Site Planning
Civil Engineering
Landscape Architecture
Land Surveying
Transportation Engineering
Environmental Studies
Entitlements
Construction Services
3D Visualization
Laser Scanning

March 11, 2024

Mr. Christopher Carthy, Chairman
and Members of the Planning Board
Town of North Castle
17 Bedford Road
Armonk, NY 10504

RE: JMC Project 20101
The Summit Club at Armonk-Golf Course Phase (Maintenance Building)
568 & 570 Bedford Road (NY 22)
Town of North Castle, NY

Golf Course Phase (Maintenance Building) Site Plan Submission

Dear Chairman Carthy and Members of the Planning Board:

On behalf of the owner and applicant, Summit Country Club, LLC, we are pleased to submit the following documents for your review of the Site Plan Application for the proposed maintenance building on the golf course parcel:

1. JMC Drawings:

Dwg. No.	Title	Rev. #/Date
C-000M	Cover Sheet	03/11/2024
C-010M	Overall Existing Conditions Map	03/11/2024
C-011M	Existing Conditions Map	03/11/2024
C-020M	Site Demolition & Tree Removal Plan	03/11/2024
C-100M	Overall Site Layout Plan	03/11/2024
C-101M	Site Layout Plan	03/11/2024
C-200M	Site Grading Plan	03/11/2024
C-300M	Site Utilities Plan	03/11/2024
C-400M	Site Erosion & Sediment Control Plan	03/11/2024
C-900M	Construction Details	03/11/2024
C-901M	Construction Details	03/11/2024

2. Granoff Architects Drawings:

Dwg. No.	Title	Rev. #/Date	
C	Cover	4	03/06/2024
A100	Floor Plan-Lower & Upper Levels	4	03/06/2024
A101	Roof Plan	4	03/06/2024
A102	RCP-Lower Level	4	03/06/2024
A300	Building Elevations	4	03/06/2024
A400	Building Sections	4	03/06/2024
A401	Building Sections	4	03/06/2024
A600	Schedules	4	03/06/2024
A601	Partition Types	4	03/06/2024

3. Carbtrol Advanced Washwater Recycle System Layout & Information, dated 01/04/2023.

4. Plantstar Chemical Mix/Load and Recapture Systems Information & Product Use/Storage List, dated 12/09/2022.

5. Integrated Turfgrass and Pest Management Plan (ITPMP) with Environmental Rik Assessment for the Brynwood Golf and Country Club (now The Summit Club at Armonk), North Castle, NY, prepared by A. Martin Petrovic, PH.D., last revised 10/28/2013.

6. Stormwater Pollution Prevention Plan (SWPPP), prepared by JMC, dated 03/11/2024.

7. Town of North Castle: Preliminary Site Plan Completeness Review Form, dated 03/11/2024.

8. Town of North Castle: Application for Site Development Plan Approval, dated 03/11/2024.

9. Town of North Castle: Tree Removal Application Permit, dated 03/11/2024.

10. NYSDEC Short Environmental Assessment Form, dated 03/11/2024.

11. Summit Club Partners, LLC Check #1468 in the amount of $475.00, dated 03/05/2024 (Site Development Plan, Tree Removal Permit and Short EAF Fees)

12. Summit Club Partners, LLC Check #1469 in the amount of $3,750.00, dated 03/05/2024 (Escrow Account Deposit)

We trust the attached documents are sufficient for your review and we respectfully request placement on the March 25th Planning Board meeting agenda. Thank you for your consideration.

If you have any questions or require additional information, please do not hesitate to contact our office at (914) 273-5225.

Sincerely,

JMC Planning Engineering Landscape Architecture & Land Surveying, PLLC

Paul Sysak

Paul R. Sysak, RLA
Senior Project Manager

cc: Adam R. Kaufman, AICP
John Kellard, PE
Joseph M. Cermele, PE, CFM
Roland Baroni, Esq.
Jeffrey B. Mendell
Mark P. Weingarten, Esq.
Peter J. Wise, Esq.
Rich S. Granoff, AIA, LEED AP
Kenneth S. Andersen, AIA

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SITE PLAN APPROVAL DRAWINGS

THE SUMMIT CLUB AT ARMONK

(GOLF COURSE PHASE - MAINTENANCE BUILDING)

TAX MAP SECTION 101.02 | BLOCK 1 | LOT 28.1 & 28.2
WESTCHESTER COUNTY
568 & 570 BEDFORD ROAD (NY-22)
TOWN OF NORTH CASTLE, NEW YORK

JMC Drawing List:

C-000M COVER SHEET
C-010M OVERALL EXISTING CONDITIONS MAP
C-011M EXISTING CONDITIONS MAP
C-020M SITE DEMOLITION & TREE REMOVAL PLAN
C-100M OVERALL SITE LAYOUT PLAN
C-101M SITE LAYOUT PLAN
C-200M SITE GRADING PLAN
C-300M SITE UTILITIES PLAN
C-400M SITE EROSION & SEDIMENT CONTROL PLAN
C-900M CONSTRUCTION DETAILS
C-901M CONSTRUCTION DETAILS

Applicant/Owner:
SUMMIT CLUB PARTNERS, LLC
568 BEDFORD ROAD (NY-22)
ARMONK, NY 10504
(914) 391-2900

Architect/Landscape Architect:
GRANOFF ARCHITECTS
330 RAILROAD AVENUE
GREENWICH, CT 06830
(203) 625-9460

Attorney:
DELBELLO DONNELLAN WEINGARTEN WISE & WIEDERKEHR, LLP
THE GATEWAY BUILDING
ONE NORTH LEXINGTON AVENUE
WHITE PLAINS, NY 10601
(914) 681-0200

Lighting Consultant:
APEX LIGHTING SOLUTIONS
20-30 BEAVER ROAD
WETHERSFIELD, CT 06109
(860) 632-8766

Water Distribution System Consultant:
WSP
ONE PENN PLAZA, 2ND FLOOR, 250 W 34TH STREET
NEW YORK, NY 10119
(212) 465-5000

Sewage Treatment Plant Consultant:
R&M ENGINEERING
50 ELM STREET
HUNTINGTON, NY 11743
(631) 271-0576

Site Planner/Civil Engineer/Surveyor:
JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE, & LAND SURVEYING PLLC
120 BEDFORD ROAD
ARMONK, NY 10504
(914) 273-5225

ZONING COMPLIANCE CHART

SECTION 101.02, BLOCK 1, LOT 28.1 & 28.2 (2/08/7.C1A)
ZONES "R-2A" – "ONE FAMILY RESIDENCE DISTRICT (2 ACRES)"
"GCCFO"– "GOLF COURSE COMMUNITY FLOATING OVERLAY DISTRICT"
PROPOSED USE: GOLF COURSE COMMUNITY
FIRE/AMBULANCE DISTRICT: ARMONK FIRE DEPARTMENT (NORTH CASTLE DISTRICT #2)
WATER DISTRICT: NORTH CASTLE WATER DISTRICT #2
SCHOOL DISTRICT: BYRAM HILLS CENTRAL SCHOOL DISTRICT
SEWER DISTRICT: ON–SITE SEWAGE TREATMENT PLANT (SPDES PERMIT)

DESCRIPTION	REQUIRED/PERMITTED (R–2A)	REQUIRED/PERMITTED (GCCFO)	EXISTING	PROPOSED/PROVIDED (LOT 1) (9)	PROPOSED/PROVIDED (LOT 2)	PROPOSED/PROVIDED (LOT 2.1)	PROPOSED/PROVIDED (LOT 3)	PROPOSED/PROVIDED (LOT 4)	PROPOSED/PROVIDED (LOT 5)	PROPOSED/PROVIDED (LOT 6)
LOT AREA (SQUARE FEET/ACRES)	2.0 MIN. (1)	SEE NOTE 1	6,808,556.34/156.30 (5)	5,678,173.42/130.34	873,787.82/20.06	39,559.08/0.91	128,720.04/2.96	11,062.95/0.25	46,266.56/1.06	31,416.21/0.72
LOT STREET FRONTAGE (FEET)	150 MIN. (1)	SEE NOTE 1	1,519.70	1,519.70 (1)	1,519.70 (1)	1,519.70 (1)	1,519.70 (1)	1,519.70 (1)	1,519.70 (1)	1,519.70 (1)
LOT WIDTH (FEET)	150 MIN. (1)	SEE NOTE 1	±2,300	±2,300 (1)	±2,300 (1)	±2,300 (1)	±2,300 (1)	±2,300 (1)	±2,300 (1)	±2,300 (1)
LOT DEPTH (FEET)	150 MIN. (1)	SEE NOTE 1	±1,805	±1,805 (1)	±1,805 (1)	±1,805 (1)	±1,805 (1)	±1,805 (1)	±1,805 (1)	±1,805 (1)
PRINCIPAL BUILDING MINIMUM YARDS (FEET)										
FRONT	50 (1)	SEE NOTE 1	123.1	313.72 (1)	252.69 (1)	279.79 (1)	817.74 (1)	1,132.50 (1)	– (1)	– (1)
SIDE	30 (1)	SEE NOTE 1	287.8	99.78 (1)	110.43 (1)	328.33 (1)	1,468.17 (1)	1,869.34 (1)	– (1)	– (1)
REAR	50 (1)	SEE NOTE 1	1,645.5	1,755.63 (1)	872.81 (1)	1,699.80 (1)	1,095.77 (1)	1,249.79 (1)	– (1)	– (1)
MAXIMUM BUILDING COVERAGE (%)	8 (1)	3.5 (1)	0.72 (6)	0.33 (1)(7)	1.29 (1)(7)	0.04 (1)(7)	0.01 (1)(7)	0.01 (1)(7)	– (1)(7)	– (1)(7)
MAXIMUM BUILDING HEIGHT (STORIES / FEET)	NA / 30	3 / 39.5 (2)	3 / < 39.5	3 / < 39.5	3 / < 39.5	3 / < 39.5	3 / < 39.5	3 / < 39.5	–	–
PARKING SPACES										
STANDARD PARKING SPACES	2 PER DWELLING UNIT	SEE NOTE 3	124	(8) 139/175 (9)	168	–	–	–	–	–
ACCESSIBLE PARKING SPACES	N/A	–	5	(8) 5/8 (9)	12	–	–	–	–	–
COMPACT PARKING SPACES	N/A	–	–	(8) –/70 (9)	–	–	–	–	–	–
TOTAL PARKING SPACES	2 PER DWELLING UNIT	–	129	(8) 144/253 (9)	180	–	–	–	–	–
LOADING SPACES	N/A	SEE NOTE 4	1	1	1	–	–	–	–	–

NOTES:

1. IN THE GCCFO DISTRICT, THE LOT, DIMENSIONAL, AND PARKING REQUIREMENTS FOR A GOLF COURSE COMMUNITY IN THIS SECTION SHALL SUPERSEDE THE SCHEDULE OF RESIDENCE DISTRICT REGULATIONS (§ 355–21 OF THIS CHAPTER). LOT SIZE, LOT CONFIGURATION AND OTHER LOT DIMENSIONAL REQUIREMENTS WITHIN A GCCFO DISTRICT SHALL BE DETERMINED BY THE PLANNING BOARD IN CONJUNCTION WITH SUBDIVISION APPROVAL. LOT SIZE, LOT CONFIGURATION AND OTHER LOT DIMENSIONAL REQUIREMENTS OF LOTS WITHIN A GCCFO DISTRICT SHALL BE BASED UPON THE PLANNING BOARD'S CONSIDERATION OF THE CHARACTER OF THE NEIGHBORHOOD IN WHICH THE GCCFO DISTRICT WILL BE LOCATED; THE GCCFO DISTRICT'S RELATIONSHIP TO ADJOINING DISTRICTS, PROPERTIES AND LAND USES; THE GCCFO DISTRICT'S TOPOGRAPHY; AND SUCH OTHER FACTORS THE PLANNING BOARD MAY DETERMINE TO BE APPROPRIATE. THE LOTS AND/OR PARCELS THAT TOGETHER COMPRISE A GOLF COURSE COMMUNITY SITE ARE NOT REQUIRED TO BE CONTIGUOUS, PROVIDED THAT EACH SUCH LOT AND/OR PARCEL ADJOINS THE AFFILIATED MEMBERSHIP CLUB. ALL LOT, DIMENSIONAL, AND PARKING REQUIREMENTS IN THIS SECTION, INCLUDING BUT NOT LIMITED TO MAXIMUM DENSITY, MAXIMUM BUILDING COVERAGE, MINIMUM YARDS AND REQUIRED OFF–STREET PARKING, SHALL APPLY TO THE LAND AREA IN THE GCCFO DISTRICT AS A WHOLE, NOTWITHSTANDING THAT THE GOLF COURSE COMMUNITY SITE MAY BE COMPRISED OF MORE THAN ONE LOT AND/OR PARCEL, OR THAT THE SITE MAY FROM TIME TO TIME BE SUBDIVIDED OR RESUBDIVIDED, AND ALL DETERMINATIONS AND CALCULATIONS RELATING TO SUCH REQUIREMENTS SHALL BE MADE WITH REFERENCE TO THE BOUNDARIES OF THE ENTIRE LAND AREA IN THE GCCFO DISTRICT AND AS THOUGH SUCH AREA IS A SINGLE LOT (AS DEFINED IN § 355–4 OF THIS CHAPTER), EVEN THOUGH IT IS OR WILL BE COMPRISED OF MORE THAN ONE LOT AND/OR PARCEL.

2. THE MAXIMUM BUILDING HEIGHT SHALL BE THREE STORIES AND 39 1/2 FEET TO THE MEAN LEVEL OF THE PRIMARY ROOF, MEASURED FROM THE LEVEL OF THE FINISHED GRADE AT THE MAIN ENTRY TO THE BUILDING.

3. RESIDENTIAL PARKING CALCULATIONS

MARKET–RATE DWELLING UNITS REQUIREMENT: "OTHER MULTIFAMILY DWELLING UNITS": 2 FOR EACH DWELLING UNIT, PLUS ½ FOR EACH BEDROOM IN EXCESS OF 2, PLUS 10% VISITOR PARKING.

65 TOTAL MARKET–RATE DWELLING UNITS: (33) 2–BEDROOM UNITS, (32) 3–BEDROOM UNITS
65 (DWELLING UNITS) X 2 = 130 PARKING SPACES
32 (3–BEDROOM UNITS) X .5 = 16 PARKING SPACES
10% VISITOR PARKING: 146 X .10 = 14.6 (15) PARKING SPACES
TOTAL REQUIRED PARKING FOR MARKET–RATE UNITS: 161 PARKING SPACES

AFFH DWELLING UNITS REQUIREMENT: "MIDDLE–INCOME DWELLING UNITS AND AFFH UNITS": 1 FOR EACH DWELLING UNIT, PLUS ½ FOR EACH BEDROOM.

7 TOTAL AFFH DWELLING UNITS: (3) 2–BEDROOM UNITS, (4) 3–BEDROOM UNITS
7 (DWELLING UNITS) X 1 = 7 PARKING SPACES
18 (TOTAL BEDROOMS) X .5 = 9 PARKING SPACES
TOTAL REQUIRED PARKING FOR AFFH UNITS: 16 PARKING SPACES

FUTURE GOLF COURSE COTTAGE UNITS REQUIREMENT: "OTHER MULTIFAMILY DWELLING UNITS": 2 FOR EACH DWELLING UNIT, PLUS ½ FOR EACH BEDROOM IN EXCESS OF 2, PLUS 10% VISITOR PARKING.

10 TOTAL COTTAGE UNITS: (5) 2–BEDROOM UNITS, (5) 4–BEDROOM UNITS
10 (DWELLING UNITS) X 2 = 20 PARKING SPACES
5 (4–BEDROOM UNITS) (5 X 2) X .5 = 5 PARKING SPACES
10% VISITOR PARKING: 25 X .10 = 2.5 (3) PARKING SPACES
TOTAL REQUIRED PARKING FOR MARKET–RATE UNITS: 28 PARKING SPACES

GOLF COURSE/CLUB PARKING CALCULATIONS

GOLF COURSE/CLUB REQUIREMENT: "GOLF OR COUNTRY CLUBS": 1 FOR EACH 3 MEMBERS, PLUS 1 FOR EACH 3 SEATS IN THE MEETING AND/OR DINING ROOMS.

500 TOTAL MEMBERSHIPS:
500 (MEMBERSHIPS) / 3 = 166.6 (167) PARKING SPACES

AMENITIES BUILDING (PHASE 1):
123 TOTAL SEATS: (68 RESTAURANT SEATS + 55 BAR SEATS)
123 (SEATS) / 3 = 41 PARKING SPACES

FUTURE CLUBHOUSE BUILDING (PHASE 2):
191 TOTAL SEATS: (162 RESTAURANT SEATS + 29 BAR SEATS)
191 (SEATS) / 3 = 63.6 (64) = PARKING SPACES

TOTAL REQUIRED PARKING FOR GOLF COURSE/CLUB: 272 PARKING SPACES

TOTAL REQUIRED PARKING: 205 RESIDENTIAL + 272 GOLF COURSE/CLUB = 477 SPACES
TOTAL PROVIDED PARKING: 180 RESIDENTIAL + 238 GOLF COURSE/CLUB + 15 MAINTENANCE AREA + 65 GOLF CLUB RESIDENT CREDIT (1 SPACE/UNIT) = 498 SPACES

4. FOR WHOLESALE BUSINESS, INDUSTRY, STORAGE, WAREHOUSE AND OTHER COMMERCIAL ESTABLISHMENTS, A MINIMUM OF ONE SPACE FOR EACH ESTABLISHMENT, AND ONE ADDITIONAL SPACE FOR EACH 10,000 SQUARE FEET OF GROSS FLOOR AREA OR MAJOR PORTION THEREOF IN EXCESS OF 4,000 SQUARE FEET OF GROSS FLOOR AREA.

5. CURRENTLY THE GOLF COURSE LOT IS ±129.96 ACRES AND THE RESIDENTIAL LOT IS ±26.34 ACRES.

6. TOTAL EXISTING BUILDING COVERAGE CALCULATED BASED ON ALL EXISTING BUILDINGS ON THE PROPERTY, INCLUDING PREVIOUSLY DEMOLISHED STRUCTURES.

7. BUILDING COVERAGE BREAKDOWN:

LOT 1: (FUTURE GOLF COURSE PHASE)

CLUBHOUSE BUILDING: ±8,070.06 S.F.
COTTAGES: 10 X 1,500.00 S.F.

TOTAL LOT 1 BUILDING COVERAGE: ±23,070.06 S.F.

LOT 2:

RESIDENTIAL BUILDINGS: 6 X ±14,420.17 S.F.
GATE HOUSE: ±903 S.F.
TENNIS PAVILION: ±375 S.F.

TOTAL LOT 2 BUILDING COVERAGE: ±87,799.02 S.F.

LOT 2.1:

RESIDENTIAL AMENITIES BUILDING: ±2,939.39 S.F.

TOTAL LOT 2.1 BUILDING COVERAGE: ±2,939.39 S.F.

LOT 3:

SEWAGE TREATMENT PLANT: ±699.58 S.F.

TOTAL LOT 3 BUILDING COVERAGE: ±699.58 S.F.

LOT 4:

WATER TREATMENT BUILDING: ±640.00 S.F.
WATER HOLDING TANK: ±571.36 S.F.

TOTAL LOT 4 BUILDING COVERAGE: ±1,211.36 S.F.

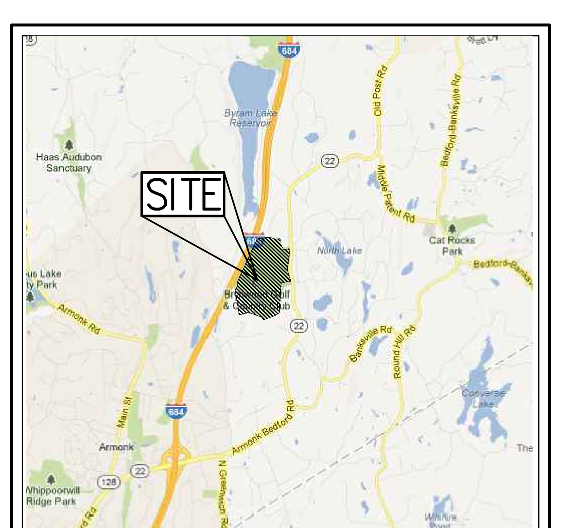
LOT 5 & LOT 6:

LOTS 5 & 6 DO NOT CONTAIN ANY BUILDINGS.

8. THE PROPOSED/PROVIDED PARKING COUNT IS BASED ON THE TEMPORARY CLUBHOUSE FACILITIES INSTALLED/CONSTRUCTED IN 2021.

9. ANTICIPATED DEVELOPMENT SCOPE FOR FUTURE GOLF COURSE PHASE.

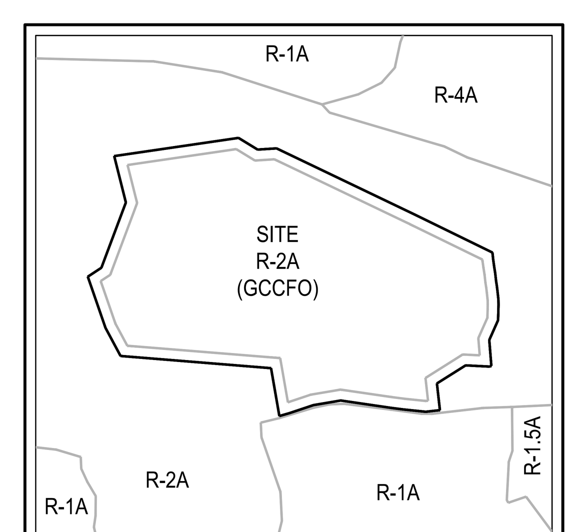
10. REFER TO DRAWING C–100A FOR THE RESIDENTIAL UNIT MIX BREAKDOWN, UNIT DENSITY CALCULATIONS, AND MINIMUM PROVIDED FLOOR AREAS PER UNIT.



SITE LOCATION MAP
SCALE: 1" = 1,000'
SOURCE: GOOGLE MAPS/2020

LEGEND

— — —	SITE PROPERTY LINE
— — —	ZONING BOUNDARY
R-4A	4–ACRE RESIDENTIAL ZONE
R-2A	2–ACRE RESIDENTIAL ZONE
R-1.5A	1.5–ACRE RESIDENTIAL ZONE
R-1A	1–ACRE RESIDENTIAL ZONE
GCCFO	GOLF COURSE COMMUNITY FLOATING OVERLAY DISTRICT



ZONING MAP
SCALE: 1" = 5,000'

GENERAL CONSTRUCTION NOTES APPLY TO ALL WORK HEREIN:

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CALL 811 "DIG SAFELY" (1–800–962–7962) TO HAVE UNDERGROUND UTILITIES LOCATED. EXPLORATORY EXCAVATIONS SHALL COMPLY WITH CODE 753 REQUIREMENTS. NO WORK SHALL COMMENCE UNTIL ALL THE OPERATORS HAVE NOTIFIED THE CONTRACTOR THAT THEIR UTILITIES HAVE BEEN LOCATED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION OF ALL PUBLIC AND PRIVATE UNDERGROUND AND SURFACE UTILITIES AND STRUCTURES AT OR ADJACENT TO THE SITE OF CONSTRUCTION, INSOFAR AS THEY MAY BE ENDANGERED BY THE CONTRACTOR'S OPERATIONS. THIS SHALL HOLD TRUE WHETHER OR NOT THEY ARE SHOWN ON THE CONTRACT DRAWINGS. IF THEY ARE SHOWN ON THE DRAWINGS, THEIR LOCATIONS ARE NOT GUARANTEED EVEN THOUGH THE INFORMATION WAS OBTAINED FROM THE BEST AVAILABLE SOURCES, AND IN ANY EVENT, OTHER UTILITIES ON THESE PLANS MAY BE ENCOUNTERED IN THE FIELD. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, IMMEDIATELY REPAIR OR REPLACE ANY STRUCTURES OR UTILITIES THAT HE DAMAGES, AND SHALL CONSTANTLY PROCEED WITH CAUTION TO PREVENT UNDUE INTERRUPTION OF UTILITY SERVICE.

2. CONTRACTOR SHALL HAND DIG TEST PITS TO VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL VERIFY EXISTING UTILITIES DEPTHS AND ADVISE OF ANY CONFLICTS WITH PROPOSED UTILITIES. IF CONFLICTS ARE PRESENT. THE OWNER'S FIELD REPRESENTATIVE, JMC, PLLC AND THE APPLICABLE MUNICIPALITY OR AGENCY SHALL BE NOTIFIED IN WRITING. THE EXISTING/PROPOSED UTILITIES RELOCATION SHALL BE DESIGNED BY JMC, PLLC.

3. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY AND ALL LOCAL PERMITS REQUIRED.

4. ALL WORK SHALL BE DONE IN STRICT COMPLIANCE WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES, STANDARDS, ORDINANCES, RULES, AND REGULATIONS. ALL CONSTRUCTION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL SAFETY CODES. APPLICABLE SAFETY CODES MEAN THE LATEST EDITION INCLUDING ANY AND ALL AMENDMENTS, REVISIONS, AND ADDITIONS THERETO, TO THE FEDERAL DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION'S OCCUPATIONAL SAFETY AND HEALTH STANDARDS (OSHA); AND APPLICABLE SAFETY, HEALTH REGULATIONS AND BUILDING CODES FOR CONSTRUCTION IN THE STATE OF NEW YORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR GUARDING AND PROTECTING ALL OPEN EXCAVATIONS IN ACCORDANCE WITH THE PROVISION OF SECTION 107–05 (SAFETY AND HEALTH REQUIREMENTS) OF THE NYSDOT STANDARD SPECIFICATIONS. IF THE CONTRACTOR PERFORMS ANY HAZARDOUS CONSTRUCTION PRACTICES, ALL OPERATIONS IN THE AFFECTED AREA SHALL BE DISCONTINUED AND IMMEDIATE ACTION SHALL BE TAKEN TO CORRECT THE SITUATION TO THE SATISFACTION OF THE APPROVAL AUTHORITY HAVING JURISDICTION.

5. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AFFECTED BY THE SCOPE OF WORK SHOWN HEREON AT ALL TIMES TO THE SATISFACTION OF THE OWNERS REPRESENTATIVE. RAMPING CONSTRUCTION TO PROVIDE ACCESS MAY BE CONSTRUCTED WITH SUBBASE MATERIAL EXCEPT THAT TEMPORARY ASPHALT CONCRETE SHALL BE PLACED AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SAFE PEDESTRIAN ACCESS AT ALL TIMES.

6. CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF EXISTING PAVEMENT TO REMAIN.

APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD RESOLUTION, DATED ________

________________________ DATE: ________
CHRISTOPHER CARTHY, CHAIRMAN,
TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING DRAWINGS REVIEWED BY TOWN CONSULTING ENGINEER

________________________ DATE: ________
JOSEPH M. CERMELE, P.E.
KSCJ CONSULTING
CONSULTING TOWN ENGINEER

SUBSURFACE UTILITY LOCATIONS ARE BASED ON A COMPILATION OF FIELD EVIDENCE, AVAILABLE RECORD PLANS AND/OR UTILITY MARK-OUTS. THE LOCATION OR COMPLETENESS OF UNDERGROUND INFORMATION CANNOT BE GUARANTEED. VERIFY THE ACTUAL LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION OR CONSTRUCTION.

811 Know what's below. Call before you dig.

No.	Revision	Date	By

Previous Editions Obsolete

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

Drawn: NC Approved: AG
Scale: NOT TO SCALE
Date: 03/11/2024
Project No: 20101
20101–COVER COVER–MAINTENANCE COVER.scr
Drawing No: C–000M

LEGEND

EXISTING PROPERTY LINE
ADJACENT PROPERTY LINE
LIMIT OF REGULATED WETLAND BUFFER AREA
EXISTING WETLAND LINE AND DELINEATION
EXISTING FLOODPLAIN LINE
EXISTING BUILDING LINE
EXISTING PAVEMENT EDGE
EXISTING CURB LINE
EXISTING CONTOUR
EXISTING INDEX CONTOUR
EXISTING STONE WALL
EXISTING RETAINING WALL
EXISTING GUIDE RAIL
EXISTING FENCE
EXISTING TREE
EXISTING TREE LINE
EXISTING STORM DRAIN LINE
EXISTING SANITARY LINE
EXISTING WATER LINE
EXISTING GAS LINE
EXISTING OVERHEAD WIRES
EXISTING ELECTRIC LINE
EXISTING DRAIN INLET
EXISTING MANHOLE
EXISTING FIRE HYDRANT
EXISTING GAS VALVE
EXISTING WATER VALVE
EXISTING UTILITY POLE
EXISTING LIGHT POLE
EXISTING SIGN
W6 EXISTING WELL LOCATION AND DESIGNATION
EXISTING GREEN-WASTE DEBRIS PILE
EXISTING TOWN-REGULATED STEEP SLOPE AREA (GREATER THAN 25%)

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC MAP," PREPARED BY JMC, LAST REVISED 03/06/2013, SUPPLEMENTED WITH AN UPDATED SURVEY LAST REVISED 01/17/2022. PORTIONS OF EXISTING TOPOGRAPHY HAVE BEEN PROVIDED BY WESTCHESTER COUNTY GIS.
2. GEOTECHNICAL BORING/TEST PIT LOCATIONS DEPICTED ON THIS PLAN WERE TAKEN FROM THE GEOTECHNICAL REPORT ENTITLED, "REPORT ON SUBSURFACE SOIL AND FOUNDATION INVESTIGATION", DATED 10/16/2013, PREPARED BY CARLIN-SIMPSON & ASSOCIATES.

DESCRIPTION OF SOILS ENCOUNTERED IN BORINGS AND TEST PITS

BORINGS AND TEST PITS	EXISTING GRADE	DEPTH TO BOTTOM OF EXISTING FILL	DEPT TO BEDROCK OR ANGER REFUSAL	GROUNDWATER ELEVATION
B-1	+661.0	NONE ENCOUNTERED	8' 0" (+653.0)	–
B-2	+628.0	NONE ENCOUNTERED	7' 0" (+621.0)	–
B-3	+620.0	NONE ENCOUNTERED	4' 9" (+615.3)	–
B-4	+628.0	NONE ENCOUNTERED	10' 6" (+617.5)	–
B-5	+623.0	NONE ENCOUNTERED	8' 6" (+614.5)	–
B-6	+617.0	1' 0" (+616.0)	5' 6" (+611.5)	–
B-7	+628.0	NONE ENCOUNTERED	15' 2" (+612.8)	–
B-8	+609.0	5' 6" (+603.5)	NE to 12' 0"	+608.3
B-9	+674.0	7' 0" (+667.0)	7' 0" (+667.0)	–
B-10	+638.8	NONE ENCOUNTERED	2' 0" (+636.8)	–
B-11	+640.0	NONE ENCOUNTERED	5' 6" (+634.5)	–
B-101	+563.0	5' 0" (+558.0)	CWR@ 7'0" (+556.0) C @ 11'2" (551.8)	NE TO 11'2"
B-102	+565.0	5' 0" (+560.0)	CWR@ 8'0" (+557.0) AR @ 9'6" (555.5)	NE TO 8'6"
B-103	+623.0	5' 0" (+618.0)	CWR@ 6'6" (+616.5) AR @ 8'0" (615.0)	NE TO 8'0"
B-104	+622.0	5' 0" (+617.0)	CWR@ 6'0" (+616.0) AR @ 7'0" (+615.0)	**3'0"(+619.0)
B-105	+620.0	5' 0" (+615.0)	CWR@ 7'0" (+613.0) AR @ 8'0" (+615.0)	NE to 9'3"
B-106	+622.0	5' 0" (+617.0)	CWR@ 6'6" (+615.5) AR @ 7'6" (+614.5)	**2'0 (+620.0)
R-7	+630.0	5' 0" (+625.0)	CWR@ 7'0" (+623.0) AR @ 9'0" (+621.0)	NE to (9'0")
B-107	+564.0	5' 0" (+559.0)	CWR@ 7'6" (+556.5) C @ 8'6" (+555.5)	NE TO 8'6"
B-108	+564.0	3' 6" (+560.5)	CWR@ 7'0" (+567.0) AR @ 8'6" (+555.5)	NE TO 8'6"
ST-1	+579.0	NE	CWR@ 5'0" (+572.0) AR @ 11'0" (+567.5)	NE TO 11'6"
ST-2	+587.0	NE	CWR@ 8'0" (+579.0) AR @ 11'0" (+576.0)	NE TO 11'0"
ST-4	+563.0	8' 0" (+555.0)	CWR@ 11'6" (+551.5) AR @ 16'6" (+546.5)	NE to 16'6"
B-201	+563.0	10' 0" (+553.0)	AR @ 12'0" (+551.0)	NE to (12'0")
B-202	+565.0	4' 0" (+561.0)	AR @ 16'6" (+548.5)	**9'0" (+556.0)

BORINGS AND TEST PITS	EXISTING GRADE	DEPTH TO BOTTOM OF EXISTING FILL	DEPT TO BEDROCK OR ANGER REFUSAL	GROUNDWATER ELEVATION
B-109	+475.0	2'0" (+473.0)	CWR@ 13.6" (+461.5) AR @ 13'9" (+561.3)	8'0" (+467.0) SHGW @ 5'0" (+470.0)
B-110	+474.0	2'6" (+471.5)	CWR@ 9'6" (+464.5) AR @ 11"0" (+563.0)	3'6" (+470.5)
B-111	+482.0	1'6" (+480.5)	CWR@ 8'6" (+473.5) AR @ 10"6" (+471.5)	3'6" (+478.5)
B-112	+481.0	1'6" (+479.5)	CWR@ 11'0" (+470.0) AR @ 12'6" (+468.5)	4'0" (+477.0) SHGW" 3'0" (+478.0)
B-113	+472.0	NE	CWR@ 5'6" (+466.5) AR @ 9'10" (+562.2)	NE to 9'10"
B-114	+622.0	NE	AR @ 3"6" (+618.5)	NE to 3'6"
B-117	+624.0	NE	CWR@ 6'6" (+617.5) AR @ 7'9" (+616.25)	NE to 7'9"
B-121	+674.0	2' 6" (+671.5)	AR @ 4'6" (+669.5)	NE to 4'6"
B-203	+552.0	10' 0" (+542.0)	CWR@ 10'0" (+542.0) AR @ 10'2" (+541.8)	**9'0" (+543.0)
DH-A	+500.0	2'3" (+497.75)	CWR@ 6'6" (+493.5) AR @ 8'6" (+491.5)	3'0" (+497.0)
DH-B	+500.0	2'6" (+497.75)	CWR@ 4'9" (+495.25) AR @ 5'6" (+494.5)	4'0" (+496.0)
DH-C	+563.0	1'3" (+561.75)	CWR@ 5'6" (+557.5) AR @ 6'6" (556.5)	NE TO 6'6"
DH-D	+563.0	NE	CWR@ 7'0" (+556.0) AR @ 7'6" (+555.5)	NE TO 7'6"
TP-E	+618.0	1'6" (+616.5)	AR @ 1'6" (+616.5)	NE TO 1.6"
TP-F	+621.0	2'3" (+618.75)	AR @ 2'3" (618.75)	NE to 2'3"
TP-G	+618.0	1' 3" (+616.75)	AR @ 1'3" (616.75)	NE to 1'3"
TP-H	+619.0	NE	CWR@ 3'0" (+616.0) AR @ 3'6" (+615.5)	NE to 3'6"
DH-I	+493.2	NE	NE to 9'0"	7'6" (+485.7) SHGW @ 2'6" (+490.7)
DH-J	+492.5	2'9" (+489.75)	CWR@ 6'9" (+485.75) AR @ 9'3" (+483.25)	7'6" (+485.0) SHGW @ 1'3" (+491.25)
DH-K	+624.0	2'9" (+621.25)	AR @ 3'0" (+621.0)	NE TO 3'0"
DH-L	+623.0	2'3" (+620.75)	CWR@ 4'9" (+618.25) AR @ 8'3" (+614.75)	NE TO 8'3"
DH-M	+624.5	2'3" (+622.25)	AR @ 5'9" (+618.75)	NE TO 5'9"
DH-N	+623.1	2'9" (+620.35)	AR @ 2'9" (+620.35)	NE to 2'9"
DH-O	+618.8	NE	AR @ 0'10" (+617.9)	NE to (0'10")
DH-P	+620.5	2' 0" (+618.5)	CWR@ 3'3" (+617.25) AR @ 5'0" (+615.5)	NE to (5'0")
INF-C	+560.5	1'3" (+559.25)	AR @ 4'0" (+556.5)	NE to 4'0"

BORINGS AND TEST PITS	EXISTING GRADE	DEPTH TO BOTTOM OF EXISTING FILL	DEPT TO BEDROCK OR ANGER REFUSAL	GROUNDWATER ELEVATION
TP-1	+662.0	NONE ENCOUNTERED	2' 0" (+660.0)	–
TP-2	+672.0	1' 10" (+670.2)	4' 4" (+667.7)	–
TP-3	+672.0	NONE ENCOUNTERED	2' 2" (+669.8)	–
TP-4	+672.0	NONE ENCOUNTERED	3' 6" (+668.5)	–
TP-5	+670.0	NONE ENCOUNTERED	4' 9" (+665.3)	–
TP-6	+672.0	NONE ENCOUNTERED	4' 7" (+667.4)	–
TP-7	+620.0	NONE ENCOUNTERED	2' 8" (+617.3)	–
TP-8	+614.0	NONE ENCOUNTERED	NE to 8' 0"	+609.9
TP-9	+628.0	>6' 9" (<+621.3)	NE to 6' 9"	–
TP-10	+625.0	3' 0" (+622.0)	NE to 8' 0"	–
TP-11	+642.0	NONE ENCOUNTERED	6' 0" (+636.0)	–
TP-12	+635.0	5' 0" (+630.0)	NE to 6' 6"	–
TP-13	+636.0	NONE ENCOUNTERED	7' 5" (+628.6)	+631.2
TP-14	+625.0	5' 0" (+620.0)	5' 0" (+620.0)	–
TP-15	+668.0	NONE ENCOUNTERED	1' 8" (+666.3)	–
TP-16	+651.0	1' 10" (+649.2)	4' 10" (+646.2)	–
TP-17	+655.0	NONE ENCOUNTERED	NE to 1' 0"	–
TP-18	+670.0	NONE ENCOUNTERED	NE to 7' 0"	–
TP-19	+427.0	2' 5" (+424.6)	NE to 7' 0"	–
TP-20	+415.0	NONE ENCOUNTERED	NE to 8' 0"	–
TP-21	+478.0	1' 4" (+476.7)	7' 0" (+471.0)	–
TP-22	+475.0	NONE ENCOUNTERED	NE to 7' 6"	+470.5
TP-23	+496.0	NONE ENCOUNTERED	3' 10" (+492.2)	–
TP-24	+564.0	NONE ENCOUNTERED	6' 8" (+557.3)	–
TP-25	+633.0	NONE ENCOUNTERED	3' 4" (+629.7)	–
TP-26	+669.0	5' 6" (+663.5)	NE to 9' 0"	–
TP-27	+561.0	NONE ENCOUNTERED	4' 4" (+556.7)	–
TP-28	+499.0	>9' 0" (<+490.0)	NE to 9' 0"	+491.0

FIELD PERMEABILITY TEST RESULTS

PERMEABILITY TEST NO.	PERMEABILITY TEST DEPTH	PERMEABILITY RATE
BP-4	7' 0" (+621.0)	2.4 IN/HOUR
P-1	3' 6" (+616.5)	>20 IN/HOUR
P-2	1' 8" (+610.3)	NR
P-3	2' 8" (+613.3)	>20 IN/HOUR
P-4	2' 0" (+613.0)	NR
INF-C	*3'0" (+557.5)	6.75 IN/HOUR
INF-D	*5'3" (+555.5)	22.5 IN/HOUR
DH-L	*3'9" (+619.3)	3.75 IN/HOUR
DH-M	*4'9" (+619.8)	9.75 IN/HOUR
DH-P	*3'3" (+617.3)	46.5 IN/HOUR

APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD RESOLUTION, DATED ________

________ DATE: ________
CHRISTOPHER CARTHY, CHAIRMAN,
TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING DRAWINGS REVIEWED BY TOWN CONSULTING ENGINEER

________ DATE: ________
JOSEPH M. CERMELE, P.E.
KSCJ CONSULTING
CONSULTING TOWN ENGINEER

NOT FOR CONSTRUCTION

No.	Revision	Date	By

Previous Editions Obsolete

APPLICANT/OWNER:
SUMMIT CLUB PARTNERS, LLC
568 BEDFORD ROAD (NY-22)
ARMONK, NY 10504

ARCHITECT:
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330 RAILROAD AVENUE
GREENWICH, CT 06830

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
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OVERALL EXISTING CONDITIONS MAP

THE SUMMIT CLUB AT ARMONK
(GOLF COURSE PHASE – MAINTENANCE BUILDING)
568 & 570 BEDFORD ROAD (NY-22)
TOWN OF NORTH CASTLE, NEW YORK

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

Drawn:	NC
Approved:	AG
Scale:	1" = 100'
Date:	03/11/2024
Project No:	20101
	20101-EXISTINGEX OV-MAINTENANCE EXIST.scr
Drawing No:	C-010M

KEY MAP

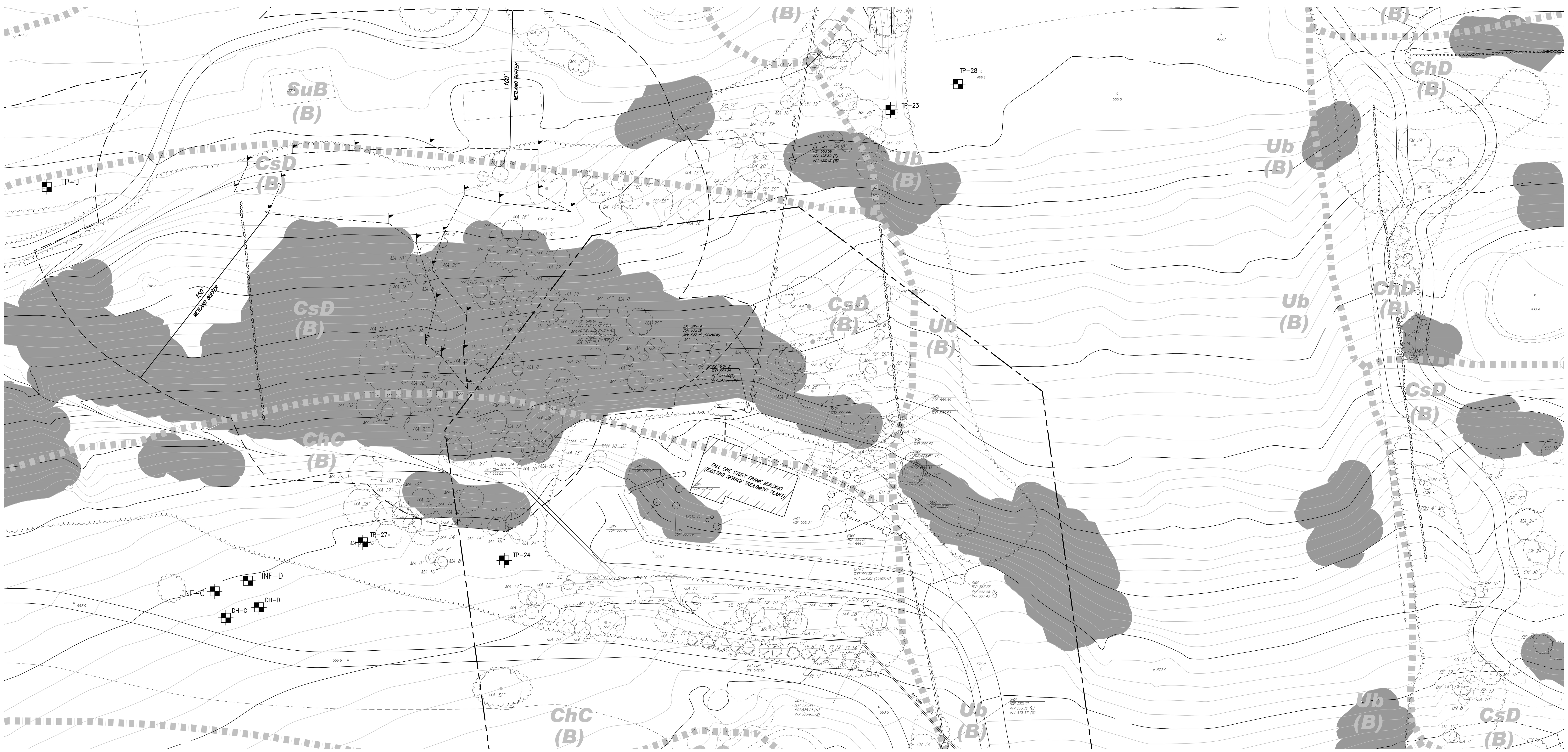
SCALE: 1" = 500'

LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- LIMIT OF REGULATED WETLAND BUFFER AREA
- EXISTING WETLAND LINE AND DELINEATION
- EXISTING FLOODPLAIN LINE
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- EXISTING STONE WALL
- EXISTING RETAINING WALL
- EXISTING GUIDE RAIL
- EXISTING FENCE
- EXISTING TREE
- EXISTING TREE LINE
- EXISTING STORM DRAIN LINE
- EXISTING SANITARY LINE
- EXISTING WATER LINE
- EXISTING GAS LINE
- EXISTING OVERHEAD WIRES
- EXISTING ELECTRIC LINE
- EXISTING DRAIN INLET
- EXISTING MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING GAS VALVE
- EXISTING WATER VALVE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN
- W6 EXISTING WELL LOCATION AND DESIGNATION
- EXISTING GREEN-WASTE DEBRIS PILE
- EXISTING TOWN-REGULATED STEEP SLOPE AREA (GREATER THAN 25%)

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC MAP," PREPARED BY JMC, LAST REVISED 03/06/2013, SUPPLEMENTED WITH AN UPDATED SURVEY LAST REVISED 01/17/2022. PORTIONS OF EXISTING TOPOGRAPHY HAVE BEEN PROVIDED BY WESTCHESTER COUNTY GIS.
2. GEOTECHNICAL BORING/TEST PIT LOCATIONS DEPICTED ON THIS PLAN WERE TAKEN FROM THE GEOTECHNICAL REPORT ENTITLED, "REPORT ON SUBSURFACE SOIL AND FOUNDATION INVESTIGATION", DATED 10/16/2013, PREPARED BY CARLIN-SIMPSON & ASSOCIATES.



No.	Revision	Date	By

Previous Editions Obsolete

APPLICANT/OWNER:
SUMMIT CLUB PARTNERS, LLC
568 BEDFORD ROAD (NY-22)
ARMONK, NY 10504

ARCHITECT:
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330 RAILROAD AVENUE
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EXISTING CONDITIONS MAP

THE SUMMIT CLUB AT ARMONK
(GOLF COURSE PHASE - MAINTENANCE BUILDING)
568 & 570 BEDFORD ROAD (NY-22)
TOWN OF NORTH CASTLE, NEW YORK

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD RESOLUTION, DATED ________

________________ DATE: ________________
CHRISTOPHER CARTHY, CHAIRMAN,
TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING DRAWINGS REVIEWED BY TOWN CONSULTING ENGINEER

________________ DATE: ________________
JOSEPH M. CERMELE, P.E.
KSCJ CONSULTING
CONSULTING TOWN ENGINEER

Drawn:	NC	Approved:	AG
Scale:	1" = 30'		
Date:	03/11/2024		
Project No:	20101		
20101-EXISTING	EX-MAINTENANCE	EXIST.scr	

Drawing No:
C-011M

NOT FOR CONSTRUCTION

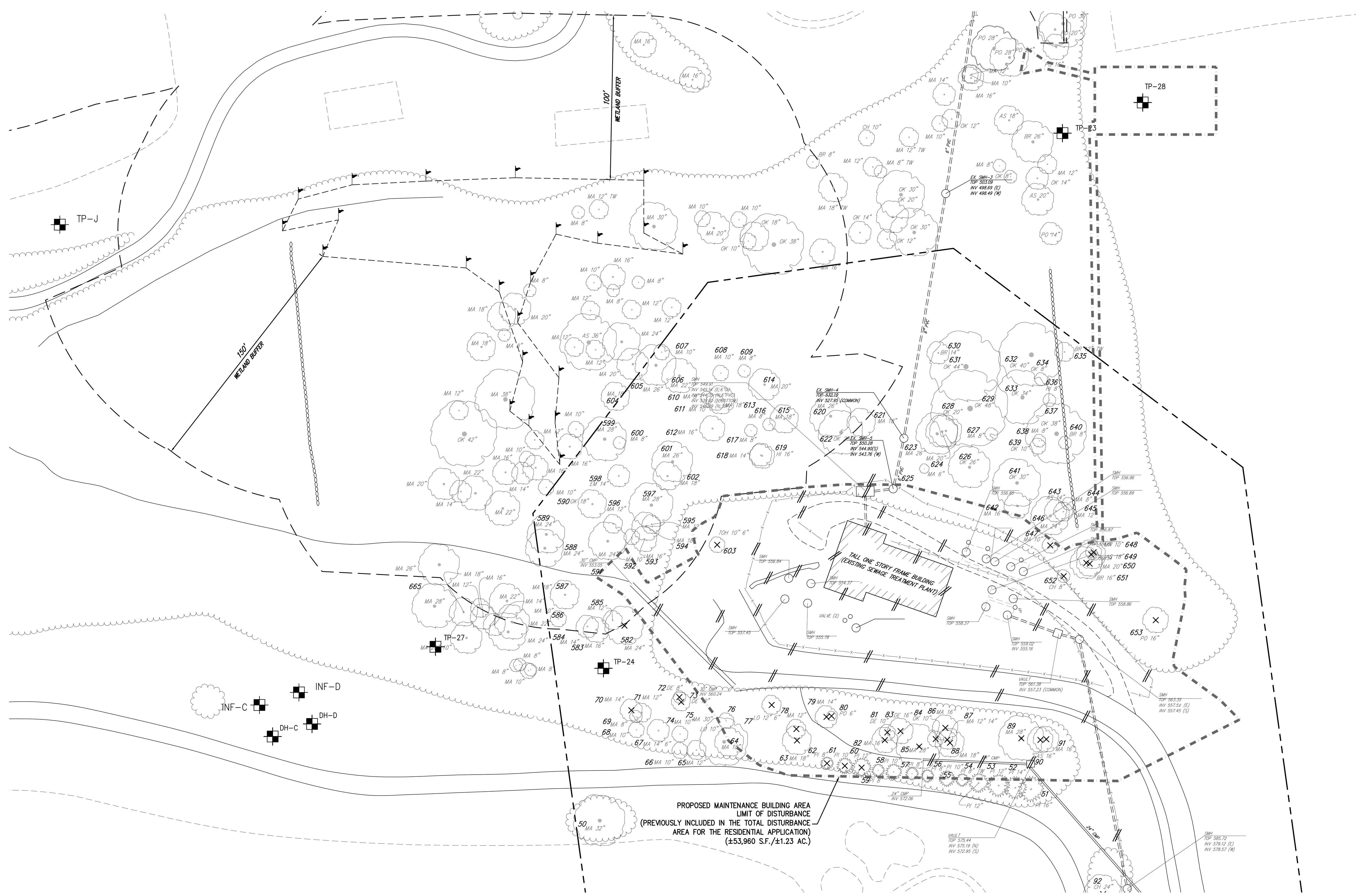
TREE REMOVAL SUMMARY

NUMBER	SPECIES	DIAMETER	REMAIN/REMOVE
51	PINE	16"	REMAIN
52	PINE	14"	REMAIN
53	PINE	12"	REMAIN
54	PINE	8"	REMAIN
55	PINE	10"	REMAIN
56	PINE	8"	REMAIN
57	PINE	8"	REMAIN
58	PINE	10"	REMAIN
59	PINE	8"	REMAIN
60	PINE	12"	REMOVE
61	PINE	10"	REMOVE
62	PINE	8"	REMOVE
63	MAPLE	18"	REMOVE
64	MAPLE	18"	REMAIN
65	MAPLE	12"	REMAIN
66	MAPLE	10"	REMAIN
67	MAPLE	14"–6"	REMAIN
68	MAPLE	10"	REMAIN
69	MAPLE	8"	REMAIN
70	MAPLE	14"	REMOVE
71	MAPLE	12"	REMAIN
72	DECIDUOUS	8"	REMOVE
73	DECIDUOUS	12"	REMOVE
74	MAPLE	10"	REMAIN
75	MAPLE	30"	REMAIN
76	LOCUST	10"	REMAIN
77	LOCUST	12"–6"	REMOVE
78	MAPLE	12"	REMOVE
79	MAPLE	14"	REMOVE
80	POPLAR	6"	REMOVE
81	DECIDUOUS	10"	REMOVE
82	MAPLE	16"	REMOVE
83	DECIDUOUS	16"	REMOVE
84	OAK	10"	REMOVE
85	MAPLE	28"	REMOVE
86	MAPLE	16"	REMOVE
87	MAPLE	12"–14"	REMOVE
88	MAPLE	18"	REMOVE
89	MAPLE	28"	REMOVE
90	ASH	16"	REMOVE
91	MAPLE	16"	REMOVE
582	MAPLE	24"	REMOVE
583	MAPLE	16"	REMAIN
584	MAPLE	14"	REMAIN
585	MAPLE	12"	REMAIN
586	MAPLE	10"	REMAIN
587	MAPLE	18"	REMAIN
588	MAPLE	24"	REMAIN
589	MAPLE	24"	REMAIN
590	OAK	18"	REMAIN
591	MAPLE	24"	REMAIN
592	MAPLE	10"	REMAIN
593	MAPLE	16"	REMAIN
594	MAPLE	18"	REMAIN
595	MAPLE	12"	REMAIN
596	MAPLE	12"	REMAIN
597	MAPLE	28"	REMAIN
598	ELM	14"	REMAIN
599	MAPLE	28"	REMAIN
600	MAPLE	8"	REMAIN
601	MAPLE	26"	REMAIN
602	MAPLE	18"	REMAIN
603	TREE OF HEAVEN	10"–6"	REMOVE
604	MAPLE	18"	REMAIN
605	MAPLE	26"	REMAIN
606	MAPLE	22"	REMAIN
607	MAPLE	10"	REMAIN
608	MAPLE	10"	REMAIN
609	MAPLE	8"	REMAIN
610	MAPLE	8"	REMAIN
611	MAPLE	10"	REMAIN
612	MAPLE	16"	REMAIN
613	MAPLE	18"	REMAIN
614	MAPLE	20"	REMAIN
615	MAPLE	18"	REMAIN
616	MAPLE	8"	REMAIN
617	MAPLE	8"	REMAIN
618	MAPLE	14"	REMAIN
619	HICKORY	16"	REMAIN
620	MAPLE	26"	REMAIN
621	MAPLE	18"	REMAIN
622	OAK	28"	REMAIN
623	MAPLE	26"	REMAIN
624	MAPLE	20"	REMAIN
625	MAPLE	6"	REMAIN
626	OAK	26"	REMAIN
627	MAPLE	8"	REMAIN
628	OAK	20"	REMAIN
629	OAK	48"	REMAIN
630	BIRCH	14"	REMAIN
631	OAK	44"	REMAIN
632	OAK	40"	REMAIN
633	OAK	34"	REMAIN
634	OAK	8"	REMAIN
635	BIRCH	12"TW	REMAIN
636	HICKORY	8"	REMAIN
637	OAK	38"	REMAIN
638	MAPLE	8"	REMAIN
639	OAK	10"	REMAIN
640	BIRCH	8"	REMAIN
641	OAK	30"	REMAIN
642	MAPLE	16"	REMAIN
643	ASH	14"	REMAIN
644	MAPLE	8"	REMAIN
645	MAPLE	12"	REMAIN
646	MAPLE	24"	REMAIN
647	MAPLE	10"	REMOVE
648	MAPLE	10"	REMOVE
649	ASH	18"	REMOVE
650	MAPLE	20"	REMOVE
651	BIRCH	16"	REMOVE
652	CHERRY	8"	REMOVE
653	POPLAR	16"	REMOVE
665	MAPLE	28"	REMAIN
TOTAL NUMBER OF TREES TO BE REMOVED: 31*			

*THE OVERALL SUMMIT CLUB DEVELOPMENT PROPOSES THE REMOVAL OF A TOTAL OF 270 TREES, WHICH INCLUDES THE MAINTENANCE BUILDING AREA.

KEY MAP

SCALE: 1" = 500'



LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- LIMIT OF REGULATED WETLAND BUFFER AREA
- EXISTING WETLAND LINE AND DELINEATION
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
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- EXISTING INDEX CONTOUR
- EXISTING STONE WALL
- EXISTING RETAINING WALL
- EXISTING GUIDE RAIL
- EXISTING FENCE
- EXISTING TREE
- EXISTING TREE TO BE REMOVED
- EXISTING TREE LINE
- EXISTING STORM DRAIN LINE
- EXISTING SANITARY LINE
- EXISTING WATER LINE
- EXISTING GAS LINE
- EXISTING OVERHEAD WIRES
- EXISTING ELECTRIC LINE
- EXISTING DRAIN INLET
- EXISTING MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING GAS VALVE
- EXISTING WATER VALVE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN
- EXISTING WELL LOCATION AND DESIGNATION
- EXISTING FEATURE TO BE REMOVED
- PROPOSED SAWCUT LINE
- PROPOSED LIMIT OF DISTURBANCE

TOTAL NUMBER OF TREES TO BE REMOVED: 31

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC MAP," PREPARED BY JMC, LAST REVISED 03/06/2013. PORTIONS OF EXISTING TOPOGRAPHY HAVE BEEN PROVIDED BY WESTCHESTER COUNTY GIS.
2. GEOTECHNICAL BORING/TEST PIT LOCATIONS DEPICTED ON THIS PLAN WERE TAKEN FROM THE GEOTECHNICAL REPORT ENTITLED, "REPORT ON SUBSURFACE SOIL AND FOUNDATION INVESTIGATION", DATED 10/16/2013, PREPARED BY CARLIN–SIMPSON & ASSOCIATES.
3. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND ADHERE TO ALL REQUIREMENTS OF AGENCIES HAVING JURISDICTION OVER ROCK CRUSHING OPERATIONS. PORTABLE ROCK CRUSHING EQUIPMENT USED IN WESTCHESTER COUNTY IS SUBJECT TO PERMITTING BY THE WESTCHESTER COUNTY DEPARTMENT OF HEALTH (WCDOH). THE ROCK CRUSHING EQUIPMENT MUST MAINTAIN A VALID AND CURRENT PERMIT IN ACCORDANCE WITH REQUIREMENTS SET FORTH IN CHAPTER 873, ARTICLE XIII, SECTIONS 873.1303.1 AND 873.1306.1 OF THE WESTCHESTER COUNTY CODE. IN ADDITION TO COUNTY INSPECTION OF THE EQUIPMENT, THESE REGULATIONS REQUIRE MITIGATION MEASURES TO CONTROL THE POTENTIAL FOR FUGITIVE PARTICULATE EMISSIONS (STONE DUST).
4. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES TO BE DEMOLISHED AND EXISTING UTILITIES TO BE PROTECTED. IF ANY DISCREPANCIES ARE FOUND, THE CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR AND JMC PRIOR TO THE START OF CONSTRUCTION.
5. PRIOR TO THE START OF ANY DEMOLITION THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND/OR APPROVALS FROM THE TOWN OF NORTH CASTLE AND ALL OTHER AUTHORITIES HAVING JURISDICTION. CONTRACTOR SHALL PAY ALL OUTSTANDING FEES, CHARGES, AND DEPOSITS TO ACQUIRE SAID PERMITS. NO DEMOLITION SHALL COMMENCE UNTIL A PERMIT HAS BEEN OBTAINED FROM THE TOWN.
6. THE CONTRACTOR SHALL COORDINATE THE DISCONNECTION OF ALL UTILITIES WITH THE UTILITY COMPANY HAVING JURISDICTION PRIOR TO THE START OF DEMOLITION. CONFIRMATION OF DISCONNECTED UTILITIES SHALL BE PROVIDED TO THE TOWN OF NORTH CASTLE BUILDING DEPARTMENT IN ACCORDANCE WITH THEIR REQUIREMENTS. LETTERS FROM THE APPROPRIATE UTILITIES STATING THAT GAS AND ELECTRIC HAVE BEEN CUT OFF SHALL BE PROVIDED TO THE TOWN.
7. THE CONTRACTOR SHALL OBTAIN, AND PROVIDE A COPY TO THE TOWN, A SEWER PLUG PERMIT INDICATING THAT A LICENSED PLUMBER HAS PLUGGED ALL EXISTING SEWER LINES TO THE EXISTING BUILDING. THE CONTRACTOR SHALL OBTAIN, AND PROVIDE A COPY TO THE TOWN, A WATER USE PERMIT INDICATING THAT A LICENSED PLUMBER HAS CUT AND SEALED ALL EXISTING WATER SERVICE TO THE EXISTING BUILDING.
8. ANY UNSUITABLE MATERIAL FOUND ON–SITE DURING DEMOLITION/CONSTRUCTION, AS DETERMINED BY THE PROJECT'S GEOTECHNICAL ENGINEER, SHALL BE PROPERLY DISPOSED OF OFF–SITE IN A MANNER APPROVED BY ALL AUTHORITIES HAVING JURISDICTION AND REPLACED WITH SUITABLE MATERIAL AS REQUIRED.
9. ALL DEMOLITION AND/OR CONSTRUCTION WITHIN THE RIGHT–OF–WAY, INCLUDING STREETS AND SIDEWALKS, SHALL BE PERFORMED IN ACCORDANCE WITH TOWN/STATE REQUIREMENTS.
10. ALL CONSTRUCTION/DEMOLITION DEBRIS NOT PROPOSED TO BE RECYCLED SHALL BE REMOVED AND LEGALLY DISPOSED OF OFF–SITE IN ACCORDANCE WITH THE REGULATIONS OF ALL LOCAL, STATE AND FEDERAL AGENCIES HAVING JURISDICTION.
11. EXISTING CONCRETE MAY BE STORED ON SITE, AND RECYCLED FOR USE AS COMPACTED FILL. ALL MATERIAL TO BE USED AS FILL SHALL BE APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER.
12. PRIOR TO THE START OF SITE DEMOLITION, EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH TOWN REQUIREMENTS, AS REQUIRED AND/OR DIRECTED BY THE TOWN OF NORTH CASTLE OR JMC.
13. EXISTING DRAINAGE PATTERNS ON SITE SHALL BE MAINTAINED TO THE MAXIMUM EXTENT PRACTICABLE.
14. ALL EXISTING UTILITY CASTINGS WHICH ARE TO REMAIN SHALL BE REMOVED AND RESET TO THE NEW PROPOSED GRADES IN ACCORDANCE WITH THE DIRECTIONS OF THE OWNER'S FIELD REPRESENTATIVE. EXISTING CASTINGS WHICH ARE DAMAGED OR UNFIT FOR INSTALLATION IN THE NEW CONSTRUCTION, AS DETERMINED BY THE OWNER'S FIELD REPRESENTATIVE, SHALL BE REPLACED.
15. ALL EXISTING SIDEWALKS, CURBS, PAVEMENT, ETC. TO REMAIN, WHICH ARE DISTURBED OR DAMAGED DUE TO THE NEW CONSTRUCTION, ARE TO BE REPLACED WITH MATERIALS CONSISTENT WITH EXISTING CONDITIONS.
16. THESE PLANS ARE TO BE PROVIDED TO BOTH THE DEMOLITION CONTRACTOR AND THE SITE CONTRACTOR FOR THEIR USE, INFORMATION AND COORDINATION. ANY QUESTIONS OF CONTRACTOR RESPONSIBILITY AND/OR SEPARATION OF WORK SHALL BE DIRECTED TO THE GENERAL CONTRACTOR IN WRITING PRIOR TO ISSUANCE OF BID.
17. THE OWNER SHALL RETAIN A LICENSED AND QUALIFIED PROFESSIONAL, CERTIFIED BY THE STATE, TO INSPECT FOR THE PRESENCE OF ASBESTOS AND/OR OTHER HAZARDOUS MATERIALS WITHIN DEMOLITION AREAS PRIOR TO THE COMMENCEMENT OF DEMOLITION. IF REMEDIATION IS REQUIRED, THE OWNER SHALL DO SO IN ACCORDANCE WITH THE NYS ASBESTOS RULES AND REGULATIONS AND/OR ANY AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED DOCUMENTATION TO THE STATE PRIOR TO OBTAINING A DEMOLITION PERMIT.
18. THE CONTRACTOR SHALL EXTERMINATE RODENTS AS REQUIRED BY WESTCHESTER COUNTY DEPARTMENT OF HEALTH AND MENTAL HYGIENE. A LETTER FROM THE HEALTH DEPARTMENT CERTIFYING THAT A LICENSED EXTERMINATOR HAS TREATED THE EXISTING BUILDING SHALL BE PROVIDED TO THE TOWN DEPARTMENT OF BUILDINGS.
19. PRIOR TO COMMENCEMENT OF DEMOLITION, THE CONTRACTOR MUST PROVIDE 24–HOUR NOTIFICATION TO THE TOWN.
20. THE CONTRACTOR SHALL PROVIDE VERIFICATION TO THE TOWN THAT FIVE (5) DAYS' PRIOR NOTIFICATION WAS GIVEN TO ALL ADJOINING OWNERS AND THAT NOTIFICATION WAS GIVEN TO THE APPROPRIATE COMMUNITY BOARD PRIOR TO THE COMMENCEMENT OF DEMOLITION.

APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD RESOLUTION, DATED ________

________________________ DATE: ________

CHRISTOPHER CARTHY, CHAIRMAN,
TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING DRAWINGS REVIEWED BY TOWN CONSULTING ENGINEER

________________________ DATE: ________

JOSEPH M. CERMELE, P.E.
KSCJ CONSULTING
CONSULTING TOWN ENGINEER

No.	Revision	Date	By

Previous Editions Obsolete

APPLICANT/OWNER:
SUMMIT CLUB PARTNERS, LLC
568 BEDFORD ROAD (NY–22)
ARMONK, NY 10504

ARCHITECT:
GRANOFF ARCHITECTS
330 RAILROAD AVENUE
GREENWICH, CT 06830

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

SITE DEMOLITION & TREE REMOVAL PLAN

THE SUMMIT CLUB AT ARMONK
(GOLF COURSE PHASE – MAINTENANCE BUILDING)
568 & 570 BEDFORD ROAD (NY–22)
TOWN OF NORTH CASTLE, NEW YORK

Drawn: NC	Approved: AG
Scale: 1" = 30'	
Date: 03/11/2024	
Project No: 20101	
20101–DEMO DEMO–MAINTENANCE DEMO.scr	
Drawing No: C–020M	

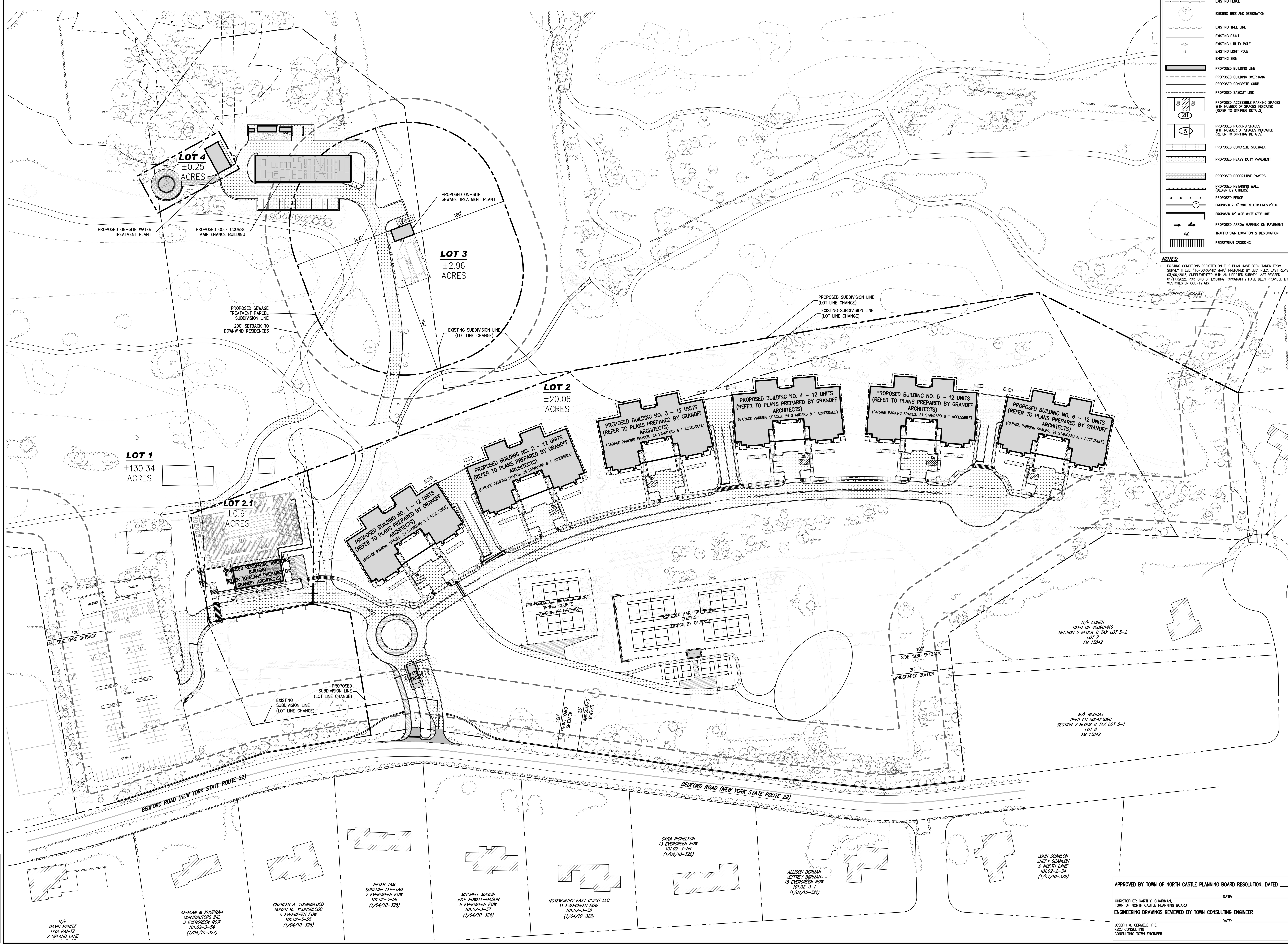
NOT FOR CONSTRUCTION

LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING SETBACK LINE
- EXISTING WETLAND LINE AND DELINEATION (WLF-63, WLF-64, WLF-65)
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING STONE WALL
- EXISTING GUIDE RAIL
- EXISTING FENCE
- EXISTING TREE AND DESIGNATION (T10 M)
- EXISTING TREE LINE
- EXISTING PAINT
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN
- PROPOSED BUILDING LINE
- PROPOSED BUILDING OVERHANG
- PROPOSED CONCRETE CURB
- PROPOSED SAWCUT LINE
- PROPOSED ACCESSIBLE PARKING SPACES WITH NUMBER OF SPACES INDICATED (REFER TO STRIPING DETAILS) (2H)
- PROPOSED PARKING SPACES WITH NUMBER OF SPACES INDICATED (REFER TO STRIPING DETAILS) (5)
- PROPOSED CONCRETE SIDEWALK
- PROPOSED HEAVY DUTY PAVEMENT
- PROPOSED DECORATIVE PAVERS
- PROPOSED RETAINING WALL (DESIGN BY OTHERS)
- PROPOSED FENCE
- PROPOSED 2-4" WIDE YELLOW LINES 8"O.C. (Y)
- PROPOSED 12" WIDE WHITE STOP LINE
- PROPOSED ARROW MARKING ON PAVEMENT
- TRAFFIC SIGN LOCATION & DESIGNATION (A)
- PEDESTRIAN CROSSING

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC MAP," PREPARED BY JMC, PLLC, LAST REVISED 03/06/2013, SUPPLEMENTED WITH AN UPDATED SURVEY LAST REVISED 01/17/2022. PORTIONS OF EXISTING TOPOGRAPHY HAVE BEEN PROVIDED BY WESTCHESTER COUNTY GIS.



APPLICANT/OWNER:
SUMMIT CLUB PARTNERS, LLC
568 BEDFORD ROAD (NY-22)
ARMONK, NY 10504

ARCHITECT:
GRANOFF ARCHITECTS
330 RAILROAD AVENUE
GREENWICH, CT 06830

No.	Revision	Date	By

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John Meyer Consulting, Inc.
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voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

OVERALL SITE LAYOUT AND PHASING PLAN

THE SUMMIT CLUB AT ARMONK
(GOLF COURSE PHASE-MAINTENANCE BUILDING)
568 & 570 BEDFORD ROAD (NY-22)
TOWN OF NORTH CASTLE, NEW YORK

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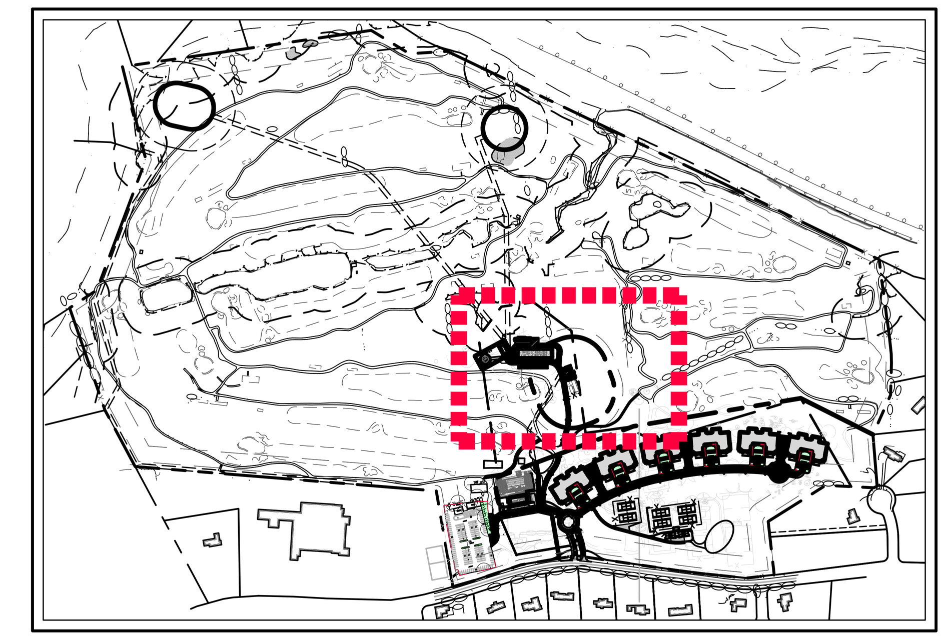
APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD RESOLUTION, DATED ________

________________ DATE: ________________
CHRISTOPHER CARTHY, CHAIRMAN,
TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING DRAWINGS REVIEWED BY TOWN CONSULTING ENGINEER

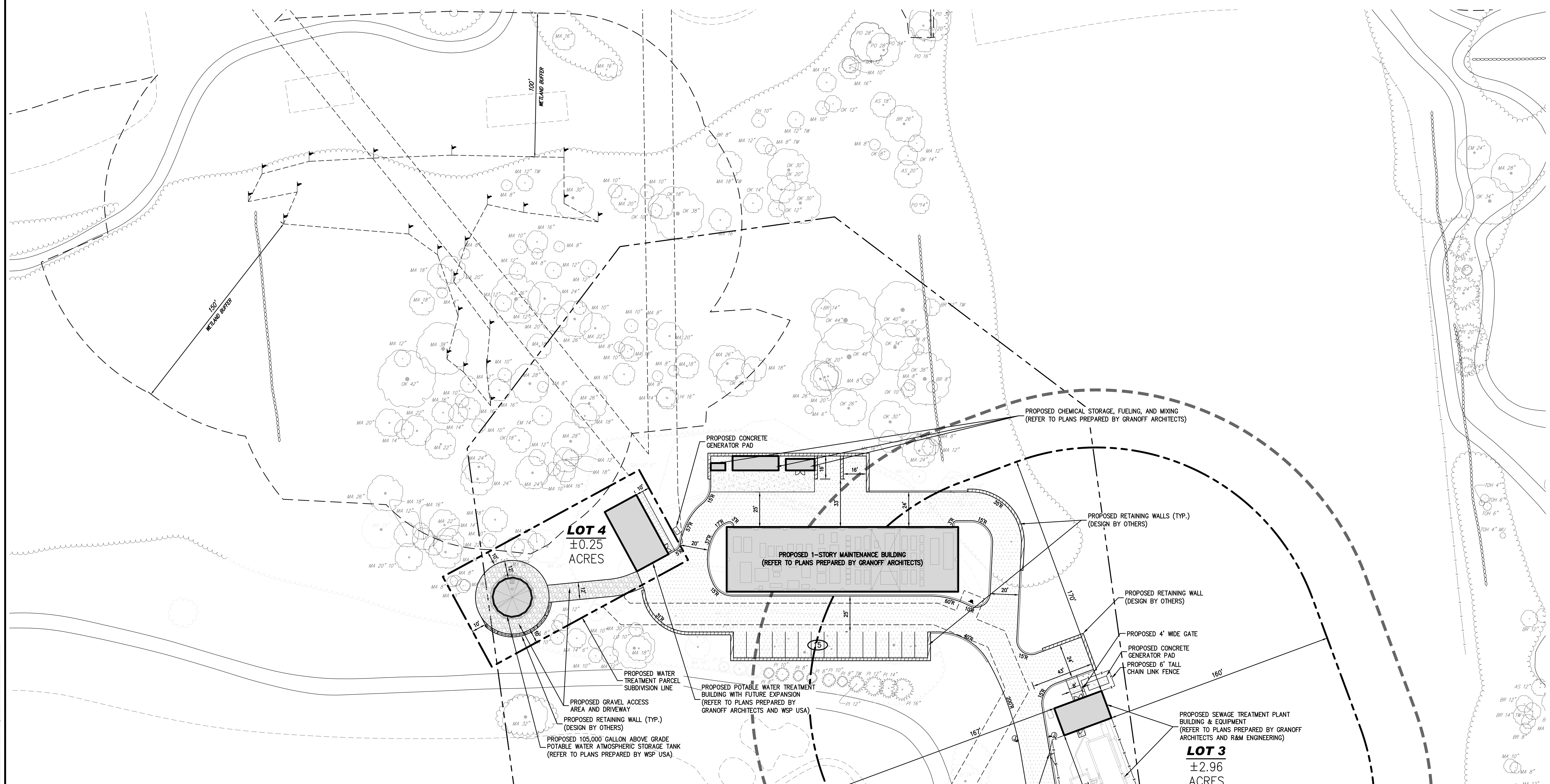
________________ DATE: ________________
JOSEPH M. CERMELE, P.E.
KSCJ CONSULTING
CONSULTING TOWN ENGINEER

Drawn: NC	Approved: AG
Scale:	1" = 50'
Date:	03/11/2024
Project No:	20101
20101-LAYOUAYOUT OV-MAINTENANCELAY.scr	
Drawing No:	C-100M



KEY MAP

SCALE: 1" = 500'



LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING SETBACK LINE
- EXISTING WETLAND LINE AND DELINEATION
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING STONE WALL
- EXISTING GUIDE RAIL
- EXISTING FENCE
- EXISTING TREE AND DESIGNATION
- EXISTING TREE LINE
- EXISTING PAINT
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN
- PROPOSED BUILDING LINE
- PROPOSED BUILDING OVERHANG
- PROPOSED CONCRETE CURB
- PROPOSED SAWCUT LINE
- PROPOSED ACCESSIBLE PARKING SPACES WITH NUMBER OF SPACES INDICATED (REFER TO STRIPING DETAILS)
- PROPOSED PARKING SPACES WITH NUMBER OF SPACES INDICATED (REFER TO STRIPING DETAILS)
- PROPOSED CONCRETE SIDEWALK
- PROPOSED HEAVY DUTY PAVEMENT
- PROPOSED DECORATIVE PAVERS
- PROPOSED RETAINING WALL (DESIGN BY OTHERS)
- PROPOSED FENCE
- PROPOSED 2–4" WIDE YELLOW LINES 8"O.C.
- PROPOSED 12" WIDE WHITE STOP LINE
- PROPOSED ARROW MARKING ON PAVEMENT
- TRAFFIC SIGN LOCATION & DESIGNATION
- PEDESTRIAN CROSSING

NOTES:

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SIGN TABLE

DESIGNATION NUMBER	SIGN	SIZE	DESCRIPTION	MOUNTING TYPE	MOUNTING HEIGHT	REGULATORY	REFLECTORIZED
J	NO PARKING FIRE LANE	12"X18"	RED ON WHITE	STEEL CHANNEL	7'-0"	NYP1-2 (MODIFIED)	X

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SITE LAYOUT PLAN

THE SUMMIT CLUB AT ARMONK
(GOLF COURSE PHASE–MAINTENANCE BUILDING)
568 & 570 BEDFORD ROAD (NY–22)
TOWN OF NORTH CASTLE, NEW YORK

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APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD RESOLUTION, DATED ________

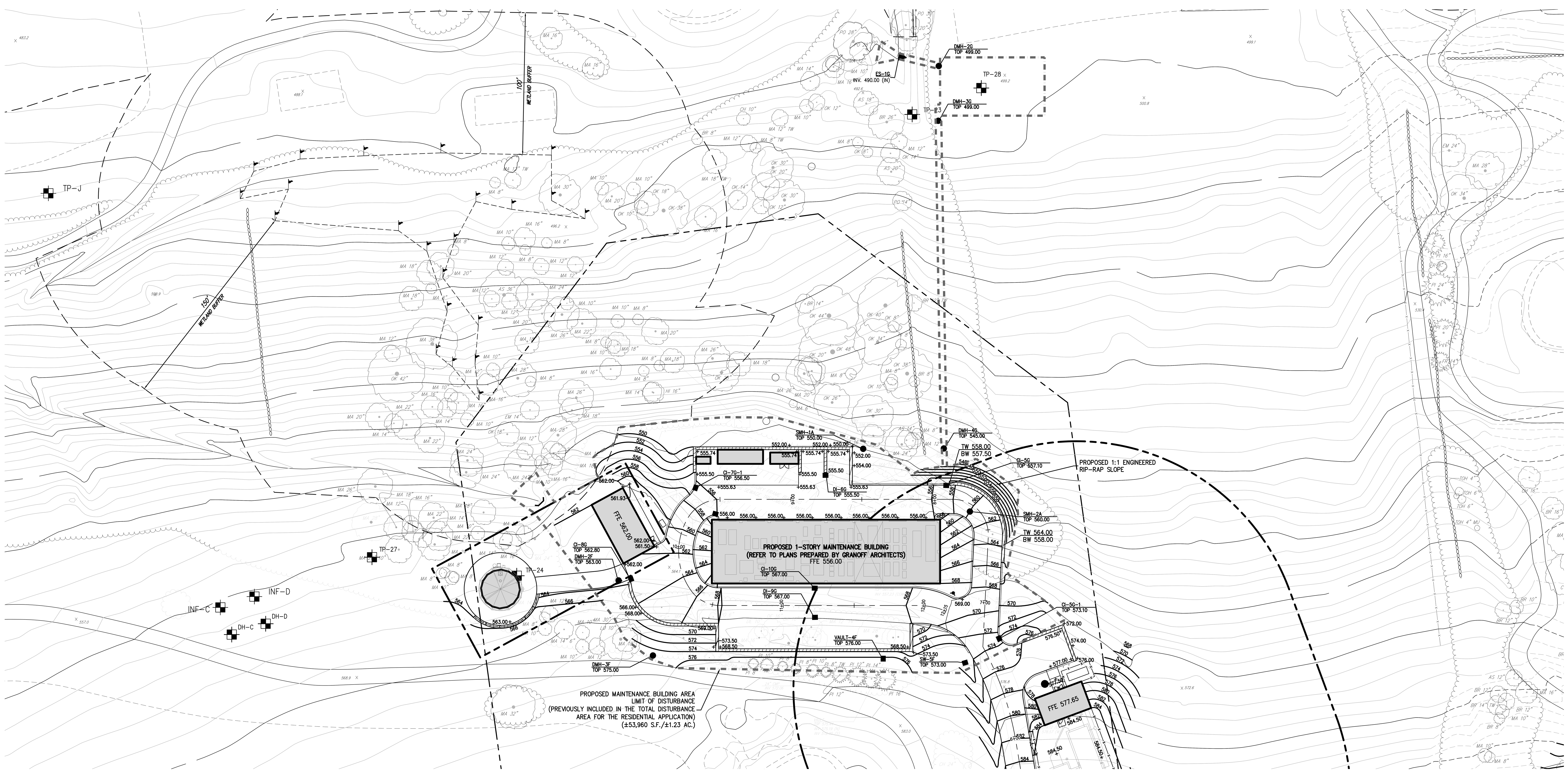
________ DATE: ________
CHRISTOPHER CARTHY, CHAIRMAN,
TOWN OF NORTH CASTLE PLANNING BOARD

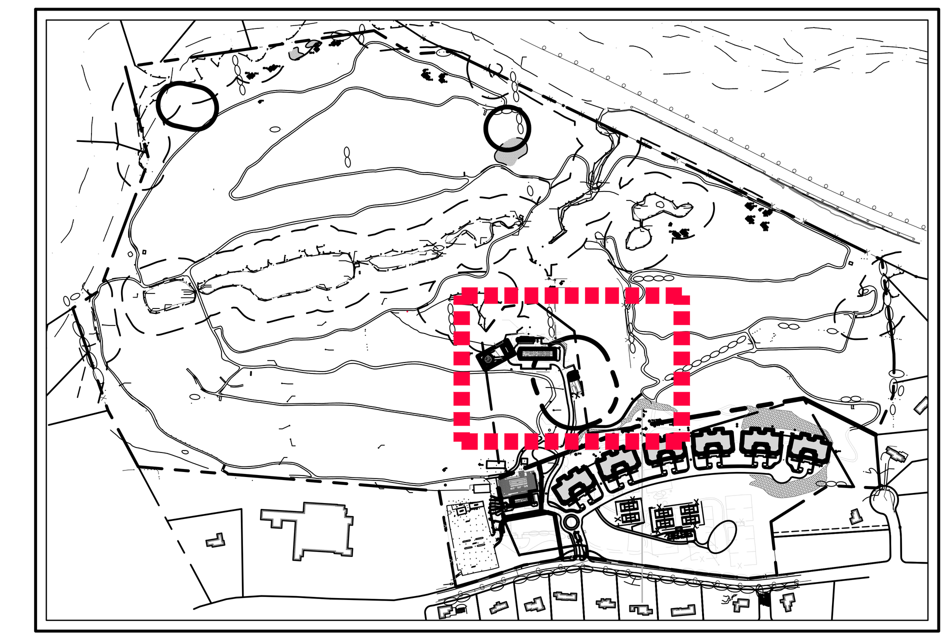
ENGINEERING DRAWINGS REVIEWED BY TOWN CONSULTING ENGINEER

________ DATE: ________
JOSEPH M. CERMELE, P.E.
KSCJ CONSULTING
CONSULTING TOWN ENGINEER

Drawn:	NC	Approved:	AG
Scale:	1" = 30'		
Date:	03/11/2024		
Project No:	20101		
20101-LAYOUTLAYOUT-MAINTENANCE LAY.scr			
Drawing No:	C–101M		

NOT FOR CONSTRUCTION





KEY MAP

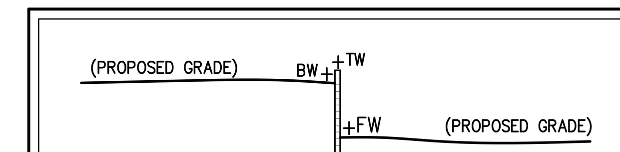
SCALE: 1" = 500'

LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING EASEMENT LINE
- EXISTING WETLAND LINE AND DELINEATION
- EXISTING BUILDING OVERHANG
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- EXISTING STONE WALL
- EXISTING RETAINING WALL
- EXISTING GUIDE RAIL
- EXISTING FENCE
- EXISTING DRAIN INLET
- EXISTING MANHOLE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN
- PROPOSED BUILDING LINE
- PROPOSED CONCRETE CURB
- PROPOSED CONCRETE SIDEWALK
- PROPOSED DROP CURB AND RAMP
- 200 — PROPOSED FINISHED GRADE
- 191.00+ — PROPOSED SPOT GRADE
- SMH — PROPOSED SANITARY SEWER MANHOLE
- MH — PROPOSED STORM DRAIN MANHOLE
- CI — PROPOSED TYPE CI DRAIN INLET
- DI — PROPOSED TYPE DI DRAIN INLET
- PROPOSED HEADWALL
- OCS — PROPOSED SUBSURFACE DRAINAGE OUTLET CONTROL STRUCTURE
- PROPOSED RETAINING WALL (DESIGN BY OTHERS)
- DP-2 — BORING LOCATION AND DESIGNATION
- PROPOSED LIMIT OF DISTURBANCE

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC MAP," PREPARED BY JMC, LAST REVISED 03/06/2013, SUPPLEMENTED WITH AN UPDATED SURVEY LAST REVISED 01/17/2022. PORTIONS OF EXISTING TOPOGRAPHY HAVE BEEN PROVIDED BY WESTCHESTER COUNTY GIS.
2. GEOTECHNICAL BORING/TEST PIT LOCATIONS DEPICTED ON THIS PLAN WERE TAKEN FROM THE GEOTECHNICAL REPORT ENTITLED, "REPORT ON SUBSURFACE SOIL AND FOUNDATION INVESTIGATION", DATED 10/16/2013, PREPARED BY CARLIN-SIMPSON & ASSOCIATES.
3. ALL STORMWATER MANAGEMENT PRACTICES SHALL REMAIN UNDISTURBED AND BE PROTECTED FROM HEAVY MACHINERY TRAFFIC DURING CONSTRUCTION. HOWEVER DURING CONSTRUCTION OF THE PRACTICE THE CONTRACTOR SHALL MINIMIZE AND AVOID HEAVY MACHINERY TRAFFIC TO THE MAXIMUM EXTENT PRACTICABLE. THERE SHALL BE NO STORAGE OF MATERIALS WITHIN AREAS TO BE USED FOR STORMWATER MANAGEMENT PRACTICES. THE CONTRACTOR SHALL INSTALL CONSTRUCTION FENCE AROUND THE PRACTICE TO DISCOURAGE VEHICLE TRAFFIC.



RETAINING WALL SPOT GRADE LEGEND

No.	Revision	Date	By

Previous Editions Obsolete

APPLICANT/OWNER:
SUMMIT CLUB PARTNERS, LLC
568 BEDFORD ROAD (NY-22)
ARMONK, NY 10504

ARCHITECT:
GRANOFF ARCHITECTS
330 RAILROAD AVENUE
GREENWICH, CT 06830

JMC

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voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

SITE GRADING PLAN (MAINTENANCE BUILDING)

THE SUMMIT CLUB AT ARMONK
(GOLF COURSE PHASE-MAINTENANCE BUILDING)
568 & 570 BEDFORD ROAD (NY-22)
TOWN OF NORTH CASTLE, NEW YORK

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APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD RESOLUTION, DATED ________

________ DATE: ________
CHRISTOPHER CARTHY, CHAIRMAN,
TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING DRAWINGS REVIEWED BY TOWN CONSULTING ENGINEER

________ DATE: ________
JOSEPH M. CERMELE, P.E.
KSCJ CONSULTING
CONSULTING TOWN ENGINEER

Drawn: NC	Approved: AG
Scale: 1" = 30'	
Date: 03/11/2024	
Project No: 20101	
20101-GRADING GRAD-MAINTENANCE GRAD.scr	
Drawing No: C-200M	

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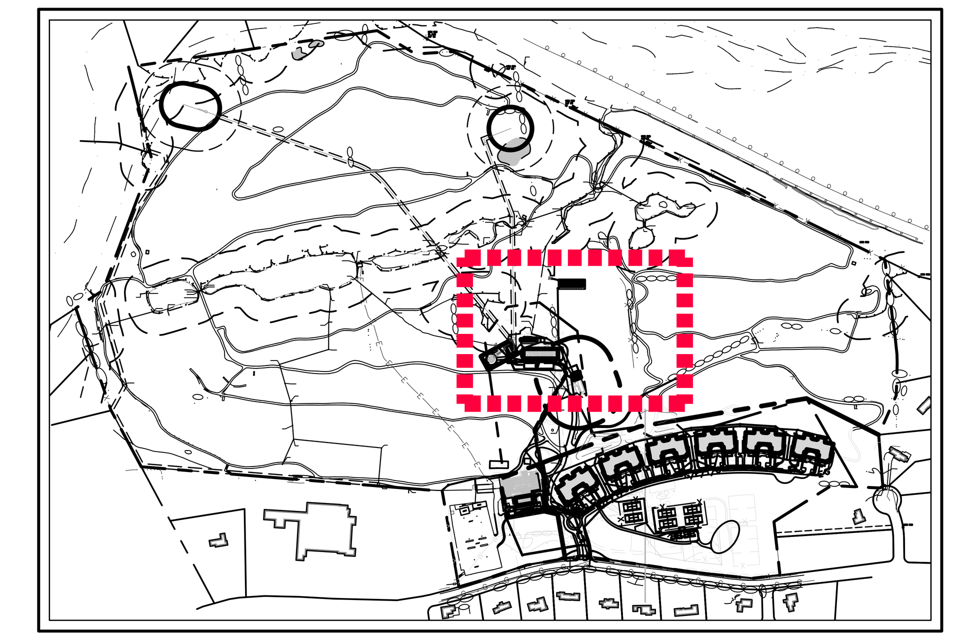

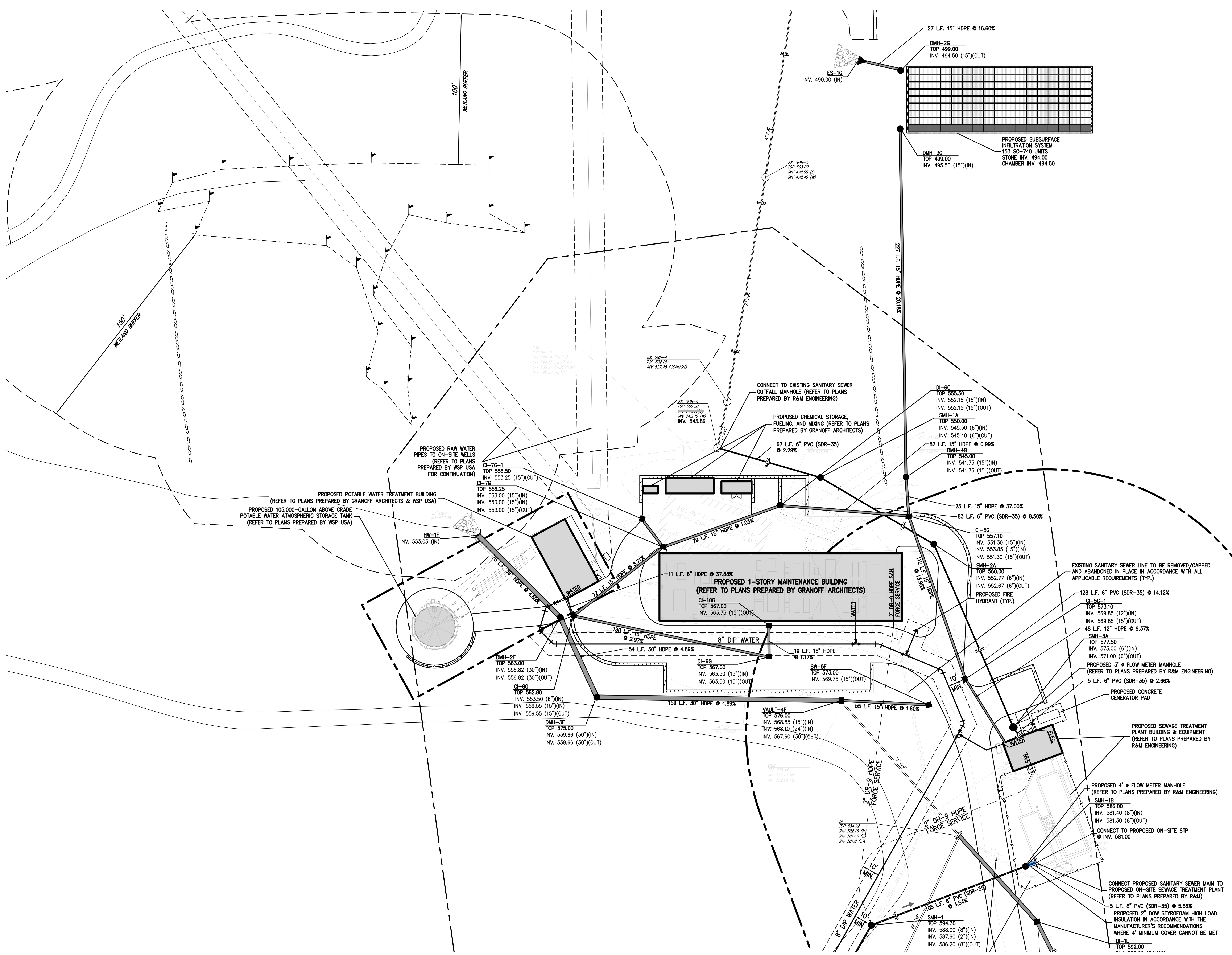

LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- PROPOSED PROPERTY LINE
- EXISTING EASEMENT LINE
- PROPOSED EASEMENT LINE
- EXISTING BUILDING OVERHANG
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- EXISTING STONE WALL
- EXISTING RETAINING WALL
- EXISTING GUIDE RAIL
- EXISTING FENCE
- 36" RCP — EXISTING STORM DRAIN LINE AND SIZE
- 8" SAN — EXISTING SANITARY LINE AND SIZE
- W — EXISTING WATER LINE
- G — EXISTING GAS LINE
- OHW — EXISTING OVERHEAD WIRES
- EXISTING DRAIN INLET
- EXISTING MANHOLE
- EXISTING FIRE HYDRANT
- GV — EXISTING GAS VALVE
- WV — EXISTING WATER VALVE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN
- PROPOSED BUILDING LINE
- PROPOSED CONCRETE CURB
- PROPOSED CONCRETE SIDEWALK
- PROPOSED DROP CURB AND RAMP
- SMH — PROPOSED SANITARY SEWER MANHOLE
- MH — PROPOSED STORM DRAIN MANHOLE
- PROPOSED TYPE CI DRAIN INLET
- DI — PROPOSED TYPE DI DRAIN INLET
- PROPOSED HEADWALL
- OCS — PROPOSED SUBSURFACE DRAINAGE OUTLET CONTROL STRUCTURE
- PROPOSED HYDRANT
- 15" HDPE — PROPOSED STORM DRAIN LINE & SIZE
- 8" PVC — PROPOSED SANITARY SEWER LINE & SIZE
- 6" WATER — PROPOSED WATER LINE & SIZE
- G — PROPOSED GAS LINE
- E — PROPOSED ELECTRIC LINE
- E/T/C — PROPOSED ELECTRIC/TELEPHONE/CABLE
- G/E/T/C — PROPOSED GAS/ELECTRIC/TELEPHONE/CABLE
- PROPOSED WATER VALVE
- PROPOSED GAS VALVE
- PROPOSED RETAINING WALL (DESIGN BY OTHERS)

NOTES:

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3. UNLESS OTHERWISE SPECIFIED, PIPE FOR STORM DRAINS SHALL BE HIGH DENSITY POLYETHYLENE PIPE (HDPE) WITH A SMOOTH INTERIOR AND ANNULAR EXTERIOR CORRUGATIONS IN ACCORDANCE WITH ASTM F-2648. JOINTS SHALL BE WATERTIGHT IN ACCORDANCE WITH ASTM D-3212.
4. UNLESS OTHERWISE SPECIFIED, PIPE FOR SANITARY SEWER GRAVITY LINES SHALL BE POLYVINYL CHLORIDE PIPE (PVCP), SDR-35, WITH PUSH-ON JOINTS IN ACCORDANCE WITH ASTM D-3034 AND D-3212. PIPE SHOWN AS EXTRA HEAVY CAST IRON (XHCI) CONFORMS TO THE "SPECIFICATIONS FOR CAST IRON SOIL AND PIPE FITTINGS", ASTM DESIGNATION A-74.
5. UNLESS OTHERWISE SPECIFIED, PIPE FOR WATER LINES SHALL BE DOUBLE CEMENT-LINED DUCTILE IRON PIPE (DIP), CLASS 52, WITH PUSH-ON JOINTS IN ACCORDANCE WITH AWWA C-150, C-151, C-104 AND C-111.
6. ELECTRIC, TELEPHONE, FIRE ALARM AND CABLE TELEVISION LINES SHALL BE INSTALLED UNDERGROUND IN CONDUIT IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY COMPANY HAVING JURISDICTION.
7. THERE ARE NO WELLS WITHIN 50 FEET OF THE PROPOSED SANITARY SEWER.
8. LOW PRESSURE AIR TESTS FOR DIP SANITARY SEWER PIPES SHALL CONFORM TO ASTM F-1417 AND VACUUM TESTING OF SANITARY SEWER MANHOLES MUST CONFORM TO ASTM C-1244. EFFULENT PIPES AND MANHOLES FROM THE PROPOSED SEWAGE TREATMENT PLANT SHALL BE INCLUDED IN THE TESTING.
9. WCDOH MUST BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO ANY LEAKAGE TESTS.
10. UPON COMPLETION AND PRIOR TO USE, TWO (2) SETS OF AS-BUILT PLANS MUST BE SUBMITTED TOGETHER WITH P.E. CERTIFICATION OF CONSTRUCTION AND ACCEPTABLE RESULTS OF LEAKAGE TESTING. RESULTS MUST BE ACCEPTED BY WCDOH PRIOR TO USE OF THE MAIN.
11. ANY DEVIATION FROM THE ORIGINAL PLAN APPROVAL MUST SECURE PRIOR APPROVAL FROM THE WCDOH.
12. ALL TESTS SHALL BE CONDUCTED UNDER THE SUPERVISION OF THE NYSPE.
13. EXFILTRATION FROM PIPES AND/OR MANHOLES SHALL NOT EXCEED 100 GALLONS PER MILE OF PIPE PER DAY PER INCH OF NOMINAL PIPE DIAMETER.
14. THE PROPOSED 6" SANITARY SEWER SERVICE CONNECTIONS SERVING THE PROPOSED RESIDENTIAL BUILDINGS WILL EACH CONVEY AN AVERAGE DAILY FLOW OF LESS THAN 2,500 GPD.

No.	Revision	Date	By

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JMC

SITE UTILITIES PLAN

THE SUMMIT CLUB AT ARMONK
(GOLF COURSE PHASE-MAINTENANCE BUILDING)
568 & 570 BEDFORD ROAD (NY-22)
TOWN OF NORTH CASTLE, NEW YORK

APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD RESOLUTION, DATED ________

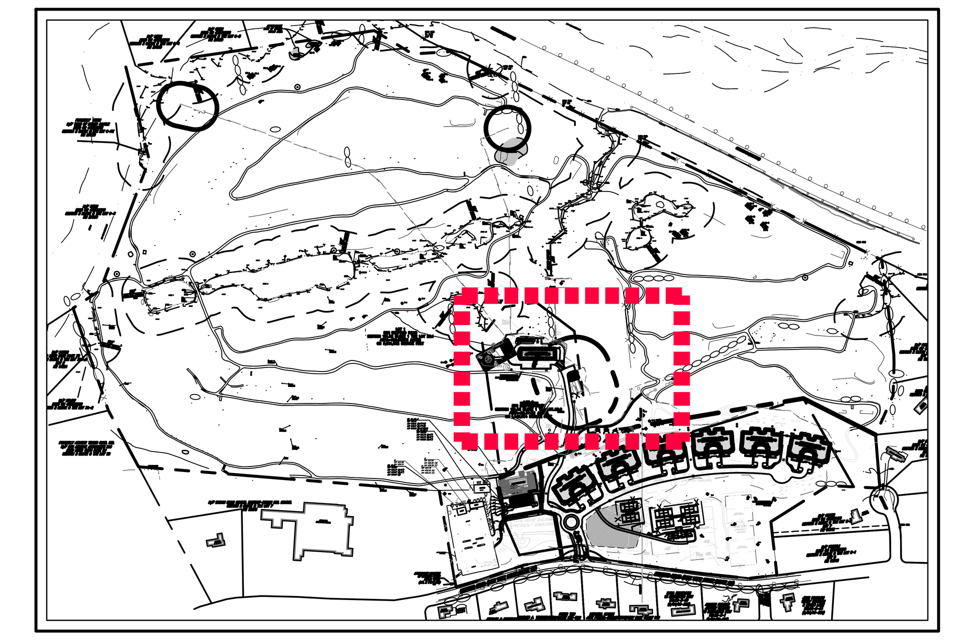
________ DATE: ________
CHRISTOPHER CARTHY, CHAIRMAN,
TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING DRAWINGS REVIEWED BY TOWN CONSULTING ENGINEER

________ DATE: ________
JOSEPH M. CERMELE, P.E.
KSCJ CONSULTING
CONSULTING TOWN ENGINEER

Drawn: NC	Approved: AG
Scale:	1" = 30'
Date:	11/23/2020
Project No:	20101
20101-UTILITIES UTIL-MAINTENANCE	UTIL.scr
Drawing No:	C-300M

NOT FOR CONSTRUCTION



KEY MAP

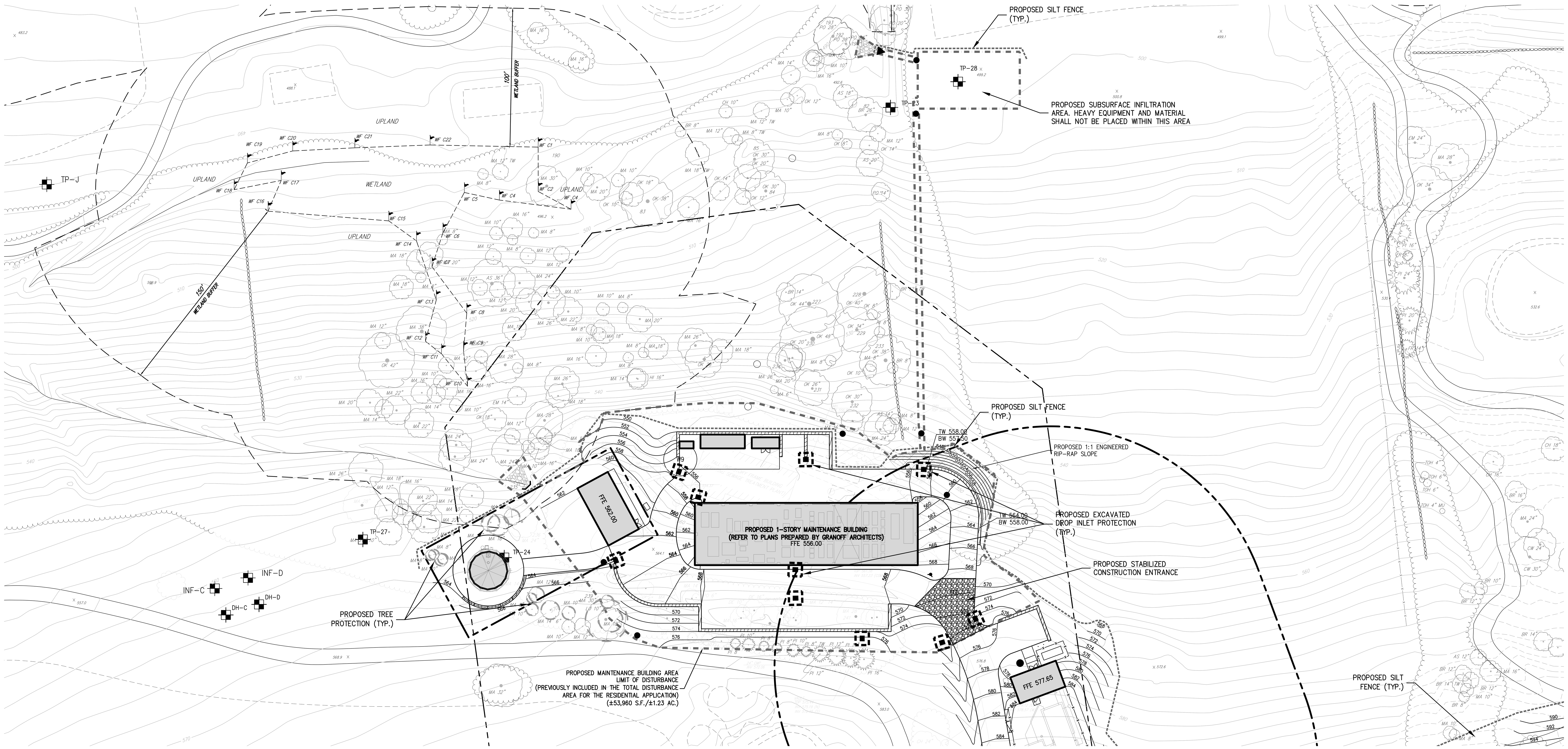
SCALE: 1" = 500'

LEGEND

- PROPOSED INLET PROTECTION
- PROPOSED CONSTRUCTION FENCE
- PROPOSED SILT FENCE
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED STOCKPILE AREA
- PROPOSED TEMPORARY SEDIMENT BASIN
- PROPOSED TEMPORARY SWALE
- PROPOSED TREE PROTECTION
- PROPOSED TEMPORARY RISER & ANTI-VORTEX DEVICE

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC MAP," PREPARED BY JMC, PLLC, LAST REVISED 03/06/2013, SUPPLEMENTED WITH AN UPDATED SURVEY LAST REVISED 01/17/2022. PORTIONS OF EXISTING TOPOGRAPHY HAVE BEEN PROVIDED BY WESTCHESTER COUNTY GIS.
2. THIS PLAN IS FOR TEMPORARY EROSION AND SEDIMENT CONTROL INFORMATION ONLY.
3. PRIOR TO BEGINNING ANY CLEARING, GRUBBING OR EXCAVATION, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH ALL THE PLANS AND SPECIFICATIONS. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL THE SITE IS STABILIZED. FINAL STABILIZATION OF LANDSCAPED AREAS SHALL BE IN ACCORDANCE WITH THE LANDSCAPE PLAN.
4. THE CONTRACTOR SHALL INSPECT AND MAINTAIN ON-SITE EROSION AND SEDIMENT CONTROL MEASURES ON A DAILY BASIS. ALL COLLECTED SEDIMENT WITHIN SEDIMENT BARRIERS SHALL BE REMOVED PERIODICALLY AS REQUIRED TO MAINTAIN THE FUNCTION OF THE SEDIMENT BARRIERS. ALL SEDIMENT COLLECTED SHALL BE RESPREAD ON-SITE WITHIN STABILIZED AREAS AS DIRECTED BY THE OWNERS REPRESENTATIVE.
5. THE CONTRACTOR SHALL INSPECT DOWNSTREAM CONDITIONS FOR EVIDENCE OF SEDIMENTATION ON A WEEKLY BASIS, AFTER EACH RAINSTORM, AND AS MAY BE REQUIRED OR DIRECTED BY ALL APPLICABLE APPROVALS AND PERMITS. THE CONTRACTOR SHALL IMMEDIATELY PROVIDE A WRITTEN REPORT ON FINDINGS OF SEDIMENT IN DOWNSTREAM AREAS TO ALL AUTHORITIES HAVING JURISDICTION AND MAKE REPAIRS AS REQUIRED OR DIRECTED.
6. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED BY THE CONTRACTOR AS REQUIRED/WARRANTED BY FIELD CONDITIONS AND AS DIRECTED BY THE OWNERS REPRESENTATIVE, JMC, AND/OR ANY AUTHORITY HAVING JURISDICTION.
7. STOCKPILING OF CONSTRUCTION MATERIAL SHALL BE PLACED ON-SITE IN THE AREA DESIGNATED ON THIS PLAN OR AS APPROVED BY THE OWNERS REPRESENTATIVE. STOCKPILED EXCAVATED MATERIAL SHALL HAVE TWO ROWS OF SILT FENCE LOCATED AROUND ITS PERIMETER. ALL STOCKPILED MATERIAL SHALL BE MAINTAINED IN AN ORDERLY MANNER SO AS NOT TO IMPEDE ON PEDESTRIAN AND/OR VEHICULAR TRAFFIC CIRCULATION ROUTES.
7. DUST SHALL BE CONTROLLED BY SPRINKLING OR OTHER APPROVED METHODS AS NECESSARY, OR AS DIRECTED BY THE OWNERS REPRESENTATIVE.
8. ALL STORMWATER MANAGEMENT PRACTICES SHALL REMAIN UNDISTURBED AND BE PROTECTED FROM HEAVY MACHINERY TRAFFIC DURING CONSTRUCTION. HOWEVER DURING CONSTRUCTION OF THE PRACTICE THE CONTRACTOR SHALL MINIMIZE AND AVOID HEAVY MACHINERY TRAFFIC TO THE MAXIMUM EXTENT PRACTICABLE. THERE SHALL BE NO STORAGE OF MATERIALS WITHIN AREAS TO BE USED FOR STORMWATER MANAGEMENT PRACTICES. THE CONTRACTOR SHALL INSTALL CONSTRUCTION FENCE AROUND THE PRACTICE TO DISCOURAGE VEHICLE TRAFFIC.
9. ALL EXPOSED SLOPES AND GRADED/DISTURBED AREAS, THAT WILL NOT BE FURTHER DISTURBED WITHIN 14 CALENDAR DAYS (7 DAYS FOR CONSTRUCTION SITES THAT EITHER DIRECTLY DISCHARGE TO ONE OF THE 303(d) SEGMENTS LISTED IN APPENDIX E OF THE GENERAL PERMIT OR ARE LOCATED WITHIN ONE OF THE WATERSHEDS LISTED IN APPENDIX C OF THE GENERAL PERMIT), SHALL BE TEMPORARILY SEEDED WITHIN 24 HOURS OF DISTURBANCE, IN ACCORDANCE WITH THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) "EROSION AND SEDIMENT CONTROL GUIDELINES" AND THE ANSI A300 "BEST MANAGEMENT PRACTICES FOR TREE AND SHRUB PLANTING, TRANSPLANTING, MAINTENANCE AND CARE," PREPARED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA), LATEST EDITIONS, AS FOLLOWS:
   A. SEED MIXTURE AND RATE OF APPLICATION:
      A.1. IN SPRING, SUMMER OR EARLY FALL, SEED THE AREA WITH RYEGRASS (ANNUAL OR PERENNIAL) AT 30 POUNDS PER ACRES (APPROXIMATELY 0.7 POUNDS/1000 SQUARE FEET OR USE 1 POUND/1000 SQUARE FEET).
      A.2. IN LATE FALL OR EARLY WINTER, SEED THE AREA WITH CERTIFIED 'AROOSTOOK' WINTER RYE (CEREAL RYE) AT 100 POUNDS PER ACRE (2.5 POUNDS/1000 SQUARE FEET).
   B. APPLICATION SHALL BE UNIFORM BY MECHANICAL OR HYDROSEED METHODS.
   C. MULCH ALL SEEDED AREAS WITH STRAW AT A RATE OF 2 TONS PER ACRE (90 POUNDS PER 1,000 SQUARE FEET) SUCH THAT THE MULCH FORMS A CONTINUOUS BLANKET.
10. ALL SEEDED AREAS SHALL BE FERTILIZED, RESEEDED, AND MULCHED AS NECESSARY TO MAINTAIN VIGOROUS, DENSE VEGETATIVE COVER.
11. TEMPORARY SEED MIXTURES SHALL NOT BE PLACED ON AREAS WHERE FINAL GRADE HAS BEEN ESTABLISHED AND TOPSOIL HAS BEEN PLACED UNLESS OTHERWISE DIRECTED BY THE PROJECT LANDSCAPE ARCHITECT.



No.	Revision	Date	By

APPLICANT/OWNER:
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ARMONK, NY 10504

ARCHITECT:
GRANOFF ARCHITECTS
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SITE EROSION & SEDIMENT CONTROL PLAN

THE SUMMIT AT ARMONK
(GOLF COURSE PHASE-MAINTENANCE BUILDING)
568 & 570 BEDFORD ROAD (NY-22)
TOWN OF NORTH CASTLE, NEW YORK

APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD RESOLUTION, DATED ________

________ DATE: ________
CHRISTOPHER CARTHY, CHAIRMAN,
TOWN OF NORTH CASTLE PLANNING BOARD

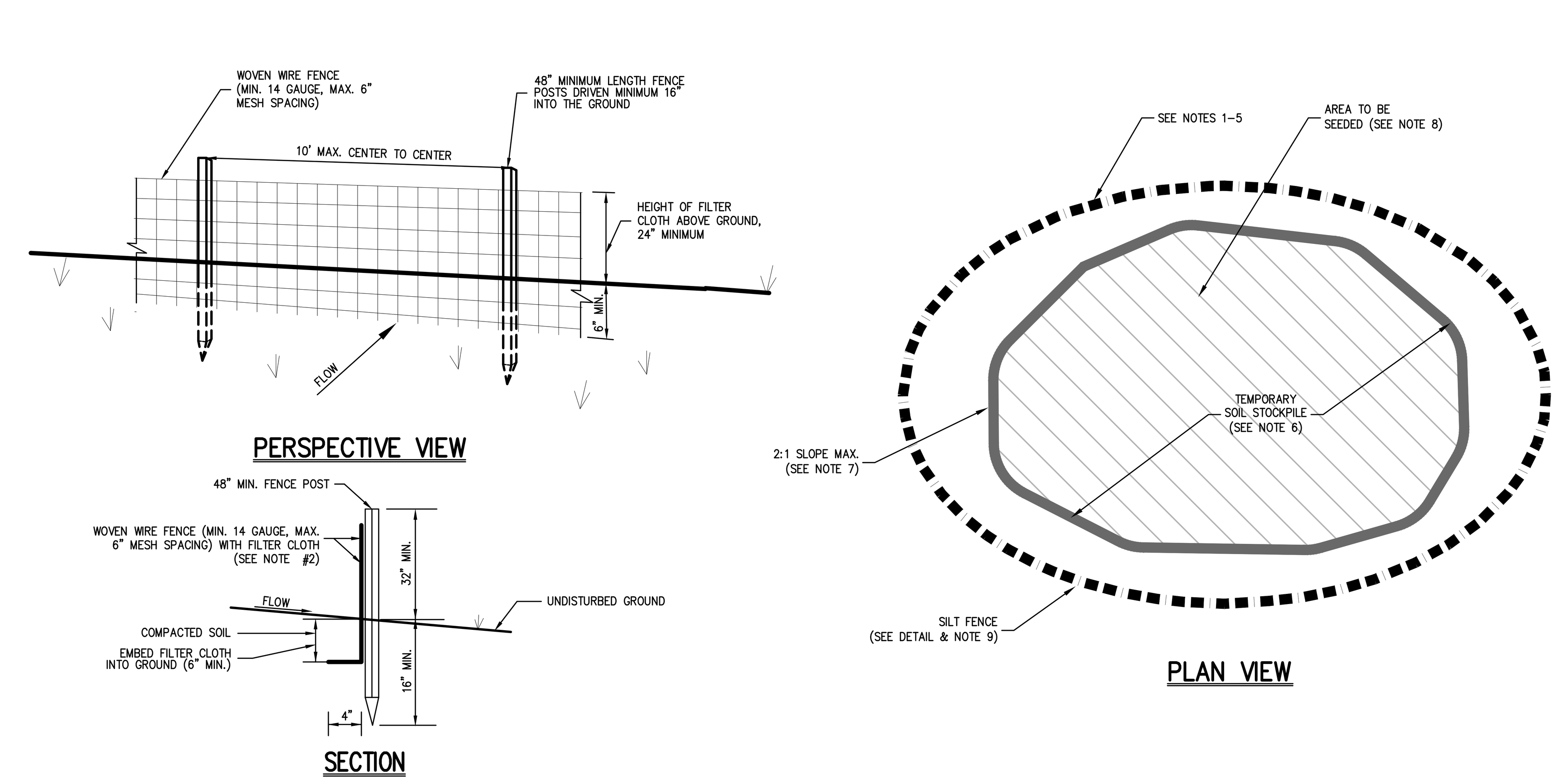
ENGINEERING DRAWINGS REVIEWED BY TOWN CONSULTING ENGINEER

________ DATE: ________
JOSEPH M. CERMELE, P.E.
KSCJ CONSULTING
CONSULTING TOWN ENGINEER

Drawn:	NC	Approved:	AG
Scale:	1" = 30'		
Date:	03/11/2024		
Project No:	20101		
20101-SE	E&S MAINTENANCE	SE.scr	

Drawing No: C-400M

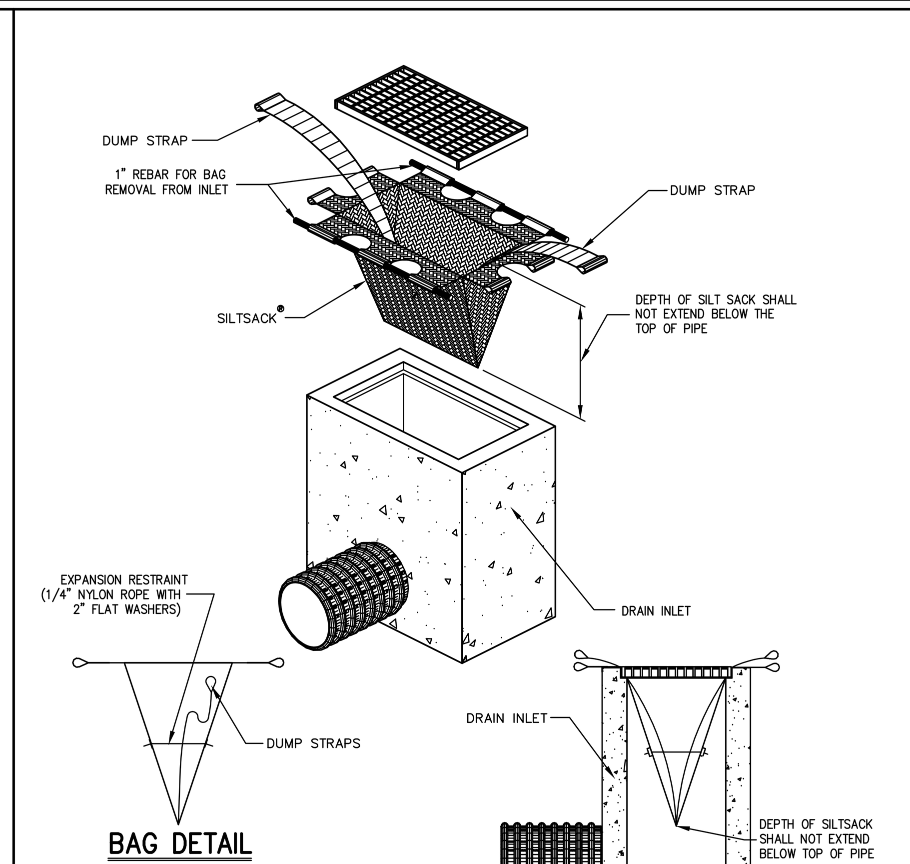
NOT FOR CONSTRUCTION



NOTES:

1. WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL, EITHER T OR U TYPE OR HARDWOOD.
2. FILTER CLOTH SHALL BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABLINKA T140N, OR APPROVED EQUAL.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED AND REPLACED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
6. THE AREA CHOSEN FOR ALL TEMPORARY SOIL STOCKPILES SHALL BE DRY AND STABLE.
7. ALL STOCKPILED SOIL SHALL NOT CONTAIN SLOPES GREATER THAN 2:1.
8. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SEEDED WITHIN 24 HOURS. PERENNIAL OR ANNUAL RYEGRASS SHALL BE PLANTED DURING SPRING, SUMMER OR EARLY FALL. WINTER RYE (CEREAL RYE) SHALL BE PLANTED DURING LATE FALL OR EARLY WINTER.
9. ALL STOCKPILES SHALL BE PROTECTED WITH SILT FENCING INSTALLED AROUND THE PERIMETER.

TEMPORARY SOIL STOCKPILE WITH SILT FENCE — 1



HI-FLOW SILT SACK AS MANUFACTURED BY ACF ENVIRONMENTAL OR APPROVED EQUAL®

(FOR AREAS OF MODERATE TO HEAVY PRECIPITATION AND RUN-OFF)

PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90 %
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC -1

NOTE:
CURB INLETS SHALL BE TYPE B WITH CURB DEFLECTOR.

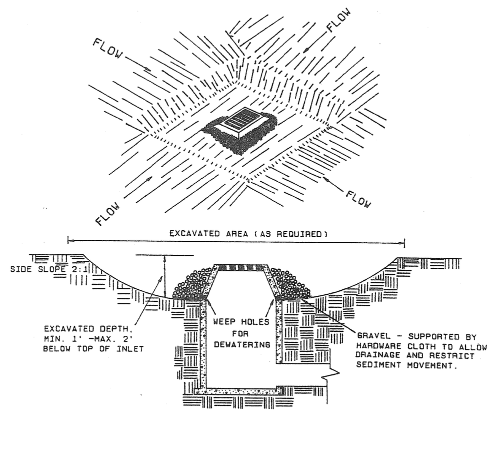
MANUFACTURED INSERT INLET PROTECTION — 2

APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD RESOLUTION, DATED ______

______ DATE: ______
CHRISTOPHER CARTHY, CHAIRMAN,
TOWN OF NORTH CASTLE PLANNING BOARD

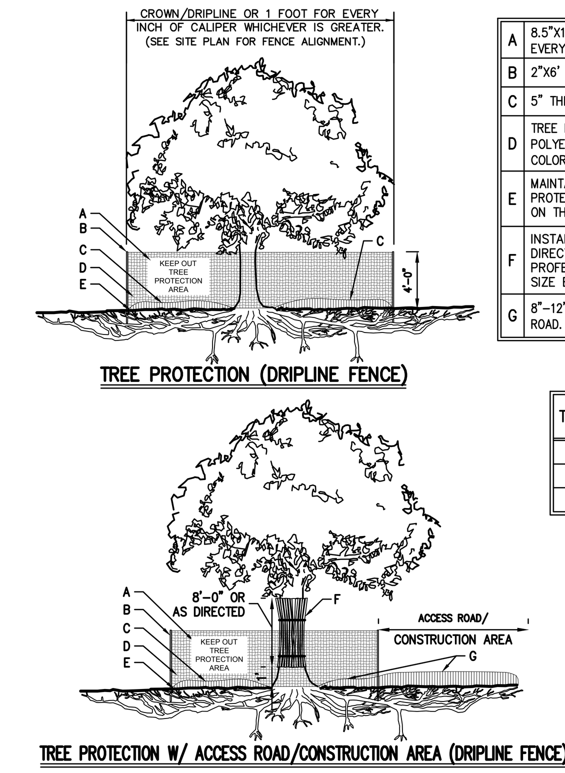
ENGINEERING DRAWINGS REVIEWED BY TOWN CONSULTING ENGINEER

______ DATE: ______
JOSEPH M. CERMELE, P.E.
KSCJ CONSULTING
CONSULTING TOWN ENGINEER



1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION.
2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.
3. WEEP HOLES SHALL BE PROCTECTED BY/STONE.
4. PROVIDE FREQUENT INSPECTION AND MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AND REPAIR OR REPLACE INLET PROTECTION TO MAINTAIN EFFECTIVENESS OF THE INSTALLATION.
5. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA. SEAL WEEP HOLES FILL BASIN WITH STABLE SOIL TO FINAL GRADE. COMPACT IT PROPERLY AND STABILIZE WITH PERMANET SEEDING.

EXCAVATED DROP INLET PROTECTION — 3



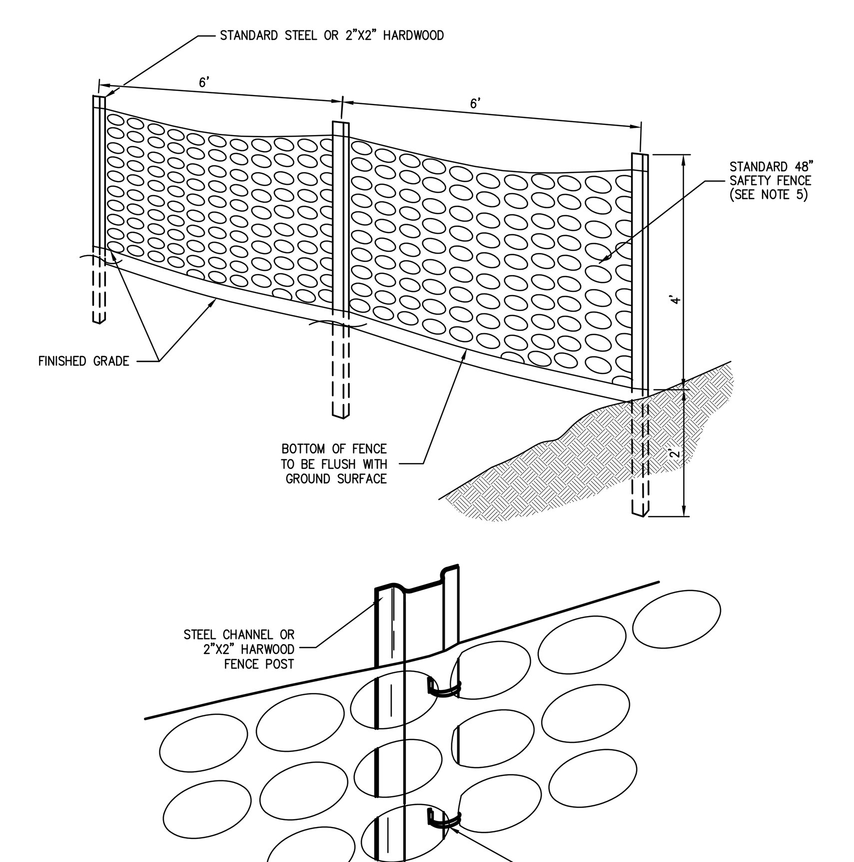
A	8.5"X11" SIGN LAMINATED IN PLASTIC SPACED EVERY 50' ALONG FENCE
B	2"X6' STEEL POSTS OR APPROVED EQUAL.
C	5" THICK LAYER OF MULCH.
D	TREE PROTECTION FENCE: HIGH DENSITY POLYETHYLENE FENCING WITH 3.5" X 1.5" OPENINGS; COLOR ORANGE. STEEL POSTS INSTALLED AT 8' O.C.
E	MAINTAIN EXISTING GRADE WITHIN THE TREE PROTECTION FENCE UNLESS OTHERWISE INDICATED ON THE PLANS.
F	INSTALL ROUGH SAWN WOOD WHERE AND AS DIRECTED BY PROJECT LANDSCAPE ARCHITECT OR PROFESSIONAL ARBORIST. SEE CHART FOR WOOD SIZE BOUND WITH 9 GAUGE WIRE.
G	8"-12" THICK LAYER OF MULCH ON MAINTENANCE ROAD. 5" THICK LAYER INSIDE TREE PROTECTION AREA.

TREE DIAMETER	ROUGH SAWN WOOD SIZE
<12"	2"X2"
13"-24"	2"X4"
>25"	2"X6"

NOTES:

1. SEE SPECIFICATIONS FOR ADDITIONAL TREE PROTECTION REQUIREMENTS.
2. IF THERE IS NO EXISTING IRRIGATION, SEE SPECIFICATIONS FOR WATERING REQUIREMENTS.
3. NO PRUNING SHALL BE PERFORMED EXCEPT BY APPROVED ARBORIST.
4. NO EQUIPMENT SHALL OPERATE INSIDE THE PROTECTIVE FENCING INCLUDING DURING FENCE INSTALLATION AND REMOVAL.
5. SEE SITE PLANS FOR IDENTIFICATIONS/LOCATIONS OF INDIVIDUAL TREES TO BE PROTECTED.
6. ALL EXCAVATION WITHIN THE CROWN/DRIPLINE OF ANY TREE SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF THE PROJECT LANDSCAPE ARCHITECT OR PROFESSIONAL ARBORIST. SPECIAL MEASURES, SUCH AS THE USE OF AN AIR SPADE MAY BE REQUIRED.
7. THE CONTRACTOR MAY PROPOSE THE USE OF ENGINEERED MATTING OR OTHER ENGINEERED PRODUCTS IN LIEU OF MULCH, WHICH SHALL BE SUBJECT TO THE REVIEW AND APPROVAL OF ALL AUTHORITIES HAVING JURISDICTION.

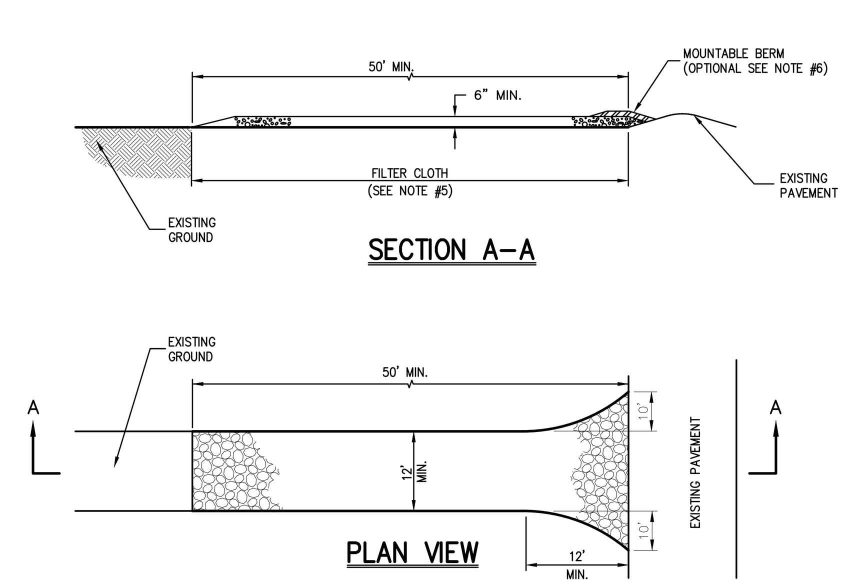
TREE PROTECTION — 4



NOTES:

1. SPACE SUPPORT FENCE POSTS AT 6 FOOT INTERVALS.
2. DRIVE SUPPORT POSTS 2 FEET INTO GROUND.
3. FIRMLY FASTEN FENCE MATERIAL IN PLACE BY WIRING TO FENCE POST WHILE MAINTAINING TENSION ACROSS FULL HEIGHT OF FENCE. WIRING SHALL BE DONE IN A MANNER THAT WILL PREVENT SAGGING OF FENCE MATERIAL.
4. PROVIDE PERIODIC INSPECTION AND MAINTENANCE OF FENCE INCLUDING REPAIRS AS NECESSARY AND REQUIRED.
5. PLASTIC FENCE SHALL BE INTERNATIONAL ORANGE COLOR, AS MANUFACTURED BY ADPI ENTERPRISES, INC. OR APPROVED EQUAL.
6. REMOVE CONSTRUCTION FENCE AS DIRECTED BY THE OWNER'S FIELD REPRESENTATIVE.

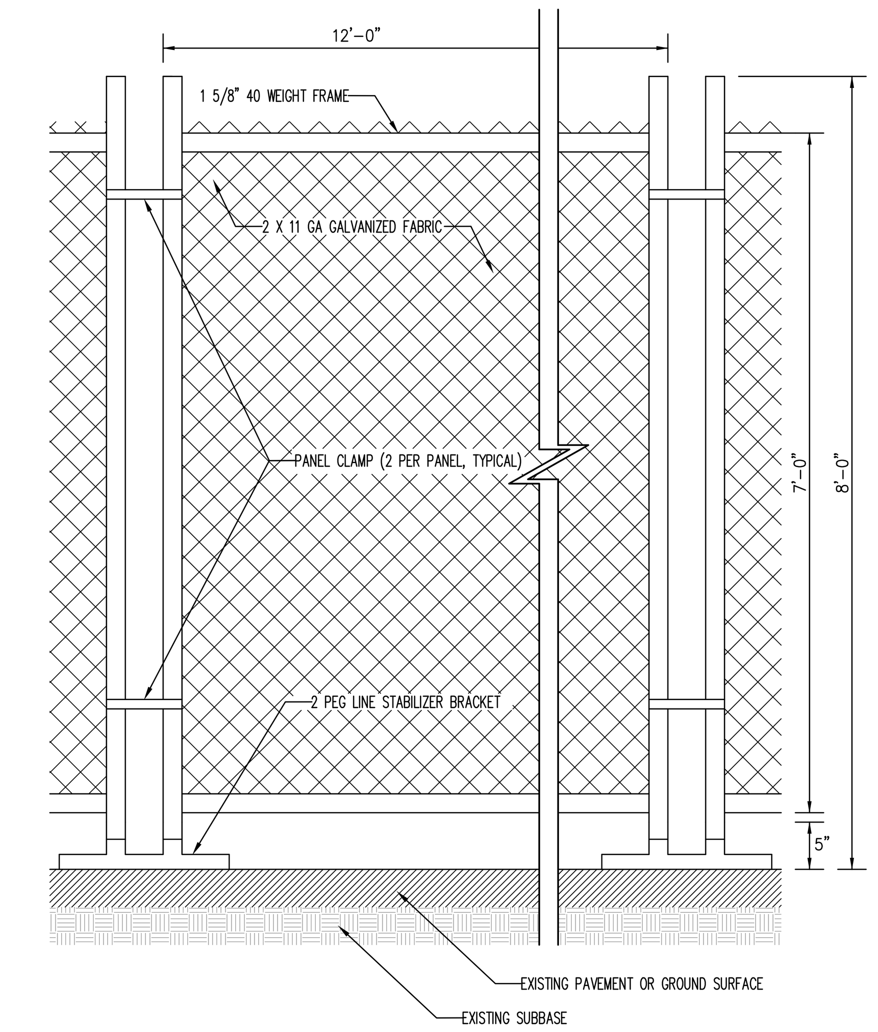
CONSTRUCTION FENCE — 5



NOTES

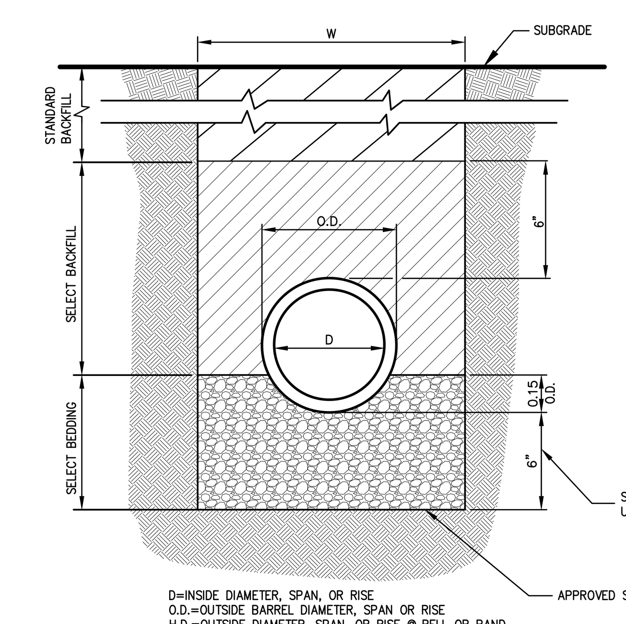
1. STONE SIZE - USE 1" TO 4" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - AS REQUIRED, BUT NOT LESS THAN 50 FEET.
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - 12 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24 FOOT MINIMUM IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH TO BE PLACED OVER THE ENTIRE WIDTH AND LENGTH OF AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH 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 MEASURE USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE — 6



NOTE:
STABILIZED BRACKET TO BE HOT DIPPED GALVANIZED STEEL PIPE.

TEMPORARY CHAIN LINK CONSTRUCTION FENCE — 7

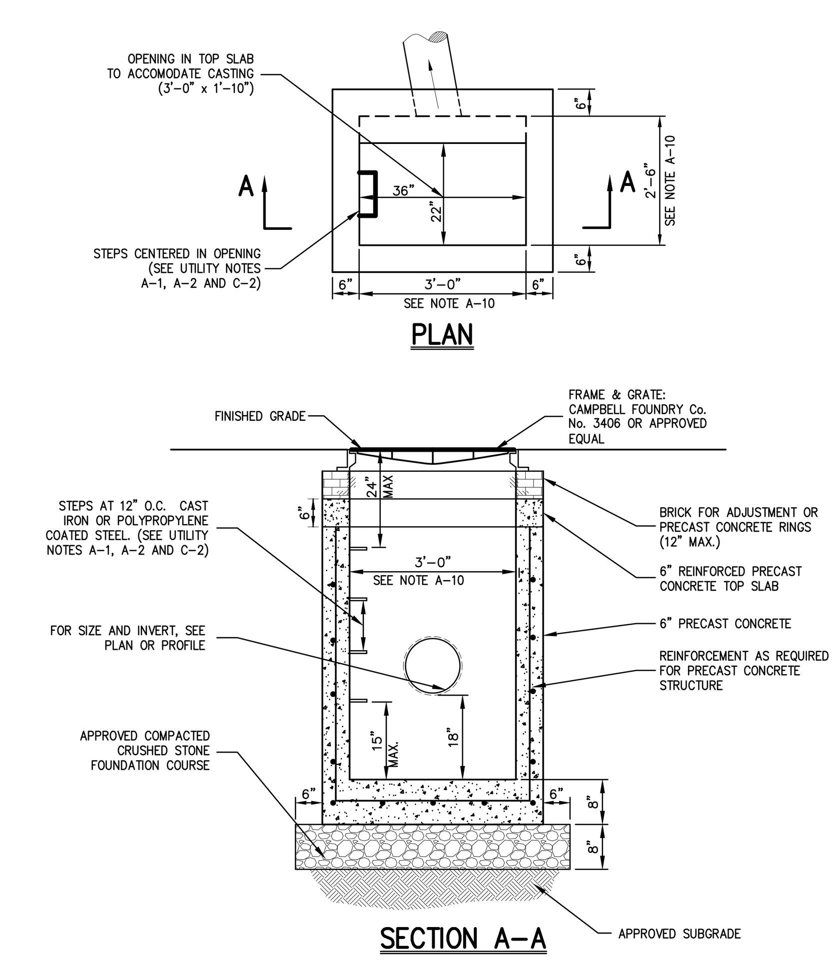


D=INSIDE DIAMETER, SPAN, OR RISE
O.D.=OUTSIDE BARREL DIAMETER, SPAN OR RISE
H.D.=OUTSIDE DIAMETER, SPAN, OR RISE @ BELL OR BAND
W=H.D. + 2.0' - FOR 48" OR SMALLER DIAMETER, SPAN, OR RISE
W=H.D. + 2.5' - FOR GREATER THAN 48" DIAMETER, SPAN, OR RISE

NOTES:

1. FOR TYPE II TRENCH, MATERIAL FOR SELECT BEDDING AND SELECT BACKFILL SHALL BE:
   A. EITHER SAND OR CRUSHED STONE IF NO WATER IS ENCOUNTERED IN TRENCH.
   B. 3/4"CRUSHED STONE IF WATER IS ENCOUNTERED IN TRENCH.
2. TYPE II TRENCH SHALL BE USED IN ALL OF THE FOLLOWING CASES:
   A. FOR ALL CORRUGATED POLYETHYLENE DRAIN PIPE (CPDP) AND PVC PIPE AND CONDUIT INSTALLATION.
   B. WHEN ROCK OR HARDPAN IS ENCOUNTERED IN BOTTOM OF TRENCH.
   C. WHEN UNSUITABLE MATERIAL IS ENCOUNTERED IN BOTTOM OF TRENCH. IN SUCH CASE DEPTH OF UNDERCUTTING SHALL BE AS DIRECTED BY THE ENGINEER WITH 6" MINIMUM.
3. FOR ALL TRENCH EXCAVATION IN FILL AREAS, ALL EMBANKMENTS SHALL BE CONSTRUCTED TO A MINIMUM OF 2 FEET ABOVE THE OUTSIDE TOP (AT THE BELL) OF THE PIPE PRIOR TO BEGINNING ANY TRENCH EXCAVATION.
4. BACKFILL FOR PIPE AND CONDUIT SHALL BE PLACED EVENLY AND CAREFULLY AROUND AND OVER THE PIPE OR CONDUIT IN SIX (6) INCH MAXIMUM LAYERS. EACH LAYER SHALL BE THOROUGHLY AND CAREFULLY COMPACTED UNTIL TWELVE (12) INCHES OF COVER EXISTS OVER THE PIPE OR CONDUIT. THE REMAINDER OF THE BACKFILL MAY THEN BE PLACED AND COMPACTED IN A MAXIMUM OF TWELVE (12) INCH LAYERS. EACH LAYER SHALL BE COMPACTED BY APPROVED MECHANICAL TAMPING MACHINES. UNLESS OTHERWISE SPECIFIED BACKFILL SHALL BE COMPACTED TO NOT LESS THAN 92% MAXIMUM MODIFIED DENSITY IN ACCORDANCE WITH ASTM DESIGNATION D-1557 IN THE MANNER HEREIN DESCRIBED. BACKFILL SHALL PROCEED UP TO THE LINES AND GRADES AS SHOWN ON THE DRAWINGS.

TYPE II TRENCH — 8

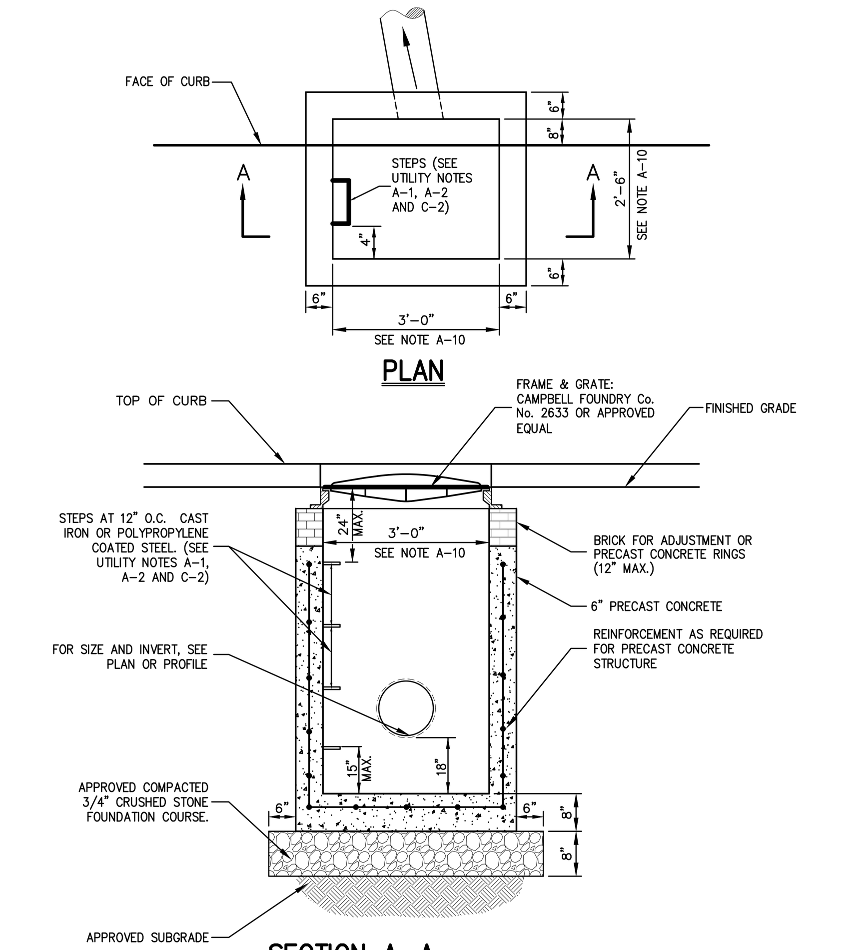


NOTE

1. REINFORCE PRECAST CONCRETE TOP SLAB AND REINFORCE PRECAST CONCRETE STRUCTURE SHALL BE DESIGNED TO ACCOMMODATE AN H-20 DESIGN LOAD.
2. SEE NOTES PERTAINING TO DRAIN INLETS UNDER UTILITY NOTES ON DRAWING C-900.

DRAIN INLET (TYPE DI) — 9

(WITH SUMP-W/O FINGER UNDERDRAINS)



NOTE:
1. SEE NOTES PERTAINING TO DRAIN INLETS UNDER UTILITY NOTES ON DRAWING C-900.

DRAIN INLET (TYPE CI) — 10

(WITH SUMP-W/O FINGER UNDERDRAINS)

NOTES PERTAINING TO DRAIN INLETS

A-1 STEPS WILL NOT BE REQUIRED IN INLETS LESS THAN FOUR (4) FEET IN DEPTH. STEPS WILL BE REQUIRED IN INLETS FOUR (4) FEET OR GREATER IN DEPTH. DEPTHS FOR DRAIN INLETS SHALL BE MEASURED FROM FINISHED GRADE TO INSIDE BOTTOM OF STRUCTURE (INCLUDING SUMP AS APPLICABLE).

A-2 WHEN STEPS ARE REQUIRED, STEPS SHALL COMPLY WITH THE SAME REQUIREMENTS OF ASTM STANDARD C-478, ARTICLE 13 ENTITLED "MANHOLE STEPS & LADDERS".

A-3 FOR MASONRY STRUCTURES, THE FIRST COURSE OF MASONRY SHALL BE SET IN THE CONCRETE FOUNDATION BEFORE THE CONCRETE HAS SET. CONCRETE FOUNDATION SHALL BE CLASS "A"(4000 psi) CONCRETE, TWELVE (12) INCHES THICK AND SHALL EXTEND SIX (6) INCHES BEYOND THE OUTSIDE FACE THE STRUCTURE.

A-4 IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FURNISH AND CONSTRUCT THE PROPER SIZE STRUCTURE INCLUDING THE NECESSARY OPENINGS TO ACCOMMODATE THE WORK AS SHOWN ON THE PLANS OR ORDERED BY THE ENGINEER, AT NO ADDITIONAL COST TO THE OWNER.

A-5 ALL NECESSARY PATCHING FOR DRAIN STRUCTURES SHALL BE ACCOMPLISHED WITH NON-SHRINKING CEMENT MORTAR GROUT, APPROVED EQUAL TO SIKA-SET AS MANUFACTURED BY THE SIKA CHEMICAL CORP.

A-6 FOUNDATIONS FOR PRECAST CONCRETE STRUCTURES SHALL BE SET ON A COMPACTED LAYER OF APPROVED CRUSHED STONE HAVING A MINIMUM COMPACTED THICKNESS OF EIGHT (8) INCHES.

A-7 ALL PIPES SHALL BE CUT FLUSH WITH THE INSIDE WALL OF THE STRUCTURE.

A-8 PROVIDE REINFORCED CONCRETE TOP SLAB FOR OVERSIZED DRAIN INLETS WITH PROPER SIZE OPENING TO ACCOMMODATE INSTALLATION OF FRAME & GRATE.

A-9 FOR MASONRY STRUCTURES GREATER THAN TEN (10) FEET IN DEPTH, THICKNESS OF MASONRY WALLS SHALL BE INCREASED TO TWELVE (12) INCHES.

A-10 FOR ALL STRUCTURES GREATER THAN 10 FEET IN DEPTH, STRUCTURES SHALL PROVIDE MINIMUM INSIDE DIMENSIONS OF 4 FEET X 4 FEET.

NOTES PERTAINING TO MANHOLES

B-1 PRECAST CONCRETE MANHOLES SHALL COMPLY WITH ASTM STANDARD C-478. MANHOLE JOINTS SHALL COMPLY WITH ASTM STANDARD C-443.

B-2 FOR PRECAST CONCRETE MANHOLES FIVE (5) FEET OR LESS IN HEIGHT, TOP CONE SECTION SHALL BE REPLACED WITH PRECAST REINFORCED CONCRETE SLAB (6" MIN. THICKNESS) WITH OPENING OF SUFFICIENT SIZE TO ACCOMMODATE MANHOLE CASTING.

B-3 FOR MANHOLES 10 FEET OR MORE IN DEPTH, MANHOLE DIAMETER SHALL BE FIVE (5) FEET.

B-4 TERMINAL MANHOLE FLOORS SHALL BE SLOPED TOWARD OUTFALL PIPE.

B-5 INVERT CHANNELS FOR PRECAST CONCRETE MANHOLES SHALL BE CONSTRUCTED OF CONCRETE.

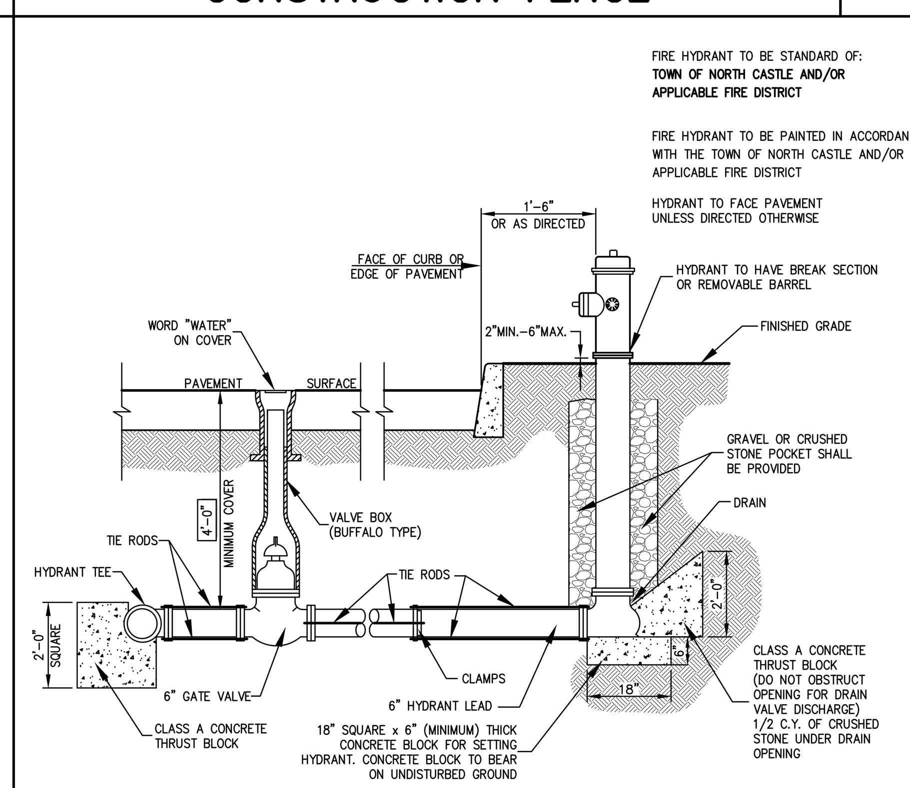
B-6 NOTES A-1, A-2, A-4, A-5, A-6 & A-7 UNDER "NOTES PERTAINING TO DRAIN INLETS" ABOVE SHALL APPLY TO MANHOLES.

NOTES PERTAINING TO PRECAST CONCRETE STRUCTURES FOR STORM DRAINS, SANITARY SEWERS AND WATER LINES

C-1 ALL PRECAST CONCRETE STRUCTURES SHALL BE DESIGNED TO ACCOMMODATE AN H-20 DESIGN LOAD.

C-2 STEPS SHALL BE LOCATED WITHIN STRUCTURE TO AVOID PLACEMENT OVER PIPES WHEN PRACTICABLE.

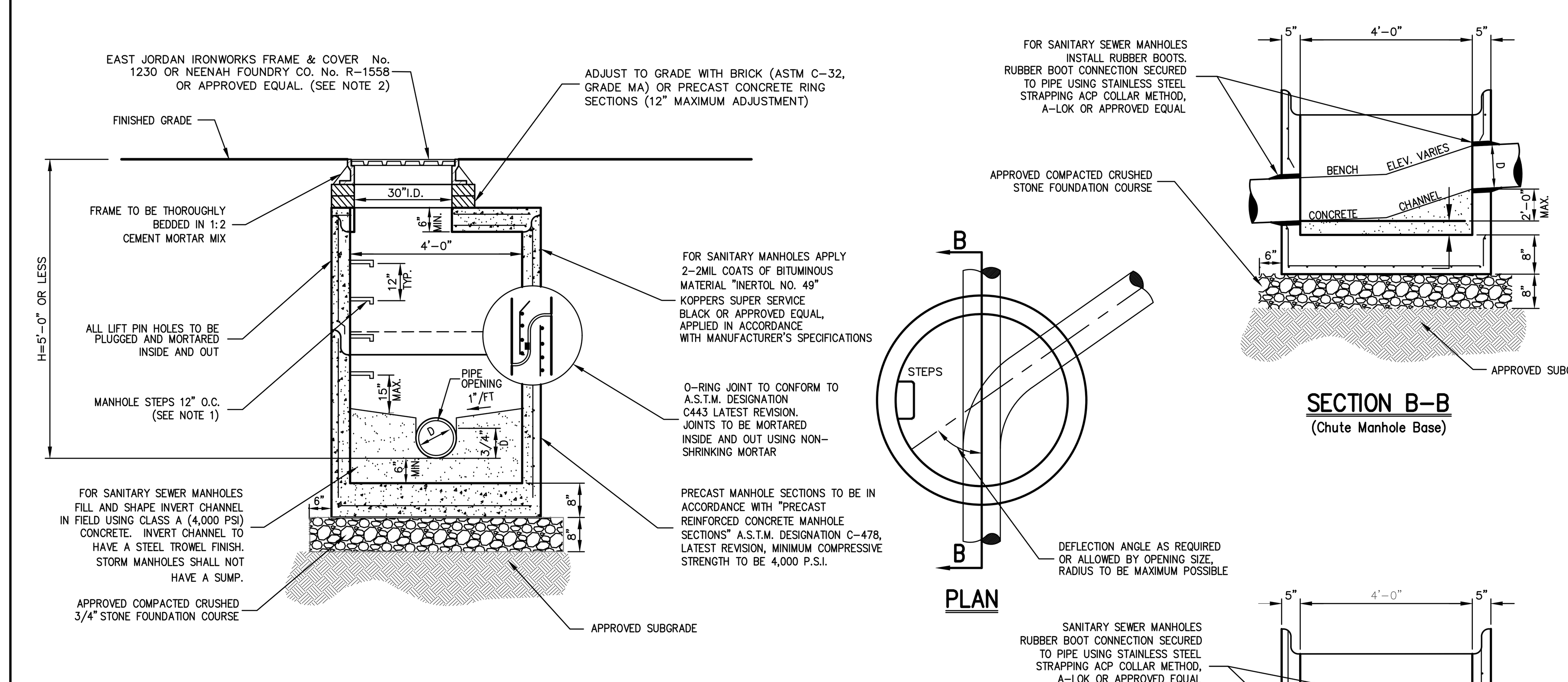
UTILITY NOTES — 11

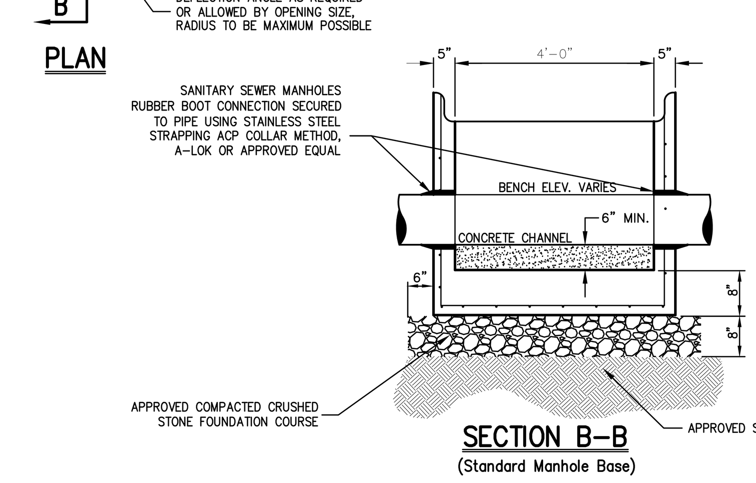


NOTES:

1. ALL CONCRETE THRUST BLOCKS SHALL BEAR ON UNDISTURBED GROUND.
2. RODDING SHALL CONSIST OF TWO 3/4" THREADED STEEL TIE RODS WITH NUTS AND WASHERS COMPLETE WITH ALL NECESSARY AND REQUIRED CLAMPS, CAREFULLY AND THOROUGHLY COVERED WITH ASPHALT OR OTHER ACCEPTABLE CORROSIVE RETARDING MATERIAL. IN GENERAL, THE METHOD AND TYPES OF MATERIAL REQUIRED IN THE INSTALLATION OF CLAMPS AND THE RODS SHALL BE IN ACCORDANCE WITH THE LATEST NATIONAL FIRE PROTECTION STANDARDS.
3. HYDRANT DRAINS SHALL NOT BE CONNECTED TO OR WITHIN TEN (10) FEET OF SANITARY SEWERS OR STORM DRAINS.
4. IF GROUND WATER IS FOUND WITHIN SEVEN (7) FEET OF THE SURFACE, HYDRANT DRAINS ARE TO BE PLUGGED. WHEN DRAINS ARE TO BE PLUGGED, THE BARRELS MUST BE PUMPED DRY AFTER USE DURING FREEZING WEATHER. SUCH HYDRANTS SHALL BE IDENTIFIED WITH A VISIBLE MARKING AS APPROVED BY THE WATER AUTHORITY.

HYDRANT INSTALLATION — 12





NOTES:

1. MANHOLE STEPS SHALL BE CAST IRON NEENAH No. R-1981-0 OR CAMPBELL FOUNDRY No. 2588-1 OR POLYPROPYLENE COATED STEEL (SEE SPECIFICATIONS) OR APPROVED EQUAL.
2. UNLESS OTHERWISE SPECIFIED, SANITARY SEWER MANHOLES SHALL HAVE LETTERS "SEWER" AND STORM DRAIN MANHOLES SHALL HAVE LETTERS "DRAIN" CAST ON COVER. THE COVERS SHALL HAVE VENT HOLES.
3. MANHOLES SHALL MEET OR EXCEED A.S.T.M. AND O.S.H.A. REQUIREMENTS.
4. SEE "NOTES PERTAINING TO MANHOLES" UNDER "UTILITY NOTES" ON DRAWING C-900.

MANHOLE (TYPE A) — 13

(H < 5'-0")

No.	Revision	Date	By

APPLICANT/OWNER:
SUMMIT CLUB PARTNERS, LLC
568 BEDFORD ROAD (NY-22)
ARMONK, NY 10504

ARCHITECT:
GRANOFF ARCHITECTS
330 RAILROAD AVENUE
GREENWICH, CT 06830

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JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
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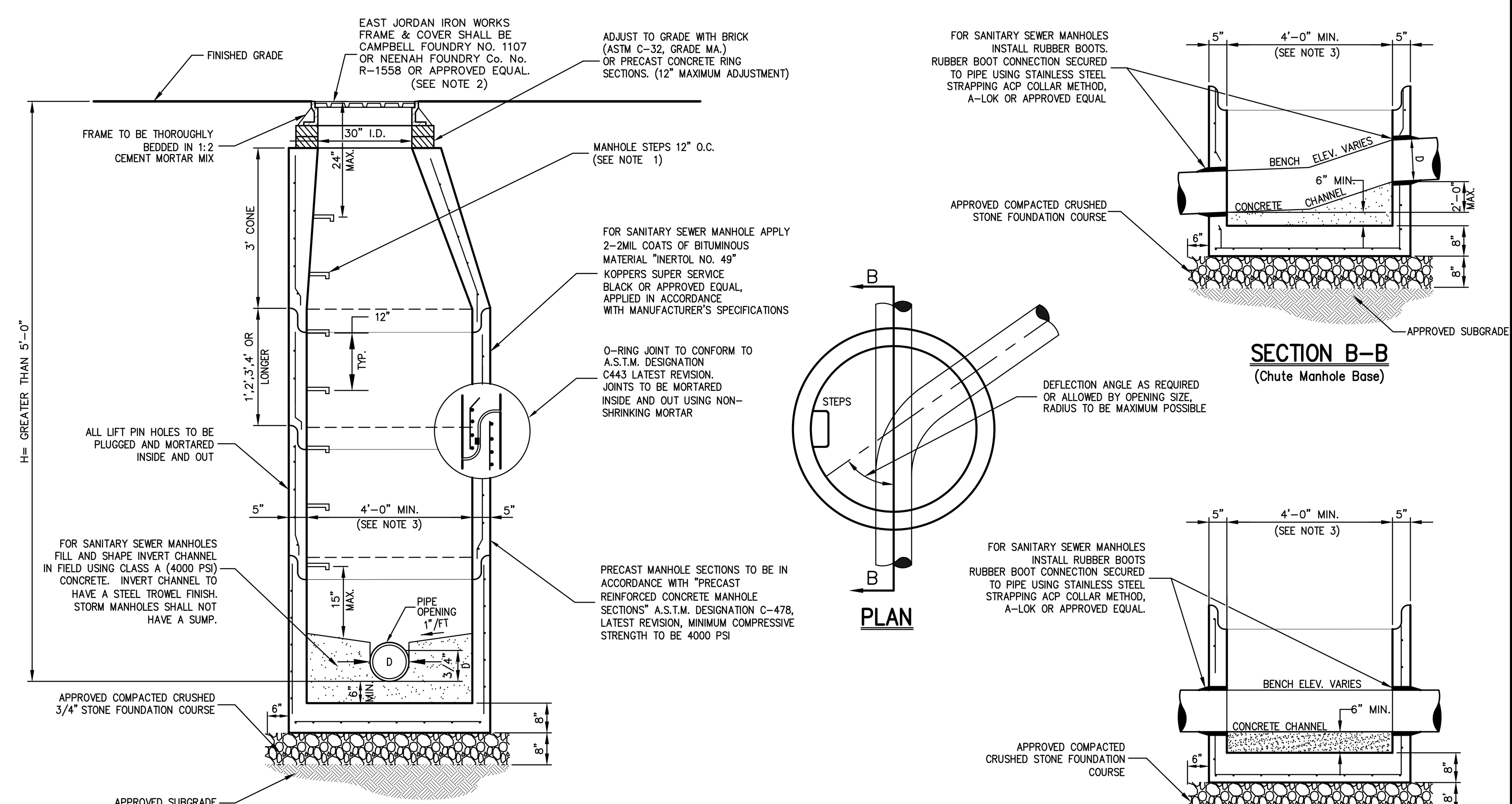
CONSTRUCTION DETAILS

THE SUMMIT CLUB AT ARMONK
(GOLF COURSE PHASE-MAINTENANCE BUILDING)
568 & 570 BEDFORD ROAD (NY-22)
TOWN OF NORTH CASTLE, NEW YORK

Drawn: NC	Approved: AG
Scale:	NOT TO SCALE
Date:	03/11/2024
Project No:	20101
20101-DETAILS DET-1 MAINTENANCE	-
Drawing No:	C-900M



NOTES:

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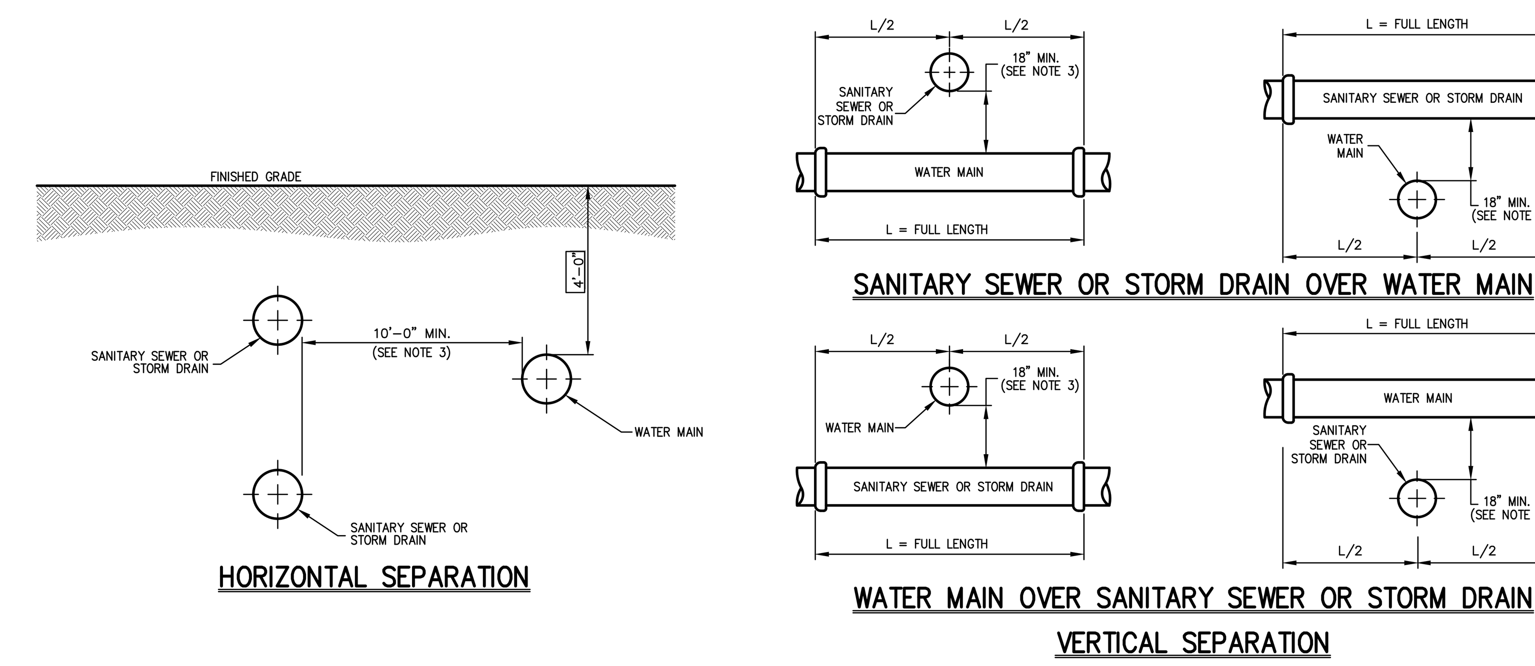
2. UNLESS OTHERWISE SPECIFIED, SANITARY SEWER MANHOLES SHALL HAVE LETTERS "SEWER" AND STORM DRAIN MANHOLES SHALL HAVE LETTERS "DRAIN" CAST ON COVER. THE COVERS SHALL HAVE VENT HOLES.
3. MANHOLES WITH DEPTH (h) 10' OR GREATER SHALL BE FIVE (5) FEET IN DIAMETER.
4. MANHOLES SHALL MEET OR EXCEED A.S.T.M. AND O.S.H.A. REQUIREMENTS.
5. SEE "NOTES PERTAINING TO MANHOLES" UNDER "UTILITY NOTES" ON DRAWING C-900.

MANHOLE (TYPE B)
(H > 5'-0" < 10'-0")

14



NOTES:

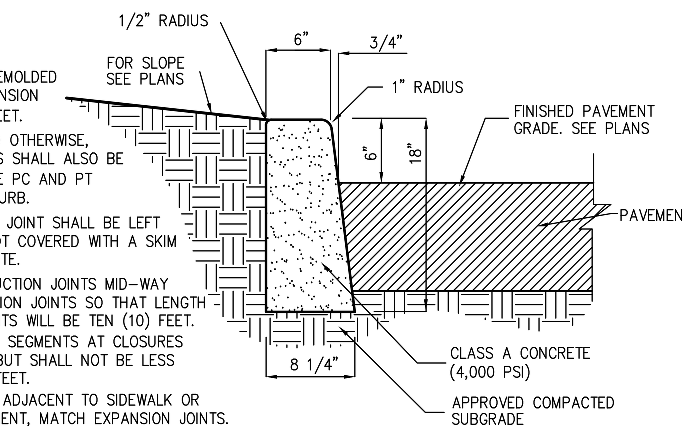
1. NORMAL CONDITIONS:
   A. WHENEVER A WATER MAIN MUST CROSS OVER OR UNDER A SANITARY SEWER OR STORM DRAIN, THE PIPES SHALL BE LAID TO PROVIDE A VERTICAL SEPARATION BETWEEN THEM OF AT LEAST 18 INCHES, AS MEASURED FROM THE BOTTOM OF THE HIGHER PIPE TO THE CROWN OF THE LOWER PIPE.
   B. FULL LENGTH OF WATER PIPE MUST BE CENTERED AT THE POINT OF CROSSING; NO JOINTS WILL BE PERMITTED AT THE POINT OF CROSSING.
2. WATER MAIN CROSSING UNDER SANITARY SEWERS:
   A. VERTICAL SEPARATION OF 18 INCHES MUST BE PROVIDED.
   B. ADEQUATE STRUCTURAL SUPPORT MUST BE PROVIDED FOR THE SANITARY SEWER TO PREVENT EXCESSIVE DEFLECTION OF JOINTS AND SETTLING.
   C. FULL LENGTH OF WATER PIPE MUST BE CENTERED AT THE POINT OF CROSSING; NO JOINTS WILL BE PERMITTED AT THE POINT OF CROSSING.
3. IF DURING CONSTRUCTION IT IS FOUND THAT THE REQUIRED SEPARATION OF WATER MAINS, SANITARY SEWERS, STORM SEWERS AND BUILDING SANITARY SEWERS CANNOT BE MET, THE CONTRACTOR OR HIS AUTHORIZED REPRESENTATIVE SHALL IN WRITING ADVISE JMC OF THE SPECIFIC CONDITIONS ENCOUNTERED. APPROVAL OF ALTERNATIVE SEPARATION CRITERIA SHALL BE OBTAINED FROM THE WCDOH PRIOR TO INSTALLATION.

SEPARATION OF WATER AND SANITARY SEWER/STORM DRAIN LINES

15

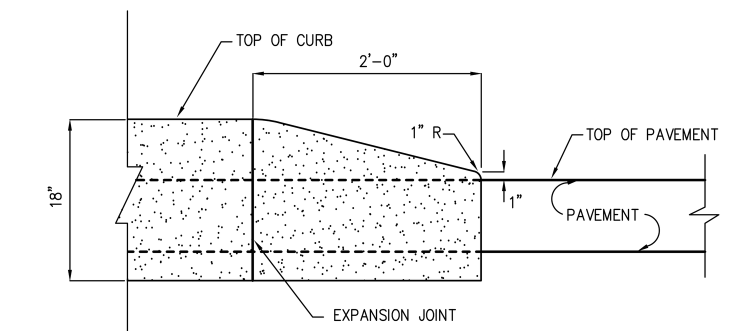
NOTES:

1. INSTALL 1/2" PREMOLDED BITUMINOUS EXPANSION JOINT EVER 20 FEET.
2. UNLESS DIRECTED OTHERWISE, EXPANSION JOINTS SHALL ALSO BE INSTALLED AT THE PC AND PT OF ALL RADIUS CURB.
3. EACH EXPANSION JOINT SHALL BE LEFT EXPOSED AND NOT COVERED WITH A SKIM COAT OF CONCRETE.
4. INSTALL CONSTRUCTION JOINTS MID-WAY BETWEEN EXPANSION JOINTS SO THAT LENGTH OF CURB SEGMENTS WILL BE TEN (10) FEET.
5. LENGTH OF CURB SEGMENTS AT CLOSURES MAY BE VARIED BUT SHALL NOT BE LESS THAN FOUR (4) FEET.
6. WHEN INSTALLED ADJACENT TO SIDEWALK OR CONCRETE PAVEMENT, MATCH EXPANSION JOINTS.



