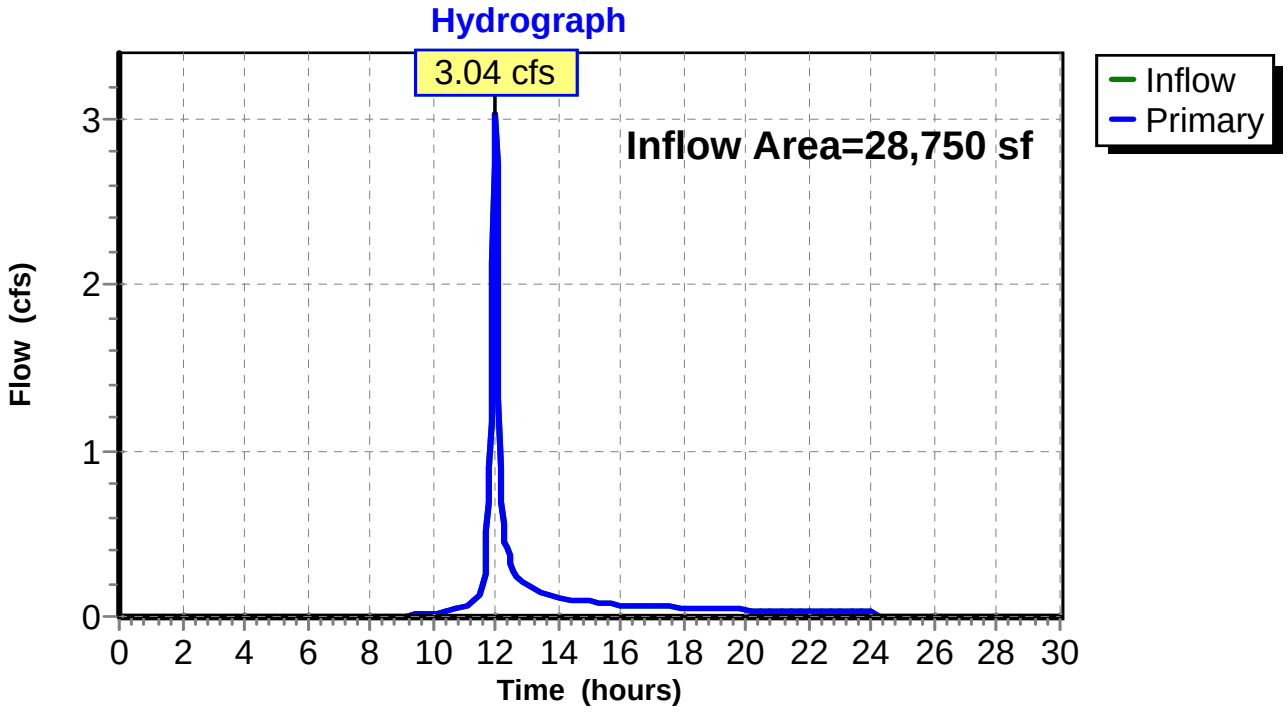


Summary for Link DP2: DESIGN POINT 2

Inflow Area = 28,750 sf, 11.60% Impervious, Inflow Depth = 2.84" for 10 Yr XSC event
Inflow = 3.04 cfs @ 12.00 hrs, Volume= 6,812 cf
Primary = 3.04 cfs @ 12.00 hrs, Volume= 6,812 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.04 hrs

Link DP2: DESIGN POINT 2

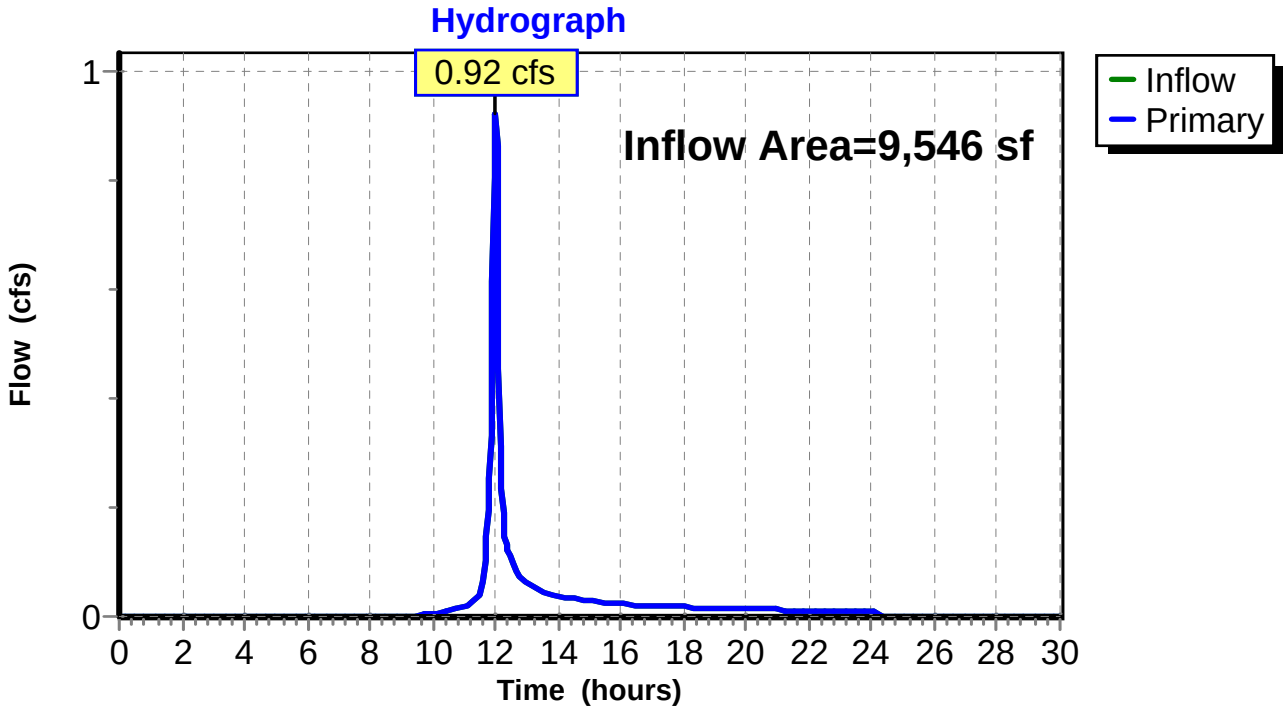


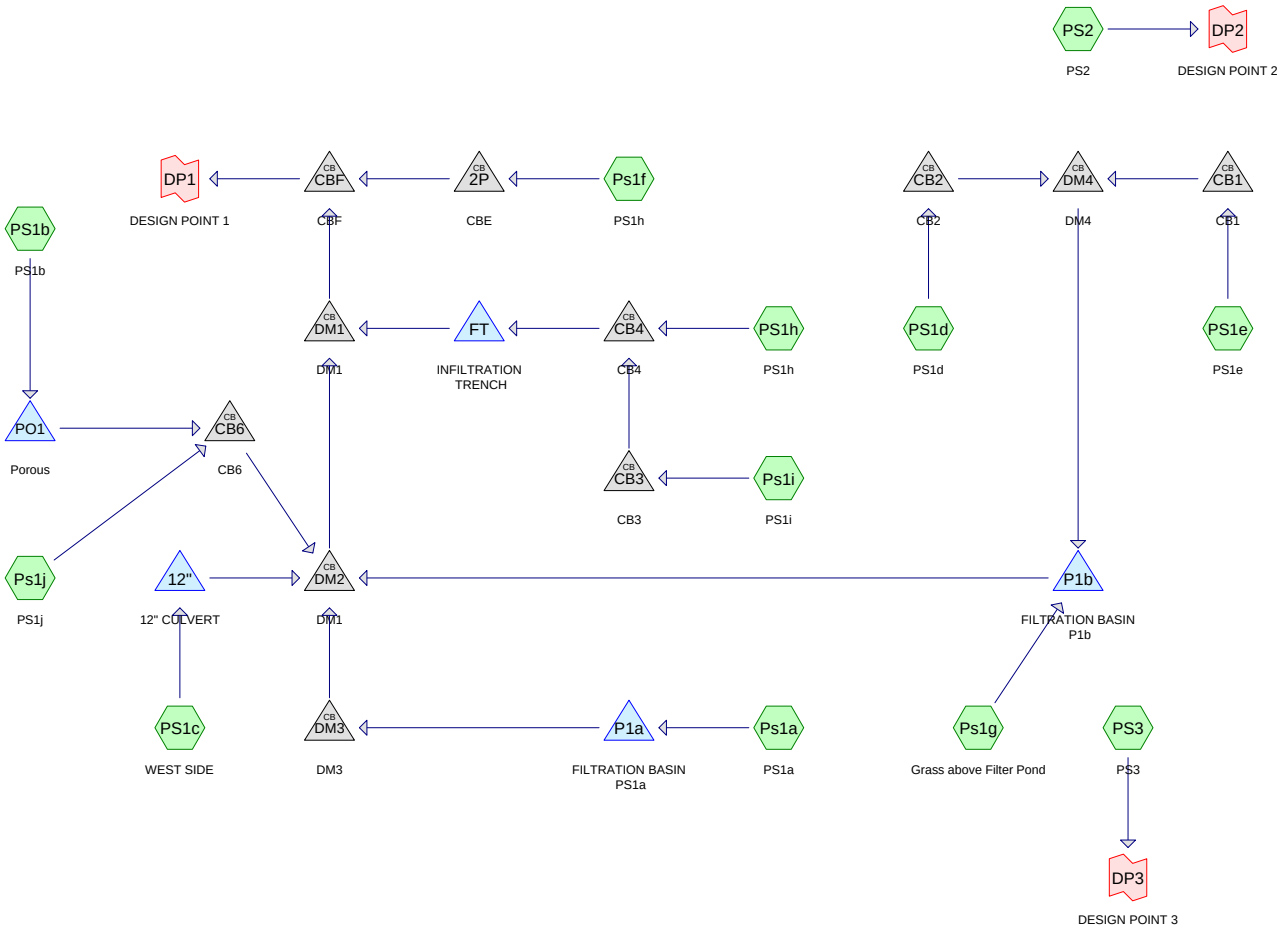
Summary for Link DP3: DESIGN POINT 3

Inflow Area = 9,546 sf, 0.00% Impervious, Inflow Depth = 2.66" for 10 Yr XSC event
Inflow = 0.92 cfs @ 12.01 hrs, Volume= 2,117 cf
Primary = 0.92 cfs @ 12.01 hrs, Volume= 2,117 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.04 hrs

Link DP3: DESIGN POINT 3





Routing Diagram for 2360-Post
Prepared by AMBIT ENGINEERING, INC
HydroCAD® 10.00 s/n 00801 © 2013 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
15,470	61	>75% Grass cover, Good, HSG B (Ps1a, PS1d, Ps1g, Ps1i, Ps1j, PS3)
9,408	74	>75% Grass cover, Good, HSG C (PS1b, Ps1f, PS1h, PS2)
33,813	98	Paved parking, HSG C (Ps1a, PS1b, PS1d, PS1e, Ps1f, PS1h, Ps1i, Ps1j)
2,994	98	Roofs, HSG C (Ps1a, PS2)
173	98	Unconnected pavement, HSG B (PS3)
632	98	Unconnected pavement, HSG B Rwall (PS1c)
489	98	Unconnected pavement, HSG C (Ps1a, PS2)
3,070	98	Unconnected roofs, HSG C (PS1b, Ps1f)
159	98	Unconnected wall, HSG C (Ps1f, PS1h, Ps1i)
4,291	98	Water Surface, 0% imp, HSG C (PS1b)
32,958	72	Woods/grass comb., Good, HSG C (PS1c)
103,457	**82**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
16,275	HSG B	Ps1a, PS1c, PS1d, Ps1g, Ps1i, Ps1j, PS3
87,182	HSG C	Ps1a, PS1b, PS1c, PS1d, PS1e, Ps1f, PS1h, Ps1i, Ps1j, PS2
0	HSG D	
0	Other	
103,457		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
0	15,470	9,408	0	0	24,878	>75% Grass cover, Good	
0	0	33,813	0	0	33,813	Paved parking	
0	0	2,994	0	0	2,994	Roofs	
0	805	489	0	0	1,294	Unconnected pavement	
0	0	3,070	0	0	3,070	Unconnected roofs	
0	0	159	0	0	159	Unconnected wall	
0	0	4,291	0	0	4,291	Water Surface, 0% imp	
0	0	32,958	0	0	32,958	Woods/grass comb., Good	
0	**16,275**	**87,182**	**0**	**0**	**103,457**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	2P	29.20	26.85	140.0	0.0168	0.013	15.0	0.0	0.0
2	12"	41.50	40.62	22.0	0.0400	0.013	6.0	0.0	0.0
3	CB1	42.00	42.10	6.0	-0.0167	0.013	12.0	0.0	0.0
4	CB2	41.30	41.00	18.0	0.0167	0.013	18.0	0.0	0.0
5	CB3	37.00	36.80	18.0	0.0111	0.013	15.0	0.0	0.0
6	CB4	36.70	36.50	5.0	0.0400	0.013	12.0	0.0	0.0
7	CB6	34.80	34.55	32.0	0.0078	0.013	12.0	0.0	0.0
8	CBF	25.35	21.50	204.0	0.0189	0.015	42.0	0.0	0.0
9	DM1	27.04	26.85	22.0	0.0086	0.011	18.0	0.0	0.0
10	DM2	34.45	33.06	100.0	0.0139	0.013	15.0	0.0	0.0
11	DM3	43.80	41.50	42.0	0.0548	0.013	12.0	0.0	0.0
12	DM4	40.90	38.50	94.0	0.0255	0.013	18.0	0.0	0.0
13	FT	36.40	36.40	33.1	0.0000	0.013	8.0	0.0	0.0
14	P1a	53.55	43.90	182.0	0.0530	0.013	24.0	0.0	0.0
15	P1a	53.70	53.65	50.0	0.0010	0.013	6.0	0.0	0.0
16	P1a	53.68	53.65	40.0	0.0008	0.013	6.0	0.0	0.0
17	P1b	35.55	34.90	64.0	0.0102	0.013	12.0	0.0	0.0
18	P1b	35.77	35.67	48.0	0.0021	0.013	6.0	0.0	0.0
19	PO1	42.30	40.00	90.0	0.0256	0.013	6.0	0.0	0.0

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points x 5
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 Ps1a: PS1a Runoff Area=24,080 sf 76.63% Impervious Runoff Depth=0.04"
Tc=5.0 min CN=89 Runoff=0.02 cfs 86 cf

Subcatchment PS1b: PS1b Runoff Area=12,245 sf 50.07% Impervious Runoff Depth=0.14"
Tc=5.0 min CN=94 Runoff=0.07 cfs 140 cf

Subcatchment PS1c: WEST SIDE Runoff Area=33,590 sf 1.88% Impervious Runoff Depth=0.00"
Flow Length=199' Tc=9.9 min CN=72 Runoff=0.00 cfs 0 cf

Subcatchment PS1d: PS1d Runoff Area=2,967 sf 65.99% Impervious Runoff Depth=0.01"
Tc=5.0 min CN=85 Runoff=0.00 cfs 3 cf

Subcatchment PS1e: PS1e Runoff Area=1,486 sf 100.00% Impervious Runoff Depth=0.32"
Tc=5.0 min CN=98 Runoff=0.02 cfs 39 cf

Subcatchment Ps1f: PS1h Runoff Area=11,452 sf 81.45% Impervious Runoff Depth=0.14"
Tc=5.0 min CN=94 Runoff=0.07 cfs 131 cf

Subcatchment Ps1g: Grass above Filter Pond Runoff Area=3,974 sf 0.00% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=61 Runoff=0.00 cfs 0 cf

Subcatchment PS1h: PS1h Runoff Area=1,737 sf 55.67% Impervious Runoff Depth=0.02"
Tc=5.0 min CN=87 Runoff=0.00 cfs 3 cf

Subcatchment Ps1i: PS1i Runoff Area=1,059 sf 76.49% Impervious Runoff Depth=0.04"
Tc=5.0 min CN=89 Runoff=0.00 cfs 4 cf

Subcatchment Ps1j: PS1j Runoff Area=520 sf 60.77% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=83 Runoff=0.00 cfs 0 cf

Subcatchment PS2: PS2 Runoff Area=5,767 sf 18.66% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=78 Runoff=0.00 cfs 0 cf

Subcatchment PS3: PS3 Runoff Area=4,580 sf 3.78% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=62 Runoff=0.00 cfs 0 cf

Pond 2P: CBE Peak Elev=29.32' Inflow=0.07 cfs 131 cf
15.0" Round Culvert n=0.013 L=140.0' S=0.0168 '/' Outflow=0.07 cfs 131 cf

Pond 12": 12" CULVERT Peak Elev=41.50' Storage=0 cf Inflow=0.00 cfs 0 cf
6.0" Round Culvert n=0.013 L=22.0' S=0.0400 '/' Outflow=0.00 cfs 0 cf

Pond CB1: CB1 Peak Elev=42.17' Inflow=0.02 cfs 39 cf
Outflow=0.02 cfs 39 cf

Pond CB2: CB2 Peak Elev=41.30' Inflow=0.00 cfs 3 cf
18.0" Round Culvert n=0.013 L=18.0' S=0.0167 '/' Outflow=0.00 cfs 3 cf

Pond CB3: CB3 Peak Elev=37.02' Inflow=0.00 cfs 4 cf
Outflow=0.00 cfs 4 cf

Pond CB4: CB4 Peak Elev=36.72' Inflow=0.00 cfs 7 cf
Outflow=0.00 cfs 7 cf

Pond CB6: CB6 Peak Elev=34.80' Inflow=0.00 cfs 0 cf
12.0" Round Culvert n=0.013 L=32.0' S=0.0078 '/' Outflow=0.00 cfs 0 cf

Pond CBF: CBF Peak Elev=25.44' Inflow=0.07 cfs 195 cf
42.0" Round Culvert n=0.015 L=204.0' S=0.0189 '/' Outflow=0.07 cfs 195 cf

Pond DM1: DM1 Peak Elev=27.06' Inflow=0.00 cfs 64 cf
18.0" Round Culvert n=0.011 L=22.0' S=0.0086 '/' Outflow=0.00 cfs 64 cf

Pond DM2: DM1 Peak Elev=34.47' Inflow=0.00 cfs 62 cf
15.0" Round Culvert n=0.013 L=100.0' S=0.0139 '/' Outflow=0.00 cfs 62 cf

Pond DM3: DM3 Peak Elev=43.82' Inflow=0.00 cfs 62 cf
12.0" Round Culvert n=0.013 L=42.0' S=0.0548 '/' Outflow=0.00 cfs 62 cf

Pond DM4: DM4 Peak Elev=40.96' Inflow=0.02 cfs 42 cf
18.0" Round Culvert n=0.013 L=94.0' S=0.0255 '/' Outflow=0.02 cfs 42 cf

Pond FT: INFILTRATION TRENCH Peak Elev=36.49' Storage=0 cf Inflow=0.00 cfs 7 cf
Discarded=0.00 cfs 5 cf Primary=0.00 cfs 2 cf Outflow=0.00 cfs 7 cf

Pond P1a: FILTRATION BASIN PS1a Peak Elev=53.72' Storage=56 cf Inflow=0.02 cfs 86 cf
Outflow=0.00 cfs 62 cf

Pond P1b: FILTRATION BASIN P1b Peak Elev=35.00' Storage=0 cf Inflow=0.02 cfs 42 cf
Discarded=0.02 cfs 42 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 42 cf

Pond PO1: Porous Peak Elev=42.19' Storage=1 cf Inflow=0.07 cfs 140 cf
Discarded=0.07 cfs 140 cf Primary=0.00 cfs 0 cf Outflow=0.07 cfs 140 cf

Link DP1: DESIGN POINT 1 delayed by 1.0 min Inflow=0.07 cfs 195 cf
Primary=0.07 cfs 195 cf

Link DP2: DESIGN POINT 2 Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Link DP3: DESIGN POINT 3 Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Total Runoff Area = 103,457 sf Runoff Volume = 407 cf Average Runoff Depth = 0.05"
60.05% Pervious = 62,127 sf 39.95% Impervious = 41,330 sf

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points x 5
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 Ps1a: PS1a Runoff Area=24,080 sf 76.63% Impervious Runoff Depth=2.52"
Tc=5.0 min CN=89 Runoff=2.48 cfs 5,065 cf

Subcatchment PS1b: PS1b Runoff Area=12,245 sf 50.07% Impervious Runoff Depth=3.01"
Tc=5.0 min CN=94 Runoff=1.43 cfs 3,073 cf

Subcatchment PS1c: WEST SIDE Runoff Area=33,590 sf 1.88% Impervious Runoff Depth=1.24"
Flow Length=199' Tc=9.9 min CN=72 Runoff=1.45 cfs 3,472 cf

Subcatchment PS1d: PS1d Runoff Area=2,967 sf 65.99% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=85 Runoff=0.27 cfs 538 cf

Subcatchment PS1e: PS1e Runoff Area=1,486 sf 100.00% Impervious Runoff Depth=3.45"
Tc=5.0 min CN=98 Runoff=0.18 cfs 427 cf

Subcatchment Ps1f: PS1h Runoff Area=11,452 sf 81.45% Impervious Runoff Depth=3.01"
Tc=5.0 min CN=94 Runoff=1.33 cfs 2,874 cf

Subcatchment Ps1g: Grass above Filter Pond Runoff Area=3,974 sf 0.00% Impervious Runoff Depth=0.66"
Tc=5.0 min CN=61 Runoff=0.10 cfs 217 cf

Subcatchment PS1h: PS1h Runoff Area=1,737 sf 55.67% Impervious Runoff Depth=2.34"
Tc=5.0 min CN=87 Runoff=0.17 cfs 339 cf

Subcatchment Ps1i: PS1i Runoff Area=1,059 sf 76.49% Impervious Runoff Depth=2.52"
Tc=5.0 min CN=89 Runoff=0.11 cfs 223 cf

Subcatchment Ps1j: PS1j Runoff Area=520 sf 60.77% Impervious Runoff Depth=2.01"
Tc=5.0 min CN=83 Runoff=0.04 cfs 87 cf

Subcatchment PS2: PS2 Runoff Area=5,767 sf 18.66% Impervious Runoff Depth=1.64"
Tc=5.0 min CN=78 Runoff=0.40 cfs 786 cf

Subcatchment PS3: PS3 Runoff Area=4,580 sf 3.78% Impervious Runoff Depth=0.70"
Tc=5.0 min CN=62 Runoff=0.12 cfs 268 cf

Pond 2P: CBE Peak Elev=29.75' Inflow=1.33 cfs 2,874 cf
15.0" Round Culvert n=0.013 L=140.0' S=0.0168 '/' Outflow=1.33 cfs 2,874 cf

Pond 12": 12" CULVERT Peak Elev=41.97' Storage=1,010 cf Inflow=1.45 cfs 3,472 cf
6.0" Round Culvert n=0.013 L=22.0' S=0.0400 '/' Outflow=0.45 cfs 3,470 cf