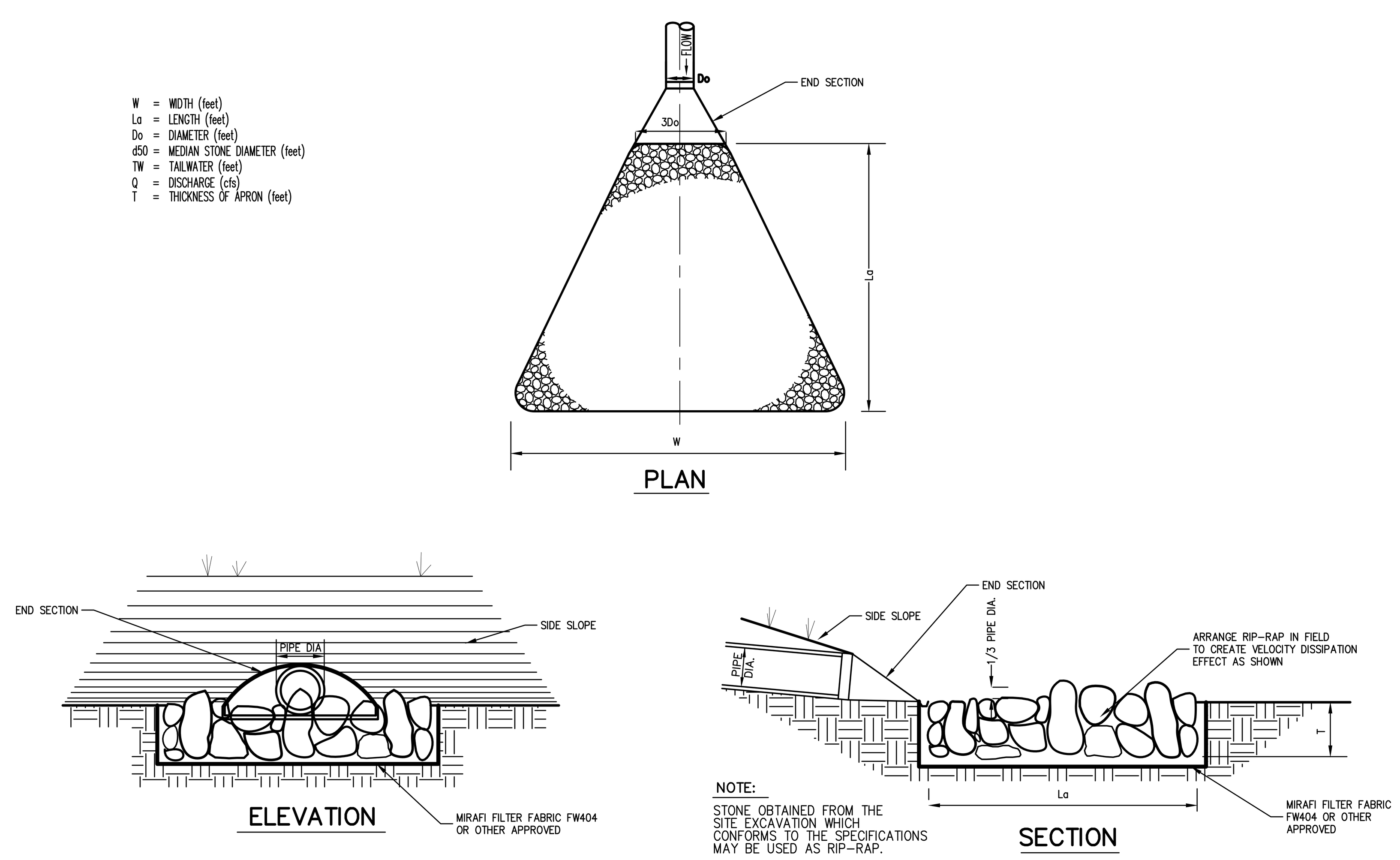
CAST-IN-PLACE CONCRETE CURB

16



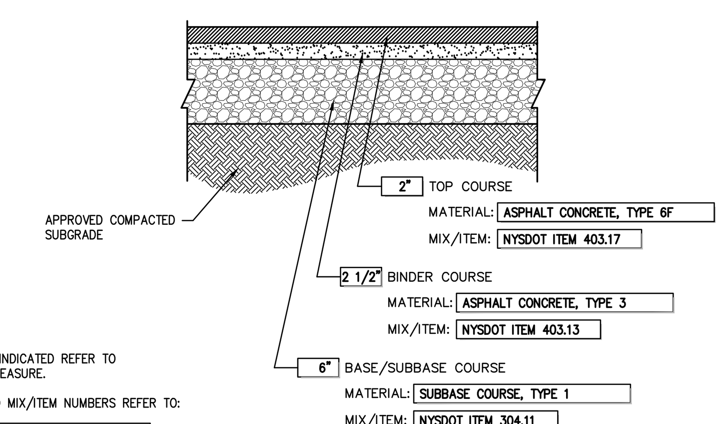
CONCRETE CURB ENDING

17



RIP-RAP APRON/ENERGY DISSIPATOR
END SECTION

18



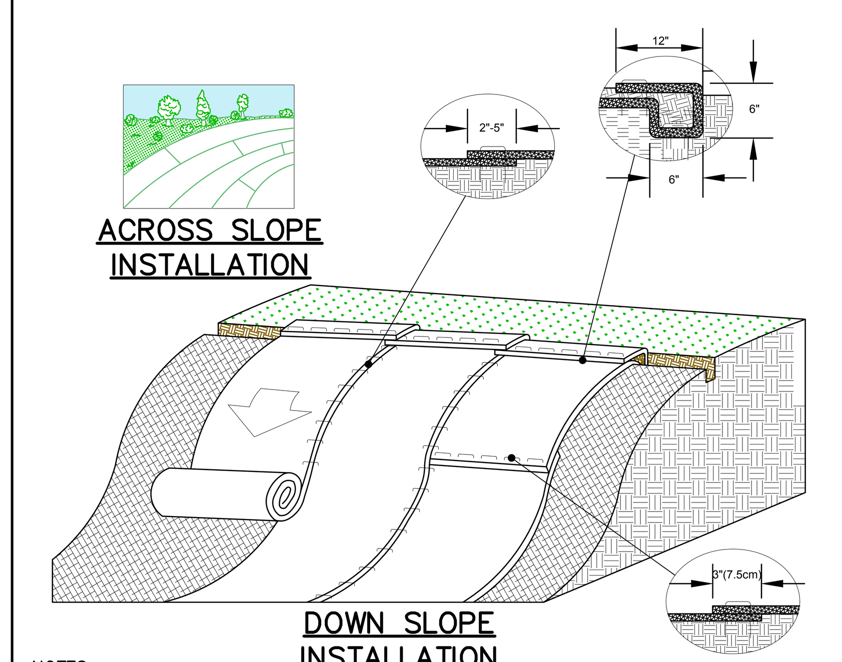
NOTES:

1. THICKNESSES INDICATED REFER TO COMPACTED MEASURE.
2. MATERIAL AND MIX/ITEM NUMBERS REFER TO:

NEW YORK STATE
DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS

SITE PAVEMENT
(LIGHT DUTY)

19



NOTES:

1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECPS), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECPS IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECPS EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECPS WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO THE COMPACTED SOIL AND FOLD THE REMAINING 12" PORTION OF RECPS BACK OVER THE SEED AND COMPACTED SOIL. SECURE RECPS OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE RECPS.
3. ROLL THE RECPS EITHER DOWN OR HORIZONTALLY ACROSS THE SLOPE. RECPS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECPS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL RECPS MUST BE STAPLED WITH APPROXIMATELY 2" – 5" OVERLAP DEPENDING ON THE RECPS TYPE.
5. CONSECUTIVE RECPS SPLICED DOWN THE SLOPE MUST BE END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE RECPS WIDTH.
6. IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE RECP'S.
7. MATERIAL FOR THE RECP SHALL BE EAST COAST EROSION CONTROL ECS-2B BIODEGRADABLE DOUBLE NET STRAW OR APPROVED EQUAL.

ROLLED EROSION CONTROL MATTING

20

X

X

X

X

X

APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD RESOLUTION, DATED ________

________ DATE: ________
CHRISTOPHER CARTHY, CHAIRMAN,
TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING DRAWINGS REVIEWED BY TOWN CONSULTING ENGINEER

________ DATE: ________
JOSEPH M. CERMELE, P.E.
KSCJ CONSULTING
CONSULTING TOWN ENGINEER

No.	Revision	Date	By

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568 BEDFORD ROAD (NY-22)
ARMONK, NY 10504

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Drawn: NC	Approved: AG
Scale:	NOT TO SCALE
Date:	03/11/2024
Project No:	20101
20101-DETAILSDET-2 MAINTENANCE	–
Drawing No:	C-901M

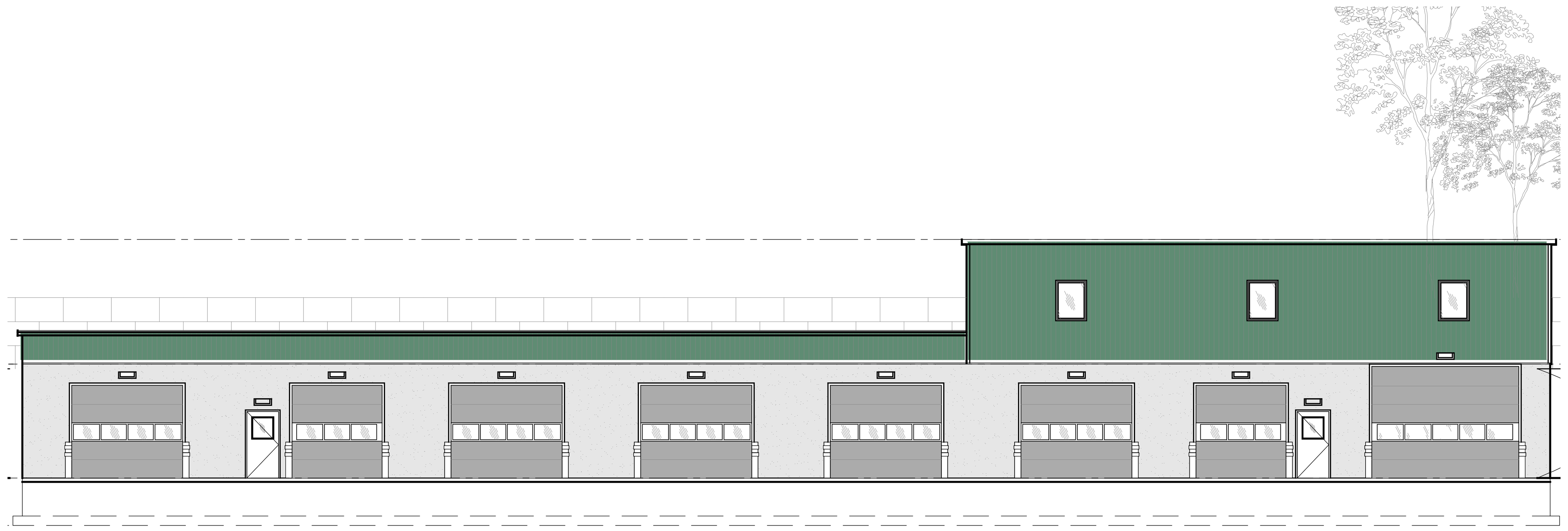
NOT FOR CONSTRUCTION

SUMMIT CLUB
TURF MANAGEMENT & MAINTENANCE FACILITY

568 & 570 BEDFORD RD. (NY-22)
TOWN OF NORTH CASTLE, NEW YORK

DRAWING LIST:

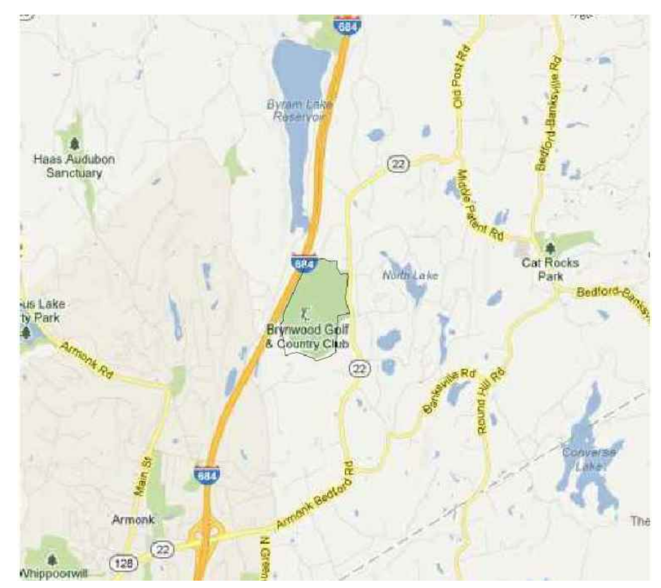
C	COVER SHEET
A100	FLOOR PLAN - LOWER AND UPPER LEVELS
A101	ROOF PLAN
A200	RCP - LOWER AND UPPER LEVELS
A300	BUILDING ELEVATIONS
A400	BUILDING SECTIONS
A401	BUILDING SECTION AND SITE SECTION
A600	SCHEDULES



ZONING NOTES:

SECTION 101.02, BLOCK 1, LOT 28.1 & 28.2 (2/08/7.C1A)
ZONES "R-2A" - "ONE FAMILY RESIDENCE DISTRICT (2 ACRES)"
"GCCFO"- "GOLF COURSE COMMUNITY FLOATING OVERLAY DISTRICT"
PROPOSED USE: GOLF COURSE COMMUNITY
FIRE/AMBULANCE DISTRICT: ARMONK FIRE DEPARTMENT (NORTH CASTLE DISTRICT #2)
WATER DISTRICT: NORTH CASTLE WATER DISTRICT #2
SCHOOL DISTRICT: BYRAM HILLS CENTRAL SCHOOL DISTRICT
SEWER DISTRICT: ON-SITE SEWAGE TREATMENT PLANT (SPDES PERMIT)

LOCATION MAP



LEGEND

MATERIAL DESIGNATIONS

ELEVATION:

- ASPHALT ROOFING
- CONCRETE
- CEDAR SHINGLE SIDING
- CERAMIC / STONE TILE
- STONE VENEER
- GLAZING

SECTION:

- EARTH FILL
- 2x WOOD FRAMING
- GRANULAR FILL / GRAVEL
- WOOD BLOCKING
- CONCRETE
- SPRAY-IN-PLACE FIBERGLASS INSULATION SYSTEM
- STONE VENEER
- FINISHED WOOD
- SAND / MORTAR / STUCCO
- PLYWOOD
- BOARD / RIGID INSULATION
- EXTERIOR SYNTHETIC TRIM BOARD/MOULDING
- SPRAYED IN-PLACE INSULATION
- STEEL
- CARPET
- MARBLE / GRANITE / STONE
- CEMENTIOUS SHEATHING
- WOOD FLOORING
- GYPSUM BOARD
- CERAMIC / QUARRY TILE

SYMBOLS

- NORTH DESIGNATION
- INTERIOR ELEVATION: ELEVATION LETTER SHEET NUMBER (1, 2, 3, 4, SHT#)
- FIRST NAME SECOND NAME 12'-0"x10'-0" — ROOM NAME & NUMBER
- ℄ — CENTER LINE
- 1, A — COLUMN GRID
- REVISION
- EXTERIOR ELEVATION: ELEVATION LETTER SHEET NUMBER (ELEV#, SHT#)
- N 60°59'31" W 137.37' — PROPERTY LINE
- 01 — DOOR NUMBER
- SETBACK/EASEMENT LINE
- A — WINDOW TYPE
- 60 — EXISTING CONTOUR LINE
- FIRST FLOOR EL = 100'-0" — ELEVATION TAG
- SECTION: SECTION LETTER SHEET NUMBER (DTL#, SHT#)
- 50 — NEW CONTOUR LINE
- [211.96'] — NEW SPOT ELEVATION
- DETAIL: DETAIL NUMBER SHEET NUMBER (DTL#, SHT#)
- 6" DN. — CHANGE IN ELEVATION
- 12, 8 — ROOF SLOPE INDICATION

ABBREVIATIONS

NOTE: Clarify with Architect all abbreviations not listed.

AB.	ANCHOR BOLT
A.C.T.	ACOUSTICAL CEILING TILE
A.F.F.	ABOVE FINISHED FLOOR
AGGR.	AGGREGATE
ALUM.	ALUMINUM
ALT.	ALTERNATE
APPROX.	APPROXIMATE
ARCH.	ARCHITECTURAL
BD.	BOARD
BLDG.	BUILDING
BLK.	BLOCK
BLK'G.	BLOCKING
BM.	BEAM
BOT.	BOTTOM
BTWN.	BETWEEN
B.W.	BOTH WAYS
C.J.	CONTROL JT.
CLG.	CEILING
CLKG.	CAULKING
CLR.	CLEAR
C.M.U.	CONCRETE MASONRY UNIT
COL.	COLUMN
CONC.	CONCRETE
CONN.	CONNECTION
CONSTR.	CONSTRUCTION
CONT.	CONTINUOUS
C.T.	CERAMIC TILE
DEG.	DEGREE
DET./DTL.	DETAIL
DIAG.	DIAGONAL
DIA. or ∅	DIAMETER
DN.	DOWN
DS.	DOWN SPOUT
DWG.	DRAWING
E	EAST
EXIST.	EXISTING
EA.	EACH
E.J.	EXPANSION JOINT
EL. or ELEV.	ELEVATION
ELEC.	ELECTRICAL
ELEV.	ELEVATION
EMER.	EMERGENCY
ENCL.	ENCLOSURE
EQ.	EQUAL
EQUIP.	EQUIPMENT
E.W.	EACH WAY
EXP.	EXPANSION
EXT.	EXTERIOR
F.A.	FIRE ALARM
F.D.	FLOOR DRAIN
FDN.	FOUNDATION
F.E.	FIRE EXTINGUISHER
F.F.	FINISH FLOOR
FIN.	FINISH
FLR.	FLOOR
FLUOR.	FLUORESCENT
FND.	FOUNDATION
F.O.C.	FACE OF CONCRETE
F.S.	FULL SIZE
FT.	FOOT OR FEET
FTG.	FOOTING
FURR.	FURRING
GA.	GAUGE
GALV.	GALVANIZED
G.C.	GENERAL CONTRACTOR
G.L.	GLASS
GR.	GRADE
GYP.	GYPSUM
GYP. BD.	GYPSUM BOARD
H.B.	HOSE BIBB
H.C.	HOLLOW CORE
HDWD.	HARDWOOD
HDWE.	HARDWARE
H.M.	HOLLOW METAL
HR.	HOUR
HT.	HEIGHT
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
I.D.	INSIDE DIAMETER
INSUL.	INSULATION
INT.	INTERIOR
JNT.	JOINT
JST.	JOIST
KIT.	KITCHEN
LAB.	LABORATORY
LAM.	LAMINATE
LAV.	LAVATORY
LT.	LIGHT
MAX.	MAXIMUM
MECH.	MECHANICAL
MEMB.	MEMBRANE
MFR.	MANUFACTURER
MIN.	MINIMUM
MISC.	MISCELLANEOUS
M.O.	MASONRY OPENING
MTL.	METAL
MUL.	MULLION
N	NORTH
N.I.C.	NOT IN CONTRACT
NO. or #	NUMBER
NOM.	NOMINAL
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
OH.	OVERHEAD
OPG.	OPENING
OPP.	OPPOSITE
PCT.	PRE-CAST
P.L.	PROPERTY LINE
P.LAM.	PLASTIC LAMINATE
PLAS.	PLASTER
PLYWD.	PLYWOOD
PR.	PAIR
Q.T.	QUARRY TILE
R.	RISER
R.D.	ROOF DRAIN
RE:	REFER TO ...
REFR.	REFRIGERATOR
REINF.	REINFORCED
REQ'D.	REQUIRED
RM.	ROOM
R.O.	ROUGH OPENING
S	SOUTH
S.C.	SOLID CORE
SCHED.	SCHEDULE
SECT.	SECTION
S.F.	SQUARE FOOT
SHT.	SHEET
SIM.	SIMILAR
SPEC.	SPECIFICATION
SQ. or ⊕	SQUARE
S.S.	STAINLESS STEEL
STAGG.	STAGGERED
STD.	STANDARD
STIFF.	STIFFENER
STL.	STEEL
STRUC.	STRUCTURAL
SUSP.	SUSPENDED
TR.	TREAD
T & B	TOP AND BOTTOM
T & G	TONGUE & GROOVE
THK.	THICK
T.O.	TOP OF
TYP.	TYPICAL
U.O.N.	UNLESS OTHERWISE NOTED
VCT	VINYL COMPOSITION TILE
VER	VERIFY
VERT.	VERTICAL
W	WEST
W/	WITH
W.C.	WATER CLOSET
WD.	WOOD
W/O	WITHOUT
℄	CENTERLINE
℞	PLATE

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Armonk, NY 10504

Structural:
MICHAEL HORTON ASSOCIATES, INC.
151 Meadow Street
Branford, CT 04405

REVISIONS

#	DATE	REVISION DESCRIPTION	BY:
1	10/24/2022	PLANNING BOARD SUBMISSION	KA
2	11/02/2022	ARB SUBMISSION	KA
3	01/11/2023	TOWN BOARD SUBMISSION	KA
4	03/06/2024	ARB REVISION	KA

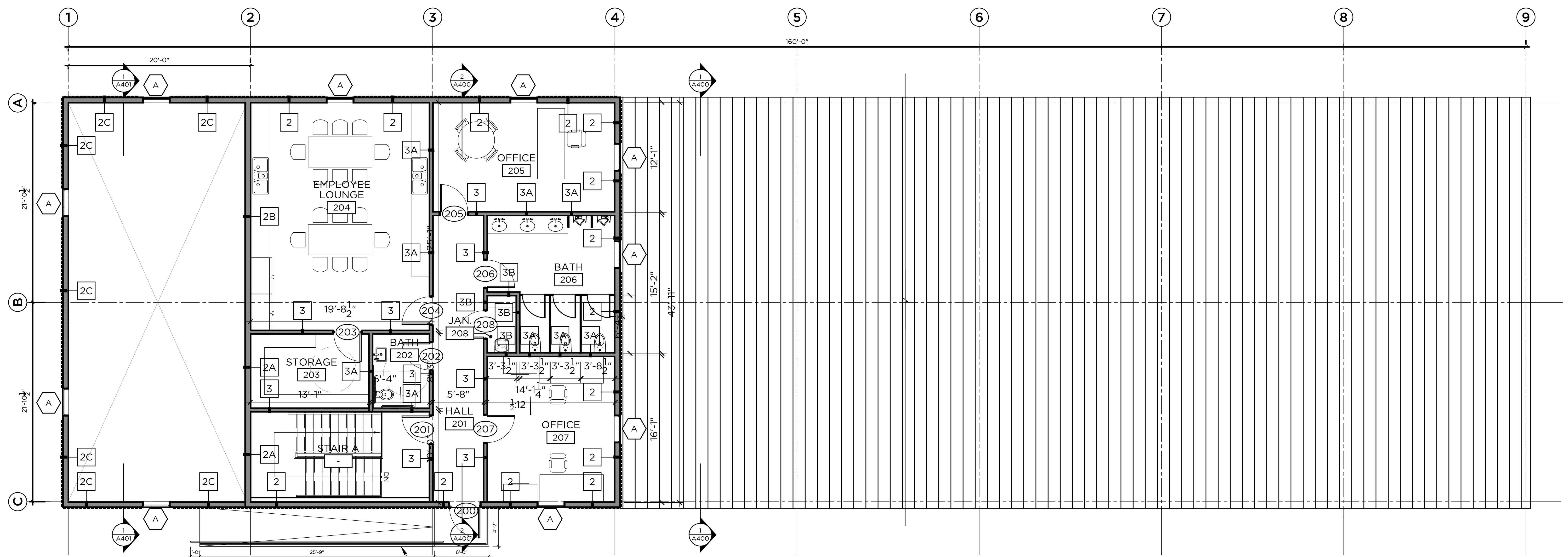
PHASE
--

PROJECT NAME
SUMMIT CLUB PARTNERS LLC - MAINTENANCE BLDG.
ARMONK, NY

JOB NO.: ----
DRAWN BY: JT PROJ. MANAGER: KA
DATE: 02/26/24 SCALE: AS NOTED

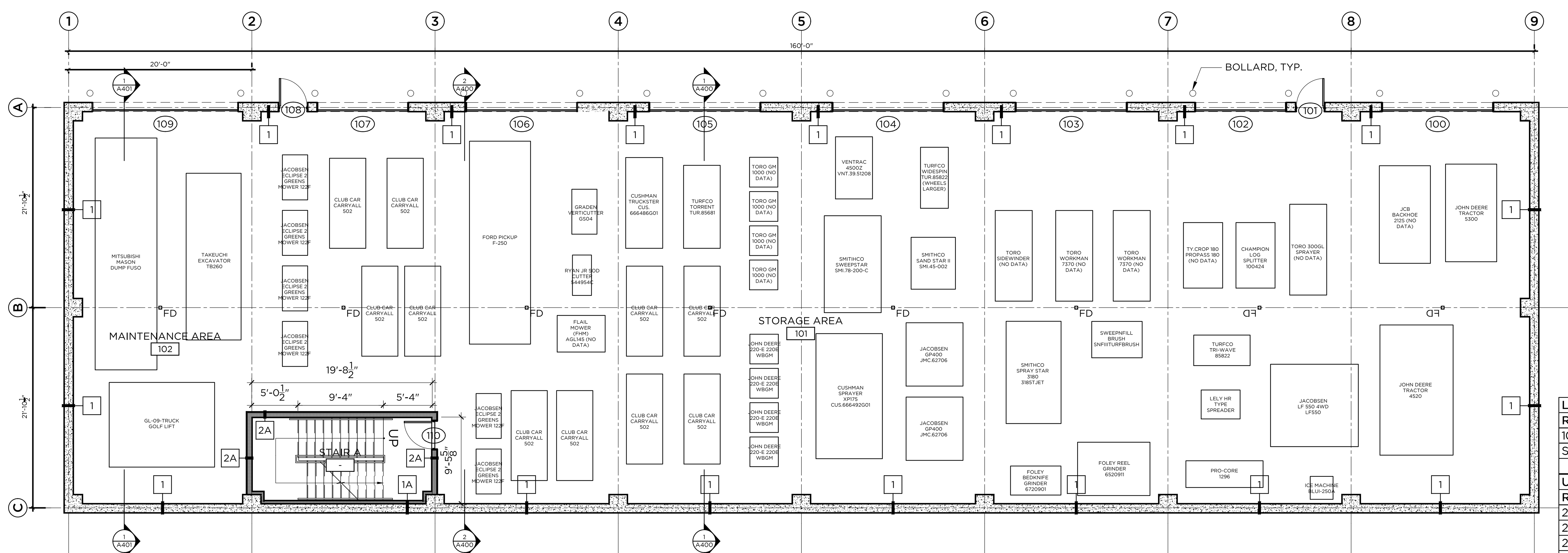
DRAWING TITLE
COVER

DRAWING NO.
C



UPPER FLOOR PLAN

MAINTENANCE BUILDING 1/4" = 1'-0"



LOWER FLOOR PLAN

MAINTENANCE BUILDING 1/8" = 1'-0"

LOWER LEVEL (SF) =		7,218
ROOM #	DESCRIPTION	AREA (SF)
101	LOWER STORAGE GARAGE	7,006
SUPPORT	-	212
UPPER LEVEL (SF) =		1,830
ROOM #	DESCRIPTION	AREA (SF)
201	CORRIDOR	192
202	BATH	56
203	STORAGE	116
204	EMPLOYEE LOUNGE	520
205	OFFICE	264
206	BATH	198
207	OFFICE	248
208	JANITORS CLOSET	24
SUPPORT	-	212
TOTAL (SF) =		9,048
MAINTENANCE STAFF =		15
PARKING SPACES PROVIDED =		15

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4	03/06/2024	ARB REVISION	KA

PHASE

--

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SUMMIT CLUB PARTNERS LLC - MAINTENANCE BLDG.

ARMONK, NY

JOB NO.: ----

DRAWN BY: JT PROJ. MANAGER: KA

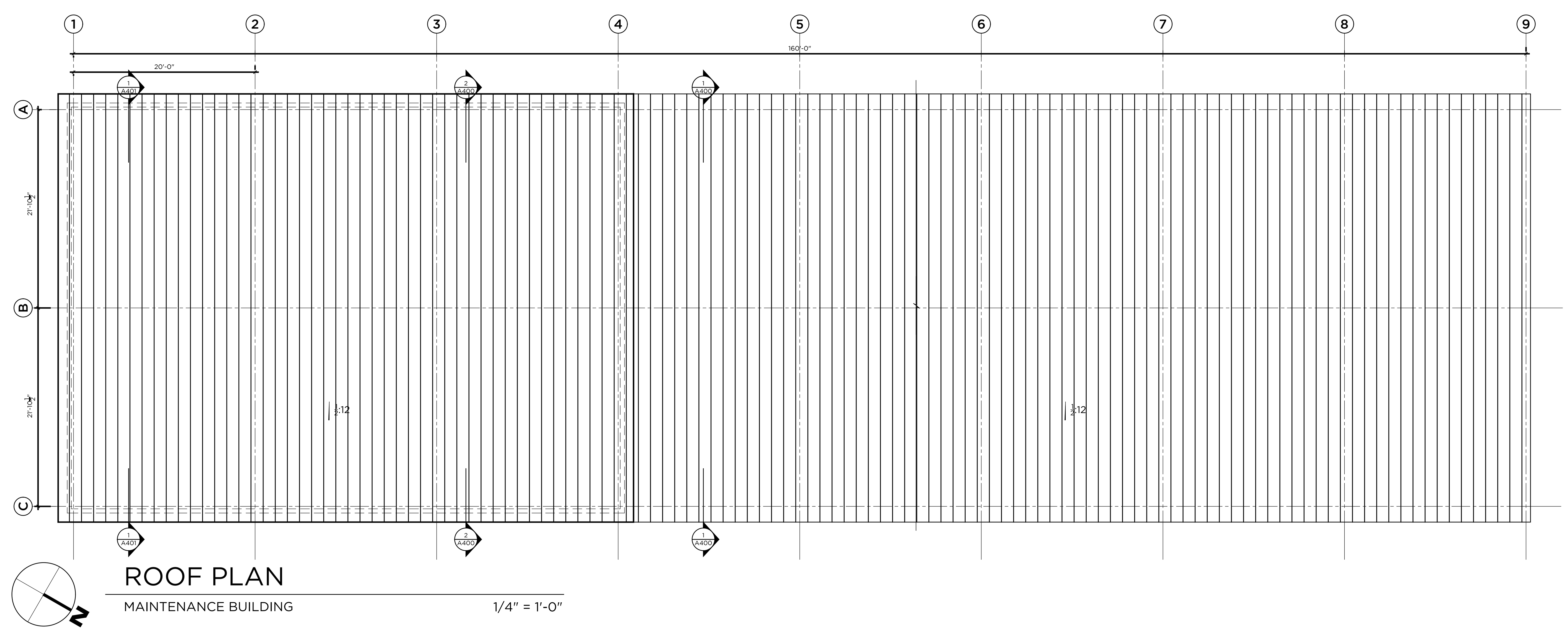
DATE: 02/22/2024 SCALE: AS NOTED

DRAWING TITLE

FLOOR PLANS - LOWER AND UPPER LEVELS

DRAWING NO.

A100



ROOF PLAN

MAINTENANCE BUILDING 1/4" = 1'-0"

GRANOFF ARCHITECTS

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203.625.9460

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CONSULTANTS

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3	01/11/2023	TOWN BOARD SUBMISSION	KA
4	03/06/2024	ARB REVISION	KA

PHASE

--

PROJECT NAME

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ARMONK, NY

JOB NO.: ----

DRAWN BY: JT PROJ. MANAGER: KA

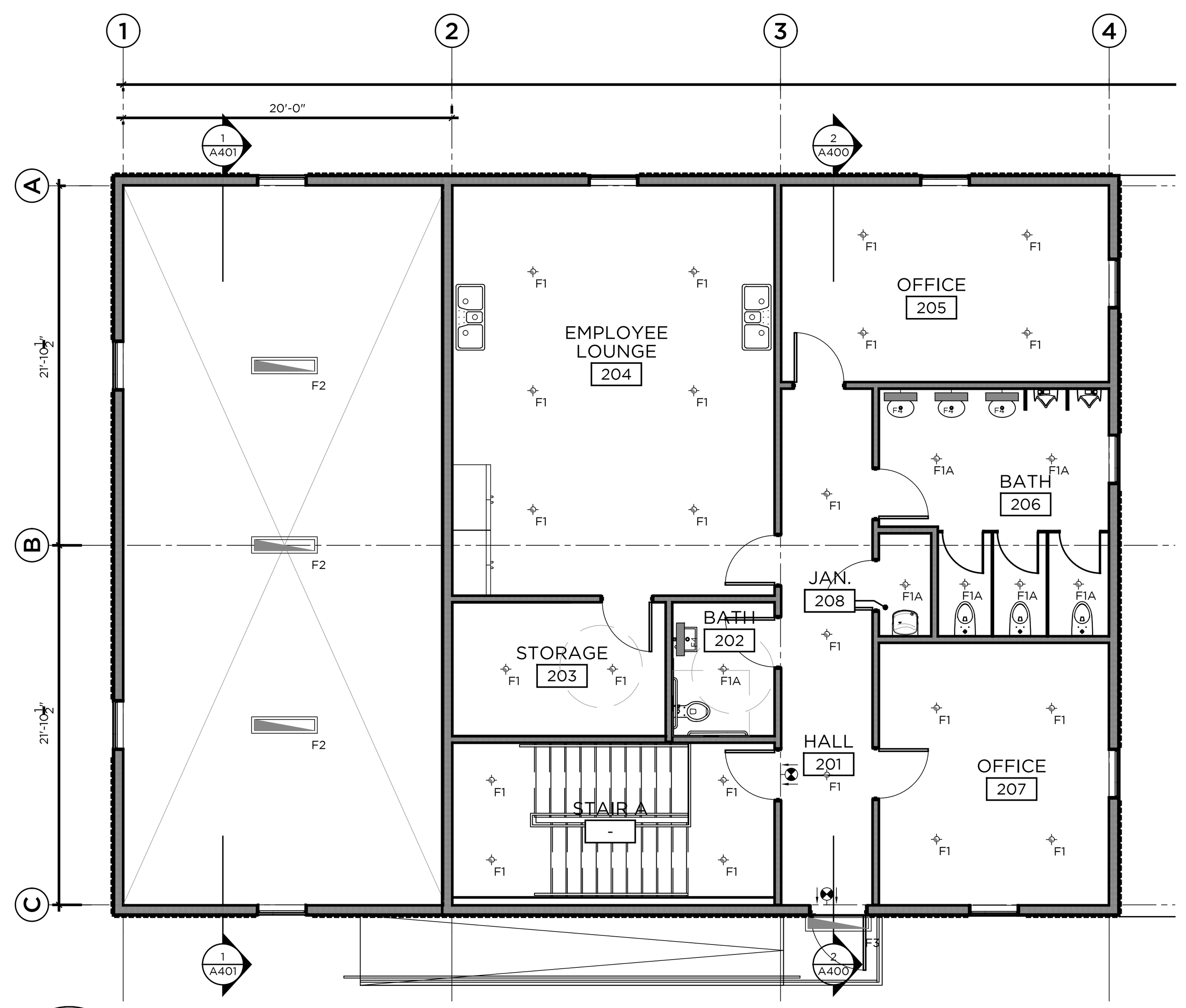
DATE: 02/22/2024 SCALE: AS NOTED

DRAWING TITLE

ROOF PLAN

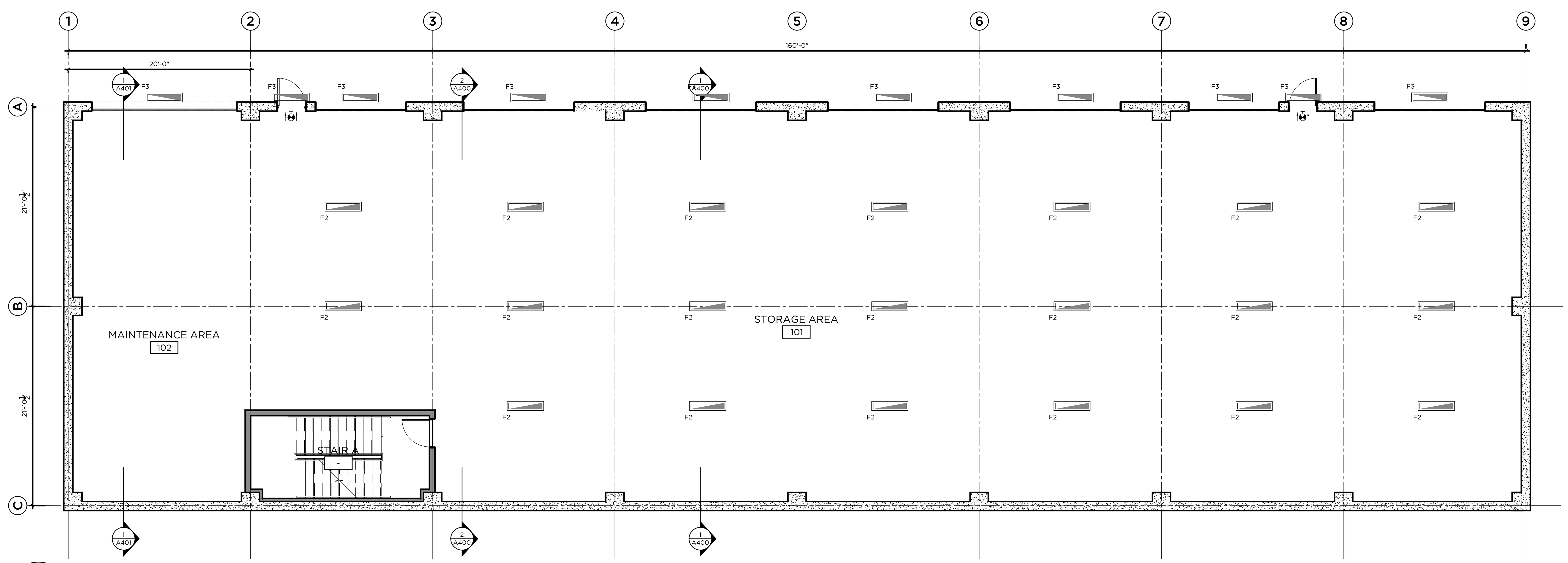
DRAWING NO.

A101



UPPER FLOOR RCP

MAINTENANCE BUILDING 1/4" = 1'-0"



LOWER FLOOR RCP

MAINTENANCE BUILDING 1/8" = 1'-0"

GRANOFF ARCHITECTS

330 RAILROAD AVENUE
GREENWICH, CT 06830

203.625.9460

WWW.GRANOFFARCHITECTS.COM

CONSULTANTS

Civil:
JMC PLANNING ENGINEERING LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC
120 Bedford Road
Armonk, NY 10504

Structural:
MICHAEL HORTON ASSOCIATES, INC.
151 Meadow Street
Branford, CT 04405

REVISIONS

#	DATE	REVISION DESCRIPTION	BY:
1	10/24/2022	PLANNING BOARD SUBMISSION	KA
2	11/02/2022	ARB SUBMISSION	KA
3	01/11/2023	TOWN BOARD SUBMISSION	KA
4	03/06/2024	ARB REVISION	KA

PHASE

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PROJECT NAME

SUMMIT CLUB PARTNERS LLC - MAINTENANCE BLDG.

ARMONK, NY

JOB NO.: ----

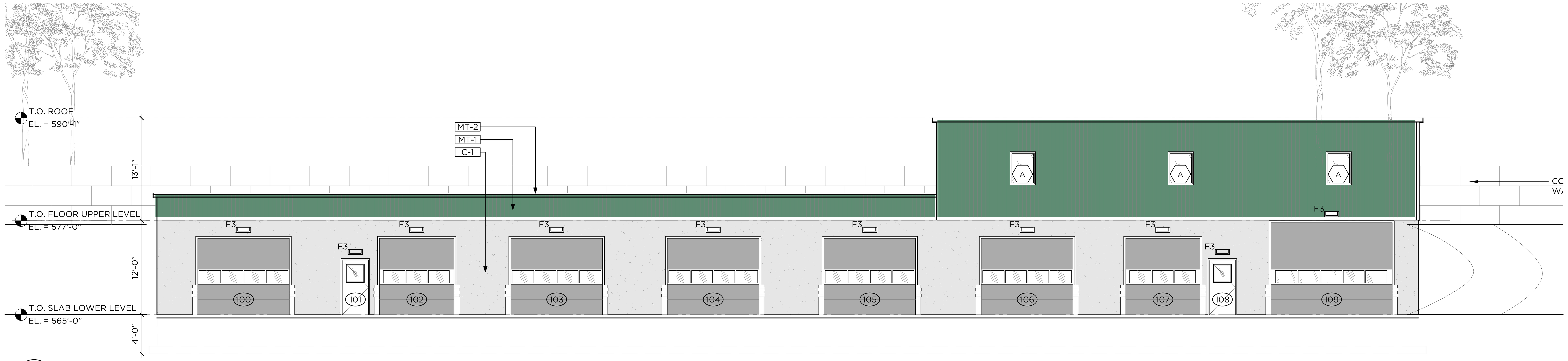
DRAWN BY: JT PROJ. MANAGER: KA

DATE: 02/22/2024 SCALE: AS NOTED

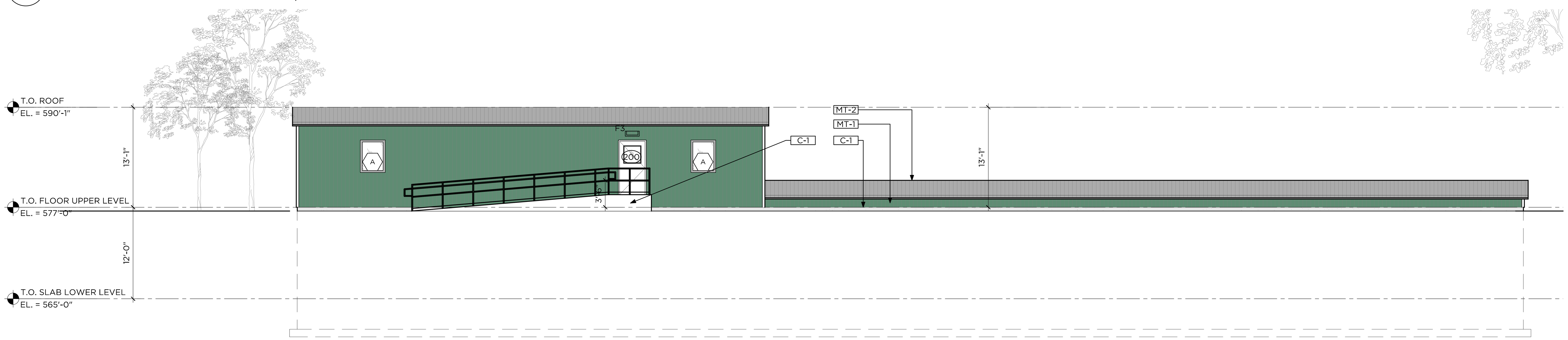
DRAWING TITLE

RCP - LOWER LEVEL

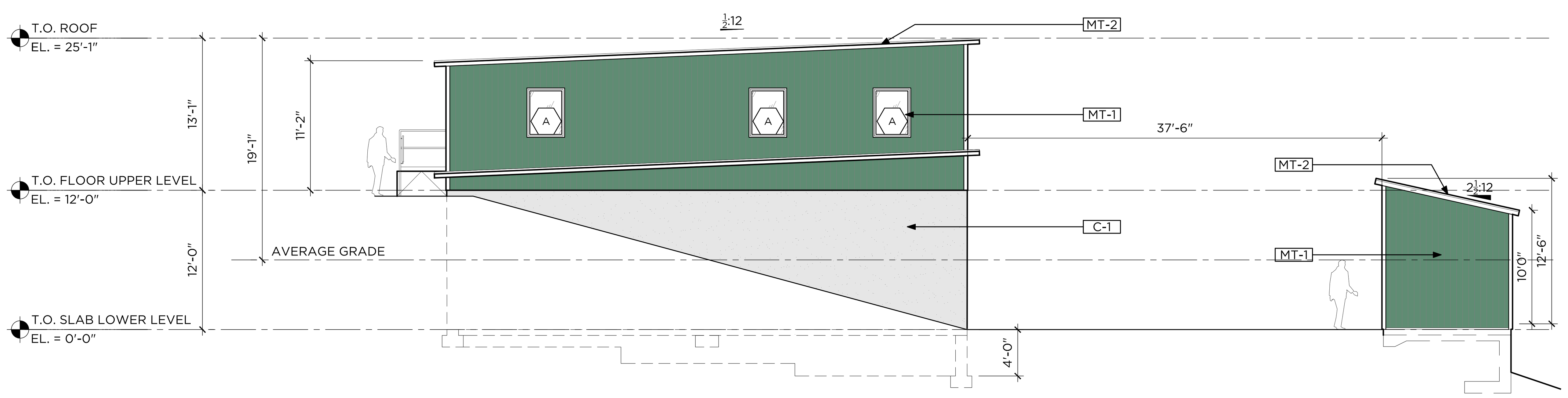
DRAWING NO.



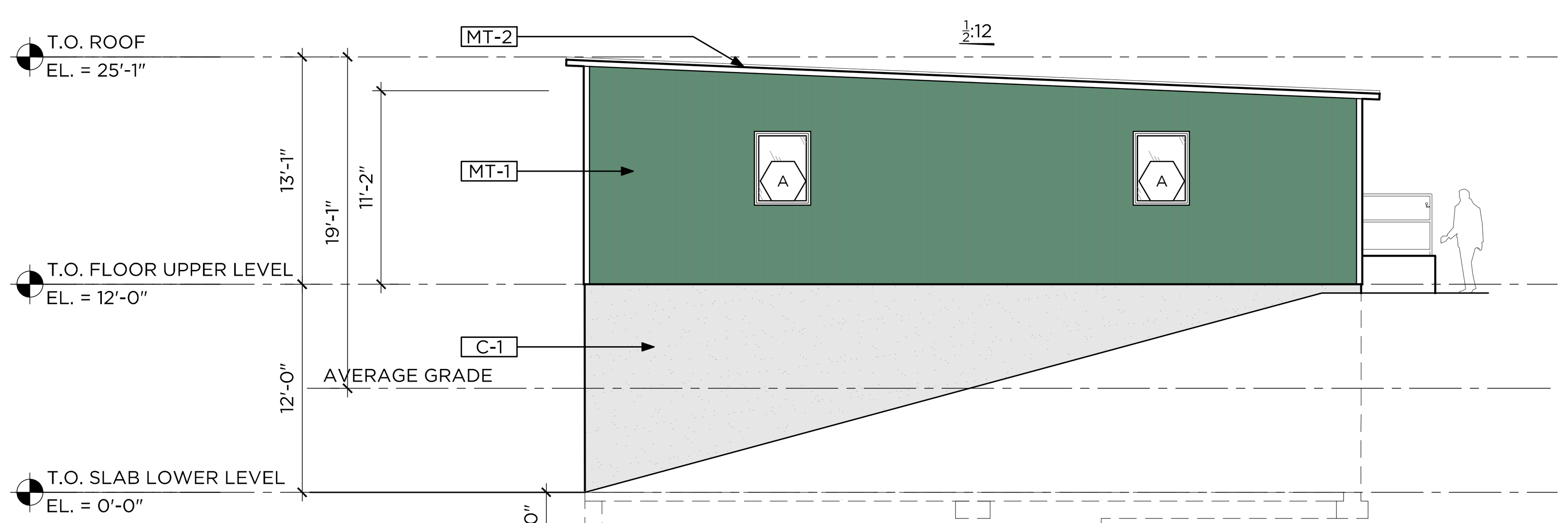
1 WEST ELEVATION
1/8"=1'-0"



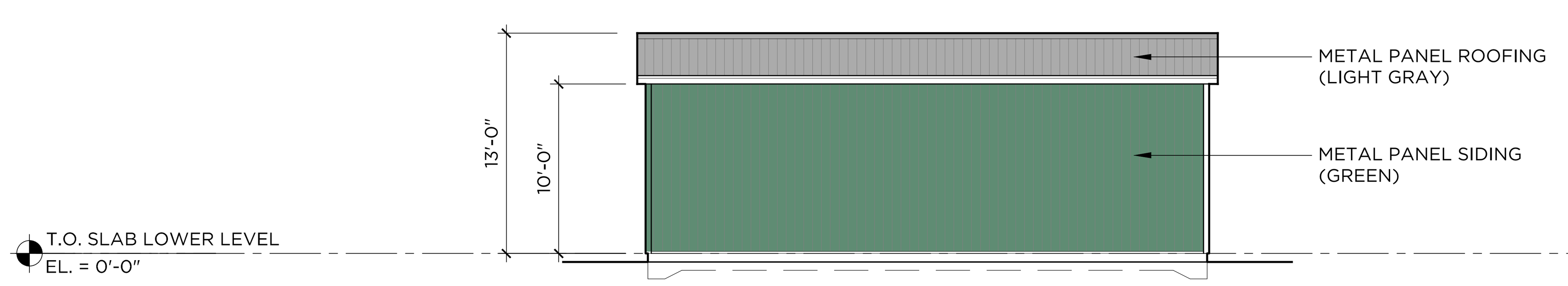
2 EAST ELEVATION
1/8"=1'-0"



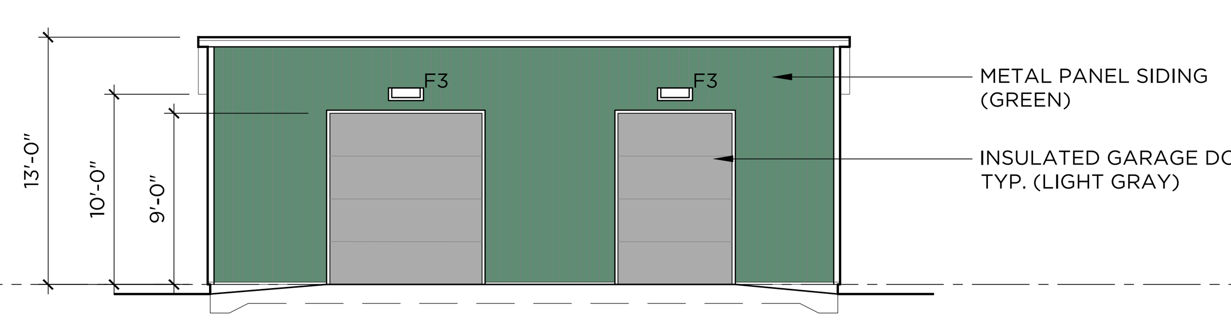
3 NORTH ELEVATION
1/8"=1'-0"



4 SOUTH ELEVATION
1/8"=1'-0"



5 WEST ELEVATION - CHEM. STOR.
1/8"=1'-0"



6 WEST ELEVATION - CHEM. STOR.
1/8"=1'-0"

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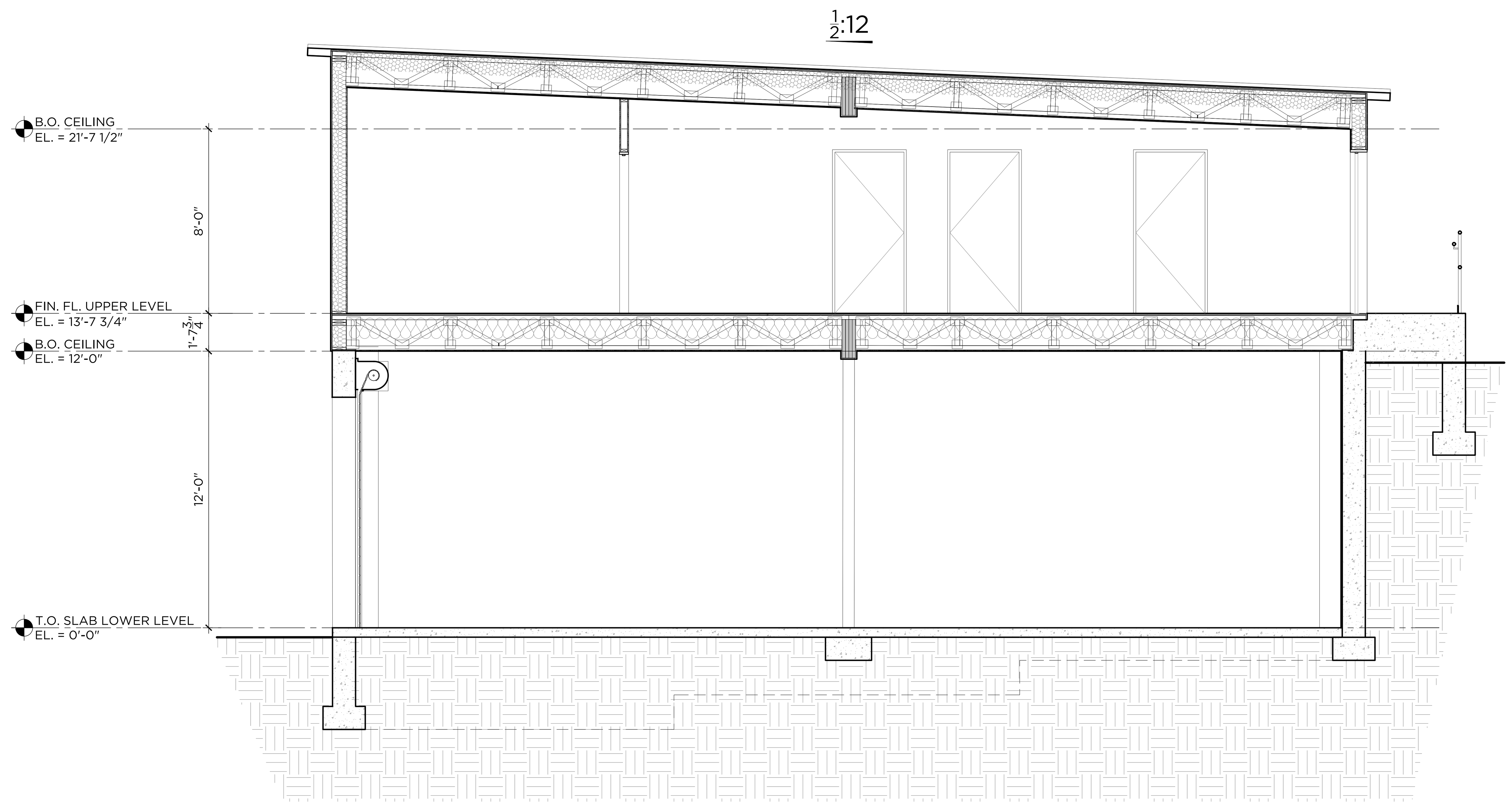
PROJECT NAME
SUMMIT CLUB PARTNERS LLC - MAINTENANCE BLDG.
ARMONK, NY

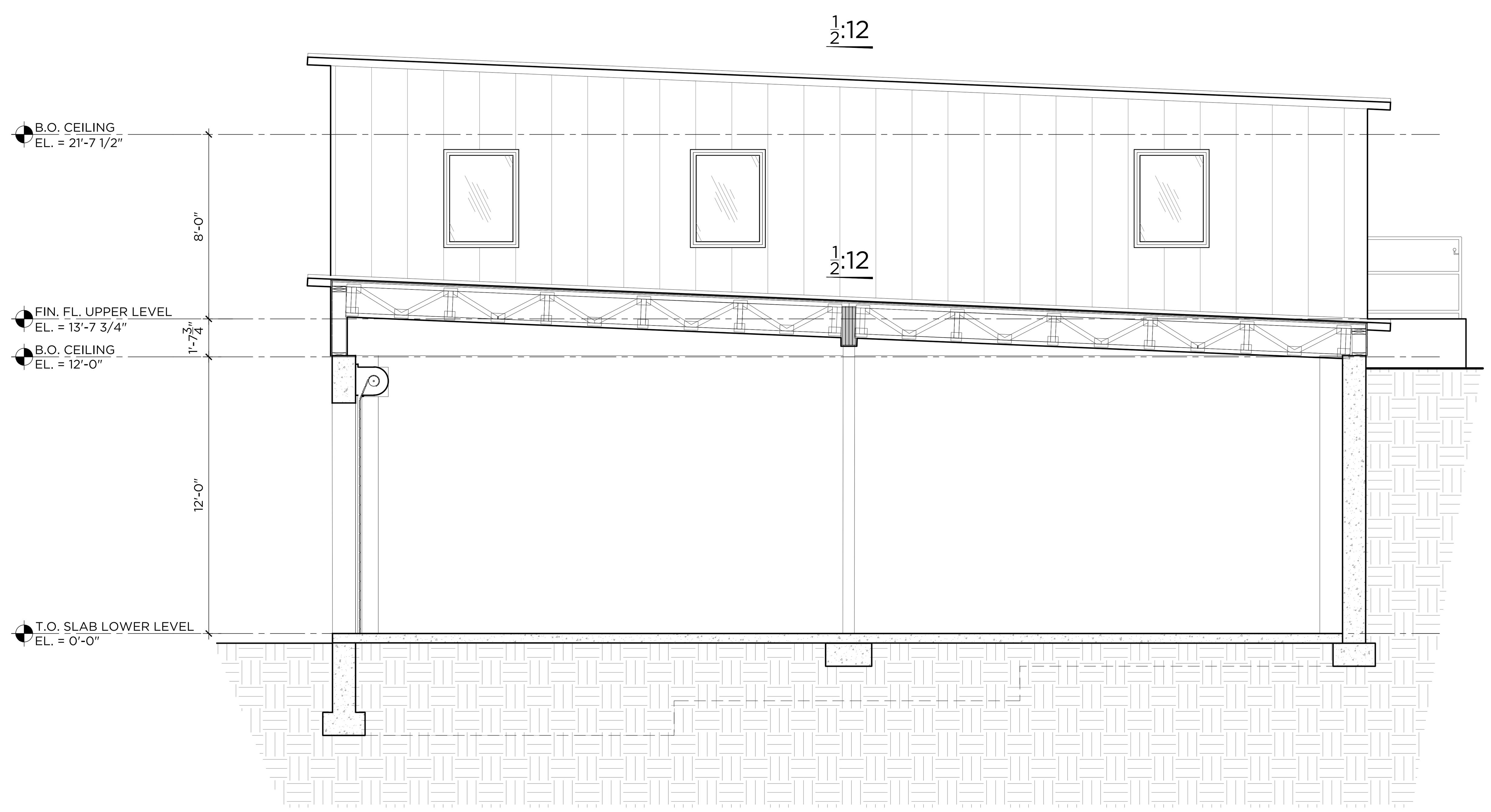
JOB NO.: ----
DRAWN BY: JT PROJ. MANAGER: KA
DATE: 02/26/24 SCALE: AS NOTED

DRAWING TITLE
BUILDING ELEVATIONS

DRAWING NO.
A300



1 BUILDING SECTION
LOFT 1/4"=1'-0"



2 BUILDING SECTION
GARAGE 1/4"=1'-0"

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PHASE
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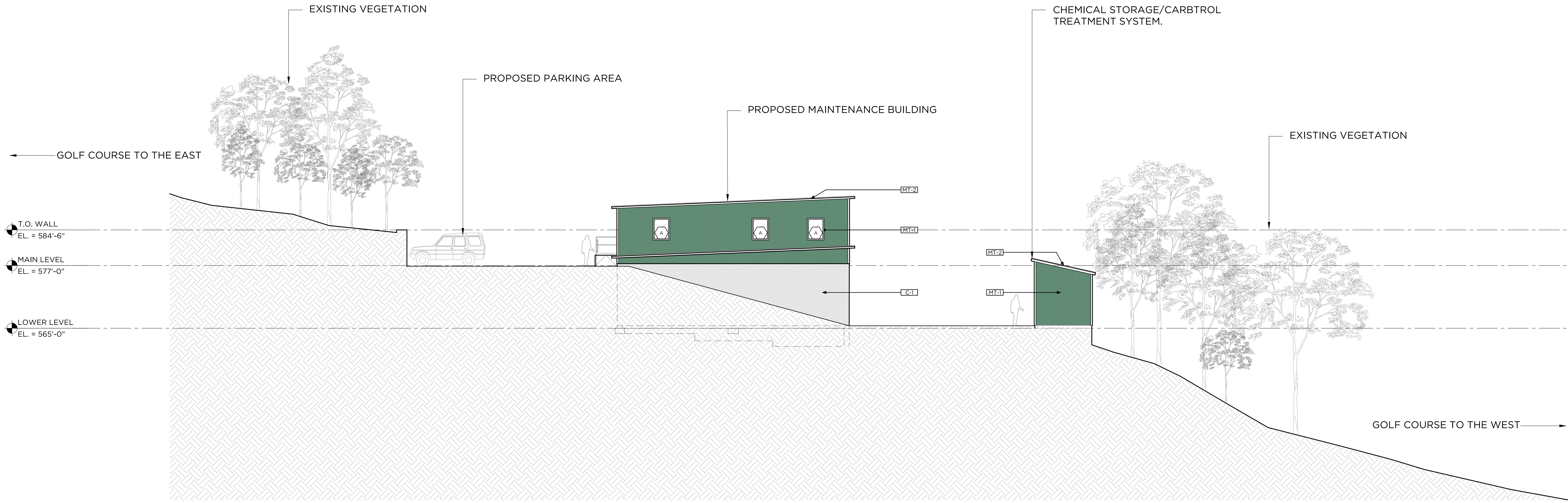
PROJECT NAME
SUMMIT CLUB PARTNERS LLC - MAINTENANCE BLDG.
ARMONK, NY

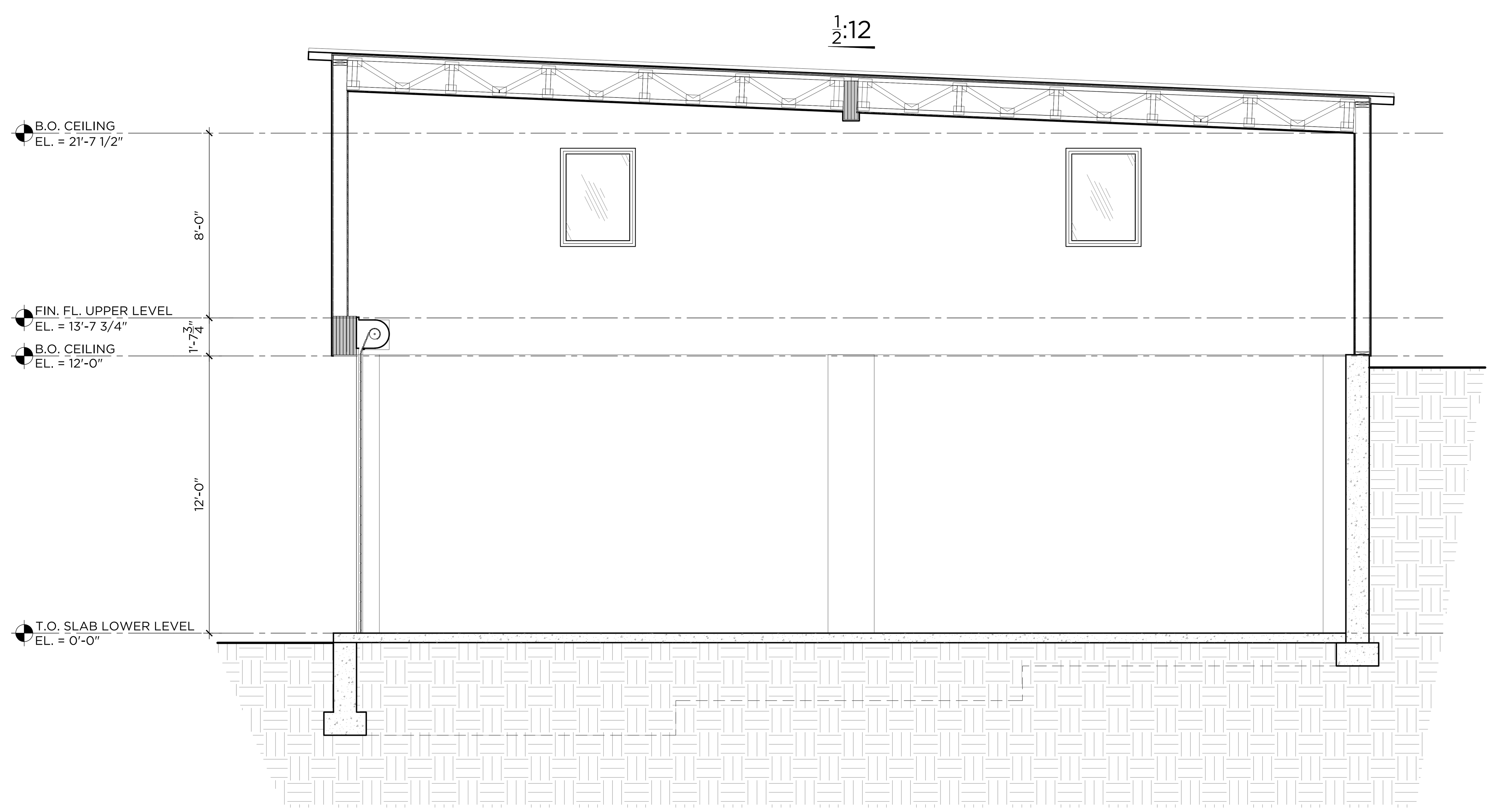
JOB NO.: ----
DRAWN BY: JT PROJ. MANAGER: KA
DATE: 02/26/24 SCALE: AS NOTED

DRAWING TITLE
BUILDING SECTIONS

DRAWING NO.
A400



2 SITE SECTION 3/32"=1'-0"



1 BUILDING SECTION
MAINTENANCE AREA 1/4"=1'-0"

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PROJECT NAME
SUMMIT CLUB PARTNERS LLC - MAINTENANCE BLDG.
ARMONK, NY

JOB NO.: ----
DRAWN BY: JT PROJ. MANAGER: KA
DATE: 02/26/24 SCALE: AS NOTED

DRAWING TITLE
BUILDING SECTIONS

DRAWING NO.
A401

ROOM FINISH SCHEDULE

LEVEL	ROOM NO.	ROOM NAME	FLOOR MATL.	FLOOR TYPE	BASE MATL.	BASE TYPE	NORTH WALL MATL.	NORTH WALL FINISH	EAST WALL MATL.	EAST WALL FINISH	SOUTH WALL MATL.	SOUTH WALL FINISH	WEST WALL MATL.	WEST WALL FINISH	CEILING MATL.	CEILING FINISH	CEILING HEIGHT	REMARKS
BASEMENT	101	STORAGE AREA	CONC.	1	-	-	CONC.	1	CONC.	1	CONC.	1	CONC.	1	GWB	PAINTED	12'-0"	
	102	MAINTENANCE AREA	CONC.	1	-	-	CONC.	1	CONC.	1	CONC.	1	CONC.	1	GWB	PAINTED	21'-7 1/2"	
	-	STAIR A	CONC.	2	VINYL	1	GWB	PTD	GWB	PTD	GWB	PTD	GWB	PTD	GWB	PTD	21'-7 1/2"	
	201	HALL	VINYL	2	VINYL	1	GWB	PTD	GWB	PTD	GWB	PTD	GWB	PTD	GWB	PTD	8'-0"	
	202	BATH	VINYL	2	VINYL	1	TILE	1	TILE	1	GWB	PTD	GWB	PTD	GWB	PTD	8'-0"	
	203	STORAGE	VINYL	2	VINYL	1	GWB	PTD	GWB	PTD	GWB	PTD	GWB	PTD	GWB	PTD	8'-0"	
	204	EMPLOYEE LOUNGE	VINYL	2	VINYL	1	GWB	PTD	GWB	PTD	GWB	PTD	GWB	PTD	GWB	PTD	8'-0"	
	205	OFFICE	VINYL	2	VINYL	1	GWB	PTD	GWB	PTD	GWB	PTD	GWB	PTD	GWB	PTD	8'-0"	
	206	BATH	VINYL	2	VINYL	1	TILE	1	GWB	PTD	GWB	PTD	TILE	1	GWB	PTD	8'-0"	
	207	OFFICE	VINYL	2	VINYL	1	GWB	PTD	GWB	PTD	GWB	PTD	GWB	PTD	GWB	PTD	8'-0"	
	208	JANITOR	VINYL	2	VINYL	1	VINYL	3	VINYL	3	VINYL	3	VINYL	3	GWB	PTD	8'-0"	

DOOR AND HARDWARE SCHEDULE

LOCATION	DOOR #	DOOR SIZE	DOOR DESCRIPTION	DOOR THK.	DOOR TYPE	DOOR MAT'L.	DOOR FINISH	FRAME MAT'L.	FRAME FIN.	HARDWARE FINISH	HARDWARE LOCK TYPE	REMARKS
	100	12'-0"x10'-0"	ROLLING GARAGE DOOR	1/2"	1	STL.	PWD.	STL.	PWD.	NA	NA	B.O.D. OVERHEAD DOOR
	101	3'-0"x7'-0"	H.M. DOOR	1 3/4"	2	STL.	PWD.	STL.	PWD.	BHMA 630	EGRESS	-
	102	9'-6"x10'-0"	ROLLING GARAGE DOOR	1/2"	1	STL.	PWD.	STL.	PWD.	NA	NA	B.O.D. OVERHEAD DOOR
	103	12'-0"x10'-0"	ROLLING GARAGE DOOR	1/2"	1	STL.	PWD.	STL.	PWD.	NA	NA	B.O.D. OVERHEAD DOOR
	104	12'-0"x10'-0"	ROLLING GARAGE DOOR	1/2"	1	STL.	PWD.	STL.	PWD.	NA	NA	B.O.D. OVERHEAD DOOR
	105	12'-0"x10'-0"	ROLLING GARAGE DOOR	1/2"	1	STL.	PWD.	STL.	PWD.	NA	NA	B.O.D. OVERHEAD DOOR
	106	12'-0"x10'-0"	ROLLING GARAGE DOOR	1/2"	1	STL.	PWD.	STL.	PWD.	NA	NA	B.O.D. OVERHEAD DOOR
	107	9'-6"x10'-0"	ROLLING GARAGE DOOR	1/2"	1	STL.	PWD.	STL.	PWD.	NA	NA	B.O.D. OVERHEAD DOOR
	108	3'-0"x7'-0"	H.M. DOOR	1 3/4"	2	STL.	PWD.	STL.	PWD.	BHMA 630	EGRESS	-
	109	15'-6"x11'-9"	ROLLING GARAGE DOOR	1/2"	1	STL.	PWD.	STL.	PWD.	NA	NA	B.O.D. OVERHEAD DOOR
	110	3'-0"x7'-0"	H.M. DOOR	1 3/4"	3	STL.	PWD.	STL.	PWD.	BHMA 630	EGRESS	-
	200	3'-4"x7'-0"	H.M. DOOR	1 3/4"	3	STL.	PWD.	STL.	PWD.	BHMA 630	EGRESS	-
	201	3'-0"x7'-0"	WD. DOOR	1 3/4"	3	WD.	PTD.	WD.	PTD.	BHMA 630	PASSAGE	-
	202	3'-0"x7'-0"	WD. DOOR	1 3/4"	3	WD.	PTD.	WD.	PTD.	BHMA 630	PASSAGE	-
	203	3'-0"x7'-0"	WD. DOOR	1 3/4"	3	WD.	PTD.	WD.	PTD.	BHMA 630	PASSAGE	-
	204	3'-0"x7'-0"	WD. DOOR	1 3/4"	3	WD.	PTD.	WD.	PTD.	BHMA 630	PASSAGE	-
	205	3'-0"x7'-0"	WD. DOOR	1 3/4"	3	WD.	PTD.	WD.	PTD.	BHMA 630	PASSAGE	-
	206	3'-0"x7'-0"	WD. DOOR	1 3/4"	3	WD.	PTD.	WD.	PTD.	BHMA 630	PASSAGE	-
	207	3'-0"x7'-0"	WD. DOOR	1 3/4"	3	WD.	PTD.	WD.	PTD.	BHMA 630	PASSAGE	-
	208	3'-0"x7'-0"	WD. DOOR	1 3/4"	3	WD.	PTD.	WD.	PTD.	BHMA 630	PASSAGE	-

WINDOW SCHEDULE

SYMBOL	OPERATION	LITE CUT	R.O. W.	R.O. H.	MANU.	CATALOG #	REMARKS
A	FIXED UNIT	1	3'-0"	4'-0"	MFG.	UNIT #	-

GENERAL NOTES:
- ALL WINDOWS TO BE WOOD (SPECIES) AS MANUFACTURED BY:

    WINDOW MANUFACTURER
    ADDRESS
    CITY, ST 01234
    (123) 456-7890

- ALL WINDOWS SHALL COMPLY TO ALL APPLICABLE WIND-LOAD AND IMPACT-RESISTANCE REQUIREMENTS AS NOTED IN THE CURRENT EDITION OF THE STATE OF NEW YORK RESIDENTIAL CODES.
- PROVIDE TEMPERED GLAZING AT ALL WINDOW UNITS WHERE THE DISTANCE FROM HORIZONTAL SURFACE (FLOORS, SEATING, ETC.) TO BOTTOM OF GLASS IS 18" OR LESS.
- PROVIDE SCREEN AT ALL OPERABLE CASEMENT WINDOWS TYP.
- PROVIDE SCREEN AT ALL OPERABLE AWNING WINDOWS TYP.
- PROVIDE ALTERNATE PRICING FOR SCREEN DOOR AT ALL FRENCH DOORS
- CONTRACTOR TO COORD. EXTERIOR WOOD (MAHOGANY) TRIM TO BE PROVIDED VIA EUROPEAN FENESTRATION, L.L.C. OR APPROVED EQUAL W/ EXTERIOR WOOD (MAHOGANY) TRIM PROVIDED BY G.C. / TRIM SUB
- WINDOW SUPPLIER TO ASSUME $\frac{5}{4}$ X 6 TRIM AT ALL STUD POCKETS
- TYP. FINISH FOR HARDWARE SHALL BE OIL-RUBBED BRONZE, UNLESS OTHERWISE NOTED

LIGHTING SCHEDULE

TAG	TYPE	MANUF.	MODEL	LOCATION	REMARKS
F1	LED RECESSED DOWNLIGHT	TBD	TBD	UPPER LEVEL THROUGHOUT	-
F1A	LED RECESSED DOWNLIGHT	TBD	TBD	UPPER LEVEL WET ROOMS	WET RATED
F2	LED LINEAR LIGHT	TBD	TBD	LOWER LEVEL THROUGHOUT	-
F3	LED WALL MOUNTED	PHILLIPS OR EQ.	STONCO OR EQ.	EXTERIOR OVER DOORS, TYP.	-
F4	LED MIRROR LIGHT	TBD	TBD	UPPER LEVEL WET ROOMS	WET RATED

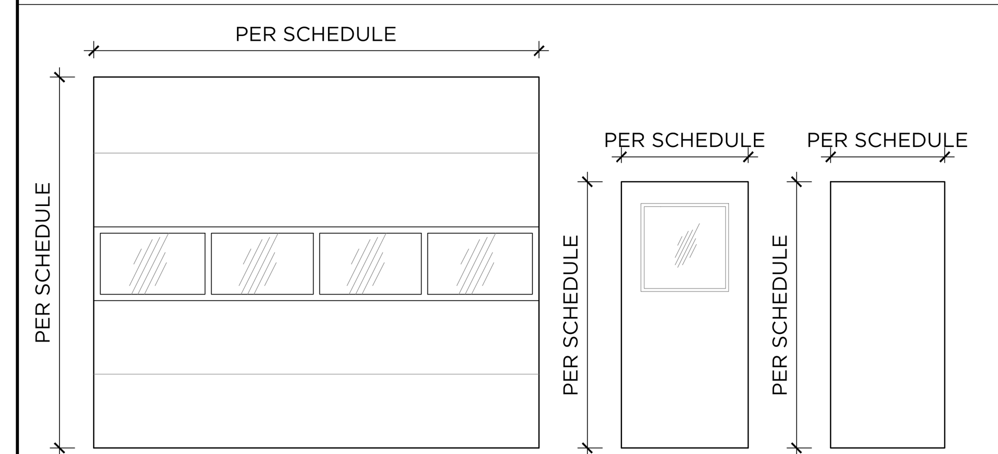
MATERIAL LEGEND

KEY	PALETTE 1 TYPE	MANUFACTURER	MODEL	COLOR	FINISH	REMARKS
CONC-1	EXPOSED CONCRETE	-	-	SEALED	MATTE	-
GWB-1	FIRE RATED GWB	-	-	PTD, COLOR TBD	TBD	-
TILE-1	PORCELAIN TILE	TBD	TBD	TBD	TBD	TBD
VINYL-1	VINYL BASE	TBD	TBD	TBD	TBD	TBD
VINYL-2	VINYL FLOOR	TBD	TBD	TBD	TBD	TBD
VINYL-3	VINYL WALL PROTECTION	TBD	TBD	TBD	TBD	TBD

EXTERIOR MATERIALS LEGEND

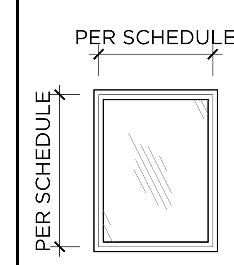
ITEM #	COMPONENT	MATERIAL AND FINISH	NOTES
MT-1	EXTERIOR METAL SIDING	CORRUGATED METAL SIDING, PTD.	COLOR TBD.
MT-2	EXTERIOR METAL ROOF	STANDING SEAM METAL ROOFING, PTD.	COLOR TBD.
C-1	EXPOSED CONCRETE	EXPOSED CONCRETE FOUNDATION WALLS	SEALED AND EXPOSED

DOOR TYPES



TYPE '1' TYPE '2' TYPE '3'

WINDOW TYPES



TYPE 'A'

PLUMBING FIXTURE SCHEDULE

MARK	DESCRIPTION	MFG.	MODEL	
1	WALL MOUNT LAVATORY	KOHLER	K-2084-N-0	ADA COMPLIANT LAVATORY, COORDINATE W/ FAUCET BATHROOM SINK W/OVERFLOW & P-TRAP
2	LIGHTED VANITY MIRROR	MIRRORS AND MARBLE	MAM102436	WALL SWITCHED - 40 LEDS/FT (CRI), 92 ETL CERT. UL STD. 962. AED60-24VLS-ETL, 120-240V (3) STEP 3000K/4000K/6000K (HORIZ)
3	FLOOR MOUNTED TOILET	DURAVIT	NO. 1 218801.88	COLOR: 00 WHITE. TANK #094150- SLOW CLOSE SEAT #0025290- WATERSENSE 1.28 GPF., V.I.F. LEFT/RIGHT HAND FLUSH
4	PLUMBING TRAP	PROVIDED BY KOHLER	XXX	PROVIDE PER SINK REQUIREMENTS. BURN PROTECTION FOR ADA COMPLIANCE.
5	LAVATORY FAUCET	KOHLER	K-73167-4	CP FINISH
6	EMPLOYEE LOUNGE SINK	PROVIDED BY KOHLER	XXX	PROVIDE PER SINK REQUIREMENTS. BURN PROTECTION FOR ADA COMPLIANCE.
7	EMPLOYEE LOUNGE FAUCET	KOHLER	XXX	CP FINISH

TOILET ACCESSORY SCHEDULE

A	TP DISPENSER	XXX	XXX	SURFACE MOUNTED DBL. ROLL TOILET PAPER DISPENSER
B	SANITARY NAPKIN DISPOSAL	XXX	XXX	SURFACE-MOUNTED SANITARY NAPKIN DISPOSAL
C	GRAB BARS [VARIES]	BOBRICK	B-5806	B-5806 (SATIN) 1 1/4" DIAMETER BOBRICK STAINLESS STEEL GRAB BARS - SIZE VARIES -SEE NOTE NO. 32
D	TOILET PARTITIONS [VARIES]	BOBRICK	XXX	SPEC TBD

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PHASE
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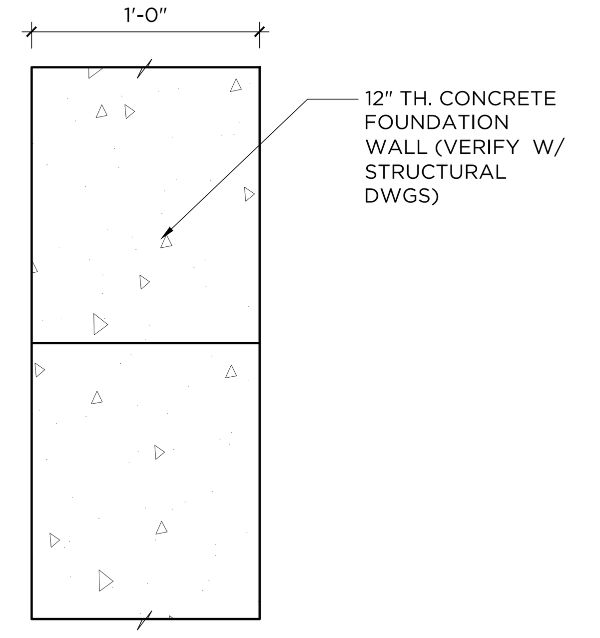
PROJECT NAME
SUMMIT CLUB PARTNERS LLC - MAINTENANCE BLDG.
ARMONK, NY

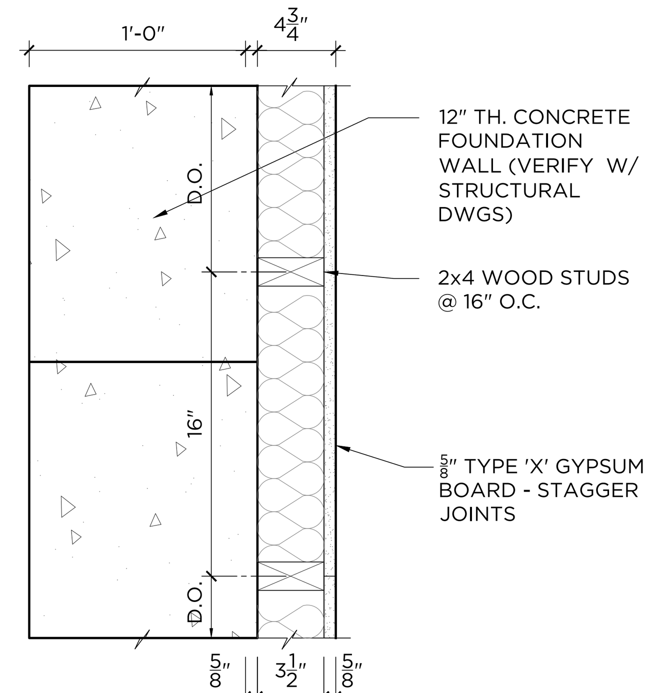
JOB NO.: ----
DRAWN BY: JT   PROJ. MANAGER: KA
DATE: 02/26/24   SCALE: AS NOTED

DRAWING TITLE
SCHEDULES

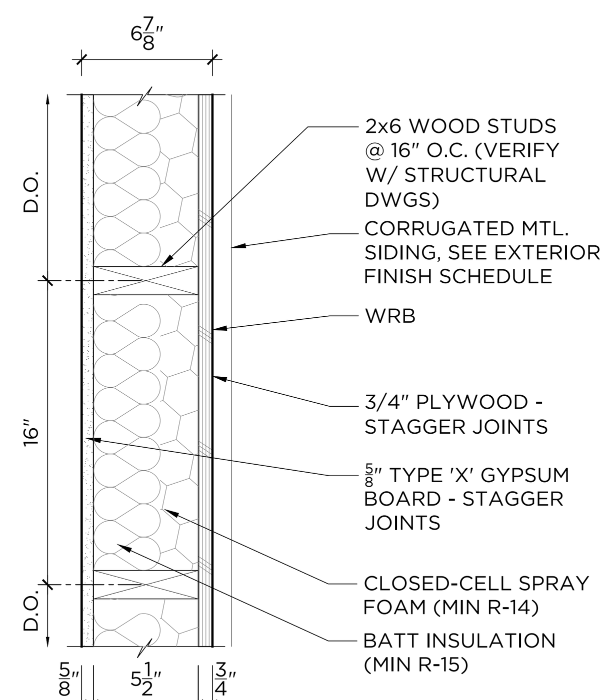
DRAWING NO.
A600



1 WALL TYPE - 1 (12" NOM.)
1 1/2" = 1'-0"

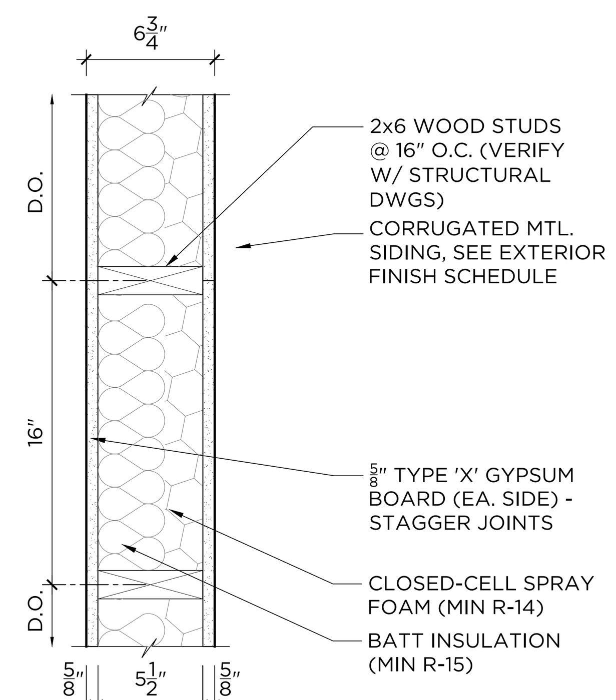


1A WALL TYPE - 1A (12" NOM.)
1 1/2" = 1'-0"



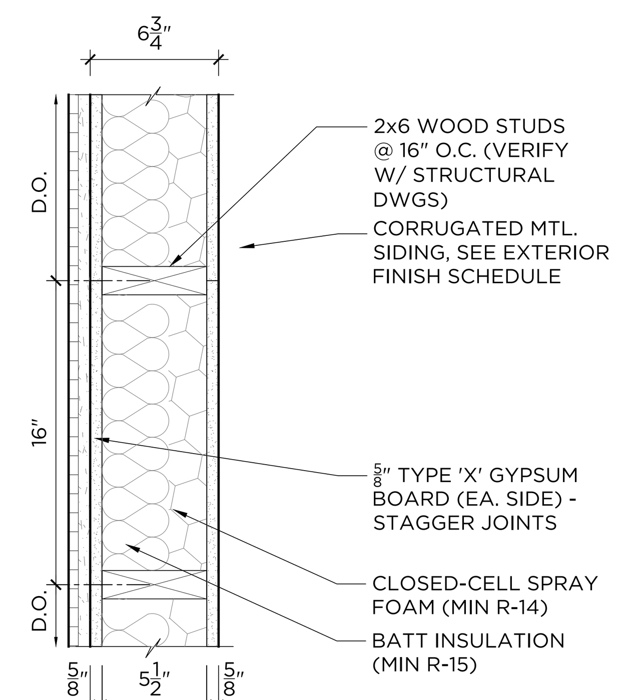
2 WALL TYPE - 2 (7" NOM.)
1 1/2" = 1'-0"

1 HOUR WALL
U.L. DESIGN NO. U305

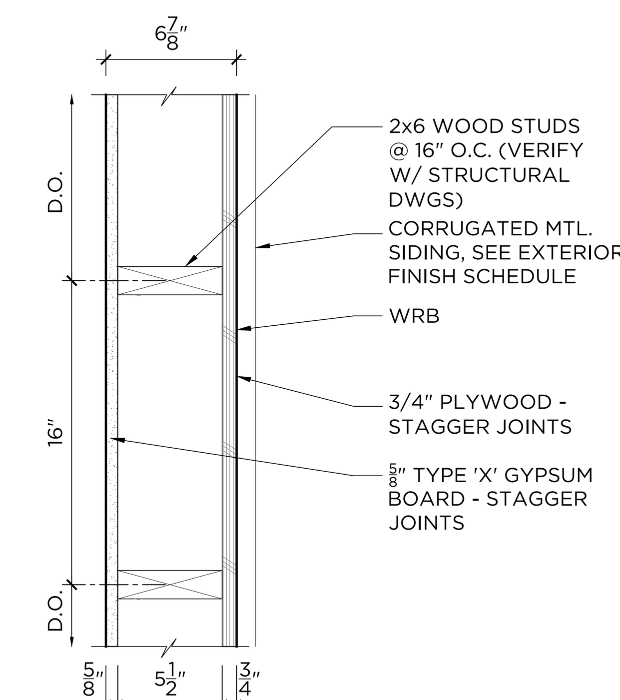


2A WALL TYPE - 2A (7" NOM.)
1 HR. FIRE RATING: U.L. DES. NO. #U305 1 1/2" = 1'-0"

1 HOUR WALL
U.L. DESIGN NO. U305

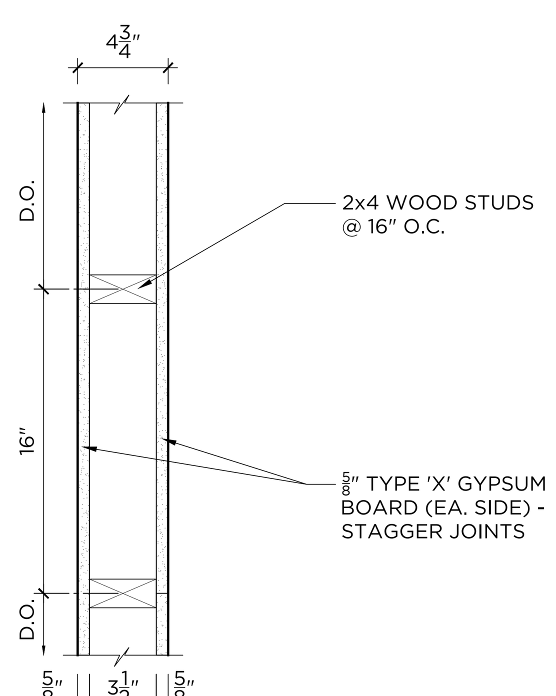


2B WALL TYPE - 2B (7" NOM.)
1 HR. FIRE RATING: U.L. DES. NO. #U305 1 1/2" = 1'-0"



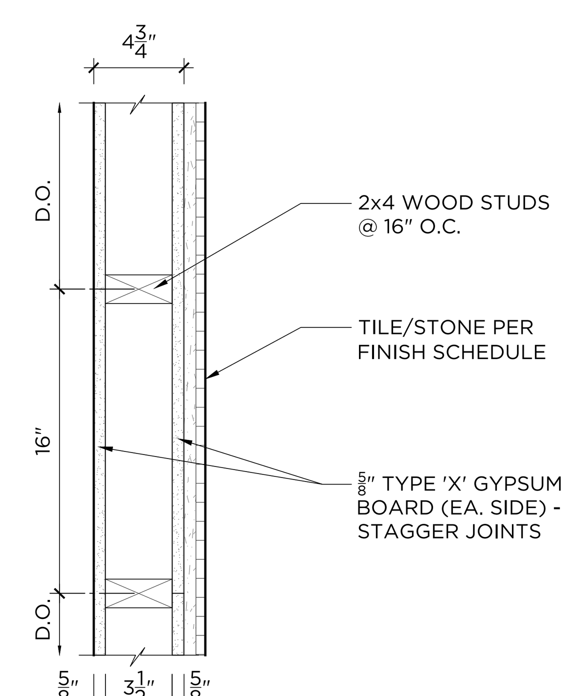
2C WALL TYPE - 2C (7" NOM.)
1 1/2" = 1'-0"

1 HOUR WALL
U.L. DESIGN NO. U305
NOTE: THIS ASSEMBLY HAS AN ESTIMATED STC-35 RATING



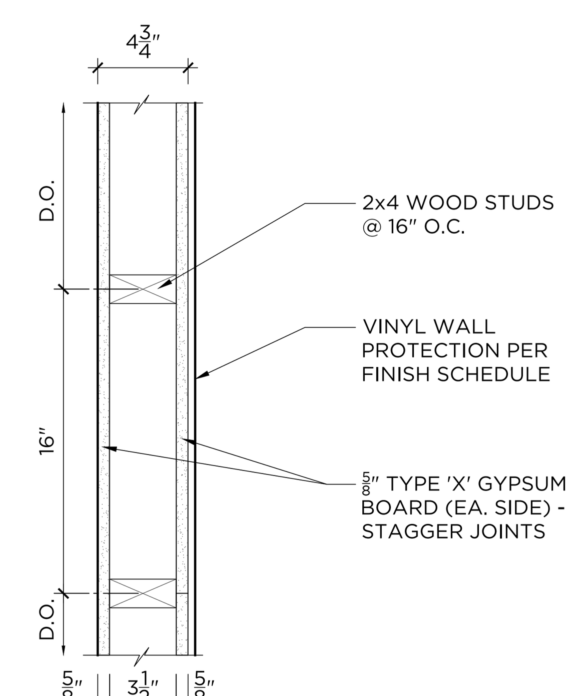
3 WALL TYPE - 3 (5" NOM.)
1 HR. FIRE RATING: U.L. DES. NO. #U305 1 1/2" = 1'-0"

1 HOUR WALL
U.L. DESIGN NO. U305
NOTE: THIS ASSEMBLY HAS AN ESTIMATED STC-35 RATING



3A WALL TYPE - 3A (5" NOM.)
1 HR. FIRE RATING: U.L. DES. NO. #U305 1 1/2" = 1'-0"

1 HOUR WALL
U.L. DESIGN NO. U305
NOTE: THIS ASSEMBLY HAS AN ESTIMATED STC-35 RATING



3B WALL TYPE - 3B (5" NOM.)
1 HR. FIRE RATING: U.L. DES. NO. #U305 1 1/2" = 1'-0"

GRANOFF ARCHITECTS
330 RAILROAD AVENUE
GREENWICH, CT 06830
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CONSULTANTS

Civil:
JMC PLANNING ENGINEERING LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC
120 Bedford Road
Armonk, NY 10504

Structural:
MICHAEL HORTON ASSOCIATES, INC.
151 Meadow Street
Branford, CT 04405

REVISIONS

#	DATE	REVISION DESCRIPTION	BY:
1	10/24/2022	PLANNING BOARD SUBMISSION	KA
2	11/02/2022	ARB SUBMISSION	KA
3	01/11/2023	TOWN BOARD SUBMISSION	KA
4	03/06/2024	ARB REVISION	KA

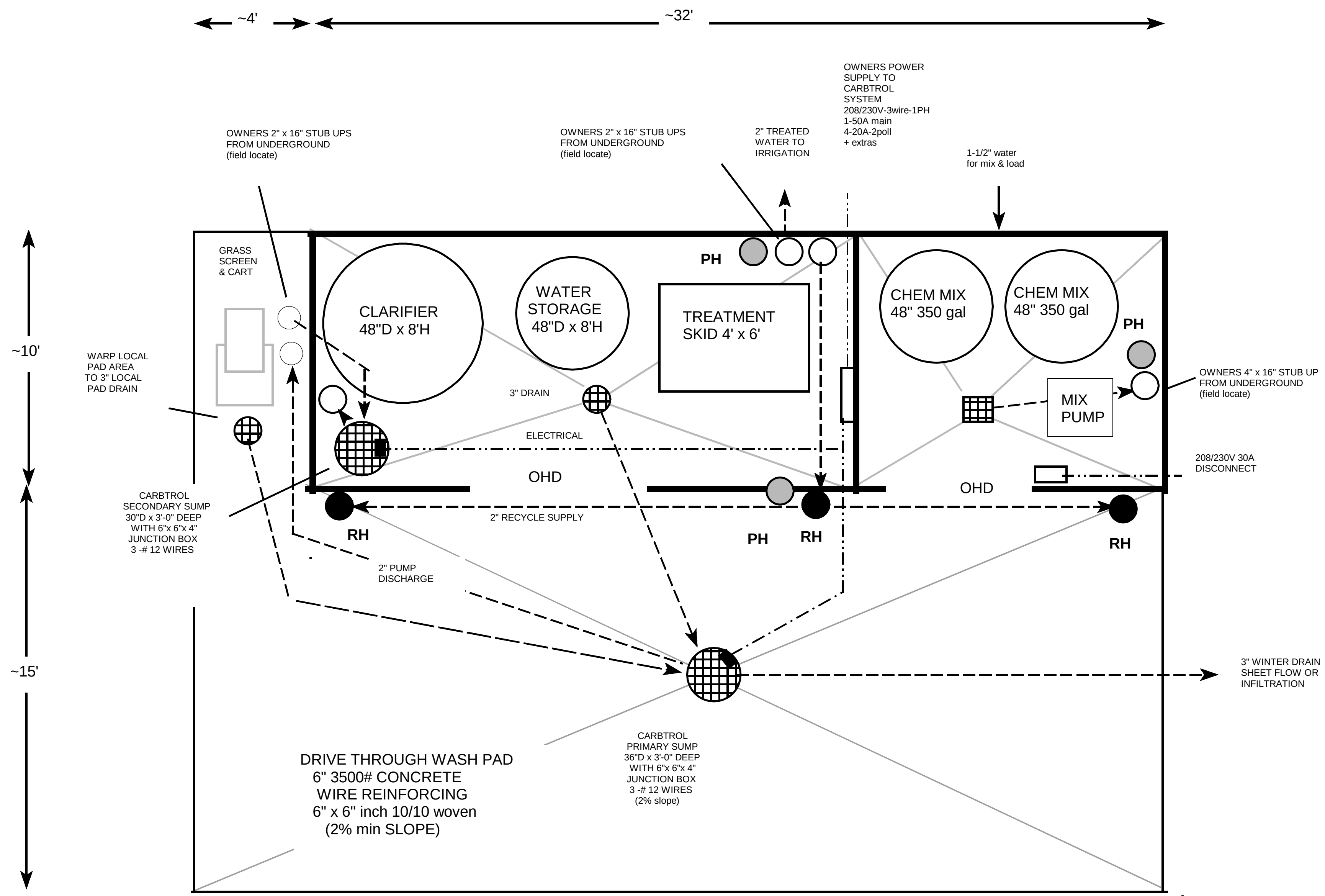
PHASE
--

PROJECT NAME
SUMMIT CLUB PARTNERS LLC - MAINTENANCE BLDG.
ARMONK, NY

JOB NO.: ----
DRAWN BY: JT PROJ. MANAGER: KA
DATE: 02/26/24 SCALE: AS NOTED

DRAWING TITLE
PARTITION TYPES

DRAWING NO.
A601



NOTE: 1
FIBERGLASS sumps provided by
CARBTROL & installed
by owners contractor
during slab construction

NOTE: 2
power service
and under slab
piping & electrical by
by owners contractor

NOTE:3
water treatment equipment
factory wired - final
tie in by Carbtrol

● RH=80psi RECYCLE HYDRANT 3/4" by OWNER

● PH = 80psi POTABLE HYDRANT 3/4" by OWNER

CONCEPT DRAWING

CARBTROL CORPORATION		955 CONNECTICUT AV BRIDGEPORT CT 06607 203.337.4340
DRAWN BY - ARS	**SUMMIT**	REV -
DATE - 01.04.23		DATE -
WASHWATER RECYCLE SYSTEM LAYOUT		

CARBTROL

ADVANCED WASHWATER RECYCLE SYSTEMS

(MODELS GCW-3 GCW-4)

Engineered systems provide:

**** Best Available Technology***

****Closed Loop Recycling***

****High Reliability and Low Maintenance***

Typical Applications:

**** Golf Course Maintenance***

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CARBTROL

ADVANCED WASHWATER RECYCLE SYSTEM

PRIMARY COLLECTION SUMP

Dirty wash water collects in the primary sump. At water high level, the pump engages. During pumping, the water is vigorously agitated to ensure that grass, and dirt, do not accumulate in the sump.

HYDRO SCREEN AND GRASS CART

Dirty water is pumped from primary sump to the solids separation screen. Grass and dirt are filtered by the screen and collected in a grass cart. Filtered water passes through the screen and flows into a transfer sump.

CLARIFIER & WATER STORAGE

Screened wash water is pumped from transfer sump to the clarifier where additional solids are removed by quiescent settling. The clarified water then flows to a storage tank, prior to final treatment and reuse.

TREATMENT AND RECYCLE PACKAGE

Clarified washwater is pumped to the treatment system which includes sand filtration and activated carbon adsorption. Oxidation using ozone and hydrogen peroxide provides final polishing. Water is available on demand.

PlantStar

Chemical Mix/Load and Recapture Systems

PlantStar mix / load and recapture systems speed turf chemical processing, allow recovery/reuse or treatment of spills, and minimize personnel chemical exposure. Investment costs for most mix and load packages pay back in one to two years in reduced turf chemical labor costs.

360 gallon open top mix tank with jet agitation and 750 gallon storage tank for rinsate or second mix tank

High volume,heavy duty FlowMax pump provides unparalleled mixing and agitation.

High volume transfer line and sprayer connections allow fast, spill free fill rates of 100 GPM or greater.

System can be integrated with the Carbtrol wash water recycle system or installed as a stand-alone unit

PLANTSTAR

Chemical Mixing and Recapture System

Overview: The PlantStar Chemical Mixing & Recapture System combines the finest components of our chemical handling and couples them with a custom installation to easily mix and contain pesticides, herbicides and soluble fertilizer materials in a closed loop system. This system allows the operator to blend, agitate and pump any chemical solution directly into a sprayer or storage tank with no exposure to the chemicals.

The recapture system also allows for sprayer tanks to be pumped out, washed, drained and the rinsate material collected out of a floor sump and stored for later use in a storage tank. Two additional sumps in the containment area and chemical storage area ensure the total recapture and containment of any spills.

Components:

Liquid Storage: (All tanks have full recirculating ability and jet agitation)
- 1 360 gallon open top mix tank with jet agitation.
- 1 750 gallon upright storage tank for stock solutions and/or rinsate material

Pumps: 1 PlantStar-FloMax chemical/fertilizer heavy duty transfer pump with stainless steel impellor and wear plate

Controls: (All controls are installed and mounted in a NEMA 4X enclosure)
- 1 3 HP, single phase or three phase electric motor with push button electrical starter

Accessories: 1 Heavy gauge, stainless steel mounting table for pump.
Custom discharge system for loading/filling of sprayer equipment
PVC 80 and polypropylene 2" components manifolded to both tanks' intake and discharge.
Metal sump grate frames
All technical drawings to ensure proper drainage and secondary containment

Features:
1 Transfer pump allows for close loop recirculation and agitation. Full transfer capabilities from any tank to any other.
2 Transfer pump link to containment sump allows for total recapture and reuse of any spills or rinsate within one of three containment areas.
3 Jet agitation in Mix Tank provides the capability to dissolve and fully mix chemical products with water.
4 Chemicals can be put in solution in Mix Tank then discharged using transfer pump into Storage tank or spray equipment.
5 Two tanks allow for storage of stock solutions and more versatile blending.
6 Water injection allows for full back wash capabilities in all lines supply and return.
7 All discharge connections are quick connect cam locks.

Options: Additional Storage and/or mix tanks.
Wash down storage tank with sump transfer hook up.
Potable water and Hot water injection for improved mixing and blending.
Floor grate covers and custom filtration baskets

Requirements: Concrete floor system with containment wall and sloping floor to sump pit.
Underground pipe connecting sump drains to pump intake.
Water supply with back flow prevention equipment.

Installation Time: Two days (includes hands-on training)

Warranty: System includes a one year parts and labor warranty

December 9, 2022

Ken Anderson
Granoff Architects
Greenwich, CT. 06830

Dear Mr. Anderson,

As per our discussion, please find below a list of products used and stored at the Summit Club maintenance facility.

Brand Name	**Chemical Name**	**EPA Registration #**
Banner Maxx	Propiconazole	100-1326
Banol	Propamocarb	432-942
Chipco 26019	Iprodione	432-888
Daconil Action	Chlorthalonil	100-1364
Heritage TL	Azoxystrobin	100-1191
Interface	Iprodione/trifloxystrobin	432-1505
Medallion	Fludioxonil	100-1448
Secure Action	Fluazinam	100-1633
Signature Xtra	Aluminum Tris	432-1541
Tartan	Trifloxystrobin/Triadimefon	432-1446
3336	Thiophanate Methyl	1001-69
Acelepryn	Chlorantraniliprole	100-1489
Ference	Cyantraniliprole	100-1551
Merit	Imidicloprid	432-1318
Provaunt	Indoxacarb	100-1487
Scimitar	Lambda Cyhalothrin	100-1088
Acclaim	Fenoxaprop	432-950
Dimension 2EW	Dithiopyr	62719-542
Lontrel	Clopyralid	62719-305
Pro-Sedge	Halosulfuron Methyl	228-702
Q4	Quinclorac/Sulfentrazone/2,4-D/Dicamba	2217-930
Specticle	Indaziflam	432-1608
Primo Maxx	Trinexapac	100-937
Proxy	Ethephon	432-1230
Trimmit	Paclobutrazol	100-1014
Briskway	AzoxystrobinDifenoconazole	100-1433
Emerald	Boscalid	7969-196
Headway	Azoxystrobin/Propiconazole	100-1216
Subdue Maxx	Mefenoxam	100-796e

Integrated Turfgrass and Pest Management Plan (ITPMP) with Environmental Risk Assessment for the Brynwood Golf and Country Club, North Castle, NY

Prepared By

A. Martin Petrovic, Ph.D.
62 East Seneca Road
Trumansburg, New York 14886

And

Andrew S. Thompson
Golf Course Superintendent
Brynwood Golf & Country Club
Troon Golf, Inc.

March 11, 2013
Revised October 28, 2013

INTRODUCTION

A properly maintained golf course with established turfgrass cover and mature tree stands provides much-needed green space relief from urban development. The filtering ability of dense, healthy turf and its thatch layer can be utilized to ensure pollutants do not reach groundwater or enter rivers and streams. A golf course can be an attractive and effective transition between agricultural and urban landscapes and provides for the preservation or creation of areas useful to wildlife. When managed in an environmentally conscious manner, golf courses can enhance the quality of life within a neighborhood.

This report is the Integrated Turfgrass Management-Environmental Risk Assessment Plan (ITPMP) for the Brynwood Golf and Country Club. The ITPMP contains a program of fertilizer, pest control options and other maintenance practices to be used on this golf course. This program was designed to serve as the maintenance blueprint for Brynwood Golf and Country Club. The ITPMP relies heavily on environmental friendly practices including the use of: natural organic fertilizers that suppress diseases, pest resistant grasses, biological control material as the first line of defense against pests and careful use of fertilizers and water for irrigation.

In general, golf course superintendents, as a group of professionals, are committed to the preservation of the ecology and the wildlife and share the concern for the preservation of the golf course site's environmental quality. The golf course superintendent, with the use of the Troon Golf Standards and Procedures Manual, will be responsible for implementing this ITPMP program.

As with any new or existing golf course, a fertilizer and pest control program must show flexibility to deal with two very important variables: weather and nature. The initial year(s) or grow-in period that often lasts up to 2 seasons will require higher than normal annual inputs of fertilizers and limited use of pest control materials in order to promote rapid establishment of cover, which reduces soil erosion and minimizes the likelihood of weed infestation.

The basic philosophy of this ITPMP is to produce a healthy pest-resistant golf-playing surface that will have little or no impact on the surrounding environment. Selection and use of fertilizers and pest control materials will be based on producing a healthy plant while not contaminating either surface water (via runoff) or groundwater (via leaching). There is little or no evidence that golf courses have or will contaminate surface or ground water (Baris et al., 2010, Cohen et al., 1990, 1999; Cohen and Durborow, 1994; Petrovic, 1994; Shirk, 1996). There are over 40 golf courses in the NY, NJ and CT region that are using an ITPMP developed by Petrovic, many with surface and ground water quality monitoring. It has been found following these site-specific ITPMP has resulted in protection of surface and ground water quality for contamination from either nutrients or pesticides.

The golf course superintendent of the Brynwood Golf Course will utilize every available method to minimize the risk of contaminating any surface water or ground water. Thus, the purpose of this report is to present a site specific analysis that meets the goals of having a healthy pest-resistant golf playing surface that poses little or no threat to the environment on or surrounding this site. The ITPMP conforms to the principles of sustainable resource management developed by Audubon International for golf courses.

The property is currently working towards becoming a Certified Audubon Cooperative Sanctuary. Audubon provides the tools to thoroughly perform a site assessment of our property and form an environmental plan of action which we can implement to help effect our wildlife habitat and wetland management, reduce our chemical use and create and safer protocol for needed use, become more efficient with our water use, manage the quality of not only our water systems on property but surrounding water systems as well as groundwater, and finally will help us to reach out to our surrounding community to educate and communicate what Brynwood is doing to positively impact the local community. Implementation of new environmental programs and initiatives will help improve our environmental performance and community relations, reduce our environmental and legal liability, have a significant impact on our financial bottom line, and overall will enhance our contribution to the conservation of environmental resources.

The ITPMP also conforms to the best management practices for golf course turf management being developed by Cornell University (Petrovic a co-author).

The report presented here was compiled from the following information: review of IPM plan from Troon Golf, site specific soil properties from VHB and corresponding soil data provided by the USDA- National Resource Conservation Service for these soils, the hydrogeology, groundwater and water supply information from VHB, environmental fate assessment (risk to surface and ground water) of the currently registered pesticides in the state of New York for golf course use by model simulation (WIN PST, pesticide risk assessment models developed by USDA-NRCS), worst case scenario estimates of pesticide concentration in surface and ground water and extensive literature search on the environment fate of fertilizers and pesticides, integrated pest management programs and fertility requirements for golf course turf. This report provides an environmentally sound fertilizer and pest management program to be followed by the golf course management personnel. Any chemical (fertilizer or pesticide) found by this environmental risk assessment to pose a high risk to humans or aquatic wildlife in either surface or groundwater will not be recommended to be used on this golf course. A few pesticides with an intermediate risk to humans or aquatic wildlife may be used on a very small area (greens) under very controlled conditions as a last resort when other control measures are lacking.

For the pests that are likely to invade Brynwood Golf Course, there are several pesticides registered for their control. Taking this into consideration as well as the need to protect surface and groundwater from contamination and to reduce the exposure of humans and wildlife to highly toxic pesticides, pesticides were selected that have a low potential for either leaching or runoff from the soils on this site. The evaluation included determining the potential of each registered pesticide for contamination of water on a soil-by-soil basis based on soil properties of this site.

In order to preserve and enhance the natural resources, this design and management plan has adopted the principles in the following report.

I. Planning and Policies

The project team is committed to the enhancement of the Brynwood Golf Course by incorporating environmentally responsible golf principles in all aspects of planning and development of this site. The environmentally responsible golf principles include: designing the golf course with care to protect environmentally sensitive areas and to minimize the micro-climatic conditions that favor pests and discourage healthy turf; use low maintenance-pest resistant grasses; follow sound integrated pest management (IPM) practices that use pesticides as a last resort and only pesticides with a low risk to humans and wildlife; careful and precise use of water and fertilizers to provide for healthy-pest resistant turf while minimizing the impact on environment.

II. Alternative Pest Controls

The Brynwood Golf Course will employ IPM techniques to minimize pest problems. This includes:

a) Reliable and accurate pest identification
b) Monitoring pest populations and related damage to ensure treatments will only be applied where and when necessary and when they will be most effective.
c) Establishment of injury levels that can be tolerated before control measures are implemented.
d) Use of combinations of the following treatment methods to control pests in a manner that achieves a high level of effectiveness while minimizing environmental impact.

i) Biological Controls - release of predatory/parasitic insects, conservation of natural enemies.
ii) Cultural Controls - use of resistant cultivars, encouragement of diverse plant communities, optimal management of irrigation, aeration and other management techniques to maximize plant vigor and reduce susceptibility to pests.
iii) Physical Controls – after construction sanitation, pruning, protective weed barriers, etc. will be used to reduce weed problems.
iv) Mechanical Controls - roto-tilling areas repeatedly to kill perennial weeds during renovations, etc.
v) Chemical Controls - use of products that are target specific, have short residual lives and have low environmental impacts.

For each pest anticipated on this golf course, the following is a detailed IPM plan. The basic premise underlying this integrated pest management (IPM) plan is that a healthy plant will be most resistant to pest attacks and will recover much faster than less healthy turf. Therefore, the golf course superintendent will follow the standard accepted maintenance practices like proper mowing (height and frequency); topdressing and cultivation for thatch management and compaction alleviation as examples. What follows is a discussion of practices that more directly affect pest problems and are part of the IPM program.

Each golf course is managed differently based on numerous factors. The following is the recommended management routine that is typical of similar golf courses in the area.

Mowing: Greens and tees will be mowed 6 to 7 times per week during the major growing portion of the year (April-November). Fairways will be mowed 3 to 5 times per week with clippings left in place whenever possible. Roughs will be mowed one to three times per week and clippings left in place.

Clipping Management: Clippings collected from greens, and tees will either be spread in rough areas or be part on the on-site compost-recycling program. Clippings from all other areas will be left in place whenever feasible. If cutworms become a major problem on greens/tees, clippings from greens/tees in June and July will not be place within 100 feet of any green to reduce the population of cutworms.

Cultivation: Several times each year, the greens, tees, fairways and trafficked sections of the roughs will be cultivated to alleviate soil compaction caused from foot traffic from golfers and vehicular traffic. The cultivation methods used will include shallow core cultivation, deep drill and water injection on greens/tees during the summer months if necessary. A soil penetrometer will be used to judge the need for cultivation. Compacted soils are much more prone to runoff and therefore, cultivation is necessary to protect surface water quality.

Topdressing: Topdressing is a practice of adding a small amount of soil (sand) to the surface of the turf so as to reduce the development of thatch while smoothing and firming the putting surface. Greens and tees will be topdressed with the same material used to construct the root zone typically on a bi-weekly interval during most of the active part of the growing season or as needed based on the turfgrass growth rate.

Pest Management Goals and Philosophy

The basic goal and philosophy of this Integrated Pest Management (IPM) program is to produce a healthy, pest resistant golf-playing surface that will have little or no impact on the surrounding environment. Every available pest management practice will be utilized with the goal of using pesticides as a last resort after all other control options have been followed. The sections of the golf course to be renovated provides the opportunity to construct a system that is less prone to stress, which is often the main cause of pest damage or invasion of weedy species. This can be accomplished by: 1) establishing grasses that are best adapted for the golf courses and are pest resistant, 2) by providing a soil system to minimize the stress caused by the golfer and is well drained and 3) reducing moisture plant stress by having an irrigation system that can provide the necessary amount of water needed by the plant (thus reducing over irrigation which can lead to the potential for ground/surface water contamination or more pest problems). Thus, the purpose of this IPM Program is to summarize the approach that meets the goals of developing a healthy pest resistant golf-playing surface that poses little or no threat to the environment on or surrounding this site. This IPM plan is to be used as a decision making tool by the golf course superintendent.

The components of this IPM plan are: proper grass selection, mapping of the property, developing the site specific pest knowledge base, yearly IPM plan development, using action thresholds, soil, plant tissue and water testing, weather record collection, pest management options (cultural, biological and pesticidal) and yearly evaluation on the effectiveness of program and modification of plan.

Turfgrass Selection: Performance and Pest Resistance Criteria

Even though there are over 7,500 species in the grass family, only a handful of species is used on golf courses. The main reason for such a few species being used is the relatively short cutting height demands of golf course playing conditions. For greens in New York, only two species could be used, creeping bentgrass (*Agrostis palustris*) and velvet bentgrass (*Agrostis canina*). Velvet bentgrass is currently being evaluated and in the future may be a grass to use, but has been experiencing problems of withstanding and recovering from traffic. There are several varieties of creeping bentgrass available. The one best suited for the climate and with good resistance to the major disease problems anticipated at this golf course (Anthracnose, Brown patch and Dollar spot) and reduces annual bluegrass invasion should be used at Brynwood. Varieties of creeping bentgrass to be used on greens will be selected by the Troon Golf Sr. Vice President of Science and Agronomy, the golf course architect and golf course superintendent based on varieties suited best for New York based on Nation Turfgrass Evaluation Program (NTEP) USDA data and from the Cornell University Turfgrass Program.

Options for grasses on tees and fairways/approaches are somewhat broader. Tees can use creeping bentgrass and in a few cases a slightly higher turf like Kentucky bluegrass (*Poa pratenses*). On the golf course at Brynwood, fairways could be either be a mixture of Kentucky bluegrass with perennial ryegrass (*Lolium perenne*) or creeping/colonial bentgrasses with fine fescues. The advantage of perennial ryegrass is that it requires less water, has somewhat less disease problems, is resistant to surface feeding insects (if endophytic varieties are used, which is highly recommended) and does not produce much thatch that can be harmful to turf. Perennial ryegrass, however, is a short lived perennial requiring at least bi-annual over-seeding, is subject to winter kill during prolonged periods of ice cover or hard winters, and has been heavily damaged by a new disease called gray leaf spot. Due to gray leaf spot problems on perennial ryegrass, fairways will be established with blend of several low maintenance bentgrass cultivars with other grasses. Tees will be established with creeping bentgrass. The varieties to be used will be suited best for New

York based on Nation Turfgrass Evaluation Program (NTEP) USDA data and from the Cornell University Turfgrass Program.

Roughs are often established with very low maintenance grasses that are mowed higher than fairways/approaches, are to be irrigated less and require minimal fertilization. This golf course will establish the primary roughs with this in mind using a mixture of fine fescues (red, chewing or hard fescue, all *Festuca*) and low maintenance Kentucky bluegrass. At least two varieties of each species should be used to seed roughs to increase the genetic diversity so as to be ecologically competitive under the ever-changing climatic conditions. The final selection of cultivars will be made at the time of seeding using NTEP data and recommendations from Cornell University Turfgrass Program. Native areas that receive limited mowing and play will be established with fine fescues.

<u>Establishment Methods and Seeding Rates</u>

All fairways and roughs will be seeded and mulched used to enhance germination and reduce the potential for erosion. The elevated areas around the greens and tees maybe stabilized with a lightweight non-woven erosion control blanket or sodded. The playing surface of the greens and tees will be seeded with drop or cyclone-type seeder. Seeding rates are as follows: greens and tees will be seeded with creeping bentgrass at a rate of 1.5 lb. of pure live seed/1000 sq. ft. Fairways and tees will be seeded at a rate of 65 lbs./acre and the rough at a rate of 174 lbs. seed/acre.

A starter fertilizer will be applied just prior to sodding or seeded after final grading is complete (construction). For greens and tees, 1 to 2 lbs. of nitrogen/1000 sq. ft. will be applied prior to seeding and then the first year fertilization program will be followed as found in Tables 5 & 6. On fairways and roughs, a starter fertilizer will be used to supply about 0.5 lbs. of N/1000 sq. ft. and then followed by the nitrogen fertilization program shown in Table 6. The amount of other nutrients (phosphorus, potassium, calcium and magnesium) will be applied prior to seeding or sodding on greens, tees, fairways and roughs based on soil test recommendations so as to provide for rapid establishment, less erosion potential and less chance of phosphorus runoff. Based on the New York State Law and Westchester County Law, phosphorus can be applied to sites being established or renovated.

Based on the pest occurrences of golf courses in New York, Table 1 contains the anticipated pests for Brynwood Golf Course.

Table 1. Anticipated pests on Brynwood Golf and Country based on current pest occurrences.

Occurrence	Greens	Tees	Fairways	Roughs
Frequent	Dollar Spot, Anthracnose Hyperodes,	Dollar Spot, Hyperodes	Dollar Spot, Hyperodes	Dollar Spot, Hyperodes, Crabgrass, Goosegrass, Broadleafs
Occasionally	Brown Patch, Summer patch, Yellow Patch, Pink Snow Mold, Moss/Algae Cutworms, Annual bluegrass	Summer Patch, Brown Patch, Anthracnose Pink Snow Mold, Cutworms, White Grubs, Annual bluegrass	Summer Patch, Anthracnose, Brown Patch, Pink Snow Mold, Cutworms, White Grubs Annual bluegrass	Red Thread, White Grubs, Chinch bugs
Seldom	Pythium, Gray Snow Mold, Leaf Spots, Necrotic Ring Spot, Red Thread, White grubs,	Pythium, Grey Snow Mold, Leaf Spots, Necrotic Ring Spot, Fairy Ring, Red Thread, Crabgrass, Goosegrass, Broadleafs	Pythium, Grey Snow Mold, Leaf Spots, Necrotic Ring Spot, Fairy Ring, Red Thread, Crabgrass, Goosegrass, Broadleafs	Pythium, Grey Snow Mold, Leaf Spots, Necrotic Ring Spot, Fairy Ring,

It is anticipated that these pests will occur during the periods shown in Table 2.

Table 2. Occurrence of anticipated pest on Brynwood Golf Course.

Pest	Month(s) of Pest Occurrence
Diseases	
dollar spot	May-September
brown Patch	July-August
pink snow mold	November-April
red thread	May-October
summer patch	June-August
Insects	
white grubs	July-May
cutworms	May-September
chinch bug	June-September
Hyperodes	April-August
Weeds	
broad leafs	all year
crabgrass	May-October
annual Bluegrass	all year
moss	all year

The scientific names and biological information for each pest are contained in the following section. This list will be updated as site-specific pest knowledge is obtained.

IPM Plan

The IPM plan for Brynwood golf course is broken down by pest management group and contains pest biology information for New York State (Rossi et al., 2013), actions thresholds, cultural control, biological control and pesticide control options to be followed by the golf course staff. All control options will be integrated and implemented with pesticides only being applied as a last resort when other methods have failed and significant pest damage is likely. All pesticide for use on Brynwood golf course have a low potential for both surface and ground water contamination (based on the risk assessment found later in this report) except where noted for reasons of the lack of control with other options.

DISEASE PESTS

Two out of the six pests that are anticipated to occur most often on this golf course are diseases. Fungi cause most diseases that attack turfgrass. The following are descriptions of each of the most prevalent diseases (frequently and occasionally, Table 1) and the "state of the art" IPM practices that will be followed on this golf course:

Dollar Spot (Sclerotinia homoeocarpa)

Dollar Spot is a foliar disease that is favored by temperatures between 61-81° and too low a level of a nitrogen level in the plant tissue. It will likely be the most prevalent disease on this golf course and would occur on this site from June to September. Dollar spot is easily recognizable, slow to develop and to cause damage. Bentgrass used on greens will be the most susceptible of the grasses used. The use of bentgrasses on greens that have a low amount of dollar spot is necessary. Daily scouting should be used to determine the extent of occurrence and range of this disease on the golf course. Natural organic disease suppressive fertilizers like Ringer Compost Plus and Greens Restore have been shown to reduce the incidence of Dollar spot by 45% (Nelson, 1990) and will be used as part of the fertilization program. Tissue testing may be used to help maintain the nitrogen level (>4.5%) in the plant at a level to suppress disease development.

Biofungicides that can be used are (see Table 3 for more details) are *Bacillus licheniformis* strain SB 3086 (EcoGuard Biofungicide) and *Pseudomonas aureofaciens* strain TX-1 (Spot-Less Biofungicide).A mineral oil made from isoparafin (Civitas with Harmonizer) has been shown to reduce dollar spot problems, especially in combination with the fungicide boscalid (low risk pesticide on this site). Damage from this disease even with these cultural and biofungicides controls may exceed the acceptable level on this golf course; thus, fungicide applications are very likely to be needed. Fungicides should be used only when 1) an outbreak in indicator sites has been observed in excess of the threshold (5 spots/sq.yd. for greens/tees and 10 spots/sq.yd. for fairways) and when weather conditions still favor disease development (temperatures 70 to 85 F and humid. The Dollar spot predictor (http://www.nrcc.cornell.edu/grass/) will also be used to determine the risk of a dollar spot outbreak. Fungicides to be used first must be registered for dollar spot control and also have a low or very low risk of surface or groundwater contaminations (Table 7).

Anthracnose (Colletotrichum graminicola)

Symptoms of this disease can be seen in cool, wet weather but the most likely period of turfgrass damage can be seen in warm weather (71-82° F) under drought conditions. Anthracnose is most damaging to annual bluegrass and creeping bentgrass during drought conditions and when the plants are deficient in nitrogen. It is likely that this stress-induced disease may only be a minor pest problem on golf courses, especially if annual bluegrass encroachment is discouraged and stress levels reduced through proper management (i.e. fertilization, irrigation, and the use of compaction resistant/well drained soils on greens/tees).

This disease is most likely to occur during warm summer months of mid-June through August. Scouting should be done if this disease becomes a recurring problem. A threshold has not been established for anthracnose. Biofungicide that can be used is (see Table 3 for more details) are *Bacillus licheniformis* strain SB 3086 (EcoGuard Biofungicide). A mineral oil made from isoparafin (Civitas with Harmonizer) has been shown to reduce anthracnose problems. Fungicides to be used first must be registered for anthracnose control and also have a low or very low risk of surface or groundwater contaminations (Table 7).

Brown Patch (Rhizoctonia solani and zeae)

This disease occurs under conditions of warm (>85 F) and very humid weather as well as in cool wet weather. It is expected that the warm weather Brown patch will occur in July to September during most years and the cool weather version in April/May and September/October. Conditions that can reduce the severity of this disease are to avoid excessive nitrogen fertilization, to water minimally and provide for good air movement and water drainage. All three of these practices can be followed where possible. The fertilization program will provide optimum level of nutrients for plant growth based on soil tests, grass nutritional requirements. Nitrogen fertilization should be suspended prior to favorable Brown Patch conditions. Part of the fertilization program will also contain disease suppressive, highly composted natural organic fertilizers (i.e. Sustain and Ringer) that have been shown to reduce the incidence of Brown patch by 75% (Nelson, 1990), thus reducing the need for fungicides. Irrigation will be provided to supply only the amount needed to replace the amount used by the plant.

The presence of Brown patch will be confirmed by daily scouting during periods of warm to hot weather is highly recommended and treatments made if the threshold is exceeded (one spot/yd. on greens/tees and two spot/yd. on fairways) and 24-48 hr. weather forecast indicates conditions are favorable for disease development. The pesticide selection is based on the risk assessment where only fungicides with a low potential for both surface and ground water contamination will be used (Table 7). The selection procedure will also involve following a program to reduce the chance of developing a strain of fungi resistant to a specific fungicide or class of fungicide. If more than one fungicide is needed to control Brown patch in the same year, then a different type/class of fungicide would be used next. Classes of fungicides would also be rotated. For every other systemic fungicide application a benzimidazole class fungicide would be used, then followed by one of the dicarboximides fungicides or sterol inhibitors. This rotating of classes/types of fungicides will be followed for all diseases.

Pink Snow Mold (Microdochium nivale)

Pink snow mold is a fungal disease that is favored by temperatures in the range of 32 to 40 F and wet conditions with or without snow cover. It is likely to occur on this site from November to April the following year. Avoiding heavy late fall water- soluble nitrogen application can reduce the severity (no late nitrogen applications will be made). However, fungicides are the only control method available at this time although there is some disease suppression with the natural organic fertilizers to be used on this golf course. Scouting is not practical for this disease with snow cover. During other cool-wet periods without snow cover, scouting should be followed before a treatment is made. If the threshold of one spot/sq.yd. on greens/tees and two spots/sq.yd. on fairways is exceeded and short term weather forecasts are calling for cool-wet weather (32-40 F), then a fungicide application will be made. Fungicides to be used first must be registered for pink snowmold control and also have a low or very low risk of surface or groundwater contaminations (Table 7).

Summer Patch (Magneporthe spp)

These diseases will most likely be found on this site from June to August. Over fertilization with nitrogen and extremes in water will increase the likelihood of the disease. The damage to the turfgrass plant occurs in April-May, well in advance of the symptoms. Thus, a preventative fungicide program is necessary on sites that have had a history of Summer Patch (azoxystrobin, fenarimol, myclobutanil or triadimefon) and Take-all patch (azoxystrobin or fenarimol) problems. A fungicide application needs to be made in the spring before June. Fungicides to be used first must be registered for Summer patch control and also have a low or very low risk of surface or groundwater contaminations (Table 7).

Table 3. Bio-fungicides.

Common Name	Sample Trade Name(s)[1]	Formulation[2]	Rate Range (per 1,000 sq. ft.)	FRAC Code	EPA Reg. No.
Bacillus licheniformis strain SB 3086	EcoGuard Biofungicide	0.14EC	20 fl. oz.	NC	70127-2
Bacillus subtillis, strain GB 03	Companion Liquid Biological Fungicide		4-6 fl. oz.	F6	71065-3
Bacillus subtilis, strain QST 713	Serenade Garden Lawn Disease Control	1.34 F	5.0 fl. oz.	F6	69592-12
	Rhapsody	1.34F	2.0-10.0 fl. oz.	F6	69592-19
Pseudomonas aureofaciens strain TX-1	Spot-Less Biofungicide	1L	0.73-1.47 fl. oz.	–	75801-1
Polyoxin D Zinc salt	Endorse	2.5W	4 oz.	19	66330-41
Mono and di-potassium salts of phosphorus acid	Vital	54.5EC	3.0-6.0 fl. oz.	33	42519-24
	Magellan	52.6L	4.1-8.2 fl. oz.	33	228-387

[1] Trade names shown are examples of products available and are not meant to be an exhaustive list.
[2] EC = emulsifiable concentrate; F = flowable; L = liquid; W = wettable powder. Rossi et al., 2013)

WEEDS

It is anticipated that, after the first year of establishment of this golf course, weed problems will tend to be minimal. This is a result of sound golf course cultural/pest control practices that will produce a dense-competitive environment against weed encroachment. Thus, the anticipated weeds on this golf course will be limited to annual bluegrass (potentially on all sites of the golf course), moss on greens and broad leaf weeds (limited mostly to fairways and roughs).

Annual Bluegrass

Annual bluegrass (Poa annua spp. Reptans/annua) is a very common weed that invades golf courses. It is well adapted to short mowing, heavily trafficked sites, soils high in pH and phosphorus, and wet soil/poorly drained conditions. Thus, the management program of this golf course is designed to reduce annual bluegrass competitiveness by: 1) keeping soil pH at 6.5 or below, 2) providing for good drainage, 3) irrigating to a minimum, 4) using compaction resistant soils (like the sand used on greens), 5) following a disease/insect management program to maintain a dense turfgrass stand and 6) following a fertilization program that is optimal for the growth of the turfgrasses used here but not too high in phosphorus, which favors annual bluegrass.

Even with all of these measures, annual bluegrass can still invade this golf course. Thus, it is anticipated that some other control measures will be necessary. There are experimental biological control agents for annual bluegrass that may someday be commercially available. Chemical control is limited and generally involves the use of either plant growth suppressants or a traditional herbicide.

Each spring and late August the amount of annual bluegrass for all greens and fairways will be mapped. When the late August mapping indicates more than 1% of the area contains annual bluegrass plants some form of treatment will be necessary to further reduce its spread. The Type II Plant Growth Regulators' (paclobutrazol and flurprimidol, each has a low or very low risk of surface or groundwater contaminations, Table 7).) have been shown to be the most effective in reducing annual bluegrass populations over a period of time. Higher cut creeping bentgrass turf on fairways tends to be a more conducive environment for reducing annual bluegrass compared to putting greens and tees with more chronic and focused surface disruption.

The most effective programs include multiple applications throughout the season that provide a cumulative reduction. Type II Plant Growth Regulators' programs have been shown to reduce fairway populations as much as 70 percent in two years. This type of success is usually achieved when a comprehensive cultural management program of reduced fertility and irrigation plus over seeding programs to favor the more hardy and desirable creeping bentgrass turf are used.

Broadleaf Weeds

Broad leaf weeds (BLW) commonly occur on established golf course fairways and roughs and thus are considered a major pest problem on these sites. Clover is a commonly occurring BLW that is favored by soil pH around 7 and by dry soils. Thus, on this golf course it would be anticipated that clover would be found on the unirrigated areas (roughs) and maybe on fairways. One of the best ways to reduce broadleaf weed problems on golf courses is to produce a dense-competitive turfgrass stand by following the overall turfgrass management program to be used on this golf course: proper fertilization/irrigation practices and reducing pest damage that opens the turf to invasion by weeds. However, broad leaf weeds may likely still invade this golf course. Weed population and locations will be scouted and mapped at least twice a year (early June and mid-September). Since broadleaf weeds may be confined to a small area, pesticide applications will only be made on areas with weeds present in excess of the threshold; two weed plants per sq.yd. on fairways and five per sq.yd. on roughs, thus reducing the amount of pesticide applied and limiting the treated area. Herbicides to be used first must be registered for broadleaf weed control and also have a low or very low risk of surface or groundwater contaminations (Table 7).

Crabgrass

Crabgrass is an annual grassy weed that invades thin turf. Thus, all the cultural practices to be used on Brynwood golf course will encourage a dense stand of turf and reduce the incidence of crabgrass. Practices such as the fertilizing, irrigation and disease/insect control programs to be used on this golf course will produce a dense turf that restricts light from reaching the soil surface. Crabgrass seeds require light for germination or open soil patches at least 2 inches in diameter. These management practices help significantly; however, when a golfer takes a divot the soil is exposed to light and crabgrass seeds can germinate and invade the turf. Some fine fescue varieties have been shown to resist a crabgrass invasion and will be used in roughs to reduce crabgrass.

There are two herbicidal control programs, preemergence and postemergence. These terms refer to herbicide applications made before or after the crabgrass seeds germinate, respectively. The preemergent herbicides must be applied in advance of the period of germination of crabgrass, usually starting in April. A problem with this approach is that you are not sure whether crabgrass will be present or not. If it is not present, then the application has been wasted.

Postemergent herbicides are few and require careful timing for good control. Mapping the amount and location of young crabgrass plants in early summer will be used to determine if small areas will need treatment. All of the management practices listed in this report (fertilization, irrigation, pest control, mowing, etc.) are designed to product a dense turf that reduces the chances of crabgrass invasion. The fairways and roughs will be scouted at weekly intervals starting in early May and continue until mid-August. Sections of fairways with one or more crabgrass plants per sq. yd. and more the 3 for roughs will be considered for a herbicide treatment. Herbicides to be used first must be registered for crabgrass control and also have a low or very low risk of surface or groundwater contaminations (Table 7).

Moss

Bryum argenteum, silvery thread moss, is a significant pest problem on golf courses throughout the US. Superintendent surveys conducted by Cornell University researchers indicate that close mowing and surface organic matter accumulation are highly correlated with increased moss invasion. This is partially done to close mowing of older greens with less dense grasses than the latest bentgrass cultivars. Controlling moss is favored by acid soil/water conditions. The sand used on greens will be of an acidic nature (if available) and irrigation water pH will be carefully monitored. Copper hydroxide and a dish detergent (Ultra Dawn), applied at two-week intervals in both spring and fall, have shown to reduce moss levels to an acceptable level. Copper has an intermediate risk on greens and tees, thus if copper is to be used it must be applied very carefully to only a small areas at a time when the weather forecast does not predict heavy rainfall within 48 hours of the anticipated application (to reduce risk to aquatic wildlife). Recently, carfentrazone (a low risk herbicide) has been labeled for selective moss control in bentgrass golf course putting greens. Carfentrazone is a contact herbicide with little or no residual activity that provides selective postemergence control of broadleaf weeds and silvery thread moss (*Bryum argenteum*) in turfgrass.

Renovation

It may be necessary at times to renovate small section of the golf course. Renovation often includes using a non-selective herbicide to remove the existing weed and turf vegetation. The non-selective herbicides glufosinate or glyphosate will be used or the purpose since they had a low risk to both humans and aquatic wildlife on this site.

INSECT PESTS

Insect problems anticipated on this golf course are restricted to just a few insects mostly Hyperodes on greens, tees and fairways, white grubs in tees and fairways and cutworms on greens. There are grasses that contain endophytic fungi that are resistant to certain surface feeding insects like cutworm, sod webworm and chinchbug. The grasses that will be used in the roughs are endophytic, thus are resistant to the surface feeding insects. Creeping bentgrasses (used on greens/tees and fairways) at this time do not contain endophytes and therefore are not resistant to surface feeding insects. Currently there are no turfgrasses resistant to root feeding insects like grubs.

Biological control options are available for most of the insect pests anticipated on this golf course and will be the first line of control. Only after biological control options have been shown to be ineffective will a synthetic insecticide be used.

One of the best practices to follow in an insect control program is to have a systematic sampling/monitoring scheme. It has been found that insect pests of turf like cutworms and white grubs do not uniformly cover the entire golf course. In fact it has been shown that grubs are confined to certain parts of the golf course and even small sections of fairways or roughs. Therefore, it is highly recommended that prior to any insecticide application a sampling protocol be followed and treatment be confined to only the areas where the insects are found.

Hyperodes

The annual bluegrass weevil (ABW) is a burgeoning pest of turfgrass in the northeastern United States. This native beetle is most prevalent and injurious in low-cut, high maintenance turf such as golf course greens, tees and fairways. The insect was first reported damaging turfgrass in Connecticut as early as 1931. Until the last 20 years or so, damage had been concentrated in the metropolitan New York area. ABW larvae and adults feed primarily on annual bluegrass (Poa annua L.), a major component of many golf course playing surfaces. Annual bluegrass is often considered a weed by golf course superintendents since it is an aggressive invader of newly seeded stands of creeping bentgrass. When annual bluegrass becomes the dominant grass species in fairways and putting greens, however, superintendents resort to managing it, rather than eliminating it. ABW has also been reported to feed on creeping bentgrass and perennial ryegrass. In areas where annual bluegrass is prevalent, high populations of weevils will cause substantial areas of dead turf that affect both the visual and functional quality of golf course turf.

ABW can be challenging to monitor due to its small size. In the spring, mower baskets can be monitored for adults because they are picked up along with clippings. This can be a useful way to stay abreast of when adults are appearing in spring, and, with more careful monitoring, on which areas of the course they are most prevalent. Some areas of the course may always harbor ABW so it is a good idea to monitor consistently those historically affected areas from year to year. Adult ABW reinvade short-mown turf soon after snow melt and soil thaw, from late March to April.

A more site-specific approach to monitor adults is to pour a soapy disclosing solution on the turf. The standard method is to mix 1 fluid ounce lemon-scented dish detergent in 2 gallons water and apply it over to 2-3 square feet of turf. The soap acts as an irritant, forcing adults to emerge from the thatch and ascend to the surface where they can be counted. Shallow soil core sampling or simply digging around at the soil surface/thatch interface will reveal older larvae and pupae. Older larvae look like grains of rice with brown heads; pupae resemble adults but are creamy white until their color darkens before adult emergence. If more detailed information is desired, larvae of all sizes (even stem boring stages) will float to the surface when an infested core is submerged and agitated in a saturated salt solution. This is a good way to confirm that your adult controls were adequate; if too many larvae are found, the application may have been poorly timed to suppress adults and another application against adults of the developing population may be necessary.

Damage thresholds are 30-80 larvae/sq. ft. for the spring generation. Given summer heat stress, thresholds drop to 10-40 larvae/sq. ft. for the summer generation. Nevertheless, field experience indicates that action may have to be taken at thresholds as low as 5-10 larvae/sq. ft. in order to avoid injury and minimize the threat of the subsequent generation.

Traditionally, golf course superintendents have targeted early spring adult populations that represent overwintering insects returning to the short mowed turf. A preventive insecticide application is then made to suppress adult populations before the insects begin to lay eggs. The timing of spring applications can be based on a plant phonological indicator. The most widely used is the period that occurs between Forsythia V. full bloom, and dogwood (Cornus florida L.), full bract. It is better to make the spring application a little late than a little early so aim for the time when Forsythia is in full bloom and has already acquired many new leaves (i.e. “half gold/half green”). Insecticides to be used first must be registered for ABW control and also have a low or very low risk of surface or groundwater contaminations (Table 7). In an additional risk assessment there were two cases where the maximum acceptable toxicant concentration for fish was slightly exceeded. However, it is unlikely that fish will come in direct contact with the untreated storm water from this site. The two insecticides, bifenthrin and lambda-cyhalothrin, are critical to control one of the most destructive insects, annual bluegrass weevil. It is proposed to allow the Brynwood Country Club to apply under emergency conditions. It has been observed that the rapid death of turfgrass will lead to excessive leaching and runoff of nitrogen and phosphorus, thus the need to prevent damage from annual bluegrass. Bifenthrin and lambda-cyhalothrin will only be applied after all other control options have failed and the population threshold has been exceeded following scouting. The Town of North Castle will be notified when an application is to be made under these set of emergency conditions.

Cutworms

Black cutworms are anticipated to be an infrequent insect problem on this golf course. This insect does not usually overwinter in New York. Adults each spring fly in from the southeastern U.S., usually arriving in late spring-early summer (May-June). The adults lay eggs that hatch in two to three weeks as small larvae, the destructive phase of this insect. A second generation can hatch later in the summer. Cutworm larvae spend three days in the soil, often in old aerifier holes. At dusk they emerge and feed on the foliage of the grass and the damage is confined to a small zone surrounding their daytime home.

It is unlikely that the entire golf course at any one time will contain cutworms in excess of the action threshold. Action thresholds will be discussed in a later section. Therefore, monitoring and sampling of the population is necessary to substantially reduce the amount of the golf course that will need to be treated. Scouting for this insect will involve a two-step process. In May each year, 10 to 20 black light and/or pheromone trays will be placed out on the golf course to attract/collect adult cutworms as they arrive at this golf course. Every other day the number of adult black cutworm adults in each trap will be counted. Two weeks after the adults begin showing up in the traps, the second phase of scouting will commence. This involves placing an irritant solution (soap or pyrethrum) on sections of each green, tee and fairway at bi-weekly intervals through June, July and August. If the number of cutworm larvae exceed one/sq.yd. on greens/tees and five/sq.yd. on fairways, then a control regime will be followed. The smaller the larvae the easier they are to control, so the initial scouting is very important. Also, biocontrols are most effective on small larvae. Another cultural control method is to place greens clippings no closer than 100 feet of any green since mowing collects eggs. Several nights mowing (before 3 am) during the first appearance of cutworm has been shown to reduce the amount of cutworm on greens.

The control for cutworms will first rely on a biocontrol method and if this does not give acceptable control (threshold still above limit after one week), then an insecticide will be used. The bacteria biocontrol available is Bacillus thurgingiensis var. kurstaki (BT). It takes

2 to 7 seven days to kill the cutworm larvae; thus, one week after the application the areas will be sampled with the irritant solution to determine the effectiveness of the biocontrol. Another biological control option is entomopathogenic nematodes which have been shown to have a good chance of success in managing cutworms. Use the nematode species *Steinernema carpocapsae*. If populations of cutworm larvae are still in excess of the threshold, a second application of the two bio-control materials will be made and effectiveness determined one week later. If after two applications of the biocontrol materials the population of cutworm larvae is still above the threshold limit, then a traditional insecticide (registered for cutworm control and also have a low or very low risk of surface or groundwater contaminations, Table 7) will be applied. As with the biocontrols, the effectiveness of the traditional insecticides will be evaluated one week after application before any additional treatment will be made.

White Grubs

There are several species of insects that have a destructive larval stage known as white grubs. These include Japanese beetle, Oriental Beetle, Asiatic Garden Beetle and European Chafer. The most destructive stages of these insects are their grub or larval stage in which the third and largest instar occurs later in the fall.

The population of grubs will be determined as follows before any insecticidal treatment will be made. Each golf hole will be mapped once in late July or early August each year for the extent, location and species of grub using the maps found in the appendix. Sampling consists of a crew of individuals with cup cutters. On fairways and roughs, taking a sample at 20 yd. spacing will follow a grid sampling technique. Greens and tees will be sampled at 20 ft. intervals. The sample involves extracting the turf and top 2-3" of soil and observing the number and species of grubs in each sample. When the threshold is exceeded, then a treatment will be made. Thresholds are: 18 to 36 May beetle grubs/ sq. yd., 21 to 72 European chafer grubs/sq. yd., 96 to 180 Asiatic garden and masked chafer grubs/sq. yd. and 54 to 180 Oriental and Japanese beetle grubs/sq. yd. Treatments are most effective in early August when the grubs are very small. Spot treatments will be made.

The bacteria biocontrol available is Bacillus thurgingiensis var. kurstaki (BT) will be used first to control white grubs when found on sites exceeding the threshold. The effectiveness will be determined by repeated sampling the treated sites one week after application. An application will only be made if the grubs are near the soil surface and the soils are moist. If the biocontrol applications have failed to lower the white grub population below the threshold level, then an insecticide (registered for white grub control and also have a low or very low risk of surface or groundwater contaminations, Table 7) will be applied to the sites still having populations above the threshold level.

As with the biocontrol nematodes, one week after the traditional insecticide application the grub population will again be sampled on the treated sites and only if threshold levels are still exceeded would an additional insecticide application be made.

Other Insect Pests

There is some likelihood that other insects will attack the grasses found on this golf course. These could include Hyperodes weevil, sod webworm and Ataenius beetle grub. There are biocontrol products (BT bacteria) available for sod webworm and Ataenius control and will be used as the first line of defense. If control is unsuccessful and these insects are still causing damage, then an insecticide will be used.

Pest Scouting, Monitoring and Action Thresholds

Scouting is one of the most common disease management practices followed by golf course superintendents. The extent and form of the scouting program varies widely between superintendents. Many superintendents rely on indicator sites or "hot spots" as areas where diseases (or other pests) first occur and use these sites as early warning signs. Many golf courses are now having pest populations mapped during a scouting visit. In this way a more permanent record of pest pressure is recorded and the effectiveness of control options evaluated. The Brynwood Golf Course will follow an aggressive scouting program as outlined in the discussion section for each pest. The scouting forms found at the end of this section will be used by this golf course to monitor pest populations.

Monitoring for pests involves determining the location and number of pests or area affected by pests. Thresholds for pest occurrence have been developed for many golf course pests and will be used to determine if a pesticides application is warranted. Table 4 contains action threshold values for most of the pests that are anticipated to occur on this golf course.

Table 4. Pest action thresholds for the Brynwood Golf Course.

Pest	Greens/tees	Fairways	Roughs
	-------------------------	#/sq.yd	-------------------------
Diseases			
Dollar spot	5*	10	-
Brown Patch	1	2	-
Pink Snow mold	1	2	-
Anthracnose	------- not determine -------		
Summer patch	UD**	UD	-
Insects			
May beetle grubs	27-36	27-36	27-36
European chafer grubs	21-72	21-72	21-72
Asiatic garden & Mask chafer grubs	96-180	96-180	96-180
Oriental & Japanese beetle grubs	54-180	54-180	54-180
cutworm	1	5	-
Ataenius	270-450	270-450	180
Hyperodes	36	54	72

Weeds

broadleaf’s	1	2	5
crabgrass	1	1	3
ann. bluegrass	1	9	-

* #/sq.yd. depending on pest. For diseases of Dollar spot and Brown Patch these are the numbers of spots/patches per sq.yd. For insects and weeds it is the number of each organism per sq. yd. ****** UD=upon detection, in conjunction with weather conditions.

If environmental conditions favor continued pest pressure, the action threshold has been exceeded and other non-pesticidal options have been tried, then a pesticide will be applied. The threshold values may be changed as pest history on this golf course warrants modification (i.e. too much or too little pest damage at a given threshold).

Application Procedures

To protect the adjoining properties from drift of the pesticide spray, all areas to be treated with pesticides, a shrouded sprayer will be used whenever possible to apply pesticides. The shrouded sprayer applies the pesticide spray directly on the turf reducing drift to near zero at wind speeds less than 15 mph. Granular applications will also be used to reduce the potential for any off-site movement of pesticides and fertilizers via spray drift. No applications of pesticides or fertilizer will be made within 48 hours of a predicted heavy rainfall event (except for imminent threat of rapidly developing diseases like Pythium blight and Brown Patch). Only after all other pest management options have been tried will pesticides be applied to areas that exceed thresholds and that the climatic conditions indicated above still favor pest damage so as to minimize the amount of pesticides to be used. Spot treatments will be the rule not the exception.

Anticipated Frequency

Pesticides: It is nearly impossible to develop a pesticide application schedule in advance of the building of a golf course if the principles of IPM are to be followed. The major premise of an IPM program is to use all options in controlling a pest and when it is necessary to apply a pesticide it must be applied at the proper time for optimal control. Only a preventative program could be developed in advance of operating a golf course. Preventative programs are only necessary for a few turfgrass diseases. It would be very likely that an all preventative program would lead to applying fungicides when it was not necessary, increasing the risk of environmental damage and greater likelihood of developing fungi resistant to fungicides. A preventative pesticide program is found at the end of the report.

e. Evaluation of turf management and pest treatment effectiveness to document program successes and determine if changes are necessary.

The as built golf plans will be used to develop a hole by hole GPS map of the golf course to be used to record the location of all pests during scouting and monitoring. As part of a permanent record, the golf course will maintain the pest occurrence maps to be used to develop the site-specific pest knowledge base. This will also be used to evaluate the effectiveness of the current IPM plan and used to modify the plan if necessary.

III. Fertilizer and Pesticide Use and Pesticide Selection based on Risk Assessment

The Brynwood Golf Course will apply fertilizers and pesticides in a very careful manner. The following outlines the practices to be followed:

3.1 Will use only products registered for use in the United States and New York for only their specified and approved function.

3.2 Will store all fertilizer and pesticides in an area conforming to all state and local regulations that include but are not necessarily limited to:

- **a)** a locked area clearly marked to indicate chemical storage;
- **b)** an operating ventilation fan discharging exhaust to the outside clear of windows of other buildings or public areas;
- **c)** a solid floor impermeable to liquid and surrounded by curbing to contain any spilled or leaked material.

Chemical storage facility: Chemical storage facility will be a standalone, pre-fabricated building with air ventilation and circulation systems capable of preventing hazardous gaseous buildup. Building will be climate controlled for both heating and cooling temperature controls. The chemical storage building will also be secured by lock and will be under 24 hour surveillance from closed circuit security system.
Our chemical storage facility will follow all NYSDEC requirements for construction materials to include an impermeable bottom and false bottom containment to hold a minimum 25% volume of stored materials. All electrical systems within storage facility will follow strict coding requirements to include non-sparking procedures for all electrical wiring and components.

Hazardous Material to be generated or stored: - A comprehensive list of fertilizers and pesticides are contained in this report.
- Current gasoline, diesel and heating oil tanks:
  1. 1500 Gallons – Agronomy Gasoline
  2. 500 Gallons – Agronomy Diesel
  3. 500 Gallons – Golf Operations Gasoline
  4. 275 Gallons – Waste Treatment Plant Diesel (generator)
  5. 2000 Gallons – Heating oil Tank at Clubhouse.
  6. 1500 Gallons – Clubhouse Generator Diesel (generator)

7. 1000 Gallons – Irrigation Pump house generator (generator)

- The bulk storage capacities should be maintained at current operable levels throughout the entire project. These will not be available for use for outside contractors, they will be responsible for their own supplies. Bulk petroleum storage tanks are up to code and secured. Going forward it will remain standard operating procedure to perform routine maintenance to insure that these existing, as well as the future, bulk petroleum storage facilities remain up to code.

- All contractors and subcontractors involved in work at the facility will provide their own source of any material labeled or deemed hazardous.

- All chemicals will be stored with the ability to collect any spills. See previous chemical storage facility discussion. All fill stations for chemicals and gasoline will be bermed and with self-contained collection pit to prevent contamination.

- As the project moves forward, any areas of the property that are found to be contaminated will be properly remediated, in line with NYS DEC requirements. Any materials from demolition of old building facilities found to contain hazardous materials will be disposed of by licensed disposal contractor and site will be remediated.

3.3 All mixing and loading of pesticides will be performed in accordance with all state regulations.

3.4 Will dispose of all pesticide containers and pesticide wastes in accordance with provincial regulations.

3.5 All handling and spraying of pesticides to be performed under the strict supervision of trained and licensed pesticide applicators. The golf course superintendent will ensure compliance.

3.6 Pesticides will be applied only when wind conditions ensure a minimum of drift and when there are as few golfers and general public present as possible.

3.7 Protect water quality by maintaining a buffer zone between all water bodies and areas of fertilizer and pesticide application. When pesticides are applied near water, use low-pressure spray nozzles will be used to further reduce chance of drift.

3.8 The golf course will communicate with members of the golfing and non-golfing community the nature of the application. This will be done with posting signs at the clubhouse and the entrance to the golf course indicating the date of the application, the product to be used and a contact person and phone number. This will be done for applications that are schedule in advance. For emergency application, the areas treated will be flagged. Posting at the clubhouse will also be done for the fertilizer application outlined in Tables 4 and 5.

3.9 Apply only the amount necessary to control the target pest and only apply when pest population warrants treatment, as determined by pest monitoring, and only apply to affected areas. The details are contained in the IPM section above.

3.10 Apply fertilizer only in quantities and types that can be utilized by the plant to minimize leaching and runoff potential. Fertilizer laws for NYS and Westchester County will be followed.

Unlike for pesticide programs, it is possible to develop in advance a comprehensive nitrogen fertilization schedule. For other nutrients like phosphorus, potassium, calcium and magnesium, soil test result information will be used to develop the fertilization program. Factors important in the development of such a program include the site specific soil properties, clipping management, nutrient requirements of grass species/cultivar, irrigation plan, desired level of quality, interaction with pest populations and environmental considerations.

Conditions set for in the NYS and Westchester County Fertilizer Restriction Law are as follows:

1. Prohibits the use of phosphorus-containing lawn (any turf) fertilizer unless:

    (a) establishing a new lawn during the first growing season or

    (b) a soil test shows that the lawn does not have enough phosphorus.

2. Prohibit the application of lawn fertilizer on impervious surfaces (sidewalk, drive way or road) and require pick up of fertilizer applied or spilled onto impervious surfaces.
3. Prohibit the application of lawn fertilizers within 20 feet of any surface water except:

    (a) where there is a continuous vegetative buffer of at least 10 feet; or

    (b) where the fertilizer is applied by a device with a spreader guard, deflector shield or drop spreader at least three feet from surface water

4. Prohibit the application of lawn fertilizer between December 1st and April 1st

5. Prohibit the application of lawn fertilizers within 20 feet of any surface water[1] except:

   (a) where there is a continuous vegetative buffer of at least 10 feet; <u>or</u>

   (b) where the fertilizer is applied by a device with a spreader guard, deflector shield or drop spreader at least three feet from surface water

   this does not apply to sites being established

   this is for all fertilizers not just ones that contain phosphorus

[1] This applies to all fertilizers and not just those containing phosphorus, but does not apply to turf establishment.

To comply with the Westchester County and New York State laws, soil samples will be taken as necessary and tested for plant available nutrients. Such soil test results will be used to determine the amounts of nutrients like phosphorus, calcium, magnesium and potassium that are needed on this site. Soil samples will be sent to Agro-One (see website for details on sampling and sample submission), Ithaca, New York or of an authority of similar expertise which uses recommendations developed at Cornell University or of an authority of similar expertise.

Clippings will be removed from the greens and tees, while clipping will be returned in the fairways and roughs. Clipping management was used in developing the nitrogen application rates shown below. The basic fertilization program is shown in Tables 5 and 6.

<u>Determining Fertilization Applications:</u> Soil testing and visual inspections will be used to determine the need for a fertilization application. A soil testing is used to determine the amount of available nutrients currently found in the soil and the amount of nutrients needed to be applied to provide for healthy plant growth. Soil testing will be used to determine the basic quarterly application rates for phosphorus, potassium, calcium and magnesium. Soil samples will be collected in December on all greens, tees and fairways/approaches until it has been determined that certain sections are similar and fewer samples will be necessary. Soil pH modification will be done to maintain a pH in the range of 5.5 to 6.0, based on the soil testing results. Limestone will be used to raise pH if soil test results indicate the needed and the amount will be based on the soil test recommendation. Limestone applied to turf has been shown to only change pH in the surface few inches of the soil.

Table 5. Recommended fertilization program for the greens/tees at the Brynwood Golf Course.

	April	May	June	July	Aug.	Sept.	Oct.-Nov	Total/ Yr. Tot.
First year								
	---------- lbs/1000 sq.ft. ----------							
	Fert*	Fert	----Disease suppressive fert-----			Fert	Fert	
	0.5	0.25	0.5	0.5	0.5	0.5	1.0	3.75 N
		---------- If Fertigation is used ----------						
		0.25	0.5	0.5	0.5	0.5		2.25 N
							Total N	**6.0 (8.0^)**
Future years								
	Fert*	Fert	------Disease suppressive fert-----			Fert	Fert	
	0.5		0.4	0.4	0.4		0.5	2.2 N
		---------- If Fertigation is used ----------						
		0.25	0.25	0.25	0.25	0.25		1.25
								Total N 3.45

***** Fert= soluble and other slow release nitrogen sources urea, ammonium sulfate, IBDU, methylene urea (Nutralene, Scotts), coated urea (sulfur, resin or polymer coated) and natural organic (Milorganite, Nature Safe, etc). ^ At establishment 2 lbs of N/1,000 sq-ft will be applied as a starter fertilizer. Maximum soluble nitrogen rate for urea and ammonium sulfate is 0.4 lbs N/1000 sq.ft per application to reduce nitrate leaching (Petrovic and Barlow, 2012)

Table 6. Recommended fertilization program for fairways and roughs for the Brynwood Golf Course.

Apr.	May	June	July	Aug.	Sept.	Oct./Nov.	Yearly Total
---------------------------------- lbs of Nitrogen/1000 sq.ft.--							
Fairways, during establishment							
0.75	0.75	0.75	0.75	0.75	1.0	0.75	5.5 Nitrogen
Fairways, following establishment							
	0.5	0.5	0.5		0.5	0.5	2.5 Nitrogen
Roughs, during establishment							
0.5	0.5	0.5		0.5	0.5		2.5 Nitrogen
Roughs, following establishment*							
	0.5				0.5		1.0 Nitrogen

* Roughs will only be fertilized when density drops by 25 %.

The nitrogen application for roughs following establishment consists of clippings being returned to roughs during mowing and from fairways. Sources to be used include any of the following: urea, ammonium sulfate and slow release materials: IBDU, methylene urea (Nutralene, Scotts), natural organic (Sustane, Ringers, Milorganite, Nature Safe) and coated urea's (sulfur, resin and polymer). Fertigation is expected to be about half of the nitrogen applied to fairways. Maximum soluble nitrogen rate for urea and ammonium sulfate is 0.7 lbs N/1000 sq.ft per application to reduce nitrate leaching (Petrovic and Barlow, 2012). In no case will the phosphorus application, associated with the use of natural organic fertilizers, exceed the soil testing recommendation level. Tissue testing will be used on fairways to adjust applications.

Fertigation Program: Apply a small amount of water soluble fertilizer via the irrigation system will be practiced as irrigation water needs to be applied. The irrigation season usually runs from May through October. Tissue testing will be used to determine application amount so as to maintain 3-6 % N in the clippings) in mid-April and ending in late September. Backflow prevention will be used on the irrigation system if fertigation injectors are to be used.

The amounts of nitrogen fertilizer to be applied will likely be reduced by 50 % within the first 10 to 25 years due to the fact that a lesser amount of the fertilizer nitrogen will be retained by soil as soil organic matter. Tissue testing may be used to help judge the need for fertilization and will be used to reduce the amounts of nitrogen fertilizer applied over time.

This fertilization programs incorporate a balanced approach to fertilization. The amount of each nutrient applied will provide for adequate plant growth, will not over or under stimulate growth at the expense of disease resistance or weed encroachment, will act in a disease suppressive manner by the use of natural organic fertilizer (Sustane or Ringer) and will not lead to either a significant amount of runoff or leaching because there will not be a large pool of water soluble nutrients available at one time. This program will avoid several of the major factors that encourage nitrate leaching. There is no late fall fertilization, use of low rates of highly water soluble sources, careful irrigation and low total amounts of nitrogen applied (Petrovic and Barlow, 2012; Petrovic, 1990; Morton et al., 1988) and the rates of application are low, thus resulting in little soluble nitrogen available for offsite transport. Small amounts of soluble nitrogen fertilizer (0.10 lbs. nitrogen/1000 sq.ft.) may be applied if the turf is off color between scheduled applications. No fertilizers will be applied in advance of inclement weather predictions (48 hr.) to further reduce the likelihood of leaching or runoff.

The fertilizer nutrients of concern from an environmental perspective are nitrogen (as nitrate) and phosphorus (phosphates). Nitrate can cause a reduction in the quality of water in a drinking water source or cause eutrophication of streams, ponds or lakes. Phosphorus is needed in small amounts by turfgrass and is mostly of concern for surface water eutrophication. This fertilization program addresses the need to protect water quality from fertilizers contaminating surface and ground water.

Phosphorus can be a problem in runoff, but in well managed turfgrass situations as described here, phosphorus runoff from turf seldom occurs due to the high amount of water infiltration into the soil and proper management (Easton and Petrovic, 2008; Soldat and Petrovic, 2008). Phosphorus runoff has been a problem in traditional agricultural production when erosion has occurred or the application of phosphorus was in excess of the amount need for plant growth (based on soil tests). Upon established turf erosion is eliminated. On the Brynwood Golf Course, phosphorus (potassium, pH modification and other nutrients other than nitrogen) applications will be based on soil test results to insure that the proper amounts be applied to provide for acceptable plant health and avoiding excesses that can lead to contamination of surface water. Soil testing will be done just prior to establishment to determine the amount of phosphorus to apply at seeding/sodding and once per year thereafter for maintenance applications. All greens, tees, fairways and roughs will be sampled. The natural organic fertilizers that will be used for much of the fertilization program and will supply most of the phosphorus needs. Soil testing done just prior to seeding will give actual amounts needed on each green, tee, fairway and rough.

3.11 The environmental risk assessment is composed of two parts. First, the surface and ground water contamination (runoff and leaching) potential of all pesticides registered for use on golf courses in New York for the soils of this site was evaluated. Second, the pesticides identified to have a high potential risk to humans or aquatic wildlife will not be used on this golf course. Pesticide that had an intermediate risk to humans or aquatic wildlife may be used only if there no other control options available and only on very limited bases applied under a very strict set of conditions. Pesticides with a low potential for both humans and aquatic wildlife will be used only after all other pest control measures have failed. Pesticides that are safest to humans and wildlife will be used first.

The following is a list of pesticides registered for use in New York and was evaluated for risk to surface and ground water contamination by WINPST.

Fungicides and fungicide combinations: azoxystrobin (USEPA reduced risk pesticide, RR), azoxystrobin + propiconazole, azoxystrobin + difenoconizole, boscalid (RR), chloroneb chlorothalonil, chlorothalonil + propiconazole, chlorothalonil + thiophanate-methyl, chlorothalonil +ASM, copper hydroxide + mancozeb, cyazofamid, etridiazole, fenarimol, fludioxonil, fludioxonil + chlorothalonil + propiconazole, fluopicolide + propamocarb hydrochloride, flutolanil, fosetyl-al, iprodione, mancozeb, metalaxyl (mefenoxam), metconazole, mineral oil, myclobutanil, polyoxin D zinc salt, propamocarb, propiconazole, pyraclostrobin, pyraclostrobin + boscalid, tebuconazole, thiophanate-methyl, thiophanate-methyl + iprodione, triadimefon, trifloxystrobin, trifloxystrobin + triadimefon, vinclozalin.

Biofungicides: *Bacillus licheniformis* strain SB 3086, *Bacillus subtillis,* strain GB 03, *Bacillus subtilis*, strain QST 713, *Pseudomonas aureofaciens* strain TX-1, Polyoxin D Zinc salt, Mono and di-potassium salts of phosphorus acid.

Insecticides: Abamectin, acephate, azadirachtin, *Bacillus thuringiensis*, subsp. *Kurstaki*, *Beauveria bassiana*, bifenthrin, boric acid, carbaryl , chlorantraniliprole, chlorpyrifos, cyfluthrin, lambda-cyhalothrin, deltamethrin, bifenthrin + carbaryl, bifenthrin + imidacloprid, cyfluthrin + imidacloprid, hydramethylnon, imidacloprid, indoxacarb, *Paenibacillus popilliae*, permethrin, spinosad, trichlorfon.

Plant Growth Regulators: Paclobutrizol, ethephon, mefluidide, trinexapac-ethyl, trinexapac-ethyl plus paclobutrazol.

Herbicides: 2,4-D, 2,4-DP + MCPP + dicamba, 2,4-D + 2,4-DP + dicamba, 2,4-D + clopyralid + dicamba, 2,4-D + triclopyr + fluroxypyr, 2,4-D +dicamba + fluroxypyr, 2,4-D + 2,4-DP + fluroxypyr, 2,4-D + sulfentrazone + dicamba +MCPP, 2,4-D + dicamba + penoxsulam, acetic acid, benefin, benefin + trifluralin, benefin + oryzalin, bensulide, bentazon, bispyribac sodium, bromoxynil, carfentrazone-ethyl, carfentrazone +2,4-D + MCPP +dicamba, carfentrazone + MCPA + MCPP + dicamba, clopyralid, clopyralid + 2,4-D +triclopyr, dithiopyr, ethofumesate, fenoxaprop, fluroxypyr + triclopyr, fluazifop-p-butyl, glufosinate, glyphosate, halosulfuron, indaziflam + diquat + glyphosate, iron HEDTA, MCPA + clopyralid + dicamba, MCPA + triclopyr + dicamba, metsulfuron-methyl, mesotrione, oxadiazon, pelargonic acid, pendimethalin, penoxsulam, penoxsulam + dicamba, primisulfuron-methyl, prodiamine, quinclorac-carfentrazone, siduron, triclopyr, triclopyr + 2,4-D, triclopyr + clopyralid, trifluralin.

The assessment of the potential risk to humans (as a drinking water source) and aquatic wildlife (fish) of each registered pesticide on each soil (see appendix) found on the site was performed by using the Windows Pesticide Screening Tool (WIN PST). WIN PST is a computerized information delivery system developed by the US Department of Agriculture and the National Resource Conservation Service based on the GLEAMS model (Leonard et al. 1987). Refer to the appendix for an explanation of WIN PST and other information related to the pesticides that were evaluated.

A summary of the pesticide fate as determined by the WIN PST analysis for the soils on greens, tees, fairways and roughs is contained in the appendix of this report.

The greens and tees will be built as a sand-based system to provide a compaction resistant/well drained system and create a healthy pest- resistant playing surface. Based on the WIN PST analysis, greens/tees will be built with about 1 % organic matter, by weight. In the appendix the greens/tees soil will be referred to as Windsor soil having the above characteristics. Greens/tees will also have a sub-drainage system in which the drainage water will be diverted to water quality swales and not directly discharged into surface water. Soils on fairways and roughs (Woodbridge, Paxton, Ridgebury, Charlton and Chatfield which are also equivalent to Leichester, Riverhead and Sutton loams) are the existing soils referred to in the appendix of WIN PST results.

The results of the environmental risk assessment of the pesticides by WIN PST screened on the soils of this site, as seen in Table 7. Pesticides with either a high risk to humans or wildlife will not be used on this golf course. Pesticides with an intermediate risk to either humans or wildlife will be only used to spot treat areas only if all other control measures fail of if applied at very low rates including when they are part of a combination product with other pesticides.

Table 7. The potential risk to humans and aquatic wildlife (fish) in surface water (S. water) and groundwater (G. water) from pesticides considered for use on Brynwood Golf Course site, based on WINPST analysis.

	Humans				Aquatic wildlife			
	Greens, tees		Fairways and roughs*		Greens, tees		Fairways, roughs *	
Pesticides	**G. water**	**S. water**	**G. water**	**S. water**	**G. water**	**S. water**	**G. water**	**S. water**
2,4-D	low	low	low	low	very low	v. low	v. low	v. low
AMS	v. low	v. low	v. low	v. low	v. low	v. low	v. low	v. low
Abamectin	low	**interm**	low	**interm.**	**Interm.**	**high**	**Interm.**	**High**
Acephate	low	**interm.**	v. low	v. low	low	**interm**	v. low	v. low
Acetic acid	v. low	v. low	v. low	v. low	v. low	v. low	v. low	v. low
Azadirachtin	v. low	v. low	v. low	v. low	**Interm.**	Low	**Interm.**	low
azoxystrobin	v. low	v. low	v. low	low	v. low	v. low	v. low	low
Bacillus licheni-formis SB3086	v. low	v. low	v. low	v. low	v. low	v. low	v. low	v. low
Bacillus subtilis GB03	v. low	v. low	v. low	v. low	v. low	v. low	v. low	v. low
B. subtilis QST 713	v. low	v. low	v. low	v. low	v. low	v. low	v. low	v. low
B. thuringiensis – kurstaki	v. low	v. low	v. low	v. low	v. low	v. low	v. low	v. low
benefin	low	low	v. low	**interm.**	low	low	v. low	**interm.**
Bensulide	low	low	v. low	**interm.**	low	low	v. low	**interm.**
bifenthrin	v. low	low	**interm.**	**high**	v. low	low	**interm.**	**High**
Bispyribac-sodium	v. low	v. low	v. low	v. low	v. low	v. low	v. low	v. low
Boric acid	v. low	v. low	v. low	v. low	v. low	v. low	v. low	v. low
Bosocalid	v. low	v. low	v. low	v. low	low	low	v. low	low
Bromoxynil	v. low	low	v. low	low	v. low	low	v. low	low
carbaryl	v. low	low	v. low	low	v. low	low	v. low	low
cartfentrazone	v. low	v. low	v. low	v. low	v. low	low	v. low	low
Chloroneb	v. low	low	v. low	v. low	v. low	low	v. low	v. low
chlorothalonil	v. low	low	v.low	low	low	**interm.**	low	**interm.**

Chlorpyrifos	**interm.**	Low	**interm.**	Low	**interm.**	**high**	**interm.**	**high**
Clopyralid	v. low	v. low	v. low	v. low	v. low	v. low	v. low	v. low
Copper hydroxide	v. low	v. low	v. low	v. low	low	**interm.**	low	**high**
Cyazofamid	v. low	v. low	v. low	v. low	v. low	low	v. low	v. low
Cyfluthrin	v. low	v. low	v. low	v. low	**interm.**	**high**	**interm.**	**high**
deltamethrin	v. low	low	v. low	low	**interm.**	**high**	**interm.**	**high**
dicloprop (2,4-DP)	low	low	low	low	v. low	v. low	v. low	v. low
dicamba	v. low	v. low	v. low	v. low	low	low	low	low
Difenoconazole	low	**interm.**	**interm.**	**High**	**interm.**	**high**	**interm.**	**X. high**
Diquat dibromide	v. low	low	v. low	v. low	v. low	low	v. low	v. low
dithiopyr	**interm.**	low	v. low	**Interm.**	**Interm.**	low	v. low	**Interm.**
Ethephon	v. low	low	v. low	v. low	v. low	v. low	v. low	v. low
ethofumesate	v. low	v. low	v. low	low	low	low	v. low	**interm.**
etridiazole	v. low	low	v. low	low	v. low	low	v. low	low
fenarimol	v. low	v. low	v. low	v. low	v. low	low	v. low	low
fenoxaprop-et	v. low	low	v. low	low	v. low	low	v. low	low
Fluazifop-butyl	v. low	low	v. low	low	v. low	low	v. low	low
Fludioxonil	v. low	v. low	v. low	v. low	v. low	low	v. low	**Interm.**
Fluopicolide	v. low	v. low	v. low	v. low	low	low	v. low	low
Fluroxypyr	v. low	v. low	v. low	v. low	v. low	v. low	v. low	v. low
flutolanil	v. low	v. low	v. low	v. low	low	low	v. low	low
fosetyl-al	v. low	v. low	v. low	v. low	v. low	v. low	v. low	v. low
glufosinate	v. low	v. low	v. low	v. low	v. low	v. low	v. low	v. low
glyphosate	v. low	v. low	v. low	low	v. low	v. low	v. low	low
halosulfuron	v. low	v. low	v. low	v. low	v. low	v. low	v. low	v. low
Hydramethylnon	**interm.**	**high**	**interm.**	**high**	low	**interm.**	v. low	**interm.**
imadicloprid	v. low	v. low	v. low	v. low	v. low	v. low	v. low	v. low
Indoxacarb	v. low	v. low	v. low	v. low	low	**interm.**	low	**interm.**
iprodione	low	**interm.**	low	**high**	v. low	low	v. low	low
lambda-cyhalothrin	low	**interm.**	low	**interm.**	**interm.**	**High**	**interm.**	**High**
MCPA	low	low	v. low	low	low	low	v. low	low
MCPP (mecoprop)	**interm.**	**high**	low	**interm.**	v. low	v. low	v. low	v. low
mancozeb	low	**interm.**	**interm.**	**high**	low	**interm.**	low	**high**
metalaxyl	v. low	v. low	v. low	low	v. low	low	low	v. low
Mefluidide	v. low	v. low	v. low	v. low	v. low	v. low	v. low	v. low
Mesotrione	v. low	low	v. low	low	v. low	v. low	v. low	v. low
Metconazole	v. low	v. low	v. low	v. low	low	low	v. low	low
Metsulfuron-methy	v. low	v. low	v. low	v. low	v. low	v. low	v. low	v. low
phosphorous acid	v. low	v. low	v. low	v. low	**interm.**	low	v. low	low
MSMA	low	low	low	low	v. low	v. low	v. low	low
Myclobutanil	v. low	v. low	v. low	v. low	low	low	v. low	low
oxadiazon	**interm.**	low	**interm.**	low	low	**interm.**	l ow	**interm.**
paclobutrazol	v. low	v. low	v. low	v. low	v. low	v. low	v. low	v. low
pendimethalin	v. low	low	v. low	low	low	**interm.**	Low	**interm.**
Penoxsulam	v. low	v. low	v. low	v. low	v. low	v. low	v. low	v. low
Permethrin	v. low	low	v. low	low	**interm.**	**High**	**interm.**	**High**
Primisulfuron-methyl	**interm.**	low	v. low	**Interm.**	v. low	v. low	v. low	v. low
prodiamine	v. low	low	v. low	low	v. low	low	v. low	low
propamocarb	v. low	v. low	v. low	v. low	v. low	v. low	v. low	v. low
propiconazole	**interm.**	**interm.**	Low	**high**	low	low	v. low	low
Pyraclostrobin	v. low	v. low	v. low	v. low	low	**interm.**	Low	**high**
Quinclorac	v. low	v. low	v. low	v. low	v. low	v. low	v. low	v. low
Siduron	v. low	v. low	v. low	v. low	low	low	v. low	**interm.**
spinosyn A & D	v. low	v. low	v. low	v. low	v. low	v. low	v. low	v. low
Sulfentrazone	low	low	v. low	low	v. low	v. low	v. low	v. low
Tebuconazole	low	low	v. low	**interm.**	low	low	v. low	**interm.**
thiophanate-methyl	v. low	low	v. low	low	low	**interm.**	low	**interm.**
triadimefon	low	low	v. low	**interm.**	low	low	v. low	low
triadimenol	low	low	v. low	**interm.**	V. low	v. low	v. low	v. low
trichlorfon	**high**	**interm.**	Low	**interm.**	**interm.**	low	v. low	low
triclopyr	v. low	v. low	v. low	v. low	v. low	v. low	v. low	v. low
trifloxystrobin	v. low	v. low	v. low	v. low	low	**interm.**	Low	**interm.**
trifluralin	v. low	low	v. low	low	**interm.**	**high**	**interm.**	**High**
Trinexapac-ethyl	v. low	v. low	v. low	v. low	v. low	v. low	v. low	v. low
vinclozalin	**interm.**	**interm.**	Low	**interm.**	low	low	v. low	low

* Includes the worst risk assessment ranking from any of the soils found on this site.

Estimated Concentration of Pesticide in Surface and Ground Water

Brynwood will only be using pesticides with a low to intermediate potential for both surface and ground water contamination and it is highly unlikely that any pesticides would be found in surface or ground water on or off this site. The whole objective and idea surrounding the use of this ITPMP is to prevent problems such as the contamination of groundwater and storm water. All of ITPMP practices, agronomic and environmental, are and will be geared toward making it unlikely that anything will reach ground and surface water. The results from surface and ground water monitoring studies of over 80 golf courses in the U.S. support this conclusion (Baris et al., 2010). However, in some cases small amounts of pesticides were and could be detected. The concentration of pesticides in surface and ground water was estimated assuming that a moderate amount (0.1 % based on pesticide fate studies) of the pesticide applied would enter surface and ground water. Using the application rates of pesticides found in Table 8, along with the estimated values of runoff and ground water recharge, the concentrations were estimated.

Table 9 contains a worst case estimate of pesticide concentration in surface water at the 5 design points that have golf course features of greens, tees or fairways. The assumptions in these estimates are that the greatest amount of contaminate loss occurs in the first ½ inch of runoff (equivalent to a 2 year return frequency event) from an individual pesticide application and standard label rate of pesticides were applied. As expected the estimated concentrations of pesticides in surface water was low and in line with the maximum values observed from actual golf courses (Baris et al., 2010). In two cases the maximum acceptable toxicant concentration for fish was slightly exceeded. However, it is unlikely that fish will come in direct contact with the untreated storm water from this site. The two pesticides, the insecticides bifenthrin and lambda-cyhalothrin shown in the WIN PST analysis to have a high risk to fish on this site, are critical to control one of the most destructive insects, annual bluegrass weevil. It is proposed to allow the Brynwood Country Club to apply under emergency conditions. It has been observed that the rapid death of turfgrass will lead to excessive leaching and runoff of nitrogen and phosphorus, thus the need to prevent damage from annual bluegrass. Bifenthrin and lambda-cyhalothrin will only be applied after all other control options have failed and the population threshold has been exceeded following scouting. The Town of North Castle will be notified when an application is to be made under these set of emergency conditions.

The estimated concentration of pesticides in groundwater in shown in Table 10. These values use the pesticide application rates shown in Table 8 for a yearly total for a given pesticide and the volumes of average ground water recharge equal to 116,702,293 liters (162.45 acres and 7 inches of recharge/yr.) or for a 1 in 30 year drought of 83,358,780 liters (162.45 acres and 5 inches of recharge/yr.). As expected none of the estimated pesticide concentration in groundwater exceeded the water quality standards.

4. Wildlife and Wildlife Habitats

4.1 Native vegetation will be used to provide habitat for indigenous species whenever possible.

4.2 On the long term, native groundcover or shrubs that may be removed during any construction or renovation projects involving non-golf areas will be replaced with indigenous plant species.

5. Water Use

5.1 The Brynwood Golf Course will irrigate only the areas requiring water and limit the amount applied to the amount actually required by the plant.

The modern computer-controlled irrigation system used on today's golf courses like the proposed Brynwood Golf Course is very flexible to be able to irrigate to the amount needed for adequate plant growth while not over irrigating. Over-irrigation can make many disease problems more severe, can lead to a significantly greater likelihood for either pesticide or nitrate leaching into groundwater and runoff into surface waters (Petrovic, 1990 and 1994) and can waste upwards of 50 % more water than is actually needed.

This golf course will apply water based on an estimate of the amount of water used by the turfgrass plant. This irrigation system will either have a weather station linked to the controller that estimates plant water use and will irrigate accordingly or use evapotranspiration rate data provided by the North East Climate Center, Ithaca, NY. This proper amount of irrigation will be applied to minimize any environmental impact, reduce the potential for pest problems, reduce the waste of water from excess irrigation and produce a healthy pest-resistant grass. Greens, tees and fairways will be irrigated. Water from the on-site pond may be used for irrigation.

ITPMP Use and Reporting Requirements

The golf course superintendent will have the responsibility of implementing the ITPMP and reporting on all phases of the project, from construction to yearly maintenance. Implementation will involve developing an operational manual that utilizes the information found in this report. This will be one of the first tasks of the new superintendent once the person is hired and will be completed in advance of the opening of the golf course and will be reported to the Town. At the point of hiring the golf course superintendent he/she will be responsible for implementation of the ITPMP. Following construction of the golf course, the operational ITPMP will be provided to the Town each year showing how the plan was followed. Town approval will be required prior to any proposed changes.

By February of each year the applicant will provide the Town with report of the previous year's activities that will include the following information:

1. The materials used at establishment (construction); actual grasses (species and variety) used by location and seeding rate (or sod used) and establishment date, fertilizer materials used (rates and dates of application by location including soil

test results), amount of mulch used and location applied, amount of lime if applied to which areas on what date(s). The superintendent will provide the Town this information so as to determine compliance with the ITPMP. After the first year this section will contain information on any over seeding or sodding that was done the previous year.

2. Irrigation Protocol: how amount of irrigation was determined, monthly summary of irrigation amount by location.

3. IPM Program: results from pest scouting showing location and amounts of pests by date, table containing all pest control applications (including cultural, biological and chemical control used) listing date, location, rate of application and material used.

4. Suggested changes to the ITPMP: the applicant may upon review of the history of the site suggest changes to the ITPMP, which may include adoption of new technologies, materials and deletions of materials to be used. Any new pesticide to be considered for use will go through a risk assessment using the currently acceptable method. Within a reasonable time frame of three month, the Town must notify the applicant of their decision on approving modifications to the ITPMP.