Pond CB1: CB1 Peak Elev=42.31' Inflow=0.18 cfs 427 cf
Outflow=0.18 cfs 427 cf

Pond CB2: CB2 Peak Elev=41.53' Inflow=0.27 cfs 538 cf
18.0" Round Culvert n=0.013 L=18.0' S=0.0167 '/' Outflow=0.27 cfs 538 cf

Pond CB3: CB3 Peak Elev=37.18' Inflow=0.11 cfs 223 cf
Outflow=0.11 cfs 223 cf

Pond CB4: CB4 Peak Elev=37.01' Inflow=0.28 cfs 562 cf
Outflow=0.28 cfs 562 cf

Pond CB6: CB6 Peak Elev=35.07' Inflow=0.04 cfs 87 cf
12.0" Round Culvert n=0.013 L=32.0' S=0.0078 '/' Outflow=0.04 cfs 87 cf

Pond CBF: CBF Peak Elev=25.91' Inflow=2.55 cfs 11,795 cf
42.0" Round Culvert n=0.015 L=204.0' S=0.0189 '/' Outflow=2.55 cfs 11,795 cf

Pond DM1: DM1 Peak Elev=27.58' Inflow=1.36 cfs 8,921 cf
18.0" Round Culvert n=0.011 L=22.0' S=0.0086 '/' Outflow=1.36 cfs 8,921 cf

Pond DM2: DM1 Peak Elev=35.06' Inflow=1.27 cfs 8,595 cf
15.0" Round Culvert n=0.013 L=100.0' S=0.0139 '/' Outflow=1.27 cfs 8,595 cf

Pond DM3: DM3 Peak Elev=44.34' Inflow=0.85 cfs 5,038 cf
12.0" Round Culvert n=0.013 L=42.0' S=0.0548 '/' Outflow=0.85 cfs 5,038 cf

Pond DM4: DM4 Peak Elev=41.19' Inflow=0.45 cfs 964 cf
18.0" Round Culvert n=0.013 L=94.0' S=0.0255 '/' Outflow=0.45 cfs 964 cf

Pond FT: INFILTRATION TRENCH Peak Elev=36.86' Storage=9 cf Inflow=0.28 cfs 562 cf
Discarded=0.02 cfs 236 cf Primary=0.26 cfs 326 cf Outflow=0.28 cfs 562 cf

Pond P1a: FILTRATION BASIN PS1a Peak Elev=55.61' Storage=1,796 cf Inflow=2.48 cfs 5,065 cf
Outflow=0.85 cfs 5,038 cf

Pond P1b: FILTRATION BASIN P1b Peak Elev=35.30' Storage=126 cf Inflow=0.55 cfs 1,181 cf
Discarded=0.27 cfs 1,181 cf Primary=0.00 cfs 0 cf Outflow=0.27 cfs 1,181 cf

Pond PO1: Porous Peak Elev=42.28' Storage=149 cf Inflow=1.43 cfs 3,073 cf
Discarded=1.00 cfs 3,073 cf Primary=0.00 cfs 0 cf Outflow=1.00 cfs 3,073 cf

Link DP1: DESIGN POINT 1 delayed by 1.0 min Inflow=2.55 cfs 11,795 cf
Primary=2.54 cfs 11,795 cf

Link DP2: DESIGN POINT 2 Inflow=0.40 cfs 786 cf
Primary=0.40 cfs 786 cf

Link DP3: DESIGN POINT 3 Inflow=0.12 cfs 268 cf
Primary=0.12 cfs 268 cf

Total Runoff Area = 103,457 sf Runoff Volume = 17,368 cf Average Runoff Depth = 2.01"
60.05% Pervious = 62,127 sf 39.95% Impervious = 41,330 sf

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points x 5
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 Ps1a: PS1a Runoff Area=24,080 sf 76.63% Impervious Runoff Depth=4.34"
Tc=5.0 min CN=89 Runoff=4.13 cfs 8,707 cf

Subcatchment PS1b: PS1b Runoff Area=12,245 sf 50.07% Impervious Runoff Depth=4.89"
Tc=5.0 min CN=94 Runoff=2.24 cfs 4,991 cf

Subcatchment PS1c: WEST SIDE Runoff Area=33,590 sf 1.88% Impervious Runoff Depth=2.66"
Flow Length=199' Tc=9.9 min CN=72 Runoff=3.18 cfs 7,450 cf

Subcatchment PS1d: PS1d Runoff Area=2,967 sf 65.99% Impervious Runoff Depth=3.92"
Tc=5.0 min CN=85 Runoff=0.47 cfs 969 cf

Subcatchment PS1e: PS1e Runoff Area=1,486 sf 100.00% Impervious Runoff Depth=5.35"
Tc=5.0 min CN=98 Runoff=0.28 cfs 663 cf

Subcatchment Ps1f: PS1h Runoff Area=11,452 sf 81.45% Impervious Runoff Depth=4.89"
Tc=5.0 min CN=94 Runoff=2.10 cfs 4,667 cf

Subcatchment Ps1g: Grass above Filter Pond Runoff Area=3,974 sf 0.00% Impervious Runoff Depth=1.74"
Tc=5.0 min CN=61 Runoff=0.29 cfs 575 cf

Subcatchment PS1h: PS1h Runoff Area=1,737 sf 55.67% Impervious Runoff Depth=4.13"
Tc=5.0 min CN=87 Runoff=0.29 cfs 597 cf

Subcatchment Ps1i: PS1i Runoff Area=1,059 sf 76.49% Impervious Runoff Depth=4.34"
Tc=5.0 min CN=89 Runoff=0.18 cfs 383 cf

Subcatchment Ps1j: PS1j Runoff Area=520 sf 60.77% Impervious Runoff Depth=3.71"
Tc=5.0 min CN=83 Runoff=0.08 cfs 161 cf

Subcatchment PS2: PS2 Runoff Area=5,767 sf 18.66% Impervious Runoff Depth=3.22"
Tc=5.0 min CN=78 Runoff=0.78 cfs 1,547 cf

Subcatchment PS3: PS3 Runoff Area=4,580 sf 3.78% Impervious Runoff Depth=1.82"
Tc=5.0 min CN=62 Runoff=0.35 cfs 693 cf

Pond 2P: CBE Peak Elev=29.92' Inflow=2.10 cfs 4,667 cf
15.0" Round Culvert n=0.013 L=140.0' S=0.0168 '/' Outflow=2.10 cfs 4,667 cf

Pond 12": 12" CULVERT Peak Elev=42.28' Storage=2,587 cf Inflow=3.18 cfs 7,450 cf
6.0" Round Culvert n=0.013 L=22.0' S=0.0400 '/' Outflow=0.69 cfs 7,448 cf

Pond CB1: CB1 Peak Elev=42.36' Inflow=0.28 cfs 663 cf
Outflow=0.28 cfs 663 cf

Pond CB2: CB2 Peak Elev=41.61' Inflow=0.47 cfs 969 cf
18.0" Round Culvert n=0.013 L=18.0' S=0.0167 '/' Outflow=0.47 cfs 969 cf

Pond CB3: CB3 Peak Elev=37.26' Inflow=0.18 cfs 383 cf
Outflow=0.18 cfs 383 cf

Pond CB4: CB4 Peak Elev=37.15' Inflow=0.47 cfs 980 cf
Outflow=0.47 cfs 980 cf

Pond CB6: CB6 Peak Elev=35.24' Inflow=0.16 cfs 220 cf
12.0" Round Culvert n=0.013 L=32.0' S=0.0078 '/' Outflow=0.16 cfs 220 cf

Pond CBF: CBF Peak Elev=26.07' Inflow=4.12 cfs 21,657 cf
42.0" Round Culvert n=0.015 L=204.0' S=0.0189 '/' Outflow=4.12 cfs 21,658 cf

Pond DM1: DM1 Peak Elev=27.74' Inflow=2.13 cfs 16,990 cf
18.0" Round Culvert n=0.011 L=22.0' S=0.0086 '/' Outflow=2.13 cfs 16,990 cf

Pond DM2: DM1 Peak Elev=35.22' Inflow=1.87 cfs 16,378 cf
15.0" Round Culvert n=0.013 L=100.0' S=0.0139 '/' Outflow=1.87 cfs 16,378 cf

Pond DM3: DM3 Peak Elev=44.40' Inflow=1.04 cfs 8,680 cf
12.0" Round Culvert n=0.013 L=42.0' S=0.0548 '/' Outflow=1.04 cfs 8,680 cf

Pond DM4: DM4 Peak Elev=41.28' Inflow=0.75 cfs 1,631 cf
18.0" Round Culvert n=0.013 L=94.0' S=0.0255 '/' Outflow=0.75 cfs 1,631 cf

Pond FT: INFILTRATION TRENCH Peak Elev=37.02' Storage=13 cf Inflow=0.47 cfs 980 cf
Discarded=0.02 cfs 368 cf Primary=0.45 cfs 612 cf Outflow=0.47 cfs 980 cf

Pond P1a: FILTRATION BASIN PS1a Peak Elev=56.34' Storage=3,091 cf Inflow=4.13 cfs 8,707 cf
Outflow=1.04 cfs 8,680 cf

Pond P1b: FILTRATION BASIN P1b Peak Elev=36.00' Storage=428 cf Inflow=1.04 cfs 2,206 cf
Discarded=0.33 cfs 2,177 cf Primary=0.07 cfs 30 cf Outflow=0.40 cfs 2,206 cf

Pond PO1: Porous Peak Elev=42.53' Storage=588 cf Inflow=2.24 cfs 4,991 cf
Discarded=1.00 cfs 4,931 cf Primary=0.12 cfs 59 cf Outflow=1.12 cfs 4,991 cf

Link DP1: DESIGN POINT 1 delayed by 1.0 min Inflow=4.12 cfs 21,658 cf
Primary=4.11 cfs 21,658 cf

Link DP2: DESIGN POINT 2 Inflow=0.78 cfs 1,547 cf
Primary=0.78 cfs 1,547 cf

Link DP3: DESIGN POINT 3 Inflow=0.35 cfs 693 cf
Primary=0.35 cfs 693 cf

Total Runoff Area = 103,457 sf Runoff Volume = 31,402 cf Average Runoff Depth = 3.64"
60.05% Pervious = 62,127 sf 39.95% Impervious = 41,330 sf

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points x 5
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 Ps1a: PS1a Runoff Area=24,080 sf 76.63% Impervious Runoff Depth=5.79"
Tc=5.0 min CN=89 Runoff=5.39 cfs 11,611 cf

Subcatchment PS1b: PS1b Runoff Area=12,245 sf 50.07% Impervious Runoff Depth=6.37"
Tc=5.0 min CN=94 Runoff=2.87 cfs 6,498 cf

Subcatchment PS1c: WEST SIDE Runoff Area=33,590 sf 1.88% Impervious Runoff Depth=3.90"
Flow Length=199' Tc=9.9 min CN=72 Runoff=4.64 cfs 10,909 cf

Subcatchment PS1d: PS1d Runoff Area=2,967 sf 65.99% Impervious Runoff Depth=5.33"
Tc=5.0 min CN=85 Runoff=0.63 cfs 1,318 cf

Subcatchment PS1e: PS1e Runoff Area=1,486 sf 100.00% Impervious Runoff Depth=6.84"
Tc=5.0 min CN=98 Runoff=0.36 cfs 847 cf

Subcatchment Ps1f: PS1h Runoff Area=11,452 sf 81.45% Impervious Runoff Depth=6.37"
Tc=5.0 min CN=94 Runoff=2.69 cfs 6,077 cf

Subcatchment Ps1g: Grass above Filter Pond Runoff Area=3,974 sf 0.00% Impervious Runoff Depth=2.76"
Tc=5.0 min CN=61 Runoff=0.47 cfs 914 cf

Subcatchment PS1h: PS1h Runoff Area=1,737 sf 55.67% Impervious Runoff Depth=5.56"
Tc=5.0 min CN=87 Runoff=0.38 cfs 804 cf

Subcatchment Ps1i: PS1i Runoff Area=1,059 sf 76.49% Impervious Runoff Depth=5.79"
Tc=5.0 min CN=89 Runoff=0.24 cfs 511 cf

Subcatchment Ps1j: PS1j Runoff Area=520 sf 60.77% Impervious Runoff Depth=5.10"
Tc=5.0 min CN=83 Runoff=0.11 cfs 221 cf

Subcatchment PS2: PS2 Runoff Area=5,767 sf 18.66% Impervious Runoff Depth=4.55"
Tc=5.0 min CN=78 Runoff=1.09 cfs 2,185 cf

Subcatchment PS3: PS3 Runoff Area=4,580 sf 3.78% Impervious Runoff Depth=2.86"
Tc=5.0 min CN=62 Runoff=0.56 cfs 1,092 cf

Pond 2P: CBE Peak Elev=30.03' Inflow=2.69 cfs 6,077 cf
15.0" Round Culvert n=0.013 L=140.0' S=0.0168 '/' Outflow=2.69 cfs 6,077 cf

Pond 12": 12" CULVERT Peak Elev=42.47' Storage=4,098 cf Inflow=4.64 cfs 10,909 cf
6.0" Round Culvert n=0.013 L=22.0' S=0.0400 '/' Outflow=0.80 cfs 10,907 cf

Pond CB1: CB1 Peak Elev=42.39' Inflow=0.36 cfs 847 cf
Outflow=0.36 cfs 847 cf

Pond CB2: CB2 Peak Elev=41.66' Inflow=0.63 cfs 1,318 cf
18.0" Round Culvert n=0.013 L=18.0' S=0.0167 '/' Outflow=0.63 cfs 1,318 cf

Pond CB3: CB3 Peak Elev=37.35' Inflow=0.24 cfs 511 cf
Outflow=0.24 cfs 511 cf

Pond CB4: CB4 Peak Elev=37.27' Inflow=0.62 cfs 1,315 cf
Outflow=0.62 cfs 1,315 cf

Pond CB6: CB6 Peak Elev=35.44' Inflow=0.39 cfs 476 cf
12.0" Round Culvert n=0.013 L=32.0' S=0.0078 '/' Outflow=0.39 cfs 476 cf

Pond CBF: CBF Peak Elev=26.18' Inflow=5.42 cfs 30,174 cf
42.0" Round Culvert n=0.015 L=204.0' S=0.0189 '/' Outflow=5.42 cfs 30,174 cf

Pond DM1: DM1 Peak Elev=27.90' Inflow=2.99 cfs 24,097 cf
18.0" Round Culvert n=0.011 L=22.0' S=0.0086 '/' Outflow=2.99 cfs 24,097 cf

Pond DM2: DM1 Peak Elev=35.39' Inflow=2.60 cfs 23,242 cf
15.0" Round Culvert n=0.013 L=100.0' S=0.0139 '/' Outflow=2.60 cfs 23,242 cf

Pond DM3: DM3 Peak Elev=44.43' Inflow=1.12 cfs 11,584 cf
12.0" Round Culvert n=0.013 L=42.0' S=0.0548 '/' Outflow=1.12 cfs 11,584 cf

Pond DM4: DM4 Peak Elev=41.34' Inflow=0.99 cfs 2,165 cf
18.0" Round Culvert n=0.013 L=94.0' S=0.0255 '/' Outflow=0.99 cfs 2,165 cf

Pond FT: INFILTRATION TRENCH Peak Elev=37.15' Storage=16 cf Inflow=0.62 cfs 1,315 cf
Discarded=0.02 cfs 460 cf Primary=0.60 cfs 855 cf Outflow=0.61 cfs 1,315 cf

Pond P1a: FILTRATION BASIN PS1a Peak Elev=56.71' Storage=4,196 cf Inflow=5.39 cfs 11,611 cf
Outflow=1.12 cfs 11,584 cf

Pond P1b: FILTRATION BASIN P1b Peak Elev=36.48' Storage=622 cf Inflow=1.45 cfs 3,079 cf
Discarded=0.37 cfs 2,804 cf Primary=0.38 cfs 274 cf Outflow=0.75 cfs 3,079 cf

Pond PO1: Porous Peak Elev=42.75' Storage=957 cf Inflow=2.87 cfs 6,498 cf
Discarded=1.01 cfs 6,242 cf Primary=0.33 cfs 255 cf Outflow=1.34 cfs 6,498 cf

Link DP1: DESIGN POINT 1 delayed by 1.0 min Inflow=5.42 cfs 30,174 cf
Primary=5.41 cfs 30,174 cf

Link DP2: DESIGN POINT 2 Inflow=1.09 cfs 2,185 cf
Primary=1.09 cfs 2,185 cf

Link DP3: DESIGN POINT 3 Inflow=0.56 cfs 1,092 cf
Primary=0.56 cfs 1,092 cf

Total Runoff Area = 103,457 sf Runoff Volume = 42,987 cf Average Runoff Depth = 4.99"
60.05% Pervious = 62,127 sf 39.95% Impervious = 41,330 sf

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points x 5
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 Ps1a: PS1a Runoff Area=24,080 sf 76.63% Impervious Runoff Depth=7.17"
Tc=5.0 min CN=89 Runoff=6.59 cfs 14,384 cf

Subcatchment PS1b: PS1b Runoff Area=12,245 sf 50.07% Impervious Runoff Depth=7.77"
Tc=5.0 min CN=94 Runoff=3.47 cfs 7,928 cf

Subcatchment PS1c: WEST SIDE Runoff Area=33,590 sf 1.88% Impervious Runoff Depth=5.13"
Flow Length=199' Tc=9.9 min CN=72 Runoff=6.06 cfs 14,351 cf

Subcatchment PS1d: PS1d Runoff Area=2,967 sf 65.99% Impervious Runoff Depth=6.69"
Tc=5.0 min CN=85 Runoff=0.78 cfs 1,653 cf

Subcatchment PS1e: PS1e Runoff Area=1,486 sf 100.00% Impervious Runoff Depth=8.25"
Tc=5.0 min CN=98 Runoff=0.43 cfs 1,022 cf

Subcatchment Ps1f: PS1h Runoff Area=11,452 sf 81.45% Impervious Runoff Depth=7.77"
Tc=5.0 min CN=94 Runoff=3.24 cfs 7,415 cf

Subcatchment Ps1g: Grass above Filter Pond Runoff Area=3,974 sf 0.00% Impervious Runoff Depth=3.82"
Tc=5.0 min CN=61 Runoff=0.65 cfs 1,266 cf

Subcatchment PS1h: PS1h Runoff Area=1,737 sf 55.67% Impervious Runoff Depth=6.93"
Tc=5.0 min CN=87 Runoff=0.47 cfs 1,003 cf

Subcatchment Ps1i: PS1i Runoff Area=1,059 sf 76.49% Impervious Runoff Depth=7.17"
Tc=5.0 min CN=89 Runoff=0.29 cfs 633 cf

Subcatchment Ps1j: PS1j Runoff Area=520 sf 60.77% Impervious Runoff Depth=6.45"
Tc=5.0 min CN=83 Runoff=0.13 cfs 279 cf

Subcatchment PS2: PS2 Runoff Area=5,767 sf 18.66% Impervious Runoff Depth=5.85"
Tc=5.0 min CN=78 Runoff=1.38 cfs 2,809 cf

Subcatchment PS3: PS3 Runoff Area=4,580 sf 3.78% Impervious Runoff Depth=3.94"
Tc=5.0 min CN=62 Runoff=0.77 cfs 1,504 cf

Pond 2P: CBE Peak Elev=30.14' Inflow=3.24 cfs 7,415 cf
15.0" Round Culvert n=0.013 L=140.0' S=0.0168 '/' Outflow=3.24 cfs 7,415 cf

Pond 12": 12" CULVERT Peak Elev=42.63' Storage=5,679 cf Inflow=6.06 cfs 14,351 cf
6.0" Round Culvert n=0.013 L=22.0' S=0.0400 '/' Outflow=0.89 cfs 14,349 cf

Pond CB1: CB1 Peak Elev=42.43' Inflow=0.43 cfs 1,022 cf
Outflow=0.43 cfs 1,022 cf

Pond CB2: CB2 Peak Elev=41.71' Inflow=0.78 cfs 1,653 cf
18.0" Round Culvert n=0.013 L=18.0' S=0.0167 '/' Outflow=0.78 cfs 1,653 cf

Pond CB3: CB3 Peak Elev=37.47' Inflow=0.29 cfs 633 cf
Outflow=0.29 cfs 633 cf

Pond CB4: CB4 Peak Elev=37.43' Inflow=0.76 cfs 1,635 cf
Outflow=0.76 cfs 1,635 cf

Pond CB6: CB6 Peak Elev=35.59' Inflow=0.56 cfs 800 cf
12.0" Round Culvert n=0.013 L=32.0' S=0.0078 '/' Outflow=0.56 cfs 800 cf

Pond CBF: CBF Peak Elev=26.28' Inflow=6.71 cfs 38,584 cf
42.0" Round Culvert n=0.015 L=204.0' S=0.0189 '/' Outflow=6.71 cfs 38,585 cf

Pond DM1: DM1 Peak Elev=28.02' Inflow=3.72 cfs 31,170 cf
18.0" Round Culvert n=0.011 L=22.0' S=0.0086 '/' Outflow=3.72 cfs 31,170 cf

Pond DM2: DM1 Peak Elev=35.54' Inflow=3.19 cfs 30,074 cf
15.0" Round Culvert n=0.013 L=100.0' S=0.0139 '/' Outflow=3.19 cfs 30,074 cf

Pond DM3: DM3 Peak Elev=44.46' Inflow=1.20 cfs 14,357 cf
12.0" Round Culvert n=0.013 L=42.0' S=0.0548 '/' Outflow=1.20 cfs 14,357 cf

Pond DM4: DM4 Peak Elev=41.39' Inflow=1.21 cfs 2,675 cf
18.0" Round Culvert n=0.013 L=94.0' S=0.0255 '/' Outflow=1.21 cfs 2,675 cf

Pond FT: INFILTRATION TRENCH Peak Elev=37.32' Storage=20 cf Inflow=0.76 cfs 1,635 cf
Discarded=0.02 cfs 540 cf Primary=0.74 cfs 1,095 cf Outflow=0.76 cfs 1,635 cf

Pond P1a: FILTRATION BASIN PS1a Peak Elev=57.07' Storage=5,281 cf Inflow=6.59 cfs 14,384 cf
Outflow=1.20 cfs 14,357 cf

Pond P1b: FILTRATION BASIN P1b Peak Elev=37.11' Storage=791 cf Inflow=1.85 cfs 3,941 cf
Discarded=0.42 cfs 3,372 cf Primary=0.66 cfs 569 cf Outflow=1.08 cfs 3,941 cf

Pond PO1: Porous Peak Elev=42.97' Storage=1,332 cf Inflow=3.47 cfs 7,928 cf
Discarded=1.01 cfs 7,407 cf Primary=0.48 cfs 520 cf Outflow=1.49 cfs 7,928 cf

Link DP1: DESIGN POINT 1 delayed by 1.0 min Inflow=6.71 cfs 38,585 cf
Primary=6.70 cfs 38,585 cf

Link DP2: DESIGN POINT 2 Inflow=1.38 cfs 2,809 cf
Primary=1.38 cfs 2,809 cf

Link DP3: DESIGN POINT 3 Inflow=0.77 cfs 1,504 cf
Primary=0.77 cfs 1,504 cf

Total Runoff Area = 103,457 sf Runoff Volume = 54,246 cf Average Runoff Depth = 6.29"
60.05% Pervious = 62,127 sf 39.95% Impervious = 41,330 sf