EQUIPMENT WASHING

All equipment wash bays will have a trench drain with a sedimentation area to drop out any grass clippings or other debris, as well as a sand/oil separator. All bays will flow through a naturalized grass and vegetative filtration ditch and be discharged into the golf course irrigation lake. Grading will be done to insure all drainage of the entire maintenance yard footprint will be collected and discharged through a naturalized grass and vegetative filtration ditch and be discharged into the golf course irrigation lake as well.

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WIN PST Soil/Pesticide Information and Risk Assessment Results

Brynwood Scouting Forms

Turf IPM Field Infestation Report

Hole ____________ Scout ____________ Date ____________

Site (turf species)	Mowing Height	Soil Moisture	Weeds: Species	Weeds: No. or %	Diseases: Species	Diseases: No. or %	Remarks	Nematodes: Species	Nematodes: No. or %
Green									
Tee									
Fairway									
Rough									
Notes:			1. Goosegrass 2. Crabgrass 3. Broadleaves 4. Nutsedge, Yellow 5. Nutsedge, Purple 6. *Poa annua* 7. Other		1. Dollar spot 2. Leaf spot 3. *Pythium* blight 4. *Pythium* root rot 5. Fairy ring 6. Brown patch *(R. solani)* 7. Rhizoctonia leaf and sheath blight *(R. zeae)* 8. Algae/moss 9. Other			1. Sting 2. Lance 3. Stubby-root 4. Root-knot 5. Cyst 6. Ring 7. Spiral 8. Sheath 9. Other	

Turf IPM Field History Report Form

Hole ______________ Scout ______________ Date ______________

Site	Turf Species	Mowing Schedule	Soil Analysis			Soil Drainage	Fertilization (N/1000 sq ft)				Irrigation Schedule
			pH	P	K		Spring	Summer	Fall	Winter	
Green											
Tee											
Fairway											
Rough											
Driving range											
Nursery green											
Practice green											

Comments on specific topics such as shade, overseeding blend, nitrogen carrier, topdressing mix, weather, irrigation salinity levels, etc.

Table 8. Preventative pesticide application schedule for Brynwood Golf Club.

<u>Greens</u>

Date	Fungicide	Rate	Insecticide	Rate	Herbicide/PGR	Rate
4/1	Headway	2 oz/m	Talstar	15 oz/A	Primo	7 oz/A
4/15	Tartan	2 oz/m			Primo	6 oz/A
	Daconil Action	2.4 oz/m			Proxy	5 oz/A
5/1	Signature	4 oz/m	Scimitar	12 oz/A	Primo	6 oz/A
	Daconil WeatherStick	3.6 oz/m				
5/15	Instrata	7 oz/m			Primo	7 oz/A
					Proxy	5 oz/A
5/16			Acelepryn	12 oz/A		
6/1	Insignia Intrinsic	.72 oz/m	Conserve	52 oz/A		
	Segway	.9 oz/m				
6/11	Affirm	2.4 lbs/A			Primo	7 oz/A
	Daconil Action	2.4 oz/m				
6/21	Clearys 3336	4 oz/m	Talstar	20 oz/A	Primo	7 oz/A
	Signature	4 oz/m				
7/1	Insignia Intrinsic	.72 oz/m	Provaunt	12 oz/A		
	Banol	2 oz.m				
7/11	Signature	4 oz/m			Primo	7 oz/A
	Headway	3 oz/m				
	Daconil WeatherStick	3.6 oz/m				
7/21	Signature	4 oz/m	Scimitar	12 oz/A	Primo	7 oz/A
	Medallion	2 oz/m				
	Daconil WeatherStick	3.6 oz/m				
8/1	Segway	.9 oz/m	Conserve	52oz/A		
8/3	Signature	4 oz/m			Primo	7 oz/A
	Headway	2 oz/m				
	Daconil WeatherStick	3.6 oz/m				
8/11	Tartan	2 oz/m			Primo	7 oz/A
	Daconil Action	2.4 oz/m				
8/21	Instrata	7 oz/m			Primo	7 oz/A
9/3	Signature	4 oz/m	Talstar	20 oz/A	Primo	7 oz/A
	Daconil WeatherStick	3.6 oz/m				
9/24	Concert II	5 oz/m	.		Primo	7 oz/A

10/15	Tartan	2 oz/m		Primo	7 oz/A
Snow Mold	Instrata	11 oz/m		Primo	7 oz/A

Tees

Date	Fungicide	Rate	Insecticide	Rate	Herb/PGR	Rate
4/15	Curalan	1 oz/m	Scimitar	12 oz/A	Primo	12 oz/A
5/2	Emerald	.18 oz/m			Primo	12 oz/A
	Bayleton FLO	1 oz/m				
mid-late May			Acelepryn	12 oz/A	Dimension	32 oz/A
5/30	Torque	.6 oz/m			Primo	12 oz/A
	Daconil Action	2.4 oz/m				
6/1	Segway	.9 oz/m	Conserve	52 oz/A		
6/13	Instrata	7 oz/m	Talstar	20 oz/A	Primo	12 oz/A
7/1	Banol	2 oz.m	Provaunt	12 oz/A		
7/4	Signature	4 oz/m			Primo	12 oz/A
	Tartan	2 oz/m				
	Daconil Weatherstic	3.6 oz/m				
7/17	Renown	4.5 oz/m	Scimitar	12 oz/A	Primo	12 oz/A
8/1	Segway	.9 oz/m	Conserve	52 oz/A		
7/29	Instrata	7 oz/m			Primo	12 oz/A
8/12	Torque	.6 oz/m	Scimitar	12 oz/m	Primo	12 oz/A
	Daconil Action	2 oz/m				
9/2	Eagle	1.2 oz/m			Primo	12 oz/A
	Daconil Action	2.4 oz/m				
10/3	Tartan	2 oz/m			Primo	12 oz/A
	Daconil Action	2.4 oz/m				
Snow Mold	Torque	.6 oz/m			Primo	12 oz/A
	Daconil Action	2.4 oz/m				

Fairways

Date	Fungicide	Rate	Insecticide	Rate	Herb/PGR	Rate
4/14	Curalan	1 oz/m	Scimitar	12 oz/A	Primo	12 oz/A

5/1	Emerald	.18 oz/m			Primo	12 oz/A
	Bayleton FLO	1 oz/m				
mid-late May			Acelepryn	12 oz/A	Barricade	32 oz/A
5/28	Torque	.6 oz/m			Primo	12 oz/A
	Daconil Action	2 oz/m				
5/29	Torque	.6 oz/m			Primo	12 oz/A
	Daconil Action	2 oz/m				
end May-early June			Provaunt	12 oz/A		
end May-early June			Acelepryn	8 oz/A		
	Rough Application for season long grub control					
6/11	Renown	3.5 oz/m			Primo	12 oz/A
6/12	Renown	3.5 oz/m			Primo	12 oz/A
7/2	Tartan	2 oz/m			Primo	12 oz/A
	Daconil Action	2 oz/m				
7/3	Tartan	2 oz/m			Primo	12 oz/A
	Daconil Action	2 oz/m				
7/15	Renown	3 oz/m			Primo	12 oz/A
	Medallion	2 oz/m				
7/16	Renown	3 oz/m			Primo	12 oz/A
	Medallion	2 oz/m				
mid July			Provaunt	12 oz/A		
7/30	Torque	0.6 oz/m			Primo	12 oz/A
	Daconil Action	2 oz/m				
7/31	Torque	.6 oz/m			Primo	12 oz/A
	Daconil Action	2 oz/m				
8/13	Tartan	2 oz/m	Scimitar	12 oz/m	Primo	12 oz/A
	Daconil Action	2 oz/m				
8/14	Tartan	2 oz/m	Scimitar	12 oz/m	Primo	12 oz/A
	Daconil Action	2 oz/m				
9/3	Eagle	1.2 oz/m			Primo	12 oz/A
	Curalan	2 oz/m				
10/1	Renown	3 oz/m			Primo	12 oz/A
10/2	Renown	3 oz/m			Primo	12 oz/A
Snow Mold	Torque	0.6 oz/m			Primo	12 oz/A
	Daconil Action	2.4 oz/m				
Snow Mold	Torque	0.6 oz/m			Primo	12 oz/A
	Daconil Action	2.4 oz/m				

Intermediate (added to fairways in risk analysis)

Date	Fungicide	Rate	Insecticide	Rate	Herb/PGR	Rate

4/14	Curalan	1 oz/m	Scimitar	12 oz/A	Primo	12 oz/A
5/28	Torque	.6 oz/m			Primo	12 oz/A
	Daconil Action	2 oz/m				
5/29	Torque	.6 oz/m			Primo	12 oz/A
	Daconil Action	2 oz/m				
mid-late May			Acelepryn	12 oz/A	Barricade	32 oz/A
end may-early june			Provaunt	12 oz/A		
7/2	Tartan	2 oz/m			Primo	12 oz/A
	Daconil Action	2 oz/m				
7/3	Tartan	2 oz/m			Primo	12 oz/A
	Daconil Action	2 oz/m				
end may-early june			Provaunt	12 oz/A		
7/30	Torque	.6 oz/m	Scimitar	12 oz/m	Primo	12 oz/A
	Daconil Action	2 oz/m				
7/31	Torque	.6 oz/m	Scimitar	12 oz/m	Primo	12 oz/A
	Daconil Action	2 oz/m				
10/1	Renown	4 oz/m			Primo	12 oz/A
10/2	Renown	4 oz/m			Primo	12 oz/A
Snow Mold	Torque	.6 oz/m			Primo	12 oz/A
	Daconil Action	2.4 oz/m				
Snow Mold	Torque	.6 oz/m			Primo	12 oz/A
	Daconil Action	2.4 oz/m				

Table 9. Estimated concentration of the preventative pesticide applications to the Brynwood CC in the storm water at the drainage design points.

Pesticide	Design Point	Greens	Tees	Fairways	Runoff volume – first 0.5 " (liters)	Amt. of Pesticide (ug)	Est. Conc. Of Pesticide in runoff (ug/l)	Long Term Human Toxicity (ug/L)	Maximum Acceptable Toxicant Concentration-fish (ug/l)	Highest conc. from golf course monitoring Studies & (ug/l)
		Acres treated on same day								
Trifloxystrobin	DP-1A	0.31			836,410	31,694	0.04	350	5.8	
Trifloxystrobin	DP-1A		0.31		836,410	31,694	0.04	350	5.8	
Trifloxystrobin	DP-1A			1.13	836,410	115,020	0.14	350	5.8	
Trifloxystrobin	DP-1B	0.26			591,131	26,582	0.04	350	5.8	
Trifloxystrobin	DP-1B		0.22		591,131	22,492	0.04	350	5.8	
Trifloxystrobin	DP-1B			0.91	591,131	93,550	0.16	350	5.8	
Trifloxystrobin	DP-1C-6	1.74			5,695,285	177,898	0.03	350	5.8	
Trifloxystrobin	DP-1C-6		1.41		5,695,285	169,538	0.03	350	5.8	
Trifloxystrobin	DP-1C-6			10.46	5,695,285	1,068,919	0.19	350	5.8	
Trifloxystrobin	DP-1C-9	0.27			485,426	27,605	0.06	350	5.8	
Trifloxystrobin	DP-1C-9		0.11		485,426	11,246	0.02	350	5.8	

Trifloxystrobin	DP-1C-9			1.22	485,426	124,222	0.26	350	5.8	
Trifloxystrobin	DP-1C-10	0.23			630,643	23,515	0.04	350	5.8	
Trifloxystrobin	DP-1C-10		0.25		630,643	25,560	0.04	350	5.8	
Trifloxystrobin	DP-1C-10			0.07	630,643	6,646	0.01	350	5.8	
Chlorothalonil@	DP-1A	0.31			836,410	739,536	0.88	15	4.4	6.5
Chlorothalonil	DP-1A		0.31		836,410	871,596	1.04	15	4.4	
Chlorothalonil	DP-1A			1.13	836,410	2,824,096	3.38	15	4.4	
Chlorothalonil	DP-1B	0.26			591,131	620,256	1.05	15	4.4	
Chlorothalonil	DP-1B		0.22		591,131	618,552	1.05	15	4.4	
Chlorothalonil	DP-1B			0.92	591,131	2,299,264	3.89	15	4.4	
Chlorothalonil	DP-1C-6	1.74			5,695,285	4,150,944	0.73	15	4.4	
Chlorothalonil	DP-1C-6		1.41		5,695,285	3,964,356	0.70	15	4.4	
Chlorothalonil	DP-1C-6			10.46	5,695,285	19,309,160	3.39	15	4.4	
Chlorothalonil	DP-1C-9	0.27			485,426	644,112	1.33	15	4.4	
Chlorothalonil	DP-1C-9		0.11		485,426	309,276	0.64	15	4.4	
Chlorothalonil	DP-1C-9			1.12	485,426	2,067,520	4.26	15	4.4	
Chlorothalonil	DP-1C-10	0.23			630,643	548,688	0.87	15	4.4	

Chlorothalonil	DP-1C-10		0.25		630,643	702,900	1.11	15	4.4	
Chlorothalonil	DP-1C-10			0.07	630,643	174,944	0.28	15	4.4	
Chlorothalonil#	DP-1A	0.31			836,410	1,258,972	1.51	15	4.4	
Chlorothalonil#	DP-1B	0.26			591,131	1,055,588	1.79	15	4.4	
Chlorothalonil#	DP-1C-6	1.74			5,695,285	7,066,290	1.24	15	4.4	
Chlorothalonil#	DP-1C-9	0.27			485,426	1,096,493	2.26	15	4.4	
Chlorothalonil#	DP-1C-10	0.23			630,643	93,404	0.15	15	4.4	
Fosetyl-al	DP-1A	0.31			836,410	1,232,560	1.47	21,000	14,711	
Fosetyl-al	DP-1A		0.31		836,410	1,232,560	1.47	21,000	14,711	
Fosetyl-al	DP-1B	0.26			591,131	1,033,760	1.75	21,000	14,711	
Fosetyl-al	DP-1B		0.22		591,131	874,721	1.48	21,000	14,711	
Fosetyl-al	DP-1C-6	1.74			5,695,285	6,918,240	1.21	21,000	14,711	
Fosetyl-al	DP-1C-6		1.41		5,695,285	5,606,160	0.98	21,000	14,711	
Fosetyl-al	DP-1C-9	0.27			485,426	1,073,520	2.21	21,000	14,711	
Fosetyl-al	DP-1C-9		0.11		485,426	437,360	0.90	21,000	14,711	
Fosetyl-al	DP-1C-10	0.23			630,643	914,480	1.45	21,000	14,711	
Fosetyl-al	DP-1C-10		0.25		630,643	994,000	1.58	21,000	14,711	

Fludioxinil	DP-1A	0.31			836,410	96,844	0.12	210	33	
Fludioxinil	DP-1B	0.26			591,131	81,224	0.14	210	33	
Fludioxinil	DP-1C-6	1.74			5,695,285	543,576	0.10	210	33	
Fludioxinil	DP-1C-9	0.27			485,426	84,348	0.17	210	33	
Fludioxinil	DP-1C-10	0.23			630,643	71,852	0.11	210	33	
Fludioxinil	DP-1A		0.31		836,410	50,183	0.06	210	33	
Fludioxinil	DP-1B		0.22		591,131	35,614	0.06	210	33	
Fludioxinil	DP-1C-6		1.41		5,695,285	228,251	0.04	210	33	
Fludioxinil	DP-1C-9		0.11		485,426	17,807	0.04	210	33	
Fludioxinil	DP-1C-10		0.25		630,643	40,470	0.06	210	33	
pyraclostrobin	DP-1A	0.31			836,410	63,389	0.08	210	3.9	
pyraclostrobin	DP-1B	0.26			591,131	53,165	0.09	210	3.9	
pyraclostrobin	DP-1C-6	1.74			5,695,285	355,795	0.06	210	3.9	
pyraclostrobin	DP-1C-9	0.27			485,426	55,210	0.11	210	3.9	
pyraclostrobin	DP-1C-10	0.23			630,643	47,030	0.07	210	3.9	
tebuconazole+	DP-1A			1.13	836,410	3,209,200	3.84	21	17	
tebuconazole	DP-1A		0.31		836,410	88,040	0.11	21	17	

tebuconazole	DP-1A			1.13	836,410	320,920	0.38	21	17	
tebuconazole+	DP-1B			0.92	591,131	2,612,800	4.42	21	17	
tebuconazole	DP-1B		0.22		591,131	62,480	0.11	21	17	
tebuconazole	DP-1B			0.92	591,131	261,280	0.44	21	17	
tebuconazole+	DP-1C-6			10.46	5,695,285	29,706,400	5.22	21	17	
tebuconazole	DP-1C-6		1.41		5,695,285	400,440	0.07	21	17	
tebuconazole	DP-1C-6			10.46	5,695,285	2,970,640	0.52	21	17	
tebuconazole+	DP-1C-9			1.22	485,426	3,464,800	7.14	21	17	
tebuconazole	DP-1C-9		0.11		485,426	31,240	0.06	21	17	
tebuconazole	DP-1C-9			1.22	485,426	346,480	0.71	21	17	
tebuconazole+	DP-1C-10			0.07	630,643	198,800	0.32	21	17	
tebuconazole	DP-1C-10		0.25		630,643	71,000	0.11	21	17	
tebuconazole	DP-1C-10			0.07	630,643	19,880	0.03	21	17	
azoxystrobin	DP-1A	0.31			836,410	66,029	0.08	1260	168	5.8
azoxystrobin	DP-1A		0.31		836,410	68,671	0.08			
azoxystrobin	DP-1A			1.13	836,410	221,435	0.26	1260	168	
azoxystrobin	DP-1B	0.26			591,131	55,380	0.09	1260	168	

azoxystrobin	DP-1B		0.22		591,131	48,734	0.08	1260	168	
azoxystrobin	DP-1B			0.92	591,131	180,283	0.30			
azoxystrobin	DP-1C-6	1.74			5,695,285	370,620	0.07	1260	168	
azoxystrobin	DP-1C-6		1.41		5,695,285	312,343	0.05	1260	168	
azoxystrobin	DP-1C-6			10.46	5,695,285	2,049,742	0.36	1260	168	
azoxystrobin	DP-1C-9	0.27			485,426	57,510	0.12	1260	168	
azoxystrobin	DP-1C-9		0.11		485,426	24,367	0.05	1260	168	
azoxystrobin	DP-1C-9			1.22	485,426	239,071	0.49	1260	168	
azoxystrobin	DP-1C-10	0.23			630,643	48,990	0.08	1260	168	
azoxystrobin	DP-1C-10		0.25		630,643	55,380	0.09	1260	168	
azoxystrobin	DP-1C-10			0.07	630,643	13,717	0.02	1260	168	
triadimefon	DP-1A	0.31			836,410	158,474	0.19	28	169	4.7
Triadimefon	DP-1A		0.31		836,410	158,474	0.19	28	169	
Triadimefon	DP-1A			1.13	836,410	577,665	0.69	28	169	
Triadimefon	DP-1B	0.26			591,131	132,914	0.22	28	169	
triadimefon	DP-1B		0.22		591,131	112,466	0.19	28	169	
Triadimefon	DP-1B			0.91	591,131	465,199	0.79	28	169	

Triadimefon	DP-1C-6	1.74			5,695,285	889,502	0.16	28	169	
Triadimefon	DP-1C-6		1.41		5,695,285	720,803	0.13	28	169	
triadimefon	DP-1C-6			10.46	5,695,285	5,347,236	0.94	28	169	
Triadimefon	DP-1C-9	0.27			485,426	138,026	0.28	28	169	
Triadimefon	DP-1C-9		0.11		485,426	56,233	0.12	28	169	
Triadimefon	DP-1C-9			1.22	485,426	623,674	1.28	28	169	
triadimefon	DP-1C-10	0.23			630,643	117,578	0.19	28	169	
Triadimefon	DP-1C-10		0.25		630,643	127,802	0.20	28	169	
Triadimefon	DP-1C-10			0.07	630,643	35,785	0.06	28	169	
Thiophanate-me	DP-1A	0.31			836,410	633,884	0.76	30	2.7	
Thiophanate-me	DP-1B	0.26			591,131	531,644	0.90	30	2.7	
Thiophanate-me	DP-1C-6	1.74			5,695,285	3,557,956	0.62	30	2.7	
Thiophanate-me	DP-1C-9	0.27			485,426	552,092	1.14	30	2.7	
Thiophanate-me	DP-1C-10	0.23			630,643	470,964	0.75	30	2.7	
Indoxacarb	DP-1A	0.31			836,410	31694.4	0.04	140	2.1	
Indoxacarb	DP-1A		0.31		836,410	31,694	0.04	140	2.1	
Indoxacarb	DP-1A			2.21	836,410	225,950	0.27	140	2.1	

Indoxacarb	DP-1B	0.26			591,131	26,582	0.04	140	2.1	
Indoxacarb	DP-1B		0.22		591,131	22,493	0.04	140	2.1	
Indoxacarb	DP-1B			1.81	591,131	185,054	0.31	140	2.1	
Indoxacarb	DP-1C-6	1.74			5,695,285	177,898	0.03	140	2.1	
Indoxacarb	DP-1C-6		1.41		5,695,285	1,441,584	0.25	140	2.1	
Indoxacarb	DP-1C-6			20.91	5,695,285	2,137,838	0.38	140	2.1	
Indoxacarb	DP-1C-9	0.27			485,426	27,605	0.06	140	2.1	
Indoxacarb	DP-1C-9		0.11		485,426	11,246	0.02	140	2.1	
Indoxacarb	DP-1C-9			2.43	485,426	248,443	0.51	140	2.1	
Indoxacarb	DP-1C-10	0.23			630,643	23,507	0.04	140	2.1	
Indoxacarb	DP-1C-10		0.25		630,643	25,560	0.04	140	2.1	
Indoxacarb	DP-1C-10			0.13	630,643	13,291	0.02	140	2.1	
lambda-cyhalothrin^	DP-1A	0.31			836,410	1021264	1.22	7	0.04	
lambda-cyhalothrin	DP-1A		0.31		836,410	1,021,264	1.22	7	0.04	
lambda-cyhalothrin	DP-1A			1.13	836,410	3,722,672	4.45	7	0.04	

lambda-cyhalothrin	DP-1B	0.26			591,131	856,544	1.45	7	0.04	
lambda-cyhalothrin	DP-1B		0.22		591,131	724,768	1.23	7	0.04	
lambda-cyhalothrin	DP-1B			0.92	591,131	3,030,848	5.13	7	0.04	
lambda-cyhalothrin	DP-1C-6	1.74			5,695,285	5,732,256	1.01	7	0.04	
lambda-cyhalothrin	DP-1C-6		1.41		5,695,285	4,645,104	0.82	7	0.04	
lambda-cyhalothrin	DP-1C-6			10.46	5,695,285	34,459,424	6.05	7	0.04	
lambda-cyhalothrin	DP-1C-9	0.27			485,426	889,488	1.83	7	0.04	
lambda-cyhalothrin	DP-1C-9		0.11		485,426	362,384	0.75	7	0.04	
lambda-cyhalothrin	DP-1C-9			1.22	485,426	4,019,168	8.28	7	0.04	
lambda-cyhalothrin	DP-1C-10	0.23			630,643	757,712	1.20	7	0.04	
lambda-cyhalothrin	DP-1C-10		0.25		630,643	823,600	1.31	7	0.04	

lambda-cyhalothrin	DP-1C-10			0.07	630,643	230,608	0.37	7	0.04	
Bifenthrin^	DP-1A	0.31			836,410	140,864	0.17	10	0.06	
bifenthrin	DP-1A		0.31		836,410	140,864	0.17	10	0.06	
bifenthrin	DP-1B	0.26			591,131	118,144	0.20	10	0.06	
bifenthrin	DP-1B		0.22		591,131	99,968	0.17	10	0.06	
bifenthrin	DP-1C-6	1.74			5,695,285	790,656	0.14	10	0.06	
bifenthrin	DP-1C-6		1.41		5,695,285	640,704	0.11	10	0.06	
bifenthrin	DP-1C-9	0.27			485,426	122,688	0.25	10	0.06	
bifenthrin	DP-1C-9		0.11		485,426	49,984	0.10	10	0.06	
bifenthrin	DP-1C-10	0.23			630,643	104,512	0.17	10	0.06	
bifenthrin	DP-1C-10		0.25		630,643	113,600	0.18	10	0.06	
vinclozalin	DP-1A		0.31		836,410	193,688	0.23	8.4	120	0.5
vinclozalin	DP-1A			1.13	836,410	706,024	0.84	8.4	120	
vinclozalin	DP-1B		0.22		591,131	137,456	0.23	8.4	120	
vinclozalin	DP-1B			0.92	591,131	574,816	0.97	8.4	120	
vinclozalin	DP-1C-6		1.41		5,695,285	880,968	0.15	8.4	120	
vinclozalin	DP-1C-6			10.46	5,695,285	6,535,408	1.15	8.4	120	

vinclozalin	DP-1C-9		0.11		485,426	68,728	0.14	8.4	120	
vinclozalin	DP-1C-9			1.22	485,426	762,256	1.57	8.4	120	
vinclozalin	DP-1C-10		0.25		630,643	156,200	0.25	8.4	120	
vinclozalin	DP-1C-10			0.07	630,643	43,736	0.07	8.4	120	
Trinexipac-eth	DP-1A	0.31			836,410	7,043	0.01	221	573	
Trinexipac-eth	DP-1A		0.31		836,410	12,486	0.01	221	573	
Trinexipac-eth	DP-1A			2.25	836,410	90,621	0.11	221	573	
Trinexipac-eth	DP-1B	0.26			591,131	5,907	0.01	221	573	
Trinexipac-eth	DP-1B		0.22		591,131	8,861	0.01	221	573	
Trinexipac-eth	DP-1B			1.83	591,131	73,705	0.12	221	573	
Trinexipac-eth	DP-1C-6	1.74			5,695,285	39,533	0.01	221	573	
Trinexipac-eth	DP-1C-6		1.41		5,695,285	56,789	0.01	221	573	
Trinexipac-eth	DP-1C-6			20.91	5,695,285	842,171	0.15	221	573	
Trinexipac-eth	DP-1C-9	0.27			485,426	6,134	0.01	221	573	
Trinexipac-eth	DP-1C-9		0.11		485,426	4,430	0.01	221	573	
Trinexipac-eth	DP-1C-9			2.43	485,426	97,871	0.20	221	573	
Trinexipac-eth	DP-1C-10	0.23			630,643	5,226	0.01	221	573	

Trinexipac-eth	DP-1C-10		0.25		630,643	10,069	0.02	221	573	
Trinexipac-eth	DP-1C-10			0.13	630,643	5,236	0.01	221	573	
ethephon	DP-1A	0.31			836,410	7,312	0.01	126	2662	
ethephon	DP-1B	0.26			591,131	7,247	0.01	126	2662	
ethephon	DP-1C-6	1.74			5,695,285	48,504	0.01	126	2662	
ethephon	DP-1C-9	0.27			485,426	7,527	0.02	126	2662	
ethephon	DP-1C-10	0.23			630,643	6,411	0.01	126	2662	
prodiamine	DP-1A			2.25	836,410	830,700	0.99	35	17	
prodiamine	DP-1B			1.83	591,131	675,636	1.14	35	17	
prodiamine	DP-1C-6			20.91	5,695,285	7,353,010	1.29	35	17	
prodiamine	DP-1C-9			2.43	485,426	897,156	1.85	35	17	
prodiamine	DP-1C-10			0.13	630,643	47,996	0.08	35	17	
myclobutanil	DP-1A		0.31		836,410	88,040	0.11	175	330	1.6
myclobutanil	DP-1A			1.13	836,410	320,920	0.38	175	330	
myclobutanil	DP-1B		0.22		591,131	62,480	0.11	175	330	
myclobutanil	DP-1B			0.92	591,131	261,280	0.44	175	330	
myclobutanil	DP-1C-6		1.41		5,695,285	400,440	0.07	175	330	

myclobutanil	DP-1C-6			10.46	5,695,285	2,970,640	0.52	175	330	
myclobutanil	DP-1C-9		0.11		485,426	31,240	0.06	175	330	
myclobutanil	DP-1C-9			1.22	485,426	346,480	0.71	175	330	
myclobutanil	DP-1C-10		0.25		630,643	71,000	0.11	175	330	
myclobutanil	DP-1C-10			0.07	630,643	19,880	0.03	175	330	
Propiconazole^	DP-1A	0.31			836,410	1,232,560	1.47	9.1	134	1.1
propiconazole	DP-1A		0.31		836,410	3,976,000	4.75	9.1	134	
propiconazole	DP-1B	0.26			591,131	1,033,760	1.75	9.1	134	
propiconazole	DP-1B		0.22		591,131	874,720	1.48	9.1	134	
propiconazole	DP-1C-6	1.74			5,695,285	6,918,240	1.21	9.1	134	
propiconazole	DP-1C-6		1.41		5,695,285	5,606,160	0.98	9.1	134	
propiconazole	DP-1C-9	0.27			485,426	1,073,520	2.21	9.1	134	
propiconazole	DP-1C-9		0.11		485,426	437,360	0.90	9.1	134	
propiconazole	DP-1C-10	0.23			630,643	914,480	1.45	9.1	134	
propiconazole	DP-1C-10		0.25		630,643	994,000	1.58	9.1	134	
Propiconazole^+	DP-1A	0.31			836,410	1,936,880	2.32	9.1	134	1.1
propiconazole	DP-1B	0.26			591,131	1,624,480	2.75	9.1	134	

propiconazole	DP-1C-6	1.74			5,695,285	10,871,520	1.91	9.1	134	
propiconazole	DP-1C-9	0.27			485,426	1,686,960	3.48	9.1	134	
propiconazole	DP-1C-10	0.23			630,643	1,437,040	2.28	9.1	134	
cyazofamid	DP-1A	0.31			836,410	140,864	0.17	6650	127	
cyazofamid	DP-1A		0.31		836,410	140,864	0.17	6650	127	
cyazofamid	DP-1B	0.26			591,131	118,144	0.20	6650	127	
cyazofamid	DP-1B		0.22		591,131	99,968	0.17	6650	127	
cyazofamid	DP-1C-6	1.74			5,695,285	790,656	0.14	6650	127	
cyazofamid	DP-1C-6		1.41		5,695,285	640,704	0.11	6650	127	
cyazofamid	DP-1C-9	0.27			485,426	122,688	0.25	6650	127	
cyazofamid	DP-1C-9		0.11		485,426	49,984	0.10	6650	127	
cyazofamid	DP-1C-10	0.23			630,643	104,512	0.17	6650	127	
cyazofamid	DP-1C-10		0.25		630,643	113,600	0.18	6650	127	
propamocarb	DP-1A	0.31			836,410	575,253	0.69	700	37500	
propamocarb	DP-1A		0.31		836,410	575,253	0.69	700	37500	
propamocarb	DP-1B	0.26			591,131	482,471	0.82	700	37500	
propamocarb	DP-1B		0.22		591,131	408,244	0.69	700	37500	

propamocarb	DP-1C-6	1.74			5,695,285	3,228,841	0.57	700	37500	
propamocarb	DP-1C-6		1.41		5,695,285	2,616,475	0.46	700	37500	
propamocarb	DP-1C-9	0.27			485,426	501,027	1.03	700	37500	
propamocarb	DP-1C-9		0.11		485,426	204,122	0.42	700	37500	
propamocarb	DP-1C-10	0.23			630,643	426,801	0.68	700	37500	
propamocarb	DP-1C-10		0.25		630,643	463,914	0.74	700	37500	
boscalid	DP-1A		0.31		836,410	48,422	0.06	153	167	
boscalid	DP-1A			2.25	836,410	351,450	0.42	153	167	
boscalid	DP-1B		0.22		591,131	34,364	0.06	153	167	
boscalid	DP-1B			1.81	591,131	282,722	0.48	153	167	
boscalid	DP-1C-6		1.41		5,695,285	220,242	0.04	153	167	
boscalid	DP-1C-6			20.91	5,695,285	3,266,142	0.57	153	167	
boscalid	DP-1C-9		0.11		485,426	17,182	0.04	153	167	
boscalid	DP-1C-9			2.43	485,426	379,566	0.78	153	167	
boscalid	DP-1C-10		0.25		630,643	39,050	0.06	153	167	
boscalid	DP-1C-10			0.13	630,643	20,306	0.03	153	167	
chlorantraniliprole	DP-1A	0.31			836,410	19,369	0.02			

chlorantraniliprole	DP-1A		0.31		836,410	19,369	0.02			
chlorantraniliprole	DP-1A			2.25	836,410	140,580	0.17			
chlorantraniliprole	DP-1B	0.26			591,131	16,245	0.03			
chlorantraniliprole	DP-1B		0.22		591,131	13,746	0.02			
chlorantraniliprole	DP-1B			1.81	591,131	113,089	0.19			
chlorantraniliprole	DP-1C-6	1.74			5,695,285	108,715	0.02			
chlorantraniliprole	DP-1C-6		1.41		5,695,285	88,097	0.02			
chlorantraniliprole	DP-1C-6			20.91	5,695,285	1,306,457	0.23			
chlorantraniliprole	DP-1C-9	0.27			485,426	16,870	0.03			
chlorantraniliprole	DP-1C-9		0.11		485,426	6,873	0.01			
chlorantraniliprole	DP-1C-9			2.43	485,426	151,826	0.31			
chlorantraniliprole	DP-1C-10	0.23			630,643	14,370	0.02			
chlorantraniliprole	DP-1C-10		0.25		630,643	15,620	0.02			
chlorantraniliprole	DP-1C-10			0.13	630,643	8,122	0.01			
spinosad	DP-1A	0.31			836,410	57,226	0.07	188	692	
spinosad	DP-1A		0.31		836,410	57,226	0.07	188	692	
spinosad	DP-1B	0.26			591,131	47,996	0.08	188	692	

spinosad	DP-1B		0.22		591,131	40,612	0.07	188	692		
spinosad	DP-1C-6	1.74			5,695,285	321,204	0.06	188	692		
spinosad	DP-1C-6		1.41		5,695,285	260,286	0.05	188	692		
spinosad	DP-1C-9	0.27			485,426	49,842	0.10	188	692		
spinosad	DP-1C-9		0.11		485,426	20,306	0.04	188	692		
spinosad	DP-1C-10	0.23			630,643	42,458	0.07	188	692		
spinosad	DP-1C-10		0.25		630,643	46,150	0.07	188	692		
dithiopyr	DP-1A		0.31		836,410	70,432	0.08	25	28	0.1	
dithiopyr	DP-1B		0.22		591,131	49,984	0.08	25	28		
dithiopyr	DP-1C-6		1.41		5,695,285	320,352	0.06	25	28		
dithiopyr	DP-1C-9		0.11		485,426	24,992	0.05	25	28		
dithiopyr	DP-1C-10		0.25		630,643	56,800	0.09	25	28		
polyoxin D zinc	DP-1A	0.31			836,410	38,202	0.05				
polyoxin D zinc	DP-1B	0.26			591,131	32,041	0.05				
polyoxin D zinc	DP-1C-6	1.74			5,695,285	214,425	0.04				
polyoxin D zinc	DP-1C-9	0.27			485,426	33,273	0.07				
polyoxin D zinc	DP-1C-10	0.23			630,643	28,344	0.04				

@ chlorothalonil applied at a rate 56 oz A.I./a. #chlorothalonil applied at a rate of 143 oz A.I./a on greens only for snow mold control.^ high risk pesticides from WIN PST analysis. + Propiconazole applied at a high rate for snow mold control on greens only. & From Baris, R.D., Cohen , S, N. LaJan Barnes, J. Lam and Q. Ma. 2010. Quantitative analysis of over 20 years of golf course monitoring studies. Environ. Tox. And Chem. 29(6):1224-1236

Table 10. Estimated concentration of the preventative pesticide applications to the Brynwood CC in the ground water at the average annual recharge rate and from a 1 in 30 year drought.

Pesticide	**Annual amount of pesticide applied annually that leached (ug)@**	**Ground water recharge, normal rainfall (L)**	**Ground water recharge, drought rainfall (L)**	**Est. yearly aver. conc. of pesticide in ground water (ug/l)**	**Long Term Human Toxicity (ug/L)**	**Highest conc. from golf course monitoring Studies # (ug/l)**
Trifloxystrobin	6,529,046	116,705,700		0.06	350	
Trifloxystrobin	6,529,046		83,361,214	0.08	350	
Chlorothalonil	422,000,000	116,705,700		3.6	15	3.1
Chlorothalonil	422,000,000		83,361,214	5.1	15	
Fosetyl-al	75,663,280	116,705,700		0.65	21,000	
Fosetyl-al	75,663,280		83,361,214	0.91	21,000	
Fludioxinil	2,385,089	116,705,700		0.02	210	
Fludioxinil	2,385,089		83,361,214	0.03	210	
pyraclostrobin	1,145,088	116,705,700		0.01	210	
pyraclostrobin	1,145,088		83,361,214	0.01	210	
tebuconazole	88,803,960	116,705,700		0.76	21	
tebuconazole	88,803,960		83,361,214	1.07	21	
azoxystrobin	16,876,530	116,705,700		0.14	1260	5
azoxystrobin	16,876,530		83,361,214	0.20	1260	
triadimefon	47,608,340	116,705,700		0.41	28	8.4
Triadimefon	47,608,340		83,361,214	0.57	28	
Thiophanate-me	5,725,440	116,705,700		0.05	30	
Thiophanate-me	5,725,440		83,361,214	0.07	30	
Indoxacarb	5,728,507	116,705,700		0.05	140	
Indoxacarb	5,728,507		83,361,214	0.07	140	

lambda-cyhalothrin^	29,250,978	116,705,700		0.25	7	
lambda-cyhalothrin^	29,250,978		83,361,214	0.35	7	
Bifenthrin^	4,512,192	116,705,700		0.04	10	
Bifenthrin^	4,512,192		83,361,214	0.05	10	
vinclozalin	17,325,704	116,705,700		0.15	8.4	
vinclozalin	17,325,704		83,361,214	0.21	8.4	
chlorantraniliprole	3,407,034	116,705,700		0.03	Ns	
chlorantraniliprole	3,407,034		83,361,214	0.04	Ns	
Trinexipac-eth	13,066,329	116,705,700		0.11	221	
Trinexipac-eth	13,066,329		83,361,214	0.16	221	
ethephon	174,944	116,705,700		0.002	126	
ethephon	174,944		83,361,214	0.002	126	
prodiamine	5,725,440	116,705,700		0.05	35	
prodiamine	5,725,440		83,361,214	0.07	35	
myclobutanil	7,875,320	116,705,700		0.07	175	0.9
myclobutanil	7,875,320		83,361,214	0.09	175	
boscalid	4,331,426	116,705,700		0.04	153	
boscalid	4,331,426		83,361,214	0.05	153	
dithiopyr	50,666	116,705,700		<0.01	25	0.1
dithiopyr	50,666		83,361,214	<0.01	25	
propiconazole	87,949,120	116,705,700		0.75	9.1	1.1
propiconazole	87,949,120		83,361,214	1.06	9.1	
spinosyn	1,857,076	116,705,700		0.02	Ns	
spinosyn	1,857,076		83,361,214	0.02	Ns	
cyazofamid	4571264	116,705,700		0.04	6650	
cyazofamid	4571264		83,361,214	0.05	6650	
polyoxin D	341936	116,705,700		<0.01		
polyoxin D	341936		83,361,214	<0.01		

@ Total amount applied per year with 0.1% leaching from low to intermediate risk pesticide to 1% of high risk pesticides. ^ high risk pesticides from WIN PST analysis. * The values in parentheses are the amount of area that can be treated per year to lower the risk of water contamination to the toxicological limit. # From Baris, R.D., Cohen , S, N. LaJan Barnes, J. Lam and Q. Ma. 2010. Quantitative analysis of over 20 years of golf course monitoring studies. Environ. Tox. And Chem. 29(6):1224-1236. Ns, there is no water quality standard s do to their very low risk to humans and wildlife.

PRELIMINARY STORMWATER POLLUTION PREVENTION PLAN

THE SUMMIT CLUB AT ARMONK

568 & 570 BEDFORD ROAD (NY-22)
ARMONK, NY 10504

Applicant/Operator/ Owner:	**Summit Club Partners, LLC** **c/o Mr. Jeff Mendell** (203) 813-3264

Prepared by:

JMC Project 20101

Draft:	06/14/2021
Revised:	01/10/2022
	03/28/2022
	08/01/2023
	03/11/2024

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REFERENCED DRAWINGS FOR SWPPP DESIGN AND DETAILS

JMC SITE PLANS

Dwg. No.	Title	Rev. No./Date
C-000	Cover Sheet	07/24/2023
C-010	Overall Existing Conditions	07/24/2023
C-011	Existing Conditions Map (South)	07/24/2023
C-012	Existing Conditions Map (North)	07/24/2023
C-020	Site Demolition Plan (South)	07/24/2023
C-021	Site Demolition Plan (North)	07/24/2023
C-022	Site Tree Removal Table	07/24/2023
C-100A	Overall Site Layout Plan	07/24/2023
C-100	Site Layout Plan (South)	07/24/2023
C-101	Site Layout Plan (North)	07/24/2023
C-102	Fire Truck Access Plan	07/24/2023
C-103	Utility Complex Plans	07/24/2023
C-200	Site Grading Plan (South)	07/24/2023
C-201	Site Grading Plan (North)	07/24/2023
C-202	Road Profiles Plan	07/24/2023
C-300	Utilities Plan (South)	07/24/2023
C-301	Utilities Plan (North)	07/24/2023
C-302	Sanitary Profiles	07/24/2023
C-303	Water Profiles	07/24/2023
C-304	Storm Profiles	07/24/2023
C-305	Storm Profiles	07/24/2023
C-400	SE Plan (South)	07/24/2023
C-401	SE Plan (North)	07/24/2023
C-402	Erosion and Sediment Control/Phasing Notes	07/24/2023
C-900	Construction Details	07/24/2023
C-901	Construction Details	07/24/2023
C-902	Construction Details	07/24/2023
C-903	Construction Details	07/24/2023
C-904	Construction Details	07/24/2023
C-905	Construction Details	07/24/2023
PSP-1	Preliminary Subdivision Plat	07/24/2023
IPP-1	Integrated Plot Plan	07/24/2023
C-000M	Cover Sheet	03/11/2024
C-010M	Overall Existing Conditions Map	03/11/2024
C-011M	Existing Conditions Map	03/11/2024
C-020M	Site Demolition & Tree Removal Plan	03/11/2024
C-021M	Site Tree Removal Table	03/11/2024

C-100M	Overall Site Layout Plan	03/11/2024
C-101M	Site Layout Plan	03/11/2024
C-200M	Site Grading Plan	03/11/2024
C-300M	Site Utilities Plan	03/11/2024
C-400M	Site Erosion & Sediment Control Plan	03/11/2024
C-900M	Construction Details	03/11/2024
C-901M	Construction Details	03/11/2024

I. INTRODUCTION

This Stormwater Pollution Prevention Plan has been prepared for the 156.30 acre Summit Club at Armonk site, located in the Town of North Castle, Westchester County, New York (hereinafter referred to as the "Site"). The site is bordered by residential to the north and south, NY-22 (Bedford Road) to the east, and I-684 to the west. The development has been designed in accordance with the following:

- Requirements of the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit No. GP-0-20-001, effective January 29, 2020.
- Chapter 267 "Stormwater Management" of the Town of North Castle Zoning Code
- New York State Stormwater Management Design Manual.

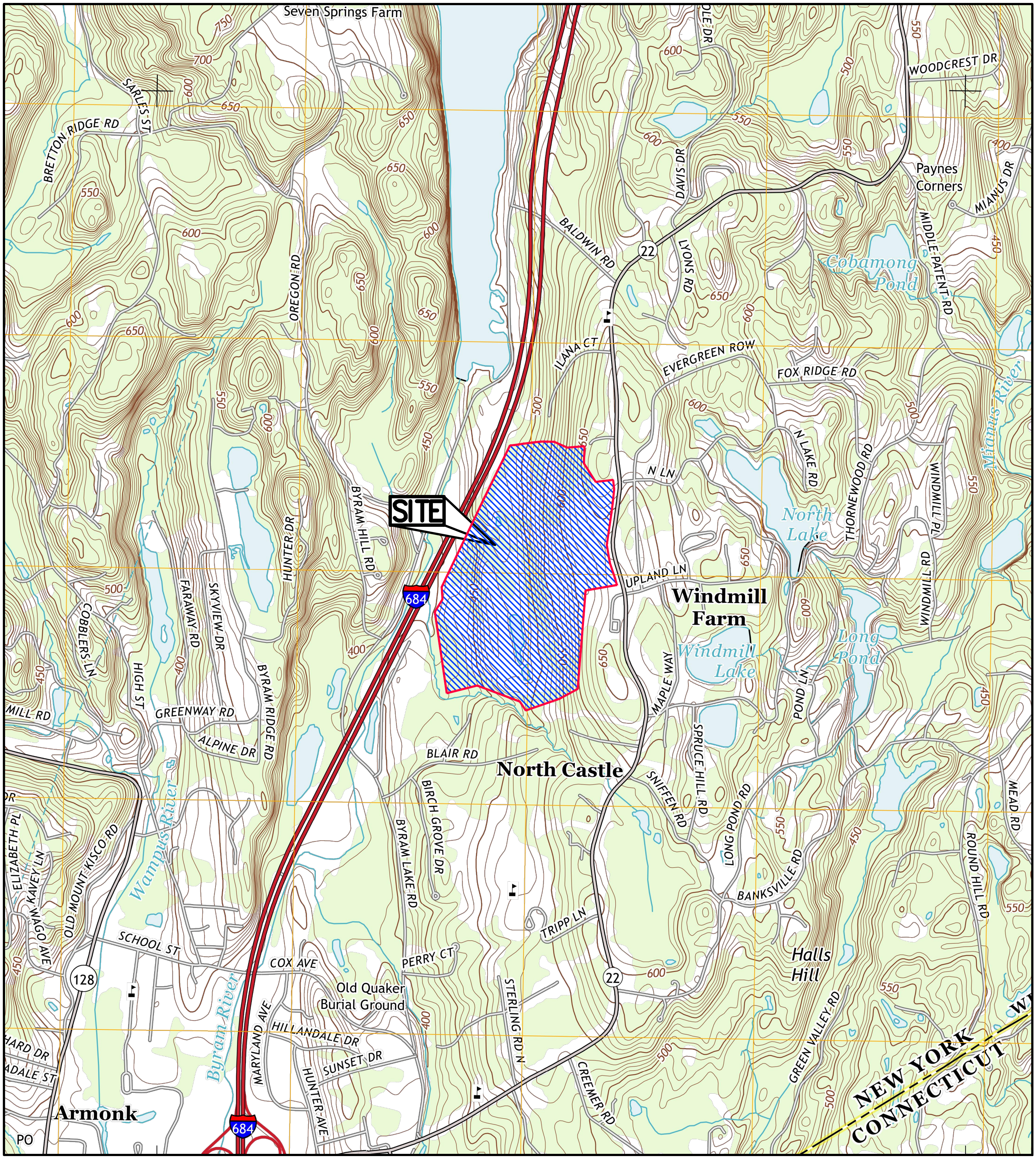
The project will consist of approximately 22.1 acres of disturbance throughout the site, the majority at the east end of the site. The existing clubhouse, pool and tennis have recently been demolished. Six multifamily 3-story residential buildings are being proposed, along with a residential amenity building, entrance road, pool, new wastewater treatment plant and water tower. An entrance road and overflow parking area are also being added. This stormwater report also includes the future work of a new clubhouse building and maintenance building.

II. STORMWATER MANAGEMENT PLANNING

In order to be eligible for coverage under the NYSDEC SPDES General Permit No. GP-0-20-001 for Stormwater Discharges from Construction Activities, the Stormwater Pollution Prevention Plan (SWPPP) includes stormwater management practices (SMP's) from the publication "New York State Stormwater Management Design Manual," last revised January 2015.

A Stormwater Pollution Prevention Plan has been prepared for this project because it is a construction activity that involves:

- Soil disturbances of one (1) or more acres of land.



THE SUMMIT CLUB AT ARMONK

568 BEDFORD ROAD (NY 22) TOWN OF NORTH CASTLE, NY

USGS SITE LOCATION MAP

DATE: 05/27/2021 JMC PROJECT: 20101

FIGURE: 1 SCALE: 1"=2000'

120 BEDFORD RD
ARMONK
NY 10504

(914) 273-5225
fax 273-2102

JMCPLLC.COM

20101–SLM.dwg; SLM.tab

The proposed stormwater facilities have been designed such that the quantity and quality of stormwater runoff during and after construction are not adversely altered or are enhanced when compared to pre-development conditions.

Based on the GIS information provided by the website of the New York State Office of Parks, Recreation and Historic Places, the site does not contain, nor is it immediately adjacent to any properties listed on the State or National Register of Historic Places.

The Six Step Process for Stormwater Site Planning and Practice Selection

Stormwater management using green infrastructure is summarized in the six step process described below. The six step process was adhered to when developing this SWPPP. Information is provided in this SWPPP which documents compliance with the required process as follows:

Step 1: Site Planning

Implement planning practices that protect natural resources and utilize the hydrology of the site. Strong consideration must be given to reducing impervious cover to aid in the preservation of natural resources including protecting natural areas, avoiding sensitive areas and minimizing grading and soil disturbance.

Step 2: Determine Water Quality Treatment Volume (WQv)

Determine the required WQv for the site based on the site layout, impervious areas and sub-catchments. This initial calculation of WQv will have to be revised after green infrastructure techniques are applied. The following method has been used to calculate the WQv.

- **90% Rule -** According to the New York State Stormwater Design Manual, Section 4.1, the water quality volume is determined from the 90% rule. The method is based on 90% of the average annual stormwater runoff volume which must be provided due to impervious surfaces. The Water Quality Volume (denoted as the WQv) is designed to improve water quality sizing to capture and treat 90% of the average annual stormwater runoff volume. The WQv is directly related to the amount of impervious cover created at a site. The average rainfall storm depth for 90% of storms in New York State in one year is used to calculate a volume of runoff. The rainfall depth depends on the location of the site within the state. From this depth of rainfall, the required water quality volume is calculated.

The project is a redevelopment and therefore will comply with the strategies outlined within Chapter 9: Redevelopment Projects of the Design Manual. There are different options to control water quality depending on the redevelopment.

Since the redevelopment results in the creation of additional impervious area, Water Quality Treatment Option II will be utilized which requires treatment for 25% of the existing impervious area, plus 100% of the additional, new impervious area.

The plan proposes that a minimum of 25% of the water quality volume (WQv) from the disturbed area is captured and treated by the implementation of standard practices. When utilizing structural stormwater management practices, these practices should be targeted to treat areas with the greatest pollutant generation potential (e.g. parking areas, service stations, etc).

Step 3: Runoff Reduction Volumes (RRv) by Applying Green Infrastructure Techniques and Standard SMP's

RRv is required for this project since it is a combination of both new development and redevelopment.

Green infrastructure techniques or standard SMP's with RRv capacity can potentially reduce the required WQv by incorporating combinations of green infrastructure techniques and standard SMP's within each drainage area on the site.

Green infrastructure techniques are grouped into two categories:

- Practices resulting in a reduction of contributing area such as preservation/restoration of conservation areas, vegetated channels, etc.
- Practices resulting in a reduction of contributing volume such as green roofs, stormwater planters, and rain gardens.

Apply a combination of green infrastructure techniques and standard SMPs with RRv capacity to provide 100% of the WQv calculated in Step 2. If the RRv calculated in this step is greater than or equal to the WQv in Step 2, the RRv requirement has been met and Step 4 can be skipped. If the RRv provided cannot meet or exceed 100% of the WQv, the project must, at a minimum, reduce a percentage of the runoff from impervious areas to be constructed on the site. The percent reduction is based on the Hydrologic Soil Group(s) (HSG) of the site and is defined as Specific Reduction Factor (S).

The following green infrastructure techniques and practices are provided in the Design Manual:

- **Conservation of Natural Areas**
  - There are no areas on the site available to be dedicated to a conservation. Therefore, there is no area to be subtracted from the contributing area for the WQv calculation.
- **Sheet flow to Riparian Buffers or Filter Strips**
  - There are some well vegetated areas on-site with acceptable slopes that lend an opportunity as a buffer and still meet the minimum contributing length of flow. However, this practice was not used since an infiltration pond was a more practical and efficient treatment method.
- **Vegetated Swales**
  - The use of sheet flow into vegetated swales cannot be implemented along the proposed driveway because of the steep slope or throughout the parking areas due to the limited flow lengths, rock outcroppings, septic expansion areas, etc.
- **Tree Planting / Tree Pits**

- The project includes extensive tree planting around its perimeter as part of the proposed landscaping plan. However, the new trees are not credited towards area reduction for the water quality volume.

- **Disconnection of Rooftop Runoff**
  - This practice is not practical for this project since these items are typically used in a residential application with small rooftop areas.
- **Stream Daylighting**
  - This practice is not possible for this project since there are no existing streams.
- **Rain Gardens**
  - This practice is not practical for this project since a contributing drainage area is limited to 1,000 square feet of rooftop. This practice is typically used in a smaller residential application.
- **Green Roofs**
  - This practice is not proposed for this project due to the desired aesthetics of the buildings. Other more practical and efficient treatment methods were used.
- **Stormwater Planters**
  - Small drainage areas, less than 15,000 square feet can be collected by roof drains and discharged into stormwater planters which infiltrate stormwater prior to entering the underground storm pipes. However, this practice was not used in lieu of more practical and efficient treatment methods.
- **Rain Barrels and Cisterns**
  - Underground storage tanks could feasibly be installed to collect stormwater runoff to be used for irrigation purposes. However, this practice was not used in lieu of more practical and efficient treatment methods.
- **Porous Paving**
  - This practice is not proposed for this project due to the desired aesthetics. Other more practical and efficient treatment methods were used.
- **Standard Practices with RRv Capacity**
  - **Biofilters and Bioretention Basins –** These practices cannot be proposed because the soil within the areas that have the ability to accommodate the practices has observed

groundwater elevations that are too close to the surface which would not provide the required separation from the bottom of the practice to groundwater.

- **Infiltration Practices –** Two infiltration ponds are located behind the residential buildings and is proposed to treat and retain runoff from a majority of the disturbance area. Subsurface infiltration systems are employed to treat runoff from the STP, water building, and associated parking area.

The Minimum RRv capacity required must be provided by green infrastructure techniques to verify that the RRv requirement has been met. The RRv that is provided by the green infrastructure techniques can then be subtracted from the Total Required WQv that must be provided by the SMP's.

Step 4: Determine the minimum RRv Required

The minimum RRv is calculated similar to the WQv. However, it is determined using only the new impervious cover and accounts for the hydrologic soil group present. In no case shall the runoff reduction achieved from the newly constructed impervious area be less than the minimum runoff reduction volume (RRv_{min}).

Step 5: Apply Standard Stormwater Management Practices to Address Remaining Water Quality Volume

Apply the standard SMP's to meet additional water quality volume requirements that cannot be addressed by applying the green infrastructure techniques. The standard SMP's with RRv capacity must be implemented to verify that the RRv requirement has been met.

- **Infiltration Practices –** Two infiltration ponds are proposed to treat and retain runoff from the residential portion of the site. This practices are located in an area the groundwater elevation is acceptable to provide the required separation. According to Section 3.6 of the Design Manual, 100% of the WQv provided by an Infiltration Practice can be applied towards meeting the RRv criteria.

Step 6: Apply Volume and Peak Rate Control Practices to Meet Water Quantity Requirements

The Channel Protection Volume (CPv), Overbank Flood Control (Qp) and Extreme Flood Control (Qf) must be met for the plan to be completed. This is accomplished by using practices such as infiltration basins, dry detention basins, etc. to meet water quantity requirements. The following standards must be met:

1. **Stream Channel Protection (CPv)**

   Stream Channel Protection Volume Requirements (CPv) are designed to protect stream channels from erosion. In New York State this goal is accomplished by providing 24-hour extended detention of the one-year, 24-hour storm event, remained from runoff reduction. Reduction of runoff for meeting stream channel protection objectives, where site conditions allow, is encouraged and the volume reduction achieved through green infrastructure can be deducted from CPv. Trout waters may be exempted from the 24-hour ED requirement, with only 12 hours of extended detention required to meet this criterion. Detention time may be calculated using either a center of mass method or plug flow calculation method.

   - CPv for a redevelopment project is not required if there is no increase in impervious area or changes to hydrology that increase the discharge rate. This criterion, as defined in Chapter 4 of New York State Stormwater Design Manual, is not based on a pre versus post-development comparison. However, for a redevelopment project this requirement is relaxed. If the hydrology and hydraulic study shows that the post-construction 1-year 24 hour discharge rate and velocity are less than or equal to the pre-construction discharge rate, providing 24 hour detention of the 1-year storm to meet the channel protection criteria is not required.

2. **Overbank Flood (Qp) which is the 10 year storm.**

   Overbank control requires storage to attenuate the post development 10-year, 24-hour peak discharge rate (Qp) to predevelopment rates.

3. **Extreme Storm (Qf) which is the 100 year storm.**

   100 Year Control requires storage to attenuate the post development 100-year, 24-hour peak discharge rate (Qf) to predevelopment rates.

Based on the foregoing, this project is eligible for coverage under NYSDEC SPDES General Permit No. GP-0-20-001.

III. STUDY METHODOLOGY

Runoff rates were calculated based upon the standards set forth by the United States Department of Agriculture Natural Resources Conservation Service Technical Release 55, Urban Hydrology for Small Watersheds (TR-55), dated June 1986. The methodology set forth in TR-55 considers a multitude of characteristics for watershed areas including soil types, soil permeability, vegetative cover, time of concentration, topography, rainfall intensity, ponding areas, etc.

The 1, 10, 25, 100-year storm recurrence intervals were reviewed in the design of the stormwater management facilities (see Appendix A Existing & Proposed Hydrologic Calculations).

Anticipated drainage conditions were analyzed taking into account the rate of runoff which will result from the construction of buildings, parking areas and other impervious surfaces associated with the site development.

Base Data and Design Criteria

For the stormwater management analysis, the following base information and methodology were used:

1. The site drainage patterns and outfall facilities were reviewed by JMC personnel for the purpose of gathering background data and confirming existing mapping of the watershed areas.

2. An Existing Drainage Area Map was developed from the topographical survey. The drainage area map reflects the existing conditions within and around the project area.

3. A Proposed Drainage Area Map was developed from the proposed grading design superimposed over the topographical survey. The drainage area map reflects the proposed conditions within the project area and the existing conditions to remain in the surrounding area.

4. The United States Department of Agriculture (USDA) Web Soil Survey of the site available on its website at http://websoilsurvey.nrcd.usda.gov.

5. Soil Survey of Putnam and Westchester Counties, 1994.

6. The United States Department of Agriculture Natural Resources Conservation Service Technical Report No. 55, Urban Hydrology for Small Watersheds (TR-55), dated June 1986.

7. The time of concentration was calculated using the methods described in Chapter 3 of TR-55, Second Edition, June 1986. Manning's kinematics wave equation was used to determine the travel time of sheet flow. The 2-year 24-hour precipitation amount of 3.4 inches was used in the equation for all storm events. The travel time for shallow concentrated flow was computed using Figure 3-1 and Table 3-1 of TR-55. Manning's Equation was used to determine the travel time for channel reaches.

8. All hydrologic calculations were performed with the Bentley PondPack software package version 10.0.

9. All hydraulic calculations were performed with the Civil 3D Storm Sewer Analysis software package version 2020.

10. The New York State Stormwater Management Design Manual, revised January 2015.

11. New York Standards and Specifications for Erosion and Sediment Control, November 2016.

12. The storm flows for the 1-, 10-, 25-, & 100-year recurrence interval storms were analyzed for the total watershed areas. The Type III distribution design storm for a 24 hour duration was used and the mass rainfall for each design storm was taken from the Extreme Precipitation in New York & New England developed by the Natural Resource Conservation Service (NRCS) and the Northeast Regional Climate Center (NRCC) as follows:

24 Hour Rainfall Amounts

Design Storm Recurrence Interval	Inches of Rainfall
1 Year	2.8
10 Year	5.1
25 Year	6.4
100 Year	9.1

IV. EXISTING CONDITIONS

The existing conditions of the project site consists of an existing clubhouse building with a swimming pool, fourteen tennis courts, and a parking lot to remain. The majority of the site drains through the golf course to the west, passing through a series of swales and pond before finally existing the site by I-684. A small portion of the stormwater drains to the east towards Bedford Road (NYS Route 22).

The following natural features, conservation areas, resource areas and drainage patterns of the project site have been identified and utilized to develop Drawing DA-1 "Existing Drainage Area Map" which is included in Appendix G:

- Wetlands (jurisdictional, wetland of special concern)
- Waterways (major, perennial, intermittent, springs)
- Buffers (stream, wetland, forest, etc.)
- Forest, vegetative cover
- Topography (contour lines, existing flow paths, steep slopes, etc.)
- Soil (hydrologic soil groups, highly erodible soils, etc.)

Based on the USDA Web soil survey, most on-site soils are well drained, with some moderately well drained soils. Most of the soils belong to hydrological groups B or C. The soil types, boundaries and drainage areas/designations are depicted on Drawing DA-1 within Appendix G.

Six separate Design Points (DP-1C-2, DP-1C-5, DP-1C-6, DP-1C-7, DP-1C-10 and DP-2) were identified for comparing peak rates of runoff in existing and proposed conditions. Similarly, six separate drainage areas were identified in existing conditions based on the existing drainage divides at the site. The numbers included in the name of each drainage area correspond to the Design Point they drain towards.

The following is a description of each of the drainage areas analyzed in the existing conditions analysis. Refer to Drawing DA-1 in Appendix G.

<u>Existing Drainage Area 1C-2 (EDA-1C-2)</u> is 53.26 acres and consists of holes 9 and 18, portions of holes 1, 3, 4 and 17, the existing club house, parking lot, pool area, cart shed, maintenance building, eight tennis courts, driveways, and woods. Stormwater runoff from the golf course areas flows east and west to Pond 2. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 70 and 12 minutes, respectively.

<u>Existing Drainage Area 1C-5 (EDA 1C-5)</u> is 2.56 acres and consists of the existing wastewater

treatment plant building, woods and a small pond. The small pond outlets to the north, via a 24" pipe under hole 16, to a watercourse. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 56 and 11 minutes, respectively.

Existing Drainage Area 1C-6 (EDA-1C-6) is 13.07 acres and consists of the majority of the driving range, hole 16 and woods. Stormwater runoff from EDA 1C-6 flows overland to an existing watercourse which flows west to Discharge Point 1C-6. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 60 and 9 minutes, respectively.

Existing Drainage Area 1C-7 (EDA-1C-7) is 5.67 acres and consists of the northern portion of the driving range, a portion of hole 14, woods and Pond 4. Stormwater runoff from EDA 1C-7 flows west to Pond 4. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 67 and 8 minutes, respectively.

Existing Drainage Area 1C-10 (EDA-1C-10) is 20.02 acres and consists of holes 10, 11 and 12, a tennis court and woods. Stormwater runoff from EDA 1C-10 flows west to a swale and then north and discharges to a wetland designated as Discharge Point 1C-10. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 61 and 10 minutes, respectively.

Existing Drainage Area 2 (EDA-2) is 3.37 acres in size and is located on the eastern portion of the disturbance area. This area consists mostly of landscaped area with a portion of the tennis courts. This drainage area drains towards a drain inlet along Bedford Road. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 74 and 12 minutes, respectively.

The peak rates of runoff to the design points from the drainage areas for each storm are shown in the table below:

Table 1
Summary of Peak Rates of Runoff in Existing Conditions
(Cubic Feet per Second)

Storm Recurrence Interval	DP-1C-2	DP-1C-5	DP-1C-6	DP-1C-7	DP-1C-10	DP-2
1 year	24.70	0.13	1.59	2.21	2.88	2.17
10 year	99.64	2.20	16.08	10.21	25.49	7.39
25 year	150.27	4.11	27.12	15.81	42.57	10.75
100 year	260.46	8.68	52.62	28.29	81.83	17.89

V. PROPOSED CONDITIONS

The proposed improvements consist of the entrance driveway, six residential buildings, an amenities building, pool, clubhouse, tennis courts, water treatment, wastewater treatment plant and a new maintenance building.

The proposed drainage improvements include two infiltration basins, a subsurface infiltration systems, and multiple water quality structures. After treatment for water quality and peak rate attenuation, stormwater discharges from the ponds will travel through overland flow and ponds/wetlands. The overland discharges provide multiple opportunities for water quality enhancement and infiltration in addition to the proposed stormwater management basins.

This section describes the design and analysis of the proposed conditions used to demonstrate that the SWPPP meets the requirements of the General Permit.

The Six Step Process For Stormwater Site Planning and Practice Selection

Step 1: Site Planning

The following practices and site features were incorporated in the site design:

- Preserving hydrology - Maintaining drainage divides

- Wetlands and buffers – The site includes 6.56 acres of wetlands and 26.01 acres of wetland buffers. The project requires the disturbance of 0 acres of wetlands and 0 acres of wetland buffers.
- Floodplain considerations - The site does not lie within the 100 year flood zone according to the National Flood Insurance Program Flood Insurance Rate Map (FIRM) No. 36119C0164F and No. 36119C0168F, effective date 09/28/2007.
- Waterways (major, perennial, intermittent, springs) – The location, setback, cross section, etc. of the existing waterway has been maintained.
- Forest, vegetative cover – The maximum amount of forest and vegetative cover has been maintained and/or provided.
- Topography (contour lines, existing flow paths, steep slopes, etc.) has been maintained or disturbed to the minimum extent practicable.
- Soil (hydrologic soil groups, highly erodible soils, etc.)

Step 2: Determine Water Quality Treatment Volume (WQv)

Step 3: Runoff Reduction Volumes (RRv) by Applying Green Infrastructure Techniques and Standard SMP's

- **Infiltration Basin**
- **Subsurface Infiltration System**

Step 4: Determine the minimum RRv Required

RRv_{min} calculations can be found in Appendix 'B'. RRv_{min} was met through infiltration practices.

Step 5: Apply Standard Stormwater Management Practices to Address Remaining Water Quality Volume

Non Standard/Alternative SMP's to Address Remaining Water Quality Volume (for Redevelopment Projects)

- **Hydrodynamic Separators**

Step 6: Apply Volume and Peak Rate Control Practices to Meet Water Quantity Requirements

All practices exceed the required elements of SMP criteria as outlined in Chapter 6 of the NYS Stormwater Management Design Manual. A summary of each category is provided below.

1. Feasibility – Stormwater practices are designed based upon unique physical environmental considerations noted in the NYS Stormwater Management Design Manual (NYSSMDM).

2. Conveyance – The design conveys runoff to the designed stormwater practice in a manner that is safe, minimizes erosion and disruption to natural drainage channel and promotes filtering and infiltration.

3. Pretreatment – All stormwater practices provide pretreatment as required in accordance with NYSSMDM design guidelines.

4. Treatment Geometry – The plan provides water quality treatment in accordance with NYSSMDM guidelines.

5. Environmental/Landscaping –Extensive landscaping has been provided for each proposed stormwater practice to enhance pollutant removal and provide aesthetic enhancement to the property.

6. Maintenance – Maintenance for the environment practices has been provided and is detain the SWPPP Report as required. Maintenance access is provided in the design plans.

In order to determine the post-development rates of runoff generated on-site, the following drainage areas were analyzed in the post-development conditions. These areas are graphically depicted on Drawing DA-2 "Proposed Drainage Area Map" located in Appendix "G".

Six separate Design Points (DP-1C-2, DP-1C-5, DP-1C-6, DP-1C-7, DP-1C-10 and DP-2) were identified for comparing peak rates of runoff in existing and proposed conditions. Similarly, nine separate drainage areas were identified in proposed conditions based on the proposed drainage divides at the site. The numbers included in the name of each drainage area correspond to the Design Point they drain towards.

The following is a description of each of the drainage areas analyzed in the proposed conditions analysis. Refer to Drawing DA-2 in Appendix G.

Proposed Drainage Area 1C-2A (PDA-1C-2A) is 6.71 acres in size and is located on the eastern portion of the disturbed area. This area consists of two proposed residential buildings, proposed tennis courts, and associated roadways and parking areas. This drainage area drains towards an infiltration pond for quality and quantity treatment. The infiltration rate of the pond is assumed to be 6.75 in/hr based on permeability test results as seen in Appendix C. A safety factor of 2 is applied so 3.38 in/hr is used in the calculations. After exiting the infiltration basin, the stormwater will be directed via storm sewer and overland flow towards Pond 2, similar to existing conditions. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 80 and 6 minutes, respectively.

Proposed Drainage Area 1C-2B (PDA-1C-2B) is 46.79 acres and consists of holes 9 and 18, portions of holes 1, 3, 4 and 17, woods, the proposed club house, parking lot, pool area, and amenities building. Stormwater runoff from the golf course areas flows east and west to Pond 2. A water quality structure behind the proposed pool will treat runoff from the pool and amenities building. When the proposed clubhouse is building, a second water quality structure will be placed in the parking lot will treat runoff from the parking, driveway, and clubhouse building areas. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 68 and 12 minutes, respectively.

Proposed Drainage Area 1C-5 (PDA 1C-5) is 2.26 acres and consists of the existing wastewater treatment plant building, woods and a small pond. The small pond outlets to the north, via a 24" pipe under hole 16, to a watercourse. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 55 and 11 minutes, respectively.

Proposed Drainage Area 1C-6A (PDA-1C-6A) is 0.97 acres and consists of the expanded cart path, proposed wastewater treatment plant, proposed water building, and associated parking for the existing treatment plant to be converted to a maintenance building. Stormwater runoff from PDA 1C-6A will be directed to a subsurface infiltration system down the hill. The infiltration rate of the system is assumed to be 3.40 in/hr based on the USGS Soil Survey. A safety factor of 2 is applied so 1.70 in/hr is used in the calculations. The water leaving the infiltration system will flow overland to an existing watercourse which flows west to Discharge Point 1C-6. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 96 and 6 minutes, respectively.

Proposed Drainage Area 1C-6B (PDA-1C-6B) is 12.47 acres and consists of the majority of the driving range, hole 16 and woods. Stormwater runoff from PDA 1C-6 flows overland to an existing watercourse which flows west to Discharge Point 1C-6. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 60 and 9 minutes, respectively.

Proposed Drainage Area 1C-7 (PDA-1C-7) is 4.07 acres and consists of the northern portion of the driving range, a portion of hole 14, woods and Pond 4. Stormwater runoff from PDA 1C-7 flows west to Pond 4. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 65 and 6 minutes, respectively.

Proposed Drainage Area 1C-10A (PDA-1C-10A) is 7.08 acres in size and is located on the northeastern portion of the disturbed area. This area consists of four proposed residential buildings, roadways and parking areas. This drainage area drains towards an infiltration pond for quality and quantity treatment. The infiltration rate of the pond is assumed to be 20 in/hr based on permeability test results as seen in Appendix C. A safety factor of 2 is applied so 10 in/hr is used in the calculations. The water leaving the infiltration system will flow overland to Discharge Point 1C-10, similar to existing conditions. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 77 and 10 minutes, respectively.

Proposed Drainage Area 1C-10B (PDA-1C-10B) is 14.82 acres and consists of holes 10, 11 and 12, a tennis court and woods. Stormwater runoff from PDA 1C-10 flows west to a swale and then north and discharges to a wetland designated as Discharge Point 1C-10. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 60 and 8 minutes, respectively.

Proposed Drainage Area 2 (PDA-2) is 2.89 acres in size and is located on the eastern portion of the disturbed area. This area consists of existing landscaped area and the updated site entrance. This drainage area drains towards a drain inlet along Bedford Road. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 73 and 12 minutes, respectively.

The peak rates of runoff to the design point of each of the analyzed drainage areas for each storm are shown on the table below:

Table 3
Summary of Proposed Peak Rates of Runoff in Proposed Conditions
(Cubic Feet per Second)

Storm Recurrence Interval	DP-1C-2	DP-1C-5	DP-1C-6	DP-1C-7	DP-1C-10	DP-2
1 year	17.76	0.08	1.51	1.29	1.81	1.72
10 year	90.98	1.80	15.49	6.99	22.09	6.11
25 year	139.39	3.42	26.49	11.03	38.61	8.96
100 year	242.99	7.40	52.51	20.06	70.62	15.06

The reductions in peak rates of runoff from proposed to existing conditions are shown on the table below:

Table 4
Percent Reductions in Peak Rates of Runoff (Existing vs. Proposed Conditions)
(Cubic Feet per Second)

Design Point	Storm Recurrence Frequency (Years)	Existing Peak Runoff Rate (cfs)	Proposed Peak Runoff Rate (cfs)	Percent Reduction (%)
1C-2	1 year	24.70	17.76	28.10%
	10 year	99.64	90.98	8.69%
	25 year	150.27	139.39	7.24%
	100 year	260.46	242.99	6.71%
1C-5	1 year	0.13	0.08	38.46%
	10 year	2.20	1.80	18.18%
	25 year	4.11	3.42	16.79%
	100 year	8.68	7.40	14.75%
1C-6	1 year	1.59	1.51	5.03%
	10 year	16.08	15.49	3.67%
	25 year	27.12	26.49	2.32%
	100 year	52.62	52.51	0.21%
1C-7	1 year	2.21	1.29	41.63%
	10 year	10.21	6.99	31.54%
	25 year	15.81	11.03	30.23%
	100 year	28.29	20.06	29.09%
1C-10	1 year	2.88	1.81	37.15%
	10 year	25.49	22.09	13.34%
	25 year	42.57	38.61	9.30%
	100 year	81.83	70.62	13.70%
2	1 year	2.17	1.72	20.74%
	10 year	7.39	6.11	17.32%
	25 year	10.75	8.96	16.65%
	100 year	17.89	15.06	15.82%

As demonstrated in Table 4, the proposed stormwater improvements will result in reductions of peak rates of runoff for all storms and design points analyzed.

VI. SOIL EROSION & SEDIMENT CONTROL

A potential impact of the proposed development on any soils or slopes will be that of erosion and transport of sediment during construction. An Erosion and Sediment Control Management

Program will be established for the proposed development, beginning at the start of construction and continuing throughout its course, as outlined in the "New York State Standards and Specifications for Erosion and Sediment Control," November 2016. A continuing maintenance program will be implemented for the control of sediment transport and erosion control after construction and throughout the useful life of the project.

The Operator shall have a qualified professional conduct an assessment of the site prior to the commencement of construction and certify that the appropriate erosion and sediment controls, as shown on the Sediment & Erosion Control Plans, have been adequately installed to ensure overall preparedness of the site for the commencement of construction. In addition, the Operator shall have a qualified professional conduct one site inspection at least every seven calendar days and at least two site inspections every seven calendar days when greater than five acres of soil is disturbed at any one time. In accordance with NYSDEC SPDES General Permit No. GP-0-20-001 effective January 29, 2020 written authorization by the MS4 (Town of North Castle) to disturb greater than five (5) acres of soil at any one time is hereby requested, subject to the following provisions:

1. The owner or operator shall have a qualified inspector conduct at least two (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.
2. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, last revised November 2016.
3. The owner or operator shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.
4. The owner or operator shall install any additional site-specific practices needed to protect water quality.

5. The owner or operator shall include the requirements above in their SWPPP.

Prior to the commencement of construction activity, the owner or operator must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The owner or operator shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the trained contractor. The owner or operator shall ensure that at least one trained contractor is on site on a daily basis when soil disturbance activities are being performed. The owner or operator shall have each of the contractors and subcontractors identified above sign a copy of the certification statement provided in Appendix E before they commence any construction activity.

Soil Description

As provided by the United States Department of Agriculture, Soil Conservation Service "Web Soil Survey," soil classifications which exist on the subject site are described below.

Soils are placed into four hydrologic groups: A, B, C, and D. In the definitions of the classes, infiltration rate is the rate at which water enters the soil at the surface and is controlled by the surface conditions. Transmission rate is the rate at which water moves in the soil and is controlled by soil properties. Definitions of the classes are as follows:

A. (Low runoff potential). The soils have a high infiltration rate even when thoroughly wetted. They chiefly consist of deep, well drained to excessively drained sands or gravels. They have a high rate of water transmission.

B. The soils have a moderate infiltration rate when thoroughly wetted. They chiefly are moderately deep to deep, moderately well drained to well drained soils that have moderately fine to moderately coarse textures. They have a moderate rate of water transmission.

C. The soils have a slow infiltration rate when thoroughly wetted. They chiefly have a layer that impedes downward movement of water or have moderately fine to fine texture. They have a slow rate of water transmission.

D. (High runoff potential). The soils have a very slow infiltration rate when thoroughly wetted. They chiefly consist of clay soils that have a high swelling potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and shallow soils over nearly impervious material. They have a very slow rate of water transmission.

A soil's tendency to erode is also described in the USDA web soil survey. The ratings in this interpretation indicate the hazard of soil loss from unsurfaced areas. The ratings are based on soil erosion factor K, slope, and content of rock fragments. The hazard is described as "slight," "moderate," or "SEVERE." A rating of "slight" indicates that little or no erosion is likely; "moderate" indicates that some erosion is likely, that the temporarily unsurfaced / unstabilized during construction may require occasional maintenance, and that simple erosion-control measures are needed; and "SEVERE" indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that erosion-control measures are needed.

Per the Soil Survey, the following soils listed below are present at the site. Following this list is a detailed description of each soil type found on the property:

SYM.	HYDRO. SOIL GROUP	DESCRIPTION
Ub	**B**	**Udorthents, Smoothed**
PnB	**C**	**Paxton fine sandy loam, 3 to 8 percent**
CrC	**B**	**Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky**
PnC	**C**	**Paxton fine sandy loam, 8 to 15 percent**
CsD	**B**	**Charlton-Chatfield complex, 15 to 35 percent slopes, very rocky**

Ub, Udorthents, Smoothed

This soil consists of very deep, excessively drained to moderately well drained soils that have been altered by cutting and filling. It is made up of soil material in alternating layers ranging from sand to silt loam. Slopes are mainly 3 to 15 percent, but they range from 0 to 25 percent. Because of the variability of the Udorthents, a typical pedon is not described. The fill material is commonly more than 20 inches deep over the original soil. The content of rock fragments ranges from 0 to 60 percent. The properties and characteristics of the Udorthents are so variable that onsite investigation and evaluation are required to determine the suitability and limitations for proposed uses.

Hydrologic group: **B**
Erosion Hazard Rating: **NOT RATED**

PnB, Paxton fine sandy loam, 3 to 8 percent

This soil is gently sloping, very deep, and well drained. It is on broad ridges and small hills. Individual areas are irregularly shaped or are long and narrow. Included with this soil in mapping are a few areas of the moderately well drained Woodbridge soils, small areas of the somewhat poorly drained Ridgebury soils, small areas of Charlton soils that do not have a dense substratum, and the areas of rock outcrop. Woodbridge soils are on the lower concave side slopes and at the bottom of the hills. Ridgebury soils are along drainageways. The rock outcrop is in a few areas, generally near areas of Chatfield or Hollis soils. Also included are a new soils that have a very stony surface. The seasonally high water table is 1.5 to 2.5 feet. The available water capacity is moderate.

Hydrologic group: **C**
Erosion Hazard Rating: **SLIGHT**

CrC, Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky

The unit consists of very deep and moderately deep, well drained and somewhat excessively drained Chatfield soil and the well-drained Charlton soil. It is on hilltops and hillsides that are underlain by highly folded bedrock. Included in mapping are areas of moderately well drained Sutton soils, the somewhat poorly drained and poorly drained Leicester soils, and the poorly drained and very poorly drained Sun soils. Sutton soils are along drainageways and in concave interridge areas. Leicester and Sun soils are in shallow depressions and along drainageways. Also included are the poorly drained Carlisle and Palms soils, the somewhat excessively drained and well drained Hollis soils, and areas of soils that are similar to the Chatfield soil but are deep over bedrock. Carlisle and Palms soils are in closed depressions. Hollis soils are shallow over bedrock. They are in scattered areas throughout the unit but are mostly on ridgetops. The soils that are similar to the Chatfield soils are in the western part of Putnam County, in areas where the surface is extremely stony or bouldery. The seasonally high water table is more than 6 feet. The available water capacity is moderate.

Hydrologic group: **B**
Erosion Hazard Rating: **MODERATE**

PnC, Paxton fine sandy loam, 8 to 15 percent

This soil is strongly sloping, very deep, and well drained. It is on the sides and tops broad ridges and small hills. Individual areas are irregularly shaped or are long and narrow. Included with this soil in mapping are a few areas of the moderately well drained Woodbridge soils, small areas of the somewhat poorly drained Ridgebury soils, small areas of Charlton soils that do not have a dense substratum, and the areas of rock outcrop. Woodbridge soils are on the lower concave side slopes and at the bottom of the hills. Ridgebury soils are along drainageways. The rock outcrop is in a few areas, generally near areas of Chatfield or Hollis soils. Also included are a new soils that have a very stony surface. The seasonally high water table is 1.5 to 2.5 feet. The available water capacity is moderate.

Hydrologic group: **C**
Erosion Hazard Rating: **MODERATE**

CsD, Charlton-Chatfield complex, 15 to 35 percent slopes, very rocky

The unit consists of very deep and moderately deep, well drained and somewhat excessively drained Chatfield soil and the well-drained Charlton soil. It is on tops ad sides of hills that are underlain by highly folded bedrock. Slopes range from 15 to 35 percent. Included in mapping are areas of moderately well drained Sutton soils, the somewhat poorly drained and poorly drained Leicester soils, and the poorly drained and very poorly drained Sun soils. Sutton soils are along drainageways and in concave interridge areas. Leicester and Sun soils are in shallow depressions and along drainageways. Also included are the poorly drained Carlisle and Palms soils, the somewhat excessively drained and well drained Hollis soils, and areas of soils that are similar to the Chatfield soil but are deep over bedrock. Carlisle and Palms soils are in closed depressions. Hollis soils are shallow over bedrock. They are in scattered areas throughout the unit but are mostly on ridgetops. The soils that are similar to the Chatfield soils are in the western part of Putnam County, in areas where the surface is extremely stony or bouldery. The seasonally high water table is more than 6 feet. The available water capacity is moderate.

Hydrologic group: **B**

Erosion Hazard Rating: **SEVERE**

On-Site Pollution Prevention

There are temporary pollution prevention measures used to control litter and construction debris on site, such as:

- Temporary Riser and Anti-Vortex Device
- Silt Fence
- Silt Sack
- Manufactured Insert Inlet Protection
- Stone Check Dam
- Excavated Drop Inlet Protection

There will be inlet protection provided for all storm drains and inlets with the use of curb gutter inlet protection structures and stone & block drop inlet protection, which keep silt, sediment and construction litter and debris out of the on-site stormwater drainage system.

Temporary Control Measures

Temporary control measures and facilities will include silt fences, construction ditches, stabilized construction access, temporary seeding, mulching and sediment traps with temporary riser and anti-vortex devices.

Throughout the construction of the proposed redevelopment, temporary control facilities will be implemented to control on-site erosion and sediment transfer. Construction ditches, if required, will be used to direct stormwater runoff to temporary sediment traps for settlement. The sediment traps will be constructed as part of this project will serve as temporary sediment basins to remove sediment and pollutants from the stormwater runoff produced during construction. Descriptions of the temporary sediment & erosion controls that will be used during the development of the site including silt fence, stabilized construction access, seeding, mulching and inlet protection are as follows:

1. Silt Fence is constructed using a geotextile fabric. The fence will be either 18 inches or 30 inches high. The height of the fence can be increased in the event of placing these devices on uncompacted fills or extremely loose undisturbed soils. The fences will not be placed in areas which receive concentrated flows such as ditches, swales and channels nor will the filter fabric material be placed across the entrance to pipes, culverts, spillway structures, sediment traps or basins.

2. Stabilized Construction Access consists of AASHTO No. 1 rock. The rock entrance will be a minimum of 50 feet in length by 24 feet in width by 8 inches in depth.

3. Seeding will be used to create a vegetative surface to stabilize disturbed earth until at least 80% of the disturbed area has a perennial vegetative cover. This amount is required to

adequately function as a sediment and erosion control facility. Grass lining will also be used to line temporary channels and the surrounding disturbed areas.

4. Mulching is used as an anchor for seeding and disturbed areas to reduce soil loss due to storm events. These areas will be mulched with straw at a rate of 3 tons per acre such that the mulch forms a continuous blanket. Mulch must be placed after seeding or within 48 hours after seeding is completed.

5. Inlet Protection will be provided for all stormwater basins and inlets with the use of curb & gutter inlet protection and stone & block inlet protection structures, which will keep silt, sediment and construction debris out of the storm system. Existing structures within existing paved areas will be protected using "Silt Sacks" inside the structures.

6. Stone Check Dams are small barriers of crushed stone which will be laid across the grass swales which are approximately 12 inches high, located every one foot of elevation change along the swales so that the crest elevation of the downstream dam is at the same elevation of the toe of the upstream dam.

7. Temporary Sediment Basins will be constructed to intercept sediment laden runoff and trap and retain the sediment. The sediment basins are sized to provide a sediment storage volume of 3,600 cubic feet per acre draining to the basin. The Sediment Basins will be used with the permanent SMP's until their contributing drainage areas are stabilized. Once stabilized, the temporary risers will be removed, permanent outlet control structures will be installed and final grading/planting of the sediment basins will be completed for permanent use as Stormwater Management basins. Sediment Basin sizing standards, details and calculations are provided in Appendix F.

8. Temporary Riser and Anti-Vortex Devices- are placed at the bottom of the temporary sediment basins where they intercept and collect debris and litter from the pond before they can enter the off-site storm drainage system.

The contractor shall be responsible for maintaining the temporary sediment and erosion control measures throughout construction. This maintenance will include, but not be limited to, the following tasks:

1. For dust control purposes, moisten all exposed graded areas with water at least twice a day in those areas where soil is exposed and cannot be planted with a temporary cover due to construction operations or the season (December through March).

2. Inspection of erosion and sediment control measures shall be performed at the end of each construction day and immediately following each rainfall event. All required repairs shall be immediately executed by the contractor.

3. Sediment deposits shall be removed when they reach approximately ⅓ the height of the silt fence. All such sediment shall be properly disposed of in fill areas on the site, as directed by the Owner's Field Representative. Fill shall be protected following disposal with mulch, temporary and/or permanent vegetation and be completely circumscribed on the downhill side by silt fence.

4. Rake all exposed areas parallel to the slope during earthwork operations.

5. Following final grading, the disturbed area shall be stabilized with a permanent surface treatment (i.e. turf grass, pavement or sidewalk). During rough grading, areas which are not to be disturbed for fourteen or more days shall be stabilized with the temporary seed mixture, as defined on the plans. Seed all piles of dirt in exposed soil areas that will not receive a permanent surface treatment.

<u>Concrete Material and Equipment Management</u>

Concrete washouts shall be used to contain concrete and liquids when the chutes of concrete mixers and hoppers of concrete pumps are rinsed out after delivery. The washout facilities consolidate solid for easier disposal and prevent runoff of liquids. The wash water is alkaline and contains high levels of chromium, which can leach into the ground and contaminate groundwater. It can also migrate to a storm drain, which can increase the pH of area waters and harm aquatic life. Solids that are improperly disposed of can clog storm drain pipes and cause flooding. Installing concrete washout facilities not only prevents pollution but also is a matter of good housekeeping at your construction site.

Prefabricated concrete washout containers can be delivered to the site to provide maintenance and disposal of materials. Regular pick-ups of solid and liquid waste materials will be necessary. To prevent leaks on the job site, ensure that prefabricated washout containers are watertight. A self installed concrete washout facility can be utilized although they are much less reliable than prefabricated containers and are prone to leaks. There are many design options for the washout, but they are preferably built below-grade to prevent breaches and reduce the likelihood of runoff. Above-grade structures can also be used if they are sized and constructed correctly and are diligently maintained. One of the most common problems with self-installed concrete washout facilities is that they can leak or be breached as a result of constant use, therefore the contractor shall be sure to use quality materials and inspect the facilities on a daily basis.

Washouts must be sized to handle solids, wash water, and rainfall to prevent overflow. Concrete Washout Systems, Inc. estimates that 7 gallons of wash water are used to wash one truck chute and 50 gallons are used to wash out the hopper of a concrete pump truck.

For larger sites, a below-grade washout should be at least 10 feet wide and sized to contain all liquid and solid waste expected to be generated in between cleanout periods. A minimum of 12-inches of freeboard must be provided. The pit must be lined with plastic sheeting of at least 10-mil thickness without holes or tears to prevent leaching of liquids into the ground. Concrete wash water should never be placed in a pit that is connected to the storm drain system or that drains to nearby waterways.

An above-grade washout can be constructed at least 10 feet wide by 10 feet long and sized to contain all liquid and solid waste expected to be generated in between cleanout periods. A minimum of 4-inches of freeboard must be provided. The washout structures can be constructed with staked straw bales or sandbags double-or triple lined with plastic sheeting of at least 10-mil thickness without holes or tears.

Concrete washout facilities shall not be located within 50 feet of storm drains, open ditches, or water bodies and should be placed in locations that allow for convenient access for concrete trucks. The contractor shall check all concrete washout facilities daily to determine if they have been filled to 75 percent capacity, which is when materials need to be removed. Both above-and below-ground self-installed washouts should be inspected daily to ensure that plastic linings are intact and sidewalls have not been damaged by construction activities. Prefabricated washout containers should be inspected daily as well as to ensure the container is not leaking or nearing 75 percent capacity. Inspectors should also note whether the facilities are being used regularly. Additional signage for washouts may be needed in more convenient locations if concrete truck operators are not utilizing them.

The washout structures must be drained or covered prior to predicted rainstorms to prevent overflows. Hardened solids either whole or broken must be removed and then they may be reused onsite or hauled away for recycling.

Once materials are removed from the concrete washout, a new structure must be built or excavated, or if the previous structure is still intact, inspect it for signs of weakening or damage and make any necessary repairs. Line the structure with new plastic that is free of holes or tears and replace signage if necessary. It is very important that new plastic be used after every cleaning because pumps and concrete removal equipment can damage the existing liner.

Construction Site Chemical Control

The purpose of this management measure is to prevent the generation of nonpoint source pollution from construction sites due to improper handling and usage of nutrients and toxic substances, and to prevent the movement of toxic substances from the construction site.

Many potential pollutants other than sediment are associated with construction activities. These pollutants include pesticides; fertilizers used for vegetative stabilization; petrochemicals; construction chemicals such as concrete products, sealers, and paints; wash water associated with these products; paper; wood; garbage; and sanitary waste.

Disposal of excess pesticides and pesticide-related wastes should conform to registered label directions for the disposal and storage of pesticides and pesticide containers set forth in applicable Federal, State and local regulations that govern their usage, handling, storage, and disposal.

Pesticides should be disposed of through either a licensed waste management firm or a treatment, storage and disposal (TSD) facility. Containers should be triple-rinsed before disposal, and rinse waters should be reused as product.
Other practices include setting aside a locked storage area, tightly closing lids, storing in a cool, dry place, checking containers periodically for leaks or deterioration, maintaining a list of products in storage, using plastic sheeting to line the storage areas, and notifying neighboring property owners prior to spraying.

When storing petroleum products, follow these guidelines:

- Create a shelter around the area with cover and wind protection;
- Line the storage area with a double layer of plastic sheeting or similar material;
- Create an impervious berm around the perimeter with a capacity of 110 percent greater than that of the largest container;
- Clearly label all products;
- Keep tanks off the ground; and
- Keep lids securely fastened.

Post spill procedure information and have persons trained in spill handling on site or on call at all times. Materials for cleaning up spills should be kept on site and easily available. Spills should be cleaned up immediately and the contaminated material properly disposed of. Maintain and wash equipment and machinery in confined areas specifically designed to control runoff.

Thinners or solvents should not be discharged into sanitary or storm systems when cleaning machinery. Use alternative methods for cleaning larger equipment parts, such as high-pressure, high-temperature water washes, or steam cleaning. Equipment-washing detergents can be used, and wash water may be discharged into sanitary sewers if solids are removed from the solution first. (This practice should be verified with the local sewer authority.) Small parts can be cleaned with degreasing solvents, which can then be reused or recycled.

Solid Waste Management and Portable Sanitary Management

The purpose of this management measure is to prevent the potential for solid waste such as construction debris, trash, etc. from construction sites due to improper handling and storage. Debris and litter should be removed periodically from the BMP's and surrounding areas to prevent clogging of pipes and structures. All construction material shall be stored in designated staging areas. Roll-off containers shall be placed on site and all empty containers, construction debris and litter shall be placed in the containers.

Portable sanitary units may be utilized on-site or bathrooms will be provided within construction trailers. A sanitation removal company will be hired to pump/remove any sanitary waste. In the event that portable sanitary units are used and then cleaned after being emptied, the rinse water may not be disposed of to the storm drain system. It shall be contained for later disposal if it can't be disposed of on-site. Remove paper and trash before cleaning the portable sanitary units. The portable sanitary units shall be located away from the storm drain system if possible. Provide over head cover for wash areas if possible. Maintain spill response material and equipment on site to eliminate the potential for contaminants and wash water from entering the storm drain system.

Permanent Control Measures and Facilities for Long Term Protection

Towards the completion of construction, permanent sediment and erosion control measures will be developed for long term erosion protection. The following permanent control measures and facilities have been proposed to be implemented for the project:

1. Vegetated Swales will function to provide additional treatment of stormwater runoff by removal of pollutants and will promote a reduction of peak flows and provide runoff infiltration.

2. Infiltration Basins will be used to treat the runoff volume generated from the developed area and provide improvement to water quality control. The proposed basins will provide water quality for 90% of the average annual stormwater runoff volume. The water quality volume will be retained and higher storms will be released gradually. Refer to the water quality volume calculations, in Appendix B.

3. Hydrodynamic Water Quality Structure will be used to provide treatment and pretreatment of the water quality flow rate for separating sediment, debris, floatables, etc. from the runoff prior to discharge to the SMP's. The Water Quality Structure has been designed to treat up to the required water quality volume and appropriately handle all storm frequencies without the resuspension of solids. The system will provide 80% TSS removal rate for particles having a mean particle size of 125 microns for stormwater runoff.

4. Catch Basins will be used to remove some of the coarse sand and grit sediment before entering the drainage system. Each catch basin will be constructed with an 18 inch deep sump.

5. Rip-Rap Energy Dissipators At discharge points from the stormwater drainage system into the stormwater management basins, rip-rap pads consisting of angular rocks will be placed to dissipate velocity and reduce the risk of erosion.

6. Seeding of at least 70% perennial vegetative cover will be used to produce a permanent uniform erosion resistant surface. The seeded areas will be mulched with straw at a rate of 2 tons per acre such that the mulch forms a continuous blanket.

Specifications for Soil Restoration

Prior to the final stabilization of the disturbed areas, soil restoration will be required for all vegetated areas to recover the original properties and porosity of the soil. Soil Restoration Requirements are provided on Table 5 below:

Table 5

Soil Restoration Requirements

<table>
<tr><th>Type of Soil Disturbance</th><th colspan="2">Soil Restoration Requirement</th><th>Comments/Examples</th></tr>
<tr><td>No soil disturbance</td><td colspan="2">Restoration not permitted</td><td>Preservation of Natural Features</td></tr>
<tr><td>Minimal soil disturbance</td><td colspan="2">Restoration not required</td><td>Clearing and grubbing</td></tr>
<tr><td rowspan="2">Areas where topsoil is stripped only – no change in grade</td><td>HSG A&B</td><td>HSG C&D</td><td rowspan="2">Protect area from any ongoing construction activities</td></tr>
<tr><td>apply 6 inches of topsoil</td><td>Aerate* and apply 6 inches of topsoil</td></tr>
<tr><td rowspan="2">Areas of cut or fill</td><td>HSG A&B</td><td>HSG C&D</td><td rowspan="2">Clearing and grubbing</td></tr>
<tr><td>Aerate and apply 6 inches of topsoil</td><td>Apply full Soil Restoration**</td></tr>
<tr><td>Heavy traffic areas on site (especially) in a zone 5-25 feet around buildings but not within a 5 foot perimeter around foundation walls)</td><td colspan="2">Apply full Soil Restoration (decompaction and compost enhancement)</td><td></td></tr>
<tr><td>Areas where Runoff Reduction and/or Infiltration practices are applied</td><td colspan="2">Restoration not required, but may be applied to enhance the reduction specified for appropriate practices.</td><td>Keep construction equipment from crossing these areas. To protect newly installed practice from any ongoing construction activities construct a single phase operation fence area.</td></tr>
<tr><td>Redevelopment projects</td><td colspan="2">Soil Restoration is required on redevelopment projects in areas where existing impervious area will be converted to pervious area.</td><td></td></tr>
</table>

* Aeration includes the use of machines such as tractor-drawn implements with coulters making a narrow slit in the soil, a roller with many spikes making indentations in the soil, or prongs which function like a mini-subsoiler.

** Per "Deep Ripping and De-compaction, DEC 2008."

During periods of relatively low to moderate subsoil moisture, the disturbed subsoils are returned to rough grade and the following full soil restoration steps applied:

1. Apply 3 inches of compost over subsoil.

2. Till compost into subsoil to a depth of at least 12 inches using a cat-mounted ripper, tractor-mounted disc, or tiller, mixing, and circulating air and compost into subsoils.

3. Rock-pick until uplifted stone/rock materials of four inches and larger size are cleaned off the site.

Specifications for Final Stabilization of Graded Areas

Final stabilization of graded areas consists of the placement of topsoil and installation of landscaping (unless the area is to be paved, or a building is to be constructed in the location). Topsoil is to be spread as soon as grading operations are completed. Topsoil is to be placed to a minimum depth of six inches on all embankments, planting areas and seeding/sod areas. The subgrade is to be scarified to a depth of two inches to provide a bond of the topsoil with the subsoil. Topsoil is to be raked to an even surface and cleared of all debris, roots, stones and other unsatisfactory material.

Planting operations shall be conducted under favorable weather conditions as follows:

- Permanent Lawns - April 15 (provided soil is frost-free and not excessively moist) to May 15; August 15 to October 15.

- Temporary Lawn Seeding - if outside of the time periods noted above, the areas shall be seeded immediately on completion of topsoil operations with annual ryegrass (Italian rye) at a rate of six pounds per 1,000 square feet. Temporary lawn installation is permitted provided the soil is frost-free and not excessively moist. The permanent lawn is to be installed the next planting season.

On slopes with a grade of 3 horizontal to 1 vertical or greater, and in swales, a geotextile netting or mat shall be installed for stabilization purposes as shown on the Plans. Seeded areas are to be mulched with straw or hay at an application rate of 70-90 pounds per 1,000 s.f. Straw or hay mulch must be spread uniformly and anchored immediately after spreading to prevent wind blowing. Mulches must be inspected periodically and in particular after rainstorms to check for erosion. If erosion is observed, additional mulch must be applied. Netting shall be inspected after rainstorms for dislocation or failure; any damage shall be repaired immediately.

All denuded surfaces which will be exposed for a period of over two months or more shall be temporarily hydroseeded with (a) perennial ryegrass at a rate of 40 lbs per acre (1.0 lb per 1000 square feet); (b) Certified "Aroostook" winter rye (cereal rye) @ 100 lb per acre (2.5 lb/1000 s.f.) to be used in the months of October and November.

Permanent turfgrass cover is to consist of a seed mixture as follows:

(a) Sunny sites

Kentucky Bluegrass	2.0-2.6 pounds/1000 square feet
Perennial Ryegrass	0.6-0.7 pounds/1000 square feet
Fine Fescue	0.4-0.6 pounds/1000 square feet

(b) Shady sites

Kentucky Bluegrass	0.8-1.0 pounds/1000 square feet
Perennial Ryegrass	0.6-0.7 pounds/1000 square feet
Fine Fescue	2.6-3.3 pounds/1000 square feet

All plant materials shall comply with the standards of the American Association of Nurserymen with respect to height and caliper as described in its publication American Standard for Nursery Stock, latest edition.

VII. CONSTRUCTION PHASE AND POST-CONSTRUCTION MAINTENANCE

During the construction phase and following construction of the project, a number of maintenance measures will be taken with respect to the site maintenance. Measures to be taken included the following:

1. During Construction

The area of proposed ground disturbance will at times exceed five (5) acres. Therefore, and in accordance with NYSDEC SPDES General Permit No. GP-0-20-001 effective January 29, 2020 written authorization by the MS4 (Town of North Castle) to disturb greater than five (5) acres of soil at any one time is hereby requested, subject to the following provisions:

i. The owner or operator shall have a qualified inspector conduct at least two (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.
ii. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, last revised November 2016.
iii. The owner or operator shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.
iv. The owner or operator shall install any additional site-specific practices needed to protect water quality.
v. The owner or operator shall include the requirements above in their SWPPP.

The minimum number of required weekly inspections will be two (2) erosion control inspections shall be made at the site every seven (7) calendar days.

In the circumstance of greater than five (5) acres of soil be disturbed at any one time, and the activity be temporarily or permanently ceased, then soil stabilization measures shall be initiated by the end of the next business day and completed within seven (7) days from ceasing activity.

A qualified professional acceptable to the municipality will be hired by the owner or operator to monitor the installation and maintenance of the sediment and erosion control plans. The qualified professional shall report directly to the Engineering Consultant and shall be responsible for ensuring compliance with the design of the sediment and erosion control plans.

In the event that there has been a variance with the design of the sediment and erosion control measures so that the ability of the measures to adequately perform the intended function is lessened or compromised and/or the facilities are not adequately maintained, the qualified professional shall be required to report such variance to the Engineering Consultant within 48 hours and shall be empowered to order immediate repairs to the sediment and erosion control measures.

The qualified professional will also be responsible for observing the adequacy of the vegetation growth (trees, shrubs, groundcovers and turfgrasses) in newly graded areas and for ordering additional plantings in the event that the established plant materials do not adequately protect the ground surface from erosion.

2. Following Construction

Site maintenance activities on the property will include:

- Grounds maintenance, including mowing of lawns;
- Planting of trees, shrubs and groundcovers; pruning of trees and shrubs;
- Application of fertilizer and herbicides;
- Maintenance of stormwater management area;

Grounds maintenance on the site will be performed by landscaping contractor.

Fertilizer is typically applied twice in the year - once in the spring and once in the fall. The application of fertilizer is usually necessary to maintain healthy lawn growth due to competition for nutrients with trees and shrubs and since the clippings are often removed. It is not recommended that fertilizer be applied during the summer. It is at this time that lawns are typically dormant.

Fertilizers come in three basic types: (1) Organic; (2) Soluble synthetic and (3) Slow release.

Organic fertilizers are derived from plant or animal waste. Since they are heavier and bulkier than other fertilizers, it is necessary to apply a much greater amount at one time. Soluble synthetic fertilizers are predictable with determining the exact impact on a lawn. However more applications are necessary since their effect is often short term. Slow release fertilizers have a high percentage of nitrogen so quantities that need be handled at one time are smaller. Slow release fertilizers will be utilized by the project.

A complete fertilizer contains all three of the primary nutrients - nitrogen (N), phosphorus (P) and potassium in the form of potash (K). Typically, a 3-1-2 ratio of nutrients (N-P-K) is used for lawn applications.

Fertilizer shall be applied by the landscape contractor in accordance with the manufacturer's instructions. The application of fertilizer does require some skill on the part of the operator. Should there be a spill of fertilizer, the landscape contractor shall be required to scrape or vacuum it up. The area will then be watered in accordance with the manufacturer's instructions to ensure that the fertilizer becomes soluble and available to plants and does not run off.

Summit Club Partners, LLC will be responsible for the long-term operation and maintenance of the permanent stormwater management practices. The permanent stormwater management practices shall be maintained in accordance with the Maintenance Inspection Checklists provided in Appendix D.

VIII. CONCLUSION

This Stormwater Pollution Prevention Plan has been prepared to describe the project's pre and post-development stormwater management improvements and its sediment and erosion control improvements to be utilized during construction. The proposed permanent improvements and the interim improvements to be utilized during construction have been designed in accordance with the requirements of the:

- Requirements of the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit No. GP-0-20-001, effective January 29, 2020.
- Chapter 267 "Stormwater Management" of the Town of North Castle Zoning Code
- New York State Stormwater Management Design Manual.

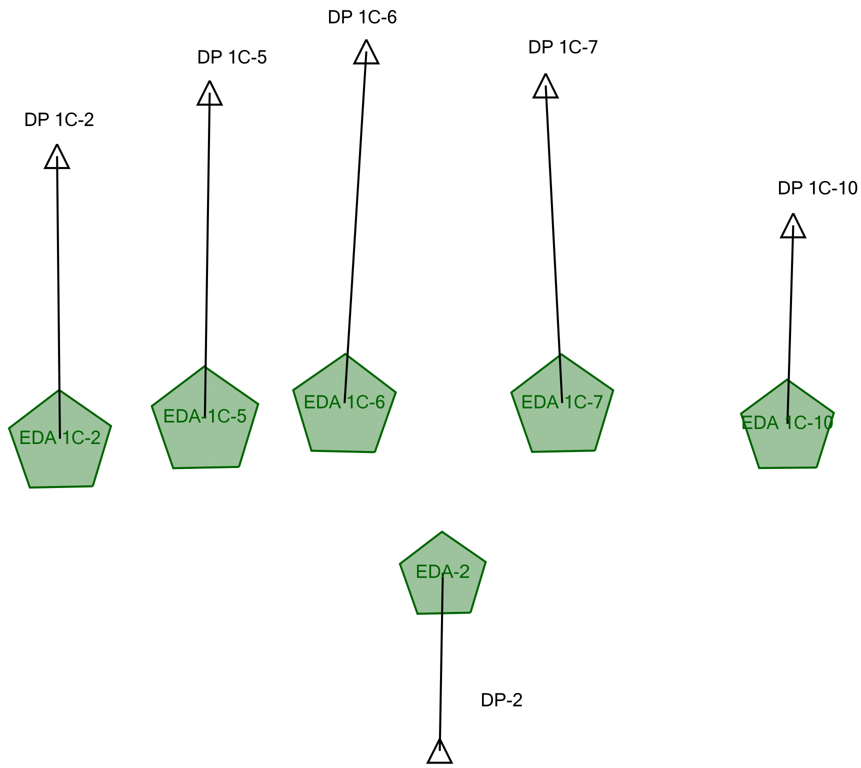
The project employs a variety of practices to enhance stormwater quality and reduce peak rates of runoff associated with the proposed improvements. These measures include an infiltration basin, detention basin, and subsurface infiltration systems.

Based on the foregoing, it is our professional opinion that the proposed improvements will provide water quantity and quality enhancements which exceed the above mentioned requirements and are not anticipated to have any adverse impacts to the site or any surrounding areas.

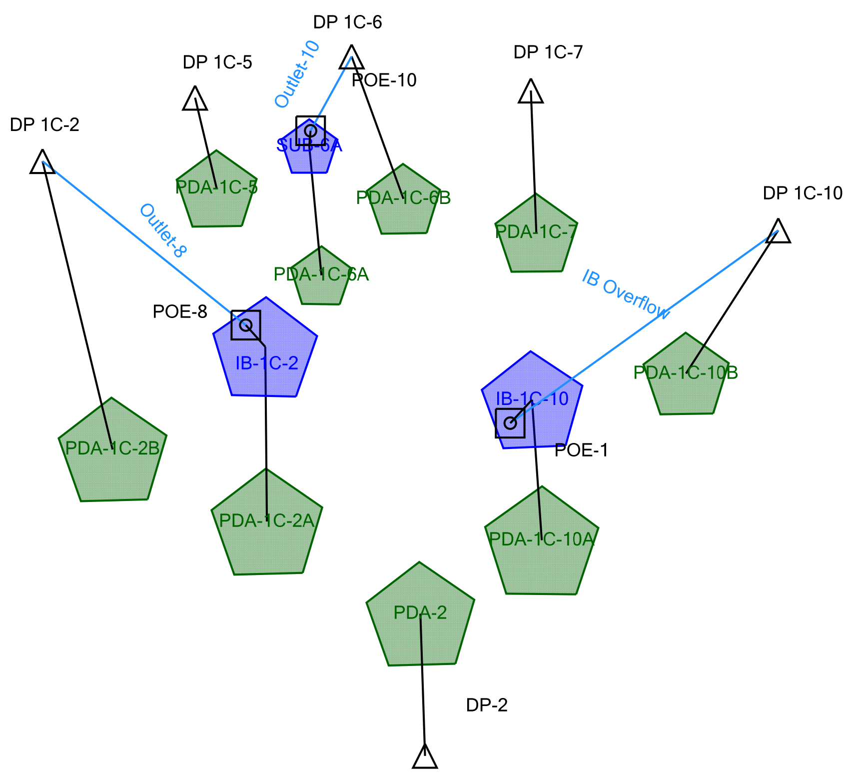
APPENDIX A

EXISTING AND PROPOSED HYDROLOGIC CALCULATIONS

Scenario: Pre-Development 1 year



Scenario: Post-Development 1 year



Stormwater Hydrologic Calculations

Project Summary	
Title	The Summit Club at Armonk
Engineer	Michael Thompson, PE
Company	JMC, PLLC
Date	3/11/2024

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Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
EDA 1C-2	Pre-Development 1 year	1	116,765	12.200	24.70
EDA 1C-2	Pre-Development 10 year	10	409,916	12.150	99.64
EDA 1C-2	Pre-Development 25 year	25	609,163	12.150	150.27
EDA 1C-2	Pre-Development 100 year	100	1,053,060	12.150	260.46
EDA 1C-6	Pre-Development 1 year	1	12,504	12.300	1.59
EDA 1C-6	Pre-Development 10 year	10	64,931	12.150	16.08
EDA 1C-6	Pre-Development 25 year	25	104,876	12.150	27.12
EDA 1C-6	Pre-Development 100 year	100	199,424	12.150	52.62
EDA 1C-7	Pre-Development 1 year	1	10,045	12.150	2.21
EDA 1C-7	Pre-Development 10 year	10	38,812	12.150	10.21
EDA 1C-7	Pre-Development 25 year	25	58,967	12.100	15.81
EDA 1C-7	Pre-Development 100 year	100	104,601	12.100	28.29
EDA 1C-10	Pre-Development 1 year	1	21,168	12.250	2.88
EDA 1C-10	Pre-Development 10 year	10	104,512	12.150	25.49
EDA 1C-10	Pre-Development 25 year	25	167,171	12.150	42.57
EDA 1C-10	Pre-Development 100 year	100	314,455	12.150	81.83
EDA-2	Pre-Development 1 year	1	9,561	12.200	2.17
EDA-2	Pre-Development 10 year	10	30,028	12.150	7.39
EDA-2	Pre-Development 25 year	25	43,435	12.150	10.75
EDA-2	Pre-Development 100 year	100	72,729	12.150	17.89
PDA-1C-2B	Post-Development 1 year	1	89,081	12.200	17.76
PDA-1C-2B	Post-Development 10 year	10	332,968	12.150	80.07
PDA-1C-2B	Post-Development 25 year	25	502,079	12.150	123.31

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
PDA-1C-2B	Post-Development 100 year	100	882,878	12.150	218.59
PDA-1C-10A	Post-Development 1 year	1	23,970	12.150	5.99
PDA-1C-10A	Post-Development 10 year	10	69,873	12.150	18.09
PDA-1C-10A	Post-Development 25 year	25	99,192	12.150	25.55
PDA-1C-10A	Post-Development 100 year	100	162,420	12.150	41.13
PDA-2	Post-Development 1 year	1	7,713	12.200	1.72
PDA-2	Post-Development 10 year	10	24,870	12.150	6.11
PDA-2	Post-Development 25 year	25	36,209	12.150	8.96
PDA-2	Post-Development 100 year	100	61,100	12.150	15.06
PDA-1C-6B	Post-Development 1 year	1	11,928	12.300	1.51
PDA-1C-6B	Post-Development 10 year	10	61,944	12.150	15.23
PDA-1C-6B	Post-Development 25 year	25	100,052	12.150	25.74
PDA-1C-6B	Post-Development 100 year	100	190,254	12.150	50.05
PDA-1C-7	Post-Development 1 year	1	6,159	12.150	1.29
PDA-1C-7	Post-Development 10 year	10	25,584	12.100	6.99
PDA-1C-7	Post-Development 25 year	25	39,493	12.100	11.03
PDA-1C-7	Post-Development 100 year	100	71,358	12.100	20.06
PDA-1C-10B	Post-Development 1 year	1	14,186	12.300	1.81
PDA-1C-10B	Post-Development 10 year	10	73,664	12.150	18.57
PDA-1C-10B	Post-Development 25 year	25	118,978	12.150	31.15
PDA-1C-10B	Post-Development 100 year	100	226,232	12.150	60.14
PDA-1C-2A	Post-Development 1 year	1	26,823	12.100	7.46
PDA-1C-2A	Post-Development 10 year	10	72,982	12.100	20.43

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
PDA-1C-2A	Post-Development 25 year	25	101,783	12.100	28.20
PDA-1C-2A	Post-Development 100 year	100	163,166	12.100	44.23
EDA-1C-5	Pre-Development 1 year	1	1,533	12.450	0.13
EDA-1C-5	Pre-Development 10 year	10	10,213	12.150	2.20
EDA-1C-5	Pre-Development 25 year	25	17,236	12.150	4.11
EDA-1C-5	Pre-Development 100 year	100	34,377	12.150	8.68
PDA-1C-5	Post-Development 1 year	1	1,183	12.450	0.08
PDA-1C-5	Post-Development 10 year	10	8,518	12.200	1.80
PDA-1C-5	Post-Development 25 year	25	14,556	12.150	3.42
PDA-1C-5	Post-Development 100 year	100	29,416	12.150	7.40
PDA-1C-6A	Post-Development 1 year	1	8,259	12.100	2.14
PDA-1C-6A	Post-Development 10 year	10	16,312	12.100	4.06
PDA-1C-6A	Post-Development 25 year	25	20,919	12.100	5.14
PDA-1C-6A	Post-Development 100 year	100	30,362	12.100	7.34

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
DP-2	Pre-Development 1 year	1	9,561	12.200	2.17
DP-2	Post-Development 1 year	1	7,713	12.200	1.72
DP-2	Pre-Development 10 year	10	30,028	12.150	7.39
DP-2	Post-Development 10 year	10	24,870	12.150	6.11
DP-2	Pre-Development 25 year	25	43,435	12.150	10.75
DP-2	Post-Development 25 year	25	36,209	12.150	8.96

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
DP-2	Pre-Development 100 year	100	72,729	12.150	17.89
DP-2	Post-Development 100 year	100	61,100	12.150	15.06
DP 1C-6	Pre-Development 1 year	1	12,504	12.300	1.59
DP 1C-6	Post-Development 1 year	1	11,928	12.300	1.51
DP 1C-6	Pre-Development 10 year	10	64,931	12.150	16.08
DP 1C-6	Post-Development 10 year	10	66,309	12.150	15.49
DP 1C-6	Pre-Development 25 year	25	104,876	12.150	27.12
DP 1C-6	Post-Development 25 year	25	107,730	12.150	26.49
DP 1C-6	Pre-Development 100 year	100	199,424	12.150	52.62
DP 1C-6	Post-Development 100 year	100	205,329	12.150	52.51
DP 1C-2	Pre-Development 1 year	1	116,765	12.200	24.70
DP 1C-2	Post-Development 1 year	1	89,081	12.200	17.76
DP 1C-2	Pre-Development 10 year	10	409,916	12.150	99.64
DP 1C-2	Post-Development 10 year	10	365,590	12.150	90.98
DP 1C-2	Pre-Development 25 year	25	609,163	12.150	150.27
DP 1C-2	Post-Development 25 year	25	558,501	12.150	139.39
DP 1C-2	Pre-Development 100 year	100	1,053,060	12.150	260.46
DP 1C-2	Post-Development 100 year	100	993,817	12.150	242.99
DP 1C-7	Pre-Development 1 year	1	10,045	12.150	2.21
DP 1C-7	Post-Development 1 year	1	6,159	12.150	1.29
DP 1C-7	Pre-Development 10 year	10	38,812	12.150	10.21
DP 1C-7	Post-Development 10 year	10	25,584	12.100	6.99
DP 1C-7	Pre-Development 25 year	25	58,967	12.100	15.81

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
DP 1C-7	Post-Development 25 year	25	39,493	12.100	11.03
DP 1C-7	Pre-Development 100 year	100	104,601	12.100	28.29
DP 1C-7	Post-Development 100 year	100	71,358	12.100	20.06
DP 1C-10	Pre-Development 1 year	1	21,168	12.250	2.88
DP 1C-10	Post-Development 1 year	1	14,186	12.300	1.81
DP 1C-10	Pre-Development 10 year	10	104,512	12.150	25.49
DP 1C-10	Post-Development 10 year	10	99,703	12.200	22.09
DP 1C-10	Pre-Development 25 year	25	167,171	12.150	42.57
DP 1C-10	Post-Development 25 year	25	167,796	12.150	38.61
DP 1C-10	Pre-Development 100 year	100	314,455	12.150	81.83
DP 1C-10	Post-Development 100 year	100	328,315	12.150	70.62
DP 1C-5	Pre-Development 1 year	1	1,533	12.450	0.13
DP 1C-5	Post-Development 1 year	1	1,183	12.450	0.08
DP 1C-5	Pre-Development 10 year	10	10,213	12.150	2.20
DP 1C-5	Post-Development 10 year	10	8,518	12.200	1.80
DP 1C-5	Pre-Development 25 year	25	17,236	12.150	4.11
DP 1C-5	Post-Development 25 year	25	14,556	12.150	3.42
DP 1C-5	Pre-Development 100 year	100	34,377	12.150	8.68
DP 1C-5	Post-Development 100 year	100	29,416	12.150	7.40

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
IB-1C-10 (IN)	Post-Development 1 year	1	23,970	12.150	5.99	(N/A)	(N/A)
IB-1C-10 (OUT)	Post-Development 1 year	1	0	0.000	0.00	619.54	7,898
IB-1C-10 (IN)	Post-Development 10 year	10	69,873	12.150	18.09	(N/A)	(N/A)
IB-1C-10 (OUT)	Post-Development 10 year	10	26,039	12.450	7.03	620.31	20,128
IB-1C-10 (IN)	Post-Development 25 year	25	99,192	12.150	25.55	(N/A)	(N/A)
IB-1C-10 (OUT)	Post-Development 25 year	25	48,818	12.450	9.21	620.83	29,768
IB-1C-10 (IN)	Post-Development 100 year	100	162,420	12.150	41.13	(N/A)	(N/A)
IB-1C-10 (OUT)	Post-Development 100 year	100	102,083	12.500	12.56	622.01	53,268
IB-1C-2 (IN)	Post-Development 1 year	1	26,823	12.100	7.46	(N/A)	(N/A)
IB-1C-2 (OUT)	Post-Development 1 year	1	0	0.000	0.00	622.90	11,164
IB-1C-2 (IN)	Post-Development 10 year	10	72,982	12.100	20.43	(N/A)	(N/A)
IB-1C-2 (OUT)	Post-Development 10 year	10	32,623	12.250	11.63	623.59	18,872
IB-1C-2 (IN)	Post-Development 25 year	25	101,783	12.100	28.20	(N/A)	(N/A)
IB-1C-2 (OUT)	Post-Development 25 year	25	56,421	12.200	16.85	624.08	24,695
IB-1C-2 (IN)	Post-Development 100 year	100	163,166	12.100	44.23	(N/A)	(N/A)

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
IB-1C-2 (OUT)	Post-Development 100 year	100	110,939	12.250	25.18	624.98	36,298
SUB-6A (IN)	Post-Development 1 year	1	8,259	12.100	2.14	(N/A)	(N/A)
SUB-6A (OUT)	Post-Development 1 year	1	0	0.000	0.00	495.13	3,806
SUB-6A (IN)	Post-Development 10 year	10	16,312	12.100	4.06	(N/A)	(N/A)
SUB-6A (OUT)	Post-Development 10 year	10	4,365	12.500	0.66	495.90	6,989
SUB-6A (IN)	Post-Development 25 year	25	20,919	12.100	5.14	(N/A)	(N/A)
SUB-6A (OUT)	Post-Development 25 year	25	7,678	12.450	1.29	496.33	8,571
SUB-6A (IN)	Post-Development 100 year	100	30,362	12.100	7.34	(N/A)	(N/A)
SUB-6A (OUT)	Post-Development 100 year	100	15,075	12.300	3.15	497.36	11,161

Subsection: Time-Depth Curve
Label: Time-Depth - 1
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time-Depth Curve: 1 year	
Label	1 year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	1 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.0	0.0	0.0	0.0
1.500	0.0	0.0	0.0	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.1
3.000	0.1	0.1	0.1	0.1	0.1
3.500	0.1	0.1	0.1	0.1	0.1
4.000	0.1	0.1	0.1	0.1	0.1
4.500	0.1	0.1	0.1	0.2	0.2
5.000	0.2	0.2	0.2	0.2	0.2
5.500	0.2	0.2	0.2	0.2	0.2
6.000	0.2	0.2	0.2	0.2	0.2
6.500	0.2	0.2	0.2	0.2	0.2
7.000	0.3	0.3	0.3	0.3	0.3
7.500	0.3	0.3	0.3	0.3	0.3
8.000	0.3	0.3	0.3	0.3	0.4
8.500	0.4	0.4	0.4	0.4	0.4
9.000	0.4	0.4	0.4	0.4	0.5
9.500	0.5	0.5	0.5	0.5	0.5
10.000	0.5	0.5	0.6	0.6	0.6
10.500	0.6	0.6	0.6	0.7	0.7
11.000	0.7	0.7	0.7	0.8	0.8
11.500	0.8	0.9	1.0	1.0	1.2
12.000	1.4	1.6	1.8	1.8	1.9
12.500	2.0	2.0	2.0	2.1	2.1
13.000	2.1	2.1	2.1	2.2	2.2
13.500	2.2	2.2	2.2	2.2	2.3
14.000	2.3	2.3	2.3	2.3	2.3
14.500	2.3	2.3	2.4	2.4	2.4
15.000	2.4	2.4	2.4	2.4	2.4
15.500	2.4	2.4	2.5	2.5	2.5
16.000	2.5	2.5	2.5	2.5	2.5
16.500	2.5	2.5	2.5	2.5	2.5

Subsection: Time-Depth Curve | Return Event: 1 years
Label: Time-Depth - 1 | Storm Event: 1 year
Scenario: Pre-Development 1 year

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	2.5	2.6	2.6	2.6	2.6
17.500	2.6	2.6	2.6	2.6	2.6
18.000	2.6	2.6	2.6	2.6	2.6
18.500	2.6	2.6	2.6	2.6	2.6
19.000	2.6	2.6	2.6	2.7	2.7
19.500	2.7	2.7	2.7	2.7	2.7
20.000	2.7	2.7	2.7	2.7	2.7
20.500	2.7	2.7	2.7	2.7	2.7
21.000	2.7	2.7	2.7	2.7	2.7
21.500	2.7	2.7	2.7	2.7	2.7
22.000	2.7	2.7	2.8	2.8	2.8
22.500	2.8	2.8	2.8	2.8	2.8
23.000	2.8	2.8	2.8	2.8	2.8
23.500	2.8	2.8	2.8	2.8	2.8
24.000	2.8	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time-Depth Curve | Return Event: 10 years
Label: Time-Depth - 1 | Storm Event: 10 year
Scenario: Pre-Development 10 year

Time-Depth Curve: 10 year	
Label	10 year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	10 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.2
3.000	0.2	0.2	0.2	0.2	0.2
3.500	0.2	0.2	0.2	0.2	0.2
4.000	0.2	0.2	0.2	0.2	0.2
4.500	0.3	0.3	0.3	0.3	0.3
5.000	0.3	0.3	0.3	0.3	0.3
5.500	0.3	0.3	0.3	0.4	0.4
6.000	0.4	0.4	0.4	0.4	0.4
6.500	0.4	0.4	0.4	0.4	0.5
7.000	0.5	0.5	0.5	0.5	0.5
7.500	0.5	0.5	0.5	0.6	0.6
8.000	0.6	0.6	0.6	0.6	0.6
8.500	0.7	0.7	0.7	0.7	0.7
9.000	0.7	0.8	0.8	0.8	0.8
9.500	0.8	0.9	0.9	0.9	0.9
10.000	1.0	1.0	1.0	1.0	1.1
10.500	1.1	1.1	1.2	1.2	1.2
11.000	1.3	1.3	1.4	1.4	1.5
11.500	1.5	1.6	1.7	1.9	2.1
12.000	2.6	3.0	3.2	3.4	3.5
12.500	3.6	3.7	3.7	3.8	3.8
13.000	3.8	3.9	3.9	3.9	4.0
13.500	4.0	4.0	4.1	4.1	4.1
14.000	4.2	4.2	4.2	4.2	4.2
14.500	4.3	4.3	4.3	4.3	4.4
15.000	4.4	4.4	4.4	4.4	4.4
15.500	4.5	4.5	4.5	4.5	4.5
16.000	4.5	4.5	4.6	4.6	4.6
16.500	4.6	4.6	4.6	4.6	4.6

Subsection: Time-Depth Curve
Return Event: 10 years
Label: Time-Depth - 1
Storm Event: 10 year
Scenario: Pre-Development 10 year

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	4.7	4.7	4.7	4.7	4.7
17.500	4.7	4.7	4.7	4.7	4.7
18.000	4.8	4.8	4.8	4.8	4.8
18.500	4.8	4.8	4.8	4.8	4.8
19.000	4.8	4.8	4.8	4.9	4.9
19.500	4.9	4.9	4.9	4.9	4.9
20.000	4.9	4.9	4.9	4.9	4.9
20.500	4.9	4.9	4.9	5.0	5.0
21.000	5.0	5.0	5.0	5.0	5.0
21.500	5.0	5.0	5.0	5.0	5.0
22.000	5.0	5.0	5.0	5.0	5.0
22.500	5.0	5.1	5.1	5.1	5.1
23.000	5.1	5.1	5.1	5.1	5.1
23.500	5.1	5.1	5.1	5.1	5.1
24.000	5.1	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time-Depth Curve
Label: Time-Depth - 1
Scenario: Pre-Development 100 year

Return Event: 100 years
Storm Event: 100 year

Time-Depth Curve: 100 year	
Label	100 year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	100 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.1	0.1	0.1	0.1
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.2	0.2	0.2
2.000	0.2	0.2	0.2	0.2	0.2
2.500	0.2	0.2	0.3	0.3	0.3
3.000	0.3	0.3	0.3	0.3	0.3
3.500	0.3	0.3	0.4	0.4	0.4
4.000	0.4	0.4	0.4	0.4	0.4
4.500	0.5	0.5	0.5	0.5	0.5
5.000	0.5	0.5	0.5	0.6	0.6
5.500	0.6	0.6	0.6	0.6	0.6
6.000	0.7	0.7	0.7	0.7	0.7
6.500	0.7	0.8	0.8	0.8	0.8
7.000	0.8	0.8	0.9	0.9	0.9
7.500	0.9	1.0	1.0	1.0	1.0
8.000	1.0	1.1	1.1	1.1	1.1
8.500	1.2	1.2	1.2	1.3	1.3
9.000	1.3	1.4	1.4	1.4	1.5
9.500	1.5	1.6	1.6	1.6	1.7
10.000	1.7	1.8	1.8	1.9	1.9
10.500	2.0	2.0	2.1	2.2	2.2
11.000	2.3	2.4	2.4	2.5	2.6
11.500	2.7	2.9	3.1	3.4	3.8
12.000	4.6	5.3	5.7	6.0	6.3
12.500	6.4	6.5	6.6	6.7	6.8
13.000	6.9	6.9	7.0	7.0	7.1
13.500	7.2	7.2	7.3	7.3	7.4
14.000	7.4	7.5	7.5	7.5	7.6
14.500	7.6	7.7	7.7	7.7	7.8
15.000	7.8	7.8	7.9	7.9	7.9
15.500	8.0	8.0	8.0	8.0	8.1
16.000	8.1	8.1	8.1	8.2	8.2
16.500	8.2	8.2	8.3	8.3	8.3

Subsection: Time-Depth Curve | Return Event: 100 years
Label: Time-Depth - 1 | Storm Event: 100 year
Scenario: Pre-Development 100 year

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	8.3	8.3	8.4	8.4	8.4
17.500	8.4	8.4	8.4	8.5	8.5
18.000	8.5	8.5	8.5	8.5	8.5
18.500	8.6	8.6	8.6	8.6	8.6
19.000	8.6	8.6	8.6	8.7	8.7
19.500	8.7	8.7	8.7	8.7	8.7
20.000	8.7	8.8	8.8	8.8	8.8
20.500	8.8	8.8	8.8	8.8	8.8
21.000	8.9	8.9	8.9	8.9	8.9
21.500	8.9	8.9	8.9	8.9	9.0
22.000	9.0	9.0	9.0	9.0	9.0
22.500	9.0	9.0	9.0	9.0	9.0
23.000	9.1	9.1	9.1	9.1	9.1
23.500	9.1	9.1	9.1	9.1	9.1
24.000	9.1	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time-Depth Curve | Return Event: 25 years
Label: Time-Depth - 1 | Storm Event: 25 year
Scenario: Pre-Development 25 year

Time-Depth Curve: 25 year	
Label	25 year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	25 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.1	0.1
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.2
2.500	0.2	0.2	0.2	0.2	0.2
3.000	0.2	0.2	0.2	0.2	0.2
3.500	0.2	0.2	0.3	0.3	0.3
4.000	0.3	0.3	0.3	0.3	0.3
4.500	0.3	0.3	0.3	0.3	0.4
5.000	0.4	0.4	0.4	0.4	0.4
5.500	0.4	0.4	0.4	0.4	0.5
6.000	0.5	0.5	0.5	0.5	0.5
6.500	0.5	0.5	0.5	0.6	0.6
7.000	0.6	0.6	0.6	0.6	0.6
7.500	0.7	0.7	0.7	0.7	0.7
8.000	0.7	0.8	0.8	0.8	0.8
8.500	0.8	0.8	0.9	0.9	0.9
9.000	0.9	1.0	1.0	1.0	1.0
9.500	1.1	1.1	1.1	1.2	1.2
10.000	1.2	1.2	1.3	1.3	1.4
10.500	1.4	1.4	1.5	1.5	1.6
11.000	1.6	1.7	1.7	1.8	1.8
11.500	1.9	2.0	2.2	2.4	2.7
12.000	3.2	3.8	4.0	4.3	4.4
12.500	4.5	4.6	4.7	4.7	4.8
13.000	4.8	4.9	4.9	5.0	5.0
13.500	5.0	5.1	5.1	5.2	5.2
14.000	5.2	5.3	5.3	5.3	5.3
14.500	5.4	5.4	5.4	5.5	5.5
15.000	5.5	5.5	5.5	5.6	5.6
15.500	5.6	5.6	5.7	5.7	5.7
16.000	5.7	5.7	5.7	5.8	5.8
16.500	5.8	5.8	5.8	5.8	5.8

Subsection: Time-Depth Curve
Label: Time-Depth - 1
Scenario: Pre-Development 25 year

Return Event: 25 years
Storm Event: 25 year

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	5.9	5.9	5.9	5.9	5.9
17.500	5.9	5.9	5.9	6.0	6.0
18.000	6.0	6.0	6.0	6.0	6.0
18.500	6.0	6.0	6.0	6.1	6.1
19.000	6.1	6.1	6.1	6.1	6.1
19.500	6.1	6.1	6.1	6.1	6.2
20.000	6.2	6.2	6.2	6.2	6.2
20.500	6.2	6.2	6.2	6.2	6.2
21.000	6.2	6.3	6.3	6.3	6.3
21.500	6.3	6.3	6.3	6.3	6.3
22.000	6.3	6.3	6.3	6.3	6.3
22.500	6.3	6.4	6.4	6.4	6.4
23.000	6.4	6.4	6.4	6.4	6.4
23.500	6.4	6.4	6.4	6.4	6.4
24.000	6.4	(N/A)	(N/A)	(N/A)	(N/A)

Stormwater Hydrologic Calculations

Subsection: Time of Concentration Calculations — Return Event: 1 years
Label: EDA 1C-10 — Storm Event: 1 year
Scenario: Pre-Development 1 year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.150
Slope	0.120 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.36 ft/s
Segment Time of Concentration	0.077 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	1,647.00 ft
Is Paved?	False
Slope	0.102 ft/ft
Average Velocity	5.15 ft/s
Segment Time of Concentration	0.089 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.166 hours

==== SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

Subsection: Time of Concentration Calculations
Label: EDA 1C-2
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.150
Slope	0.040 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.23 ft/s
Segment Time of Concentration	0.120 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	1,515.00 ft
Is Paved?	False
Slope	0.091 ft/ft
Average Velocity	4.87 ft/s
Segment Time of Concentration	0.086 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.207 hours

==== SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

Stormwater Hydrologic Calculations

Subsection: Time of Concentration Calculations — Return Event: 1 years
Label: EDA 1C-6 — Storm Event: 1 year
Scenario: Pre-Development 1 year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.150
Slope	0.220 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.46 ft/s
Segment Time of Concentration	0.061 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	1,699.00 ft
Is Paved?	False
Slope	0.109 ft/ft
Average Velocity	5.33 ft/s
Segment Time of Concentration	0.089 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.149 hours

Stormwater Hydrologic Calculations

Subsection: Time of Concentration Calculations	Return Event: 1 years
Label: EDA 1C-6	Storm Event: 1 year
Scenario: Pre-Development 1 year	

==== SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

Subsection: Time of Concentration Calculations | Return Event: 1 years
Label: EDA 1C-7 | Storm Event: 1 year
Scenario: Pre-Development 1 year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.150
Slope	0.080 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.31 ft/s
Segment Time of Concentration	0.091 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	855.00 ft
Is Paved?	False
Slope	0.164 ft/ft
Average Velocity	6.53 ft/s
Segment Time of Concentration	0.036 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.127 hours

Stormwater Hydrologic Calculations

Subsection: Time of Concentration Calculations	Return Event: 1 years
Label: EDA 1C-7	Storm Event: 1 year
Scenario: Pre-Development 1 year	

==== SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

Stormwater Hydrologic Calculations

Subsection: Time of Concentration Calculations | Return Event: 1 years
Label: EDA-1C-5 | Storm Event: 1 year
Scenario: Pre-Development 1 year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	144.00 ft
Manning's n	0.400
Slope	0.313 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.26 ft/s
Segment Time of Concentration	0.154 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	381.00 ft
Is Paved?	False
Slope	0.047 ft/ft
Average Velocity	3.50 ft/s
Segment Time of Concentration	0.030 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.184 hours

Subsection: Time of Concentration Calculations | Return Event: 1 years
Label: EDA-1C-5 | Storm Event: 1 year
Scenario: Pre-Development 1 year

==== SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

Stormwater Hydrologic Calculations

Subsection: Time of Concentration Calculations — Return Event: 1 years
Label: EDA-2 — Storm Event: 1 year
Scenario: Pre-Development 1 year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.150
Slope	0.040 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.23 ft/s
Segment Time of Concentration	0.120 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	947.00 ft
Is Paved?	False
Slope	0.034 ft/ft
Average Velocity	2.98 ft/s
Segment Time of Concentration	0.088 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.208 hours

==== SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

Stormwater Hydrologic Calculations

Subsection: Time of Concentration Calculations Return Event: 1 years
Label: PDA-1C-10A Storm Event: 1 year
Scenario: Post-Development 1 year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.150
Slope	0.040 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.23 ft/s
Segment Time of Concentration	0.120 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	650.00 ft
Is Paved?	False
Slope	0.060 ft/ft
Average Velocity	3.95 ft/s
Segment Time of Concentration	0.046 hours

Segment #3: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	272.00 ft
Manning's n	0.011
Slope	0.058 ft/ft
Wetted Perimeter	3.93 ft
Average Velocity	14.97 ft/s
Segment Time of Concentration	0.005 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.171 hours

==== SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc =	(0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))
Where:	Tc= Time of concentration, hours n= Manning's n Lf= Flow length, feet P= 2yr, 24hr Rain depth, inches Sf= Slope, %

Stormwater Hydrologic Calculations

Subsection: Time of Concentration Calculations — Return Event: 1 years
Label: PDA-1C-10B — Storm Event: 1 year
Scenario: Post-Development 1 year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.150
Slope	0.150 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.39 ft/s
Segment Time of Concentration	0.071 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	1,194.00 ft
Is Paved?	False
Slope	0.101 ft/ft
Average Velocity	5.13 ft/s
Segment Time of Concentration	0.065 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.135 hours

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where: R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where: V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Stormwater Hydrologic Calculations

Subsection: Time of Concentration Calculations
Label: PDA-1C-2A
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.100 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.100 hours

Stormwater Hydrologic Calculations

Subsection: Time of Concentration Calculations	Return Event: 1 years
Label: PDA-1C-2A	Storm Event: 1 year
Scenario: Post-Development 1 year	

==== User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Stormwater Hydrologic Calculations

Subsection: Time of Concentration Calculations — Return Event: 1 years
Label: PDA-1C-2B — Storm Event: 1 year
Scenario: Post-Development 1 year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.150
Slope	0.040 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.23 ft/s
Segment Time of Concentration	0.120 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	1,515.00 ft
Is Paved?	False
Slope	0.091 ft/ft
Average Velocity	4.87 ft/s
Segment Time of Concentration	0.086 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.207 hours

==== SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

Subsection: Time of Concentration Calculations
Label: PDA-1C-5
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	144.00 ft
Manning's n	0.400
Slope	0.313 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.26 ft/s
Segment Time of Concentration	0.154 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	381.00 ft
Is Paved?	False
Slope	0.047 ft/ft
Average Velocity	3.50 ft/s
Segment Time of Concentration	0.030 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.184 hours

Stormwater Hydrologic Calculations

Subsection: Time of Concentration Calculations | Return Event: 1 years
Label: PDA-1C-5 | Storm Event: 1 year
Scenario: Post-Development 1 year

==== SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

Stormwater Hydrologic Calculations

Subsection: Time of Concentration Calculations | Return Event: 1 years
Label: PDA-1C-6A | Storm Event: 1 year
Scenario: Post-Development 1 year

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.100 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.100 hours

Stormwater Hydrologic Calculations

Subsection: Time of Concentration Calculations	Return Event: 1 years
Label: PDA-1C-6A	Storm Event: 1 year
Scenario: Post-Development 1 year	

==== User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Stormwater Hydrologic Calculations

Subsection: Time of Concentration Calculations — Return Event: 1 years
Label: PDA-1C-6B — Storm Event: 1 year
Scenario: Post-Development 1 year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.150
Slope	0.170 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.41 ft/s
Segment Time of Concentration	0.067 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	1,688.00 ft
Is Paved?	False
Slope	0.110 ft/ft
Average Velocity	5.35 ft/s
Segment Time of Concentration	0.088 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.155 hours

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Stormwater Hydrologic Calculations

Subsection: Time of Concentration Calculations	Return Event: 1 years
Label: PDA-1C-7	Storm Event: 1 year
Scenario: Post-Development 1 year	

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.150
Slope	0.240 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.47 ft/s
Segment Time of Concentration	0.059 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	718.00 ft
Is Paved?	False
Slope	0.167 ft/ft
Average Velocity	6.59 ft/s
Segment Time of Concentration	0.030 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.100 hours

==== SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

Stormwater Hydrologic Calculations

Subsection: Time of Concentration Calculations — Return Event: 1 years
Label: PDA-2 — Storm Event: 1 year
Scenario: Post-Development 1 year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.150
Slope	0.040 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.23 ft/s
Segment Time of Concentration	0.120 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	947.00 ft
Is Paved?	False
Slope	0.034 ft/ft
Average Velocity	2.98 ft/s
Segment Time of Concentration	0.088 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.208 hours

Subsection: Time of Concentration Calculations | Return Event: 1 years
Label: PDA-2 | Storm Event: 1 year
Scenario: Post-Development 1 year

==== SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

Stormwater Hydrologic Calculations

Subsection: Runoff CN-Area
Label: EDA 1C-10
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft^2)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil C	98.000	25,196	0.0	0.0	98.000
Woods - good - Soil C	70.000	15,880	0.0	0.0	70.000
Tennis Court - Soil B	92.000	7,323	0.0	0.0	92.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	59,050	0.0	0.0	74.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	476,936	0.0	0.0	61.000
Woods - good - Soil B	55.000	287,685	0.0	0.0	55.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	872,070	(N/A)	(N/A)	61.394

Stormwater Hydrologic Calculations

Subsection: Runoff CN-Area
Label: EDA 1C-2
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft^2)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil B	98.000	285,024	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	1,133,377	0.0	0.0	61.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	406,420	0.0	0.0	74.000
Woods - good - Soil B	55.000	256,121	0.0	0.0	55.000
Woods - good - Soil C	70.000	94,026	0.0	0.0	70.000
Water	100.000	82,180	0.0	0.0	100.000
Tennis Court - Soil B	92.000	50,432	0.0	0.0	92.000
Tennis Court - Soil C	94.000	12,426	0.0	0.0	94.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	2,320,006	(N/A)	(N/A)	69.757

Stormwater Hydrologic Calculations

Subsection: Runoff CN-Area
Label: EDA 1C-6
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil B	98.000	15,851	0.0	0.0	98.000
Woods - good - Soil B	55.000	176,410	0.0	0.0	55.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	372,448	0.0	0.0	61.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	4,620	0.0	0.0	74.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	569,329	(N/A)	(N/A)	60.276

Stormwater Hydrologic Calculations

Subsection: Runoff CN-Area
Label: EDA 1C-7
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil C	98.000	22,088	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	136,639	0.0	0.0	61.000
Woods - good - Soil B	55.000	40,653	0.0	0.0	55.000
Tennis Court - Soil C	92.000	12,560	0.0	0.0	92.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	16,584	0.0	0.0	74.000
Woods - good - Soil C	70.000	10,690	0.0	0.0	70.000
Water	100.000	8,021	0.0	0.0	100.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	247,235	(N/A)	(N/A)	67.420

Stormwater Hydrologic Calculations

Subsection: Runoff CN-Area
Label: EDA-1C-5
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft^2)	C (%)	UC (%)	Adjusted CN
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	19,092	0.0	0.0	39.000
Woods - good - Soil A	30.000	3,532	0.0	0.0	30.000
Woods - good - Soil B	55.000	48,456	0.0	0.0	55.000
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil D	98.000	6,010	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	34,237	0.0	0.0	61.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	111,327	(N/A)	(N/A)	55.629

Stormwater Hydrologic Calculations

Subsection: Runoff CN-Area | Return Event: 1 years
Label: EDA-2 | Storm Event: 1 year
Scenario: Pre-Development 1 year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil C	98.000	15,842	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	6,802	0.0	0.0	61.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	69,240	0.0	0.0	74.000
Woods - good - Soil B	55.000	1,020	0.0	0.0	55.000
Woods - good - Soil C	70.000	53,899	0.0	0.0	70.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	146,803	(N/A)	(N/A)	74.387

Stormwater Hydrologic Calculations

Subsection: Runoff CN-Area
Label: PDA-1C-10A
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil C	98.000	114,006	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	146,663	0.0	0.0	61.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	47,777	0.0	0.0	74.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	308,446	(N/A)	(N/A)	76.689

Stormwater Hydrologic Calculations

Subsection: Runoff CN-Area
Label: PDA-1C-10B
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil B	98.000	12,243	0.0	0.0	98.000
Woods - good - Soil C	70.000	5,602	0.0	0.0	70.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	10,867	0.0	0.0	74.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	433,215	0.0	0.0	61.000
Woods - good - Soil B	55.000	183,777	0.0	0.0	55.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	645,704	(N/A)	(N/A)	60.291

Subsection: Runoff CN-Area
Label: PDA-1C-2A
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil C	98.000	130,749	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	104,103	0.0	0.0	61.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	57,608	0.0	0.0	74.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	292,460	(N/A)	(N/A)	80.102

Stormwater Hydrologic Calculations

Subsection: Runoff CN-Area
Label: PDA-1C-2B
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil C	98.000	208,969	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	1,100,228	0.0	0.0	61.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	296,837	0.0	0.0	74.000
Woods - good - Soil B	55.000	256,121	0.0	0.0	55.000
Woods - good - Soil C	70.000	94,026	0.0	0.0	70.000
Water	100.000	82,180	0.0	0.0	100.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	2,038,361	(N/A)	(N/A)	67.920

Stormwater Hydrologic Calculations

Subsection: Runoff CN-Area
Label: PDA-1C-5
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	19,092	0.0	0.0	39.000
Woods - good - Soil A	30.000	3,532	0.0	0.0	30.000
Woods - good - Soil B	55.000	43,928	0.0	0.0	55.000
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil D	98.000	6,155	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	25,845	0.0	0.0	61.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	98,552	(N/A)	(N/A)	55.263

Stormwater Hydrologic Calculations

Subsection: Runoff CN-Area
Label: PDA-1C-6A
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil D	98.000	39,302	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	2,809	0.0	0.0	61.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	42,111	(N/A)	(N/A)	95.532

Stormwater Hydrologic Calculations

Subsection: Runoff CN-Area
Label: PDA-1C-6B
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft^2)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil B	98.000	17,280	0.0	0.0	98.000
Woods - good - Soil B	55.000	176,410	0.0	0.0	55.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	344,860	0.0	0.0	61.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	4,620	0.0	0.0	74.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	543,170	(N/A)	(N/A)	60.339

Stormwater Hydrologic Calculations

Subsection: Runoff CN-Area
Label: PDA-1C-7
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil B	98.000	16,509	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	112,143	0.0	0.0	61.000
Woods - good - Soil B	55.000	40,653	0.0	0.0	55.000
Water	100.000	8,021	0.0	0.0	100.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	177,326	(N/A)	(N/A)	64.833

Stormwater Hydrologic Calculations

Subsection: Runoff CN-Area
Label: PDA-2
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil C	98.000	263	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	7,530	0.0	0.0	61.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	118,171	0.0	0.0	74.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	125,964	(N/A)	(N/A)	73.273

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 1 years
Label: EDA 1C-10 — Storm Event: 1 year
Scenario: Pre-Development 1 year

Storm Event	1 year
Return Event	1 years
Duration	24.000 hours
Depth	2.8 in
Time of Concentration (Composite)	0.166 hours
Area (User Defined)	872,070 ft²

Computational Time Increment	0.022 hours
Time to Peak (Computed)	12.251 hours
Flow (Peak, Computed)	2.88 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	2.88 ft³/s

Drainage Area

SCS CN (Composite)	61.000
Area (User Defined)	872,070 ft²
Maximum Retention (Pervious)	6.4 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	0.3 in
Runoff Volume (Pervious)	21,250 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	21,168 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.166 hours
Computational Time Increment	0.022 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 1 years
Label: EDA 1C-10 | Storm Event: 1 year
Scenario: Pre-Development 1 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	136.52 ft^3/s
Unit peak time, Tp	0.111 hours
Unit receding limb, Tr	0.443 hours
Total unit time, Tb	0.554 hours

Subsection: Unit Hydrograph Summary | Return Event: 10 years
Label: EDA 1C-10 | Storm Event: 10 year
Scenario: Pre-Development 10 year

Storm Event	10 year
Return Event	10 years
Duration	24.000 hours
Depth	5.1 in
Time of Concentration (Composite)	0.166 hours
Area (User Defined)	872,070 ft²

Computational Time Increment	0.022 hours
Time to Peak (Computed)	12.162 hours
Flow (Peak, Computed)	25.53 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	25.49 ft³/s

Drainage Area

SCS CN (Composite)	61.000
Area (User Defined)	872,070 ft²
Maximum Retention (Pervious)	6.4 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	1.4 in
Runoff Volume (Pervious)	104,774 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	104,512 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.166 hours
Computational Time Increment	0.022 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 10 years
Label: EDA 1C-10 | Storm Event: 10 year
Scenario: Pre-Development 10 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	136.52 ft^3/s
Unit peak time, Tp	0.111 hours
Unit receding limb, Tr	0.443 hours
Total unit time, Tb	0.554 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 25 years
Label: EDA 1C-10 — Storm Event: 25 year
Scenario: Pre-Development 25 year

Storm Event	25 year
Return Event	25 years
Duration	24.000 hours
Depth	6.4 in
Time of Concentration (Composite)	0.166 hours
Area (User Defined)	872,070 ft²

Computational Time Increment	0.022 hours
Time to Peak (Computed)	12.140 hours
Flow (Peak, Computed)	42.70 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	42.57 ft³/s

Drainage Area

SCS CN (Composite)	61.000
Area (User Defined)	872,070 ft²
Maximum Retention (Pervious)	6.4 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	2.3 in
Runoff Volume (Pervious)	167,544 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	167,171 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.166 hours
Computational Time Increment	0.022 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Subsection: Unit Hydrograph Summary — Return Event: 25 years

Label: EDA 1C-10 — Storm Event: 25 year

Scenario: Pre-Development 25 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	136.52 ft^3/s
Unit peak time, Tp	0.111 hours
Unit receding limb, Tr	0.443 hours
Total unit time, Tb	0.554 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 100 years
Label: EDA 1C-10 | Storm Event: 100 year
Scenario: Pre-Development 100 year

Storm Event	100 year
Return Event	100 years
Duration	24.000 hours
Depth	9.1 in
Time of Concentration (Composite)	0.166 hours
Area (User Defined)	872,070 ft²

Computational Time Increment	0.022 hours
Time to Peak (Computed)	12.140 hours
Flow (Peak, Computed)	82.43 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	81.83 ft³/s

Drainage Area

SCS CN (Composite)	61.000
Area (User Defined)	872,070 ft²
Maximum Retention (Pervious)	6.4 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	4.3 in
Runoff Volume (Pervious)	315,065 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	314,455 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.166 hours
Computational Time Increment	0.022 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 100 years
Label: EDA 1C-10 | Storm Event: 100 year
Scenario: Pre-Development 100 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	136.52 ft^3/s
Unit peak time, Tp	0.111 hours
Unit receding limb, Tr	0.443 hours
Total unit time, Tb	0.554 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 1 years

Label: EDA 1C-2 — Storm Event: 1 year

Scenario: Pre-Development 1 year

Storm Event	1 year
Return Event	1 years
Duration	24.000 hours
Depth	2.8 in
Time of Concentration (Composite)	0.207 hours
Area (User Defined)	2,320,006 ft²

Computational Time Increment	0.028 hours
Time to Peak (Computed)	12.199 hours
Flow (Peak, Computed)	24.73 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	24.70 ft³/s

Drainage Area

SCS CN (Composite)	70.000
Area (User Defined)	2,320,006 ft²
Maximum Retention (Pervious)	4.3 in
Maximum Retention (Pervious, 20 percent)	0.9 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	0.6 in
Runoff Volume (Pervious)	117,166 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	116,765 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.207 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 1 years
Label: EDA 1C-2 | Storm Event: 1 year
Scenario: Pre-Development 1 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	292.19 ft³/s
Unit peak time, Tp	0.138 hours
Unit receding limb, Tr	0.551 hours
Total unit time, Tb	0.688 hours

Subsection: Unit Hydrograph Summary | Return Event: 10 years
Label: EDA 1C-2 | Storm Event: 10 year
Scenario: Pre-Development 10 year

Storm Event	10 year
Return Event	10 years
Duration	24.000 hours
Depth	5.1 in
Time of Concentration (Composite)	0.207 hours
Area (User Defined)	2,320,006 ft²

Computational Time Increment	0.028 hours
Time to Peak (Computed)	12.171 hours
Flow (Peak, Computed)	100.58 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	99.64 ft³/s

Drainage Area

SCS CN (Composite)	70.000
Area (User Defined)	2,320,006 ft²
Maximum Retention (Pervious)	4.3 in
Maximum Retention (Pervious, 20 percent)	0.9 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	2.1 in
Runoff Volume (Pervious)	410,975 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	409,916 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.207 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 10 years
Label: EDA 1C-2 | Storm Event: 10 year
Scenario: Pre-Development 10 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	292.19 ft^3/s
Unit peak time, Tp	0.138 hours
Unit receding limb, Tr	0.551 hours
Total unit time, Tb	0.688 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 25 years
Label: EDA 1C-2 — Storm Event: 25 year
Scenario: Pre-Development 25 year

Storm Event	25 year
Return Event	25 years
Duration	24.000 hours
Depth	6.4 in
Time of Concentration (Composite)	0.207 hours
Area (User Defined)	2,320,006 ft²

Computational Time Increment	0.028 hours
Time to Peak (Computed)	12.171 hours
Flow (Peak, Computed)	150.94 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	150.27 ft³/s

Drainage Area

SCS CN (Composite)	70.000
Area (User Defined)	2,320,006 ft²
Maximum Retention (Pervious)	4.3 in
Maximum Retention (Pervious, 20 percent)	0.9 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	3.2 in
Runoff Volume (Pervious)	610,614 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	609,163 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.207 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 25 years
Label: EDA 1C-2 | Storm Event: 25 year
Scenario: Pre-Development 25 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	292.19 ft^3/s
Unit peak time, Tp	0.138 hours
Unit receding limb, Tr	0.551 hours
Total unit time, Tb	0.688 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 100 years
Label: EDA 1C-2 | Storm Event: 100 year
Scenario: Pre-Development 100 year

Storm Event	100 year
Return Event	100 years
Duration	24.000 hours
Depth	9.1 in
Time of Concentration (Composite)	0.207 hours
Area (User Defined)	2,320,006 ft²

Computational Time Increment	0.028 hours
Time to Peak (Computed)	12.144 hours
Flow (Peak, Computed)	260.54 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	260.46 ft³/s

Drainage Area

SCS CN (Composite)	70.000
Area (User Defined)	2,320,006 ft²
Maximum Retention (Pervious)	4.3 in
Maximum Retention (Pervious, 20 percent)	0.9 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	5.5 in
Runoff Volume (Pervious)	1,055,315 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	1,053,060 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.207 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 100 years
Label: EDA 1C-2 | Storm Event: 100 year
Scenario: Pre-Development 100 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	292.19 ft^3/s
Unit peak time, Tp	0.138 hours
Unit receding limb, Tr	0.551 hours
Total unit time, Tb	0.688 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 1 years
Label: EDA 1C-6 | Storm Event: 1 year
Scenario: Pre-Development 1 year

Storm Event	1 year
Return Event	1 years
Duration	24.000 hours
Depth	2.8 in
Time of Concentration (Composite)	0.149 hours
Area (User Defined)	569,329 ft²

Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.323 hours
Flow (Peak, Computed)	1.59 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.300 hours
Flow (Peak Interpolated Output)	1.59 ft³/s

Drainage Area	
SCS CN (Composite)	60.000
Area (User Defined)	569,329 ft²
Maximum Retention (Pervious)	6.7 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.3 in
Runoff Volume (Pervious)	12,548 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	12,504 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.149 hours
Computational Time Increment	0.020 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 1 years
Label: EDA 1C-6 | Storm Event: 1 year
Scenario: Pre-Development 1 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	99.18 ft³/s
Unit peak time, Tp	0.100 hours
Unit receding limb, Tr	0.398 hours
Total unit time, Tb	0.498 hours

Storm Event	10 year
Return Event	10 years
Duration	24.000 hours
Depth	5.1 in
Time of Concentration (Composite)	0.149 hours
Area (User Defined)	569,329 ft²

Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.144 hours
Flow (Peak, Computed)	16.16 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	16.08 ft³/s

Drainage Area

SCS CN (Composite)	60.000
Area (User Defined)	569,329 ft²
Maximum Retention (Pervious)	6.7 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	1.4 in
Runoff Volume (Pervious)	65,079 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	64,931 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.149 hours
Computational Time Increment	0.020 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Subsection: Unit Hydrograph Summary — Return Event: 10 years

Label: EDA 1C-6 — Storm Event: 10 year

Scenario: Pre-Development 10 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	99.18 ft³/s
Unit peak time, Tp	0.100 hours
Unit receding limb, Tr	0.398 hours
Total unit time, Tb	0.498 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 25 years
Label: EDA 1C-6 — Storm Event: 25 year
Scenario: Pre-Development 25 year

Storm Event	25 year
Return Event	25 years
Duration	24.000 hours
Depth	6.4 in
Time of Concentration (Composite)	0.149 hours
Area (User Defined)	569,329 ft²

Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.144 hours
Flow (Peak, Computed)	27.33 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	27.12 ft³/s

Drainage Area

SCS CN (Composite)	60.000
Area (User Defined)	569,329 ft²
Maximum Retention (Pervious)	6.7 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	2.2 in
Runoff Volume (Pervious)	105,089 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	104,876 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.149 hours
Computational Time Increment	0.020 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 25 years

Label: EDA 1C-6 — Storm Event: 25 year

Scenario: Pre-Development 25 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	99.18 ft³/s
Unit peak time, Tp	0.100 hours
Unit receding limb, Tr	0.398 hours
Total unit time, Tb	0.498 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 100 years
Label: EDA 1C-6 | Storm Event: 100 year
Scenario: Pre-Development 100 year

Storm Event	100 year
Return Event	100 years
Duration	24.000 hours
Depth	9.1 in
Time of Concentration (Composite)	0.149 hours
Area (User Defined)	569,329 ft²

Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.144 hours
Flow (Peak, Computed)	53.17 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	52.62 ft³/s

Drainage Area	
SCS CN (Composite)	60.000
Area (User Defined)	569,329 ft²
Maximum Retention (Pervious)	6.7 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.2 in
Runoff Volume (Pervious)	199,777 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	199,424 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.149 hours
Computational Time Increment	0.020 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 100 years
Label: EDA 1C-6 | Storm Event: 100 year
Scenario: Pre-Development 100 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	99.18 ft^3/s
Unit peak time, Tp	0.100 hours
Unit receding limb, Tr	0.398 hours
Total unit time, Tb	0.498 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 1 years
Label: EDA 1C-7 | Storm Event: 1 year
Scenario: Pre-Development 1 year

Storm Event	1 year
Return Event	1 years
Duration	24.000 hours
Depth	2.8 in
Time of Concentration (Composite)	0.127 hours
Area (User Defined)	247,235 ft²

Computational Time Increment	0.017 hours
Time to Peak (Computed)	12.140 hours
Flow (Peak, Computed)	2.22 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	2.21 ft³/s

Drainage Area	
SCS CN (Composite)	67.000
Area (User Defined)	247,235 ft²
Maximum Retention (Pervious)	4.9 in
Maximum Retention (Pervious, 20 percent)	1.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.5 in
Runoff Volume (Pervious)	10,069 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	10,045 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.127 hours
Computational Time Increment	0.017 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 1 years
Label: EDA 1C-7 | Storm Event: 1 year
Scenario: Pre-Development 1 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	50.50 ft³/s
Unit peak time, Tp	0.085 hours
Unit receding limb, Tr	0.340 hours
Total unit time, Tb	0.424 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 10 years
Label: EDA 1C-7 | Storm Event: 10 year
Scenario: Pre-Development 10 year

Storm Event	10 year
Return Event	10 years
Duration	24.000 hours
Depth	5.1 in
Time of Concentration (Composite)	0.127 hours
Area (User Defined)	247,235 ft²

Computational Time Increment	0.017 hours
Time to Peak (Computed)	12.123 hours
Flow (Peak, Computed)	10.50 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	10.21 ft³/s

Drainage Area	
SCS CN (Composite)	67.000
Area (User Defined)	247,235 ft²
Maximum Retention (Pervious)	4.9 in
Maximum Retention (Pervious, 20 percent)	1.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.9 in
Runoff Volume (Pervious)	38,880 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	38,812 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.127 hours
Computational Time Increment	0.017 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary Return Event: 10 years
Label: EDA 1C-7 Storm Event: 10 year
Scenario: Pre-Development 10 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	50.50 ft³/s
Unit peak time, Tp	0.085 hours
Unit receding limb, Tr	0.340 hours
Total unit time, Tb	0.424 hours

Subsection: Unit Hydrograph Summary | Return Event: 25 years
Label: EDA 1C-7 | Storm Event: 25 year
Scenario: Pre-Development 25 year

Storm Event	25 year
Return Event	25 years
Duration	24.000 hours
Depth	6.4 in
Time of Concentration (Composite)	0.127 hours
Area (User Defined)	247,235 ft²

Computational Time Increment	0.017 hours
Time to Peak (Computed)	12.123 hours
Flow (Peak, Computed)	16.19 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	15.81 ft³/s

Drainage Area	
SCS CN (Composite)	67.000
Area (User Defined)	247,235 ft²
Maximum Retention (Pervious)	4.9 in
Maximum Retention (Pervious, 20 percent)	1.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.9 in
Runoff Volume (Pervious)	59,060 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	58,967 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.127 hours
Computational Time Increment	0.017 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 25 years
Label: EDA 1C-7 — Storm Event: 25 year
Scenario: Pre-Development 25 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	50.50 ft³/s
Unit peak time, Tp	0.085 hours
Unit receding limb, Tr	0.340 hours
Total unit time, Tb	0.424 hours

Storm Event	100 year
Return Event	100 years
Duration	24.000 hours
Depth	9.1 in
Time of Concentration (Composite)	0.127 hours
Area (User Defined)	247,235 ft²

Computational Time Increment	0.017 hours
Time to Peak (Computed)	12.123 hours
Flow (Peak, Computed)	28.73 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	28.29 ft³/s

Drainage Area

SCS CN (Composite)	67.000
Area (User Defined)	247,235 ft²
Maximum Retention (Pervious)	4.9 in
Maximum Retention (Pervious, 20 percent)	1.0 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	5.1 in
Runoff Volume (Pervious)	104,749 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	104,601 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.127 hours
Computational Time Increment	0.017 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 100 years
Label: EDA 1C-7 | Storm Event: 100 year
Scenario: Pre-Development 100 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	50.50 ft³/s
Unit peak time, Tp	0.085 hours
Unit receding limb, Tr	0.340 hours
Total unit time, Tb	0.424 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 1 years
Label: EDA-1C-5 — Storm Event: 1 year
Scenario: Pre-Development 1 year

Storm Event	1 year
Return Event	1 years
Duration	24.000 hours
Depth	2.8 in
Time of Concentration (Composite)	0.184 hours
Area (User Defined)	111,327 ft²

Computational Time Increment	0.025 hours
Time to Peak (Computed)	12.448 hours
Flow (Peak, Computed)	0.13 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.450 hours
Flow (Peak Interpolated Output)	0.13 ft³/s

Drainage Area

SCS CN (Composite)	56.000
Area (User Defined)	111,327 ft²
Maximum Retention (Pervious)	7.9 in
Maximum Retention (Pervious, 20 percent)	1.6 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	0.2 in
Runoff Volume (Pervious)	1,541 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	1,533 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.184 hours
Computational Time Increment	0.025 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 1 years
Label: EDA-1C-5 | Storm Event: 1 year
Scenario: Pre-Development 1 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	15.70 ft^3/s
Unit peak time, Tp	0.123 hours
Unit receding limb, Tr	0.492 hours
Total unit time, Tb	0.615 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 10 years
Label: EDA-1C-5 — Storm Event: 10 year
Scenario: Pre-Development 10 year

Storm Event	10 year
Return Event	10 years
Duration	24.000 hours
Depth	5.1 in
Time of Concentration (Composite)	0.184 hours
Area (User Defined)	111,327 ft²

Computational Time Increment	0.025 hours
Time to Peak (Computed)	12.177 hours
Flow (Peak, Computed)	2.24 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	2.20 ft³/s

Drainage Area

SCS CN (Composite)	56.000
Area (User Defined)	111,327 ft²
Maximum Retention (Pervious)	7.9 in
Maximum Retention (Pervious, 20 percent)	1.6 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	1.1 in
Runoff Volume (Pervious)	10,242 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	10,213 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.184 hours
Computational Time Increment	0.025 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 10 years
Label: EDA-1C-5 | Storm Event: 10 year
Scenario: Pre-Development 10 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	15.70 ft^3/s
Unit peak time, Tp	0.123 hours
Unit receding limb, Tr	0.492 hours
Total unit time, Tb	0.615 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 25 years
Label: EDA-1C-5 | Storm Event: 25 year
Scenario: Pre-Development 25 year

Storm Event	25 year
Return Event	25 years
Duration	24.000 hours
Depth	6.4 in
Time of Concentration (Composite)	0.184 hours
Area (User Defined)	111,327 ft²

Computational Time Increment	0.025 hours
Time to Peak (Computed)	12.152 hours
Flow (Peak, Computed)	4.12 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	4.11 ft³/s

Drainage Area

SCS CN (Composite)	56.000
Area (User Defined)	111,327 ft²
Maximum Retention (Pervious)	7.9 in
Maximum Retention (Pervious, 20 percent)	1.6 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	1.9 in
Runoff Volume (Pervious)	17,280 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	17,236 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.184 hours
Computational Time Increment	0.025 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Subsection: Unit Hydrograph Summary | Return Event: 25 years
Label: EDA-1C-5 | Storm Event: 25 year
Scenario: Pre-Development 25 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	15.70 ft^3/s
Unit peak time, Tp	0.123 hours
Unit receding limb, Tr	0.492 hours
Total unit time, Tb	0.615 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 100 years
Label: EDA-1C-5 — Storm Event: 100 year
Scenario: Pre-Development 100 year

Storm Event	100 year
Return Event	100 years
Duration	24.000 hours
Depth	9.1 in
Time of Concentration (Composite)	0.184 hours
Area (User Defined)	111,327 ft²

Computational Time Increment	0.025 hours
Time to Peak (Computed)	12.152 hours
Flow (Peak, Computed)	8.70 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	8.68 ft³/s

Drainage Area

SCS CN (Composite)	56.000
Area (User Defined)	111,327 ft²
Maximum Retention (Pervious)	7.9 in
Maximum Retention (Pervious, 20 percent)	1.6 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	3.7 in
Runoff Volume (Pervious)	34,451 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	34,377 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.184 hours
Computational Time Increment	0.025 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary
Return Event: 100 years
Label: EDA-1C-5
Storm Event: 100 year
Scenario: Pre-Development 100 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	15.70 ft^3/s
Unit peak time, Tp	0.123 hours
Unit receding limb, Tr	0.492 hours
Total unit time, Tb	0.615 hours

Storm Event	1 year
Return Event	1 years
Duration	24.000 hours
Depth	2.8 in
Time of Concentration (Composite)	0.208 hours
Area (User Defined)	146,803 ft²

Computational Time Increment	0.028 hours
Time to Peak (Computed)	12.175 hours
Flow (Peak, Computed)	2.19 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	2.17 ft³/s

Drainage Area

SCS CN (Composite)	74.000
Area (User Defined)	146,803 ft²
Maximum Retention (Pervious)	3.5 in
Maximum Retention (Pervious, 20 percent)	0.7 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	0.8 in
Runoff Volume (Pervious)	9,591 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	9,561 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.208 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Subsection: Unit Hydrograph Summary | Return Event: 1 years
Label: EDA-2 | Storm Event: 1 year
Scenario: Pre-Development 1 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	18.32 ft³/s
Unit peak time, Tp	0.139 hours
Unit receding limb, Tr	0.556 hours
Total unit time, Tb	0.695 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 10 years
Label: EDA-2 | Storm Event: 10 year
Scenario: Pre-Development 10 year

Storm Event	10 year
Return Event	10 years
Duration	24.000 hours
Depth	5.1 in
Time of Concentration (Composite)	0.208 hours
Area (User Defined)	146,803 ft²

Computational Time Increment	0.028 hours
Time to Peak (Computed)	12.175 hours
Flow (Peak, Computed)	7.41 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	7.39 ft³/s

Drainage Area

SCS CN (Composite)	74.000
Area (User Defined)	146,803 ft²
Maximum Retention (Pervious)	3.5 in
Maximum Retention (Pervious, 20 percent)	0.7 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	2.5 in
Runoff Volume (Pervious)	30,099 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	30,028 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.208 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 10 years
Label: EDA-2 — Storm Event: 10 year
Scenario: Pre-Development 10 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	18.32 ft^3/s
Unit peak time, Tp	0.139 hours
Unit receding limb, Tr	0.556 hours
Total unit time, Tb	0.695 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 25 years
Label: EDA-2 — Storm Event: 25 year
Scenario: Pre-Development 25 year

Storm Event	25 year
Return Event	25 years
Duration	24.000 hours
Depth	6.4 in
Time of Concentration (Composite)	0.208 hours
Area (User Defined)	146,803 ft²

Computational Time Increment	0.028 hours
Time to Peak (Computed)	12.148 hours
Flow (Peak, Computed)	10.75 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	10.75 ft³/s

Drainage Area	
SCS CN (Composite)	74.000
Area (User Defined)	146,803 ft²
Maximum Retention (Pervious)	3.5 in
Maximum Retention (Pervious, 20 percent)	0.7 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.6 in
Runoff Volume (Pervious)	43,530 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	43,435 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.208 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 25 years
Label: EDA-2 | Storm Event: 25 year
Scenario: Pre-Development 25 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	18.32 ft^3/s
Unit peak time, Tp	0.139 hours
Unit receding limb, Tr	0.556 hours
Total unit time, Tb	0.695 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 100 years
Label: EDA-2 | Storm Event: 100 year
Scenario: Pre-Development 100 year

Storm Event	100 year
Return Event	100 years
Duration	24.000 hours
Depth	9.1 in
Time of Concentration (Composite)	0.208 hours
Area (User Defined)	146,803 ft²

Computational Time Increment	0.028 hours
Time to Peak (Computed)	12.148 hours
Flow (Peak, Computed)	17.90 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	17.89 ft³/s

Drainage Area	
SCS CN (Composite)	74.000
Area (User Defined)	146,803 ft²
Maximum Retention (Pervious)	3.5 in
Maximum Retention (Pervious, 20 percent)	0.7 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.0 in
Runoff Volume (Pervious)	72,872 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	72,729 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.208 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 100 years
Label: EDA-2 | Storm Event: 100 year
Scenario: Pre-Development 100 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	18.32 ft^3/s
Unit peak time, Tp	0.139 hours
Unit receding limb, Tr	0.556 hours
Total unit time, Tb	0.695 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 1 years
Label: PDA-1C-10A — Storm Event: 1 year
Scenario: Post-Development 1 year

Storm Event	1 year
Return Event	1 years
Duration	24.000 hours
Depth	2.8 in
Time of Concentration (Composite)	0.171 hours
Area (User Defined)	308,446 ft²

Computational Time Increment	0.023 hours
Time to Peak (Computed)	12.161 hours
Flow (Peak, Computed)	6.00 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	5.99 ft³/s

Drainage Area	
SCS CN (Composite)	77.000
Area (User Defined)	308,446 ft²
Maximum Retention (Pervious)	3.0 in
Maximum Retention (Pervious, 20 percent)	0.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.9 in
Runoff Volume (Pervious)	24,029 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	23,970 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.171 hours
Computational Time Increment	0.023 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 1 years
Label: PDA-1C-10A | Storm Event: 1 year
Scenario: Post-Development 1 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	46.97 ft^3/s
Unit peak time, Tp	0.114 hours
Unit receding limb, Tr	0.455 hours
Total unit time, Tb	0.569 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 10 years
Label: PDA-1C-10A — Storm Event: 10 year
Scenario: Post-Development 10 year

Storm Event	10 year
Return Event	10 years
Duration	24.000 hours
Depth	5.1 in
Time of Concentration (Composite)	0.171 hours
Area (User Defined)	308,446 ft²

Computational Time Increment	0.023 hours
Time to Peak (Computed)	12.138 hours
Flow (Peak, Computed)	18.21 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	18.09 ft³/s

Drainage Area	
SCS CN (Composite)	77.000
Area (User Defined)	308,446 ft²
Maximum Retention (Pervious)	3.0 in
Maximum Retention (Pervious, 20 percent)	0.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.7 in
Runoff Volume (Pervious)	70,009 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	69,873 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.171 hours
Computational Time Increment	0.023 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary
Return Event: 10 years
Label: PDA-1C-10A
Storm Event: 10 year
Scenario: Post-Development 10 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	46.97 ft^3/s
Unit peak time, Tp	0.114 hours
Unit receding limb, Tr	0.455 hours
Total unit time, Tb	0.569 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 25 years
Label: PDA-1C-10A — Storm Event: 25 year
Scenario: Post-Development 25 year

Storm Event	25 year
Return Event	25 years
Duration	24.000 hours
Depth	6.4 in
Time of Concentration (Composite)	0.171 hours
Area (User Defined)	308,446 ft²

Computational Time Increment	0.023 hours
Time to Peak (Computed)	12.138 hours
Flow (Peak, Computed)	25.77 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	25.55 ft³/s

Drainage Area	
SCS CN (Composite)	77.000
Area (User Defined)	308,446 ft²
Maximum Retention (Pervious)	3.0 in
Maximum Retention (Pervious, 20 percent)	0.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.9 in
Runoff Volume (Pervious)	99,373 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	99,192 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.171 hours
Computational Time Increment	0.023 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 25 years
Label: PDA-1C-10A | Storm Event: 25 year
Scenario: Post-Development 25 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	46.97 ft³/s
Unit peak time, Tp	0.114 hours
Unit receding limb, Tr	0.455 hours
Total unit time, Tb	0.569 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 100 years
Label: PDA-1C-10A | Storm Event: 100 year
Scenario: Post-Development 100 year

Storm Event	100 year
Return Event	100 years
Duration	24.000 hours
Depth	9.1 in
Time of Concentration (Composite)	0.171 hours
Area (User Defined)	308,446 ft²

Computational Time Increment	0.023 hours
Time to Peak (Computed)	12.138 hours
Flow (Peak, Computed)	41.58 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	41.13 ft³/s

Drainage Area

SCS CN (Composite)	77.000
Area (User Defined)	308,446 ft²
Maximum Retention (Pervious)	3.0 in
Maximum Retention (Pervious, 20 percent)	0.6 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	6.3 in
Runoff Volume (Pervious)	162,691 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	162,420 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.171 hours
Computational Time Increment	0.023 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 100 years
Label: PDA-1C-10A | Storm Event: 100 year
Scenario: Post-Development 100 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	46.97 ft^3/s
Unit peak time, Tp	0.114 hours
Unit receding limb, Tr	0.455 hours
Total unit time, Tb	0.569 hours

Storm Event	1 year
Return Event	1 years
Duration	24.000 hours
Depth	2.8 in
Time of Concentration (Composite)	0.135 hours
Area (User Defined)	645,704 ft²

Computational Time Increment	0.018 hours
Time to Peak (Computed)	12.262 hours
Flow (Peak, Computed)	1.81 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.300 hours
Flow (Peak Interpolated Output)	1.81 ft³/s

Drainage Area

SCS CN (Composite)	60.000
Area (User Defined)	645,704 ft²
Maximum Retention (Pervious)	6.7 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	0.3 in
Runoff Volume (Pervious)	14,231 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	14,186 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.135 hours
Computational Time Increment	0.018 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 1 years

Label: PDA-1C-10B | Storm Event: 1 year

Scenario: Post-Development 1 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	124.00 ft³/s
Unit peak time, Tp	0.090 hours
Unit receding limb, Tr	0.361 hours
Total unit time, Tb	0.451 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 10 years
Label: PDA-1C-10B | Storm Event: 10 year
Scenario: Post-Development 10 year

Storm Event	10 year
Return Event	10 years
Duration	24.000 hours
Depth	5.1 in
Time of Concentration (Composite)	0.135 hours
Area (User Defined)	645,704 ft²

Computational Time Increment	0.018 hours
Time to Peak (Computed)	12.136 hours
Flow (Peak, Computed)	18.79 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	18.57 ft³/s

Drainage Area

SCS CN (Composite)	60.000
Area (User Defined)	645,704 ft²
Maximum Retention (Pervious)	6.7 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	1.4 in
Runoff Volume (Pervious)	73,809 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	73,664 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.135 hours
Computational Time Increment	0.018 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 10 years
Label: PDA-1C-10B | Storm Event: 10 year
Scenario: Post-Development 10 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	124.00 ft^3/s
Unit peak time, Tp	0.090 hours
Unit receding limb, Tr	0.361 hours
Total unit time, Tb	0.451 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 25 years
Label: PDA-1C-10B — Storm Event: 25 year
Scenario: Post-Development 25 year

Storm Event	25 year
Return Event	25 years
Duration	24.000 hours
Depth	6.4 in
Time of Concentration (Composite)	0.135 hours
Area (User Defined)	645,704 ft²

Computational Time Increment	0.018 hours
Time to Peak (Computed)	12.136 hours
Flow (Peak, Computed)	31.72 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	31.15 ft³/s

Drainage Area	
SCS CN (Composite)	60.000
Area (User Defined)	645,704 ft²
Maximum Retention (Pervious)	6.7 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.2 in
Runoff Volume (Pervious)	119,187 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	118,978 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.135 hours
Computational Time Increment	0.018 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 25 years
Label: PDA-1C-10B | Storm Event: 25 year
Scenario: Post-Development 25 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	124.00 ft³/s
Unit peak time, Tp	0.090 hours
Unit receding limb, Tr	0.361 hours
Total unit time, Tb	0.451 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 100 years

Label: PDA-1C-10B | Storm Event: 100 year

Scenario: Post-Development 100 year

Storm Event	100 year
Return Event	100 years
Duration	24.000 hours
Depth	9.1 in
Time of Concentration (Composite)	0.135 hours
Area (User Defined)	645,704 ft²

Computational Time Increment	0.018 hours
Time to Peak (Computed)	12.136 hours
Flow (Peak, Computed)	61.60 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	60.14 ft³/s

Drainage Area

SCS CN (Composite)	60.000
Area (User Defined)	645,704 ft²
Maximum Retention (Pervious)	6.7 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	4.2 in
Runoff Volume (Pervious)	226,577 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	226,232 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.135 hours
Computational Time Increment	0.018 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary
Return Event: 100 years
Label: PDA-1C-10B
Storm Event: 100 year
Scenario: Post-Development 100 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	124.00 ft³/s
Unit peak time, Tp	0.090 hours
Unit receding limb, Tr	0.361 hours
Total unit time, Tb	0.451 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 1 years
Label: PDA-1C-2A — Storm Event: 1 year
Scenario: Post-Development 1 year

Storm Event	1 year
Return Event	1 years
Duration	24.000 hours
Depth	2.8 in
Time of Concentration (Composite)	0.100 hours
Area (User Defined)	292,460 ft²