Summary for Subcatchment Ps1a: PS1a

Runoff = 4.13 cfs @ 11.96 hrs, Volume= 8,707 cf, Depth= 4.34"

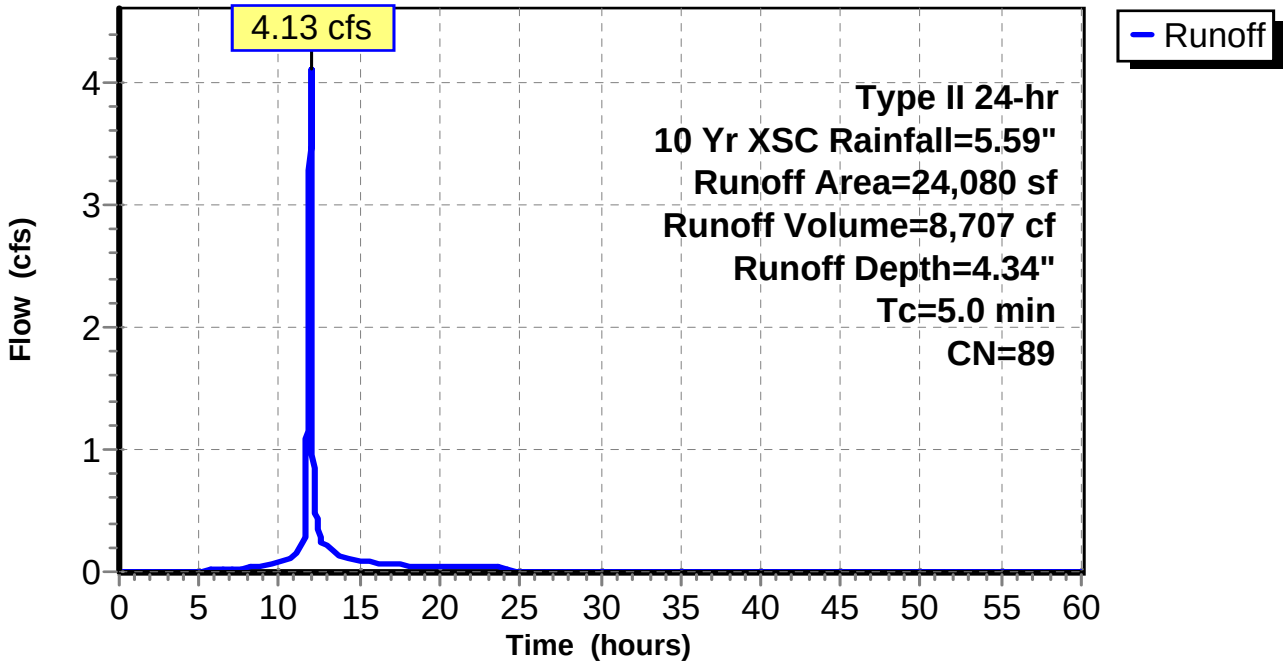
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10 Yr XSC Rainfall=5.59"

Area (sf)	CN	Description
16,046	98	Paved parking, HSG C
479	98	Unconnected pavement, HSG C
1,928	98	Roofs, HSG C
3,664	61	>75% Grass cover, Good, HSG B
1,963	61	>75% Grass cover, Good, HSG B
24,080	89	Weighted Average
5,627	61	23.37% Pervious Area
18,453	98	76.63% Impervious Area
479		2.60% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, TR55 MIN 5 mIN**

Subcatchment Ps1a: PS1a

Hydrograph



Summary for Subcatchment PS1b: PS1b

Runoff = 2.24 cfs @ 11.96 hrs, Volume= 4,991 cf, Depth= 4.89"

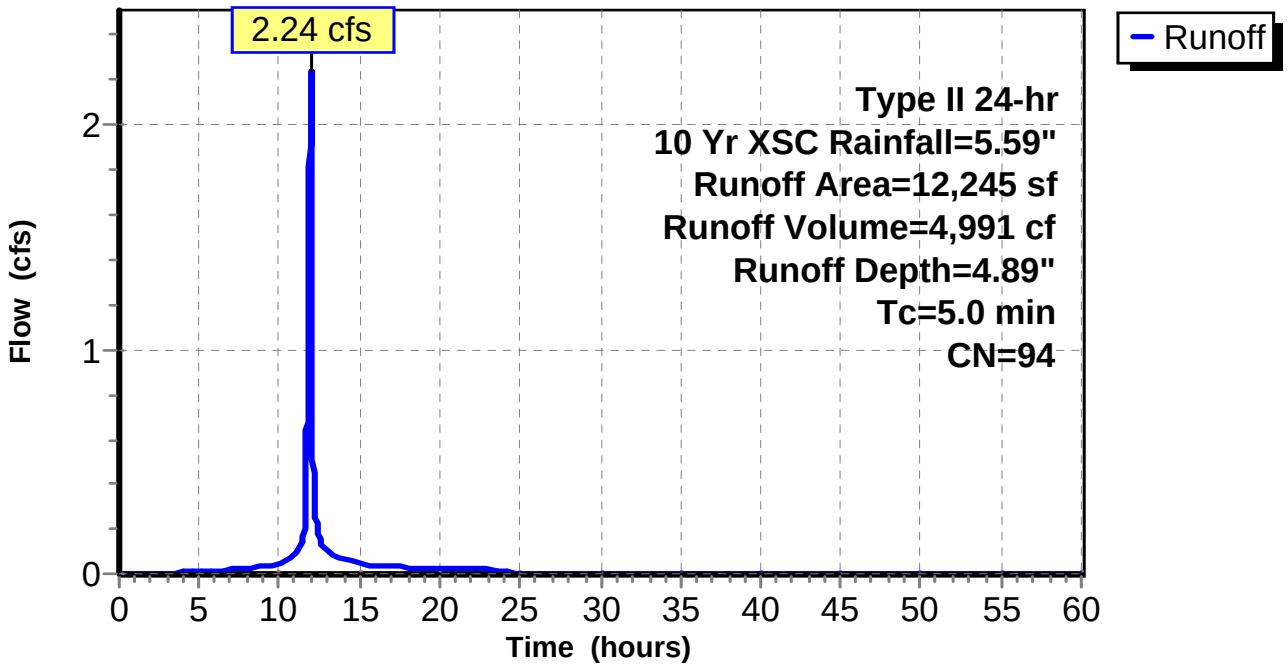
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10 Yr XSC Rainfall=5.59"

Area (sf)	CN	Description
4,092	98	Paved parking, HSG C
736	98	Paved parking, HSG C
1,303	98	Unconnected roofs, HSG C
1,823	74	>75% Grass cover, Good, HSG C
4,291	98	Water Surface, 0% imp, HSG C
12,245	94	Weighted Average
6,114	91	49.93% Pervious Area
6,131	98	50.07% Impervious Area
1,303		21.25% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Per TR55**

Subcatchment PS1b: PS1b

Hydrograph



Summary for Subcatchment PS1c: WEST SIDE

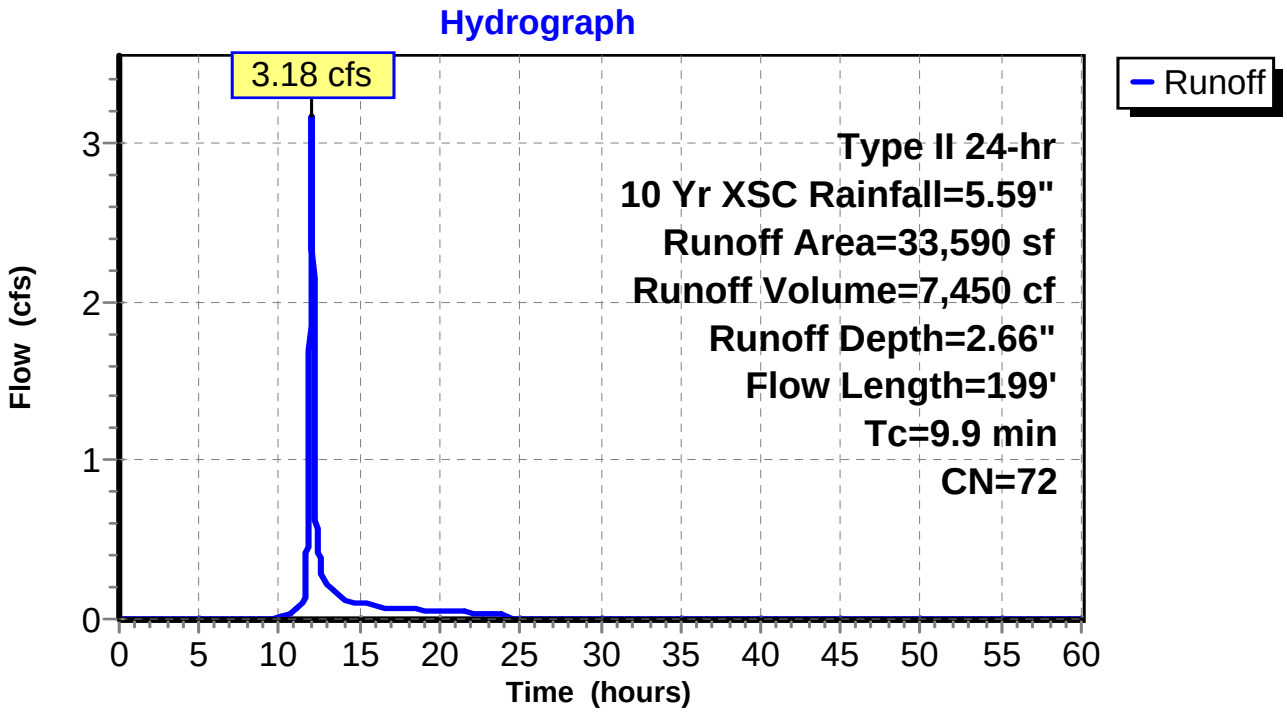
Runoff = 3.18 cfs @ 12.02 hrs, Volume= 7,450 cf, Depth= 2.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10 Yr XSC Rainfall=5.59"

	Area (sf)	CN	Description
	32,958	72	Woods/grass comb., Good, HSG C
*	632	98	Unconnected pavement, HSG B Rwall
	33,590	72	Weighted Average
	32,958	72	98.12% Pervious Area
	632	98	1.88% Impervious Area
	632		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	50	0.0466	0.10		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.68"
1.7	149	0.0866	1.47		**Shallow Concentrated Flow, Light Brush Woods** Woodland Kv= 5.0 fps
9.9	199	Total			

Subcatchment PS1c: WEST SIDE



Summary for Subcatchment PS1d: PS1d

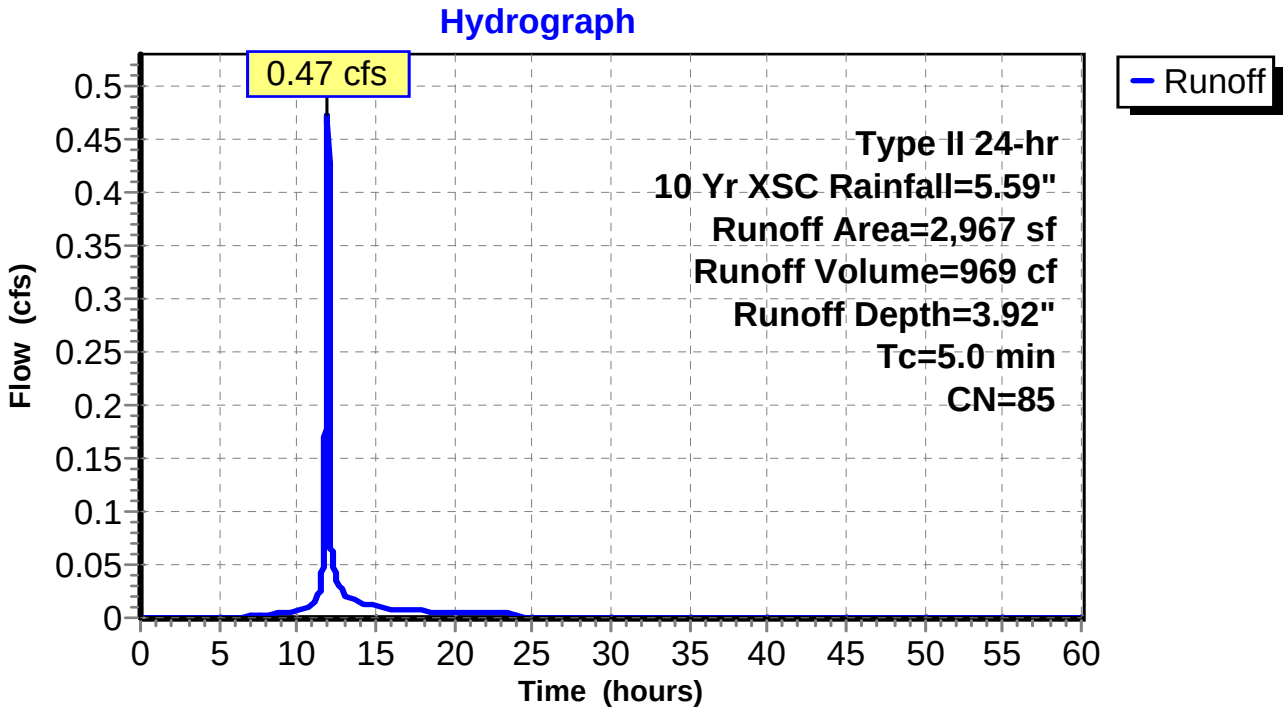
Runoff = 0.47 cfs @ 11.96 hrs, Volume= 969 cf, Depth= 3.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10 Yr XSC Rainfall=5.59"

Area (sf)	CN	Description
1,958	98	Paved parking, HSG C
1,009	61	>75% Grass cover, Good, HSG B
2,967	85	Weighted Average
1,009	61	34.01% Pervious Area
1,958	98	65.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, TR55 MIN.**

Subcatchment PS1d: PS1d



Summary for Subcatchment PS1e: PS1e

Runoff = 0.28 cfs @ 11.96 hrs, Volume= 663 cf, Depth= 5.35"

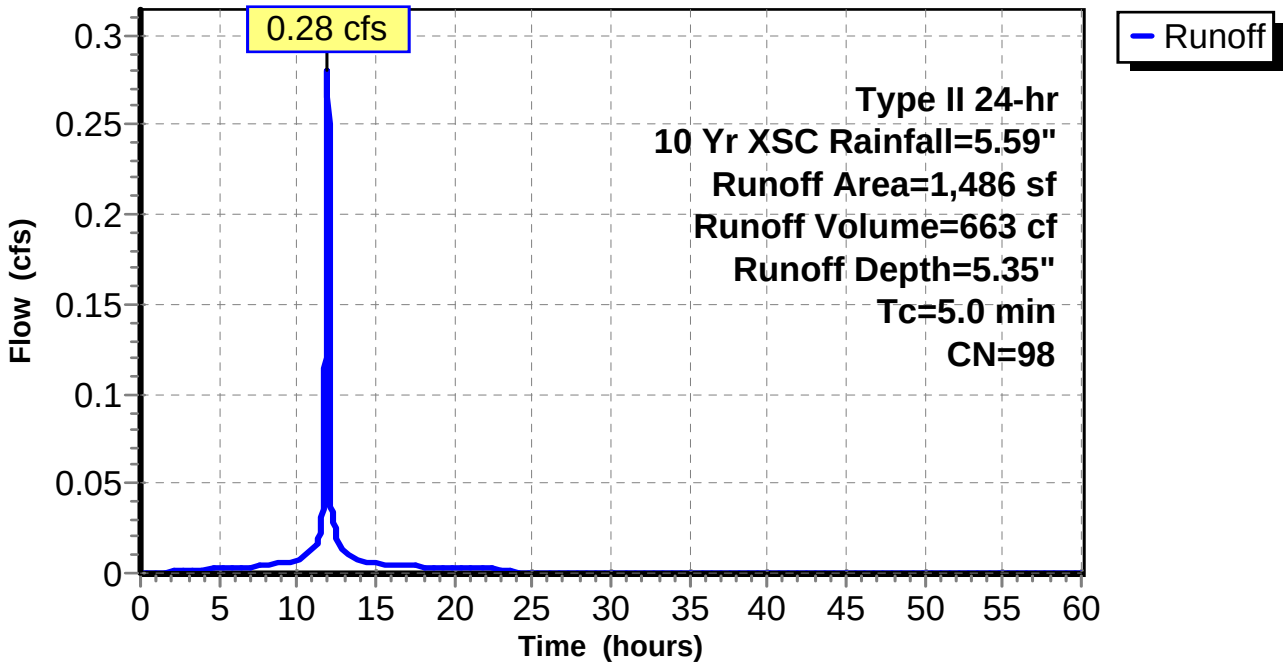
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10 Yr XSC Rainfall=5.59"

Area (sf)	CN	Description
1,486	98	Paved parking, HSG C
1,486	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, TR55 Min**

Subcatchment PS1e: PS1e

Hydrograph



Summary for Subcatchment Ps1f: PS1h

Runoff = 2.10 cfs @ 11.96 hrs, Volume= 4,667 cf, Depth= 4.89"

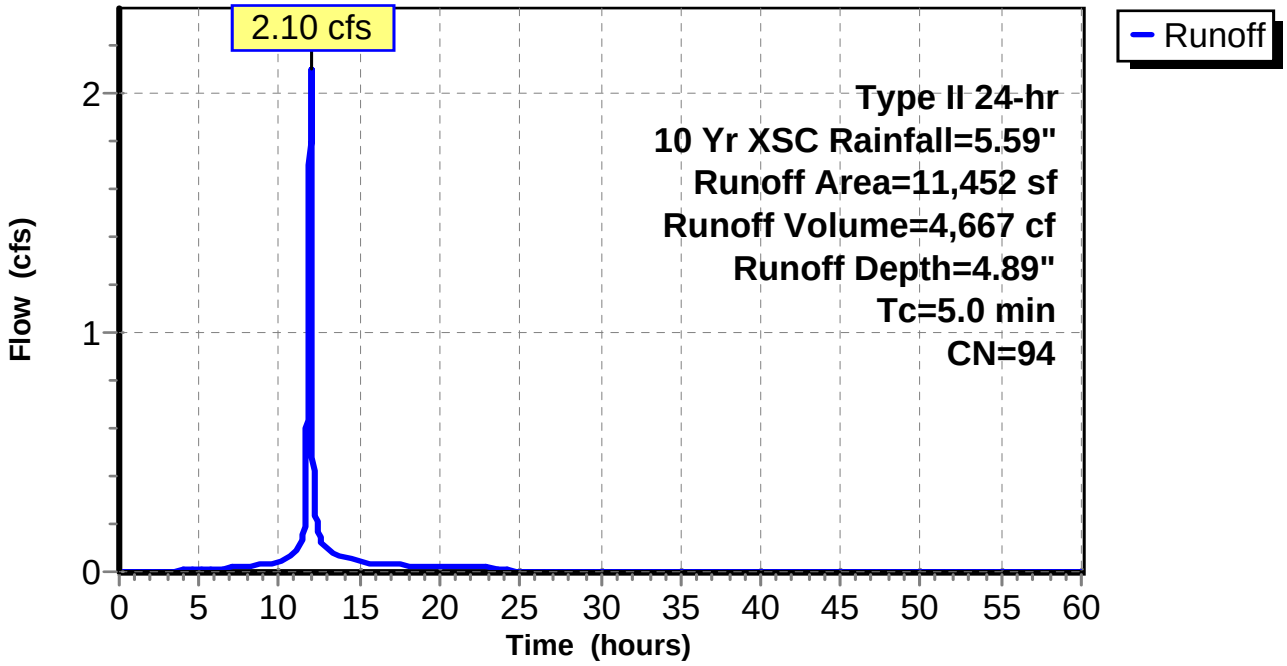
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10 Yr XSC Rainfall=5.59"

	Area (sf)	CN	Description
	6,521	98	Paved parking, HSG C
	981	98	Paved parking, HSG C
*	59	98	Unconnected wall, HSG C
	1,767	98	Unconnected roofs, HSG C
	2,124	74	>75% Grass cover, Good, HSG C
	11,452	94	Weighted Average
	2,124	74	18.55% Pervious Area
	9,328	98	81.45% Impervious Area
	1,826		19.58% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, TR55 MIN**

Subcatchment Ps1f: PS1h

Hydrograph



Summary for Subcatchment Ps1g: Grass above Filter Pond

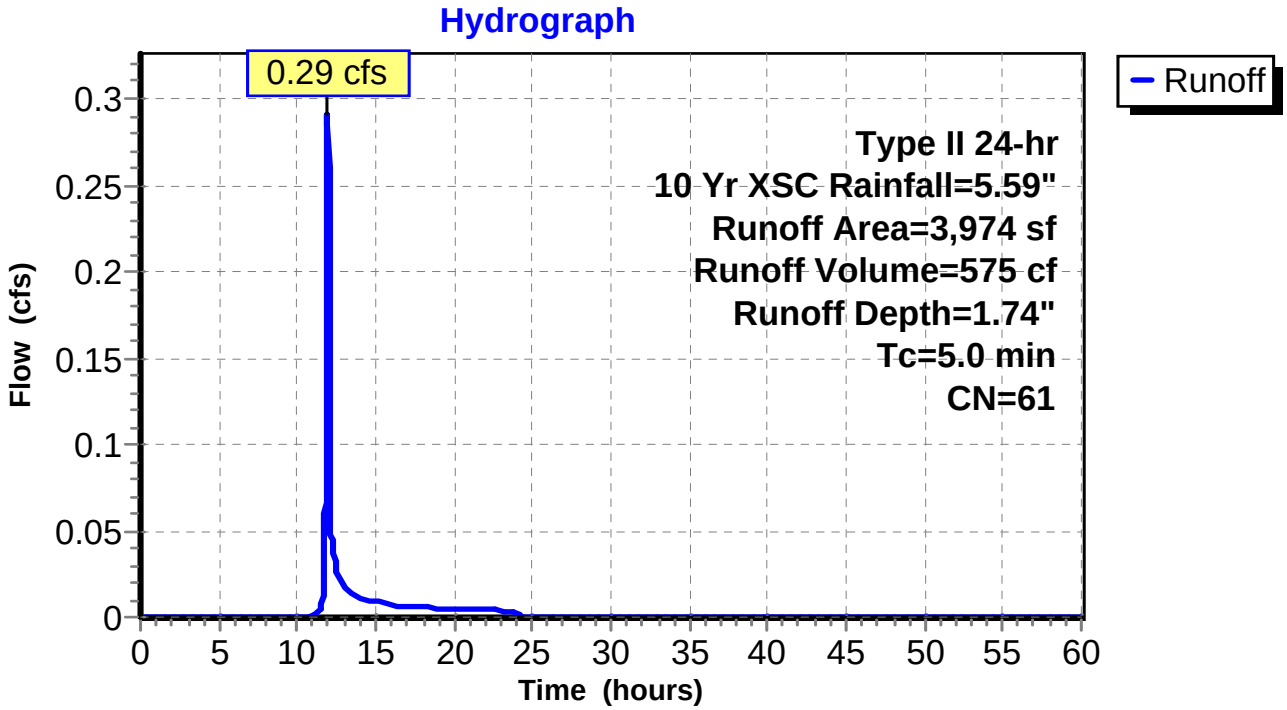
Runoff = 0.29 cfs @ 11.97 hrs, Volume= 575 cf, Depth= 1.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10 Yr XSC Rainfall=5.59"