Computational Time Increment	0.013 hours
Time to Peak (Computed)	12.120 hours
Flow (Peak, Computed)	7.56 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	7.46 ft³/s

Drainage Area

SCS CN (Composite)	80.000
Area (User Defined)	292,460 ft²
Maximum Retention (Pervious)	2.5 in
Maximum Retention (Pervious, 20 percent)	0.5 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	1.1 in
Runoff Volume (Pervious)	26,860 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	26,823 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.100 hours
Computational Time Increment	0.013 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary

Label: PDA-1C-2A

Scenario: Post-Development 1 year

Return Event: 1 years

Storm Event: 1 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	76.07 ft^3/s
Unit peak time, Tp	0.067 hours
Unit receding limb, Tr	0.267 hours
Total unit time, Tb	0.333 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 10 years
Label: PDA-1C-2A | Storm Event: 10 year
Scenario: Post-Development 10 year

Storm Event	10 year
Return Event	10 years
Duration	24.000 hours
Depth	5.1 in
Time of Concentration (Composite)	0.100 hours
Area (User Defined)	292,460 ft²

Computational Time Increment	0.013 hours
Time to Peak (Computed)	12.107 hours
Flow (Peak, Computed)	20.52 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	20.43 ft³/s

Drainage Area

SCS CN (Composite)	80.000
Area (User Defined)	292,460 ft²
Maximum Retention (Pervious)	2.5 in
Maximum Retention (Pervious, 20 percent)	0.5 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	3.0 in
Runoff Volume (Pervious)	73,062 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	72,982 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.100 hours
Computational Time Increment	0.013 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Subsection: Unit Hydrograph Summary | Return Event: 10 years
Label: PDA-1C-2A | Storm Event: 10 year
Scenario: Post-Development 10 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	76.07 ft³/s
Unit peak time, Tp	0.067 hours
Unit receding limb, Tr	0.267 hours
Total unit time, Tb	0.333 hours

Storm Event	25 year
Return Event	25 years
Duration	24.000 hours
Depth	6.4 in
Time of Concentration (Composite)	0.100 hours
Area (User Defined)	292,460 ft²

Computational Time Increment	0.013 hours
Time to Peak (Computed)	12.107 hours
Flow (Peak, Computed)	28.30 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	28.20 ft³/s

Drainage Area

SCS CN (Composite)	80.000
Area (User Defined)	292,460 ft²
Maximum Retention (Pervious)	2.5 in
Maximum Retention (Pervious, 20 percent)	0.5 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	4.2 in
Runoff Volume (Pervious)	101,886 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	101,783 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.100 hours
Computational Time Increment	0.013 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary
Return Event: 25 years
Label: PDA-1C-2A
Storm Event: 25 year
Scenario: Post-Development 25 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	76.07 ft³/s
Unit peak time, Tp	0.067 hours
Unit receding limb, Tr	0.267 hours
Total unit time, Tb	0.333 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 100 years
Label: PDA-1C-2A — Storm Event: 100 year
Scenario: Post-Development 100 year

Storm Event	100 year
Return Event	100 years
Duration	24.000 hours
Depth	9.1 in
Time of Concentration (Composite)	0.100 hours
Area (User Defined)	292,460 ft²

Computational Time Increment	0.013 hours
Time to Peak (Computed)	12.107 hours
Flow (Peak, Computed)	44.33 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	44.23 ft³/s

Drainage Area

SCS CN (Composite)	80.000
Area (User Defined)	292,460 ft²
Maximum Retention (Pervious)	2.5 in
Maximum Retention (Pervious, 20 percent)	0.5 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	6.7 in
Runoff Volume (Pervious)	163,315 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	163,166 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.100 hours
Computational Time Increment	0.013 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary
Return Event: 100 years
Label: PDA-1C-2A
Storm Event: 100 year
Scenario: Post-Development 100 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	76.07 ft³/s
Unit peak time, Tp	0.067 hours
Unit receding limb, Tr	0.267 hours
Total unit time, Tb	0.333 hours

Storm Event	1 year
Return Event	1 years
Duration	24.000 hours
Depth	2.8 in
Time of Concentration (Composite)	0.207 hours
Area (User Defined)	2,038,361 ft²

Computational Time Increment	0.028 hours
Time to Peak (Computed)	12.199 hours
Flow (Peak, Computed)	17.78 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	17.76 ft³/s

Drainage Area

SCS CN (Composite)	68.000
Area (User Defined)	2,038,361 ft²
Maximum Retention (Pervious)	4.7 in
Maximum Retention (Pervious, 20 percent)	0.9 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	0.5 in
Runoff Volume (Pervious)	89,405 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	89,081 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.207 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 1 years

Label: PDA-1C-2B | Storm Event: 1 year

Scenario: Post-Development 1 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	256.72 ft^3/s
Unit peak time, Tp	0.138 hours
Unit receding limb, Tr	0.551 hours
Total unit time, Tb	0.688 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 10 years
Label: PDA-1C-2B — Storm Event: 10 year
Scenario: Post-Development 10 year

Storm Event	10 year
Return Event	10 years
Duration	24.000 hours
Depth	5.1 in
Time of Concentration (Composite)	0.207 hours
Area (User Defined)	2,038,361 ft²

Computational Time Increment	0.028 hours
Time to Peak (Computed)	12.171 hours
Flow (Peak, Computed)	81.04 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	80.07 ft³/s

Drainage Area

SCS CN (Composite)	68.000
Area (User Defined)	2,038,361 ft²
Maximum Retention (Pervious)	4.7 in
Maximum Retention (Pervious, 20 percent)	0.9 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	2.0 in
Runoff Volume (Pervious)	333,860 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	332,968 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.207 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 10 years
Label: PDA-1C-2B | Storm Event: 10 year
Scenario: Post-Development 10 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	256.72 ft³/s
Unit peak time, Tp	0.138 hours
Unit receding limb, Tr	0.551 hours
Total unit time, Tb	0.688 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 25 years
Label: PDA-1C-2B | Storm Event: 25 year
Scenario: Post-Development 25 year

Storm Event	25 year
Return Event	25 years
Duration	24.000 hours
Depth	6.4 in
Time of Concentration (Composite)	0.207 hours
Area (User Defined)	2,038,361 ft²

Computational Time Increment	0.028 hours
Time to Peak (Computed)	12.171 hours
Flow (Peak, Computed)	124.09 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	123.31 ft³/s

Drainage Area

SCS CN (Composite)	68.000
Area (User Defined)	2,038,361 ft²
Maximum Retention (Pervious)	4.7 in
Maximum Retention (Pervious, 20 percent)	0.9 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	3.0 in
Runoff Volume (Pervious)	503,314 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	502,079 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.207 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 25 years
Label: PDA-1C-2B — Storm Event: 25 year
Scenario: Post-Development 25 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	256.72 ft³/s
Unit peak time, Tp	0.138 hours
Unit receding limb, Tr	0.551 hours
Total unit time, Tb	0.688 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 100 years
Label: PDA-1C-2B — Storm Event: 100 year
Scenario: Post-Development 100 year

Storm Event	100 year
Return Event	100 years
Duration	24.000 hours
Depth	9.1 in
Time of Concentration (Composite)	0.207 hours
Area (User Defined)	2,038,361 ft²

Computational Time Increment	0.028 hours
Time to Peak (Computed)	12.171 hours
Flow (Peak, Computed)	218.63 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	218.59 ft³/s

Drainage Area

SCS CN (Composite)	68.000
Area (User Defined)	2,038,361 ft²
Maximum Retention (Pervious)	4.7 in
Maximum Retention (Pervious, 20 percent)	0.9 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	5.2 in
Runoff Volume (Pervious)	884,820 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	882,878 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.207 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 100 years
Label: PDA-1C-2B — Storm Event: 100 year
Scenario: Post-Development 100 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	256.72 ft^3/s
Unit peak time, Tp	0.138 hours
Unit receding limb, Tr	0.551 hours
Total unit time, Tb	0.688 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 1 years
Label: PDA-1C-5 | Storm Event: 1 year
Scenario: Post-Development 1 year

Storm Event	1 year
Return Event	1 years
Duration	24.000 hours
Depth	2.8 in
Time of Concentration (Composite)	0.184 hours
Area (User Defined)	98,552 ft²

Computational Time Increment	0.025 hours
Time to Peak (Computed)	12.472 hours
Flow (Peak, Computed)	0.08 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.450 hours
Flow (Peak Interpolated Output)	0.08 ft³/s

Drainage Area

SCS CN (Composite)	55.000
Area (User Defined)	98,552 ft²
Maximum Retention (Pervious)	8.2 in
Maximum Retention (Pervious, 20 percent)	1.6 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	0.1 in
Runoff Volume (Pervious)	1,190 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	1,183 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.184 hours
Computational Time Increment	0.025 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 1 years

Label: PDA-1C-5 — Storm Event: 1 year

Scenario: Post-Development 1 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	13.89 ft³/s
Unit peak time, Tp	0.123 hours
Unit receding limb, Tr	0.492 hours
Total unit time, Tb	0.615 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 10 years
Label: PDA-1C-5 — Storm Event: 10 year
Scenario: Post-Development 10 year

Storm Event	10 year
Return Event	10 years
Duration	24.000 hours
Depth	5.1 in
Time of Concentration (Composite)	0.184 hours
Area (User Defined)	98,552 ft²

Computational Time Increment	0.025 hours
Time to Peak (Computed)	12.177 hours
Flow (Peak, Computed)	1.83 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	1.80 ft³/s

Drainage Area

SCS CN (Composite)	55.000
Area (User Defined)	98,552 ft²
Maximum Retention (Pervious)	8.2 in
Maximum Retention (Pervious, 20 percent)	1.6 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	8,544 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	8,518 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.184 hours
Computational Time Increment	0.025 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 10 years
Label: PDA-1C-5 | Storm Event: 10 year
Scenario: Post-Development 10 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	13.89 ft³/s
Unit peak time, Tp	0.123 hours
Unit receding limb, Tr	0.492 hours
Total unit time, Tb	0.615 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 25 years
Label: PDA-1C-5 — Storm Event: 25 year
Scenario: Post-Development 25 year

Storm Event	25 year
Return Event	25 years
Duration	24.000 hours
Depth	6.4 in
Time of Concentration (Composite)	0.184 hours
Area (User Defined)	98,552 ft²

Computational Time Increment	0.025 hours
Time to Peak (Computed)	12.152 hours
Flow (Peak, Computed)	3.44 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	3.42 ft³/s

Drainage Area

SCS CN (Composite)	55.000
Area (User Defined)	98,552 ft²
Maximum Retention (Pervious)	8.2 in
Maximum Retention (Pervious, 20 percent)	1.6 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	1.8 in
Runoff Volume (Pervious)	14,594 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	14,556 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.184 hours
Computational Time Increment	0.025 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 25 years
Label: PDA-1C-5 — Storm Event: 25 year
Scenario: Post-Development 25 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	13.89 ft^3/s
Unit peak time, Tp	0.123 hours
Unit receding limb, Tr	0.492 hours
Total unit time, Tb	0.615 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 100 years
Label: PDA-1C-5 — Storm Event: 100 year
Scenario: Post-Development 100 year

Storm Event	100 year
Return Event	100 years
Duration	24.000 hours
Depth	9.1 in
Time of Concentration (Composite)	0.184 hours
Area (User Defined)	98,552 ft²

Computational Time Increment	0.025 hours
Time to Peak (Computed)	12.152 hours
Flow (Peak, Computed)	7.42 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	7.40 ft³/s

Drainage Area	
SCS CN (Composite)	55.000
Area (User Defined)	98,552 ft²
Maximum Retention (Pervious)	8.2 in
Maximum Retention (Pervious, 20 percent)	1.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.6 in
Runoff Volume (Pervious)	29,480 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	29,416 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.184 hours
Computational Time Increment	0.025 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 100 years
Label: PDA-1C-5 — Storm Event: 100 year
Scenario: Post-Development 100 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	13.89 ft³/s
Unit peak time, Tp	0.123 hours
Unit receding limb, Tr	0.492 hours
Total unit time, Tb	0.615 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 1 years
Label: PDA-1C-6A | Storm Event: 1 year
Scenario: Post-Development 1 year

Storm Event	1 year
Return Event	1 years
Duration	24.000 hours
Depth	2.8 in
Time of Concentration (Composite)	0.100 hours
Area (User Defined)	42,111 ft²

Computational Time Increment	0.013 hours
Time to Peak (Computed)	12.107 hours
Flow (Peak, Computed)	2.14 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	2.14 ft³/s

Drainage Area	
SCS CN (Composite)	96.000
Area (User Defined)	42,111 ft²
Maximum Retention (Pervious)	0.4 in
Maximum Retention (Pervious, 20 percent)	0.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.4 in
Runoff Volume (Pervious)	8,266 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	8,259 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.100 hours
Computational Time Increment	0.013 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary	Return Event: 1 years
Label: PDA-1C-6A	Storm Event: 1 year
Scenario: Post-Development 1 year	

SCS Unit Hydrograph Parameters	
Unit peak, qp	10.95 ft³/s
Unit peak time, Tp	0.067 hours
Unit receding limb, Tr	0.267 hours
Total unit time, Tb	0.333 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 10 years
Label: PDA-1C-6A | Storm Event: 10 year
Scenario: Post-Development 10 year

Storm Event	10 year
Return Event	10 years
Duration	24.000 hours
Depth	5.1 in
Time of Concentration (Composite)	0.100 hours
Area (User Defined)	42,111 ft²

Computational Time Increment	0.013 hours
Time to Peak (Computed)	12.107 hours
Flow (Peak, Computed)	4.06 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	4.06 ft³/s

Drainage Area

SCS CN (Composite)	96.000
Area (User Defined)	42,111 ft²
Maximum Retention (Pervious)	0.4 in
Maximum Retention (Pervious, 20 percent)	0.1 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	4.7 in
Runoff Volume (Pervious)	16,324 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	16,312 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.100 hours
Computational Time Increment	0.013 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 10 years
Label: PDA-1C-6A | Storm Event: 10 year
Scenario: Post-Development 10 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	10.95 ft^3/s
Unit peak time, Tp	0.067 hours
Unit receding limb, Tr	0.267 hours
Total unit time, Tb	0.333 hours

Storm Event	25 year
Return Event	25 years
Duration	24.000 hours
Depth	6.4 in
Time of Concentration (Composite)	0.100 hours
Area (User Defined)	42,111 ft²

Computational Time Increment	0.013 hours
Time to Peak (Computed)	12.107 hours
Flow (Peak, Computed)	5.14 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	5.14 ft³/s

Drainage Area

SCS CN (Composite)	96.000
Area (User Defined)	42,111 ft²
Maximum Retention (Pervious)	0.4 in
Maximum Retention (Pervious, 20 percent)	0.1 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	6.0 in
Runoff Volume (Pervious)	20,935 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	20,919 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.100 hours
Computational Time Increment	0.013 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 25 years
Label: PDA-1C-6A | Storm Event: 25 year
Scenario: Post-Development 25 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	10.95 ft^3/s
Unit peak time, Tp	0.067 hours
Unit receding limb, Tr	0.267 hours
Total unit time, Tb	0.333 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 100 years
Label: PDA-1C-6A — Storm Event: 100 year
Scenario: Post-Development 100 year

Storm Event	100 year
Return Event	100 years
Duration	24.000 hours
Depth	9.1 in
Time of Concentration (Composite)	0.100 hours
Area (User Defined)	42,111 ft²

Computational Time Increment	0.013 hours
Time to Peak (Computed)	12.107 hours
Flow (Peak, Computed)	7.34 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	7.34 ft³/s

Drainage Area

SCS CN (Composite)	96.000
Area (User Defined)	42,111 ft²
Maximum Retention (Pervious)	0.4 in
Maximum Retention (Pervious, 20 percent)	0.1 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	8.7 in
Runoff Volume (Pervious)	30,384 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	30,362 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.100 hours
Computational Time Increment	0.013 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 100 years
Label: PDA-1C-6A — Storm Event: 100 year
Scenario: Post-Development 100 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	10.95 ft^3/s
Unit peak time, Tp	0.067 hours
Unit receding limb, Tr	0.267 hours
Total unit time, Tb	0.333 hours

Storm Event	1 year
Return Event	1 years
Duration	24.000 hours
Depth	2.8 in
Time of Concentration (Composite)	0.155 hours
Area (User Defined)	543,170 ft²

Computational Time Increment	0.021 hours
Time to Peak (Computed)	12.312 hours
Flow (Peak, Computed)	1.51 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.300 hours
Flow (Peak Interpolated Output)	1.51 ft³/s

Drainage Area	
SCS CN (Composite)	60.000
Area (User Defined)	543,170 ft²
Maximum Retention (Pervious)	6.7 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.3 in
Runoff Volume (Pervious)	11,972 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	11,928 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.155 hours
Computational Time Increment	0.021 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 1 years
Label: PDA-1C-6B | Storm Event: 1 year
Scenario: Post-Development 1 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	91.19 ft^3/s
Unit peak time, Tp	0.103 hours
Unit receding limb, Tr	0.413 hours
Total unit time, Tb	0.516 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 10 years
Label: PDA-1C-6B | Storm Event: 10 year
Scenario: Post-Development 10 year

Storm Event	10 year
Return Event	10 years
Duration	24.000 hours
Depth	5.1 in
Time of Concentration (Composite)	0.155 hours
Area (User Defined)	543,170 ft²

Computational Time Increment	0.021 hours
Time to Peak (Computed)	12.146 hours
Flow (Peak, Computed)	15.27 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	15.23 ft³/s

Drainage Area

SCS CN (Composite)	60.000
Area (User Defined)	543,170 ft²
Maximum Retention (Pervious)	6.7 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	1.4 in
Runoff Volume (Pervious)	62,089 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	61,944 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.155 hours
Computational Time Increment	0.021 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 10 years
Label: PDA-1C-6B | Storm Event: 10 year
Scenario: Post-Development 10 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	91.19 ft³/s
Unit peak time, Tp	0.103 hours
Unit receding limb, Tr	0.413 hours
Total unit time, Tb	0.516 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 25 years
Label: PDA-1C-6B | Storm Event: 25 year
Scenario: Post-Development 25 year

Storm Event	25 year
Return Event	25 years
Duration	24.000 hours
Depth	6.4 in
Time of Concentration (Composite)	0.155 hours
Area (User Defined)	543,170 ft²

Computational Time Increment	0.021 hours
Time to Peak (Computed)	12.146 hours
Flow (Peak, Computed)	25.85 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	25.74 ft³/s

Drainage Area

SCS CN (Composite)	60.000
Area (User Defined)	543,170 ft²
Maximum Retention (Pervious)	6.7 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	2.2 in
Runoff Volume (Pervious)	100,261 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	100,052 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.155 hours
Computational Time Increment	0.021 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 25 years
Label: PDA-1C-6B — Storm Event: 25 year
Scenario: Post-Development 25 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	91.19 ft^3/s
Unit peak time, Tp	0.103 hours
Unit receding limb, Tr	0.413 hours
Total unit time, Tb	0.516 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 100 years
Label: PDA-1C-6B — Storm Event: 100 year
Scenario: Post-Development 100 year

Storm Event	100 year
Return Event	100 years
Duration	24.000 hours
Depth	9.1 in
Time of Concentration (Composite)	0.155 hours
Area (User Defined)	543,170 ft²

Computational Time Increment	0.021 hours
Time to Peak (Computed)	12.146 hours
Flow (Peak, Computed)	50.34 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	50.05 ft³/s

Drainage Area

SCS CN (Composite)	60.000
Area (User Defined)	543,170 ft²
Maximum Retention (Pervious)	6.7 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	4.2 in
Runoff Volume (Pervious)	190,598 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	190,254 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.155 hours
Computational Time Increment	0.021 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 100 years
Label: PDA-1C-6B — Storm Event: 100 year
Scenario: Post-Development 100 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	91.19 ft^3/s
Unit peak time, Tp	0.103 hours
Unit receding limb, Tr	0.413 hours
Total unit time, Tb	0.516 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 1 years
Label: PDA-1C-7 | Storm Event: 1 year
Scenario: Post-Development 1 year

Storm Event	1 year
Return Event	1 years
Duration	24.000 hours
Depth	2.8 in
Time of Concentration (Composite)	0.100 hours
Area (User Defined)	177,326 ft²

Computational Time Increment	0.013 hours
Time to Peak (Computed)	12.133 hours
Flow (Peak, Computed)	1.32 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	1.29 ft³/s

Drainage Area	
SCS CN (Composite)	65.000
Area (User Defined)	177,326 ft²
Maximum Retention (Pervious)	5.4 in
Maximum Retention (Pervious, 20 percent)	1.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.4 in
Runoff Volume (Pervious)	6,173 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	6,159 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.100 hours
Computational Time Increment	0.013 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 1 years
Label: PDA-1C-7 | Storm Event: 1 year
Scenario: Post-Development 1 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	46.12 ft^3/s
Unit peak time, Tp	0.067 hours
Unit receding limb, Tr	0.267 hours
Total unit time, Tb	0.333 hours

Stormwater Hydrologic Calculations

Storm Event	10 year
Return Event	10 years
Duration	24.000 hours
Depth	5.1 in
Time of Concentration (Composite)	0.100 hours
Area (User Defined)	177,326 ft²

Computational Time Increment	0.013 hours
Time to Peak (Computed)	12.120 hours
Flow (Peak, Computed)	7.13 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	6.99 ft³/s

Drainage Area

SCS CN (Composite)	65.000
Area (User Defined)	177,326 ft²
Maximum Retention (Pervious)	5.4 in
Maximum Retention (Pervious, 20 percent)	1.1 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	1.7 in
Runoff Volume (Pervious)	25,622 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	25,584 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.100 hours
Computational Time Increment	0.013 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Subsection: Unit Hydrograph Summary — Return Event: 10 years

Label: PDA-1C-7 — Storm Event: 10 year

Scenario: Post-Development 10 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	46.12 ft³/s
Unit peak time, Tp	0.067 hours
Unit receding limb, Tr	0.267 hours
Total unit time, Tb	0.333 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 25 years

Label: PDA-1C-7 — Storm Event: 25 year

Scenario: Post-Development 25 year

Storm Event	25 year
Return Event	25 years
Duration	24.000 hours
Depth	6.4 in
Time of Concentration (Composite)	0.100 hours
Area (User Defined)	177,326 ft²

Computational Time Increment	0.013 hours
Time to Peak (Computed)	12.120 hours
Flow (Peak, Computed)	11.16 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	11.03 ft³/s

Drainage Area

SCS CN (Composite)	65.000
Area (User Defined)	177,326 ft²
Maximum Retention (Pervious)	5.4 in
Maximum Retention (Pervious, 20 percent)	1.1 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	2.7 in
Runoff Volume (Pervious)	39,546 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	39,493 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.100 hours
Computational Time Increment	0.013 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 25 years
Label: PDA-1C-7 | Storm Event: 25 year
Scenario: Post-Development 25 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	46.12 ft^3/s
Unit peak time, Tp	0.067 hours
Unit receding limb, Tr	0.267 hours
Total unit time, Tb	0.333 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 100 years
Label: PDA-1C-7 — Storm Event: 100 year
Scenario: Post-Development 100 year

Storm Event	100 year
Return Event	100 years
Duration	24.000 hours
Depth	9.1 in
Time of Concentration (Composite)	0.100 hours
Area (User Defined)	177,326 ft²

Computational Time Increment	0.013 hours
Time to Peak (Computed)	12.107 hours
Flow (Peak, Computed)	20.18 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	20.06 ft³/s

Drainage Area

SCS CN (Composite)	65.000
Area (User Defined)	177,326 ft²
Maximum Retention (Pervious)	5.4 in
Maximum Retention (Pervious, 20 percent)	1.1 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	4.8 in
Runoff Volume (Pervious)	71,441 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	71,358 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.100 hours
Computational Time Increment	0.013 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 100 years
Label: PDA-1C-7 | Storm Event: 100 year
Scenario: Post-Development 100 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	46.12 ft^3/s
Unit peak time, Tp	0.067 hours
Unit receding limb, Tr	0.267 hours
Total unit time, Tb	0.333 hours

Subsection: Unit Hydrograph Summary — Return Event: 1 years
Label: PDA-2 — Storm Event: 1 year
Scenario: Post-Development 1 year

Storm Event	1 year
Return Event	1 years
Duration	24.000 hours
Depth	2.8 in
Time of Concentration (Composite)	0.208 hours
Area (User Defined)	125,964 ft²

Computational Time Increment	0.028 hours
Time to Peak (Computed)	12.175 hours
Flow (Peak, Computed)	1.74 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	1.72 ft³/s

Drainage Area

SCS CN (Composite)	73.000
Area (User Defined)	125,964 ft²
Maximum Retention (Pervious)	3.7 in
Maximum Retention (Pervious, 20 percent)	0.7 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	0.7 in
Runoff Volume (Pervious)	7,737 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	7,713 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.208 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary
Label: PDA-2
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	15.72 ft^3/s
Unit peak time, Tp	0.139 hours
Unit receding limb, Tr	0.556 hours
Total unit time, Tb	0.695 hours

Storm Event	10 year
Return Event	10 years
Duration	24.000 hours
Depth	5.1 in
Time of Concentration (Composite)	0.208 hours
Area (User Defined)	125,964 ft²

Computational Time Increment	0.028 hours
Time to Peak (Computed)	12.175 hours
Flow (Peak, Computed)	6.13 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	6.11 ft³/s

Drainage Area	
SCS CN (Composite)	73.000
Area (User Defined)	125,964 ft²
Maximum Retention (Pervious)	3.7 in
Maximum Retention (Pervious, 20 percent)	0.7 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.4 in
Runoff Volume (Pervious)	24,930 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	24,870 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.208 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary | Return Event: 10 years
Label: PDA-2 | Storm Event: 10 year
Scenario: Post-Development 10 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	15.72 ft^3/s
Unit peak time, Tp	0.139 hours
Unit receding limb, Tr	0.556 hours
Total unit time, Tb	0.695 hours

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 25 years
Label: PDA-2 — Storm Event: 25 year
Scenario: Post-Development 25 year

Storm Event	25 year
Return Event	25 years
Duration	24.000 hours
Depth	6.4 in
Time of Concentration (Composite)	0.208 hours
Area (User Defined)	125,964 ft²

Computational Time Increment	0.028 hours
Time to Peak (Computed)	12.148 hours
Flow (Peak, Computed)	8.96 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	8.96 ft³/s

Drainage Area

SCS CN (Composite)	73.000
Area (User Defined)	125,964 ft²
Maximum Retention (Pervious)	3.7 in
Maximum Retention (Pervious, 20 percent)	0.7 in

Cumulative Runoff

Cumulative Runoff Depth (Pervious)	3.5 in
Runoff Volume (Pervious)	36,289 ft³

Hydrograph Volume (Area under Hydrograph curve)

Volume	36,209 ft³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.208 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

SCS Unit Hydrograph Parameters	
Unit peak, qp	15.72 ft^3/s
Unit peak time, Tp	0.139 hours
Unit receding limb, Tr	0.556 hours
Total unit time, Tb	0.695 hours

Storm Event	100 year
Return Event	100 years
Duration	24.000 hours
Depth	9.1 in
Time of Concentration (Composite)	0.208 hours
Area (User Defined)	125,964 ft²

Computational Time Increment	0.028 hours
Time to Peak (Computed)	12.148 hours
Flow (Peak, Computed)	15.07 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	15.06 ft³/s

Drainage Area	
SCS CN (Composite)	73.000
Area (User Defined)	125,964 ft²
Maximum Retention (Pervious)	3.7 in
Maximum Retention (Pervious, 20 percent)	0.7 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.8 in
Runoff Volume (Pervious)	61,222 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	61,100 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.208 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Stormwater Hydrologic Calculations

Subsection: Unit Hydrograph Summary — Return Event: 100 years
Label: PDA-2 — Storm Event: 100 year
Scenario: Post-Development 100 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	15.72 ft^3/s
Unit peak time, Tp	0.139 hours
Unit receding limb, Tr	0.556 hours
Total unit time, Tb	0.695 hours

Subsection: Addition Summary
Label: DP 1C-10
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Summary for Hydrograph Addition at 'DP 1C-10'

Upstream Link	Upstream Node
IB Overflow	IB-1C-10
<Catchment to Outflow Node>	PDA-1C-10B

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	IB Overflow	0	0.000	0.00
Flow (From)	PDA-1C-10B	14,186	12.300	1.81
Flow (In)	DP 1C-10	14,186	12.300	1.81

Subsection: Addition Summary | Return Event: 1 years
Label: DP 1C-10 | Storm Event: 1 year
Scenario: Pre-Development 1 year

Summary for Hydrograph Addition at 'DP 1C-10'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA 1C-10

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA 1C-10	21,168	12.250	2.88
Flow (In)	DP 1C-10	21,168	12.250	2.88

Subsection: Addition Summary | Return Event: 10 years
Label: DP 1C-10 | Storm Event: 10 year
Scenario: Post-Development 10 year

Summary for Hydrograph Addition at 'DP 1C-10'

Upstream Link	Upstream Node
IB Overflow	IB-1C-10
<Catchment to Outflow Node>	PDA-1C-10B

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	IB Overflow	26,039	12.450	7.03
Flow (From)	PDA-1C-10B	73,664	12.150	18.57
Flow (In)	DP 1C-10	99,703	12.200	22.09

Summary for Hydrograph Addition at 'DP 1C-10'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA 1C-10

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA 1C-10	104,512	12.150	25.49
Flow (In)	DP 1C-10	104,512	12.150	25.49

Summary for Hydrograph Addition at 'DP 1C-10'

Upstream Link	Upstream Node
IB Overflow	IB-1C-10
<Catchment to Outflow Node>	PDA-1C-10B

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	IB Overflow	48,818	12.450	9.21
Flow (From)	PDA-1C-10B	118,978	12.150	31.15
Flow (In)	DP 1C-10	167,796	12.150	38.61

Subsection: Addition Summary
Return Event: 25 years

Label: DP 1C-10
Storm Event: 25 year

Scenario: Pre-Development 25 year

Summary for Hydrograph Addition at 'DP 1C-10'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA 1C-10

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA 1C-10	167,171	12.150	42.57
Flow (In)	DP 1C-10	167,171	12.150	42.57

Subsection: Addition Summary | Return Event: 100 years
Label: DP 1C-10 | Storm Event: 100 year
Scenario: Post-Development 100 year

Summary for Hydrograph Addition at 'DP 1C-10'

Upstream Link	Upstream Node
IB Overflow	IB-1C-10
<Catchment to Outflow Node>	PDA-1C-10B

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	IB Overflow	102,083	12.500	12.56
Flow (From)	PDA-1C-10B	226,232	12.150	60.14
Flow (In)	DP 1C-10	328,315	12.150	70.62

Subsection: Addition Summary | Return Event: 100 years
Label: DP 1C-10 | Storm Event: 100 year
Scenario: Pre-Development 100 year

Summary for Hydrograph Addition at 'DP 1C-10'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA 1C-10

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA 1C-10	314,455	12.150	81.83
Flow (In)	DP 1C-10	314,455	12.150	81.83

Subsection: Addition Summary
Label: DP 1C-2
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Summary for Hydrograph Addition at 'DP 1C-2'

Upstream Link	Upstream Node
Outlet-8	IB-1C-2
<Catchment to Outflow Node>	PDA-1C-2B

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	Outlet-8	0	0.000	0.00
Flow (From)	PDA-1C-2B	89,081	12.200	17.76
Flow (In)	DP 1C-2	89,081	12.200	17.76

Subsection: Addition Summary
Label: DP 1C-2
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Summary for Hydrograph Addition at 'DP 1C-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA 1C-2

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA 1C-2	116,765	12.200	24.70
Flow (In)	DP 1C-2	116,765	12.200	24.70

Subsection: Addition Summary | Return Event: 10 years
Label: DP 1C-2 | Storm Event: 10 year
Scenario: Post-Development 10 year

Summary for Hydrograph Addition at 'DP 1C-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C-2B
Outlet-8	IB-1C-2

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	Outlet-8	32,623	12.250	11.63
Flow (From)	PDA-1C-2B	332,968	12.150	80.07
Flow (In)	DP 1C-2	365,590	12.150	90.98

Subsection: Addition Summary | Return Event: 10 years
Label: DP 1C-2 | Storm Event: 10 year
Scenario: Pre-Development 10 year

Summary for Hydrograph Addition at 'DP 1C-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA 1C-2

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA 1C-2	409,916	12.150	99.64
Flow (In)	DP 1C-2	409,916	12.150	99.64

Subsection: Addition Summary | Return Event: 25 years
Label: DP 1C-2 | Storm Event: 25 year
Scenario: Post-Development 25 year

Summary for Hydrograph Addition at 'DP 1C-2'

Upstream Link	Upstream Node
Outlet-8	IB-1C-2
<Catchment to Outflow Node>	PDA-1C-2B

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	Outlet-8	56,421	12.200	16.85
Flow (From)	PDA-1C-2B	502,079	12.150	123.31
Flow (In)	DP 1C-2	558,501	12.150	139.39

Summary for Hydrograph Addition at 'DP 1C-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA 1C-2

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA 1C-2	609,163	12.150	150.27
Flow (In)	DP 1C-2	609,163	12.150	150.27

Subsection: Addition Summary | Return Event: 100 years
Label: DP 1C-2 | Storm Event: 100 year
Scenario: Post-Development 100 year

Summary for Hydrograph Addition at 'DP 1C-2'

Upstream Link	Upstream Node
Outlet-8	IB-1C-2
<Catchment to Outflow Node>	PDA-1C-2B

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	Outlet-8	110,939	12.250	25.18
Flow (From)	PDA-1C-2B	882,878	12.150	218.59
Flow (In)	DP 1C-2	993,817	12.150	242.99

Subsection: Addition Summary | Return Event: 100 years
Label: DP 1C-2 | Storm Event: 100 year
Scenario: Pre-Development 100 year

Summary for Hydrograph Addition at 'DP 1C-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA 1C-2

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA 1C-2	1,053,060	12.150	260.46
Flow (In)	DP 1C-2	1,053,060	12.150	260.46

Subsection: Addition Summary
Label: DP 1C-5
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Summary for Hydrograph Addition at 'DP 1C-5'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C-5

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PDA-1C-5	1,183	12.450	0.08
Flow (In)	DP 1C-5	1,183	12.450	0.08

Stormwater Hydrologic Calculations

Subsection: Addition Summary — Return Event: 1 years

Label: DP 1C-5 — Storm Event: 1 year

Scenario: Pre-Development 1 year

Summary for Hydrograph Addition at 'DP 1C-5'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-1C-5

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA-1C-5	1,533	12.450	0.13
Flow (In)	DP 1C-5	1,533	12.450	0.13

Subsection: Addition Summary
Label: DP 1C-5
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 year

Summary for Hydrograph Addition at 'DP 1C-5'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C-5

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PDA-1C-5	8,518	12.200	1.80
Flow (In)	DP 1C-5	8,518	12.200	1.80

Subsection: Addition Summary | Return Event: 10 years

Label: DP 1C-5 | Storm Event: 10 year

Scenario: Pre-Development 10 year

Summary for Hydrograph Addition at 'DP 1C-5'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-1C-5

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA-1C-5	10,213	12.150	2.20
Flow (In)	DP 1C-5	10,213	12.150	2.20

Subsection: Addition Summary — Return Event: 25 years

Label: DP 1C-5 — Storm Event: 25 year

Scenario: Post-Development 25 year

Summary for Hydrograph Addition at 'DP 1C-5'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C-5

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PDA-1C-5	14,556	12.150	3.42
Flow (In)	DP 1C-5	14,556	12.150	3.42

Subsection: Addition Summary — Return Event: 25 years

Label: DP 1C-5 — Storm Event: 25 year

Scenario: Pre-Development 25 year

Summary for Hydrograph Addition at 'DP 1C-5'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-1C-5

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA-1C-5	17,236	12.150	4.11
Flow (In)	DP 1C-5	17,236	12.150	4.11

Subsection: Addition Summary | Return Event: 100 years
Label: DP 1C-5 | Storm Event: 100 year
Scenario: Post-Development 100 year

Summary for Hydrograph Addition at 'DP 1C-5'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C-5

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PDA-1C-5	29,416	12.150	7.40
Flow (In)	DP 1C-5	29,416	12.150	7.40

Subsection: Addition Summary | Return Event: 100 years

Label: DP 1C-5 | Storm Event: 100 year

Scenario: Pre-Development 100 year

Summary for Hydrograph Addition at 'DP 1C-5'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-1C-5

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA-1C-5	34,377	12.150	8.68
Flow (In)	DP 1C-5	34,377	12.150	8.68

Subsection: Addition Summary | Return Event: 1 years
Label: DP 1C-6 | Storm Event: 1 year
Scenario: Post-Development 1 year

Summary for Hydrograph Addition at 'DP 1C-6'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C-6B
Outlet-10	SUB-6A

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PDA-1C-6B	11,928	12.300	1.51
Flow (From)	Outlet-10	0	0.000	0.00
Flow (In)	DP 1C-6	11,928	12.300	1.51

Subsection: Addition Summary | Return Event: 1 years

Label: DP 1C-6 | Storm Event: 1 year

Scenario: Pre-Development 1 year

Summary for Hydrograph Addition at 'DP 1C-6'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA 1C-6

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA 1C-6	12,504	12.300	1.59
Flow (In)	DP 1C-6	12,504	12.300	1.59

Summary for Hydrograph Addition at 'DP 1C-6'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C-6B
Outlet-10	SUB-6A

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PDA-1C-6B	61,944	12.150	15.23
Flow (From)	Outlet-10	4,365	12.500	0.66
Flow (In)	DP 1C-6	66,309	12.150	15.49

Subsection: Addition Summary

Return Event: 10 years

Label: DP 1C-6

Storm Event: 10 year

Scenario: Pre-Development 10 year

Summary for Hydrograph Addition at 'DP 1C-6'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA 1C-6

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA 1C-6	64,931	12.150	16.08
Flow (In)	DP 1C-6	64,931	12.150	16.08

Subsection: Addition Summary

Return Event: 25 years

Label: DP 1C-6

Storm Event: 25 year

Scenario: Post-Development 25 year

Summary for Hydrograph Addition at 'DP 1C-6'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C-6B
Outlet-10	SUB-6A

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PDA-1C-6B	100,052	12.150	25.74
Flow (From)	Outlet-10	7,678	12.450	1.29
Flow (In)	DP 1C-6	107,730	12.150	26.49

Subsection: Addition Summary
Label: DP 1C-6
Scenario: Pre-Development 25 year

Return Event: 25 years
Storm Event: 25 year

Summary for Hydrograph Addition at 'DP 1C-6'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA 1C-6

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA 1C-6	104,876	12.150	27.12
Flow (In)	DP 1C-6	104,876	12.150	27.12

Subsection: Addition Summary | Return Event: 100 years
Label: DP 1C-6 | Storm Event: 100 year
Scenario: Post-Development 100 year

Summary for Hydrograph Addition at 'DP 1C-6'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C-6B
Outlet-10	SUB-6A

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PDA-1C-6B	190,254	12.150	50.05
Flow (From)	Outlet-10	15,075	12.300	3.15
Flow (In)	DP 1C-6	205,329	12.150	52.51

Stormwater Hydrologic Calculations

Subsection: Addition Summary | Return Event: 100 years
Label: DP 1C-6 | Storm Event: 100 year
Scenario: Pre-Development 100 year

Summary for Hydrograph Addition at 'DP 1C-6'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA 1C-6

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA 1C-6	199,424	12.150	52.62
Flow (In)	DP 1C-6	199,424	12.150	52.62

Subsection: Addition Summary | Return Event: 1 years
Label: DP 1C-7 | Storm Event: 1 year
Scenario: Post-Development 1 year

Summary for Hydrograph Addition at 'DP 1C-7'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C-7

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PDA-1C-7	6,159	12.150	1.29
Flow (In)	DP 1C-7	6,159	12.150	1.29

Summary for Hydrograph Addition at 'DP 1C-7'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA 1C-7

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA 1C-7	10,045	12.150	2.21
Flow (In)	DP 1C-7	10,045	12.150	2.21

Stormwater Hydrologic Calculations

Subsection: Addition Summary — Return Event: 10 years
Label: DP 1C-7 — Storm Event: 10 year
Scenario: Post-Development 10 year

Summary for Hydrograph Addition at 'DP 1C-7'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C-7

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PDA-1C-7	25,584	12.100	6.99
Flow (In)	DP 1C-7	25,584	12.100	6.99

Stormwater Hydrologic Calculations

Subsection: Addition Summary | Return Event: 10 years
Label: DP 1C-7 | Storm Event: 10 year
Scenario: Pre-Development 10 year

Summary for Hydrograph Addition at 'DP 1C-7'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA 1C-7

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA 1C-7	38,812	12.150	10.21
Flow (In)	DP 1C-7	38,812	12.150	10.21

Subsection: Addition Summary | Return Event: 25 years
Label: DP 1C-7 | Storm Event: 25 year
Scenario: Post-Development 25 year

Summary for Hydrograph Addition at 'DP 1C-7'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C-7

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PDA-1C-7	39,493	12.100	11.03
Flow (In)	DP 1C-7	39,493	12.100	11.03

Subsection: Addition Summary | Return Event: 25 years
Label: DP 1C-7 | Storm Event: 25 year
Scenario: Pre-Development 25 year

Summary for Hydrograph Addition at 'DP 1C-7'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA 1C-7

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA 1C-7	58,967	12.100	15.81
Flow (In)	DP 1C-7	58,967	12.100	15.81

Summary for Hydrograph Addition at 'DP 1C-7'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C-7

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PDA-1C-7	71,358	12.100	20.06
Flow (In)	DP 1C-7	71,358	12.100	20.06

Subsection: Addition Summary | Return Event: 100 years
Label: DP 1C-7 | Storm Event: 100 year
Scenario: Pre-Development 100 year

Summary for Hydrograph Addition at 'DP 1C-7'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA 1C-7

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA 1C-7	104,601	12.100	28.29
Flow (In)	DP 1C-7	104,601	12.100	28.29

Stormwater Hydrologic Calculations

Subsection: Addition Summary | Return Event: 1 years
Label: DP-2 | Storm Event: 1 year
Scenario: Post-Development 1 year

Summary for Hydrograph Addition at 'DP-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-2

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	PDA-2	7,713	12.200	1.72
Flow (In)	DP-2	7,713	12.200	1.72

Subsection: Addition Summary

Label: DP-2

Scenario: Pre-Development 1 year

Return Event: 1 years

Storm Event: 1 year

Summary for Hydrograph Addition at 'DP-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-2

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA-2	9,561	12.200	2.17
Flow (In)	DP-2	9,561	12.200	2.17

Subsection: Addition Summary | Return Event: 10 years
Label: DP-2 | Storm Event: 10 year
Scenario: Post-Development 10 year

Summary for Hydrograph Addition at 'DP-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-2

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PDA-2	24,870	12.150	6.11
Flow (In)	DP-2	24,870	12.150	6.11

Subsection: Addition Summary — Return Event: 10 years
Label: DP-2 — Storm Event: 10 year
Scenario: Pre-Development 10 year

Summary for Hydrograph Addition at 'DP-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-2

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA-2	30,028	12.150	7.39
Flow (In)	DP-2	30,028	12.150	7.39

Subsection: Addition Summary | Return Event: 25 years
Label: DP-2 | Storm Event: 25 year
Scenario: Post-Development 25 year

Summary for Hydrograph Addition at 'DP-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-2

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PDA-2	36,209	12.150	8.96
Flow (In)	DP-2	36,209	12.150	8.96

Subsection: Addition Summary | Return Event: 25 years

Label: DP-2 | Storm Event: 25 year

Scenario: Pre-Development 25 year

Summary for Hydrograph Addition at 'DP-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-2

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA-2	43,435	12.150	10.75
Flow (In)	DP-2	43,435	12.150	10.75

Subsection: Addition Summary — Return Event: 100 years
Label: DP-2 — Storm Event: 100 year
Scenario: Post-Development 100 year

Summary for Hydrograph Addition at 'DP-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-2

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PDA-2	61,100	12.150	15.06
Flow (In)	DP-2	61,100	12.150	15.06

Subsection: Addition Summary | Return Event: 100 years
Label: DP-2 | Storm Event: 100 year
Scenario: Pre-Development 100 year

Summary for Hydrograph Addition at 'DP-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-2

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA-2	72,729	12.150	17.89
Flow (In)	DP-2	72,729	12.150	17.89

Subsection: Time vs. Elevation Return Event: 1 years
Label: IB-1C-10 (IN) Storm Event: 1 year
Scenario: Post-Development 1 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	618.50	618.50	618.50	618.50	618.50
0.250	618.50	618.50	618.50	618.50	618.50
0.500	618.50	618.50	618.50	618.50	618.50
0.750	618.50	618.50	618.50	618.50	618.50
1.000	618.50	618.50	618.50	618.50	618.50
1.250	618.50	618.50	618.50	618.50	618.50
1.500	618.50	618.50	618.50	618.50	618.50
1.750	618.50	618.50	618.50	618.50	618.50
2.000	618.50	618.50	618.50	618.50	618.50
2.250	618.50	618.50	618.50	618.50	618.50
2.500	618.50	618.50	618.50	618.50	618.50
2.750	618.50	618.50	618.50	618.50	618.50
3.000	618.50	618.50	618.50	618.50	618.50
3.250	618.50	618.50	618.50	618.50	618.50
3.500	618.50	618.50	618.50	618.50	618.50
3.750	618.50	618.50	618.50	618.50	618.50
4.000	618.50	618.50	618.50	618.50	618.50
4.250	618.50	618.50	618.50	618.50	618.50
4.500	618.50	618.50	618.50	618.50	618.50
4.750	618.50	618.50	618.50	618.50	618.50
5.000	618.50	618.50	618.50	618.50	618.50
5.250	618.50	618.50	618.50	618.50	618.50
5.500	618.50	618.50	618.50	618.50	618.50
5.750	618.50	618.50	618.50	618.50	618.50
6.000	618.50	618.50	618.50	618.50	618.50
6.250	618.50	618.50	618.50	618.50	618.50
6.500	618.50	618.50	618.50	618.50	618.50
6.750	618.50	618.50	618.50	618.50	618.50
7.000	618.50	618.50	618.50	618.50	618.50
7.250	618.50	618.50	618.50	618.50	618.50
7.500	618.50	618.50	618.50	618.50	618.50
7.750	618.50	618.50	618.50	618.50	618.50
8.000	618.50	618.50	618.50	618.50	618.50
8.250	618.50	618.50	618.50	618.50	618.50
8.500	618.50	618.50	618.50	618.50	618.50
8.750	618.50	618.50	618.50	618.50	618.50
9.000	618.50	618.50	618.50	618.50	618.50
9.250	618.50	618.50	618.50	618.50	618.50
9.500	618.50	618.50	618.50	618.50	618.50
9.750	618.50	618.50	618.50	618.50	618.50

Subsection: Time vs. Elevation | Return Event: 1 years
Label: IB-1C-10 (IN) | Storm Event: 1 year
Scenario: Post-Development 1 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.000	618.50	618.50	618.50	618.50	618.50
10.250	618.50	618.50	618.50	618.50	618.50
10.500	618.50	618.50	618.50	618.50	618.50
10.750	618.50	618.50	618.50	618.50	618.50
11.000	618.50	618.50	618.50	618.50	618.51
11.250	618.51	618.51	618.51	618.51	618.51
11.500	618.51	618.51	618.52	618.52	618.53
11.750	618.53	618.54	618.56	618.58	618.63
12.000	618.69	618.79	618.91	619.04	619.15
12.250	619.23	619.30	619.36	619.40	619.43
12.500	619.46	619.48	619.50	619.51	619.52
12.750	619.52	619.53	619.53	619.53	619.53
13.000	619.53	619.54	619.53	619.53	619.53
13.250	619.53	619.53	619.53	619.53	619.52
13.500	619.52	619.52	619.52	619.51	619.51
13.750	619.51	619.50	619.50	619.50	619.49
14.000	619.49	619.48	619.48	619.47	619.47
14.250	619.46	619.46	619.45	619.45	619.44
14.500	619.43	619.43	619.42	619.42	619.41
14.750	619.40	619.40	619.39	619.38	619.38
15.000	619.37	619.36	619.35	619.35	619.34
15.250	619.33	619.32	619.31	619.30	619.30
15.500	619.29	619.28	619.27	619.26	619.25
15.750	619.24	619.23	619.22	619.21	619.20
16.000	619.19	619.17	619.16	619.15	619.14
16.250	619.13	619.11	619.10	619.09	619.07
16.500	619.06	619.05	619.03	619.02	619.00
16.750	618.99	618.97	618.96	618.94	618.92
17.000	618.91	618.89	618.87	618.85	618.83
17.250	618.81	618.80	618.77	618.75	618.73
17.500	618.71	618.69	618.66	618.64	618.61
17.750	618.59	618.56	618.53	618.52	618.52
18.000	618.51	618.51	618.51	618.51	618.51
18.250	618.51	618.51	618.51	618.51	618.51
18.500	618.51	618.51	618.51	618.51	618.51
18.750	618.51	618.51	618.51	618.51	618.51
19.000	618.51	618.51	618.51	618.51	618.51
19.250	618.51	618.51	618.51	618.51	618.51
19.500	618.51	618.51	618.51	618.51	618.51
19.750	618.51	618.51	618.51	618.51	618.51
20.000	618.51	618.51	618.51	618.51	618.51

Subsection: Time vs. Elevation　　Return Event: 1 years
Label: IB-1C-10 (IN)　　Storm Event: 1 year
Scenario: Post-Development 1 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.250	618.51	618.51	618.51	618.51	618.51
20.500	618.51	618.51	618.51	618.51	618.51
20.750	618.51	618.51	618.51	618.51	618.51
21.000	618.51	618.51	618.51	618.51	618.51
21.250	618.51	618.51	618.51	618.51	618.51
21.500	618.51	618.51	618.51	618.51	618.51
21.750	618.51	618.51	618.51	618.51	618.51
22.000	618.51	618.51	618.51	618.51	618.51
22.250	618.51	618.51	618.51	618.51	618.51
22.500	618.51	618.51	618.51	618.51	618.51
22.750	618.51	618.51	618.51	618.51	618.51
23.000	618.51	618.51	618.51	618.51	618.51
23.250	618.51	618.51	618.51	618.51	618.51
23.500	618.51	618.51	618.51	618.51	618.51
23.750	618.51	618.51	618.51	618.51	618.51
24.000	618.51	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Elevation　　Return Event: 10 years
Label: IB-1C-10 (IN)　　Storm Event: 10 year
Scenario: Post-Development 10 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	618.50	618.50	618.50	618.50	618.50
0.250	618.50	618.50	618.50	618.50	618.50
0.500	618.50	618.50	618.50	618.50	618.50
0.750	618.50	618.50	618.50	618.50	618.50
1.000	618.50	618.50	618.50	618.50	618.50
1.250	618.50	618.50	618.50	618.50	618.50
1.500	618.50	618.50	618.50	618.50	618.50
1.750	618.50	618.50	618.50	618.50	618.50
2.000	618.50	618.50	618.50	618.50	618.50
2.250	618.50	618.50	618.50	618.50	618.50
2.500	618.50	618.50	618.50	618.50	618.50
2.750	618.50	618.50	618.50	618.50	618.50
3.000	618.50	618.50	618.50	618.50	618.50
3.250	618.50	618.50	618.50	618.50	618.50
3.500	618.50	618.50	618.50	618.50	618.50
3.750	618.50	618.50	618.50	618.50	618.50
4.000	618.50	618.50	618.50	618.50	618.50
4.250	618.50	618.50	618.50	618.50	618.50
4.500	618.50	618.50	618.50	618.50	618.50
4.750	618.50	618.50	618.50	618.50	618.50
5.000	618.50	618.50	618.50	618.50	618.50
5.250	618.50	618.50	618.50	618.50	618.50
5.500	618.50	618.50	618.50	618.50	618.50
5.750	618.50	618.50	618.50	618.50	618.50
6.000	618.50	618.50	618.50	618.50	618.50
6.250	618.50	618.50	618.50	618.50	618.50
6.500	618.50	618.50	618.50	618.50	618.50
6.750	618.50	618.50	618.50	618.50	618.50
7.000	618.50	618.50	618.50	618.50	618.50
7.250	618.50	618.50	618.50	618.50	618.50
7.500	618.50	618.50	618.50	618.50	618.50
7.750	618.50	618.50	618.50	618.50	618.50
8.000	618.50	618.50	618.50	618.50	618.50
8.250	618.50	618.50	618.50	618.50	618.50
8.500	618.50	618.50	618.50	618.50	618.50
8.750	618.50	618.50	618.50	618.50	618.50
9.000	618.51	618.51	618.51	618.51	618.51
9.250	618.51	618.51	618.51	618.51	618.51
9.500	618.51	618.51	618.51	618.51	618.51
9.750	618.51	618.51	618.52	618.52	618.52

Subsection: Time vs. Elevation | Return Event: 10 years
Label: IB-1C-10 (IN) | Storm Event: 10 year
Scenario: Post-Development 10 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.000	618.52	618.52	618.52	618.52	618.52
10.250	618.52	618.52	618.52	618.53	618.53
10.500	618.53	618.53	618.53	618.53	618.53
10.750	618.54	618.54	618.54	618.54	618.54
11.000	618.54	618.54	618.55	618.55	618.55
11.250	618.56	618.57	618.58	618.60	618.62
11.500	618.64	618.67	618.70	618.74	618.80
11.750	618.87	618.96	619.06	619.18	619.30
12.000	619.46	619.64	619.83	620.00	620.12
12.250	620.20	620.26	620.29	620.31	620.31
12.500	620.30	620.28	620.25	620.22	620.18
12.750	620.14	620.10	620.06	620.04	620.02
13.000	620.00	619.99	619.98	619.97	619.96
13.250	619.95	619.95	619.94	619.94	619.94
13.500	619.93	619.93	619.93	619.93	619.92
13.750	619.92	619.92	619.92	619.92	619.91
14.000	619.91	619.91	619.91	619.91	619.91
14.250	619.90	619.90	619.90	619.90	619.90
14.500	619.90	619.90	619.90	619.89	619.89
14.750	619.89	619.89	619.89	619.89	619.89
15.000	619.88	619.88	619.88	619.88	619.88
15.250	619.88	619.88	619.87	619.87	619.87
15.500	619.87	619.87	619.87	619.87	619.86
15.750	619.86	619.86	619.86	619.86	619.86
16.000	619.85	619.85	619.85	619.85	619.85
16.250	619.85	619.85	619.84	619.84	619.84
16.500	619.84	619.84	619.83	619.83	619.83
16.750	619.83	619.82	619.82	619.82	619.82
17.000	619.81	619.81	619.81	619.80	619.80
17.250	619.80	619.79	619.79	619.79	619.78
17.500	619.78	619.77	619.77	619.77	619.76
17.750	619.76	619.75	619.75	619.74	619.74
18.000	619.73	619.73	619.72	619.72	619.71
18.250	619.71	619.70	619.70	619.69	619.68
18.500	619.68	619.67	619.67	619.66	619.66
18.750	619.65	619.64	619.64	619.63	619.62
19.000	619.62	619.61	619.61	619.60	619.59
19.250	619.59	619.58	619.57	619.57	619.56
19.500	619.55	619.55	619.54	619.53	619.52
19.750	619.52	619.51	619.50	619.49	619.49
20.000	619.48	619.47	619.46	619.46	619.45

Subsection: Time vs. Elevation | Return Event: 10 years
Label: IB-1C-10 (IN) | Storm Event: 10 year
Scenario: Post-Development 10 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.250	619.44	619.43	619.42	619.41	619.41
20.500	619.40	619.39	619.38	619.37	619.36
20.750	619.35	619.34	619.33	619.32	619.32
21.000	619.31	619.30	619.29	619.28	619.27
21.250	619.26	619.25	619.23	619.22	619.21
21.500	619.20	619.19	619.18	619.17	619.16
21.750	619.15	619.13	619.12	619.11	619.10
22.000	619.08	619.07	619.06	619.04	619.03
22.250	619.02	619.00	618.99	618.97	618.96
22.500	618.94	618.93	618.91	618.90	618.88
22.750	618.86	618.85	618.83	618.81	618.79
23.000	618.77	618.75	618.73	618.71	618.69
23.250	618.67	618.65	618.62	618.60	618.58
23.500	618.55	618.53	618.52	618.52	618.52
23.750	618.52	618.52	618.52	618.52	618.52
24.000	618.51	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Elevation — Return Event: 25 years
Label: IB-1C-10 (IN) — Storm Event: 25 year
Scenario: Post-Development 25 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	618.50	618.50	618.50	618.50	618.50
0.250	618.50	618.50	618.50	618.50	618.50
0.500	618.50	618.50	618.50	618.50	618.50
0.750	618.50	618.50	618.50	618.50	618.50
1.000	618.50	618.50	618.50	618.50	618.50
1.250	618.50	618.50	618.50	618.50	618.50
1.500	618.50	618.50	618.50	618.50	618.50
1.750	618.50	618.50	618.50	618.50	618.50
2.000	618.50	618.50	618.50	618.50	618.50
2.250	618.50	618.50	618.50	618.50	618.50
2.500	618.50	618.50	618.50	618.50	618.50
2.750	618.50	618.50	618.50	618.50	618.50
3.000	618.50	618.50	618.50	618.50	618.50
3.250	618.50	618.50	618.50	618.50	618.50
3.500	618.50	618.50	618.50	618.50	618.50
3.750	618.50	618.50	618.50	618.50	618.50
4.000	618.50	618.50	618.50	618.50	618.50
4.250	618.50	618.50	618.50	618.50	618.50
4.500	618.50	618.50	618.50	618.50	618.50
4.750	618.50	618.50	618.50	618.50	618.50
5.000	618.50	618.50	618.50	618.50	618.50
5.250	618.50	618.50	618.50	618.50	618.50
5.500	618.50	618.50	618.50	618.50	618.50
5.750	618.50	618.50	618.50	618.50	618.50
6.000	618.50	618.50	618.50	618.50	618.50
6.250	618.50	618.50	618.50	618.50	618.50
6.500	618.50	618.50	618.50	618.50	618.50
6.750	618.50	618.50	618.50	618.50	618.50
7.000	618.50	618.50	618.50	618.50	618.50
7.250	618.50	618.50	618.50	618.50	618.50
7.500	618.50	618.50	618.50	618.50	618.50
7.750	618.50	618.50	618.50	618.50	618.50
8.000	618.50	618.50	618.51	618.51	618.51
8.250	618.51	618.51	618.51	618.51	618.51
8.500	618.51	618.51	618.51	618.51	618.51
8.750	618.51	618.51	618.51	618.51	618.51
9.000	618.52	618.52	618.52	618.52	618.52
9.250	618.52	618.52	618.52	618.52	618.52
9.500	618.52	618.53	618.53	618.53	618.53
9.750	618.53	618.53	618.53	618.53	618.53

Subsection: Time vs. Elevation | Return Event: 25 years
Label: IB-1C-10 (IN) | Storm Event: 25 year
Scenario: Post-Development 25 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.000	618.53	618.54	618.54	618.54	618.54
10.250	618.54	618.54	618.54	618.55	618.55
10.500	618.55	618.55	618.56	618.56	618.57
10.750	618.58	618.59	618.61	618.62	618.63
11.000	618.65	618.67	618.69	618.71	618.74
11.250	618.76	618.79	618.82	618.86	618.90
11.500	618.94	618.98	619.03	619.09	619.16
11.750	619.24	619.34	619.46	619.58	619.72
12.000	619.88	620.05	620.22	620.39	620.55
12.250	620.66	620.74	620.79	620.82	620.83
12.500	620.83	620.81	620.78	620.74	620.69
12.750	620.64	620.59	620.54	620.49	620.44
13.000	620.39	620.34	620.29	620.24	620.19
13.250	620.15	620.10	620.06	620.04	620.02
13.500	620.00	619.99	619.98	619.97	619.97
13.750	619.96	619.96	619.95	619.95	619.95
14.000	619.94	619.94	619.94	619.94	619.93
14.250	619.93	619.93	619.93	619.93	619.92
14.500	619.92	619.92	619.92	619.92	619.92
14.750	619.92	619.92	619.91	619.91	619.91
15.000	619.91	619.91	619.91	619.91	619.91
15.250	619.90	619.90	619.90	619.90	619.90
15.500	619.90	619.90	619.90	619.89	619.89
15.750	619.89	619.89	619.89	619.89	619.88
16.000	619.88	619.88	619.88	619.88	619.88
16.250	619.87	619.87	619.87	619.87	619.87
16.500	619.87	619.87	619.86	619.86	619.86
16.750	619.86	619.86	619.86	619.86	619.86
17.000	619.86	619.85	619.85	619.85	619.85
17.250	619.85	619.85	619.85	619.85	619.85
17.500	619.84	619.84	619.84	619.84	619.84
17.750	619.83	619.83	619.83	619.83	619.83
18.000	619.82	619.82	619.82	619.81	619.81
18.250	619.81	619.80	619.80	619.80	619.79
18.500	619.79	619.79	619.78	619.78	619.78
18.750	619.77	619.77	619.77	619.76	619.76
19.000	619.76	619.75	619.75	619.74	619.74
19.250	619.74	619.73	619.73	619.72	619.72
19.500	619.71	619.71	619.71	619.70	619.70
19.750	619.69	619.69	619.68	619.68	619.67
20.000	619.67	619.66	619.66	619.65	619.65

Subsection: Time vs. Elevation | Return Event: 25 years
Label: IB-1C-10 (IN) | Storm Event: 25 year
Scenario: Post-Development 25 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.250	619.64	619.64	619.63	619.63	619.62
20.500	619.62	619.61	619.61	619.60	619.59
20.750	619.59	619.58	619.58	619.57	619.57
21.000	619.56	619.55	619.55	619.54	619.53
21.250	619.53	619.52	619.52	619.51	619.50
21.500	619.50	619.49	619.48	619.48	619.47
21.750	619.46	619.45	619.45	619.44	619.43
22.000	619.43	619.42	619.41	619.40	619.39
22.250	619.39	619.38	619.37	619.36	619.35
22.500	619.35	619.34	619.33	619.32	619.31
22.750	619.30	619.29	619.28	619.28	619.27
23.000	619.26	619.25	619.24	619.23	619.22
23.250	619.21	619.20	619.19	619.18	619.16
23.500	619.15	619.14	619.13	619.12	619.11
23.750	619.10	619.08	619.07	619.06	619.05
24.000	619.03	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Elevation
Return Event: 100 years
Label: IB-1C-10 (IN)
Storm Event: 100 year
Scenario: Post-Development 100 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	618.50	618.50	618.50	618.50	618.50
0.250	618.50	618.50	618.50	618.50	618.50
0.500	618.50	618.50	618.50	618.50	618.50
0.750	618.50	618.50	618.50	618.50	618.50
1.000	618.50	618.50	618.50	618.50	618.50
1.250	618.50	618.50	618.50	618.50	618.50
1.500	618.50	618.50	618.50	618.50	618.50
1.750	618.50	618.50	618.50	618.50	618.50
2.000	618.50	618.50	618.50	618.50	618.50
2.250	618.50	618.50	618.50	618.50	618.50
2.500	618.50	618.50	618.50	618.50	618.50
2.750	618.50	618.50	618.50	618.50	618.50
3.000	618.50	618.50	618.50	618.50	618.50
3.250	618.50	618.50	618.50	618.50	618.50
3.500	618.50	618.50	618.50	618.50	618.50
3.750	618.50	618.50	618.50	618.50	618.50
4.000	618.50	618.50	618.50	618.50	618.50
4.250	618.50	618.50	618.50	618.50	618.50
4.500	618.50	618.50	618.50	618.50	618.50
4.750	618.50	618.50	618.50	618.50	618.50
5.000	618.50	618.50	618.50	618.50	618.50
5.250	618.50	618.50	618.50	618.50	618.50
5.500	618.50	618.50	618.50	618.50	618.50
5.750	618.50	618.50	618.50	618.50	618.50
6.000	618.50	618.50	618.50	618.50	618.50
6.250	618.50	618.50	618.50	618.50	618.50
6.500	618.50	618.50	618.51	618.51	618.51
6.750	618.51	618.51	618.51	618.51	618.51
7.000	618.51	618.51	618.51	618.51	618.51
7.250	618.51	618.51	618.51	618.51	618.51
7.500	618.51	618.51	618.52	618.52	618.52
7.750	618.52	618.52	618.52	618.52	618.52
8.000	618.52	618.52	618.52	618.52	618.52
8.250	618.52	618.53	618.53	618.53	618.53
8.500	618.53	618.53	618.53	618.53	618.53
8.750	618.54	618.54	618.54	618.54	618.54
9.000	618.54	618.54	618.55	618.55	618.55
9.250	618.55	618.55	618.56	618.56	618.57
9.500	618.57	618.58	618.59	618.60	618.61
9.750	618.63	618.64	618.66	618.67	618.69

Stormwater Hydrologic Calculations

Subsection: Time vs. Elevation | Return Event: 100 years
Label: IB-1C-10 (IN) | Storm Event: 100 year
Scenario: Post-Development 100 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.000	618.71	618.72	618.74	618.76	618.79
10.250	618.81	618.83	618.86	618.88	618.91
10.500	618.93	618.96	618.99	619.02	619.05
10.750	619.08	619.11	619.15	619.18	619.21
11.000	619.24	619.28	619.31	619.35	619.38
11.250	619.42	619.46	619.51	619.55	619.60
11.500	619.64	619.69	619.75	619.81	619.89
11.750	619.96	620.04	620.12	620.20	620.31
12.000	620.47	620.69	620.96	621.24	621.48
12.250	621.67	621.80	621.90	621.96	622.00
12.500	622.01	622.00	621.98	621.94	621.89
12.750	621.84	621.78	621.72	621.66	621.60
13.000	621.53	621.47	621.40	621.34	621.27
13.250	621.20	621.14	621.07	621.01	620.95
13.500	620.88	620.82	620.76	620.70	620.64
13.750	620.59	620.53	620.47	620.42	620.37
14.000	620.32	620.27	620.22	620.18	620.14
14.250	620.09	620.06	620.04	620.02	620.00
14.500	619.99	619.99	619.98	619.97	619.97
14.750	619.97	619.96	619.96	619.96	619.96
15.000	619.95	619.95	619.95	619.95	619.95
15.250	619.94	619.94	619.94	619.94	619.94
15.500	619.94	619.93	619.93	619.93	619.93
15.750	619.93	619.93	619.92	619.92	619.92
16.000	619.92	619.92	619.92	619.91	619.91
16.250	619.91	619.91	619.91	619.91	619.91
16.500	619.91	619.90	619.90	619.90	619.90
16.750	619.90	619.90	619.90	619.90	619.90
17.000	619.90	619.90	619.89	619.89	619.89
17.250	619.89	619.89	619.89	619.89	619.89
17.500	619.88	619.88	619.88	619.88	619.88
17.750	619.88	619.88	619.88	619.87	619.87
18.000	619.87	619.87	619.87	619.87	619.87
18.250	619.86	619.86	619.86	619.86	619.86
18.500	619.86	619.86	619.86	619.86	619.86
18.750	619.86	619.86	619.85	619.85	619.85
19.000	619.85	619.85	619.85	619.85	619.85
19.250	619.85	619.85	619.85	619.85	619.85
19.500	619.85	619.85	619.85	619.85	619.85
19.750	619.84	619.84	619.84	619.84	619.84
20.000	619.84	619.84	619.84	619.84	619.83

Subsection: Time vs. Elevation
Label: IB-1C-10 (IN)
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.250	619.83	619.83	619.83	619.83	619.83
20.500	619.82	619.82	619.82	619.82	619.82
20.750	619.82	619.81	619.81	619.81	619.81
21.000	619.81	619.80	619.80	619.80	619.80
21.250	619.80	619.79	619.79	619.79	619.79
21.500	619.78	619.78	619.78	619.78	619.77
21.750	619.77	619.77	619.77	619.76	619.76
22.000	619.76	619.75	619.75	619.75	619.74
22.250	619.74	619.74	619.73	619.73	619.73
22.500	619.72	619.72	619.72	619.71	619.71
22.750	619.71	619.70	619.70	619.70	619.69
23.000	619.69	619.68	619.68	619.67	619.67
23.250	619.67	619.66	619.66	619.65	619.65
23.500	619.64	619.64	619.63	619.63	619.63
23.750	619.62	619.62	619.61	619.61	619.60
24.000	619.60	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Elevation — Return Event: 1 years
Label: IB-1C-2 (IN) — Storm Event: 1 year
Scenario: Post-Development 1 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	621.75	621.75	621.75	621.75	621.75
0.250	621.75	621.75	621.75	621.75	621.75
0.500	621.75	621.75	621.75	621.75	621.75
0.750	621.75	621.75	621.75	621.75	621.75
1.000	621.75	621.75	621.75	621.75	621.75
1.250	621.75	621.75	621.75	621.75	621.75
1.500	621.75	621.75	621.75	621.75	621.75
1.750	621.75	621.75	621.75	621.75	621.75
2.000	621.75	621.75	621.75	621.75	621.75
2.250	621.75	621.75	621.75	621.75	621.75
2.500	621.75	621.75	621.75	621.75	621.75
2.750	621.75	621.75	621.75	621.75	621.75
3.000	621.75	621.75	621.75	621.75	621.75
3.250	621.75	621.75	621.75	621.75	621.75
3.500	621.75	621.75	621.75	621.75	621.75
3.750	621.75	621.75	621.75	621.75	621.75
4.000	621.75	621.75	621.75	621.75	621.75
4.250	621.75	621.75	621.75	621.75	621.75
4.500	621.75	621.75	621.75	621.75	621.75
4.750	621.75	621.75	621.75	621.75	621.75
5.000	621.75	621.75	621.75	621.75	621.75
5.250	621.75	621.75	621.75	621.75	621.75
5.500	621.75	621.75	621.75	621.75	621.75
5.750	621.75	621.75	621.75	621.75	621.75
6.000	621.75	621.75	621.75	621.75	621.75
6.250	621.75	621.75	621.75	621.75	621.75
6.500	621.75	621.75	621.75	621.75	621.75
6.750	621.75	621.75	621.75	621.75	621.75
7.000	621.75	621.75	621.75	621.75	621.75
7.250	621.75	621.75	621.75	621.75	621.75
7.500	621.75	621.75	621.75	621.75	621.75
7.750	621.75	621.75	621.75	621.75	621.75
8.000	621.75	621.75	621.75	621.75	621.75
8.250	621.75	621.75	621.75	621.75	621.75
8.500	621.75	621.75	621.75	621.75	621.75
8.750	621.75	621.75	621.75	621.75	621.75
9.000	621.75	621.75	621.75	621.75	621.75
9.250	621.75	621.75	621.75	621.75	621.75
9.500	621.75	621.75	621.75	621.75	621.75
9.750	621.75	621.75	621.75	621.75	621.75

Subsection: Time vs. Elevation — Return Event: 1 years

Label: IB-1C-2 (IN) — Storm Event: 1 year

Scenario: Post-Development 1 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.000	621.75	621.75	621.75	621.75	621.75
10.250	621.75	621.75	621.75	621.75	621.75
10.500	621.75	621.75	621.76	621.76	621.76
10.750	621.76	621.76	621.76	621.76	621.76
11.000	621.76	621.76	621.76	621.76	621.76
11.250	621.77	621.77	621.77	621.77	621.77
11.500	621.77	621.78	621.78	621.79	621.80
11.750	621.81	621.83	621.85	621.89	621.93
12.000	622.01	622.12	622.24	622.36	622.46
12.250	622.53	622.60	622.65	622.70	622.73
12.500	622.76	622.78	622.80	622.81	622.82
12.750	622.83	622.84	622.85	622.86	622.86
13.000	622.87	622.87	622.87	622.88	622.88
13.250	622.88	622.89	622.89	622.89	622.89
13.500	622.89	622.89	622.90	622.90	622.90
13.750	622.90	622.90	622.90	622.90	622.90
14.000	622.90	622.90	622.89	622.89	622.89
14.250	622.89	622.89	622.89	622.89	622.88
14.500	622.88	622.88	622.88	622.87	622.87
14.750	622.87	622.87	622.86	622.86	622.86
15.000	622.85	622.85	622.85	622.84	622.84
15.250	622.84	622.83	622.83	622.83	622.82
15.500	622.82	622.81	622.81	622.80	622.80
15.750	622.79	622.79	622.78	622.78	622.77
16.000	622.77	622.76	622.75	622.75	622.74
16.250	622.74	622.73	622.72	622.72	622.71
16.500	622.70	622.70	622.69	622.69	622.68
16.750	622.67	622.67	622.66	622.65	622.64
17.000	622.64	622.63	622.62	622.62	622.61
17.250	622.60	622.59	622.59	622.58	622.57
17.500	622.56	622.56	622.55	622.54	622.53
17.750	622.53	622.52	622.51	622.50	622.49
18.000	622.48	622.48	622.47	622.46	622.45
18.250	622.44	622.43	622.43	622.42	622.41
18.500	622.40	622.39	622.38	622.37	622.36
18.750	622.36	622.35	622.34	622.33	622.32
19.000	622.31	622.30	622.29	622.28	622.28
19.250	622.27	622.26	622.25	622.24	622.23
19.500	622.22	622.21	622.20	622.19	622.18
19.750	622.17	622.16	622.16	622.15	622.14
20.000	622.13	622.12	622.11	622.10	622.09

Subsection: Time vs. Elevation | Return Event: 1 years
Label: IB-1C-2 (IN) | Storm Event: 1 year
Scenario: Post-Development 1 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.250	622.08	622.07	622.06	622.05	622.04
20.500	622.03	622.02	622.01	622.00	621.99
20.750	621.98	621.97	621.96	621.95	621.94
21.000	621.93	621.92	621.91	621.90	621.89
21.250	621.88	621.87	621.86	621.85	621.84
21.500	621.83	621.82	621.80	621.79	621.79
21.750	621.78	621.78	621.77	621.77	621.77
22.000	621.77	621.76	621.76	621.76	621.76
22.250	621.76	621.76	621.76	621.76	621.76
22.500	621.76	621.76	621.76	621.76	621.76
22.750	621.76	621.76	621.76	621.76	621.76
23.000	621.76	621.76	621.76	621.76	621.76
23.250	621.76	621.76	621.76	621.76	621.76
23.500	621.76	621.76	621.76	621.76	621.76
23.750	621.76	621.76	621.76	621.76	621.76
24.000	621.76	(N/A)	(N/A)	(N/A)	(N/A)

Stormwater Hydrologic Calculations

Subsection: Time vs. Elevation | Return Event: 10 years
Label: IB-1C-2 (IN) | Storm Event: 10 year
Scenario: Post-Development 10 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	621.75	621.75	621.75	621.75	621.75
0.250	621.75	621.75	621.75	621.75	621.75
0.500	621.75	621.75	621.75	621.75	621.75
0.750	621.75	621.75	621.75	621.75	621.75
1.000	621.75	621.75	621.75	621.75	621.75
1.250	621.75	621.75	621.75	621.75	621.75
1.500	621.75	621.75	621.75	621.75	621.75
1.750	621.75	621.75	621.75	621.75	621.75
2.000	621.75	621.75	621.75	621.75	621.75
2.250	621.75	621.75	621.75	621.75	621.75
2.500	621.75	621.75	621.75	621.75	621.75
2.750	621.75	621.75	621.75	621.75	621.75
3.000	621.75	621.75	621.75	621.75	621.75
3.250	621.75	621.75	621.75	621.75	621.75
3.500	621.75	621.75	621.75	621.75	621.75
3.750	621.75	621.75	621.75	621.75	621.75
4.000	621.75	621.75	621.75	621.75	621.75
4.250	621.75	621.75	621.75	621.75	621.75
4.500	621.75	621.75	621.75	621.75	621.75
4.750	621.75	621.75	621.75	621.75	621.75
5.000	621.75	621.75	621.75	621.75	621.75
5.250	621.75	621.75	621.75	621.75	621.75
5.500	621.75	621.75	621.75	621.75	621.75
5.750	621.75	621.75	621.75	621.75	621.75
6.000	621.75	621.75	621.75	621.75	621.75
6.250	621.75	621.75	621.75	621.75	621.75
6.500	621.75	621.75	621.75	621.75	621.75
6.750	621.75	621.75	621.75	621.75	621.75
7.000	621.75	621.75	621.75	621.75	621.75
7.250	621.75	621.75	621.75	621.75	621.75
7.500	621.75	621.75	621.75	621.75	621.75
7.750	621.75	621.75	621.75	621.75	621.75
8.000	621.75	621.75	621.75	621.75	621.75
8.250	621.75	621.75	621.76	621.76	621.76
8.500	621.76	621.76	621.76	621.76	621.76
8.750	621.76	621.76	621.76	621.76	621.76
9.000	621.76	621.76	621.76	621.76	621.77
9.250	621.77	621.77	621.77	621.77	621.77
9.500	621.77	621.77	621.77	621.77	621.77
9.750	621.78	621.78	621.78	621.78	621.78

Subsection: Time vs. Elevation | Return Event: 10 years
Label: IB-1C-2 (IN) | Storm Event: 10 year
Scenario: Post-Development 10 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.000	621.78	621.78	621.78	621.78	621.79
10.250	621.79	621.79	621.79	621.79	621.79
10.500	621.80	621.80	621.80	621.80	621.80
10.750	621.81	621.81	621.81	621.82	621.83
11.000	621.83	621.84	621.85	621.86	621.87
11.250	621.88	621.90	621.91	621.93	621.95
11.500	621.97	622.00	622.03	622.08	622.13
11.750	622.21	622.30	622.41	622.54	622.70
12.000	622.93	623.19	623.39	623.52	623.59
12.250	623.59	623.57	623.53	623.48	623.42
12.500	623.35	623.28	623.23	623.20	623.17
12.750	623.16	623.15	623.14	623.13	623.12
13.000	623.12	623.11	623.11	623.10	623.10
13.250	623.10	623.09	623.09	623.09	623.09
13.500	623.09	623.08	623.08	623.08	623.08
13.750	623.08	623.07	623.07	623.07	623.07
14.000	623.07	623.07	623.06	623.06	623.06
14.250	623.06	623.06	623.06	623.06	623.06
14.500	623.06	623.06	623.05	623.05	623.05
14.750	623.05	623.05	623.05	623.05	623.05
15.000	623.05	623.05	623.05	623.04	623.04
15.250	623.04	623.04	623.04	623.04	623.04
15.500	623.03	623.03	623.03	623.03	623.03
15.750	623.03	623.03	623.02	623.02	623.02
16.000	623.02	623.02	623.02	623.02	623.01
16.250	623.01	623.01	623.01	623.01	623.01
16.500	623.01	623.01	623.01	623.01	623.00
16.750	623.00	623.00	623.00	623.00	623.00
17.000	623.00	623.00	623.00	623.00	623.00
17.250	622.99	622.99	622.99	622.99	622.99
17.500	622.99	622.98	622.98	622.98	622.98
17.750	622.98	622.97	622.97	622.97	622.96
18.000	622.96	622.96	622.95	622.95	622.95
18.250	622.94	622.94	622.94	622.93	622.93
18.500	622.93	622.92	622.92	622.91	622.91
18.750	622.91	622.90	622.90	622.89	622.89
19.000	622.89	622.88	622.88	622.87	622.87
19.250	622.87	622.86	622.86	622.85	622.85
19.500	622.84	622.84	622.83	622.83	622.82
19.750	622.82	622.82	622.81	622.81	622.80
20.000	622.80	622.79	622.79	622.78	622.78

Subsection: Time vs. Elevation | Return Event: 10 years
Label: IB-1C-2 (IN) | Storm Event: 10 year
Scenario: Post-Development 10 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.250	622.77	622.77	622.76	622.76	622.75
20.500	622.74	622.74	622.73	622.73	622.72
20.750	622.72	622.71	622.71	622.70	622.70
21.000	622.69	622.68	622.68	622.67	622.67
21.250	622.66	622.66	622.65	622.64	622.64
21.500	622.63	622.63	622.62	622.62	622.61
21.750	622.60	622.60	622.59	622.58	622.58
22.000	622.57	622.57	622.56	622.55	622.55
22.250	622.54	622.53	622.53	622.52	622.51
22.500	622.51	622.50	622.49	622.49	622.48
22.750	622.47	622.47	622.46	622.45	622.45
23.000	622.44	622.43	622.43	622.42	622.41
23.250	622.40	622.40	622.39	622.38	622.37
23.500	622.37	622.36	622.35	622.35	622.34
23.750	622.33	622.32	622.32	622.31	622.30
24.000	622.29	(N/A)	(N/A)	(N/A)	(N/A)

Stormwater Hydrologic Calculations

Subsection: Time vs. Elevation — Return Event: 25 years

Label: IB-1C-2 (IN) — Storm Event: 25 year

Scenario: Post-Development 25 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	621.75	621.75	621.75	621.75	621.75
0.250	621.75	621.75	621.75	621.75	621.75
0.500	621.75	621.75	621.75	621.75	621.75
0.750	621.75	621.75	621.75	621.75	621.75
1.000	621.75	621.75	621.75	621.75	621.75
1.250	621.75	621.75	621.75	621.75	621.75
1.500	621.75	621.75	621.75	621.75	621.75
1.750	621.75	621.75	621.75	621.75	621.75
2.000	621.75	621.75	621.75	621.75	621.75
2.250	621.75	621.75	621.75	621.75	621.75
2.500	621.75	621.75	621.75	621.75	621.75
2.750	621.75	621.75	621.75	621.75	621.75
3.000	621.75	621.75	621.75	621.75	621.75
3.250	621.75	621.75	621.75	621.75	621.75
3.500	621.75	621.75	621.75	621.75	621.75
3.750	621.75	621.75	621.75	621.75	621.75
4.000	621.75	621.75	621.75	621.75	621.75
4.250	621.75	621.75	621.75	621.75	621.75
4.500	621.75	621.75	621.75	621.75	621.75
4.750	621.75	621.75	621.75	621.75	621.75
5.000	621.75	621.75	621.75	621.75	621.75
5.250	621.75	621.75	621.75	621.75	621.75
5.500	621.75	621.75	621.75	621.75	621.75
5.750	621.75	621.75	621.75	621.75	621.75
6.000	621.75	621.75	621.75	621.75	621.75
6.250	621.75	621.75	621.75	621.75	621.75
6.500	621.75	621.75	621.75	621.75	621.75
6.750	621.75	621.75	621.75	621.75	621.75
7.000	621.75	621.75	621.75	621.75	621.75
7.250	621.75	621.75	621.76	621.76	621.76
7.500	621.76	621.76	621.76	621.76	621.76
7.750	621.76	621.76	621.76	621.76	621.76
8.000	621.76	621.76	621.76	621.76	621.76
8.250	621.76	621.76	621.77	621.77	621.77
8.500	621.77	621.77	621.77	621.77	621.77
8.750	621.77	621.77	621.77	621.78	621.78
9.000	621.78	621.78	621.78	621.78	621.78
9.250	621.78	621.78	621.79	621.79	621.79
9.500	621.79	621.79	621.79	621.79	621.80
9.750	621.80	621.80	621.80	621.80	621.80

Subsection: Time vs. Elevation | Return Event: 25 years
Label: IB-1C-2 (IN) | Storm Event: 25 year
Scenario: Post-Development 25 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.000	621.81	621.81	621.81	621.82	621.82
10.250	621.83	621.83	621.84	621.85	621.86
10.500	621.86	621.87	621.89	621.90	621.91
10.750	621.92	621.94	621.95	621.97	621.98
11.000	622.00	622.02	622.04	622.06	622.08
11.250	622.11	622.14	622.17	622.20	622.24
11.500	622.27	622.32	622.37	622.44	622.53
11.750	622.64	622.77	622.92	623.09	623.25
12.000	623.43	623.64	623.85	624.01	624.08
12.250	624.08	624.04	623.97	623.90	623.81
12.500	623.72	623.61	623.51	623.41	623.32
12.750	623.26	623.22	623.19	623.17	623.16
13.000	623.15	623.14	623.14	623.13	623.13
13.250	623.12	623.12	623.12	623.12	623.11
13.500	623.11	623.11	623.11	623.11	623.10
13.750	623.10	623.10	623.10	623.10	623.10
14.000	623.09	623.09	623.09	623.09	623.09
14.250	623.08	623.08	623.08	623.08	623.08
14.500	623.08	623.08	623.08	623.07	623.07
14.750	623.07	623.07	623.07	623.07	623.07
15.000	623.07	623.07	623.07	623.06	623.06
15.250	623.06	623.06	623.06	623.06	623.06
15.500	623.06	623.05	623.05	623.05	623.05
15.750	623.05	623.05	623.05	623.05	623.05
16.000	623.04	623.04	623.04	623.04	623.04
16.250	623.04	623.03	623.03	623.03	623.03
16.500	623.03	623.03	623.03	623.03	623.03
16.750	623.02	623.02	623.02	623.02	623.02
17.000	623.02	623.02	623.02	623.02	623.02
17.250	623.02	623.01	623.01	623.01	623.01
17.500	623.01	623.01	623.01	623.01	623.01
17.750	623.01	623.01	623.00	623.00	623.00
18.000	623.00	623.00	623.00	623.00	623.00
18.250	623.00	623.00	622.99	622.99	622.99
18.500	622.99	622.99	622.99	622.99	622.99
18.750	622.98	622.98	622.98	622.98	622.98
19.000	622.98	622.97	622.97	622.97	622.97
19.250	622.97	622.96	622.96	622.96	622.96
19.500	622.96	622.95	622.95	622.95	622.95
19.750	622.94	622.94	622.94	622.94	622.93
20.000	622.93	622.93	622.93	622.92	622.92

Subsection: Time vs. Elevation | Return Event: 25 years
Label: IB-1C-2 (IN) | Storm Event: 25 year
Scenario: Post-Development 25 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.250	622.92	622.91	622.91	622.91	622.91
20.500	622.90	622.90	622.90	622.89	622.89
20.750	622.89	622.88	622.88	622.88	622.87
21.000	622.87	622.86	622.86	622.86	622.85
21.250	622.85	622.85	622.84	622.84	622.84
21.500	622.83	622.83	622.82	622.82	622.82
21.750	622.81	622.81	622.80	622.80	622.79
22.000	622.79	622.79	622.78	622.78	622.77
22.250	622.77	622.76	622.76	622.75	622.75
22.500	622.74	622.74	622.74	622.73	622.73
22.750	622.72	622.72	622.71	622.71	622.70
23.000	622.70	622.69	622.68	622.68	622.67
23.250	622.67	622.66	622.66	622.65	622.65
23.500	622.64	622.64	622.63	622.62	622.62
23.750	622.61	622.61	622.60	622.60	622.59
24.000	622.58	(N/A)	(N/A)	(N/A)	(N/A)

Stormwater Hydrologic Calculations

Subsection: Time vs. Elevation | Return Event: 100 years
Label: IB-1C-2 (IN) | Storm Event: 100 year
Scenario: Post-Development 100 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	621.75	621.75	621.75	621.75	621.75
0.250	621.75	621.75	621.75	621.75	621.75
0.500	621.75	621.75	621.75	621.75	621.75
0.750	621.75	621.75	621.75	621.75	621.75
1.000	621.75	621.75	621.75	621.75	621.75
1.250	621.75	621.75	621.75	621.75	621.75
1.500	621.75	621.75	621.75	621.75	621.75
1.750	621.75	621.75	621.75	621.75	621.75
2.000	621.75	621.75	621.75	621.75	621.75
2.250	621.75	621.75	621.75	621.75	621.75
2.500	621.75	621.75	621.75	621.75	621.75
2.750	621.75	621.75	621.75	621.75	621.75
3.000	621.75	621.75	621.75	621.75	621.75
3.250	621.75	621.75	621.75	621.75	621.75
3.500	621.75	621.75	621.75	621.75	621.75
3.750	621.75	621.75	621.75	621.75	621.75
4.000	621.75	621.75	621.75	621.75	621.75
4.250	621.75	621.75	621.75	621.75	621.75
4.500	621.75	621.75	621.75	621.75	621.75
4.750	621.75	621.75	621.75	621.75	621.75
5.000	621.75	621.75	621.75	621.75	621.75
5.250	621.75	621.75	621.75	621.75	621.75
5.500	621.75	621.75	621.75	621.75	621.75
5.750	621.75	621.75	621.76	621.76	621.76
6.000	621.76	621.76	621.76	621.76	621.76
6.250	621.76	621.76	621.76	621.76	621.76
6.500	621.76	621.76	621.76	621.76	621.76
6.750	621.76	621.76	621.77	621.77	621.77
7.000	621.77	621.77	621.77	621.77	621.77
7.250	621.77	621.77	621.77	621.77	621.77
7.500	621.77	621.78	621.78	621.78	621.78
7.750	621.78	621.78	621.78	621.78	621.78
8.000	621.78	621.78	621.79	621.79	621.79
8.250	621.79	621.79	621.79	621.79	621.79
8.500	621.80	621.80	621.80	621.80	621.80
8.750	621.81	621.81	621.81	621.82	621.82
9.000	621.83	621.84	621.84	621.85	621.86
9.250	621.87	621.87	621.88	621.89	621.91
9.500	621.92	621.93	621.94	621.95	621.97
9.750	621.98	622.00	622.01	622.03	622.05

Subsection: Time vs. Elevation Return Event: 100 years
Label: IB-1C-2 (IN) Storm Event: 100 year
Scenario: Post-Development 100 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.000	622.06	622.08	622.10	622.12	622.14
10.250	622.16	622.19	622.21	622.24	622.26
10.500	622.29	622.32	622.35	622.38	622.41
10.750	622.44	622.48	622.51	622.55	622.58
11.000	622.62	622.66	622.70	622.75	622.79
11.250	622.85	622.90	622.96	623.02	623.07
11.500	623.12	623.15	623.19	623.22	623.27
11.750	623.32	623.39	623.47	623.58	623.74
12.000	623.99	624.31	624.61	624.85	624.97
12.250	624.98	624.93	624.85	624.74	624.61
12.500	624.47	624.31	624.15	624.00	623.85
12.750	623.73	623.61	623.51	623.42	623.34
13.000	623.28	623.24	623.21	623.20	623.19
13.250	623.18	623.17	623.17	623.16	623.16
13.500	623.16	623.16	623.15	623.15	623.15
13.750	623.15	623.15	623.14	623.14	623.14
14.000	623.13	623.13	623.13	623.13	623.13
14.250	623.12	623.12	623.12	623.12	623.12
14.500	623.12	623.12	623.11	623.11	623.11
14.750	623.11	623.11	623.11	623.11	623.11
15.000	623.10	623.10	623.10	623.10	623.10
15.250	623.10	623.10	623.09	623.09	623.09
15.500	623.09	623.09	623.09	623.08	623.08
15.750	623.08	623.08	623.08	623.08	623.07
16.000	623.07	623.07	623.07	623.07	623.07
16.250	623.07	623.06	623.06	623.06	623.06
16.500	623.06	623.06	623.06	623.06	623.06
16.750	623.06	623.06	623.06	623.06	623.05
17.000	623.05	623.05	623.05	623.05	623.05
17.250	623.05	623.05	623.05	623.05	623.05
17.500	623.05	623.04	623.04	623.04	623.04
17.750	623.04	623.04	623.04	623.04	623.03
18.000	623.03	623.03	623.03	623.03	623.03
18.250	623.03	623.03	623.03	623.02	623.02
18.500	623.02	623.02	623.02	623.02	623.02
18.750	623.02	623.02	623.02	623.02	623.02
19.000	623.02	623.02	623.02	623.02	623.02
19.250	623.02	623.02	623.02	623.02	623.01
19.500	623.01	623.01	623.01	623.01	623.01
19.750	623.01	623.01	623.01	623.01	623.01
20.000	623.01	623.01	623.01	623.01	623.01

Subsection: Time vs. Elevation | Return Event: 100 years
Label: IB-1C-2 (IN) | Storm Event: 100 year
Scenario: Post-Development 100 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.250	623.01	623.01	623.01	623.01	623.01
20.500	623.01	623.01	623.01	623.01	623.01
20.750	623.01	623.00	623.00	623.00	623.00
21.000	623.00	623.00	623.00	623.00	623.00
21.250	623.00	623.00	623.00	623.00	623.00
21.500	623.00	623.00	623.00	623.00	623.00
21.750	623.00	623.00	623.00	623.00	623.00
22.000	623.00	623.00	622.99	622.99	622.99
22.250	622.99	622.99	622.99	622.99	622.99
22.500	622.99	622.98	622.98	622.98	622.98
22.750	622.98	622.98	622.98	622.97	622.97
23.000	622.97	622.97	622.97	622.96	622.96
23.250	622.96	622.96	622.96	622.95	622.95
23.500	622.95	622.95	622.94	622.94	622.94
23.750	622.94	622.93	622.93	622.93	622.92
24.000	622.92	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Elevation | Return Event: 1 years
Label: SUB-6A (IN) | Storm Event: 1 year
Scenario: Post-Development 1 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	494.00	494.00	494.00	494.00	494.00
0.250	494.00	494.00	494.00	494.00	494.00
0.500	494.00	494.00	494.00	494.00	494.00
0.750	494.00	494.00	494.00	494.00	494.00
1.000	494.00	494.00	494.00	494.00	494.00
1.250	494.00	494.00	494.00	494.00	494.00
1.500	494.00	494.00	494.00	494.00	494.00
1.750	494.00	494.00	494.00	494.00	494.00
2.000	494.00	494.00	494.00	494.00	494.00
2.250	494.00	494.00	494.00	494.00	494.00
2.500	494.00	494.00	494.00	494.00	494.00
2.750	494.00	494.00	494.00	494.00	494.00
3.000	494.00	494.00	494.00	494.00	494.00
3.250	494.00	494.00	494.00	494.00	494.00
3.500	494.00	494.00	494.00	494.00	494.00
3.750	494.00	494.00	494.00	494.00	494.00
4.000	494.00	494.00	494.00	494.00	494.00
4.250	494.01	494.01	494.01	494.01	494.01
4.500	494.01	494.01	494.01	494.01	494.01
4.750	494.01	494.01	494.01	494.01	494.01
5.000	494.01	494.01	494.01	494.01	494.01
5.250	494.01	494.02	494.02	494.02	494.02
5.500	494.02	494.02	494.02	494.02	494.02
5.750	494.02	494.02	494.02	494.02	494.02
6.000	494.02	494.02	494.02	494.03	494.03
6.250	494.03	494.03	494.03	494.03	494.03
6.500	494.03	494.03	494.03	494.03	494.03
6.750	494.03	494.04	494.04	494.04	494.04
7.000	494.04	494.04	494.04	494.04	494.04
7.250	494.04	494.05	494.05	494.05	494.05
7.500	494.05	494.05	494.05	494.05	494.05
7.750	494.06	494.06	494.06	494.06	494.06
8.000	494.06	494.06	494.07	494.07	494.07
8.250	494.07	494.07	494.07	494.07	494.08
8.500	494.08	494.08	494.08	494.08	494.09
8.750	494.09	494.09	494.09	494.09	494.10
9.000	494.10	494.10	494.10	494.11	494.11
9.250	494.11	494.11	494.12	494.12	494.12
9.500	494.13	494.13	494.13	494.13	494.14
9.750	494.14	494.14	494.15	494.15	494.15

Stormwater Hydrologic Calculations

Subsection: Time vs. Elevation | Return Event: 1 years
Label: SUB-6A (IN) | Storm Event: 1 year
Scenario: Post-Development 1 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.000	494.16	494.16	494.16	494.17	494.17
10.250	494.17	494.18	494.18	494.18	494.19
10.500	494.19	494.20	494.20	494.21	494.21
10.750	494.22	494.22	494.23	494.23	494.24
11.000	494.24	494.25	494.25	494.26	494.27
11.250	494.27	494.28	494.29	494.30	494.31
11.500	494.32	494.34	494.35	494.38	494.40
11.750	494.44	494.49	494.52	494.55	494.59
12.000	494.64	494.72	494.79	494.87	494.92
12.250	494.97	495.00	495.03	495.05	495.07
12.500	495.09	495.10	495.11	495.11	495.12
12.750	495.12	495.12	495.12	495.12	495.13
13.000	495.13	495.13	495.13	495.13	495.13
13.250	495.12	495.12	495.12	495.12	495.12
13.500	495.12	495.12	495.11	495.11	495.11
13.750	495.11	495.11	495.10	495.10	495.10
14.000	495.10	495.09	495.09	495.09	495.08
14.250	495.08	495.08	495.07	495.07	495.07
14.500	495.06	495.06	495.06	495.05	495.05
14.750	495.04	495.04	495.04	495.03	495.03
15.000	495.02	495.02	495.02	495.01	495.01
15.250	495.00	495.00	494.99	494.99	494.98
15.500	494.98	494.97	494.97	494.96	494.96
15.750	494.95	494.95	494.94	494.94	494.93
16.000	494.93	494.92	494.92	494.91	494.91
16.250	494.90	494.90	494.89	494.89	494.88
16.500	494.87	494.87	494.86	494.86	494.85
16.750	494.85	494.84	494.83	494.83	494.82
17.000	494.82	494.81	494.80	494.80	494.79
17.250	494.79	494.78	494.77	494.77	494.76
17.500	494.76	494.75	494.74	494.74	494.73
17.750	494.72	494.72	494.71	494.70	494.70
18.000	494.69	494.69	494.68	494.67	494.67
18.250	494.66	494.65	494.65	494.64	494.63
18.500	494.63	494.62	494.61	494.61	494.60
18.750	494.59	494.59	494.58	494.57	494.57
19.000	494.56	494.55	494.55	494.54	494.53
19.250	494.53	494.52	494.51	494.51	494.50
19.500	494.48	494.47	494.46	494.45	494.43
19.750	494.42	494.41	494.40	494.39	494.38
20.000	494.37	494.36	494.35	494.34	494.33

Subsection: Time vs. Elevation — Return Event: 1 years
Label: SUB-6A (IN) — Storm Event: 1 year
Scenario: Post-Development 1 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.250	494.32	494.31	494.30	494.30	494.29
20.500	494.28	494.28	494.27	494.26	494.26
20.750	494.25	494.24	494.24	494.23	494.23
21.000	494.22	494.22	494.21	494.21	494.20
21.250	494.20	494.19	494.19	494.19	494.18
21.500	494.18	494.17	494.17	494.17	494.16
21.750	494.16	494.16	494.16	494.15	494.15
22.000	494.15	494.14	494.14	494.14	494.14
22.250	494.13	494.13	494.13	494.13	494.13
22.500	494.12	494.12	494.12	494.12	494.12
22.750	494.11	494.11	494.11	494.11	494.11
23.000	494.11	494.10	494.10	494.10	494.10
23.250	494.10	494.10	494.10	494.10	494.09
23.500	494.09	494.09	494.09	494.09	494.09
23.750	494.09	494.09	494.09	494.08	494.08
24.000	494.08	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Elevation | Return Event: 10 years
Label: SUB-6A (IN) | Storm Event: 10 year
Scenario: Post-Development 10 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	494.00	494.00	494.00	494.00	494.00
0.250	494.00	494.00	494.00	494.00	494.00
0.500	494.00	494.00	494.00	494.00	494.00
0.750	494.00	494.00	494.00	494.00	494.00
1.000	494.00	494.00	494.00	494.00	494.00
1.250	494.00	494.00	494.00	494.00	494.00
1.500	494.00	494.00	494.00	494.00	494.00
1.750	494.00	494.00	494.00	494.00	494.00
2.000	494.00	494.00	494.00	494.00	494.00
2.250	494.00	494.00	494.00	494.00	494.00
2.500	494.01	494.01	494.01	494.01	494.01
2.750	494.01	494.01	494.01	494.01	494.01
3.000	494.01	494.01	494.01	494.02	494.02
3.250	494.02	494.02	494.02	494.02	494.02
3.500	494.02	494.02	494.02	494.03	494.03
3.750	494.03	494.03	494.03	494.03	494.03
4.000	494.03	494.03	494.04	494.04	494.04
4.250	494.04	494.04	494.04	494.04	494.04
4.500	494.05	494.05	494.05	494.05	494.05
4.750	494.05	494.05	494.05	494.06	494.06
5.000	494.06	494.06	494.06	494.06	494.06
5.250	494.07	494.07	494.07	494.07	494.07
5.500	494.07	494.07	494.07	494.08	494.08
5.750	494.08	494.08	494.08	494.08	494.08
6.000	494.09	494.09	494.09	494.09	494.09
6.250	494.09	494.09	494.10	494.10	494.10
6.500	494.10	494.10	494.10	494.11	494.11
6.750	494.11	494.11	494.11	494.12	494.12
7.000	494.12	494.12	494.13	494.13	494.13
7.250	494.13	494.13	494.14	494.14	494.14
7.500	494.14	494.15	494.15	494.15	494.15
7.750	494.16	494.16	494.16	494.16	494.17
8.000	494.17	494.17	494.18	494.18	494.18
8.250	494.18	494.19	494.19	494.19	494.20
8.500	494.20	494.21	494.21	494.21	494.22
8.750	494.22	494.23	494.23	494.24	494.24
9.000	494.25	494.25	494.25	494.26	494.26
9.250	494.27	494.28	494.28	494.29	494.29
9.500	494.30	494.30	494.31	494.31	494.32
9.750	494.32	494.33	494.34	494.34	494.35

Subsection: Time vs. Elevation | Return Event: 10 years
Label: SUB-6A (IN) | Storm Event: 10 year
Scenario: Post-Development 10 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.000	494.35	494.36	494.37	494.37	494.38
10.250	494.39	494.39	494.40	494.41	494.42
10.500	494.43	494.43	494.44	494.45	494.46
10.750	494.47	494.48	494.49	494.50	494.50
11.000	494.51	494.51	494.52	494.53	494.53
11.250	494.54	494.55	494.56	494.57	494.58
11.500	494.60	494.61	494.63	494.65	494.68
11.750	494.72	494.77	494.83	494.89	494.98
12.000	495.10	495.25	495.40	495.55	495.67
12.250	495.75	495.80	495.84	495.87	495.89
12.500	495.90	495.90	495.89	495.88	495.87
12.750	495.86	495.84	495.83	495.81	495.80
13.000	495.78	495.77	495.75	495.74	495.72
13.250	495.71	495.70	495.68	495.67	495.66
13.500	495.64	495.63	495.62	495.61	495.60
13.750	495.59	495.58	495.57	495.56	495.55
14.000	495.54	495.53	495.52	495.51	495.51
14.250	495.50	495.49	495.48	495.48	495.47
14.500	495.46	495.45	495.45	495.44	495.43
14.750	495.43	495.42	495.41	495.41	495.40
15.000	495.39	495.39	495.38	495.37	495.37
15.250	495.36	495.35	495.35	495.34	495.33
15.500	495.33	495.32	495.32	495.31	495.30
15.750	495.30	495.29	495.29	495.28	495.27
16.000	495.27	495.26	495.26	495.25	495.24
16.250	495.24	495.23	495.23	495.22	495.22
16.500	495.21	495.21	495.20	495.20	495.19
16.750	495.19	495.18	495.18	495.17	495.17
17.000	495.16	495.16	495.15	495.15	495.15
17.250	495.14	495.14	495.13	495.13	495.12
17.500	495.12	495.11	495.11	495.11	495.10
17.750	495.10	495.09	495.09	495.08	495.08
18.000	495.07	495.07	495.06	495.06	495.05
18.250	495.04	495.04	495.03	495.03	495.02
18.500	495.02	495.01	495.01	495.00	495.00
18.750	494.99	494.99	494.98	494.98	494.97
19.000	494.97	494.96	494.95	494.95	494.94
19.250	494.94	494.93	494.93	494.92	494.92
19.500	494.91	494.91	494.90	494.89	494.89
19.750	494.88	494.88	494.87	494.87	494.86
20.000	494.86	494.85	494.84	494.84	494.83

Subsection: Time vs. Elevation
Return Event: 10 years
Label: SUB-6A (IN)
Storm Event: 10 year
Scenario: Post-Development 10 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.250	494.83	494.82	494.82	494.81	494.80
20.500	494.80	494.79	494.79	494.78	494.78
20.750	494.77	494.76	494.76	494.75	494.75
21.000	494.74	494.74	494.73	494.72	494.72
21.250	494.71	494.71	494.70	494.69	494.69
21.500	494.68	494.68	494.67	494.66	494.66
21.750	494.65	494.65	494.64	494.63	494.63
22.000	494.62	494.62	494.61	494.60	494.60
22.250	494.59	494.59	494.58	494.57	494.57
22.500	494.56	494.55	494.55	494.54	494.54
22.750	494.53	494.52	494.52	494.51	494.50
23.000	494.50	494.48	494.47	494.46	494.45
23.250	494.43	494.42	494.41	494.40	494.39
23.500	494.38	494.37	494.36	494.35	494.35
23.750	494.34	494.33	494.32	494.31	494.31
24.000	494.30	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Elevation | Return Event: 25 years
Label: SUB-6A (IN) | Storm Event: 25 year
Scenario: Post-Development 25 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	494.00	494.00	494.00	494.00	494.00
0.250	494.00	494.00	494.00	494.00	494.00
0.500	494.00	494.00	494.00	494.00	494.00
0.750	494.00	494.00	494.00	494.00	494.00
1.000	494.00	494.00	494.00	494.00	494.00
1.250	494.00	494.00	494.00	494.00	494.00
1.500	494.00	494.00	494.00	494.00	494.00
1.750	494.00	494.00	494.00	494.00	494.00
2.000	494.01	494.01	494.01	494.01	494.01
2.250	494.01	494.01	494.01	494.01	494.01
2.500	494.01	494.02	494.02	494.02	494.02
2.750	494.02	494.02	494.02	494.02	494.03
3.000	494.03	494.03	494.03	494.03	494.03
3.250	494.03	494.04	494.04	494.04	494.04
3.500	494.04	494.04	494.04	494.05	494.05
3.750	494.05	494.05	494.05	494.05	494.06
4.000	494.06	494.06	494.06	494.06	494.06
4.250	494.07	494.07	494.07	494.07	494.07
4.500	494.07	494.08	494.08	494.08	494.08
4.750	494.08	494.08	494.09	494.09	494.09
5.000	494.09	494.09	494.10	494.10	494.10
5.250	494.10	494.10	494.10	494.11	494.11
5.500	494.11	494.11	494.11	494.11	494.12
5.750	494.12	494.12	494.12	494.12	494.13
6.000	494.13	494.13	494.13	494.13	494.13
6.250	494.14	494.14	494.14	494.14	494.14
6.500	494.15	494.15	494.15	494.15	494.16
6.750	494.16	494.16	494.16	494.17	494.17
7.000	494.17	494.17	494.18	494.18	494.18
7.250	494.19	494.19	494.19	494.20	494.20
7.500	494.20	494.20	494.21	494.21	494.21
7.750	494.22	494.22	494.22	494.23	494.23
8.000	494.23	494.24	494.24	494.25	494.25
8.250	494.25	494.26	494.26	494.27	494.27
8.500	494.28	494.28	494.29	494.29	494.30
8.750	494.30	494.31	494.31	494.32	494.32
9.000	494.33	494.34	494.34	494.35	494.36
9.250	494.36	494.37	494.38	494.38	494.39
9.500	494.40	494.40	494.41	494.42	494.42
9.750	494.43	494.44	494.45	494.45	494.46

Subsection: Time vs. Elevation — Return Event: 25 years
Label: SUB-6A (IN) — Storm Event: 25 year
Scenario: Post-Development 25 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.000	494.47	494.48	494.48	494.49	494.50
10.250	494.50	494.51	494.51	494.52	494.52
10.500	494.53	494.54	494.54	494.55	494.56
10.750	494.56	494.57	494.58	494.59	494.60
11.000	494.60	494.61	494.62	494.63	494.65
11.250	494.66	494.67	494.69	494.70	494.72
11.500	494.74	494.76	494.79	494.82	494.86
11.750	494.91	494.98	495.05	495.14	495.25
12.000	495.41	495.60	495.80	495.98	496.12
12.250	496.21	496.27	496.31	496.33	496.33
12.500	496.33	496.31	496.28	496.25	496.21
12.750	496.18	496.15	496.12	496.09	496.06
13.000	496.04	496.01	495.98	495.96	495.94
13.250	495.92	495.90	495.88	495.86	495.84
13.500	495.82	495.81	495.79	495.77	495.76
13.750	495.74	495.73	495.71	495.70	495.69
14.000	495.67	495.66	495.65	495.64	495.62
14.250	495.61	495.60	495.59	495.58	495.57
14.500	495.56	495.55	495.54	495.54	495.53
14.750	495.52	495.51	495.50	495.50	495.49
15.000	495.48	495.48	495.47	495.46	495.46
15.250	495.45	495.44	495.44	495.43	495.42
15.500	495.42	495.41	495.40	495.40	495.39
15.750	495.38	495.38	495.37	495.36	495.36
16.000	495.35	495.34	495.34	495.33	495.32
16.250	495.32	495.31	495.31	495.30	495.29
16.500	495.29	495.28	495.28	495.27	495.27
16.750	495.26	495.26	495.25	495.24	495.24
17.000	495.23	495.23	495.22	495.22	495.21
17.250	495.21	495.21	495.20	495.20	495.19
17.500	495.19	495.18	495.18	495.17	495.17
17.750	495.16	495.16	495.16	495.15	495.15
18.000	495.14	495.14	495.13	495.13	495.13
18.250	495.12	495.12	495.11	495.11	495.10
18.500	495.10	495.09	495.09	495.09	495.08
18.750	495.08	495.07	495.07	495.06	495.06
19.000	495.05	495.05	495.04	495.04	495.03
19.250	495.03	495.02	495.02	495.01	495.01
19.500	495.01	495.00	495.00	494.99	494.99
19.750	494.98	494.98	494.97	494.97	494.96
20.000	494.96	494.95	494.95	494.94	494.94

Subsection: Time vs. Elevation | Return Event: 25 years
Label: SUB-6A (IN) | Storm Event: 25 year
Scenario: Post-Development 25 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.250	494.93	494.93	494.92	494.92	494.91
20.500	494.91	494.90	494.90	494.89	494.89
20.750	494.88	494.88	494.87	494.87	494.86
21.000	494.85	494.85	494.84	494.84	494.83
21.250	494.83	494.82	494.82	494.81	494.81
21.500	494.80	494.80	494.79	494.79	494.78
21.750	494.77	494.77	494.76	494.76	494.75
22.000	494.75	494.74	494.74	494.73	494.73
22.250	494.72	494.71	494.71	494.70	494.70
22.500	494.69	494.69	494.68	494.67	494.67
22.750	494.66	494.66	494.65	494.65	494.64
23.000	494.63	494.63	494.62	494.62	494.61
23.250	494.61	494.60	494.59	494.59	494.58
23.500	494.58	494.57	494.56	494.56	494.55
23.750	494.55	494.54	494.53	494.53	494.52
24.000	494.52	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Elevation — Return Event: 100 years
Label: SUB-6A (IN) — Storm Event: 100 year
Scenario: Post-Development 100 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	494.00	494.00	494.00	494.00	494.00
0.250	494.00	494.00	494.00	494.00	494.00
0.500	494.00	494.00	494.00	494.00	494.00
0.750	494.00	494.00	494.00	494.00	494.00
1.000	494.00	494.00	494.00	494.00	494.00
1.250	494.00	494.00	494.00	494.00	494.01
1.500	494.01	494.01	494.01	494.01	494.01
1.750	494.01	494.02	494.02	494.02	494.02
2.000	494.02	494.02	494.03	494.03	494.03
2.250	494.03	494.03	494.04	494.04	494.04
2.500	494.04	494.04	494.05	494.05	494.05
2.750	494.05	494.06	494.06	494.06	494.06
3.000	494.06	494.07	494.07	494.07	494.07
3.250	494.08	494.08	494.08	494.08	494.09
3.500	494.09	494.09	494.09	494.10	494.10
3.750	494.10	494.10	494.11	494.11	494.11
4.000	494.11	494.12	494.12	494.12	494.12
4.250	494.13	494.13	494.13	494.13	494.14
4.500	494.14	494.14	494.14	494.15	494.15
4.750	494.15	494.16	494.16	494.16	494.16
5.000	494.17	494.17	494.17	494.17	494.18
5.250	494.18	494.18	494.18	494.19	494.19
5.500	494.19	494.19	494.20	494.20	494.20
5.750	494.20	494.21	494.21	494.21	494.21
6.000	494.22	494.22	494.22	494.22	494.23
6.250	494.23	494.23	494.23	494.24	494.24
6.500	494.24	494.25	494.25	494.25	494.26
6.750	494.26	494.26	494.27	494.27	494.28
7.000	494.28	494.28	494.29	494.29	494.30
7.250	494.30	494.30	494.31	494.31	494.32
7.500	494.32	494.33	494.33	494.34	494.34
7.750	494.34	494.35	494.35	494.36	494.36
8.000	494.37	494.37	494.38	494.38	494.39
8.250	494.39	494.40	494.41	494.41	494.42
8.500	494.43	494.43	494.44	494.45	494.46
8.750	494.46	494.47	494.48	494.49	494.50
9.000	494.50	494.51	494.51	494.52	494.52
9.250	494.53	494.53	494.54	494.54	494.55
9.500	494.55	494.56	494.57	494.57	494.58
9.750	494.59	494.59	494.60	494.61	494.62

Subsection: Time vs. Elevation — Return Event: 100 years
Label: SUB-6A (IN) — Storm Event: 100 year
Scenario: Post-Development 100 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.000	494.63	494.63	494.64	494.65	494.66
10.250	494.67	494.68	494.69	494.70	494.72
10.500	494.73	494.74	494.75	494.77	494.78
10.750	494.80	494.81	494.83	494.84	494.86
11.000	494.87	494.89	494.91	494.93	494.95
11.250	494.97	494.99	495.02	495.05	495.08
11.500	495.11	495.14	495.19	495.24	495.30
11.750	495.38	495.47	495.59	495.71	495.87
12.000	496.08	496.37	496.70	497.01	497.24
12.250	497.34	497.36	497.33	497.28	497.21
12.500	497.11	497.00	496.91	496.82	496.73
12.750	496.65	496.58	496.51	496.46	496.42
13.000	496.37	496.33	496.29	496.25	496.22
13.250	496.18	496.15	496.12	496.09	496.06
13.500	496.04	496.01	495.99	495.97	495.95
13.750	495.94	495.92	495.90	495.88	495.87
14.000	495.85	495.83	495.82	495.80	495.79
14.250	495.78	495.76	495.75	495.74	495.72
14.500	495.71	495.70	495.69	495.68	495.67
14.750	495.66	495.65	495.64	495.63	495.62
15.000	495.61	495.60	495.59	495.58	495.58
15.250	495.57	495.56	495.55	495.55	495.54
15.500	495.53	495.52	495.52	495.51	495.50
15.750	495.50	495.49	495.49	495.48	495.47
16.000	495.47	495.46	495.45	495.45	495.44
16.250	495.44	495.43	495.42	495.42	495.41
16.500	495.40	495.40	495.39	495.39	495.38
16.750	495.38	495.37	495.36	495.36	495.35
17.000	495.35	495.34	495.34	495.33	495.33
17.250	495.32	495.32	495.31	495.30	495.30
17.500	495.29	495.29	495.28	495.28	495.27
17.750	495.27	495.26	495.26	495.25	495.25
18.000	495.24	495.24	495.24	495.23	495.23
18.250	495.22	495.22	495.21	495.21	495.20
18.500	495.20	495.20	495.19	495.19	495.18
18.750	495.18	495.18	495.17	495.17	495.17
19.000	495.16	495.16	495.16	495.15	495.15
19.250	495.15	495.14	495.14	495.14	495.13
19.500	495.13	495.13	495.12	495.12	495.12
19.750	495.11	495.11	495.10	495.10	495.10
20.000	495.09	495.09	495.09	495.08	495.08

Subsection: Time vs. Elevation
Return Event: 100 years
Label: SUB-6A (IN)
Storm Event: 100 year
Scenario: Post-Development 100 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.250	495.08	495.07	495.07	495.06	495.06
20.500	495.06	495.05	495.05	495.04	495.04
20.750	495.04	495.03	495.03	495.02	495.02
21.000	495.02	495.01	495.01	495.00	495.00
21.250	495.00	494.99	494.99	494.98	494.98
21.500	494.98	494.97	494.97	494.96	494.96
21.750	494.95	494.95	494.95	494.94	494.94
22.000	494.93	494.93	494.92	494.92	494.92
22.250	494.91	494.91	494.90	494.90	494.89
22.500	494.89	494.88	494.88	494.88	494.87
22.750	494.87	494.86	494.86	494.85	494.85
23.000	494.84	494.84	494.83	494.83	494.82
23.250	494.82	494.81	494.81	494.80	494.80
23.500	494.79	494.79	494.78	494.78	494.77
23.750	494.77	494.76	494.76	494.75	494.75
24.000	494.74	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Volume | Return Event: 1 years
Label: IB-1C-10 | Storm Event: 1 year
Scenario: Post-Development 1 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
0.000	0	0	0	0	0
0.250	0	0	0	0	0
0.500	0	0	0	0	0
0.750	0	0	0	0	0
1.000	0	0	0	0	0
1.250	0	0	0	0	0
1.500	0	0	0	0	0
1.750	0	0	0	0	0
2.000	0	0	0	0	0
2.250	0	0	0	0	0
2.500	0	0	0	0	0
2.750	0	0	0	0	0
3.000	0	0	0	0	0
3.250	0	0	0	0	0
3.500	0	0	0	0	0
3.750	0	0	0	0	0
4.000	0	0	0	0	0
4.250	0	0	0	0	0
4.500	0	0	0	0	0
4.750	0	0	0	0	0
5.000	0	0	0	0	0
5.250	0	0	0	0	0
5.500	0	0	0	0	0
5.750	0	0	0	0	0
6.000	0	0	0	0	0
6.250	0	0	0	0	0
6.500	0	0	0	0	0
6.750	0	0	0	0	0
7.000	0	0	0	0	0
7.250	0	0	0	0	0
7.500	0	0	0	0	0
7.750	0	0	0	0	0
8.000	0	0	0	0	0
8.250	0	0	0	0	0
8.500	0	0	0	0	0
8.750	0	0	0	0	0
9.000	0	0	0	0	0
9.250	0	0	0	0	0
9.500	0	0	0	0	0
9.750	0	0	0	0	0

Stormwater Hydrologic Calculations

Subsection: Time vs. Volume | Return Event: 1 years
Label: IB-1C-10 | Storm Event: 1 year
Scenario: Post-Development 1 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
10.000	0	0	0	0	0
10.250	0	0	0	0	0
10.500	0	0	1	1	2
10.750	4	5	7	9	10
11.000	12	14	17	19	22
11.250	25	29	33	38	43
11.500	48	55	65	79	102
11.750	133	175	237	344	533
12.000	869	1,409	2,149	3,023	3,905
12.250	4,678	5,328	5,876	6,344	6,732
12.500	7,047	7,289	7,469	7,591	7,679
12.750	7,744	7,794	7,833	7,862	7,883
13.000	7,895	7,898	7,894	7,884	7,870
13.250	7,852	7,832	7,809	7,784	7,757
13.500	7,728	7,697	7,664	7,629	7,592
13.750	7,553	7,512	7,469	7,422	7,372
14.000	7,321	7,268	7,212	7,156	7,097
14.250	7,038	6,978	6,917	6,854	6,789
14.500	6,723	6,656	6,589	6,521	6,452
14.750	6,383	6,311	6,238	6,163	6,088
15.000	6,012	5,935	5,858	5,779	5,697
15.250	5,614	5,531	5,448	5,364	5,278
15.500	5,189	5,099	5,009	4,919	4,828
15.750	4,733	4,637	4,541	4,445	4,348
16.000	4,246	4,145	4,044	3,943	3,837
16.250	3,732	3,628	3,524	3,416	3,309
16.500	3,203	3,096	2,986	2,878	2,770
16.750	2,659	2,548	2,439	2,327	2,215
17.000	2,103	1,990	1,876	1,764	1,648
17.250	1,533	1,418	1,301	1,185	1,067
17.500	950	831	712	593	473
17.750	352	232	136	85	64
18.000	54	50	47	46	45
18.250	45	45	44	44	44
18.500	44	43	43	43	43
18.750	43	42	42	42	42
19.000	42	41	41	41	41
19.250	41	41	40	40	40
19.500	40	40	39	39	39
19.750	39	39	38	38	38
20.000	38	38	37	37	37

Subsection: Time vs. Volume
Return Event: 1 years
Label: IB-1C-10
Storm Event: 1 year
Scenario: Post-Development 1 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
20.250	37	37	37	36	36
20.500	36	36	36	36	35
20.750	35	35	35	35	35
21.000	35	34	34	34	34
21.250	34	34	34	33	33
21.500	33	33	33	33	32
21.750	32	32	32	32	32
22.000	32	31	31	31	31
22.250	31	31	30	30	30
22.500	30	30	30	30	29
22.750	29	29	29	29	29
23.000	28	28	28	28	28
23.250	28	28	27	27	27
23.500	27	27	27	26	26
23.750	26	26	26	26	25
24.000	25	(N/A)	(N/A)	(N/A)	(N/A)

Stormwater Hydrologic Calculations

Subsection: Time vs. Volume | Return Event: 10 years
Label: IB-1C-10 | Storm Event: 10 year
Scenario: Post-Development 10 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
0.000	0	0	0	0	0
0.250	0	0	0	0	0
0.500	0	0	0	0	0
0.750	0	0	0	0	0
1.000	0	0	0	0	0
1.250	0	0	0	0	0
1.500	0	0	0	0	0
1.750	0	0	0	0	0
2.000	0	0	0	0	0
2.250	0	0	0	0	0
2.500	0	0	0	0	0
2.750	0	0	0	0	0
3.000	0	0	0	0	0
3.250	0	0	0	0	0
3.500	0	0	0	0	0
3.750	0	0	0	0	0
4.000	0	0	0	0	0
4.250	0	0	0	0	0
4.500	0	0	0	0	0
4.750	0	0	0	0	0
5.000	0	0	0	0	0
5.250	0	0	0	0	0
5.500	0	0	0	0	0
5.750	0	0	0	0	0
6.000	0	0	0	0	0
6.250	0	0	0	0	0
6.500	0	0	0	0	0
6.750	0	0	0	0	0
7.000	0	0	0	0	0
7.250	0	0	0	0	0
7.500	0	0	0	0	0
7.750	0	0	0	0	0
8.000	0	0	0	0	0
8.250	0	1	2	2	4
8.500	5	6	7	9	10
8.750	12	13	15	16	18
9.000	20	22	24	26	28
9.250	30	32	34	37	39
9.500	42	44	47	49	52
9.750	55	57	60	63	66

Subsection: Time vs. Volume

Return Event: 10 years

Label: IB-1C-10

Storm Event: 10 year

Scenario: Post-Development 10 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
10.000	69	73	76	79	83
10.250	87	92	96	101	106
10.500	112	117	123	129	134
10.750	141	147	153	160	166
11.000	173	181	189	199	214
11.250	241	282	338	412	499
11.500	606	734	903	1,134	1,457
11.750	1,899	2,486	3,234	4,163	5,345
12.000	6,962	9,174	11,915	14,696	16,838
12.250	18,257	19,194	19,769	20,068	20,128
12.500	19,975	19,630	19,131	18,518	17,841
12.750	17,137	16,432	15,821	15,364	15,013
13.000	14,737	14,510	14,322	14,165	14,035
13.250	13,929	13,842	13,765	13,698	13,639
13.500	13,586	13,539	13,495	13,455	13,418
13.750	13,382	13,349	13,316	13,285	13,255
14.000	13,225	13,196	13,167	13,140	13,115
14.250	13,092	13,070	13,050	13,031	13,013
14.500	12,993	12,974	12,953	12,933	12,912
14.750	12,891	12,869	12,848	12,826	12,804
15.000	12,781	12,759	12,737	12,714	12,691
15.250	12,668	12,645	12,622	12,599	12,576
15.500	12,552	12,529	12,505	12,482	12,458
15.750	12,435	12,411	12,387	12,364	12,340
16.000	12,316	12,292	12,269	12,246	12,223
16.250	12,197	12,171	12,143	12,114	12,083
16.500	12,051	12,018	11,984	11,949	11,912
16.750	11,874	11,835	11,794	11,752	11,710
17.000	11,665	11,620	11,574	11,526	11,477
17.250	11,425	11,372	11,318	11,263	11,206
17.500	11,148	11,089	11,029	10,968	10,905
17.750	10,842	10,778	10,711	10,641	10,571
18.000	10,500	10,427	10,354	10,280	10,205
18.250	10,130	10,055	9,978	9,900	9,822
18.500	9,744	9,666	9,587	9,509	9,431
18.750	9,352	9,271	9,189	9,108	9,026
19.000	8,945	8,864	8,782	8,701	8,616
19.250	8,531	8,447	8,362	8,278	8,193
19.500	8,109	8,023	7,935	7,848	7,760
19.750	7,673	7,586	7,499	7,410	7,319
20.000	7,229	7,139	7,050	6,960	6,870

Subsection: Time vs. Volume
Return Event: 10 years
Label: IB-1C-10
Storm Event: 10 year
Scenario: Post-Development 10 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
20.250	6,777	6,685	6,593	6,501	6,410
20.500	6,317	6,223	6,129	6,035	5,942
20.750	5,849	5,753	5,657	5,561	5,466
21.000	5,372	5,276	5,178	5,081	4,985
21.250	4,889	4,791	4,692	4,593	4,496
21.500	4,398	4,298	4,198	4,098	3,999
21.750	3,899	3,797	3,696	3,596	3,496
22.000	3,392	3,290	3,189	3,086	2,982
22.250	2,879	2,777	2,672	2,567	2,463
22.500	2,359	2,252	2,148	2,043	1,936
22.750	1,830	1,724	1,616	1,509	1,402
23.000	1,293	1,187	1,077	968	860
23.250	750	642	530	421	309
23.500	201	120	86	72	65
23.750	62	61	60	60	59
24.000	59	(N/A)	(N/A)	(N/A)	(N/A)

Stormwater Hydrologic Calculations

Subsection: Time vs. Volume
Label: IB-1C-10
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
0.000	0	0	0	0	0
0.250	0	0	0	0	0
0.500	0	0	0	0	0
0.750	0	0	0	0	0
1.000	0	0	0	0	0
1.250	0	0	0	0	0
1.500	0	0	0	0	0
1.750	0	0	0	0	0
2.000	0	0	0	0	0
2.250	0	0	0	0	0
2.500	0	0	0	0	0
2.750	0	0	0	0	0
3.000	0	0	0	0	0
3.250	0	0	0	0	0
3.500	0	0	0	0	0
3.750	0	0	0	0	0
4.000	0	0	0	0	0
4.250	0	0	0	0	0
4.500	0	0	0	0	0
4.750	0	0	0	0	0
5.000	0	0	0	0	0
5.250	0	0	0	0	0
5.500	0	0	0	0	0
5.750	0	0	0	0	0
6.000	0	0	0	0	0
6.250	0	0	0	0	0
6.500	0	0	0	0	0
6.750	0	0	0	0	0
7.000	0	0	0	0	0
7.250	0	1	1	2	3
7.500	4	5	6	8	9
7.750	10	11	13	14	15
8.000	17	18	19	21	23
8.250	24	26	28	30	32
8.500	35	37	39	42	44
8.750	47	49	52	55	58
9.000	61	64	67	71	74
9.250	77	81	84	88	92
9.500	96	100	104	108	112
9.750	116	120	125	129	134

Subsection: Time vs. Volume | Return Event: 25 years
Label: IB-1C-10 | Storm Event: 25 year
Scenario: Post-Development 25 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
10.000	139	143	148	154	160
10.250	166	173	181	188	196
10.500	205	218	238	264	298
10.750	339	389	445	507	579
11.000	659	745	844	956	1,083
11.250	1,230	1,398	1,588	1,803	2,042
11.500	2,305	2,601	2,957	3,408	3,998
11.750	4,767	5,746	6,960	8,431	10,257
12.000	12,673	15,544	18,566	21,666	24,462
12.250	26,580	28,030	28,978	29,540	29,768
12.500	29,691	29,339	28,756	28,000	27,136
12.750	26,218	25,276	24,328	23,384	22,451
13.000	21,531	20,626	19,739	18,875	18,039
13.250	17,232	16,458	15,805	15,331	14,982
13.500	14,720	14,516	14,354	14,225	14,120
13.750	14,033	13,960	13,898	13,843	13,791
14.000	13,742	13,696	13,652	13,610	13,572
14.250	13,537	13,505	13,475	13,448	13,423
14.500	13,399	13,376	13,354	13,333	13,313
14.750	13,293	13,273	13,254	13,235	13,216
15.000	13,198	13,179	13,161	13,143	13,124
15.250	13,106	13,088	13,070	13,052	13,034
15.500	13,014	12,993	12,971	12,948	12,923
15.750	12,898	12,871	12,844	12,816	12,788
16.000	12,759	12,729	12,700	12,671	12,643
16.250	12,616	12,591	12,566	12,543	12,521
16.500	12,500	12,479	12,459	12,440	12,422
16.750	12,404	12,386	12,369	12,352	12,336
17.000	12,320	12,304	12,288	12,273	12,257
17.250	12,242	12,226	12,208	12,188	12,166
17.500	12,143	12,118	12,091	12,063	12,032
17.750	12,000	11,966	11,931	11,893	11,855
18.000	11,814	11,772	11,728	11,682	11,636
18.250	11,590	11,543	11,495	11,446	11,396
18.500	11,345	11,294	11,242	11,191	11,138
18.750	11,086	11,033	10,979	10,926	10,871
19.000	10,817	10,762	10,705	10,648	10,590
19.250	10,531	10,472	10,413	10,354	10,294
19.500	10,234	10,174	10,113	10,052	9,989
19.750	9,924	9,860	9,795	9,730	9,665
20.000	9,599	9,533	9,467	9,401	9,334

Stormwater Hydrologic Calculations

Subsection: Time vs. Volume | Return Event: 25 years
Label: IB-1C-10 | Storm Event: 25 year
Scenario: Post-Development 25 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
20.250	9,264	9,195	9,126	9,056	8,986
20.500	8,916	8,846	8,776	8,706	8,633
20.750	8,560	8,486	8,413	8,339	8,266
21.000	8,193	8,119	8,045	7,968	7,891
21.250	7,815	7,738	7,662	7,585	7,509
21.500	7,430	7,350	7,270	7,191	7,111
21.750	7,031	6,952	6,872	6,789	6,706
22.000	6,624	6,542	6,459	6,377	6,293
22.250	6,208	6,122	6,037	5,952	5,868
22.500	5,782	5,694	5,606	5,519	5,432
22.750	5,345	5,256	5,165	5,075	4,986
23.000	4,897	4,807	4,714	4,622	4,530
23.250	4,439	4,347	4,252	4,158	4,065
23.500	3,972	3,877	3,781	3,685	3,590
23.750	3,495	3,396	3,299	3,202	3,105
24.000	3,005	(N/A)	(N/A)	(N/A)	(N/A)

Stormwater Hydrologic Calculations

Subsection: Time vs. Volume — Return Event: 100 years
Label: IB-1C-10 — Storm Event: 100 year
Scenario: Post-Development 100 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
0.000	0	0	0	0	0
0.250	0	0	0	0	0
0.500	0	0	0	0	0
0.750	0	0	0	0	0
1.000	0	0	0	0	0
1.250	0	0	0	0	0
1.500	0	0	0	0	0
1.750	0	0	0	0	0
2.000	0	0	0	0	0
2.250	0	0	0	0	0
2.500	0	0	0	0	0
2.750	0	0	0	0	0
3.000	0	0	0	0	0
3.250	0	0	0	0	0
3.500	0	0	0	0	0
3.750	0	0	0	0	0
4.000	0	0	0	0	0
4.250	0	0	0	0	0
4.500	0	0	0	0	0
4.750	0	0	0	0	0
5.000	0	0	0	0	0
5.250	0	0	0	0	0
5.500	0	0	0	0	0
5.750	1	1	2	3	4
6.000	5	6	7	8	9
6.250	10	12	13	14	16
6.500	17	18	20	21	23
6.750	25	26	28	30	32
7.000	33	35	37	39	41
7.250	43	45	48	50	52
7.500	54	57	59	61	64
7.750	66	69	71	74	77
8.000	79	82	85	88	92
8.250	95	99	104	108	112
8.500	117	122	127	132	137
8.750	142	148	153	159	165
9.000	171	177	183	189	196
9.250	202	211	225	245	269
9.500	300	337	379	428	480
9.750	540	606	678	754	839

Subsection: Time vs. Volume | Return Event: 100 years
Label: IB-1C-10 | Storm Event: 100 year
Scenario: Post-Development 100 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
10.000	930	1,025	1,130	1,241	1,361
10.250	1,491	1,630	1,781	1,941	2,113
10.500	2,295	2,490	2,696	2,912	3,143
10.750	3,382	3,636	3,903	4,179	4,470
11.000	4,774	5,090	5,426	5,785	6,168
11.250	6,586	7,042	7,537	8,072	8,646
11.500	9,263	9,937	10,712	11,649	12,792
11.750	14,075	15,390	16,715	18,236	20,233
12.000	23,101	27,140	32,129	37,479	42,369
12.250	46,188	48,934	50,876	52,195	52,977
12.500	53,268	53,113	52,580	51,756	50,741
12.750	49,616	48,429	47,202	45,949	44,673
13.000	43,378	42,070	40,753	39,434	38,125
13.250	36,831	35,556	34,303	33,073	31,867
13.500	30,684	29,527	28,394	27,287	26,204
13.750	25,147	24,117	23,120	22,157	21,226
14.000	20,329	19,463	18,630	17,830	17,063
14.250	16,342	15,749	15,322	15,007	14,772
14.500	14,592	14,450	14,338	14,247	14,172
14.750	14,111	14,058	14,013	13,974	13,938
15.000	13,906	13,876	13,848	13,820	13,792
15.250	13,764	13,736	13,707	13,679	13,650
15.500	13,622	13,594	13,565	13,537	13,509
15.750	13,480	13,452	13,424	13,395	13,367
16.000	13,339	13,310	13,283	13,257	13,232
16.250	13,208	13,187	13,167	13,149	13,132
16.500	13,115	13,100	13,085	13,071	13,057
16.750	13,044	13,030	13,016	13,001	12,986
17.000	12,969	12,952	12,934	12,916	12,897
17.250	12,878	12,859	12,839	12,819	12,799
17.500	12,779	12,758	12,737	12,716	12,695
17.750	12,674	12,653	12,632	12,610	12,589
18.000	12,568	12,546	12,525	12,504	12,484
18.250	12,466	12,449	12,433	12,418	12,404
18.500	12,391	12,378	12,367	12,355	12,345
18.750	12,335	12,325	12,316	12,307	12,298
19.000	12,290	12,282	12,274	12,266	12,258
19.250	12,251	12,244	12,236	12,228	12,219
19.500	12,209	12,198	12,187	12,175	12,162
19.750	12,148	12,133	12,118	12,101	12,084
20.000	12,066	12,048	12,028	12,008	11,987

Subsection: Time vs. Volume
Return Event: 100 years
Label: IB-1C-10
Storm Event: 100 year
Scenario: Post-Development 100 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
20.250	11,966	11,944	11,922	11,898	11,875
20.500	11,850	11,825	11,800	11,774	11,747
20.750	11,720	11,692	11,663	11,634	11,605
21.000	11,575	11,544	11,514	11,482	11,449
21.250	11,415	11,380	11,345	11,310	11,273
21.500	11,237	11,199	11,161	11,123	11,084
21.750	11,044	11,004	10,964	10,924	10,882
22.000	10,840	10,798	10,755	10,710	10,664
22.250	10,618	10,572	10,524	10,476	10,428
22.500	10,379	10,330	10,281	10,231	10,180
22.750	10,130	10,078	10,026	9,971	9,917
23.000	9,861	9,806	9,750	9,693	9,635
23.250	9,578	9,520	9,462	9,403	9,344
23.500	9,282	9,220	9,157	9,094	9,031
23.750	8,967	8,903	8,839	8,774	8,709
24.000	8,641	(N/A)	(N/A)	(N/A)	(N/A)

Stormwater Hydrologic Calculations

Subsection: Time vs. Volume | Return Event: 1 years
Label: IB-1C-2 | Storm Event: 1 year
Scenario: Post-Development 1 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
0.000	0	0	0	0	0
0.250	0	0	0	0	0
0.500	0	0	0	0	0
0.750	0	0	0	0	0
1.000	0	0	0	0	0
1.250	0	0	0	0	0
1.500	0	0	0	0	0
1.750	0	0	0	0	0
2.000	0	0	0	0	0
2.250	0	0	0	0	0
2.500	0	0	0	0	0
2.750	0	0	0	0	0
3.000	0	0	0	0	0
3.250	0	0	0	0	0
3.500	0	0	0	0	0
3.750	0	0	0	0	0
4.000	0	0	0	0	0
4.250	0	0	0	0	0
4.500	0	0	0	0	0
4.750	0	0	0	0	0
5.000	0	0	0	0	0
5.250	0	0	0	0	0
5.500	0	0	0	0	0
5.750	0	0	0	0	0
6.000	0	0	0	0	0
6.250	0	0	0	0	0
6.500	0	0	0	0	0
6.750	0	0	0	0	0
7.000	0	0	0	0	0
7.250	0	0	0	0	0
7.500	0	0	0	0	0
7.750	0	0	0	0	0
8.000	0	0	0	0	0
8.250	0	0	0	0	0
8.500	0	0	0	0	0
8.750	0	0	0	0	0
9.000	0	0	0	0	0
9.250	0	0	0	0	0
9.500	0	0	0	0	0
9.750	0	0	0	0	1

Subsection: Time vs. Volume | Return Event: 1 years
Label: IB-1C-2 | Storm Event: 1 year
Scenario: Post-Development 1 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
10.000	3	5	7	9	12
10.250	15	19	22	26	30
10.500	34	39	44	49	54
10.750	59	65	71	77	83
11.000	90	97	105	113	124
11.250	135	148	163	178	195
11.500	214	237	271	322	397
11.750	505	666	894	1,197	1,644
12.000	2,362	3,352	4,508	5,681	6,657
12.250	7,411	8,043	8,587	9,052	9,437
12.500	9,739	9,966	10,136	10,266	10,376
12.750	10,475	10,565	10,645	10,717	10,779
13.000	10,832	10,877	10,916	10,949	10,980
13.250	11,008	11,033	11,057	11,078	11,097
13.500	11,113	11,128	11,140	11,149	11,157
13.750	11,162	11,164	11,164	11,162	11,157
14.000	11,149	11,140	11,128	11,115	11,100
14.250	11,084	11,068	11,049	11,030	11,010
14.500	10,988	10,966	10,942	10,917	10,891
14.750	10,863	10,835	10,805	10,774	10,742
15.000	10,709	10,675	10,639	10,602	10,563
15.250	10,524	10,483	10,441	10,398	10,353
15.500	10,307	10,260	10,212	10,163	10,112
15.750	10,060	10,006	9,951	9,895	9,838
16.000	9,779	9,720	9,659	9,598	9,535
16.250	9,472	9,409	9,345	9,280	9,215
16.500	9,150	9,084	9,017	8,949	8,881
16.750	8,813	8,744	8,674	8,605	8,534
17.000	8,462	8,391	8,318	8,245	8,172
17.250	8,098	8,023	7,948	7,872	7,796
17.500	7,719	7,641	7,564	7,485	7,405
17.750	7,325	7,245	7,164	7,083	7,001
18.000	6,918	6,834	6,751	6,667	6,583
18.250	6,498	6,413	6,328	6,244	6,159
18.500	6,074	5,988	5,902	5,816	5,731
18.750	5,645	5,559	5,472	5,385	5,298
19.000	5,212	5,125	5,037	4,950	4,862
19.250	4,774	4,687	4,599	4,510	4,422
19.500	4,333	4,244	4,155	4,066	3,977
19.750	3,887	3,798	3,708	3,618	3,528
20.000	3,437	3,347	3,256	3,166	3,074

Subsection: Time vs. Volume | Return Event: 1 years
Label: IB-1C-2 | Storm Event: 1 year
Scenario: Post-Development 1 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
20.250	2,983	2,892	2,801	2,710	2,618
20.500	2,526	2,434	2,342	2,251	2,158
20.750	2,065	1,972	1,880	1,788	1,694
21.000	1,601	1,508	1,415	1,322	1,228
21.250	1,134	1,041	947	853	759
21.500	664	570	476	387	316
21.750	261	221	190	167	149
22.000	136	125	118	112	107
22.250	103	100	98	96	95
22.500	94	93	92	91	90
22.750	90	89	88	88	87
23.000	87	86	86	85	85
23.250	84	84	83	83	82
23.500	82	81	81	80	80
23.750	80	79	79	78	77
24.000	77	(N/A)	(N/A)	(N/A)	(N/A)

Stormwater Hydrologic Calculations

Subsection: Time vs. Volume | Return Event: 10 years
Label: IB-1C-2 | Storm Event: 10 year
Scenario: Post-Development 10 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
0.000	0	0	0	0	0
0.250	0	0	0	0	0
0.500	0	0	0	0	0
0.750	0	0	0	0	0
1.000	0	0	0	0	0
1.250	0	0	0	0	0
1.500	0	0	0	0	0
1.750	0	0	0	0	0
2.000	0	0	0	0	0
2.250	0	0	0	0	0
2.500	0	0	0	0	0
2.750	0	0	0	0	0
3.000	0	0	0	0	0
3.250	0	0	0	0	0
3.500	0	0	0	0	0
3.750	0	0	0	0	0
4.000	0	0	0	0	0
4.250	0	0	0	0	0
4.500	0	0	0	0	0
4.750	0	0	0	0	0
5.000	0	0	0	0	0
5.250	0	0	0	0	0
5.500	0	0	0	0	0
5.750	0	0	0	0	0
6.000	0	0	0	0	0
6.250	0	0	0	0	0
6.500	0	0	0	0	0
6.750	0	0	0	0	0
7.000	0	0	0	0	0
7.250	0	0	0	0	0
7.500	1	2	4	5	7
7.750	9	12	14	17	19
8.000	22	25	28	31	34
8.250	37	41	45	49	53
8.500	57	61	66	71	76
8.750	81	86	92	97	103
9.000	109	115	122	128	135
9.250	142	149	156	164	171
9.500	179	187	195	203	211
9.750	220	229	238	247	256

Subsection: Time vs. Volume | Return Event: 10 years
Label: IB-1C-2 | Storm Event: 10 year
Scenario: Post-Development 10 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
10.000	265	275	285	296	308
10.250	320	333	347	362	377
10.500	393	409	426	444	466
10.750	493	526	564	608	658
11.000	714	778	851	935	1,034
11.250	1,149	1,281	1,430	1,597	1,784
11.500	1,989	2,231	2,540	2,948	3,497
11.750	4,208	5,096	6,174	7,458	9,136
12.000	11,555	14,303	16,530	18,067	18,817
12.250	18,872	18,596	18,137	17,549	16,857
12.500	16,073	15,333	14,782	14,402	14,142
12.750	13,962	13,833	13,732	13,648	13,575
13.000	13,508	13,448	13,395	13,350	13,314
13.250	13,283	13,256	13,231	13,209	13,188
13.500	13,167	13,148	13,129	13,110	13,092
13.750	13,073	13,055	13,037	13,018	13,000
14.000	12,982	12,964	12,947	12,931	12,917
14.250	12,904	12,893	12,882	12,872	12,862
14.500	12,853	12,843	12,834	12,825	12,816
14.750	12,807	12,799	12,790	12,780	12,770
15.000	12,759	12,747	12,735	12,721	12,707
15.250	12,693	12,679	12,664	12,649	12,633
15.500	12,618	12,602	12,586	12,570	12,554
15.750	12,538	12,522	12,505	12,489	12,472
16.000	12,456	12,440	12,424	12,409	12,395
16.250	12,382	12,370	12,359	12,349	12,339
16.500	12,329	12,320	12,311	12,303	12,294
16.750	12,286	12,278	12,270	12,263	12,255
17.000	12,247	12,239	12,229	12,218	12,206
17.250	12,192	12,177	12,161	12,143	12,124
17.500	12,104	12,082	12,059	12,035	12,009
17.750	11,982	11,954	11,925	11,894	11,862
18.000	11,828	11,794	11,758	11,721	11,684
18.250	11,647	11,609	11,571	11,532	11,493
18.500	11,454	11,414	11,374	11,334	11,293
18.750	11,251	11,210	11,168	11,125	11,082
19.000	11,039	10,995	10,951	10,907	10,862
19.250	10,817	10,772	10,726	10,679	10,633
19.500	10,585	10,538	10,490	10,441	10,392
19.750	10,343	10,294	10,244	10,194	10,143
20.000	10,092	10,040	9,988	9,936	9,884

Subsection: Time vs. Volume
Return Event: 10 years
Label: IB-1C-2
Storm Event: 10 year
Scenario: Post-Development 10 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
20.250	9,831	9,778	9,725	9,671	9,617
20.500	9,563	9,508	9,453	9,398	9,343
20.750	9,287	9,231	9,174	9,118	9,061
21.000	9,003	8,946	8,888	8,830	8,772
21.250	8,713	8,654	8,595	8,535	8,475
21.500	8,415	8,354	8,293	8,232	8,171
21.750	8,109	8,047	7,985	7,922	7,859
22.000	7,796	7,733	7,669	7,605	7,541
22.250	7,476	7,411	7,345	7,279	7,214
22.500	7,148	7,081	7,014	6,947	6,880
22.750	6,812	6,744	6,676	6,607	6,539
23.000	6,469	6,400	6,330	6,259	6,189
23.250	6,118	6,047	5,976	5,904	5,832
23.500	5,760	5,688	5,615	5,542	5,468
23.750	5,394	5,320	5,246	5,172	5,097
24.000	5,021	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Volume
Label: IB-1C-2
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 year

Time vs. Volume (ft^3)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft^3)	Volume (ft^3)	Volume (ft^3)	Volume (ft^3)	Volume (ft^3)
0.000	0	0	0	0	0
0.250	0	0	0	0	0
0.500	0	0	0	0	0
0.750	0	0	0	0	0
1.000	0	0	0	0	0
1.250	0	0	0	0	0
1.500	0	0	0	0	0
1.750	0	0	0	0	0
2.000	0	0	0	0	0
2.250	0	0	0	0	0
2.500	0	0	0	0	0
2.750	0	0	0	0	0
3.000	0	0	0	0	0
3.250	0	0	0	0	0
3.500	0	0	0	0	0
3.750	0	0	0	0	0
4.000	0	0	0	0	0
4.250	0	0	0	0	0
4.500	0	0	0	0	0
4.750	0	0	0	0	0
5.000	0	0	0	0	0
5.250	0	0	0	0	0
5.500	0	0	0	0	0
5.750	0	0	0	0	0
6.000	0	0	0	0	0
6.250	0	0	0	0	0
6.500	1	2	3	5	7
6.750	9	11	14	16	19
7.000	22	24	27	31	34
7.250	37	40	44	47	51
7.500	54	58	62	66	70
7.750	74	78	82	86	90
8.000	95	99	104	109	115
8.250	120	126	133	139	146
8.500	153	161	168	176	184
8.750	193	201	210	219	228
9.000	238	247	257	267	278
9.250	288	299	310	321	332
9.500	344	356	368	380	392
9.750	405	418	431	445	463

Subsection: Time vs. Volume | Return Event: 25 years
Label: IB-1C-2 | Storm Event: 25 year
Scenario: Post-Development 25 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
10.000	484	510	540	576	618
10.250	666	721	782	850	925
10.500	1,006	1,095	1,191	1,295	1,406
10.750	1,524	1,650	1,785	1,926	2,077
11.000	2,236	2,404	2,586	2,786	3,006
11.250	3,251	3,519	3,813	4,133	4,478
11.500	4,852	5,278	5,802	6,472	7,344
11.750	8,449	9,804	11,423	13,209	14,991
12.000	17,016	19,424	21,864	23,819	24,695
12.250	24,629	24,124	23,383	22,481	21,450
12.500	20,309	19,104	17,902	16,756	15,756
12.750	15,032	14,596	14,325	14,142	14,007
13.000	13,902	13,814	13,740	13,677	13,627
13.250	13,587	13,555	13,527	13,503	13,480
13.500	13,459	13,439	13,419	13,400	13,381
13.750	13,362	13,343	13,324	13,303	13,282
14.000	13,260	13,237	13,216	13,195	13,177
14.250	13,160	13,145	13,131	13,117	13,104
14.500	13,091	13,079	13,067	13,055	13,043
14.750	13,031	13,019	13,007	12,995	12,983
15.000	12,971	12,959	12,948	12,936	12,924
15.250	12,912	12,900	12,888	12,876	12,864
15.500	12,852	12,840	12,828	12,816	12,804
15.750	12,792	12,779	12,765	12,750	12,734
16.000	12,717	12,699	12,681	12,664	12,648
16.250	12,633	12,618	12,605	12,592	12,579
16.500	12,568	12,556	12,545	12,534	12,523
16.750	12,513	12,502	12,492	12,482	12,472
17.000	12,462	12,452	12,442	12,432	12,423
17.250	12,413	12,403	12,393	12,384	12,374
17.500	12,364	12,354	12,345	12,335	12,325
17.750	12,316	12,306	12,296	12,286	12,277
18.000	12,267	12,257	12,248	12,238	12,228
18.250	12,218	12,206	12,195	12,182	12,170
18.500	12,156	12,142	12,128	12,113	12,098
18.750	12,082	12,066	12,049	12,031	12,013
19.000	11,995	11,976	11,957	11,937	11,916
19.250	11,895	11,874	11,852	11,829	11,806
19.500	11,782	11,758	11,734	11,709	11,683
19.750	11,656	11,630	11,602	11,574	11,546
20.000	11,517	11,488	11,458	11,427	11,397

Stormwater Hydrologic Calculations

Subsection: Time vs. Volume
Return Event: 25 years
Label: IB-1C-2
Storm Event: 25 year
Scenario: Post-Development 25 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
20.250	11,366	11,335	11,303	11,271	11,238
20.500	11,205	11,172	11,138	11,104	11,069
20.750	11,033	10,998	10,962	10,926	10,889
21.000	10,852	10,815	10,778	10,740	10,701
21.250	10,662	10,623	10,583	10,543	10,503
21.500	10,461	10,420	10,378	10,336	10,294
21.750	10,251	10,208	10,165	10,121	10,076
22.000	10,031	9,986	9,940	9,894	9,848
22.250	9,801	9,754	9,706	9,658	9,610
22.500	9,561	9,511	9,462	9,412	9,362
22.750	9,311	9,260	9,208	9,156	9,104
23.000	9,051	8,998	8,944	8,890	8,836
23.250	8,781	8,726	8,670	8,615	8,559
23.500	8,502	8,445	8,387	8,329	8,271
23.750	8,212	8,153	8,094	8,034	7,973
24.000	7,912	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Volume

Return Event: 100 years

Label: IB-1C-2

Storm Event: 100 year

Scenario: Post-Development 100 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
0.000	0	0	0	0	0
0.250	0	0	0	0	0
0.500	0	0	0	0	0
0.750	0	0	0	0	0
1.000	0	0	0	0	0
1.250	0	0	0	0	0
1.500	0	0	0	0	0
1.750	0	0	0	0	0
2.000	0	0	0	0	0
2.250	0	0	0	0	0
2.500	0	0	0	0	0
2.750	0	0	0	0	0
3.000	0	0	0	0	0
3.250	0	0	0	0	0
3.500	0	0	0	0	0
3.750	0	0	0	0	0
4.000	0	0	0	0	0
4.250	0	0	0	0	0
4.500	0	0	0	0	0
4.750	0	0	0	0	0
5.000	0	2	3	5	8
5.250	10	13	15	18	21
5.500	24	27	30	33	36
5.750	39	42	46	49	52
6.000	56	59	62	66	70
6.250	74	78	82	86	91
6.500	95	100	105	110	115
6.750	121	126	132	137	143
7.000	149	155	161	168	174
7.250	180	187	194	200	207
7.500	214	222	229	236	244
7.750	251	259	267	275	283
8.000	291	299	308	317	328
8.250	339	350	363	376	389
8.500	403	417	432	448	468
8.750	494	523	558	597	642
9.000	691	746	806	871	941
9.250	1,017	1,098	1,185	1,277	1,375
9.500	1,479	1,588	1,704	1,825	1,952
9.750	2,086	2,226	2,371	2,523	2,681

Subsection: Time vs. Volume | Return Event: 100 years
Label: IB-1C-2 | Storm Event: 100 year
Scenario: Post-Development 100 year

Time vs. Volume (ft^3)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft^3)	Volume (ft^3)	Volume (ft^3)	Volume (ft^3)	Volume (ft^3)
10.000	2,846	3,017	3,197	3,384	3,583
10.250	3,791	4,011	4,241	4,483	4,736
10.500	5,001	5,277	5,565	5,864	6,176
10.750	6,500	6,836	7,185	7,547	7,921
11.000	8,308	8,711	9,137	9,591	10,081
11.250	10,610	11,179	11,790	12,426	13,019
11.500	13,499	13,896	14,278	14,694	15,192
11.750	15,773	16,508	17,487	18,729	20,570
12.000	23,614	27,523	31,436	34,619	36,188
12.250	36,298	35,664	34,575	33,137	31,434
12.500	29,536	27,534	25,542	23,646	21,938
12.750	20,429	19,100	17,926	16,886	15,970
13.000	15,263	14,817	14,545	14,370	14,255
13.250	14,174	14,116	14,071	14,035	14,003
13.500	13,974	13,947	13,922	13,896	13,871
13.750	13,846	13,819	13,792	13,764	13,735
14.000	13,706	13,678	13,652	13,628	13,606
14.250	13,588	13,570	13,554	13,539	13,524
14.500	13,510	13,496	13,482	13,468	13,454
14.750	13,439	13,426	13,412	13,398	13,384
15.000	13,370	13,356	13,342	13,328	13,313
15.250	13,298	13,282	13,265	13,248	13,230
15.500	13,213	13,195	13,177	13,159	13,141
15.750	13,123	13,105	13,087	13,068	13,050
16.000	13,032	13,014	12,998	12,982	12,968
16.250	12,956	12,945	12,935	12,925	12,916
16.500	12,907	12,899	12,891	12,882	12,874
16.750	12,866	12,858	12,850	12,842	12,834
17.000	12,826	12,818	12,810	12,803	12,795
17.250	12,787	12,778	12,769	12,759	12,748
17.500	12,736	12,724	12,712	12,699	12,686
17.750	12,673	12,659	12,645	12,631	12,618
18.000	12,604	12,589	12,576	12,563	12,552
18.250	12,542	12,532	12,524	12,516	12,509
18.500	12,502	12,496	12,490	12,484	12,479
18.750	12,473	12,468	12,463	12,458	12,453
19.000	12,449	12,444	12,440	12,435	12,430
19.250	12,426	12,422	12,417	12,413	12,408
19.500	12,404	12,399	12,395	12,391	12,386
19.750	12,382	12,378	12,373	12,369	12,365
20.000	12,360	12,356	12,352	12,347	12,344

Subsection: Time vs. Volume | Return Event: 100 years
Label: IB-1C-2 | Storm Event: 100 year
Scenario: Post-Development 100 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
20.250	12,340	12,336	12,333	12,329	12,325
20.500	12,322	12,318	12,315	12,311	12,308
20.750	12,304	12,301	12,298	12,294	12,291
21.000	12,288	12,285	12,282	12,278	12,275
21.250	12,272	12,268	12,265	12,262	12,259
21.500	12,255	12,251	12,248	12,245	12,240
21.750	12,236	12,230	12,225	12,219	12,211
22.000	12,204	12,195	12,186	12,177	12,167
22.250	12,157	12,145	12,133	12,120	12,108
22.500	12,094	12,080	12,065	12,050	12,034
22.750	12,018	12,001	11,983	11,965	11,946
23.000	11,927	11,907	11,886	11,864	11,842
23.250	11,820	11,797	11,773	11,749	11,725
23.500	11,700	11,674	11,647	11,620	11,592
23.750	11,564	11,535	11,506	11,475	11,444
24.000	11,413	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Volume | Return Event: 1 years
Label: SUB-6A | Storm Event: 1 year
Scenario: Post-Development 1 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
0.000	0	0	0	0	0
0.250	0	0	0	0	0
0.500	0	0	0	0	0
0.750	0	0	0	0	0
1.000	0	0	0	0	0
1.250	0	0	0	0	0
1.500	0	0	0	0	0
1.750	0	0	0	0	0
2.000	0	0	0	0	0
2.250	0	0	0	0	0
2.500	0	0	0	0	0
2.750	0	0	0	0	0
3.000	0	0	0	0	0
3.250	1	1	1	1	2
3.500	2	2	3	3	4
3.750	4	5	5	6	7
4.000	7	8	9	9	10
4.250	11	12	13	13	14
4.500	15	16	17	18	19
4.750	20	21	22	23	24
5.000	25	26	27	28	29
5.250	30	31	33	34	35
5.500	36	37	38	40	41
5.750	42	43	45	46	47
6.000	48	50	51	52	54
6.250	55	57	58	60	61
6.500	63	65	66	68	70
6.750	72	74	75	77	79
7.000	81	83	86	88	90
7.250	92	94	97	99	101
7.500	104	106	109	111	114
7.750	116	119	122	124	127
8.000	130	132	135	138	141
8.250	144	148	151	155	158
8.500	162	166	170	174	178
8.750	182	187	191	196	201
9.000	206	211	216	221	226
9.250	231	237	242	248	253
9.500	259	265	271	277	283
9.750	289	295	302	308	314

Subsection: Time vs. Volume | Return Event: 1 years
Label: SUB-6A | Storm Event: 1 year
Scenario: Post-Development 1 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
10.000	321	328	334	341	349
10.250	356	364	372	381	389
10.500	398	407	417	426	436
10.750	446	457	467	478	489
11.000	500	512	524	537	552
11.250	568	586	605	625	647
11.500	670	697	731	776	837
11.750	914	1,008	1,120	1,253	1,427
12.000	1,678	1,995	2,338	2,663	2,921
12.250	3,111	3,264	3,391	3,496	3,580
12.500	3,643	3,688	3,719	3,740	3,757
12.750	3,771	3,782	3,791	3,798	3,803
13.000	3,806	3,806	3,805	3,803	3,800
13.250	3,797	3,793	3,788	3,783	3,777
13.500	3,771	3,764	3,756	3,748	3,739
13.750	3,730	3,720	3,710	3,699	3,688
14.000	3,676	3,663	3,650	3,636	3,623
14.250	3,609	3,594	3,580	3,565	3,550
14.500	3,534	3,519	3,503	3,486	3,470
14.750	3,453	3,436	3,419	3,401	3,383
15.000	3,365	3,347	3,328	3,309	3,290
15.250	3,270	3,250	3,230	3,210	3,189
15.500	3,168	3,147	3,126	3,104	3,082
15.750	3,060	3,037	3,014	2,991	2,968
16.000	2,944	2,920	2,896	2,872	2,847
16.250	2,823	2,798	2,773	2,748	2,723
16.500	2,698	2,673	2,648	2,622	2,596
16.750	2,571	2,545	2,519	2,493	2,466
17.000	2,440	2,413	2,387	2,360	2,333
17.250	2,306	2,279	2,252	2,225	2,197
17.500	2,170	2,142	2,114	2,086	2,058
17.750	2,030	2,002	1,973	1,945	1,916
18.000	1,887	1,858	1,830	1,800	1,771
18.250	1,742	1,713	1,684	1,655	1,625
18.500	1,596	1,567	1,537	1,508	1,479
18.750	1,449	1,420	1,390	1,360	1,331
19.000	1,301	1,271	1,242	1,212	1,182
19.250	1,152	1,122	1,092	1,063	1,033
19.500	1,003	975	947	921	895
19.750	870	846	823	801	779
20.000	758	738	718	699	681

Subsection: Time vs. Volume | Return Event: 1 years
Label: SUB-6A | Storm Event: 1 year
Scenario: Post-Development 1 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
20.250	663	646	630	614	598
20.500	583	569	555	541	528
20.750	516	504	492	480	469
21.000	459	448	438	429	419
21.250	410	401	393	385	377
21.500	369	361	354	347	340
21.750	334	327	321	315	309
22.000	304	298	293	288	283
22.250	278	273	269	264	260
22.500	256	252	248	244	240
22.750	237	233	230	226	223
23.000	220	217	214	211	208
23.250	205	203	200	197	195
23.500	192	190	188	185	183
23.750	181	179	177	175	173
24.000	171	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Volume
Return Event: 10 years
Label: SUB-6A
Storm Event: 10 year
Scenario: Post-Development 10 year

Time vs. Volume (ft^3)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft^3)	Volume (ft^3)	Volume (ft^3)	Volume (ft^3)	Volume (ft^3)
0.000	0	0	0	0	0
0.250	0	0	0	0	0
0.500	0	0	0	0	0
0.750	0	0	0	0	0
1.000	0	0	0	0	0
1.250	0	0	0	0	0
1.500	0	0	0	0	0
1.750	0	0	0	1	1
2.000	2	2	3	4	5
2.250	5	6	7	9	10
2.500	11	12	14	15	16
2.750	18	20	21	23	25
3.000	26	28	30	32	34
3.250	36	38	40	42	44
3.500	46	48	50	53	55
3.750	57	60	62	64	67
4.000	69	72	74	77	79
4.250	82	84	87	89	92
4.500	94	97	100	102	105
4.750	108	110	113	116	119
5.000	121	124	127	130	132
5.250	135	138	141	143	146
5.500	149	152	155	158	160
5.750	163	166	169	172	175
6.000	177	180	183	186	189
6.250	192	196	199	202	206
6.500	209	213	217	221	225
6.750	229	233	237	241	246
7.000	250	255	259	264	269
7.250	273	278	283	288	293
7.500	298	303	308	314	319
7.750	324	330	335	341	346
8.000	352	358	364	370	376
8.250	382	389	396	403	411
8.500	418	426	435	443	452
8.750	460	469	478	488	497
9.000	507	517	527	537	548
9.250	558	569	580	591	602
9.500	614	625	637	648	660
9.750	672	684	696	709	721

Subsection: Time vs. Volume | Return Event: 10 years
Label: SUB-6A | Storm Event: 10 year
Scenario: Post-Development 10 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
10.000	734	746	759	773	787
10.250	801	816	832	848	864
10.500	881	898	916	935	954
10.750	973	992	1,012	1,033	1,054
11.000	1,076	1,100	1,126	1,154	1,187
11.250	1,223	1,263	1,307	1,355	1,407
11.500	1,464	1,529	1,610	1,716	1,855
11.750	2,032	2,247	2,500	2,793	3,163
12.000	3,678	4,321	4,982	5,596	6,066
12.250	6,383	6,605	6,769	6,885	6,957
12.500	6,989	6,985	6,958	6,914	6,864
12.750	6,812	6,758	6,703	6,646	6,589
13.000	6,530	6,471	6,412	6,352	6,293
13.250	6,236	6,180	6,127	6,075	6,024
13.500	5,975	5,928	5,881	5,836	5,793
13.750	5,750	5,708	5,668	5,628	5,590
14.000	5,552	5,515	5,479	5,445	5,411
14.250	5,379	5,348	5,317	5,287	5,256
14.500	5,226	5,196	5,167	5,137	5,108
14.750	5,079	5,051	5,022	4,994	4,966
15.000	4,938	4,910	4,882	4,855	4,828
15.250	4,801	4,774	4,747	4,721	4,694
15.500	4,668	4,642	4,616	4,590	4,564
15.750	4,539	4,513	4,488	4,463	4,438
16.000	4,413	4,388	4,363	4,339	4,314
16.250	4,290	4,266	4,243	4,219	4,197
16.500	4,174	4,152	4,130	4,109	4,087
16.750	4,066	4,046	4,025	4,005	3,986
17.000	3,966	3,947	3,928	3,909	3,890
17.250	3,872	3,853	3,834	3,815	3,795
17.500	3,775	3,755	3,735	3,715	3,694
17.750	3,673	3,652	3,631	3,609	3,588
18.000	3,566	3,543	3,521	3,498	3,476
18.250	3,453	3,431	3,408	3,385	3,362
18.500	3,339	3,316	3,293	3,270	3,247
18.750	3,223	3,200	3,176	3,153	3,129
19.000	3,106	3,082	3,058	3,034	3,010
19.250	2,987	2,962	2,938	2,914	2,890
19.500	2,866	2,841	2,817	2,792	2,768
19.750	2,743	2,718	2,694	2,669	2,644
20.000	2,619	2,594	2,569	2,544	2,518

Stormwater Hydrologic Calculations

Subsection: Time vs. Volume | Return Event: 10 years
Label: SUB-6A | Storm Event: 10 year
Scenario: Post-Development 10 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
20.250	2,493	2,468	2,442	2,417	2,392
20.500	2,366	2,341	2,315	2,289	2,264
20.750	2,238	2,212	2,186	2,160	2,134
21.000	2,108	2,082	2,056	2,030	2,004
21.250	1,977	1,951	1,925	1,898	1,872
21.500	1,845	1,819	1,792	1,765	1,739
21.750	1,712	1,685	1,658	1,631	1,604
22.000	1,577	1,550	1,523	1,496	1,469
22.250	1,442	1,414	1,387	1,359	1,332
22.500	1,304	1,277	1,249	1,222	1,194
22.750	1,166	1,138	1,110	1,083	1,055
23.000	1,027	999	973	947	923
23.250	899	876	853	832	811
23.500	791	771	752	734	716
23.750	699	682	666	651	635
24.000	621	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Volume
Label: SUB-6A
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 year

Time vs. Volume (ft^3)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft^3)	Volume (ft^3)	Volume (ft^3)	Volume (ft^3)	Volume (ft^3)
0.000	0	0	0	0	0
0.250	0	0	0	0	0
0.500	0	0	0	0	0
0.750	0	0	0	0	0
1.000	0	0	0	0	0
1.250	0	0	0	0	0
1.500	1	1	2	2	3
1.750	4	5	7	8	9
2.000	11	12	14	16	18
2.250	19	21	23	26	28
2.500	30	32	35	37	39
2.750	42	45	47	50	53
3.000	55	58	61	64	67
3.250	70	73	76	79	82
3.500	85	89	92	95	98
3.750	102	105	108	112	115
4.000	119	122	125	129	132
4.250	136	139	143	146	150
4.500	153	157	161	164	168
4.750	171	175	179	182	186
5.000	189	193	197	200	204
5.250	208	211	215	218	222
5.500	226	229	233	237	240
5.750	244	248	251	255	259
6.000	262	266	270	273	277
6.250	281	285	290	294	299
6.500	303	308	313	318	323
6.750	328	333	339	344	350
7.000	356	361	367	373	379
7.250	385	391	398	404	411
7.500	417	424	430	437	444
7.750	451	458	464	472	479
8.000	486	493	500	508	516
8.250	524	533	542	551	560
8.500	570	580	591	602	612
8.750	624	635	647	659	671
9.000	683	696	709	722	735
9.250	749	762	776	790	804
9.500	819	833	848	862	877
9.750	893	908	923	939	954

Subsection: Time vs. Volume | Return Event: 25 years
Label: SUB-6A | Storm Event: 25 year
Scenario: Post-Development 25 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
10.000	970	986	1,003	1,019	1,037
10.250	1,055	1,075	1,097	1,119	1,143
10.500	1,169	1,195	1,223	1,253	1,284
10.750	1,316	1,349	1,384	1,421	1,458
11.000	1,498	1,539	1,582	1,630	1,681
11.250	1,738	1,800	1,867	1,939	2,016
11.500	2,099	2,192	2,307	2,452	2,641
11.750	2,876	3,160	3,492	3,875	4,357
12.000	4,998	5,783	6,591	7,291	7,820
12.250	8,150	8,359	8,485	8,554	8,571
12.500	8,541	8,473	8,380	8,272	8,153
12.750	8,037	7,923	7,813	7,707	7,603
13.000	7,501	7,403	7,312	7,225	7,140
13.250	7,058	6,979	6,903	6,829	6,758
13.500	6,689	6,622	6,557	6,494	6,433
13.750	6,373	6,313	6,255	6,198	6,143
14.000	6,090	6,037	5,987	5,938	5,890
14.250	5,845	5,801	5,759	5,718	5,678
14.500	5,640	5,603	5,568	5,533	5,500
14.750	5,468	5,436	5,406	5,377	5,348
15.000	5,320	5,291	5,263	5,234	5,206
15.250	5,178	5,150	5,122	5,094	5,066
15.500	5,038	5,010	4,983	4,955	4,927
15.750	4,899	4,872	4,844	4,817	4,789
16.000	4,762	4,735	4,708	4,681	4,654
16.250	4,628	4,602	4,577	4,551	4,527
16.500	4,502	4,478	4,454	4,431	4,407
16.750	4,385	4,362	4,340	4,317	4,295
17.000	4,273	4,251	4,229	4,208	4,187
17.250	4,166	4,145	4,125	4,105	4,085
17.500	4,065	4,045	4,026	4,007	3,988
17.750	3,969	3,950	3,932	3,914	3,896
18.000	3,877	3,859	3,840	3,822	3,803
18.250	3,784	3,765	3,746	3,726	3,707
18.500	3,688	3,668	3,649	3,629	3,609
18.750	3,589	3,570	3,550	3,530	3,509
19.000	3,489	3,469	3,448	3,428	3,407
19.250	3,387	3,366	3,345	3,324	3,303
19.500	3,282	3,261	3,240	3,219	3,197
19.750	3,176	3,154	3,132	3,111	3,089
20.000	3,067	3,045	3,023	3,001	2,978

Stormwater Hydrologic Calculations

Subsection: Time vs. Volume | Return Event: 25 years
Label: SUB-6A | Storm Event: 25 year
Scenario: Post-Development 25 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
20.250	2,956	2,934	2,912	2,889	2,867
20.500	2,844	2,821	2,799	2,776	2,753
20.750	2,730	2,707	2,684	2,661	2,638
21.000	2,614	2,591	2,568	2,545	2,521
21.250	2,497	2,474	2,450	2,426	2,403
21.500	2,379	2,355	2,331	2,307	2,283
21.750	2,259	2,234	2,210	2,186	2,161
22.000	2,137	2,112	2,088	2,063	2,038
22.250	2,013	1,989	1,964	1,939	1,914
22.500	1,888	1,863	1,838	1,813	1,787
22.750	1,762	1,736	1,711	1,685	1,659
23.000	1,634	1,608	1,582	1,556	1,530
23.250	1,504	1,478	1,452	1,425	1,399
23.500	1,373	1,346	1,320	1,293	1,267
23.750	1,240	1,213	1,186	1,159	1,132
24.000	1,105	(N/A)	(N/A)	(N/A)	(N/A)

Stormwater Hydrologic Calculations

Subsection: Time vs. Volume | Return Event: 100 years
Label: SUB-6A | Storm Event: 100 year
Scenario: Post-Development 100 year

Time vs. Volume (ft^3)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft^3)	Volume (ft^3)	Volume (ft^3)	Volume (ft^3)	Volume (ft^3)
0.000	0	0	0	0	0
0.250	0	0	0	0	0
0.500	0	0	0	0	0
0.750	0	0	0	0	0
1.000	0	0	1	2	3
1.250	4	6	8	10	12
1.500	15	17	20	23	26
1.750	29	32	36	39	43
2.000	46	50	54	58	61
2.250	65	70	74	78	82
2.500	87	91	95	100	105
2.750	109	114	119	124	128
3.000	133	138	143	148	153
3.250	158	163	168	173	179
3.500	184	189	194	199	205
3.750	210	215	220	226	231
4.000	236	241	247	252	257
4.250	263	268	273	279	284
4.500	289	295	300	305	311
4.750	316	321	326	332	337
5.000	342	347	353	358	363
5.250	368	374	379	384	389
5.500	394	400	405	410	415
5.750	420	425	430	435	440
6.000	445	451	456	461	466
6.250	472	478	484	490	496
6.500	503	510	517	524	531
6.750	538	546	554	562	569
7.000	578	586	594	603	611
7.250	620	629	638	647	656
7.500	665	674	684	693	703
7.750	713	723	732	742	752
8.000	762	773	783	794	805
8.250	817	829	842	855	868
8.500	882	897	912	927	943
8.750	959	975	992	1,009	1,026
9.000	1,044	1,063	1,082	1,103	1,124
9.250	1,146	1,170	1,194	1,219	1,246
9.500	1,273	1,301	1,330	1,360	1,391
9.750	1,423	1,456	1,489	1,524	1,560

Subsection: Time vs. Volume
Return Event: 100 years
Label: SUB-6A
Storm Event: 100 year
Scenario: Post-Development 100 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
10.000	1,596	1,634	1,673	1,714	1,756
10.250	1,800	1,847	1,895	1,945	1,997
10.500	2,051	2,106	2,164	2,224	2,286
10.750	2,349	2,415	2,482	2,552	2,623
11.000	2,696	2,772	2,852	2,937	3,029
11.250	3,128	3,234	3,347	3,467	3,595
11.500	3,731	3,882	4,064	4,287	4,561
11.750	4,893	5,285	5,740	6,249	6,851
12.000	7,682	8,677	9,701	10,447	10,929
12.250	11,119	11,161	11,115	11,008	10,852
12.500	10,656	10,434	10,230	10,024	9,818
12.750	9,583	9,367	9,168	9,003	8,851
13.000	8,704	8,562	8,426	8,296	8,163
13.250	8,038	7,920	7,810	7,705	7,607
13.500	7,514	7,427	7,345	7,270	7,197
13.750	7,125	7,055	6,987	6,921	6,856
14.000	6,793	6,731	6,670	6,612	6,555
14.250	6,501	6,448	6,397	6,345	6,295
14.500	6,247	6,201	6,155	6,111	6,069
14.750	6,028	5,987	5,948	5,910	5,873
15.000	5,837	5,802	5,768	5,734	5,702
15.250	5,670	5,639	5,608	5,578	5,549
15.500	5,520	5,491	5,464	5,436	5,410
15.750	5,383	5,358	5,332	5,305	5,279
16.000	5,252	5,225	5,198	5,171	5,144
16.250	5,118	5,092	5,066	5,040	5,015
16.500	4,989	4,964	4,939	4,915	4,890
16.750	4,866	4,842	4,819	4,795	4,772
17.000	4,748	4,725	4,702	4,680	4,657
17.250	4,635	4,613	4,591	4,569	4,547
17.500	4,525	4,504	4,483	4,461	4,440
17.750	4,419	4,399	4,378	4,357	4,337
18.000	4,316	4,295	4,274	4,254	4,234
18.250	4,215	4,195	4,177	4,158	4,140
18.500	4,122	4,105	4,087	4,070	4,054
18.750	4,037	4,021	4,006	3,990	3,975
19.000	3,960	3,945	3,931	3,916	3,902
19.250	3,888	3,874	3,860	3,846	3,832
19.500	3,817	3,803	3,788	3,773	3,758
19.750	3,743	3,728	3,713	3,697	3,682
20.000	3,666	3,650	3,634	3,618	3,602

Subsection: Time vs. Volume | Return Event: 100 years
Label: SUB-6A | Storm Event: 100 year
Scenario: Post-Development 100 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
20.250	3,586	3,570	3,554	3,537	3,521
20.500	3,504	3,487	3,470	3,454	3,437
20.750	3,419	3,402	3,385	3,368	3,350
21.000	3,333	3,315	3,297	3,280	3,262
21.250	3,244	3,226	3,208	3,189	3,171
21.500	3,152	3,134	3,115	3,097	3,078
21.750	3,059	3,040	3,021	3,002	2,983
22.000	2,963	2,944	2,924	2,905	2,885
22.250	2,865	2,845	2,825	2,805	2,785
22.500	2,765	2,745	2,724	2,704	2,683
22.750	2,663	2,642	2,621	2,600	2,579
23.000	2,558	2,537	2,515	2,494	2,472
23.250	2,451	2,429	2,407	2,386	2,364
23.500	2,342	2,320	2,297	2,275	2,253
23.750	2,230	2,208	2,185	2,162	2,139
24.000	2,116	(N/A)	(N/A)	(N/A)	(N/A)

Stormwater Hydrologic Calculations

Subsection: Elevation-Area Volume Curve — Return Event: 1 years
Label: IB-1C-10 — Storm Event: 1 year
Scenario: Post-Development 1 year

Elevation (ft)	Planimeter (ft^2)	Area (ft^2)	A1+A2+sqr (A1*A2) (ft^2)	Volume (ft^3)	Volume (Total) (ft^3)
618.50	0.0	3,892	0	0	0
620.00	0.0	17,302	29,400	14,700	14,700
622.00	0.0	21,078	57,477	38,318	53,018
624.00	0.0	25,085	69,157	46,105	99,123

Stormwater Hydrologic Calculations

Subsection: Elevation-Area Volume Curve — Return Event: 10 years
Label: IB-1C-10 — Storm Event: 10 year
Scenario: Post-Development 10 year

Elevation (ft)	Planimeter (ft²)	Area (ft²)	A1+A2+sqr (A1*A2) (ft²)	Volume (ft³)	Volume (Total) (ft³)
618.50	0.0	3,892	0	0	0
620.00	0.0	17,302	29,400	14,700	14,700
622.00	0.0	21,078	57,477	38,318	53,018
624.00	0.0	25,085	69,157	46,105	99,123

Stormwater Hydrologic Calculations

Subsection: Elevation-Area Volume Curve — Return Event: 25 years
Label: IB-1C-10 — Storm Event: 25 year
Scenario: Post-Development 25 year

Elevation (ft)	Planimeter (ft²)	Area (ft²)	A1+A2+sqr (A1*A2) (ft²)	Volume (ft³)	Volume (Total) (ft³)
618.50	0.0	3,892	0	0	0
620.00	0.0	17,302	29,400	14,700	14,700
622.00	0.0	21,078	57,477	38,318	53,018
624.00	0.0	25,085	69,157	46,105	99,123

Stormwater Hydrologic Calculations

Subsection: Elevation-Area Volume Curve | Return Event: 100 years
Label: IB-1C-10 | Storm Event: 100 year
Scenario: Post-Development 100 year