Area (sf)	CN	Description
3,974	61	>75% Grass cover, Good, HSG B
3,974	61	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Per TR55**

Subcatchment Ps1g: Grass above Filter Pond



Summary for Subcatchment PS1h: PS1h

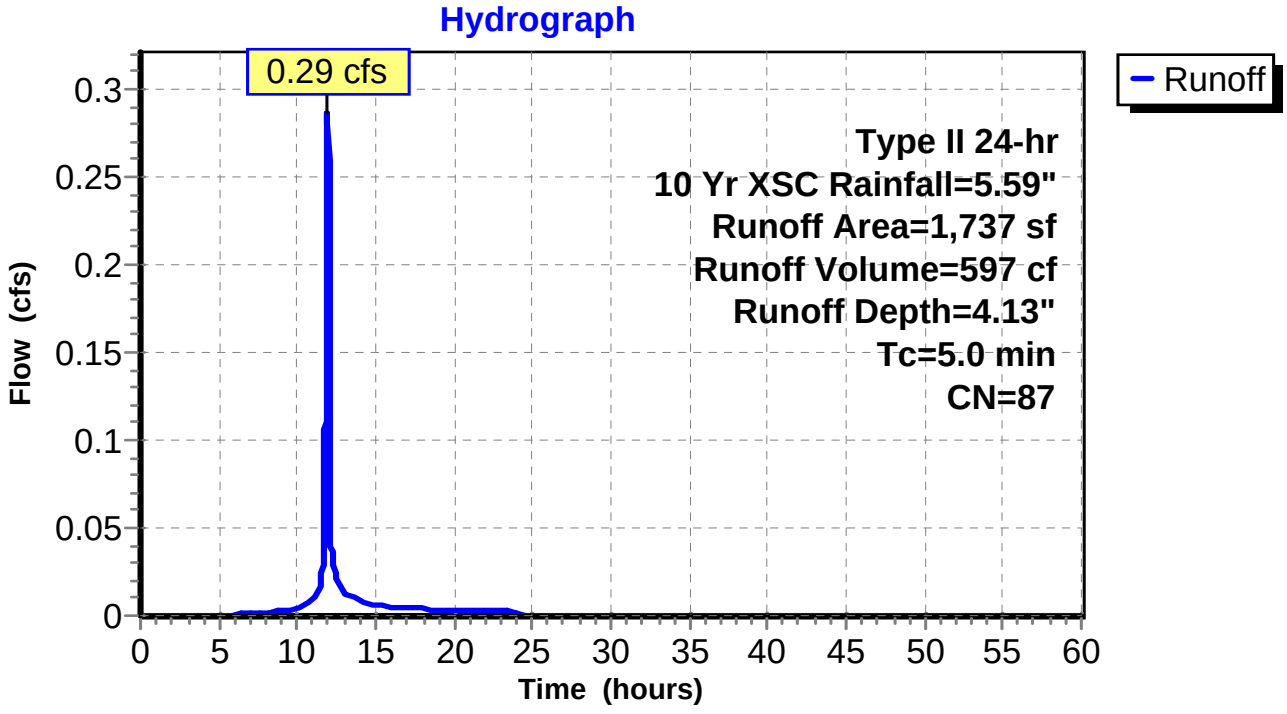
Runoff = 0.29 cfs @ 11.96 hrs, Volume= 597 cf, Depth= 4.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10 Yr XSC Rainfall=5.59"

	Area (sf)	CN	Description
	907	98	Paved parking, HSG C
*	60	98	Unconnected wall, HSG C
	770	74	>75% Grass cover, Good, HSG C
	1,737	87	Weighted Average
	770	74	44.33% Pervious Area
	967	98	55.67% Impervious Area
	60		6.20% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, TR55 MIN**

Subcatchment PS1h: PS1h



Summary for Subcatchment Ps1i: PS1i

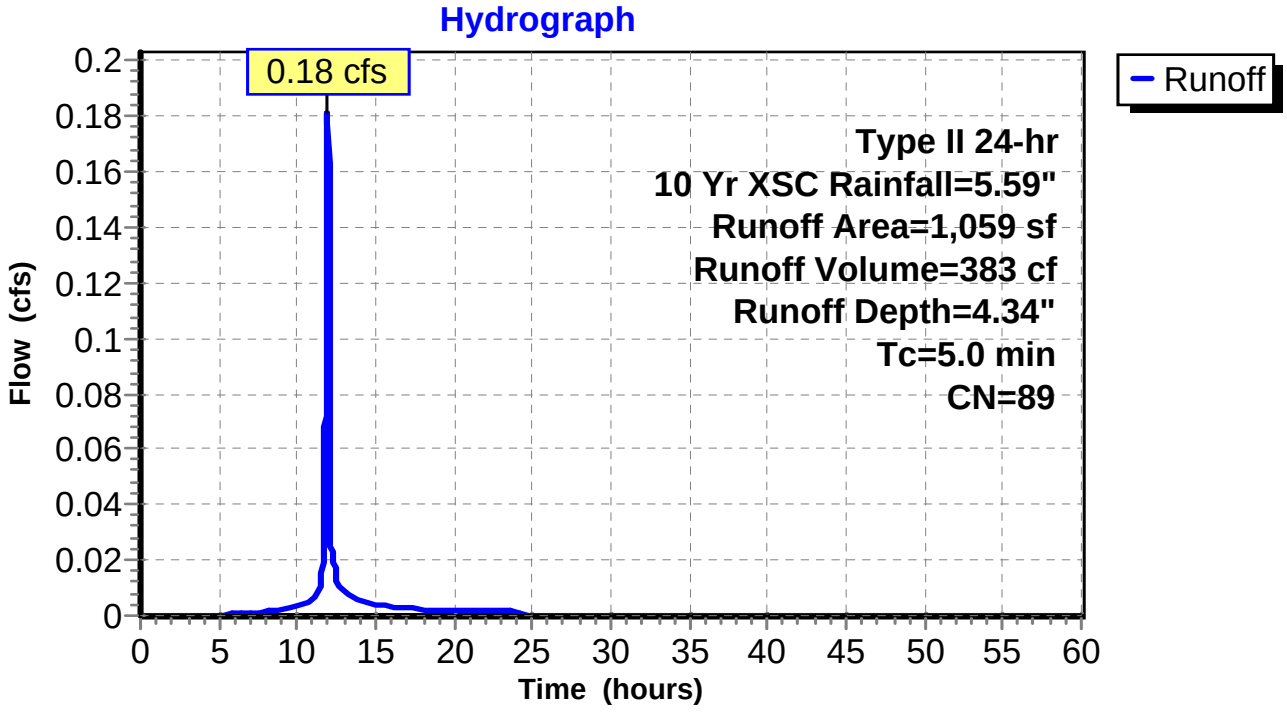
Runoff = 0.18 cfs @ 11.96 hrs, Volume= 383 cf, Depth= 4.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10 Yr XSC Rainfall=5.59"

	Area (sf)	CN	Description
	770	98	Paved parking, HSG C
*	40	98	Unconnected wall, HSG C
	249	61	>75% Grass cover, Good, HSG B
	1,059	89	Weighted Average
	249	61	23.51% Pervious Area
	810	98	76.49% Impervious Area
	40		4.94% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, TR55 MIN**

Subcatchment Ps1i: PS1i



Summary for Subcatchment Ps1j: PS1j

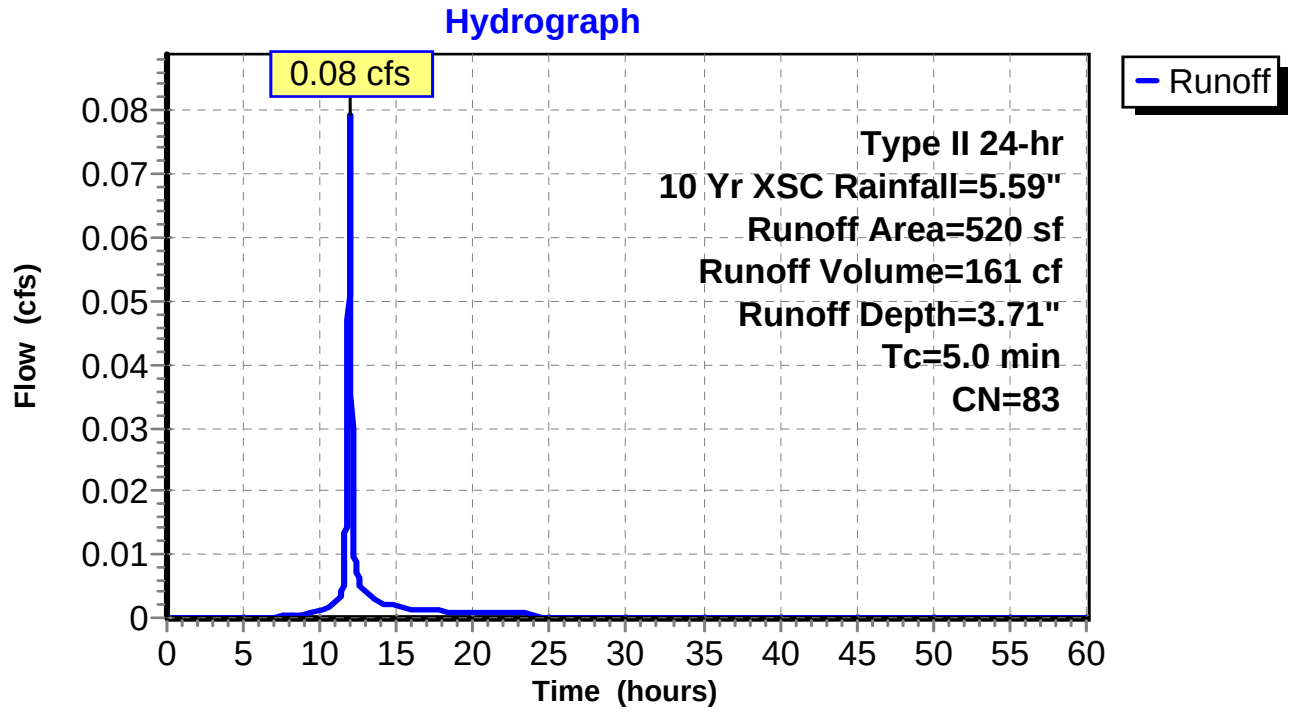
Runoff = 0.08 cfs @ 11.96 hrs, Volume= 161 cf, Depth= 3.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10 Yr XSC Rainfall=5.59"

Area (sf)	CN	Description
316	98	Paved parking, HSG C
204	61	>75% Grass cover, Good, HSG B
520	83	Weighted Average
204	61	39.23% Pervious Area
316	98	60.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, TR55 MIN**

Subcatchment Ps1j: PS1j



Summary for Subcatchment PS2: PS2

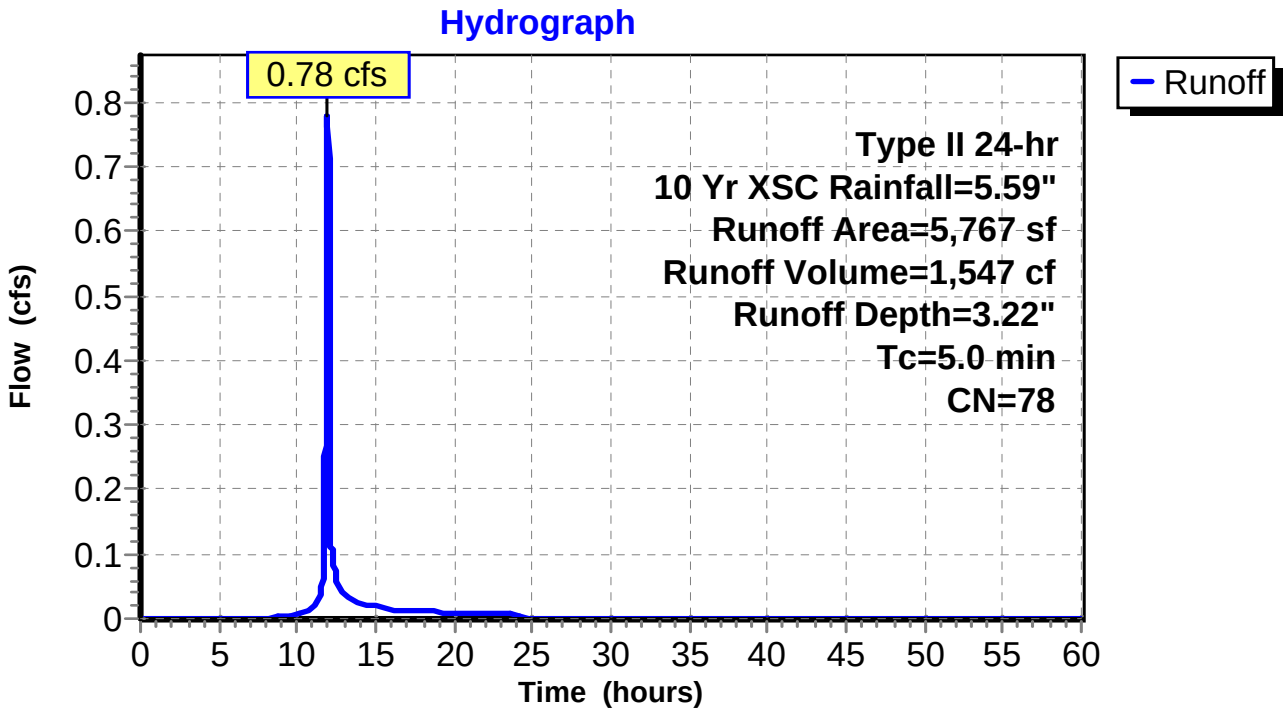
Runoff = 0.78 cfs @ 11.96 hrs, Volume= 1,547 cf, Depth= 3.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10 Yr XSC Rainfall=5.59"

Area (sf)	CN	Description
10	98	Unconnected pavement, HSG C
1,066	98	Roofs, HSG C
4,691	74	>75% Grass cover, Good, HSG C
5,767	78	Weighted Average
4,691	74	81.34% Pervious Area
1,076	98	18.66% Impervious Area
10		0.93% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, TR55 MIN**

Subcatchment PS2: PS2



Summary for Subcatchment PS3: PS3

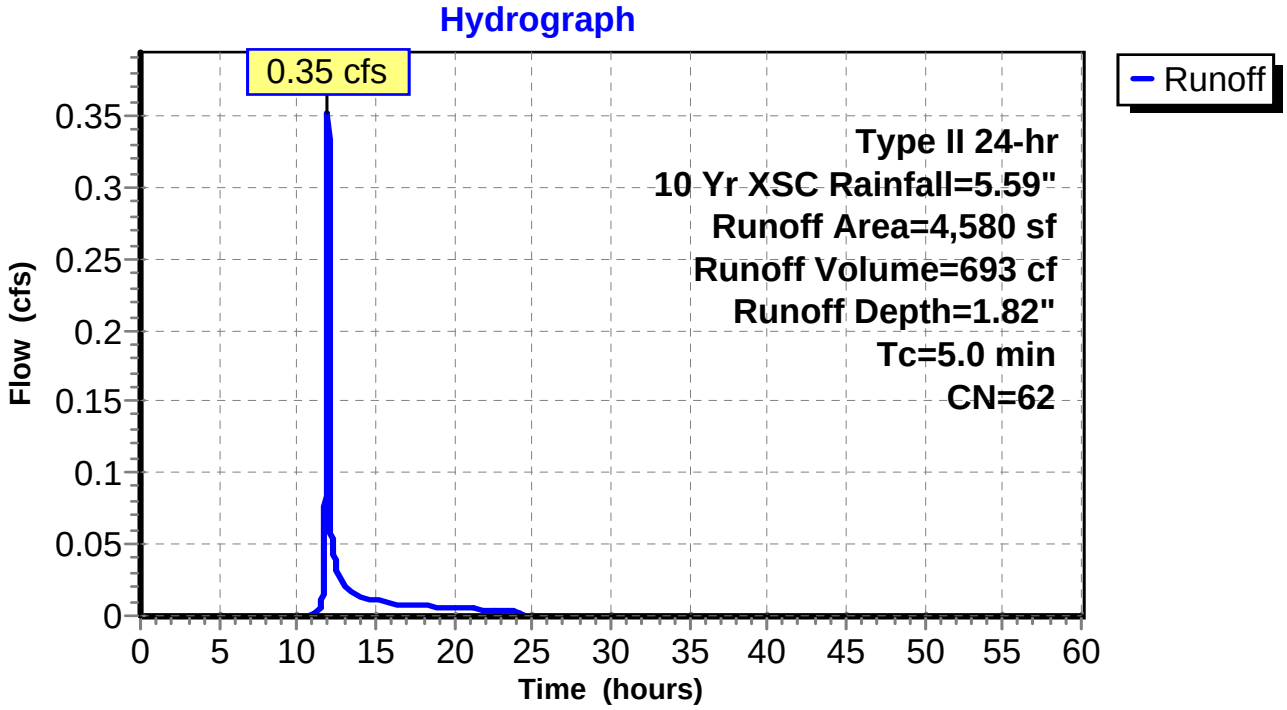
Runoff = 0.35 cfs @ 11.97 hrs, Volume= 693 cf, Depth= 1.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10 Yr XSC Rainfall=5.59"

Area (sf)	CN	Description
173	98	Unconnected pavement, HSG B
4,407	61	>75% Grass cover, Good, HSG B
4,580	62	Weighted Average
4,407	61	96.22% Pervious Area
173	98	3.78% Impervious Area
173		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, TR55 Min**

Subcatchment PS3: PS3



Summary for Pond 2P: CBE

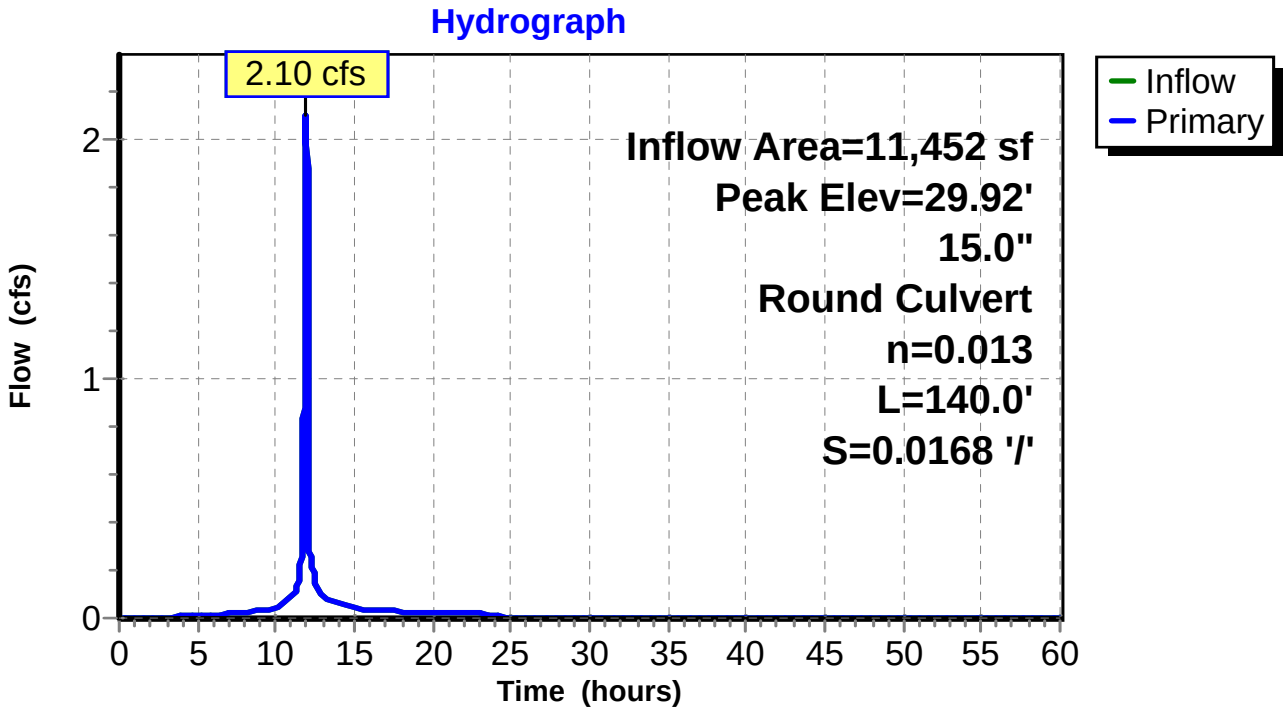
Inflow Area = 11,452 sf, 81.45% Impervious, Inflow Depth = 4.89" for 10 Yr XSC event
Inflow = 2.10 cfs @ 11.96 hrs, Volume= 4,667 cf
Outflow = 2.10 cfs @ 11.96 hrs, Volume= 4,667 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.10 cfs @ 11.96 hrs, Volume= 4,667 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 5
Peak Elev= 29.92' @ 11.96 hrs
Flood Elev= 32.27'

Device	Routing	Invert	Outlet Devices
#1	Primary	29.20'	**15.0" Round Culvert** L= 140.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 29.20' / 26.85' S= 0.0168 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.09 cfs @ 11.96 hrs HW=29.92' TW=26.07' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.09 cfs @ 2.88 fps)

Pond 2P: CBE



Summary for Pond 12": 12" CULVERT

Inflow Area = 33,590 sf, 1.88% Impervious, Inflow Depth = 2.66" for 10 Yr XSC event
Inflow = 3.18 cfs @ 12.02 hrs, Volume= 7,450 cf
Outflow = 0.69 cfs @ 12.26 hrs, Volume= 7,448 cf, Atten= 78%, Lag= 14.3 min
Primary = 0.69 cfs @ 12.26 hrs, Volume= 7,448 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 5
Peak Elev= 42.28' @ 12.26 hrs Surf.Area= 6,625 sf Storage= 2,587 cf
Flood Elev= 43.00' Surf.Area= 16,641 sf Storage= 10,706 cf

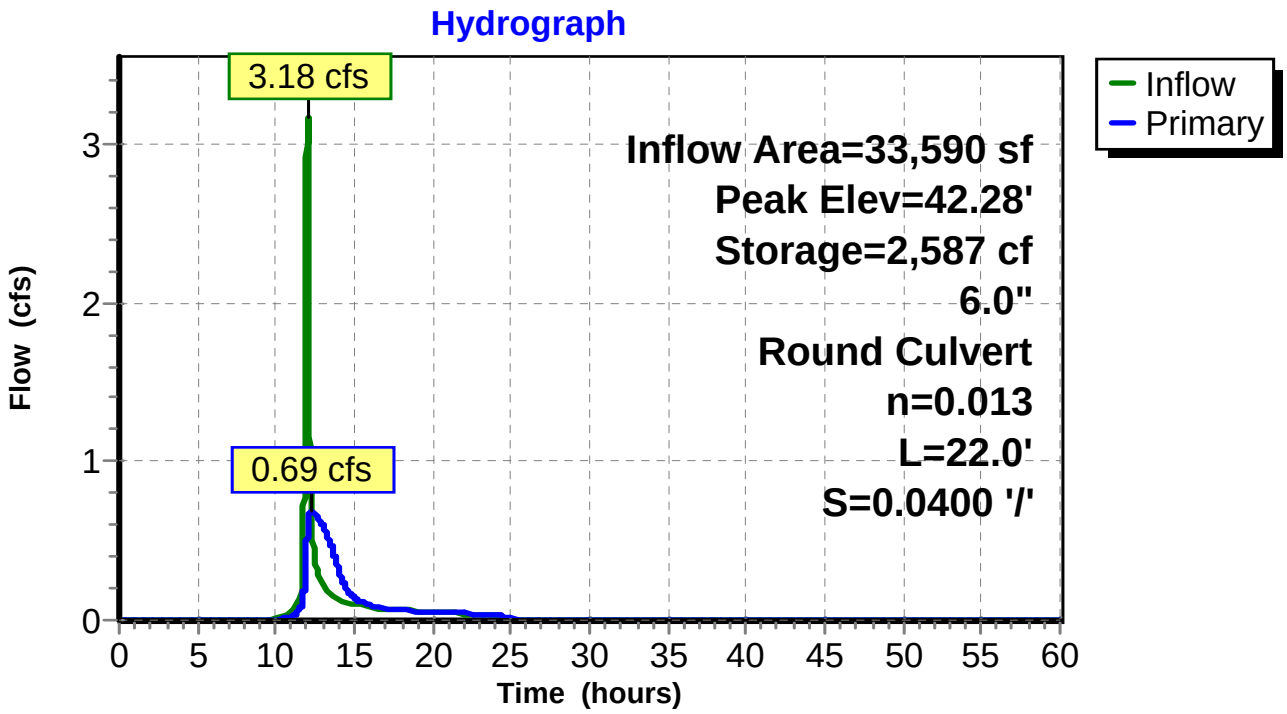
Plug-Flow detention time= 49.2 min calculated for 7,447 cf (100% of inflow)
Center-of-Mass det. time= 49.3 min (886.6 - 837.3)

Volume	Invert	Avail.Storage	Storage Description
#1	41.50'	21,336 cf	**30.00'W x 30.00'L x 2.00'H Prismatoid Z=33.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**6.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 41.50' / 40.62' S= 0.0400 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.69 cfs @ 12.26 hrs HW=42.28' TW=35.18' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.69 cfs @ 3.50 fps)

Pond 12": 12" CULVERT



Summary for Pond CB1: CB1

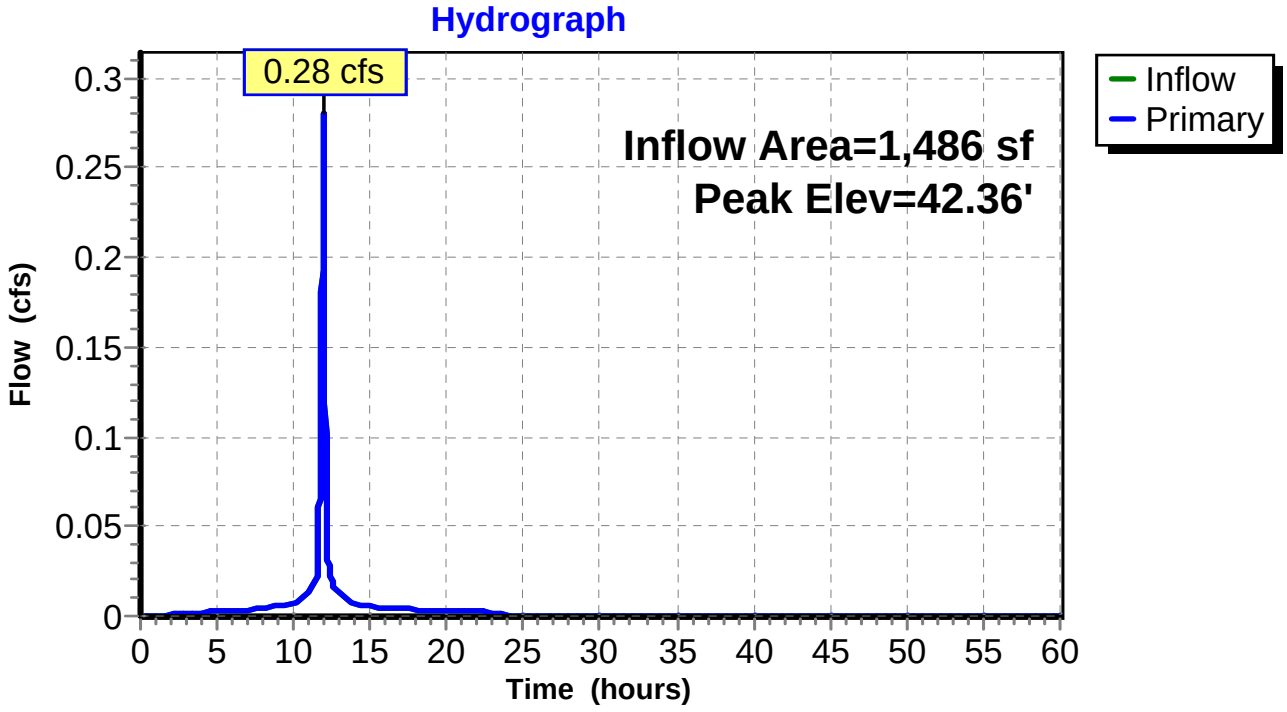
Inflow Area = 1,486 sf,100.00% Impervious, Inflow Depth = 5.35" for 10 Yr XSC event
Inflow = 0.28 cfs @ 11.96 hrs, Volume= 663 cf
Outflow = 0.28 cfs @ 11.96 hrs, Volume= 663 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.28 cfs @ 11.96 hrs, Volume= 663 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 5
Peak Elev= 42.36' @ 11.96 hrs
Flood Elev= 47.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	42.10'	**12.0" Round Culvert** L= 6.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.00' / 42.10' S= -0.0167 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	46.70'	**25.0" x 25.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.28 cfs @ 11.96 hrs HW=42.36' TW=41.28' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 0.28 cfs @ 1.73 fps)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Pond CB1: CB1



Summary for Pond CB2: CB2

Inflow Area = 2,967 sf, 65.99% Impervious, Inflow Depth = 3.92" for 10 Yr XSC event
Inflow = 0.47 cfs @ 11.96 hrs, Volume= 969 cf
Outflow = 0.47 cfs @ 11.96 hrs, Volume= 969 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.47 cfs @ 11.96 hrs, Volume= 969 cf

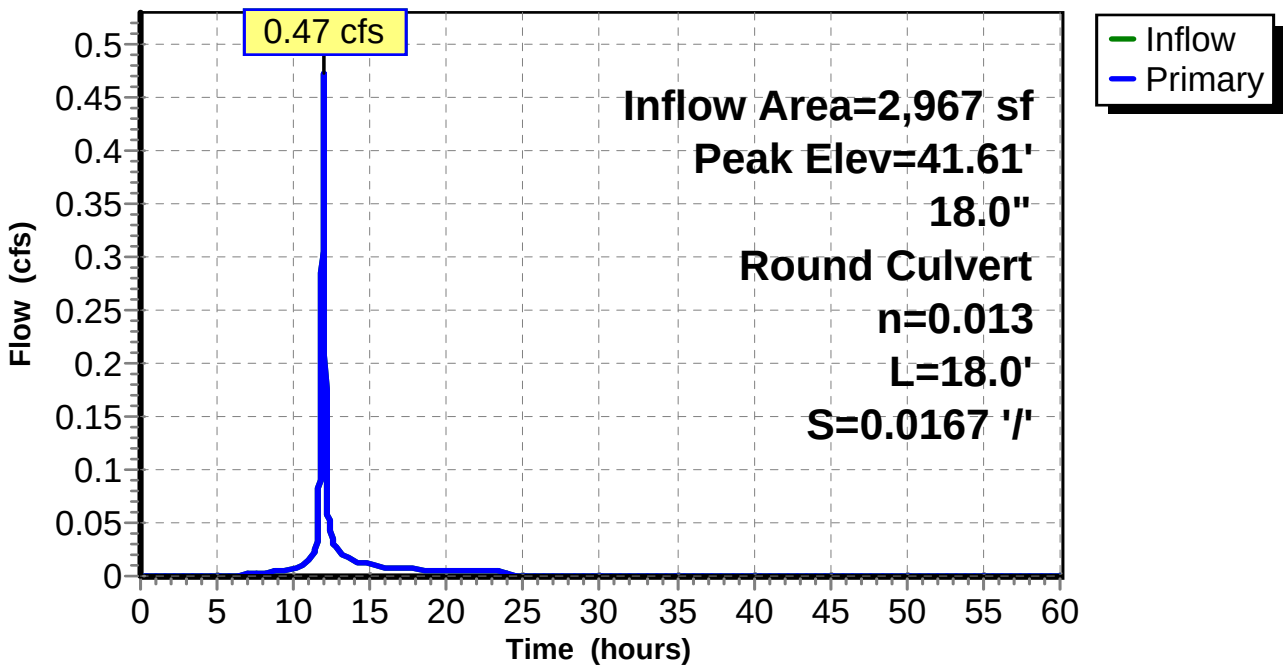
Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 5
Peak Elev= 41.61' @ 11.96 hrs
Flood Elev= 46.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.30'	**18.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 41.30' / 41.00' S= 0.0167 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.47 cfs @ 11.96 hrs HW=41.61' TW=41.28' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 0.47 cfs @ 2.77 fps)

Pond CB2: CB2

Hydrograph



Summary for Pond CB3: CB3

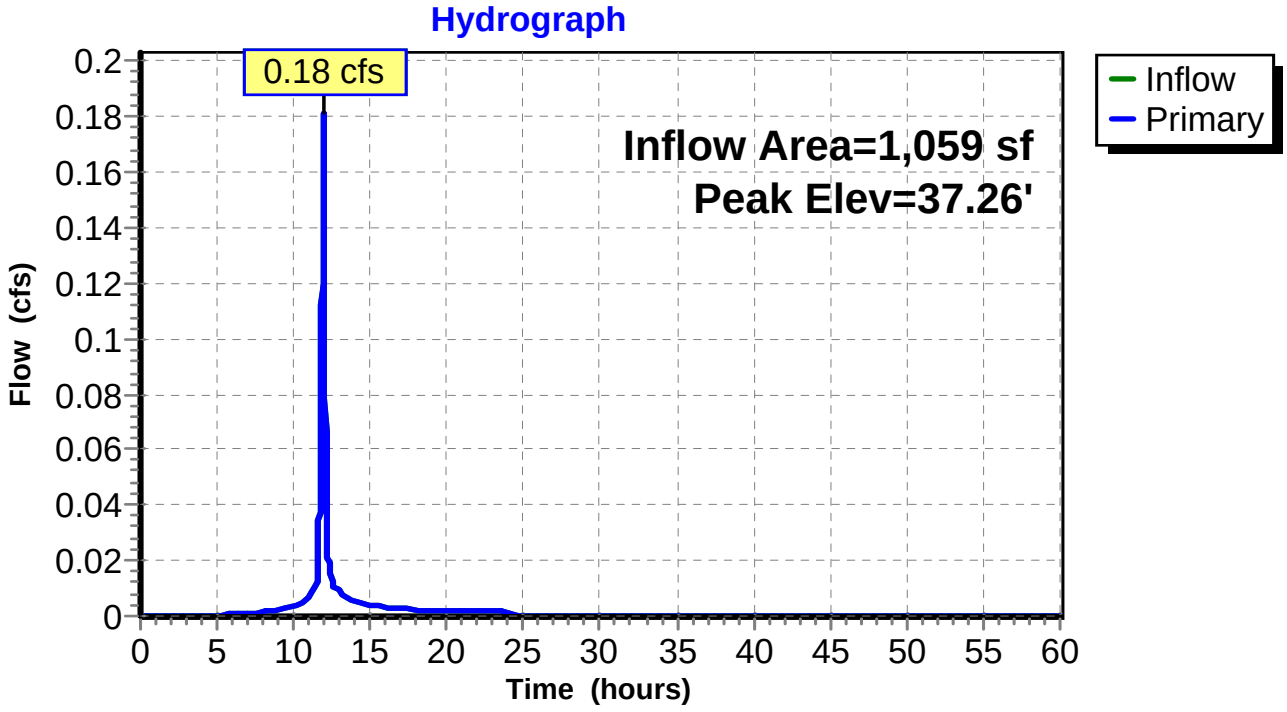
Inflow Area = 1,059 sf, 76.49% Impervious, Inflow Depth = 4.34" for 10 Yr XSC event
Inflow = 0.18 cfs @ 11.96 hrs, Volume= 383 cf
Outflow = 0.18 cfs @ 11.96 hrs, Volume= 383 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.18 cfs @ 11.96 hrs, Volume= 383 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 5
Peak Elev= 37.26' @ 11.96 hrs
Flood Elev= 41.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	**15.0" Round Culvert** L= 18.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 37.00' / 36.80' S= 0.0111 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Primary	40.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.18 cfs @ 11.96 hrs HW=37.26' TW=37.15' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 0.18 cfs @ 1.46 fps)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Pond CB3: CB3



Summary for Pond CB4: CB4

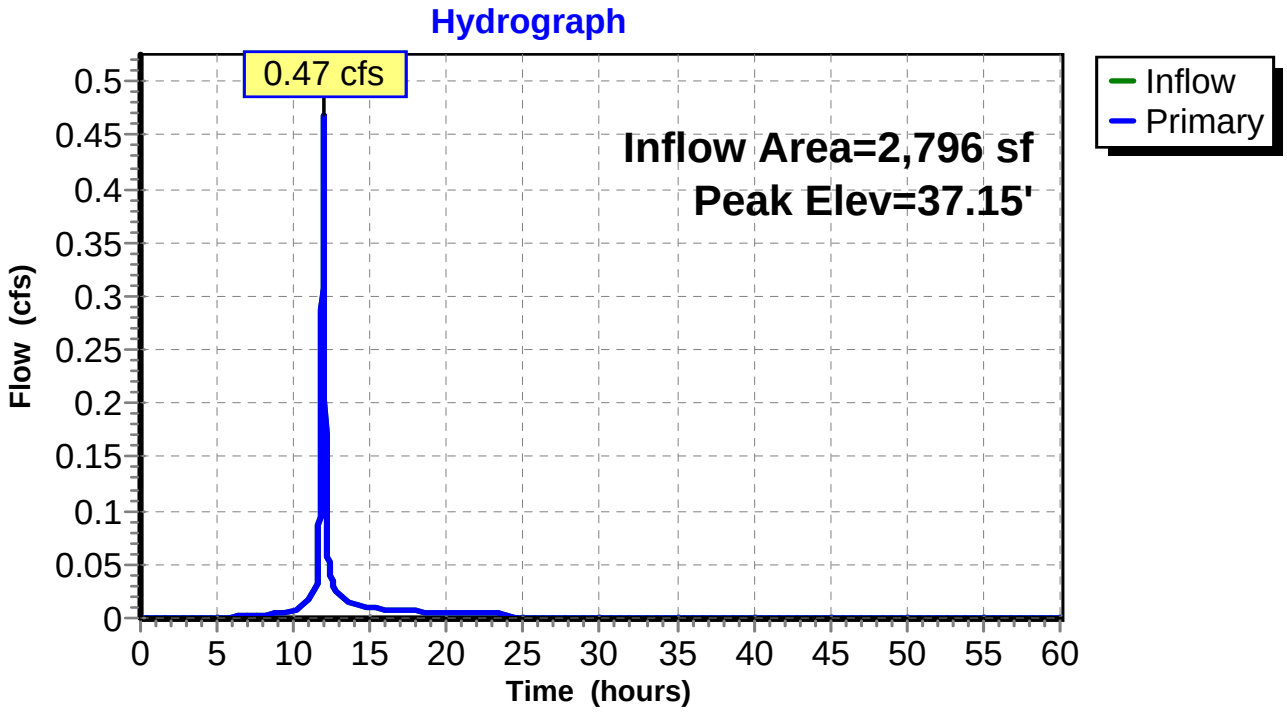
Inflow Area = 2,796 sf, 63.56% Impervious, Inflow Depth = 4.21" for 10 Yr XSC event
Inflow = 0.47 cfs @ 11.96 hrs, Volume= 980 cf
Outflow = 0.47 cfs @ 11.96 hrs, Volume= 980 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.47 cfs @ 11.96 hrs, Volume= 980 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 5
Peak Elev= 37.15' @ 11.96 hrs
Flood Elev= 40.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	36.70'	**12.0" Round Culvert** L= 5.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 36.70' / 36.50' S= 0.0400 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	40.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.47 cfs @ 11.96 hrs HW=37.15' TW=37.02' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 0.47 cfs @ 2.00 fps)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Pond CB4: CB4



Summary for Pond CB6: CB6

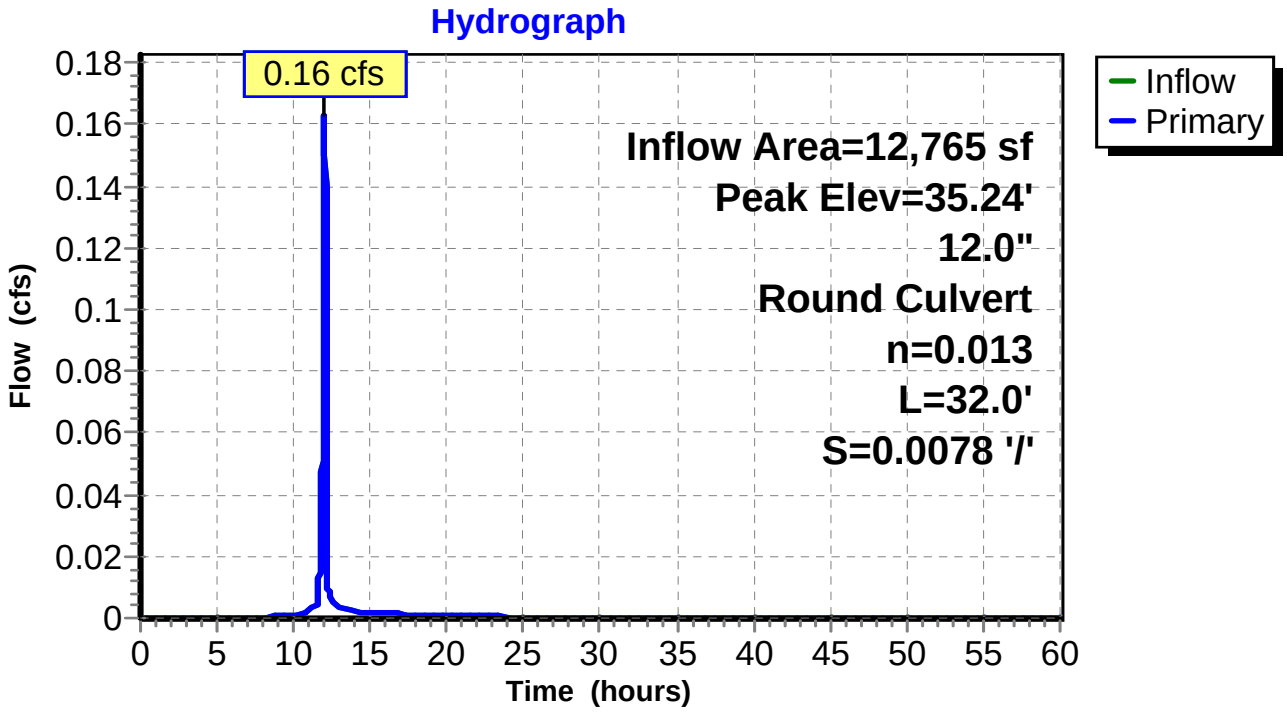
Inflow Area = 12,765 sf, 50.51% Impervious, Inflow Depth = 0.21" for 10 Yr XSC event
Inflow = 0.16 cfs @ 12.02 hrs, Volume= 220 cf
Outflow = 0.16 cfs @ 12.02 hrs, Volume= 220 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.16 cfs @ 12.02 hrs, Volume= 220 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 5
Peak Elev= 35.24' @ 12.05 hrs
Flood Elev= 44.45'

Device	Routing	Invert	Outlet Devices
#1	Primary	34.80'	**12.0" Round Culvert** L= 32.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 34.80' / 34.55' S= 0.0078 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.16 cfs @ 12.02 hrs HW=35.23' TW=35.20' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.16 cfs @ 0.74 fps)

Pond CB6: CB6



Summary for Pond CBF: CBF

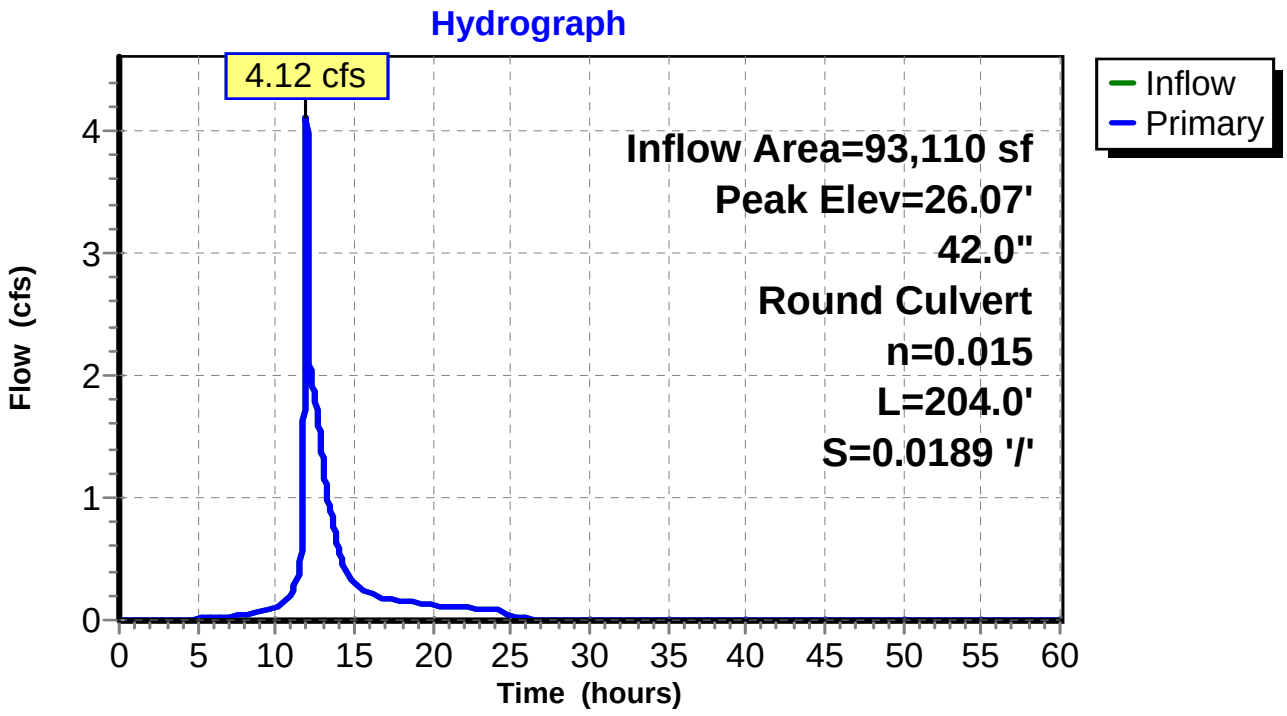
Inflow Area = 93,110 sf, 43.05% Impervious, Inflow Depth = 2.79" for 10 Yr XSC event
Inflow = 4.12 cfs @ 11.97 hrs, Volume= 21,657 cf
Outflow = 4.12 cfs @ 11.97 hrs, Volume= 21,658 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.12 cfs @ 11.97 hrs, Volume= 21,658 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 5
Peak Elev= 26.07' @ 11.97 hrs
Flood Elev= 37.23'