Elevation (ft)	Planimeter (ft²)	Area (ft²)	A1+A2+sqr (A1*A2) (ft²)	Volume (ft³)	Volume (Total) (ft³)
618.50	0.0	3,892	0	0	0
620.00	0.0	17,302	29,400	14,700	14,700
622.00	0.0	21,078	57,477	38,318	53,018
624.00	0.0	25,085	69,157	46,105	99,123

Stormwater Hydrologic Calculations

Subsection: Elevation-Area Volume Curve | Return Event: 1 years
Label: IB-1C-2 | Storm Event: 1 year
Scenario: Post-Development 1 year

Elevation (ft)	Planimeter (ft^2)	Area (ft^2)	A1+A2+sqr (A1*A2) (ft^2)	Volume (ft^3)	Volume (Total) (ft^3)
621.75	0.0	8,634	0	0	0
622.00	0.0	9,318	26,921	2,243	2,243
624.00	0.0	12,195	32,173	21,449	23,692
626.00	0.0	15,297	41,150	27,433	51,126

Stormwater Hydrologic Calculations

Subsection: Elevation-Area Volume Curve | Return Event: 10 years
Label: IB-1C-2 | Storm Event: 10 year
Scenario: Post-Development 10 year

Elevation (ft)	Planimeter (ft²)	Area (ft²)	A1+A2+sqr (A1*A2) (ft²)	Volume (ft³)	Volume (Total) (ft³)
621.75	0.0	8,634	0	0	0
622.00	0.0	9,318	26,921	2,243	2,243
624.00	0.0	12,195	32,173	21,449	23,692
626.00	0.0	15,297	41,150	27,433	51,126

Stormwater Hydrologic Calculations

Subsection: Elevation-Area Volume Curve | Return Event: 25 years
Label: IB-1C-2 | Storm Event: 25 year
Scenario: Post-Development 25 year

Elevation (ft)	Planimeter (ft^2)	Area (ft^2)	A1+A2+sqr (A1*A2) (ft^2)	Volume (ft^3)	Volume (Total) (ft^3)
621.75	0.0	8,634	0	0	0
622.00	0.0	9,318	26,921	2,243	2,243
624.00	0.0	12,195	32,173	21,449	23,692
626.00	0.0	15,297	41,150	27,433	51,126

Stormwater Hydrologic Calculations

Subsection: Elevation-Area Volume Curve | Return Event: 100 years
Label: IB-1C-2 | Storm Event: 100 year
Scenario: Post-Development 100 year

Elevation (ft)	Planimeter (ft²)	Area (ft²)	A1+A2+sqr (A1*A2) (ft²)	Volume (ft³)	Volume (Total) (ft³)
621.75	0.0	8,634	0	0	0
622.00	0.0	9,318	26,921	2,243	2,243
624.00	0.0	12,195	32,173	21,449	23,692
626.00	0.0	15,297	41,150	27,433	51,126

Subsection: Elevation vs. Volume Curve | Return Event: 1 years
Label: SUB-6A | Storm Event: 1 year
Scenario: Post-Development 1 year

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ft³)
494.00	0
494.50	1,034
495.00	3,260
495.25	4,339
495.50	5,390
495.75	6,403
496.00	7,373
496.25	8,288
496.50	9,128
496.75	9,862
497.00	10,425
497.25	10,943
497.50	11,460

Subsection: Elevation vs. Volume Curve | Return Event: 10 years
Label: SUB-6A | Storm Event: 10 year
Scenario: Post-Development 10 year

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ft^3)
494.00	0
494.50	1,034
495.00	3,260
495.25	4,339
495.50	5,390
495.75	6,403
496.00	7,373
496.25	8,288
496.50	9,128
496.75	9,862
497.00	10,425
497.25	10,943
497.50	11,460

Subsection: Elevation vs. Volume Curve
Return Event: 25 years
Label: SUB-6A
Storm Event: 25 year
Scenario: Post-Development 25 year

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ft^3)
494.00	0
494.50	1,034
495.00	3,260
495.25	4,339
495.50	5,390
495.75	6,403
496.00	7,373
496.25	8,288
496.50	9,128
496.75	9,862
497.00	10,425
497.25	10,943
497.50	11,460

Subsection: Elevation vs. Volume Curve | Return Event: 100 years
Label: SUB-6A | Storm Event: 100 year
Scenario: Post-Development 100 year

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ft^3)
494.00	0
494.50	1,034
495.00	3,260
495.25	4,339
495.50	5,390
495.75	6,403
496.00	7,373
496.25	8,288
496.50	9,128
496.75	9,862
497.00	10,425
497.25	10,943
497.50	11,460

Requested Pond Water Surface Elevations	
Minimum (Headwater)	618.50 ft
Increment (Headwater)	0.05 ft
Maximum (Headwater)	624.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Inlet Box	Riser - 1	Forward	Culvert - 1	619.85	624.00
Culvert-Circular	Culvert - 1	Forward	TW	618.50	624.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Stormwater Hydrologic Calculations

Subsection: Outlet Input Data	Return Event: 1 years
Label: IB-1C-10 OUT	Storm Event: 1 year
Scenario: Post-Development 1 year	

Structure ID: Culvert - 1
Structure Type: Culvert-Circular

Number of Barrels	1
Diameter	15.0 in
Length	141.00 ft
Length (Computed Barrel)	141.96 ft
Slope (Computed)	0.117 ft/ft

Outlet Control Data

Manning's n	0.013
Ke	0.200
Kb	0.023
Kr	0.200
Convergence Tolerance	0.00 ft

Inlet Control Data

Equation Form	Form 1
K	0.0018
M	2.5000
C	0.0243
Y	0.8300
T1 ratio (HW/D)	1.023
T2 ratio (HW/D)	1.160
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	619.78 ft	T1 Flow	4.80 ft³/s
T2 Elevation	619.95 ft	T2 Flow	5.49 ft³/s

Structure ID: Riser - 1
Structure Type: Inlet Box

Number of Openings	1
Elevation	619.85 ft
Orifice Area	16.0 ft²
Orifice Coefficient	0.600
Weir Length	16.00 ft
Weir Coefficient	3.00 (ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: TW
Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
618.50	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.55	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.60	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.65	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.70	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.75	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.80	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.85	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.90	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.95	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.05	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.10	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.15	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.20	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.25	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.30	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.35	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.40	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.45	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.50	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.55	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.60	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.65	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.70	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.75	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.80	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.85	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.90	0.54	618.91	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
619.95	1.52	619.21	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
620.00	2.79	619.49	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
620.05	4.29	619.79	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
620.10	5.95	620.10	Free Outfall	Free Outfall	0.00	0.05	(N/A)	0.00
620.15	6.22	620.15	Free Outfall	Free Outfall	0.00	1.67	(N/A)	0.00

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves | Return Event: 1 years
Label: IB-1C-10 OUT | Storm Event: 1 year
Scenario: Post-Development 1 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
620.20	6.47	620.20	Free Outfall	Free Outfall	0.00	3.47	(N/A)	0.00
620.25	6.73	620.25	Free Outfall	Free Outfall	0.00	5.41	(N/A)	0.00
620.30	6.99	620.30	Free Outfall	Free Outfall	0.00	7.50	(N/A)	0.00
620.35	7.24	620.35	Free Outfall	Free Outfall	0.00	9.74	(N/A)	0.00
620.40	7.48	620.40	Free Outfall	Free Outfall	0.00	12.10	(N/A)	0.00
620.45	7.72	620.45	Free Outfall	Free Outfall	0.00	14.59	(N/A)	0.00
620.50	7.96	620.50	Free Outfall	Free Outfall	0.00	17.19	(N/A)	0.00
620.55	8.19	620.55	Free Outfall	Free Outfall	0.00	19.92	(N/A)	0.00
620.60	8.39	620.60	Free Outfall	Free Outfall	0.00	22.78	(N/A)	0.00
620.65	8.57	620.65	Free Outfall	Free Outfall	0.00	25.77	(N/A)	0.00
620.70	8.75	620.70	Free Outfall	Free Outfall	0.00	28.87	(N/A)	0.00
620.75	8.93	620.75	Free Outfall	Free Outfall	0.00	32.05	(N/A)	0.00
620.80	9.10	620.80	Free Outfall	Free Outfall	0.00	35.35	(N/A)	0.00
620.85	9.27	620.85	Free Outfall	Free Outfall	0.00	38.73	(N/A)	0.00
620.90	9.43	620.90	Free Outfall	Free Outfall	0.00	42.22	(N/A)	0.00
620.95	9.60	620.95	Free Outfall	Free Outfall	0.00	45.78	(N/A)	0.00
621.00	9.76	621.00	Free Outfall	Free Outfall	0.00	49.44	(N/A)	0.00
621.05	9.91	621.05	Free Outfall	Free Outfall	0.00	53.19	(N/A)	0.00
621.10	10.07	621.10	Free Outfall	Free Outfall	0.00	57.01	(N/A)	0.00
621.15	10.22	621.15	Free Outfall	Free Outfall	0.00	60.92	(N/A)	0.00
621.20	10.37	621.20	Free Outfall	Free Outfall	0.00	64.92	(N/A)	0.00
621.25	10.52	621.25	Free Outfall	Free Outfall	0.00	68.99	(N/A)	0.00
621.30	10.66	621.30	Free Outfall	Free Outfall	0.00	73.15	(N/A)	0.00
621.35	10.81	621.35	Free Outfall	Free Outfall	0.00	77.37	(N/A)	0.00
621.40	10.96	621.40	Free Outfall	Free Outfall	0.00	81.67	(N/A)	0.00
621.45	11.09	621.45	Free Outfall	Free Outfall	0.00	86.05	(N/A)	0.00
621.50	11.23	621.50	Free Outfall	Free Outfall	0.00	87.69	(N/A)	0.00
621.55	11.37	621.55	Free Outfall	Free Outfall	0.00	89.04	(N/A)	0.00
621.60	11.50	621.60	Free Outfall	Free Outfall	0.00	90.37	(N/A)	0.00
621.65	11.64	621.65	Free Outfall	Free Outfall	0.00	91.68	(N/A)	0.00
621.70	11.77	621.70	Free Outfall	Free Outfall	0.00	92.97	(N/A)	0.00
621.75	11.90	621.75	Free Outfall	Free Outfall	0.00	94.25	(N/A)	0.00
621.80	12.03	621.80	Free Outfall	Free Outfall	0.00	95.51	(N/A)	0.00
621.85	12.16	621.85	Free Outfall	Free Outfall	0.00	96.75	(N/A)	0.00

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
621.90	12.28	621.90	Free Outfall	Free Outfall	0.00	97.97	(N/A)	0.00
621.95	12.41	621.95	Free Outfall	Free Outfall	0.00	99.19	(N/A)	0.00
622.00	12.53	622.00	Free Outfall	Free Outfall	0.00	100.38	(N/A)	0.00
622.05	12.66	622.05	Free Outfall	Free Outfall	0.00	101.56	(N/A)	0.00
622.10	12.78	622.10	Free Outfall	Free Outfall	0.00	102.73	(N/A)	0.00
622.15	12.90	622.15	Free Outfall	Free Outfall	0.00	103.89	(N/A)	0.00
622.20	13.02	622.20	Free Outfall	Free Outfall	0.00	105.03	(N/A)	0.00
622.25	13.14	622.25	Free Outfall	Free Outfall	0.00	106.16	(N/A)	0.00
622.30	13.26	622.30	Free Outfall	Free Outfall	0.00	107.28	(N/A)	0.00
622.35	13.38	622.35	Free Outfall	Free Outfall	0.00	108.39	(N/A)	0.00
622.40	13.49	622.40	Free Outfall	Free Outfall	0.00	109.48	(N/A)	0.00
622.45	13.60	622.45	Free Outfall	Free Outfall	0.00	110.57	(N/A)	0.00
622.50	13.72	622.50	Free Outfall	Free Outfall	0.00	111.65	(N/A)	0.00
622.55	13.83	622.55	Free Outfall	Free Outfall	0.00	112.71	(N/A)	0.00
622.60	13.94	622.60	Free Outfall	Free Outfall	0.00	113.76	(N/A)	0.00
622.65	14.05	622.65	Free Outfall	Free Outfall	0.00	114.81	(N/A)	0.00
622.70	14.16	622.70	Free Outfall	Free Outfall	0.00	115.84	(N/A)	0.00
622.75	14.27	622.75	Free Outfall	Free Outfall	0.00	116.87	(N/A)	0.00
622.80	14.38	622.80	Free Outfall	Free Outfall	0.00	117.89	(N/A)	0.00
622.85	14.48	622.85	Free Outfall	Free Outfall	0.00	118.90	(N/A)	0.00
622.90	14.59	622.90	Free Outfall	Free Outfall	0.00	119.90	(N/A)	0.00
622.95	14.70	622.95	Free Outfall	Free Outfall	0.00	120.89	(N/A)	0.00
623.00	14.80	623.00	Free Outfall	Free Outfall	0.00	121.87	(N/A)	0.00
623.05	14.91	623.05	Free Outfall	Free Outfall	0.00	122.85	(N/A)	0.00
623.10	15.01	623.10	Free Outfall	Free Outfall	0.00	123.82	(N/A)	0.00
623.15	15.11	623.15	Free Outfall	Free Outfall	0.00	124.78	(N/A)	0.00
623.20	15.22	623.20	Free Outfall	Free Outfall	0.00	125.73	(N/A)	0.00
623.25	15.32	623.25	Free Outfall	Free Outfall	0.00	126.68	(N/A)	0.00
623.30	15.42	623.30	Free Outfall	Free Outfall	0.00	127.62	(N/A)	0.00
623.35	15.52	623.35	Free Outfall	Free Outfall	0.00	128.55	(N/A)	0.00
623.40	15.62	623.40	Free Outfall	Free Outfall	0.00	129.48	(N/A)	0.00
623.45	15.72	623.45	Free Outfall	Free Outfall	0.00	130.40	(N/A)	0.00
623.50	15.81	623.50	Free Outfall	Free Outfall	0.00	131.31	(N/A)	0.00
623.55	15.91	623.55	Free Outfall	Free Outfall	0.00	132.22	(N/A)	0.00

Subsection: Individual Outlet Curves | Return Event: 1 years
Label: IB-1C-10 OUT | Storm Event: 1 year
Scenario: Post-Development 1 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
623.60	16.01	623.60	Free Outfall	Free Outfall	0.00	133.12	(N/A)	0.00
623.65	16.11	623.65	Free Outfall	Free Outfall	0.00	134.01	(N/A)	0.00
623.70	16.20	623.70	Free Outfall	Free Outfall	0.00	134.90	(N/A)	0.00
623.75	16.30	623.75	Free Outfall	Free Outfall	0.00	135.78	(N/A)	0.00
623.80	16.39	623.80	Free Outfall	Free Outfall	0.00	136.66	(N/A)	0.00
623.85	16.49	623.85	Free Outfall	Free Outfall	0.00	137.53	(N/A)	0.00
623.90	16.58	623.90	Free Outfall	Free Outfall	0.00	138.40	(N/A)	0.00
623.95	16.67	623.95	Free Outfall	Free Outfall	0.00	139.26	(N/A)	0.00
624.00	16.77	624.00	Free Outfall	Free Outfall	0.00	140.11	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
CRIT.DEPTH CONTROL Vh= .101ft Dcr= .286ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .182ft Dcr= .487ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .269ft Dcr= .670ft CRIT.DEPTH Hev= .00ft

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
CRIT.DEPTH CONTROL Vh= .373ft Dcr= .839ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .510ft Dcr= .987ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .536ft Dcr= 1.007ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .561ft Dcr= 1.025ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .588ft Dcr= 1.043ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .617ft Dcr= 1.059ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .646ft Dcr= 1.074ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .676ft Dcr= 1.089ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .707ft Dcr= 1.101ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .740ft Dcr= 1.113ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .772ft Dcr= 1.124ft CRIT.DEPTH Hev= .00ft
INLET CONTROL... Submerged: HW =2.10
INLET CONTROL... Submerged: HW =2.15
INLET CONTROL... Submerged: HW =2.20
INLET CONTROL... Submerged: HW =2.25

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
INLET CONTROL... Submerged: HW =2.30
INLET CONTROL... Submerged: HW =2.35
INLET CONTROL... Submerged: HW =2.40
INLET CONTROL... Submerged: HW =2.45
INLET CONTROL... Submerged: HW =2.50
INLET CONTROL... Submerged: HW =2.55
INLET CONTROL... Submerged: HW =2.60
INLET CONTROL... Submerged: HW =2.65
INLET CONTROL... Submerged: HW =2.70
INLET CONTROL... Submerged: HW =2.75
INLET CONTROL... Submerged: HW =2.80
INLET CONTROL... Submerged: HW =2.85
INLET CONTROL... Submerged: HW =2.90
INLET CONTROL... Submerged: HW =2.95
INLET CONTROL... Submerged: HW =3.00
INLET CONTROL... Submerged: HW =3.05
INLET CONTROL... Submerged: HW =3.10
INLET CONTROL... Submerged: HW =3.15
INLET CONTROL... Submerged: HW =3.20
INLET CONTROL... Submerged: HW =3.25

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
INLET CONTROL... Submerged: HW =3.30
INLET CONTROL... Submerged: HW =3.35
INLET CONTROL... Submerged: HW =3.40
INLET CONTROL... Submerged: HW =3.45
INLET CONTROL... Submerged: HW =3.50
INLET CONTROL... Submerged: HW =3.55
INLET CONTROL... Submerged: HW =3.60
INLET CONTROL... Submerged: HW =3.65
INLET CONTROL... Submerged: HW =3.70
INLET CONTROL... Submerged: HW =3.75
INLET CONTROL... Submerged: HW =3.80
INLET CONTROL... Submerged: HW =3.85
INLET CONTROL... Submerged: HW =3.90
INLET CONTROL... Submerged: HW =3.95
INLET CONTROL... Submerged: HW =4.00
INLET CONTROL... Submerged: HW =4.05
INLET CONTROL... Submerged: HW =4.10
INLET CONTROL... Submerged: HW =4.15
INLET CONTROL... Submerged: HW =4.20
INLET CONTROL... Submerged: HW =4.25

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
INLET CONTROL... Submerged: HW =4.30
INLET CONTROL... Submerged: HW =4.35
INLET CONTROL... Submerged: HW =4.40
INLET CONTROL... Submerged: HW =4.45
INLET CONTROL... Submerged: HW =4.50
INLET CONTROL... Submerged: HW =4.55
INLET CONTROL... Submerged: HW =4.60
INLET CONTROL... Submerged: HW =4.65
INLET CONTROL... Submerged: HW =4.70
INLET CONTROL... Submerged: HW =4.75
INLET CONTROL... Submerged: HW =4.80
INLET CONTROL... Submerged: HW =4.85
INLET CONTROL... Submerged: HW =4.90
INLET CONTROL... Submerged: HW =4.95
INLET CONTROL... Submerged: HW =5.00
INLET CONTROL... Submerged: HW =5.05
INLET CONTROL... Submerged: HW =5.10
INLET CONTROL... Submerged: HW =5.15
INLET CONTROL... Submerged: HW =5.20
INLET CONTROL... Submerged: HW =5.25

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
INLET CONTROL... Submerged: HW =5.30
INLET CONTROL... Submerged: HW =5.35
INLET CONTROL... Submerged: HW =5.40
INLET CONTROL... Submerged: HW =5.45
INLET CONTROL... Submerged: HW =5.50

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves — Return Event: 1 years
Label: IB-1C-10 OUT — Storm Event: 1 year
Scenario: Post-Development 1 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
618.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.55	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.60	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.65	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.70	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.75	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.80	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.85	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.90	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.95	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.05	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.10	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.15	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.20	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.25	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.30	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.35	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.40	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.45	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.55	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.60	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.65	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.70	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.75	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.80	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.85	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.90	0.54	619.90	Free Outfall	618.91	0.00	0.00	(N/A)	0.00
619.95	1.52	619.95	Free Outfall	619.21	0.00	0.00	(N/A)	0.00
620.00	2.79	620.00	Free Outfall	619.49	0.00	0.00	(N/A)	0.00
620.05	4.29	620.05	Free Outfall	619.79	0.00	0.00	(N/A)	0.00
620.10	6.00	620.10	620.10	620.10	0.00	0.00	(N/A)	0.00
620.15	7.89	620.15	620.15	620.15	0.00	0.00	(N/A)	0.00
620.20	9.94	620.20	620.20	620.20	0.00	0.00	(N/A)	0.00

Subsection: Individual Outlet Curves | Return Event: 1 years
Label: IB-1C-10 OUT | Storm Event: 1 year
Scenario: Post-Development 1 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
620.25	12.14	620.25	620.25	620.25	0.00	0.00	(N/A)	0.00
620.30	14.49	620.30	620.30	620.30	0.00	0.00	(N/A)	0.00
620.35	16.97	620.35	620.35	620.35	0.00	0.00	(N/A)	0.00
620.40	19.58	620.40	620.40	620.40	0.00	0.00	(N/A)	0.00
620.45	22.31	620.45	620.45	620.45	0.00	0.00	(N/A)	0.00
620.50	25.15	620.50	620.50	620.50	0.00	0.00	(N/A)	0.00
620.55	28.11	620.55	620.55	620.55	0.00	0.00	(N/A)	0.00
620.60	31.18	620.60	620.60	620.60	0.00	0.00	(N/A)	0.00
620.65	34.35	620.65	620.65	620.65	0.00	0.00	(N/A)	0.00
620.70	37.62	620.70	620.70	620.70	0.00	0.00	(N/A)	0.00
620.75	40.98	620.75	620.75	620.75	0.00	0.00	(N/A)	0.00
620.80	44.45	620.80	620.80	620.80	0.00	0.00	(N/A)	0.00
620.85	48.00	620.85	620.85	620.85	0.00	0.00	(N/A)	0.00
620.90	51.64	620.90	620.90	620.90	0.00	0.00	(N/A)	0.00
620.95	55.38	620.95	620.95	620.95	0.00	0.00	(N/A)	0.00
621.00	59.20	621.00	621.00	621.00	0.00	0.00	(N/A)	0.00
621.05	63.10	621.05	621.05	621.05	0.00	0.00	(N/A)	0.00
621.10	67.08	621.10	621.10	621.10	0.00	0.00	(N/A)	0.00
621.15	71.15	621.15	621.15	621.15	0.00	0.00	(N/A)	0.00
621.20	75.29	621.20	621.20	621.20	0.00	0.00	(N/A)	0.00
621.25	79.51	621.25	621.25	621.25	0.00	0.00	(N/A)	0.00
621.30	83.81	621.30	621.30	621.30	0.00	0.00	(N/A)	0.00
621.35	88.18	621.35	621.35	621.35	0.00	0.00	(N/A)	0.00
621.40	92.63	621.40	621.40	621.40	0.00	0.00	(N/A)	0.00
621.45	97.15	621.45	621.45	621.45	0.00	0.00	(N/A)	0.00
621.50	98.92	621.50	621.50	621.50	0.00	0.00	(N/A)	0.00
621.55	100.41	621.55	621.55	621.55	0.00	0.00	(N/A)	0.00
621.60	101.87	621.60	621.60	621.60	0.00	0.00	(N/A)	0.00
621.65	103.32	621.65	621.65	621.65	0.00	0.00	(N/A)	0.00
621.70	104.74	621.70	621.70	621.70	0.00	0.00	(N/A)	0.00
621.75	106.15	621.75	621.75	621.75	0.00	0.00	(N/A)	0.00
621.80	107.54	621.80	621.80	621.80	0.00	0.00	(N/A)	0.00
621.85	108.91	621.85	621.85	621.85	0.00	0.00	(N/A)	0.00
621.90	110.26	621.90	621.90	621.90	0.00	0.00	(N/A)	0.00
621.95	111.60	621.95	621.95	621.95	0.00	0.00	(N/A)	0.00

Subsection: Individual Outlet Curves | Return Event: 1 years
Label: IB-1C-10 OUT | Storm Event: 1 year
Scenario: Post-Development 1 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
622.00	112.92	622.00	622.00	622.00	0.00	0.00	(N/A)	0.00
622.05	114.22	622.05	622.05	622.05	0.00	0.00	(N/A)	0.00
622.10	115.51	622.10	622.10	622.10	0.00	0.00	(N/A)	0.00
622.15	116.79	622.15	622.15	622.15	0.00	0.00	(N/A)	0.00
622.20	118.05	622.20	622.20	622.20	0.00	0.00	(N/A)	0.00
622.25	119.30	622.25	622.25	622.25	0.00	0.00	(N/A)	0.00
622.30	120.54	622.30	622.30	622.30	0.00	0.00	(N/A)	0.00
622.35	121.76	622.35	622.35	622.35	0.00	0.00	(N/A)	0.00
622.40	122.97	622.40	622.40	622.40	0.00	0.00	(N/A)	0.00
622.45	124.17	622.45	622.45	622.45	0.00	0.00	(N/A)	0.00
622.50	125.36	622.50	622.50	622.50	0.00	0.00	(N/A)	0.00
622.55	126.54	622.55	622.55	622.55	0.00	0.00	(N/A)	0.00
622.60	127.70	622.60	622.60	622.60	0.00	0.00	(N/A)	0.00
622.65	128.86	622.65	622.65	622.65	0.00	0.00	(N/A)	0.00
622.70	130.01	622.70	622.70	622.70	0.00	0.00	(N/A)	0.00
622.75	131.14	622.75	622.75	622.75	0.00	0.00	(N/A)	0.00
622.80	132.27	622.80	622.80	622.80	0.00	0.00	(N/A)	0.00
622.85	133.38	622.85	622.85	622.85	0.00	0.00	(N/A)	0.00
622.90	134.49	622.90	622.90	622.90	0.00	0.00	(N/A)	0.00
622.95	135.59	622.95	622.95	622.95	0.00	0.00	(N/A)	0.00
623.00	136.68	623.00	623.00	623.00	0.00	0.00	(N/A)	0.00
623.05	137.76	623.05	623.05	623.05	0.00	0.00	(N/A)	0.00
623.10	138.83	623.10	623.10	623.10	0.00	0.00	(N/A)	0.00
623.15	139.89	623.15	623.15	623.15	0.00	0.00	(N/A)	0.00
623.20	140.95	623.20	623.20	623.20	0.00	0.00	(N/A)	0.00
623.25	142.00	623.25	623.25	623.25	0.00	0.00	(N/A)	0.00
623.30	143.04	623.30	623.30	623.30	0.00	0.00	(N/A)	0.00
623.35	144.07	623.35	623.35	623.35	0.00	0.00	(N/A)	0.00
623.40	145.10	623.40	623.40	623.40	0.00	0.00	(N/A)	0.00
623.45	146.11	623.45	623.45	623.45	0.00	0.00	(N/A)	0.00
623.50	147.12	623.50	623.50	623.50	0.00	0.00	(N/A)	0.00
623.55	148.13	623.55	623.55	623.55	0.00	0.00	(N/A)	0.00
623.60	149.13	623.60	623.60	623.60	0.00	0.00	(N/A)	0.00
623.65	150.12	623.65	623.65	623.65	0.00	0.00	(N/A)	0.00
623.70	151.10	623.70	623.70	623.70	0.00	0.00	(N/A)	0.00

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
623.75	152.08	623.75	623.75	623.75	0.00	0.00	(N/A)	0.00
623.80	153.05	623.80	623.80	623.80	0.00	0.00	(N/A)	0.00
623.85	154.02	623.85	623.85	623.85	0.00	0.00	(N/A)	0.00
623.90	154.98	623.90	623.90	623.90	0.00	0.00	(N/A)	0.00
623.95	155.93	623.95	623.95	623.95	0.00	0.00	(N/A)	0.00
624.00	156.88	624.00	624.00	624.00	0.00	0.00	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
Weir: H =0.05ft
Weir: H =0.1ft
Weir: H =0.15ft
Weir: H =0.2ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.25ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.3ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.35ft

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.4ft
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve | Return Event: 1 years
Label: IB-1C-10 OUT | Storm Event: 1 year
Scenario: Post-Development 1 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
618.50	0.00	(N/A)	0.00
618.55	0.00	(N/A)	0.00
618.60	0.00	(N/A)	0.00
618.65	0.00	(N/A)	0.00
618.70	0.00	(N/A)	0.00
618.75	0.00	(N/A)	0.00
618.80	0.00	(N/A)	0.00
618.85	0.00	(N/A)	0.00
618.90	0.00	(N/A)	0.00
618.95	0.00	(N/A)	0.00
619.00	0.00	(N/A)	0.00
619.05	0.00	(N/A)	0.00
619.10	0.00	(N/A)	0.00
619.15	0.00	(N/A)	0.00
619.20	0.00	(N/A)	0.00
619.25	0.00	(N/A)	0.00
619.30	0.00	(N/A)	0.00
619.35	0.00	(N/A)	0.00
619.40	0.00	(N/A)	0.00
619.45	0.00	(N/A)	0.00
619.50	0.00	(N/A)	0.00
619.55	0.00	(N/A)	0.00
619.60	0.00	(N/A)	0.00
619.65	0.00	(N/A)	0.00
619.70	0.00	(N/A)	0.00
619.75	0.00	(N/A)	0.00
619.80	0.00	(N/A)	0.00
619.85	0.00	(N/A)	0.00
619.90	0.54	(N/A)	0.00
619.95	1.52	(N/A)	0.00
620.00	2.79	(N/A)	0.00
620.05	4.29	(N/A)	0.00
620.10	5.95	(N/A)	0.00
620.15	6.22	(N/A)	0.00
620.20	6.47	(N/A)	0.00
620.25	6.73	(N/A)	0.00
620.30	6.99	(N/A)	0.00
620.35	7.24	(N/A)	0.00
620.40	7.48	(N/A)	0.00
620.45	7.72	(N/A)	0.00
620.50	7.96	(N/A)	0.00
620.55	8.19	(N/A)	0.00

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
620.60	8.39	(N/A)	0.00
620.65	8.57	(N/A)	0.00
620.70	8.75	(N/A)	0.00
620.75	8.93	(N/A)	0.00
620.80	9.10	(N/A)	0.00
620.85	9.27	(N/A)	0.00
620.90	9.43	(N/A)	0.00
620.95	9.60	(N/A)	0.00
621.00	9.76	(N/A)	0.00
621.05	9.91	(N/A)	0.00
621.10	10.07	(N/A)	0.00
621.15	10.22	(N/A)	0.00
621.20	10.37	(N/A)	0.00
621.25	10.52	(N/A)	0.00
621.30	10.66	(N/A)	0.00
621.35	10.81	(N/A)	0.00
621.40	10.96	(N/A)	0.00
621.45	11.09	(N/A)	0.00
621.50	11.23	(N/A)	0.00
621.55	11.37	(N/A)	0.00
621.60	11.50	(N/A)	0.00
621.65	11.64	(N/A)	0.00
621.70	11.77	(N/A)	0.00
621.75	11.90	(N/A)	0.00
621.80	12.03	(N/A)	0.00
621.85	12.16	(N/A)	0.00
621.90	12.28	(N/A)	0.00
621.95	12.41	(N/A)	0.00
622.00	12.53	(N/A)	0.00
622.05	12.66	(N/A)	0.00
622.10	12.78	(N/A)	0.00
622.15	12.90	(N/A)	0.00
622.20	13.02	(N/A)	0.00
622.25	13.14	(N/A)	0.00
622.30	13.26	(N/A)	0.00
622.35	13.38	(N/A)	0.00
622.40	13.49	(N/A)	0.00
622.45	13.60	(N/A)	0.00
622.50	13.72	(N/A)	0.00
622.55	13.83	(N/A)	0.00
622.60	13.94	(N/A)	0.00
622.65	14.05	(N/A)	0.00

Subsection: Composite Rating Curve
Label: IB-1C-10 OUT
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
622.70	14.16	(N/A)	0.00
622.75	14.27	(N/A)	0.00
622.80	14.38	(N/A)	0.00
622.85	14.48	(N/A)	0.00
622.90	14.59	(N/A)	0.00
622.95	14.70	(N/A)	0.00
623.00	14.80	(N/A)	0.00
623.05	14.91	(N/A)	0.00
623.10	15.01	(N/A)	0.00
623.15	15.11	(N/A)	0.00
623.20	15.22	(N/A)	0.00
623.25	15.32	(N/A)	0.00
623.30	15.42	(N/A)	0.00
623.35	15.52	(N/A)	0.00
623.40	15.62	(N/A)	0.00
623.45	15.72	(N/A)	0.00
623.50	15.81	(N/A)	0.00
623.55	15.91	(N/A)	0.00
623.60	16.01	(N/A)	0.00
623.65	16.11	(N/A)	0.00
623.70	16.20	(N/A)	0.00
623.75	16.30	(N/A)	0.00
623.80	16.39	(N/A)	0.00
623.85	16.49	(N/A)	0.00
623.90	16.58	(N/A)	0.00
623.95	16.67	(N/A)	0.00
624.00	16.77	(N/A)	0.00

Contributing Structures
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)

Subsection: Composite Rating Curve
Label: IB-1C-10 OUT
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Composite Outflow Summary

Contributing Structures
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
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(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1

Subsection: Composite Rating Curve Return Event: 1 years
Label: IB-1C-10 OUT Storm Event: 1 year
Scenario: Post-Development 1 year

Composite Outflow Summary

Contributing Structures
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
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Riser - 1,Culvert - 1

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve | Return Event: 1 years
Label: IB-1C-10 OUT | Storm Event: 1 year
Scenario: Post-Development 1 year

Composite Outflow Summary

Contributing Structures
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
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Riser - 1,Culvert - 1
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Riser - 1,Culvert - 1
Riser - 1,Culvert - 1

Stormwater Hydrologic Calculations

Subsection: Outlet Input Data | Return Event: 10 years
Label: IB-1C-10 OUT | Storm Event: 10 year
Scenario: Post-Development 10 year

Requested Pond Water Surface Elevations	
Minimum (Headwater)	618.50 ft
Increment (Headwater)	0.05 ft
Maximum (Headwater)	624.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Inlet Box	Riser - 1	Forward	Culvert - 1	619.85	624.00
Culvert-Circular	Culvert - 1	Forward	TW	618.50	624.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Stormwater Hydrologic Calculations

Subsection: Outlet Input Data	Return Event: 10 years
Label: IB-1C-10 OUT	Storm Event: 10 year
Scenario: Post-Development 10 year	

Structure ID: Culvert - 1
Structure Type: Culvert-Circular

Number of Barrels	1
Diameter	15.0 in
Length	141.00 ft
Length (Computed Barrel)	141.96 ft
Slope (Computed)	0.117 ft/ft

Outlet Control Data

Manning's n	0.013
Ke	0.200
Kb	0.023
Kr	0.200
Convergence Tolerance	0.00 ft

Inlet Control Data

Equation Form	Form 1
K	0.0018
M	2.5000
C	0.0243
Y	0.8300
T1 ratio (HW/D)	1.023
T2 ratio (HW/D)	1.160
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	619.78 ft	T1 Flow	4.80 ft³/s
T2 Elevation	619.95 ft	T2 Flow	5.49 ft³/s

Stormwater Hydrologic Calculations

Subsection: Outlet Input Data — Return Event: 10 years
Label: IB-1C-10 OUT — Storm Event: 10 year
Scenario: Post-Development 10 year

Structure ID: Riser - 1
Structure Type: Inlet Box

Number of Openings	1
Elevation	619.85 ft
Orifice Area	16.0 ft²
Orifice Coefficient	0.600
Weir Length	16.00 ft
Weir Coefficient	3.00 (ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: TW
Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves | Return Event: 10 years
Label: IB-1C-10 OUT | Storm Event: 10 year
Scenario: Post-Development 10 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
618.50	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.55	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.60	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.65	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.70	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.75	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.80	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.85	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.90	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.95	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.05	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.10	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.15	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.20	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.25	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.30	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.35	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.40	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.45	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.50	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.55	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.60	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.65	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.70	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.75	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.80	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.85	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.90	0.54	618.91	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
619.95	1.52	619.21	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
620.00	2.79	619.49	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
620.05	4.29	619.79	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
620.10	5.95	620.10	Free Outfall	Free Outfall	0.00	0.05	(N/A)	0.00
620.15	6.22	620.15	Free Outfall	Free Outfall	0.00	1.67	(N/A)	0.00

Subsection: Individual Outlet Curves | Return Event: 10 years
Label: IB-1C-10 OUT | Storm Event: 10 year
Scenario: Post-Development 10 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
620.20	6.47	620.20	Free Outfall	Free Outfall	0.00	3.47	(N/A)	0.00
620.25	6.73	620.25	Free Outfall	Free Outfall	0.00	5.41	(N/A)	0.00
620.30	6.99	620.30	Free Outfall	Free Outfall	0.00	7.50	(N/A)	0.00
620.35	7.24	620.35	Free Outfall	Free Outfall	0.00	9.74	(N/A)	0.00
620.40	7.48	620.40	Free Outfall	Free Outfall	0.00	12.10	(N/A)	0.00
620.45	7.72	620.45	Free Outfall	Free Outfall	0.00	14.59	(N/A)	0.00
620.50	7.96	620.50	Free Outfall	Free Outfall	0.00	17.19	(N/A)	0.00
620.55	8.19	620.55	Free Outfall	Free Outfall	0.00	19.92	(N/A)	0.00
620.60	8.39	620.60	Free Outfall	Free Outfall	0.00	22.78	(N/A)	0.00
620.65	8.57	620.65	Free Outfall	Free Outfall	0.00	25.77	(N/A)	0.00
620.70	8.75	620.70	Free Outfall	Free Outfall	0.00	28.87	(N/A)	0.00
620.75	8.93	620.75	Free Outfall	Free Outfall	0.00	32.05	(N/A)	0.00
620.80	9.10	620.80	Free Outfall	Free Outfall	0.00	35.35	(N/A)	0.00
620.85	9.27	620.85	Free Outfall	Free Outfall	0.00	38.73	(N/A)	0.00
620.90	9.43	620.90	Free Outfall	Free Outfall	0.00	42.22	(N/A)	0.00
620.95	9.60	620.95	Free Outfall	Free Outfall	0.00	45.78	(N/A)	0.00
621.00	9.76	621.00	Free Outfall	Free Outfall	0.00	49.44	(N/A)	0.00
621.05	9.91	621.05	Free Outfall	Free Outfall	0.00	53.19	(N/A)	0.00
621.10	10.07	621.10	Free Outfall	Free Outfall	0.00	57.01	(N/A)	0.00
621.15	10.22	621.15	Free Outfall	Free Outfall	0.00	60.92	(N/A)	0.00
621.20	10.37	621.20	Free Outfall	Free Outfall	0.00	64.92	(N/A)	0.00
621.25	10.52	621.25	Free Outfall	Free Outfall	0.00	68.99	(N/A)	0.00
621.30	10.66	621.30	Free Outfall	Free Outfall	0.00	73.15	(N/A)	0.00
621.35	10.81	621.35	Free Outfall	Free Outfall	0.00	77.37	(N/A)	0.00
621.40	10.96	621.40	Free Outfall	Free Outfall	0.00	81.67	(N/A)	0.00
621.45	11.09	621.45	Free Outfall	Free Outfall	0.00	86.05	(N/A)	0.00
621.50	11.23	621.50	Free Outfall	Free Outfall	0.00	87.69	(N/A)	0.00
621.55	11.37	621.55	Free Outfall	Free Outfall	0.00	89.04	(N/A)	0.00
621.60	11.50	621.60	Free Outfall	Free Outfall	0.00	90.37	(N/A)	0.00
621.65	11.64	621.65	Free Outfall	Free Outfall	0.00	91.68	(N/A)	0.00
621.70	11.77	621.70	Free Outfall	Free Outfall	0.00	92.97	(N/A)	0.00
621.75	11.90	621.75	Free Outfall	Free Outfall	0.00	94.25	(N/A)	0.00
621.80	12.03	621.80	Free Outfall	Free Outfall	0.00	95.51	(N/A)	0.00
621.85	12.16	621.85	Free Outfall	Free Outfall	0.00	96.75	(N/A)	0.00

Subsection: Individual Outlet Curves | Return Event: 10 years
Label: IB-1C-10 OUT | Storm Event: 10 year
Scenario: Post-Development 10 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
621.90	12.28	621.90	Free Outfall	Free Outfall	0.00	97.97	(N/A)	0.00
621.95	12.41	621.95	Free Outfall	Free Outfall	0.00	99.19	(N/A)	0.00
622.00	12.53	622.00	Free Outfall	Free Outfall	0.00	100.38	(N/A)	0.00
622.05	12.66	622.05	Free Outfall	Free Outfall	0.00	101.56	(N/A)	0.00
622.10	12.78	622.10	Free Outfall	Free Outfall	0.00	102.73	(N/A)	0.00
622.15	12.90	622.15	Free Outfall	Free Outfall	0.00	103.89	(N/A)	0.00
622.20	13.02	622.20	Free Outfall	Free Outfall	0.00	105.03	(N/A)	0.00
622.25	13.14	622.25	Free Outfall	Free Outfall	0.00	106.16	(N/A)	0.00
622.30	13.26	622.30	Free Outfall	Free Outfall	0.00	107.28	(N/A)	0.00
622.35	13.38	622.35	Free Outfall	Free Outfall	0.00	108.39	(N/A)	0.00
622.40	13.49	622.40	Free Outfall	Free Outfall	0.00	109.48	(N/A)	0.00
622.45	13.60	622.45	Free Outfall	Free Outfall	0.00	110.57	(N/A)	0.00
622.50	13.72	622.50	Free Outfall	Free Outfall	0.00	111.65	(N/A)	0.00
622.55	13.83	622.55	Free Outfall	Free Outfall	0.00	112.71	(N/A)	0.00
622.60	13.94	622.60	Free Outfall	Free Outfall	0.00	113.76	(N/A)	0.00
622.65	14.05	622.65	Free Outfall	Free Outfall	0.00	114.81	(N/A)	0.00
622.70	14.16	622.70	Free Outfall	Free Outfall	0.00	115.84	(N/A)	0.00
622.75	14.27	622.75	Free Outfall	Free Outfall	0.00	116.87	(N/A)	0.00
622.80	14.38	622.80	Free Outfall	Free Outfall	0.00	117.89	(N/A)	0.00
622.85	14.48	622.85	Free Outfall	Free Outfall	0.00	118.90	(N/A)	0.00
622.90	14.59	622.90	Free Outfall	Free Outfall	0.00	119.90	(N/A)	0.00
622.95	14.70	622.95	Free Outfall	Free Outfall	0.00	120.89	(N/A)	0.00
623.00	14.80	623.00	Free Outfall	Free Outfall	0.00	121.87	(N/A)	0.00
623.05	14.91	623.05	Free Outfall	Free Outfall	0.00	122.85	(N/A)	0.00
623.10	15.01	623.10	Free Outfall	Free Outfall	0.00	123.82	(N/A)	0.00
623.15	15.11	623.15	Free Outfall	Free Outfall	0.00	124.78	(N/A)	0.00
623.20	15.22	623.20	Free Outfall	Free Outfall	0.00	125.73	(N/A)	0.00
623.25	15.32	623.25	Free Outfall	Free Outfall	0.00	126.68	(N/A)	0.00
623.30	15.42	623.30	Free Outfall	Free Outfall	0.00	127.62	(N/A)	0.00
623.35	15.52	623.35	Free Outfall	Free Outfall	0.00	128.55	(N/A)	0.00
623.40	15.62	623.40	Free Outfall	Free Outfall	0.00	129.48	(N/A)	0.00
623.45	15.72	623.45	Free Outfall	Free Outfall	0.00	130.40	(N/A)	0.00
623.50	15.81	623.50	Free Outfall	Free Outfall	0.00	131.31	(N/A)	0.00
623.55	15.91	623.55	Free Outfall	Free Outfall	0.00	132.22	(N/A)	0.00

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
623.60	16.01	623.60	Free Outfall	Free Outfall	0.00	133.12	(N/A)	0.00
623.65	16.11	623.65	Free Outfall	Free Outfall	0.00	134.01	(N/A)	0.00
623.70	16.20	623.70	Free Outfall	Free Outfall	0.00	134.90	(N/A)	0.00
623.75	16.30	623.75	Free Outfall	Free Outfall	0.00	135.78	(N/A)	0.00
623.80	16.39	623.80	Free Outfall	Free Outfall	0.00	136.66	(N/A)	0.00
623.85	16.49	623.85	Free Outfall	Free Outfall	0.00	137.53	(N/A)	0.00
623.90	16.58	623.90	Free Outfall	Free Outfall	0.00	138.40	(N/A)	0.00
623.95	16.67	623.95	Free Outfall	Free Outfall	0.00	139.26	(N/A)	0.00
624.00	16.77	624.00	Free Outfall	Free Outfall	0.00	140.11	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
CRIT.DEPTH CONTROL Vh= .101ft Dcr= .286ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .182ft Dcr= .487ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .269ft Dcr= .670ft CRIT.DEPTH Hev= .00ft

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
CRIT.DEPTH CONTROL Vh= .373ft Dcr= .839ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .510ft Dcr= .987ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .536ft Dcr= 1.007ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .561ft Dcr= 1.025ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .588ft Dcr= 1.043ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .617ft Dcr= 1.059ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .646ft Dcr= 1.074ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .676ft Dcr= 1.089ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .707ft Dcr= 1.101ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .740ft Dcr= 1.113ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .772ft Dcr= 1.124ft CRIT.DEPTH Hev= .00ft
INLET CONTROL... Submerged: HW =2.10
INLET CONTROL... Submerged: HW =2.15
INLET CONTROL... Submerged: HW =2.20
INLET CONTROL... Submerged: HW =2.25

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
INLET CONTROL... Submerged: HW =2.30
INLET CONTROL... Submerged: HW =2.35
INLET CONTROL... Submerged: HW =2.40
INLET CONTROL... Submerged: HW =2.45
INLET CONTROL... Submerged: HW =2.50
INLET CONTROL... Submerged: HW =2.55
INLET CONTROL... Submerged: HW =2.60
INLET CONTROL... Submerged: HW =2.65
INLET CONTROL... Submerged: HW =2.70
INLET CONTROL... Submerged: HW =2.75
INLET CONTROL... Submerged: HW =2.80
INLET CONTROL... Submerged: HW =2.85
INLET CONTROL... Submerged: HW =2.90
INLET CONTROL... Submerged: HW =2.95
INLET CONTROL... Submerged: HW =3.00
INLET CONTROL... Submerged: HW =3.05
INLET CONTROL... Submerged: HW =3.10
INLET CONTROL... Submerged: HW =3.15
INLET CONTROL... Submerged: HW =3.20
INLET CONTROL... Submerged: HW =3.25

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
INLET CONTROL... Submerged: HW =3.30
INLET CONTROL... Submerged: HW =3.35
INLET CONTROL... Submerged: HW =3.40
INLET CONTROL... Submerged: HW =3.45
INLET CONTROL... Submerged: HW =3.50
INLET CONTROL... Submerged: HW =3.55
INLET CONTROL... Submerged: HW =3.60
INLET CONTROL... Submerged: HW =3.65
INLET CONTROL... Submerged: HW =3.70
INLET CONTROL... Submerged: HW =3.75
INLET CONTROL... Submerged: HW =3.80
INLET CONTROL... Submerged: HW =3.85
INLET CONTROL... Submerged: HW =3.90
INLET CONTROL... Submerged: HW =3.95
INLET CONTROL... Submerged: HW =4.00
INLET CONTROL... Submerged: HW =4.05
INLET CONTROL... Submerged: HW =4.10
INLET CONTROL... Submerged: HW =4.15
INLET CONTROL... Submerged: HW =4.20
INLET CONTROL... Submerged: HW =4.25

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
INLET CONTROL... Submerged: HW =4.30
INLET CONTROL... Submerged: HW =4.35
INLET CONTROL... Submerged: HW =4.40
INLET CONTROL... Submerged: HW =4.45
INLET CONTROL... Submerged: HW =4.50
INLET CONTROL... Submerged: HW =4.55
INLET CONTROL... Submerged: HW =4.60
INLET CONTROL... Submerged: HW =4.65
INLET CONTROL... Submerged: HW =4.70
INLET CONTROL... Submerged: HW =4.75
INLET CONTROL... Submerged: HW =4.80
INLET CONTROL... Submerged: HW =4.85
INLET CONTROL... Submerged: HW =4.90
INLET CONTROL... Submerged: HW =4.95
INLET CONTROL... Submerged: HW =5.00
INLET CONTROL... Submerged: HW =5.05
INLET CONTROL... Submerged: HW =5.10
INLET CONTROL... Submerged: HW =5.15
INLET CONTROL... Submerged: HW =5.20
INLET CONTROL... Submerged: HW =5.25

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
INLET CONTROL... Submerged: HW =5.30
INLET CONTROL... Submerged: HW =5.35
INLET CONTROL... Submerged: HW =5.40
INLET CONTROL... Submerged: HW =5.45
INLET CONTROL... Submerged: HW =5.50

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves — Return Event: 10 years
Label: IB-1C-10 OUT — Storm Event: 10 year
Scenario: Post-Development 10 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
618.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.55	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.60	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.65	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.70	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.75	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.80	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.85	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.90	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.95	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.05	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.10	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.15	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.20	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.25	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.30	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.35	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.40	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.45	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.55	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.60	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.65	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.70	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.75	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.80	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.85	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.90	0.54	619.90	Free Outfall	618.91	0.00	0.00	(N/A)	0.00
619.95	1.52	619.95	Free Outfall	619.21	0.00	0.00	(N/A)	0.00
620.00	2.79	620.00	Free Outfall	619.49	0.00	0.00	(N/A)	0.00
620.05	4.29	620.05	Free Outfall	619.79	0.00	0.00	(N/A)	0.00
620.10	6.00	620.10	620.10	620.10	0.00	0.00	(N/A)	0.00
620.15	7.89	620.15	620.15	620.15	0.00	0.00	(N/A)	0.00
620.20	9.94	620.20	620.20	620.20	0.00	0.00	(N/A)	0.00

Subsection: Individual Outlet Curves | Return Event: 10 years
Label: IB-1C-10 OUT | Storm Event: 10 year
Scenario: Post-Development 10 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
620.25	12.14	620.25	620.25	620.25	0.00	0.00	(N/A)	0.00
620.30	14.49	620.30	620.30	620.30	0.00	0.00	(N/A)	0.00
620.35	16.97	620.35	620.35	620.35	0.00	0.00	(N/A)	0.00
620.40	19.58	620.40	620.40	620.40	0.00	0.00	(N/A)	0.00
620.45	22.31	620.45	620.45	620.45	0.00	0.00	(N/A)	0.00
620.50	25.15	620.50	620.50	620.50	0.00	0.00	(N/A)	0.00
620.55	28.11	620.55	620.55	620.55	0.00	0.00	(N/A)	0.00
620.60	31.18	620.60	620.60	620.60	0.00	0.00	(N/A)	0.00
620.65	34.35	620.65	620.65	620.65	0.00	0.00	(N/A)	0.00
620.70	37.62	620.70	620.70	620.70	0.00	0.00	(N/A)	0.00
620.75	40.98	620.75	620.75	620.75	0.00	0.00	(N/A)	0.00
620.80	44.45	620.80	620.80	620.80	0.00	0.00	(N/A)	0.00
620.85	48.00	620.85	620.85	620.85	0.00	0.00	(N/A)	0.00
620.90	51.64	620.90	620.90	620.90	0.00	0.00	(N/A)	0.00
620.95	55.38	620.95	620.95	620.95	0.00	0.00	(N/A)	0.00
621.00	59.20	621.00	621.00	621.00	0.00	0.00	(N/A)	0.00
621.05	63.10	621.05	621.05	621.05	0.00	0.00	(N/A)	0.00
621.10	67.08	621.10	621.10	621.10	0.00	0.00	(N/A)	0.00
621.15	71.15	621.15	621.15	621.15	0.00	0.00	(N/A)	0.00
621.20	75.29	621.20	621.20	621.20	0.00	0.00	(N/A)	0.00
621.25	79.51	621.25	621.25	621.25	0.00	0.00	(N/A)	0.00
621.30	83.81	621.30	621.30	621.30	0.00	0.00	(N/A)	0.00
621.35	88.18	621.35	621.35	621.35	0.00	0.00	(N/A)	0.00
621.40	92.63	621.40	621.40	621.40	0.00	0.00	(N/A)	0.00
621.45	97.15	621.45	621.45	621.45	0.00	0.00	(N/A)	0.00
621.50	98.92	621.50	621.50	621.50	0.00	0.00	(N/A)	0.00
621.55	100.41	621.55	621.55	621.55	0.00	0.00	(N/A)	0.00
621.60	101.87	621.60	621.60	621.60	0.00	0.00	(N/A)	0.00
621.65	103.32	621.65	621.65	621.65	0.00	0.00	(N/A)	0.00
621.70	104.74	621.70	621.70	621.70	0.00	0.00	(N/A)	0.00
621.75	106.15	621.75	621.75	621.75	0.00	0.00	(N/A)	0.00
621.80	107.54	621.80	621.80	621.80	0.00	0.00	(N/A)	0.00
621.85	108.91	621.85	621.85	621.85	0.00	0.00	(N/A)	0.00
621.90	110.26	621.90	621.90	621.90	0.00	0.00	(N/A)	0.00
621.95	111.60	621.95	621.95	621.95	0.00	0.00	(N/A)	0.00

Subsection: Individual Outlet Curves | Return Event: 10 years
Label: IB-1C-10 OUT | Storm Event: 10 year
Scenario: Post-Development 10 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
622.00	112.92	622.00	622.00	622.00	0.00	0.00	(N/A)	0.00
622.05	114.22	622.05	622.05	622.05	0.00	0.00	(N/A)	0.00
622.10	115.51	622.10	622.10	622.10	0.00	0.00	(N/A)	0.00
622.15	116.79	622.15	622.15	622.15	0.00	0.00	(N/A)	0.00
622.20	118.05	622.20	622.20	622.20	0.00	0.00	(N/A)	0.00
622.25	119.30	622.25	622.25	622.25	0.00	0.00	(N/A)	0.00
622.30	120.54	622.30	622.30	622.30	0.00	0.00	(N/A)	0.00
622.35	121.76	622.35	622.35	622.35	0.00	0.00	(N/A)	0.00
622.40	122.97	622.40	622.40	622.40	0.00	0.00	(N/A)	0.00
622.45	124.17	622.45	622.45	622.45	0.00	0.00	(N/A)	0.00
622.50	125.36	622.50	622.50	622.50	0.00	0.00	(N/A)	0.00
622.55	126.54	622.55	622.55	622.55	0.00	0.00	(N/A)	0.00
622.60	127.70	622.60	622.60	622.60	0.00	0.00	(N/A)	0.00
622.65	128.86	622.65	622.65	622.65	0.00	0.00	(N/A)	0.00
622.70	130.01	622.70	622.70	622.70	0.00	0.00	(N/A)	0.00
622.75	131.14	622.75	622.75	622.75	0.00	0.00	(N/A)	0.00
622.80	132.27	622.80	622.80	622.80	0.00	0.00	(N/A)	0.00
622.85	133.38	622.85	622.85	622.85	0.00	0.00	(N/A)	0.00
622.90	134.49	622.90	622.90	622.90	0.00	0.00	(N/A)	0.00
622.95	135.59	622.95	622.95	622.95	0.00	0.00	(N/A)	0.00
623.00	136.68	623.00	623.00	623.00	0.00	0.00	(N/A)	0.00
623.05	137.76	623.05	623.05	623.05	0.00	0.00	(N/A)	0.00
623.10	138.83	623.10	623.10	623.10	0.00	0.00	(N/A)	0.00
623.15	139.89	623.15	623.15	623.15	0.00	0.00	(N/A)	0.00
623.20	140.95	623.20	623.20	623.20	0.00	0.00	(N/A)	0.00
623.25	142.00	623.25	623.25	623.25	0.00	0.00	(N/A)	0.00
623.30	143.04	623.30	623.30	623.30	0.00	0.00	(N/A)	0.00
623.35	144.07	623.35	623.35	623.35	0.00	0.00	(N/A)	0.00
623.40	145.10	623.40	623.40	623.40	0.00	0.00	(N/A)	0.00
623.45	146.11	623.45	623.45	623.45	0.00	0.00	(N/A)	0.00
623.50	147.12	623.50	623.50	623.50	0.00	0.00	(N/A)	0.00
623.55	148.13	623.55	623.55	623.55	0.00	0.00	(N/A)	0.00
623.60	149.13	623.60	623.60	623.60	0.00	0.00	(N/A)	0.00
623.65	150.12	623.65	623.65	623.65	0.00	0.00	(N/A)	0.00
623.70	151.10	623.70	623.70	623.70	0.00	0.00	(N/A)	0.00

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
623.75	152.08	623.75	623.75	623.75	0.00	0.00	(N/A)	0.00
623.80	153.05	623.80	623.80	623.80	0.00	0.00	(N/A)	0.00
623.85	154.02	623.85	623.85	623.85	0.00	0.00	(N/A)	0.00
623.90	154.98	623.90	623.90	623.90	0.00	0.00	(N/A)	0.00
623.95	155.93	623.95	623.95	623.95	0.00	0.00	(N/A)	0.00
624.00	156.88	624.00	624.00	624.00	0.00	0.00	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves | Return Event: 10 years
Label: IB-1C-10 OUT | Storm Event: 10 year
Scenario: Post-Development 10 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
Weir: H =0.05ft
Weir: H =0.1ft
Weir: H =0.15ft
Weir: H =0.2ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.25ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.3ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.35ft

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.4ft
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
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FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
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FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
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FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
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FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
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FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
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FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

Subsection: Composite Rating Curve
Label: IB-1C-10 OUT
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
618.50	0.00	(N/A)	0.00
618.55	0.00	(N/A)	0.00
618.60	0.00	(N/A)	0.00
618.65	0.00	(N/A)	0.00
618.70	0.00	(N/A)	0.00
618.75	0.00	(N/A)	0.00
618.80	0.00	(N/A)	0.00
618.85	0.00	(N/A)	0.00
618.90	0.00	(N/A)	0.00
618.95	0.00	(N/A)	0.00
619.00	0.00	(N/A)	0.00
619.05	0.00	(N/A)	0.00
619.10	0.00	(N/A)	0.00
619.15	0.00	(N/A)	0.00
619.20	0.00	(N/A)	0.00
619.25	0.00	(N/A)	0.00
619.30	0.00	(N/A)	0.00
619.35	0.00	(N/A)	0.00
619.40	0.00	(N/A)	0.00
619.45	0.00	(N/A)	0.00
619.50	0.00	(N/A)	0.00
619.55	0.00	(N/A)	0.00
619.60	0.00	(N/A)	0.00
619.65	0.00	(N/A)	0.00
619.70	0.00	(N/A)	0.00
619.75	0.00	(N/A)	0.00
619.80	0.00	(N/A)	0.00
619.85	0.00	(N/A)	0.00
619.90	0.54	(N/A)	0.00
619.95	1.52	(N/A)	0.00
620.00	2.79	(N/A)	0.00
620.05	4.29	(N/A)	0.00
620.10	5.95	(N/A)	0.00
620.15	6.22	(N/A)	0.00
620.20	6.47	(N/A)	0.00
620.25	6.73	(N/A)	0.00
620.30	6.99	(N/A)	0.00
620.35	7.24	(N/A)	0.00
620.40	7.48	(N/A)	0.00
620.45	7.72	(N/A)	0.00
620.50	7.96	(N/A)	0.00
620.55	8.19	(N/A)	0.00

Subsection: Composite Rating Curve | Return Event: 10 years
Label: IB-1C-10 OUT | Storm Event: 10 year
Scenario: Post-Development 10 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
620.60	8.39	(N/A)	0.00
620.65	8.57	(N/A)	0.00
620.70	8.75	(N/A)	0.00
620.75	8.93	(N/A)	0.00
620.80	9.10	(N/A)	0.00
620.85	9.27	(N/A)	0.00
620.90	9.43	(N/A)	0.00
620.95	9.60	(N/A)	0.00
621.00	9.76	(N/A)	0.00
621.05	9.91	(N/A)	0.00
621.10	10.07	(N/A)	0.00
621.15	10.22	(N/A)	0.00
621.20	10.37	(N/A)	0.00
621.25	10.52	(N/A)	0.00
621.30	10.66	(N/A)	0.00
621.35	10.81	(N/A)	0.00
621.40	10.96	(N/A)	0.00
621.45	11.09	(N/A)	0.00
621.50	11.23	(N/A)	0.00
621.55	11.37	(N/A)	0.00
621.60	11.50	(N/A)	0.00
621.65	11.64	(N/A)	0.00
621.70	11.77	(N/A)	0.00
621.75	11.90	(N/A)	0.00
621.80	12.03	(N/A)	0.00
621.85	12.16	(N/A)	0.00
621.90	12.28	(N/A)	0.00
621.95	12.41	(N/A)	0.00
622.00	12.53	(N/A)	0.00
622.05	12.66	(N/A)	0.00
622.10	12.78	(N/A)	0.00
622.15	12.90	(N/A)	0.00
622.20	13.02	(N/A)	0.00
622.25	13.14	(N/A)	0.00
622.30	13.26	(N/A)	0.00
622.35	13.38	(N/A)	0.00
622.40	13.49	(N/A)	0.00
622.45	13.60	(N/A)	0.00
622.50	13.72	(N/A)	0.00
622.55	13.83	(N/A)	0.00
622.60	13.94	(N/A)	0.00
622.65	14.05	(N/A)	0.00

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve — Return Event: 10 years
Label: IB-1C-10 OUT — Storm Event: 10 year
Scenario: Post-Development 10 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
622.70	14.16	(N/A)	0.00
622.75	14.27	(N/A)	0.00
622.80	14.38	(N/A)	0.00
622.85	14.48	(N/A)	0.00
622.90	14.59	(N/A)	0.00
622.95	14.70	(N/A)	0.00
623.00	14.80	(N/A)	0.00
623.05	14.91	(N/A)	0.00
623.10	15.01	(N/A)	0.00
623.15	15.11	(N/A)	0.00
623.20	15.22	(N/A)	0.00
623.25	15.32	(N/A)	0.00
623.30	15.42	(N/A)	0.00
623.35	15.52	(N/A)	0.00
623.40	15.62	(N/A)	0.00
623.45	15.72	(N/A)	0.00
623.50	15.81	(N/A)	0.00
623.55	15.91	(N/A)	0.00
623.60	16.01	(N/A)	0.00
623.65	16.11	(N/A)	0.00
623.70	16.20	(N/A)	0.00
623.75	16.30	(N/A)	0.00
623.80	16.39	(N/A)	0.00
623.85	16.49	(N/A)	0.00
623.90	16.58	(N/A)	0.00
623.95	16.67	(N/A)	0.00
624.00	16.77	(N/A)	0.00

Contributing Structures
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)

Composite Outflow Summary

Contributing Structures
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
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(no Q: Riser - 1,Culvert - 1)
Riser - 1,Culvert - 1
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Riser - 1,Culvert - 1
Riser - 1,Culvert - 1

Subsection: Composite Rating Curve | Return Event: 10 years
Label: IB-1C-10 OUT | Storm Event: 10 year
Scenario: Post-Development 10 year

Composite Outflow Summary

Contributing Structures
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
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Riser - 1,Culvert - 1
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Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve — Return Event: 10 years
Label: IB-1C-10 OUT — Storm Event: 10 year
Scenario: Post-Development 10 year

Composite Outflow Summary

Contributing Structures
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
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Riser - 1,Culvert - 1

Stormwater Hydrologic Calculations

Subsection: Outlet Input Data
Label: IB-1C-10 OUT
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 year

Requested Pond Water Surface Elevations	
Minimum (Headwater)	618.50 ft
Increment (Headwater)	0.05 ft
Maximum (Headwater)	624.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Inlet Box	Riser - 1	Forward	Culvert - 1	619.85	624.00
Culvert-Circular	Culvert - 1	Forward	TW	618.50	624.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Stormwater Hydrologic Calculations

Subsection: Outlet Input Data	Return Event: 25 years
Label: IB-1C-10 OUT	Storm Event: 25 year
Scenario: Post-Development 25 year	

Structure ID: Culvert - 1
Structure Type: Culvert-Circular

Number of Barrels	1
Diameter	15.0 in
Length	141.00 ft
Length (Computed Barrel)	141.96 ft
Slope (Computed)	0.117 ft/ft

Outlet Control Data

Manning's n	0.013
Ke	0.200
Kb	0.023
Kr	0.200
Convergence Tolerance	0.00 ft

Inlet Control Data

Equation Form	Form 1
K	0.0018
M	2.5000
C	0.0243
Y	0.8300
T1 ratio (HW/D)	1.023
T2 ratio (HW/D)	1.160
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	619.78 ft	T1 Flow	4.80 ft³/s
T2 Elevation	619.95 ft	T2 Flow	5.49 ft³/s

Subsection: Outlet Input Data | Return Event: 25 years
Label: IB-1C-10 OUT | Storm Event: 25 year
Scenario: Post-Development 25 year

Structure ID: Riser - 1
Structure Type: Inlet Box

Number of Openings	1
Elevation	619.85 ft
Orifice Area	16.0 ft²
Orifice Coefficient	0.600
Weir Length	16.00 ft
Weir Coefficient	3.00 (ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: TW
Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves | Return Event: 25 years
Label: IB-1C-10 OUT | Storm Event: 25 year
Scenario: Post-Development 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
618.50	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.55	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.60	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.65	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.70	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.75	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.80	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.85	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.90	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.95	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.05	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.10	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.15	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.20	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.25	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.30	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.35	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.40	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.45	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.50	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.55	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.60	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.65	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.70	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.75	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.80	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.85	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.90	0.54	618.91	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
619.95	1.52	619.21	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
620.00	2.79	619.49	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
620.05	4.29	619.79	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
620.10	5.95	620.10	Free Outfall	Free Outfall	0.00	0.05	(N/A)	0.00
620.15	6.22	620.15	Free Outfall	Free Outfall	0.00	1.67	(N/A)	0.00

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves — Return Event: 25 years
Label: IB-1C-10 OUT — Storm Event: 25 year
Scenario: Post-Development 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
620.20	6.47	620.20	Free Outfall	Free Outfall	0.00	3.47	(N/A)	0.00
620.25	6.73	620.25	Free Outfall	Free Outfall	0.00	5.41	(N/A)	0.00
620.30	6.99	620.30	Free Outfall	Free Outfall	0.00	7.50	(N/A)	0.00
620.35	7.24	620.35	Free Outfall	Free Outfall	0.00	9.74	(N/A)	0.00
620.40	7.48	620.40	Free Outfall	Free Outfall	0.00	12.10	(N/A)	0.00
620.45	7.72	620.45	Free Outfall	Free Outfall	0.00	14.59	(N/A)	0.00
620.50	7.96	620.50	Free Outfall	Free Outfall	0.00	17.19	(N/A)	0.00
620.55	8.19	620.55	Free Outfall	Free Outfall	0.00	19.92	(N/A)	0.00
620.60	8.39	620.60	Free Outfall	Free Outfall	0.00	22.78	(N/A)	0.00
620.65	8.57	620.65	Free Outfall	Free Outfall	0.00	25.77	(N/A)	0.00
620.70	8.75	620.70	Free Outfall	Free Outfall	0.00	28.87	(N/A)	0.00
620.75	8.93	620.75	Free Outfall	Free Outfall	0.00	32.05	(N/A)	0.00
620.80	9.10	620.80	Free Outfall	Free Outfall	0.00	35.35	(N/A)	0.00
620.85	9.27	620.85	Free Outfall	Free Outfall	0.00	38.73	(N/A)	0.00
620.90	9.43	620.90	Free Outfall	Free Outfall	0.00	42.22	(N/A)	0.00
620.95	9.60	620.95	Free Outfall	Free Outfall	0.00	45.78	(N/A)	0.00
621.00	9.76	621.00	Free Outfall	Free Outfall	0.00	49.44	(N/A)	0.00
621.05	9.91	621.05	Free Outfall	Free Outfall	0.00	53.19	(N/A)	0.00
621.10	10.07	621.10	Free Outfall	Free Outfall	0.00	57.01	(N/A)	0.00
621.15	10.22	621.15	Free Outfall	Free Outfall	0.00	60.92	(N/A)	0.00
621.20	10.37	621.20	Free Outfall	Free Outfall	0.00	64.92	(N/A)	0.00
621.25	10.52	621.25	Free Outfall	Free Outfall	0.00	68.99	(N/A)	0.00
621.30	10.66	621.30	Free Outfall	Free Outfall	0.00	73.15	(N/A)	0.00
621.35	10.81	621.35	Free Outfall	Free Outfall	0.00	77.37	(N/A)	0.00
621.40	10.96	621.40	Free Outfall	Free Outfall	0.00	81.67	(N/A)	0.00
621.45	11.09	621.45	Free Outfall	Free Outfall	0.00	86.05	(N/A)	0.00
621.50	11.23	621.50	Free Outfall	Free Outfall	0.00	87.69	(N/A)	0.00
621.55	11.37	621.55	Free Outfall	Free Outfall	0.00	89.04	(N/A)	0.00
621.60	11.50	621.60	Free Outfall	Free Outfall	0.00	90.37	(N/A)	0.00
621.65	11.64	621.65	Free Outfall	Free Outfall	0.00	91.68	(N/A)	0.00
621.70	11.77	621.70	Free Outfall	Free Outfall	0.00	92.97	(N/A)	0.00
621.75	11.90	621.75	Free Outfall	Free Outfall	0.00	94.25	(N/A)	0.00
621.80	12.03	621.80	Free Outfall	Free Outfall	0.00	95.51	(N/A)	0.00
621.85	12.16	621.85	Free Outfall	Free Outfall	0.00	96.75	(N/A)	0.00

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
621.90	12.28	621.90	Free Outfall	Free Outfall	0.00	97.97	(N/A)	0.00
621.95	12.41	621.95	Free Outfall	Free Outfall	0.00	99.19	(N/A)	0.00
622.00	12.53	622.00	Free Outfall	Free Outfall	0.00	100.38	(N/A)	0.00
622.05	12.66	622.05	Free Outfall	Free Outfall	0.00	101.56	(N/A)	0.00
622.10	12.78	622.10	Free Outfall	Free Outfall	0.00	102.73	(N/A)	0.00
622.15	12.90	622.15	Free Outfall	Free Outfall	0.00	103.89	(N/A)	0.00
622.20	13.02	622.20	Free Outfall	Free Outfall	0.00	105.03	(N/A)	0.00
622.25	13.14	622.25	Free Outfall	Free Outfall	0.00	106.16	(N/A)	0.00
622.30	13.26	622.30	Free Outfall	Free Outfall	0.00	107.28	(N/A)	0.00
622.35	13.38	622.35	Free Outfall	Free Outfall	0.00	108.39	(N/A)	0.00
622.40	13.49	622.40	Free Outfall	Free Outfall	0.00	109.48	(N/A)	0.00
622.45	13.60	622.45	Free Outfall	Free Outfall	0.00	110.57	(N/A)	0.00
622.50	13.72	622.50	Free Outfall	Free Outfall	0.00	111.65	(N/A)	0.00
622.55	13.83	622.55	Free Outfall	Free Outfall	0.00	112.71	(N/A)	0.00
622.60	13.94	622.60	Free Outfall	Free Outfall	0.00	113.76	(N/A)	0.00
622.65	14.05	622.65	Free Outfall	Free Outfall	0.00	114.81	(N/A)	0.00
622.70	14.16	622.70	Free Outfall	Free Outfall	0.00	115.84	(N/A)	0.00
622.75	14.27	622.75	Free Outfall	Free Outfall	0.00	116.87	(N/A)	0.00
622.80	14.38	622.80	Free Outfall	Free Outfall	0.00	117.89	(N/A)	0.00
622.85	14.48	622.85	Free Outfall	Free Outfall	0.00	118.90	(N/A)	0.00
622.90	14.59	622.90	Free Outfall	Free Outfall	0.00	119.90	(N/A)	0.00
622.95	14.70	622.95	Free Outfall	Free Outfall	0.00	120.89	(N/A)	0.00
623.00	14.80	623.00	Free Outfall	Free Outfall	0.00	121.87	(N/A)	0.00
623.05	14.91	623.05	Free Outfall	Free Outfall	0.00	122.85	(N/A)	0.00
623.10	15.01	623.10	Free Outfall	Free Outfall	0.00	123.82	(N/A)	0.00
623.15	15.11	623.15	Free Outfall	Free Outfall	0.00	124.78	(N/A)	0.00
623.20	15.22	623.20	Free Outfall	Free Outfall	0.00	125.73	(N/A)	0.00
623.25	15.32	623.25	Free Outfall	Free Outfall	0.00	126.68	(N/A)	0.00
623.30	15.42	623.30	Free Outfall	Free Outfall	0.00	127.62	(N/A)	0.00
623.35	15.52	623.35	Free Outfall	Free Outfall	0.00	128.55	(N/A)	0.00
623.40	15.62	623.40	Free Outfall	Free Outfall	0.00	129.48	(N/A)	0.00
623.45	15.72	623.45	Free Outfall	Free Outfall	0.00	130.40	(N/A)	0.00
623.50	15.81	623.50	Free Outfall	Free Outfall	0.00	131.31	(N/A)	0.00
623.55	15.91	623.55	Free Outfall	Free Outfall	0.00	132.22	(N/A)	0.00

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves | Return Event: 25 years
Label: IB-1C-10 OUT | Storm Event: 25 year
Scenario: Post-Development 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
623.60	16.01	623.60	Free Outfall	Free Outfall	0.00	133.12	(N/A)	0.00
623.65	16.11	623.65	Free Outfall	Free Outfall	0.00	134.01	(N/A)	0.00
623.70	16.20	623.70	Free Outfall	Free Outfall	0.00	134.90	(N/A)	0.00
623.75	16.30	623.75	Free Outfall	Free Outfall	0.00	135.78	(N/A)	0.00
623.80	16.39	623.80	Free Outfall	Free Outfall	0.00	136.66	(N/A)	0.00
623.85	16.49	623.85	Free Outfall	Free Outfall	0.00	137.53	(N/A)	0.00
623.90	16.58	623.90	Free Outfall	Free Outfall	0.00	138.40	(N/A)	0.00
623.95	16.67	623.95	Free Outfall	Free Outfall	0.00	139.26	(N/A)	0.00
624.00	16.77	624.00	Free Outfall	Free Outfall	0.00	140.11	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
CRIT.DEPTH CONTROL Vh= .101ft Dcr= .286ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .182ft Dcr= .487ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .269ft Dcr= .670ft CRIT.DEPTH Hev= .00ft

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
CRIT.DEPTH CONTROL Vh= .373ft Dcr= .839ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .510ft Dcr= .987ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .536ft Dcr= 1.007ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .561ft Dcr= 1.025ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .588ft Dcr= 1.043ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .617ft Dcr= 1.059ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .646ft Dcr= 1.074ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .676ft Dcr= 1.089ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .707ft Dcr= 1.101ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .740ft Dcr= 1.113ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .772ft Dcr= 1.124ft CRIT.DEPTH Hev= .00ft
INLET CONTROL... Submerged: HW =2.10
INLET CONTROL... Submerged: HW =2.15
INLET CONTROL... Submerged: HW =2.20
INLET CONTROL... Submerged: HW =2.25

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
INLET CONTROL... Submerged: HW =2.30
INLET CONTROL... Submerged: HW =2.35
INLET CONTROL... Submerged: HW =2.40
INLET CONTROL... Submerged: HW =2.45
INLET CONTROL... Submerged: HW =2.50
INLET CONTROL... Submerged: HW =2.55
INLET CONTROL... Submerged: HW =2.60
INLET CONTROL... Submerged: HW =2.65
INLET CONTROL... Submerged: HW =2.70
INLET CONTROL... Submerged: HW =2.75
INLET CONTROL... Submerged: HW =2.80
INLET CONTROL... Submerged: HW =2.85
INLET CONTROL... Submerged: HW =2.90
INLET CONTROL... Submerged: HW =2.95
INLET CONTROL... Submerged: HW =3.00
INLET CONTROL... Submerged: HW =3.05
INLET CONTROL... Submerged: HW =3.10
INLET CONTROL... Submerged: HW =3.15
INLET CONTROL... Submerged: HW =3.20
INLET CONTROL... Submerged: HW =3.25

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
INLET CONTROL... Submerged: HW =3.30
INLET CONTROL... Submerged: HW =3.35
INLET CONTROL... Submerged: HW =3.40
INLET CONTROL... Submerged: HW =3.45
INLET CONTROL... Submerged: HW =3.50
INLET CONTROL... Submerged: HW =3.55
INLET CONTROL... Submerged: HW =3.60
INLET CONTROL... Submerged: HW =3.65
INLET CONTROL... Submerged: HW =3.70
INLET CONTROL... Submerged: HW =3.75
INLET CONTROL... Submerged: HW =3.80
INLET CONTROL... Submerged: HW =3.85
INLET CONTROL... Submerged: HW =3.90
INLET CONTROL... Submerged: HW =3.95
INLET CONTROL... Submerged: HW =4.00
INLET CONTROL... Submerged: HW =4.05
INLET CONTROL... Submerged: HW =4.10
INLET CONTROL... Submerged: HW =4.15
INLET CONTROL... Submerged: HW =4.20
INLET CONTROL... Submerged: HW =4.25

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
INLET CONTROL... Submerged: HW =4.30
INLET CONTROL... Submerged: HW =4.35
INLET CONTROL... Submerged: HW =4.40
INLET CONTROL... Submerged: HW =4.45
INLET CONTROL... Submerged: HW =4.50
INLET CONTROL... Submerged: HW =4.55
INLET CONTROL... Submerged: HW =4.60
INLET CONTROL... Submerged: HW =4.65
INLET CONTROL... Submerged: HW =4.70
INLET CONTROL... Submerged: HW =4.75
INLET CONTROL... Submerged: HW =4.80
INLET CONTROL... Submerged: HW =4.85
INLET CONTROL... Submerged: HW =4.90
INLET CONTROL... Submerged: HW =4.95
INLET CONTROL... Submerged: HW =5.00
INLET CONTROL... Submerged: HW =5.05
INLET CONTROL... Submerged: HW =5.10
INLET CONTROL... Submerged: HW =5.15
INLET CONTROL... Submerged: HW =5.20
INLET CONTROL... Submerged: HW =5.25

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
INLET CONTROL... Submerged: HW =5.30
INLET CONTROL... Submerged: HW =5.35
INLET CONTROL... Submerged: HW =5.40
INLET CONTROL... Submerged: HW =5.45
INLET CONTROL... Submerged: HW =5.50

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
618.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.55	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.60	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.65	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.70	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.75	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.80	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.85	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.90	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.95	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.05	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.10	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.15	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.20	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.25	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.30	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.35	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.40	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.45	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.55	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.60	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.65	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.70	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.75	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.80	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.85	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.90	0.54	619.90	Free Outfall	618.91	0.00	0.00	(N/A)	0.00
619.95	1.52	619.95	Free Outfall	619.21	0.00	0.00	(N/A)	0.00
620.00	2.79	620.00	Free Outfall	619.49	0.00	0.00	(N/A)	0.00
620.05	4.29	620.05	Free Outfall	619.79	0.00	0.00	(N/A)	0.00
620.10	6.00	620.10	620.10	620.10	0.00	0.00	(N/A)	0.00
620.15	7.89	620.15	620.15	620.15	0.00	0.00	(N/A)	0.00
620.20	9.94	620.20	620.20	620.20	0.00	0.00	(N/A)	0.00

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
620.25	12.14	620.25	620.25	620.25	0.00	0.00	(N/A)	0.00
620.30	14.49	620.30	620.30	620.30	0.00	0.00	(N/A)	0.00
620.35	16.97	620.35	620.35	620.35	0.00	0.00	(N/A)	0.00
620.40	19.58	620.40	620.40	620.40	0.00	0.00	(N/A)	0.00
620.45	22.31	620.45	620.45	620.45	0.00	0.00	(N/A)	0.00
620.50	25.15	620.50	620.50	620.50	0.00	0.00	(N/A)	0.00
620.55	28.11	620.55	620.55	620.55	0.00	0.00	(N/A)	0.00
620.60	31.18	620.60	620.60	620.60	0.00	0.00	(N/A)	0.00
620.65	34.35	620.65	620.65	620.65	0.00	0.00	(N/A)	0.00
620.70	37.62	620.70	620.70	620.70	0.00	0.00	(N/A)	0.00
620.75	40.98	620.75	620.75	620.75	0.00	0.00	(N/A)	0.00
620.80	44.45	620.80	620.80	620.80	0.00	0.00	(N/A)	0.00
620.85	48.00	620.85	620.85	620.85	0.00	0.00	(N/A)	0.00
620.90	51.64	620.90	620.90	620.90	0.00	0.00	(N/A)	0.00
620.95	55.38	620.95	620.95	620.95	0.00	0.00	(N/A)	0.00
621.00	59.20	621.00	621.00	621.00	0.00	0.00	(N/A)	0.00
621.05	63.10	621.05	621.05	621.05	0.00	0.00	(N/A)	0.00
621.10	67.08	621.10	621.10	621.10	0.00	0.00	(N/A)	0.00
621.15	71.15	621.15	621.15	621.15	0.00	0.00	(N/A)	0.00
621.20	75.29	621.20	621.20	621.20	0.00	0.00	(N/A)	0.00
621.25	79.51	621.25	621.25	621.25	0.00	0.00	(N/A)	0.00
621.30	83.81	621.30	621.30	621.30	0.00	0.00	(N/A)	0.00
621.35	88.18	621.35	621.35	621.35	0.00	0.00	(N/A)	0.00
621.40	92.63	621.40	621.40	621.40	0.00	0.00	(N/A)	0.00
621.45	97.15	621.45	621.45	621.45	0.00	0.00	(N/A)	0.00
621.50	98.92	621.50	621.50	621.50	0.00	0.00	(N/A)	0.00
621.55	100.41	621.55	621.55	621.55	0.00	0.00	(N/A)	0.00
621.60	101.87	621.60	621.60	621.60	0.00	0.00	(N/A)	0.00
621.65	103.32	621.65	621.65	621.65	0.00	0.00	(N/A)	0.00
621.70	104.74	621.70	621.70	621.70	0.00	0.00	(N/A)	0.00
621.75	106.15	621.75	621.75	621.75	0.00	0.00	(N/A)	0.00
621.80	107.54	621.80	621.80	621.80	0.00	0.00	(N/A)	0.00
621.85	108.91	621.85	621.85	621.85	0.00	0.00	(N/A)	0.00
621.90	110.26	621.90	621.90	621.90	0.00	0.00	(N/A)	0.00
621.95	111.60	621.95	621.95	621.95	0.00	0.00	(N/A)	0.00

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft^3/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft^3/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
622.00	112.92	622.00	622.00	622.00	0.00	0.00	(N/A)	0.00
622.05	114.22	622.05	622.05	622.05	0.00	0.00	(N/A)	0.00
622.10	115.51	622.10	622.10	622.10	0.00	0.00	(N/A)	0.00
622.15	116.79	622.15	622.15	622.15	0.00	0.00	(N/A)	0.00
622.20	118.05	622.20	622.20	622.20	0.00	0.00	(N/A)	0.00
622.25	119.30	622.25	622.25	622.25	0.00	0.00	(N/A)	0.00
622.30	120.54	622.30	622.30	622.30	0.00	0.00	(N/A)	0.00
622.35	121.76	622.35	622.35	622.35	0.00	0.00	(N/A)	0.00
622.40	122.97	622.40	622.40	622.40	0.00	0.00	(N/A)	0.00
622.45	124.17	622.45	622.45	622.45	0.00	0.00	(N/A)	0.00
622.50	125.36	622.50	622.50	622.50	0.00	0.00	(N/A)	0.00
622.55	126.54	622.55	622.55	622.55	0.00	0.00	(N/A)	0.00
622.60	127.70	622.60	622.60	622.60	0.00	0.00	(N/A)	0.00
622.65	128.86	622.65	622.65	622.65	0.00	0.00	(N/A)	0.00
622.70	130.01	622.70	622.70	622.70	0.00	0.00	(N/A)	0.00
622.75	131.14	622.75	622.75	622.75	0.00	0.00	(N/A)	0.00
622.80	132.27	622.80	622.80	622.80	0.00	0.00	(N/A)	0.00
622.85	133.38	622.85	622.85	622.85	0.00	0.00	(N/A)	0.00
622.90	134.49	622.90	622.90	622.90	0.00	0.00	(N/A)	0.00
622.95	135.59	622.95	622.95	622.95	0.00	0.00	(N/A)	0.00
623.00	136.68	623.00	623.00	623.00	0.00	0.00	(N/A)	0.00
623.05	137.76	623.05	623.05	623.05	0.00	0.00	(N/A)	0.00
623.10	138.83	623.10	623.10	623.10	0.00	0.00	(N/A)	0.00
623.15	139.89	623.15	623.15	623.15	0.00	0.00	(N/A)	0.00
623.20	140.95	623.20	623.20	623.20	0.00	0.00	(N/A)	0.00
623.25	142.00	623.25	623.25	623.25	0.00	0.00	(N/A)	0.00
623.30	143.04	623.30	623.30	623.30	0.00	0.00	(N/A)	0.00
623.35	144.07	623.35	623.35	623.35	0.00	0.00	(N/A)	0.00
623.40	145.10	623.40	623.40	623.40	0.00	0.00	(N/A)	0.00
623.45	146.11	623.45	623.45	623.45	0.00	0.00	(N/A)	0.00
623.50	147.12	623.50	623.50	623.50	0.00	0.00	(N/A)	0.00
623.55	148.13	623.55	623.55	623.55	0.00	0.00	(N/A)	0.00
623.60	149.13	623.60	623.60	623.60	0.00	0.00	(N/A)	0.00
623.65	150.12	623.65	623.65	623.65	0.00	0.00	(N/A)	0.00
623.70	151.10	623.70	623.70	623.70	0.00	0.00	(N/A)	0.00

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
623.75	152.08	623.75	623.75	623.75	0.00	0.00	(N/A)	0.00
623.80	153.05	623.80	623.80	623.80	0.00	0.00	(N/A)	0.00
623.85	154.02	623.85	623.85	623.85	0.00	0.00	(N/A)	0.00
623.90	154.98	623.90	623.90	623.90	0.00	0.00	(N/A)	0.00
623.95	155.93	623.95	623.95	623.95	0.00	0.00	(N/A)	0.00
624.00	156.88	624.00	624.00	624.00	0.00	0.00	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.

Subsection: Individual Outlet Curves | Return Event: 25 years
Label: IB-1C-10 OUT | Storm Event: 25 year
Scenario: Post-Development 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
Weir: H =0.05ft
Weir: H =0.1ft
Weir: H =0.15ft
Weir: H =0.2ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.25ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.3ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.35ft

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.4ft
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

Subsection: Individual Outlet Curves　　Return Event: 25 years
Label: IB-1C-10 OUT　　Storm Event: 25 year
Scenario: Post-Development 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve | Return Event: 25 years
Label: IB-1C-10 OUT | Storm Event: 25 year
Scenario: Post-Development 25 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
618.50	0.00	(N/A)	0.00
618.55	0.00	(N/A)	0.00
618.60	0.00	(N/A)	0.00
618.65	0.00	(N/A)	0.00
618.70	0.00	(N/A)	0.00
618.75	0.00	(N/A)	0.00
618.80	0.00	(N/A)	0.00
618.85	0.00	(N/A)	0.00
618.90	0.00	(N/A)	0.00
618.95	0.00	(N/A)	0.00
619.00	0.00	(N/A)	0.00
619.05	0.00	(N/A)	0.00
619.10	0.00	(N/A)	0.00
619.15	0.00	(N/A)	0.00
619.20	0.00	(N/A)	0.00
619.25	0.00	(N/A)	0.00
619.30	0.00	(N/A)	0.00
619.35	0.00	(N/A)	0.00
619.40	0.00	(N/A)	0.00
619.45	0.00	(N/A)	0.00
619.50	0.00	(N/A)	0.00
619.55	0.00	(N/A)	0.00
619.60	0.00	(N/A)	0.00
619.65	0.00	(N/A)	0.00
619.70	0.00	(N/A)	0.00
619.75	0.00	(N/A)	0.00
619.80	0.00	(N/A)	0.00
619.85	0.00	(N/A)	0.00
619.90	0.54	(N/A)	0.00
619.95	1.52	(N/A)	0.00
620.00	2.79	(N/A)	0.00
620.05	4.29	(N/A)	0.00
620.10	5.95	(N/A)	0.00
620.15	6.22	(N/A)	0.00
620.20	6.47	(N/A)	0.00
620.25	6.73	(N/A)	0.00
620.30	6.99	(N/A)	0.00
620.35	7.24	(N/A)	0.00
620.40	7.48	(N/A)	0.00
620.45	7.72	(N/A)	0.00
620.50	7.96	(N/A)	0.00
620.55	8.19	(N/A)	0.00

Subsection: Composite Rating Curve | Return Event: 25 years
Label: IB-1C-10 OUT | Storm Event: 25 year
Scenario: Post-Development 25 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
620.60	8.39	(N/A)	0.00
620.65	8.57	(N/A)	0.00
620.70	8.75	(N/A)	0.00
620.75	8.93	(N/A)	0.00
620.80	9.10	(N/A)	0.00
620.85	9.27	(N/A)	0.00
620.90	9.43	(N/A)	0.00
620.95	9.60	(N/A)	0.00
621.00	9.76	(N/A)	0.00
621.05	9.91	(N/A)	0.00
621.10	10.07	(N/A)	0.00
621.15	10.22	(N/A)	0.00
621.20	10.37	(N/A)	0.00
621.25	10.52	(N/A)	0.00
621.30	10.66	(N/A)	0.00
621.35	10.81	(N/A)	0.00
621.40	10.96	(N/A)	0.00
621.45	11.09	(N/A)	0.00
621.50	11.23	(N/A)	0.00
621.55	11.37	(N/A)	0.00
621.60	11.50	(N/A)	0.00
621.65	11.64	(N/A)	0.00
621.70	11.77	(N/A)	0.00
621.75	11.90	(N/A)	0.00
621.80	12.03	(N/A)	0.00
621.85	12.16	(N/A)	0.00
621.90	12.28	(N/A)	0.00
621.95	12.41	(N/A)	0.00
622.00	12.53	(N/A)	0.00
622.05	12.66	(N/A)	0.00
622.10	12.78	(N/A)	0.00
622.15	12.90	(N/A)	0.00
622.20	13.02	(N/A)	0.00
622.25	13.14	(N/A)	0.00
622.30	13.26	(N/A)	0.00
622.35	13.38	(N/A)	0.00
622.40	13.49	(N/A)	0.00
622.45	13.60	(N/A)	0.00
622.50	13.72	(N/A)	0.00
622.55	13.83	(N/A)	0.00
622.60	13.94	(N/A)	0.00
622.65	14.05	(N/A)	0.00

Subsection: Composite Rating Curve Return Event: 25 years
Label: IB-1C-10 OUT Storm Event: 25 year
Scenario: Post-Development 25 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
622.70	14.16	(N/A)	0.00
622.75	14.27	(N/A)	0.00
622.80	14.38	(N/A)	0.00
622.85	14.48	(N/A)	0.00
622.90	14.59	(N/A)	0.00
622.95	14.70	(N/A)	0.00
623.00	14.80	(N/A)	0.00
623.05	14.91	(N/A)	0.00
623.10	15.01	(N/A)	0.00
623.15	15.11	(N/A)	0.00
623.20	15.22	(N/A)	0.00
623.25	15.32	(N/A)	0.00
623.30	15.42	(N/A)	0.00
623.35	15.52	(N/A)	0.00
623.40	15.62	(N/A)	0.00
623.45	15.72	(N/A)	0.00
623.50	15.81	(N/A)	0.00
623.55	15.91	(N/A)	0.00
623.60	16.01	(N/A)	0.00
623.65	16.11	(N/A)	0.00
623.70	16.20	(N/A)	0.00
623.75	16.30	(N/A)	0.00
623.80	16.39	(N/A)	0.00
623.85	16.49	(N/A)	0.00
623.90	16.58	(N/A)	0.00
623.95	16.67	(N/A)	0.00
624.00	16.77	(N/A)	0.00

Contributing Structures
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve
Label: IB-1C-10 OUT
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 year

Composite Outflow Summary

Contributing Structures
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1

Composite Outflow Summary

Contributing Structures
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
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Riser - 1,Culvert - 1
Riser - 1,Culvert - 1

Subsection: Composite Rating Curve | Return Event: 25 years
Label: IB-1C-10 OUT | Storm Event: 25 year
Scenario: Post-Development 25 year

Composite Outflow Summary

Contributing Structures
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
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Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1

Stormwater Hydrologic Calculations

Subsection: Outlet Input Data | Return Event: 100 years
Label: IB-1C-10 OUT | Storm Event: 100 year
Scenario: Post-Development 100 year

Requested Pond Water Surface Elevations	
Minimum (Headwater)	618.50 ft
Increment (Headwater)	0.05 ft
Maximum (Headwater)	624.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Inlet Box	Riser - 1	Forward	Culvert - 1	619.85	624.00
Culvert-Circular	Culvert - 1	Forward	TW	618.50	624.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Stormwater Hydrologic Calculations

Subsection: Outlet Input Data — Return Event: 100 years
Label: IB-1C-10 OUT — Storm Event: 100 year
Scenario: Post-Development 100 year

Structure ID: Culvert - 1 Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	15.0 in
Length	141.00 ft
Length (Computed Barrel)	141.96 ft
Slope (Computed)	0.117 ft/ft

Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.023
Kr	0.200
Convergence Tolerance	0.00 ft

Inlet Control Data	
Equation Form	Form 1
K	0.0018
M	2.5000
C	0.0243
Y	0.8300
T1 ratio (HW/D)	1.023
T2 ratio (HW/D)	1.160
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	619.78 ft	T1 Flow	4.80 ft³/s
T2 Elevation	619.95 ft	T2 Flow	5.49 ft³/s

Structure ID: Riser - 1
Structure Type: Inlet Box

Number of Openings	1
Elevation	619.85 ft
Orifice Area	16.0 ft²
Orifice Coefficient	0.600
Weir Length	16.00 ft
Weir Coefficient	3.00 (ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: TW
Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Subsection: Individual Outlet Curves — Return Event: 100 years
Label: IB-1C-10 OUT — Storm Event: 100 year
Scenario: Post-Development 100 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
618.50	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.55	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.60	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.65	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.70	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.75	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.80	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.85	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.90	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
618.95	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.05	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.10	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.15	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.20	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.25	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.30	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.35	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.40	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.45	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.50	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.55	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.60	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.65	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.70	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.75	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.80	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.85	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
619.90	0.54	618.91	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
619.95	1.52	619.21	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
620.00	2.79	619.49	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
620.05	4.29	619.79	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
620.10	5.95	620.10	Free Outfall	Free Outfall	0.00	0.05	(N/A)	0.00
620.15	6.22	620.15	Free Outfall	Free Outfall	0.00	1.67	(N/A)	0.00

Subsection: Individual Outlet Curves | Return Event: 100 years
Label: IB-1C-10 OUT | Storm Event: 100 year
Scenario: Post-Development 100 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
620.20	6.47	620.20	Free Outfall	Free Outfall	0.00	3.47	(N/A)	0.00
620.25	6.73	620.25	Free Outfall	Free Outfall	0.00	5.41	(N/A)	0.00
620.30	6.99	620.30	Free Outfall	Free Outfall	0.00	7.50	(N/A)	0.00
620.35	7.24	620.35	Free Outfall	Free Outfall	0.00	9.74	(N/A)	0.00
620.40	7.48	620.40	Free Outfall	Free Outfall	0.00	12.10	(N/A)	0.00
620.45	7.72	620.45	Free Outfall	Free Outfall	0.00	14.59	(N/A)	0.00
620.50	7.96	620.50	Free Outfall	Free Outfall	0.00	17.19	(N/A)	0.00
620.55	8.19	620.55	Free Outfall	Free Outfall	0.00	19.92	(N/A)	0.00
620.60	8.39	620.60	Free Outfall	Free Outfall	0.00	22.78	(N/A)	0.00
620.65	8.57	620.65	Free Outfall	Free Outfall	0.00	25.77	(N/A)	0.00
620.70	8.75	620.70	Free Outfall	Free Outfall	0.00	28.87	(N/A)	0.00
620.75	8.93	620.75	Free Outfall	Free Outfall	0.00	32.05	(N/A)	0.00
620.80	9.10	620.80	Free Outfall	Free Outfall	0.00	35.35	(N/A)	0.00
620.85	9.27	620.85	Free Outfall	Free Outfall	0.00	38.73	(N/A)	0.00
620.90	9.43	620.90	Free Outfall	Free Outfall	0.00	42.22	(N/A)	0.00
620.95	9.60	620.95	Free Outfall	Free Outfall	0.00	45.78	(N/A)	0.00
621.00	9.76	621.00	Free Outfall	Free Outfall	0.00	49.44	(N/A)	0.00
621.05	9.91	621.05	Free Outfall	Free Outfall	0.00	53.19	(N/A)	0.00
621.10	10.07	621.10	Free Outfall	Free Outfall	0.00	57.01	(N/A)	0.00
621.15	10.22	621.15	Free Outfall	Free Outfall	0.00	60.92	(N/A)	0.00
621.20	10.37	621.20	Free Outfall	Free Outfall	0.00	64.92	(N/A)	0.00
621.25	10.52	621.25	Free Outfall	Free Outfall	0.00	68.99	(N/A)	0.00
621.30	10.66	621.30	Free Outfall	Free Outfall	0.00	73.15	(N/A)	0.00
621.35	10.81	621.35	Free Outfall	Free Outfall	0.00	77.37	(N/A)	0.00
621.40	10.96	621.40	Free Outfall	Free Outfall	0.00	81.67	(N/A)	0.00
621.45	11.09	621.45	Free Outfall	Free Outfall	0.00	86.05	(N/A)	0.00
621.50	11.23	621.50	Free Outfall	Free Outfall	0.00	87.69	(N/A)	0.00
621.55	11.37	621.55	Free Outfall	Free Outfall	0.00	89.04	(N/A)	0.00
621.60	11.50	621.60	Free Outfall	Free Outfall	0.00	90.37	(N/A)	0.00
621.65	11.64	621.65	Free Outfall	Free Outfall	0.00	91.68	(N/A)	0.00
621.70	11.77	621.70	Free Outfall	Free Outfall	0.00	92.97	(N/A)	0.00
621.75	11.90	621.75	Free Outfall	Free Outfall	0.00	94.25	(N/A)	0.00
621.80	12.03	621.80	Free Outfall	Free Outfall	0.00	95.51	(N/A)	0.00
621.85	12.16	621.85	Free Outfall	Free Outfall	0.00	96.75	(N/A)	0.00

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
621.90	12.28	621.90	Free Outfall	Free Outfall	0.00	97.97	(N/A)	0.00
621.95	12.41	621.95	Free Outfall	Free Outfall	0.00	99.19	(N/A)	0.00
622.00	12.53	622.00	Free Outfall	Free Outfall	0.00	100.38	(N/A)	0.00
622.05	12.66	622.05	Free Outfall	Free Outfall	0.00	101.56	(N/A)	0.00
622.10	12.78	622.10	Free Outfall	Free Outfall	0.00	102.73	(N/A)	0.00
622.15	12.90	622.15	Free Outfall	Free Outfall	0.00	103.89	(N/A)	0.00
622.20	13.02	622.20	Free Outfall	Free Outfall	0.00	105.03	(N/A)	0.00
622.25	13.14	622.25	Free Outfall	Free Outfall	0.00	106.16	(N/A)	0.00
622.30	13.26	622.30	Free Outfall	Free Outfall	0.00	107.28	(N/A)	0.00
622.35	13.38	622.35	Free Outfall	Free Outfall	0.00	108.39	(N/A)	0.00
622.40	13.49	622.40	Free Outfall	Free Outfall	0.00	109.48	(N/A)	0.00
622.45	13.60	622.45	Free Outfall	Free Outfall	0.00	110.57	(N/A)	0.00
622.50	13.72	622.50	Free Outfall	Free Outfall	0.00	111.65	(N/A)	0.00
622.55	13.83	622.55	Free Outfall	Free Outfall	0.00	112.71	(N/A)	0.00
622.60	13.94	622.60	Free Outfall	Free Outfall	0.00	113.76	(N/A)	0.00
622.65	14.05	622.65	Free Outfall	Free Outfall	0.00	114.81	(N/A)	0.00
622.70	14.16	622.70	Free Outfall	Free Outfall	0.00	115.84	(N/A)	0.00
622.75	14.27	622.75	Free Outfall	Free Outfall	0.00	116.87	(N/A)	0.00
622.80	14.38	622.80	Free Outfall	Free Outfall	0.00	117.89	(N/A)	0.00
622.85	14.48	622.85	Free Outfall	Free Outfall	0.00	118.90	(N/A)	0.00
622.90	14.59	622.90	Free Outfall	Free Outfall	0.00	119.90	(N/A)	0.00
622.95	14.70	622.95	Free Outfall	Free Outfall	0.00	120.89	(N/A)	0.00
623.00	14.80	623.00	Free Outfall	Free Outfall	0.00	121.87	(N/A)	0.00
623.05	14.91	623.05	Free Outfall	Free Outfall	0.00	122.85	(N/A)	0.00
623.10	15.01	623.10	Free Outfall	Free Outfall	0.00	123.82	(N/A)	0.00
623.15	15.11	623.15	Free Outfall	Free Outfall	0.00	124.78	(N/A)	0.00
623.20	15.22	623.20	Free Outfall	Free Outfall	0.00	125.73	(N/A)	0.00
623.25	15.32	623.25	Free Outfall	Free Outfall	0.00	126.68	(N/A)	0.00
623.30	15.42	623.30	Free Outfall	Free Outfall	0.00	127.62	(N/A)	0.00
623.35	15.52	623.35	Free Outfall	Free Outfall	0.00	128.55	(N/A)	0.00
623.40	15.62	623.40	Free Outfall	Free Outfall	0.00	129.48	(N/A)	0.00
623.45	15.72	623.45	Free Outfall	Free Outfall	0.00	130.40	(N/A)	0.00
623.50	15.81	623.50	Free Outfall	Free Outfall	0.00	131.31	(N/A)	0.00
623.55	15.91	623.55	Free Outfall	Free Outfall	0.00	132.22	(N/A)	0.00

Subsection: Individual Outlet Curves | Return Event: 100 years
Label: IB-1C-10 OUT | Storm Event: 100 year
Scenario: Post-Development 100 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
623.60	16.01	623.60	Free Outfall	Free Outfall	0.00	133.12	(N/A)	0.00
623.65	16.11	623.65	Free Outfall	Free Outfall	0.00	134.01	(N/A)	0.00
623.70	16.20	623.70	Free Outfall	Free Outfall	0.00	134.90	(N/A)	0.00
623.75	16.30	623.75	Free Outfall	Free Outfall	0.00	135.78	(N/A)	0.00
623.80	16.39	623.80	Free Outfall	Free Outfall	0.00	136.66	(N/A)	0.00
623.85	16.49	623.85	Free Outfall	Free Outfall	0.00	137.53	(N/A)	0.00
623.90	16.58	623.90	Free Outfall	Free Outfall	0.00	138.40	(N/A)	0.00
623.95	16.67	623.95	Free Outfall	Free Outfall	0.00	139.26	(N/A)	0.00
624.00	16.77	624.00	Free Outfall	Free Outfall	0.00	140.11	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves | Return Event: 100 years
Label: IB-1C-10 OUT | Storm Event: 100 year
Scenario: Post-Development 100 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
CRIT.DEPTH CONTROL Vh= .101ft Dcr= .286ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .182ft Dcr= .487ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .269ft Dcr= .670ft CRIT.DEPTH Hev= .00ft

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
CRIT.DEPTH CONTROL Vh= .373ft Dcr= .839ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .510ft Dcr= .987ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .536ft Dcr= 1.007ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .561ft Dcr= 1.025ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .588ft Dcr= 1.043ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .617ft Dcr= 1.059ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .646ft Dcr= 1.074ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .676ft Dcr= 1.089ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .707ft Dcr= 1.101ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .740ft Dcr= 1.113ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .772ft Dcr= 1.124ft CRIT.DEPTH Hev= .00ft
INLET CONTROL... Submerged: HW =2.10
INLET CONTROL... Submerged: HW =2.15
INLET CONTROL... Submerged: HW =2.20
INLET CONTROL... Submerged: HW =2.25

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
INLET CONTROL... Submerged: HW =2.30
INLET CONTROL... Submerged: HW =2.35
INLET CONTROL... Submerged: HW =2.40
INLET CONTROL... Submerged: HW =2.45
INLET CONTROL... Submerged: HW =2.50
INLET CONTROL... Submerged: HW =2.55
INLET CONTROL... Submerged: HW =2.60
INLET CONTROL... Submerged: HW =2.65
INLET CONTROL... Submerged: HW =2.70
INLET CONTROL... Submerged: HW =2.75
INLET CONTROL... Submerged: HW =2.80
INLET CONTROL... Submerged: HW =2.85
INLET CONTROL... Submerged: HW =2.90
INLET CONTROL... Submerged: HW =2.95
INLET CONTROL... Submerged: HW =3.00
INLET CONTROL... Submerged: HW =3.05
INLET CONTROL... Submerged: HW =3.10
INLET CONTROL... Submerged: HW =3.15
INLET CONTROL... Submerged: HW =3.20
INLET CONTROL... Submerged: HW =3.25

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
INLET CONTROL... Submerged: HW =3.30
INLET CONTROL... Submerged: HW =3.35
INLET CONTROL... Submerged: HW =3.40
INLET CONTROL... Submerged: HW =3.45
INLET CONTROL... Submerged: HW =3.50
INLET CONTROL... Submerged: HW =3.55
INLET CONTROL... Submerged: HW =3.60
INLET CONTROL... Submerged: HW =3.65
INLET CONTROL... Submerged: HW =3.70
INLET CONTROL... Submerged: HW =3.75
INLET CONTROL... Submerged: HW =3.80
INLET CONTROL... Submerged: HW =3.85
INLET CONTROL... Submerged: HW =3.90
INLET CONTROL... Submerged: HW =3.95
INLET CONTROL... Submerged: HW =4.00
INLET CONTROL... Submerged: HW =4.05
INLET CONTROL... Submerged: HW =4.10
INLET CONTROL... Submerged: HW =4.15
INLET CONTROL... Submerged: HW =4.20
INLET CONTROL... Submerged: HW =4.25

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
INLET CONTROL... Submerged: HW =4.30
INLET CONTROL... Submerged: HW =4.35
INLET CONTROL... Submerged: HW =4.40
INLET CONTROL... Submerged: HW =4.45
INLET CONTROL... Submerged: HW =4.50
INLET CONTROL... Submerged: HW =4.55
INLET CONTROL... Submerged: HW =4.60
INLET CONTROL... Submerged: HW =4.65
INLET CONTROL... Submerged: HW =4.70
INLET CONTROL... Submerged: HW =4.75
INLET CONTROL... Submerged: HW =4.80
INLET CONTROL... Submerged: HW =4.85
INLET CONTROL... Submerged: HW =4.90
INLET CONTROL... Submerged: HW =4.95
INLET CONTROL... Submerged: HW =5.00
INLET CONTROL... Submerged: HW =5.05
INLET CONTROL... Submerged: HW =5.10
INLET CONTROL... Submerged: HW =5.15
INLET CONTROL... Submerged: HW =5.20
INLET CONTROL... Submerged: HW =5.25

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 23.77 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
INLET CONTROL... Submerged: HW =5.30
INLET CONTROL... Submerged: HW =5.35
INLET CONTROL... Submerged: HW =5.40
INLET CONTROL... Submerged: HW =5.45
INLET CONTROL... Submerged: HW =5.50

Subsection: Individual Outlet Curves | Return Event: 100 years
Label: IB-1C-10 OUT | Storm Event: 100 year
Scenario: Post-Development 100 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
618.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.55	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.60	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.65	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.70	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.75	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.80	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.85	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.90	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
618.95	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.05	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.10	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.15	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.20	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.25	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.30	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.35	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.40	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.45	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.55	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.60	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.65	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.70	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.75	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.80	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.85	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
619.90	0.54	619.90	Free Outfall	618.91	0.00	0.00	(N/A)	0.00
619.95	1.52	619.95	Free Outfall	619.21	0.00	0.00	(N/A)	0.00
620.00	2.79	620.00	Free Outfall	619.49	0.00	0.00	(N/A)	0.00
620.05	4.29	620.05	Free Outfall	619.79	0.00	0.00	(N/A)	0.00
620.10	6.00	620.10	620.10	620.10	0.00	0.00	(N/A)	0.00
620.15	7.89	620.15	620.15	620.15	0.00	0.00	(N/A)	0.00
620.20	9.94	620.20	620.20	620.20	0.00	0.00	(N/A)	0.00

Subsection: Individual Outlet Curves | Return Event: 100 years
Label: IB-1C-10 OUT | Storm Event: 100 year
Scenario: Post-Development 100 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
620.25	12.14	620.25	620.25	620.25	0.00	0.00	(N/A)	0.00
620.30	14.49	620.30	620.30	620.30	0.00	0.00	(N/A)	0.00
620.35	16.97	620.35	620.35	620.35	0.00	0.00	(N/A)	0.00
620.40	19.58	620.40	620.40	620.40	0.00	0.00	(N/A)	0.00
620.45	22.31	620.45	620.45	620.45	0.00	0.00	(N/A)	0.00
620.50	25.15	620.50	620.50	620.50	0.00	0.00	(N/A)	0.00
620.55	28.11	620.55	620.55	620.55	0.00	0.00	(N/A)	0.00
620.60	31.18	620.60	620.60	620.60	0.00	0.00	(N/A)	0.00
620.65	34.35	620.65	620.65	620.65	0.00	0.00	(N/A)	0.00
620.70	37.62	620.70	620.70	620.70	0.00	0.00	(N/A)	0.00
620.75	40.98	620.75	620.75	620.75	0.00	0.00	(N/A)	0.00
620.80	44.45	620.80	620.80	620.80	0.00	0.00	(N/A)	0.00
620.85	48.00	620.85	620.85	620.85	0.00	0.00	(N/A)	0.00
620.90	51.64	620.90	620.90	620.90	0.00	0.00	(N/A)	0.00
620.95	55.38	620.95	620.95	620.95	0.00	0.00	(N/A)	0.00
621.00	59.20	621.00	621.00	621.00	0.00	0.00	(N/A)	0.00
621.05	63.10	621.05	621.05	621.05	0.00	0.00	(N/A)	0.00
621.10	67.08	621.10	621.10	621.10	0.00	0.00	(N/A)	0.00
621.15	71.15	621.15	621.15	621.15	0.00	0.00	(N/A)	0.00
621.20	75.29	621.20	621.20	621.20	0.00	0.00	(N/A)	0.00
621.25	79.51	621.25	621.25	621.25	0.00	0.00	(N/A)	0.00
621.30	83.81	621.30	621.30	621.30	0.00	0.00	(N/A)	0.00
621.35	88.18	621.35	621.35	621.35	0.00	0.00	(N/A)	0.00
621.40	92.63	621.40	621.40	621.40	0.00	0.00	(N/A)	0.00
621.45	97.15	621.45	621.45	621.45	0.00	0.00	(N/A)	0.00
621.50	98.92	621.50	621.50	621.50	0.00	0.00	(N/A)	0.00
621.55	100.41	621.55	621.55	621.55	0.00	0.00	(N/A)	0.00
621.60	101.87	621.60	621.60	621.60	0.00	0.00	(N/A)	0.00
621.65	103.32	621.65	621.65	621.65	0.00	0.00	(N/A)	0.00
621.70	104.74	621.70	621.70	621.70	0.00	0.00	(N/A)	0.00
621.75	106.15	621.75	621.75	621.75	0.00	0.00	(N/A)	0.00
621.80	107.54	621.80	621.80	621.80	0.00	0.00	(N/A)	0.00
621.85	108.91	621.85	621.85	621.85	0.00	0.00	(N/A)	0.00
621.90	110.26	621.90	621.90	621.90	0.00	0.00	(N/A)	0.00
621.95	111.60	621.95	621.95	621.95	0.00	0.00	(N/A)	0.00

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
622.00	112.92	622.00	622.00	622.00	0.00	0.00	(N/A)	0.00
622.05	114.22	622.05	622.05	622.05	0.00	0.00	(N/A)	0.00
622.10	115.51	622.10	622.10	622.10	0.00	0.00	(N/A)	0.00
622.15	116.79	622.15	622.15	622.15	0.00	0.00	(N/A)	0.00
622.20	118.05	622.20	622.20	622.20	0.00	0.00	(N/A)	0.00
622.25	119.30	622.25	622.25	622.25	0.00	0.00	(N/A)	0.00
622.30	120.54	622.30	622.30	622.30	0.00	0.00	(N/A)	0.00
622.35	121.76	622.35	622.35	622.35	0.00	0.00	(N/A)	0.00
622.40	122.97	622.40	622.40	622.40	0.00	0.00	(N/A)	0.00
622.45	124.17	622.45	622.45	622.45	0.00	0.00	(N/A)	0.00
622.50	125.36	622.50	622.50	622.50	0.00	0.00	(N/A)	0.00
622.55	126.54	622.55	622.55	622.55	0.00	0.00	(N/A)	0.00
622.60	127.70	622.60	622.60	622.60	0.00	0.00	(N/A)	0.00
622.65	128.86	622.65	622.65	622.65	0.00	0.00	(N/A)	0.00
622.70	130.01	622.70	622.70	622.70	0.00	0.00	(N/A)	0.00
622.75	131.14	622.75	622.75	622.75	0.00	0.00	(N/A)	0.00
622.80	132.27	622.80	622.80	622.80	0.00	0.00	(N/A)	0.00
622.85	133.38	622.85	622.85	622.85	0.00	0.00	(N/A)	0.00
622.90	134.49	622.90	622.90	622.90	0.00	0.00	(N/A)	0.00
622.95	135.59	622.95	622.95	622.95	0.00	0.00	(N/A)	0.00
623.00	136.68	623.00	623.00	623.00	0.00	0.00	(N/A)	0.00
623.05	137.76	623.05	623.05	623.05	0.00	0.00	(N/A)	0.00
623.10	138.83	623.10	623.10	623.10	0.00	0.00	(N/A)	0.00
623.15	139.89	623.15	623.15	623.15	0.00	0.00	(N/A)	0.00
623.20	140.95	623.20	623.20	623.20	0.00	0.00	(N/A)	0.00
623.25	142.00	623.25	623.25	623.25	0.00	0.00	(N/A)	0.00
623.30	143.04	623.30	623.30	623.30	0.00	0.00	(N/A)	0.00
623.35	144.07	623.35	623.35	623.35	0.00	0.00	(N/A)	0.00
623.40	145.10	623.40	623.40	623.40	0.00	0.00	(N/A)	0.00
623.45	146.11	623.45	623.45	623.45	0.00	0.00	(N/A)	0.00
623.50	147.12	623.50	623.50	623.50	0.00	0.00	(N/A)	0.00
623.55	148.13	623.55	623.55	623.55	0.00	0.00	(N/A)	0.00
623.60	149.13	623.60	623.60	623.60	0.00	0.00	(N/A)	0.00
623.65	150.12	623.65	623.65	623.65	0.00	0.00	(N/A)	0.00
623.70	151.10	623.70	623.70	623.70	0.00	0.00	(N/A)	0.00

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
623.75	152.08	623.75	623.75	623.75	0.00	0.00	(N/A)	0.00
623.80	153.05	623.80	623.80	623.80	0.00	0.00	(N/A)	0.00
623.85	154.02	623.85	623.85	623.85	0.00	0.00	(N/A)	0.00
623.90	154.98	623.90	623.90	623.90	0.00	0.00	(N/A)	0.00
623.95	155.93	623.95	623.95	623.95	0.00	0.00	(N/A)	0.00
624.00	156.88	624.00	624.00	624.00	0.00	0.00	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
Weir: H =0.05ft
Weir: H =0.1ft
Weir: H =0.15ft
Weir: H =0.2ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.25ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.3ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.35ft

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.4ft
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
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FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
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FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
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FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

Subsection: Individual Outlet Curves | Return Event: 100 years
Label: IB-1C-10 OUT | Storm Event: 100 year
Scenario: Post-Development 100 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves
Label: IB-1C-10 OUT
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

Subsection: Composite Rating Curve
Label: IB-1C-10 OUT
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
618.50	0.00	(N/A)	0.00
618.55	0.00	(N/A)	0.00
618.60	0.00	(N/A)	0.00
618.65	0.00	(N/A)	0.00
618.70	0.00	(N/A)	0.00
618.75	0.00	(N/A)	0.00
618.80	0.00	(N/A)	0.00
618.85	0.00	(N/A)	0.00
618.90	0.00	(N/A)	0.00
618.95	0.00	(N/A)	0.00
619.00	0.00	(N/A)	0.00
619.05	0.00	(N/A)	0.00
619.10	0.00	(N/A)	0.00
619.15	0.00	(N/A)	0.00
619.20	0.00	(N/A)	0.00
619.25	0.00	(N/A)	0.00
619.30	0.00	(N/A)	0.00
619.35	0.00	(N/A)	0.00
619.40	0.00	(N/A)	0.00
619.45	0.00	(N/A)	0.00
619.50	0.00	(N/A)	0.00
619.55	0.00	(N/A)	0.00
619.60	0.00	(N/A)	0.00
619.65	0.00	(N/A)	0.00
619.70	0.00	(N/A)	0.00
619.75	0.00	(N/A)	0.00
619.80	0.00	(N/A)	0.00
619.85	0.00	(N/A)	0.00
619.90	0.54	(N/A)	0.00
619.95	1.52	(N/A)	0.00
620.00	2.79	(N/A)	0.00
620.05	4.29	(N/A)	0.00
620.10	5.95	(N/A)	0.00
620.15	6.22	(N/A)	0.00
620.20	6.47	(N/A)	0.00
620.25	6.73	(N/A)	0.00
620.30	6.99	(N/A)	0.00
620.35	7.24	(N/A)	0.00
620.40	7.48	(N/A)	0.00
620.45	7.72	(N/A)	0.00
620.50	7.96	(N/A)	0.00
620.55	8.19	(N/A)	0.00

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve | Return Event: 100 years
Label: IB-1C-10 OUT | Storm Event: 100 year
Scenario: Post-Development 100 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
620.60	8.39	(N/A)	0.00
620.65	8.57	(N/A)	0.00
620.70	8.75	(N/A)	0.00
620.75	8.93	(N/A)	0.00
620.80	9.10	(N/A)	0.00
620.85	9.27	(N/A)	0.00
620.90	9.43	(N/A)	0.00
620.95	9.60	(N/A)	0.00
621.00	9.76	(N/A)	0.00
621.05	9.91	(N/A)	0.00
621.10	10.07	(N/A)	0.00
621.15	10.22	(N/A)	0.00
621.20	10.37	(N/A)	0.00
621.25	10.52	(N/A)	0.00
621.30	10.66	(N/A)	0.00
621.35	10.81	(N/A)	0.00
621.40	10.96	(N/A)	0.00
621.45	11.09	(N/A)	0.00
621.50	11.23	(N/A)	0.00
621.55	11.37	(N/A)	0.00
621.60	11.50	(N/A)	0.00
621.65	11.64	(N/A)	0.00
621.70	11.77	(N/A)	0.00
621.75	11.90	(N/A)	0.00
621.80	12.03	(N/A)	0.00
621.85	12.16	(N/A)	0.00
621.90	12.28	(N/A)	0.00
621.95	12.41	(N/A)	0.00
622.00	12.53	(N/A)	0.00
622.05	12.66	(N/A)	0.00
622.10	12.78	(N/A)	0.00
622.15	12.90	(N/A)	0.00
622.20	13.02	(N/A)	0.00
622.25	13.14	(N/A)	0.00
622.30	13.26	(N/A)	0.00
622.35	13.38	(N/A)	0.00
622.40	13.49	(N/A)	0.00
622.45	13.60	(N/A)	0.00
622.50	13.72	(N/A)	0.00
622.55	13.83	(N/A)	0.00
622.60	13.94	(N/A)	0.00
622.65	14.05	(N/A)	0.00

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve | Return Event: 100 years
Label: IB-1C-10 OUT | Storm Event: 100 year
Scenario: Post-Development 100 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
622.70	14.16	(N/A)	0.00
622.75	14.27	(N/A)	0.00
622.80	14.38	(N/A)	0.00
622.85	14.48	(N/A)	0.00
622.90	14.59	(N/A)	0.00
622.95	14.70	(N/A)	0.00
623.00	14.80	(N/A)	0.00
623.05	14.91	(N/A)	0.00
623.10	15.01	(N/A)	0.00
623.15	15.11	(N/A)	0.00
623.20	15.22	(N/A)	0.00
623.25	15.32	(N/A)	0.00
623.30	15.42	(N/A)	0.00
623.35	15.52	(N/A)	0.00
623.40	15.62	(N/A)	0.00
623.45	15.72	(N/A)	0.00
623.50	15.81	(N/A)	0.00
623.55	15.91	(N/A)	0.00
623.60	16.01	(N/A)	0.00
623.65	16.11	(N/A)	0.00
623.70	16.20	(N/A)	0.00
623.75	16.30	(N/A)	0.00
623.80	16.39	(N/A)	0.00
623.85	16.49	(N/A)	0.00
623.90	16.58	(N/A)	0.00
623.95	16.67	(N/A)	0.00
624.00	16.77	(N/A)	0.00

Contributing Structures
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)

Composite Outflow Summary

Contributing Structures
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
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(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
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Riser - 1,Culvert - 1
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Riser - 1,Culvert - 1

Subsection: Composite Rating Curve
Label: IB-1C-10 OUT
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 year

Composite Outflow Summary

Contributing Structures
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
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Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
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Riser - 1,Culvert - 1

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve — Return Event: 100 years
Label: IB-1C-10 OUT — Storm Event: 100 year
Scenario: Post-Development 100 year

Composite Outflow Summary

Contributing Structures
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
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Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1

Requested Pond Water Surface Elevations	
Minimum (Headwater)	621.75 ft
Increment (Headwater)	0.05 ft
Maximum (Headwater)	626.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Inlet Box	Riser - 1	Forward	Culvert - 1	623.00	626.00
Culvert-Circular	Culvert - 1	Forward	TW	621.75	626.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Culvert - 1
Structure Type: Culvert-Circular

Number of Barrels	1
Diameter	24.0 in
Length	182.00 ft
Length (Computed Barrel)	185.29 ft
Slope (Computed)	0.191 ft/ft

Outlet Control Data

Manning's n	0.013
Ke	0.200
Kb	0.012
Kr	0.200
Convergence Tolerance	0.00 ft

Inlet Control Data

Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.000
T2 ratio (HW/D)	1.102
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	623.75 ft	T1 Flow	15.55 ft³/s
T2 Elevation	623.95 ft	T2 Flow	17.77 ft³/s

Stormwater Hydrologic Calculations

Subsection: Outlet Input Data | Return Event: 1 years
Label: IB-1C-2 OUT | Storm Event: 1 year
Scenario: Post-Development 1 year

Structure ID: Riser - 1 Structure Type: Inlet Box	
Number of Openings	1
Elevation	623.00 ft
Orifice Area	16.0 ft²
Orifice Coefficient	0.600
Weir Length	16.00 ft
Weir Coefficient	3.00 (ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
621.75	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
621.80	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
621.85	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
621.90	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
621.95	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.05	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.10	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.15	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.20	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.25	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.30	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.35	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.40	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.45	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.50	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.55	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.60	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.65	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.70	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.75	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.80	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.85	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.90	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.95	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
623.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
623.05	0.54	622.10	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
623.10	1.52	622.36	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
623.15	2.79	622.58	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
623.20	4.29	622.80	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
623.25	6.01	623.01	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
623.30	7.89	623.22	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
623.35	9.14	623.35	Free Outfall	Free Outfall	0.00	0.80	(N/A)	0.00
623.40	9.63	623.40	Free Outfall	Free Outfall	0.00	2.52	(N/A)	0.00

Subsection: Individual Outlet Curves | Return Event: 1 years
Label: IB-1C-2 OUT | Storm Event: 1 year
Scenario: Post-Development 1 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
623.45	10.13	623.45	Free Outfall	Free Outfall	0.00	4.36	(N/A)	0.00
623.50	10.65	623.50	Free Outfall	Free Outfall	0.00	6.32	(N/A)	0.00
623.55	11.17	623.55	Free Outfall	Free Outfall	0.00	8.41	(N/A)	0.00
623.60	11.68	623.60	Free Outfall	Free Outfall	0.00	10.62	(N/A)	0.00
623.65	12.21	623.65	Free Outfall	Free Outfall	0.00	12.94	(N/A)	0.00
623.70	12.74	623.70	Free Outfall	Free Outfall	0.00	15.37	(N/A)	0.00
623.75	13.27	623.75	Free Outfall	Free Outfall	0.00	17.91	(N/A)	0.00
623.80	13.80	623.80	Free Outfall	Free Outfall	0.00	20.54	(N/A)	0.00
623.85	14.34	623.85	Free Outfall	Free Outfall	0.00	23.28	(N/A)	0.00
623.90	14.87	623.90	Free Outfall	Free Outfall	0.00	26.11	(N/A)	0.00
623.95	15.41	623.95	Free Outfall	Free Outfall	0.00	29.03	(N/A)	0.00
624.00	15.97	624.00	Free Outfall	Free Outfall	0.00	32.03	(N/A)	0.00
624.05	16.51	624.05	Free Outfall	Free Outfall	0.00	35.14	(N/A)	0.00
624.10	17.05	624.10	Free Outfall	Free Outfall	0.00	38.33	(N/A)	0.00
624.15	17.58	624.15	Free Outfall	Free Outfall	0.00	41.62	(N/A)	0.00
624.20	18.13	624.20	Free Outfall	Free Outfall	0.00	44.97	(N/A)	0.00
624.25	18.67	624.25	Free Outfall	Free Outfall	0.00	48.42	(N/A)	0.00
624.30	19.18	624.30	Free Outfall	Free Outfall	0.00	51.97	(N/A)	0.00
624.35	19.73	624.35	Free Outfall	Free Outfall	0.00	55.56	(N/A)	0.00
624.40	20.24	624.40	Free Outfall	Free Outfall	0.00	59.27	(N/A)	0.00
624.45	20.79	624.45	Free Outfall	Free Outfall	0.00	63.02	(N/A)	0.00
624.50	21.29	624.50	Free Outfall	Free Outfall	0.00	66.89	(N/A)	0.00
624.55	21.81	624.55	Free Outfall	Free Outfall	0.00	70.82	(N/A)	0.00
624.60	22.32	624.60	Free Outfall	Free Outfall	0.00	74.82	(N/A)	0.00
624.65	22.83	624.65	Free Outfall	Free Outfall	0.00	76.09	(N/A)	0.00
624.70	23.34	624.70	Free Outfall	Free Outfall	0.00	77.06	(N/A)	0.00
624.75	23.75	624.75	Free Outfall	Free Outfall	0.00	78.13	(N/A)	0.00
624.80	24.07	624.80	Free Outfall	Free Outfall	0.00	79.25	(N/A)	0.00
624.85	24.39	624.85	Free Outfall	Free Outfall	0.00	80.35	(N/A)	0.00
624.90	24.71	624.90	Free Outfall	Free Outfall	0.00	81.44	(N/A)	0.00
624.95	25.02	624.95	Free Outfall	Free Outfall	0.00	82.51	(N/A)	0.00
625.00	25.33	625.00	Free Outfall	Free Outfall	0.00	83.57	(N/A)	0.00
625.05	25.64	625.05	Free Outfall	Free Outfall	0.00	84.62	(N/A)	0.00
625.10	25.94	625.10	Free Outfall	Free Outfall	0.00	85.66	(N/A)	0.00

Subsection: Individual Outlet Curves | Return Event: 1 years
Label: IB-1C-2 OUT | Storm Event: 1 year
Scenario: Post-Development 1 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
625.15	26.24	625.15	Free Outfall	Free Outfall	0.00	86.68	(N/A)	0.00
625.20	26.54	625.20	Free Outfall	Free Outfall	0.00	87.69	(N/A)	0.00
625.25	26.82	625.25	Free Outfall	Free Outfall	0.00	88.69	(N/A)	0.00
625.30	27.11	625.30	Free Outfall	Free Outfall	0.00	89.68	(N/A)	0.00
625.35	27.39	625.35	Free Outfall	Free Outfall	0.00	90.66	(N/A)	0.00
625.40	27.68	625.40	Free Outfall	Free Outfall	0.00	91.62	(N/A)	0.00
625.45	27.95	625.45	Free Outfall	Free Outfall	0.00	92.58	(N/A)	0.00
625.50	28.24	625.50	Free Outfall	Free Outfall	0.00	93.52	(N/A)	0.00
625.55	28.51	625.55	Free Outfall	Free Outfall	0.00	94.46	(N/A)	0.00
625.60	28.78	625.60	Free Outfall	Free Outfall	0.00	95.39	(N/A)	0.00
625.65	29.05	625.65	Free Outfall	Free Outfall	0.00	96.31	(N/A)	0.00
625.70	29.32	625.70	Free Outfall	Free Outfall	0.00	97.22	(N/A)	0.00
625.75	29.59	625.75	Free Outfall	Free Outfall	0.00	98.12	(N/A)	0.00
625.80	29.85	625.80	Free Outfall	Free Outfall	0.00	99.01	(N/A)	0.00
625.85	30.10	625.85	Free Outfall	Free Outfall	0.00	99.90	(N/A)	0.00
625.90	30.36	625.90	Free Outfall	Free Outfall	0.00	100.78	(N/A)	0.00
625.95	30.61	625.95	Free Outfall	Free Outfall	0.00	101.65	(N/A)	0.00
626.00	30.88	626.00	Free Outfall	Free Outfall	0.00	102.51	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
CRIT.DEPTH CONTROL Vh= .086ft Dcr= .251ft CRIT.DEPTH Hev= .00ft

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
CRIT.DEPTH CONTROL Vh= .150ft Dcr= .427ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .209ft Dcr= .582ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .268ft Dcr= .728ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .329ft Dcr= .867ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .393ft Dcr= 1.000ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .434ft Dcr= 1.079ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .450ft Dcr= 1.109ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .467ft Dcr= 1.140ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .484ft Dcr= 1.170ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .501ft Dcr= 1.199ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .519ft Dcr= 1.227ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .537ft Dcr= 1.256ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .555ft Dcr= 1.284ft CRIT.DEPTH Hev= .00ft

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
CRIT.DEPTH CONTROL Vh= .574ft Dcr= 1.311ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .593ft Dcr= 1.338ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .613ft Dcr= 1.364ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .633ft Dcr= 1.390ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .653ft Dcr= 1.415ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .675ft Dcr= 1.441ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .696ft Dcr= 1.465ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .718ft Dcr= 1.488ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .741ft Dcr= 1.511ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .764ft Dcr= 1.534ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .788ft Dcr= 1.555ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .811ft Dcr= 1.575ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .837ft Dcr= 1.596ft CRIT.DEPTH Hev= .00ft

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves | Return Event: 1 years
Label: IB-1C-2 OUT | Storm Event: 1 year
Scenario: Post-Development 1 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
CRIT.DEPTH CONTROL Vh= .862ft Dcr= 1.615ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .889ft Dcr= 1.634ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .915ft Dcr= 1.652ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .942ft Dcr= 1.669ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .970ft Dcr= 1.686ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .999ft Dcr= 1.701ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= 1.029ft Dcr= 1.717ft CRIT.DEPTH Hev= .00ft
INLET CONTROL... Submerged: HW =3.00
INLET CONTROL... Submerged: HW =3.05
INLET CONTROL... Submerged: HW =3.10
INLET CONTROL... Submerged: HW =3.15
INLET CONTROL... Submerged: HW =3.20
INLET CONTROL... Submerged: HW =3.25
INLET CONTROL... Submerged: HW =3.30
INLET CONTROL... Submerged: HW =3.35
INLET CONTROL... Submerged: HW =3.40
INLET CONTROL... Submerged: HW =3.45

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves — Return Event: 1 years
Label: IB-1C-2 OUT — Storm Event: 1 year
Scenario: Post-Development 1 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
INLET CONTROL... Submerged: HW =3.50
INLET CONTROL... Submerged: HW =3.55
INLET CONTROL... Submerged: HW =3.60
INLET CONTROL... Submerged: HW =3.65
INLET CONTROL... Submerged: HW =3.70
INLET CONTROL... Submerged: HW =3.75
INLET CONTROL... Submerged: HW =3.80
INLET CONTROL... Submerged: HW =3.85
INLET CONTROL... Submerged: HW =3.90
INLET CONTROL... Submerged: HW =3.95
INLET CONTROL... Submerged: HW =4.00
INLET CONTROL... Submerged: HW =4.05
INLET CONTROL... Submerged: HW =4.10
INLET CONTROL... Submerged: HW =4.15
INLET CONTROL... Submerged: HW =4.20
INLET CONTROL... Submerged: HW =4.25

Subsection: Individual Outlet Curves
Label: IB-1C-2 OUT
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
621.75	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
621.80	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
621.85	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
621.90	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
621.95	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.05	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.10	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.15	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.20	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.25	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.30	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.35	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.40	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.45	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.55	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.60	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.65	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.70	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.75	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.80	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.85	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.90	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.95	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
623.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
623.05	0.54	623.05	Free Outfall	622.10	0.00	0.00	(N/A)	0.00
623.10	1.52	623.10	Free Outfall	622.36	0.00	0.00	(N/A)	0.00
623.15	2.79	623.15	Free Outfall	622.58	0.00	0.00	(N/A)	0.00
623.20	4.29	623.20	Free Outfall	622.80	0.00	0.00	(N/A)	0.00
623.25	6.00	623.25	623.01	623.01	0.00	0.00	(N/A)	0.00
623.30	7.89	623.30	623.22	623.22	0.00	0.00	(N/A)	0.00
623.35	9.94	623.35	623.35	623.35	0.00	0.00	(N/A)	0.00
623.40	12.14	623.40	623.40	623.40	0.00	0.00	(N/A)	0.00
623.45	14.49	623.45	623.45	623.45	0.00	0.00	(N/A)	0.00

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves
Label: IB-1C-2 OUT
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
623.50	16.97	623.50	623.50	623.50	0.00	0.00	(N/A)	0.00
623.55	19.58	623.55	623.55	623.55	0.00	0.00	(N/A)	0.00
623.60	22.31	623.60	623.60	623.60	0.00	0.00	(N/A)	0.00
623.65	25.15	623.65	623.65	623.65	0.00	0.00	(N/A)	0.00
623.70	28.11	623.70	623.70	623.70	0.00	0.00	(N/A)	0.00
623.75	31.18	623.75	623.75	623.75	0.00	0.00	(N/A)	0.00
623.80	34.35	623.80	623.80	623.80	0.00	0.00	(N/A)	0.00
623.85	37.62	623.85	623.85	623.85	0.00	0.00	(N/A)	0.00
623.90	40.98	623.90	623.90	623.90	0.00	0.00	(N/A)	0.00
623.95	44.45	623.95	623.95	623.95	0.00	0.00	(N/A)	0.00
624.00	48.00	624.00	624.00	624.00	0.00	0.00	(N/A)	0.00
624.05	51.64	624.05	624.05	624.05	0.00	0.00	(N/A)	0.00
624.10	55.38	624.10	624.10	624.10	0.00	0.00	(N/A)	0.00
624.15	59.20	624.15	624.15	624.15	0.00	0.00	(N/A)	0.00
624.20	63.10	624.20	624.20	624.20	0.00	0.00	(N/A)	0.00
624.25	67.08	624.25	624.25	624.25	0.00	0.00	(N/A)	0.00
624.30	71.15	624.30	624.30	624.30	0.00	0.00	(N/A)	0.00
624.35	75.29	624.35	624.35	624.35	0.00	0.00	(N/A)	0.00
624.40	79.51	624.40	624.40	624.40	0.00	0.00	(N/A)	0.00
624.45	83.81	624.45	624.45	624.45	0.00	0.00	(N/A)	0.00
624.50	88.18	624.50	624.50	624.50	0.00	0.00	(N/A)	0.00
624.55	92.63	624.55	624.55	624.55	0.00	0.00	(N/A)	0.00
624.60	97.15	624.60	624.60	624.60	0.00	0.00	(N/A)	0.00
624.65	98.92	624.65	624.65	624.65	0.00	0.00	(N/A)	0.00
624.70	100.41	624.70	624.70	624.70	0.00	0.00	(N/A)	0.00
624.75	101.87	624.75	624.75	624.75	0.00	0.00	(N/A)	0.00
624.80	103.32	624.80	624.80	624.80	0.00	0.00	(N/A)	0.00
624.85	104.74	624.85	624.85	624.85	0.00	0.00	(N/A)	0.00
624.90	106.15	624.90	624.90	624.90	0.00	0.00	(N/A)	0.00
624.95	107.54	624.95	624.95	624.95	0.00	0.00	(N/A)	0.00
625.00	108.91	625.00	625.00	625.00	0.00	0.00	(N/A)	0.00
625.05	110.26	625.05	625.05	625.05	0.00	0.00	(N/A)	0.00
625.10	111.60	625.10	625.10	625.10	0.00	0.00	(N/A)	0.00
625.15	112.92	625.15	625.15	625.15	0.00	0.00	(N/A)	0.00
625.20	114.22	625.20	625.20	625.20	0.00	0.00	(N/A)	0.00

Subsection: Individual Outlet Curves
Label: IB-1C-2 OUT
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
625.25	115.51	625.25	625.25	625.25	0.00	0.00	(N/A)	0.00
625.30	116.79	625.30	625.30	625.30	0.00	0.00	(N/A)	0.00
625.35	118.05	625.35	625.35	625.35	0.00	0.00	(N/A)	0.00
625.40	119.30	625.40	625.40	625.40	0.00	0.00	(N/A)	0.00
625.45	120.54	625.45	625.45	625.45	0.00	0.00	(N/A)	0.00
625.50	121.76	625.50	625.50	625.50	0.00	0.00	(N/A)	0.00
625.55	122.97	625.55	625.55	625.55	0.00	0.00	(N/A)	0.00
625.60	124.17	625.60	625.60	625.60	0.00	0.00	(N/A)	0.00
625.65	125.36	625.65	625.65	625.65	0.00	0.00	(N/A)	0.00
625.70	126.54	625.70	625.70	625.70	0.00	0.00	(N/A)	0.00
625.75	127.70	625.75	625.75	625.75	0.00	0.00	(N/A)	0.00
625.80	128.86	625.80	625.80	625.80	0.00	0.00	(N/A)	0.00
625.85	130.01	625.85	625.85	625.85	0.00	0.00	(N/A)	0.00
625.90	131.14	625.90	625.90	625.90	0.00	0.00	(N/A)	0.00
625.95	132.27	625.95	625.95	625.95	0.00	0.00	(N/A)	0.00
626.00	133.38	626.00	626.00	626.00	0.00	0.00	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
Weir: H =0.05ft
Weir: H =0.1ft
Weir: H =0.15ft
Weir: H =0.2ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.25ft

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.3ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.35ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.4ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.45ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.5ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.55ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.6ft
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

Subsection: Individual Outlet Curves
Label: IB-1C-2 OUT
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve
Label: IB-1C-2 OUT
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
621.75	0.00	(N/A)	0.00
621.80	0.00	(N/A)	0.00
621.85	0.00	(N/A)	0.00
621.90	0.00	(N/A)	0.00
621.95	0.00	(N/A)	0.00
622.00	0.00	(N/A)	0.00
622.05	0.00	(N/A)	0.00
622.10	0.00	(N/A)	0.00
622.15	0.00	(N/A)	0.00
622.20	0.00	(N/A)	0.00
622.25	0.00	(N/A)	0.00
622.30	0.00	(N/A)	0.00
622.35	0.00	(N/A)	0.00
622.40	0.00	(N/A)	0.00
622.45	0.00	(N/A)	0.00
622.50	0.00	(N/A)	0.00
622.55	0.00	(N/A)	0.00
622.60	0.00	(N/A)	0.00
622.65	0.00	(N/A)	0.00
622.70	0.00	(N/A)	0.00
622.75	0.00	(N/A)	0.00
622.80	0.00	(N/A)	0.00
622.85	0.00	(N/A)	0.00
622.90	0.00	(N/A)	0.00
622.95	0.00	(N/A)	0.00
623.00	0.00	(N/A)	0.00
623.05	0.54	(N/A)	0.00
623.10	1.52	(N/A)	0.00
623.15	2.79	(N/A)	0.00
623.20	4.29	(N/A)	0.00
623.25	6.01	(N/A)	0.00
623.30	7.89	(N/A)	0.00
623.35	9.14	(N/A)	0.00
623.40	9.63	(N/A)	0.00
623.45	10.13	(N/A)	0.00
623.50	10.65	(N/A)	0.00
623.55	11.17	(N/A)	0.00
623.60	11.68	(N/A)	0.00
623.65	12.21	(N/A)	0.00
623.70	12.74	(N/A)	0.00
623.75	13.27	(N/A)	0.00
623.80	13.80	(N/A)	0.00

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve Return Event: 1 years
Label: IB-1C-2 OUT Storm Event: 1 year
Scenario: Post-Development 1 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
623.85	14.34	(N/A)	0.00
623.90	14.87	(N/A)	0.00
623.95	15.41	(N/A)	0.00
624.00	15.97	(N/A)	0.00
624.05	16.51	(N/A)	0.00
624.10	17.05	(N/A)	0.00
624.15	17.58	(N/A)	0.00
624.20	18.13	(N/A)	0.00
624.25	18.67	(N/A)	0.00
624.30	19.18	(N/A)	0.00
624.35	19.73	(N/A)	0.00
624.40	20.24	(N/A)	0.00
624.45	20.79	(N/A)	0.00
624.50	21.29	(N/A)	0.00
624.55	21.81	(N/A)	0.00
624.60	22.32	(N/A)	0.00
624.65	22.83	(N/A)	0.00
624.70	23.34	(N/A)	0.00
624.75	23.75	(N/A)	0.00
624.80	24.07	(N/A)	0.00
624.85	24.39	(N/A)	0.00
624.90	24.71	(N/A)	0.00
624.95	25.02	(N/A)	0.00
625.00	25.33	(N/A)	0.00
625.05	25.64	(N/A)	0.00
625.10	25.94	(N/A)	0.00
625.15	26.24	(N/A)	0.00
625.20	26.54	(N/A)	0.00
625.25	26.82	(N/A)	0.00
625.30	27.11	(N/A)	0.00
625.35	27.39	(N/A)	0.00
625.40	27.68	(N/A)	0.00
625.45	27.95	(N/A)	0.00
625.50	28.24	(N/A)	0.00
625.55	28.51	(N/A)	0.00
625.60	28.78	(N/A)	0.00
625.65	29.05	(N/A)	0.00
625.70	29.32	(N/A)	0.00
625.75	29.59	(N/A)	0.00
625.80	29.85	(N/A)	0.00
625.85	30.10	(N/A)	0.00
625.90	30.36	(N/A)	0.00

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve
Label: IB-1C-2 OUT
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
625.95	30.61	(N/A)	0.00
626.00	30.88	(N/A)	0.00

Contributing Structures
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
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(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)

Subsection: Composite Rating Curve | Return Event: 1 years
Label: IB-1C-2 OUT | Storm Event: 1 year
Scenario: Post-Development 1 year

Composite Outflow Summary

Contributing Structures
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
Riser - 1,Culvert - 1
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Riser - 1,Culvert - 1
Riser - 1,Culvert - 1

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve Return Event: 1 years
Label: IB-1C-2 OUT Storm Event: 1 year
Scenario: Post-Development 1 year

Composite Outflow Summary

Contributing Structures
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
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Riser - 1,Culvert - 1
Riser - 1,Culvert - 1

Stormwater Hydrologic Calculations

Subsection: Outlet Input Data Return Event: 10 years
Label: IB-1C-2 OUT Storm Event: 10 year
Scenario: Post-Development 10 year

Requested Pond Water Surface Elevations	
Minimum (Headwater)	621.75 ft
Increment (Headwater)	0.05 ft
Maximum (Headwater)	626.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Inlet Box	Riser - 1	Forward	Culvert - 1	623.00	626.00
Culvert-Circular	Culvert - 1	Forward	TW	621.75	626.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Stormwater Hydrologic Calculations

Subsection: Outlet Input Data
Label: IB-1C-2 OUT
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 year

Structure ID: Culvert - 1
Structure Type: Culvert-Circular

Number of Barrels	1
Diameter	24.0 in
Length	182.00 ft
Length (Computed Barrel)	185.29 ft
Slope (Computed)	0.191 ft/ft

Outlet Control Data

Manning's n	0.013
Ke	0.200
Kb	0.012
Kr	0.200
Convergence Tolerance	0.00 ft

Inlet Control Data

Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.000
T2 ratio (HW/D)	1.102
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	623.75 ft	T1 Flow	15.55 ft³/s
T2 Elevation	623.95 ft	T2 Flow	17.77 ft³/s

Subsection: Outlet Input Data | Return Event: 10 years
Label: IB-1C-2 OUT | Storm Event: 10 year
Scenario: Post-Development 10 year

Structure ID: Riser - 1
Structure Type: Inlet Box

Number of Openings	1
Elevation	623.00 ft
Orifice Area	16.0 ft²
Orifice Coefficient	0.600
Weir Length	16.00 ft
Weir Coefficient	3.00 (ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: TW
Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Subsection: Individual Outlet Curves | Return Event: 10 years
Label: IB-1C-2 OUT | Storm Event: 10 year
Scenario: Post-Development 10 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
621.75	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
621.80	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
621.85	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
621.90	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
621.95	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.05	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.10	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.15	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.20	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.25	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.30	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.35	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.40	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.45	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.50	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.55	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.60	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.65	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.70	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.75	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.80	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.85	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.90	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.95	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
623.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
623.05	0.54	622.10	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
623.10	1.52	622.36	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
623.15	2.79	622.58	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
623.20	4.29	622.80	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
623.25	6.01	623.01	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
623.30	7.89	623.22	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
623.35	9.14	623.35	Free Outfall	Free Outfall	0.00	0.80	(N/A)	0.00
623.40	9.63	623.40	Free Outfall	Free Outfall	0.00	2.52	(N/A)	0.00

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves | Return Event: 10 years
Label: IB-1C-2 OUT | Storm Event: 10 year
Scenario: Post-Development 10 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
623.45	10.13	623.45	Free Outfall	Free Outfall	0.00	4.36	(N/A)	0.00
623.50	10.65	623.50	Free Outfall	Free Outfall	0.00	6.32	(N/A)	0.00
623.55	11.17	623.55	Free Outfall	Free Outfall	0.00	8.41	(N/A)	0.00
623.60	11.68	623.60	Free Outfall	Free Outfall	0.00	10.62	(N/A)	0.00
623.65	12.21	623.65	Free Outfall	Free Outfall	0.00	12.94	(N/A)	0.00
623.70	12.74	623.70	Free Outfall	Free Outfall	0.00	15.37	(N/A)	0.00
623.75	13.27	623.75	Free Outfall	Free Outfall	0.00	17.91	(N/A)	0.00
623.80	13.80	623.80	Free Outfall	Free Outfall	0.00	20.54	(N/A)	0.00
623.85	14.34	623.85	Free Outfall	Free Outfall	0.00	23.28	(N/A)	0.00
623.90	14.87	623.90	Free Outfall	Free Outfall	0.00	26.11	(N/A)	0.00
623.95	15.41	623.95	Free Outfall	Free Outfall	0.00	29.03	(N/A)	0.00
624.00	15.97	624.00	Free Outfall	Free Outfall	0.00	32.03	(N/A)	0.00
624.05	16.51	624.05	Free Outfall	Free Outfall	0.00	35.14	(N/A)	0.00
624.10	17.05	624.10	Free Outfall	Free Outfall	0.00	38.33	(N/A)	0.00
624.15	17.58	624.15	Free Outfall	Free Outfall	0.00	41.62	(N/A)	0.00
624.20	18.13	624.20	Free Outfall	Free Outfall	0.00	44.97	(N/A)	0.00
624.25	18.67	624.25	Free Outfall	Free Outfall	0.00	48.42	(N/A)	0.00
624.30	19.18	624.30	Free Outfall	Free Outfall	0.00	51.97	(N/A)	0.00
624.35	19.73	624.35	Free Outfall	Free Outfall	0.00	55.56	(N/A)	0.00
624.40	20.24	624.40	Free Outfall	Free Outfall	0.00	59.27	(N/A)	0.00
624.45	20.79	624.45	Free Outfall	Free Outfall	0.00	63.02	(N/A)	0.00
624.50	21.29	624.50	Free Outfall	Free Outfall	0.00	66.89	(N/A)	0.00
624.55	21.81	624.55	Free Outfall	Free Outfall	0.00	70.82	(N/A)	0.00
624.60	22.32	624.60	Free Outfall	Free Outfall	0.00	74.82	(N/A)	0.00
624.65	22.83	624.65	Free Outfall	Free Outfall	0.00	76.09	(N/A)	0.00
624.70	23.34	624.70	Free Outfall	Free Outfall	0.00	77.06	(N/A)	0.00
624.75	23.75	624.75	Free Outfall	Free Outfall	0.00	78.13	(N/A)	0.00
624.80	24.07	624.80	Free Outfall	Free Outfall	0.00	79.25	(N/A)	0.00
624.85	24.39	624.85	Free Outfall	Free Outfall	0.00	80.35	(N/A)	0.00
624.90	24.71	624.90	Free Outfall	Free Outfall	0.00	81.44	(N/A)	0.00
624.95	25.02	624.95	Free Outfall	Free Outfall	0.00	82.51	(N/A)	0.00
625.00	25.33	625.00	Free Outfall	Free Outfall	0.00	83.57	(N/A)	0.00
625.05	25.64	625.05	Free Outfall	Free Outfall	0.00	84.62	(N/A)	0.00
625.10	25.94	625.10	Free Outfall	Free Outfall	0.00	85.66	(N/A)	0.00

Subsection: Individual Outlet Curves | Return Event: 10 years
Label: IB-1C-2 OUT | Storm Event: 10 year
Scenario: Post-Development 10 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
625.15	26.24	625.15	Free Outfall	Free Outfall	0.00	86.68	(N/A)	0.00
625.20	26.54	625.20	Free Outfall	Free Outfall	0.00	87.69	(N/A)	0.00
625.25	26.82	625.25	Free Outfall	Free Outfall	0.00	88.69	(N/A)	0.00
625.30	27.11	625.30	Free Outfall	Free Outfall	0.00	89.68	(N/A)	0.00
625.35	27.39	625.35	Free Outfall	Free Outfall	0.00	90.66	(N/A)	0.00
625.40	27.68	625.40	Free Outfall	Free Outfall	0.00	91.62	(N/A)	0.00
625.45	27.95	625.45	Free Outfall	Free Outfall	0.00	92.58	(N/A)	0.00
625.50	28.24	625.50	Free Outfall	Free Outfall	0.00	93.52	(N/A)	0.00
625.55	28.51	625.55	Free Outfall	Free Outfall	0.00	94.46	(N/A)	0.00
625.60	28.78	625.60	Free Outfall	Free Outfall	0.00	95.39	(N/A)	0.00
625.65	29.05	625.65	Free Outfall	Free Outfall	0.00	96.31	(N/A)	0.00
625.70	29.32	625.70	Free Outfall	Free Outfall	0.00	97.22	(N/A)	0.00
625.75	29.59	625.75	Free Outfall	Free Outfall	0.00	98.12	(N/A)	0.00
625.80	29.85	625.80	Free Outfall	Free Outfall	0.00	99.01	(N/A)	0.00
625.85	30.10	625.85	Free Outfall	Free Outfall	0.00	99.90	(N/A)	0.00
625.90	30.36	625.90	Free Outfall	Free Outfall	0.00	100.78	(N/A)	0.00
625.95	30.61	625.95	Free Outfall	Free Outfall	0.00	101.65	(N/A)	0.00
626.00	30.88	626.00	Free Outfall	Free Outfall	0.00	102.51	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.

Subsection: Individual Outlet Curves
Label: IB-1C-2 OUT
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
CRIT.DEPTH CONTROL Vh= .086ft Dcr= .251ft CRIT.DEPTH Hev= .00ft

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
CRIT.DEPTH CONTROL Vh= .150ft Dcr= .427ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .209ft Dcr= .582ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .268ft Dcr= .728ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .329ft Dcr= .867ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .393ft Dcr= 1.000ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .434ft Dcr= 1.079ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .450ft Dcr= 1.109ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .467ft Dcr= 1.140ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .484ft Dcr= 1.170ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .501ft Dcr= 1.199ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .519ft Dcr= 1.227ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .537ft Dcr= 1.256ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .555ft Dcr= 1.284ft CRIT.DEPTH Hev= .00ft

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
CRIT.DEPTH CONTROL Vh= .574ft Dcr= 1.311ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .593ft Dcr= 1.338ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .613ft Dcr= 1.364ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .633ft Dcr= 1.390ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .653ft Dcr= 1.415ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .675ft Dcr= 1.441ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .696ft Dcr= 1.465ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .718ft Dcr= 1.488ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .741ft Dcr= 1.511ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .764ft Dcr= 1.534ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .788ft Dcr= 1.555ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .811ft Dcr= 1.575ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .837ft Dcr= 1.596ft CRIT.DEPTH Hev= .00ft

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
CRIT.DEPTH CONTROL Vh= .862ft Dcr= 1.615ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .889ft Dcr= 1.634ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .915ft Dcr= 1.652ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .942ft Dcr= 1.669ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .970ft Dcr= 1.686ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .999ft Dcr= 1.701ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= 1.029ft Dcr= 1.717ft CRIT.DEPTH Hev= .00ft
INLET CONTROL... Submerged: HW =3.00
INLET CONTROL... Submerged: HW =3.05
INLET CONTROL... Submerged: HW =3.10
INLET CONTROL... Submerged: HW =3.15
INLET CONTROL... Submerged: HW =3.20
INLET CONTROL... Submerged: HW =3.25
INLET CONTROL... Submerged: HW =3.30
INLET CONTROL... Submerged: HW =3.35
INLET CONTROL... Submerged: HW =3.40
INLET CONTROL... Submerged: HW =3.45

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
INLET CONTROL... Submerged: HW =3.50
INLET CONTROL... Submerged: HW =3.55
INLET CONTROL... Submerged: HW =3.60
INLET CONTROL... Submerged: HW =3.65
INLET CONTROL... Submerged: HW =3.70
INLET CONTROL... Submerged: HW =3.75
INLET CONTROL... Submerged: HW =3.80
INLET CONTROL... Submerged: HW =3.85
INLET CONTROL... Submerged: HW =3.90
INLET CONTROL... Submerged: HW =3.95
INLET CONTROL... Submerged: HW =4.00
INLET CONTROL... Submerged: HW =4.05
INLET CONTROL... Submerged: HW =4.10
INLET CONTROL... Submerged: HW =4.15
INLET CONTROL... Submerged: HW =4.20
INLET CONTROL... Submerged: HW =4.25

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves | Return Event: 10 years
Label: IB-1C-2 OUT | Storm Event: 10 year
Scenario: Post-Development 10 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
621.75	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
621.80	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
621.85	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
621.90	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
621.95	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.05	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.10	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.15	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.20	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.25	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.30	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.35	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.40	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.45	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.55	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.60	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.65	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.70	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.75	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.80	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.85	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.90	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.95	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
623.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
623.05	0.54	623.05	Free Outfall	622.10	0.00	0.00	(N/A)	0.00
623.10	1.52	623.10	Free Outfall	622.36	0.00	0.00	(N/A)	0.00
623.15	2.79	623.15	Free Outfall	622.58	0.00	0.00	(N/A)	0.00
623.20	4.29	623.20	Free Outfall	622.80	0.00	0.00	(N/A)	0.00
623.25	6.00	623.25	623.01	623.01	0.00	0.00	(N/A)	0.00
623.30	7.89	623.30	623.22	623.22	0.00	0.00	(N/A)	0.00
623.35	9.94	623.35	623.35	623.35	0.00	0.00	(N/A)	0.00
623.40	12.14	623.40	623.40	623.40	0.00	0.00	(N/A)	0.00
623.45	14.49	623.45	623.45	623.45	0.00	0.00	(N/A)	0.00

Subsection: Individual Outlet Curves | Return Event: 10 years
Label: IB-1C-2 OUT | Storm Event: 10 year
Scenario: Post-Development 10 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
623.50	16.97	623.50	623.50	623.50	0.00	0.00	(N/A)	0.00
623.55	19.58	623.55	623.55	623.55	0.00	0.00	(N/A)	0.00
623.60	22.31	623.60	623.60	623.60	0.00	0.00	(N/A)	0.00
623.65	25.15	623.65	623.65	623.65	0.00	0.00	(N/A)	0.00
623.70	28.11	623.70	623.70	623.70	0.00	0.00	(N/A)	0.00
623.75	31.18	623.75	623.75	623.75	0.00	0.00	(N/A)	0.00
623.80	34.35	623.80	623.80	623.80	0.00	0.00	(N/A)	0.00
623.85	37.62	623.85	623.85	623.85	0.00	0.00	(N/A)	0.00
623.90	40.98	623.90	623.90	623.90	0.00	0.00	(N/A)	0.00
623.95	44.45	623.95	623.95	623.95	0.00	0.00	(N/A)	0.00
624.00	48.00	624.00	624.00	624.00	0.00	0.00	(N/A)	0.00
624.05	51.64	624.05	624.05	624.05	0.00	0.00	(N/A)	0.00
624.10	55.38	624.10	624.10	624.10	0.00	0.00	(N/A)	0.00
624.15	59.20	624.15	624.15	624.15	0.00	0.00	(N/A)	0.00
624.20	63.10	624.20	624.20	624.20	0.00	0.00	(N/A)	0.00
624.25	67.08	624.25	624.25	624.25	0.00	0.00	(N/A)	0.00
624.30	71.15	624.30	624.30	624.30	0.00	0.00	(N/A)	0.00
624.35	75.29	624.35	624.35	624.35	0.00	0.00	(N/A)	0.00
624.40	79.51	624.40	624.40	624.40	0.00	0.00	(N/A)	0.00
624.45	83.81	624.45	624.45	624.45	0.00	0.00	(N/A)	0.00
624.50	88.18	624.50	624.50	624.50	0.00	0.00	(N/A)	0.00
624.55	92.63	624.55	624.55	624.55	0.00	0.00	(N/A)	0.00
624.60	97.15	624.60	624.60	624.60	0.00	0.00	(N/A)	0.00
624.65	98.92	624.65	624.65	624.65	0.00	0.00	(N/A)	0.00
624.70	100.41	624.70	624.70	624.70	0.00	0.00	(N/A)	0.00
624.75	101.87	624.75	624.75	624.75	0.00	0.00	(N/A)	0.00
624.80	103.32	624.80	624.80	624.80	0.00	0.00	(N/A)	0.00
624.85	104.74	624.85	624.85	624.85	0.00	0.00	(N/A)	0.00
624.90	106.15	624.90	624.90	624.90	0.00	0.00	(N/A)	0.00
624.95	107.54	624.95	624.95	624.95	0.00	0.00	(N/A)	0.00
625.00	108.91	625.00	625.00	625.00	0.00	0.00	(N/A)	0.00
625.05	110.26	625.05	625.05	625.05	0.00	0.00	(N/A)	0.00
625.10	111.60	625.10	625.10	625.10	0.00	0.00	(N/A)	0.00
625.15	112.92	625.15	625.15	625.15	0.00	0.00	(N/A)	0.00
625.20	114.22	625.20	625.20	625.20	0.00	0.00	(N/A)	0.00

Subsection: Individual Outlet Curves | Return Event: 10 years
Label: IB-1C-2 OUT | Storm Event: 10 year
Scenario: Post-Development 10 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
625.25	115.51	625.25	625.25	625.25	0.00	0.00	(N/A)	0.00
625.30	116.79	625.30	625.30	625.30	0.00	0.00	(N/A)	0.00
625.35	118.05	625.35	625.35	625.35	0.00	0.00	(N/A)	0.00
625.40	119.30	625.40	625.40	625.40	0.00	0.00	(N/A)	0.00
625.45	120.54	625.45	625.45	625.45	0.00	0.00	(N/A)	0.00
625.50	121.76	625.50	625.50	625.50	0.00	0.00	(N/A)	0.00
625.55	122.97	625.55	625.55	625.55	0.00	0.00	(N/A)	0.00
625.60	124.17	625.60	625.60	625.60	0.00	0.00	(N/A)	0.00
625.65	125.36	625.65	625.65	625.65	0.00	0.00	(N/A)	0.00
625.70	126.54	625.70	625.70	625.70	0.00	0.00	(N/A)	0.00
625.75	127.70	625.75	625.75	625.75	0.00	0.00	(N/A)	0.00
625.80	128.86	625.80	625.80	625.80	0.00	0.00	(N/A)	0.00
625.85	130.01	625.85	625.85	625.85	0.00	0.00	(N/A)	0.00
625.90	131.14	625.90	625.90	625.90	0.00	0.00	(N/A)	0.00
625.95	132.27	625.95	625.95	625.95	0.00	0.00	(N/A)	0.00
626.00	133.38	626.00	626.00	626.00	0.00	0.00	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
Weir: H =0.05ft
Weir: H =0.1ft
Weir: H =0.15ft
Weir: H =0.2ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.25ft

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.3ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.35ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.4ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.45ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.5ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.55ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.6ft
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

Subsection: Individual Outlet Curves
Label: IB-1C-2 OUT
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve | Return Event: 10 years
Label: IB-1C-2 OUT | Storm Event: 10 year
Scenario: Post-Development 10 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
621.75	0.00	(N/A)	0.00
621.80	0.00	(N/A)	0.00
621.85	0.00	(N/A)	0.00
621.90	0.00	(N/A)	0.00
621.95	0.00	(N/A)	0.00
622.00	0.00	(N/A)	0.00
622.05	0.00	(N/A)	0.00
622.10	0.00	(N/A)	0.00
622.15	0.00	(N/A)	0.00
622.20	0.00	(N/A)	0.00
622.25	0.00	(N/A)	0.00
622.30	0.00	(N/A)	0.00
622.35	0.00	(N/A)	0.00
622.40	0.00	(N/A)	0.00
622.45	0.00	(N/A)	0.00
622.50	0.00	(N/A)	0.00
622.55	0.00	(N/A)	0.00
622.60	0.00	(N/A)	0.00
622.65	0.00	(N/A)	0.00
622.70	0.00	(N/A)	0.00
622.75	0.00	(N/A)	0.00
622.80	0.00	(N/A)	0.00
622.85	0.00	(N/A)	0.00
622.90	0.00	(N/A)	0.00
622.95	0.00	(N/A)	0.00
623.00	0.00	(N/A)	0.00
623.05	0.54	(N/A)	0.00
623.10	1.52	(N/A)	0.00
623.15	2.79	(N/A)	0.00
623.20	4.29	(N/A)	0.00
623.25	6.01	(N/A)	0.00
623.30	7.89	(N/A)	0.00
623.35	9.14	(N/A)	0.00
623.40	9.63	(N/A)	0.00
623.45	10.13	(N/A)	0.00
623.50	10.65	(N/A)	0.00
623.55	11.17	(N/A)	0.00
623.60	11.68	(N/A)	0.00
623.65	12.21	(N/A)	0.00
623.70	12.74	(N/A)	0.00
623.75	13.27	(N/A)	0.00
623.80	13.80	(N/A)	0.00

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve | Return Event: 10 years
Label: IB-1C-2 OUT | Storm Event: 10 year
Scenario: Post-Development 10 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
623.85	14.34	(N/A)	0.00
623.90	14.87	(N/A)	0.00
623.95	15.41	(N/A)	0.00
624.00	15.97	(N/A)	0.00
624.05	16.51	(N/A)	0.00
624.10	17.05	(N/A)	0.00
624.15	17.58	(N/A)	0.00
624.20	18.13	(N/A)	0.00
624.25	18.67	(N/A)	0.00
624.30	19.18	(N/A)	0.00
624.35	19.73	(N/A)	0.00
624.40	20.24	(N/A)	0.00
624.45	20.79	(N/A)	0.00
624.50	21.29	(N/A)	0.00
624.55	21.81	(N/A)	0.00
624.60	22.32	(N/A)	0.00
624.65	22.83	(N/A)	0.00
624.70	23.34	(N/A)	0.00
624.75	23.75	(N/A)	0.00
624.80	24.07	(N/A)	0.00
624.85	24.39	(N/A)	0.00
624.90	24.71	(N/A)	0.00
624.95	25.02	(N/A)	0.00
625.00	25.33	(N/A)	0.00
625.05	25.64	(N/A)	0.00
625.10	25.94	(N/A)	0.00
625.15	26.24	(N/A)	0.00
625.20	26.54	(N/A)	0.00
625.25	26.82	(N/A)	0.00
625.30	27.11	(N/A)	0.00
625.35	27.39	(N/A)	0.00
625.40	27.68	(N/A)	0.00
625.45	27.95	(N/A)	0.00
625.50	28.24	(N/A)	0.00
625.55	28.51	(N/A)	0.00
625.60	28.78	(N/A)	0.00
625.65	29.05	(N/A)	0.00
625.70	29.32	(N/A)	0.00
625.75	29.59	(N/A)	0.00
625.80	29.85	(N/A)	0.00
625.85	30.10	(N/A)	0.00
625.90	30.36	(N/A)	0.00

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve
Label: IB-1C-2 OUT
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
625.95	30.61	(N/A)	0.00
626.00	30.88	(N/A)	0.00

Contributing Structures
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve | Return Event: 10 years
Label: IB-1C-2 OUT | Storm Event: 10 year
Scenario: Post-Development 10 year

Composite Outflow Summary

Contributing Structures
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
Riser - 1,Culvert - 1
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Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
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Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1

Subsection: Composite Rating Curve | Return Event: 10 years
Label: IB-1C-2 OUT | Storm Event: 10 year
Scenario: Post-Development 10 year

Composite Outflow Summary

Contributing Structures
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1

Stormwater Hydrologic Calculations

Subsection: Outlet Input Data | Return Event: 25 years
Label: IB-1C-2 OUT | Storm Event: 25 year
Scenario: Post-Development 25 year

Requested Pond Water Surface Elevations	
Minimum (Headwater)	621.75 ft
Increment (Headwater)	0.05 ft
Maximum (Headwater)	626.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Inlet Box	Riser - 1	Forward	Culvert - 1	623.00	626.00
Culvert-Circular	Culvert - 1	Forward	TW	621.75	626.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Subsection: Outlet Input Data	Return Event: 25 years
Label: IB-1C-2 OUT	Storm Event: 25 year
Scenario: Post-Development 25 year	

Structure ID: Culvert - 1
Structure Type: Culvert-Circular

Number of Barrels	1
Diameter	24.0 in
Length	182.00 ft
Length (Computed Barrel)	185.29 ft
Slope (Computed)	0.191 ft/ft

Outlet Control Data

Manning's n	0.013
Ke	0.200
Kb	0.012
Kr	0.200
Convergence Tolerance	0.00 ft

Inlet Control Data

Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.000
T2 ratio (HW/D)	1.102
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	623.75 ft	T1 Flow	15.55 ft³/s
T2 Elevation	623.95 ft	T2 Flow	17.77 ft³/s

Subsection: Outlet Input Data | Return Event: 25 years
Label: IB-1C-2 OUT | Storm Event: 25 year
Scenario: Post-Development 25 year

Structure ID: Riser - 1
Structure Type: Inlet Box

Number of Openings	1
Elevation	623.00 ft
Orifice Area	16.0 ft²
Orifice Coefficient	0.600
Weir Length	16.00 ft
Weir Coefficient	3.00 (ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: TW
Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Subsection: Individual Outlet Curves | Return Event: 25 years
Label: IB-1C-2 OUT | Storm Event: 25 year
Scenario: Post-Development 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
621.75	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
621.80	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
621.85	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
621.90	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
621.95	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.05	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.10	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.15	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.20	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.25	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.30	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.35	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.40	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.45	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.50	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.55	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.60	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.65	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.70	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.75	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.80	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.85	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.90	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.95	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
623.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
623.05	0.54	622.10	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
623.10	1.52	622.36	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
623.15	2.79	622.58	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
623.20	4.29	622.80	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
623.25	6.01	623.01	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
623.30	7.89	623.22	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
623.35	9.14	623.35	Free Outfall	Free Outfall	0.00	0.80	(N/A)	0.00
623.40	9.63	623.40	Free Outfall	Free Outfall	0.00	2.52	(N/A)	0.00

Subsection: Individual Outlet Curves | Return Event: 25 years
Label: IB-1C-2 OUT | Storm Event: 25 year
Scenario: Post-Development 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
623.45	10.13	623.45	Free Outfall	Free Outfall	0.00	4.36	(N/A)	0.00
623.50	10.65	623.50	Free Outfall	Free Outfall	0.00	6.32	(N/A)	0.00
623.55	11.17	623.55	Free Outfall	Free Outfall	0.00	8.41	(N/A)	0.00
623.60	11.68	623.60	Free Outfall	Free Outfall	0.00	10.62	(N/A)	0.00
623.65	12.21	623.65	Free Outfall	Free Outfall	0.00	12.94	(N/A)	0.00
623.70	12.74	623.70	Free Outfall	Free Outfall	0.00	15.37	(N/A)	0.00
623.75	13.27	623.75	Free Outfall	Free Outfall	0.00	17.91	(N/A)	0.00
623.80	13.80	623.80	Free Outfall	Free Outfall	0.00	20.54	(N/A)	0.00
623.85	14.34	623.85	Free Outfall	Free Outfall	0.00	23.28	(N/A)	0.00
623.90	14.87	623.90	Free Outfall	Free Outfall	0.00	26.11	(N/A)	0.00
623.95	15.41	623.95	Free Outfall	Free Outfall	0.00	29.03	(N/A)	0.00
624.00	15.97	624.00	Free Outfall	Free Outfall	0.00	32.03	(N/A)	0.00
624.05	16.51	624.05	Free Outfall	Free Outfall	0.00	35.14	(N/A)	0.00
624.10	17.05	624.10	Free Outfall	Free Outfall	0.00	38.33	(N/A)	0.00
624.15	17.58	624.15	Free Outfall	Free Outfall	0.00	41.62	(N/A)	0.00
624.20	18.13	624.20	Free Outfall	Free Outfall	0.00	44.97	(N/A)	0.00
624.25	18.67	624.25	Free Outfall	Free Outfall	0.00	48.42	(N/A)	0.00
624.30	19.18	624.30	Free Outfall	Free Outfall	0.00	51.97	(N/A)	0.00
624.35	19.73	624.35	Free Outfall	Free Outfall	0.00	55.56	(N/A)	0.00
624.40	20.24	624.40	Free Outfall	Free Outfall	0.00	59.27	(N/A)	0.00
624.45	20.79	624.45	Free Outfall	Free Outfall	0.00	63.02	(N/A)	0.00
624.50	21.29	624.50	Free Outfall	Free Outfall	0.00	66.89	(N/A)	0.00
624.55	21.81	624.55	Free Outfall	Free Outfall	0.00	70.82	(N/A)	0.00
624.60	22.32	624.60	Free Outfall	Free Outfall	0.00	74.82	(N/A)	0.00
624.65	22.83	624.65	Free Outfall	Free Outfall	0.00	76.09	(N/A)	0.00
624.70	23.34	624.70	Free Outfall	Free Outfall	0.00	77.06	(N/A)	0.00
624.75	23.75	624.75	Free Outfall	Free Outfall	0.00	78.13	(N/A)	0.00
624.80	24.07	624.80	Free Outfall	Free Outfall	0.00	79.25	(N/A)	0.00
624.85	24.39	624.85	Free Outfall	Free Outfall	0.00	80.35	(N/A)	0.00
624.90	24.71	624.90	Free Outfall	Free Outfall	0.00	81.44	(N/A)	0.00
624.95	25.02	624.95	Free Outfall	Free Outfall	0.00	82.51	(N/A)	0.00
625.00	25.33	625.00	Free Outfall	Free Outfall	0.00	83.57	(N/A)	0.00
625.05	25.64	625.05	Free Outfall	Free Outfall	0.00	84.62	(N/A)	0.00
625.10	25.94	625.10	Free Outfall	Free Outfall	0.00	85.66	(N/A)	0.00

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves
Label: IB-1C-2 OUT
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
625.15	26.24	625.15	Free Outfall	Free Outfall	0.00	86.68	(N/A)	0.00
625.20	26.54	625.20	Free Outfall	Free Outfall	0.00	87.69	(N/A)	0.00
625.25	26.82	625.25	Free Outfall	Free Outfall	0.00	88.69	(N/A)	0.00
625.30	27.11	625.30	Free Outfall	Free Outfall	0.00	89.68	(N/A)	0.00
625.35	27.39	625.35	Free Outfall	Free Outfall	0.00	90.66	(N/A)	0.00
625.40	27.68	625.40	Free Outfall	Free Outfall	0.00	91.62	(N/A)	0.00
625.45	27.95	625.45	Free Outfall	Free Outfall	0.00	92.58	(N/A)	0.00
625.50	28.24	625.50	Free Outfall	Free Outfall	0.00	93.52	(N/A)	0.00
625.55	28.51	625.55	Free Outfall	Free Outfall	0.00	94.46	(N/A)	0.00
625.60	28.78	625.60	Free Outfall	Free Outfall	0.00	95.39	(N/A)	0.00
625.65	29.05	625.65	Free Outfall	Free Outfall	0.00	96.31	(N/A)	0.00
625.70	29.32	625.70	Free Outfall	Free Outfall	0.00	97.22	(N/A)	0.00
625.75	29.59	625.75	Free Outfall	Free Outfall	0.00	98.12	(N/A)	0.00
625.80	29.85	625.80	Free Outfall	Free Outfall	0.00	99.01	(N/A)	0.00
625.85	30.10	625.85	Free Outfall	Free Outfall	0.00	99.90	(N/A)	0.00
625.90	30.36	625.90	Free Outfall	Free Outfall	0.00	100.78	(N/A)	0.00
625.95	30.61	625.95	Free Outfall	Free Outfall	0.00	101.65	(N/A)	0.00
626.00	30.88	626.00	Free Outfall	Free Outfall	0.00	102.51	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.