Device	Routing	Invert	Outlet Devices
#1	Primary	25.35'	**42.0" Round Culvert** L= 204.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 25.35' / 21.50' S= 0.0189 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 9.62 sf

Primary OutFlow Max=4.11 cfs @ 11.97 hrs HW=26.07' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 4.11 cfs @ 2.89 fps)

Pond CBF: CBF



Summary for Pond DM1: DM1

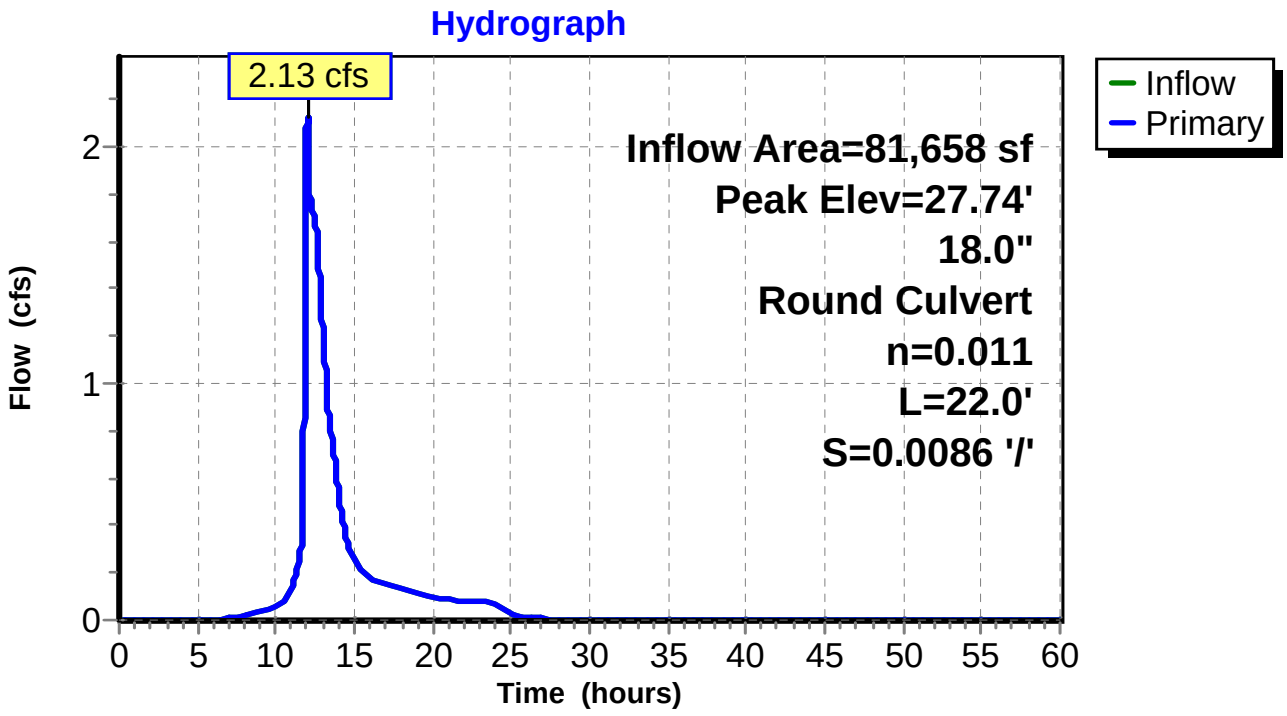
Inflow Area = 81,658 sf, 37.66% Impervious, Inflow Depth = 2.50" for 10 Yr XSC event
Inflow = 2.13 cfs @ 12.02 hrs, Volume= 16,990 cf
Outflow = 2.13 cfs @ 12.02 hrs, Volume= 16,990 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.13 cfs @ 12.02 hrs, Volume= 16,990 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 5
Peak Elev= 27.74' @ 12.02 hrs
Flood Elev= 37.06'

Device	Routing	Invert	Outlet Devices
#1	Primary	27.04'	**18.0" Round Culvert** L= 22.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 27.04' / 26.85' S= 0.0086 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=2.13 cfs @ 12.02 hrs HW=27.74' TW=26.02' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.13 cfs @ 3.83 fps)

Pond DM1: DM1



Summary for Pond DM2: DM1

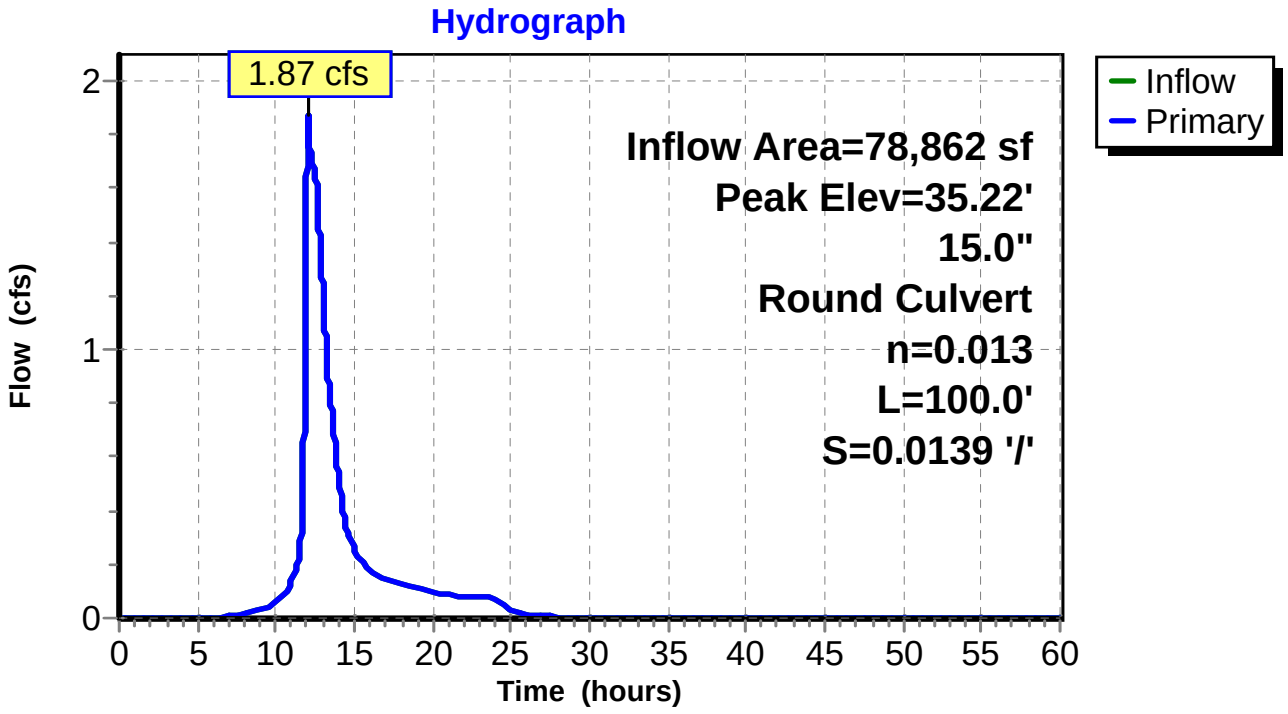
Inflow Area = 78,862 sf, 36.74% Impervious, Inflow Depth = 2.49" for 10 Yr XSC event
Inflow = 1.87 cfs @ 12.06 hrs, Volume= 16,378 cf
Outflow = 1.87 cfs @ 12.06 hrs, Volume= 16,378 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.87 cfs @ 12.06 hrs, Volume= 16,378 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 5
Peak Elev= 35.22' @ 12.06 hrs
Flood Elev= 44.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	34.45'	**15.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 34.45' / 33.06' S= 0.0139 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.87 cfs @ 12.06 hrs HW=35.22' TW=27.73' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 1.87 cfs @ 2.36 fps)

Pond DM2: DM1



Summary for Pond DM3: DM3

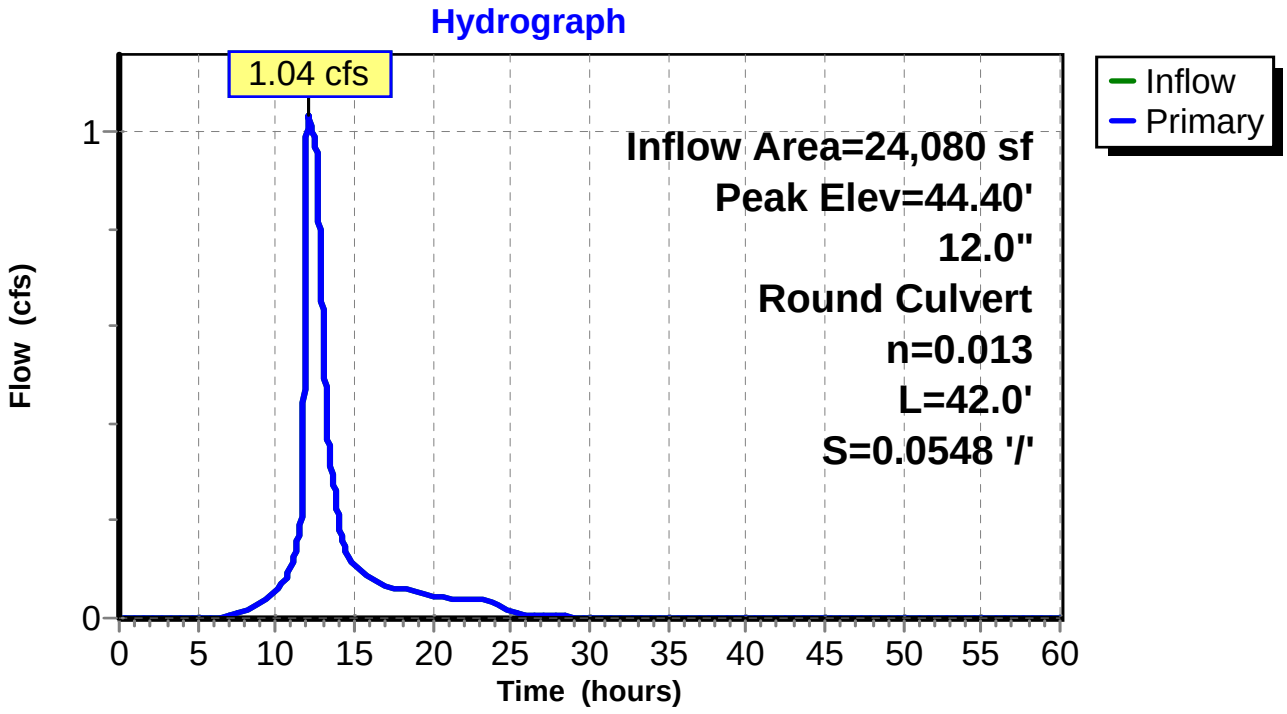
Inflow Area = 24,080 sf, 76.63% Impervious, Inflow Depth = 4.33" for 10 Yr XSC event
Inflow = 1.04 cfs @ 12.08 hrs, Volume= 8,680 cf
Outflow = 1.04 cfs @ 12.08 hrs, Volume= 8,680 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.04 cfs @ 12.08 hrs, Volume= 8,680 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 5
Peak Elev= 44.40' @ 12.08 hrs
Flood Elev= 47.85'

Device	Routing	Invert	Outlet Devices
#1	Primary	43.80'	**12.0" Round Culvert** L= 42.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 43.80' / 41.50' S= 0.0548 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.04 cfs @ 12.08 hrs HW=44.40' TW=35.22' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 1.04 cfs @ 2.09 fps)

Pond DM3: DM3



Summary for Pond DM4: DM4

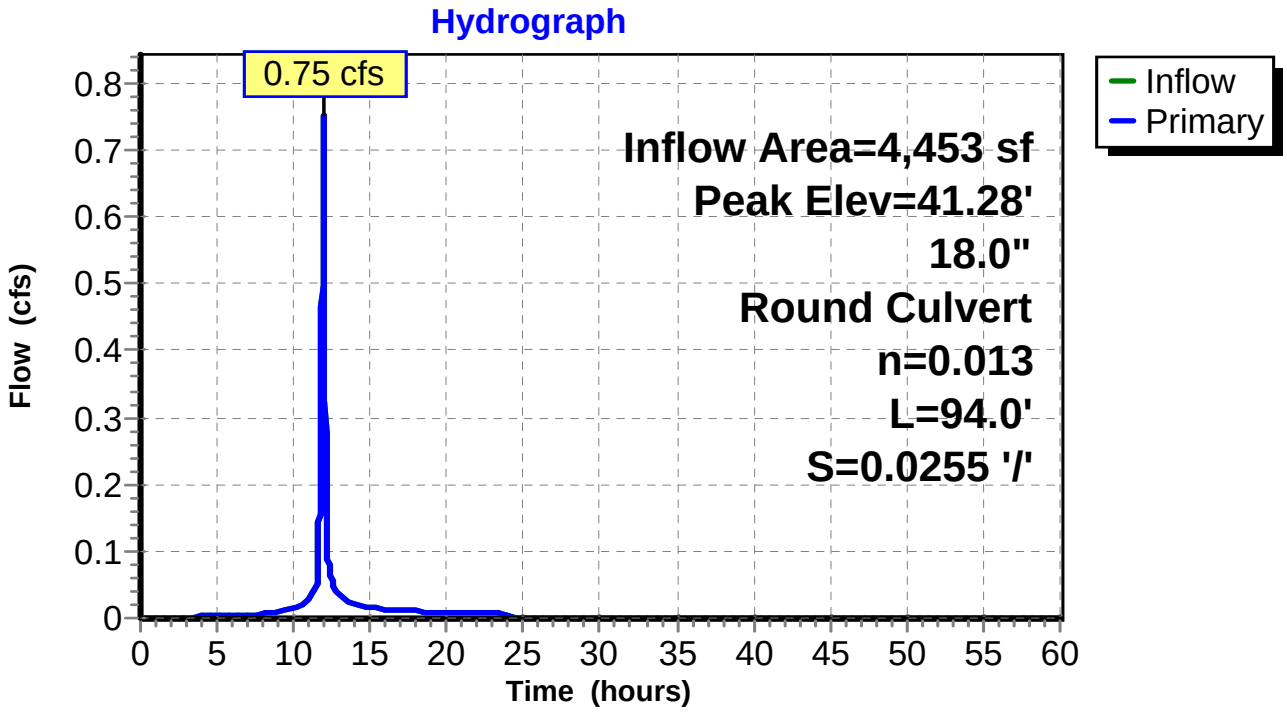
Inflow Area = 4,453 sf, 77.34% Impervious, Inflow Depth = 4.40" for 10 Yr XSC event
Inflow = 0.75 cfs @ 11.96 hrs, Volume= 1,631 cf
Outflow = 0.75 cfs @ 11.96 hrs, Volume= 1,631 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.75 cfs @ 11.96 hrs, Volume= 1,631 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 5
Peak Elev= 41.28' @ 11.96 hrs
Flood Elev= 48.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	40.90'	**18.0" Round Culvert** L= 94.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.90' / 38.50' S= 0.0255 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.75 cfs @ 11.96 hrs HW=41.28' TW=35.63' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.75 cfs @ 2.11 fps)

Pond DM4: DM4



Summary for Pond FT: INFILTRATION TRENCH

Inflow Area = 2,796 sf, 63.56% Impervious, Inflow Depth = 4.21" for 10 Yr XSC event
Inflow = 0.47 cfs @ 11.96 hrs, Volume= 980 cf
Outflow = 0.47 cfs @ 11.96 hrs, Volume= 980 cf, Atten= 0%, Lag= 0.3 min
Discarded = 0.02 cfs @ 11.96 hrs, Volume= 368 cf
Primary = 0.45 cfs @ 11.96 hrs, Volume= 612 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 5
Peak Elev= 37.02' @ 11.96 hrs Surf.Area= 60 sf Storage= 13 cf
Flood Elev= 38.50' Surf.Area= 60 sf Storage= 36 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.3 min (790.8 - 790.5)

Volume	Invert	Avail.Storage	Storage Description
#1	36.49'	36 cf	**Custom Stage Data (Prismatic)** Listed below

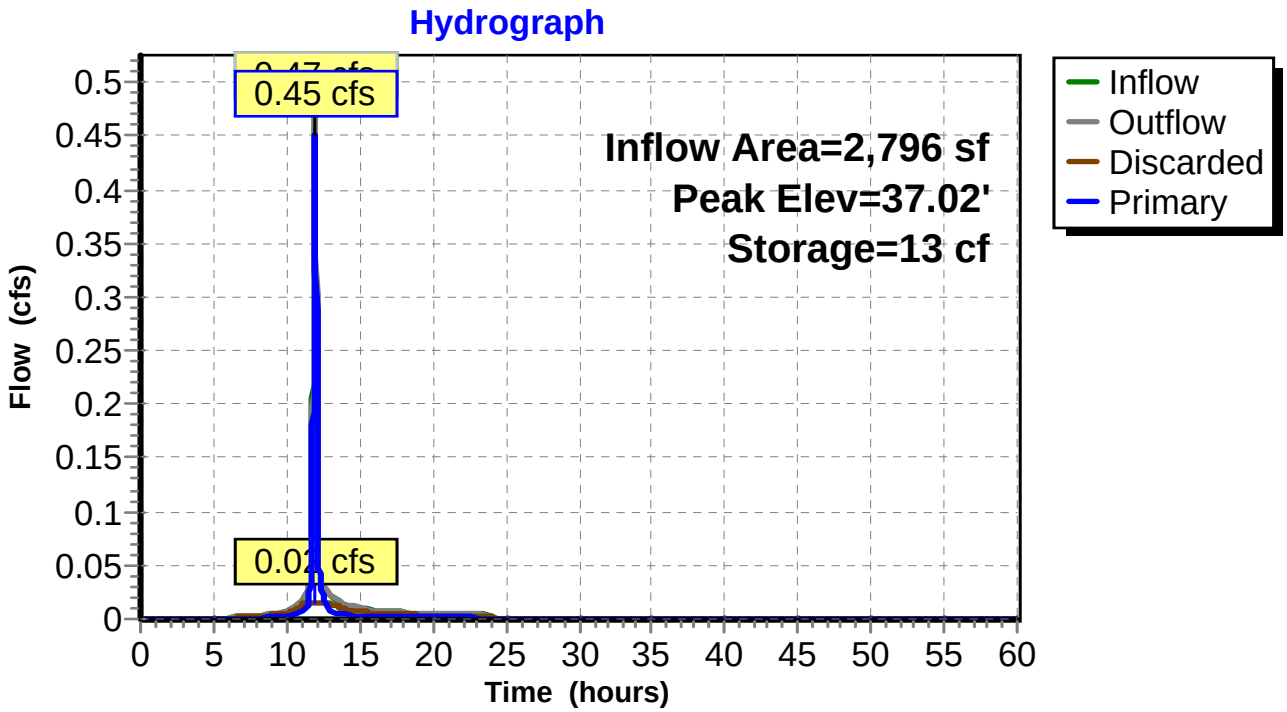
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.49	60	0.0	0	0
36.50	60	40.0	0	0
38.00	60	40.0	36	36

Device	Routing	Invert	Outlet Devices
#1	Primary	36.40'	**8.0" Round Culvert** L= 33.1' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 36.40' / 36.40' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Discarded	36.49'	**10.000 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 33.00'

Discarded OutFlow Max=0.02 cfs @ 11.96 hrs HW=37.02' (Free Discharge)
2=Exfiltration (Controls 0.02 cfs)

Primary OutFlow Max=0.45 cfs @ 11.96 hrs HW=37.02' TW=27.72' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.45 cfs @ 1.73 fps)

Pond FT: INFILTRATION TRENCH



Summary for Pond P1a: FILTRATION BASIN PS1a

Inflow Area = 24,080 sf, 76.63% Impervious, Inflow Depth = 4.34" for 10 Yr XSC event
Inflow = 4.13 cfs @ 11.96 hrs, Volume= 8,707 cf
Outflow = 1.04 cfs @ 12.08 hrs, Volume= 8,680 cf, Atten= 75%, Lag= 7.6 min
Primary = 1.04 cfs @ 12.08 hrs, Volume= 8,680 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 5
Peak Elev= 56.34' @ 12.08 hrs Surf.Area= 3,010 sf Storage= 3,091 cf
Flood Elev= 57.50' Surf.Area= 3,010 sf Storage= 6,577 cf

Plug-Flow detention time= 60.4 min calculated for 8,680 cf (100% of inflow)
Center-of-Mass det. time= 58.4 min (844.8 - 786.4)

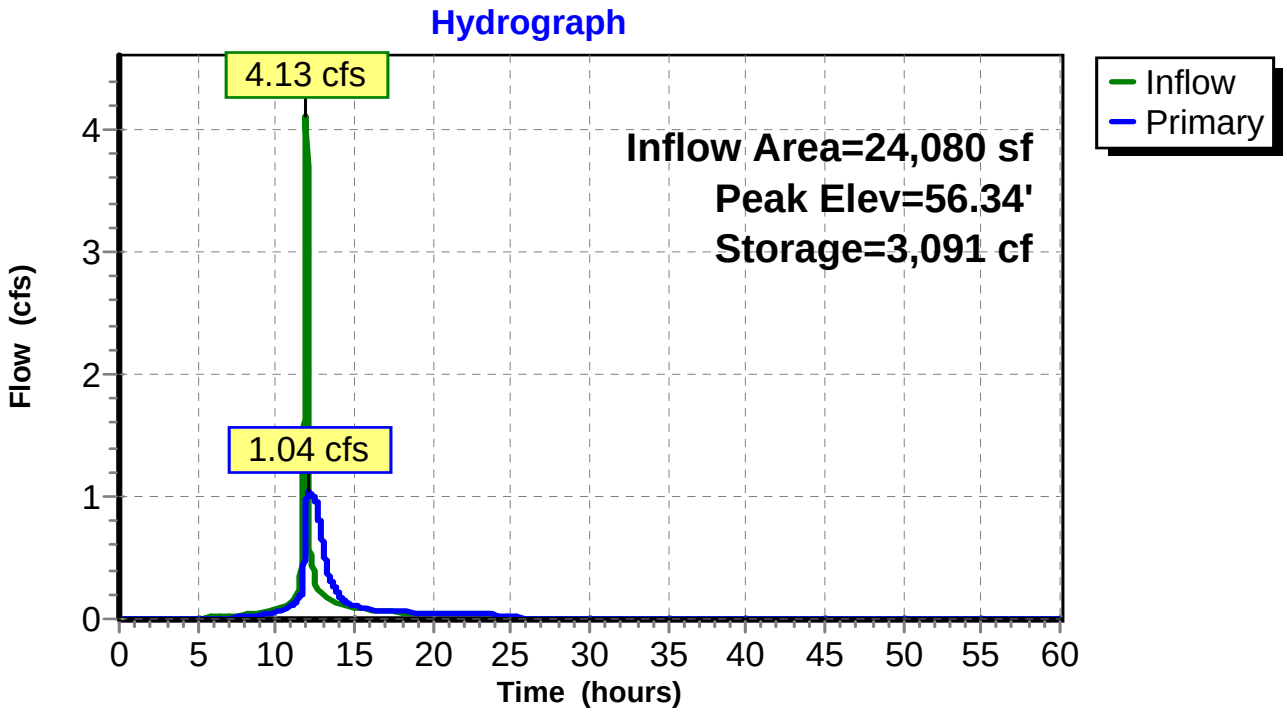
Volume	Invert	Avail.Storage	Storage Description
#1	53.67'	6,577 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
53.67	3,010	0.0	0	0
53.68	3,010	40.0	12	12
54.42	3,010	40.0	891	903
54.43	3,010	25.0	8	911
56.00	3,010	25.0	1,181	2,092
56.01	3,010	0.0	0	2,092
56.02	3,010	100.0	30	2,122
57.50	3,010	100.0	4,455	6,577

Device	Routing	Invert	Outlet Devices
#1	Primary	53.55'	**24.0" Round Culvert** L= 182.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 53.55' / 43.90' S= 0.0530 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	53.70'	**6.0" Round Culvert X 2.00** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 53.70' / 53.65' S= 0.0010 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	53.68'	**6.0" Round Culvert** L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 53.68' / 53.65' S= 0.0008 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#4	Device 1	57.10'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 2	53.67'	**10.000 in/hr Exfiltration over Horizontal area above 53.67'** Conductivity to Groundwater Elevation = 0.00' Excluded Horizontal area = 3,010 sf Phase-In= 0.01'

Primary OutFlow Max=1.04 cfs @ 12.08 hrs HW=56.34' TW=44.40' (Dynamic Tailwater)
- **1=Culvert** (Passes 1.04 cfs of 15.99 cfs potential flow)
  - **2=Culvert** (Passes 0.00 cfs of 1.93 cfs potential flow)
    - **5=Exfiltration** (Controls 0.00 cfs)
  - **3=Culvert** (Barrel Controls 1.04 cfs @ 5.28 fps)
  - **4=Orifice/Grate** (Controls 0.00 cfs)

Pond P1a: FILTRATION BASIN PS1a



Summary for Pond P1b: FILTRATION BASIN P1b

Inflow Area = 8,427 sf, 40.87% Impervious, Inflow Depth = 3.14" for 10 Yr XSC event
Inflow = 1.04 cfs @ 11.96 hrs, Volume= 2,206 cf
Outflow = 0.40 cfs @ 12.06 hrs, Volume= 2,206 cf, Atten= 61%, Lag= 5.9 min
Discarded = 0.33 cfs @ 12.06 hrs, Volume= 2,177 cf
Primary = 0.07 cfs @ 12.06 hrs, Volume= 30 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 5
Peak Elev= 36.00' @ 12.06 hrs Surf.Area= 1,069 sf Storage= 428 cf
Flood Elev= 40.00' Surf.Area= 1,069 sf Storage= 3,167 cf

Plug-Flow detention time= 5.7 min calculated for 2,206 cf (100% of inflow)
Center-of-Mass det. time= 5.7 min (803.4 - 797.7)

Volume	Invert	Avail.Storage	Storage Description
#1	35.00'	3,167 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

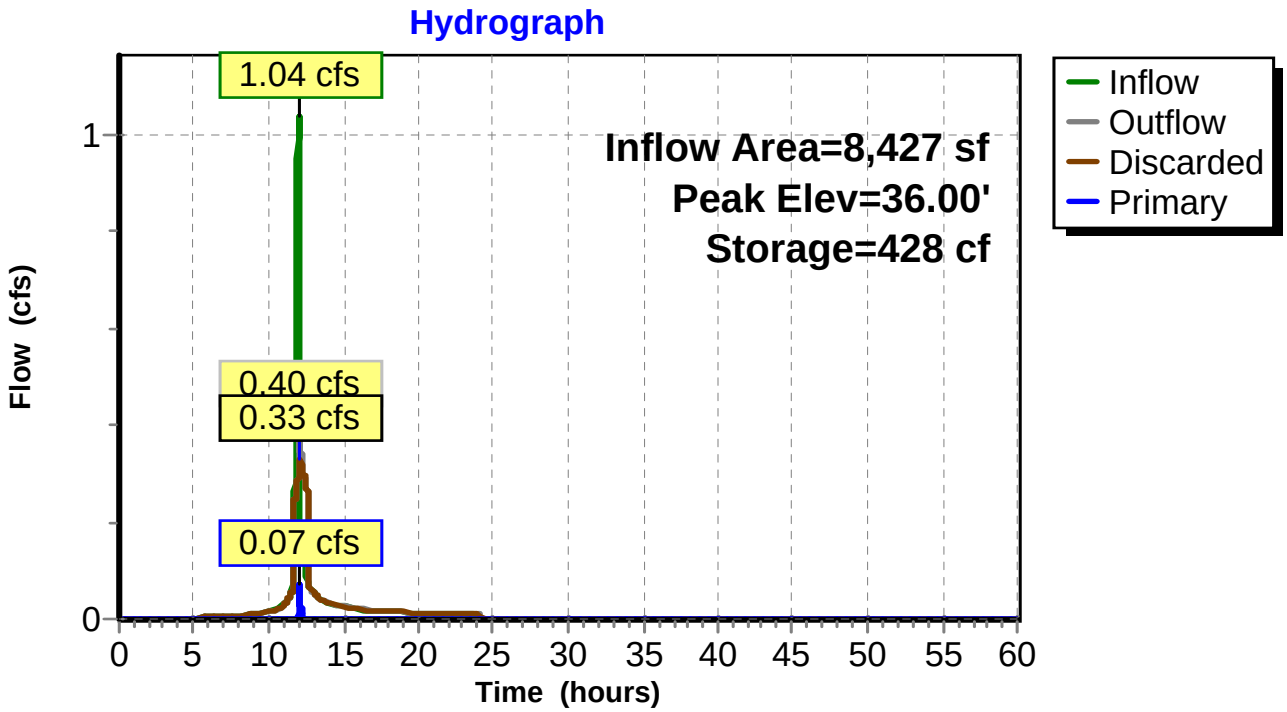
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.00	1,069	0.0	0	0
35.01	1,069	40.0	4	4
36.42	1,069	40.0	603	607
36.43	1,069	25.0	3	610
38.00	1,069	25.0	420	1,029
38.01	1,069	100.0	11	1,040
40.00	1,069	100.0	2,127	3,167

Device	Routing	Invert	Outlet Devices
#1	Primary	35.55'	**12.0" Round Culvert** L= 64.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 35.55' / 34.90' S= 0.0102 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	35.77'	**6.0" Round Culvert** L= 48.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 35.77' / 35.67' S= 0.0021 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	38.50'	**6.0" Horiz. Orifice/Grate X 3.00** C= 0.600 Limited to weir flow at low heads
#4	Device 1	39.25'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Discarded	35.00'	**10.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 32.00' Phase-In= 0.01'

Discarded OutFlow Max=0.33 cfs @ 12.06 hrs HW=36.00' (Free Discharge)
└**5=Exfiltration** (Controls 0.33 cfs)

Primary OutFlow Max=0.07 cfs @ 12.06 hrs HW=36.00' TW=35.22' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.07 cfs of 0.62 cfs potential flow)
  ├**2=Culvert** (Barrel Controls 0.07 cfs @ 1.21 fps)
  ├**3=Orifice/Grate** (Controls 0.00 cfs)
  └**4=Orifice/Grate** (Controls 0.00 cfs)

Pond P1b: FILTRATION BASIN P1b



Summary for Pond PO1: Porous

Inflow Area = 12,245 sf, 50.07% Impervious, Inflow Depth = 4.89" for 10 Yr XSC event
Inflow = 2.24 cfs @ 11.96 hrs, Volume= 4,991 cf
Outflow = 1.12 cfs @ 12.04 hrs, Volume= 4,991 cf, Atten= 50%, Lag= 5.1 min
Discarded = 1.00 cfs @ 12.04 hrs, Volume= 4,931 cf
Primary = 0.12 cfs @ 12.04 hrs, Volume= 59 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 5
Peak Elev= 42.53' @ 12.04 hrs Surf.Area= 4,291 sf Storage= 588 cf
Flood Elev= 44.80' Surf.Area= 4,291 sf Storage= 4,506 cf

Plug-Flow detention time= 1.9 min calculated for 4,990 cf (100% of inflow)
Center-of-Mass det. time= 1.9 min (767.8 - 765.9)

Volume	Invert	Avail.Storage	Storage Description
#1	42.19'	4,506 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.19	4,291	0.0	0	0
42.20	4,291	40.0	17	17
44.79	4,291	40.0	4,445	4,463
44.80	4,291	100.0	43	4,506

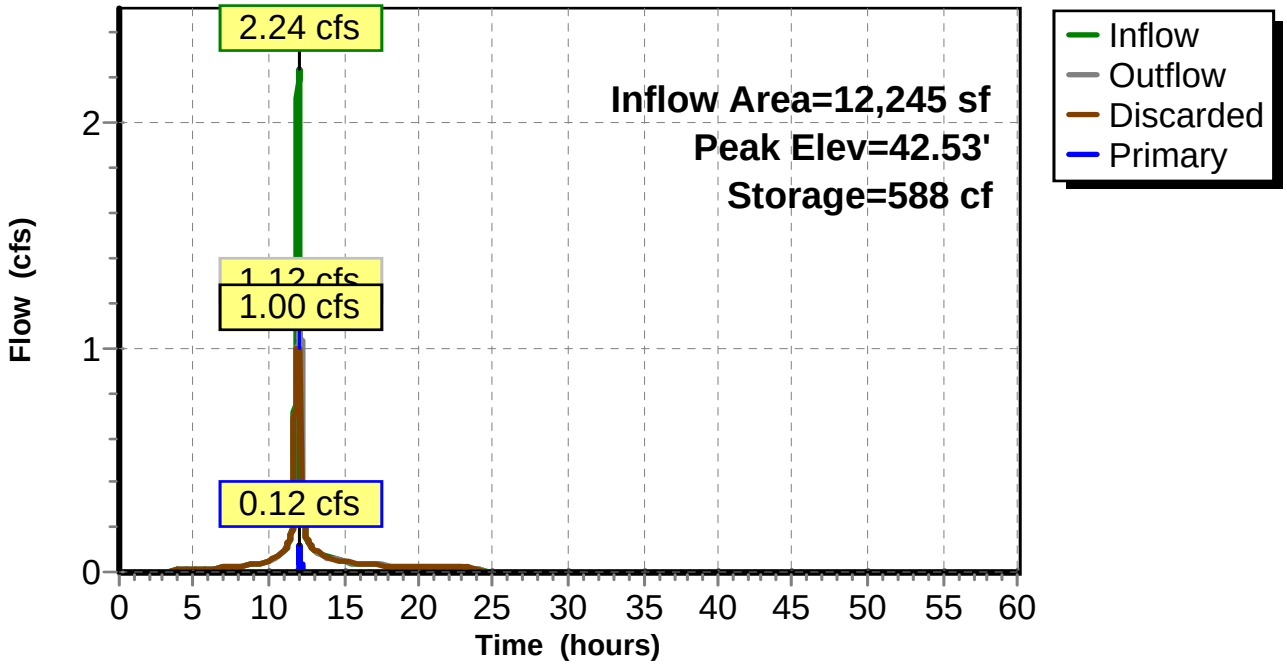
Device	Routing	Invert	Outlet Devices
#1	Primary	42.30'	**6.0" Round Culvert** L= 90.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 42.30' / 40.00' S= 0.0256 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Discarded	42.19'	**10.000 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 0.00' Phase-In= 0.01'

Discarded OutFlow Max=1.00 cfs @ 12.04 hrs HW=42.53' (Free Discharge)
↑—**2=Exfiltration** (Controls 1.00 cfs)

Primary OutFlow Max=0.12 cfs @ 12.04 hrs HW=42.53' TW=35.24' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.12 cfs @ 1.30 fps)

Pond PO1: Porous

Hydrograph



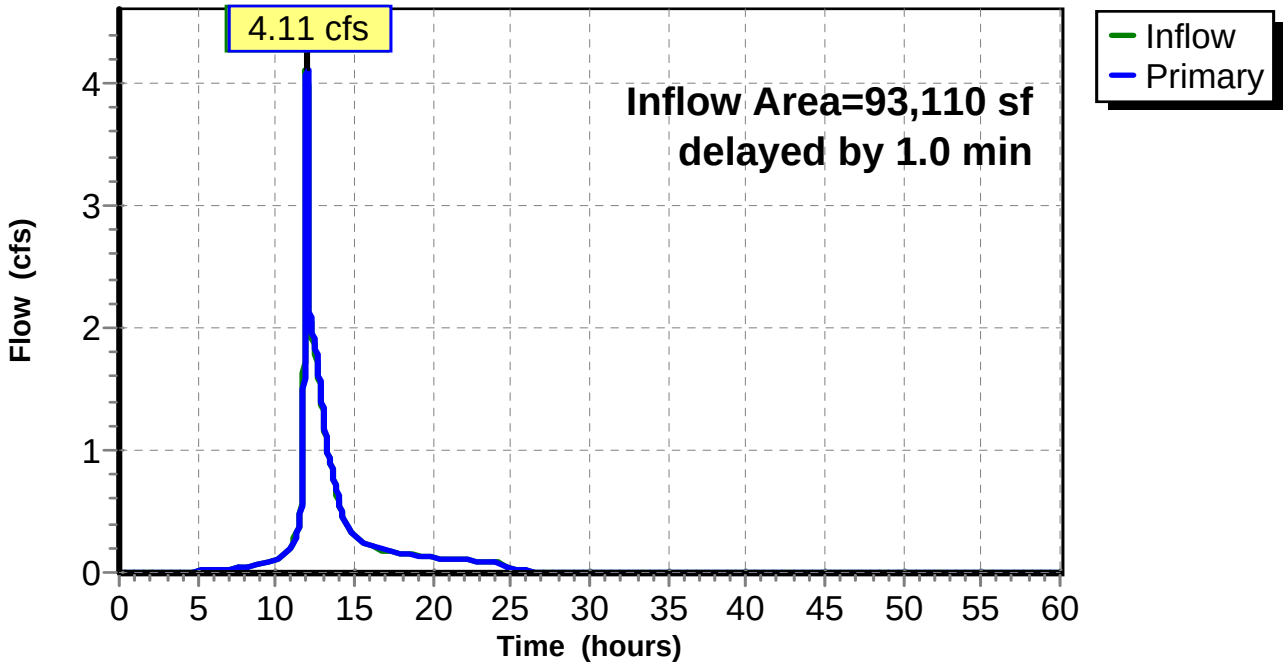
Summary for Link DP1: DESIGN POINT 1

Inflow Area = 93,110 sf, 43.05% Impervious, Inflow Depth = 2.79" for 10 Yr XSC event
Inflow = 4.12 cfs @ 11.97 hrs, Volume= 21,658 cf
Primary = 4.11 cfs @ 11.98 hrs, Volume= 21,658 cf, Atten= 0%, Lag= 1.0 min

Primary outflow = Inflow delayed by 1.0 min, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link DP1: DESIGN POINT 1

Hydrograph



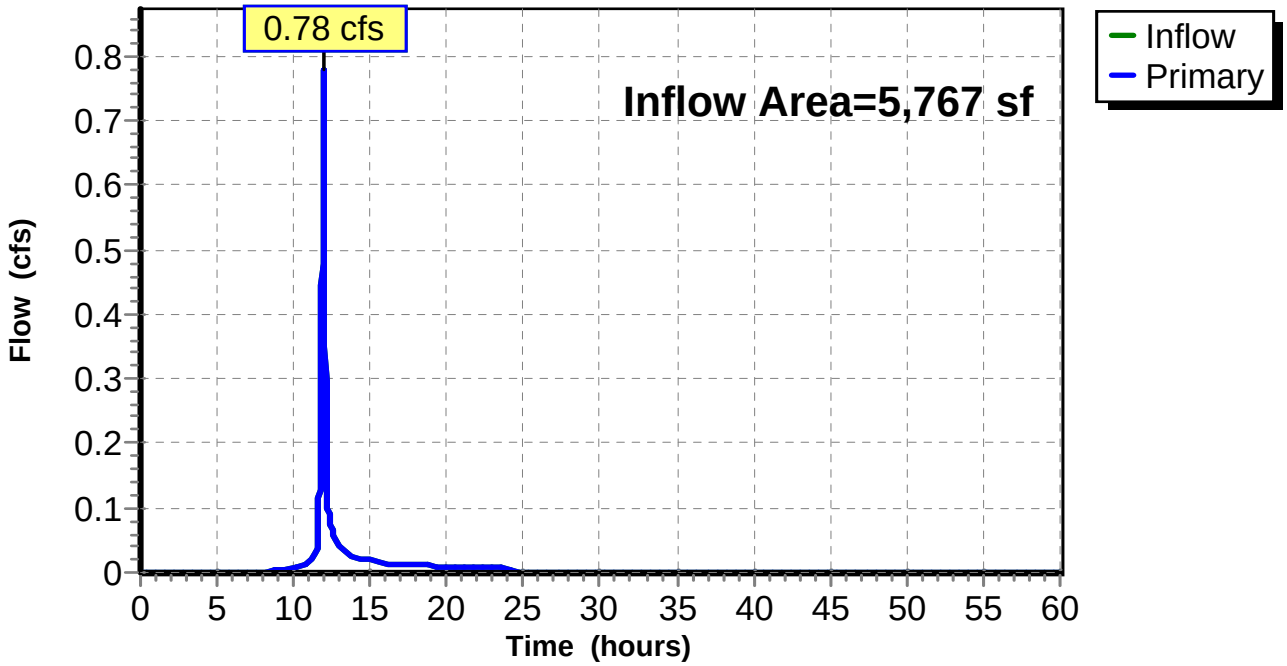
Summary for Link DP2: DESIGN POINT 2

Inflow Area = 5,767 sf, 18.66% Impervious, Inflow Depth = 3.22" for 10 Yr XSC event
Inflow = 0.78 cfs @ 11.96 hrs, Volume= 1,547 cf
Primary = 0.78 cfs @ 11.96 hrs, Volume= 1,547 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link DP2: DESIGN POINT 2

Hydrograph



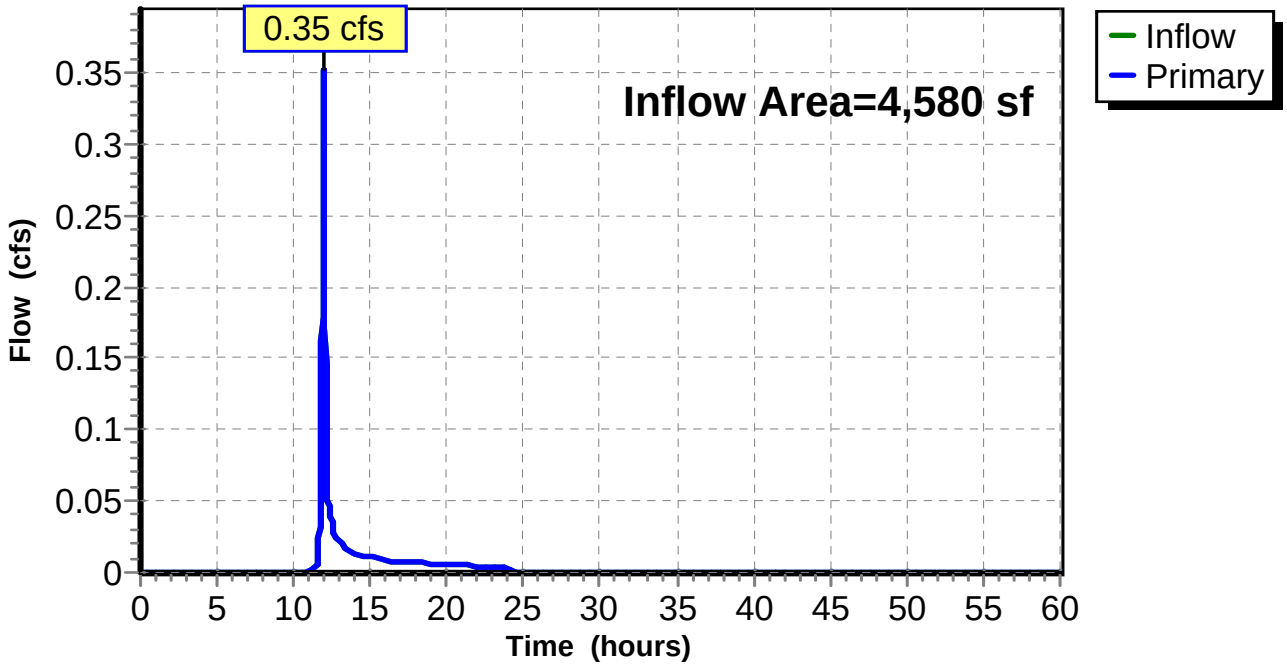
Summary for Link DP3: DESIGN POINT 3

Inflow Area = 4,580 sf, 3.78% Impervious, Inflow Depth = 1.82" for 10 Yr XSC event
Inflow = 0.35 cfs @ 11.97 hrs, Volume= 693 cf
Primary = 0.35 cfs @ 11.97 hrs, Volume= 693 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link DP3: DESIGN POINT 3