Subsection: Individual Outlet Curves | Return Event: 25 years
Label: IB-1C-2 OUT | Storm Event: 25 year
Scenario: Post-Development 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
CRIT.DEPTH CONTROL Vh= .086ft Dcr= .251ft CRIT.DEPTH Hev= .00ft

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
CRIT.DEPTH CONTROL Vh= .150ft Dcr= .427ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .209ft Dcr= .582ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .268ft Dcr= .728ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .329ft Dcr= .867ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .393ft Dcr= 1.000ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .434ft Dcr= 1.079ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .450ft Dcr= 1.109ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .467ft Dcr= 1.140ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .484ft Dcr= 1.170ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .501ft Dcr= 1.199ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .519ft Dcr= 1.227ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .537ft Dcr= 1.256ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .555ft Dcr= 1.284ft CRIT.DEPTH Hev= .00ft

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
CRIT.DEPTH CONTROL Vh= .574ft Dcr= 1.311ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .593ft Dcr= 1.338ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .613ft Dcr= 1.364ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .633ft Dcr= 1.390ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .653ft Dcr= 1.415ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .675ft Dcr= 1.441ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .696ft Dcr= 1.465ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .718ft Dcr= 1.488ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .741ft Dcr= 1.511ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .764ft Dcr= 1.534ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .788ft Dcr= 1.555ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .811ft Dcr= 1.575ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .837ft Dcr= 1.596ft CRIT.DEPTH Hev= .00ft

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
CRIT.DEPTH CONTROL Vh= .862ft Dcr= 1.615ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .889ft Dcr= 1.634ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .915ft Dcr= 1.652ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .942ft Dcr= 1.669ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .970ft Dcr= 1.686ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .999ft Dcr= 1.701ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= 1.029ft Dcr= 1.717ft CRIT.DEPTH Hev= .00ft
INLET CONTROL... Submerged: HW =3.00
INLET CONTROL... Submerged: HW =3.05
INLET CONTROL... Submerged: HW =3.10
INLET CONTROL... Submerged: HW =3.15
INLET CONTROL... Submerged: HW =3.20
INLET CONTROL... Submerged: HW =3.25
INLET CONTROL... Submerged: HW =3.30
INLET CONTROL... Submerged: HW =3.35
INLET CONTROL... Submerged: HW =3.40
INLET CONTROL... Submerged: HW =3.45

Subsection: Individual Outlet Curves
Label: IB-1C-2 OUT
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
INLET CONTROL... Submerged: HW =3.50
INLET CONTROL... Submerged: HW =3.55
INLET CONTROL... Submerged: HW =3.60
INLET CONTROL... Submerged: HW =3.65
INLET CONTROL... Submerged: HW =3.70
INLET CONTROL... Submerged: HW =3.75
INLET CONTROL... Submerged: HW =3.80
INLET CONTROL... Submerged: HW =3.85
INLET CONTROL... Submerged: HW =3.90
INLET CONTROL... Submerged: HW =3.95
INLET CONTROL... Submerged: HW =4.00
INLET CONTROL... Submerged: HW =4.05
INLET CONTROL... Submerged: HW =4.10
INLET CONTROL... Submerged: HW =4.15
INLET CONTROL... Submerged: HW =4.20
INLET CONTROL... Submerged: HW =4.25

Subsection: Individual Outlet Curves | Return Event: 25 years
Label: IB-1C-2 OUT | Storm Event: 25 year
Scenario: Post-Development 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
621.75	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
621.80	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
621.85	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
621.90	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
621.95	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.05	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.10	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.15	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.20	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.25	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.30	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.35	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.40	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.45	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.55	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.60	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.65	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.70	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.75	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.80	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.85	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.90	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.95	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
623.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
623.05	0.54	623.05	Free Outfall	622.10	0.00	0.00	(N/A)	0.00
623.10	1.52	623.10	Free Outfall	622.36	0.00	0.00	(N/A)	0.00
623.15	2.79	623.15	Free Outfall	622.58	0.00	0.00	(N/A)	0.00
623.20	4.29	623.20	Free Outfall	622.80	0.00	0.00	(N/A)	0.00
623.25	6.00	623.25	623.01	623.01	0.00	0.00	(N/A)	0.00
623.30	7.89	623.30	623.22	623.22	0.00	0.00	(N/A)	0.00
623.35	9.94	623.35	623.35	623.35	0.00	0.00	(N/A)	0.00
623.40	12.14	623.40	623.40	623.40	0.00	0.00	(N/A)	0.00
623.45	14.49	623.45	623.45	623.45	0.00	0.00	(N/A)	0.00

Subsection: Individual Outlet Curves | Return Event: 25 years
Label: IB-1C-2 OUT | Storm Event: 25 year
Scenario: Post-Development 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
623.50	16.97	623.50	623.50	623.50	0.00	0.00	(N/A)	0.00
623.55	19.58	623.55	623.55	623.55	0.00	0.00	(N/A)	0.00
623.60	22.31	623.60	623.60	623.60	0.00	0.00	(N/A)	0.00
623.65	25.15	623.65	623.65	623.65	0.00	0.00	(N/A)	0.00
623.70	28.11	623.70	623.70	623.70	0.00	0.00	(N/A)	0.00
623.75	31.18	623.75	623.75	623.75	0.00	0.00	(N/A)	0.00
623.80	34.35	623.80	623.80	623.80	0.00	0.00	(N/A)	0.00
623.85	37.62	623.85	623.85	623.85	0.00	0.00	(N/A)	0.00
623.90	40.98	623.90	623.90	623.90	0.00	0.00	(N/A)	0.00
623.95	44.45	623.95	623.95	623.95	0.00	0.00	(N/A)	0.00
624.00	48.00	624.00	624.00	624.00	0.00	0.00	(N/A)	0.00
624.05	51.64	624.05	624.05	624.05	0.00	0.00	(N/A)	0.00
624.10	55.38	624.10	624.10	624.10	0.00	0.00	(N/A)	0.00
624.15	59.20	624.15	624.15	624.15	0.00	0.00	(N/A)	0.00
624.20	63.10	624.20	624.20	624.20	0.00	0.00	(N/A)	0.00
624.25	67.08	624.25	624.25	624.25	0.00	0.00	(N/A)	0.00
624.30	71.15	624.30	624.30	624.30	0.00	0.00	(N/A)	0.00
624.35	75.29	624.35	624.35	624.35	0.00	0.00	(N/A)	0.00
624.40	79.51	624.40	624.40	624.40	0.00	0.00	(N/A)	0.00
624.45	83.81	624.45	624.45	624.45	0.00	0.00	(N/A)	0.00
624.50	88.18	624.50	624.50	624.50	0.00	0.00	(N/A)	0.00
624.55	92.63	624.55	624.55	624.55	0.00	0.00	(N/A)	0.00
624.60	97.15	624.60	624.60	624.60	0.00	0.00	(N/A)	0.00
624.65	98.92	624.65	624.65	624.65	0.00	0.00	(N/A)	0.00
624.70	100.41	624.70	624.70	624.70	0.00	0.00	(N/A)	0.00
624.75	101.87	624.75	624.75	624.75	0.00	0.00	(N/A)	0.00
624.80	103.32	624.80	624.80	624.80	0.00	0.00	(N/A)	0.00
624.85	104.74	624.85	624.85	624.85	0.00	0.00	(N/A)	0.00
624.90	106.15	624.90	624.90	624.90	0.00	0.00	(N/A)	0.00
624.95	107.54	624.95	624.95	624.95	0.00	0.00	(N/A)	0.00
625.00	108.91	625.00	625.00	625.00	0.00	0.00	(N/A)	0.00
625.05	110.26	625.05	625.05	625.05	0.00	0.00	(N/A)	0.00
625.10	111.60	625.10	625.10	625.10	0.00	0.00	(N/A)	0.00
625.15	112.92	625.15	625.15	625.15	0.00	0.00	(N/A)	0.00
625.20	114.22	625.20	625.20	625.20	0.00	0.00	(N/A)	0.00

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves | Return Event: 25 years
Label: IB-1C-2 OUT | Storm Event: 25 year
Scenario: Post-Development 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
625.25	115.51	625.25	625.25	625.25	0.00	0.00	(N/A)	0.00
625.30	116.79	625.30	625.30	625.30	0.00	0.00	(N/A)	0.00
625.35	118.05	625.35	625.35	625.35	0.00	0.00	(N/A)	0.00
625.40	119.30	625.40	625.40	625.40	0.00	0.00	(N/A)	0.00
625.45	120.54	625.45	625.45	625.45	0.00	0.00	(N/A)	0.00
625.50	121.76	625.50	625.50	625.50	0.00	0.00	(N/A)	0.00
625.55	122.97	625.55	625.55	625.55	0.00	0.00	(N/A)	0.00
625.60	124.17	625.60	625.60	625.60	0.00	0.00	(N/A)	0.00
625.65	125.36	625.65	625.65	625.65	0.00	0.00	(N/A)	0.00
625.70	126.54	625.70	625.70	625.70	0.00	0.00	(N/A)	0.00
625.75	127.70	625.75	625.75	625.75	0.00	0.00	(N/A)	0.00
625.80	128.86	625.80	625.80	625.80	0.00	0.00	(N/A)	0.00
625.85	130.01	625.85	625.85	625.85	0.00	0.00	(N/A)	0.00
625.90	131.14	625.90	625.90	625.90	0.00	0.00	(N/A)	0.00
625.95	132.27	625.95	625.95	625.95	0.00	0.00	(N/A)	0.00
626.00	133.38	626.00	626.00	626.00	0.00	0.00	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
Weir: H =0.05ft
Weir: H =0.1ft
Weir: H =0.15ft
Weir: H =0.2ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.25ft

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.3ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.35ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.4ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.45ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.5ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.55ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.6ft
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

Subsection: Individual Outlet Curves　　Return Event: 25 years
Label: IB-1C-2 OUT　　Storm Event: 25 year
Scenario: Post-Development 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

Subsection: Individual Outlet Curves | Return Event: 25 years
Label: IB-1C-2 OUT | Storm Event: 25 year
Scenario: Post-Development 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

Subsection: Individual Outlet Curves
Label: IB-1C-2 OUT
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

Subsection: Composite Rating Curve
Label: IB-1C-2 OUT
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
621.75	0.00	(N/A)	0.00
621.80	0.00	(N/A)	0.00
621.85	0.00	(N/A)	0.00
621.90	0.00	(N/A)	0.00
621.95	0.00	(N/A)	0.00
622.00	0.00	(N/A)	0.00
622.05	0.00	(N/A)	0.00
622.10	0.00	(N/A)	0.00
622.15	0.00	(N/A)	0.00
622.20	0.00	(N/A)	0.00
622.25	0.00	(N/A)	0.00
622.30	0.00	(N/A)	0.00
622.35	0.00	(N/A)	0.00
622.40	0.00	(N/A)	0.00
622.45	0.00	(N/A)	0.00
622.50	0.00	(N/A)	0.00
622.55	0.00	(N/A)	0.00
622.60	0.00	(N/A)	0.00
622.65	0.00	(N/A)	0.00
622.70	0.00	(N/A)	0.00
622.75	0.00	(N/A)	0.00
622.80	0.00	(N/A)	0.00
622.85	0.00	(N/A)	0.00
622.90	0.00	(N/A)	0.00
622.95	0.00	(N/A)	0.00
623.00	0.00	(N/A)	0.00
623.05	0.54	(N/A)	0.00
623.10	1.52	(N/A)	0.00
623.15	2.79	(N/A)	0.00
623.20	4.29	(N/A)	0.00
623.25	6.01	(N/A)	0.00
623.30	7.89	(N/A)	0.00
623.35	9.14	(N/A)	0.00
623.40	9.63	(N/A)	0.00
623.45	10.13	(N/A)	0.00
623.50	10.65	(N/A)	0.00
623.55	11.17	(N/A)	0.00
623.60	11.68	(N/A)	0.00
623.65	12.21	(N/A)	0.00
623.70	12.74	(N/A)	0.00
623.75	13.27	(N/A)	0.00
623.80	13.80	(N/A)	0.00

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve — Return Event: 25 years
Label: IB-1C-2 OUT — Storm Event: 25 year
Scenario: Post-Development 25 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
623.85	14.34	(N/A)	0.00
623.90	14.87	(N/A)	0.00
623.95	15.41	(N/A)	0.00
624.00	15.97	(N/A)	0.00
624.05	16.51	(N/A)	0.00
624.10	17.05	(N/A)	0.00
624.15	17.58	(N/A)	0.00
624.20	18.13	(N/A)	0.00
624.25	18.67	(N/A)	0.00
624.30	19.18	(N/A)	0.00
624.35	19.73	(N/A)	0.00
624.40	20.24	(N/A)	0.00
624.45	20.79	(N/A)	0.00
624.50	21.29	(N/A)	0.00
624.55	21.81	(N/A)	0.00
624.60	22.32	(N/A)	0.00
624.65	22.83	(N/A)	0.00
624.70	23.34	(N/A)	0.00
624.75	23.75	(N/A)	0.00
624.80	24.07	(N/A)	0.00
624.85	24.39	(N/A)	0.00
624.90	24.71	(N/A)	0.00
624.95	25.02	(N/A)	0.00
625.00	25.33	(N/A)	0.00
625.05	25.64	(N/A)	0.00
625.10	25.94	(N/A)	0.00
625.15	26.24	(N/A)	0.00
625.20	26.54	(N/A)	0.00
625.25	26.82	(N/A)	0.00
625.30	27.11	(N/A)	0.00
625.35	27.39	(N/A)	0.00
625.40	27.68	(N/A)	0.00
625.45	27.95	(N/A)	0.00
625.50	28.24	(N/A)	0.00
625.55	28.51	(N/A)	0.00
625.60	28.78	(N/A)	0.00
625.65	29.05	(N/A)	0.00
625.70	29.32	(N/A)	0.00
625.75	29.59	(N/A)	0.00
625.80	29.85	(N/A)	0.00
625.85	30.10	(N/A)	0.00
625.90	30.36	(N/A)	0.00

Subsection: Composite Rating Curve
Label: IB-1C-2 OUT
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
625.95	30.61	(N/A)	0.00
626.00	30.88	(N/A)	0.00

Contributing Structures
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)

Subsection: Composite Rating Curve
Label: IB-1C-2 OUT
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 year

Composite Outflow Summary

Contributing Structures
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
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Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve | Return Event: 25 years
Label: IB-1C-2 OUT | Storm Event: 25 year
Scenario: Post-Development 25 year

Composite Outflow Summary

Contributing Structures
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
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Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1

Subsection: Outlet Input Data — Return Event: 100 years
Label: IB-1C-2 OUT — Storm Event: 100 year
Scenario: Post-Development 100 year

Requested Pond Water Surface Elevations	
Minimum (Headwater)	621.75 ft
Increment (Headwater)	0.05 ft
Maximum (Headwater)	626.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Inlet Box	Riser - 1	Forward	Culvert - 1	623.00	626.00
Culvert-Circular	Culvert - 1	Forward	TW	621.75	626.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Stormwater Hydrologic Calculations

Subsection: Outlet Input Data — Return Event: 100 years
Label: IB-1C-2 OUT — Storm Event: 100 year
Scenario: Post-Development 100 year

Structure ID: Culvert - 1 Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	24.0 in
Length	182.00 ft
Length (Computed Barrel)	185.29 ft
Slope (Computed)	0.191 ft/ft

Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.012
Kr	0.200
Convergence Tolerance	0.00 ft

Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.000
T2 ratio (HW/D)	1.102
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	623.75 ft	T1 Flow	15.55 ft³/s
T2 Elevation	623.95 ft	T2 Flow	17.77 ft³/s

Stormwater Hydrologic Calculations

Subsection: Outlet Input Data	Return Event: 100 years
Label: IB-1C-2 OUT	Storm Event: 100 year
Scenario: Post-Development 100 year	

Structure ID: Riser - 1
Structure Type: Inlet Box

Number of Openings	1
Elevation	623.00 ft
Orifice Area	16.0 ft²
Orifice Coefficient	0.600
Weir Length	16.00 ft
Weir Coefficient	3.00 (ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: TW
Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Subsection: Individual Outlet Curves | Return Event: 100 years
Label: IB-1C-2 OUT | Storm Event: 100 year
Scenario: Post-Development 100 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
621.75	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
621.80	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
621.85	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
621.90	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
621.95	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.05	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.10	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.15	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.20	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.25	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.30	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.35	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.40	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.45	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.50	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.55	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.60	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.65	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.70	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.75	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.80	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.85	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.90	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
622.95	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
623.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
623.05	0.54	622.10	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
623.10	1.52	622.36	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
623.15	2.79	622.58	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
623.20	4.29	622.80	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
623.25	6.01	623.01	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
623.30	7.89	623.22	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
623.35	9.14	623.35	Free Outfall	Free Outfall	0.00	0.80	(N/A)	0.00
623.40	9.63	623.40	Free Outfall	Free Outfall	0.00	2.52	(N/A)	0.00

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves | Return Event: 100 years
Label: IB-1C-2 OUT | Storm Event: 100 year
Scenario: Post-Development 100 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
623.45	10.13	623.45	Free Outfall	Free Outfall	0.00	4.36	(N/A)	0.00
623.50	10.65	623.50	Free Outfall	Free Outfall	0.00	6.32	(N/A)	0.00
623.55	11.17	623.55	Free Outfall	Free Outfall	0.00	8.41	(N/A)	0.00
623.60	11.68	623.60	Free Outfall	Free Outfall	0.00	10.62	(N/A)	0.00
623.65	12.21	623.65	Free Outfall	Free Outfall	0.00	12.94	(N/A)	0.00
623.70	12.74	623.70	Free Outfall	Free Outfall	0.00	15.37	(N/A)	0.00
623.75	13.27	623.75	Free Outfall	Free Outfall	0.00	17.91	(N/A)	0.00
623.80	13.80	623.80	Free Outfall	Free Outfall	0.00	20.54	(N/A)	0.00
623.85	14.34	623.85	Free Outfall	Free Outfall	0.00	23.28	(N/A)	0.00
623.90	14.87	623.90	Free Outfall	Free Outfall	0.00	26.11	(N/A)	0.00
623.95	15.41	623.95	Free Outfall	Free Outfall	0.00	29.03	(N/A)	0.00
624.00	15.97	624.00	Free Outfall	Free Outfall	0.00	32.03	(N/A)	0.00
624.05	16.51	624.05	Free Outfall	Free Outfall	0.00	35.14	(N/A)	0.00
624.10	17.05	624.10	Free Outfall	Free Outfall	0.00	38.33	(N/A)	0.00
624.15	17.58	624.15	Free Outfall	Free Outfall	0.00	41.62	(N/A)	0.00
624.20	18.13	624.20	Free Outfall	Free Outfall	0.00	44.97	(N/A)	0.00
624.25	18.67	624.25	Free Outfall	Free Outfall	0.00	48.42	(N/A)	0.00
624.30	19.18	624.30	Free Outfall	Free Outfall	0.00	51.97	(N/A)	0.00
624.35	19.73	624.35	Free Outfall	Free Outfall	0.00	55.56	(N/A)	0.00
624.40	20.24	624.40	Free Outfall	Free Outfall	0.00	59.27	(N/A)	0.00
624.45	20.79	624.45	Free Outfall	Free Outfall	0.00	63.02	(N/A)	0.00
624.50	21.29	624.50	Free Outfall	Free Outfall	0.00	66.89	(N/A)	0.00
624.55	21.81	624.55	Free Outfall	Free Outfall	0.00	70.82	(N/A)	0.00
624.60	22.32	624.60	Free Outfall	Free Outfall	0.00	74.82	(N/A)	0.00
624.65	22.83	624.65	Free Outfall	Free Outfall	0.00	76.09	(N/A)	0.00
624.70	23.34	624.70	Free Outfall	Free Outfall	0.00	77.06	(N/A)	0.00
624.75	23.75	624.75	Free Outfall	Free Outfall	0.00	78.13	(N/A)	0.00
624.80	24.07	624.80	Free Outfall	Free Outfall	0.00	79.25	(N/A)	0.00
624.85	24.39	624.85	Free Outfall	Free Outfall	0.00	80.35	(N/A)	0.00
624.90	24.71	624.90	Free Outfall	Free Outfall	0.00	81.44	(N/A)	0.00
624.95	25.02	624.95	Free Outfall	Free Outfall	0.00	82.51	(N/A)	0.00
625.00	25.33	625.00	Free Outfall	Free Outfall	0.00	83.57	(N/A)	0.00
625.05	25.64	625.05	Free Outfall	Free Outfall	0.00	84.62	(N/A)	0.00
625.10	25.94	625.10	Free Outfall	Free Outfall	0.00	85.66	(N/A)	0.00

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves — Return Event: 100 years
Label: IB-1C-2 OUT — Storm Event: 100 year
Scenario: Post-Development 100 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
625.15	26.24	625.15	Free Outfall	Free Outfall	0.00	86.68	(N/A)	0.00
625.20	26.54	625.20	Free Outfall	Free Outfall	0.00	87.69	(N/A)	0.00
625.25	26.82	625.25	Free Outfall	Free Outfall	0.00	88.69	(N/A)	0.00
625.30	27.11	625.30	Free Outfall	Free Outfall	0.00	89.68	(N/A)	0.00
625.35	27.39	625.35	Free Outfall	Free Outfall	0.00	90.66	(N/A)	0.00
625.40	27.68	625.40	Free Outfall	Free Outfall	0.00	91.62	(N/A)	0.00
625.45	27.95	625.45	Free Outfall	Free Outfall	0.00	92.58	(N/A)	0.00
625.50	28.24	625.50	Free Outfall	Free Outfall	0.00	93.52	(N/A)	0.00
625.55	28.51	625.55	Free Outfall	Free Outfall	0.00	94.46	(N/A)	0.00
625.60	28.78	625.60	Free Outfall	Free Outfall	0.00	95.39	(N/A)	0.00
625.65	29.05	625.65	Free Outfall	Free Outfall	0.00	96.31	(N/A)	0.00
625.70	29.32	625.70	Free Outfall	Free Outfall	0.00	97.22	(N/A)	0.00
625.75	29.59	625.75	Free Outfall	Free Outfall	0.00	98.12	(N/A)	0.00
625.80	29.85	625.80	Free Outfall	Free Outfall	0.00	99.01	(N/A)	0.00
625.85	30.10	625.85	Free Outfall	Free Outfall	0.00	99.90	(N/A)	0.00
625.90	30.36	625.90	Free Outfall	Free Outfall	0.00	100.78	(N/A)	0.00
625.95	30.61	625.95	Free Outfall	Free Outfall	0.00	101.65	(N/A)	0.00
626.00	30.88	626.00	Free Outfall	Free Outfall	0.00	102.51	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
CRIT.DEPTH CONTROL Vh= .086ft Dcr= .251ft CRIT.DEPTH Hev= .00ft

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
CRIT.DEPTH CONTROL Vh= .150ft Dcr= .427ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .209ft Dcr= .582ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .268ft Dcr= .728ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .329ft Dcr= .867ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .393ft Dcr= 1.000ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .434ft Dcr= 1.079ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .450ft Dcr= 1.109ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .467ft Dcr= 1.140ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .484ft Dcr= 1.170ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .501ft Dcr= 1.199ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .519ft Dcr= 1.227ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .537ft Dcr= 1.256ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .555ft Dcr= 1.284ft CRIT.DEPTH Hev= .00ft

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
CRIT.DEPTH CONTROL Vh= .574ft Dcr= 1.311ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .593ft Dcr= 1.338ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .613ft Dcr= 1.364ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .633ft Dcr= 1.390ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .653ft Dcr= 1.415ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .675ft Dcr= 1.441ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .696ft Dcr= 1.465ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .718ft Dcr= 1.488ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .741ft Dcr= 1.511ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .764ft Dcr= 1.534ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .788ft Dcr= 1.555ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .811ft Dcr= 1.575ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .837ft Dcr= 1.596ft CRIT.DEPTH Hev= .00ft

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
CRIT.DEPTH CONTROL Vh= .862ft Dcr= 1.615ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .889ft Dcr= 1.634ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .915ft Dcr= 1.652ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .942ft Dcr= 1.669ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .970ft Dcr= 1.686ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .999ft Dcr= 1.701ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= 1.029ft Dcr= 1.717ft CRIT.DEPTH Hev= .00ft
INLET CONTROL... Submerged: HW =3.00
INLET CONTROL... Submerged: HW =3.05
INLET CONTROL... Submerged: HW =3.10
INLET CONTROL... Submerged: HW =3.15
INLET CONTROL... Submerged: HW =3.20
INLET CONTROL... Submerged: HW =3.25
INLET CONTROL... Submerged: HW =3.30
INLET CONTROL... Submerged: HW =3.35
INLET CONTROL... Submerged: HW =3.40
INLET CONTROL... Submerged: HW =3.45

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 106.33 ft³/s
Upstream ID = Riser - 1 (Inlet Box)
Downstream ID = Tailwater (Pond Outfall)

Message
INLET CONTROL... Submerged: HW =3.50
INLET CONTROL... Submerged: HW =3.55
INLET CONTROL... Submerged: HW =3.60
INLET CONTROL... Submerged: HW =3.65
INLET CONTROL... Submerged: HW =3.70
INLET CONTROL... Submerged: HW =3.75
INLET CONTROL... Submerged: HW =3.80
INLET CONTROL... Submerged: HW =3.85
INLET CONTROL... Submerged: HW =3.90
INLET CONTROL... Submerged: HW =3.95
INLET CONTROL... Submerged: HW =4.00
INLET CONTROL... Submerged: HW =4.05
INLET CONTROL... Submerged: HW =4.10
INLET CONTROL... Submerged: HW =4.15
INLET CONTROL... Submerged: HW =4.20
INLET CONTROL... Submerged: HW =4.25

Subsection: Individual Outlet Curves | Return Event: 100 years
Label: IB-1C-2 OUT | Storm Event: 100 year
Scenario: Post-Development 100 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
621.75	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
621.80	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
621.85	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
621.90	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
621.95	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.05	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.10	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.15	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.20	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.25	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.30	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.35	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.40	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.45	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.55	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.60	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.65	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.70	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.75	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.80	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.85	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.90	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
622.95	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
623.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
623.05	0.54	623.05	Free Outfall	622.10	0.00	0.00	(N/A)	0.00
623.10	1.52	623.10	Free Outfall	622.36	0.00	0.00	(N/A)	0.00
623.15	2.79	623.15	Free Outfall	622.58	0.00	0.00	(N/A)	0.00
623.20	4.29	623.20	Free Outfall	622.80	0.00	0.00	(N/A)	0.00
623.25	6.00	623.25	623.01	623.01	0.00	0.00	(N/A)	0.00
623.30	7.89	623.30	623.22	623.22	0.00	0.00	(N/A)	0.00
623.35	9.94	623.35	623.35	623.35	0.00	0.00	(N/A)	0.00
623.40	12.14	623.40	623.40	623.40	0.00	0.00	(N/A)	0.00
623.45	14.49	623.45	623.45	623.45	0.00	0.00	(N/A)	0.00

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
623.50	16.97	623.50	623.50	623.50	0.00	0.00	(N/A)	0.00
623.55	19.58	623.55	623.55	623.55	0.00	0.00	(N/A)	0.00
623.60	22.31	623.60	623.60	623.60	0.00	0.00	(N/A)	0.00
623.65	25.15	623.65	623.65	623.65	0.00	0.00	(N/A)	0.00
623.70	28.11	623.70	623.70	623.70	0.00	0.00	(N/A)	0.00
623.75	31.18	623.75	623.75	623.75	0.00	0.00	(N/A)	0.00
623.80	34.35	623.80	623.80	623.80	0.00	0.00	(N/A)	0.00
623.85	37.62	623.85	623.85	623.85	0.00	0.00	(N/A)	0.00
623.90	40.98	623.90	623.90	623.90	0.00	0.00	(N/A)	0.00
623.95	44.45	623.95	623.95	623.95	0.00	0.00	(N/A)	0.00
624.00	48.00	624.00	624.00	624.00	0.00	0.00	(N/A)	0.00
624.05	51.64	624.05	624.05	624.05	0.00	0.00	(N/A)	0.00
624.10	55.38	624.10	624.10	624.10	0.00	0.00	(N/A)	0.00
624.15	59.20	624.15	624.15	624.15	0.00	0.00	(N/A)	0.00
624.20	63.10	624.20	624.20	624.20	0.00	0.00	(N/A)	0.00
624.25	67.08	624.25	624.25	624.25	0.00	0.00	(N/A)	0.00
624.30	71.15	624.30	624.30	624.30	0.00	0.00	(N/A)	0.00
624.35	75.29	624.35	624.35	624.35	0.00	0.00	(N/A)	0.00
624.40	79.51	624.40	624.40	624.40	0.00	0.00	(N/A)	0.00
624.45	83.81	624.45	624.45	624.45	0.00	0.00	(N/A)	0.00
624.50	88.18	624.50	624.50	624.50	0.00	0.00	(N/A)	0.00
624.55	92.63	624.55	624.55	624.55	0.00	0.00	(N/A)	0.00
624.60	97.15	624.60	624.60	624.60	0.00	0.00	(N/A)	0.00
624.65	98.92	624.65	624.65	624.65	0.00	0.00	(N/A)	0.00
624.70	100.41	624.70	624.70	624.70	0.00	0.00	(N/A)	0.00
624.75	101.87	624.75	624.75	624.75	0.00	0.00	(N/A)	0.00
624.80	103.32	624.80	624.80	624.80	0.00	0.00	(N/A)	0.00
624.85	104.74	624.85	624.85	624.85	0.00	0.00	(N/A)	0.00
624.90	106.15	624.90	624.90	624.90	0.00	0.00	(N/A)	0.00
624.95	107.54	624.95	624.95	624.95	0.00	0.00	(N/A)	0.00
625.00	108.91	625.00	625.00	625.00	0.00	0.00	(N/A)	0.00
625.05	110.26	625.05	625.05	625.05	0.00	0.00	(N/A)	0.00
625.10	111.60	625.10	625.10	625.10	0.00	0.00	(N/A)	0.00
625.15	112.92	625.15	625.15	625.15	0.00	0.00	(N/A)	0.00
625.20	114.22	625.20	625.20	625.20	0.00	0.00	(N/A)	0.00

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves | Return Event: 100 years
Label: IB-1C-2 OUT | Storm Event: 100 year
Scenario: Post-Development 100 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
625.25	115.51	625.25	625.25	625.25	0.00	0.00	(N/A)	0.00
625.30	116.79	625.30	625.30	625.30	0.00	0.00	(N/A)	0.00
625.35	118.05	625.35	625.35	625.35	0.00	0.00	(N/A)	0.00
625.40	119.30	625.40	625.40	625.40	0.00	0.00	(N/A)	0.00
625.45	120.54	625.45	625.45	625.45	0.00	0.00	(N/A)	0.00
625.50	121.76	625.50	625.50	625.50	0.00	0.00	(N/A)	0.00
625.55	122.97	625.55	625.55	625.55	0.00	0.00	(N/A)	0.00
625.60	124.17	625.60	625.60	625.60	0.00	0.00	(N/A)	0.00
625.65	125.36	625.65	625.65	625.65	0.00	0.00	(N/A)	0.00
625.70	126.54	625.70	625.70	625.70	0.00	0.00	(N/A)	0.00
625.75	127.70	625.75	625.75	625.75	0.00	0.00	(N/A)	0.00
625.80	128.86	625.80	625.80	625.80	0.00	0.00	(N/A)	0.00
625.85	130.01	625.85	625.85	625.85	0.00	0.00	(N/A)	0.00
625.90	131.14	625.90	625.90	625.90	0.00	0.00	(N/A)	0.00
625.95	132.27	625.95	625.95	625.95	0.00	0.00	(N/A)	0.00
626.00	133.38	626.00	626.00	626.00	0.00	0.00	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
Weir: H =0.05ft
Weir: H =0.1ft
Weir: H =0.15ft
Weir: H =0.2ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.25ft

Subsection: Individual Outlet Curves
Label: IB-1C-2 OUT
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.3ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.35ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.4ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.45ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.5ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.55ft
FULLY CHARGED RISER: ADJUSTED TO WEIR: H =0.6ft
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

Subsection: Individual Outlet Curves | Return Event: 100 years
Label: IB-1C-2 OUT | Storm Event: 100 year
Scenario: Post-Development 100 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Message
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000
FULLY CHARGED RISER, DOWNSTREAM CONTROL: Kev=0. Hev=0.000

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve | Return Event: 100 years
Label: IB-1C-2 OUT | Storm Event: 100 year
Scenario: Post-Development 100 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
621.75	0.00	(N/A)	0.00
621.80	0.00	(N/A)	0.00
621.85	0.00	(N/A)	0.00
621.90	0.00	(N/A)	0.00
621.95	0.00	(N/A)	0.00
622.00	0.00	(N/A)	0.00
622.05	0.00	(N/A)	0.00
622.10	0.00	(N/A)	0.00
622.15	0.00	(N/A)	0.00
622.20	0.00	(N/A)	0.00
622.25	0.00	(N/A)	0.00
622.30	0.00	(N/A)	0.00
622.35	0.00	(N/A)	0.00
622.40	0.00	(N/A)	0.00
622.45	0.00	(N/A)	0.00
622.50	0.00	(N/A)	0.00
622.55	0.00	(N/A)	0.00
622.60	0.00	(N/A)	0.00
622.65	0.00	(N/A)	0.00
622.70	0.00	(N/A)	0.00
622.75	0.00	(N/A)	0.00
622.80	0.00	(N/A)	0.00
622.85	0.00	(N/A)	0.00
622.90	0.00	(N/A)	0.00
622.95	0.00	(N/A)	0.00
623.00	0.00	(N/A)	0.00
623.05	0.54	(N/A)	0.00
623.10	1.52	(N/A)	0.00
623.15	2.79	(N/A)	0.00
623.20	4.29	(N/A)	0.00
623.25	6.01	(N/A)	0.00
623.30	7.89	(N/A)	0.00
623.35	9.14	(N/A)	0.00
623.40	9.63	(N/A)	0.00
623.45	10.13	(N/A)	0.00
623.50	10.65	(N/A)	0.00
623.55	11.17	(N/A)	0.00
623.60	11.68	(N/A)	0.00
623.65	12.21	(N/A)	0.00
623.70	12.74	(N/A)	0.00
623.75	13.27	(N/A)	0.00
623.80	13.80	(N/A)	0.00

Subsection: Composite Rating Curve
Label: IB-1C-2 OUT
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
623.85	14.34	(N/A)	0.00
623.90	14.87	(N/A)	0.00
623.95	15.41	(N/A)	0.00
624.00	15.97	(N/A)	0.00
624.05	16.51	(N/A)	0.00
624.10	17.05	(N/A)	0.00
624.15	17.58	(N/A)	0.00
624.20	18.13	(N/A)	0.00
624.25	18.67	(N/A)	0.00
624.30	19.18	(N/A)	0.00
624.35	19.73	(N/A)	0.00
624.40	20.24	(N/A)	0.00
624.45	20.79	(N/A)	0.00
624.50	21.29	(N/A)	0.00
624.55	21.81	(N/A)	0.00
624.60	22.32	(N/A)	0.00
624.65	22.83	(N/A)	0.00
624.70	23.34	(N/A)	0.00
624.75	23.75	(N/A)	0.00
624.80	24.07	(N/A)	0.00
624.85	24.39	(N/A)	0.00
624.90	24.71	(N/A)	0.00
624.95	25.02	(N/A)	0.00
625.00	25.33	(N/A)	0.00
625.05	25.64	(N/A)	0.00
625.10	25.94	(N/A)	0.00
625.15	26.24	(N/A)	0.00
625.20	26.54	(N/A)	0.00
625.25	26.82	(N/A)	0.00
625.30	27.11	(N/A)	0.00
625.35	27.39	(N/A)	0.00
625.40	27.68	(N/A)	0.00
625.45	27.95	(N/A)	0.00
625.50	28.24	(N/A)	0.00
625.55	28.51	(N/A)	0.00
625.60	28.78	(N/A)	0.00
625.65	29.05	(N/A)	0.00
625.70	29.32	(N/A)	0.00
625.75	29.59	(N/A)	0.00
625.80	29.85	(N/A)	0.00
625.85	30.10	(N/A)	0.00
625.90	30.36	(N/A)	0.00

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve | Return Event: 100 years
Label: IB-1C-2 OUT | Storm Event: 100 year
Scenario: Post-Development 100 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
625.95	30.61	(N/A)	0.00
626.00	30.88	(N/A)	0.00

Contributing Structures
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve | Return Event: 100 years
Label: IB-1C-2 OUT | Storm Event: 100 year
Scenario: Post-Development 100 year

Composite Outflow Summary

Contributing Structures
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
(no Q: Riser - 1,Culvert - 1)
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
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Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve — Return Event: 100 years
Label: IB-1C-2 OUT — Storm Event: 100 year
Scenario: Post-Development 100 year

Composite Outflow Summary

Contributing Structures
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
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Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1
Riser - 1,Culvert - 1

Stormwater Hydrologic Calculations

Subsection: Outlet Input Data | Return Event: 1 years
Label: Subsurface System 6A | Storm Event: 1 year
Scenario: Post-Development 1 year

Requested Pond Water Surface Elevations	
Minimum (Headwater)	494.00 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	497.50 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Rectangular Weir	Weir - 1	Forward	Culvert - 1	495.15	497.50
Culvert-Circular	Culvert - 1	Forward	TW	494.50	497.50
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Culvert - 1
Structure Type: Culvert-Circular

Number of Barrels	1
Diameter	15.0 in
Length	27.11 ft
Length (Computed Barrel)	27.48 ft
Slope (Computed)	0.166 ft/ft

Outlet Control Data

Manning's n	0.013
Ke	0.200
Kb	0.023
Kr	0.200
Convergence Tolerance	0.00 ft

Inlet Control Data

Equation Form	Form 1
K	0.0018
M	2.5000
C	0.0243
Y	0.8300
T1 ratio (HW/D)	0.998
T2 ratio (HW/D)	1.136
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	495.75 ft	T1 Flow	4.80 ft³/s
T2 Elevation	495.92 ft	T2 Flow	5.49 ft³/s

Subsection: Outlet Input Data | Return Event: 1 years
Label: Subsurface System 6A | Storm Event: 1 year
Scenario: Post-Development 1 year

Structure ID: Weir - 1 Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	495.15 ft
Weir Length	0.33 ft
Weir Coefficient	3.00 (ft^0.5)/s

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Subsection: Individual Outlet Curves | Return Event: 1 years
Label: Subsurface System 6A | Storm Event: 1 year
Scenario: Post-Development 1 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 28.31 ft³/s
Upstream ID = Weir - 1 (Rectangular Weir)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
494.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
494.50	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
495.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
495.15	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
495.50	0.21	494.75	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
496.00	0.77	495.00	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
496.50	1.54	495.22	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
497.00	2.44	495.42	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
497.50	3.43	495.62	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
FLOW PRECEDENCE SET TO UPSTREAM CONTROLLING STRUCTURE
CRIT.DEPTH CONTROL Vh= .123ft Dcr= .344ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .184ft Dcr= .492ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .245ft Dcr= .625ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .312ft Dcr= .748ft CRIT.DEPTH Hev= .00ft

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves
Label: Subsurface System 6A
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Weir - 1 (Rectangular Weir)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
494.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
494.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
495.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
495.15	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
495.50	0.20	495.50	Free Outfall	494.75	0.00	0.00	(N/A)	0.00
496.00	0.78	496.00	Free Outfall	495.00	0.00	0.00	(N/A)	0.00
496.50	1.55	496.50	495.21	495.22	0.00	0.00	(N/A)	0.00
497.00	2.44	497.00	495.42	495.42	0.00	0.00	(N/A)	0.00
497.50	3.44	497.50	495.62	495.62	0.00	0.00	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
H=.35; Htw=.00; Qfree=.20;
H=.85; Htw=.00; Qfree=.78;
H=1.35; Htw=.06; Qfree=1.55;
H=1.85; Htw=.27; Qfree=2.49;
H=2.35; Htw=.47; Qfree=3.57;

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve | Return Event: 1 years
Label: Subsurface System 6A | Storm Event: 1 year
Scenario: Post-Development 1 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
494.00	0.00	(N/A)	0.00
494.50	0.00	(N/A)	0.00
495.00	0.00	(N/A)	0.00
495.15	0.00	(N/A)	0.00
495.50	0.20	(N/A)	0.00
496.00	0.78	(N/A)	0.00
496.50	1.54	(N/A)	0.00
497.00	2.44	(N/A)	0.00
497.50	3.44	(N/A)	0.00

Contributing Structures
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1

Stormwater Hydrologic Calculations

Subsection: Outlet Input Data | Return Event: 10 years
Label: Subsurface System 6A | Storm Event: 10 year
Scenario: Post-Development 10 year

Requested Pond Water Surface Elevations	
Minimum (Headwater)	494.00 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	497.50 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Rectangular Weir	Weir - 1	Forward	Culvert - 1	495.15	497.50
Culvert-Circular	Culvert - 1	Forward	TW	494.50	497.50
Tailwater Settings	Tailwater			(N/A)	(N/A)

Subsection: Outlet Input Data | Return Event: 10 years
Label: Subsurface System 6A | Storm Event: 10 year
Scenario: Post-Development 10 year

Structure ID: Culvert - 1
Structure Type: Culvert-Circular

Number of Barrels	1
Diameter	15.0 in
Length	27.11 ft
Length (Computed Barrel)	27.48 ft
Slope (Computed)	0.166 ft/ft

Outlet Control Data

Manning's n	0.013
Ke	0.200
Kb	0.023
Kr	0.200
Convergence Tolerance	0.00 ft

Inlet Control Data

Equation Form	Form 1
K	0.0018
M	2.5000
C	0.0243
Y	0.8300
T1 ratio (HW/D)	0.998
T2 ratio (HW/D)	1.136
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	495.75 ft	T1 Flow	4.80 ft³/s
T2 Elevation	495.92 ft	T2 Flow	5.49 ft³/s

Stormwater Hydrologic Calculations

Subsection: Outlet Input Data | Return Event: 10 years
Label: Subsurface System 6A | Storm Event: 10 year
Scenario: Post-Development 10 year

Structure ID: Weir - 1
Structure Type: Rectangular Weir

Number of Openings	1
Elevation	495.15 ft
Weir Length	0.33 ft
Weir Coefficient	3.00 (ft^0.5)/s

Structure ID: TW
Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft^3/s
Flow Tolerance (Maximum)	10.000 ft^3/s

Subsection: Individual Outlet Curves
Label: Subsurface System 6A
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 28.31 ft³/s
Upstream ID = Weir - 1 (Rectangular Weir)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
494.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
494.50	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
495.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
495.15	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
495.50	0.21	494.75	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
496.00	0.77	495.00	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
496.50	1.54	495.22	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
497.00	2.44	495.42	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
497.50	3.43	495.62	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
FLOW PRECEDENCE SET TO UPSTREAM CONTROLLING STRUCTURE
CRIT.DEPTH CONTROL Vh= .123ft Dcr= .344ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .184ft Dcr= .492ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .245ft Dcr= .625ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .312ft Dcr= .748ft CRIT.DEPTH Hev= .00ft

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves
Label: Subsurface System 6A
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Weir - 1 (Rectangular Weir)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft^3/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft^3/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
494.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
494.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
495.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
495.15	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
495.50	0.20	495.50	Free Outfall	494.75	0.00	0.00	(N/A)	0.00
496.00	0.78	496.00	Free Outfall	495.00	0.00	0.00	(N/A)	0.00
496.50	1.55	496.50	495.21	495.22	0.00	0.00	(N/A)	0.00
497.00	2.44	497.00	495.42	495.42	0.00	0.00	(N/A)	0.00
497.50	3.44	497.50	495.62	495.62	0.00	0.00	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
H=.35; Htw=.00; Qfree=.20;
H=.85; Htw=.00; Qfree=.78;
H=1.35; Htw=.06; Qfree=1.55;
H=1.85; Htw=.27; Qfree=2.49;
H=2.35; Htw=.47; Qfree=3.57;

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve　　Return Event: 10 years
Label: Subsurface System 6A　　Storm Event: 10 year
Scenario: Post-Development 10 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
494.00	0.00	(N/A)	0.00
494.50	0.00	(N/A)	0.00
495.00	0.00	(N/A)	0.00
495.15	0.00	(N/A)	0.00
495.50	0.20	(N/A)	0.00
496.00	0.78	(N/A)	0.00
496.50	1.54	(N/A)	0.00
497.00	2.44	(N/A)	0.00
497.50	3.44	(N/A)	0.00

Contributing Structures
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1

Stormwater Hydrologic Calculations

Subsection: Outlet Input Data | Return Event: 25 years
Label: Subsurface System 6A | Storm Event: 25 year
Scenario: Post-Development 25 year

Requested Pond Water Surface Elevations	
Minimum (Headwater)	494.00 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	497.50 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Rectangular Weir	Weir - 1	Forward	Culvert - 1	495.15	497.50
Culvert-Circular	Culvert - 1	Forward	TW	494.50	497.50
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Culvert - 1
Structure Type: Culvert-Circular

Number of Barrels	1
Diameter	15.0 in
Length	27.11 ft
Length (Computed Barrel)	27.48 ft
Slope (Computed)	0.166 ft/ft

Outlet Control Data

Manning's n	0.013
Ke	0.200
Kb	0.023
Kr	0.200
Convergence Tolerance	0.00 ft

Inlet Control Data

Equation Form	Form 1
K	0.0018
M	2.5000
C	0.0243
Y	0.8300
T1 ratio (HW/D)	0.998
T2 ratio (HW/D)	1.136
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	495.75 ft	T1 Flow	4.80 ft³/s
T2 Elevation	495.92 ft	T2 Flow	5.49 ft³/s

Stormwater Hydrologic Calculations

Subsection: Outlet Input Data | Return Event: 25 years
Label: Subsurface System 6A | Storm Event: 25 year
Scenario: Post-Development 25 year

Structure ID: Weir - 1
Structure Type: Rectangular Weir

Number of Openings	1
Elevation	495.15 ft
Weir Length	0.33 ft
Weir Coefficient	3.00 (ft^0.5)/s

Structure ID: TW
Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft^3/s
Flow Tolerance (Maximum)	10.000 ft^3/s

Subsection: Individual Outlet Curves — Return Event: 25 years
Label: Subsurface System 6A — Storm Event: 25 year
Scenario: Post-Development 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 28.31 ft³/s
Upstream ID = Weir - 1 (Rectangular Weir)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
494.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
494.50	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
495.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
495.15	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
495.50	0.21	494.75	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
496.00	0.77	495.00	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
496.50	1.54	495.22	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
497.00	2.44	495.42	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
497.50	3.43	495.62	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
FLOW PRECEDENCE SET TO UPSTREAM CONTROLLING STRUCTURE
CRIT.DEPTH CONTROL Vh= .123ft Dcr= .344ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .184ft Dcr= .492ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .245ft Dcr= .625ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .312ft Dcr= .748ft CRIT.DEPTH Hev= .00ft

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves | Return Event: 25 years
Label: Subsurface System 6A | Storm Event: 25 year
Scenario: Post-Development 25 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Weir - 1 (Rectangular Weir)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
494.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
494.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
495.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
495.15	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
495.50	0.20	495.50	Free Outfall	494.75	0.00	0.00	(N/A)	0.00
496.00	0.78	496.00	Free Outfall	495.00	0.00	0.00	(N/A)	0.00
496.50	1.55	496.50	495.21	495.22	0.00	0.00	(N/A)	0.00
497.00	2.44	497.00	495.42	495.42	0.00	0.00	(N/A)	0.00
497.50	3.44	497.50	495.62	495.62	0.00	0.00	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
H=.35; Htw=.00; Qfree=.20;
H=.85; Htw=.00; Qfree=.78;
H=1.35; Htw=.06; Qfree=1.55;
H=1.85; Htw=.27; Qfree=2.49;
H=2.35; Htw=.47; Qfree=3.57;

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve | Return Event: 25 years
Label: Subsurface System 6A | Storm Event: 25 year
Scenario: Post-Development 25 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
494.00	0.00	(N/A)	0.00
494.50	0.00	(N/A)	0.00
495.00	0.00	(N/A)	0.00
495.15	0.00	(N/A)	0.00
495.50	0.20	(N/A)	0.00
496.00	0.78	(N/A)	0.00
496.50	1.54	(N/A)	0.00
497.00	2.44	(N/A)	0.00
497.50	3.44	(N/A)	0.00

Contributing Structures
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1

Subsection: Outlet Input Data | Return Event: 100 years
Label: Subsurface System 6A | Storm Event: 100 year
Scenario: Post-Development 100 year

Requested Pond Water Surface Elevations	
Minimum (Headwater)	494.00 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	497.50 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Rectangular Weir	Weir - 1	Forward	Culvert - 1	495.15	497.50
Culvert-Circular	Culvert - 1	Forward	TW	494.50	497.50
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Culvert - 1
Structure Type: Culvert-Circular

Number of Barrels	1
Diameter	15.0 in
Length	27.11 ft
Length (Computed Barrel)	27.48 ft
Slope (Computed)	0.166 ft/ft

Outlet Control Data

Manning's n	0.013
Ke	0.200
Kb	0.023
Kr	0.200
Convergence Tolerance	0.00 ft

Inlet Control Data

Equation Form	Form 1
K	0.0018
M	2.5000
C	0.0243
Y	0.8300
T1 ratio (HW/D)	0.998
T2 ratio (HW/D)	1.136
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	495.75 ft	T1 Flow	4.80 ft³/s
T2 Elevation	495.92 ft	T2 Flow	5.49 ft³/s

Stormwater Hydrologic Calculations

Subsection: Outlet Input Data | Return Event: 100 years
Label: Subsurface System 6A | Storm Event: 100 year
Scenario: Post-Development 100 year

Structure ID: Weir - 1
Structure Type: Rectangular Weir

Number of Openings	1
Elevation	495.15 ft
Weir Length	0.33 ft
Weir Coefficient	3.00 (ft^0.5)/s

Structure ID: TW
Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft^3/s
Flow Tolerance (Maximum)	10.000 ft^3/s

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves | Return Event: 100 years
Label: Subsurface System 6A | Storm Event: 100 year
Scenario: Post-Development 100 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 28.31 ft³/s
Upstream ID = Weir - 1 (Rectangular Weir)
Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
494.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
494.50	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
495.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
495.15	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
495.50	0.21	494.75	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
496.00	0.77	495.00	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
496.50	1.54	495.22	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
497.00	2.44	495.42	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
497.50	3.43	495.62	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
FLOW PRECEDENCE SET TO UPSTREAM CONTROLLING STRUCTURE
CRIT.DEPTH CONTROL Vh= .123ft Dcr= .344ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .184ft Dcr= .492ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .245ft Dcr= .625ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .312ft Dcr= .748ft CRIT.DEPTH Hev= .00ft

Stormwater Hydrologic Calculations

Subsection: Individual Outlet Curves | Return Event: 100 years
Label: Subsurface System 6A | Storm Event: 100 year
Scenario: Post-Development 100 year

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Weir - 1 (Rectangular Weir)

Upstream ID = (Pond Water Surface)
Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft³/s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft³/s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
494.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
494.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
495.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
495.15	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
495.50	0.20	495.50	Free Outfall	494.75	0.00	0.00	(N/A)	0.00
496.00	0.78	496.00	Free Outfall	495.00	0.00	0.00	(N/A)	0.00
496.50	1.55	496.50	495.21	495.22	0.00	0.00	(N/A)	0.00
497.00	2.44	497.00	495.42	495.42	0.00	0.00	(N/A)	0.00
497.50	3.44	497.50	495.62	495.62	0.00	0.00	(N/A)	0.00

Message
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
WS below an invert; no flow.
H=.35; Htw=.00; Qfree=.20;
H=.85; Htw=.00; Qfree=.78;
H=1.35; Htw=.06; Qfree=1.55;
H=1.85; Htw=.27; Qfree=2.49;
H=2.35; Htw=.47; Qfree=3.57;

Stormwater Hydrologic Calculations

Subsection: Composite Rating Curve | Return Event: 100 years
Label: Subsurface System 6A | Storm Event: 100 year
Scenario: Post-Development 100 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
494.00	0.00	(N/A)	0.00
494.50	0.00	(N/A)	0.00
495.00	0.00	(N/A)	0.00
495.15	0.00	(N/A)	0.00
495.50	0.20	(N/A)	0.00
496.00	0.78	(N/A)	0.00
496.50	1.54	(N/A)	0.00
497.00	2.44	(N/A)	0.00
497.50	3.44	(N/A)	0.00

Contributing Structures
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond) — Return Event: 1 years
Label: IB-1C-10 — Storm Event: 1 year
Scenario: Post-Development 1 year

Infiltration	
Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	0.90 ft³/s

Initial Conditions	
Elevation (Water Surface, Initial)	618.50 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
618.50	0.00	0	3,892	0.00	0.00	0.00
618.55	0.00	202	4,185	0.90	0.90	3.14
618.60	0.00	419	4,488	0.90	0.90	5.55
618.65	0.00	651	4,803	0.90	0.90	8.13
618.70	0.00	899	5,127	0.90	0.90	10.89
618.75	0.00	1,164	5,463	0.90	0.90	13.83
618.80	0.00	1,446	5,809	0.90	0.90	16.96
618.85	0.00	1,745	6,166	0.90	0.90	20.29
618.90	0.00	2,062	6,533	0.90	0.90	23.81
618.95	0.00	2,398	6,911	0.90	0.90	27.55
619.00	0.00	2,754	7,299	0.90	0.90	31.50
619.05	0.00	3,128	7,699	0.90	0.90	35.66
619.10	0.00	3,524	8,108	0.90	0.90	40.05
619.15	0.00	3,939	8,529	0.90	0.90	44.67
619.20	0.00	4,377	8,960	0.90	0.90	49.53
619.25	0.00	4,836	9,402	0.90	0.90	54.63
619.30	0.00	5,317	9,854	0.90	0.90	59.98
619.35	0.00	5,821	10,317	0.90	0.90	65.58
619.40	0.00	6,349	10,790	0.90	0.90	71.44
619.45	0.00	6,900	11,275	0.90	0.90	77.57
619.50	0.00	7,476	11,769	0.90	0.90	83.97
619.55	0.00	8,078	12,275	0.90	0.90	90.65
619.60	0.00	8,704	12,791	0.90	0.90	97.61
619.65	0.00	9,357	13,318	0.90	0.90	104.86
619.70	0.00	10,036	13,855	0.90	0.90	112.41
619.75	0.00	10,742	14,403	0.90	0.90	120.26
619.80	0.00	11,477	14,961	0.90	0.90	128.42
619.85	0.00	12,239	15,531	0.90	0.90	136.89

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 1 years
Label: IB-1C-10 Storm Event: 1 year
Scenario: Post-Development 1 year

Elevation (ft)	Outflow (ft^3/s)	Storage (ft^3)	Area (ft^2)	Infiltration (ft^3/s)	Flow (Total) (ft^3/s)	2S/t + O (ft^3/s)
619.90	0.54	13,030	16,110	0.90	1.44	146.21
619.95	1.52	13,850	16,701	0.90	2.42	156.31
620.00	2.79	14,700	17,302	0.90	3.69	167.02
620.05	4.29	15,567	17,392	0.90	5.19	178.16
620.10	5.95	16,439	17,482	0.90	6.85	189.51
620.15	6.22	17,316	17,572	0.90	7.12	199.52
620.20	6.47	18,196	17,663	0.90	7.37	209.55
620.25	6.73	19,082	17,754	0.90	7.63	219.65
620.30	6.99	19,972	17,845	0.90	7.89	229.80
620.35	7.24	20,866	17,936	0.90	8.14	239.98
620.40	7.48	21,765	18,027	0.90	8.38	250.22
620.45	7.72	22,669	18,119	0.90	8.62	260.50
620.50	7.96	23,577	18,211	0.90	8.86	270.83
620.55	8.19	24,490	18,303	0.90	9.09	281.21
620.60	8.39	25,408	18,396	0.90	9.29	291.60
620.65	8.57	26,330	18,488	0.90	9.47	302.02
620.70	8.75	27,257	18,581	0.90	9.65	312.50
620.75	8.93	28,188	18,674	0.90	9.83	323.03
620.80	9.10	29,124	18,768	0.90	10.00	333.60
620.85	9.27	30,065	18,861	0.90	10.17	344.22
620.90	9.43	31,010	18,955	0.90	10.33	354.89
620.95	9.60	31,960	19,049	0.90	10.50	365.61
621.00	9.76	32,915	19,143	0.90	10.66	376.38
621.05	9.91	33,875	19,238	0.90	10.81	387.20
621.10	10.07	34,839	19,333	0.90	10.97	398.06
621.15	10.22	35,808	19,428	0.90	11.12	408.99
621.20	10.37	36,782	19,523	0.90	11.27	419.96
621.25	10.52	37,760	19,618	0.90	11.42	430.98
621.30	10.66	38,743	19,714	0.90	11.56	442.05
621.35	10.81	39,732	19,810	0.90	11.71	453.17
621.40	10.96	40,724	19,906	0.90	11.86	464.35
621.45	11.09	41,722	20,002	0.90	11.99	475.57
621.50	11.23	42,725	20,099	0.90	12.13	486.85
621.55	11.37	43,732	20,196	0.90	12.27	498.18
621.60	11.50	44,744	20,293	0.90	12.40	509.56
621.65	11.64	45,761	20,390	0.90	12.54	521.00
621.70	11.77	46,783	20,488	0.90	12.67	532.49
621.75	11.90	47,810	20,586	0.90	12.80	544.03
621.80	12.03	48,842	20,684	0.90	12.93	555.62
621.85	12.16	49,878	20,782	0.90	13.06	567.26
621.90	12.28	50,920	20,880	0.90	13.18	578.96
621.95	12.41	51,967	20,979	0.90	13.31	590.72
622.00	12.53	53,018	21,078	0.90	13.43	602.52

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond) — Return Event: 1 years
Label: IB-1C-10 — Storm Event: 1 year
Scenario: Post-Development 1 year

Elevation (ft)	Outflow (ft^3/s)	Storage (ft^3)	Area (ft^2)	Infiltration (ft^3/s)	Flow (Total) (ft^3/s)	2S/t + O (ft^3/s)
622.05	12.66	54,074	21,174	0.90	13.56	614.39
622.10	12.78	55,135	21,270	0.90	13.68	626.29
622.15	12.90	56,201	21,366	0.90	13.80	638.26
622.20	13.02	57,272	21,463	0.90	13.92	650.28
622.25	13.14	58,348	21,560	0.90	14.04	662.34
622.30	13.26	59,428	21,657	0.90	14.16	674.47
622.35	13.38	60,513	21,754	0.90	14.28	686.64
622.40	13.49	61,603	21,852	0.90	14.39	698.87
622.45	13.60	62,698	21,949	0.90	14.50	711.15
622.50	13.72	63,798	22,047	0.90	14.62	723.49
622.55	13.83	64,903	22,145	0.90	14.73	735.87
622.60	13.94	66,013	22,244	0.90	14.84	748.32
622.65	14.05	67,127	22,342	0.90	14.95	760.81
622.70	14.16	68,247	22,441	0.90	15.06	773.36
622.75	14.27	69,372	22,540	0.90	15.17	785.96
622.80	14.38	70,501	22,639	0.90	15.28	798.62
622.85	14.48	71,635	22,738	0.90	15.38	811.33
622.90	14.59	72,775	22,838	0.90	15.49	824.10
622.95	14.70	73,919	22,938	0.90	15.60	836.92
623.00	14.80	75,069	23,038	0.90	15.70	849.80
623.05	14.91	76,223	23,138	0.90	15.81	862.73
623.10	15.01	77,382	23,239	0.90	15.91	875.72
623.15	15.11	78,547	23,339	0.90	16.01	888.76
623.20	15.22	79,716	23,440	0.90	16.12	901.86
623.25	15.32	80,891	23,542	0.90	16.22	915.01
623.30	15.42	82,071	23,643	0.90	16.32	928.22
623.35	15.52	83,255	23,745	0.90	16.42	941.48
623.40	15.62	84,445	23,846	0.90	16.52	954.79
623.45	15.72	85,640	23,948	0.90	16.62	968.17
623.50	15.81	86,840	24,051	0.90	16.71	981.60
623.55	15.91	88,045	24,153	0.90	16.81	995.09
623.60	16.01	89,255	24,256	0.90	16.91	1,008.63
623.65	16.11	90,471	24,359	0.90	17.01	1,022.23
623.70	16.20	91,691	24,462	0.90	17.10	1,035.89
623.75	16.30	92,917	24,565	0.90	17.20	1,049.60
623.80	16.39	94,148	24,669	0.90	17.29	1,063.38
623.85	16.49	95,384	24,772	0.90	17.39	1,077.20
623.90	16.58	96,625	24,876	0.90	17.48	1,091.09
623.95	16.67	97,871	24,981	0.90	17.57	1,105.03
624.00	16.77	99,123	25,085	0.90	17.67	1,119.03

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond) — Return Event: 10 years
Label: IB-1C-10 — Storm Event: 10 year
Scenario: Post-Development 10 year

Infiltration	
Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	0.90 ft³/s

Initial Conditions	
Elevation (Water Surface, Initial)	618.50 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
618.50	0.00	0	3,892	0.00	0.00	0.00
618.55	0.00	202	4,185	0.90	0.90	3.14
618.60	0.00	419	4,488	0.90	0.90	5.55
618.65	0.00	651	4,803	0.90	0.90	8.13
618.70	0.00	899	5,127	0.90	0.90	10.89
618.75	0.00	1,164	5,463	0.90	0.90	13.83
618.80	0.00	1,446	5,809	0.90	0.90	16.96
618.85	0.00	1,745	6,166	0.90	0.90	20.29
618.90	0.00	2,062	6,533	0.90	0.90	23.81
618.95	0.00	2,398	6,911	0.90	0.90	27.55
619.00	0.00	2,754	7,299	0.90	0.90	31.50
619.05	0.00	3,128	7,699	0.90	0.90	35.66
619.10	0.00	3,524	8,108	0.90	0.90	40.05
619.15	0.00	3,939	8,529	0.90	0.90	44.67
619.20	0.00	4,377	8,960	0.90	0.90	49.53
619.25	0.00	4,836	9,402	0.90	0.90	54.63
619.30	0.00	5,317	9,854	0.90	0.90	59.98
619.35	0.00	5,821	10,317	0.90	0.90	65.58
619.40	0.00	6,349	10,790	0.90	0.90	71.44
619.45	0.00	6,900	11,275	0.90	0.90	77.57
619.50	0.00	7,476	11,769	0.90	0.90	83.97
619.55	0.00	8,078	12,275	0.90	0.90	90.65
619.60	0.00	8,704	12,791	0.90	0.90	97.61
619.65	0.00	9,357	13,318	0.90	0.90	104.86
619.70	0.00	10,036	13,855	0.90	0.90	112.41
619.75	0.00	10,742	14,403	0.90	0.90	120.26
619.80	0.00	11,477	14,961	0.90	0.90	128.42
619.85	0.00	12,239	15,531	0.90	0.90	136.89

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond) — Return Event: 10 years
Label: IB-1C-10 — Storm Event: 10 year
Scenario: Post-Development 10 year

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
619.90	0.54	13,030	16,110	0.90	1.44	146.21
619.95	1.52	13,850	16,701	0.90	2.42	156.31
620.00	2.79	14,700	17,302	0.90	3.69	167.02
620.05	4.29	15,567	17,392	0.90	5.19	178.16
620.10	5.95	16,439	17,482	0.90	6.85	189.51
620.15	6.22	17,316	17,572	0.90	7.12	199.52
620.20	6.47	18,196	17,663	0.90	7.37	209.55
620.25	6.73	19,082	17,754	0.90	7.63	219.65
620.30	6.99	19,972	17,845	0.90	7.89	229.80
620.35	7.24	20,866	17,936	0.90	8.14	239.98
620.40	7.48	21,765	18,027	0.90	8.38	250.22
620.45	7.72	22,669	18,119	0.90	8.62	260.50
620.50	7.96	23,577	18,211	0.90	8.86	270.83
620.55	8.19	24,490	18,303	0.90	9.09	281.21
620.60	8.39	25,408	18,396	0.90	9.29	291.60
620.65	8.57	26,330	18,488	0.90	9.47	302.02
620.70	8.75	27,257	18,581	0.90	9.65	312.50
620.75	8.93	28,188	18,674	0.90	9.83	323.03
620.80	9.10	29,124	18,768	0.90	10.00	333.60
620.85	9.27	30,065	18,861	0.90	10.17	344.22
620.90	9.43	31,010	18,955	0.90	10.33	354.89
620.95	9.60	31,960	19,049	0.90	10.50	365.61
621.00	9.76	32,915	19,143	0.90	10.66	376.38
621.05	9.91	33,875	19,238	0.90	10.81	387.20
621.10	10.07	34,839	19,333	0.90	10.97	398.06
621.15	10.22	35,808	19,428	0.90	11.12	408.99
621.20	10.37	36,782	19,523	0.90	11.27	419.96
621.25	10.52	37,760	19,618	0.90	11.42	430.98
621.30	10.66	38,743	19,714	0.90	11.56	442.05
621.35	10.81	39,732	19,810	0.90	11.71	453.17
621.40	10.96	40,724	19,906	0.90	11.86	464.35
621.45	11.09	41,722	20,002	0.90	11.99	475.57
621.50	11.23	42,725	20,099	0.90	12.13	486.85
621.55	11.37	43,732	20,196	0.90	12.27	498.18
621.60	11.50	44,744	20,293	0.90	12.40	509.56
621.65	11.64	45,761	20,390	0.90	12.54	521.00
621.70	11.77	46,783	20,488	0.90	12.67	532.49
621.75	11.90	47,810	20,586	0.90	12.80	544.03
621.80	12.03	48,842	20,684	0.90	12.93	555.62
621.85	12.16	49,878	20,782	0.90	13.06	567.26
621.90	12.28	50,920	20,880	0.90	13.18	578.96
621.95	12.41	51,967	20,979	0.90	13.31	590.72
622.00	12.53	53,018	21,078	0.90	13.43	602.52

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 10 years
Label: IB-1C-10 Storm Event: 10 year
Scenario: Post-Development 10 year

Elevation (ft)	Outflow (ft^3/s)	Storage (ft^3)	Area (ft^2)	Infiltration (ft^3/s)	Flow (Total) (ft^3/s)	2S/t + O (ft^3/s)
622.05	12.66	54,074	21,174	0.90	13.56	614.39
622.10	12.78	55,135	21,270	0.90	13.68	626.29
622.15	12.90	56,201	21,366	0.90	13.80	638.26
622.20	13.02	57,272	21,463	0.90	13.92	650.28
622.25	13.14	58,348	21,560	0.90	14.04	662.34
622.30	13.26	59,428	21,657	0.90	14.16	674.47
622.35	13.38	60,513	21,754	0.90	14.28	686.64
622.40	13.49	61,603	21,852	0.90	14.39	698.87
622.45	13.60	62,698	21,949	0.90	14.50	711.15
622.50	13.72	63,798	22,047	0.90	14.62	723.49
622.55	13.83	64,903	22,145	0.90	14.73	735.87
622.60	13.94	66,013	22,244	0.90	14.84	748.32
622.65	14.05	67,127	22,342	0.90	14.95	760.81
622.70	14.16	68,247	22,441	0.90	15.06	773.36
622.75	14.27	69,372	22,540	0.90	15.17	785.96
622.80	14.38	70,501	22,639	0.90	15.28	798.62
622.85	14.48	71,635	22,738	0.90	15.38	811.33
622.90	14.59	72,775	22,838	0.90	15.49	824.10
622.95	14.70	73,919	22,938	0.90	15.60	836.92
623.00	14.80	75,069	23,038	0.90	15.70	849.80
623.05	14.91	76,223	23,138	0.90	15.81	862.73
623.10	15.01	77,382	23,239	0.90	15.91	875.72
623.15	15.11	78,547	23,339	0.90	16.01	888.76
623.20	15.22	79,716	23,440	0.90	16.12	901.86
623.25	15.32	80,891	23,542	0.90	16.22	915.01
623.30	15.42	82,071	23,643	0.90	16.32	928.22
623.35	15.52	83,255	23,745	0.90	16.42	941.48
623.40	15.62	84,445	23,846	0.90	16.52	954.79
623.45	15.72	85,640	23,948	0.90	16.62	968.17
623.50	15.81	86,840	24,051	0.90	16.71	981.60
623.55	15.91	88,045	24,153	0.90	16.81	995.09
623.60	16.01	89,255	24,256	0.90	16.91	1,008.63
623.65	16.11	90,471	24,359	0.90	17.01	1,022.23
623.70	16.20	91,691	24,462	0.90	17.10	1,035.89
623.75	16.30	92,917	24,565	0.90	17.20	1,049.60
623.80	16.39	94,148	24,669	0.90	17.29	1,063.38
623.85	16.49	95,384	24,772	0.90	17.39	1,077.20
623.90	16.58	96,625	24,876	0.90	17.48	1,091.09
623.95	16.67	97,871	24,981	0.90	17.57	1,105.03
624.00	16.77	99,123	25,085	0.90	17.67	1,119.03

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond) | Return Event: 25 years
Label: IB-1C-10 | Storm Event: 25 year
Scenario: Post-Development 25 year

Infiltration	
Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	0.90 ft³/s

Initial Conditions	
Elevation (Water Surface, Initial)	618.50 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
618.50	0.00	0	3,892	0.00	0.00	0.00
618.55	0.00	202	4,185	0.90	0.90	3.14
618.60	0.00	419	4,488	0.90	0.90	5.55
618.65	0.00	651	4,803	0.90	0.90	8.13
618.70	0.00	899	5,127	0.90	0.90	10.89
618.75	0.00	1,164	5,463	0.90	0.90	13.83
618.80	0.00	1,446	5,809	0.90	0.90	16.96
618.85	0.00	1,745	6,166	0.90	0.90	20.29
618.90	0.00	2,062	6,533	0.90	0.90	23.81
618.95	0.00	2,398	6,911	0.90	0.90	27.55
619.00	0.00	2,754	7,299	0.90	0.90	31.50
619.05	0.00	3,128	7,699	0.90	0.90	35.66
619.10	0.00	3,524	8,108	0.90	0.90	40.05
619.15	0.00	3,939	8,529	0.90	0.90	44.67
619.20	0.00	4,377	8,960	0.90	0.90	49.53
619.25	0.00	4,836	9,402	0.90	0.90	54.63
619.30	0.00	5,317	9,854	0.90	0.90	59.98
619.35	0.00	5,821	10,317	0.90	0.90	65.58
619.40	0.00	6,349	10,790	0.90	0.90	71.44
619.45	0.00	6,900	11,275	0.90	0.90	77.57
619.50	0.00	7,476	11,769	0.90	0.90	83.97
619.55	0.00	8,078	12,275	0.90	0.90	90.65
619.60	0.00	8,704	12,791	0.90	0.90	97.61
619.65	0.00	9,357	13,318	0.90	0.90	104.86
619.70	0.00	10,036	13,855	0.90	0.90	112.41
619.75	0.00	10,742	14,403	0.90	0.90	120.26
619.80	0.00	11,477	14,961	0.90	0.90	128.42
619.85	0.00	12,239	15,531	0.90	0.90	136.89

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 25 years
Label: IB-1C-10 Storm Event: 25 year
Scenario: Post-Development 25 year

Elevation (ft)	Outflow (ft^3/s)	Storage (ft^3)	Area (ft^2)	Infiltration (ft^3/s)	Flow (Total) (ft^3/s)	2S/t + O (ft^3/s)
619.90	0.54	13,030	16,110	0.90	1.44	146.21
619.95	1.52	13,850	16,701	0.90	2.42	156.31
620.00	2.79	14,700	17,302	0.90	3.69	167.02
620.05	4.29	15,567	17,392	0.90	5.19	178.16
620.10	5.95	16,439	17,482	0.90	6.85	189.51
620.15	6.22	17,316	17,572	0.90	7.12	199.52
620.20	6.47	18,196	17,663	0.90	7.37	209.55
620.25	6.73	19,082	17,754	0.90	7.63	219.65
620.30	6.99	19,972	17,845	0.90	7.89	229.80
620.35	7.24	20,866	17,936	0.90	8.14	239.98
620.40	7.48	21,765	18,027	0.90	8.38	250.22
620.45	7.72	22,669	18,119	0.90	8.62	260.50
620.50	7.96	23,577	18,211	0.90	8.86	270.83
620.55	8.19	24,490	18,303	0.90	9.09	281.21
620.60	8.39	25,408	18,396	0.90	9.29	291.60
620.65	8.57	26,330	18,488	0.90	9.47	302.02
620.70	8.75	27,257	18,581	0.90	9.65	312.50
620.75	8.93	28,188	18,674	0.90	9.83	323.03
620.80	9.10	29,124	18,768	0.90	10.00	333.60
620.85	9.27	30,065	18,861	0.90	10.17	344.22
620.90	9.43	31,010	18,955	0.90	10.33	354.89
620.95	9.60	31,960	19,049	0.90	10.50	365.61
621.00	9.76	32,915	19,143	0.90	10.66	376.38
621.05	9.91	33,875	19,238	0.90	10.81	387.20
621.10	10.07	34,839	19,333	0.90	10.97	398.06
621.15	10.22	35,808	19,428	0.90	11.12	408.99
621.20	10.37	36,782	19,523	0.90	11.27	419.96
621.25	10.52	37,760	19,618	0.90	11.42	430.98
621.30	10.66	38,743	19,714	0.90	11.56	442.05
621.35	10.81	39,732	19,810	0.90	11.71	453.17
621.40	10.96	40,724	19,906	0.90	11.86	464.35
621.45	11.09	41,722	20,002	0.90	11.99	475.57
621.50	11.23	42,725	20,099	0.90	12.13	486.85
621.55	11.37	43,732	20,196	0.90	12.27	498.18
621.60	11.50	44,744	20,293	0.90	12.40	509.56
621.65	11.64	45,761	20,390	0.90	12.54	521.00
621.70	11.77	46,783	20,488	0.90	12.67	532.49
621.75	11.90	47,810	20,586	0.90	12.80	544.03
621.80	12.03	48,842	20,684	0.90	12.93	555.62
621.85	12.16	49,878	20,782	0.90	13.06	567.26
621.90	12.28	50,920	20,880	0.90	13.18	578.96
621.95	12.41	51,967	20,979	0.90	13.31	590.72
622.00	12.53	53,018	21,078	0.90	13.43	602.52

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 25 years
Label: IB-1C-10 Storm Event: 25 year
Scenario: Post-Development 25 year

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
622.05	12.66	54,074	21,174	0.90	13.56	614.39
622.10	12.78	55,135	21,270	0.90	13.68	626.29
622.15	12.90	56,201	21,366	0.90	13.80	638.26
622.20	13.02	57,272	21,463	0.90	13.92	650.28
622.25	13.14	58,348	21,560	0.90	14.04	662.34
622.30	13.26	59,428	21,657	0.90	14.16	674.47
622.35	13.38	60,513	21,754	0.90	14.28	686.64
622.40	13.49	61,603	21,852	0.90	14.39	698.87
622.45	13.60	62,698	21,949	0.90	14.50	711.15
622.50	13.72	63,798	22,047	0.90	14.62	723.49
622.55	13.83	64,903	22,145	0.90	14.73	735.87
622.60	13.94	66,013	22,244	0.90	14.84	748.32
622.65	14.05	67,127	22,342	0.90	14.95	760.81
622.70	14.16	68,247	22,441	0.90	15.06	773.36
622.75	14.27	69,372	22,540	0.90	15.17	785.96
622.80	14.38	70,501	22,639	0.90	15.28	798.62
622.85	14.48	71,635	22,738	0.90	15.38	811.33
622.90	14.59	72,775	22,838	0.90	15.49	824.10
622.95	14.70	73,919	22,938	0.90	15.60	836.92
623.00	14.80	75,069	23,038	0.90	15.70	849.80
623.05	14.91	76,223	23,138	0.90	15.81	862.73
623.10	15.01	77,382	23,239	0.90	15.91	875.72
623.15	15.11	78,547	23,339	0.90	16.01	888.76
623.20	15.22	79,716	23,440	0.90	16.12	901.86
623.25	15.32	80,891	23,542	0.90	16.22	915.01
623.30	15.42	82,071	23,643	0.90	16.32	928.22
623.35	15.52	83,255	23,745	0.90	16.42	941.48
623.40	15.62	84,445	23,846	0.90	16.52	954.79
623.45	15.72	85,640	23,948	0.90	16.62	968.17
623.50	15.81	86,840	24,051	0.90	16.71	981.60
623.55	15.91	88,045	24,153	0.90	16.81	995.09
623.60	16.01	89,255	24,256	0.90	16.91	1,008.63
623.65	16.11	90,471	24,359	0.90	17.01	1,022.23
623.70	16.20	91,691	24,462	0.90	17.10	1,035.89
623.75	16.30	92,917	24,565	0.90	17.20	1,049.60
623.80	16.39	94,148	24,669	0.90	17.29	1,063.38
623.85	16.49	95,384	24,772	0.90	17.39	1,077.20
623.90	16.58	96,625	24,876	0.90	17.48	1,091.09
623.95	16.67	97,871	24,981	0.90	17.57	1,105.03
624.00	16.77	99,123	25,085	0.90	17.67	1,119.03

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond) | Return Event: 100 years
Label: IB-1C-10 | Storm Event: 100 year
Scenario: Post-Development 100 year

Infiltration	
Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	0.90 ft³/s

Initial Conditions	
Elevation (Water Surface, Initial)	618.50 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
618.50	0.00	0	3,892	0.00	0.00	0.00
618.55	0.00	202	4,185	0.90	0.90	3.14
618.60	0.00	419	4,488	0.90	0.90	5.55
618.65	0.00	651	4,803	0.90	0.90	8.13
618.70	0.00	899	5,127	0.90	0.90	10.89
618.75	0.00	1,164	5,463	0.90	0.90	13.83
618.80	0.00	1,446	5,809	0.90	0.90	16.96
618.85	0.00	1,745	6,166	0.90	0.90	20.29
618.90	0.00	2,062	6,533	0.90	0.90	23.81
618.95	0.00	2,398	6,911	0.90	0.90	27.55
619.00	0.00	2,754	7,299	0.90	0.90	31.50
619.05	0.00	3,128	7,699	0.90	0.90	35.66
619.10	0.00	3,524	8,108	0.90	0.90	40.05
619.15	0.00	3,939	8,529	0.90	0.90	44.67
619.20	0.00	4,377	8,960	0.90	0.90	49.53
619.25	0.00	4,836	9,402	0.90	0.90	54.63
619.30	0.00	5,317	9,854	0.90	0.90	59.98
619.35	0.00	5,821	10,317	0.90	0.90	65.58
619.40	0.00	6,349	10,790	0.90	0.90	71.44
619.45	0.00	6,900	11,275	0.90	0.90	77.57
619.50	0.00	7,476	11,769	0.90	0.90	83.97
619.55	0.00	8,078	12,275	0.90	0.90	90.65
619.60	0.00	8,704	12,791	0.90	0.90	97.61
619.65	0.00	9,357	13,318	0.90	0.90	104.86
619.70	0.00	10,036	13,855	0.90	0.90	112.41
619.75	0.00	10,742	14,403	0.90	0.90	120.26
619.80	0.00	11,477	14,961	0.90	0.90	128.42
619.85	0.00	12,239	15,531	0.90	0.90	136.89

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond) | Return Event: 100 years
Label: IB-1C-10 | Storm Event: 100 year
Scenario: Post-Development 100 year

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
619.90	0.54	13,030	16,110	0.90	1.44	146.21
619.95	1.52	13,850	16,701	0.90	2.42	156.31
620.00	2.79	14,700	17,302	0.90	3.69	167.02
620.05	4.29	15,567	17,392	0.90	5.19	178.16
620.10	5.95	16,439	17,482	0.90	6.85	189.51
620.15	6.22	17,316	17,572	0.90	7.12	199.52
620.20	6.47	18,196	17,663	0.90	7.37	209.55
620.25	6.73	19,082	17,754	0.90	7.63	219.65
620.30	6.99	19,972	17,845	0.90	7.89	229.80
620.35	7.24	20,866	17,936	0.90	8.14	239.98
620.40	7.48	21,765	18,027	0.90	8.38	250.22
620.45	7.72	22,669	18,119	0.90	8.62	260.50
620.50	7.96	23,577	18,211	0.90	8.86	270.83
620.55	8.19	24,490	18,303	0.90	9.09	281.21
620.60	8.39	25,408	18,396	0.90	9.29	291.60
620.65	8.57	26,330	18,488	0.90	9.47	302.02
620.70	8.75	27,257	18,581	0.90	9.65	312.50
620.75	8.93	28,188	18,674	0.90	9.83	323.03
620.80	9.10	29,124	18,768	0.90	10.00	333.60
620.85	9.27	30,065	18,861	0.90	10.17	344.22
620.90	9.43	31,010	18,955	0.90	10.33	354.89
620.95	9.60	31,960	19,049	0.90	10.50	365.61
621.00	9.76	32,915	19,143	0.90	10.66	376.38
621.05	9.91	33,875	19,238	0.90	10.81	387.20
621.10	10.07	34,839	19,333	0.90	10.97	398.06
621.15	10.22	35,808	19,428	0.90	11.12	408.99
621.20	10.37	36,782	19,523	0.90	11.27	419.96
621.25	10.52	37,760	19,618	0.90	11.42	430.98
621.30	10.66	38,743	19,714	0.90	11.56	442.05
621.35	10.81	39,732	19,810	0.90	11.71	453.17
621.40	10.96	40,724	19,906	0.90	11.86	464.35
621.45	11.09	41,722	20,002	0.90	11.99	475.57
621.50	11.23	42,725	20,099	0.90	12.13	486.85
621.55	11.37	43,732	20,196	0.90	12.27	498.18
621.60	11.50	44,744	20,293	0.90	12.40	509.56
621.65	11.64	45,761	20,390	0.90	12.54	521.00
621.70	11.77	46,783	20,488	0.90	12.67	532.49
621.75	11.90	47,810	20,586	0.90	12.80	544.03
621.80	12.03	48,842	20,684	0.90	12.93	555.62
621.85	12.16	49,878	20,782	0.90	13.06	567.26
621.90	12.28	50,920	20,880	0.90	13.18	578.96
621.95	12.41	51,967	20,979	0.90	13.31	590.72
622.00	12.53	53,018	21,078	0.90	13.43	602.52

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 100 years
Label: IB-1C-10 Storm Event: 100 year
Scenario: Post-Development 100 year

Elevation (ft)	Outflow (ft^3/s)	Storage (ft^3)	Area (ft^2)	Infiltration (ft^3/s)	Flow (Total) (ft^3/s)	2S/t + O (ft^3/s)
622.05	12.66	54,074	21,174	0.90	13.56	614.39
622.10	12.78	55,135	21,270	0.90	13.68	626.29
622.15	12.90	56,201	21,366	0.90	13.80	638.26
622.20	13.02	57,272	21,463	0.90	13.92	650.28
622.25	13.14	58,348	21,560	0.90	14.04	662.34
622.30	13.26	59,428	21,657	0.90	14.16	674.47
622.35	13.38	60,513	21,754	0.90	14.28	686.64
622.40	13.49	61,603	21,852	0.90	14.39	698.87
622.45	13.60	62,698	21,949	0.90	14.50	711.15
622.50	13.72	63,798	22,047	0.90	14.62	723.49
622.55	13.83	64,903	22,145	0.90	14.73	735.87
622.60	13.94	66,013	22,244	0.90	14.84	748.32
622.65	14.05	67,127	22,342	0.90	14.95	760.81
622.70	14.16	68,247	22,441	0.90	15.06	773.36
622.75	14.27	69,372	22,540	0.90	15.17	785.96
622.80	14.38	70,501	22,639	0.90	15.28	798.62
622.85	14.48	71,635	22,738	0.90	15.38	811.33
622.90	14.59	72,775	22,838	0.90	15.49	824.10
622.95	14.70	73,919	22,938	0.90	15.60	836.92
623.00	14.80	75,069	23,038	0.90	15.70	849.80
623.05	14.91	76,223	23,138	0.90	15.81	862.73
623.10	15.01	77,382	23,239	0.90	15.91	875.72
623.15	15.11	78,547	23,339	0.90	16.01	888.76
623.20	15.22	79,716	23,440	0.90	16.12	901.86
623.25	15.32	80,891	23,542	0.90	16.22	915.01
623.30	15.42	82,071	23,643	0.90	16.32	928.22
623.35	15.52	83,255	23,745	0.90	16.42	941.48
623.40	15.62	84,445	23,846	0.90	16.52	954.79
623.45	15.72	85,640	23,948	0.90	16.62	968.17
623.50	15.81	86,840	24,051	0.90	16.71	981.60
623.55	15.91	88,045	24,153	0.90	16.81	995.09
623.60	16.01	89,255	24,256	0.90	16.91	1,008.63
623.65	16.11	90,471	24,359	0.90	17.01	1,022.23
623.70	16.20	91,691	24,462	0.90	17.10	1,035.89
623.75	16.30	92,917	24,565	0.90	17.20	1,049.60
623.80	16.39	94,148	24,669	0.90	17.29	1,063.38
623.85	16.49	95,384	24,772	0.90	17.39	1,077.20
623.90	16.58	96,625	24,876	0.90	17.48	1,091.09
623.95	16.67	97,871	24,981	0.90	17.57	1,105.03
624.00	16.77	99,123	25,085	0.90	17.67	1,119.03

Stormwater Hydrologic Calculations

Subsection: Level Pool Pond Routing Summary | Return Event: 1 years
Label: IB-1C-10 (IN) | Storm Event: 1 year
Scenario: Post-Development 1 year

Infiltration

Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	0.90 ft³/s

Initial Conditions

Elevation (Water Surface, Initial)	618.50 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	5.99 ft³/s	Time to Peak (Flow, In)	12.150 hours
Infiltration (Peak)	0.90 ft³/s	Time to Peak (Infiltration)	11.850 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	619.54 ft
Volume (Peak)	7,898 ft³

Mass Balance (ft³)

Volume (Initial)	0 ft³
Volume (Total Inflow)	23,970 ft³
Volume (Total Infiltration)	23,959 ft³
Volume (Total Outlet Outflow)	0 ft³
Volume (Retained)	11 ft³
Volume (Unrouted)	0 ft³
Error (Mass Balance)	0.0 %

Stormwater Hydrologic Calculations

Subsection: Level Pool Pond Routing Summary — Return Event: 10 years
Label: IB-1C-10 (IN) — Storm Event: 10 year
Scenario: Post-Development 10 year

Infiltration	
Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	0.90 ft³/s

Initial Conditions	
Elevation (Water Surface, Initial)	618.50 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	18.09 ft³/s	Time to Peak (Flow, In)	12.150 hours
Infiltration (Peak)	0.90 ft³/s	Time to Peak (Infiltration)	11.200 hours
Flow (Peak Outlet)	7.03 ft³/s	Time to Peak (Flow, Outlet)	12.450 hours

Elevation (Water Surface, Peak)	620.31 ft
Volume (Peak)	20,128 ft³

Mass Balance (ft³)	
Volume (Initial)	0 ft³
Volume (Total Inflow)	69,873 ft³
Volume (Total Infiltration)	43,808 ft³
Volume (Total Outlet Outflow)	26,039 ft³
Volume (Retained)	25 ft³
Volume (Unrouted)	-1 ft³
Error (Mass Balance)	0.0 %

Stormwater Hydrologic Calculations

Subsection: Level Pool Pond Routing Summary — Return Event: 25 years
Label: IB-1C-10 (IN) — Storm Event: 25 year
Scenario: Post-Development 25 year

Infiltration	
Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	0.90 ft³/s

Initial Conditions	
Elevation (Water Surface, Initial)	618.50 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	25.55 ft³/s	Time to Peak (Flow, In)	12.150 hours
Infiltration (Peak)	0.90 ft³/s	Time to Peak (Infiltration)	10.500 hours
Flow (Peak Outlet)	9.21 ft³/s	Time to Peak (Flow, Outlet)	12.450 hours

Elevation (Water Surface, Peak)	620.83 ft
Volume (Peak)	29,768 ft³

Mass Balance (ft³)	
Volume (Initial)	0 ft³
Volume (Total Inflow)	99,192 ft³
Volume (Total Infiltration)	47,529 ft³
Volume (Total Outlet Outflow)	48,818 ft³
Volume (Retained)	2,843 ft³
Volume (Unrouted)	-2 ft³
Error (Mass Balance)	0.0 %

Stormwater Hydrologic Calculations

Subsection: Level Pool Pond Routing Summary	Return Event: 100 years
Label: IB-1C-10 (IN)	Storm Event: 100 year
Scenario: Post-Development 100 year	

Infiltration	
Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	0.90 ft³/s

Initial Conditions	
Elevation (Water Surface, Initial)	618.50 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	41.13 ft³/s	Time to Peak (Flow, In)	12.150 hours
Infiltration (Peak)	0.90 ft³/s	Time to Peak (Infiltration)	9.250 hours
Flow (Peak Outlet)	12.56 ft³/s	Time to Peak (Flow, Outlet)	12.500 hours

Elevation (Water Surface, Peak)	622.01 ft
Volume (Peak)	53,268 ft³

Mass Balance (ft³)	
Volume (Initial)	0 ft³
Volume (Total Inflow)	162,420 ft³
Volume (Total Infiltration)	51,858 ft³
Volume (Total Outlet Outflow)	102,083 ft³
Volume (Retained)	8,477 ft³
Volume (Unrouted)	-3 ft³
Error (Mass Balance)	0.0 %

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: IB-1C-10 (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
0.000	0.00	0.00	0.00	0.00	0.00	0	618.50
0.050	0.00	0.00	0.00	0.00	0.00	0	618.50
0.100	0.00	0.00	0.00	0.00	0.00	0	618.50
0.150	0.00	0.00	0.00	0.00	0.00	0	618.50
0.200	0.00	0.00	0.00	0.00	0.00	0	618.50
0.250	0.00	0.00	0.00	0.00	0.00	0	618.50
0.300	0.00	0.00	0.00	0.00	0.00	0	618.50
0.350	0.00	0.00	0.00	0.00	0.00	0	618.50
0.400	0.00	0.00	0.00	0.00	0.00	0	618.50
0.450	0.00	0.00	0.00	0.00	0.00	0	618.50
0.500	0.00	0.00	0.00	0.00	0.00	0	618.50
0.550	0.00	0.00	0.00	0.00	0.00	0	618.50
0.600	0.00	0.00	0.00	0.00	0.00	0	618.50
0.650	0.00	0.00	0.00	0.00	0.00	0	618.50
0.700	0.00	0.00	0.00	0.00	0.00	0	618.50
0.750	0.00	0.00	0.00	0.00	0.00	0	618.50
0.800	0.00	0.00	0.00	0.00	0.00	0	618.50
0.850	0.00	0.00	0.00	0.00	0.00	0	618.50
0.900	0.00	0.00	0.00	0.00	0.00	0	618.50
0.950	0.00	0.00	0.00	0.00	0.00	0	618.50
1.000	0.00	0.00	0.00	0.00	0.00	0	618.50
1.050	0.00	0.00	0.00	0.00	0.00	0	618.50
1.100	0.00	0.00	0.00	0.00	0.00	0	618.50
1.150	0.00	0.00	0.00	0.00	0.00	0	618.50
1.200	0.00	0.00	0.00	0.00	0.00	0	618.50
1.250	0.00	0.00	0.00	0.00	0.00	0	618.50
1.300	0.00	0.00	0.00	0.00	0.00	0	618.50
1.350	0.00	0.00	0.00	0.00	0.00	0	618.50
1.400	0.00	0.00	0.00	0.00	0.00	0	618.50
1.450	0.00	0.00	0.00	0.00	0.00	0	618.50
1.500	0.00	0.00	0.00	0.00	0.00	0	618.50
1.550	0.00	0.00	0.00	0.00	0.00	0	618.50
1.600	0.00	0.00	0.00	0.00	0.00	0	618.50
1.650	0.00	0.00	0.00	0.00	0.00	0	618.50
1.700	0.00	0.00	0.00	0.00	0.00	0	618.50
1.750	0.00	0.00	0.00	0.00	0.00	0	618.50
1.800	0.00	0.00	0.00	0.00	0.00	0	618.50
1.850	0.00	0.00	0.00	0.00	0.00	0	618.50
1.900	0.00	0.00	0.00	0.00	0.00	0	618.50
1.950	0.00	0.00	0.00	0.00	0.00	0	618.50
2.000	0.00	0.00	0.00	0.00	0.00	0	618.50
2.050	0.00	0.00	0.00	0.00	0.00	0	618.50

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: IB-1C-10 (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
2.100	0.00	0.00	0.00	0.00	0.00	0	618.50
2.150	0.00	0.00	0.00	0.00	0.00	0	618.50
2.200	0.00	0.00	0.00	0.00	0.00	0	618.50
2.250	0.00	0.00	0.00	0.00	0.00	0	618.50
2.300	0.00	0.00	0.00	0.00	0.00	0	618.50
2.350	0.00	0.00	0.00	0.00	0.00	0	618.50
2.400	0.00	0.00	0.00	0.00	0.00	0	618.50
2.450	0.00	0.00	0.00	0.00	0.00	0	618.50
2.500	0.00	0.00	0.00	0.00	0.00	0	618.50
2.550	0.00	0.00	0.00	0.00	0.00	0	618.50
2.600	0.00	0.00	0.00	0.00	0.00	0	618.50
2.650	0.00	0.00	0.00	0.00	0.00	0	618.50
2.700	0.00	0.00	0.00	0.00	0.00	0	618.50
2.750	0.00	0.00	0.00	0.00	0.00	0	618.50
2.800	0.00	0.00	0.00	0.00	0.00	0	618.50
2.850	0.00	0.00	0.00	0.00	0.00	0	618.50
2.900	0.00	0.00	0.00	0.00	0.00	0	618.50
2.950	0.00	0.00	0.00	0.00	0.00	0	618.50
3.000	0.00	0.00	0.00	0.00	0.00	0	618.50
3.050	0.00	0.00	0.00	0.00	0.00	0	618.50
3.100	0.00	0.00	0.00	0.00	0.00	0	618.50
3.150	0.00	0.00	0.00	0.00	0.00	0	618.50
3.200	0.00	0.00	0.00	0.00	0.00	0	618.50
3.250	0.00	0.00	0.00	0.00	0.00	0	618.50
3.300	0.00	0.00	0.00	0.00	0.00	0	618.50
3.350	0.00	0.00	0.00	0.00	0.00	0	618.50
3.400	0.00	0.00	0.00	0.00	0.00	0	618.50
3.450	0.00	0.00	0.00	0.00	0.00	0	618.50
3.500	0.00	0.00	0.00	0.00	0.00	0	618.50
3.550	0.00	0.00	0.00	0.00	0.00	0	618.50
3.600	0.00	0.00	0.00	0.00	0.00	0	618.50
3.650	0.00	0.00	0.00	0.00	0.00	0	618.50
3.700	0.00	0.00	0.00	0.00	0.00	0	618.50
3.750	0.00	0.00	0.00	0.00	0.00	0	618.50
3.800	0.00	0.00	0.00	0.00	0.00	0	618.50
3.850	0.00	0.00	0.00	0.00	0.00	0	618.50
3.900	0.00	0.00	0.00	0.00	0.00	0	618.50
3.950	0.00	0.00	0.00	0.00	0.00	0	618.50
4.000	0.00	0.00	0.00	0.00	0.00	0	618.50
4.050	0.00	0.00	0.00	0.00	0.00	0	618.50
4.100	0.00	0.00	0.00	0.00	0.00	0	618.50
4.150	0.00	0.00	0.00	0.00	0.00	0	618.50

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: IB-1C-10 (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
4.200	0.00	0.00	0.00	0.00	0.00	0	618.50
4.250	0.00	0.00	0.00	0.00	0.00	0	618.50
4.300	0.00	0.00	0.00	0.00	0.00	0	618.50
4.350	0.00	0.00	0.00	0.00	0.00	0	618.50
4.400	0.00	0.00	0.00	0.00	0.00	0	618.50
4.450	0.00	0.00	0.00	0.00	0.00	0	618.50
4.500	0.00	0.00	0.00	0.00	0.00	0	618.50
4.550	0.00	0.00	0.00	0.00	0.00	0	618.50
4.600	0.00	0.00	0.00	0.00	0.00	0	618.50
4.650	0.00	0.00	0.00	0.00	0.00	0	618.50
4.700	0.00	0.00	0.00	0.00	0.00	0	618.50
4.750	0.00	0.00	0.00	0.00	0.00	0	618.50
4.800	0.00	0.00	0.00	0.00	0.00	0	618.50
4.850	0.00	0.00	0.00	0.00	0.00	0	618.50
4.900	0.00	0.00	0.00	0.00	0.00	0	618.50
4.950	0.00	0.00	0.00	0.00	0.00	0	618.50
5.000	0.00	0.00	0.00	0.00	0.00	0	618.50
5.050	0.00	0.00	0.00	0.00	0.00	0	618.50
5.100	0.00	0.00	0.00	0.00	0.00	0	618.50
5.150	0.00	0.00	0.00	0.00	0.00	0	618.50
5.200	0.00	0.00	0.00	0.00	0.00	0	618.50
5.250	0.00	0.00	0.00	0.00	0.00	0	618.50
5.300	0.00	0.00	0.00	0.00	0.00	0	618.50
5.350	0.00	0.00	0.00	0.00	0.00	0	618.50
5.400	0.00	0.00	0.00	0.00	0.00	0	618.50
5.450	0.00	0.00	0.00	0.00	0.00	0	618.50
5.500	0.00	0.00	0.00	0.00	0.00	0	618.50
5.550	0.00	0.00	0.00	0.00	0.00	0	618.50
5.600	0.00	0.00	0.00	0.00	0.00	0	618.50
5.650	0.00	0.00	0.00	0.00	0.00	0	618.50
5.700	0.00	0.00	0.00	0.00	0.00	0	618.50
5.750	0.00	0.00	0.00	0.00	0.00	0	618.50
5.800	0.00	0.00	0.00	0.00	0.00	0	618.50
5.850	0.00	0.00	0.00	0.00	0.00	0	618.50
5.900	0.00	0.00	0.00	0.00	0.00	0	618.50
5.950	0.00	0.00	0.00	0.00	0.00	0	618.50
6.000	0.00	0.00	0.00	0.00	0.00	0	618.50
6.050	0.00	0.00	0.00	0.00	0.00	0	618.50
6.100	0.00	0.00	0.00	0.00	0.00	0	618.50
6.150	0.00	0.00	0.00	0.00	0.00	0	618.50
6.200	0.00	0.00	0.00	0.00	0.00	0	618.50
6.250	0.00	0.00	0.00	0.00	0.00	0	618.50

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: IB-1C-10 (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
6.300	0.00	0.00	0.00	0.00	0.00	0	618.50
6.350	0.00	0.00	0.00	0.00	0.00	0	618.50
6.400	0.00	0.00	0.00	0.00	0.00	0	618.50
6.450	0.00	0.00	0.00	0.00	0.00	0	618.50
6.500	0.00	0.00	0.00	0.00	0.00	0	618.50
6.550	0.00	0.00	0.00	0.00	0.00	0	618.50
6.600	0.00	0.00	0.00	0.00	0.00	0	618.50
6.650	0.00	0.00	0.00	0.00	0.00	0	618.50
6.700	0.00	0.00	0.00	0.00	0.00	0	618.50
6.750	0.00	0.00	0.00	0.00	0.00	0	618.50
6.800	0.00	0.00	0.00	0.00	0.00	0	618.50
6.850	0.00	0.00	0.00	0.00	0.00	0	618.50
6.900	0.00	0.00	0.00	0.00	0.00	0	618.50
6.950	0.00	0.00	0.00	0.00	0.00	0	618.50
7.000	0.00	0.00	0.00	0.00	0.00	0	618.50
7.050	0.00	0.00	0.00	0.00	0.00	0	618.50
7.100	0.00	0.00	0.00	0.00	0.00	0	618.50
7.150	0.00	0.00	0.00	0.00	0.00	0	618.50
7.200	0.00	0.00	0.00	0.00	0.00	0	618.50
7.250	0.00	0.00	0.00	0.00	0.00	0	618.50
7.300	0.00	0.00	0.00	0.00	0.00	0	618.50
7.350	0.00	0.00	0.00	0.00	0.00	0	618.50
7.400	0.00	0.00	0.00	0.00	0.00	0	618.50
7.450	0.00	0.00	0.00	0.00	0.00	0	618.50
7.500	0.00	0.00	0.00	0.00	0.00	0	618.50
7.550	0.00	0.00	0.00	0.00	0.00	0	618.50
7.600	0.00	0.00	0.00	0.00	0.00	0	618.50
7.650	0.00	0.00	0.00	0.00	0.00	0	618.50
7.700	0.00	0.00	0.00	0.00	0.00	0	618.50
7.750	0.00	0.00	0.00	0.00	0.00	0	618.50
7.800	0.00	0.00	0.00	0.00	0.00	0	618.50
7.850	0.00	0.00	0.00	0.00	0.00	0	618.50
7.900	0.00	0.00	0.00	0.00	0.00	0	618.50
7.950	0.00	0.00	0.00	0.00	0.00	0	618.50
8.000	0.00	0.00	0.00	0.00	0.00	0	618.50
8.050	0.00	0.00	0.00	0.00	0.00	0	618.50
8.100	0.00	0.00	0.00	0.00	0.00	0	618.50
8.150	0.00	0.00	0.00	0.00	0.00	0	618.50
8.200	0.00	0.00	0.00	0.00	0.00	0	618.50
8.250	0.00	0.00	0.00	0.00	0.00	0	618.50
8.300	0.00	0.00	0.00	0.00	0.00	0	618.50
8.350	0.00	0.00	0.00	0.00	0.00	0	618.50

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: IB-1C-10 (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
8.400	0.00	0.00	0.00	0.00	0.00	0	618.50
8.450	0.00	0.00	0.00	0.00	0.00	0	618.50
8.500	0.00	0.00	0.00	0.00	0.00	0	618.50
8.550	0.00	0.00	0.00	0.00	0.00	0	618.50
8.600	0.00	0.00	0.00	0.00	0.00	0	618.50
8.650	0.00	0.00	0.00	0.00	0.00	0	618.50
8.700	0.00	0.00	0.00	0.00	0.00	0	618.50
8.750	0.00	0.00	0.00	0.00	0.00	0	618.50
8.800	0.00	0.00	0.00	0.00	0.00	0	618.50
8.850	0.00	0.00	0.00	0.00	0.00	0	618.50
8.900	0.00	0.00	0.00	0.00	0.00	0	618.50
8.950	0.00	0.00	0.00	0.00	0.00	0	618.50
9.000	0.00	0.00	0.00	0.00	0.00	0	618.50
9.050	0.00	0.00	0.00	0.00	0.00	0	618.50
9.100	0.00	0.00	0.00	0.00	0.00	0	618.50
9.150	0.00	0.00	0.00	0.00	0.00	0	618.50
9.200	0.00	0.00	0.00	0.00	0.00	0	618.50
9.250	0.00	0.00	0.00	0.00	0.00	0	618.50
9.300	0.00	0.00	0.00	0.00	0.00	0	618.50
9.350	0.00	0.00	0.00	0.00	0.00	0	618.50
9.400	0.00	0.00	0.00	0.00	0.00	0	618.50
9.450	0.00	0.00	0.00	0.00	0.00	0	618.50
9.500	0.00	0.00	0.00	0.00	0.00	0	618.50
9.550	0.00	0.00	0.00	0.00	0.00	0	618.50
9.600	0.00	0.00	0.00	0.00	0.00	0	618.50
9.650	0.00	0.00	0.00	0.00	0.00	0	618.50
9.700	0.00	0.00	0.00	0.00	0.00	0	618.50
9.750	0.00	0.00	0.00	0.00	0.00	0	618.50
9.800	0.00	0.00	0.00	0.00	0.00	0	618.50
9.850	0.00	0.00	0.00	0.00	0.00	0	618.50
9.900	0.00	0.00	0.00	0.00	0.00	0	618.50
9.950	0.00	0.00	0.00	0.00	0.00	0	618.50
10.000	0.00	0.00	0.00	0.00	0.00	0	618.50
10.050	0.00	0.00	0.00	0.00	0.00	0	618.50
10.100	0.00	0.00	0.00	0.00	0.00	0	618.50
10.150	0.00	0.00	0.00	0.00	0.00	0	618.50
10.200	0.00	0.00	0.00	0.00	0.00	0	618.50
10.250	0.00	0.00	0.00	0.00	0.00	0	618.50
10.300	0.00	0.00	0.00	0.00	0.00	0	618.50
10.350	0.00	0.00	0.00	0.00	0.00	0	618.50
10.400	0.00	0.00	0.00	0.00	0.00	0	618.50
10.450	0.00	0.00	0.00	0.00	0.00	0	618.50

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: IB-1C-10 (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
10.500	0.00	0.00	0.00	0.00	0.00	0	618.50
10.550	0.00	0.00	0.00	0.00	0.00	0	618.50
10.600	0.01	0.00	0.01	0.00	0.00	1	618.50
10.650	0.01	0.01	0.02	0.01	0.00	1	618.50
10.700	0.02	0.02	0.04	0.01	0.00	2	618.50
10.750	0.02	0.02	0.06	0.02	0.00	4	618.50
10.800	0.03	0.04	0.08	0.02	0.00	5	618.50
10.850	0.04	0.05	0.11	0.03	0.00	7	618.50
10.900	0.05	0.06	0.14	0.04	0.00	9	618.50
10.950	0.06	0.07	0.17	0.05	0.00	10	618.50
11.000	0.07	0.08	0.20	0.06	0.00	12	618.50
11.050	0.08	0.10	0.23	0.07	0.00	14	618.50
11.100	0.09	0.11	0.27	0.08	0.00	17	618.50
11.150	0.10	0.13	0.31	0.09	0.00	19	618.50
11.200	0.12	0.15	0.35	0.10	0.00	22	618.51
11.250	0.14	0.17	0.41	0.12	0.00	25	618.51
11.300	0.16	0.20	0.47	0.13	0.00	29	618.51
11.350	0.18	0.23	0.53	0.15	0.00	33	618.51
11.400	0.20	0.26	0.61	0.17	0.00	38	618.51
11.450	0.23	0.29	0.69	0.20	0.00	43	618.51
11.500	0.25	0.33	0.78	0.22	0.00	48	618.51
11.550	0.29	0.38	0.88	0.25	0.00	55	618.51
11.600	0.36	0.44	1.03	0.30	0.00	65	618.52
11.650	0.46	0.54	1.26	0.36	0.00	79	618.52
11.700	0.61	0.69	1.61	0.46	0.00	102	618.53
11.750	0.80	0.90	2.10	0.60	0.00	133	618.53
11.800	1.04	1.17	2.74	0.78	0.00	175	618.54
11.850	1.33	1.74	3.54	0.90	0.00	237	618.56
11.900	1.67	2.94	4.74	0.90	0.00	344	618.58
11.950	2.23	5.05	6.85	0.90	0.00	533	618.63
12.000	3.29	8.77	10.57	0.90	0.00	869	618.69
12.050	4.52	14.77	16.57	0.90	0.00	1,409	618.79
12.100	5.52	23.00	24.80	0.90	0.00	2,149	618.91
12.150	5.99	32.72	34.52	0.90	0.00	3,023	619.04
12.200	5.59	42.50	44.30	0.90	0.00	3,905	619.15
12.250	4.82	51.10	52.90	0.90	0.00	4,678	619.23
12.300	4.18	58.30	60.10	0.90	0.00	5,328	619.30
12.350	3.71	64.40	66.20	0.90	0.00	5,876	619.36
12.400	3.27	69.59	71.39	0.90	0.00	6,344	619.40
12.450	2.86	73.93	75.73	0.90	0.00	6,732	619.43
12.500	2.44	77.43	79.23	0.90	0.00	7,047	619.46
12.550	2.05	80.12	81.92	0.90	0.00	7,289	619.48

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: IB-1C-10 (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
12.600	1.72	82.09	83.89	0.90	0.00	7,469	619.50
12.650	1.47	83.47	85.27	0.90	0.00	7,591	619.51
12.700	1.31	84.45	86.25	0.90	0.00	7,679	619.52
12.750	1.21	85.17	86.97	0.90	0.00	7,744	619.52
12.800	1.14	85.73	87.53	0.90	0.00	7,794	619.53
12.850	1.09	86.17	87.97	0.90	0.00	7,833	619.53
12.900	1.04	86.49	88.29	0.90	0.00	7,862	619.53
12.950	0.99	86.72	88.52	0.90	0.00	7,883	619.53
13.000	0.94	86.85	88.65	0.90	0.00	7,895	619.53
13.050	0.90	86.89	88.69	0.90	0.00	7,898	619.54
13.100	0.86	86.84	88.64	0.90	0.00	7,894	619.53
13.150	0.83	86.74	88.54	0.90	0.00	7,884	619.53
13.200	0.81	86.58	88.38	0.90	0.00	7,870	619.53
13.250	0.79	86.38	88.18	0.90	0.00	7,852	619.53
13.300	0.78	86.15	87.95	0.90	0.00	7,832	619.53
13.350	0.77	85.90	87.70	0.90	0.00	7,809	619.53
13.400	0.76	85.62	87.42	0.90	0.00	7,784	619.53
13.450	0.74	85.33	87.13	0.90	0.00	7,757	619.52
13.500	0.73	85.00	86.80	0.90	0.00	7,728	619.52
13.550	0.72	84.66	86.46	0.90	0.00	7,697	619.52
13.600	0.71	84.29	86.09	0.90	0.00	7,664	619.52
13.650	0.70	83.90	85.70	0.90	0.00	7,629	619.51
13.700	0.69	83.48	85.28	0.90	0.00	7,592	619.51
13.750	0.67	83.04	84.84	0.90	0.00	7,553	619.51
13.800	0.66	82.58	84.38	0.90	0.00	7,512	619.50
13.850	0.65	82.09	83.89	0.90	0.00	7,469	619.50
13.900	0.64	81.57	83.37	0.90	0.00	7,422	619.50
13.950	0.62	81.04	82.84	0.90	0.00	7,372	619.49
14.000	0.61	80.47	82.27	0.90	0.00	7,321	619.49
14.050	0.60	79.88	81.68	0.90	0.00	7,268	619.48
14.100	0.59	79.27	81.07	0.90	0.00	7,212	619.48
14.150	0.58	78.64	80.44	0.90	0.00	7,156	619.47
14.200	0.57	77.99	79.79	0.90	0.00	7,097	619.47
14.250	0.57	77.33	79.13	0.90	0.00	7,038	619.46
14.300	0.56	76.65	78.45	0.90	0.00	6,978	619.46
14.350	0.55	75.96	77.76	0.90	0.00	6,917	619.45
14.400	0.55	75.26	77.06	0.90	0.00	6,854	619.45
14.450	0.54	74.55	76.35	0.90	0.00	6,789	619.44
14.500	0.54	73.83	75.63	0.90	0.00	6,723	619.43
14.550	0.53	73.09	74.89	0.90	0.00	6,656	619.43
14.600	0.52	72.35	74.15	0.90	0.00	6,589	619.42
14.650	0.52	71.59	73.39	0.90	0.00	6,521	619.42

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: IB-1C-10 (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
14.700	0.51	70.82	72.62	0.90	0.00	6,452	619.41
14.750	0.51	70.03	71.83	0.90	0.00	6,383	619.40
14.800	0.50	69.24	71.04	0.90	0.00	6,311	619.40
14.850	0.49	68.43	70.23	0.90	0.00	6,238	619.39
14.900	0.49	67.61	69.41	0.90	0.00	6,163	619.38
14.950	0.48	66.77	68.57	0.90	0.00	6,088	619.38
15.000	0.47	65.93	67.73	0.90	0.00	6,012	619.37
15.050	0.47	65.07	66.87	0.90	0.00	5,935	619.36
15.100	0.46	64.20	66.00	0.90	0.00	5,858	619.35
15.150	0.46	63.32	65.12	0.90	0.00	5,779	619.35
15.200	0.45	62.42	64.22	0.90	0.00	5,697	619.34
15.250	0.44	61.51	63.31	0.90	0.00	5,614	619.33
15.300	0.44	60.59	62.39	0.90	0.00	5,531	619.32
15.350	0.43	59.66	61.46	0.90	0.00	5,448	619.31
15.400	0.42	58.71	60.51	0.90	0.00	5,364	619.30
15.450	0.42	57.75	59.55	0.90	0.00	5,278	619.30
15.500	0.41	56.78	58.58	0.90	0.00	5,189	619.29
15.550	0.40	55.79	57.59	0.90	0.00	5,099	619.28
15.600	0.40	54.79	56.59	0.90	0.00	5,009	619.27
15.650	0.39	53.78	55.58	0.90	0.00	4,919	619.26
15.700	0.38	52.75	54.55	0.90	0.00	4,828	619.25
15.750	0.38	51.71	53.51	0.90	0.00	4,733	619.24
15.800	0.37	50.66	52.46	0.90	0.00	4,637	619.23
15.850	0.36	49.59	51.39	0.90	0.00	4,541	619.22
15.900	0.36	48.51	50.31	0.90	0.00	4,445	619.21
15.950	0.35	47.41	49.21	0.90	0.00	4,348	619.20
16.000	0.34	46.31	48.11	0.90	0.00	4,246	619.19
16.050	0.34	45.19	46.99	0.90	0.00	4,145	619.17
16.100	0.33	44.05	45.85	0.90	0.00	4,044	619.16
16.150	0.33	42.91	44.71	0.90	0.00	3,943	619.15
16.200	0.32	41.76	43.56	0.90	0.00	3,837	619.14
16.250	0.32	40.60	42.40	0.90	0.00	3,732	619.13
16.300	0.32	39.43	41.23	0.90	0.00	3,628	619.11
16.350	0.31	38.26	40.06	0.90	0.00	3,524	619.10
16.400	0.31	37.08	38.88	0.90	0.00	3,416	619.09
16.450	0.31	35.90	37.70	0.90	0.00	3,309	619.07
16.500	0.30	34.71	36.51	0.90	0.00	3,203	619.06
16.550	0.30	33.51	35.31	0.90	0.00	3,096	619.05
16.600	0.30	32.31	34.11	0.90	0.00	2,986	619.03
16.650	0.29	31.10	32.90	0.90	0.00	2,878	619.02
16.700	0.29	29.89	31.69	0.90	0.00	2,770	619.00
16.750	0.29	28.67	30.47	0.90	0.00	2,659	618.99

Stormwater Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: IB-1C-10 (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
16.800	0.29	27.44	29.24	0.90	0.00	2,548	618.97
16.850	0.28	26.21	28.01	0.90	0.00	2,439	618.96
16.900	0.28	24.97	26.77	0.90	0.00	2,327	618.94
16.950	0.28	23.73	25.53	0.90	0.00	2,215	618.92
17.000	0.27	22.48	24.28	0.90	0.00	2,103	618.91
17.050	0.27	21.23	23.03	0.90	0.00	1,990	618.89
17.100	0.27	19.97	21.77	0.90	0.00	1,876	618.87
17.150	0.27	18.70	20.50	0.90	0.00	1,764	618.85
17.200	0.26	17.43	19.23	0.90	0.00	1,648	618.83
17.250	0.26	16.15	17.95	0.90	0.00	1,533	618.81
17.300	0.26	14.87	16.67	0.90	0.00	1,418	618.80
17.350	0.25	13.58	15.38	0.90	0.00	1,301	618.77
17.400	0.25	12.28	14.08	0.90	0.00	1,185	618.75
17.450	0.25	10.98	12.78	0.90	0.00	1,067	618.73
17.500	0.24	9.67	11.47	0.90	0.00	950	618.71
17.550	0.24	8.35	10.15	0.90	0.00	831	618.69
17.600	0.24	7.03	8.83	0.90	0.00	712	618.66
17.650	0.23	5.71	7.51	0.90	0.00	593	618.64
17.700	0.23	4.37	6.17	0.90	0.00	473	618.61
17.750	0.23	3.03	4.83	0.90	0.00	352	618.59
17.800	0.23	1.69	3.49	0.90	0.00	232	618.56
17.850	0.22	0.91	2.14	0.61	0.00	136	618.53
17.900	0.22	0.58	1.36	0.39	0.00	85	618.52
17.950	0.22	0.43	1.02	0.29	0.00	64	618.52
18.000	0.21	0.37	0.86	0.25	0.00	54	618.51
18.050	0.21	0.34	0.79	0.23	0.00	50	618.51
18.100	0.21	0.32	0.76	0.22	0.00	47	618.51
18.150	0.21	0.32	0.74	0.21	0.00	46	618.51
18.200	0.20	0.31	0.73	0.21	0.00	45	618.51
18.250	0.20	0.31	0.72	0.21	0.00	45	618.51
18.300	0.20	0.30	0.71	0.20	0.00	45	618.51
18.350	0.20	0.30	0.71	0.20	0.00	44	618.51
18.400	0.20	0.30	0.70	0.20	0.00	44	618.51
18.450	0.20	0.30	0.70	0.20	0.00	44	618.51
18.500	0.20	0.30	0.70	0.20	0.00	44	618.51
18.550	0.20	0.30	0.70	0.20	0.00	43	618.51
18.600	0.20	0.30	0.69	0.20	0.00	43	618.51
18.650	0.20	0.29	0.69	0.20	0.00	43	618.51
18.700	0.20	0.29	0.69	0.20	0.00	43	618.51
18.750	0.19	0.29	0.68	0.20	0.00	43	618.51
18.800	0.19	0.29	0.68	0.19	0.00	42	618.51
18.850	0.19	0.29	0.68	0.19	0.00	42	618.51

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: IB-1C-10 (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
18.900	0.19	0.29	0.67	0.19	0.00	42	618.51
18.950	0.19	0.29	0.67	0.19	0.00	42	618.51
19.000	0.19	0.29	0.67	0.19	0.00	42	618.51
19.050	0.19	0.28	0.66	0.19	0.00	41	618.51
19.100	0.19	0.28	0.66	0.19	0.00	41	618.51
19.150	0.19	0.28	0.66	0.19	0.00	41	618.51
19.200	0.19	0.28	0.66	0.19	0.00	41	618.51
19.250	0.19	0.28	0.65	0.19	0.00	41	618.51
19.300	0.18	0.28	0.65	0.19	0.00	41	618.51
19.350	0.18	0.28	0.65	0.18	0.00	40	618.51
19.400	0.18	0.27	0.64	0.18	0.00	40	618.51
19.450	0.18	0.27	0.64	0.18	0.00	40	618.51
19.500	0.18	0.27	0.64	0.18	0.00	40	618.51
19.550	0.18	0.27	0.63	0.18	0.00	40	618.51
19.600	0.18	0.27	0.63	0.18	0.00	39	618.51
19.650	0.18	0.27	0.63	0.18	0.00	39	618.51
19.700	0.18	0.27	0.62	0.18	0.00	39	618.51
19.750	0.18	0.27	0.62	0.18	0.00	39	618.51
19.800	0.18	0.26	0.62	0.18	0.00	39	618.51
19.850	0.17	0.26	0.61	0.18	0.00	38	618.51
19.900	0.17	0.26	0.61	0.18	0.00	38	618.51
19.950	0.17	0.26	0.61	0.17	0.00	38	618.51
20.000	0.17	0.26	0.60	0.17	0.00	38	618.51
20.050	0.17	0.26	0.60	0.17	0.00	38	618.51
20.100	0.17	0.26	0.60	0.17	0.00	37	618.51
20.150	0.17	0.25	0.60	0.17	0.00	37	618.51
20.200	0.17	0.25	0.59	0.17	0.00	37	618.51
20.250	0.17	0.25	0.59	0.17	0.00	37	618.51
20.300	0.17	0.25	0.59	0.17	0.00	37	618.51
20.350	0.17	0.25	0.59	0.17	0.00	37	618.51
20.400	0.17	0.25	0.58	0.17	0.00	36	618.51
20.450	0.17	0.25	0.58	0.17	0.00	36	618.51
20.500	0.16	0.25	0.58	0.17	0.00	36	618.51
20.550	0.16	0.25	0.58	0.16	0.00	36	618.51
20.600	0.16	0.25	0.57	0.16	0.00	36	618.51
20.650	0.16	0.24	0.57	0.16	0.00	36	618.51
20.700	0.16	0.24	0.57	0.16	0.00	35	618.51
20.750	0.16	0.24	0.57	0.16	0.00	35	618.51
20.800	0.16	0.24	0.56	0.16	0.00	35	618.51
20.850	0.16	0.24	0.56	0.16	0.00	35	618.51
20.900	0.16	0.24	0.56	0.16	0.00	35	618.51
20.950	0.16	0.24	0.56	0.16	0.00	35	618.51

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: IB-1C-10 (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
21.000	0.16	0.24	0.55	0.16	0.00	35	618.51
21.050	0.16	0.24	0.55	0.16	0.00	34	618.51
21.100	0.16	0.24	0.55	0.16	0.00	34	618.51
21.150	0.16	0.23	0.55	0.16	0.00	34	618.51
21.200	0.16	0.23	0.55	0.16	0.00	34	618.51
21.250	0.15	0.23	0.54	0.16	0.00	34	618.51
21.300	0.15	0.23	0.54	0.15	0.00	34	618.51
21.350	0.15	0.23	0.54	0.15	0.00	34	618.51
21.400	0.15	0.23	0.54	0.15	0.00	33	618.51
21.450	0.15	0.23	0.53	0.15	0.00	33	618.51
21.500	0.15	0.23	0.53	0.15	0.00	33	618.51
21.550	0.15	0.23	0.53	0.15	0.00	33	618.51
21.600	0.15	0.22	0.52	0.15	0.00	33	618.51
21.650	0.15	0.22	0.52	0.15	0.00	33	618.51
21.700	0.15	0.22	0.52	0.15	0.00	32	618.51
21.750	0.15	0.22	0.52	0.15	0.00	32	618.51
21.800	0.15	0.22	0.52	0.15	0.00	32	618.51
21.850	0.15	0.22	0.51	0.15	0.00	32	618.51
21.900	0.15	0.22	0.51	0.15	0.00	32	618.51
21.950	0.14	0.22	0.51	0.15	0.00	32	618.51
22.000	0.14	0.22	0.51	0.15	0.00	32	618.51
22.050	0.14	0.22	0.50	0.14	0.00	31	618.51
22.100	0.14	0.21	0.50	0.14	0.00	31	618.51
22.150	0.14	0.21	0.50	0.14	0.00	31	618.51
22.200	0.14	0.21	0.50	0.14	0.00	31	618.51
22.250	0.14	0.21	0.49	0.14	0.00	31	618.51
22.300	0.14	0.21	0.49	0.14	0.00	31	618.51
22.350	0.14	0.21	0.49	0.14	0.00	30	618.51
22.400	0.14	0.21	0.49	0.14	0.00	30	618.51
22.450	0.14	0.21	0.48	0.14	0.00	30	618.51
22.500	0.14	0.21	0.48	0.14	0.00	30	618.51
22.550	0.14	0.20	0.48	0.14	0.00	30	618.51
22.600	0.14	0.20	0.48	0.14	0.00	30	618.51
22.650	0.14	0.20	0.47	0.14	0.00	30	618.51
22.700	0.13	0.20	0.47	0.14	0.00	29	618.51
22.750	0.13	0.20	0.47	0.13	0.00	29	618.51
22.800	0.13	0.20	0.47	0.13	0.00	29	618.51
22.850	0.13	0.20	0.46	0.13	0.00	29	618.51
22.900	0.13	0.20	0.46	0.13	0.00	29	618.51
22.950	0.13	0.20	0.46	0.13	0.00	29	618.51
23.000	0.13	0.20	0.46	0.13	0.00	28	618.51
23.050	0.13	0.19	0.45	0.13	0.00	28	618.51

Stormwater Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: IB-1C-10 (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
23.100	0.13	0.19	0.45	0.13	0.00	28	618.51
23.150	0.13	0.19	0.45	0.13	0.00	28	618.51
23.200	0.13	0.19	0.45	0.13	0.00	28	618.51
23.250	0.13	0.19	0.44	0.13	0.00	28	618.51
23.300	0.13	0.19	0.44	0.13	0.00	28	618.51
23.350	0.12	0.19	0.44	0.13	0.00	27	618.51
23.400	0.12	0.19	0.44	0.13	0.00	27	618.51
23.450	0.12	0.19	0.43	0.12	0.00	27	618.51
23.500	0.12	0.18	0.43	0.12	0.00	27	618.51
23.550	0.12	0.18	0.43	0.12	0.00	27	618.51
23.600	0.12	0.18	0.43	0.12	0.00	27	618.51
23.650	0.12	0.18	0.42	0.12	0.00	26	618.51
23.700	0.12	0.18	0.42	0.12	0.00	26	618.51
23.750	0.12	0.18	0.42	0.12	0.00	26	618.51
23.800	0.12	0.18	0.42	0.12	0.00	26	618.51
23.850	0.12	0.18	0.41	0.12	0.00	26	618.51
23.900	0.12	0.18	0.41	0.12	0.00	26	618.51
23.950	0.12	0.17	0.41	0.12	0.00	25	618.51
24.000	0.12	0.17	0.41	0.12	0.00	25	618.51

Subsection: Pond Routing Calculations (Total Out)	Return Event: 10 years
Label: IB-1C-10 (OUT)	Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
0.000	0.00	0.00	0.00	0.00	0.00	0	618.50
0.050	0.00	0.00	0.00	0.00	0.00	0	618.50
0.100	0.00	0.00	0.00	0.00	0.00	0	618.50
0.150	0.00	0.00	0.00	0.00	0.00	0	618.50
0.200	0.00	0.00	0.00	0.00	0.00	0	618.50
0.250	0.00	0.00	0.00	0.00	0.00	0	618.50
0.300	0.00	0.00	0.00	0.00	0.00	0	618.50
0.350	0.00	0.00	0.00	0.00	0.00	0	618.50
0.400	0.00	0.00	0.00	0.00	0.00	0	618.50
0.450	0.00	0.00	0.00	0.00	0.00	0	618.50
0.500	0.00	0.00	0.00	0.00	0.00	0	618.50
0.550	0.00	0.00	0.00	0.00	0.00	0	618.50
0.600	0.00	0.00	0.00	0.00	0.00	0	618.50
0.650	0.00	0.00	0.00	0.00	0.00	0	618.50
0.700	0.00	0.00	0.00	0.00	0.00	0	618.50
0.750	0.00	0.00	0.00	0.00	0.00	0	618.50
0.800	0.00	0.00	0.00	0.00	0.00	0	618.50
0.850	0.00	0.00	0.00	0.00	0.00	0	618.50
0.900	0.00	0.00	0.00	0.00	0.00	0	618.50
0.950	0.00	0.00	0.00	0.00	0.00	0	618.50
1.000	0.00	0.00	0.00	0.00	0.00	0	618.50
1.050	0.00	0.00	0.00	0.00	0.00	0	618.50
1.100	0.00	0.00	0.00	0.00	0.00	0	618.50
1.150	0.00	0.00	0.00	0.00	0.00	0	618.50
1.200	0.00	0.00	0.00	0.00	0.00	0	618.50
1.250	0.00	0.00	0.00	0.00	0.00	0	618.50
1.300	0.00	0.00	0.00	0.00	0.00	0	618.50
1.350	0.00	0.00	0.00	0.00	0.00	0	618.50
1.400	0.00	0.00	0.00	0.00	0.00	0	618.50
1.450	0.00	0.00	0.00	0.00	0.00	0	618.50
1.500	0.00	0.00	0.00	0.00	0.00	0	618.50
1.550	0.00	0.00	0.00	0.00	0.00	0	618.50
1.600	0.00	0.00	0.00	0.00	0.00	0	618.50
1.650	0.00	0.00	0.00	0.00	0.00	0	618.50
1.700	0.00	0.00	0.00	0.00	0.00	0	618.50
1.750	0.00	0.00	0.00	0.00	0.00	0	618.50
1.800	0.00	0.00	0.00	0.00	0.00	0	618.50
1.850	0.00	0.00	0.00	0.00	0.00	0	618.50
1.900	0.00	0.00	0.00	0.00	0.00	0	618.50
1.950	0.00	0.00	0.00	0.00	0.00	0	618.50
2.000	0.00	0.00	0.00	0.00	0.00	0	618.50
2.050	0.00	0.00	0.00	0.00	0.00	0	618.50

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: IB-1C-10 (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
2.100	0.00	0.00	0.00	0.00	0.00	0	618.50
2.150	0.00	0.00	0.00	0.00	0.00	0	618.50
2.200	0.00	0.00	0.00	0.00	0.00	0	618.50
2.250	0.00	0.00	0.00	0.00	0.00	0	618.50
2.300	0.00	0.00	0.00	0.00	0.00	0	618.50
2.350	0.00	0.00	0.00	0.00	0.00	0	618.50
2.400	0.00	0.00	0.00	0.00	0.00	0	618.50
2.450	0.00	0.00	0.00	0.00	0.00	0	618.50
2.500	0.00	0.00	0.00	0.00	0.00	0	618.50
2.550	0.00	0.00	0.00	0.00	0.00	0	618.50
2.600	0.00	0.00	0.00	0.00	0.00	0	618.50
2.650	0.00	0.00	0.00	0.00	0.00	0	618.50
2.700	0.00	0.00	0.00	0.00	0.00	0	618.50
2.750	0.00	0.00	0.00	0.00	0.00	0	618.50
2.800	0.00	0.00	0.00	0.00	0.00	0	618.50
2.850	0.00	0.00	0.00	0.00	0.00	0	618.50
2.900	0.00	0.00	0.00	0.00	0.00	0	618.50
2.950	0.00	0.00	0.00	0.00	0.00	0	618.50
3.000	0.00	0.00	0.00	0.00	0.00	0	618.50
3.050	0.00	0.00	0.00	0.00	0.00	0	618.50
3.100	0.00	0.00	0.00	0.00	0.00	0	618.50
3.150	0.00	0.00	0.00	0.00	0.00	0	618.50
3.200	0.00	0.00	0.00	0.00	0.00	0	618.50
3.250	0.00	0.00	0.00	0.00	0.00	0	618.50
3.300	0.00	0.00	0.00	0.00	0.00	0	618.50
3.350	0.00	0.00	0.00	0.00	0.00	0	618.50
3.400	0.00	0.00	0.00	0.00	0.00	0	618.50
3.450	0.00	0.00	0.00	0.00	0.00	0	618.50
3.500	0.00	0.00	0.00	0.00	0.00	0	618.50
3.550	0.00	0.00	0.00	0.00	0.00	0	618.50
3.600	0.00	0.00	0.00	0.00	0.00	0	618.50
3.650	0.00	0.00	0.00	0.00	0.00	0	618.50
3.700	0.00	0.00	0.00	0.00	0.00	0	618.50
3.750	0.00	0.00	0.00	0.00	0.00	0	618.50
3.800	0.00	0.00	0.00	0.00	0.00	0	618.50
3.850	0.00	0.00	0.00	0.00	0.00	0	618.50
3.900	0.00	0.00	0.00	0.00	0.00	0	618.50
3.950	0.00	0.00	0.00	0.00	0.00	0	618.50
4.000	0.00	0.00	0.00	0.00	0.00	0	618.50
4.050	0.00	0.00	0.00	0.00	0.00	0	618.50
4.100	0.00	0.00	0.00	0.00	0.00	0	618.50
4.150	0.00	0.00	0.00	0.00	0.00	0	618.50

Subsection: Pond Routing Calculations (Total Out)　　Return Event: 10 years
Label: IB-1C-10 (OUT)　　Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
4.200	0.00	0.00	0.00	0.00	0.00	0	618.50
4.250	0.00	0.00	0.00	0.00	0.00	0	618.50
4.300	0.00	0.00	0.00	0.00	0.00	0	618.50
4.350	0.00	0.00	0.00	0.00	0.00	0	618.50
4.400	0.00	0.00	0.00	0.00	0.00	0	618.50
4.450	0.00	0.00	0.00	0.00	0.00	0	618.50
4.500	0.00	0.00	0.00	0.00	0.00	0	618.50
4.550	0.00	0.00	0.00	0.00	0.00	0	618.50
4.600	0.00	0.00	0.00	0.00	0.00	0	618.50
4.650	0.00	0.00	0.00	0.00	0.00	0	618.50
4.700	0.00	0.00	0.00	0.00	0.00	0	618.50
4.750	0.00	0.00	0.00	0.00	0.00	0	618.50
4.800	0.00	0.00	0.00	0.00	0.00	0	618.50
4.850	0.00	0.00	0.00	0.00	0.00	0	618.50
4.900	0.00	0.00	0.00	0.00	0.00	0	618.50
4.950	0.00	0.00	0.00	0.00	0.00	0	618.50
5.000	0.00	0.00	0.00	0.00	0.00	0	618.50
5.050	0.00	0.00	0.00	0.00	0.00	0	618.50
5.100	0.00	0.00	0.00	0.00	0.00	0	618.50
5.150	0.00	0.00	0.00	0.00	0.00	0	618.50
5.200	0.00	0.00	0.00	0.00	0.00	0	618.50
5.250	0.00	0.00	0.00	0.00	0.00	0	618.50
5.300	0.00	0.00	0.00	0.00	0.00	0	618.50
5.350	0.00	0.00	0.00	0.00	0.00	0	618.50
5.400	0.00	0.00	0.00	0.00	0.00	0	618.50
5.450	0.00	0.00	0.00	0.00	0.00	0	618.50
5.500	0.00	0.00	0.00	0.00	0.00	0	618.50
5.550	0.00	0.00	0.00	0.00	0.00	0	618.50
5.600	0.00	0.00	0.00	0.00	0.00	0	618.50
5.650	0.00	0.00	0.00	0.00	0.00	0	618.50
5.700	0.00	0.00	0.00	0.00	0.00	0	618.50
5.750	0.00	0.00	0.00	0.00	0.00	0	618.50
5.800	0.00	0.00	0.00	0.00	0.00	0	618.50
5.850	0.00	0.00	0.00	0.00	0.00	0	618.50
5.900	0.00	0.00	0.00	0.00	0.00	0	618.50
5.950	0.00	0.00	0.00	0.00	0.00	0	618.50
6.000	0.00	0.00	0.00	0.00	0.00	0	618.50
6.050	0.00	0.00	0.00	0.00	0.00	0	618.50
6.100	0.00	0.00	0.00	0.00	0.00	0	618.50
6.150	0.00	0.00	0.00	0.00	0.00	0	618.50
6.200	0.00	0.00	0.00	0.00	0.00	0	618.50
6.250	0.00	0.00	0.00	0.00	0.00	0	618.50

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: IB-1C-10 (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
6.300	0.00	0.00	0.00	0.00	0.00	0	618.50
6.350	0.00	0.00	0.00	0.00	0.00	0	618.50
6.400	0.00	0.00	0.00	0.00	0.00	0	618.50
6.450	0.00	0.00	0.00	0.00	0.00	0	618.50
6.500	0.00	0.00	0.00	0.00	0.00	0	618.50
6.550	0.00	0.00	0.00	0.00	0.00	0	618.50
6.600	0.00	0.00	0.00	0.00	0.00	0	618.50
6.650	0.00	0.00	0.00	0.00	0.00	0	618.50
6.700	0.00	0.00	0.00	0.00	0.00	0	618.50
6.750	0.00	0.00	0.00	0.00	0.00	0	618.50
6.800	0.00	0.00	0.00	0.00	0.00	0	618.50
6.850	0.00	0.00	0.00	0.00	0.00	0	618.50
6.900	0.00	0.00	0.00	0.00	0.00	0	618.50
6.950	0.00	0.00	0.00	0.00	0.00	0	618.50
7.000	0.00	0.00	0.00	0.00	0.00	0	618.50
7.050	0.00	0.00	0.00	0.00	0.00	0	618.50
7.100	0.00	0.00	0.00	0.00	0.00	0	618.50
7.150	0.00	0.00	0.00	0.00	0.00	0	618.50
7.200	0.00	0.00	0.00	0.00	0.00	0	618.50
7.250	0.00	0.00	0.00	0.00	0.00	0	618.50
7.300	0.00	0.00	0.00	0.00	0.00	0	618.50
7.350	0.00	0.00	0.00	0.00	0.00	0	618.50
7.400	0.00	0.00	0.00	0.00	0.00	0	618.50
7.450	0.00	0.00	0.00	0.00	0.00	0	618.50
7.500	0.00	0.00	0.00	0.00	0.00	0	618.50
7.550	0.00	0.00	0.00	0.00	0.00	0	618.50
7.600	0.00	0.00	0.00	0.00	0.00	0	618.50
7.650	0.00	0.00	0.00	0.00	0.00	0	618.50
7.700	0.00	0.00	0.00	0.00	0.00	0	618.50
7.750	0.00	0.00	0.00	0.00	0.00	0	618.50
7.800	0.00	0.00	0.00	0.00	0.00	0	618.50
7.850	0.00	0.00	0.00	0.00	0.00	0	618.50
7.900	0.00	0.00	0.00	0.00	0.00	0	618.50
7.950	0.00	0.00	0.00	0.00	0.00	0	618.50
8.000	0.00	0.00	0.00	0.00	0.00	0	618.50
8.050	0.00	0.00	0.00	0.00	0.00	0	618.50
8.100	0.00	0.00	0.00	0.00	0.00	0	618.50
8.150	0.00	0.00	0.00	0.00	0.00	0	618.50
8.200	0.00	0.00	0.00	0.00	0.00	0	618.50
8.250	0.00	0.00	0.01	0.00	0.00	0	618.50
8.300	0.01	0.01	0.01	0.00	0.00	1	618.50
8.350	0.01	0.01	0.03	0.01	0.00	2	618.50

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: IB-1C-10 (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
8.400	0.02	0.02	0.04	0.01	0.00	2	618.50
8.450	0.02	0.02	0.06	0.02	0.00	4	618.50
8.500	0.03	0.03	0.08	0.02	0.00	5	618.50
8.550	0.03	0.04	0.10	0.03	0.00	6	618.50
8.600	0.04	0.05	0.12	0.03	0.00	7	618.50
8.650	0.05	0.06	0.14	0.04	0.00	9	618.50
8.700	0.05	0.07	0.16	0.05	0.00	10	618.50
8.750	0.06	0.08	0.19	0.05	0.00	12	618.50
8.800	0.07	0.09	0.21	0.06	0.00	13	618.50
8.850	0.08	0.10	0.24	0.07	0.00	15	618.50
8.900	0.09	0.11	0.26	0.08	0.00	16	618.50
8.950	0.09	0.12	0.29	0.08	0.00	18	618.50
9.000	0.10	0.14	0.32	0.09	0.00	20	618.51
9.050	0.11	0.15	0.35	0.10	0.00	22	618.51
9.100	0.12	0.16	0.38	0.11	0.00	24	618.51
9.150	0.13	0.18	0.41	0.12	0.00	26	618.51
9.200	0.14	0.19	0.45	0.13	0.00	28	618.51
9.250	0.15	0.21	0.48	0.14	0.00	30	618.51
9.300	0.16	0.22	0.52	0.15	0.00	32	618.51
9.350	0.17	0.24	0.55	0.16	0.00	34	618.51
9.400	0.18	0.25	0.59	0.17	0.00	37	618.51
9.450	0.19	0.27	0.63	0.18	0.00	39	618.51
9.500	0.20	0.28	0.67	0.19	0.00	42	618.51
9.550	0.22	0.30	0.71	0.20	0.00	44	618.51
9.600	0.23	0.32	0.75	0.21	0.00	47	618.51
9.650	0.24	0.34	0.79	0.23	0.00	49	618.51
9.700	0.25	0.35	0.83	0.24	0.00	52	618.51
9.750	0.27	0.37	0.87	0.25	0.00	55	618.51
9.800	0.28	0.39	0.92	0.26	0.00	57	618.51
9.850	0.29	0.41	0.96	0.28	0.00	60	618.52
9.900	0.31	0.43	1.01	0.29	0.00	63	618.52
9.950	0.32	0.45	1.06	0.30	0.00	66	618.52
10.000	0.33	0.47	1.11	0.32	0.00	69	618.52
10.050	0.35	0.49	1.16	0.33	0.00	73	618.52
10.100	0.36	0.52	1.21	0.35	0.00	76	618.52
10.150	0.38	0.54	1.26	0.36	0.00	79	618.52
10.200	0.40	0.57	1.32	0.38	0.00	83	618.52
10.250	0.42	0.59	1.39	0.40	0.00	87	618.52
10.300	0.44	0.62	1.46	0.42	0.00	92	618.52
10.350	0.47	0.65	1.53	0.44	0.00	96	618.52
10.400	0.49	0.69	1.61	0.46	0.00	101	618.53
10.450	0.51	0.72	1.69	0.48	0.00	106	618.53

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: IB-1C-10 (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
10.500	0.54	0.76	1.77	0.51	0.00	112	618.53
10.550	0.56	0.79	1.85	0.53	0.00	117	618.53
10.600	0.59	0.83	1.94	0.55	0.00	123	618.53
10.650	0.61	0.87	2.03	0.58	0.00	129	618.53
10.700	0.64	0.91	2.12	0.61	0.00	134	618.53
10.750	0.67	0.95	2.21	0.63	0.00	141	618.54
10.800	0.70	0.99	2.31	0.66	0.00	147	618.54
10.850	0.72	1.03	2.41	0.69	0.00	153	618.54
10.900	0.75	1.07	2.51	0.72	0.00	160	618.54
10.950	0.78	1.11	2.61	0.75	0.00	166	618.54
11.000	0.81	1.16	2.71	0.78	0.00	173	618.54
11.050	0.85	1.21	2.82	0.81	0.00	181	618.54
11.100	0.89	1.26	2.95	0.84	0.00	189	618.55
11.150	0.95	1.33	3.10	0.89	0.00	199	618.55
11.200	1.01	1.49	3.29	0.90	0.00	214	618.55
11.250	1.09	1.79	3.59	0.90	0.00	241	618.56
11.300	1.17	2.25	4.05	0.90	0.00	282	618.57
11.350	1.26	2.88	4.68	0.90	0.00	338	618.58
11.400	1.35	3.68	5.48	0.90	0.00	412	618.60
11.450	1.44	4.67	6.47	0.90	0.00	499	618.62
11.500	1.54	5.85	7.65	0.90	0.00	606	618.64
11.550	1.69	7.28	9.08	0.90	0.00	734	618.67
11.600	1.97	9.14	10.94	0.90	0.00	903	618.70
11.650	2.39	11.71	13.51	0.90	0.00	1,134	618.74
11.700	3.00	15.30	17.10	0.90	0.00	1,457	618.80
11.750	3.73	20.22	22.02	0.90	0.00	1,899	618.87
11.800	4.59	26.74	28.54	0.90	0.00	2,486	618.96
11.850	5.53	35.06	36.86	0.90	0.00	3,234	619.06
11.900	6.60	45.39	47.19	0.90	0.00	4,163	619.18
11.950	8.30	58.49	60.29	0.90	0.00	5,345	619.30
12.000	11.48	76.47	78.27	0.90	0.00	6,962	619.46
12.050	14.92	101.06	102.86	0.90	0.00	9,174	619.64
12.100	17.35	131.53	133.33	0.90	0.00	11,915	619.83
12.150	18.09	159.61	166.98	0.90	2.78	14,696	620.00
12.200	16.36	180.12	194.07	0.90	6.07	16,838	620.12
12.250	13.76	195.47	210.25	0.90	6.49	18,257	620.20
12.300	11.69	205.61	220.93	0.90	6.76	19,194	620.26
12.350	10.19	211.83	227.49	0.90	6.93	19,769	620.29
12.400	8.86	215.06	230.89	0.90	7.02	20,068	620.31
12.450	7.66	215.72	231.58	0.90	7.03	20,128	620.31
12.500	6.46	214.06	229.84	0.90	6.99	19,975	620.30
12.550	5.39	210.33	225.91	0.90	6.89	19,630	620.28

Stormwater Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) — Return Event: 10 years
Label: IB-1C-10 (OUT) — Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
12.600	4.49	204.93	220.21	0.90	6.74	19,131	620.25
12.650	3.81	198.30	213.23	0.90	6.56	18,518	620.22
12.700	3.39	190.96	205.50	0.90	6.37	17,841	620.18
12.750	3.13	183.35	197.48	0.90	6.17	17,137	620.14
12.800	2.94	175.74	189.42	0.90	5.94	16,432	620.10
12.850	2.79	170.12	181.47	0.90	4.77	15,821	620.06
12.900	2.65	165.87	175.55	0.90	3.94	15,364	620.04
12.950	2.52	162.58	171.04	0.90	3.33	15,013	620.02
13.000	2.39	159.99	167.49	0.90	2.85	14,737	620.00
13.050	2.28	157.85	164.66	0.90	2.51	14,510	619.99
13.100	2.18	156.05	162.30	0.90	2.23	14,322	619.98
13.150	2.10	154.54	160.32	0.90	1.99	14,165	619.97
13.200	2.04	153.28	158.68	0.90	1.80	14,035	619.96
13.250	2.00	152.25	157.32	0.90	1.64	13,929	619.95
13.300	1.96	151.39	156.20	0.90	1.51	13,842	619.95
13.350	1.93	150.64	155.28	0.90	1.42	13,765	619.94
13.400	1.89	149.99	154.46	0.90	1.34	13,698	619.94
13.450	1.86	149.41	153.74	0.90	1.27	13,639	619.94
13.500	1.83	148.89	153.10	0.90	1.21	13,586	619.93
13.550	1.80	148.42	152.52	0.90	1.15	13,539	619.93
13.600	1.77	147.99	151.99	0.90	1.10	13,495	619.93
13.650	1.74	147.59	151.49	0.90	1.05	13,455	619.93
13.700	1.70	147.22	151.03	0.90	1.00	13,418	619.92
13.750	1.67	146.87	150.60	0.90	0.96	13,382	619.92
13.800	1.64	146.54	150.18	0.90	0.92	13,349	619.92
13.850	1.61	146.22	149.78	0.90	0.88	13,316	619.92
13.900	1.57	145.90	149.39	0.90	0.85	13,285	619.92
13.950	1.54	145.60	149.02	0.90	0.81	13,255	619.91
14.000	1.51	145.30	148.65	0.90	0.77	13,225	619.91
14.050	1.48	145.01	148.28	0.90	0.74	13,196	619.91
14.100	1.45	144.72	147.93	0.90	0.70	13,167	619.91
14.150	1.42	144.45	147.60	0.90	0.67	13,140	619.91
14.200	1.40	144.20	147.28	0.90	0.64	13,115	619.91
14.250	1.39	143.96	146.99	0.90	0.61	13,092	619.90
14.300	1.37	143.75	146.72	0.90	0.59	13,070	619.90
14.350	1.35	143.54	146.47	0.90	0.56	13,050	619.90
14.400	1.34	143.36	146.23	0.90	0.54	13,031	619.90
14.450	1.32	143.16	146.01	0.90	0.53	13,013	619.90
14.500	1.31	142.96	145.79	0.90	0.51	12,993	619.90
14.550	1.29	142.76	145.56	0.90	0.50	12,974	619.90
14.600	1.27	142.55	145.33	0.90	0.49	12,953	619.90
14.650	1.26	142.34	145.09	0.90	0.47	12,933	619.89

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
14.700	1.24	142.13	144.84	0.90	0.46	12,912	619.89
14.750	1.23	141.91	144.60	0.90	0.44	12,891	619.89
14.800	1.21	141.69	144.35	0.90	0.43	12,869	619.89
14.850	1.20	141.47	144.10	0.90	0.41	12,848	619.89
14.900	1.18	141.24	143.84	0.90	0.40	12,826	619.89
14.950	1.16	141.01	143.58	0.90	0.39	12,804	619.89
15.000	1.15	140.78	143.32	0.90	0.37	12,781	619.88
15.050	1.13	140.55	143.06	0.90	0.36	12,759	619.88
15.100	1.11	140.31	142.79	0.90	0.34	12,737	619.88
15.150	1.10	140.08	142.53	0.90	0.32	12,714	619.88
15.200	1.08	139.84	142.26	0.90	0.31	12,691	619.88
15.250	1.07	139.60	141.99	0.90	0.29	12,668	619.88
15.300	1.05	139.36	141.72	0.90	0.28	12,645	619.88
15.350	1.03	139.12	141.45	0.90	0.26	12,622	619.87
15.400	1.02	138.88	141.17	0.90	0.25	12,599	619.87
15.450	1.00	138.64	140.90	0.90	0.23	12,576	619.87
15.500	0.98	138.39	140.62	0.90	0.22	12,552	619.87
15.550	0.97	138.15	140.35	0.90	0.20	12,529	619.87
15.600	0.95	137.90	140.07	0.90	0.18	12,505	619.87
15.650	0.94	137.65	139.79	0.90	0.17	12,482	619.87
15.700	0.92	137.41	139.51	0.90	0.15	12,458	619.86
15.750	0.90	137.16	139.23	0.90	0.13	12,435	619.86
15.800	0.89	136.91	138.95	0.90	0.12	12,411	619.86
15.850	0.87	136.66	138.66	0.90	0.10	12,387	619.86
15.900	0.85	136.41	138.38	0.90	0.09	12,364	619.86
15.950	0.84	136.16	138.10	0.90	0.07	12,340	619.86
16.000	0.82	135.91	137.81	0.90	0.05	12,316	619.85
16.050	0.80	135.65	137.53	0.90	0.04	12,292	619.85
16.100	0.79	135.41	137.25	0.90	0.02	12,269	619.85
16.150	0.78	135.16	136.97	0.90	0.01	12,246	619.85
16.200	0.77	134.91	136.71	0.90	0.00	12,223	619.85
16.250	0.76	134.63	136.43	0.90	0.00	12,197	619.85
16.300	0.75	134.34	136.14	0.90	0.00	12,171	619.85
16.350	0.74	134.04	135.84	0.90	0.00	12,143	619.84
16.400	0.74	133.72	135.52	0.90	0.00	12,114	619.84
16.450	0.73	133.38	135.18	0.90	0.00	12,083	619.84
16.500	0.72	133.03	134.83	0.90	0.00	12,051	619.84
16.550	0.71	132.67	134.47	0.90	0.00	12,018	619.84
16.600	0.71	132.29	134.09	0.90	0.00	11,984	619.83
16.650	0.70	131.90	133.70	0.90	0.00	11,949	619.83
16.700	0.69	131.49	133.29	0.90	0.00	11,912	619.83
16.750	0.69	131.07	132.87	0.90	0.00	11,874	619.83

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: IB-1C-10 (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
16.800	0.68	130.63	132.43	0.90	0.00	11,835	619.82
16.850	0.67	130.18	131.98	0.90	0.00	11,794	619.82
16.900	0.66	129.72	131.52	0.90	0.00	11,752	619.82
16.950	0.66	129.24	131.04	0.90	0.00	11,710	619.82
17.000	0.65	128.75	130.55	0.90	0.00	11,665	619.81
17.050	0.64	128.24	130.04	0.90	0.00	11,620	619.81
17.100	0.63	127.71	129.51	0.90	0.00	11,574	619.81
17.150	0.63	127.18	128.98	0.90	0.00	11,526	619.80
17.200	0.62	126.63	128.43	0.90	0.00	11,477	619.80
17.250	0.61	126.06	127.86	0.90	0.00	11,425	619.80
17.300	0.61	125.48	127.28	0.90	0.00	11,372	619.79
17.350	0.60	124.88	126.68	0.90	0.00	11,318	619.79
17.400	0.59	124.27	126.07	0.90	0.00	11,263	619.79
17.450	0.58	123.65	125.45	0.90	0.00	11,206	619.78
17.500	0.58	123.01	124.81	0.90	0.00	11,148	619.78
17.550	0.57	122.35	124.15	0.90	0.00	11,089	619.77
17.600	0.56	121.68	123.48	0.90	0.00	11,029	619.77
17.650	0.55	121.00	122.80	0.90	0.00	10,968	619.77
17.700	0.55	120.30	122.10	0.90	0.00	10,905	619.76
17.750	0.54	119.59	121.39	0.90	0.00	10,842	619.76
17.800	0.53	118.86	120.66	0.90	0.00	10,778	619.75
17.850	0.52	118.11	119.91	0.90	0.00	10,711	619.75
17.900	0.52	117.36	119.16	0.90	0.00	10,641	619.74
17.950	0.51	116.58	118.38	0.90	0.00	10,571	619.74
18.000	0.50	115.80	117.60	0.90	0.00	10,500	619.73
18.050	0.50	115.00	116.80	0.90	0.00	10,427	619.73
18.100	0.49	114.18	115.98	0.90	0.00	10,354	619.72
18.150	0.48	113.35	115.15	0.90	0.00	10,280	619.72
18.200	0.48	112.52	114.32	0.90	0.00	10,205	619.71
18.250	0.48	111.68	113.48	0.90	0.00	10,130	619.71
18.300	0.48	110.83	112.63	0.90	0.00	10,055	619.70
18.350	0.47	109.98	111.78	0.90	0.00	9,978	619.70
18.400	0.47	109.12	110.92	0.90	0.00	9,900	619.69
18.450	0.47	108.27	110.07	0.90	0.00	9,822	619.68
18.500	0.47	107.40	109.20	0.90	0.00	9,744	619.68
18.550	0.46	106.53	108.33	0.90	0.00	9,666	619.67
18.600	0.46	105.66	107.46	0.90	0.00	9,587	619.67
18.650	0.46	104.78	106.58	0.90	0.00	9,509	619.66
18.700	0.46	103.90	105.70	0.90	0.00	9,431	619.66
18.750	0.46	103.02	104.82	0.90	0.00	9,352	619.65
18.800	0.45	102.13	103.93	0.90	0.00	9,271	619.64
18.850	0.45	101.23	103.03	0.90	0.00	9,189	619.64

Stormwater Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) | Return Event: 10 years
Label: IB-1C-10 (OUT) | Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
18.900	0.45	100.33	102.13	0.90	0.00	9,108	619.63
18.950	0.45	99.43	101.23	0.90	0.00	9,026	619.62
19.000	0.45	98.52	100.32	0.90	0.00	8,945	619.62
19.050	0.44	97.61	99.41	0.90	0.00	8,864	619.61
19.100	0.44	96.70	98.50	0.90	0.00	8,782	619.61
19.150	0.44	95.77	97.57	0.90	0.00	8,701	619.60
19.200	0.44	94.85	96.65	0.90	0.00	8,616	619.59
19.250	0.43	93.92	95.72	0.90	0.00	8,531	619.59
19.300	0.43	92.99	94.79	0.90	0.00	8,447	619.58
19.350	0.43	92.05	93.85	0.90	0.00	8,362	619.57
19.400	0.43	91.11	92.91	0.90	0.00	8,278	619.57
19.450	0.43	90.16	91.96	0.90	0.00	8,193	619.56
19.500	0.42	89.21	91.01	0.90	0.00	8,109	619.55
19.550	0.42	88.25	90.05	0.90	0.00	8,023	619.55
19.600	0.42	87.29	89.09	0.90	0.00	7,935	619.54
19.650	0.42	86.33	88.13	0.90	0.00	7,848	619.53
19.700	0.41	85.36	87.16	0.90	0.00	7,760	619.52
19.750	0.41	84.39	86.19	0.90	0.00	7,673	619.52
19.800	0.41	83.41	85.21	0.90	0.00	7,586	619.51
19.850	0.41	82.43	84.23	0.90	0.00	7,499	619.50
19.900	0.41	81.44	83.24	0.90	0.00	7,410	619.49
19.950	0.40	80.45	82.25	0.90	0.00	7,319	619.49
20.000	0.40	79.46	81.26	0.90	0.00	7,229	619.48
20.050	0.40	78.46	80.26	0.90	0.00	7,139	619.47
20.100	0.40	77.45	79.25	0.90	0.00	7,050	619.46
20.150	0.39	76.45	78.25	0.90	0.00	6,960	619.46
20.200	0.39	75.43	77.23	0.90	0.00	6,870	619.45
20.250	0.39	74.42	76.22	0.90	0.00	6,777	619.44
20.300	0.39	73.40	75.20	0.90	0.00	6,685	619.43
20.350	0.39	72.38	74.18	0.90	0.00	6,593	619.42
20.400	0.39	71.36	73.16	0.90	0.00	6,501	619.41
20.450	0.38	70.33	72.13	0.90	0.00	6,410	619.41
20.500	0.38	69.30	71.10	0.90	0.00	6,317	619.40
20.550	0.38	68.26	70.06	0.90	0.00	6,223	619.39
20.600	0.38	67.23	69.03	0.90	0.00	6,129	619.38
20.650	0.38	66.19	67.99	0.90	0.00	6,035	619.37
20.700	0.38	65.14	66.94	0.90	0.00	5,942	619.36
20.750	0.37	64.09	65.89	0.90	0.00	5,849	619.35
20.800	0.37	63.04	64.84	0.90	0.00	5,753	619.34
20.850	0.37	61.98	63.78	0.90	0.00	5,657	619.33
20.900	0.37	60.93	62.73	0.90	0.00	5,561	619.32
20.950	0.37	59.87	61.67	0.90	0.00	5,466	619.32

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: IB-1C-10 (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
21.000	0.37	58.80	60.60	0.90	0.00	5,372	619.31
21.050	0.37	57.73	59.53	0.90	0.00	5,276	619.30
21.100	0.36	56.66	58.46	0.90	0.00	5,178	619.29
21.150	0.36	55.59	57.39	0.90	0.00	5,081	619.28
21.200	0.36	54.51	56.31	0.90	0.00	4,985	619.27
21.250	0.36	53.43	55.23	0.90	0.00	4,889	619.26
21.300	0.36	52.35	54.15	0.90	0.00	4,791	619.25
21.350	0.36	51.26	53.06	0.90	0.00	4,692	619.23
21.400	0.35	50.17	51.97	0.90	0.00	4,593	619.22
21.450	0.35	49.08	50.88	0.90	0.00	4,496	619.21
21.500	0.35	47.98	49.78	0.90	0.00	4,398	619.20
21.550	0.35	46.88	48.68	0.90	0.00	4,298	619.19
21.600	0.35	45.77	47.57	0.90	0.00	4,198	619.18
21.650	0.35	44.66	46.46	0.90	0.00	4,098	619.17
21.700	0.34	43.55	45.35	0.90	0.00	3,999	619.16
21.750	0.34	42.44	44.24	0.90	0.00	3,899	619.15
21.800	0.34	41.32	43.12	0.90	0.00	3,797	619.13
21.850	0.34	40.20	42.00	0.90	0.00	3,696	619.12
21.900	0.34	39.08	40.88	0.90	0.00	3,596	619.11
21.950	0.34	37.95	39.75	0.90	0.00	3,496	619.10
22.000	0.33	36.82	38.62	0.90	0.00	3,392	619.08
22.050	0.33	35.68	37.48	0.90	0.00	3,290	619.07
22.100	0.33	34.55	36.35	0.90	0.00	3,189	619.06
22.150	0.33	33.40	35.20	0.90	0.00	3,086	619.04
22.200	0.33	32.26	34.06	0.90	0.00	2,982	619.03
22.250	0.33	31.11	32.91	0.90	0.00	2,879	619.02
22.300	0.32	29.96	31.76	0.90	0.00	2,777	619.00
22.350	0.32	28.81	30.61	0.90	0.00	2,672	618.99
22.400	0.32	27.65	29.45	0.90	0.00	2,567	618.97
22.450	0.32	26.49	28.29	0.90	0.00	2,463	618.96
22.500	0.32	25.32	27.12	0.90	0.00	2,359	618.94
22.550	0.31	24.15	25.95	0.90	0.00	2,252	618.93
22.600	0.31	22.98	24.78	0.90	0.00	2,148	618.91
22.650	0.31	21.81	23.61	0.90	0.00	2,043	618.90
22.700	0.31	20.63	22.43	0.90	0.00	1,936	618.88
22.750	0.31	19.45	21.25	0.90	0.00	1,830	618.86
22.800	0.31	18.27	20.07	0.90	0.00	1,724	618.85
22.850	0.31	17.08	18.88	0.90	0.00	1,616	618.83
22.900	0.30	15.89	17.69	0.90	0.00	1,509	618.81
22.950	0.30	14.69	16.49	0.90	0.00	1,402	618.79
23.000	0.30	13.49	15.29	0.90	0.00	1,293	618.77
23.050	0.30	12.29	14.09	0.90	0.00	1,187	618.75

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: IB-1C-10 (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
23.100	0.30	11.09	12.89	0.90	0.00	1,077	618.73
23.150	0.29	9.88	11.68	0.90	0.00	968	618.71
23.200	0.29	8.67	10.47	0.90	0.00	860	618.69
23.250	0.29	7.45	9.25	0.90	0.00	750	618.67
23.300	0.29	6.23	8.03	0.90	0.00	642	618.65
23.350	0.29	5.01	6.81	0.90	0.00	530	618.62
23.400	0.29	3.78	5.58	0.90	0.00	421	618.60
23.450	0.29	2.56	4.36	0.90	0.00	309	618.58
23.500	0.28	1.34	3.13	0.90	0.00	201	618.55
23.550	0.28	0.81	1.90	0.54	0.00	120	618.53
23.600	0.28	0.59	1.37	0.39	0.00	86	618.52
23.650	0.28	0.49	1.14	0.33	0.00	72	618.52
23.700	0.28	0.45	1.04	0.30	0.00	65	618.52
23.750	0.27	0.43	1.00	0.29	0.00	62	618.52
23.800	0.27	0.42	0.97	0.28	0.00	61	618.52
23.850	0.27	0.41	0.96	0.28	0.00	60	618.52
23.900	0.27	0.41	0.95	0.27	0.00	60	618.52
23.950	0.27	0.40	0.94	0.27	0.00	59	618.52
24.000	0.27	0.40	0.94	0.27	0.00	59	618.51

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
0.000	0.00	0.00	0.00	0.00	0.00	0	618.50
0.050	0.00	0.00	0.00	0.00	0.00	0	618.50
0.100	0.00	0.00	0.00	0.00	0.00	0	618.50
0.150	0.00	0.00	0.00	0.00	0.00	0	618.50
0.200	0.00	0.00	0.00	0.00	0.00	0	618.50
0.250	0.00	0.00	0.00	0.00	0.00	0	618.50
0.300	0.00	0.00	0.00	0.00	0.00	0	618.50
0.350	0.00	0.00	0.00	0.00	0.00	0	618.50
0.400	0.00	0.00	0.00	0.00	0.00	0	618.50
0.450	0.00	0.00	0.00	0.00	0.00	0	618.50
0.500	0.00	0.00	0.00	0.00	0.00	0	618.50
0.550	0.00	0.00	0.00	0.00	0.00	0	618.50
0.600	0.00	0.00	0.00	0.00	0.00	0	618.50
0.650	0.00	0.00	0.00	0.00	0.00	0	618.50
0.700	0.00	0.00	0.00	0.00	0.00	0	618.50
0.750	0.00	0.00	0.00	0.00	0.00	0	618.50
0.800	0.00	0.00	0.00	0.00	0.00	0	618.50
0.850	0.00	0.00	0.00	0.00	0.00	0	618.50
0.900	0.00	0.00	0.00	0.00	0.00	0	618.50
0.950	0.00	0.00	0.00	0.00	0.00	0	618.50
1.000	0.00	0.00	0.00	0.00	0.00	0	618.50
1.050	0.00	0.00	0.00	0.00	0.00	0	618.50
1.100	0.00	0.00	0.00	0.00	0.00	0	618.50
1.150	0.00	0.00	0.00	0.00	0.00	0	618.50
1.200	0.00	0.00	0.00	0.00	0.00	0	618.50
1.250	0.00	0.00	0.00	0.00	0.00	0	618.50
1.300	0.00	0.00	0.00	0.00	0.00	0	618.50
1.350	0.00	0.00	0.00	0.00	0.00	0	618.50
1.400	0.00	0.00	0.00	0.00	0.00	0	618.50
1.450	0.00	0.00	0.00	0.00	0.00	0	618.50
1.500	0.00	0.00	0.00	0.00	0.00	0	618.50
1.550	0.00	0.00	0.00	0.00	0.00	0	618.50
1.600	0.00	0.00	0.00	0.00	0.00	0	618.50
1.650	0.00	0.00	0.00	0.00	0.00	0	618.50
1.700	0.00	0.00	0.00	0.00	0.00	0	618.50
1.750	0.00	0.00	0.00	0.00	0.00	0	618.50
1.800	0.00	0.00	0.00	0.00	0.00	0	618.50
1.850	0.00	0.00	0.00	0.00	0.00	0	618.50
1.900	0.00	0.00	0.00	0.00	0.00	0	618.50
1.950	0.00	0.00	0.00	0.00	0.00	0	618.50
2.000	0.00	0.00	0.00	0.00	0.00	0	618.50
2.050	0.00	0.00	0.00	0.00	0.00	0	618.50

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: IB-1C-10 (OUT) Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
2.100	0.00	0.00	0.00	0.00	0.00	0	618.50
2.150	0.00	0.00	0.00	0.00	0.00	0	618.50
2.200	0.00	0.00	0.00	0.00	0.00	0	618.50
2.250	0.00	0.00	0.00	0.00	0.00	0	618.50
2.300	0.00	0.00	0.00	0.00	0.00	0	618.50
2.350	0.00	0.00	0.00	0.00	0.00	0	618.50
2.400	0.00	0.00	0.00	0.00	0.00	0	618.50
2.450	0.00	0.00	0.00	0.00	0.00	0	618.50
2.500	0.00	0.00	0.00	0.00	0.00	0	618.50
2.550	0.00	0.00	0.00	0.00	0.00	0	618.50
2.600	0.00	0.00	0.00	0.00	0.00	0	618.50
2.650	0.00	0.00	0.00	0.00	0.00	0	618.50
2.700	0.00	0.00	0.00	0.00	0.00	0	618.50
2.750	0.00	0.00	0.00	0.00	0.00	0	618.50
2.800	0.00	0.00	0.00	0.00	0.00	0	618.50
2.850	0.00	0.00	0.00	0.00	0.00	0	618.50
2.900	0.00	0.00	0.00	0.00	0.00	0	618.50
2.950	0.00	0.00	0.00	0.00	0.00	0	618.50
3.000	0.00	0.00	0.00	0.00	0.00	0	618.50
3.050	0.00	0.00	0.00	0.00	0.00	0	618.50
3.100	0.00	0.00	0.00	0.00	0.00	0	618.50
3.150	0.00	0.00	0.00	0.00	0.00	0	618.50
3.200	0.00	0.00	0.00	0.00	0.00	0	618.50
3.250	0.00	0.00	0.00	0.00	0.00	0	618.50
3.300	0.00	0.00	0.00	0.00	0.00	0	618.50
3.350	0.00	0.00	0.00	0.00	0.00	0	618.50
3.400	0.00	0.00	0.00	0.00	0.00	0	618.50
3.450	0.00	0.00	0.00	0.00	0.00	0	618.50
3.500	0.00	0.00	0.00	0.00	0.00	0	618.50
3.550	0.00	0.00	0.00	0.00	0.00	0	618.50
3.600	0.00	0.00	0.00	0.00	0.00	0	618.50
3.650	0.00	0.00	0.00	0.00	0.00	0	618.50
3.700	0.00	0.00	0.00	0.00	0.00	0	618.50
3.750	0.00	0.00	0.00	0.00	0.00	0	618.50
3.800	0.00	0.00	0.00	0.00	0.00	0	618.50
3.850	0.00	0.00	0.00	0.00	0.00	0	618.50
3.900	0.00	0.00	0.00	0.00	0.00	0	618.50
3.950	0.00	0.00	0.00	0.00	0.00	0	618.50
4.000	0.00	0.00	0.00	0.00	0.00	0	618.50
4.050	0.00	0.00	0.00	0.00	0.00	0	618.50
4.100	0.00	0.00	0.00	0.00	0.00	0	618.50
4.150	0.00	0.00	0.00	0.00	0.00	0	618.50

Stormwater Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: IB-1C-10 (OUT) Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
4.200	0.00	0.00	0.00	0.00	0.00	0	618.50
4.250	0.00	0.00	0.00	0.00	0.00	0	618.50
4.300	0.00	0.00	0.00	0.00	0.00	0	618.50
4.350	0.00	0.00	0.00	0.00	0.00	0	618.50
4.400	0.00	0.00	0.00	0.00	0.00	0	618.50
4.450	0.00	0.00	0.00	0.00	0.00	0	618.50
4.500	0.00	0.00	0.00	0.00	0.00	0	618.50
4.550	0.00	0.00	0.00	0.00	0.00	0	618.50
4.600	0.00	0.00	0.00	0.00	0.00	0	618.50
4.650	0.00	0.00	0.00	0.00	0.00	0	618.50
4.700	0.00	0.00	0.00	0.00	0.00	0	618.50
4.750	0.00	0.00	0.00	0.00	0.00	0	618.50
4.800	0.00	0.00	0.00	0.00	0.00	0	618.50
4.850	0.00	0.00	0.00	0.00	0.00	0	618.50
4.900	0.00	0.00	0.00	0.00	0.00	0	618.50
4.950	0.00	0.00	0.00	0.00	0.00	0	618.50
5.000	0.00	0.00	0.00	0.00	0.00	0	618.50
5.050	0.00	0.00	0.00	0.00	0.00	0	618.50
5.100	0.00	0.00	0.00	0.00	0.00	0	618.50
5.150	0.00	0.00	0.00	0.00	0.00	0	618.50
5.200	0.00	0.00	0.00	0.00	0.00	0	618.50
5.250	0.00	0.00	0.00	0.00	0.00	0	618.50
5.300	0.00	0.00	0.00	0.00	0.00	0	618.50
5.350	0.00	0.00	0.00	0.00	0.00	0	618.50
5.400	0.00	0.00	0.00	0.00	0.00	0	618.50
5.450	0.00	0.00	0.00	0.00	0.00	0	618.50
5.500	0.00	0.00	0.00	0.00	0.00	0	618.50
5.550	0.00	0.00	0.00	0.00	0.00	0	618.50
5.600	0.00	0.00	0.00	0.00	0.00	0	618.50
5.650	0.00	0.00	0.00	0.00	0.00	0	618.50
5.700	0.00	0.00	0.00	0.00	0.00	0	618.50
5.750	0.00	0.00	0.00	0.00	0.00	0	618.50
5.800	0.00	0.00	0.00	0.00	0.00	0	618.50
5.850	0.00	0.00	0.00	0.00	0.00	0	618.50
5.900	0.00	0.00	0.00	0.00	0.00	0	618.50
5.950	0.00	0.00	0.00	0.00	0.00	0	618.50
6.000	0.00	0.00	0.00	0.00	0.00	0	618.50
6.050	0.00	0.00	0.00	0.00	0.00	0	618.50
6.100	0.00	0.00	0.00	0.00	0.00	0	618.50
6.150	0.00	0.00	0.00	0.00	0.00	0	618.50
6.200	0.00	0.00	0.00	0.00	0.00	0	618.50
6.250	0.00	0.00	0.00	0.00	0.00	0	618.50

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
6.300	0.00	0.00	0.00	0.00	0.00	0	618.50
6.350	0.00	0.00	0.00	0.00	0.00	0	618.50
6.400	0.00	0.00	0.00	0.00	0.00	0	618.50
6.450	0.00	0.00	0.00	0.00	0.00	0	618.50
6.500	0.00	0.00	0.00	0.00	0.00	0	618.50
6.550	0.00	0.00	0.00	0.00	0.00	0	618.50
6.600	0.00	0.00	0.00	0.00	0.00	0	618.50
6.650	0.00	0.00	0.00	0.00	0.00	0	618.50
6.700	0.00	0.00	0.00	0.00	0.00	0	618.50
6.750	0.00	0.00	0.00	0.00	0.00	0	618.50
6.800	0.00	0.00	0.00	0.00	0.00	0	618.50
6.850	0.00	0.00	0.00	0.00	0.00	0	618.50
6.900	0.00	0.00	0.00	0.00	0.00	0	618.50
6.950	0.00	0.00	0.00	0.00	0.00	0	618.50
7.000	0.00	0.00	0.00	0.00	0.00	0	618.50
7.050	0.00	0.00	0.00	0.00	0.00	0	618.50
7.100	0.00	0.00	0.00	0.00	0.00	0	618.50
7.150	0.00	0.00	0.00	0.00	0.00	0	618.50
7.200	0.00	0.00	0.00	0.00	0.00	0	618.50
7.250	0.00	0.00	0.00	0.00	0.00	0	618.50
7.300	0.01	0.01	0.01	0.00	0.00	1	618.50
7.350	0.01	0.01	0.02	0.01	0.00	1	618.50
7.400	0.02	0.02	0.04	0.01	0.00	2	618.50
7.450	0.02	0.02	0.05	0.01	0.00	3	618.50
7.500	0.03	0.03	0.07	0.02	0.00	4	618.50
7.550	0.03	0.04	0.09	0.02	0.00	5	618.50
7.600	0.04	0.04	0.10	0.03	0.00	6	618.50
7.650	0.04	0.05	0.12	0.04	0.00	8	618.50
7.700	0.05	0.06	0.14	0.04	0.00	9	618.50
7.750	0.05	0.07	0.16	0.05	0.00	10	618.50
7.800	0.06	0.08	0.18	0.05	0.00	11	618.50
7.850	0.07	0.09	0.20	0.06	0.00	13	618.50
7.900	0.07	0.10	0.22	0.06	0.00	14	618.50
7.950	0.08	0.10	0.25	0.07	0.00	15	618.50
8.000	0.08	0.11	0.27	0.08	0.00	17	618.50
8.050	0.09	0.12	0.29	0.08	0.00	18	618.50
8.100	0.10	0.13	0.31	0.09	0.00	19	618.51
8.150	0.11	0.14	0.34	0.10	0.00	21	618.51
8.200	0.11	0.16	0.36	0.10	0.00	23	618.51
8.250	0.12	0.17	0.39	0.11	0.00	24	618.51
8.300	0.13	0.18	0.42	0.12	0.00	26	618.51
8.350	0.14	0.19	0.45	0.13	0.00	28	618.51

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
8.400	0.15	0.21	0.48	0.14	0.00	30	618.51
8.450	0.16	0.22	0.52	0.15	0.00	32	618.51
8.500	0.17	0.24	0.55	0.16	0.00	35	618.51
8.550	0.18	0.25	0.59	0.17	0.00	37	618.51
8.600	0.19	0.27	0.63	0.18	0.00	39	618.51
8.650	0.20	0.28	0.67	0.19	0.00	42	618.51
8.700	0.22	0.30	0.71	0.20	0.00	44	618.51
8.750	0.23	0.32	0.75	0.21	0.00	47	618.51
8.800	0.24	0.34	0.79	0.23	0.00	49	618.51
8.850	0.25	0.36	0.83	0.24	0.00	52	618.51
8.900	0.27	0.38	0.88	0.25	0.00	55	618.51
8.950	0.28	0.40	0.93	0.27	0.00	58	618.51
9.000	0.30	0.42	0.97	0.28	0.00	61	618.52
9.050	0.31	0.44	1.02	0.29	0.00	64	618.52
9.100	0.33	0.46	1.07	0.31	0.00	67	618.52
9.150	0.34	0.48	1.12	0.32	0.00	71	618.52
9.200	0.36	0.50	1.18	0.34	0.00	74	618.52
9.250	0.37	0.53	1.23	0.35	0.00	77	618.52
9.300	0.39	0.55	1.28	0.37	0.00	81	618.52
9.350	0.40	0.57	1.34	0.38	0.00	84	618.52
9.400	0.42	0.60	1.40	0.40	0.00	88	618.52
9.450	0.44	0.62	1.46	0.42	0.00	92	618.52
9.500	0.46	0.65	1.52	0.43	0.00	96	618.52
9.550	0.47	0.67	1.58	0.45	0.00	100	618.53
9.600	0.49	0.70	1.64	0.47	0.00	104	618.53
9.650	0.51	0.73	1.70	0.49	0.00	108	618.53
9.700	0.53	0.76	1.77	0.51	0.00	112	618.53
9.750	0.55	0.78	1.83	0.53	0.00	116	618.53
9.800	0.57	0.81	1.90	0.54	0.00	120	618.53
9.850	0.59	0.84	1.97	0.56	0.00	125	618.53
9.900	0.61	0.87	2.04	0.58	0.00	129	618.53
9.950	0.63	0.90	2.11	0.60	0.00	134	618.53
10.000	0.65	0.93	2.18	0.62	0.00	139	618.53
10.050	0.67	0.96	2.25	0.65	0.00	143	618.54
10.100	0.70	1.00	2.33	0.67	0.00	148	618.54
10.150	0.72	1.03	2.41	0.69	0.00	154	618.54
10.200	0.75	1.07	2.51	0.72	0.00	160	618.54
10.250	0.78	1.11	2.60	0.75	0.00	166	618.54
10.300	0.82	1.16	2.71	0.78	0.00	173	618.54
10.350	0.85	1.21	2.82	0.81	0.00	181	618.54
10.400	0.88	1.26	2.94	0.84	0.00	188	618.55
10.450	0.92	1.31	3.06	0.88	0.00	196	618.55

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: IB-1C-10 (OUT) Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
10.500	0.96	1.38	3.18	0.90	0.00	205	618.55
10.550	0.99	1.53	3.33	0.90	0.00	218	618.55
10.600	1.03	1.75	3.55	0.90	0.00	238	618.56
10.650	1.07	2.05	3.85	0.90	0.00	264	618.56
10.700	1.11	2.43	4.23	0.90	0.00	298	618.57
10.750	1.15	2.89	4.69	0.90	0.00	339	618.58
10.800	1.19	3.43	5.23	0.90	0.00	389	618.59
10.850	1.23	4.05	5.85	0.90	0.00	445	618.61
10.900	1.27	4.76	6.56	0.90	0.00	507	618.62
10.950	1.32	5.55	7.35	0.90	0.00	579	618.63
11.000	1.36	6.43	8.23	0.90	0.00	659	618.65
11.050	1.41	7.40	9.20	0.90	0.00	745	618.67
11.100	1.48	8.50	10.30	0.90	0.00	844	618.69
11.150	1.56	9.73	11.53	0.90	0.00	956	618.71
11.200	1.66	11.15	12.95	0.90	0.00	1,083	618.74
11.250	1.77	12.78	14.58	0.90	0.00	1,230	618.76
11.300	1.90	14.65	16.45	0.90	0.00	1,398	618.79
11.350	2.02	16.76	18.56	0.90	0.00	1,588	618.82
11.400	2.16	19.14	20.94	0.90	0.00	1,803	618.86
11.450	2.29	21.80	23.60	0.90	0.00	2,042	618.90
11.500	2.44	24.73	26.53	0.90	0.00	2,305	618.94
11.550	2.66	28.03	29.83	0.90	0.00	2,601	618.98
11.600	3.09	31.98	33.78	0.90	0.00	2,957	619.03
11.650	3.72	36.99	38.79	0.90	0.00	3,408	619.09
11.700	4.63	43.54	45.34	0.90	0.00	3,998	619.16
11.750	5.71	52.08	53.88	0.90	0.00	4,767	619.24
11.800	6.97	62.96	64.76	0.90	0.00	5,746	619.34
11.850	8.32	76.45	78.25	0.90	0.00	6,960	619.46
11.900	9.84	92.81	94.61	0.90	0.00	8,431	619.58
11.950	12.24	113.09	114.89	0.90	0.00	10,257	619.72
12.000	16.72	139.66	142.05	0.90	0.30	12,673	619.88
12.050	21.49	167.56	177.86	0.90	4.25	15,544	620.05
12.100	24.73	198.82	213.77	0.90	6.58	18,566	620.22
12.150	25.55	232.38	249.10	0.90	7.46	21,666	620.39
12.200	22.95	262.72	280.89	0.90	8.19	24,462	620.55
12.250	19.19	285.82	304.86	0.90	8.62	26,580	620.66
12.300	16.23	301.65	321.24	0.90	8.90	28,030	620.74
12.350	14.08	312.01	331.95	0.90	9.07	28,978	620.79
12.400	12.20	318.15	338.30	0.90	9.17	29,540	620.82
12.450	10.51	320.64	340.87	0.90	9.21	29,768	620.83
12.500	8.85	319.80	340.00	0.90	9.20	29,691	620.83
12.550	7.37	315.95	336.02	0.90	9.14	29,339	620.81

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: IB-1C-10 (OUT) Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
12.600	6.12	309.59	329.45	0.90	9.03	28,756	620.78
12.650	5.20	301.33	320.91	0.90	8.89	28,000	620.74
12.700	4.62	291.89	311.14	0.90	8.73	27,136	620.69
12.750	4.26	281.87	300.76	0.90	8.55	26,218	620.64
12.800	3.99	271.59	290.12	0.90	8.36	25,276	620.59
12.850	3.79	261.26	279.37	0.90	8.15	24,328	620.54
12.900	3.59	251.02	268.64	0.90	7.91	23,384	620.49
12.950	3.42	240.90	258.03	0.90	7.67	22,451	620.44
13.000	3.24	230.92	247.56	0.90	7.42	21,531	620.39
13.050	3.09	221.11	237.25	0.90	7.17	20,626	620.34
13.100	2.95	211.50	227.15	0.90	6.92	19,739	620.29
13.150	2.84	202.16	217.29	0.90	6.67	18,875	620.24
13.200	2.76	193.11	207.76	0.90	6.43	18,039	620.19
13.250	2.70	184.38	198.57	0.90	6.20	17,232	620.15
13.300	2.65	176.01	189.73	0.90	5.96	16,458	620.10
13.350	2.60	169.97	181.27	0.90	4.75	15,805	620.06
13.400	2.56	165.57	175.14	0.90	3.88	15,331	620.04
13.450	2.51	162.29	170.64	0.90	3.28	14,982	620.02
13.500	2.47	159.83	167.28	0.90	2.82	14,720	620.00
13.550	2.43	157.90	164.73	0.90	2.52	14,516	619.99
13.600	2.38	156.36	162.71	0.90	2.28	14,354	619.98
13.650	2.34	155.11	161.08	0.90	2.08	14,225	619.97
13.700	2.29	154.10	159.75	0.90	1.92	14,120	619.97
13.750	2.25	153.26	158.65	0.90	1.79	14,033	619.96
13.800	2.21	152.55	157.72	0.90	1.68	13,960	619.96
13.850	2.16	151.94	156.92	0.90	1.59	13,898	619.95
13.900	2.12	151.40	156.22	0.90	1.51	13,843	619.95
13.950	2.07	150.90	155.59	0.90	1.45	13,791	619.95
14.000	2.03	150.42	155.00	0.90	1.39	13,742	619.94
14.050	1.99	149.96	154.43	0.90	1.33	13,696	619.94
14.100	1.95	149.53	153.90	0.90	1.28	13,652	619.94
14.150	1.91	149.12	153.39	0.90	1.23	13,610	619.94
14.200	1.89	148.75	152.92	0.90	1.19	13,572	619.93
14.250	1.86	148.40	152.49	0.90	1.15	13,537	619.93
14.300	1.84	148.08	152.10	0.90	1.11	13,505	619.93
14.350	1.82	147.79	151.74	0.90	1.07	13,475	619.93
14.400	1.79	147.52	151.40	0.90	1.04	13,448	619.93
14.450	1.77	147.27	151.09	0.90	1.01	13,423	619.92
14.500	1.75	147.03	150.80	0.90	0.98	13,399	619.92
14.550	1.73	146.81	150.51	0.90	0.95	13,376	619.92
14.600	1.71	146.59	150.25	0.90	0.93	13,354	619.92
14.650	1.69	146.38	149.99	0.90	0.90	13,333	619.92

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
14.700	1.67	146.18	149.74	0.90	0.88	13,313	619.92
14.750	1.64	145.98	149.49	0.90	0.85	13,293	619.92
14.800	1.62	145.78	149.25	0.90	0.83	13,273	619.92
14.850	1.60	145.59	149.01	0.90	0.81	13,254	619.91
14.900	1.58	145.40	148.77	0.90	0.79	13,235	619.91
14.950	1.56	145.22	148.54	0.90	0.76	13,216	619.91
15.000	1.54	145.03	148.31	0.90	0.74	13,198	619.91
15.050	1.52	144.84	148.08	0.90	0.72	13,179	619.91
15.100	1.49	144.66	147.85	0.90	0.70	13,161	619.91
15.150	1.47	144.48	147.62	0.90	0.67	13,143	619.91
15.200	1.45	144.29	147.40	0.90	0.65	13,124	619.91
15.250	1.43	144.11	147.17	0.90	0.63	13,106	619.90
15.300	1.40	143.93	146.94	0.90	0.61	13,088	619.90
15.350	1.38	143.74	146.71	0.90	0.59	13,070	619.90
15.400	1.36	143.56	146.49	0.90	0.56	13,052	619.90
15.450	1.34	143.38	146.26	0.90	0.54	13,034	619.90
15.500	1.32	143.18	146.03	0.90	0.53	13,014	619.90
15.550	1.29	142.97	145.79	0.90	0.51	12,993	619.90
15.600	1.27	142.74	145.53	0.90	0.50	12,971	619.90
15.650	1.25	142.50	145.26	0.90	0.48	12,948	619.89
15.700	1.23	142.24	144.98	0.90	0.47	12,923	619.89
15.750	1.21	141.98	144.68	0.90	0.45	12,898	619.89
15.800	1.18	141.71	144.37	0.90	0.43	12,871	619.89
15.850	1.16	141.43	144.05	0.90	0.41	12,844	619.89
15.900	1.14	141.14	143.73	0.90	0.39	12,816	619.89
15.950	1.12	140.84	143.39	0.90	0.37	12,788	619.88
16.000	1.09	140.54	143.05	0.90	0.35	12,759	619.88
16.050	1.07	140.24	142.71	0.90	0.34	12,729	619.88
16.100	1.05	139.94	142.37	0.90	0.32	12,700	619.88
16.150	1.04	139.64	142.03	0.90	0.30	12,671	619.88
16.200	1.02	139.35	141.70	0.90	0.28	12,643	619.88
16.250	1.01	139.06	141.38	0.90	0.26	12,616	619.87
16.300	1.00	138.80	141.08	0.90	0.24	12,591	619.87
16.350	0.99	138.54	140.79	0.90	0.22	12,566	619.87
16.400	0.98	138.30	140.52	0.90	0.21	12,543	619.87
16.450	0.97	138.06	140.25	0.90	0.19	12,521	619.87
16.500	0.96	137.84	140.00	0.90	0.18	12,500	619.87
16.550	0.95	137.63	139.76	0.90	0.17	12,479	619.87
16.600	0.94	137.42	139.52	0.90	0.15	12,459	619.86
16.650	0.93	137.22	139.30	0.90	0.14	12,440	619.86
16.700	0.92	137.02	139.07	0.90	0.13	12,422	619.86
16.750	0.91	136.83	138.86	0.90	0.11	12,404	619.86

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: IB-1C-10 (OUT) Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
16.800	0.90	136.65	138.65	0.90	0.10	12,386	619.86
16.850	0.89	136.47	138.45	0.90	0.09	12,369	619.86
16.900	0.88	136.29	138.25	0.90	0.08	12,352	619.86
16.950	0.88	136.12	138.05	0.90	0.07	12,336	619.86
17.000	0.87	135.95	137.86	0.90	0.06	12,320	619.86
17.050	0.86	135.78	137.67	0.90	0.04	12,304	619.85
17.100	0.85	135.61	137.48	0.90	0.03	12,288	619.85
17.150	0.84	135.45	137.29	0.90	0.02	12,273	619.85
17.200	0.83	135.28	137.11	0.90	0.01	12,257	619.85
17.250	0.82	135.12	136.93	0.90	0.00	12,242	619.85
17.300	0.81	134.94	136.74	0.90	0.00	12,226	619.85
17.350	0.80	134.75	136.55	0.90	0.00	12,208	619.85
17.400	0.79	134.53	136.33	0.90	0.00	12,188	619.85
17.450	0.78	134.30	136.10	0.90	0.00	12,166	619.85
17.500	0.77	134.04	135.84	0.90	0.00	12,143	619.84
17.550	0.76	133.77	135.57	0.90	0.00	12,118	619.84
17.600	0.75	133.47	135.27	0.90	0.00	12,091	619.84
17.650	0.74	133.16	134.96	0.90	0.00	12,063	619.84
17.700	0.73	132.82	134.62	0.90	0.00	12,032	619.84
17.750	0.72	132.47	134.27	0.90	0.00	12,000	619.83
17.800	0.71	132.10	133.90	0.90	0.00	11,966	619.83
17.850	0.70	131.70	133.50	0.90	0.00	11,931	619.83
17.900	0.69	131.29	133.09	0.90	0.00	11,893	619.83
17.950	0.68	130.86	132.66	0.90	0.00	11,855	619.83
18.000	0.67	130.40	132.20	0.90	0.00	11,814	619.82
18.050	0.66	129.93	131.73	0.90	0.00	11,772	619.82
18.100	0.65	129.44	131.24	0.90	0.00	11,728	619.82
18.150	0.64	128.94	130.74	0.90	0.00	11,682	619.81
18.200	0.64	128.42	130.22	0.90	0.00	11,636	619.81
18.250	0.64	127.90	129.70	0.90	0.00	11,590	619.81
18.300	0.63	127.36	129.16	0.90	0.00	11,543	619.80
18.350	0.63	126.83	128.63	0.90	0.00	11,495	619.80
18.400	0.63	126.28	128.08	0.90	0.00	11,446	619.80
18.450	0.62	125.73	127.53	0.90	0.00	11,396	619.79
18.500	0.62	125.18	126.98	0.90	0.00	11,345	619.79
18.550	0.62	124.62	126.42	0.90	0.00	11,294	619.79
18.600	0.61	124.05	125.85	0.90	0.00	11,242	619.78
18.650	0.61	123.48	125.28	0.90	0.00	11,191	619.78
18.700	0.61	122.90	124.70	0.90	0.00	11,138	619.78
18.750	0.61	122.31	124.11	0.90	0.00	11,086	619.77
18.800	0.60	121.72	123.52	0.90	0.00	11,033	619.77
18.850	0.60	121.13	122.93	0.90	0.00	10,979	619.77

Subsection: Pond Routing Calculations (Total Out)
Return Event: 25 years
Label: IB-1C-10 (OUT)
Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
18.900	0.60	120.52	122.32	0.90	0.00	10,926	619.76
18.950	0.59	119.92	121.72	0.90	0.00	10,871	619.76
19.000	0.59	119.30	121.10	0.90	0.00	10,817	619.76
19.050	0.59	118.68	120.48	0.90	0.00	10,762	619.75
19.100	0.59	118.06	119.86	0.90	0.00	10,705	619.75
19.150	0.58	117.43	119.23	0.90	0.00	10,648	619.74
19.200	0.58	116.79	118.59	0.90	0.00	10,590	619.74
19.250	0.58	116.14	117.94	0.90	0.00	10,531	619.74
19.300	0.57	115.50	117.30	0.90	0.00	10,472	619.73
19.350	0.57	114.84	116.64	0.90	0.00	10,413	619.73
19.400	0.57	114.18	115.98	0.90	0.00	10,354	619.72
19.450	0.57	113.51	115.31	0.90	0.00	10,294	619.72
19.500	0.56	112.84	114.64	0.90	0.00	10,234	619.71
19.550	0.56	112.16	113.96	0.90	0.00	10,174	619.71
19.600	0.56	111.48	113.28	0.90	0.00	10,113	619.71
19.650	0.55	110.79	112.59	0.90	0.00	10,052	619.70
19.700	0.55	110.09	111.89	0.90	0.00	9,989	619.70
19.750	0.55	109.39	111.19	0.90	0.00	9,924	619.69
19.800	0.54	108.68	110.48	0.90	0.00	9,860	619.69
19.850	0.54	107.97	109.77	0.90	0.00	9,795	619.68
19.900	0.54	107.25	109.05	0.90	0.00	9,730	619.68
19.950	0.54	106.52	108.32	0.90	0.00	9,665	619.67
20.000	0.53	105.79	107.59	0.90	0.00	9,599	619.67
20.050	0.53	105.06	106.86	0.90	0.00	9,533	619.66
20.100	0.53	104.31	106.11	0.90	0.00	9,467	619.66
20.150	0.52	103.56	105.36	0.90	0.00	9,401	619.65
20.200	0.52	102.81	104.61	0.90	0.00	9,334	619.65
20.250	0.52	102.05	103.85	0.90	0.00	9,264	619.64
20.300	0.52	101.29	103.09	0.90	0.00	9,195	619.64
20.350	0.52	100.53	102.33	0.90	0.00	9,126	619.63
20.400	0.51	99.76	101.56	0.90	0.00	9,056	619.63
20.450	0.51	98.98	100.78	0.90	0.00	8,986	619.62
20.500	0.51	98.20	100.00	0.90	0.00	8,916	619.62
20.550	0.51	97.42	99.22	0.90	0.00	8,846	619.61
20.600	0.50	96.63	98.43	0.90	0.00	8,776	619.61
20.650	0.50	95.83	97.63	0.90	0.00	8,706	619.60
20.700	0.50	95.04	96.84	0.90	0.00	8,633	619.59
20.750	0.50	94.23	96.03	0.90	0.00	8,560	619.59
20.800	0.49	93.42	95.22	0.90	0.00	8,486	619.58
20.850	0.49	92.61	94.41	0.90	0.00	8,413	619.58
20.900	0.49	91.80	93.60	0.90	0.00	8,339	619.57
20.950	0.49	90.98	92.78	0.90	0.00	8,266	619.57

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: IB-1C-10 (OUT) Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
21.000	0.49	90.15	91.95	0.90	0.00	8,193	619.56
21.050	0.49	89.32	91.12	0.90	0.00	8,119	619.55
21.100	0.48	88.49	90.29	0.90	0.00	8,045	619.55
21.150	0.48	87.66	89.46	0.90	0.00	7,968	619.54
21.200	0.48	86.81	88.61	0.90	0.00	7,891	619.53
21.250	0.48	85.97	87.77	0.90	0.00	7,815	619.53
21.300	0.47	85.11	86.91	0.90	0.00	7,738	619.52
21.350	0.47	84.26	86.06	0.90	0.00	7,662	619.52
21.400	0.47	83.40	85.20	0.90	0.00	7,585	619.51
21.450	0.47	82.54	84.34	0.90	0.00	7,509	619.50
21.500	0.46	81.67	83.47	0.90	0.00	7,430	619.50
21.550	0.46	80.79	82.59	0.90	0.00	7,350	619.49
21.600	0.46	79.91	81.71	0.90	0.00	7,270	619.48
21.650	0.46	79.03	80.83	0.90	0.00	7,191	619.48
21.700	0.46	78.14	79.94	0.90	0.00	7,111	619.47
21.750	0.45	77.25	79.05	0.90	0.00	7,031	619.46
21.800	0.45	76.36	78.16	0.90	0.00	6,952	619.45
21.850	0.45	75.46	77.26	0.90	0.00	6,872	619.45
21.900	0.45	74.55	76.35	0.90	0.00	6,789	619.44
21.950	0.44	73.65	75.45	0.90	0.00	6,706	619.43
22.000	0.44	72.73	74.53	0.90	0.00	6,624	619.43
22.050	0.44	71.81	73.61	0.90	0.00	6,542	619.42
22.100	0.44	70.89	72.69	0.90	0.00	6,459	619.41
22.150	0.44	69.97	71.77	0.90	0.00	6,377	619.40
22.200	0.43	69.03	70.83	0.90	0.00	6,293	619.39
22.250	0.43	68.10	69.90	0.90	0.00	6,208	619.39
22.300	0.43	67.16	68.96	0.90	0.00	6,122	619.38
22.350	0.43	66.21	68.01	0.90	0.00	6,037	619.37
22.400	0.42	65.26	67.06	0.90	0.00	5,952	619.36
22.450	0.42	64.31	66.11	0.90	0.00	5,868	619.35
22.500	0.42	63.35	65.15	0.90	0.00	5,782	619.35
22.550	0.42	62.39	64.19	0.90	0.00	5,694	619.34
22.600	0.42	61.42	63.22	0.90	0.00	5,606	619.33
22.650	0.41	60.45	62.25	0.90	0.00	5,519	619.32
22.700	0.41	59.47	61.27	0.90	0.00	5,432	619.31
22.750	0.41	58.49	60.29	0.90	0.00	5,345	619.30
22.800	0.41	57.51	59.31	0.90	0.00	5,256	619.29
22.850	0.40	56.52	58.32	0.90	0.00	5,165	619.28
22.900	0.40	55.53	57.33	0.90	0.00	5,075	619.28
22.950	0.40	54.53	56.33	0.90	0.00	4,986	619.27
23.000	0.40	53.52	55.32	0.90	0.00	4,897	619.26
23.050	0.40	52.52	54.32	0.90	0.00	4,807	619.25

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: IB-1C-10 (OUT) Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
23.100	0.39	51.50	53.30	0.90	0.00	4,714	619.24
23.150	0.39	50.49	52.29	0.90	0.00	4,622	619.23
23.200	0.39	49.46	51.26	0.90	0.00	4,530	619.22
23.250	0.39	48.44	50.24	0.90	0.00	4,439	619.21
23.300	0.38	47.41	49.21	0.90	0.00	4,347	619.20
23.350	0.38	46.37	48.17	0.90	0.00	4,252	619.19
23.400	0.38	45.33	47.13	0.90	0.00	4,158	619.18
23.450	0.38	44.29	46.09	0.90	0.00	4,065	619.16
23.500	0.38	43.24	45.04	0.90	0.00	3,972	619.15
23.550	0.37	42.19	43.99	0.90	0.00	3,877	619.14
23.600	0.37	41.14	42.94	0.90	0.00	3,781	619.13
23.650	0.37	40.07	41.87	0.90	0.00	3,685	619.12
23.700	0.37	39.01	40.81	0.90	0.00	3,590	619.11
23.750	0.36	37.94	39.74	0.90	0.00	3,495	619.10
23.800	0.36	36.86	38.66	0.90	0.00	3,396	619.08
23.850	0.36	35.78	37.58	0.90	0.00	3,299	619.07
23.900	0.36	34.70	36.50	0.90	0.00	3,202	619.06
23.950	0.35	33.61	35.41	0.90	0.00	3,105	619.05
24.000	0.35	32.51	34.31	0.90	0.00	3,005	619.03

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
0.000	0.00	0.00	0.00	0.00	0.00	0	618.50
0.050	0.00	0.00	0.00	0.00	0.00	0	618.50
0.100	0.00	0.00	0.00	0.00	0.00	0	618.50
0.150	0.00	0.00	0.00	0.00	0.00	0	618.50
0.200	0.00	0.00	0.00	0.00	0.00	0	618.50
0.250	0.00	0.00	0.00	0.00	0.00	0	618.50
0.300	0.00	0.00	0.00	0.00	0.00	0	618.50
0.350	0.00	0.00	0.00	0.00	0.00	0	618.50
0.400	0.00	0.00	0.00	0.00	0.00	0	618.50
0.450	0.00	0.00	0.00	0.00	0.00	0	618.50
0.500	0.00	0.00	0.00	0.00	0.00	0	618.50
0.550	0.00	0.00	0.00	0.00	0.00	0	618.50
0.600	0.00	0.00	0.00	0.00	0.00	0	618.50
0.650	0.00	0.00	0.00	0.00	0.00	0	618.50
0.700	0.00	0.00	0.00	0.00	0.00	0	618.50
0.750	0.00	0.00	0.00	0.00	0.00	0	618.50
0.800	0.00	0.00	0.00	0.00	0.00	0	618.50
0.850	0.00	0.00	0.00	0.00	0.00	0	618.50
0.900	0.00	0.00	0.00	0.00	0.00	0	618.50
0.950	0.00	0.00	0.00	0.00	0.00	0	618.50
1.000	0.00	0.00	0.00	0.00	0.00	0	618.50
1.050	0.00	0.00	0.00	0.00	0.00	0	618.50
1.100	0.00	0.00	0.00	0.00	0.00	0	618.50
1.150	0.00	0.00	0.00	0.00	0.00	0	618.50
1.200	0.00	0.00	0.00	0.00	0.00	0	618.50
1.250	0.00	0.00	0.00	0.00	0.00	0	618.50
1.300	0.00	0.00	0.00	0.00	0.00	0	618.50
1.350	0.00	0.00	0.00	0.00	0.00	0	618.50
1.400	0.00	0.00	0.00	0.00	0.00	0	618.50
1.450	0.00	0.00	0.00	0.00	0.00	0	618.50
1.500	0.00	0.00	0.00	0.00	0.00	0	618.50
1.550	0.00	0.00	0.00	0.00	0.00	0	618.50
1.600	0.00	0.00	0.00	0.00	0.00	0	618.50
1.650	0.00	0.00	0.00	0.00	0.00	0	618.50
1.700	0.00	0.00	0.00	0.00	0.00	0	618.50
1.750	0.00	0.00	0.00	0.00	0.00	0	618.50
1.800	0.00	0.00	0.00	0.00	0.00	0	618.50
1.850	0.00	0.00	0.00	0.00	0.00	0	618.50
1.900	0.00	0.00	0.00	0.00	0.00	0	618.50
1.950	0.00	0.00	0.00	0.00	0.00	0	618.50
2.000	0.00	0.00	0.00	0.00	0.00	0	618.50
2.050	0.00	0.00	0.00	0.00	0.00	0	618.50

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: IB-1C-10 (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
2.100	0.00	0.00	0.00	0.00	0.00	0	618.50
2.150	0.00	0.00	0.00	0.00	0.00	0	618.50
2.200	0.00	0.00	0.00	0.00	0.00	0	618.50
2.250	0.00	0.00	0.00	0.00	0.00	0	618.50
2.300	0.00	0.00	0.00	0.00	0.00	0	618.50
2.350	0.00	0.00	0.00	0.00	0.00	0	618.50
2.400	0.00	0.00	0.00	0.00	0.00	0	618.50
2.450	0.00	0.00	0.00	0.00	0.00	0	618.50
2.500	0.00	0.00	0.00	0.00	0.00	0	618.50
2.550	0.00	0.00	0.00	0.00	0.00	0	618.50
2.600	0.00	0.00	0.00	0.00	0.00	0	618.50
2.650	0.00	0.00	0.00	0.00	0.00	0	618.50
2.700	0.00	0.00	0.00	0.00	0.00	0	618.50
2.750	0.00	0.00	0.00	0.00	0.00	0	618.50
2.800	0.00	0.00	0.00	0.00	0.00	0	618.50
2.850	0.00	0.00	0.00	0.00	0.00	0	618.50
2.900	0.00	0.00	0.00	0.00	0.00	0	618.50
2.950	0.00	0.00	0.00	0.00	0.00	0	618.50
3.000	0.00	0.00	0.00	0.00	0.00	0	618.50
3.050	0.00	0.00	0.00	0.00	0.00	0	618.50
3.100	0.00	0.00	0.00	0.00	0.00	0	618.50
3.150	0.00	0.00	0.00	0.00	0.00	0	618.50
3.200	0.00	0.00	0.00	0.00	0.00	0	618.50
3.250	0.00	0.00	0.00	0.00	0.00	0	618.50
3.300	0.00	0.00	0.00	0.00	0.00	0	618.50
3.350	0.00	0.00	0.00	0.00	0.00	0	618.50
3.400	0.00	0.00	0.00	0.00	0.00	0	618.50
3.450	0.00	0.00	0.00	0.00	0.00	0	618.50
3.500	0.00	0.00	0.00	0.00	0.00	0	618.50
3.550	0.00	0.00	0.00	0.00	0.00	0	618.50
3.600	0.00	0.00	0.00	0.00	0.00	0	618.50
3.650	0.00	0.00	0.00	0.00	0.00	0	618.50
3.700	0.00	0.00	0.00	0.00	0.00	0	618.50
3.750	0.00	0.00	0.00	0.00	0.00	0	618.50
3.800	0.00	0.00	0.00	0.00	0.00	0	618.50
3.850	0.00	0.00	0.00	0.00	0.00	0	618.50
3.900	0.00	0.00	0.00	0.00	0.00	0	618.50
3.950	0.00	0.00	0.00	0.00	0.00	0	618.50
4.000	0.00	0.00	0.00	0.00	0.00	0	618.50
4.050	0.00	0.00	0.00	0.00	0.00	0	618.50
4.100	0.00	0.00	0.00	0.00	0.00	0	618.50
4.150	0.00	0.00	0.00	0.00	0.00	0	618.50

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: IB-1C-10 (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
4.200	0.00	0.00	0.00	0.00	0.00	0	618.50
4.250	0.00	0.00	0.00	0.00	0.00	0	618.50
4.300	0.00	0.00	0.00	0.00	0.00	0	618.50
4.350	0.00	0.00	0.00	0.00	0.00	0	618.50
4.400	0.00	0.00	0.00	0.00	0.00	0	618.50
4.450	0.00	0.00	0.00	0.00	0.00	0	618.50
4.500	0.00	0.00	0.00	0.00	0.00	0	618.50
4.550	0.00	0.00	0.00	0.00	0.00	0	618.50
4.600	0.00	0.00	0.00	0.00	0.00	0	618.50
4.650	0.00	0.00	0.00	0.00	0.00	0	618.50
4.700	0.00	0.00	0.00	0.00	0.00	0	618.50
4.750	0.00	0.00	0.00	0.00	0.00	0	618.50
4.800	0.00	0.00	0.00	0.00	0.00	0	618.50
4.850	0.00	0.00	0.00	0.00	0.00	0	618.50
4.900	0.00	0.00	0.00	0.00	0.00	0	618.50
4.950	0.00	0.00	0.00	0.00	0.00	0	618.50
5.000	0.00	0.00	0.00	0.00	0.00	0	618.50
5.050	0.00	0.00	0.00	0.00	0.00	0	618.50
5.100	0.00	0.00	0.00	0.00	0.00	0	618.50
5.150	0.00	0.00	0.00	0.00	0.00	0	618.50
5.200	0.00	0.00	0.00	0.00	0.00	0	618.50
5.250	0.00	0.00	0.00	0.00	0.00	0	618.50
5.300	0.00	0.00	0.00	0.00	0.00	0	618.50
5.350	0.00	0.00	0.00	0.00	0.00	0	618.50
5.400	0.00	0.00	0.00	0.00	0.00	0	618.50
5.450	0.00	0.00	0.00	0.00	0.00	0	618.50
5.500	0.00	0.00	0.00	0.00	0.00	0	618.50
5.550	0.00	0.00	0.00	0.00	0.00	0	618.50
5.600	0.00	0.00	0.00	0.00	0.00	0	618.50
5.650	0.00	0.00	0.00	0.00	0.00	0	618.50
5.700	0.00	0.00	0.00	0.00	0.00	0	618.50
5.750	0.01	0.00	0.01	0.00	0.00	1	618.50
5.800	0.01	0.01	0.02	0.01	0.00	1	618.50
5.850	0.01	0.01	0.03	0.01	0.00	2	618.50
5.900	0.02	0.02	0.04	0.01	0.00	3	618.50
5.950	0.02	0.03	0.06	0.02	0.00	4	618.50
6.000	0.03	0.03	0.08	0.02	0.00	5	618.50
6.050	0.03	0.04	0.09	0.03	0.00	6	618.50
6.100	0.04	0.05	0.11	0.03	0.00	7	618.50
6.150	0.04	0.05	0.13	0.04	0.00	8	618.50
6.200	0.05	0.06	0.15	0.04	0.00	9	618.50
6.250	0.05	0.07	0.17	0.05	0.00	10	618.50

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: IB-1C-10 (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
6.300	0.06	0.08	0.19	0.05	0.00	12	618.50
6.350	0.07	0.09	0.21	0.06	0.00	13	618.50
6.400	0.07	0.10	0.23	0.07	0.00	14	618.50
6.450	0.08	0.11	0.25	0.07	0.00	16	618.50
6.500	0.09	0.12	0.27	0.08	0.00	17	618.50
6.550	0.09	0.13	0.30	0.08	0.00	18	618.50
6.600	0.10	0.14	0.32	0.09	0.00	20	618.51
6.650	0.11	0.15	0.34	0.10	0.00	21	618.51
6.700	0.12	0.16	0.37	0.11	0.00	23	618.51
6.750	0.12	0.17	0.40	0.11	0.00	25	618.51
6.800	0.13	0.18	0.42	0.12	0.00	26	618.51
6.850	0.14	0.19	0.45	0.13	0.00	28	618.51
6.900	0.15	0.20	0.48	0.14	0.00	30	618.51
6.950	0.16	0.22	0.51	0.15	0.00	32	618.51
7.000	0.16	0.23	0.54	0.15	0.00	33	618.51
7.050	0.17	0.24	0.57	0.16	0.00	35	618.51
7.100	0.18	0.26	0.60	0.17	0.00	37	618.51
7.150	0.19	0.27	0.63	0.18	0.00	39	618.51
7.200	0.20	0.28	0.66	0.19	0.00	41	618.51
7.250	0.21	0.30	0.69	0.20	0.00	43	618.51
7.300	0.22	0.31	0.73	0.21	0.00	45	618.51
7.350	0.23	0.33	0.76	0.22	0.00	48	618.51
7.400	0.24	0.34	0.80	0.23	0.00	50	618.51
7.450	0.25	0.36	0.83	0.24	0.00	52	618.51
7.500	0.26	0.37	0.87	0.25	0.00	54	618.51
7.550	0.27	0.39	0.91	0.26	0.00	57	618.51
7.600	0.28	0.40	0.94	0.27	0.00	59	618.52
7.650	0.29	0.42	0.98	0.28	0.00	61	618.52
7.700	0.31	0.44	1.02	0.29	0.00	64	618.52
7.750	0.32	0.45	1.06	0.30	0.00	66	618.52
7.800	0.33	0.47	1.10	0.31	0.00	69	618.52
7.850	0.34	0.49	1.14	0.33	0.00	71	618.52
7.900	0.35	0.50	1.18	0.34	0.00	74	618.52
7.950	0.36	0.52	1.22	0.35	0.00	77	618.52
8.000	0.38	0.54	1.26	0.36	0.00	79	618.52
8.050	0.39	0.56	1.31	0.37	0.00	82	618.52
8.100	0.40	0.58	1.35	0.39	0.00	85	618.52
8.150	0.42	0.60	1.40	0.40	0.00	88	618.52
8.200	0.44	0.62	1.46	0.42	0.00	92	618.52
8.250	0.45	0.65	1.51	0.43	0.00	95	618.52
8.300	0.47	0.67	1.58	0.45	0.00	99	618.53
8.350	0.49	0.70	1.64	0.47	0.00	104	618.53

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: IB-1C-10 (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
8.400	0.51	0.73	1.71	0.49	0.00	108	618.53
8.450	0.53	0.76	1.78	0.51	0.00	112	618.53
8.500	0.56	0.79	1.85	0.53	0.00	117	618.53
8.550	0.58	0.82	1.93	0.55	0.00	122	618.53
8.600	0.60	0.86	2.00	0.57	0.00	127	618.53
8.650	0.62	0.89	2.08	0.60	0.00	132	618.53
8.700	0.65	0.92	2.16	0.62	0.00	137	618.53
8.750	0.67	0.96	2.24	0.64	0.00	142	618.54
8.800	0.70	0.99	2.32	0.67	0.00	148	618.54
8.850	0.72	1.03	2.41	0.69	0.00	153	618.54
8.900	0.75	1.07	2.49	0.71	0.00	159	618.54
8.950	0.77	1.10	2.58	0.74	0.00	165	618.54
9.000	0.80	1.14	2.67	0.77	0.00	171	618.54
9.050	0.82	1.18	2.76	0.79	0.00	177	618.54
9.100	0.85	1.22	2.86	0.82	0.00	183	618.55
9.150	0.88	1.26	2.95	0.85	0.00	189	618.55
9.200	0.91	1.30	3.05	0.87	0.00	196	618.55
9.250	0.94	1.35	3.15	0.90	0.00	202	618.55
9.300	0.97	1.45	3.25	0.90	0.00	211	618.55
9.350	1.00	1.61	3.41	0.90	0.00	225	618.56
9.400	1.03	1.83	3.63	0.90	0.00	245	618.56
9.450	1.06	2.11	3.91	0.90	0.00	269	618.57
9.500	1.09	2.45	4.25	0.90	0.00	300	618.57
9.550	1.12	2.86	4.66	0.90	0.00	337	618.58
9.600	1.15	3.33	5.13	0.90	0.00	379	618.59
9.650	1.18	3.86	5.66	0.90	0.00	428	618.60
9.700	1.21	4.45	6.25	0.90	0.00	480	618.61
9.750	1.25	5.12	6.92	0.90	0.00	540	618.63
9.800	1.28	5.85	7.65	0.90	0.00	606	618.64
9.850	1.31	6.64	8.44	0.90	0.00	678	618.66
9.900	1.35	7.51	9.31	0.90	0.00	754	618.67
9.950	1.38	8.44	10.24	0.90	0.00	839	618.69
10.000	1.42	9.44	11.24	0.90	0.00	930	618.71
10.050	1.45	10.51	12.31	0.90	0.00	1,025	618.72
10.100	1.50	11.66	13.46	0.90	0.00	1,130	618.74
10.150	1.54	12.90	14.70	0.90	0.00	1,241	618.76
10.200	1.59	14.24	16.04	0.90	0.00	1,361	618.79
10.250	1.65	15.68	17.48	0.90	0.00	1,491	618.81
10.300	1.70	17.23	19.03	0.90	0.00	1,630	618.83
10.350	1.76	18.90	20.70	0.90	0.00	1,781	618.86
10.400	1.82	20.69	22.49	0.90	0.00	1,941	618.88
10.450	1.88	22.59	24.39	0.90	0.00	2,113	618.91

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: IB-1C-10 (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
10.500	1.95	24.63	26.43	0.90	0.00	2,295	618.93
10.550	2.01	26.78	28.58	0.90	0.00	2,490	618.96
10.600	2.07	29.07	30.87	0.90	0.00	2,696	618.99
10.650	2.14	31.48	33.28	0.90	0.00	2,912	619.02
10.700	2.21	34.03	35.83	0.90	0.00	3,143	619.05
10.750	2.27	36.71	38.51	0.90	0.00	3,382	619.08
10.800	2.34	39.52	41.32	0.90	0.00	3,636	619.11
10.850	2.41	42.47	44.27	0.90	0.00	3,903	619.15
10.900	2.48	45.56	47.36	0.90	0.00	4,179	619.18
10.950	2.55	48.79	50.59	0.90	0.00	4,470	619.21
11.000	2.62	52.16	53.96	0.90	0.00	4,774	619.24
11.050	2.70	55.69	57.49	0.90	0.00	5,090	619.28
11.100	2.82	59.41	61.21	0.90	0.00	5,426	619.31
11.150	2.95	63.38	65.18	0.90	0.00	5,785	619.35
11.200	3.13	67.66	69.46	0.90	0.00	6,168	619.38
11.250	3.32	72.31	74.11	0.90	0.00	6,586	619.42
11.300	3.53	77.37	79.17	0.90	0.00	7,042	619.46
11.350	3.75	82.85	84.65	0.90	0.00	7,537	619.51
11.400	3.98	88.79	90.59	0.90	0.00	8,072	619.55
11.450	4.21	95.18	96.98	0.90	0.00	8,646	619.60
11.500	4.45	102.05	103.85	0.90	0.00	9,263	619.64
11.550	4.83	109.53	111.33	0.90	0.00	9,937	619.69
11.600	5.57	118.13	119.93	0.90	0.00	10,712	619.75
11.650	6.66	128.56	130.36	0.90	0.00	11,649	619.81
11.700	8.23	140.89	143.45	0.90	0.38	12,792	619.89
11.750	10.06	153.66	159.17	0.90	1.86	14,075	619.96
11.800	12.17	166.12	175.89	0.90	3.98	15,390	620.04
11.850	14.37	178.79	192.67	0.90	6.04	16,715	620.12
11.900	16.84	195.24	210.01	0.90	6.48	18,236	620.20
11.950	20.69	216.85	232.77	0.90	7.06	20,233	620.31
12.000	27.87	247.94	265.42	0.90	7.84	23,101	620.47
12.050	35.37	291.93	311.18	0.90	8.73	27,140	620.69
12.100	40.22	346.47	367.52	0.90	9.62	32,129	620.96
12.150	41.13	405.07	427.82	0.90	10.48	37,479	621.24
12.200	36.66	458.69	482.86	0.90	11.18	42,369	621.48
12.250	30.45	500.61	525.80	0.90	11.70	46,188	621.67
12.300	25.59	530.77	556.66	0.90	12.04	48,934	621.80
12.350	22.10	552.11	578.47	0.90	12.28	50,876	621.90
12.400	19.07	566.61	593.29	0.90	12.44	52,195	621.96
12.450	16.38	575.21	602.07	0.90	12.53	52,977	622.00
12.500	13.75	578.41	605.34	0.90	12.56	53,268	622.01
12.550	11.43	576.70	603.59	0.90	12.55	53,113	622.00

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: IB-1C-10 (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
12.600	9.48	570.84	597.61	0.90	12.48	52,580	621.98
12.650	8.04	561.79	588.36	0.90	12.38	51,756	621.94
12.700	7.13	550.63	576.95	0.90	12.26	50,741	621.89
12.750	6.56	538.27	564.32	0.90	12.13	49,616	621.84
12.800	6.15	525.22	550.98	0.90	11.98	48,429	621.78
12.850	5.83	511.75	537.20	0.90	11.83	47,202	621.72
12.900	5.53	497.98	523.11	0.90	11.66	45,949	621.66
12.950	5.25	483.97	508.76	0.90	11.49	44,673	621.60
13.000	4.98	469.77	494.20	0.90	11.32	43,378	621.53
13.050	4.74	455.41	479.49	0.90	11.14	42,070	621.47
13.100	4.52	440.95	464.67	0.90	10.96	40,753	621.40
13.150	4.36	426.50	449.83	0.90	10.77	39,434	621.34
13.200	4.23	412.14	435.09	0.90	10.57	38,125	621.27
13.250	4.14	397.95	420.51	0.90	10.38	36,831	621.20
13.300	4.06	383.98	406.15	0.90	10.18	35,556	621.14
13.350	3.99	370.26	392.03	0.90	9.98	34,303	621.07
13.400	3.91	356.80	378.16	0.90	9.78	33,073	621.01
13.450	3.84	343.60	364.56	0.90	9.58	31,867	620.95
13.500	3.78	330.67	351.22	0.90	9.37	30,684	620.88
13.550	3.71	318.01	338.15	0.90	9.17	29,527	620.82
13.600	3.64	305.63	325.36	0.90	8.97	28,394	620.76
13.650	3.57	293.53	312.84	0.90	8.76	27,287	620.70
13.700	3.50	281.71	300.60	0.90	8.55	26,204	620.64
13.750	3.43	270.18	288.65	0.90	8.34	25,147	620.59
13.800	3.37	258.98	276.98	0.90	8.10	24,117	620.53
13.850	3.30	248.15	265.64	0.90	7.84	23,120	620.47
13.900	3.23	237.70	254.68	0.90	7.59	22,157	620.42
13.950	3.16	227.62	244.09	0.90	7.33	21,226	620.37
14.000	3.09	217.89	233.87	0.90	7.09	20,329	620.32
14.050	3.02	208.52	224.00	0.90	6.84	19,463	620.27
14.100	2.96	199.51	214.51	0.90	6.60	18,630	620.22
14.150	2.91	190.85	205.39	0.90	6.37	17,830	620.18
14.200	2.87	182.55	196.63	0.90	6.14	17,063	620.14
14.250	2.83	174.91	188.24	0.90	5.77	16,342	620.09
14.300	2.79	169.46	180.54	0.90	4.64	15,749	620.06
14.350	2.76	165.48	175.01	0.90	3.87	15,322	620.04
14.400	2.73	162.53	170.97	0.90	3.32	15,007	620.02
14.450	2.69	160.33	167.95	0.90	2.91	14,772	620.00
14.500	2.66	158.63	165.68	0.90	2.63	14,592	619.99
14.550	2.63	157.28	163.91	0.90	2.42	14,450	619.99
14.600	2.59	156.20	162.50	0.90	2.25	14,338	619.98
14.650	2.56	155.32	161.35	0.90	2.12	14,247	619.97

Subsection: Pond Routing Calculations (Total Out) | Return Event: 100 years
Label: IB-1C-10 (OUT) | Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
14.700	2.53	154.61	160.41	0.90	2.00	14,172	619.97
14.750	2.49	154.01	159.63	0.90	1.91	14,111	619.97
14.800	2.46	153.50	158.96	0.90	1.83	14,058	619.96
14.850	2.43	153.06	158.39	0.90	1.76	14,013	619.96
14.900	2.39	152.68	157.89	0.90	1.70	13,974	619.96
14.950	2.36	152.34	157.44	0.90	1.65	13,938	619.96
15.000	2.33	152.02	157.02	0.90	1.60	13,906	619.95
15.050	2.30	151.73	156.64	0.90	1.56	13,876	619.95
15.100	2.26	151.46	156.29	0.90	1.51	13,848	619.95
15.150	2.23	151.18	155.95	0.90	1.48	13,820	619.95
15.200	2.19	150.91	155.60	0.90	1.45	13,792	619.95
15.250	2.16	150.63	155.26	0.90	1.42	13,764	619.94
15.300	2.13	150.35	154.92	0.90	1.38	13,736	619.94
15.350	2.09	150.08	154.57	0.90	1.35	13,707	619.94
15.400	2.06	149.80	154.23	0.90	1.31	13,679	619.94
15.450	2.03	149.52	153.88	0.90	1.28	13,650	619.94
15.500	1.99	149.24	153.54	0.90	1.25	13,622	619.94
15.550	1.96	148.96	153.19	0.90	1.21	13,594	619.93
15.600	1.92	148.68	152.84	0.90	1.18	13,565	619.93
15.650	1.89	148.40	152.50	0.90	1.15	13,537	619.93
15.700	1.86	148.12	152.15	0.90	1.11	13,509	619.93
15.750	1.82	147.84	151.80	0.90	1.08	13,480	619.93
15.800	1.79	147.56	151.45	0.90	1.05	13,452	619.93
15.850	1.75	147.28	151.10	0.90	1.01	13,424	619.92
15.900	1.72	147.00	150.75	0.90	0.98	13,395	619.92
15.950	1.69	146.72	150.40	0.90	0.94	13,367	619.92
16.000	1.65	146.43	150.05	0.90	0.91	13,339	619.92
16.050	1.62	146.15	149.71	0.90	0.88	13,310	619.92
16.100	1.59	145.88	149.37	0.90	0.84	13,283	619.92
16.150	1.57	145.62	149.04	0.90	0.81	13,257	619.91
16.200	1.55	145.37	148.73	0.90	0.78	13,232	619.91
16.250	1.53	145.14	148.44	0.90	0.75	13,208	619.91
16.300	1.51	144.92	148.17	0.90	0.73	13,187	619.91
16.350	1.50	144.72	147.93	0.90	0.70	13,167	619.91
16.400	1.48	144.54	147.70	0.90	0.68	13,149	619.91
16.450	1.47	144.37	147.49	0.90	0.66	13,132	619.91
16.500	1.45	144.20	147.28	0.90	0.64	13,115	619.91
16.550	1.44	144.05	147.09	0.90	0.62	13,100	619.90
16.600	1.42	143.90	146.91	0.90	0.60	13,085	619.90
16.650	1.41	143.75	146.73	0.90	0.59	13,071	619.90
16.700	1.39	143.61	146.55	0.90	0.57	13,057	619.90
16.750	1.38	143.48	146.39	0.90	0.55	13,044	619.90

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: IB-1C-10 (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
16.800	1.36	143.35	146.22	0.90	0.54	13,030	619.90
16.850	1.35	143.20	146.06	0.90	0.53	13,016	619.90
16.900	1.33	143.05	145.88	0.90	0.52	13,001	619.90
16.950	1.32	142.89	145.70	0.90	0.51	12,986	619.90
17.000	1.30	142.72	145.51	0.90	0.50	12,969	619.90
17.050	1.29	142.54	145.31	0.90	0.48	12,952	619.90
17.100	1.27	142.36	145.10	0.90	0.47	12,934	619.89
17.150	1.26	142.17	144.89	0.90	0.46	12,916	619.89
17.200	1.24	141.98	144.67	0.90	0.45	12,897	619.89
17.250	1.23	141.78	144.45	0.90	0.44	12,878	619.89
17.300	1.21	141.58	144.22	0.90	0.42	12,859	619.89
17.350	1.20	141.38	144.00	0.90	0.41	12,839	619.89
17.400	1.19	141.17	143.76	0.90	0.40	12,819	619.89
17.450	1.17	140.96	143.53	0.90	0.38	12,799	619.89
17.500	1.16	140.75	143.29	0.90	0.37	12,779	619.88
17.550	1.14	140.54	143.05	0.90	0.35	12,758	619.88
17.600	1.13	140.32	142.80	0.90	0.34	12,737	619.88
17.650	1.11	140.11	142.56	0.90	0.33	12,716	619.88
17.700	1.10	139.89	142.31	0.90	0.31	12,695	619.88
17.750	1.08	139.67	142.06	0.90	0.30	12,674	619.88
17.800	1.07	139.45	141.81	0.90	0.28	12,653	619.88
17.850	1.05	139.22	141.56	0.90	0.27	12,632	619.88
17.900	1.04	139.00	141.31	0.90	0.25	12,610	619.87
17.950	1.02	138.78	141.06	0.90	0.24	12,589	619.87
18.000	1.01	138.56	140.81	0.90	0.23	12,568	619.87
18.050	0.99	138.33	140.55	0.90	0.21	12,546	619.87
18.100	0.98	138.11	140.30	0.90	0.20	12,525	619.87
18.150	0.97	137.89	140.05	0.90	0.18	12,504	619.87
18.200	0.96	137.68	139.82	0.90	0.17	12,484	619.87
18.250	0.96	137.49	139.60	0.90	0.16	12,466	619.86
18.300	0.95	137.31	139.40	0.90	0.14	12,449	619.86
18.350	0.95	137.14	139.20	0.90	0.13	12,433	619.86
18.400	0.94	136.98	139.03	0.90	0.12	12,418	619.86
18.450	0.94	136.83	138.86	0.90	0.11	12,404	619.86
18.500	0.93	136.69	138.70	0.90	0.10	12,391	619.86
18.550	0.93	136.56	138.56	0.90	0.10	12,378	619.86
18.600	0.92	136.44	138.42	0.90	0.09	12,367	619.86
18.650	0.92	136.32	138.28	0.90	0.08	12,355	619.86
18.700	0.92	136.21	138.16	0.90	0.07	12,345	619.86
18.750	0.91	136.11	138.04	0.90	0.07	12,335	619.86
18.800	0.91	136.00	137.92	0.90	0.06	12,325	619.86
18.850	0.90	135.91	137.81	0.90	0.05	12,316	619.85

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: IB-1C-10 (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
18.900	0.90	135.81	137.71	0.90	0.05	12,307	619.85
18.950	0.89	135.72	137.60	0.90	0.04	12,298	619.85
19.000	0.89	135.63	137.50	0.90	0.04	12,290	619.85
19.050	0.88	135.54	137.40	0.90	0.03	12,282	619.85
19.100	0.88	135.46	137.31	0.90	0.02	12,274	619.85
19.150	0.87	135.38	137.21	0.90	0.02	12,266	619.85
19.200	0.87	135.30	137.12	0.90	0.01	12,258	619.85
19.250	0.87	135.22	137.03	0.90	0.01	12,251	619.85
19.300	0.86	135.14	136.94	0.90	0.00	12,244	619.85
19.350	0.86	135.06	136.86	0.90	0.00	12,236	619.85
19.400	0.85	134.97	136.77	0.90	0.00	12,228	619.85
19.450	0.85	134.87	136.67	0.90	0.00	12,219	619.85
19.500	0.84	134.76	136.56	0.90	0.00	12,209	619.85
19.550	0.84	134.65	136.45	0.90	0.00	12,198	619.85
19.600	0.84	134.52	136.32	0.90	0.00	12,187	619.85
19.650	0.83	134.39	136.19	0.90	0.00	12,175	619.85
19.700	0.83	134.24	136.04	0.90	0.00	12,162	619.85
19.750	0.82	134.09	135.89	0.90	0.00	12,148	619.84
19.800	0.82	133.93	135.73	0.90	0.00	12,133	619.84
19.850	0.81	133.76	135.56	0.90	0.00	12,118	619.84
19.900	0.81	133.58	135.38	0.90	0.00	12,101	619.84
19.950	0.80	133.40	135.20	0.90	0.00	12,084	619.84
20.000	0.80	133.20	135.00	0.90	0.00	12,066	619.84
20.050	0.80	132.99	134.79	0.90	0.00	12,048	619.84
20.100	0.79	132.78	134.58	0.90	0.00	12,028	619.84
20.150	0.79	132.56	134.36	0.90	0.00	12,008	619.84
20.200	0.78	132.33	134.13	0.90	0.00	11,987	619.83
20.250	0.78	132.09	133.89	0.90	0.00	11,966	619.83
20.300	0.78	131.85	133.65	0.90	0.00	11,944	619.83
20.350	0.77	131.60	133.40	0.90	0.00	11,922	619.83
20.400	0.77	131.34	133.14	0.90	0.00	11,898	619.83
20.450	0.77	131.08	132.88	0.90	0.00	11,875	619.83
20.500	0.76	130.81	132.61	0.90	0.00	11,850	619.82
20.550	0.76	130.53	132.33	0.90	0.00	11,825	619.82
20.600	0.76	130.25	132.05	0.90	0.00	11,800	619.82
20.650	0.75	129.96	131.76	0.90	0.00	11,774	619.82
20.700	0.75	129.66	131.46	0.90	0.00	11,747	619.82
20.750	0.74	129.35	131.15	0.90	0.00	11,720	619.82
20.800	0.74	129.04	130.84	0.90	0.00	11,692	619.81
20.850	0.74	128.72	130.52	0.90	0.00	11,663	619.81
20.900	0.74	128.40	130.20	0.90	0.00	11,634	619.81
20.950	0.73	128.06	129.86	0.90	0.00	11,605	619.81

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: IB-1C-10 (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
21.000	0.73	127.73	129.53	0.90	0.00	11,575	619.81
21.050	0.73	127.38	129.18	0.90	0.00	11,544	619.80
21.100	0.72	127.04	128.84	0.90	0.00	11,514	619.80
21.150	0.72	126.68	128.48	0.90	0.00	11,482	619.80
21.200	0.72	126.31	128.11	0.90	0.00	11,449	619.80
21.250	0.71	125.94	127.74	0.90	0.00	11,415	619.80
21.300	0.71	125.56	127.36	0.90	0.00	11,380	619.79
21.350	0.71	125.18	126.98	0.90	0.00	11,345	619.79
21.400	0.70	124.79	126.59	0.90	0.00	11,310	619.79
21.450	0.70	124.39	126.19	0.90	0.00	11,273	619.79
21.500	0.69	123.99	125.79	0.90	0.00	11,237	619.78
21.550	0.69	123.57	125.37	0.90	0.00	11,199	619.78
21.600	0.69	123.15	124.95	0.90	0.00	11,161	619.78
21.650	0.69	122.72	124.52	0.90	0.00	11,123	619.78
21.700	0.68	122.29	124.09	0.90	0.00	11,084	619.77
21.750	0.68	121.85	123.65	0.90	0.00	11,044	619.77
21.800	0.68	121.41	123.21	0.90	0.00	11,004	619.77
21.850	0.67	120.96	122.76	0.90	0.00	10,964	619.77
21.900	0.67	120.50	122.30	0.90	0.00	10,924	619.76
21.950	0.67	120.04	121.84	0.90	0.00	10,882	619.76
22.000	0.66	119.56	121.36	0.90	0.00	10,840	619.76
22.050	0.66	119.09	120.89	0.90	0.00	10,798	619.75
22.100	0.66	118.60	120.40	0.90	0.00	10,755	619.75
22.150	0.65	118.11	119.91	0.90	0.00	10,710	619.75
22.200	0.65	117.61	119.41	0.90	0.00	10,664	619.74
22.250	0.65	117.10	118.90	0.90	0.00	10,618	619.74
22.300	0.64	116.59	118.39	0.90	0.00	10,572	619.74
22.350	0.64	116.07	117.87	0.90	0.00	10,524	619.73
22.400	0.63	115.54	117.34	0.90	0.00	10,476	619.73
22.450	0.63	115.00	116.80	0.90	0.00	10,428	619.73
22.500	0.63	114.46	116.26	0.90	0.00	10,379	619.72
22.550	0.62	113.92	115.72	0.90	0.00	10,330	619.72
22.600	0.62	113.36	115.16	0.90	0.00	10,281	619.72
22.650	0.62	112.81	114.61	0.90	0.00	10,231	619.71
22.700	0.62	112.24	114.04	0.90	0.00	10,180	619.71
22.750	0.61	111.67	113.47	0.90	0.00	10,130	619.71
22.800	0.61	111.09	112.89	0.90	0.00	10,078	619.70
22.850	0.60	110.50	112.30	0.90	0.00	10,026	619.70
22.900	0.60	109.91	111.71	0.90	0.00	9,971	619.70
22.950	0.60	109.31	111.11	0.90	0.00	9,917	619.69
23.000	0.60	108.70	110.50	0.90	0.00	9,861	619.69
23.050	0.59	108.09	109.89	0.90	0.00	9,806	619.68

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: IB-1C-10 (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
23.100	0.59	107.46	109.26	0.90	0.00	9,750	619.68
23.150	0.58	106.83	108.63	0.90	0.00	9,693	619.67
23.200	0.58	106.20	108.00	0.90	0.00	9,635	619.67
23.250	0.58	105.55	107.35	0.90	0.00	9,578	619.67
23.300	0.57	104.91	106.71	0.90	0.00	9,520	619.66
23.350	0.57	104.25	106.05	0.90	0.00	9,462	619.66
23.400	0.57	103.59	105.39	0.90	0.00	9,403	619.65
23.450	0.57	102.92	104.72	0.90	0.00	9,344	619.65
23.500	0.56	102.25	104.05	0.90	0.00	9,282	619.64
23.550	0.56	101.57	103.37	0.90	0.00	9,220	619.64
23.600	0.55	100.88	102.68	0.90	0.00	9,157	619.63
23.650	0.55	100.18	101.98	0.90	0.00	9,094	619.63
23.700	0.55	99.48	101.28	0.90	0.00	9,031	619.63
23.750	0.54	98.77	100.57	0.90	0.00	8,967	619.62
23.800	0.54	98.06	99.86	0.90	0.00	8,903	619.62
23.850	0.54	97.33	99.13	0.90	0.00	8,839	619.61
23.900	0.53	96.60	98.40	0.90	0.00	8,774	619.61
23.950	0.53	95.87	97.67	0.90	0.00	8,709	619.60
24.000	0.53	95.12	96.92	0.90	0.00	8,641	619.60

Subsection: Pond Inflow Summary | Return Event: 1 years
Label: IB-1C-10 (IN) | Storm Event: 1 year
Scenario: Post-Development 1 year

Summary for Hydrograph Addition at 'IB-1C-10'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C-10A

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	PDA-1C-10A	23,970	12.150	5.99
Flow (In)	IB-1C-10	23,970	12.150	5.99

Subsection: Pond Inflow Summary | Return Event: 10 years
Label: IB-1C-10 (IN) | Storm Event: 10 year
Scenario: Post-Development 10 year

Summary for Hydrograph Addition at 'IB-1C-10'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C-10A

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PDA-1C-10A	69,873	12.150	18.09
Flow (In)	IB-1C-10	69,873	12.150	18.09

Subsection: Pond Inflow Summary | Return Event: 25 years
Label: IB-1C-10 (IN) | Storm Event: 25 year
Scenario: Post-Development 25 year

Summary for Hydrograph Addition at 'IB-1C-10'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C-10A

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	PDA-1C-10A	99,192	12.150	25.55
Flow (In)	IB-1C-10	99,192	12.150	25.55

Subsection: Pond Inflow Summary | Return Event: 100 years
Label: IB-1C-10 (IN) | Storm Event: 100 year
Scenario: Post-Development 100 year

Summary for Hydrograph Addition at 'IB-1C-10'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C-10A

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PDA-1C-10A	162,420	12.150	41.13
Flow (In)	IB-1C-10	162,420	12.150	41.13

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond)
Label: IB-1C-2
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Infiltration	
Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	0.68 ft³/s

Initial Conditions	
Elevation (Water Surface, Initial)	621.75 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
621.75	0.00	0	8,634	0.00	0.00	0.00
621.80	0.00	435	8,769	0.68	0.68	5.51
621.85	0.00	877	8,904	0.68	0.68	10.42
621.90	0.00	1,326	9,041	0.68	0.68	15.41
621.95	0.00	1,781	9,179	0.68	0.68	20.47
622.00	0.00	2,243	9,318	0.68	0.68	25.61
622.05	0.00	2,711	9,385	0.68	0.68	30.80
622.10	0.00	3,182	9,453	0.68	0.68	36.04
622.15	0.00	3,656	9,520	0.68	0.68	41.31
622.20	0.00	4,134	9,588	0.68	0.68	46.61
622.25	0.00	4,615	9,656	0.68	0.68	51.96
622.30	0.00	5,100	9,725	0.68	0.68	57.34
622.35	0.00	5,588	9,794	0.68	0.68	62.76
622.40	0.00	6,079	9,862	0.68	0.68	68.22
622.45	0.00	6,574	9,932	0.68	0.68	73.72
622.50	0.00	7,072	10,001	0.68	0.68	79.26
622.55	0.00	7,574	10,071	0.68	0.68	84.84
622.60	0.00	8,079	10,141	0.68	0.68	90.45
622.65	0.00	8,588	10,211	0.68	0.68	96.10
622.70	0.00	9,100	10,281	0.68	0.68	101.79
622.75	0.00	9,616	10,352	0.68	0.68	107.53
622.80	0.00	10,136	10,422	0.68	0.68	113.30
622.85	0.00	10,658	10,494	0.68	0.68	119.11
622.90	0.00	11,185	10,565	0.68	0.68	124.96
622.95	0.00	11,715	10,636	0.68	0.68	130.85
623.00	0.00	12,248	10,708	0.68	0.68	136.77
623.05	0.54	12,786	10,780	0.68	1.22	143.28
623.10	1.52	13,327	10,853	0.68	2.20	150.27

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 1 years
Label: IB-1C-2 Storm Event: 1 year
Scenario: Post-Development 1 year

Elevation (ft)	Outflow (ft^3/s)	Storage (ft^3)	Area (ft^2)	Infiltration (ft^3/s)	Flow (Total) (ft^3/s)	2S/t + O (ft^3/s)
623.15	2.79	13,871	10,925	0.68	3.47	157.59
623.20	4.29	14,419	10,998	0.68	4.97	165.19
623.25	6.01	14,971	11,071	0.68	6.69	173.03
623.30	7.89	15,526	11,144	0.68	8.57	181.08
623.35	9.14	16,085	11,218	0.68	9.82	188.54
623.40	9.63	16,648	11,291	0.68	10.31	195.28
623.45	10.13	17,214	11,365	0.68	10.81	202.08
623.50	10.65	17,784	11,440	0.68	11.33	208.94
623.55	11.17	18,358	11,514	0.68	11.85	215.83
623.60	11.68	18,936	11,589	0.68	12.36	222.76
623.65	12.21	19,517	11,664	0.68	12.89	229.75
623.70	12.74	20,102	11,739	0.68	13.42	236.78
623.75	13.27	20,691	11,814	0.68	13.95	243.85
623.80	13.80	21,284	11,890	0.68	14.48	250.97
623.85	14.34	21,880	11,966	0.68	15.02	258.13
623.90	14.87	22,480	12,042	0.68	15.55	265.33
623.95	15.41	23,084	12,118	0.68	16.09	272.58
624.00	15.97	23,692	12,195	0.68	16.65	279.89
624.05	16.51	24,304	12,268	0.68	17.19	287.23
624.10	17.05	24,919	12,342	0.68	17.73	294.60
624.15	17.58	25,538	12,415	0.68	18.26	302.01
624.20	18.13	26,160	12,489	0.68	18.81	309.48
624.25	18.67	26,787	12,564	0.68	19.35	316.98
624.30	19.18	27,417	12,638	0.68	19.86	324.49
624.35	19.73	28,051	12,713	0.68	20.41	332.08
624.40	20.24	28,688	12,787	0.68	20.92	339.68
624.45	20.79	29,329	12,862	0.68	21.47	347.35
624.50	21.29	29,974	12,938	0.68	21.97	355.02
624.55	21.81	30,623	13,013	0.68	22.49	362.74
624.60	22.32	31,276	13,089	0.68	23.00	370.51
624.65	22.83	31,932	13,165	0.68	23.51	378.31
624.70	23.34	32,592	13,241	0.68	24.02	386.16
624.75	23.75	33,256	13,317	0.68	24.43	393.94
624.80	24.07	33,924	13,394	0.68	24.75	401.68
624.85	24.39	34,595	13,470	0.68	25.07	409.46
624.90	24.71	35,271	13,547	0.68	25.39	417.29
624.95	25.02	35,950	13,625	0.68	25.70	425.15
625.00	25.33	36,633	13,702	0.68	26.01	433.05
625.05	25.64	37,320	13,780	0.68	26.32	440.99
625.10	25.94	38,011	13,858	0.68	26.62	448.97
625.15	26.24	38,706	13,936	0.68	26.92	456.99
625.20	26.54	39,405	14,014	0.68	27.22	465.05
625.25	26.82	40,108	14,093	0.68	27.50	473.14

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 1 years
Label: IB-1C-2 Storm Event: 1 year
Scenario: Post-Development 1 year

Elevation (ft)	Outflow (ft^3/s)	Storage (ft^3)	Area (ft^2)	Infiltration (ft^3/s)	Flow (Total) (ft^3/s)	2S/t + O (ft^3/s)
625.30	27.11	40,814	14,171	0.68	27.79	481.28
625.35	27.39	41,525	14,250	0.68	28.07	489.46
625.40	27.68	42,239	14,330	0.68	28.36	497.68
625.45	27.95	42,958	14,409	0.68	28.63	505.94
625.50	28.24	43,680	14,489	0.68	28.92	514.25
625.55	28.51	44,406	14,568	0.68	29.19	522.60
625.60	28.78	45,137	14,649	0.68	29.46	530.98
625.65	29.05	45,871	14,729	0.68	29.73	539.41
625.70	29.32	46,610	14,809	0.68	30.00	547.89
625.75	29.59	47,352	14,890	0.68	30.27	556.40
625.80	29.85	48,099	14,971	0.68	30.53	564.96
625.85	30.10	48,849	15,052	0.68	30.78	573.55
625.90	30.36	49,604	15,134	0.68	31.04	582.20
625.95	30.61	50,363	15,215	0.68	31.29	590.88
626.00	30.88	51,126	15,297	0.68	31.56	599.62

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond) | Return Event: 10 years
Label: IB-1C-2 | Storm Event: 10 year
Scenario: Post-Development 10 year

Infiltration	
Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	0.68 ft³/s

Initial Conditions	
Elevation (Water Surface, Initial)	621.75 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
621.75	0.00	0	8,634	0.00	0.00	0.00
621.80	0.00	435	8,769	0.68	0.68	5.51
621.85	0.00	877	8,904	0.68	0.68	10.42
621.90	0.00	1,326	9,041	0.68	0.68	15.41
621.95	0.00	1,781	9,179	0.68	0.68	20.47
622.00	0.00	2,243	9,318	0.68	0.68	25.61
622.05	0.00	2,711	9,385	0.68	0.68	30.80
622.10	0.00	3,182	9,453	0.68	0.68	36.04
622.15	0.00	3,656	9,520	0.68	0.68	41.31
622.20	0.00	4,134	9,588	0.68	0.68	46.61
622.25	0.00	4,615	9,656	0.68	0.68	51.96
622.30	0.00	5,100	9,725	0.68	0.68	57.34
622.35	0.00	5,588	9,794	0.68	0.68	62.76
622.40	0.00	6,079	9,862	0.68	0.68	68.22
622.45	0.00	6,574	9,932	0.68	0.68	73.72
622.50	0.00	7,072	10,001	0.68	0.68	79.26
622.55	0.00	7,574	10,071	0.68	0.68	84.84
622.60	0.00	8,079	10,141	0.68	0.68	90.45
622.65	0.00	8,588	10,211	0.68	0.68	96.10
622.70	0.00	9,100	10,281	0.68	0.68	101.79
622.75	0.00	9,616	10,352	0.68	0.68	107.53
622.80	0.00	10,136	10,422	0.68	0.68	113.30
622.85	0.00	10,658	10,494	0.68	0.68	119.11
622.90	0.00	11,185	10,565	0.68	0.68	124.96
622.95	0.00	11,715	10,636	0.68	0.68	130.85
623.00	0.00	12,248	10,708	0.68	0.68	136.77
623.05	0.54	12,786	10,780	0.68	1.22	143.28
623.10	1.52	13,327	10,853	0.68	2.20	150.27

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 10 years
Label: IB-1C-2 Storm Event: 10 year
Scenario: Post-Development 10 year

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
623.15	2.79	13,871	10,925	0.68	3.47	157.59
623.20	4.29	14,419	10,998	0.68	4.97	165.19
623.25	6.01	14,971	11,071	0.68	6.69	173.03
623.30	7.89	15,526	11,144	0.68	8.57	181.08
623.35	9.14	16,085	11,218	0.68	9.82	188.54
623.40	9.63	16,648	11,291	0.68	10.31	195.28
623.45	10.13	17,214	11,365	0.68	10.81	202.08
623.50	10.65	17,784	11,440	0.68	11.33	208.94
623.55	11.17	18,358	11,514	0.68	11.85	215.83
623.60	11.68	18,936	11,589	0.68	12.36	222.76
623.65	12.21	19,517	11,664	0.68	12.89	229.75
623.70	12.74	20,102	11,739	0.68	13.42	236.78
623.75	13.27	20,691	11,814	0.68	13.95	243.85
623.80	13.80	21,284	11,890	0.68	14.48	250.97
623.85	14.34	21,880	11,966	0.68	15.02	258.13
623.90	14.87	22,480	12,042	0.68	15.55	265.33
623.95	15.41	23,084	12,118	0.68	16.09	272.58
624.00	15.97	23,692	12,195	0.68	16.65	279.89
624.05	16.51	24,304	12,268	0.68	17.19	287.23
624.10	17.05	24,919	12,342	0.68	17.73	294.60
624.15	17.58	25,538	12,415	0.68	18.26	302.01
624.20	18.13	26,160	12,489	0.68	18.81	309.48
624.25	18.67	26,787	12,564	0.68	19.35	316.98
624.30	19.18	27,417	12,638	0.68	19.86	324.49
624.35	19.73	28,051	12,713	0.68	20.41	332.08
624.40	20.24	28,688	12,787	0.68	20.92	339.68
624.45	20.79	29,329	12,862	0.68	21.47	347.35
624.50	21.29	29,974	12,938	0.68	21.97	355.02
624.55	21.81	30,623	13,013	0.68	22.49	362.74
624.60	22.32	31,276	13,089	0.68	23.00	370.51
624.65	22.83	31,932	13,165	0.68	23.51	378.31
624.70	23.34	32,592	13,241	0.68	24.02	386.16
624.75	23.75	33,256	13,317	0.68	24.43	393.94
624.80	24.07	33,924	13,394	0.68	24.75	401.68
624.85	24.39	34,595	13,470	0.68	25.07	409.46
624.90	24.71	35,271	13,547	0.68	25.39	417.29
624.95	25.02	35,950	13,625	0.68	25.70	425.15
625.00	25.33	36,633	13,702	0.68	26.01	433.05
625.05	25.64	37,320	13,780	0.68	26.32	440.99
625.10	25.94	38,011	13,858	0.68	26.62	448.97
625.15	26.24	38,706	13,936	0.68	26.92	456.99
625.20	26.54	39,405	14,014	0.68	27.22	465.05
625.25	26.82	40,108	14,093	0.68	27.50	473.14

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 10 years
Label: IB-1C-2 Storm Event: 10 year
Scenario: Post-Development 10 year

Elevation (ft)	Outflow (ft^3/s)	Storage (ft^3)	Area (ft^2)	Infiltration (ft^3/s)	Flow (Total) (ft^3/s)	2S/t + O (ft^3/s)
625.30	27.11	40,814	14,171	0.68	27.79	481.28
625.35	27.39	41,525	14,250	0.68	28.07	489.46
625.40	27.68	42,239	14,330	0.68	28.36	497.68
625.45	27.95	42,958	14,409	0.68	28.63	505.94
625.50	28.24	43,680	14,489	0.68	28.92	514.25
625.55	28.51	44,406	14,568	0.68	29.19	522.60
625.60	28.78	45,137	14,649	0.68	29.46	530.98
625.65	29.05	45,871	14,729	0.68	29.73	539.41
625.70	29.32	46,610	14,809	0.68	30.00	547.89
625.75	29.59	47,352	14,890	0.68	30.27	556.40
625.80	29.85	48,099	14,971	0.68	30.53	564.96
625.85	30.10	48,849	15,052	0.68	30.78	573.55
625.90	30.36	49,604	15,134	0.68	31.04	582.20
625.95	30.61	50,363	15,215	0.68	31.29	590.88
626.00	30.88	51,126	15,297	0.68	31.56	599.62

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 25 years
Label: IB-1C-2 Storm Event: 25 year
Scenario: Post-Development 25 year

Infiltration	
Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	0.68 ft³/s

Initial Conditions	
Elevation (Water Surface, Initial)	621.75 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
621.75	0.00	0	8,634	0.00	0.00	0.00
621.80	0.00	435	8,769	0.68	0.68	5.51
621.85	0.00	877	8,904	0.68	0.68	10.42
621.90	0.00	1,326	9,041	0.68	0.68	15.41
621.95	0.00	1,781	9,179	0.68	0.68	20.47
622.00	0.00	2,243	9,318	0.68	0.68	25.61
622.05	0.00	2,711	9,385	0.68	0.68	30.80
622.10	0.00	3,182	9,453	0.68	0.68	36.04
622.15	0.00	3,656	9,520	0.68	0.68	41.31
622.20	0.00	4,134	9,588	0.68	0.68	46.61
622.25	0.00	4,615	9,656	0.68	0.68	51.96
622.30	0.00	5,100	9,725	0.68	0.68	57.34
622.35	0.00	5,588	9,794	0.68	0.68	62.76
622.40	0.00	6,079	9,862	0.68	0.68	68.22
622.45	0.00	6,574	9,932	0.68	0.68	73.72
622.50	0.00	7,072	10,001	0.68	0.68	79.26
622.55	0.00	7,574	10,071	0.68	0.68	84.84
622.60	0.00	8,079	10,141	0.68	0.68	90.45
622.65	0.00	8,588	10,211	0.68	0.68	96.10
622.70	0.00	9,100	10,281	0.68	0.68	101.79
622.75	0.00	9,616	10,352	0.68	0.68	107.53
622.80	0.00	10,136	10,422	0.68	0.68	113.30
622.85	0.00	10,658	10,494	0.68	0.68	119.11
622.90	0.00	11,185	10,565	0.68	0.68	124.96
622.95	0.00	11,715	10,636	0.68	0.68	130.85
623.00	0.00	12,248	10,708	0.68	0.68	136.77
623.05	0.54	12,786	10,780	0.68	1.22	143.28
623.10	1.52	13,327	10,853	0.68	2.20	150.27

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond) — Return Event: 25 years
Label: IB-1C-2 — Storm Event: 25 year
Scenario: Post-Development 25 year

Elevation (ft)	Outflow (ft^3/s)	Storage (ft^3)	Area (ft^2)	Infiltration (ft^3/s)	Flow (Total) (ft^3/s)	2S/t + O (ft^3/s)
623.15	2.79	13,871	10,925	0.68	3.47	157.59
623.20	4.29	14,419	10,998	0.68	4.97	165.19
623.25	6.01	14,971	11,071	0.68	6.69	173.03
623.30	7.89	15,526	11,144	0.68	8.57	181.08
623.35	9.14	16,085	11,218	0.68	9.82	188.54
623.40	9.63	16,648	11,291	0.68	10.31	195.28
623.45	10.13	17,214	11,365	0.68	10.81	202.08
623.50	10.65	17,784	11,440	0.68	11.33	208.94
623.55	11.17	18,358	11,514	0.68	11.85	215.83
623.60	11.68	18,936	11,589	0.68	12.36	222.76
623.65	12.21	19,517	11,664	0.68	12.89	229.75
623.70	12.74	20,102	11,739	0.68	13.42	236.78
623.75	13.27	20,691	11,814	0.68	13.95	243.85
623.80	13.80	21,284	11,890	0.68	14.48	250.97
623.85	14.34	21,880	11,966	0.68	15.02	258.13
623.90	14.87	22,480	12,042	0.68	15.55	265.33
623.95	15.41	23,084	12,118	0.68	16.09	272.58
624.00	15.97	23,692	12,195	0.68	16.65	279.89
624.05	16.51	24,304	12,268	0.68	17.19	287.23
624.10	17.05	24,919	12,342	0.68	17.73	294.60
624.15	17.58	25,538	12,415	0.68	18.26	302.01
624.20	18.13	26,160	12,489	0.68	18.81	309.48
624.25	18.67	26,787	12,564	0.68	19.35	316.98
624.30	19.18	27,417	12,638	0.68	19.86	324.49
624.35	19.73	28,051	12,713	0.68	20.41	332.08
624.40	20.24	28,688	12,787	0.68	20.92	339.68
624.45	20.79	29,329	12,862	0.68	21.47	347.35
624.50	21.29	29,974	12,938	0.68	21.97	355.02
624.55	21.81	30,623	13,013	0.68	22.49	362.74
624.60	22.32	31,276	13,089	0.68	23.00	370.51
624.65	22.83	31,932	13,165	0.68	23.51	378.31
624.70	23.34	32,592	13,241	0.68	24.02	386.16
624.75	23.75	33,256	13,317	0.68	24.43	393.94
624.80	24.07	33,924	13,394	0.68	24.75	401.68
624.85	24.39	34,595	13,470	0.68	25.07	409.46
624.90	24.71	35,271	13,547	0.68	25.39	417.29
624.95	25.02	35,950	13,625	0.68	25.70	425.15
625.00	25.33	36,633	13,702	0.68	26.01	433.05
625.05	25.64	37,320	13,780	0.68	26.32	440.99
625.10	25.94	38,011	13,858	0.68	26.62	448.97
625.15	26.24	38,706	13,936	0.68	26.92	456.99
625.20	26.54	39,405	14,014	0.68	27.22	465.05
625.25	26.82	40,108	14,093	0.68	27.50	473.14

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond)
Return Event: 25 years
Label: IB-1C-2
Storm Event: 25 year
Scenario: Post-Development 25 year

Elevation (ft)	Outflow (ft^3/s)	Storage (ft^3)	Area (ft^2)	Infiltration (ft^3/s)	Flow (Total) (ft^3/s)	2S/t + O (ft^3/s)
625.30	27.11	40,814	14,171	0.68	27.79	481.28
625.35	27.39	41,525	14,250	0.68	28.07	489.46
625.40	27.68	42,239	14,330	0.68	28.36	497.68
625.45	27.95	42,958	14,409	0.68	28.63	505.94
625.50	28.24	43,680	14,489	0.68	28.92	514.25
625.55	28.51	44,406	14,568	0.68	29.19	522.60
625.60	28.78	45,137	14,649	0.68	29.46	530.98
625.65	29.05	45,871	14,729	0.68	29.73	539.41
625.70	29.32	46,610	14,809	0.68	30.00	547.89
625.75	29.59	47,352	14,890	0.68	30.27	556.40
625.80	29.85	48,099	14,971	0.68	30.53	564.96
625.85	30.10	48,849	15,052	0.68	30.78	573.55
625.90	30.36	49,604	15,134	0.68	31.04	582.20
625.95	30.61	50,363	15,215	0.68	31.29	590.88
626.00	30.88	51,126	15,297	0.68	31.56	599.62

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond) — Return Event: 100 years

Label: IB-1C-2 — Storm Event: 100 year

Scenario: Post-Development 100 year

Infiltration	
Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	0.68 ft³/s

Initial Conditions	
Elevation (Water Surface, Initial)	621.75 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
621.75	0.00	0	8,634	0.00	0.00	0.00
621.80	0.00	435	8,769	0.68	0.68	5.51
621.85	0.00	877	8,904	0.68	0.68	10.42
621.90	0.00	1,326	9,041	0.68	0.68	15.41
621.95	0.00	1,781	9,179	0.68	0.68	20.47
622.00	0.00	2,243	9,318	0.68	0.68	25.61
622.05	0.00	2,711	9,385	0.68	0.68	30.80
622.10	0.00	3,182	9,453	0.68	0.68	36.04
622.15	0.00	3,656	9,520	0.68	0.68	41.31
622.20	0.00	4,134	9,588	0.68	0.68	46.61
622.25	0.00	4,615	9,656	0.68	0.68	51.96
622.30	0.00	5,100	9,725	0.68	0.68	57.34
622.35	0.00	5,588	9,794	0.68	0.68	62.76
622.40	0.00	6,079	9,862	0.68	0.68	68.22
622.45	0.00	6,574	9,932	0.68	0.68	73.72
622.50	0.00	7,072	10,001	0.68	0.68	79.26
622.55	0.00	7,574	10,071	0.68	0.68	84.84
622.60	0.00	8,079	10,141	0.68	0.68	90.45
622.65	0.00	8,588	10,211	0.68	0.68	96.10
622.70	0.00	9,100	10,281	0.68	0.68	101.79
622.75	0.00	9,616	10,352	0.68	0.68	107.53
622.80	0.00	10,136	10,422	0.68	0.68	113.30
622.85	0.00	10,658	10,494	0.68	0.68	119.11
622.90	0.00	11,185	10,565	0.68	0.68	124.96
622.95	0.00	11,715	10,636	0.68	0.68	130.85
623.00	0.00	12,248	10,708	0.68	0.68	136.77
623.05	0.54	12,786	10,780	0.68	1.22	143.28
623.10	1.52	13,327	10,853	0.68	2.20	150.27

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond) — Return Event: 100 years
Label: IB-1C-2 — Storm Event: 100 year
Scenario: Post-Development 100 year

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
623.15	2.79	13,871	10,925	0.68	3.47	157.59
623.20	4.29	14,419	10,998	0.68	4.97	165.19
623.25	6.01	14,971	11,071	0.68	6.69	173.03
623.30	7.89	15,526	11,144	0.68	8.57	181.08
623.35	9.14	16,085	11,218	0.68	9.82	188.54
623.40	9.63	16,648	11,291	0.68	10.31	195.28
623.45	10.13	17,214	11,365	0.68	10.81	202.08
623.50	10.65	17,784	11,440	0.68	11.33	208.94
623.55	11.17	18,358	11,514	0.68	11.85	215.83
623.60	11.68	18,936	11,589	0.68	12.36	222.76
623.65	12.21	19,517	11,664	0.68	12.89	229.75
623.70	12.74	20,102	11,739	0.68	13.42	236.78
623.75	13.27	20,691	11,814	0.68	13.95	243.85
623.80	13.80	21,284	11,890	0.68	14.48	250.97
623.85	14.34	21,880	11,966	0.68	15.02	258.13
623.90	14.87	22,480	12,042	0.68	15.55	265.33
623.95	15.41	23,084	12,118	0.68	16.09	272.58
624.00	15.97	23,692	12,195	0.68	16.65	279.89
624.05	16.51	24,304	12,268	0.68	17.19	287.23
624.10	17.05	24,919	12,342	0.68	17.73	294.60
624.15	17.58	25,538	12,415	0.68	18.26	302.01
624.20	18.13	26,160	12,489	0.68	18.81	309.48
624.25	18.67	26,787	12,564	0.68	19.35	316.98
624.30	19.18	27,417	12,638	0.68	19.86	324.49
624.35	19.73	28,051	12,713	0.68	20.41	332.08
624.40	20.24	28,688	12,787	0.68	20.92	339.68
624.45	20.79	29,329	12,862	0.68	21.47	347.35
624.50	21.29	29,974	12,938	0.68	21.97	355.02
624.55	21.81	30,623	13,013	0.68	22.49	362.74
624.60	22.32	31,276	13,089	0.68	23.00	370.51
624.65	22.83	31,932	13,165	0.68	23.51	378.31
624.70	23.34	32,592	13,241	0.68	24.02	386.16
624.75	23.75	33,256	13,317	0.68	24.43	393.94
624.80	24.07	33,924	13,394	0.68	24.75	401.68
624.85	24.39	34,595	13,470	0.68	25.07	409.46
624.90	24.71	35,271	13,547	0.68	25.39	417.29
624.95	25.02	35,950	13,625	0.68	25.70	425.15
625.00	25.33	36,633	13,702	0.68	26.01	433.05
625.05	25.64	37,320	13,780	0.68	26.32	440.99
625.10	25.94	38,011	13,858	0.68	26.62	448.97
625.15	26.24	38,706	13,936	0.68	26.92	456.99
625.20	26.54	39,405	14,014	0.68	27.22	465.05
625.25	26.82	40,108	14,093	0.68	27.50	473.14

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond) | Return Event: 100 years
Label: IB-1C-2 | Storm Event: 100 year
Scenario: Post-Development 100 year

Elevation (ft)	Outflow (ft^3/s)	Storage (ft^3)	Area (ft^2)	Infiltration (ft^3/s)	Flow (Total) (ft^3/s)	2S/t + O (ft^3/s)
625.30	27.11	40,814	14,171	0.68	27.79	481.28
625.35	27.39	41,525	14,250	0.68	28.07	489.46
625.40	27.68	42,239	14,330	0.68	28.36	497.68
625.45	27.95	42,958	14,409	0.68	28.63	505.94
625.50	28.24	43,680	14,489	0.68	28.92	514.25
625.55	28.51	44,406	14,568	0.68	29.19	522.60
625.60	28.78	45,137	14,649	0.68	29.46	530.98
625.65	29.05	45,871	14,729	0.68	29.73	539.41
625.70	29.32	46,610	14,809	0.68	30.00	547.89
625.75	29.59	47,352	14,890	0.68	30.27	556.40
625.80	29.85	48,099	14,971	0.68	30.53	564.96
625.85	30.10	48,849	15,052	0.68	30.78	573.55
625.90	30.36	49,604	15,134	0.68	31.04	582.20
625.95	30.61	50,363	15,215	0.68	31.29	590.88
626.00	30.88	51,126	15,297	0.68	31.56	599.62

Stormwater Hydrologic Calculations

Subsection: Level Pool Pond Routing Summary | Return Event: 1 years
Label: IB-1C-2 (IN) | Storm Event: 1 year
Scenario: Post-Development 1 year

Infiltration	
Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	0.68 ft³/s

Initial Conditions	
Elevation (Water Surface, Initial)	621.75 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	7.46 ft³/s	Time to Peak (Flow, In)	12.100 hours
Infiltration (Peak)	0.68 ft³/s	Time to Peak (Infiltration)	11.750 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	622.90 ft
Volume (Peak)	11,164 ft³

Mass Balance (ft³)	
Volume (Initial)	0 ft³
Volume (Total Inflow)	26,823 ft³
Volume (Total Infiltration)	26,764 ft³
Volume (Total Outlet Outflow)	0 ft³
Volume (Retained)	58 ft³
Volume (Unrouted)	0 ft³
Error (Mass Balance)	0.0 %

Stormwater Hydrologic Calculations

Subsection: Level Pool Pond Routing Summary — Return Event: 10 years
Label: IB-1C-2 (IN) — Storm Event: 10 year
Scenario: Post-Development 10 year

Infiltration	
Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	0.68 ft³/s

Initial Conditions	
Elevation (Water Surface, Initial)	621.75 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	20.43 ft³/s	Time to Peak (Flow, In)	12.100 hours
Infiltration (Peak)	0.68 ft³/s	Time to Peak (Infiltration)	10.650 hours
Flow (Peak Outlet)	11.63 ft³/s	Time to Peak (Flow, Outlet)	12.250 hours

Elevation (Water Surface, Peak)	623.59 ft
Volume (Peak)	18,872 ft³

Mass Balance (ft³)	
Volume (Initial)	0 ft³
Volume (Total Inflow)	72,982 ft³
Volume (Total Infiltration)	35,461 ft³
Volume (Total Outlet Outflow)	32,623 ft³
Volume (Retained)	4,898 ft³
Volume (Unrouted)	0 ft³
Error (Mass Balance)	0.0 %

Stormwater Hydrologic Calculations

Subsection: Level Pool Pond Routing Summary	Return Event: 25 years
Label: IB-1C-2 (IN)	Storm Event: 25 year
Scenario: Post-Development 25 year	

Infiltration

Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	0.68 ft³/s

Initial Conditions

Elevation (Water Surface, Initial)	621.75 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	28.20 ft³/s	Time to Peak (Flow, In)	12.100 hours
Infiltration (Peak)	0.68 ft³/s	Time to Peak (Infiltration)	9.900 hours
Flow (Peak Outlet)	16.85 ft³/s	Time to Peak (Flow, Outlet)	12.200 hours

Elevation (Water Surface, Peak)	624.08 ft
Volume (Peak)	24,695 ft³

Mass Balance (ft³)

Volume (Initial)	0 ft³
Volume (Total Inflow)	101,783 ft³
Volume (Total Infiltration)	37,572 ft³
Volume (Total Outlet Outflow)	56,421 ft³
Volume (Retained)	7,790 ft³
Volume (Unrouted)	0 ft³
Error (Mass Balance)	0.0 %

Stormwater Hydrologic Calculations

Subsection: Level Pool Pond Routing Summary | Return Event: 100 years
Label: IB-1C-2 (IN) | Storm Event: 100 year
Scenario: Post-Development 100 year

Infiltration	
Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	0.68 ft³/s

Initial Conditions	
Elevation (Water Surface, Initial)	621.75 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	44.23 ft³/s	Time to Peak (Flow, In)	12.100 hours
Infiltration (Peak)	0.68 ft³/s	Time to Peak (Infiltration)	8.650 hours
Flow (Peak Outlet)	25.18 ft³/s	Time to Peak (Flow, Outlet)	12.250 hours

Elevation (Water Surface, Peak)	624.98 ft
Volume (Peak)	36,298 ft³

Mass Balance (ft³)	
Volume (Initial)	0 ft³
Volume (Total Inflow)	163,166 ft³
Volume (Total Infiltration)	40,936 ft³
Volume (Total Outlet Outflow)	110,939 ft³
Volume (Retained)	11,291 ft³
Volume (Unrouted)	0 ft³
Error (Mass Balance)	0.0 %

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: IB-1C-2 (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
0.000	0.00	0.00	0.00	0.00	0.00	0	621.75
0.050	0.00	0.00	0.00	0.00	0.00	0	621.75
0.100	0.00	0.00	0.00	0.00	0.00	0	621.75
0.150	0.00	0.00	0.00	0.00	0.00	0	621.75
0.200	0.00	0.00	0.00	0.00	0.00	0	621.75
0.250	0.00	0.00	0.00	0.00	0.00	0	621.75
0.300	0.00	0.00	0.00	0.00	0.00	0	621.75
0.350	0.00	0.00	0.00	0.00	0.00	0	621.75
0.400	0.00	0.00	0.00	0.00	0.00	0	621.75
0.450	0.00	0.00	0.00	0.00	0.00	0	621.75
0.500	0.00	0.00	0.00	0.00	0.00	0	621.75
0.550	0.00	0.00	0.00	0.00	0.00	0	621.75
0.600	0.00	0.00	0.00	0.00	0.00	0	621.75
0.650	0.00	0.00	0.00	0.00	0.00	0	621.75
0.700	0.00	0.00	0.00	0.00	0.00	0	621.75
0.750	0.00	0.00	0.00	0.00	0.00	0	621.75
0.800	0.00	0.00	0.00	0.00	0.00	0	621.75
0.850	0.00	0.00	0.00	0.00	0.00	0	621.75
0.900	0.00	0.00	0.00	0.00	0.00	0	621.75
0.950	0.00	0.00	0.00	0.00	0.00	0	621.75
1.000	0.00	0.00	0.00	0.00	0.00	0	621.75
1.050	0.00	0.00	0.00	0.00	0.00	0	621.75
1.100	0.00	0.00	0.00	0.00	0.00	0	621.75
1.150	0.00	0.00	0.00	0.00	0.00	0	621.75
1.200	0.00	0.00	0.00	0.00	0.00	0	621.75
1.250	0.00	0.00	0.00	0.00	0.00	0	621.75
1.300	0.00	0.00	0.00	0.00	0.00	0	621.75
1.350	0.00	0.00	0.00	0.00	0.00	0	621.75
1.400	0.00	0.00	0.00	0.00	0.00	0	621.75
1.450	0.00	0.00	0.00	0.00	0.00	0	621.75
1.500	0.00	0.00	0.00	0.00	0.00	0	621.75
1.550	0.00	0.00	0.00	0.00	0.00	0	621.75
1.600	0.00	0.00	0.00	0.00	0.00	0	621.75
1.650	0.00	0.00	0.00	0.00	0.00	0	621.75
1.700	0.00	0.00	0.00	0.00	0.00	0	621.75
1.750	0.00	0.00	0.00	0.00	0.00	0	621.75
1.800	0.00	0.00	0.00	0.00	0.00	0	621.75
1.850	0.00	0.00	0.00	0.00	0.00	0	621.75
1.900	0.00	0.00	0.00	0.00	0.00	0	621.75
1.950	0.00	0.00	0.00	0.00	0.00	0	621.75
2.000	0.00	0.00	0.00	0.00	0.00	0	621.75
2.050	0.00	0.00	0.00	0.00	0.00	0	621.75

Subsection: Pond Routing Calculations (Total Out)	Return Event: 1 years
Label: IB-1C-2 (OUT)	Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
2.100	0.00	0.00	0.00	0.00	0.00	0	621.75
2.150	0.00	0.00	0.00	0.00	0.00	0	621.75
2.200	0.00	0.00	0.00	0.00	0.00	0	621.75
2.250	0.00	0.00	0.00	0.00	0.00	0	621.75
2.300	0.00	0.00	0.00	0.00	0.00	0	621.75
2.350	0.00	0.00	0.00	0.00	0.00	0	621.75
2.400	0.00	0.00	0.00	0.00	0.00	0	621.75
2.450	0.00	0.00	0.00	0.00	0.00	0	621.75
2.500	0.00	0.00	0.00	0.00	0.00	0	621.75
2.550	0.00	0.00	0.00	0.00	0.00	0	621.75
2.600	0.00	0.00	0.00	0.00	0.00	0	621.75
2.650	0.00	0.00	0.00	0.00	0.00	0	621.75
2.700	0.00	0.00	0.00	0.00	0.00	0	621.75
2.750	0.00	0.00	0.00	0.00	0.00	0	621.75
2.800	0.00	0.00	0.00	0.00	0.00	0	621.75
2.850	0.00	0.00	0.00	0.00	0.00	0	621.75
2.900	0.00	0.00	0.00	0.00	0.00	0	621.75
2.950	0.00	0.00	0.00	0.00	0.00	0	621.75
3.000	0.00	0.00	0.00	0.00	0.00	0	621.75
3.050	0.00	0.00	0.00	0.00	0.00	0	621.75
3.100	0.00	0.00	0.00	0.00	0.00	0	621.75
3.150	0.00	0.00	0.00	0.00	0.00	0	621.75
3.200	0.00	0.00	0.00	0.00	0.00	0	621.75
3.250	0.00	0.00	0.00	0.00	0.00	0	621.75
3.300	0.00	0.00	0.00	0.00	0.00	0	621.75
3.350	0.00	0.00	0.00	0.00	0.00	0	621.75
3.400	0.00	0.00	0.00	0.00	0.00	0	621.75
3.450	0.00	0.00	0.00	0.00	0.00	0	621.75
3.500	0.00	0.00	0.00	0.00	0.00	0	621.75
3.550	0.00	0.00	0.00	0.00	0.00	0	621.75
3.600	0.00	0.00	0.00	0.00	0.00	0	621.75
3.650	0.00	0.00	0.00	0.00	0.00	0	621.75
3.700	0.00	0.00	0.00	0.00	0.00	0	621.75
3.750	0.00	0.00	0.00	0.00	0.00	0	621.75
3.800	0.00	0.00	0.00	0.00	0.00	0	621.75
3.850	0.00	0.00	0.00	0.00	0.00	0	621.75
3.900	0.00	0.00	0.00	0.00	0.00	0	621.75
3.950	0.00	0.00	0.00	0.00	0.00	0	621.75
4.000	0.00	0.00	0.00	0.00	0.00	0	621.75
4.050	0.00	0.00	0.00	0.00	0.00	0	621.75
4.100	0.00	0.00	0.00	0.00	0.00	0	621.75
4.150	0.00	0.00	0.00	0.00	0.00	0	621.75

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: IB-1C-2 (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
4.200	0.00	0.00	0.00	0.00	0.00	0	621.75
4.250	0.00	0.00	0.00	0.00	0.00	0	621.75
4.300	0.00	0.00	0.00	0.00	0.00	0	621.75
4.350	0.00	0.00	0.00	0.00	0.00	0	621.75
4.400	0.00	0.00	0.00	0.00	0.00	0	621.75
4.450	0.00	0.00	0.00	0.00	0.00	0	621.75
4.500	0.00	0.00	0.00	0.00	0.00	0	621.75
4.550	0.00	0.00	0.00	0.00	0.00	0	621.75
4.600	0.00	0.00	0.00	0.00	0.00	0	621.75
4.650	0.00	0.00	0.00	0.00	0.00	0	621.75
4.700	0.00	0.00	0.00	0.00	0.00	0	621.75
4.750	0.00	0.00	0.00	0.00	0.00	0	621.75
4.800	0.00	0.00	0.00	0.00	0.00	0	621.75
4.850	0.00	0.00	0.00	0.00	0.00	0	621.75
4.900	0.00	0.00	0.00	0.00	0.00	0	621.75
4.950	0.00	0.00	0.00	0.00	0.00	0	621.75
5.000	0.00	0.00	0.00	0.00	0.00	0	621.75
5.050	0.00	0.00	0.00	0.00	0.00	0	621.75
5.100	0.00	0.00	0.00	0.00	0.00	0	621.75
5.150	0.00	0.00	0.00	0.00	0.00	0	621.75
5.200	0.00	0.00	0.00	0.00	0.00	0	621.75
5.250	0.00	0.00	0.00	0.00	0.00	0	621.75
5.300	0.00	0.00	0.00	0.00	0.00	0	621.75
5.350	0.00	0.00	0.00	0.00	0.00	0	621.75
5.400	0.00	0.00	0.00	0.00	0.00	0	621.75
5.450	0.00	0.00	0.00	0.00	0.00	0	621.75
5.500	0.00	0.00	0.00	0.00	0.00	0	621.75
5.550	0.00	0.00	0.00	0.00	0.00	0	621.75
5.600	0.00	0.00	0.00	0.00	0.00	0	621.75
5.650	0.00	0.00	0.00	0.00	0.00	0	621.75
5.700	0.00	0.00	0.00	0.00	0.00	0	621.75
5.750	0.00	0.00	0.00	0.00	0.00	0	621.75
5.800	0.00	0.00	0.00	0.00	0.00	0	621.75
5.850	0.00	0.00	0.00	0.00	0.00	0	621.75
5.900	0.00	0.00	0.00	0.00	0.00	0	621.75
5.950	0.00	0.00	0.00	0.00	0.00	0	621.75
6.000	0.00	0.00	0.00	0.00	0.00	0	621.75
6.050	0.00	0.00	0.00	0.00	0.00	0	621.75
6.100	0.00	0.00	0.00	0.00	0.00	0	621.75
6.150	0.00	0.00	0.00	0.00	0.00	0	621.75
6.200	0.00	0.00	0.00	0.00	0.00	0	621.75
6.250	0.00	0.00	0.00	0.00	0.00	0	621.75

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
6.300	0.00	0.00	0.00	0.00	0.00	0	621.75
6.350	0.00	0.00	0.00	0.00	0.00	0	621.75
6.400	0.00	0.00	0.00	0.00	0.00	0	621.75
6.450	0.00	0.00	0.00	0.00	0.00	0	621.75
6.500	0.00	0.00	0.00	0.00	0.00	0	621.75
6.550	0.00	0.00	0.00	0.00	0.00	0	621.75
6.600	0.00	0.00	0.00	0.00	0.00	0	621.75
6.650	0.00	0.00	0.00	0.00	0.00	0	621.75
6.700	0.00	0.00	0.00	0.00	0.00	0	621.75
6.750	0.00	0.00	0.00	0.00	0.00	0	621.75
6.800	0.00	0.00	0.00	0.00	0.00	0	621.75
6.850	0.00	0.00	0.00	0.00	0.00	0	621.75
6.900	0.00	0.00	0.00	0.00	0.00	0	621.75
6.950	0.00	0.00	0.00	0.00	0.00	0	621.75
7.000	0.00	0.00	0.00	0.00	0.00	0	621.75
7.050	0.00	0.00	0.00	0.00	0.00	0	621.75
7.100	0.00	0.00	0.00	0.00	0.00	0	621.75
7.150	0.00	0.00	0.00	0.00	0.00	0	621.75
7.200	0.00	0.00	0.00	0.00	0.00	0	621.75
7.250	0.00	0.00	0.00	0.00	0.00	0	621.75
7.300	0.00	0.00	0.00	0.00	0.00	0	621.75
7.350	0.00	0.00	0.00	0.00	0.00	0	621.75
7.400	0.00	0.00	0.00	0.00	0.00	0	621.75
7.450	0.00	0.00	0.00	0.00	0.00	0	621.75
7.500	0.00	0.00	0.00	0.00	0.00	0	621.75
7.550	0.00	0.00	0.00	0.00	0.00	0	621.75
7.600	0.00	0.00	0.00	0.00	0.00	0	621.75
7.650	0.00	0.00	0.00	0.00	0.00	0	621.75
7.700	0.00	0.00	0.00	0.00	0.00	0	621.75
7.750	0.00	0.00	0.00	0.00	0.00	0	621.75
7.800	0.00	0.00	0.00	0.00	0.00	0	621.75
7.850	0.00	0.00	0.00	0.00	0.00	0	621.75
7.900	0.00	0.00	0.00	0.00	0.00	0	621.75
7.950	0.00	0.00	0.00	0.00	0.00	0	621.75
8.000	0.00	0.00	0.00	0.00	0.00	0	621.75
8.050	0.00	0.00	0.00	0.00	0.00	0	621.75
8.100	0.00	0.00	0.00	0.00	0.00	0	621.75
8.150	0.00	0.00	0.00	0.00	0.00	0	621.75
8.200	0.00	0.00	0.00	0.00	0.00	0	621.75
8.250	0.00	0.00	0.00	0.00	0.00	0	621.75
8.300	0.00	0.00	0.00	0.00	0.00	0	621.75
8.350	0.00	0.00	0.00	0.00	0.00	0	621.75

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: IB-1C-2 (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
8.400	0.00	0.00	0.00	0.00	0.00	0	621.75
8.450	0.00	0.00	0.00	0.00	0.00	0	621.75
8.500	0.00	0.00	0.00	0.00	0.00	0	621.75
8.550	0.00	0.00	0.00	0.00	0.00	0	621.75
8.600	0.00	0.00	0.00	0.00	0.00	0	621.75
8.650	0.00	0.00	0.00	0.00	0.00	0	621.75
8.700	0.00	0.00	0.00	0.00	0.00	0	621.75
8.750	0.00	0.00	0.00	0.00	0.00	0	621.75
8.800	0.00	0.00	0.00	0.00	0.00	0	621.75
8.850	0.00	0.00	0.00	0.00	0.00	0	621.75
8.900	0.00	0.00	0.00	0.00	0.00	0	621.75
8.950	0.00	0.00	0.00	0.00	0.00	0	621.75
9.000	0.00	0.00	0.00	0.00	0.00	0	621.75
9.050	0.00	0.00	0.00	0.00	0.00	0	621.75
9.100	0.00	0.00	0.00	0.00	0.00	0	621.75
9.150	0.00	0.00	0.00	0.00	0.00	0	621.75
9.200	0.00	0.00	0.00	0.00	0.00	0	621.75
9.250	0.00	0.00	0.00	0.00	0.00	0	621.75
9.300	0.00	0.00	0.00	0.00	0.00	0	621.75
9.350	0.00	0.00	0.00	0.00	0.00	0	621.75
9.400	0.00	0.00	0.00	0.00	0.00	0	621.75
9.450	0.00	0.00	0.00	0.00	0.00	0	621.75
9.500	0.00	0.00	0.00	0.00	0.00	0	621.75
9.550	0.00	0.00	0.00	0.00	0.00	0	621.75
9.600	0.00	0.00	0.00	0.00	0.00	0	621.75
9.650	0.00	0.00	0.00	0.00	0.00	0	621.75
9.700	0.00	0.00	0.00	0.00	0.00	0	621.75
9.750	0.00	0.00	0.00	0.00	0.00	0	621.75
9.800	0.00	0.00	0.00	0.00	0.00	0	621.75
9.850	0.00	0.00	0.00	0.00	0.00	0	621.75
9.900	0.00	0.00	0.01	0.00	0.00	0	621.75
9.950	0.01	0.01	0.02	0.00	0.00	1	621.75
10.000	0.01	0.03	0.04	0.00	0.00	3	621.75
10.050	0.02	0.04	0.06	0.01	0.00	5	621.75
10.100	0.02	0.06	0.09	0.01	0.00	7	621.75
10.150	0.03	0.09	0.12	0.01	0.00	9	621.75
10.200	0.04	0.12	0.15	0.02	0.00	12	621.75
10.250	0.04	0.15	0.19	0.02	0.00	15	621.75
10.300	0.05	0.18	0.24	0.03	0.00	19	621.75
10.350	0.06	0.21	0.28	0.03	0.00	22	621.75
10.400	0.06	0.25	0.33	0.04	0.00	26	621.75
10.450	0.07	0.29	0.38	0.05	0.00	30	621.75

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: IB-1C-2 (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
10.500	0.08	0.33	0.44	0.05	0.00	34	621.75
10.550	0.09	0.37	0.50	0.06	0.00	39	621.75
10.600	0.10	0.42	0.56	0.07	0.00	44	621.76
10.650	0.11	0.47	0.62	0.08	0.00	49	621.76
10.700	0.11	0.52	0.69	0.08	0.00	54	621.76
10.750	0.12	0.57	0.76	0.09	0.00	59	621.76
10.800	0.13	0.63	0.83	0.10	0.00	65	621.76
10.850	0.15	0.68	0.91	0.11	0.00	71	621.76
10.900	0.16	0.74	0.98	0.12	0.00	77	621.76
10.950	0.17	0.80	1.06	0.13	0.00	83	621.76
11.000	0.18	0.86	1.15	0.14	0.00	90	621.76
11.050	0.19	0.93	1.24	0.15	0.00	97	621.76
11.100	0.21	1.01	1.33	0.16	0.00	105	621.76
11.150	0.23	1.09	1.45	0.18	0.00	113	621.76
11.200	0.26	1.19	1.58	0.19	0.00	124	621.76
11.250	0.28	1.30	1.72	0.21	0.00	135	621.77
11.300	0.31	1.42	1.89	0.23	0.00	148	621.77
11.350	0.34	1.56	2.07	0.26	0.00	163	621.77
11.400	0.37	1.71	2.27	0.28	0.00	178	621.77
11.450	0.40	1.87	2.49	0.31	0.00	195	621.77
11.500	0.44	2.05	2.72	0.34	0.00	214	621.77
11.550	0.52	2.27	3.02	0.37	0.00	237	621.78
11.600	0.65	2.60	3.45	0.43	0.00	271	621.78
11.650	0.84	3.08	4.09	0.50	0.00	322	621.79
11.700	1.11	3.79	5.03	0.62	0.00	397	621.80
11.750	1.40	4.94	6.30	0.68	0.00	505	621.81
11.800	1.76	6.73	8.09	0.68	0.00	666	621.83
11.850	2.13	9.26	10.62	0.68	0.00	894	621.85
11.900	2.60	12.63	13.99	0.68	0.00	1,197	621.89
11.950	3.72	17.59	18.95	0.68	0.00	1,644	621.93
12.000	5.62	25.57	26.93	0.68	0.00	2,362	622.01
12.050	6.74	36.57	37.93	0.68	0.00	3,352	622.12
12.100	7.46	49.41	50.77	0.68	0.00	4,508	622.24
12.150	6.93	62.44	63.80	0.68	0.00	5,681	622.36
12.200	5.27	73.29	74.65	0.68	0.00	6,657	622.46
12.250	4.47	81.67	83.03	0.68	0.00	7,411	622.53
12.300	3.91	88.69	90.05	0.68	0.00	8,043	622.60
12.350	3.50	94.74	96.10	0.68	0.00	8,587	622.65
12.400	3.02	99.90	101.26	0.68	0.00	9,052	622.70
12.450	2.61	104.18	105.54	0.68	0.00	9,437	622.73
12.500	2.10	107.53	108.89	0.68	0.00	9,739	622.76
12.550	1.78	110.05	111.41	0.68	0.00	9,966	622.78

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: IB-1C-2 (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
12.600	1.47	111.94	113.30	0.68	0.00	10,136	622.80
12.650	1.33	113.39	114.75	0.68	0.00	10,266	622.81
12.700	1.25	114.61	115.97	0.68	0.00	10,376	622.82
12.750	1.20	115.71	117.07	0.68	0.00	10,475	622.83
12.800	1.15	116.71	118.07	0.68	0.00	10,565	622.84
12.850	1.10	117.60	118.96	0.68	0.00	10,645	622.85
12.900	1.05	118.40	119.76	0.68	0.00	10,717	622.86
12.950	1.00	119.09	120.45	0.68	0.00	10,779	622.86
13.000	0.95	119.68	121.04	0.68	0.00	10,832	622.87
13.050	0.91	120.18	121.54	0.68	0.00	10,877	622.87
13.100	0.88	120.61	121.97	0.68	0.00	10,916	622.87
13.150	0.86	120.98	122.34	0.68	0.00	10,949	622.88
13.200	0.84	121.32	122.68	0.68	0.00	10,980	622.88
13.250	0.83	121.63	122.99	0.68	0.00	11,008	622.88
13.300	0.82	121.92	123.28	0.68	0.00	11,033	622.89
13.350	0.80	122.18	123.54	0.68	0.00	11,057	622.89
13.400	0.79	122.41	123.77	0.68	0.00	11,078	622.89
13.450	0.78	122.62	123.98	0.68	0.00	11,097	622.89
13.500	0.77	122.81	124.17	0.68	0.00	11,113	622.89
13.550	0.75	122.96	124.32	0.68	0.00	11,128	622.89
13.600	0.74	123.10	124.46	0.68	0.00	11,140	622.90
13.650	0.73	123.20	124.56	0.68	0.00	11,149	622.90
13.700	0.71	123.28	124.64	0.68	0.00	11,157	622.90
13.750	0.70	123.34	124.70	0.68	0.00	11,162	622.90
13.800	0.69	123.37	124.73	0.68	0.00	11,164	622.90
13.850	0.67	123.37	124.73	0.68	0.00	11,164	622.90
13.900	0.66	123.34	124.70	0.68	0.00	11,162	622.90
13.950	0.65	123.29	124.65	0.68	0.00	11,157	622.90
14.000	0.63	123.20	124.56	0.68	0.00	11,149	622.90
14.050	0.62	123.10	124.46	0.68	0.00	11,140	622.90
14.100	0.61	122.97	124.33	0.68	0.00	11,128	622.89
14.150	0.60	122.82	124.18	0.68	0.00	11,115	622.89
14.200	0.60	122.66	124.02	0.68	0.00	11,100	622.89
14.250	0.59	122.48	123.84	0.68	0.00	11,084	622.89
14.300	0.58	122.30	123.66	0.68	0.00	11,068	622.89
14.350	0.58	122.10	123.46	0.68	0.00	11,049	622.89
14.400	0.57	121.88	123.24	0.68	0.00	11,030	622.89
14.450	0.56	121.66	123.02	0.68	0.00	11,010	622.88
14.500	0.56	121.42	122.78	0.68	0.00	10,988	622.88
14.550	0.55	121.17	122.53	0.68	0.00	10,966	622.88
14.600	0.54	120.90	122.26	0.68	0.00	10,942	622.88
14.650	0.54	120.63	121.99	0.68	0.00	10,917	622.87

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: IB-1C-2 (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
14.700	0.53	120.33	121.69	0.68	0.00	10,891	622.87
14.750	0.52	120.03	121.39	0.68	0.00	10,863	622.87
14.800	0.52	119.71	121.07	0.68	0.00	10,835	622.87
14.850	0.51	119.38	120.74	0.68	0.00	10,805	622.86
14.900	0.50	119.04	120.40	0.68	0.00	10,774	622.86
14.950	0.50	118.68	120.04	0.68	0.00	10,742	622.86
15.000	0.49	118.31	119.67	0.68	0.00	10,709	622.85
15.050	0.48	117.93	119.29	0.68	0.00	10,675	622.85
15.100	0.48	117.53	118.89	0.68	0.00	10,639	622.85
15.150	0.47	117.12	118.48	0.68	0.00	10,602	622.84
15.200	0.46	116.69	118.05	0.68	0.00	10,563	622.84
15.250	0.46	116.25	117.61	0.68	0.00	10,524	622.84
15.300	0.45	115.80	117.16	0.68	0.00	10,483	622.83
15.350	0.44	115.33	116.69	0.68	0.00	10,441	622.83
15.400	0.44	114.85	116.21	0.68	0.00	10,398	622.83
15.450	0.43	114.36	115.72	0.68	0.00	10,353	622.82
15.500	0.42	113.85	115.21	0.68	0.00	10,307	622.82
15.550	0.42	113.33	114.69	0.68	0.00	10,260	622.81
15.600	0.41	112.79	114.15	0.68	0.00	10,212	622.81
15.650	0.40	112.24	113.60	0.68	0.00	10,163	622.80
15.700	0.39	111.67	113.03	0.68	0.00	10,112	622.80
15.750	0.39	111.10	112.46	0.68	0.00	10,060	622.79
15.800	0.38	110.50	111.86	0.68	0.00	10,006	622.79
15.850	0.37	109.89	111.25	0.68	0.00	9,951	622.78
15.900	0.36	109.27	110.63	0.68	0.00	9,895	622.78
15.950	0.36	108.64	110.00	0.68	0.00	9,838	622.77
16.000	0.35	107.98	109.34	0.68	0.00	9,779	622.77
16.050	0.35	107.32	108.68	0.68	0.00	9,720	622.76
16.100	0.34	106.65	108.01	0.68	0.00	9,659	622.75
16.150	0.34	105.96	107.32	0.68	0.00	9,598	622.75
16.200	0.33	105.27	106.63	0.68	0.00	9,535	622.74
16.250	0.33	104.57	105.93	0.68	0.00	9,472	622.74
16.300	0.33	103.87	105.23	0.68	0.00	9,409	622.73
16.350	0.32	103.15	104.51	0.68	0.00	9,345	622.72
16.400	0.32	102.44	103.80	0.68	0.00	9,280	622.72
16.450	0.32	101.71	103.07	0.68	0.00	9,215	622.71
16.500	0.31	100.98	102.34	0.68	0.00	9,150	622.70
16.550	0.31	100.25	101.61	0.68	0.00	9,084	622.70
16.600	0.31	99.51	100.87	0.68	0.00	9,017	622.69
16.650	0.30	98.76	100.12	0.68	0.00	8,949	622.69
16.700	0.30	98.01	99.37	0.68	0.00	8,881	622.68
16.750	0.30	97.25	98.61	0.68	0.00	8,813	622.67

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: IB-1C-2 (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
16.800	0.29	96.48	97.84	0.68	0.00	8,744	622.67
16.850	0.29	95.71	97.07	0.68	0.00	8,674	622.66
16.900	0.29	94.93	96.29	0.68	0.00	8,605	622.65
16.950	0.29	94.14	95.50	0.68	0.00	8,534	622.64
17.000	0.28	93.35	94.71	0.68	0.00	8,462	622.64
17.050	0.28	92.55	93.91	0.68	0.00	8,391	622.63
17.100	0.28	91.75	93.11	0.68	0.00	8,318	622.62
17.150	0.27	90.94	92.30	0.68	0.00	8,245	622.62
17.200	0.27	90.12	91.48	0.68	0.00	8,172	622.61
17.250	0.27	89.30	90.66	0.68	0.00	8,098	622.60
17.300	0.26	88.47	89.83	0.68	0.00	8,023	622.59
17.350	0.26	87.63	88.99	0.68	0.00	7,948	622.59
17.400	0.26	86.79	88.15	0.68	0.00	7,872	622.58
17.450	0.25	85.94	87.30	0.68	0.00	7,796	622.57
17.500	0.25	85.09	86.45	0.68	0.00	7,719	622.56
17.550	0.25	84.23	85.59	0.68	0.00	7,641	622.56
17.600	0.24	83.36	84.72	0.68	0.00	7,564	622.55
17.650	0.24	82.49	83.85	0.68	0.00	7,485	622.54
17.700	0.24	81.60	82.96	0.68	0.00	7,405	622.53
17.750	0.24	80.72	82.08	0.68	0.00	7,325	622.53
17.800	0.23	79.83	81.19	0.68	0.00	7,245	622.52
17.850	0.23	78.92	80.28	0.68	0.00	7,164	622.51
17.900	0.23	78.02	79.38	0.68	0.00	7,083	622.50
17.950	0.22	77.11	78.47	0.68	0.00	7,001	622.49
18.000	0.22	76.19	77.55	0.68	0.00	6,918	622.48
18.050	0.22	75.26	76.62	0.68	0.00	6,834	622.48
18.100	0.21	74.33	75.69	0.68	0.00	6,751	622.47
18.150	0.21	73.40	74.76	0.68	0.00	6,667	622.46
18.200	0.21	72.46	73.82	0.68	0.00	6,583	622.45
18.250	0.21	71.52	72.88	0.68	0.00	6,498	622.44
18.300	0.21	70.58	71.94	0.68	0.00	6,413	622.43
18.350	0.21	69.64	71.00	0.68	0.00	6,328	622.43
18.400	0.21	68.70	70.06	0.68	0.00	6,244	622.42
18.450	0.21	67.75	69.11	0.68	0.00	6,159	622.41
18.500	0.21	66.81	68.17	0.68	0.00	6,074	622.40
18.550	0.20	65.86	67.22	0.68	0.00	5,988	622.39
18.600	0.20	64.90	66.26	0.68	0.00	5,902	622.38
18.650	0.20	63.95	65.31	0.68	0.00	5,816	622.37
18.700	0.20	63.00	64.36	0.68	0.00	5,731	622.36
18.750	0.20	62.04	63.40	0.68	0.00	5,645	622.36
18.800	0.20	61.08	62.44	0.68	0.00	5,559	622.35
18.850	0.20	60.12	61.48	0.68	0.00	5,472	622.34

Stormwater Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) | Return Event: 1 years
Label: IB-1C-2 (OUT) | Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
18.900	0.20	59.16	60.52	0.68	0.00	5,385	622.33
18.950	0.20	58.20	59.56	0.68	0.00	5,298	622.32
19.000	0.20	57.23	58.59	0.68	0.00	5,212	622.31
19.050	0.20	56.26	57.62	0.68	0.00	5,125	622.30
19.100	0.19	55.29	56.65	0.68	0.00	5,037	622.29
19.150	0.19	54.32	55.68	0.68	0.00	4,950	622.28
19.200	0.19	53.35	54.71	0.68	0.00	4,862	622.28
19.250	0.19	52.37	53.73	0.68	0.00	4,774	622.27
19.300	0.19	51.40	52.76	0.68	0.00	4,687	622.26
19.350	0.19	50.42	51.78	0.68	0.00	4,599	622.25
19.400	0.19	49.44	50.80	0.68	0.00	4,510	622.24
19.450	0.19	48.45	49.81	0.68	0.00	4,422	622.23
19.500	0.19	47.47	48.83	0.68	0.00	4,333	622.22
19.550	0.19	46.48	47.84	0.68	0.00	4,244	622.21
19.600	0.19	45.49	46.85	0.68	0.00	4,155	622.20
19.650	0.18	44.50	45.86	0.68	0.00	4,066	622.19
19.700	0.18	43.51	44.87	0.68	0.00	3,977	622.18
19.750	0.18	42.52	43.88	0.68	0.00	3,887	622.17
19.800	0.18	41.52	42.88	0.68	0.00	3,798	622.16
19.850	0.18	40.52	41.88	0.68	0.00	3,708	622.16
19.900	0.18	39.52	40.88	0.68	0.00	3,618	622.15
19.950	0.18	38.52	39.88	0.68	0.00	3,528	622.14
20.000	0.18	37.52	38.88	0.68	0.00	3,437	622.13
20.050	0.18	36.51	37.87	0.68	0.00	3,347	622.12
20.100	0.18	35.50	36.86	0.68	0.00	3,256	622.11
20.150	0.18	34.49	35.85	0.68	0.00	3,166	622.10
20.200	0.17	33.48	34.84	0.68	0.00	3,074	622.09
20.250	0.17	32.47	33.83	0.68	0.00	2,983	622.08
20.300	0.17	31.46	32.82	0.68	0.00	2,892	622.07
20.350	0.17	30.44	31.80	0.68	0.00	2,801	622.06
20.400	0.17	29.43	30.79	0.68	0.00	2,710	622.05
20.450	0.17	28.41	29.77	0.68	0.00	2,618	622.04
20.500	0.17	27.39	28.75	0.68	0.00	2,526	622.03
20.550	0.17	26.37	27.73	0.68	0.00	2,434	622.02
20.600	0.17	25.35	26.71	0.68	0.00	2,342	622.01
20.650	0.17	24.33	25.69	0.68	0.00	2,251	622.00
20.700	0.17	23.30	24.66	0.68	0.00	2,158	621.99
20.750	0.17	22.27	23.63	0.68	0.00	2,065	621.98
20.800	0.17	21.25	22.61	0.68	0.00	1,972	621.97
20.850	0.17	20.22	21.58	0.68	0.00	1,880	621.96
20.900	0.16	19.19	20.55	0.68	0.00	1,788	621.95
20.950	0.16	18.15	19.51	0.68	0.00	1,694	621.94

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
21.000	0.16	17.12	18.48	0.68	0.00	1,601	621.93
21.050	0.16	16.09	17.45	0.68	0.00	1,508	621.92
21.100	0.16	15.05	16.41	0.68	0.00	1,415	621.91
21.150	0.16	14.01	15.37	0.68	0.00	1,322	621.90
21.200	0.16	12.97	14.33	0.68	0.00	1,228	621.89
21.250	0.16	11.93	13.29	0.68	0.00	1,134	621.88
21.300	0.16	10.89	12.25	0.68	0.00	1,041	621.87
21.350	0.16	9.85	11.21	0.68	0.00	947	621.86
21.400	0.16	8.80	10.16	0.68	0.00	853	621.85
21.450	0.16	7.76	9.12	0.68	0.00	759	621.84
21.500	0.16	6.71	8.07	0.68	0.00	664	621.83
21.550	0.15	5.66	7.02	0.68	0.00	570	621.82
21.600	0.15	4.61	5.97	0.68	0.00	476	621.80
21.650	0.15	3.70	4.91	0.61	0.00	387	621.79
21.700	0.15	3.02	4.01	0.49	0.00	316	621.79
21.750	0.15	2.50	3.32	0.41	0.00	261	621.78
21.800	0.15	2.12	2.81	0.35	0.00	221	621.78
21.850	0.15	1.82	2.42	0.30	0.00	190	621.77
21.900	0.15	1.60	2.12	0.26	0.00	167	621.77
21.950	0.15	1.43	1.90	0.23	0.00	149	621.77
22.000	0.15	1.30	1.73	0.21	0.00	136	621.77
22.050	0.15	1.20	1.60	0.20	0.00	125	621.76
22.100	0.15	1.13	1.50	0.18	0.00	118	621.76
22.150	0.15	1.07	1.42	0.18	0.00	112	621.76
22.200	0.15	1.03	1.36	0.17	0.00	107	621.76
22.250	0.14	0.99	1.32	0.16	0.00	103	621.76
22.300	0.14	0.96	1.28	0.16	0.00	100	621.76
22.350	0.14	0.94	1.25	0.15	0.00	98	621.76
22.400	0.14	0.92	1.23	0.15	0.00	96	621.76
22.450	0.14	0.91	1.21	0.15	0.00	95	621.76
22.500	0.14	0.90	1.19	0.15	0.00	94	621.76
22.550	0.14	0.89	1.18	0.15	0.00	93	621.76
22.600	0.14	0.88	1.17	0.14	0.00	92	621.76
22.650	0.14	0.87	1.16	0.14	0.00	91	621.76
22.700	0.14	0.87	1.15	0.14	0.00	90	621.76
22.750	0.14	0.86	1.14	0.14	0.00	90	621.76
22.800	0.14	0.85	1.13	0.14	0.00	89	621.76
22.850	0.14	0.85	1.13	0.14	0.00	88	621.76
22.900	0.14	0.84	1.12	0.14	0.00	88	621.76
22.950	0.13	0.84	1.11	0.14	0.00	87	621.76
23.000	0.13	0.83	1.11	0.14	0.00	87	621.76
23.050	0.13	0.83	1.10	0.14	0.00	86	621.76

Stormwater Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: IB-1C-2 (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
23.100	0.13	0.82	1.09	0.13	0.00	86	621.76
23.150	0.13	0.82	1.09	0.13	0.00	85	621.76
23.200	0.13	0.81	1.08	0.13	0.00	85	621.76
23.250	0.13	0.81	1.07	0.13	0.00	84	621.76
23.300	0.13	0.80	1.07	0.13	0.00	84	621.76
23.350	0.13	0.80	1.06	0.13	0.00	83	621.76
23.400	0.13	0.80	1.06	0.13	0.00	83	621.76
23.450	0.13	0.79	1.05	0.13	0.00	82	621.76
23.500	0.13	0.79	1.05	0.13	0.00	82	621.76
23.550	0.13	0.78	1.04	0.13	0.00	81	621.76
23.600	0.12	0.78	1.03	0.13	0.00	81	621.76
23.650	0.12	0.77	1.03	0.13	0.00	80	621.76
23.700	0.12	0.77	1.02	0.13	0.00	80	621.76
23.750	0.12	0.76	1.01	0.13	0.00	80	621.76
23.800	0.12	0.76	1.01	0.12	0.00	79	621.76
23.850	0.12	0.76	1.00	0.12	0.00	79	621.76
23.900	0.12	0.75	1.00	0.12	0.00	78	621.76
23.950	0.12	0.74	0.99	0.12	0.00	77	621.76
24.000	0.12	0.74	0.98	0.12	0.00	77	621.76

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
0.000	0.00	0.00	0.00	0.00	0.00	0	621.75
0.050	0.00	0.00	0.00	0.00	0.00	0	621.75
0.100	0.00	0.00	0.00	0.00	0.00	0	621.75
0.150	0.00	0.00	0.00	0.00	0.00	0	621.75
0.200	0.00	0.00	0.00	0.00	0.00	0	621.75
0.250	0.00	0.00	0.00	0.00	0.00	0	621.75
0.300	0.00	0.00	0.00	0.00	0.00	0	621.75
0.350	0.00	0.00	0.00	0.00	0.00	0	621.75
0.400	0.00	0.00	0.00	0.00	0.00	0	621.75
0.450	0.00	0.00	0.00	0.00	0.00	0	621.75
0.500	0.00	0.00	0.00	0.00	0.00	0	621.75
0.550	0.00	0.00	0.00	0.00	0.00	0	621.75
0.600	0.00	0.00	0.00	0.00	0.00	0	621.75
0.650	0.00	0.00	0.00	0.00	0.00	0	621.75
0.700	0.00	0.00	0.00	0.00	0.00	0	621.75
0.750	0.00	0.00	0.00	0.00	0.00	0	621.75
0.800	0.00	0.00	0.00	0.00	0.00	0	621.75
0.850	0.00	0.00	0.00	0.00	0.00	0	621.75
0.900	0.00	0.00	0.00	0.00	0.00	0	621.75
0.950	0.00	0.00	0.00	0.00	0.00	0	621.75
1.000	0.00	0.00	0.00	0.00	0.00	0	621.75
1.050	0.00	0.00	0.00	0.00	0.00	0	621.75
1.100	0.00	0.00	0.00	0.00	0.00	0	621.75
1.150	0.00	0.00	0.00	0.00	0.00	0	621.75
1.200	0.00	0.00	0.00	0.00	0.00	0	621.75
1.250	0.00	0.00	0.00	0.00	0.00	0	621.75
1.300	0.00	0.00	0.00	0.00	0.00	0	621.75
1.350	0.00	0.00	0.00	0.00	0.00	0	621.75
1.400	0.00	0.00	0.00	0.00	0.00	0	621.75
1.450	0.00	0.00	0.00	0.00	0.00	0	621.75
1.500	0.00	0.00	0.00	0.00	0.00	0	621.75
1.550	0.00	0.00	0.00	0.00	0.00	0	621.75
1.600	0.00	0.00	0.00	0.00	0.00	0	621.75
1.650	0.00	0.00	0.00	0.00	0.00	0	621.75
1.700	0.00	0.00	0.00	0.00	0.00	0	621.75
1.750	0.00	0.00	0.00	0.00	0.00	0	621.75
1.800	0.00	0.00	0.00	0.00	0.00	0	621.75
1.850	0.00	0.00	0.00	0.00	0.00	0	621.75
1.900	0.00	0.00	0.00	0.00	0.00	0	621.75
1.950	0.00	0.00	0.00	0.00	0.00	0	621.75
2.000	0.00	0.00	0.00	0.00	0.00	0	621.75
2.050	0.00	0.00	0.00	0.00	0.00	0	621.75

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: IB-1C-2 (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
2.100	0.00	0.00	0.00	0.00	0.00	0	621.75
2.150	0.00	0.00	0.00	0.00	0.00	0	621.75
2.200	0.00	0.00	0.00	0.00	0.00	0	621.75
2.250	0.00	0.00	0.00	0.00	0.00	0	621.75
2.300	0.00	0.00	0.00	0.00	0.00	0	621.75
2.350	0.00	0.00	0.00	0.00	0.00	0	621.75
2.400	0.00	0.00	0.00	0.00	0.00	0	621.75
2.450	0.00	0.00	0.00	0.00	0.00	0	621.75
2.500	0.00	0.00	0.00	0.00	0.00	0	621.75
2.550	0.00	0.00	0.00	0.00	0.00	0	621.75
2.600	0.00	0.00	0.00	0.00	0.00	0	621.75
2.650	0.00	0.00	0.00	0.00	0.00	0	621.75
2.700	0.00	0.00	0.00	0.00	0.00	0	621.75
2.750	0.00	0.00	0.00	0.00	0.00	0	621.75
2.800	0.00	0.00	0.00	0.00	0.00	0	621.75
2.850	0.00	0.00	0.00	0.00	0.00	0	621.75
2.900	0.00	0.00	0.00	0.00	0.00	0	621.75
2.950	0.00	0.00	0.00	0.00	0.00	0	621.75
3.000	0.00	0.00	0.00	0.00	0.00	0	621.75
3.050	0.00	0.00	0.00	0.00	0.00	0	621.75
3.100	0.00	0.00	0.00	0.00	0.00	0	621.75
3.150	0.00	0.00	0.00	0.00	0.00	0	621.75
3.200	0.00	0.00	0.00	0.00	0.00	0	621.75
3.250	0.00	0.00	0.00	0.00	0.00	0	621.75
3.300	0.00	0.00	0.00	0.00	0.00	0	621.75
3.350	0.00	0.00	0.00	0.00	0.00	0	621.75
3.400	0.00	0.00	0.00	0.00	0.00	0	621.75
3.450	0.00	0.00	0.00	0.00	0.00	0	621.75
3.500	0.00	0.00	0.00	0.00	0.00	0	621.75
3.550	0.00	0.00	0.00	0.00	0.00	0	621.75
3.600	0.00	0.00	0.00	0.00	0.00	0	621.75
3.650	0.00	0.00	0.00	0.00	0.00	0	621.75
3.700	0.00	0.00	0.00	0.00	0.00	0	621.75
3.750	0.00	0.00	0.00	0.00	0.00	0	621.75
3.800	0.00	0.00	0.00	0.00	0.00	0	621.75
3.850	0.00	0.00	0.00	0.00	0.00	0	621.75
3.900	0.00	0.00	0.00	0.00	0.00	0	621.75
3.950	0.00	0.00	0.00	0.00	0.00	0	621.75
4.000	0.00	0.00	0.00	0.00	0.00	0	621.75
4.050	0.00	0.00	0.00	0.00	0.00	0	621.75
4.100	0.00	0.00	0.00	0.00	0.00	0	621.75
4.150	0.00	0.00	0.00	0.00	0.00	0	621.75

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: IB-1C-2 (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
4.200	0.00	0.00	0.00	0.00	0.00	0	621.75
4.250	0.00	0.00	0.00	0.00	0.00	0	621.75
4.300	0.00	0.00	0.00	0.00	0.00	0	621.75
4.350	0.00	0.00	0.00	0.00	0.00	0	621.75
4.400	0.00	0.00	0.00	0.00	0.00	0	621.75
4.450	0.00	0.00	0.00	0.00	0.00	0	621.75
4.500	0.00	0.00	0.00	0.00	0.00	0	621.75
4.550	0.00	0.00	0.00	0.00	0.00	0	621.75
4.600	0.00	0.00	0.00	0.00	0.00	0	621.75
4.650	0.00	0.00	0.00	0.00	0.00	0	621.75
4.700	0.00	0.00	0.00	0.00	0.00	0	621.75
4.750	0.00	0.00	0.00	0.00	0.00	0	621.75
4.800	0.00	0.00	0.00	0.00	0.00	0	621.75
4.850	0.00	0.00	0.00	0.00	0.00	0	621.75
4.900	0.00	0.00	0.00	0.00	0.00	0	621.75
4.950	0.00	0.00	0.00	0.00	0.00	0	621.75
5.000	0.00	0.00	0.00	0.00	0.00	0	621.75
5.050	0.00	0.00	0.00	0.00	0.00	0	621.75
5.100	0.00	0.00	0.00	0.00	0.00	0	621.75
5.150	0.00	0.00	0.00	0.00	0.00	0	621.75
5.200	0.00	0.00	0.00	0.00	0.00	0	621.75
5.250	0.00	0.00	0.00	0.00	0.00	0	621.75
5.300	0.00	0.00	0.00	0.00	0.00	0	621.75
5.350	0.00	0.00	0.00	0.00	0.00	0	621.75
5.400	0.00	0.00	0.00	0.00	0.00	0	621.75
5.450	0.00	0.00	0.00	0.00	0.00	0	621.75
5.500	0.00	0.00	0.00	0.00	0.00	0	621.75
5.550	0.00	0.00	0.00	0.00	0.00	0	621.75
5.600	0.00	0.00	0.00	0.00	0.00	0	621.75
5.650	0.00	0.00	0.00	0.00	0.00	0	621.75
5.700	0.00	0.00	0.00	0.00	0.00	0	621.75
5.750	0.00	0.00	0.00	0.00	0.00	0	621.75
5.800	0.00	0.00	0.00	0.00	0.00	0	621.75
5.850	0.00	0.00	0.00	0.00	0.00	0	621.75
5.900	0.00	0.00	0.00	0.00	0.00	0	621.75
5.950	0.00	0.00	0.00	0.00	0.00	0	621.75
6.000	0.00	0.00	0.00	0.00	0.00	0	621.75
6.050	0.00	0.00	0.00	0.00	0.00	0	621.75
6.100	0.00	0.00	0.00	0.00	0.00	0	621.75
6.150	0.00	0.00	0.00	0.00	0.00	0	621.75
6.200	0.00	0.00	0.00	0.00	0.00	0	621.75
6.250	0.00	0.00	0.00	0.00	0.00	0	621.75

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
6.300	0.00	0.00	0.00	0.00	0.00	0	621.75
6.350	0.00	0.00	0.00	0.00	0.00	0	621.75
6.400	0.00	0.00	0.00	0.00	0.00	0	621.75
6.450	0.00	0.00	0.00	0.00	0.00	0	621.75
6.500	0.00	0.00	0.00	0.00	0.00	0	621.75
6.550	0.00	0.00	0.00	0.00	0.00	0	621.75
6.600	0.00	0.00	0.00	0.00	0.00	0	621.75
6.650	0.00	0.00	0.00	0.00	0.00	0	621.75
6.700	0.00	0.00	0.00	0.00	0.00	0	621.75
6.750	0.00	0.00	0.00	0.00	0.00	0	621.75
6.800	0.00	0.00	0.00	0.00	0.00	0	621.75
6.850	0.00	0.00	0.00	0.00	0.00	0	621.75
6.900	0.00	0.00	0.00	0.00	0.00	0	621.75
6.950	0.00	0.00	0.00	0.00	0.00	0	621.75
7.000	0.00	0.00	0.00	0.00	0.00	0	621.75
7.050	0.00	0.00	0.00	0.00	0.00	0	621.75
7.100	0.00	0.00	0.00	0.00	0.00	0	621.75
7.150	0.00	0.00	0.00	0.00	0.00	0	621.75
7.200	0.00	0.00	0.00	0.00	0.00	0	621.75
7.250	0.00	0.00	0.00	0.00	0.00	0	621.75
7.300	0.00	0.00	0.00	0.00	0.00	0	621.75
7.350	0.00	0.00	0.00	0.00	0.00	0	621.75
7.400	0.00	0.00	0.00	0.00	0.00	0	621.75
7.450	0.00	0.00	0.01	0.00	0.00	0	621.75
7.500	0.01	0.01	0.01	0.00	0.00	1	621.75
7.550	0.01	0.02	0.03	0.00	0.00	2	621.75
7.600	0.01	0.04	0.05	0.01	0.00	4	621.75
7.650	0.02	0.05	0.07	0.01	0.00	5	621.75
7.700	0.02	0.07	0.09	0.01	0.00	7	621.75
7.750	0.03	0.09	0.12	0.01	0.00	9	621.75
7.800	0.03	0.11	0.15	0.02	0.00	12	621.75
7.850	0.04	0.14	0.18	0.02	0.00	14	621.75
7.900	0.04	0.16	0.21	0.03	0.00	17	621.75
7.950	0.05	0.19	0.25	0.03	0.00	19	621.75
8.000	0.05	0.21	0.28	0.03	0.00	22	621.75
8.050	0.05	0.24	0.32	0.04	0.00	25	621.75
8.100	0.06	0.27	0.35	0.04	0.00	28	621.75
8.150	0.07	0.30	0.39	0.05	0.00	31	621.75
8.200	0.07	0.33	0.43	0.05	0.00	34	621.75
8.250	0.08	0.36	0.48	0.06	0.00	37	621.75
8.300	0.08	0.39	0.52	0.06	0.00	41	621.75
8.350	0.09	0.43	0.57	0.07	0.00	45	621.76

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: IB-1C-2 (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
8.400	0.10	0.47	0.62	0.08	0.00	49	621.76
8.450	0.11	0.51	0.67	0.08	0.00	53	621.76
8.500	0.11	0.55	0.73	0.09	0.00	57	621.76
8.550	0.12	0.59	0.78	0.10	0.00	61	621.76
8.600	0.13	0.63	0.84	0.10	0.00	66	621.76
8.650	0.14	0.68	0.90	0.11	0.00	71	621.76
8.700	0.15	0.73	0.97	0.12	0.00	76	621.76
8.750	0.16	0.78	1.03	0.13	0.00	81	621.76
8.800	0.17	0.83	1.10	0.14	0.00	86	621.76
8.850	0.18	0.88	1.17	0.14	0.00	92	621.76
8.900	0.19	0.94	1.24	0.15	0.00	97	621.76
8.950	0.20	0.99	1.32	0.16	0.00	103	621.76
9.000	0.21	1.05	1.39	0.17	0.00	109	621.76
9.050	0.22	1.11	1.47	0.18	0.00	115	621.76
9.100	0.23	1.17	1.55	0.19	0.00	122	621.76
9.150	0.24	1.23	1.64	0.20	0.00	128	621.76
9.200	0.25	1.30	1.72	0.21	0.00	135	621.77
9.250	0.26	1.36	1.81	0.22	0.00	142	621.77
9.300	0.27	1.43	1.90	0.23	0.00	149	621.77
9.350	0.29	1.50	1.99	0.25	0.00	156	621.77
9.400	0.30	1.57	2.08	0.26	0.00	164	621.77
9.450	0.31	1.64	2.18	0.27	0.00	171	621.77
9.500	0.32	1.72	2.28	0.28	0.00	179	621.77
9.550	0.34	1.79	2.38	0.29	0.00	187	621.77
9.600	0.35	1.87	2.48	0.31	0.00	195	621.77
9.650	0.36	1.95	2.58	0.32	0.00	203	621.77
9.700	0.38	2.03	2.69	0.33	0.00	211	621.77
9.750	0.39	2.11	2.80	0.35	0.00	220	621.78
9.800	0.41	2.19	2.91	0.36	0.00	229	621.78
9.850	0.42	2.28	3.02	0.37	0.00	238	621.78
9.900	0.44	2.36	3.14	0.39	0.00	247	621.78
9.950	0.45	2.45	3.25	0.40	0.00	256	621.78
10.000	0.47	2.54	3.37	0.42	0.00	265	621.78
10.050	0.49	2.63	3.49	0.43	0.00	275	621.78
10.100	0.51	2.73	3.62	0.45	0.00	285	621.78
10.150	0.53	2.83	3.76	0.46	0.00	296	621.78
10.200	0.55	2.94	3.91	0.48	0.00	308	621.79
10.250	0.57	3.06	4.07	0.50	0.00	320	621.79
10.300	0.60	3.19	4.23	0.52	0.00	333	621.79
10.350	0.62	3.32	4.41	0.54	0.00	347	621.79
10.400	0.65	3.46	4.60	0.57	0.00	362	621.79
10.450	0.67	3.61	4.79	0.59	0.00	377	621.79

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: IB-1C-2 (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
10.500	0.70	3.75	4.98	0.61	0.00	393	621.80
10.550	0.73	3.91	5.19	0.64	0.00	409	621.80
10.600	0.76	4.07	5.40	0.67	0.00	426	621.80
10.650	0.79	4.25	5.61	0.68	0.00	444	621.80
10.700	0.82	4.50	5.86	0.68	0.00	466	621.80
10.750	0.85	4.80	6.16	0.68	0.00	493	621.81
10.800	0.88	5.17	6.53	0.68	0.00	526	621.81
10.850	0.91	5.60	6.96	0.68	0.00	564	621.81
10.900	0.94	6.09	7.45	0.68	0.00	608	621.82
10.950	0.97	6.65	8.01	0.68	0.00	658	621.83
11.000	1.01	7.27	8.63	0.68	0.00	714	621.83
11.050	1.05	7.97	9.33	0.68	0.00	778	621.84
11.100	1.11	8.77	10.13	0.68	0.00	851	621.85
11.150	1.18	9.71	11.07	0.68	0.00	935	621.86
11.200	1.28	10.81	12.17	0.68	0.00	1,034	621.87
11.250	1.36	12.09	13.45	0.68	0.00	1,149	621.88
11.300	1.46	13.56	14.92	0.68	0.00	1,281	621.90
11.350	1.56	15.22	16.58	0.68	0.00	1,430	621.91
11.400	1.66	17.08	18.44	0.68	0.00	1,597	621.93
11.450	1.76	19.14	20.50	0.68	0.00	1,784	621.95
11.500	1.88	21.43	22.79	0.68	0.00	1,989	621.97
11.550	2.17	24.11	25.47	0.68	0.00	2,231	622.00
11.600	2.63	27.55	28.91	0.68	0.00	2,540	622.03
11.650	3.27	32.08	33.44	0.68	0.00	2,948	622.08
11.700	4.19	38.18	39.54	0.68	0.00	3,497	622.13
11.750	5.07	46.08	47.44	0.68	0.00	4,208	622.21
11.800	6.15	55.95	57.31	0.68	0.00	5,096	622.30
11.850	7.18	67.92	69.28	0.68	0.00	6,174	622.41
11.900	8.45	82.19	83.55	0.68	0.00	7,458	622.54
11.950	11.55	100.83	102.19	0.68	0.00	9,136	622.70
12.000	16.69	127.71	129.07	0.68	0.00	11,555	622.93
12.050	19.18	154.27	163.58	0.68	3.98	14,303	623.19
12.100	20.43	173.46	193.87	0.68	9.52	16,530	623.39
12.150	18.44	189.16	212.34	0.68	10.91	18,067	623.52
12.200	13.74	196.83	221.34	0.68	11.58	18,817	623.59
12.250	11.44	197.38	222.00	0.68	11.63	18,872	623.59
12.300	9.87	194.57	218.69	0.68	11.38	18,596	623.57
12.350	8.75	189.88	213.18	0.68	10.97	18,137	623.53
12.400	7.49	183.88	206.12	0.68	10.44	17,549	623.48
12.450	6.43	176.81	197.79	0.68	9.81	16,857	623.42
12.500	5.14	168.80	188.38	0.68	9.11	16,073	623.35
12.550	4.34	162.45	178.29	0.68	7.24	15,333	623.28

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: IB-1C-2 (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
12.600	3.56	158.15	170.36	0.68	5.42	14,782	623.23
12.650	3.23	155.09	164.94	0.68	4.25	14,402	623.20
12.700	3.03	152.92	161.35	0.68	3.53	14,142	623.17
12.750	2.90	151.41	158.85	0.68	3.04	13,962	623.16
12.800	2.76	150.32	157.08	0.68	2.70	13,833	623.15
12.850	2.65	149.44	155.73	0.68	2.46	13,732	623.14
12.900	2.51	148.70	154.60	0.68	2.27	13,648	623.13
12.950	2.40	148.06	153.61	0.68	2.10	13,575	623.12
13.000	2.26	147.47	152.72	0.68	1.94	13,508	623.12
13.050	2.17	146.94	151.91	0.68	1.80	13,448	623.11
13.100	2.08	146.48	151.19	0.68	1.68	13,395	623.11
13.150	2.03	146.08	150.59	0.68	1.57	13,350	623.10
13.200	1.99	145.76	150.11	0.68	1.49	13,314	623.10
13.250	1.96	145.47	149.71	0.68	1.44	13,283	623.10
13.300	1.93	145.22	149.36	0.68	1.39	13,256	623.09
13.350	1.90	144.99	149.04	0.68	1.35	13,231	623.09
13.400	1.86	144.78	148.75	0.68	1.30	13,209	623.09
13.450	1.83	144.59	148.48	0.68	1.27	13,188	623.09
13.500	1.80	144.40	148.22	0.68	1.23	13,167	623.09
13.550	1.77	144.22	147.97	0.68	1.19	13,148	623.08
13.600	1.73	144.04	147.72	0.68	1.16	13,129	623.08
13.650	1.70	143.87	147.48	0.68	1.13	13,110	623.08
13.700	1.67	143.69	147.24	0.68	1.09	13,092	623.08
13.750	1.64	143.52	147.00	0.68	1.06	13,073	623.08
13.800	1.60	143.35	146.76	0.68	1.03	13,055	623.07
13.850	1.57	143.18	146.53	0.68	0.99	13,037	623.07
13.900	1.54	143.01	146.29	0.68	0.96	13,018	623.07
13.950	1.51	142.84	146.06	0.68	0.93	13,000	623.07
14.000	1.47	142.67	145.82	0.68	0.89	12,982	623.07
14.050	1.44	142.51	145.59	0.68	0.86	12,964	623.07
14.100	1.42	142.35	145.37	0.68	0.83	12,947	623.06
14.150	1.40	142.20	145.16	0.68	0.80	12,931	623.06
14.200	1.38	142.07	144.98	0.68	0.77	12,917	623.06
14.250	1.37	141.95	144.82	0.68	0.75	12,904	623.06
14.300	1.35	141.84	144.67	0.68	0.73	12,893	623.06
14.350	1.33	141.74	144.53	0.68	0.71	12,882	623.06
14.400	1.32	141.65	144.39	0.68	0.69	12,872	623.06
14.450	1.30	141.56	144.27	0.68	0.68	12,862	623.06
14.500	1.28	141.47	144.15	0.68	0.66	12,853	623.06
14.550	1.27	141.38	144.03	0.68	0.64	12,843	623.06
14.600	1.25	141.30	143.91	0.68	0.62	12,834	623.05
14.650	1.24	141.22	143.79	0.68	0.61	12,825	623.05

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: IB-1C-2 (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
14.700	1.22	141.13	143.68	0.68	0.59	12,816	623.05
14.750	1.21	141.05	143.56	0.68	0.58	12,807	623.05
14.800	1.19	140.97	143.45	0.68	0.56	12,799	623.05
14.850	1.18	140.88	143.33	0.68	0.54	12,790	623.05
14.900	1.16	140.79	143.22	0.68	0.53	12,780	623.05
14.950	1.14	140.69	143.09	0.68	0.52	12,770	623.05
15.000	1.13	140.58	142.96	0.68	0.51	12,759	623.05
15.050	1.11	140.46	142.82	0.68	0.50	12,747	623.05
15.100	1.09	140.33	142.66	0.68	0.49	12,735	623.05
15.150	1.08	140.20	142.50	0.68	0.47	12,721	623.04
15.200	1.06	140.06	142.33	0.68	0.46	12,707	623.04
15.250	1.05	139.91	142.16	0.68	0.44	12,693	623.04
15.300	1.03	139.77	141.99	0.68	0.43	12,679	623.04
15.350	1.01	139.62	141.81	0.68	0.41	12,664	623.04
15.400	0.99	139.46	141.62	0.68	0.40	12,649	623.04
15.450	0.98	139.31	141.44	0.68	0.38	12,633	623.04
15.500	0.96	139.15	141.25	0.68	0.37	12,618	623.03
15.550	0.95	138.99	141.06	0.68	0.35	12,602	623.03
15.600	0.93	138.83	140.87	0.68	0.34	12,586	623.03
15.650	0.91	138.67	140.67	0.68	0.32	12,570	623.03
15.700	0.89	138.51	140.48	0.68	0.31	12,554	623.03
15.750	0.88	138.34	140.28	0.68	0.29	12,538	623.03
15.800	0.86	138.18	140.09	0.68	0.27	12,522	623.03
15.850	0.85	138.02	139.89	0.68	0.26	12,505	623.02
15.900	0.83	137.85	139.69	0.68	0.24	12,489	623.02
15.950	0.81	137.68	139.49	0.68	0.22	12,472	623.02
16.000	0.80	137.52	139.29	0.68	0.21	12,456	623.02
16.050	0.78	137.35	139.10	0.68	0.19	12,440	623.02
16.100	0.77	137.20	138.91	0.68	0.18	12,424	623.02
16.150	0.76	137.04	138.73	0.68	0.16	12,409	623.02
16.200	0.75	136.90	138.56	0.68	0.15	12,395	623.01
16.250	0.74	136.77	138.40	0.68	0.13	12,382	623.01
16.300	0.74	136.65	138.25	0.68	0.12	12,370	623.01
16.350	0.73	136.54	138.12	0.68	0.11	12,359	623.01
16.400	0.72	136.43	137.99	0.68	0.10	12,349	623.01
16.450	0.72	136.33	137.87	0.68	0.09	12,339	623.01
16.500	0.71	136.23	137.75	0.68	0.08	12,329	623.01
16.550	0.70	136.14	137.65	0.68	0.07	12,320	623.01
16.600	0.69	136.05	137.54	0.68	0.06	12,311	623.01
16.650	0.69	135.96	137.43	0.68	0.05	12,303	623.01
16.700	0.68	135.88	137.33	0.68	0.05	12,294	623.00
16.750	0.67	135.80	137.24	0.68	0.04	12,286	623.00

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: IB-1C-2 (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
16.800	0.66	135.72	137.14	0.68	0.03	12,278	623.00
16.850	0.66	135.64	137.04	0.68	0.02	12,270	623.00
16.900	0.65	135.56	136.95	0.68	0.01	12,263	623.00
16.950	0.64	135.48	136.85	0.68	0.01	12,255	623.00
17.000	0.64	135.40	136.76	0.68	0.00	12,247	623.00
17.050	0.63	135.31	136.67	0.68	0.00	12,239	623.00
17.100	0.62	135.20	136.56	0.68	0.00	12,229	623.00
17.150	0.62	135.08	136.44	0.68	0.00	12,218	623.00
17.200	0.61	134.94	136.30	0.68	0.00	12,206	623.00
17.250	0.60	134.79	136.15	0.68	0.00	12,192	622.99
17.300	0.59	134.62	135.98	0.68	0.00	12,177	622.99
17.350	0.59	134.44	135.80	0.68	0.00	12,161	622.99
17.400	0.58	134.24	135.60	0.68	0.00	12,143	622.99
17.450	0.57	134.03	135.39	0.68	0.00	12,124	622.99
17.500	0.56	133.81	135.17	0.68	0.00	12,104	622.99
17.550	0.56	133.57	134.93	0.68	0.00	12,082	622.98
17.600	0.55	133.31	134.67	0.68	0.00	12,059	622.98
17.650	0.54	133.04	134.40	0.68	0.00	12,035	622.98
17.700	0.53	132.76	134.12	0.68	0.00	12,009	622.98
17.750	0.53	132.46	133.82	0.68	0.00	11,982	622.98
17.800	0.52	132.15	133.51	0.68	0.00	11,954	622.97
17.850	0.51	131.82	133.18	0.68	0.00	11,925	622.97
17.900	0.51	131.48	132.84	0.68	0.00	11,894	622.97
17.950	0.50	131.12	132.48	0.68	0.00	11,862	622.96
18.000	0.49	130.75	132.11	0.68	0.00	11,828	622.96
18.050	0.48	130.36	131.72	0.68	0.00	11,794	622.96
18.100	0.48	129.96	131.32	0.68	0.00	11,758	622.95
18.150	0.48	129.56	130.92	0.68	0.00	11,721	622.95
18.200	0.47	129.15	130.51	0.68	0.00	11,684	622.95
18.250	0.47	128.73	130.09	0.68	0.00	11,647	622.94
18.300	0.47	128.31	129.67	0.68	0.00	11,609	622.94
18.350	0.47	127.89	129.25	0.68	0.00	11,571	622.94
18.400	0.47	127.46	128.82	0.68	0.00	11,532	622.93
18.450	0.46	127.03	128.39	0.68	0.00	11,493	622.93
18.500	0.46	126.59	127.95	0.68	0.00	11,454	622.93
18.550	0.46	126.15	127.51	0.68	0.00	11,414	622.92
18.600	0.46	125.70	127.06	0.68	0.00	11,374	622.92
18.650	0.45	125.25	126.61	0.68	0.00	11,334	622.91
18.700	0.45	124.80	126.16	0.68	0.00	11,293	622.91
18.750	0.45	124.34	125.70	0.68	0.00	11,251	622.91
18.800	0.45	123.88	125.24	0.68	0.00	11,210	622.90
18.850	0.45	123.41	124.77	0.68	0.00	11,168	622.90

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: IB-1C-2 (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
18.900	0.44	122.94	124.30	0.68	0.00	11,125	622.89
18.950	0.44	122.46	123.82	0.68	0.00	11,082	622.89
19.000	0.44	121.98	123.34	0.68	0.00	11,039	622.89
19.050	0.44	121.50	122.86	0.68	0.00	10,995	622.88
19.100	0.43	121.01	122.37	0.68	0.00	10,951	622.88
19.150	0.43	120.51	121.87	0.68	0.00	10,907	622.87
19.200	0.43	120.02	121.38	0.68	0.00	10,862	622.87
19.250	0.43	119.51	120.87	0.68	0.00	10,817	622.87
19.300	0.43	119.01	120.37	0.68	0.00	10,772	622.86
19.350	0.42	118.50	119.86	0.68	0.00	10,726	622.86
19.400	0.42	117.98	119.34	0.68	0.00	10,679	622.85
19.450	0.42	117.46	118.82	0.68	0.00	10,633	622.85
19.500	0.42	116.94	118.30	0.68	0.00	10,585	622.84
19.550	0.41	116.41	117.77	0.68	0.00	10,538	622.84
19.600	0.41	115.87	117.23	0.68	0.00	10,490	622.83
19.650	0.41	115.34	116.70	0.68	0.00	10,441	622.83
19.700	0.41	114.80	116.16	0.68	0.00	10,392	622.82
19.750	0.41	114.25	115.61	0.68	0.00	10,343	622.82
19.800	0.40	113.70	115.06	0.68	0.00	10,294	622.82
19.850	0.40	113.15	114.51	0.68	0.00	10,244	622.81
19.900	0.40	112.59	113.95	0.68	0.00	10,194	622.81
19.950	0.40	112.02	113.38	0.68	0.00	10,143	622.80
20.000	0.40	111.45	112.81	0.68	0.00	10,092	622.80
20.050	0.39	110.88	112.24	0.68	0.00	10,040	622.79
20.100	0.39	110.31	111.67	0.68	0.00	9,988	622.79
20.150	0.39	109.72	111.08	0.68	0.00	9,936	622.78
20.200	0.39	109.14	110.50	0.68	0.00	9,884	622.78
20.250	0.39	108.56	109.92	0.68	0.00	9,831	622.77
20.300	0.38	107.97	109.33	0.68	0.00	9,778	622.77
20.350	0.38	107.38	108.74	0.68	0.00	9,725	622.76
20.400	0.38	106.78	108.14	0.68	0.00	9,671	622.76
20.450	0.38	106.18	107.54	0.68	0.00	9,617	622.75
20.500	0.38	105.58	106.94	0.68	0.00	9,563	622.74
20.550	0.38	104.97	106.33	0.68	0.00	9,508	622.74
20.600	0.37	104.36	105.72	0.68	0.00	9,453	622.73
20.650	0.37	103.75	105.11	0.68	0.00	9,398	622.73
20.700	0.37	103.13	104.49	0.68	0.00	9,343	622.72
20.750	0.37	102.51	103.87	0.68	0.00	9,287	622.72
20.800	0.37	101.89	103.25	0.68	0.00	9,231	622.71
20.850	0.37	101.26	102.62	0.68	0.00	9,174	622.71
20.900	0.36	100.63	101.99	0.68	0.00	9,118	622.70
20.950	0.36	100.00	101.36	0.68	0.00	9,061	622.70

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: IB-1C-2 (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
21.000	0.36	99.36	100.72	0.68	0.00	9,003	622.69
21.050	0.36	98.72	100.08	0.68	0.00	8,946	622.68
21.100	0.36	98.08	99.44	0.68	0.00	8,888	622.68
21.150	0.36	97.44	98.80	0.68	0.00	8,830	622.67
21.200	0.35	96.79	98.15	0.68	0.00	8,772	622.67
21.250	0.35	96.13	97.49	0.68	0.00	8,713	622.66
21.300	0.35	95.48	96.84	0.68	0.00	8,654	622.66
21.350	0.35	94.82	96.18	0.68	0.00	8,595	622.65
21.400	0.35	94.16	95.52	0.68	0.00	8,535	622.64
21.450	0.35	93.49	94.85	0.68	0.00	8,475	622.64
21.500	0.34	92.82	94.18	0.68	0.00	8,415	622.63
21.550	0.34	92.15	93.51	0.68	0.00	8,354	622.63
21.600	0.34	91.47	92.83	0.68	0.00	8,293	622.62
21.650	0.34	90.79	92.15	0.68	0.00	8,232	622.62
21.700	0.34	90.11	91.47	0.68	0.00	8,171	622.61
21.750	0.34	89.42	90.78	0.68	0.00	8,109	622.60
21.800	0.34	88.74	90.10	0.68	0.00	8,047	622.60
21.850	0.33	88.05	89.41	0.68	0.00	7,985	622.59
21.900	0.33	87.35	88.71	0.68	0.00	7,922	622.58
21.950	0.33	86.65	88.01	0.68	0.00	7,859	622.58
22.000	0.33	85.95	87.31	0.68	0.00	7,796	622.57
22.050	0.33	85.24	86.60	0.68	0.00	7,733	622.57
22.100	0.32	84.53	85.89	0.68	0.00	7,669	622.56
22.150	0.32	83.82	85.18	0.68	0.00	7,605	622.55
22.200	0.32	83.11	84.47	0.68	0.00	7,541	622.55
22.250	0.32	82.39	83.75	0.68	0.00	7,476	622.54
22.300	0.32	81.66	83.02	0.68	0.00	7,411	622.53
22.350	0.32	80.94	82.30	0.68	0.00	7,345	622.53
22.400	0.32	80.21	81.57	0.68	0.00	7,279	622.52
22.450	0.31	79.48	80.84	0.68	0.00	7,214	622.51
22.500	0.31	78.74	80.10	0.68	0.00	7,148	622.51
22.550	0.31	78.00	79.36	0.68	0.00	7,081	622.50
22.600	0.31	77.26	78.62	0.68	0.00	7,014	622.49
22.650	0.31	76.52	77.88	0.68	0.00	6,947	622.49
22.700	0.30	75.77	77.13	0.68	0.00	6,880	622.48
22.750	0.30	75.02	76.38	0.68	0.00	6,812	622.47
22.800	0.30	74.26	75.62	0.68	0.00	6,744	622.47
22.850	0.30	73.50	74.86	0.68	0.00	6,676	622.46
22.900	0.30	72.74	74.10	0.68	0.00	6,607	622.45
22.950	0.30	71.97	73.33	0.68	0.00	6,539	622.45
23.000	0.29	71.20	72.56	0.68	0.00	6,469	622.44
23.050	0.29	70.43	71.79	0.68	0.00	6,400	622.43

Stormwater Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: IB-1C-2 (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
23.100	0.29	69.65	71.01	0.68	0.00	6,330	622.43
23.150	0.29	68.87	70.23	0.68	0.00	6,259	622.42
23.200	0.29	68.09	69.45	0.68	0.00	6,189	622.41
23.250	0.29	67.30	68.66	0.68	0.00	6,118	622.40
23.300	0.28	66.51	67.87	0.68	0.00	6,047	622.40
23.350	0.28	65.72	67.08	0.68	0.00	5,976	622.39
23.400	0.28	64.93	66.29	0.68	0.00	5,904	622.38
23.450	0.28	64.13	65.49	0.68	0.00	5,832	622.37
23.500	0.28	63.33	64.69	0.68	0.00	5,760	622.37
23.550	0.28	62.52	63.88	0.68	0.00	5,688	622.36
23.600	0.27	61.71	63.07	0.68	0.00	5,615	622.35
23.650	0.27	60.90	62.26	0.68	0.00	5,542	622.35
23.700	0.27	60.08	61.44	0.68	0.00	5,468	622.34
23.750	0.27	59.26	60.62	0.68	0.00	5,394	622.33
23.800	0.27	58.44	59.80	0.68	0.00	5,320	622.32
23.850	0.27	57.61	58.97	0.68	0.00	5,246	622.32
23.900	0.26	56.78	58.14	0.68	0.00	5,172	622.31
23.950	0.26	55.95	57.31	0.68	0.00	5,097	622.30
24.000	0.26	55.11	56.47	0.68	0.00	5,021	622.29

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
0.000	0.00	0.00	0.00	0.00	0.00	0	621.75
0.050	0.00	0.00	0.00	0.00	0.00	0	621.75
0.100	0.00	0.00	0.00	0.00	0.00	0	621.75
0.150	0.00	0.00	0.00	0.00	0.00	0	621.75
0.200	0.00	0.00	0.00	0.00	0.00	0	621.75
0.250	0.00	0.00	0.00	0.00	0.00	0	621.75
0.300	0.00	0.00	0.00	0.00	0.00	0	621.75
0.350	0.00	0.00	0.00	0.00	0.00	0	621.75
0.400	0.00	0.00	0.00	0.00	0.00	0	621.75
0.450	0.00	0.00	0.00	0.00	0.00	0	621.75
0.500	0.00	0.00	0.00	0.00	0.00	0	621.75
0.550	0.00	0.00	0.00	0.00	0.00	0	621.75
0.600	0.00	0.00	0.00	0.00	0.00	0	621.75
0.650	0.00	0.00	0.00	0.00	0.00	0	621.75
0.700	0.00	0.00	0.00	0.00	0.00	0	621.75
0.750	0.00	0.00	0.00	0.00	0.00	0	621.75
0.800	0.00	0.00	0.00	0.00	0.00	0	621.75
0.850	0.00	0.00	0.00	0.00	0.00	0	621.75
0.900	0.00	0.00	0.00	0.00	0.00	0	621.75
0.950	0.00	0.00	0.00	0.00	0.00	0	621.75
1.000	0.00	0.00	0.00	0.00	0.00	0	621.75
1.050	0.00	0.00	0.00	0.00	0.00	0	621.75
1.100	0.00	0.00	0.00	0.00	0.00	0	621.75
1.150	0.00	0.00	0.00	0.00	0.00	0	621.75
1.200	0.00	0.00	0.00	0.00	0.00	0	621.75
1.250	0.00	0.00	0.00	0.00	0.00	0	621.75
1.300	0.00	0.00	0.00	0.00	0.00	0	621.75
1.350	0.00	0.00	0.00	0.00	0.00	0	621.75
1.400	0.00	0.00	0.00	0.00	0.00	0	621.75
1.450	0.00	0.00	0.00	0.00	0.00	0	621.75
1.500	0.00	0.00	0.00	0.00	0.00	0	621.75
1.550	0.00	0.00	0.00	0.00	0.00	0	621.75
1.600	0.00	0.00	0.00	0.00	0.00	0	621.75
1.650	0.00	0.00	0.00	0.00	0.00	0	621.75
1.700	0.00	0.00	0.00	0.00	0.00	0	621.75
1.750	0.00	0.00	0.00	0.00	0.00	0	621.75
1.800	0.00	0.00	0.00	0.00	0.00	0	621.75
1.850	0.00	0.00	0.00	0.00	0.00	0	621.75
1.900	0.00	0.00	0.00	0.00	0.00	0	621.75
1.950	0.00	0.00	0.00	0.00	0.00	0	621.75
2.000	0.00	0.00	0.00	0.00	0.00	0	621.75
2.050	0.00	0.00	0.00	0.00	0.00	0	621.75

Subsection: Pond Routing Calculations (Total Out) | Return Event: 25 years
Label: IB-1C-2 (OUT) | Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
2.100	0.00	0.00	0.00	0.00	0.00	0	621.75
2.150	0.00	0.00	0.00	0.00	0.00	0	621.75
2.200	0.00	0.00	0.00	0.00	0.00	0	621.75
2.250	0.00	0.00	0.00	0.00	0.00	0	621.75
2.300	0.00	0.00	0.00	0.00	0.00	0	621.75
2.350	0.00	0.00	0.00	0.00	0.00	0	621.75
2.400	0.00	0.00	0.00	0.00	0.00	0	621.75
2.450	0.00	0.00	0.00	0.00	0.00	0	621.75
2.500	0.00	0.00	0.00	0.00	0.00	0	621.75
2.550	0.00	0.00	0.00	0.00	0.00	0	621.75
2.600	0.00	0.00	0.00	0.00	0.00	0	621.75
2.650	0.00	0.00	0.00	0.00	0.00	0	621.75
2.700	0.00	0.00	0.00	0.00	0.00	0	621.75
2.750	0.00	0.00	0.00	0.00	0.00	0	621.75
2.800	0.00	0.00	0.00	0.00	0.00	0	621.75
2.850	0.00	0.00	0.00	0.00	0.00	0	621.75
2.900	0.00	0.00	0.00	0.00	0.00	0	621.75
2.950	0.00	0.00	0.00	0.00	0.00	0	621.75
3.000	0.00	0.00	0.00	0.00	0.00	0	621.75
3.050	0.00	0.00	0.00	0.00	0.00	0	621.75
3.100	0.00	0.00	0.00	0.00	0.00	0	621.75
3.150	0.00	0.00	0.00	0.00	0.00	0	621.75
3.200	0.00	0.00	0.00	0.00	0.00	0	621.75
3.250	0.00	0.00	0.00	0.00	0.00	0	621.75
3.300	0.00	0.00	0.00	0.00	0.00	0	621.75
3.350	0.00	0.00	0.00	0.00	0.00	0	621.75
3.400	0.00	0.00	0.00	0.00	0.00	0	621.75
3.450	0.00	0.00	0.00	0.00	0.00	0	621.75
3.500	0.00	0.00	0.00	0.00	0.00	0	621.75
3.550	0.00	0.00	0.00	0.00	0.00	0	621.75
3.600	0.00	0.00	0.00	0.00	0.00	0	621.75
3.650	0.00	0.00	0.00	0.00	0.00	0	621.75
3.700	0.00	0.00	0.00	0.00	0.00	0	621.75
3.750	0.00	0.00	0.00	0.00	0.00	0	621.75
3.800	0.00	0.00	0.00	0.00	0.00	0	621.75
3.850	0.00	0.00	0.00	0.00	0.00	0	621.75
3.900	0.00	0.00	0.00	0.00	0.00	0	621.75
3.950	0.00	0.00	0.00	0.00	0.00	0	621.75
4.000	0.00	0.00	0.00	0.00	0.00	0	621.75
4.050	0.00	0.00	0.00	0.00	0.00	0	621.75
4.100	0.00	0.00	0.00	0.00	0.00	0	621.75
4.150	0.00	0.00	0.00	0.00	0.00	0	621.75

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: IB-1C-2 (OUT) Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
4.200	0.00	0.00	0.00	0.00	0.00	0	621.75
4.250	0.00	0.00	0.00	0.00	0.00	0	621.75
4.300	0.00	0.00	0.00	0.00	0.00	0	621.75
4.350	0.00	0.00	0.00	0.00	0.00	0	621.75
4.400	0.00	0.00	0.00	0.00	0.00	0	621.75
4.450	0.00	0.00	0.00	0.00	0.00	0	621.75
4.500	0.00	0.00	0.00	0.00	0.00	0	621.75
4.550	0.00	0.00	0.00	0.00	0.00	0	621.75
4.600	0.00	0.00	0.00	0.00	0.00	0	621.75
4.650	0.00	0.00	0.00	0.00	0.00	0	621.75
4.700	0.00	0.00	0.00	0.00	0.00	0	621.75
4.750	0.00	0.00	0.00	0.00	0.00	0	621.75
4.800	0.00	0.00	0.00	0.00	0.00	0	621.75
4.850	0.00	0.00	0.00	0.00	0.00	0	621.75
4.900	0.00	0.00	0.00	0.00	0.00	0	621.75
4.950	0.00	0.00	0.00	0.00	0.00	0	621.75
5.000	0.00	0.00	0.00	0.00	0.00	0	621.75
5.050	0.00	0.00	0.00	0.00	0.00	0	621.75
5.100	0.00	0.00	0.00	0.00	0.00	0	621.75
5.150	0.00	0.00	0.00	0.00	0.00	0	621.75
5.200	0.00	0.00	0.00	0.00	0.00	0	621.75
5.250	0.00	0.00	0.00	0.00	0.00	0	621.75
5.300	0.00	0.00	0.00	0.00	0.00	0	621.75
5.350	0.00	0.00	0.00	0.00	0.00	0	621.75
5.400	0.00	0.00	0.00	0.00	0.00	0	621.75
5.450	0.00	0.00	0.00	0.00	0.00	0	621.75
5.500	0.00	0.00	0.00	0.00	0.00	0	621.75
5.550	0.00	0.00	0.00	0.00	0.00	0	621.75
5.600	0.00	0.00	0.00	0.00	0.00	0	621.75
5.650	0.00	0.00	0.00	0.00	0.00	0	621.75
5.700	0.00	0.00	0.00	0.00	0.00	0	621.75
5.750	0.00	0.00	0.00	0.00	0.00	0	621.75
5.800	0.00	0.00	0.00	0.00	0.00	0	621.75
5.850	0.00	0.00	0.00	0.00	0.00	0	621.75
5.900	0.00	0.00	0.00	0.00	0.00	0	621.75
5.950	0.00	0.00	0.00	0.00	0.00	0	621.75
6.000	0.00	0.00	0.00	0.00	0.00	0	621.75
6.050	0.00	0.00	0.00	0.00	0.00	0	621.75
6.100	0.00	0.00	0.00	0.00	0.00	0	621.75
6.150	0.00	0.00	0.00	0.00	0.00	0	621.75
6.200	0.00	0.00	0.00	0.00	0.00	0	621.75
6.250	0.00	0.00	0.00	0.00	0.00	0	621.75

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: IB-1C-2 (OUT) Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
6.300	0.00	0.00	0.00	0.00	0.00	0	621.75
6.350	0.00	0.00	0.00	0.00	0.00	0	621.75
6.400	0.00	0.00	0.00	0.00	0.00	0	621.75
6.450	0.00	0.00	0.00	0.00	0.00	0	621.75
6.500	0.01	0.01	0.01	0.00	0.00	1	621.75
6.550	0.01	0.02	0.03	0.00	0.00	2	621.75
6.600	0.01	0.03	0.04	0.01	0.00	3	621.75
6.650	0.02	0.05	0.06	0.01	0.00	5	621.75
6.700	0.02	0.07	0.09	0.01	0.00	7	621.75
6.750	0.03	0.09	0.12	0.01	0.00	9	621.75
6.800	0.03	0.11	0.14	0.02	0.00	11	621.75
6.850	0.04	0.13	0.18	0.02	0.00	14	621.75
6.900	0.04	0.16	0.21	0.03	0.00	16	621.75
6.950	0.04	0.18	0.24	0.03	0.00	19	621.75
7.000	0.05	0.21	0.28	0.03	0.00	22	621.75
7.050	0.05	0.24	0.31	0.04	0.00	24	621.75
7.100	0.06	0.26	0.35	0.04	0.00	27	621.75
7.150	0.07	0.29	0.39	0.05	0.00	31	621.75
7.200	0.07	0.32	0.43	0.05	0.00	34	621.75
7.250	0.08	0.35	0.47	0.06	0.00	37	621.75
7.300	0.08	0.39	0.51	0.06	0.00	40	621.75
7.350	0.09	0.42	0.56	0.07	0.00	44	621.76
7.400	0.09	0.45	0.60	0.07	0.00	47	621.76
7.450	0.10	0.49	0.65	0.08	0.00	51	621.76
7.500	0.11	0.52	0.69	0.09	0.00	54	621.76
7.550	0.11	0.56	0.74	0.09	0.00	58	621.76
7.600	0.12	0.59	0.79	0.10	0.00	62	621.76
7.650	0.12	0.63	0.84	0.10	0.00	66	621.76
7.700	0.13	0.67	0.89	0.11	0.00	70	621.76
7.750	0.14	0.71	0.94	0.12	0.00	74	621.76
7.800	0.15	0.75	0.99	0.12	0.00	78	621.76
7.850	0.15	0.79	1.04	0.13	0.00	82	621.76
7.900	0.16	0.83	1.10	0.14	0.00	86	621.76
7.950	0.17	0.87	1.15	0.14	0.00	90	621.76
8.000	0.17	0.91	1.21	0.15	0.00	95	621.76
8.050	0.18	0.95	1.27	0.16	0.00	99	621.76
8.100	0.19	1.00	1.33	0.16	0.00	104	621.76
8.150	0.20	1.05	1.39	0.17	0.00	109	621.76
8.200	0.21	1.10	1.46	0.18	0.00	115	621.76
8.250	0.22	1.15	1.53	0.19	0.00	120	621.76
8.300	0.23	1.21	1.61	0.20	0.00	126	621.76
8.350	0.24	1.27	1.69	0.21	0.00	133	621.77

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
8.400	0.26	1.34	1.77	0.22	0.00	139	621.77
8.450	0.27	1.40	1.86	0.23	0.00	146	621.77
8.500	0.28	1.47	1.95	0.24	0.00	153	621.77
8.550	0.29	1.54	2.05	0.25	0.00	161	621.77
8.600	0.31	1.62	2.14	0.26	0.00	168	621.77
8.650	0.32	1.69	2.24	0.28	0.00	176	621.77
8.700	0.34	1.77	2.35	0.29	0.00	184	621.77
8.750	0.35	1.85	2.45	0.30	0.00	193	621.77
8.800	0.36	1.93	2.56	0.32	0.00	201	621.77
8.850	0.38	2.01	2.67	0.33	0.00	210	621.77
8.900	0.39	2.10	2.79	0.34	0.00	219	621.78
8.950	0.41	2.19	2.90	0.36	0.00	228	621.78
9.000	0.43	2.28	3.02	0.37	0.00	238	621.78
9.050	0.44	2.37	3.15	0.39	0.00	247	621.78
9.100	0.46	2.46	3.27	0.40	0.00	257	621.78
9.150	0.48	2.56	3.40	0.42	0.00	267	621.78
9.200	0.49	2.66	3.53	0.44	0.00	278	621.78
9.250	0.51	2.76	3.66	0.45	0.00	288	621.78
9.300	0.53	2.86	3.80	0.47	0.00	299	621.78
9.350	0.55	2.97	3.94	0.49	0.00	310	621.79
9.400	0.57	3.07	4.08	0.50	0.00	321	621.79
9.450	0.58	3.18	4.22	0.52	0.00	332	621.79
9.500	0.60	3.29	4.37	0.54	0.00	344	621.79
9.550	0.62	3.40	4.52	0.56	0.00	356	621.79
9.600	0.64	3.52	4.67	0.58	0.00	368	621.79
9.650	0.66	3.63	4.82	0.59	0.00	380	621.79
9.700	0.68	3.75	4.98	0.61	0.00	392	621.80
9.750	0.70	3.87	5.14	0.63	0.00	405	621.80
9.800	0.72	3.99	5.30	0.65	0.00	418	621.80
9.850	0.75	4.11	5.46	0.67	0.00	431	621.80
9.900	0.77	4.27	5.63	0.68	0.00	445	621.80
9.950	0.79	4.46	5.82	0.68	0.00	463	621.80
10.000	0.81	4.70	6.06	0.68	0.00	484	621.81
10.050	0.84	4.99	6.35	0.68	0.00	510	621.81
10.100	0.86	5.33	6.69	0.68	0.00	540	621.81
10.150	0.89	5.73	7.09	0.68	0.00	576	621.82
10.200	0.93	6.19	7.55	0.68	0.00	618	621.82
10.250	0.96	6.73	8.09	0.68	0.00	666	621.83
10.300	1.00	7.33	8.69	0.68	0.00	721	621.83
10.350	1.04	8.01	9.37	0.68	0.00	782	621.84
10.400	1.08	8.77	10.13	0.68	0.00	850	621.85
10.450	1.11	9.60	10.96	0.68	0.00	925	621.86

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: IB-1C-2 (OUT) Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
10.500	1.15	10.51	11.87	0.68	0.00	1,006	621.86
10.550	1.19	11.49	12.85	0.68	0.00	1,095	621.87
10.600	1.23	12.56	13.92	0.68	0.00	1,191	621.89
10.650	1.27	13.71	15.07	0.68	0.00	1,295	621.90
10.700	1.32	14.94	16.30	0.68	0.00	1,406	621.91
10.750	1.36	16.26	17.62	0.68	0.00	1,524	621.92
10.800	1.40	17.66	19.02	0.68	0.00	1,650	621.94
10.850	1.45	19.15	20.51	0.68	0.00	1,785	621.95
10.900	1.49	20.73	22.09	0.68	0.00	1,926	621.97
10.950	1.54	22.40	23.76	0.68	0.00	2,077	621.98
11.000	1.58	24.16	25.52	0.68	0.00	2,236	622.00
11.050	1.65	26.03	27.39	0.68	0.00	2,404	622.02
11.100	1.74	28.06	29.42	0.68	0.00	2,586	622.04
11.150	1.84	30.28	31.64	0.68	0.00	2,786	622.06
11.200	1.97	32.73	34.09	0.68	0.00	3,006	622.08
11.250	2.10	35.44	36.80	0.68	0.00	3,251	622.11
11.300	2.25	38.43	39.79	0.68	0.00	3,519	622.14
11.350	2.38	41.69	43.05	0.68	0.00	3,813	622.17
11.400	2.53	45.24	46.60	0.68	0.00	4,133	622.20
11.450	2.67	49.08	50.44	0.68	0.00	4,478	622.24
11.500	2.84	53.23	54.59	0.68	0.00	4,852	622.27
11.550	3.26	57.97	59.33	0.68	0.00	5,278	622.32
11.600	3.93	63.80	65.16	0.68	0.00	5,802	622.37
11.650	4.86	71.23	72.59	0.68	0.00	6,472	622.44
11.700	6.20	80.93	82.29	0.68	0.00	7,344	622.53
11.750	7.44	93.20	94.56	0.68	0.00	8,449	622.64
11.800	8.97	108.25	109.61	0.68	0.00	9,804	622.77
11.850	10.38	126.24	127.60	0.68	0.00	11,423	622.92
11.900	12.13	144.78	148.75	0.68	1.30	13,209	623.09
11.950	16.41	159.81	173.32	0.68	6.07	14,991	623.25
12.000	23.49	178.43	199.71	0.68	9.96	17,016	623.43
12.050	26.71	203.02	228.63	0.68	12.13	19,424	623.64
12.100	28.20	227.93	257.93	0.68	14.32	21,864	623.85
12.150	25.29	247.90	281.42	0.68	16.08	23,819	624.01
12.200	18.74	256.86	291.92	0.68	16.85	24,695	624.08
12.250	15.53	256.19	291.13	0.68	16.79	24,629	624.08
12.300	13.35	251.01	285.07	0.68	16.35	24,124	624.04
12.350	11.81	243.45	276.18	0.68	15.69	23,383	623.97
12.400	10.09	234.24	265.35	0.68	14.87	22,481	623.90
12.450	8.64	223.71	252.97	0.68	13.95	21,450	623.81
12.500	6.91	212.05	239.26	0.68	12.92	20,309	623.72
12.550	5.82	199.75	224.79	0.68	11.84	19,104	623.61

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: IB-1C-2 (OUT) Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
12.600	4.78	187.47	210.35	0.68	10.76	17,902	623.51
12.650	4.32	175.77	196.58	0.68	9.72	16,756	623.41
12.700	4.05	165.98	184.15	0.68	8.40	15,756	623.32
12.750	3.88	160.13	173.92	0.68	6.21	15,032	623.26
12.800	3.69	156.66	167.70	0.68	4.84	14,596	623.22
12.850	3.54	154.45	163.89	0.68	4.04	14,325	623.19
12.900	3.36	152.92	161.35	0.68	3.53	14,142	623.17
12.950	3.20	151.79	159.48	0.68	3.16	14,007	623.16
13.000	3.02	150.91	158.02	0.68	2.87	13,902	623.15
13.050	2.90	150.16	156.83	0.68	2.66	13,814	623.14
13.100	2.77	149.50	155.83	0.68	2.48	13,740	623.14
13.150	2.71	148.95	154.99	0.68	2.34	13,677	623.13
13.200	2.65	148.52	154.32	0.68	2.22	13,627	623.13
13.250	2.61	148.17	153.78	0.68	2.13	13,587	623.12
13.300	2.57	147.88	153.35	0.68	2.05	13,555	623.12
13.350	2.53	147.64	152.98	0.68	1.99	13,527	623.12
13.400	2.48	147.43	152.65	0.68	1.93	13,503	623.12
13.450	2.44	147.23	152.34	0.68	1.88	13,480	623.11
13.500	2.39	147.04	152.06	0.68	1.83	13,459	623.11
13.550	2.35	146.87	151.79	0.68	1.78	13,439	623.11
13.600	2.30	146.69	151.52	0.68	1.74	13,419	623.11
13.650	2.26	146.52	151.26	0.68	1.69	13,400	623.11
13.700	2.22	146.35	151.00	0.68	1.64	13,381	623.10
13.750	2.18	146.18	150.74	0.68	1.60	13,362	623.10
13.800	2.13	146.02	150.49	0.68	1.56	13,343	623.10
13.850	2.09	145.85	150.23	0.68	1.51	13,324	623.10
13.900	2.04	145.66	149.97	0.68	1.48	13,303	623.10
13.950	2.00	145.46	149.70	0.68	1.44	13,282	623.10
14.000	1.95	145.26	149.41	0.68	1.40	13,260	623.09
14.050	1.91	145.05	149.12	0.68	1.36	13,237	623.09
14.100	1.88	144.85	148.84	0.68	1.32	13,216	623.09
14.150	1.85	144.66	148.58	0.68	1.28	13,195	623.09
14.200	1.83	144.49	148.34	0.68	1.25	13,177	623.09
14.250	1.81	144.33	148.13	0.68	1.22	13,160	623.08
14.300	1.79	144.19	147.93	0.68	1.19	13,145	623.08
14.350	1.77	144.06	147.74	0.68	1.16	13,131	623.08
14.400	1.74	143.93	147.57	0.68	1.14	13,117	623.08
14.450	1.73	143.81	147.40	0.68	1.11	13,104	623.08
14.500	1.70	143.69	147.24	0.68	1.09	13,091	623.08
14.550	1.68	143.58	147.08	0.68	1.07	13,079	623.08
14.600	1.66	143.46	146.92	0.68	1.05	13,067	623.08
14.650	1.64	143.35	146.76	0.68	1.03	13,055	623.07