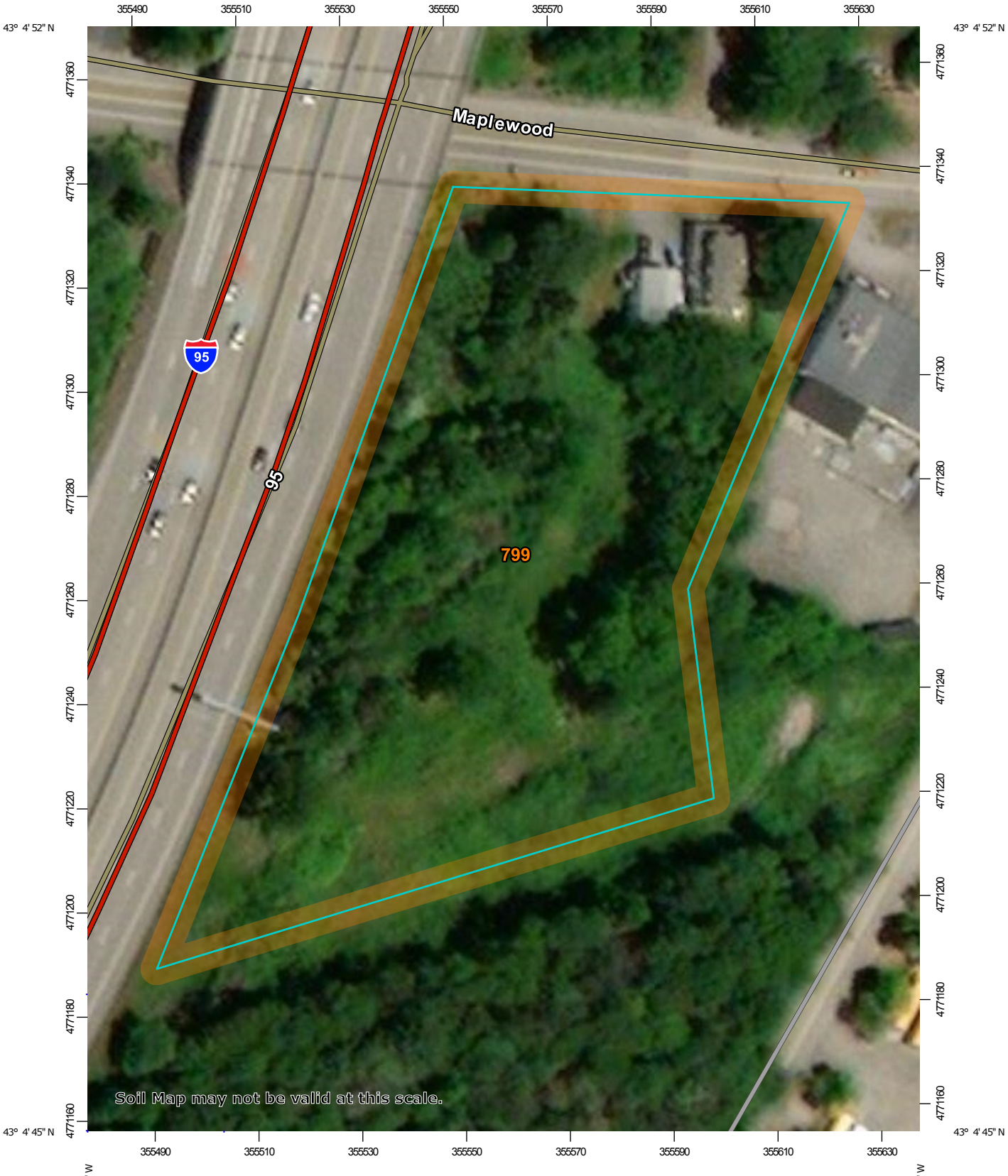
Hydrograph



APPENDIX D

SOIL SURVEY INFORMATION

Soil Map—Rockingham County, New Hampshire
(686 Maplewood Ave)



Map Scale: 1:1,030 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

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

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Rockingham County, New Hampshire
Survey Area Data: Version 20, Sep 7, 2018

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

Date(s) aerial images were photographed: Dec 31, 2009—Sep 9, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
799	Urban land-Canton complex, 3 to 15 percent slopes	2.6	100.0%
Totals for Area of Interest		**2.6**	**100.0%**

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

TECHNICAL REPORT OF WETLAND DELINEATION, CLASSIFICATION & IDENTIFICATION

Ambit Engineering Project No.:2360 **Date(s) of Delineation**: 9/8/17 **Date of Report**: 9/8/17

Field Delineator: Steven D. Riker **Compiled by:** Steven D. Riker

Project Location/Tax Map & Lot: 686 Maplewood Avenue, Portsmouth, NH. Tax Map 220, Lot 89/90.

Prepared for: ISSA, Mohammed Ebrahim, 42 Dover Point Road, Suite N, Dover, NH, 03820.

Site Area Observed: Entire lot and adjacent area within 100 feet.

Site Conditions: Undeveloped lot.

Weather/Seasonal Conditions: 75 sunny, summer conditions.

Site Disturbance: None

Wetlands Present: No.

Wetland conditions/atypical situation/problem area: No wetlands present.

Hydric Soil Criterion: No hydric soils present.

Delineation Standards Utilized:

1. *US Army Corps of Engineers Wetlands Delineation Manual,* Technical Report Y-87-1 (Jan 1987). **AND** Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0, January 2012.
2. Field Indicators of Hydric Soils in the United States, Version 8.1, USDA-NRCS, 2017 **AND (for disturbed sites)** *Field Indicators for Identifying Hydric Soils in New England,* Version 4. NEIWPCC Wetlands Work Group (2017).
3. *National List of Plant Species That Occur in Wetlands: Northeast (Region 1).* USFWS (May 1988).

There were no jurisdictional wetlands and/or hydric soils identified on the parcel, or within 100 feet of the parcel.

APPENDIX E

FEMA FIRM MAP

National Flood Hazard Layer FIRMette

FEMA

Legend

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

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

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

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

OTHER FEATURES
- 20.2 / 17.5 — Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- 513 — Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/15/2018 at 12:55:50 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

APPENDIX F

INSPECTION & MAINTENANCE PLAN

INSPECTION & MAINTENANCE PLAN

FOR

Portsmouth Maple Majid

Site Redevelopment

686 Maplewood Avenue

Portsmouth, NH

Introduction

The intent of this plan is to provide Portsmouth Maple Majid (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 filtration 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 adjust 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 Outlets and Outlet Control Structures & Infiltration Trench:** Monitor drain inlets and outlet aprons for excessive accumulation of sediments or missing stone/riprap. Remove sediments as required to maintain filtering capabilities of the stone. Replace missing riprap.
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.

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.

5. **Porous Pavement:** After placement of the final surface of porous asphalt pavement, inspect the area for signs that rainfall is flowing through the surface and not running off of the surface. Sweep and / or vacuum as needed.

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 is 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 Portsmouth Maple Majid, 686 Maplewood Avenue, 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.
Porous Pavement	2 X Annually	*Check that rainfall is flowing through the surface and not running off of the surface*	Sweep and/or vacuum as needed.
Annual Report	Yearly	*Prepare Annual Report, including all Inspection & Maintenance Logs. Provide to City (if required).*	N/A

Stormwater Management System Maintenance Summary

Inspection & Maintenance Log—for Portsmouth Maple Masjid, 686 Maplewood Avenue, Portsmouth, NH

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

Data Sheets

CMA ENGINEERS, INC.
CIVIL | ENVIRONMENTAL | STRUCTURAL

35 Bow Street
Portsmouth
New Hampshire
03801-3819

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April 11, 2019

Jillian M. Harris, AICP, Planner I
Portsmouth Planning Department
City Hall, 1 Junkins Ave.
Portsmouth, NH 03801

Re: Review of Revised Stormwater and Drainage for the "Maple Masjid of Portsmouth"
Developer: Islamic Society of the Seacoast Area
CMA #1134

Dear Ms. Harris:

At the City of Portsmouth's request, CMA Engineers has reviewed the revised materials and response letter supporting the drainage analysis and design for the proposed development at 686 Maplewood Avenue, known as the "Maple Masjid of Portsmouth." We have reviewed three design iterations of plans and drainage report; our most recent review included following information:

1. Plans: *Proposed Site Plan, Maple Masjid of Portsmouth 686 Maplewood Avenue*, TAC Submission, dated March 19, 2018, (sheet C4 revised April 4, 2019) as prepared by Ambit Engineering, Inc.

2. Stormwater Report & Analysis: *Drainage Analysis, Site Development Maple Masjid,* dated October 15, 2018, with revision date of April 2019, as prepared by Ambit Engineering, Inc.

With this latest design iteration, Ambit has responded to all our comments. A summary of our comments and Ambit's responses are listed below.

REVIEW OF DRAINAGE ANALYSIS

The applicant proposes to develop 686 Maplewood Avenue (Tax Map 220 Lot 90) to include a new place of worship (3,880 sf building footprint), associated parking, landscaping, drainage, and utilities. The proposed development increases the impervious area from 8.9% to 60%. To mitigate the increased stormwater runoff from the additional impervious cover, the applicant has proposed installation of two stormwater filter basins and a porous pavement area.

Site Plan Review Regulations

For items for which we had comments, we have included the applicable sections of the Site Plan Review Regulations in *italics*. Below these regulations are CMA Engineers' comments in plain text and **Ambit's responses in bold.**

1. Section 4.3.1: *Every effort shall be made to use pervious parking and pathway surfaces as an alternative to impervious asphalt or concrete for overflow parking areas, except in cases where it is*

determined that a traditional impervious parking lot with engineered stormwater systems renders greater protection of surface and groundwater resources than pervious pavement.

11/19/18 CMA Eng. Comment: The proposed plan includes no pervious parking or pathway surfaces. The applicant should describe why pervious surfaces are not viable for this project.

2/19/19 Ambit Response: Test Pits were performed on-site and indicate that the depth to ledge varies from 24" – 36". Due to the shallow depth to ledge, previous surfaces are viable in area of fill. The site driveway is 8%. Pervious pavement is not recommended on slopes greater than 5%. The "lower" parking area is a fill area. The proposed slope is 3.5%. We have revised the plans with porous pavement in this area.

2/28/19 CMA Eng. Comment: The revised plan added approximately 4,500 sf of porous pavement. For this porous pavement section, revise the storage calculation so that only the large stone courses have 40% voids. There are not 40% voids in the filter blanket and filter course, or the porous pavement.

The applicant stated that they have "specified the fill to have a minimum Ksat value of 10 inches per hour." We did not find this requirement on the plans. The applicant should describe how this requirement gets implemented (specification, testing, verification, etc.).

3/5/19 Ambit Response: It was agreed that the filter blanket and filter course were shown to have an average of 25% voids, the porous pavement storage volume is to be removed from the storage volume calculations.

3/27/19 CMA Eng. Comment: For the porous parking lot, surface flows and any flows captured in catch basins should be directed to the closed drainage system down the driveway.

3/28/19 Ambit Response: [We] regraded porous pavement parking area to drain down the proposed drive if failure occurs.

4/11/19 CMA Eng. Comment: No additional comments.

2. Section 7.1: *Applicants shall incorporate Low Impact Development (LID) design practices and techniques in all aspects of the site's development.*

11/19/18 CMA Eng. Comment: The applicant has proposed two filtrations basins, which appear to be undersized (to be confirmed with revised calculations requested in General Comments). Significant portions of impervious area (PS1c) leave the site untreated.

2/19/19 Ambit Response: We have confirmed with the attached drainage analysis that the filtration basins are adequately sized. We have broken up Drainage Area Ps1c, added two deep sump catch basins CB1 and CB2 and directed the flow into Filtration Basin Ps1b to increase the area of impervious that is treated prior to leaving the site.

2/28/19 CMA Eng. Comment: The applicant's calculation of flow through the filtration basins is incorrect. The analysis assumes the incoming stormwater freely passes through the filter media (lawn, 16" of soil filter, and 3" of pea gravel) to the underdrains. To simulate the flow through the media, HydroCAD® recommends using an "exfiltration outlet," which better models the flow through the media. This revised modeling will likely require significantly larger basins with more storage volume.

Routing offsite stormwater runoff (sub-catchment PS1c) exacerbates this issue because it adds flow to the filtration basin that must be transmitted through the filter media or stored in the available storage volume.

For the filtration basin section, revise the storage calculation so only the large stone course has 40% voids. There are not 40% voids in the soil filter layer and the pea stone.

Because the filtration basins are proposed as detention ponds with storage to mitigate peak flow rates, a minimum 1-foot of freeboard should be provided for the 50-year, 24-hour storm and an emergency spillway should be designed to direct overflows.

From the previous revision, the applicant has increased the area that is intercepted and directed towards BMP's. However, runoff leaves the site untreated from sub-catchments PS1f, PS2, and PS2 (~25,000 sf total/12,500 sf impervious). We would expect the pollutant loading from PS2 and PS3 to be low because it is runoff from grassed areas and the building roof.

3/5/19 Ambit Response: It was agreed that an exfiltration outlet, "device #2," will be used to retard water flow through the filtration pond before it enters the underdrains. This device will be modeled using an exfiltration rate (Ksat value) of 10" per hour.

It was agreed that run-off from the offsite drainage area PS1c will rerouted so that the majority or all of the run-off from PSC1 is not routed through Filtration Basin PS1b (lower basin).

It was agreed that 25% voids would be used in the soil filter layer and the pea stone.

It was agreed that the 1' of freeboard rule (an AoT NHDES rule) has changed from 1' of freeboard to not overtopping the embankment. It was agreed that if the PS1C stormwater was rerouted from Filtration Basin Ps1b, and that a grate system that was not subject to clogging was specified, that a emergency spillway was not required because the run-off directed to Filtration Basin Ps1b would be reduced.

It was agreed that we would treat driveway run-off by installing catch basins and an underground infiltration system. The system would collect water no greater than 50' upslope of the property line. To ensure we protect the abutter, it was agreed to review the abutting lots tax card to ensure that the garage shown does not have a basement.

3/5/19 Ambit Response: Our Basin in the revised design will have over 1' of freeboard in a 50-year event (8.5" of Rainfall in a 24-hour period

3/27/19 CMA Eng. Comment: Do not direct the emergency spillway from Filtration Basin 1b to the adjacent residential home.

3/5/19 Ambit Response: [We have] Removed [the] Spillway from Pond 2.

4/11/19 CMA Eng. Comment: No additional comments.

3. Section 7.4.2.4: *Snow storage areas shall be located such that no direct discharges to receiving waters are possible from the storage site. Runoff from snow storage areas shall enter treatment areas to remove suspended solids and other contaminants before being discharged to receiving waters or preferably be allowed to infiltrate into the groundwater.*

   11/19/18 CMA Eng. Comment: The snow storage areas shown on the Site Plans (sheet C2) are upgradient from the filtration basins; however, we question whether the areas shown are adequate. If these areas are inadequate, it is likely snow will be pushed into the filtration basins.

   2/19/19 Ambit Response: We have added a snow storage area to the east of the building. Note #8 on sheet C2 states "Excess snow shall be trucked from site."

   2/28/19 CMA Eng. Comment: No additional comments.

4. *Section 7.4.2.8: Measures shall be taken to control the post-development peak rate of runoff so that it does not exceed pre-development runoff for the 2, 10, 25, and 50-year, 24-hour storm event.*

   11/19/18 CMA Eng. Comment: The reported post development runoff rates are less than pre-development peak flow rates because the applicant used incorrect time of concentrations (see General Comments below).

   2/19/19 Ambit Response: We have revised time of concentration (TC). We have not added extended TC to the filtration basins as recommended by the UNHSC reports.

   2/28/19 CMA Eng. Comment: See comments under Section 7.1.

5. *Section 7.4.2.10: For a storm event of ½ inch or less, the applicant shall demonstrate that stormwater management practices will remove contaminants from the stormwater runoff that leaves the site. The use of oil and grit traps in manholes, on-site vegetated waterways, and vegetated buffer strips along waterways and drainage swales, and the reduction in use of deicing salts and fertilizers may be required by the Planning Board.*

   11/19/18 CMA Eng. Comment: This information is not provided and there are significant areas of impervious area (PS1c) leave the site untreated (see comment 2).

   2/19/19 Ambit Response: Please find attached the Post Construction Drainage Analysis indicating that 0.07 CFS or less leaves the site in ½ inch or less Storm Event. This small amount

of run-off includes the site driveway, a portion of Maplewood Avenue, 678 Maplewood Avenue: Garage, Drive, a portion of the lot and ½ of the house. Every site requires a driveway for access. This site slopes toward Maplewood Avenue and some untreated runoff is normal and customary.

2/28/19 CMA Eng. Comment: See comments under Section 7.1.

6. *Section 7.4.3.1: All applications shall minimize the area of impervious surfaces and address the potential negative impact of impervious surfaces on surface and groundwater resources.*

   11/19/18 CMA Eng. Comment: The proposed development increases the impervious area from 3.6% to 59%.

   2/19/19 Ambit Response: The area of impervious in the revised drainage model increases from 8.9% to 60%. We believe the amount of lot impervious is the minimum necessary to achieve the project goals and is under the allowable impervious coverage in the zoning ordinance.

   2/28/19 CMA Eng. Comment: No additional comments.

7. Section 7.4.1.1: *Adequate provisions shall be made for the collection, treatment and/or disposal of all stormwater that runs off the site.*

   11/19/18 CMA Eng. Comment: Areas of the proposed development (subcatchment PS1c) discharge stormwater onto Maplewood Avenue with no treatment.

   2/19/19 Ambit Response: An area of driveway below CB1 and CB2 runs off the site untreated. Currently the entire Drainage Area ES1 including the existing driveway, gravel and run-off the site untreated. Given the site constraints we believe we have made adequate provisions.

   2/28/19 CMA Eng. Comment: No additional comments.

City Ordinances, Chapter 16, Article II, Regulation of Discharges into Storm Water Drainage System

Under this ordinance, Section 16.207.A, the applicant is required to obtain a permit from the City to connect to the Stormwater drainage system.

General CMA Engineers Comments

1. The Drainage Analysis cover has "386 Maplewood Avenue", which should be corrected to "686 Maplewood Avenue."

   2/19/19 Ambit Response: The cover title has been corrected.

   2/28/19 CMA Eng. Comment: No additional comments.

2. There is a reference to porous pavement on page 6 in the Drainage Analysis report; there does not appear to be any porous pavement proposed.

   2/19/19 Ambit Response: We have revised the site to include some porous pavement.

   2/28/19 CMA Eng. Comment: No additional comments.

3. The Drainage Design Points DP1 and DP2 are not configured correctly. In the existing conditions analysis, DP2 should not be connected to DP1. In the proposed condition, it does not appear there is any flow to DP2 (all the flow goes to DP1).

   2/19/19 Ambit Response: We have performed additional research and additional offsite field survey work to refine our pre- and post drainage areas.

   2/28/19 CMA Eng. Comment: No additional comments.

4. The time of concentration for existing subcatchment ES1 has not been calculated correctly. The time of concentration for the subcatchment should start at the furthest point, flow overland (100') to the existing channel (offsite), then down the channel to Maple Wood Avenue.

   2/19/19 Ambit Response: We have revised the TC for ES1 as recommended.

   2/28/19 CMA Eng. Comment: No additional comments.

5. The time of concentrations for proposed subcatchment PS1a and PS1b are not calculated correctly. The time should be specific to the characteristics of the subcatchment (likely the 5 minutes minimum allowable) and should not include the time for flow through the filtration basins. The applicant should calculate the peak runoff from the subcatchment to ensure the filtration basins have adequate capacity to accept and infiltrated these flows.

   2/19/19 Ambit Response: We have revised the TC calculations as recommended. We are providing revised peak rate run-off calculations showing that the filtration basins have adequate capacity.

   2/28/19 CMA Eng. Comment: See comments in Section 7.1.

6. Confirm how the 6 in/hr exfiltration rate was calculated for the filtration basins. Based on the test pits, ledge is 2-2.5' below finished grade.

   2/19/19 Ambit Response: We have revised the Ksat values. Filtration Basin Ps1a has an impermeable liner. A 10 inch per hour Ksat value is acceptable to NHDES AoT Bureau in filtration basins with impermeable liners. Filtration Basin PS1b and the proposed porous

pavement are designed if fill. We have specified the fill to have a minimum Ksat value of 10 inches per hour.

2/28/19 CMA Eng. Comment: The applicant stated that they have "specified the fill to have a minimum Ksat value of 10 inches per hour." We did not find this requirement on the final design plans. The applicant should describe how this requirement gets implemented (testing, verification, etc.). When the infiltration rate is not measured through field testing, NHDES requires the default rate to equal the slowest infiltration rate for the limiting layer of site-specific soil, dived by 2.

3/5/19 Ambit Response: It was agreed that a Ksat of 10 inches per hour is allowable. We shall provide on plan specifications for suitable fill and that a gradation report shall be supplied to the review engineer and approved by the third party construction reviewer.

We have agreed that the contractor shall supply two (2) in -situ acceptable infiltration field tests (borehole, double ring infiltration test, or amoozemeter) per practice, the requirements of which shall be noted on revised plans. Acceptable test results shall indicate that the soil has an infiltration rate of 10 inches per hour or greater.
4/11/19 CMA Eng. Comment: No additional comments.

7. The proposed grading appears to trap drainage coming off the highway embankment in a lot point adjacent to the entrance drive at propose grade contour 48/existing grade contour 42.

2/19/19 Ambit Response: We have performed additional off-site survey work to refine the area where drainage may be trapped. We have added a 12" box culvert under the wall at the low point to allow drainage to pass into the site drainage system.

2/28/19 CMA Eng. Comment: We note that the applicant has modeled this trapped drainage adjacent to the driveway retaining wall as a detention pond with the 12" box culvert as an outlet.

3/5/19 Ambit Response: We have agreed that the 12" box culvert will be revised to a round culvert.

4/11/19 CMA Eng. Comment: No additional comments.

8. Confirm with the Eversource that the proposed grades (up to 8' of fill) and proposed light poles provide adequate clearance under the high voltage transmission lines.

2/19/19 Ambit Response: Attached please find correspondence with Eversource. Eversource will allow the added fill with the caveat that the owners provide a check for $50,000 for design and construction of upgraded poles and that a joint use agreement is signed.
2/28/19 CMA Eng. Comment: No additional comments.

9. Confirm that the retaining wall adjacent to Filtration Basin 1b is designed to handle the hydraulic loading it will experience from the surface runoff and flow through the filtration basin.

2/19/19 Ambit Response: We have corresponded with Shea Concrete. They have stated that "The filtration pond will not have an impact on the wall given the distance from the face of wall to the pond." We have revised the wall details so that the retaining walls shall be designed and stamped by a Structural Engineer and reviewed by the Building Department prior to construction.

2/28/19 CMA Eng. Comment: No additional comments.

10. Confirm adequate clearance from the face of the block gravity wall to the property lines. The detail shows 5'+ required for some wall heights for the excavation/installation.

    2/19/19 Ambit Response: Since the low side of the wall is adjacent to the property line, we can excavate and construct from the high side and not impact the adjacent property.

    2/28/19 CMA Eng. Comment: No additional comments.

11. If the pavement section is going to be 4" total, it should be 1.5" wearing course (12 mm)/2.5" binder course (19 mm).

    2/19/19 Ambit Response: We have revised detail L on Sheet D2 to indicate 1.5" of wearing course and 2.5" of binder course as requested.

    2/28/19 CMA Eng. Comment: No additional comments.

12. Why does the soil group change for some sub-catchments (15,822 sf) from HSG C in the pre-development analysis to the HSG B in the post-development analysis? This changed parameter reduces the calculated runoff in the post-development analysis.

    3/5/19 Ambit Response: We have agreed to limit the soils to HSG C or provide specific fill testing requirements on the plan for areas that have been changed to HSG B soil.

    4/11/19 CMA Eng. Comment: No additional comments.

Should you have any questions, please do not hesitate to contact us.

Very truly yours,

CMA ENGINEERS, INC.

Philip A. Corbett

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Project Manager

PAC/kao