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: IB-1C-2 (OUT) Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
14.700	1.62	143.24	146.61	0.68	1.00	13,043	623.07
14.750	1.60	143.13	146.45	0.68	0.98	13,031	623.07
14.800	1.57	143.02	146.30	0.68	0.96	13,019	623.07
14.850	1.55	142.91	146.15	0.68	0.94	13,007	623.07
14.900	1.53	142.80	145.99	0.68	0.92	12,995	623.07
14.950	1.51	142.69	145.84	0.68	0.90	12,983	623.07
15.000	1.49	142.58	145.68	0.68	0.87	12,971	623.07
15.050	1.47	142.47	145.53	0.68	0.85	12,959	623.07
15.100	1.44	142.35	145.38	0.68	0.83	12,948	623.07
15.150	1.42	142.24	145.22	0.68	0.81	12,936	623.06
15.200	1.40	142.13	145.07	0.68	0.79	12,924	623.06
15.250	1.38	142.02	144.91	0.68	0.77	12,912	623.06
15.300	1.36	141.91	144.76	0.68	0.74	12,900	623.06
15.350	1.34	141.80	144.60	0.68	0.72	12,888	623.06
15.400	1.31	141.69	144.45	0.68	0.70	12,876	623.06
15.450	1.29	141.58	144.29	0.68	0.68	12,864	623.06
15.500	1.27	141.46	144.14	0.68	0.66	12,852	623.06
15.550	1.25	141.35	143.98	0.68	0.63	12,840	623.05
15.600	1.23	141.24	143.83	0.68	0.61	12,828	623.05
15.650	1.21	141.13	143.67	0.68	0.59	12,816	623.05
15.700	1.18	141.02	143.51	0.68	0.57	12,804	623.05
15.750	1.16	140.90	143.36	0.68	0.55	12,792	623.05
15.800	1.14	140.78	143.20	0.68	0.53	12,779	623.05
15.850	1.12	140.64	143.04	0.68	0.52	12,765	623.05
15.900	1.09	140.49	142.85	0.68	0.50	12,750	623.05
15.950	1.07	140.33	142.65	0.68	0.48	12,734	623.05
16.000	1.05	140.15	142.45	0.68	0.47	12,717	623.04
16.050	1.03	139.97	142.23	0.68	0.45	12,699	623.04
16.100	1.02	139.80	142.02	0.68	0.43	12,681	623.04
16.150	1.00	139.62	141.81	0.68	0.42	12,664	623.04
16.200	0.99	139.46	141.62	0.68	0.40	12,648	623.04
16.250	0.98	139.30	141.43	0.68	0.38	12,633	623.04
16.300	0.97	139.16	141.26	0.68	0.37	12,618	623.03
16.350	0.96	139.02	141.09	0.68	0.36	12,605	623.03
16.400	0.95	138.89	140.94	0.68	0.34	12,592	623.03
16.450	0.94	138.77	140.79	0.68	0.33	12,579	623.03
16.500	0.93	138.65	140.64	0.68	0.32	12,568	623.03
16.550	0.93	138.53	140.51	0.68	0.31	12,556	623.03
16.600	0.91	138.42	140.37	0.68	0.30	12,545	623.03
16.650	0.91	138.31	140.24	0.68	0.29	12,534	623.03
16.700	0.90	138.20	140.11	0.68	0.27	12,523	623.03
16.750	0.89	138.09	139.98	0.68	0.26	12,513	623.02

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: IB-1C-2 (OUT) Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
16.800	0.88	137.99	139.85	0.68	0.25	12,502	623.02
16.850	0.87	137.88	139.73	0.68	0.24	12,492	623.02
16.900	0.86	137.78	139.61	0.68	0.23	12,482	623.02
16.950	0.85	137.68	139.49	0.68	0.22	12,472	623.02
17.000	0.84	137.58	139.36	0.68	0.21	12,462	623.02
17.050	0.83	137.48	139.24	0.68	0.20	12,452	623.02
17.100	0.82	137.38	139.12	0.68	0.19	12,442	623.02
17.150	0.81	137.28	139.01	0.68	0.18	12,432	623.02
17.200	0.80	137.18	138.89	0.68	0.17	12,423	623.02
17.250	0.79	137.08	138.77	0.68	0.16	12,413	623.02
17.300	0.78	136.98	138.65	0.68	0.15	12,403	623.01
17.350	0.77	136.88	138.53	0.68	0.14	12,393	623.01
17.400	0.76	136.78	138.41	0.68	0.14	12,384	623.01
17.450	0.75	136.68	138.29	0.68	0.13	12,374	623.01
17.500	0.74	136.59	138.18	0.68	0.12	12,364	623.01
17.550	0.73	136.49	138.06	0.68	0.11	12,354	623.01
17.600	0.72	136.39	137.94	0.68	0.10	12,345	623.01
17.650	0.71	136.29	137.82	0.68	0.09	12,335	623.01
17.700	0.70	136.19	137.71	0.68	0.08	12,325	623.01
17.750	0.69	136.10	137.59	0.68	0.07	12,316	623.01
17.800	0.68	136.00	137.47	0.68	0.06	12,306	623.01
17.850	0.67	135.90	137.35	0.68	0.05	12,296	623.00
17.900	0.66	135.80	137.23	0.68	0.04	12,286	623.00
17.950	0.66	135.70	137.12	0.68	0.03	12,277	623.00
18.000	0.64	135.60	137.00	0.68	0.02	12,267	623.00
18.050	0.64	135.50	136.88	0.68	0.01	12,257	623.00
18.100	0.63	135.41	136.77	0.68	0.00	12,248	623.00
18.150	0.63	135.30	136.66	0.68	0.00	12,238	623.00
18.200	0.62	135.19	136.55	0.68	0.00	12,228	623.00
18.250	0.62	135.07	136.43	0.68	0.00	12,218	623.00
18.300	0.62	134.95	136.31	0.68	0.00	12,206	623.00
18.350	0.61	134.82	136.18	0.68	0.00	12,195	622.99
18.400	0.61	134.68	136.04	0.68	0.00	12,182	622.99
18.450	0.61	134.54	135.90	0.68	0.00	12,170	622.99
18.500	0.60	134.39	135.75	0.68	0.00	12,156	622.99
18.550	0.60	134.24	135.60	0.68	0.00	12,142	622.99
18.600	0.60	134.08	135.44	0.68	0.00	12,128	622.99
18.650	0.60	133.92	135.28	0.68	0.00	12,113	622.99
18.700	0.59	133.75	135.11	0.68	0.00	12,098	622.99
18.750	0.59	133.57	134.93	0.68	0.00	12,082	622.98
18.800	0.59	133.39	134.75	0.68	0.00	12,066	622.98
18.850	0.59	133.20	134.56	0.68	0.00	12,049	622.98

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
18.900	0.58	133.01	134.37	0.68	0.00	12,031	622.98
18.950	0.58	132.81	134.17	0.68	0.00	12,013	622.98
19.000	0.58	132.60	133.96	0.68	0.00	11,995	622.98
19.050	0.57	132.39	133.75	0.68	0.00	11,976	622.97
19.100	0.57	132.18	133.54	0.68	0.00	11,957	622.97
19.150	0.57	131.95	133.31	0.68	0.00	11,937	622.97
19.200	0.57	131.73	133.09	0.68	0.00	11,916	622.97
19.250	0.56	131.49	132.85	0.68	0.00	11,895	622.97
19.300	0.56	131.25	132.61	0.68	0.00	11,874	622.96
19.350	0.56	131.01	132.37	0.68	0.00	11,852	622.96
19.400	0.55	130.76	132.12	0.68	0.00	11,829	622.96
19.450	0.55	130.50	131.86	0.68	0.00	11,806	622.96
19.500	0.55	130.24	131.60	0.68	0.00	11,782	622.96
19.550	0.54	129.97	131.33	0.68	0.00	11,758	622.95
19.600	0.54	129.69	131.05	0.68	0.00	11,734	622.95
19.650	0.54	129.42	130.78	0.68	0.00	11,709	622.95
19.700	0.53	129.13	130.49	0.68	0.00	11,683	622.95
19.750	0.53	128.84	130.20	0.68	0.00	11,656	622.94
19.800	0.53	128.54	129.90	0.68	0.00	11,630	622.94
19.850	0.53	128.24	129.60	0.68	0.00	11,602	622.94
19.900	0.52	127.93	129.29	0.68	0.00	11,574	622.94
19.950	0.52	127.61	128.97	0.68	0.00	11,546	622.93
20.000	0.52	127.29	128.65	0.68	0.00	11,517	622.93
20.050	0.52	126.97	128.33	0.68	0.00	11,488	622.93
20.100	0.51	126.63	127.99	0.68	0.00	11,458	622.93
20.150	0.51	126.30	127.66	0.68	0.00	11,427	622.92
20.200	0.51	125.96	127.32	0.68	0.00	11,397	622.92
20.250	0.51	125.61	126.97	0.68	0.00	11,366	622.92
20.300	0.50	125.27	126.63	0.68	0.00	11,335	622.91
20.350	0.50	124.91	126.27	0.68	0.00	11,303	622.91
20.400	0.50	124.55	125.91	0.68	0.00	11,271	622.91
20.450	0.50	124.19	125.55	0.68	0.00	11,238	622.91
20.500	0.50	123.82	125.18	0.68	0.00	11,205	622.90
20.550	0.49	123.45	124.81	0.68	0.00	11,172	622.90
20.600	0.49	123.08	124.44	0.68	0.00	11,138	622.90
20.650	0.49	122.70	124.06	0.68	0.00	11,104	622.89
20.700	0.48	122.31	123.67	0.68	0.00	11,069	622.89
20.750	0.48	121.92	123.28	0.68	0.00	11,033	622.89
20.800	0.48	121.52	122.88	0.68	0.00	10,998	622.88
20.850	0.48	121.13	122.49	0.68	0.00	10,962	622.88
20.900	0.48	120.72	122.08	0.68	0.00	10,926	622.88
20.950	0.48	120.32	121.68	0.68	0.00	10,889	622.87

Subsection: Pond Routing Calculations (Total Out)　　Return Event: 25 years
Label: IB-1C-2 (OUT)　　Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
21.000	0.48	119.91	121.27	0.68	0.00	10,852	622.87
21.050	0.47	119.50	120.86	0.68	0.00	10,815	622.86
21.100	0.47	119.08	120.44	0.68	0.00	10,778	622.86
21.150	0.47	118.65	120.01	0.68	0.00	10,740	622.86
21.200	0.46	118.22	119.58	0.68	0.00	10,701	622.85
21.250	0.46	117.79	119.15	0.68	0.00	10,662	622.85
21.300	0.46	117.36	118.72	0.68	0.00	10,623	622.85
21.350	0.46	116.91	118.27	0.68	0.00	10,583	622.84
21.400	0.46	116.47	117.83	0.68	0.00	10,543	622.84
21.450	0.45	116.02	117.38	0.68	0.00	10,503	622.84
21.500	0.45	115.56	116.92	0.68	0.00	10,461	622.83
21.550	0.45	115.10	116.46	0.68	0.00	10,420	622.83
21.600	0.45	114.64	116.00	0.68	0.00	10,378	622.82
21.650	0.45	114.17	115.53	0.68	0.00	10,336	622.82
21.700	0.44	113.70	115.06	0.68	0.00	10,294	622.82
21.750	0.44	113.22	114.58	0.68	0.00	10,251	622.81
21.800	0.44	112.74	114.10	0.68	0.00	10,208	622.81
21.850	0.44	112.26	113.62	0.68	0.00	10,165	622.80
21.900	0.43	111.77	113.13	0.68	0.00	10,121	622.80
21.950	0.43	111.28	112.64	0.68	0.00	10,076	622.79
22.000	0.43	110.78	112.14	0.68	0.00	10,031	622.79
22.050	0.43	110.28	111.64	0.68	0.00	9,986	622.79
22.100	0.43	109.77	111.13	0.68	0.00	9,940	622.78
22.150	0.42	109.26	110.62	0.68	0.00	9,894	622.78
22.200	0.42	108.74	110.10	0.68	0.00	9,848	622.77
22.250	0.42	108.22	109.58	0.68	0.00	9,801	622.77
22.300	0.41	107.70	109.06	0.68	0.00	9,754	622.76
22.350	0.41	107.17	108.53	0.68	0.00	9,706	622.76
22.400	0.41	106.63	107.99	0.68	0.00	9,658	622.75
22.450	0.41	106.09	107.45	0.68	0.00	9,610	622.75
22.500	0.41	105.55	106.91	0.68	0.00	9,561	622.74
22.550	0.41	105.00	106.36	0.68	0.00	9,511	622.74
22.600	0.41	104.45	105.81	0.68	0.00	9,462	622.74
22.650	0.40	103.90	105.26	0.68	0.00	9,412	622.73
22.700	0.40	103.34	104.70	0.68	0.00	9,362	622.73
22.750	0.40	102.78	104.14	0.68	0.00	9,311	622.72
22.800	0.39	102.21	103.57	0.68	0.00	9,260	622.72
22.850	0.39	101.64	103.00	0.68	0.00	9,208	622.71
22.900	0.39	101.06	102.42	0.68	0.00	9,156	622.71
22.950	0.39	100.48	101.84	0.68	0.00	9,104	622.70
23.000	0.39	99.89	101.25	0.68	0.00	9,051	622.70
23.050	0.38	99.30	100.66	0.68	0.00	8,998	622.69

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: IB-1C-2 (OUT) Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
23.100	0.38	98.71	100.07	0.68	0.00	8,944	622.68
23.150	0.38	98.10	99.46	0.68	0.00	8,890	622.68
23.200	0.38	97.50	98.86	0.68	0.00	8,836	622.67
23.250	0.38	96.89	98.25	0.68	0.00	8,781	622.67
23.300	0.37	96.28	97.64	0.68	0.00	8,726	622.66
23.350	0.37	95.66	97.02	0.68	0.00	8,670	622.66
23.400	0.37	95.04	96.40	0.68	0.00	8,615	622.65
23.450	0.37	94.42	95.78	0.68	0.00	8,559	622.65
23.500	0.36	93.79	95.15	0.68	0.00	8,502	622.64
23.550	0.36	93.15	94.51	0.68	0.00	8,445	622.64
23.600	0.36	92.51	93.87	0.68	0.00	8,387	622.63
23.650	0.36	91.87	93.23	0.68	0.00	8,329	622.62
23.700	0.35	91.22	92.58	0.68	0.00	8,271	622.62
23.750	0.35	90.57	91.93	0.68	0.00	8,212	622.61
23.800	0.35	89.91	91.27	0.68	0.00	8,153	622.61
23.850	0.35	89.25	90.61	0.68	0.00	8,094	622.60
23.900	0.34	88.58	89.94	0.68	0.00	8,034	622.60
23.950	0.34	87.91	89.27	0.68	0.00	7,973	622.59
24.000	0.34	87.24	88.60	0.68	0.00	7,912	622.58

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: IB-1C-2 (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
0.000	0.00	0.00	0.00	0.00	0.00	0	621.75
0.050	0.00	0.00	0.00	0.00	0.00	0	621.75
0.100	0.00	0.00	0.00	0.00	0.00	0	621.75
0.150	0.00	0.00	0.00	0.00	0.00	0	621.75
0.200	0.00	0.00	0.00	0.00	0.00	0	621.75
0.250	0.00	0.00	0.00	0.00	0.00	0	621.75
0.300	0.00	0.00	0.00	0.00	0.00	0	621.75
0.350	0.00	0.00	0.00	0.00	0.00	0	621.75
0.400	0.00	0.00	0.00	0.00	0.00	0	621.75
0.450	0.00	0.00	0.00	0.00	0.00	0	621.75
0.500	0.00	0.00	0.00	0.00	0.00	0	621.75
0.550	0.00	0.00	0.00	0.00	0.00	0	621.75
0.600	0.00	0.00	0.00	0.00	0.00	0	621.75
0.650	0.00	0.00	0.00	0.00	0.00	0	621.75
0.700	0.00	0.00	0.00	0.00	0.00	0	621.75
0.750	0.00	0.00	0.00	0.00	0.00	0	621.75
0.800	0.00	0.00	0.00	0.00	0.00	0	621.75
0.850	0.00	0.00	0.00	0.00	0.00	0	621.75
0.900	0.00	0.00	0.00	0.00	0.00	0	621.75
0.950	0.00	0.00	0.00	0.00	0.00	0	621.75
1.000	0.00	0.00	0.00	0.00	0.00	0	621.75
1.050	0.00	0.00	0.00	0.00	0.00	0	621.75
1.100	0.00	0.00	0.00	0.00	0.00	0	621.75
1.150	0.00	0.00	0.00	0.00	0.00	0	621.75
1.200	0.00	0.00	0.00	0.00	0.00	0	621.75
1.250	0.00	0.00	0.00	0.00	0.00	0	621.75
1.300	0.00	0.00	0.00	0.00	0.00	0	621.75
1.350	0.00	0.00	0.00	0.00	0.00	0	621.75
1.400	0.00	0.00	0.00	0.00	0.00	0	621.75
1.450	0.00	0.00	0.00	0.00	0.00	0	621.75
1.500	0.00	0.00	0.00	0.00	0.00	0	621.75
1.550	0.00	0.00	0.00	0.00	0.00	0	621.75
1.600	0.00	0.00	0.00	0.00	0.00	0	621.75
1.650	0.00	0.00	0.00	0.00	0.00	0	621.75
1.700	0.00	0.00	0.00	0.00	0.00	0	621.75
1.750	0.00	0.00	0.00	0.00	0.00	0	621.75
1.800	0.00	0.00	0.00	0.00	0.00	0	621.75
1.850	0.00	0.00	0.00	0.00	0.00	0	621.75
1.900	0.00	0.00	0.00	0.00	0.00	0	621.75
1.950	0.00	0.00	0.00	0.00	0.00	0	621.75
2.000	0.00	0.00	0.00	0.00	0.00	0	621.75
2.050	0.00	0.00	0.00	0.00	0.00	0	621.75

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: IB-1C-2 (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
2.100	0.00	0.00	0.00	0.00	0.00	0	621.75
2.150	0.00	0.00	0.00	0.00	0.00	0	621.75
2.200	0.00	0.00	0.00	0.00	0.00	0	621.75
2.250	0.00	0.00	0.00	0.00	0.00	0	621.75
2.300	0.00	0.00	0.00	0.00	0.00	0	621.75
2.350	0.00	0.00	0.00	0.00	0.00	0	621.75
2.400	0.00	0.00	0.00	0.00	0.00	0	621.75
2.450	0.00	0.00	0.00	0.00	0.00	0	621.75
2.500	0.00	0.00	0.00	0.00	0.00	0	621.75
2.550	0.00	0.00	0.00	0.00	0.00	0	621.75
2.600	0.00	0.00	0.00	0.00	0.00	0	621.75
2.650	0.00	0.00	0.00	0.00	0.00	0	621.75
2.700	0.00	0.00	0.00	0.00	0.00	0	621.75
2.750	0.00	0.00	0.00	0.00	0.00	0	621.75
2.800	0.00	0.00	0.00	0.00	0.00	0	621.75
2.850	0.00	0.00	0.00	0.00	0.00	0	621.75
2.900	0.00	0.00	0.00	0.00	0.00	0	621.75
2.950	0.00	0.00	0.00	0.00	0.00	0	621.75
3.000	0.00	0.00	0.00	0.00	0.00	0	621.75
3.050	0.00	0.00	0.00	0.00	0.00	0	621.75
3.100	0.00	0.00	0.00	0.00	0.00	0	621.75
3.150	0.00	0.00	0.00	0.00	0.00	0	621.75
3.200	0.00	0.00	0.00	0.00	0.00	0	621.75
3.250	0.00	0.00	0.00	0.00	0.00	0	621.75
3.300	0.00	0.00	0.00	0.00	0.00	0	621.75
3.350	0.00	0.00	0.00	0.00	0.00	0	621.75
3.400	0.00	0.00	0.00	0.00	0.00	0	621.75
3.450	0.00	0.00	0.00	0.00	0.00	0	621.75
3.500	0.00	0.00	0.00	0.00	0.00	0	621.75
3.550	0.00	0.00	0.00	0.00	0.00	0	621.75
3.600	0.00	0.00	0.00	0.00	0.00	0	621.75
3.650	0.00	0.00	0.00	0.00	0.00	0	621.75
3.700	0.00	0.00	0.00	0.00	0.00	0	621.75
3.750	0.00	0.00	0.00	0.00	0.00	0	621.75
3.800	0.00	0.00	0.00	0.00	0.00	0	621.75
3.850	0.00	0.00	0.00	0.00	0.00	0	621.75
3.900	0.00	0.00	0.00	0.00	0.00	0	621.75
3.950	0.00	0.00	0.00	0.00	0.00	0	621.75
4.000	0.00	0.00	0.00	0.00	0.00	0	621.75
4.050	0.00	0.00	0.00	0.00	0.00	0	621.75
4.100	0.00	0.00	0.00	0.00	0.00	0	621.75
4.150	0.00	0.00	0.00	0.00	0.00	0	621.75

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: IB-1C-2 (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
4.200	0.00	0.00	0.00	0.00	0.00	0	621.75
4.250	0.00	0.00	0.00	0.00	0.00	0	621.75
4.300	0.00	0.00	0.00	0.00	0.00	0	621.75
4.350	0.00	0.00	0.00	0.00	0.00	0	621.75
4.400	0.00	0.00	0.00	0.00	0.00	0	621.75
4.450	0.00	0.00	0.00	0.00	0.00	0	621.75
4.500	0.00	0.00	0.00	0.00	0.00	0	621.75
4.550	0.00	0.00	0.00	0.00	0.00	0	621.75
4.600	0.00	0.00	0.00	0.00	0.00	0	621.75
4.650	0.00	0.00	0.00	0.00	0.00	0	621.75
4.700	0.00	0.00	0.00	0.00	0.00	0	621.75
4.750	0.00	0.00	0.00	0.00	0.00	0	621.75
4.800	0.00	0.00	0.00	0.00	0.00	0	621.75
4.850	0.00	0.00	0.00	0.00	0.00	0	621.75
4.900	0.00	0.00	0.00	0.00	0.00	0	621.75
4.950	0.00	0.00	0.00	0.00	0.00	0	621.75
5.000	0.01	0.01	0.01	0.00	0.00	0	621.75
5.050	0.01	0.02	0.02	0.00	0.00	2	621.75
5.100	0.02	0.03	0.04	0.01	0.00	3	621.75
5.150	0.02	0.05	0.07	0.01	0.00	5	621.75
5.200	0.02	0.07	0.10	0.01	0.00	8	621.75
5.250	0.03	0.10	0.13	0.02	0.00	10	621.75
5.300	0.03	0.12	0.16	0.02	0.00	13	621.75
5.350	0.04	0.15	0.19	0.02	0.00	15	621.75
5.400	0.04	0.17	0.23	0.03	0.00	18	621.75
5.450	0.05	0.20	0.27	0.03	0.00	21	621.75
5.500	0.05	0.23	0.30	0.04	0.00	24	621.75
5.550	0.06	0.26	0.34	0.04	0.00	27	621.75
5.600	0.06	0.29	0.38	0.05	0.00	30	621.75
5.650	0.07	0.32	0.42	0.05	0.00	33	621.75
5.700	0.07	0.35	0.46	0.06	0.00	36	621.75
5.750	0.08	0.38	0.50	0.06	0.00	39	621.75
5.800	0.08	0.41	0.54	0.07	0.00	42	621.75
5.850	0.09	0.44	0.58	0.07	0.00	46	621.76
5.900	0.10	0.47	0.62	0.08	0.00	49	621.76
5.950	0.10	0.50	0.67	0.08	0.00	52	621.76
6.000	0.11	0.53	0.71	0.09	0.00	56	621.76
6.050	0.11	0.57	0.75	0.09	0.00	59	621.76
6.100	0.12	0.60	0.79	0.10	0.00	62	621.76
6.150	0.12	0.63	0.84	0.10	0.00	66	621.76
6.200	0.13	0.67	0.89	0.11	0.00	70	621.76
6.250	0.14	0.71	0.94	0.12	0.00	74	621.76

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: IB-1C-2 (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
6.300	0.15	0.75	0.99	0.12	0.00	78	621.76
6.350	0.15	0.79	1.04	0.13	0.00	82	621.76
6.400	0.16	0.83	1.10	0.14	0.00	86	621.76
6.450	0.17	0.87	1.16	0.14	0.00	91	621.76
6.500	0.18	0.92	1.22	0.15	0.00	95	621.76
6.550	0.18	0.96	1.28	0.16	0.00	100	621.76
6.600	0.19	1.01	1.34	0.17	0.00	105	621.76
6.650	0.20	1.06	1.40	0.17	0.00	110	621.76
6.700	0.21	1.11	1.47	0.18	0.00	115	621.76
6.750	0.22	1.16	1.54	0.19	0.00	121	621.76
6.800	0.23	1.21	1.61	0.20	0.00	126	621.76
6.850	0.24	1.26	1.68	0.21	0.00	132	621.77
6.900	0.25	1.32	1.75	0.22	0.00	137	621.77
6.950	0.26	1.37	1.82	0.22	0.00	143	621.77
7.000	0.27	1.43	1.90	0.23	0.00	149	621.77
7.050	0.28	1.49	1.97	0.24	0.00	155	621.77
7.100	0.29	1.55	2.05	0.25	0.00	161	621.77
7.150	0.30	1.61	2.13	0.26	0.00	168	621.77
7.200	0.31	1.67	2.21	0.27	0.00	174	621.77
7.250	0.32	1.73	2.30	0.28	0.00	180	621.77
7.300	0.33	1.79	2.38	0.29	0.00	187	621.77
7.350	0.34	1.86	2.47	0.30	0.00	194	621.77
7.400	0.35	1.92	2.55	0.31	0.00	200	621.77
7.450	0.36	1.99	2.64	0.33	0.00	207	621.77
7.500	0.38	2.06	2.73	0.34	0.00	214	621.77
7.550	0.39	2.12	2.82	0.35	0.00	222	621.78
7.600	0.40	2.19	2.91	0.36	0.00	229	621.78
7.650	0.41	2.26	3.00	0.37	0.00	236	621.78
7.700	0.42	2.34	3.10	0.38	0.00	244	621.78
7.750	0.44	2.41	3.20	0.39	0.00	251	621.78
7.800	0.45	2.48	3.29	0.41	0.00	259	621.78
7.850	0.46	2.55	3.39	0.42	0.00	267	621.78
7.900	0.48	2.63	3.49	0.43	0.00	275	621.78
7.950	0.49	2.71	3.59	0.44	0.00	283	621.78
8.000	0.50	2.78	3.70	0.46	0.00	291	621.78
8.050	0.52	2.86	3.80	0.47	0.00	299	621.78
8.100	0.53	2.95	3.91	0.48	0.00	308	621.79
8.150	0.55	3.04	4.03	0.50	0.00	317	621.79
8.200	0.57	3.14	4.16	0.51	0.00	328	621.79
8.250	0.59	3.24	4.30	0.53	0.00	339	621.79
8.300	0.62	3.35	4.45	0.55	0.00	350	621.79
8.350	0.64	3.47	4.61	0.57	0.00	363	621.79

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: IB-1C-2 (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
8.400	0.66	3.59	4.77	0.59	0.00	376	621.79
8.450	0.68	3.72	4.94	0.61	0.00	389	621.79
8.500	0.71	3.85	5.11	0.63	0.00	403	621.80
8.550	0.73	3.98	5.29	0.65	0.00	417	621.80
8.600	0.76	4.12	5.47	0.67	0.00	432	621.80
8.650	0.78	4.30	5.66	0.68	0.00	448	621.80
8.700	0.81	4.53	5.89	0.68	0.00	468	621.80
8.750	0.83	4.81	6.17	0.68	0.00	494	621.81
8.800	0.86	5.14	6.50	0.68	0.00	523	621.81
8.850	0.89	5.52	6.88	0.68	0.00	558	621.81
8.900	0.91	5.96	7.32	0.68	0.00	597	621.82
8.950	0.94	6.46	7.82	0.68	0.00	642	621.82
9.000	0.97	7.01	8.37	0.68	0.00	691	621.83
9.050	1.00	7.61	8.97	0.68	0.00	746	621.84
9.100	1.03	8.28	9.64	0.68	0.00	806	621.84
9.150	1.06	9.00	10.36	0.68	0.00	871	621.85
9.200	1.09	9.78	11.14	0.68	0.00	941	621.86
9.250	1.11	10.62	11.98	0.68	0.00	1,017	621.87
9.300	1.15	11.53	12.89	0.68	0.00	1,098	621.87
9.350	1.18	12.49	13.85	0.68	0.00	1,185	621.88
9.400	1.21	13.52	14.88	0.68	0.00	1,277	621.89
9.450	1.24	14.60	15.96	0.68	0.00	1,375	621.91
9.500	1.27	15.76	17.12	0.68	0.00	1,479	621.92
9.550	1.30	16.97	18.33	0.68	0.00	1,588	621.93
9.600	1.34	18.26	19.62	0.68	0.00	1,704	621.94
9.650	1.37	19.60	20.96	0.68	0.00	1,825	621.95
9.700	1.41	21.02	22.38	0.68	0.00	1,952	621.97
9.750	1.44	22.50	23.86	0.68	0.00	2,086	621.98
9.800	1.47	24.05	25.41	0.68	0.00	2,226	622.00
9.850	1.51	25.67	27.03	0.68	0.00	2,371	622.01
9.900	1.54	27.36	28.72	0.68	0.00	2,523	622.03
9.950	1.58	29.12	30.48	0.68	0.00	2,681	622.05
10.000	1.61	30.94	32.30	0.68	0.00	2,846	622.06
10.050	1.65	32.85	34.21	0.68	0.00	3,017	622.08
10.100	1.70	34.84	36.20	0.68	0.00	3,197	622.10
10.150	1.75	36.93	38.29	0.68	0.00	3,384	622.12
10.200	1.81	39.13	40.49	0.68	0.00	3,583	622.14
10.250	1.87	41.45	42.81	0.68	0.00	3,791	622.16
10.300	1.93	43.89	45.25	0.68	0.00	4,011	622.19
10.350	1.99	46.45	47.81	0.68	0.00	4,241	622.21
10.400	2.06	49.14	50.50	0.68	0.00	4,483	622.24
10.450	2.12	51.95	53.31	0.68	0.00	4,736	622.26

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: IB-1C-2 (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft^3/s)	2S/t - O (ft^3/s)	2S/t + O (ft^3/s)	Infiltration (ft^3/s)	Flow (Outlet) (ft^3/s)	Volume (ft^3)	Elevation (ft)
10.500	2.18	54.89	56.25	0.68	0.00	5,001	622.29
10.550	2.24	57.95	59.31	0.68	0.00	5,277	622.32
10.600	2.31	61.15	62.51	0.68	0.00	5,565	622.35
10.650	2.38	64.48	65.84	0.68	0.00	5,864	622.38
10.700	2.45	67.95	69.31	0.68	0.00	6,176	622.41
10.750	2.51	71.55	72.91	0.68	0.00	6,500	622.44
10.800	2.58	75.29	76.65	0.68	0.00	6,836	622.48
10.850	2.65	79.16	80.52	0.68	0.00	7,185	622.51
10.900	2.72	83.18	84.54	0.68	0.00	7,547	622.55
10.950	2.79	87.33	88.69	0.68	0.00	7,921	622.58
11.000	2.87	91.63	92.99	0.68	0.00	8,308	622.62
11.050	2.97	96.11	97.47	0.68	0.00	8,711	622.66
11.100	3.12	100.84	102.20	0.68	0.00	9,137	622.70
11.150	3.29	105.89	107.25	0.68	0.00	9,591	622.75
11.200	3.52	111.33	112.69	0.68	0.00	10,081	622.79
11.250	3.72	117.21	118.57	0.68	0.00	10,610	622.85
11.300	3.96	123.53	124.89	0.68	0.00	11,179	622.90
11.350	4.18	130.32	131.68	0.68	0.00	11,790	622.96
11.400	4.43	137.21	138.93	0.68	0.18	12,426	623.02
11.450	4.66	143.02	146.30	0.68	0.96	13,019	623.07
11.500	4.92	147.40	152.60	0.68	1.92	13,499	623.12
11.550	5.62	150.86	157.94	0.68	2.86	13,896	623.15
11.600	6.75	154.06	163.23	0.68	3.91	14,278	623.19
11.650	8.29	157.45	169.11	0.68	5.15	14,694	623.22
11.700	10.50	161.36	176.24	0.68	6.76	15,192	623.27
11.750	12.51	166.14	184.38	0.68	8.44	15,773	623.32
11.800	14.96	173.24	193.61	0.68	9.50	16,508	623.39
11.850	17.17	183.24	205.37	0.68	10.38	17,487	623.47
11.900	19.88	195.92	220.28	0.68	11.50	18,729	623.58
11.950	26.60	214.72	242.40	0.68	13.16	20,570	623.74
12.000	37.63	245.80	278.96	0.68	15.90	23,614	623.99
12.050	42.33	285.86	325.77	0.68	19.27	27,523	624.31
12.100	44.23	326.17	372.42	0.68	22.45	31,436	624.61
12.150	39.34	359.58	409.74	0.68	24.40	34,619	624.85
12.200	28.98	376.28	427.90	0.68	25.13	36,188	624.97
12.250	23.91	377.45	429.17	0.68	25.18	36,298	624.98
12.300	20.48	370.70	421.84	0.68	24.89	35,664	624.93
12.350	18.06	359.11	409.23	0.68	24.38	34,575	624.85
12.400	15.39	343.84	392.55	0.68	23.67	33,137	624.74
12.450	13.16	326.14	372.39	0.68	22.45	31,434	624.61
12.500	10.51	306.55	349.81	0.68	20.95	29,536	624.47
12.550	8.84	285.98	325.90	0.68	19.28	27,534	624.31

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: IB-1C-2 (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
12.600	7.25	265.54	302.07	0.68	17.58	25,542	624.15
12.650	6.55	246.13	279.34	0.68	15.93	23,646	624.00
12.700	6.14	228.69	258.83	0.68	14.39	21,938	623.85
12.750	5.87	213.28	240.70	0.68	13.03	20,429	623.73
12.800	5.59	199.71	224.74	0.68	11.83	19,100	623.61
12.850	5.35	187.72	210.64	0.68	10.78	17,926	623.51
12.900	5.07	177.10	198.14	0.68	9.84	16,886	623.42
12.950	4.83	167.89	187.01	0.68	8.88	15,970	623.34
13.000	4.56	161.92	177.28	0.68	7.00	15,263	623.28
13.050	4.37	158.43	170.84	0.68	5.53	14,817	623.24
13.100	4.18	156.25	166.98	0.68	4.69	14,545	623.21
13.150	4.08	154.83	164.51	0.68	4.16	14,370	623.20
13.200	4.00	153.87	162.91	0.68	3.84	14,255	623.19
13.250	3.94	153.20	161.80	0.68	3.62	14,174	623.18
13.300	3.86	152.71	160.99	0.68	3.46	14,116	623.17
13.350	3.80	152.33	160.37	0.68	3.34	14,071	623.17
13.400	3.73	152.03	159.86	0.68	3.24	14,035	623.16
13.450	3.67	151.76	159.43	0.68	3.15	14,003	623.16
13.500	3.60	151.52	159.03	0.68	3.07	13,974	623.16
13.550	3.54	151.30	158.65	0.68	3.00	13,947	623.16
13.600	3.46	151.08	158.29	0.68	2.93	13,922	623.15
13.650	3.40	150.87	157.94	0.68	2.86	13,896	623.15
13.700	3.33	150.66	157.60	0.68	2.79	13,871	623.15
13.750	3.27	150.43	157.25	0.68	2.73	13,846	623.15
13.800	3.19	150.20	156.89	0.68	2.67	13,819	623.15
13.850	3.13	149.96	156.53	0.68	2.60	13,792	623.14
13.900	3.06	149.71	156.15	0.68	2.54	13,764	623.14
13.950	3.00	149.46	155.77	0.68	2.47	13,735	623.14
14.000	2.92	149.21	155.38	0.68	2.41	13,706	623.13
14.050	2.87	148.97	155.01	0.68	2.34	13,678	623.13
14.100	2.81	148.73	154.65	0.68	2.28	13,652	623.13
14.150	2.78	148.52	154.32	0.68	2.22	13,628	623.13
14.200	2.74	148.34	154.04	0.68	2.17	13,606	623.13
14.250	2.71	148.17	153.79	0.68	2.13	13,588	623.12
14.300	2.67	148.02	153.55	0.68	2.09	13,570	623.12
14.350	2.64	147.88	153.34	0.68	2.05	13,554	623.12
14.400	2.61	147.74	153.13	0.68	2.01	13,539	623.12
14.450	2.58	147.62	152.94	0.68	1.98	13,524	623.12
14.500	2.54	147.49	152.74	0.68	1.95	13,510	623.12
14.550	2.52	147.36	152.55	0.68	1.91	13,496	623.12
14.600	2.48	147.24	152.36	0.68	1.88	13,482	623.11
14.650	2.45	147.12	152.17	0.68	1.85	13,468	623.11

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: IB-1C-2 (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
14.700	2.41	146.99	151.98	0.68	1.81	13,454	623.11
14.750	2.39	146.87	151.79	0.68	1.78	13,439	623.11
14.800	2.35	146.75	151.61	0.68	1.75	13,426	623.11
14.850	2.32	146.62	151.42	0.68	1.72	13,412	623.11
14.900	2.28	146.50	151.23	0.68	1.68	13,398	623.11
14.950	2.25	146.38	151.04	0.68	1.65	13,384	623.11
15.000	2.22	146.26	150.85	0.68	1.62	13,370	623.10
15.050	2.19	146.13	150.67	0.68	1.59	13,356	623.10
15.100	2.15	146.01	150.48	0.68	1.55	13,342	623.10
15.150	2.12	145.89	150.29	0.68	1.52	13,328	623.10
15.200	2.09	145.75	150.10	0.68	1.49	13,313	623.10
15.250	2.06	145.61	149.90	0.68	1.47	13,298	623.10
15.300	2.02	145.46	149.69	0.68	1.44	13,282	623.10
15.350	1.99	145.30	149.47	0.68	1.41	13,265	623.09
15.400	1.96	145.14	149.25	0.68	1.37	13,248	623.09
15.450	1.93	144.98	149.03	0.68	1.34	13,230	623.09
15.500	1.89	144.82	148.80	0.68	1.31	13,213	623.09
15.550	1.86	144.65	148.57	0.68	1.28	13,195	623.09
15.600	1.83	144.49	148.34	0.68	1.25	13,177	623.09
15.650	1.80	144.32	148.11	0.68	1.21	13,159	623.08
15.700	1.76	144.15	147.88	0.68	1.18	13,141	623.08
15.750	1.73	143.98	147.64	0.68	1.15	13,123	623.08
15.800	1.69	143.82	147.41	0.68	1.12	13,105	623.08
15.850	1.66	143.65	147.17	0.68	1.08	13,087	623.08
15.900	1.63	143.48	146.94	0.68	1.05	13,068	623.08
15.950	1.60	143.31	146.70	0.68	1.02	13,050	623.07
16.000	1.56	143.14	146.47	0.68	0.98	13,032	623.07
16.050	1.54	142.98	146.24	0.68	0.95	13,014	623.07
16.100	1.51	142.82	146.03	0.68	0.92	12,998	623.07
16.150	1.49	142.68	145.83	0.68	0.89	12,982	623.07
16.200	1.47	142.55	145.65	0.68	0.87	12,968	623.07
16.250	1.46	142.43	145.48	0.68	0.85	12,956	623.07
16.300	1.45	142.33	145.34	0.68	0.83	12,945	623.06
16.350	1.43	142.24	145.21	0.68	0.81	12,935	623.06
16.400	1.42	142.15	145.09	0.68	0.79	12,925	623.06
16.450	1.40	142.06	144.97	0.68	0.77	12,916	623.06
16.500	1.39	141.98	144.86	0.68	0.76	12,907	623.06
16.550	1.38	141.90	144.75	0.68	0.74	12,899	623.06
16.600	1.36	141.82	144.64	0.68	0.73	12,891	623.06
16.650	1.35	141.75	144.53	0.68	0.71	12,882	623.06
16.700	1.33	141.67	144.43	0.68	0.70	12,874	623.06
16.750	1.32	141.60	144.32	0.68	0.68	12,866	623.06

Stormwater Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: IB-1C-2 (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
16.800	1.30	141.52	144.22	0.68	0.67	12,858	623.06
16.850	1.29	141.45	144.11	0.68	0.65	12,850	623.06
16.900	1.28	141.37	144.01	0.68	0.64	12,842	623.06
16.950	1.26	141.30	143.91	0.68	0.62	12,834	623.05
17.000	1.24	141.23	143.81	0.68	0.61	12,826	623.05
17.050	1.23	141.15	143.70	0.68	0.60	12,818	623.05
17.100	1.22	141.08	143.60	0.68	0.58	12,810	623.05
17.150	1.20	141.01	143.50	0.68	0.57	12,803	623.05
17.200	1.19	140.93	143.40	0.68	0.55	12,795	623.05
17.250	1.17	140.85	143.29	0.68	0.54	12,787	623.05
17.300	1.16	140.77	143.19	0.68	0.53	12,778	623.05
17.350	1.15	140.68	143.08	0.68	0.52	12,769	623.05
17.400	1.13	140.57	142.95	0.68	0.51	12,759	623.05
17.450	1.12	140.46	142.82	0.68	0.50	12,748	623.05
17.500	1.10	140.35	142.68	0.68	0.49	12,736	623.05
17.550	1.09	140.23	142.54	0.68	0.48	12,724	623.04
17.600	1.07	140.10	142.39	0.68	0.46	12,712	623.04
17.650	1.06	139.97	142.23	0.68	0.45	12,699	623.04
17.700	1.04	139.84	142.07	0.68	0.44	12,686	623.04
17.750	1.03	139.71	141.91	0.68	0.42	12,673	623.04
17.800	1.01	139.57	141.75	0.68	0.41	12,659	623.04
17.850	1.00	139.43	141.58	0.68	0.40	12,645	623.04
17.900	0.99	139.29	141.42	0.68	0.38	12,631	623.04
17.950	0.97	139.15	141.25	0.68	0.37	12,618	623.03
18.000	0.95	139.01	141.08	0.68	0.35	12,604	623.03
18.050	0.94	138.87	140.91	0.68	0.34	12,589	623.03
18.100	0.93	138.73	140.74	0.68	0.33	12,576	623.03
18.150	0.93	138.60	140.59	0.68	0.31	12,563	623.03
18.200	0.92	138.49	140.45	0.68	0.30	12,552	623.03
18.250	0.92	138.38	140.33	0.68	0.29	12,542	623.03
18.300	0.91	138.29	140.22	0.68	0.28	12,532	623.03
18.350	0.91	138.20	140.11	0.68	0.28	12,524	623.03
18.400	0.91	138.13	140.02	0.68	0.27	12,516	623.02
18.450	0.90	138.05	139.93	0.68	0.26	12,509	623.02
18.500	0.90	137.99	139.85	0.68	0.25	12,502	623.02
18.550	0.89	137.92	139.77	0.68	0.25	12,496	623.02
18.600	0.89	137.86	139.70	0.68	0.24	12,490	623.02
18.650	0.89	137.80	139.63	0.68	0.24	12,484	623.02
18.700	0.88	137.75	139.57	0.68	0.23	12,479	623.02
18.750	0.88	137.69	139.50	0.68	0.22	12,473	623.02
18.800	0.87	137.64	139.44	0.68	0.22	12,468	623.02
18.850	0.87	137.59	139.38	0.68	0.21	12,463	623.02

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: IB-1C-2 (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
18.900	0.86	137.54	139.32	0.68	0.21	12,458	623.02
18.950	0.86	137.49	139.26	0.68	0.21	12,453	623.02
19.000	0.85	137.44	139.21	0.68	0.20	12,449	623.02
19.050	0.85	137.40	139.15	0.68	0.20	12,444	623.02
19.100	0.84	137.35	139.09	0.68	0.19	12,440	623.02
19.150	0.84	137.30	139.04	0.68	0.19	12,435	623.02
19.200	0.84	137.26	138.98	0.68	0.18	12,430	623.02
19.250	0.83	137.21	138.93	0.68	0.18	12,426	623.02
19.300	0.83	137.17	138.88	0.68	0.17	12,422	623.02
19.350	0.82	137.12	138.82	0.68	0.17	12,417	623.02
19.400	0.82	137.08	138.77	0.68	0.16	12,413	623.02
19.450	0.82	137.04	138.72	0.68	0.16	12,408	623.01
19.500	0.81	136.99	138.66	0.68	0.16	12,404	623.01
19.550	0.81	136.95	138.61	0.68	0.15	12,399	623.01
19.600	0.80	136.90	138.55	0.68	0.15	12,395	623.01
19.650	0.80	136.86	138.50	0.68	0.14	12,391	623.01
19.700	0.79	136.81	138.45	0.68	0.14	12,386	623.01
19.750	0.79	136.77	138.40	0.68	0.13	12,382	623.01
19.800	0.79	136.72	138.34	0.68	0.13	12,378	623.01
19.850	0.78	136.68	138.29	0.68	0.13	12,373	623.01
19.900	0.78	136.64	138.24	0.68	0.12	12,369	623.01
19.950	0.77	136.59	138.18	0.68	0.12	12,365	623.01
20.000	0.77	136.55	138.13	0.68	0.11	12,360	623.01
20.050	0.76	136.51	138.08	0.68	0.11	12,356	623.01
20.100	0.76	136.46	138.03	0.68	0.10	12,352	623.01
20.150	0.76	136.42	137.98	0.68	0.10	12,347	623.01
20.200	0.76	136.38	137.93	0.68	0.10	12,344	623.01
20.250	0.75	136.34	137.89	0.68	0.09	12,340	623.01
20.300	0.75	136.31	137.84	0.68	0.09	12,336	623.01
20.350	0.74	136.27	137.79	0.68	0.08	12,333	623.01
20.400	0.74	136.23	137.75	0.68	0.08	12,329	623.01
20.450	0.74	136.19	137.70	0.68	0.08	12,325	623.01
20.500	0.73	136.16	137.66	0.68	0.07	12,322	623.01
20.550	0.73	136.12	137.62	0.68	0.07	12,318	623.01
20.600	0.73	136.09	137.58	0.68	0.07	12,315	623.01
20.650	0.72	136.05	137.54	0.68	0.06	12,311	623.01
20.700	0.72	136.01	137.49	0.68	0.06	12,308	623.01
20.750	0.72	135.98	137.45	0.68	0.06	12,304	623.01
20.800	0.71	135.94	137.41	0.68	0.05	12,301	623.00
20.850	0.71	135.91	137.37	0.68	0.05	12,298	623.00
20.900	0.71	135.88	137.33	0.68	0.05	12,294	623.00
20.950	0.70	135.84	137.29	0.68	0.04	12,291	623.00

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: IB-1C-2 (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
21.000	0.70	135.81	137.25	0.68	0.04	12,288	623.00
21.050	0.70	135.78	137.22	0.68	0.04	12,285	623.00
21.100	0.69	135.75	137.18	0.68	0.03	12,282	623.00
21.150	0.69	135.72	137.14	0.68	0.03	12,278	623.00
21.200	0.69	135.68	137.09	0.68	0.03	12,275	623.00
21.250	0.68	135.65	137.05	0.68	0.02	12,272	623.00
21.300	0.68	135.61	137.01	0.68	0.02	12,268	623.00
21.350	0.68	135.58	136.97	0.68	0.02	12,265	623.00
21.400	0.68	135.55	136.94	0.68	0.01	12,262	623.00
21.450	0.67	135.52	136.90	0.68	0.01	12,259	623.00
21.500	0.67	135.48	136.85	0.68	0.01	12,255	623.00
21.550	0.66	135.44	136.81	0.68	0.00	12,251	623.00
21.600	0.66	135.41	136.77	0.68	0.00	12,248	623.00
21.650	0.66	135.37	136.73	0.68	0.00	12,245	623.00
21.700	0.65	135.33	136.69	0.68	0.00	12,240	623.00
21.750	0.65	135.27	136.63	0.68	0.00	12,236	623.00
21.800	0.65	135.21	136.57	0.68	0.00	12,230	623.00
21.850	0.65	135.15	136.51	0.68	0.00	12,225	623.00
21.900	0.64	135.08	136.44	0.68	0.00	12,219	623.00
21.950	0.64	135.00	136.36	0.68	0.00	12,211	623.00
22.000	0.64	134.92	136.28	0.68	0.00	12,204	623.00
22.050	0.63	134.83	136.19	0.68	0.00	12,195	623.00
22.100	0.63	134.73	136.09	0.68	0.00	12,186	622.99
22.150	0.63	134.62	135.98	0.68	0.00	12,177	622.99
22.200	0.62	134.51	135.87	0.68	0.00	12,167	622.99
22.250	0.62	134.40	135.76	0.68	0.00	12,157	622.99
22.300	0.61	134.27	135.63	0.68	0.00	12,145	622.99
22.350	0.61	134.13	135.49	0.68	0.00	12,133	622.99
22.400	0.61	133.99	135.35	0.68	0.00	12,120	622.99
22.450	0.61	133.85	135.21	0.68	0.00	12,108	622.99
22.500	0.60	133.70	135.06	0.68	0.00	12,094	622.99
22.550	0.60	133.54	134.90	0.68	0.00	12,080	622.98
22.600	0.60	133.38	134.74	0.68	0.00	12,065	622.98
22.650	0.60	133.21	134.57	0.68	0.00	12,050	622.98
22.700	0.59	133.04	134.40	0.68	0.00	12,034	622.98
22.750	0.59	132.86	134.22	0.68	0.00	12,018	622.98
22.800	0.58	132.67	134.03	0.68	0.00	12,001	622.98
22.850	0.58	132.47	133.83	0.68	0.00	11,983	622.98
22.900	0.58	132.27	133.63	0.68	0.00	11,965	622.97
22.950	0.57	132.06	133.42	0.68	0.00	11,946	622.97
23.000	0.57	131.84	133.20	0.68	0.00	11,927	622.97
23.050	0.57	131.62	132.98	0.68	0.00	11,907	622.97

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: IB-1C-2 (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
23.100	0.56	131.39	132.75	0.68	0.00	11,886	622.97
23.150	0.56	131.15	132.51	0.68	0.00	11,864	622.96
23.200	0.56	130.90	132.26	0.68	0.00	11,842	622.96
23.250	0.55	130.66	132.02	0.68	0.00	11,820	622.96
23.300	0.55	130.40	131.76	0.68	0.00	11,797	622.96
23.350	0.55	130.14	131.50	0.68	0.00	11,773	622.96
23.400	0.55	129.87	131.23	0.68	0.00	11,749	622.95
23.450	0.54	129.60	130.96	0.68	0.00	11,725	622.95
23.500	0.54	129.32	130.68	0.68	0.00	11,700	622.95
23.550	0.53	129.03	130.39	0.68	0.00	11,674	622.95
23.600	0.53	128.74	130.10	0.68	0.00	11,647	622.94
23.650	0.53	128.43	129.79	0.68	0.00	11,620	622.94
23.700	0.52	128.13	129.49	0.68	0.00	11,592	622.94
23.750	0.52	127.81	129.17	0.68	0.00	11,564	622.94
23.800	0.52	127.49	128.85	0.68	0.00	11,535	622.93
23.850	0.51	127.17	128.53	0.68	0.00	11,506	622.93
23.900	0.51	126.83	128.19	0.68	0.00	11,475	622.93
23.950	0.51	126.48	127.84	0.68	0.00	11,444	622.92
24.000	0.51	126.13	127.49	0.68	0.00	11,413	622.92

Stormwater Hydrologic Calculations

Subsection: Pond Inflow Summary | Return Event: 1 years
Label: IB-1C-2 (IN) | Storm Event: 1 year
Scenario: Post-Development 1 year

Summary for Hydrograph Addition at 'IB-1C-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C-2A

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PDA-1C-2A	26,823	12.100	7.46
Flow (In)	IB-1C-2	26,823	12.100	7.46

Subsection: Pond Inflow Summary
Label: IB-1C-2 (IN)
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 year

Summary for Hydrograph Addition at 'IB-1C-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C-2A

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PDA-1C-2A	72,982	12.100	20.43
Flow (In)	IB-1C-2	72,982	12.100	20.43

Subsection: Pond Inflow Summary
Return Event: 25 years
Label: IB-1C-2 (IN)
Storm Event: 25 year
Scenario: Post-Development 25 year

Summary for Hydrograph Addition at 'IB-1C-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C-2A

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PDA-1C-2A	101,783	12.100	28.20
Flow (In)	IB-1C-2	101,783	12.100	28.20

Subsection: Pond Inflow Summary　　Return Event: 100 years
Label: IB-1C-2 (IN)　　Storm Event: 100 year
Scenario: Post-Development 100 year

Summary for Hydrograph Addition at 'IB-1C-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C-2A

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PDA-1C-2A	163,166	12.100	44.23
Flow (In)	IB-1C-2	163,166	12.100	44.23

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond)
Label: SUB-6A
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Infiltration	
Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	0.20 ft³/s

Initial Conditions	
Elevation (Water Surface, Initial)	494.00 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
494.00	0.00	0	0	0.00	0.00	0.00
494.50	0.00	1,034	0	0.20	0.20	11.70
495.00	0.00	3,260	0	0.20	0.20	36.43
495.15	0.00	3,908	0	0.20	0.20	43.62
495.50	0.20	5,390	0	0.20	0.41	60.30
496.00	0.78	7,373	0	0.20	0.98	82.90
496.50	1.54	9,128	0	0.20	1.75	103.17
497.00	2.44	10,425	0	0.20	2.64	118.48
497.50	3.44	11,460	0	0.20	3.64	130.97

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond) — Return Event: 10 years
Label: SUB-6A — Storm Event: 10 year
Scenario: Post-Development 10 year

Infiltration	
Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	0.20 ft³/s

Initial Conditions	
Elevation (Water Surface, Initial)	494.00 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
494.00	0.00	0	0	0.00	0.00	0.00
494.50	0.00	1,034	0	0.20	0.20	11.70
495.00	0.00	3,260	0	0.20	0.20	36.43
495.15	0.00	3,908	0	0.20	0.20	43.62
495.50	0.20	5,390	0	0.20	0.41	60.30
496.00	0.78	7,373	0	0.20	0.98	82.90
496.50	1.54	9,128	0	0.20	1.75	103.17
497.00	2.44	10,425	0	0.20	2.64	118.48
497.50	3.44	11,460	0	0.20	3.64	130.97

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 25 years
Label: SUB-6A Storm Event: 25 year
Scenario: Post-Development 25 year

Infiltration	
Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	0.20 ft³/s

Initial Conditions	
Elevation (Water Surface, Initial)	494.00 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
494.00	0.00	0	0	0.00	0.00	0.00
494.50	0.00	1,034	0	0.20	0.20	11.70
495.00	0.00	3,260	0	0.20	0.20	36.43
495.15	0.00	3,908	0	0.20	0.20	43.62
495.50	0.20	5,390	0	0.20	0.41	60.30
496.00	0.78	7,373	0	0.20	0.98	82.90
496.50	1.54	9,128	0	0.20	1.75	103.17
497.00	2.44	10,425	0	0.20	2.64	118.48
497.50	3.44	11,460	0	0.20	3.64	130.97

Stormwater Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond) | Return Event: 100 years
Label: SUB-6A | Storm Event: 100 year
Scenario: Post-Development 100 year

Infiltration	
Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	0.20 ft^3/s

Initial Conditions	
Elevation (Water Surface, Initial)	494.00 ft
Volume (Initial)	0 ft^3
Flow (Initial Outlet)	0.00 ft^3/s
Flow (Initial Infiltration)	0.00 ft^3/s
Flow (Initial, Total)	0.00 ft^3/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft^3/s)	Storage (ft^3)	Area (ft^2)	Infiltration (ft^3/s)	Flow (Total) (ft^3/s)	2S/t + O (ft^3/s)
494.00	0.00	0	0	0.00	0.00	0.00
494.50	0.00	1,034	0	0.20	0.20	11.70
495.00	0.00	3,260	0	0.20	0.20	36.43
495.15	0.00	3,908	0	0.20	0.20	43.62
495.50	0.20	5,390	0	0.20	0.41	60.30
496.00	0.78	7,373	0	0.20	0.98	82.90
496.50	1.54	9,128	0	0.20	1.75	103.17
497.00	2.44	10,425	0	0.20	2.64	118.48
497.50	3.44	11,460	0	0.20	3.64	130.97

Stormwater Hydrologic Calculations

Subsection: Level Pool Pond Routing Summary — Return Event: 1 years
Label: SUB-6A (IN) — Storm Event: 1 year
Scenario: Post-Development 1 year

Infiltration

Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	0.20 ft³/s

Initial Conditions

Elevation (Water Surface, Initial)	494.00 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	2.14 ft³/s	Time to Peak (Flow, In)	12.100 hours
Infiltration (Peak)	0.20 ft³/s	Time to Peak (Infiltration)	11.850 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	495.13 ft
Volume (Peak)	3,806 ft³

Mass Balance (ft³)

Volume (Initial)	0 ft³
Volume (Total Inflow)	8,259 ft³
Volume (Total Infiltration)	8,094 ft³
Volume (Total Outlet Outflow)	0 ft³
Volume (Retained)	165 ft³
Volume (Unrouted)	0 ft³
Error (Mass Balance)	0.0 %

Stormwater Hydrologic Calculations

Subsection: Level Pool Pond Routing Summary	Return Event: 10 years
Label: SUB-6A (IN)	Storm Event: 10 year
Scenario: Post-Development 10 year	

Infiltration

Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	0.20 ft³/s

Initial Conditions

Elevation (Water Surface, Initial)	494.00 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	4.06 ft³/s	Time to Peak (Flow, In)	12.100 hours
Infiltration (Peak)	0.20 ft³/s	Time to Peak (Infiltration)	10.950 hours
Flow (Peak Outlet)	0.66 ft³/s	Time to Peak (Flow, Outlet)	12.500 hours

Elevation (Water Surface, Peak)	495.90 ft
Volume (Peak)	6,989 ft³

Mass Balance (ft³)

Volume (Initial)	0 ft³
Volume (Total Inflow)	16,312 ft³
Volume (Total Infiltration)	11,348 ft³
Volume (Total Outlet Outflow)	4,365 ft³
Volume (Retained)	599 ft³
Volume (Unrouted)	0 ft³
Error (Mass Balance)	0.0 %

Stormwater Hydrologic Calculations

Subsection: Level Pool Pond Routing Summary — Return Event: 25 years
Label: SUB-6A (IN) — Storm Event: 25 year
Scenario: Post-Development 25 year

Infiltration	
Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	0.20 ft³/s

Initial Conditions	
Elevation (Water Surface, Initial)	494.00 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	5.14 ft³/s	Time to Peak (Flow, In)	12.100 hours
Infiltration (Peak)	0.20 ft³/s	Time to Peak (Infiltration)	10.200 hours
Flow (Peak Outlet)	1.29 ft³/s	Time to Peak (Flow, Outlet)	12.450 hours

Elevation (Water Surface, Peak)	496.33 ft
Volume (Peak)	8,571 ft³

Mass Balance (ft³)	
Volume (Initial)	0 ft³
Volume (Total Inflow)	20,919 ft³
Volume (Total Infiltration)	12,173 ft³
Volume (Total Outlet Outflow)	7,678 ft³
Volume (Retained)	1,069 ft³
Volume (Unrouted)	0 ft³
Error (Mass Balance)	0.0 %

Stormwater Hydrologic Calculations

Subsection: Level Pool Pond Routing Summary — Return Event: 100 years
Label: SUB-6A (IN) — Storm Event: 100 year
Scenario: Post-Development 100 year

Infiltration	
Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	0.20 ft^3/s

Initial Conditions	
Elevation (Water Surface, Initial)	494.00 ft
Volume (Initial)	0 ft^3
Flow (Initial Outlet)	0.00 ft^3/s
Flow (Initial Infiltration)	0.00 ft^3/s
Flow (Initial, Total)	0.00 ft^3/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	7.34 ft^3/s	Time to Peak (Flow, In)	12.100 hours
Infiltration (Peak)	0.20 ft^3/s	Time to Peak (Infiltration)	9.000 hours
Flow (Peak Outlet)	3.15 ft^3/s	Time to Peak (Flow, Outlet)	12.300 hours

Elevation (Water Surface, Peak)	497.36 ft
Volume (Peak)	11,161 ft^3

Mass Balance (ft^3)	
Volume (Initial)	0 ft^3
Volume (Total Inflow)	30,362 ft^3
Volume (Total Infiltration)	13,207 ft^3
Volume (Total Outlet Outflow)	15,075 ft^3
Volume (Retained)	2,080 ft^3
Volume (Unrouted)	0 ft^3
Error (Mass Balance)	0.0 %

Stormwater Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: SUB-6A (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft^3/s)	2S/t - O (ft^3/s)	2S/t + O (ft^3/s)	Infiltration (ft^3/s)	Flow (Outlet) (ft^3/s)	Volume (ft^3)	Elevation (ft)
0.000	0.00	0.00	0.00	0.00	0.00	0	494.00
0.050	0.00	0.00	0.00	0.00	0.00	0	494.00
0.100	0.00	0.00	0.00	0.00	0.00	0	494.00
0.150	0.00	0.00	0.00	0.00	0.00	0	494.00
0.200	0.00	0.00	0.00	0.00	0.00	0	494.00
0.250	0.00	0.00	0.00	0.00	0.00	0	494.00
0.300	0.00	0.00	0.00	0.00	0.00	0	494.00
0.350	0.00	0.00	0.00	0.00	0.00	0	494.00
0.400	0.00	0.00	0.00	0.00	0.00	0	494.00
0.450	0.00	0.00	0.00	0.00	0.00	0	494.00
0.500	0.00	0.00	0.00	0.00	0.00	0	494.00
0.550	0.00	0.00	0.00	0.00	0.00	0	494.00
0.600	0.00	0.00	0.00	0.00	0.00	0	494.00
0.650	0.00	0.00	0.00	0.00	0.00	0	494.00
0.700	0.00	0.00	0.00	0.00	0.00	0	494.00
0.750	0.00	0.00	0.00	0.00	0.00	0	494.00
0.800	0.00	0.00	0.00	0.00	0.00	0	494.00
0.850	0.00	0.00	0.00	0.00	0.00	0	494.00
0.900	0.00	0.00	0.00	0.00	0.00	0	494.00
0.950	0.00	0.00	0.00	0.00	0.00	0	494.00
1.000	0.00	0.00	0.00	0.00	0.00	0	494.00
1.050	0.00	0.00	0.00	0.00	0.00	0	494.00
1.100	0.00	0.00	0.00	0.00	0.00	0	494.00
1.150	0.00	0.00	0.00	0.00	0.00	0	494.00
1.200	0.00	0.00	0.00	0.00	0.00	0	494.00
1.250	0.00	0.00	0.00	0.00	0.00	0	494.00
1.300	0.00	0.00	0.00	0.00	0.00	0	494.00
1.350	0.00	0.00	0.00	0.00	0.00	0	494.00
1.400	0.00	0.00	0.00	0.00	0.00	0	494.00
1.450	0.00	0.00	0.00	0.00	0.00	0	494.00
1.500	0.00	0.00	0.00	0.00	0.00	0	494.00
1.550	0.00	0.00	0.00	0.00	0.00	0	494.00
1.600	0.00	0.00	0.00	0.00	0.00	0	494.00
1.650	0.00	0.00	0.00	0.00	0.00	0	494.00
1.700	0.00	0.00	0.00	0.00	0.00	0	494.00
1.750	0.00	0.00	0.00	0.00	0.00	0	494.00
1.800	0.00	0.00	0.00	0.00	0.00	0	494.00
1.850	0.00	0.00	0.00	0.00	0.00	0	494.00
1.900	0.00	0.00	0.00	0.00	0.00	0	494.00
1.950	0.00	0.00	0.00	0.00	0.00	0	494.00
2.000	0.00	0.00	0.00	0.00	0.00	0	494.00
2.050	0.00	0.00	0.00	0.00	0.00	0	494.00

Stormwater Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: SUB-6A (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
2.100	0.00	0.00	0.00	0.00	0.00	0	494.00
2.150	0.00	0.00	0.00	0.00	0.00	0	494.00
2.200	0.00	0.00	0.00	0.00	0.00	0	494.00
2.250	0.00	0.00	0.00	0.00	0.00	0	494.00
2.300	0.00	0.00	0.00	0.00	0.00	0	494.00
2.350	0.00	0.00	0.00	0.00	0.00	0	494.00
2.400	0.00	0.00	0.00	0.00	0.00	0	494.00
2.450	0.00	0.00	0.00	0.00	0.00	0	494.00
2.500	0.00	0.00	0.00	0.00	0.00	0	494.00
2.550	0.00	0.00	0.00	0.00	0.00	0	494.00
2.600	0.00	0.00	0.00	0.00	0.00	0	494.00
2.650	0.00	0.00	0.00	0.00	0.00	0	494.00
2.700	0.00	0.00	0.00	0.00	0.00	0	494.00
2.750	0.00	0.00	0.00	0.00	0.00	0	494.00
2.800	0.00	0.00	0.00	0.00	0.00	0	494.00
2.850	0.00	0.00	0.00	0.00	0.00	0	494.00
2.900	0.00	0.00	0.00	0.00	0.00	0	494.00
2.950	0.00	0.00	0.00	0.00	0.00	0	494.00
3.000	0.00	0.00	0.00	0.00	0.00	0	494.00
3.050	0.00	0.00	0.00	0.00	0.00	0	494.00
3.100	0.00	0.00	0.00	0.00	0.00	0	494.00
3.150	0.00	0.00	0.00	0.00	0.00	0	494.00
3.200	0.00	0.00	0.00	0.00	0.00	0	494.00
3.250	0.00	0.01	0.01	0.00	0.00	1	494.00
3.300	0.00	0.01	0.01	0.00	0.00	1	494.00
3.350	0.00	0.01	0.01	0.00	0.00	1	494.00
3.400	0.00	0.01	0.02	0.00	0.00	1	494.00
3.450	0.00	0.02	0.02	0.00	0.00	2	494.00
3.500	0.00	0.02	0.02	0.00	0.00	2	494.00
3.550	0.00	0.03	0.03	0.00	0.00	2	494.00
3.600	0.00	0.03	0.03	0.00	0.00	3	494.00
3.650	0.00	0.04	0.04	0.00	0.00	3	494.00
3.700	0.00	0.04	0.04	0.00	0.00	4	494.00
3.750	0.00	0.05	0.05	0.00	0.00	4	494.00
3.800	0.00	0.05	0.05	0.00	0.00	5	494.00
3.850	0.00	0.06	0.06	0.00	0.00	5	494.00
3.900	0.00	0.07	0.07	0.00	0.00	6	494.00
3.950	0.00	0.07	0.08	0.00	0.00	7	494.00
4.000	0.01	0.08	0.08	0.00	0.00	7	494.00
4.050	0.01	0.09	0.09	0.00	0.00	8	494.00
4.100	0.01	0.09	0.10	0.00	0.00	9	494.00
4.150	0.01	0.10	0.11	0.00	0.00	9	494.00

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: SUB-6A (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
4.200	0.01	0.11	0.11	0.00	0.00	10	494.00
4.250	0.01	0.12	0.12	0.00	0.00	11	494.01
4.300	0.01	0.13	0.13	0.00	0.00	12	494.01
4.350	0.01	0.14	0.14	0.00	0.00	13	494.01
4.400	0.01	0.15	0.15	0.00	0.00	13	494.01
4.450	0.01	0.16	0.16	0.00	0.00	14	494.01
4.500	0.01	0.16	0.17	0.00	0.00	15	494.01
4.550	0.01	0.17	0.18	0.00	0.00	16	494.01
4.600	0.01	0.18	0.19	0.00	0.00	17	494.01
4.650	0.01	0.19	0.20	0.00	0.00	18	494.01
4.700	0.01	0.20	0.21	0.00	0.00	19	494.01
4.750	0.01	0.22	0.22	0.00	0.00	20	494.01
4.800	0.01	0.23	0.23	0.00	0.00	21	494.01
4.850	0.01	0.24	0.25	0.00	0.00	22	494.01
4.900	0.01	0.25	0.26	0.00	0.00	23	494.01
4.950	0.01	0.26	0.27	0.00	0.00	24	494.01
5.000	0.01	0.27	0.28	0.00	0.00	25	494.01
5.050	0.01	0.28	0.29	0.01	0.00	26	494.01
5.100	0.01	0.29	0.30	0.01	0.00	27	494.01
5.150	0.01	0.31	0.32	0.01	0.00	28	494.01
5.200	0.01	0.32	0.33	0.01	0.00	29	494.01
5.250	0.01	0.33	0.34	0.01	0.00	30	494.01
5.300	0.01	0.34	0.36	0.01	0.00	31	494.02
5.350	0.01	0.36	0.37	0.01	0.00	33	494.02
5.400	0.01	0.37	0.38	0.01	0.00	34	494.02
5.450	0.01	0.38	0.39	0.01	0.00	35	494.02
5.500	0.01	0.39	0.41	0.01	0.00	36	494.02
5.550	0.01	0.41	0.42	0.01	0.00	37	494.02
5.600	0.01	0.42	0.43	0.01	0.00	38	494.02
5.650	0.01	0.43	0.45	0.01	0.00	40	494.02
5.700	0.01	0.45	0.46	0.01	0.00	41	494.02
5.750	0.02	0.46	0.48	0.01	0.00	42	494.02
5.800	0.02	0.47	0.49	0.01	0.00	43	494.02
5.850	0.02	0.49	0.50	0.01	0.00	45	494.02
5.900	0.02	0.50	0.52	0.01	0.00	46	494.02
5.950	0.02	0.51	0.53	0.01	0.00	47	494.02
6.000	0.02	0.53	0.55	0.01	0.00	48	494.02
6.050	0.02	0.54	0.56	0.01	0.00	50	494.02
6.100	0.02	0.56	0.58	0.01	0.00	51	494.02
6.150	0.02	0.57	0.59	0.01	0.00	52	494.03
6.200	0.02	0.59	0.61	0.01	0.00	54	494.03
6.250	0.02	0.60	0.62	0.01	0.00	55	494.03

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: SUB-6A (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
6.300	0.02	0.62	0.64	0.01	0.00	57	494.03
6.350	0.02	0.63	0.66	0.01	0.00	58	494.03
6.400	0.02	0.65	0.68	0.01	0.00	60	494.03
6.450	0.02	0.67	0.69	0.01	0.00	61	494.03
6.500	0.02	0.69	0.71	0.01	0.00	63	494.03
6.550	0.02	0.71	0.73	0.01	0.00	65	494.03
6.600	0.02	0.72	0.75	0.01	0.00	66	494.03
6.650	0.02	0.74	0.77	0.01	0.00	68	494.03
6.700	0.02	0.76	0.79	0.01	0.00	70	494.03
6.750	0.02	0.78	0.81	0.01	0.00	72	494.03
6.800	0.02	0.80	0.83	0.01	0.00	74	494.04
6.850	0.03	0.82	0.85	0.01	0.00	75	494.04
6.900	0.03	0.84	0.88	0.02	0.00	77	494.04
6.950	0.03	0.87	0.90	0.02	0.00	79	494.04
7.000	0.03	0.89	0.92	0.02	0.00	81	494.04
7.050	0.03	0.91	0.94	0.02	0.00	83	494.04
7.100	0.03	0.93	0.97	0.02	0.00	86	494.04
7.150	0.03	0.96	0.99	0.02	0.00	88	494.04
7.200	0.03	0.98	1.02	0.02	0.00	90	494.04
7.250	0.03	1.01	1.04	0.02	0.00	92	494.04
7.300	0.03	1.03	1.07	0.02	0.00	94	494.05
7.350	0.03	1.06	1.09	0.02	0.00	97	494.05
7.400	0.03	1.08	1.12	0.02	0.00	99	494.05
7.450	0.03	1.11	1.15	0.02	0.00	101	494.05
7.500	0.03	1.13	1.17	0.02	0.00	104	494.05
7.550	0.03	1.16	1.20	0.02	0.00	106	494.05
7.600	0.04	1.19	1.23	0.02	0.00	109	494.05
7.650	0.04	1.21	1.26	0.02	0.00	111	494.05
7.700	0.04	1.24	1.29	0.02	0.00	114	494.05
7.750	0.04	1.27	1.32	0.02	0.00	116	494.06
7.800	0.04	1.30	1.34	0.02	0.00	119	494.06
7.850	0.04	1.33	1.37	0.02	0.00	122	494.06
7.900	0.04	1.36	1.40	0.02	0.00	124	494.06
7.950	0.04	1.39	1.44	0.03	0.00	127	494.06
8.000	0.04	1.42	1.47	0.03	0.00	130	494.06
8.050	0.04	1.45	1.50	0.03	0.00	132	494.06
8.100	0.04	1.48	1.53	0.03	0.00	135	494.07
8.150	0.04	1.51	1.56	0.03	0.00	138	494.07
8.200	0.05	1.54	1.60	0.03	0.00	141	494.07
8.250	0.05	1.58	1.63	0.03	0.00	144	494.07
8.300	0.05	1.61	1.67	0.03	0.00	148	494.07
8.350	0.05	1.65	1.71	0.03	0.00	151	494.07

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: SUB-6A (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
8.400	0.05	1.69	1.75	0.03	0.00	155	494.07
8.450	0.05	1.73	1.79	0.03	0.00	158	494.08
8.500	0.05	1.77	1.83	0.03	0.00	162	494.08
8.550	0.05	1.81	1.88	0.03	0.00	166	494.08
8.600	0.06	1.85	1.92	0.03	0.00	170	494.08
8.650	0.06	1.90	1.97	0.03	0.00	174	494.08
8.700	0.06	1.94	2.01	0.04	0.00	178	494.09
8.750	0.06	1.99	2.06	0.04	0.00	182	494.09
8.800	0.06	2.04	2.11	0.04	0.00	187	494.09
8.850	0.06	2.09	2.16	0.04	0.00	191	494.09
8.900	0.06	2.14	2.22	0.04	0.00	196	494.09
8.950	0.07	2.19	2.27	0.04	0.00	201	494.10
9.000	0.07	2.24	2.32	0.04	0.00	206	494.10
9.050	0.07	2.30	2.38	0.04	0.00	211	494.10
9.100	0.07	2.35	2.44	0.04	0.00	216	494.10
9.150	0.07	2.41	2.50	0.04	0.00	221	494.11
9.200	0.07	2.46	2.55	0.04	0.00	226	494.11
9.250	0.08	2.52	2.61	0.05	0.00	231	494.11
9.300	0.08	2.58	2.68	0.05	0.00	237	494.11
9.350	0.08	2.64	2.74	0.05	0.00	242	494.12
9.400	0.08	2.70	2.80	0.05	0.00	248	494.12
9.450	0.08	2.76	2.86	0.05	0.00	253	494.12
9.500	0.08	2.83	2.93	0.05	0.00	259	494.13
9.550	0.08	2.89	3.00	0.05	0.00	265	494.13
9.600	0.09	2.96	3.06	0.05	0.00	271	494.13
9.650	0.09	3.02	3.13	0.05	0.00	277	494.13
9.700	0.09	3.09	3.20	0.06	0.00	283	494.14
9.750	0.09	3.15	3.27	0.06	0.00	289	494.14
9.800	0.09	3.22	3.34	0.06	0.00	295	494.14
9.850	0.09	3.29	3.41	0.06	0.00	302	494.15
9.900	0.10	3.36	3.48	0.06	0.00	308	494.15
9.950	0.10	3.43	3.56	0.06	0.00	314	494.15
10.000	0.10	3.50	3.63	0.06	0.00	321	494.16
10.050	0.10	3.58	3.71	0.06	0.00	328	494.16
10.100	0.10	3.65	3.78	0.07	0.00	334	494.16
10.150	0.11	3.73	3.86	0.07	0.00	341	494.17
10.200	0.11	3.81	3.94	0.07	0.00	349	494.17
10.250	0.11	3.89	4.03	0.07	0.00	356	494.17
10.300	0.12	3.97	4.12	0.07	0.00	364	494.18
10.350	0.12	4.06	4.21	0.07	0.00	372	494.18
10.400	0.12	4.15	4.30	0.08	0.00	381	494.18
10.450	0.13	4.25	4.40	0.08	0.00	389	494.19

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: SUB-6A (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
10.500	0.13	4.34	4.50	0.08	0.00	398	494.19
10.550	0.13	4.44	4.61	0.08	0.00	407	494.20
10.600	0.14	4.55	4.71	0.08	0.00	417	494.20
10.650	0.14	4.65	4.82	0.08	0.00	426	494.21
10.700	0.14	4.76	4.93	0.09	0.00	436	494.21
10.750	0.14	4.87	5.05	0.09	0.00	446	494.22
10.800	0.15	4.98	5.16	0.09	0.00	457	494.22
10.850	0.15	5.10	5.28	0.09	0.00	467	494.23
10.900	0.15	5.22	5.41	0.09	0.00	478	494.23
10.950	0.16	5.34	5.53	0.10	0.00	489	494.24
11.000	0.16	5.46	5.66	0.10	0.00	500	494.24
11.050	0.17	5.59	5.79	0.10	0.00	512	494.25
11.100	0.17	5.72	5.93	0.10	0.00	524	494.25
11.150	0.18	5.87	6.08	0.11	0.00	537	494.26
11.200	0.19	6.03	6.24	0.11	0.00	552	494.27
11.250	0.21	6.20	6.43	0.11	0.00	568	494.27
11.300	0.22	6.39	6.62	0.12	0.00	586	494.28
11.350	0.23	6.60	6.84	0.12	0.00	605	494.29
11.400	0.24	6.82	7.07	0.12	0.00	625	494.30
11.450	0.25	7.06	7.32	0.13	0.00	647	494.31
11.500	0.27	7.31	7.58	0.13	0.00	670	494.32
11.550	0.30	7.61	7.88	0.14	0.00	697	494.34
11.600	0.36	7.98	8.27	0.14	0.00	731	494.35
11.650	0.44	8.47	8.78	0.15	0.00	776	494.38
11.700	0.55	9.13	9.46	0.17	0.00	837	494.40
11.750	0.65	9.97	10.33	0.18	0.00	914	494.44
11.800	0.77	11.00	11.40	0.20	0.00	1,008	494.49
11.850	0.88	12.24	12.65	0.20	0.00	1,120	494.52
11.900	1.01	13.72	14.13	0.20	0.00	1,253	494.55
11.950	1.33	15.65	16.06	0.20	0.00	1,427	494.59
12.000	1.86	18.44	18.85	0.20	0.00	1,678	494.64
12.050	2.07	21.97	22.37	0.20	0.00	1,995	494.72
12.100	2.14	25.77	26.18	0.20	0.00	2,338	494.79
12.150	1.89	29.39	29.80	0.20	0.00	2,663	494.87
12.200	1.38	32.25	32.66	0.20	0.00	2,921	494.92
12.250	1.14	34.36	34.77	0.20	0.00	3,111	494.97
12.300	0.97	36.06	36.47	0.20	0.00	3,264	495.00
12.350	0.85	37.47	37.88	0.20	0.00	3,391	495.03
12.400	0.72	38.64	39.04	0.20	0.00	3,496	495.05
12.450	0.62	39.57	39.98	0.20	0.00	3,580	495.07
12.500	0.49	40.27	40.68	0.20	0.00	3,643	495.09
12.550	0.41	40.77	41.18	0.20	0.00	3,688	495.10

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
12.600	0.34	41.12	41.52	0.20	0.00	3,719	495.11
12.650	0.31	41.35	41.76	0.20	0.00	3,740	495.11
12.700	0.29	41.54	41.95	0.20	0.00	3,757	495.12
12.750	0.27	41.69	42.10	0.20	0.00	3,771	495.12
12.800	0.26	41.82	42.23	0.20	0.00	3,782	495.12
12.850	0.25	41.92	42.33	0.20	0.00	3,791	495.12
12.900	0.24	42.00	42.41	0.20	0.00	3,798	495.12
12.950	0.23	42.05	42.46	0.20	0.00	3,803	495.13
13.000	0.21	42.08	42.49	0.20	0.00	3,806	495.13
13.050	0.20	42.09	42.50	0.20	0.00	3,806	495.13
13.100	0.19	42.08	42.49	0.20	0.00	3,805	495.13
13.150	0.19	42.06	42.46	0.20	0.00	3,803	495.13
13.200	0.19	42.02	42.43	0.20	0.00	3,800	495.13
13.250	0.18	41.98	42.39	0.20	0.00	3,797	495.12
13.300	0.18	41.94	42.35	0.20	0.00	3,793	495.12
13.350	0.18	41.89	42.29	0.20	0.00	3,788	495.12
13.400	0.17	41.83	42.24	0.20	0.00	3,783	495.12
13.450	0.17	41.76	42.17	0.20	0.00	3,777	495.12
13.500	0.17	41.69	42.10	0.20	0.00	3,771	495.12
13.550	0.16	41.62	42.02	0.20	0.00	3,764	495.12
13.600	0.16	41.53	41.94	0.20	0.00	3,756	495.11
13.650	0.16	41.44	41.85	0.20	0.00	3,748	495.11
13.700	0.15	41.35	41.75	0.20	0.00	3,739	495.11
13.750	0.15	41.24	41.65	0.20	0.00	3,730	495.11
13.800	0.15	41.13	41.54	0.20	0.00	3,720	495.11
13.850	0.14	41.02	41.43	0.20	0.00	3,710	495.10
13.900	0.14	40.90	41.31	0.20	0.00	3,699	495.10
13.950	0.14	40.77	41.18	0.20	0.00	3,688	495.10
14.000	0.14	40.64	41.04	0.20	0.00	3,676	495.10
14.050	0.13	40.50	40.90	0.20	0.00	3,663	495.09
14.100	0.13	40.35	40.76	0.20	0.00	3,650	495.09
14.150	0.13	40.20	40.61	0.20	0.00	3,636	495.09
14.200	0.13	40.05	40.46	0.20	0.00	3,623	495.08
14.250	0.13	39.89	40.30	0.20	0.00	3,609	495.08
14.300	0.12	39.73	40.14	0.20	0.00	3,594	495.08
14.350	0.12	39.57	39.98	0.20	0.00	3,580	495.07
14.400	0.12	39.41	39.81	0.20	0.00	3,565	495.07
14.450	0.12	39.24	39.64	0.20	0.00	3,550	495.07
14.500	0.12	39.07	39.47	0.20	0.00	3,534	495.06
14.550	0.12	38.89	39.30	0.20	0.00	3,519	495.06
14.600	0.11	38.71	39.12	0.20	0.00	3,503	495.06
14.650	0.11	38.53	38.94	0.20	0.00	3,486	495.05

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: SUB-6A (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
14.700	0.11	38.35	38.76	0.20	0.00	3,470	495.05
14.750	0.11	38.16	38.57	0.20	0.00	3,453	495.04
14.800	0.11	37.97	38.38	0.20	0.00	3,436	495.04
14.850	0.11	37.78	38.19	0.20	0.00	3,419	495.04
14.900	0.11	37.59	37.99	0.20	0.00	3,401	495.03
14.950	0.10	37.39	37.79	0.20	0.00	3,383	495.03
15.000	0.10	37.19	37.59	0.20	0.00	3,365	495.02
15.050	0.10	36.98	37.39	0.20	0.00	3,347	495.02
15.100	0.10	36.77	37.18	0.20	0.00	3,328	495.02
15.150	0.10	36.56	36.97	0.20	0.00	3,309	495.01
15.200	0.10	36.35	36.76	0.20	0.00	3,290	495.01
15.250	0.09	36.13	36.54	0.20	0.00	3,270	495.00
15.300	0.09	35.91	36.32	0.20	0.00	3,250	495.00
15.350	0.09	35.69	36.10	0.20	0.00	3,230	494.99
15.400	0.09	35.46	35.87	0.20	0.00	3,210	494.99
15.450	0.09	35.23	35.64	0.20	0.00	3,189	494.98
15.500	0.09	35.00	35.41	0.20	0.00	3,168	494.98
15.550	0.09	34.76	35.17	0.20	0.00	3,147	494.97
15.600	0.08	34.53	34.93	0.20	0.00	3,126	494.97
15.650	0.08	34.29	34.69	0.20	0.00	3,104	494.96
15.700	0.08	34.04	34.45	0.20	0.00	3,082	494.96
15.750	0.08	33.79	34.20	0.20	0.00	3,060	494.95
15.800	0.08	33.54	33.95	0.20	0.00	3,037	494.95
15.850	0.08	33.29	33.70	0.20	0.00	3,014	494.94
15.900	0.07	33.03	33.44	0.20	0.00	2,991	494.94
15.950	0.07	32.77	33.18	0.20	0.00	2,968	494.93
16.000	0.07	32.51	32.92	0.20	0.00	2,944	494.93
16.050	0.07	32.24	32.65	0.20	0.00	2,920	494.92
16.100	0.07	31.98	32.38	0.20	0.00	2,896	494.92
16.150	0.07	31.71	32.11	0.20	0.00	2,872	494.91
16.200	0.07	31.43	31.84	0.20	0.00	2,847	494.91
16.250	0.07	31.16	31.57	0.20	0.00	2,823	494.90
16.300	0.07	30.89	31.30	0.20	0.00	2,798	494.90
16.350	0.07	30.61	31.02	0.20	0.00	2,773	494.89
16.400	0.07	30.33	30.74	0.20	0.00	2,748	494.89
16.450	0.06	30.06	30.46	0.20	0.00	2,723	494.88
16.500	0.06	29.78	30.18	0.20	0.00	2,698	494.87
16.550	0.06	29.50	29.90	0.20	0.00	2,673	494.87
16.600	0.06	29.21	29.62	0.20	0.00	2,648	494.86
16.650	0.06	28.93	29.34	0.20	0.00	2,622	494.86
16.700	0.06	28.64	29.05	0.20	0.00	2,596	494.85
16.750	0.06	28.36	28.77	0.20	0.00	2,571	494.85

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: SUB-6A (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
16.800	0.06	28.07	28.48	0.20	0.00	2,545	494.84
16.850	0.06	27.78	28.19	0.20	0.00	2,519	494.83
16.900	0.06	27.49	27.90	0.20	0.00	2,493	494.83
16.950	0.06	27.20	27.61	0.20	0.00	2,466	494.82
17.000	0.06	26.91	27.31	0.20	0.00	2,440	494.82
17.050	0.06	26.61	27.02	0.20	0.00	2,413	494.81
17.100	0.06	26.32	26.72	0.20	0.00	2,387	494.80
17.150	0.06	26.02	26.43	0.20	0.00	2,360	494.80
17.200	0.05	25.72	26.13	0.20	0.00	2,333	494.79
17.250	0.05	25.42	25.83	0.20	0.00	2,306	494.79
17.300	0.05	25.12	25.53	0.20	0.00	2,279	494.78
17.350	0.05	24.82	25.23	0.20	0.00	2,252	494.77
17.400	0.05	24.51	24.92	0.20	0.00	2,225	494.77
17.450	0.05	24.21	24.62	0.20	0.00	2,197	494.76
17.500	0.05	23.90	24.31	0.20	0.00	2,170	494.76
17.550	0.05	23.60	24.00	0.20	0.00	2,142	494.75
17.600	0.05	23.29	23.69	0.20	0.00	2,114	494.74
17.650	0.05	22.98	23.38	0.20	0.00	2,086	494.74
17.700	0.05	22.66	23.07	0.20	0.00	2,058	494.73
17.750	0.05	22.35	22.76	0.20	0.00	2,030	494.72
17.800	0.05	22.04	22.45	0.20	0.00	2,002	494.72
17.850	0.05	21.72	22.13	0.20	0.00	1,973	494.71
17.900	0.05	21.40	21.81	0.20	0.00	1,945	494.70
17.950	0.04	21.09	21.49	0.20	0.00	1,916	494.70
18.000	0.04	20.77	21.17	0.20	0.00	1,887	494.69
18.050	0.04	20.45	20.85	0.20	0.00	1,858	494.69
18.100	0.04	20.12	20.53	0.20	0.00	1,830	494.68
18.150	0.04	19.80	20.21	0.20	0.00	1,800	494.67
18.200	0.04	19.48	19.89	0.20	0.00	1,771	494.67
18.250	0.04	19.15	19.56	0.20	0.00	1,742	494.66
18.300	0.04	18.83	19.24	0.20	0.00	1,713	494.65
18.350	0.04	18.51	18.91	0.20	0.00	1,684	494.65
18.400	0.04	18.18	18.59	0.20	0.00	1,655	494.64
18.450	0.04	17.86	18.26	0.20	0.00	1,625	494.63
18.500	0.04	17.53	17.94	0.20	0.00	1,596	494.63
18.550	0.04	17.20	17.61	0.20	0.00	1,567	494.62
18.600	0.04	16.88	17.29	0.20	0.00	1,537	494.61
18.650	0.04	16.55	16.96	0.20	0.00	1,508	494.61
18.700	0.04	16.22	16.63	0.20	0.00	1,479	494.60
18.750	0.04	15.90	16.30	0.20	0.00	1,449	494.59
18.800	0.04	15.57	15.98	0.20	0.00	1,420	494.59
18.850	0.04	15.24	15.65	0.20	0.00	1,390	494.58

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: SUB-6A (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
18.900	0.04	14.91	15.32	0.20	0.00	1,360	494.57
18.950	0.04	14.58	14.99	0.20	0.00	1,331	494.57
19.000	0.04	14.25	14.66	0.20	0.00	1,301	494.56
19.050	0.04	13.92	14.33	0.20	0.00	1,271	494.55
19.100	0.04	13.59	14.00	0.20	0.00	1,242	494.55
19.150	0.04	13.26	13.67	0.20	0.00	1,212	494.54
19.200	0.04	12.93	13.34	0.20	0.00	1,182	494.53
19.250	0.04	12.60	13.01	0.20	0.00	1,152	494.53
19.300	0.04	12.27	12.68	0.20	0.00	1,122	494.52
19.350	0.04	11.93	12.34	0.20	0.00	1,092	494.51
19.400	0.04	11.60	12.01	0.20	0.00	1,063	494.51
19.450	0.04	11.27	11.68	0.20	0.00	1,033	494.50
19.500	0.04	10.95	11.34	0.20	0.00	1,003	494.48
19.550	0.04	10.64	11.02	0.19	0.00	975	494.47
19.600	0.04	10.34	10.71	0.19	0.00	947	494.46
19.650	0.04	10.05	10.41	0.18	0.00	921	494.45
19.700	0.04	9.77	10.12	0.18	0.00	895	494.43
19.750	0.04	9.50	9.84	0.17	0.00	870	494.42
19.800	0.04	9.24	9.57	0.17	0.00	846	494.41
19.850	0.04	8.98	9.31	0.16	0.00	823	494.40
19.900	0.04	8.74	9.05	0.16	0.00	801	494.39
19.950	0.04	8.50	8.81	0.15	0.00	779	494.38
20.000	0.04	8.27	8.57	0.15	0.00	758	494.37
20.050	0.03	8.05	8.34	0.15	0.00	738	494.36
20.100	0.03	7.84	8.12	0.14	0.00	718	494.35
20.150	0.03	7.63	7.91	0.14	0.00	699	494.34
20.200	0.03	7.43	7.70	0.13	0.00	681	494.33
20.250	0.03	7.24	7.50	0.13	0.00	663	494.32
20.300	0.03	7.05	7.31	0.13	0.00	646	494.31
20.350	0.03	6.87	7.12	0.12	0.00	630	494.30
20.400	0.03	6.70	6.94	0.12	0.00	614	494.30
20.450	0.03	6.53	6.77	0.12	0.00	598	494.29
20.500	0.03	6.37	6.60	0.12	0.00	583	494.28
20.550	0.03	6.21	6.43	0.11	0.00	569	494.28
20.600	0.03	6.06	6.28	0.11	0.00	555	494.27
20.650	0.03	5.91	6.12	0.11	0.00	541	494.26
20.700	0.03	5.77	5.98	0.10	0.00	528	494.26
20.750	0.03	5.63	5.83	0.10	0.00	516	494.25
20.800	0.03	5.50	5.69	0.10	0.00	504	494.24
20.850	0.03	5.37	5.56	0.10	0.00	492	494.24
20.900	0.03	5.24	5.43	0.09	0.00	480	494.23
20.950	0.03	5.12	5.31	0.09	0.00	469	494.23

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
21.000	0.03	5.01	5.19	0.09	0.00	459	494.22
21.050	0.03	4.89	5.07	0.09	0.00	448	494.22
21.100	0.03	4.78	4.96	0.09	0.00	438	494.21
21.150	0.03	4.68	4.85	0.08	0.00	429	494.21
21.200	0.03	4.58	4.74	0.08	0.00	419	494.20
21.250	0.03	4.48	4.64	0.08	0.00	410	494.20
21.300	0.03	4.38	4.54	0.08	0.00	401	494.19
21.350	0.03	4.29	4.44	0.08	0.00	393	494.19
21.400	0.03	4.20	4.35	0.08	0.00	385	494.19
21.450	0.03	4.11	4.26	0.07	0.00	377	494.18
21.500	0.03	4.03	4.17	0.07	0.00	369	494.18
21.550	0.03	3.94	4.09	0.07	0.00	361	494.17
21.600	0.03	3.87	4.01	0.07	0.00	354	494.17
21.650	0.03	3.79	3.93	0.07	0.00	347	494.17
21.700	0.03	3.71	3.85	0.07	0.00	340	494.16
21.750	0.03	3.64	3.77	0.07	0.00	334	494.16
21.800	0.03	3.57	3.70	0.06	0.00	327	494.16
21.850	0.03	3.51	3.63	0.06	0.00	321	494.16
21.900	0.03	3.44	3.56	0.06	0.00	315	494.15
21.950	0.03	3.38	3.50	0.06	0.00	309	494.15
22.000	0.03	3.31	3.43	0.06	0.00	304	494.15
22.050	0.03	3.26	3.37	0.06	0.00	298	494.14
22.100	0.03	3.20	3.31	0.06	0.00	293	494.14
22.150	0.03	3.14	3.25	0.06	0.00	288	494.14
22.200	0.03	3.09	3.20	0.06	0.00	283	494.14
22.250	0.03	3.03	3.14	0.05	0.00	278	494.13
22.300	0.03	2.98	3.09	0.05	0.00	273	494.13
22.350	0.03	2.93	3.04	0.05	0.00	269	494.13
22.400	0.03	2.88	2.99	0.05	0.00	264	494.13
22.450	0.03	2.84	2.94	0.05	0.00	260	494.13
22.500	0.03	2.79	2.89	0.05	0.00	256	494.12
22.550	0.03	2.75	2.85	0.05	0.00	252	494.12
22.600	0.03	2.70	2.80	0.05	0.00	248	494.12
22.650	0.03	2.66	2.76	0.05	0.00	244	494.12
22.700	0.03	2.62	2.72	0.05	0.00	240	494.12
22.750	0.03	2.58	2.68	0.05	0.00	237	494.11
22.800	0.03	2.54	2.64	0.05	0.00	233	494.11
22.850	0.03	2.51	2.60	0.05	0.00	230	494.11
22.900	0.03	2.47	2.56	0.04	0.00	226	494.11
22.950	0.03	2.43	2.52	0.04	0.00	223	494.11
23.000	0.03	2.40	2.49	0.04	0.00	220	494.11
23.050	0.03	2.37	2.45	0.04	0.00	217	494.10

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
23.100	0.03	2.33	2.42	0.04	0.00	214	494.10
23.150	0.03	2.30	2.38	0.04	0.00	211	494.10
23.200	0.03	2.27	2.35	0.04	0.00	208	494.10
23.250	0.03	2.24	2.32	0.04	0.00	205	494.10
23.300	0.03	2.21	2.29	0.04	0.00	203	494.10
23.350	0.02	2.18	2.26	0.04	0.00	200	494.10
23.400	0.02	2.15	2.23	0.04	0.00	197	494.10
23.450	0.02	2.13	2.20	0.04	0.00	195	494.09
23.500	0.02	2.10	2.18	0.04	0.00	192	494.09
23.550	0.02	2.07	2.15	0.04	0.00	190	494.09
23.600	0.02	2.05	2.12	0.04	0.00	188	494.09
23.650	0.02	2.02	2.10	0.04	0.00	185	494.09
23.700	0.02	2.00	2.07	0.04	0.00	183	494.09
23.750	0.02	1.98	2.05	0.04	0.00	181	494.09
23.800	0.02	1.95	2.02	0.04	0.00	179	494.09
23.850	0.02	1.93	2.00	0.03	0.00	177	494.09
23.900	0.02	1.91	1.98	0.03	0.00	175	494.08
23.950	0.02	1.89	1.95	0.03	0.00	173	494.08
24.000	0.02	1.86	1.93	0.03	0.00	171	494.08

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: SUB-6A (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
0.000	0.00	0.00	0.00	0.00	0.00	0	494.00
0.050	0.00	0.00	0.00	0.00	0.00	0	494.00
0.100	0.00	0.00	0.00	0.00	0.00	0	494.00
0.150	0.00	0.00	0.00	0.00	0.00	0	494.00
0.200	0.00	0.00	0.00	0.00	0.00	0	494.00
0.250	0.00	0.00	0.00	0.00	0.00	0	494.00
0.300	0.00	0.00	0.00	0.00	0.00	0	494.00
0.350	0.00	0.00	0.00	0.00	0.00	0	494.00
0.400	0.00	0.00	0.00	0.00	0.00	0	494.00
0.450	0.00	0.00	0.00	0.00	0.00	0	494.00
0.500	0.00	0.00	0.00	0.00	0.00	0	494.00
0.550	0.00	0.00	0.00	0.00	0.00	0	494.00
0.600	0.00	0.00	0.00	0.00	0.00	0	494.00
0.650	0.00	0.00	0.00	0.00	0.00	0	494.00
0.700	0.00	0.00	0.00	0.00	0.00	0	494.00
0.750	0.00	0.00	0.00	0.00	0.00	0	494.00
0.800	0.00	0.00	0.00	0.00	0.00	0	494.00
0.850	0.00	0.00	0.00	0.00	0.00	0	494.00
0.900	0.00	0.00	0.00	0.00	0.00	0	494.00
0.950	0.00	0.00	0.00	0.00	0.00	0	494.00
1.000	0.00	0.00	0.00	0.00	0.00	0	494.00
1.050	0.00	0.00	0.00	0.00	0.00	0	494.00
1.100	0.00	0.00	0.00	0.00	0.00	0	494.00
1.150	0.00	0.00	0.00	0.00	0.00	0	494.00
1.200	0.00	0.00	0.00	0.00	0.00	0	494.00
1.250	0.00	0.00	0.00	0.00	0.00	0	494.00
1.300	0.00	0.00	0.00	0.00	0.00	0	494.00
1.350	0.00	0.00	0.00	0.00	0.00	0	494.00
1.400	0.00	0.00	0.00	0.00	0.00	0	494.00
1.450	0.00	0.00	0.00	0.00	0.00	0	494.00
1.500	0.00	0.00	0.00	0.00	0.00	0	494.00
1.550	0.00	0.00	0.00	0.00	0.00	0	494.00
1.600	0.00	0.00	0.00	0.00	0.00	0	494.00
1.650	0.00	0.00	0.00	0.00	0.00	0	494.00
1.700	0.00	0.00	0.00	0.00	0.00	0	494.00
1.750	0.00	0.00	0.00	0.00	0.00	0	494.00
1.800	0.00	0.00	0.00	0.00	0.00	0	494.00
1.850	0.00	0.01	0.01	0.00	0.00	0	494.00
1.900	0.00	0.01	0.01	0.00	0.00	1	494.00
1.950	0.00	0.01	0.01	0.00	0.00	1	494.00
2.000	0.00	0.02	0.02	0.00	0.00	2	494.00
2.050	0.00	0.03	0.03	0.00	0.00	2	494.00

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: SUB-6A (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
2.100	0.00	0.03	0.03	0.00	0.00	3	494.00
2.150	0.01	0.04	0.04	0.00	0.00	4	494.00
2.200	0.01	0.05	0.05	0.00	0.00	5	494.00
2.250	0.01	0.06	0.06	0.00	0.00	5	494.00
2.300	0.01	0.07	0.07	0.00	0.00	6	494.00
2.350	0.01	0.08	0.08	0.00	0.00	7	494.00
2.400	0.01	0.09	0.10	0.00	0.00	9	494.00
2.450	0.01	0.11	0.11	0.00	0.00	10	494.00
2.500	0.01	0.12	0.12	0.00	0.00	11	494.01
2.550	0.01	0.13	0.14	0.00	0.00	12	494.01
2.600	0.01	0.15	0.15	0.00	0.00	14	494.01
2.650	0.01	0.16	0.17	0.00	0.00	15	494.01
2.700	0.01	0.18	0.19	0.00	0.00	16	494.01
2.750	0.01	0.20	0.20	0.00	0.00	18	494.01
2.800	0.01	0.21	0.22	0.00	0.00	20	494.01
2.850	0.01	0.23	0.24	0.00	0.00	21	494.01
2.900	0.01	0.25	0.26	0.00	0.00	23	494.01
2.950	0.01	0.27	0.28	0.00	0.00	25	494.01
3.000	0.02	0.29	0.30	0.01	0.00	26	494.01
3.050	0.02	0.31	0.32	0.01	0.00	28	494.01
3.100	0.02	0.33	0.34	0.01	0.00	30	494.01
3.150	0.02	0.35	0.36	0.01	0.00	32	494.02
3.200	0.02	0.37	0.38	0.01	0.00	34	494.02
3.250	0.02	0.39	0.40	0.01	0.00	36	494.02
3.300	0.02	0.41	0.43	0.01	0.00	38	494.02
3.350	0.02	0.43	0.45	0.01	0.00	40	494.02
3.400	0.02	0.46	0.47	0.01	0.00	42	494.02
3.450	0.02	0.48	0.50	0.01	0.00	44	494.02
3.500	0.02	0.50	0.52	0.01	0.00	46	494.02
3.550	0.02	0.53	0.55	0.01	0.00	48	494.02
3.600	0.02	0.55	0.57	0.01	0.00	50	494.02
3.650	0.02	0.58	0.60	0.01	0.00	53	494.03
3.700	0.02	0.60	0.62	0.01	0.00	55	494.03
3.750	0.02	0.63	0.65	0.01	0.00	57	494.03
3.800	0.02	0.65	0.67	0.01	0.00	60	494.03
3.850	0.03	0.68	0.70	0.01	0.00	62	494.03
3.900	0.03	0.70	0.73	0.01	0.00	64	494.03
3.950	0.03	0.73	0.75	0.01	0.00	67	494.03
4.000	0.03	0.75	0.78	0.01	0.00	69	494.03
4.050	0.03	0.78	0.81	0.01	0.00	72	494.03
4.100	0.03	0.81	0.84	0.01	0.00	74	494.04
4.150	0.03	0.84	0.87	0.02	0.00	77	494.04

Stormwater Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: SUB-6A (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
4.200	0.03	0.86	0.89	0.02	0.00	79	494.04
4.250	0.03	0.89	0.92	0.02	0.00	82	494.04
4.300	0.03	0.92	0.95	0.02	0.00	84	494.04
4.350	0.03	0.95	0.98	0.02	0.00	87	494.04
4.400	0.03	0.97	1.01	0.02	0.00	89	494.04
4.450	0.03	1.00	1.04	0.02	0.00	92	494.04
4.500	0.03	1.03	1.07	0.02	0.00	94	494.05
4.550	0.03	1.06	1.10	0.02	0.00	97	494.05
4.600	0.03	1.09	1.13	0.02	0.00	100	494.05
4.650	0.03	1.12	1.16	0.02	0.00	102	494.05
4.700	0.04	1.15	1.19	0.02	0.00	105	494.05
4.750	0.04	1.18	1.22	0.02	0.00	108	494.05
4.800	0.04	1.21	1.25	0.02	0.00	110	494.05
4.850	0.04	1.23	1.28	0.02	0.00	113	494.05
4.900	0.04	1.26	1.31	0.02	0.00	116	494.06
4.950	0.04	1.29	1.34	0.02	0.00	119	494.06
5.000	0.04	1.32	1.37	0.02	0.00	121	494.06
5.050	0.04	1.35	1.40	0.02	0.00	124	494.06
5.100	0.04	1.38	1.43	0.03	0.00	127	494.06
5.150	0.04	1.41	1.47	0.03	0.00	130	494.06
5.200	0.04	1.44	1.50	0.03	0.00	132	494.06
5.250	0.04	1.47	1.53	0.03	0.00	135	494.07
5.300	0.04	1.51	1.56	0.03	0.00	138	494.07
5.350	0.04	1.54	1.59	0.03	0.00	141	494.07
5.400	0.04	1.57	1.62	0.03	0.00	143	494.07
5.450	0.04	1.60	1.65	0.03	0.00	146	494.07
5.500	0.05	1.63	1.69	0.03	0.00	149	494.07
5.550	0.05	1.66	1.72	0.03	0.00	152	494.07
5.600	0.05	1.69	1.75	0.03	0.00	155	494.07
5.650	0.05	1.72	1.78	0.03	0.00	158	494.08
5.700	0.05	1.75	1.81	0.03	0.00	160	494.08
5.750	0.05	1.78	1.85	0.03	0.00	163	494.08
5.800	0.05	1.81	1.88	0.03	0.00	166	494.08
5.850	0.05	1.84	1.91	0.03	0.00	169	494.08
5.900	0.05	1.87	1.94	0.03	0.00	172	494.08
5.950	0.05	1.91	1.97	0.03	0.00	175	494.08
6.000	0.05	1.94	2.01	0.03	0.00	177	494.09
6.050	0.05	1.97	2.04	0.04	0.00	180	494.09
6.100	0.05	2.00	2.07	0.04	0.00	183	494.09
6.150	0.05	2.03	2.11	0.04	0.00	186	494.09
6.200	0.05	2.07	2.14	0.04	0.00	189	494.09
6.250	0.06	2.10	2.18	0.04	0.00	192	494.09

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: SUB-6A (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
6.300	0.06	2.13	2.21	0.04	0.00	196	494.09
6.350	0.06	2.17	2.25	0.04	0.00	199	494.10
6.400	0.06	2.21	2.29	0.04	0.00	202	494.10
6.450	0.06	2.25	2.33	0.04	0.00	206	494.10
6.500	0.06	2.29	2.37	0.04	0.00	209	494.10
6.550	0.06	2.33	2.41	0.04	0.00	213	494.10
6.600	0.06	2.37	2.45	0.04	0.00	217	494.10
6.650	0.07	2.41	2.50	0.04	0.00	221	494.11
6.700	0.07	2.45	2.54	0.04	0.00	225	494.11
6.750	0.07	2.50	2.59	0.05	0.00	229	494.11
6.800	0.07	2.54	2.63	0.05	0.00	233	494.11
6.850	0.07	2.59	2.68	0.05	0.00	237	494.11
6.900	0.07	2.63	2.73	0.05	0.00	241	494.12
6.950	0.07	2.68	2.78	0.05	0.00	246	494.12
7.000	0.07	2.73	2.83	0.05	0.00	250	494.12
7.050	0.08	2.78	2.88	0.05	0.00	255	494.12
7.100	0.08	2.83	2.93	0.05	0.00	259	494.13
7.150	0.08	2.88	2.98	0.05	0.00	264	494.13
7.200	0.08	2.93	3.04	0.05	0.00	269	494.13
7.250	0.08	2.98	3.09	0.05	0.00	273	494.13
7.300	0.08	3.04	3.15	0.05	0.00	278	494.13
7.350	0.08	3.09	3.20	0.06	0.00	283	494.14
7.400	0.08	3.14	3.26	0.06	0.00	288	494.14
7.450	0.09	3.20	3.31	0.06	0.00	293	494.14
7.500	0.09	3.25	3.37	0.06	0.00	298	494.14
7.550	0.09	3.31	3.43	0.06	0.00	303	494.15
7.600	0.09	3.37	3.49	0.06	0.00	308	494.15
7.650	0.09	3.42	3.55	0.06	0.00	314	494.15
7.700	0.09	3.48	3.61	0.06	0.00	319	494.15
7.750	0.09	3.54	3.67	0.06	0.00	324	494.16
7.800	0.10	3.60	3.73	0.07	0.00	330	494.16
7.850	0.10	3.66	3.79	0.07	0.00	335	494.16
7.900	0.10	3.72	3.85	0.07	0.00	341	494.16
7.950	0.10	3.78	3.92	0.07	0.00	346	494.17
8.000	0.10	3.84	3.98	0.07	0.00	352	494.17
8.050	0.10	3.90	4.05	0.07	0.00	358	494.17
8.100	0.10	3.97	4.11	0.07	0.00	364	494.18
8.150	0.11	4.03	4.18	0.07	0.00	370	494.18
8.200	0.11	4.10	4.25	0.07	0.00	376	494.18
8.250	0.11	4.17	4.32	0.08	0.00	382	494.18
8.300	0.12	4.25	4.40	0.08	0.00	389	494.19
8.350	0.12	4.32	4.48	0.08	0.00	396	494.19

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: SUB-6A (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
8.400	0.12	4.40	4.56	0.08	0.00	403	494.19
8.450	0.12	4.48	4.64	0.08	0.00	411	494.20
8.500	0.13	4.57	4.73	0.08	0.00	418	494.20
8.550	0.13	4.65	4.82	0.08	0.00	426	494.21
8.600	0.13	4.74	4.91	0.09	0.00	435	494.21
8.650	0.13	4.83	5.01	0.09	0.00	443	494.21
8.700	0.14	4.93	5.11	0.09	0.00	452	494.22
8.750	0.14	5.02	5.21	0.09	0.00	460	494.22
8.800	0.14	5.12	5.31	0.09	0.00	469	494.23
8.850	0.15	5.22	5.41	0.09	0.00	478	494.23
8.900	0.15	5.32	5.52	0.10	0.00	488	494.24
8.950	0.15	5.43	5.62	0.10	0.00	497	494.24
9.000	0.15	5.53	5.73	0.10	0.00	507	494.25
9.050	0.16	5.64	5.85	0.10	0.00	517	494.25
9.100	0.16	5.75	5.96	0.10	0.00	527	494.25
9.150	0.16	5.87	6.08	0.11	0.00	537	494.26
9.200	0.17	5.98	6.20	0.11	0.00	548	494.26
9.250	0.17	6.09	6.31	0.11	0.00	558	494.27
9.300	0.17	6.21	6.44	0.11	0.00	569	494.28
9.350	0.18	6.33	6.56	0.11	0.00	580	494.28
9.400	0.18	6.45	6.68	0.12	0.00	591	494.29
9.450	0.18	6.57	6.81	0.12	0.00	602	494.29
9.500	0.18	6.70	6.94	0.12	0.00	614	494.30
9.550	0.19	6.82	7.07	0.12	0.00	625	494.30
9.600	0.19	6.95	7.20	0.13	0.00	637	494.31
9.650	0.19	7.08	7.33	0.13	0.00	648	494.31
9.700	0.20	7.21	7.47	0.13	0.00	660	494.32
9.750	0.20	7.34	7.60	0.13	0.00	672	494.32
9.800	0.20	7.47	7.74	0.13	0.00	684	494.33
9.850	0.21	7.60	7.88	0.14	0.00	696	494.34
9.900	0.21	7.74	8.02	0.14	0.00	709	494.34
9.950	0.21	7.87	8.16	0.14	0.00	721	494.35
10.000	0.21	8.01	8.30	0.14	0.00	734	494.35
10.050	0.22	8.15	8.44	0.15	0.00	746	494.36
10.100	0.22	8.29	8.59	0.15	0.00	759	494.37
10.150	0.23	8.43	8.74	0.15	0.00	773	494.37
10.200	0.23	8.59	8.90	0.16	0.00	787	494.38
10.250	0.24	8.74	9.06	0.16	0.00	801	494.39
10.300	0.25	8.91	9.23	0.16	0.00	816	494.39
10.350	0.25	9.08	9.40	0.16	0.00	832	494.40
10.400	0.26	9.25	9.58	0.17	0.00	848	494.41
10.450	0.26	9.43	9.77	0.17	0.00	864	494.42

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: SUB-6A (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
10.500	0.27	9.62	9.96	0.17	0.00	881	494.43
10.550	0.28	9.81	10.16	0.18	0.00	898	494.43
10.600	0.28	10.00	10.36	0.18	0.00	916	494.44
10.650	0.29	10.20	10.57	0.18	0.00	935	494.45
10.700	0.29	10.41	10.78	0.19	0.00	954	494.46
10.750	0.30	10.62	11.00	0.19	0.00	973	494.47
10.800	0.31	10.83	11.22	0.20	0.00	992	494.48
10.850	0.31	11.05	11.45	0.20	0.00	1,012	494.49
10.900	0.32	11.27	11.68	0.20	0.00	1,033	494.50
10.950	0.32	11.51	11.91	0.20	0.00	1,054	494.50
11.000	0.33	11.75	12.16	0.20	0.00	1,076	494.51
11.050	0.34	12.02	12.42	0.20	0.00	1,100	494.51
11.100	0.35	12.30	12.71	0.20	0.00	1,126	494.52
11.150	0.37	12.62	13.03	0.20	0.00	1,154	494.53
11.200	0.39	12.98	13.39	0.20	0.00	1,187	494.53
11.250	0.41	13.38	13.79	0.20	0.00	1,223	494.54
11.300	0.44	13.83	14.23	0.20	0.00	1,263	494.55
11.350	0.46	14.32	14.73	0.20	0.00	1,307	494.56
11.400	0.48	14.85	15.26	0.20	0.00	1,355	494.57
11.450	0.50	15.43	15.84	0.20	0.00	1,407	494.58
11.500	0.53	16.06	16.47	0.20	0.00	1,464	494.60
11.550	0.60	16.78	17.19	0.20	0.00	1,529	494.61
11.600	0.71	17.69	18.10	0.20	0.00	1,610	494.63
11.650	0.87	18.86	19.27	0.20	0.00	1,716	494.65
11.700	1.09	20.41	20.82	0.20	0.00	1,855	494.68
11.750	1.28	22.37	22.78	0.20	0.00	2,032	494.72
11.800	1.51	24.76	25.17	0.20	0.00	2,247	494.77
11.850	1.71	27.57	27.98	0.20	0.00	2,500	494.83
11.900	1.95	30.83	31.23	0.20	0.00	2,793	494.89
11.950	2.57	34.94	35.35	0.20	0.00	3,163	494.98
12.000	3.57	40.67	41.08	0.20	0.00	3,678	495.10
12.050	3.95	47.66	48.18	0.20	0.06	4,321	495.25
12.100	4.06	54.97	55.67	0.20	0.15	4,982	495.40
12.150	3.57	61.66	62.60	0.20	0.26	5,596	495.55
12.200	2.61	66.64	67.84	0.20	0.40	6,066	495.67
12.250	2.14	70.00	71.38	0.20	0.48	6,383	495.75
12.300	1.82	72.45	73.96	0.20	0.55	6,605	495.80
12.350	1.60	74.26	75.87	0.20	0.60	6,769	495.84
12.400	1.36	75.54	77.22	0.20	0.63	6,885	495.87
12.450	1.16	76.34	78.06	0.20	0.65	6,957	495.89
12.500	0.92	76.69	78.42	0.20	0.66	6,989	495.90
12.550	0.77	76.66	78.39	0.20	0.66	6,985	495.90

Stormwater Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: SUB-6A (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
12.600	0.63	76.35	78.06	0.20	0.65	6,958	495.89
12.650	0.57	75.87	77.56	0.20	0.64	6,914	495.88
12.700	0.54	75.32	76.98	0.20	0.63	6,864	495.87
12.750	0.51	74.74	76.37	0.20	0.61	6,812	495.86
12.800	0.49	74.14	75.74	0.20	0.59	6,758	495.84
12.850	0.47	73.53	75.09	0.20	0.58	6,703	495.83
12.900	0.44	72.90	74.43	0.20	0.56	6,646	495.81
12.950	0.42	72.27	73.76	0.20	0.54	6,589	495.80
13.000	0.40	71.62	73.08	0.20	0.53	6,530	495.78
13.050	0.38	70.97	72.40	0.20	0.51	6,471	495.77
13.100	0.36	70.32	71.71	0.20	0.49	6,412	495.75
13.150	0.35	69.67	71.03	0.20	0.48	6,352	495.74
13.200	0.35	69.05	70.37	0.20	0.46	6,293	495.72
13.250	0.34	68.44	69.74	0.20	0.44	6,236	495.71
13.300	0.33	67.85	69.12	0.20	0.43	6,180	495.70
13.350	0.33	67.29	68.52	0.20	0.41	6,127	495.68
13.400	0.32	66.73	67.94	0.20	0.40	6,075	495.67
13.450	0.32	66.20	67.37	0.20	0.38	6,024	495.66
13.500	0.31	65.68	66.83	0.20	0.37	5,975	495.64
13.550	0.31	65.18	66.30	0.20	0.36	5,928	495.63
13.600	0.30	64.68	65.78	0.20	0.34	5,881	495.62
13.650	0.29	64.21	65.28	0.20	0.33	5,836	495.61
13.700	0.29	63.74	64.79	0.20	0.32	5,793	495.60
13.750	0.28	63.29	64.31	0.20	0.31	5,750	495.59
13.800	0.28	62.85	63.85	0.20	0.29	5,708	495.58
13.850	0.27	62.42	63.40	0.20	0.28	5,668	495.57
13.900	0.26	62.01	62.96	0.20	0.27	5,628	495.56
13.950	0.26	61.60	62.53	0.20	0.26	5,590	495.55
14.000	0.25	61.20	62.11	0.20	0.25	5,552	495.54
14.050	0.25	60.81	61.70	0.20	0.24	5,515	495.53
14.100	0.24	60.43	61.30	0.20	0.23	5,479	495.52
14.150	0.24	60.06	60.91	0.20	0.22	5,445	495.51
14.200	0.24	59.70	60.53	0.20	0.21	5,411	495.51
14.250	0.23	59.36	60.17	0.20	0.20	5,379	495.50
14.300	0.23	59.01	59.82	0.20	0.20	5,348	495.49
14.350	0.23	58.67	59.47	0.20	0.19	5,317	495.48
14.400	0.22	58.34	59.13	0.20	0.19	5,287	495.48
14.450	0.22	58.00	58.78	0.20	0.19	5,256	495.47
14.500	0.22	57.67	58.44	0.20	0.18	5,226	495.46
14.550	0.22	57.34	58.10	0.20	0.18	5,196	495.45
14.600	0.21	57.01	57.77	0.20	0.17	5,167	495.45
14.650	0.21	56.69	57.44	0.20	0.17	5,137	495.44

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: SUB-6A (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
14.700	0.21	56.37	57.10	0.20	0.17	5,108	495.43
14.750	0.20	56.05	56.78	0.20	0.16	5,079	495.43
14.800	0.20	55.73	56.45	0.20	0.16	5,051	495.42
14.850	0.20	55.41	56.13	0.20	0.15	5,022	495.41
14.900	0.20	55.10	55.81	0.20	0.15	4,994	495.41
14.950	0.19	54.79	55.49	0.20	0.15	4,966	495.40
15.000	0.19	54.48	55.17	0.20	0.14	4,938	495.39
15.050	0.19	54.17	54.86	0.20	0.14	4,910	495.39
15.100	0.18	53.87	54.55	0.20	0.13	4,882	495.38
15.150	0.18	53.57	54.24	0.20	0.13	4,855	495.37
15.200	0.18	53.27	53.93	0.20	0.13	4,828	495.37
15.250	0.18	52.97	53.62	0.20	0.12	4,801	495.36
15.300	0.17	52.67	53.32	0.20	0.12	4,774	495.35
15.350	0.17	52.37	53.01	0.20	0.12	4,747	495.35
15.400	0.17	52.08	52.71	0.20	0.11	4,721	495.34
15.450	0.16	51.79	52.41	0.20	0.11	4,694	495.33
15.500	0.16	51.50	52.11	0.20	0.10	4,668	495.33
15.550	0.16	51.21	51.82	0.20	0.10	4,642	495.32
15.600	0.16	50.92	51.52	0.20	0.10	4,616	495.32
15.650	0.15	50.64	51.23	0.20	0.09	4,590	495.31
15.700	0.15	50.35	50.94	0.20	0.09	4,564	495.30
15.750	0.15	50.07	50.65	0.20	0.09	4,539	495.30
15.800	0.14	49.79	50.36	0.20	0.08	4,513	495.29
15.850	0.14	49.51	50.07	0.20	0.08	4,488	495.29
15.900	0.14	49.23	49.79	0.20	0.08	4,463	495.28
15.950	0.14	48.95	49.50	0.20	0.07	4,438	495.27
16.000	0.13	48.68	49.22	0.20	0.07	4,413	495.27
16.050	0.13	48.40	48.94	0.20	0.07	4,388	495.26
16.100	0.13	48.13	48.66	0.20	0.06	4,363	495.26
16.150	0.13	47.86	48.39	0.20	0.06	4,339	495.25
16.200	0.13	47.60	48.11	0.20	0.06	4,314	495.24
16.250	0.12	47.33	47.85	0.20	0.05	4,290	495.24
16.300	0.12	47.08	47.58	0.20	0.05	4,266	495.23
16.350	0.12	46.82	47.32	0.20	0.05	4,243	495.23
16.400	0.12	46.57	47.07	0.20	0.04	4,219	495.22
16.450	0.12	46.33	46.81	0.20	0.04	4,197	495.22
16.500	0.12	46.08	46.57	0.20	0.04	4,174	495.21
16.550	0.12	45.85	46.32	0.20	0.03	4,152	495.21
16.600	0.12	45.61	46.08	0.20	0.03	4,130	495.20
16.650	0.11	45.38	45.84	0.20	0.03	4,109	495.20
16.700	0.11	45.15	45.61	0.20	0.02	4,087	495.19
16.750	0.11	44.93	45.38	0.20	0.02	4,066	495.19

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: SUB-6A (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
16.800	0.11	44.70	45.15	0.20	0.02	4,046	495.18
16.850	0.11	44.48	44.92	0.20	0.02	4,025	495.18
16.900	0.11	44.27	44.70	0.20	0.01	4,005	495.17
16.950	0.11	44.05	44.48	0.20	0.01	3,986	495.17
17.000	0.11	43.84	44.27	0.20	0.01	3,966	495.16
17.050	0.10	43.64	44.05	0.20	0.01	3,947	495.16
17.100	0.10	43.43	43.84	0.20	0.00	3,928	495.15
17.150	0.10	43.23	43.64	0.20	0.00	3,909	495.15
17.200	0.10	43.02	43.43	0.20	0.00	3,890	495.15
17.250	0.10	42.82	43.22	0.20	0.00	3,872	495.14
17.300	0.10	42.61	43.01	0.20	0.00	3,853	495.14
17.350	0.10	42.39	42.80	0.20	0.00	3,834	495.13
17.400	0.10	42.18	42.59	0.20	0.00	3,815	495.13
17.450	0.09	41.96	42.37	0.20	0.00	3,795	495.12
17.500	0.09	41.74	42.15	0.20	0.00	3,775	495.12
17.550	0.09	41.52	41.93	0.20	0.00	3,755	495.11
17.600	0.09	41.30	41.71	0.20	0.00	3,735	495.11
17.650	0.09	41.07	41.48	0.20	0.00	3,715	495.11
17.700	0.09	40.84	41.25	0.20	0.00	3,694	495.10
17.750	0.09	40.61	41.02	0.20	0.00	3,673	495.10
17.800	0.09	40.38	40.78	0.20	0.00	3,652	495.09
17.850	0.08	40.14	40.55	0.20	0.00	3,631	495.09
17.900	0.08	39.90	40.31	0.20	0.00	3,609	495.08
17.950	0.08	39.66	40.07	0.20	0.00	3,588	495.08
18.000	0.08	39.41	39.82	0.20	0.00	3,566	495.07
18.050	0.08	39.17	39.57	0.20	0.00	3,543	495.07
18.100	0.08	38.92	39.33	0.20	0.00	3,521	495.06
18.150	0.08	38.67	39.08	0.20	0.00	3,498	495.06
18.200	0.08	38.42	38.83	0.20	0.00	3,476	495.05
18.250	0.08	38.17	38.57	0.20	0.00	3,453	495.04
18.300	0.08	37.91	38.32	0.20	0.00	3,431	495.04
18.350	0.08	37.66	38.07	0.20	0.00	3,408	495.03
18.400	0.08	37.41	37.81	0.20	0.00	3,385	495.03
18.450	0.08	37.15	37.56	0.20	0.00	3,362	495.02
18.500	0.08	36.90	37.31	0.20	0.00	3,339	495.02
18.550	0.08	36.64	37.05	0.20	0.00	3,316	495.01
18.600	0.08	36.38	36.79	0.20	0.00	3,293	495.01
18.650	0.08	36.13	36.53	0.20	0.00	3,270	495.00
18.700	0.07	35.87	36.28	0.20	0.00	3,247	495.00
18.750	0.07	35.61	36.02	0.20	0.00	3,223	494.99
18.800	0.07	35.35	35.76	0.20	0.00	3,200	494.99
18.850	0.07	35.09	35.50	0.20	0.00	3,176	494.98

Stormwater Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) | Return Event: 10 years
Label: SUB-6A (OUT) | Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
18.900	0.07	34.83	35.24	0.20	0.00	3,153	494.98
18.950	0.07	34.57	34.97	0.20	0.00	3,129	494.97
19.000	0.07	34.30	34.71	0.20	0.00	3,106	494.97
19.050	0.07	34.04	34.45	0.20	0.00	3,082	494.96
19.100	0.07	33.78	34.18	0.20	0.00	3,058	494.95
19.150	0.07	33.51	33.92	0.20	0.00	3,034	494.95
19.200	0.07	33.25	33.65	0.20	0.00	3,010	494.94
19.250	0.07	32.98	33.39	0.20	0.00	2,987	494.94
19.300	0.07	32.71	33.12	0.20	0.00	2,962	494.93
19.350	0.07	32.44	32.85	0.20	0.00	2,938	494.93
19.400	0.07	32.18	32.58	0.20	0.00	2,914	494.92
19.450	0.07	31.91	32.31	0.20	0.00	2,890	494.92
19.500	0.07	31.64	32.04	0.20	0.00	2,866	494.91
19.550	0.07	31.37	31.77	0.20	0.00	2,841	494.91
19.600	0.07	31.09	31.50	0.20	0.00	2,817	494.90
19.650	0.07	30.82	31.23	0.20	0.00	2,792	494.89
19.700	0.07	30.55	30.96	0.20	0.00	2,768	494.89
19.750	0.07	30.27	30.68	0.20	0.00	2,743	494.88
19.800	0.07	30.00	30.41	0.20	0.00	2,718	494.88
19.850	0.07	29.73	30.13	0.20	0.00	2,694	494.87
19.900	0.07	29.45	29.86	0.20	0.00	2,669	494.87
19.950	0.07	29.17	29.58	0.20	0.00	2,644	494.86
20.000	0.07	28.89	29.30	0.20	0.00	2,619	494.86
20.050	0.06	28.62	29.02	0.20	0.00	2,594	494.85
20.100	0.06	28.34	28.75	0.20	0.00	2,569	494.84
20.150	0.06	28.06	28.47	0.20	0.00	2,544	494.84
20.200	0.06	27.78	28.19	0.20	0.00	2,518	494.83
20.250	0.06	27.50	27.91	0.20	0.00	2,493	494.83
20.300	0.06	27.22	27.62	0.20	0.00	2,468	494.82
20.350	0.06	26.93	27.34	0.20	0.00	2,442	494.82
20.400	0.06	26.65	27.06	0.20	0.00	2,417	494.81
20.450	0.06	26.37	26.78	0.20	0.00	2,392	494.80
20.500	0.06	26.09	26.49	0.20	0.00	2,366	494.80
20.550	0.06	25.80	26.21	0.20	0.00	2,341	494.79
20.600	0.06	25.52	25.93	0.20	0.00	2,315	494.79
20.650	0.06	25.23	25.64	0.20	0.00	2,289	494.78
20.700	0.06	24.95	25.35	0.20	0.00	2,264	494.78
20.750	0.06	24.66	25.07	0.20	0.00	2,238	494.77
20.800	0.06	24.37	24.78	0.20	0.00	2,212	494.76
20.850	0.06	24.09	24.49	0.20	0.00	2,186	494.76
20.900	0.06	23.80	24.21	0.20	0.00	2,160	494.75
20.950	0.06	23.51	23.92	0.20	0.00	2,134	494.75

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: SUB-6A (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
21.000	0.06	23.22	23.63	0.20	0.00	2,108	494.74
21.050	0.06	22.93	23.34	0.20	0.00	2,082	494.74
21.100	0.06	22.64	23.05	0.20	0.00	2,056	494.73
21.150	0.06	22.35	22.76	0.20	0.00	2,030	494.72
21.200	0.06	22.06	22.47	0.20	0.00	2,004	494.72
21.250	0.06	21.77	22.17	0.20	0.00	1,977	494.71
21.300	0.06	21.47	21.88	0.20	0.00	1,951	494.71
21.350	0.06	21.18	21.59	0.20	0.00	1,925	494.70
21.400	0.06	20.89	21.30	0.20	0.00	1,898	494.69
21.450	0.06	20.59	21.00	0.20	0.00	1,872	494.69
21.500	0.06	20.30	20.71	0.20	0.00	1,845	494.68
21.550	0.06	20.00	20.41	0.20	0.00	1,819	494.68
21.600	0.06	19.71	20.12	0.20	0.00	1,792	494.67
21.650	0.06	19.41	19.82	0.20	0.00	1,765	494.66
21.700	0.06	19.12	19.52	0.20	0.00	1,739	494.66
21.750	0.06	18.82	19.23	0.20	0.00	1,712	494.65
21.800	0.06	18.52	18.93	0.20	0.00	1,685	494.65
21.850	0.05	18.22	18.63	0.20	0.00	1,658	494.64
21.900	0.05	17.92	18.33	0.20	0.00	1,631	494.63
21.950	0.05	17.62	18.03	0.20	0.00	1,604	494.63
22.000	0.05	17.32	17.73	0.20	0.00	1,577	494.62
22.050	0.05	17.02	17.43	0.20	0.00	1,550	494.62
22.100	0.05	16.72	17.13	0.20	0.00	1,523	494.61
22.150	0.05	16.42	16.83	0.20	0.00	1,496	494.60
22.200	0.05	16.12	16.52	0.20	0.00	1,469	494.60
22.250	0.05	15.81	16.22	0.20	0.00	1,442	494.59
22.300	0.05	15.51	15.92	0.20	0.00	1,414	494.59
22.350	0.05	15.21	15.61	0.20	0.00	1,387	494.58
22.400	0.05	14.90	15.31	0.20	0.00	1,359	494.57
22.450	0.05	14.60	15.00	0.20	0.00	1,332	494.57
22.500	0.05	14.29	14.70	0.20	0.00	1,304	494.56
22.550	0.05	13.98	14.39	0.20	0.00	1,277	494.55
22.600	0.05	13.68	14.08	0.20	0.00	1,249	494.55
22.650	0.05	13.37	13.78	0.20	0.00	1,222	494.54
22.700	0.05	13.06	13.47	0.20	0.00	1,194	494.54
22.750	0.05	12.75	13.16	0.20	0.00	1,166	494.53
22.800	0.05	12.44	12.85	0.20	0.00	1,138	494.52
22.850	0.05	12.13	12.54	0.20	0.00	1,110	494.52
22.900	0.05	11.82	12.23	0.20	0.00	1,083	494.51
22.950	0.05	11.51	11.92	0.20	0.00	1,055	494.50
23.000	0.05	11.21	11.61	0.20	0.00	1,027	494.50
23.050	0.05	10.91	11.30	0.20	0.00	999	494.48

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: SUB-6A (OUT) Storm Event: 10 year
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
23.100	0.05	10.62	11.00	0.19	0.00	973	494.47
23.150	0.05	10.34	10.71	0.19	0.00	947	494.46
23.200	0.05	10.07	10.43	0.18	0.00	923	494.45
23.250	0.05	9.81	10.16	0.18	0.00	899	494.43
23.300	0.05	9.56	9.90	0.17	0.00	876	494.42
23.350	0.05	9.31	9.65	0.17	0.00	853	494.41
23.400	0.05	9.08	9.41	0.16	0.00	832	494.40
23.450	0.05	8.85	9.17	0.16	0.00	811	494.39
23.500	0.05	8.63	8.94	0.16	0.00	791	494.38
23.550	0.05	8.42	8.72	0.15	0.00	771	494.37
23.600	0.04	8.21	8.51	0.15	0.00	752	494.36
23.650	0.04	8.01	8.30	0.14	0.00	734	494.35
23.700	0.04	7.81	8.10	0.14	0.00	716	494.35
23.750	0.04	7.63	7.90	0.14	0.00	699	494.34
23.800	0.04	7.45	7.72	0.13	0.00	682	494.33
23.850	0.04	7.27	7.53	0.13	0.00	666	494.32
23.900	0.04	7.10	7.36	0.13	0.00	651	494.31
23.950	0.04	6.94	7.19	0.13	0.00	635	494.31
24.000	0.04	6.78	7.02	0.12	0.00	621	494.30

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: SUB-6A (OUT) Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
0.000	0.00	0.00	0.00	0.00	0.00	0	494.00
0.050	0.00	0.00	0.00	0.00	0.00	0	494.00
0.100	0.00	0.00	0.00	0.00	0.00	0	494.00
0.150	0.00	0.00	0.00	0.00	0.00	0	494.00
0.200	0.00	0.00	0.00	0.00	0.00	0	494.00
0.250	0.00	0.00	0.00	0.00	0.00	0	494.00
0.300	0.00	0.00	0.00	0.00	0.00	0	494.00
0.350	0.00	0.00	0.00	0.00	0.00	0	494.00
0.400	0.00	0.00	0.00	0.00	0.00	0	494.00
0.450	0.00	0.00	0.00	0.00	0.00	0	494.00
0.500	0.00	0.00	0.00	0.00	0.00	0	494.00
0.550	0.00	0.00	0.00	0.00	0.00	0	494.00
0.600	0.00	0.00	0.00	0.00	0.00	0	494.00
0.650	0.00	0.00	0.00	0.00	0.00	0	494.00
0.700	0.00	0.00	0.00	0.00	0.00	0	494.00
0.750	0.00	0.00	0.00	0.00	0.00	0	494.00
0.800	0.00	0.00	0.00	0.00	0.00	0	494.00
0.850	0.00	0.00	0.00	0.00	0.00	0	494.00
0.900	0.00	0.00	0.00	0.00	0.00	0	494.00
0.950	0.00	0.00	0.00	0.00	0.00	0	494.00
1.000	0.00	0.00	0.00	0.00	0.00	0	494.00
1.050	0.00	0.00	0.00	0.00	0.00	0	494.00
1.100	0.00	0.00	0.00	0.00	0.00	0	494.00
1.150	0.00	0.00	0.00	0.00	0.00	0	494.00
1.200	0.00	0.00	0.00	0.00	0.00	0	494.00
1.250	0.00	0.00	0.00	0.00	0.00	0	494.00
1.300	0.00	0.00	0.00	0.00	0.00	0	494.00
1.350	0.00	0.00	0.00	0.00	0.00	0	494.00
1.400	0.00	0.00	0.00	0.00	0.00	0	494.00
1.450	0.00	0.00	0.00	0.00	0.00	0	494.00
1.500	0.00	0.01	0.01	0.00	0.00	1	494.00
1.550	0.00	0.01	0.01	0.00	0.00	1	494.00
1.600	0.00	0.02	0.02	0.00	0.00	2	494.00
1.650	0.01	0.03	0.03	0.00	0.00	2	494.00
1.700	0.01	0.04	0.04	0.00	0.00	3	494.00
1.750	0.01	0.05	0.05	0.00	0.00	4	494.00
1.800	0.01	0.06	0.06	0.00	0.00	5	494.00
1.850	0.01	0.07	0.08	0.00	0.00	7	494.00
1.900	0.01	0.09	0.09	0.00	0.00	8	494.00
1.950	0.01	0.10	0.11	0.00	0.00	9	494.00
2.000	0.01	0.12	0.12	0.00	0.00	11	494.01
2.050	0.01	0.14	0.14	0.00	0.00	12	494.01

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: SUB-6A (OUT) Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
2.100	0.01	0.15	0.16	0.00	0.00	14	494.01
2.150	0.01	0.17	0.18	0.00	0.00	16	494.01
2.200	0.01	0.19	0.20	0.00	0.00	18	494.01
2.250	0.01	0.21	0.22	0.00	0.00	19	494.01
2.300	0.02	0.23	0.24	0.00	0.00	21	494.01
2.350	0.02	0.26	0.26	0.00	0.00	23	494.01
2.400	0.02	0.28	0.29	0.01	0.00	26	494.01
2.450	0.02	0.30	0.31	0.01	0.00	28	494.01
2.500	0.02	0.33	0.34	0.01	0.00	30	494.01
2.550	0.02	0.35	0.36	0.01	0.00	32	494.02
2.600	0.02	0.38	0.39	0.01	0.00	35	494.02
2.650	0.02	0.40	0.42	0.01	0.00	37	494.02
2.700	0.02	0.43	0.45	0.01	0.00	39	494.02
2.750	0.02	0.46	0.48	0.01	0.00	42	494.02
2.800	0.02	0.49	0.50	0.01	0.00	45	494.02
2.850	0.02	0.52	0.53	0.01	0.00	47	494.02
2.900	0.02	0.55	0.56	0.01	0.00	50	494.02
2.950	0.03	0.57	0.60	0.01	0.00	53	494.03
3.000	0.03	0.61	0.63	0.01	0.00	55	494.03
3.050	0.03	0.64	0.66	0.01	0.00	58	494.03
3.100	0.03	0.67	0.69	0.01	0.00	61	494.03
3.150	0.03	0.70	0.72	0.01	0.00	64	494.03
3.200	0.03	0.73	0.76	0.01	0.00	67	494.03
3.250	0.03	0.76	0.79	0.01	0.00	70	494.03
3.300	0.03	0.80	0.83	0.01	0.00	73	494.04
3.350	0.03	0.83	0.86	0.02	0.00	76	494.04
3.400	0.03	0.86	0.90	0.02	0.00	79	494.04
3.450	0.03	0.90	0.93	0.02	0.00	82	494.04
3.500	0.03	0.93	0.97	0.02	0.00	85	494.04
3.550	0.04	0.97	1.00	0.02	0.00	89	494.04
3.600	0.04	1.00	1.04	0.02	0.00	92	494.04
3.650	0.04	1.04	1.08	0.02	0.00	95	494.05
3.700	0.04	1.07	1.11	0.02	0.00	98	494.05
3.750	0.04	1.11	1.15	0.02	0.00	102	494.05
3.800	0.04	1.15	1.19	0.02	0.00	105	494.05
3.850	0.04	1.18	1.23	0.02	0.00	108	494.05
3.900	0.04	1.22	1.26	0.02	0.00	112	494.05
3.950	0.04	1.26	1.30	0.02	0.00	115	494.06
4.000	0.04	1.29	1.34	0.02	0.00	119	494.06
4.050	0.04	1.33	1.38	0.02	0.00	122	494.06
4.100	0.04	1.37	1.42	0.02	0.00	125	494.06
4.150	0.04	1.41	1.46	0.03	0.00	129	494.06

Subsection: Pond Routing Calculations (Total Out)
Return Event: 25 years
Label: SUB-6A (OUT)
Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft^3/s)	2S/t - O (ft^3/s)	2S/t + O (ft^3/s)	Infiltration (ft^3/s)	Flow (Outlet) (ft^3/s)	Volume (ft^3)	Elevation (ft)
4.200	0.05	1.44	1.50	0.03	0.00	132	494.06
4.250	0.05	1.48	1.54	0.03	0.00	136	494.07
4.300	0.05	1.52	1.58	0.03	0.00	139	494.07
4.350	0.05	1.56	1.62	0.03	0.00	143	494.07
4.400	0.05	1.60	1.65	0.03	0.00	146	494.07
4.450	0.05	1.64	1.69	0.03	0.00	150	494.07
4.500	0.05	1.67	1.73	0.03	0.00	153	494.07
4.550	0.05	1.71	1.78	0.03	0.00	157	494.08
4.600	0.05	1.75	1.82	0.03	0.00	161	494.08
4.650	0.05	1.79	1.86	0.03	0.00	164	494.08
4.700	0.05	1.83	1.90	0.03	0.00	168	494.08
4.750	0.05	1.87	1.94	0.03	0.00	171	494.08
4.800	0.05	1.91	1.98	0.03	0.00	175	494.08
4.850	0.06	1.95	2.02	0.04	0.00	179	494.09
4.900	0.06	1.99	2.06	0.04	0.00	182	494.09
4.950	0.06	2.03	2.10	0.04	0.00	186	494.09
5.000	0.06	2.07	2.14	0.04	0.00	189	494.09
5.050	0.06	2.11	2.18	0.04	0.00	193	494.09
5.100	0.06	2.15	2.22	0.04	0.00	197	494.10
5.150	0.06	2.19	2.26	0.04	0.00	200	494.10
5.200	0.06	2.23	2.31	0.04	0.00	204	494.10
5.250	0.06	2.27	2.35	0.04	0.00	208	494.10
5.300	0.06	2.30	2.39	0.04	0.00	211	494.10
5.350	0.06	2.34	2.43	0.04	0.00	215	494.10
5.400	0.06	2.38	2.47	0.04	0.00	218	494.11
5.450	0.06	2.42	2.51	0.04	0.00	222	494.11
5.500	0.06	2.46	2.55	0.04	0.00	226	494.11
5.550	0.07	2.50	2.59	0.05	0.00	229	494.11
5.600	0.07	2.54	2.64	0.05	0.00	233	494.11
5.650	0.07	2.58	2.68	0.05	0.00	237	494.11
5.700	0.07	2.62	2.72	0.05	0.00	240	494.12
5.750	0.07	2.66	2.76	0.05	0.00	244	494.12
5.800	0.07	2.70	2.80	0.05	0.00	248	494.12
5.850	0.07	2.74	2.84	0.05	0.00	251	494.12
5.900	0.07	2.78	2.88	0.05	0.00	255	494.12
5.950	0.07	2.82	2.92	0.05	0.00	259	494.13
6.000	0.07	2.86	2.96	0.05	0.00	262	494.13
6.050	0.07	2.90	3.01	0.05	0.00	266	494.13
6.100	0.07	2.94	3.05	0.05	0.00	270	494.13
6.150	0.08	2.98	3.09	0.05	0.00	273	494.13
6.200	0.08	3.03	3.13	0.05	0.00	277	494.13
6.250	0.08	3.07	3.18	0.06	0.00	281	494.14

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: SUB-6A (OUT) Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
6.300	0.08	3.11	3.23	0.06	0.00	285	494.14
6.350	0.08	3.16	3.28	0.06	0.00	290	494.14
6.400	0.08	3.21	3.33	0.06	0.00	294	494.14
6.450	0.08	3.26	3.38	0.06	0.00	299	494.14
6.500	0.09	3.31	3.43	0.06	0.00	303	494.15
6.550	0.09	3.36	3.48	0.06	0.00	308	494.15
6.600	0.09	3.41	3.54	0.06	0.00	313	494.15
6.650	0.09	3.47	3.59	0.06	0.00	318	494.15
6.700	0.09	3.52	3.65	0.06	0.00	323	494.16
6.750	0.09	3.58	3.71	0.06	0.00	328	494.16
6.800	0.10	3.64	3.77	0.07	0.00	333	494.16
6.850	0.10	3.70	3.83	0.07	0.00	339	494.16
6.900	0.10	3.76	3.89	0.07	0.00	344	494.17
6.950	0.10	3.82	3.96	0.07	0.00	350	494.17
7.000	0.10	3.88	4.02	0.07	0.00	356	494.17
7.050	0.10	3.94	4.09	0.07	0.00	361	494.17
7.100	0.11	4.01	4.15	0.07	0.00	367	494.18
7.150	0.11	4.07	4.22	0.07	0.00	373	494.18
7.200	0.11	4.14	4.29	0.07	0.00	379	494.18
7.250	0.11	4.21	4.36	0.08	0.00	385	494.19
7.300	0.11	4.27	4.43	0.08	0.00	391	494.19
7.350	0.11	4.34	4.50	0.08	0.00	398	494.19
7.400	0.12	4.41	4.57	0.08	0.00	404	494.20
7.450	0.12	4.48	4.64	0.08	0.00	411	494.20
7.500	0.12	4.55	4.72	0.08	0.00	417	494.20
7.550	0.12	4.62	4.79	0.08	0.00	424	494.20
7.600	0.12	4.70	4.87	0.08	0.00	430	494.21
7.650	0.12	4.77	4.94	0.09	0.00	437	494.21
7.700	0.13	4.84	5.02	0.09	0.00	444	494.21
7.750	0.13	4.92	5.10	0.09	0.00	451	494.22
7.800	0.13	4.99	5.17	0.09	0.00	458	494.22
7.850	0.13	5.07	5.25	0.09	0.00	464	494.22
7.900	0.13	5.15	5.33	0.09	0.00	472	494.23
7.950	0.13	5.22	5.41	0.09	0.00	479	494.23
8.000	0.14	5.30	5.49	0.10	0.00	486	494.23
8.050	0.14	5.38	5.57	0.10	0.00	493	494.24
8.100	0.14	5.46	5.66	0.10	0.00	500	494.24
8.150	0.14	5.54	5.74	0.10	0.00	508	494.25
8.200	0.15	5.63	5.83	0.10	0.00	516	494.25
8.250	0.15	5.72	5.93	0.10	0.00	524	494.25
8.300	0.15	5.81	6.03	0.11	0.00	533	494.26
8.350	0.16	5.91	6.13	0.11	0.00	542	494.26

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: SUB-6A (OUT) Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
8.400	0.16	6.01	6.23	0.11	0.00	551	494.27
8.450	0.16	6.12	6.34	0.11	0.00	560	494.27
8.500	0.17	6.22	6.45	0.11	0.00	570	494.28
8.550	0.17	6.34	6.56	0.11	0.00	580	494.28
8.600	0.18	6.45	6.68	0.12	0.00	591	494.29
8.650	0.18	6.57	6.80	0.12	0.00	602	494.29
8.700	0.18	6.68	6.93	0.12	0.00	612	494.30
8.750	0.19	6.81	7.05	0.12	0.00	624	494.30
8.800	0.19	6.93	7.18	0.13	0.00	635	494.31
8.850	0.19	7.06	7.31	0.13	0.00	647	494.31
8.900	0.20	7.19	7.45	0.13	0.00	659	494.32
8.950	0.20	7.32	7.59	0.13	0.00	671	494.32
9.000	0.20	7.46	7.73	0.13	0.00	683	494.33
9.050	0.21	7.60	7.87	0.14	0.00	696	494.34
9.100	0.21	7.74	8.02	0.14	0.00	709	494.34
9.150	0.22	7.88	8.16	0.14	0.00	722	494.35
9.200	0.22	8.02	8.31	0.14	0.00	735	494.36
9.250	0.22	8.17	8.46	0.15	0.00	749	494.36
9.300	0.23	8.32	8.62	0.15	0.00	762	494.37
9.350	0.23	8.47	8.78	0.15	0.00	776	494.38
9.400	0.23	8.62	8.93	0.16	0.00	790	494.38
9.450	0.24	8.78	9.09	0.16	0.00	804	494.39
9.500	0.24	8.93	9.26	0.16	0.00	819	494.40
9.550	0.25	9.09	9.42	0.16	0.00	833	494.40
9.600	0.25	9.25	9.59	0.17	0.00	848	494.41
9.650	0.25	9.41	9.75	0.17	0.00	862	494.42
9.700	0.26	9.58	9.92	0.17	0.00	877	494.42
9.750	0.26	9.74	10.09	0.18	0.00	893	494.43
9.800	0.26	9.91	10.27	0.18	0.00	908	494.44
9.850	0.27	10.08	10.44	0.18	0.00	923	494.45
9.900	0.27	10.25	10.62	0.19	0.00	939	494.45
9.950	0.28	10.42	10.79	0.19	0.00	954	494.46
10.000	0.28	10.59	10.97	0.19	0.00	970	494.47
10.050	0.28	10.76	11.15	0.19	0.00	986	494.48
10.100	0.29	10.94	11.34	0.20	0.00	1,003	494.48
10.150	0.30	11.12	11.53	0.20	0.00	1,019	494.49
10.200	0.30	11.32	11.72	0.20	0.00	1,037	494.50
10.250	0.31	11.52	11.93	0.20	0.00	1,055	494.50
10.300	0.32	11.74	12.15	0.20	0.00	1,075	494.51
10.350	0.33	11.98	12.39	0.20	0.00	1,097	494.51
10.400	0.33	12.23	12.64	0.20	0.00	1,119	494.52
10.450	0.34	12.50	12.91	0.20	0.00	1,143	494.52

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: SUB-6A (OUT) Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
10.500	0.35	12.78	13.19	0.20	0.00	1,169	494.53
10.550	0.36	13.08	13.49	0.20	0.00	1,195	494.54
10.600	0.36	13.39	13.80	0.20	0.00	1,223	494.54
10.650	0.37	13.72	14.12	0.20	0.00	1,253	494.55
10.700	0.38	14.06	14.47	0.20	0.00	1,284	494.56
10.750	0.39	14.42	14.83	0.20	0.00	1,316	494.56
10.800	0.39	14.79	15.20	0.20	0.00	1,349	494.57
10.850	0.40	15.18	15.59	0.20	0.00	1,384	494.58
10.900	0.41	15.58	15.99	0.20	0.00	1,421	494.59
10.950	0.42	16.00	16.41	0.20	0.00	1,458	494.60
11.000	0.43	16.44	16.84	0.20	0.00	1,498	494.60
11.050	0.44	16.89	17.30	0.20	0.00	1,539	494.61
11.100	0.46	17.38	17.78	0.20	0.00	1,582	494.62
11.150	0.48	17.90	18.31	0.20	0.00	1,630	494.63
11.200	0.51	18.48	18.89	0.20	0.00	1,681	494.65
11.250	0.53	19.11	19.52	0.20	0.00	1,738	494.66
11.300	0.56	19.80	20.21	0.20	0.00	1,800	494.67
11.350	0.59	20.54	20.95	0.20	0.00	1,867	494.69
11.400	0.62	21.34	21.75	0.20	0.00	1,939	494.70
11.450	0.65	22.20	22.61	0.20	0.00	2,016	494.72
11.500	0.68	23.12	23.53	0.20	0.00	2,099	494.74
11.550	0.77	24.16	24.56	0.20	0.00	2,192	494.76
11.600	0.91	25.43	25.84	0.20	0.00	2,307	494.79
11.650	1.11	27.04	27.45	0.20	0.00	2,452	494.82
11.700	1.39	29.14	29.54	0.20	0.00	2,641	494.86
11.750	1.63	31.75	32.16	0.20	0.00	2,876	494.91
11.800	1.93	34.90	35.31	0.20	0.00	3,160	494.98
11.850	2.18	38.60	39.01	0.20	0.00	3,492	495.05
11.900	2.48	42.85	43.26	0.20	0.00	3,875	495.14
11.950	3.26	48.07	48.60	0.20	0.06	4,357	495.25
12.000	4.53	55.15	55.86	0.20	0.15	4,998	495.41
12.050	5.00	63.64	64.68	0.20	0.32	5,783	495.60
12.100	5.14	72.29	73.79	0.20	0.55	6,591	495.80
12.150	4.52	80.03	81.94	0.20	0.75	7,291	495.98
12.200	3.30	85.51	87.85	0.20	0.96	7,820	496.12
12.250	2.70	88.90	91.51	0.20	1.10	8,150	496.21
12.300	2.30	91.10	93.90	0.20	1.19	8,359	496.27
12.350	2.02	92.51	95.42	0.20	1.25	8,485	496.31
12.400	1.71	93.27	96.24	0.20	1.28	8,554	496.33
12.450	1.46	93.46	96.44	0.20	1.29	8,571	496.33
12.500	1.16	93.13	96.08	0.20	1.28	8,541	496.33
12.550	0.98	92.37	95.27	0.20	1.24	8,473	496.31

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: SUB-6A (OUT) Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
12.600	0.80	91.34	94.15	0.20	1.20	8,380	496.28
12.650	0.72	90.15	92.86	0.20	1.15	8,272	496.25
12.700	0.68	88.93	91.55	0.20	1.10	8,153	496.21
12.750	0.65	87.74	90.25	0.20	1.05	8,037	496.18
12.800	0.61	86.58	89.00	0.20	1.01	7,923	496.15
12.850	0.59	85.45	87.78	0.20	0.96	7,813	496.12
12.900	0.56	84.36	86.60	0.20	0.92	7,707	496.09
12.950	0.53	83.29	85.44	0.20	0.87	7,603	496.06
13.000	0.50	82.26	84.32	0.20	0.83	7,501	496.04
13.050	0.48	81.25	83.24	0.20	0.79	7,403	496.01
13.100	0.46	80.27	82.19	0.20	0.76	7,312	495.98
13.150	0.45	79.30	81.17	0.20	0.73	7,225	495.96
13.200	0.44	78.36	80.19	0.20	0.71	7,140	495.94
13.250	0.43	77.46	79.23	0.20	0.68	7,058	495.92
13.300	0.42	76.59	78.31	0.20	0.66	6,979	495.90
13.350	0.42	75.74	77.42	0.20	0.64	6,903	495.88
13.400	0.41	74.92	76.56	0.20	0.62	6,829	495.86
13.450	0.40	74.14	75.73	0.20	0.59	6,758	495.84
13.500	0.39	73.37	74.93	0.20	0.57	6,689	495.82
13.550	0.39	72.63	74.15	0.20	0.55	6,622	495.81
13.600	0.38	71.92	73.40	0.20	0.54	6,557	495.79
13.650	0.37	71.22	72.66	0.20	0.52	6,494	495.77
13.700	0.36	70.55	71.96	0.20	0.50	6,433	495.76
13.750	0.36	69.90	71.27	0.20	0.48	6,373	495.74
13.800	0.35	69.26	70.60	0.20	0.46	6,313	495.73
13.850	0.34	68.64	69.95	0.20	0.45	6,255	495.71
13.900	0.33	68.04	69.32	0.20	0.43	6,198	495.70
13.950	0.33	67.46	68.70	0.20	0.42	6,143	495.69
14.000	0.32	66.89	68.10	0.20	0.40	6,090	495.67
14.050	0.31	66.34	67.52	0.20	0.39	6,037	495.66
14.100	0.31	65.80	66.96	0.20	0.37	5,987	495.65
14.150	0.30	65.28	66.41	0.20	0.36	5,938	495.64
14.200	0.30	64.78	65.88	0.20	0.35	5,890	495.62
14.250	0.29	64.30	65.37	0.20	0.33	5,845	495.61
14.300	0.29	63.83	64.88	0.20	0.32	5,801	495.60
14.350	0.29	63.38	64.41	0.20	0.31	5,759	495.59
14.400	0.28	62.95	63.95	0.20	0.30	5,718	495.58
14.450	0.28	62.53	63.51	0.20	0.29	5,678	495.57
14.500	0.28	62.13	63.09	0.20	0.28	5,640	495.56
14.550	0.27	61.74	62.68	0.20	0.26	5,603	495.55
14.600	0.27	61.36	62.28	0.20	0.25	5,568	495.54
14.650	0.27	61.00	61.90	0.20	0.25	5,533	495.54

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: SUB-6A (OUT) Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
14.700	0.26	60.64	61.52	0.20	0.24	5,500	495.53
14.750	0.26	60.30	61.16	0.20	0.23	5,468	495.52
14.800	0.25	59.97	60.81	0.20	0.22	5,436	495.51
14.850	0.25	59.65	60.48	0.20	0.21	5,406	495.50
14.900	0.25	59.33	60.15	0.20	0.20	5,377	495.50
14.950	0.24	59.02	59.82	0.20	0.20	5,348	495.49
15.000	0.24	58.70	59.50	0.20	0.20	5,320	495.48
15.050	0.24	58.39	59.18	0.20	0.19	5,291	495.48
15.100	0.23	58.07	58.86	0.20	0.19	5,263	495.47
15.150	0.23	57.76	58.54	0.20	0.18	5,234	495.46
15.200	0.23	57.45	58.22	0.20	0.18	5,206	495.46
15.250	0.22	57.14	57.90	0.20	0.18	5,178	495.45
15.300	0.22	56.83	57.58	0.20	0.17	5,150	495.44
15.350	0.21	56.52	57.26	0.20	0.17	5,122	495.44
15.400	0.21	56.21	56.94	0.20	0.16	5,094	495.43
15.450	0.21	55.90	56.63	0.20	0.16	5,066	495.42
15.500	0.20	55.59	56.31	0.20	0.16	5,038	495.42
15.550	0.20	55.28	55.99	0.20	0.15	5,010	495.41
15.600	0.20	54.98	55.68	0.20	0.15	4,983	495.40
15.650	0.19	54.67	55.37	0.20	0.14	4,955	495.40
15.700	0.19	54.36	55.05	0.20	0.14	4,927	495.39
15.750	0.19	54.06	54.74	0.20	0.14	4,899	495.38
15.800	0.18	53.75	54.43	0.20	0.13	4,872	495.38
15.850	0.18	53.45	54.11	0.20	0.13	4,844	495.37
15.900	0.18	53.14	53.80	0.20	0.13	4,817	495.36
15.950	0.17	52.84	53.49	0.20	0.12	4,789	495.36
16.000	0.17	52.54	53.18	0.20	0.12	4,762	495.35
16.050	0.17	52.23	52.87	0.20	0.11	4,735	495.34
16.100	0.16	51.94	52.56	0.20	0.11	4,708	495.34
16.150	0.16	51.64	52.26	0.20	0.11	4,681	495.33
16.200	0.16	51.34	51.96	0.20	0.10	4,654	495.32
16.250	0.16	51.05	51.66	0.20	0.10	4,628	495.32
16.300	0.16	50.77	51.37	0.20	0.10	4,602	495.31
16.350	0.15	50.49	51.08	0.20	0.09	4,577	495.31
16.400	0.15	50.21	50.79	0.20	0.09	4,551	495.30
16.450	0.15	49.93	50.51	0.20	0.08	4,527	495.29
16.500	0.15	49.66	50.24	0.20	0.08	4,502	495.29
16.550	0.15	49.40	49.96	0.20	0.08	4,478	495.28
16.600	0.15	49.13	49.69	0.20	0.07	4,454	495.28
16.650	0.14	48.87	49.43	0.20	0.07	4,431	495.27
16.700	0.14	48.62	49.16	0.20	0.07	4,407	495.27
16.750	0.14	48.37	48.90	0.20	0.06	4,385	495.26

Stormwater Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) | Return Event: 25 years
Label: SUB-6A (OUT) | Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
16.800	0.14	48.12	48.65	0.20	0.06	4,362	495.26
16.850	0.14	47.87	48.39	0.20	0.06	4,340	495.25
16.900	0.14	47.62	48.14	0.20	0.06	4,317	495.24
16.950	0.14	47.38	47.90	0.20	0.05	4,295	495.24
17.000	0.13	47.15	47.65	0.20	0.05	4,273	495.23
17.050	0.13	46.91	47.41	0.20	0.05	4,251	495.23
17.100	0.13	46.68	47.17	0.20	0.04	4,229	495.22
17.150	0.13	46.45	46.94	0.20	0.04	4,208	495.22
17.200	0.13	46.22	46.70	0.20	0.04	4,187	495.21
17.250	0.13	46.00	46.47	0.20	0.04	4,166	495.21
17.300	0.12	45.77	46.25	0.20	0.03	4,145	495.21
17.350	0.12	45.55	46.02	0.20	0.03	4,125	495.20
17.400	0.12	45.34	45.80	0.20	0.03	4,105	495.20
17.450	0.12	45.12	45.58	0.20	0.02	4,085	495.19
17.500	0.12	44.91	45.36	0.20	0.02	4,065	495.19
17.550	0.12	44.70	45.14	0.20	0.02	4,045	495.18
17.600	0.11	44.49	44.93	0.20	0.02	4,026	495.18
17.650	0.11	44.28	44.72	0.20	0.01	4,007	495.17
17.700	0.11	44.08	44.51	0.20	0.01	3,988	495.17
17.750	0.11	43.87	44.30	0.20	0.01	3,969	495.16
17.800	0.11	43.67	44.09	0.20	0.01	3,950	495.16
17.850	0.11	43.48	43.89	0.20	0.00	3,932	495.16
17.900	0.11	43.28	43.69	0.20	0.00	3,914	495.15
17.950	0.10	43.08	43.49	0.20	0.00	3,896	495.15
18.000	0.10	42.88	43.29	0.20	0.00	3,877	495.14
18.050	0.10	42.67	43.08	0.20	0.00	3,859	495.14
18.100	0.10	42.47	42.88	0.20	0.00	3,840	495.13
18.150	0.10	42.26	42.67	0.20	0.00	3,822	495.13
18.200	0.10	42.05	42.46	0.20	0.00	3,803	495.13
18.250	0.10	41.84	42.25	0.20	0.00	3,784	495.12
18.300	0.10	41.63	42.03	0.20	0.00	3,765	495.12
18.350	0.10	41.41	41.82	0.20	0.00	3,746	495.11
18.400	0.10	41.20	41.61	0.20	0.00	3,726	495.11
18.450	0.10	40.99	41.39	0.20	0.00	3,707	495.10
18.500	0.10	40.77	41.18	0.20	0.00	3,688	495.10
18.550	0.10	40.55	40.96	0.20	0.00	3,668	495.09
18.600	0.10	40.34	40.74	0.20	0.00	3,649	495.09
18.650	0.09	40.12	40.53	0.20	0.00	3,629	495.09
18.700	0.09	39.90	40.31	0.20	0.00	3,609	495.08
18.750	0.09	39.68	40.09	0.20	0.00	3,589	495.08
18.800	0.09	39.46	39.87	0.20	0.00	3,570	495.07
18.850	0.09	39.24	39.64	0.20	0.00	3,550	495.07

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: SUB-6A (OUT) Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
18.900	0.09	39.01	39.42	0.20	0.00	3,530	495.06
18.950	0.09	38.79	39.20	0.20	0.00	3,509	495.06
19.000	0.09	38.56	38.97	0.20	0.00	3,489	495.05
19.050	0.09	38.34	38.75	0.20	0.00	3,469	495.05
19.100	0.09	38.11	38.52	0.20	0.00	3,448	495.04
19.150	0.09	37.88	38.29	0.20	0.00	3,428	495.04
19.200	0.09	37.66	38.06	0.20	0.00	3,407	495.03
19.250	0.09	37.43	37.84	0.20	0.00	3,387	495.03
19.300	0.09	37.20	37.60	0.20	0.00	3,366	495.02
19.350	0.09	36.97	37.37	0.20	0.00	3,345	495.02
19.400	0.09	36.73	37.14	0.20	0.00	3,324	495.01
19.450	0.09	36.50	36.91	0.20	0.00	3,303	495.01
19.500	0.09	36.27	36.67	0.20	0.00	3,282	495.01
19.550	0.09	36.03	36.44	0.20	0.00	3,261	495.00
19.600	0.09	35.79	36.20	0.20	0.00	3,240	495.00
19.650	0.09	35.56	35.97	0.20	0.00	3,219	494.99
19.700	0.08	35.32	35.73	0.20	0.00	3,197	494.99
19.750	0.08	35.08	35.49	0.20	0.00	3,176	494.98
19.800	0.08	34.84	35.25	0.20	0.00	3,154	494.98
19.850	0.08	34.60	35.01	0.20	0.00	3,132	494.97
19.900	0.08	34.36	34.77	0.20	0.00	3,111	494.97
19.950	0.08	34.12	34.52	0.20	0.00	3,089	494.96
20.000	0.08	33.87	34.28	0.20	0.00	3,067	494.96
20.050	0.08	33.63	34.04	0.20	0.00	3,045	494.95
20.100	0.08	33.38	33.79	0.20	0.00	3,023	494.95
20.150	0.08	33.14	33.54	0.20	0.00	3,001	494.94
20.200	0.08	32.89	33.30	0.20	0.00	2,978	494.94
20.250	0.08	32.64	33.05	0.20	0.00	2,956	494.93
20.300	0.08	32.40	32.80	0.20	0.00	2,934	494.93
20.350	0.08	32.15	32.55	0.20	0.00	2,912	494.92
20.400	0.08	31.90	32.30	0.20	0.00	2,889	494.92
20.450	0.08	31.65	32.05	0.20	0.00	2,867	494.91
20.500	0.08	31.40	31.80	0.20	0.00	2,844	494.91
20.550	0.08	31.14	31.55	0.20	0.00	2,821	494.90
20.600	0.08	30.89	31.30	0.20	0.00	2,799	494.90
20.650	0.08	30.64	31.05	0.20	0.00	2,776	494.89
20.700	0.08	30.38	30.79	0.20	0.00	2,753	494.89
20.750	0.08	30.13	30.54	0.20	0.00	2,730	494.88
20.800	0.08	29.87	30.28	0.20	0.00	2,707	494.88
20.850	0.08	29.62	30.03	0.20	0.00	2,684	494.87
20.900	0.08	29.36	29.77	0.20	0.00	2,661	494.87
20.950	0.08	29.10	29.51	0.20	0.00	2,638	494.86

Stormwater Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) | Return Event: 25 years
Label: SUB-6A (OUT) | Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
21.000	0.08	28.85	29.25	0.20	0.00	2,614	494.85
21.050	0.07	28.59	29.00	0.20	0.00	2,591	494.85
21.100	0.07	28.33	28.74	0.20	0.00	2,568	494.84
21.150	0.07	28.07	28.48	0.20	0.00	2,545	494.84
21.200	0.07	27.81	28.22	0.20	0.00	2,521	494.83
21.250	0.07	27.55	27.95	0.20	0.00	2,497	494.83
21.300	0.07	27.28	27.69	0.20	0.00	2,474	494.82
21.350	0.07	27.02	27.43	0.20	0.00	2,450	494.82
21.400	0.07	26.76	27.17	0.20	0.00	2,426	494.81
21.450	0.07	26.49	26.90	0.20	0.00	2,403	494.81
21.500	0.07	26.23	26.64	0.20	0.00	2,379	494.80
21.550	0.07	25.96	26.37	0.20	0.00	2,355	494.80
21.600	0.07	25.69	26.10	0.20	0.00	2,331	494.79
21.650	0.07	25.43	25.84	0.20	0.00	2,307	494.79
21.700	0.07	25.16	25.57	0.20	0.00	2,283	494.78
21.750	0.07	24.89	25.30	0.20	0.00	2,259	494.77
21.800	0.07	24.62	25.03	0.20	0.00	2,234	494.77
21.850	0.07	24.35	24.76	0.20	0.00	2,210	494.76
21.900	0.07	24.08	24.49	0.20	0.00	2,186	494.76
21.950	0.07	23.81	24.22	0.20	0.00	2,161	494.75
22.000	0.07	23.54	23.95	0.20	0.00	2,137	494.75
22.050	0.07	23.27	23.67	0.20	0.00	2,112	494.74
22.100	0.07	22.99	23.40	0.20	0.00	2,088	494.74
22.150	0.07	22.72	23.13	0.20	0.00	2,063	494.73
22.200	0.07	22.44	22.85	0.20	0.00	2,038	494.73
22.250	0.07	22.17	22.58	0.20	0.00	2,013	494.72
22.300	0.07	21.89	22.30	0.20	0.00	1,989	494.71
22.350	0.07	21.61	22.02	0.20	0.00	1,964	494.71
22.400	0.07	21.34	21.74	0.20	0.00	1,939	494.70
22.450	0.06	21.06	21.47	0.20	0.00	1,914	494.70
22.500	0.06	20.78	21.19	0.20	0.00	1,888	494.69
22.550	0.06	20.50	20.91	0.20	0.00	1,863	494.69
22.600	0.06	20.22	20.63	0.20	0.00	1,838	494.68
22.650	0.06	19.94	20.34	0.20	0.00	1,813	494.67
22.700	0.06	19.66	20.06	0.20	0.00	1,787	494.67
22.750	0.06	19.37	19.78	0.20	0.00	1,762	494.66
22.800	0.06	19.09	19.50	0.20	0.00	1,736	494.66
22.850	0.06	18.80	19.21	0.20	0.00	1,711	494.65
22.900	0.06	18.52	18.93	0.20	0.00	1,685	494.65
22.950	0.06	18.23	18.64	0.20	0.00	1,659	494.64
23.000	0.06	17.95	18.36	0.20	0.00	1,634	494.63
23.050	0.06	17.66	18.07	0.20	0.00	1,608	494.63

Subsection: Pond Routing Calculations (Total Out) | Return Event: 25 years
Label: SUB-6A (OUT) | Storm Event: 25 year
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
23.100	0.06	17.37	17.78	0.20	0.00	1,582	494.62
23.150	0.06	17.09	17.49	0.20	0.00	1,556	494.62
23.200	0.06	16.80	17.20	0.20	0.00	1,530	494.61
23.250	0.06	16.51	16.91	0.20	0.00	1,504	494.61
23.300	0.06	16.22	16.62	0.20	0.00	1,478	494.60
23.350	0.06	15.93	16.33	0.20	0.00	1,452	494.59
23.400	0.06	15.63	16.04	0.20	0.00	1,425	494.59
23.450	0.06	15.34	15.75	0.20	0.00	1,399	494.58
23.500	0.06	15.05	15.46	0.20	0.00	1,373	494.58
23.550	0.06	14.75	15.16	0.20	0.00	1,346	494.57
23.600	0.06	14.46	14.87	0.20	0.00	1,320	494.56
23.650	0.06	14.16	14.57	0.20	0.00	1,293	494.56
23.700	0.06	13.87	14.28	0.20	0.00	1,267	494.55
23.750	0.06	13.57	13.98	0.20	0.00	1,240	494.55
23.800	0.06	13.27	13.68	0.20	0.00	1,213	494.54
23.850	0.05	12.98	13.38	0.20	0.00	1,186	494.53
23.900	0.05	12.68	13.09	0.20	0.00	1,159	494.53
23.950	0.05	12.38	12.79	0.20	0.00	1,132	494.52
24.000	0.05	12.08	12.49	0.20	0.00	1,105	494.52

Stormwater Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out)
Return Event: 100 years
Label: SUB-6A (OUT)
Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
0.000	0.00	0.00	0.00	0.00	0.00	0	494.00
0.050	0.00	0.00	0.00	0.00	0.00	0	494.00
0.100	0.00	0.00	0.00	0.00	0.00	0	494.00
0.150	0.00	0.00	0.00	0.00	0.00	0	494.00
0.200	0.00	0.00	0.00	0.00	0.00	0	494.00
0.250	0.00	0.00	0.00	0.00	0.00	0	494.00
0.300	0.00	0.00	0.00	0.00	0.00	0	494.00
0.350	0.00	0.00	0.00	0.00	0.00	0	494.00
0.400	0.00	0.00	0.00	0.00	0.00	0	494.00
0.450	0.00	0.00	0.00	0.00	0.00	0	494.00
0.500	0.00	0.00	0.00	0.00	0.00	0	494.00
0.550	0.00	0.00	0.00	0.00	0.00	0	494.00
0.600	0.00	0.00	0.00	0.00	0.00	0	494.00
0.650	0.00	0.00	0.00	0.00	0.00	0	494.00
0.700	0.00	0.00	0.00	0.00	0.00	0	494.00
0.750	0.00	0.00	0.00	0.00	0.00	0	494.00
0.800	0.00	0.00	0.00	0.00	0.00	0	494.00
0.850	0.00	0.00	0.00	0.00	0.00	0	494.00
0.900	0.00	0.00	0.00	0.00	0.00	0	494.00
0.950	0.00	0.00	0.00	0.00	0.00	0	494.00
1.000	0.00	0.00	0.00	0.00	0.00	0	494.00
1.050	0.00	0.00	0.00	0.00	0.00	0	494.00
1.100	0.00	0.01	0.01	0.00	0.00	1	494.00
1.150	0.01	0.02	0.02	0.00	0.00	2	494.00
1.200	0.01	0.03	0.03	0.00	0.00	3	494.00
1.250	0.01	0.05	0.05	0.00	0.00	4	494.00
1.300	0.01	0.06	0.07	0.00	0.00	6	494.00
1.350	0.01	0.09	0.09	0.00	0.00	8	494.00
1.400	0.01	0.11	0.11	0.00	0.00	10	494.00
1.450	0.02	0.13	0.14	0.00	0.00	12	494.01
1.500	0.02	0.16	0.17	0.00	0.00	15	494.01
1.550	0.02	0.19	0.19	0.00	0.00	17	494.01
1.600	0.02	0.22	0.23	0.00	0.00	20	494.01
1.650	0.02	0.25	0.26	0.00	0.00	23	494.01
1.700	0.02	0.28	0.29	0.01	0.00	26	494.01
1.750	0.02	0.32	0.33	0.01	0.00	29	494.01
1.800	0.02	0.35	0.37	0.01	0.00	32	494.02
1.850	0.03	0.39	0.40	0.01	0.00	36	494.02
1.900	0.03	0.43	0.44	0.01	0.00	39	494.02
1.950	0.03	0.47	0.48	0.01	0.00	43	494.02
2.000	0.03	0.51	0.52	0.01	0.00	46	494.02
2.050	0.03	0.55	0.57	0.01	0.00	50	494.02

Stormwater Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: SUB-6A (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
2.100	0.03	0.59	0.61	0.01	0.00	54	494.03
2.150	0.03	0.63	0.65	0.01	0.00	58	494.03
2.200	0.03	0.67	0.70	0.01	0.00	61	494.03
2.250	0.04	0.71	0.74	0.01	0.00	65	494.03
2.300	0.04	0.76	0.79	0.01	0.00	70	494.03
2.350	0.04	0.80	0.83	0.01	0.00	74	494.04
2.400	0.04	0.85	0.88	0.02	0.00	78	494.04
2.450	0.04	0.90	0.93	0.02	0.00	82	494.04
2.500	0.04	0.94	0.98	0.02	0.00	87	494.04
2.550	0.04	0.99	1.03	0.02	0.00	91	494.04
2.600	0.04	1.04	1.08	0.02	0.00	95	494.05
2.650	0.05	1.09	1.13	0.02	0.00	100	494.05
2.700	0.05	1.14	1.18	0.02	0.00	105	494.05
2.750	0.05	1.19	1.24	0.02	0.00	109	494.05
2.800	0.05	1.24	1.29	0.02	0.00	114	494.06
2.850	0.05	1.30	1.34	0.02	0.00	119	494.06
2.900	0.05	1.35	1.40	0.02	0.00	124	494.06
2.950	0.05	1.40	1.45	0.03	0.00	128	494.06
3.000	0.05	1.45	1.51	0.03	0.00	133	494.06
3.050	0.05	1.51	1.56	0.03	0.00	138	494.07
3.100	0.06	1.56	1.62	0.03	0.00	143	494.07
3.150	0.06	1.62	1.67	0.03	0.00	148	494.07
3.200	0.06	1.67	1.73	0.03	0.00	153	494.07
3.250	0.06	1.73	1.79	0.03	0.00	158	494.08
3.300	0.06	1.78	1.85	0.03	0.00	163	494.08
3.350	0.06	1.84	1.90	0.03	0.00	168	494.08
3.400	0.06	1.89	1.96	0.03	0.00	173	494.08
3.450	0.06	1.95	2.02	0.04	0.00	179	494.09
3.500	0.07	2.01	2.08	0.04	0.00	184	494.09
3.550	0.07	2.06	2.14	0.04	0.00	189	494.09
3.600	0.07	2.12	2.20	0.04	0.00	194	494.09
3.650	0.07	2.18	2.25	0.04	0.00	199	494.10
3.700	0.07	2.23	2.31	0.04	0.00	205	494.10
3.750	0.07	2.29	2.37	0.04	0.00	210	494.10
3.800	0.07	2.35	2.43	0.04	0.00	215	494.10
3.850	0.07	2.40	2.49	0.04	0.00	220	494.11
3.900	0.07	2.46	2.55	0.04	0.00	226	494.11
3.950	0.07	2.52	2.61	0.05	0.00	231	494.11
4.000	0.08	2.58	2.67	0.05	0.00	236	494.11
4.050	0.08	2.64	2.73	0.05	0.00	241	494.12
4.100	0.08	2.69	2.79	0.05	0.00	247	494.12
4.150	0.08	2.75	2.85	0.05	0.00	252	494.12

Subsection: Pond Routing Calculations (Total Out)
Label: SUB-6A (OUT)
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
4.200	0.08	2.81	2.91	0.05	0.00	257	494.12
4.250	0.08	2.87	2.97	0.05	0.00	263	494.13
4.300	0.08	2.93	3.03	0.05	0.00	268	494.13
4.350	0.08	2.98	3.09	0.05	0.00	273	494.13
4.400	0.08	3.04	3.15	0.05	0.00	279	494.13
4.450	0.09	3.10	3.21	0.06	0.00	284	494.14
4.500	0.09	3.16	3.27	0.06	0.00	289	494.14
4.550	0.09	3.22	3.33	0.06	0.00	295	494.14
4.600	0.09	3.27	3.39	0.06	0.00	300	494.14
4.650	0.09	3.33	3.45	0.06	0.00	305	494.15
4.700	0.09	3.39	3.51	0.06	0.00	311	494.15
4.750	0.09	3.45	3.57	0.06	0.00	316	494.15
4.800	0.09	3.50	3.63	0.06	0.00	321	494.16
4.850	0.09	3.56	3.69	0.06	0.00	326	494.16
4.900	0.09	3.62	3.75	0.07	0.00	332	494.16
4.950	0.10	3.68	3.81	0.07	0.00	337	494.16
5.000	0.10	3.73	3.87	0.07	0.00	342	494.17
5.050	0.10	3.79	3.93	0.07	0.00	347	494.17
5.100	0.10	3.85	3.99	0.07	0.00	353	494.17
5.150	0.10	3.91	4.05	0.07	0.00	358	494.17
5.200	0.10	3.96	4.11	0.07	0.00	363	494.18
5.250	0.10	4.02	4.17	0.07	0.00	368	494.18
5.300	0.10	4.08	4.22	0.07	0.00	374	494.18
5.350	0.10	4.13	4.28	0.07	0.00	379	494.18
5.400	0.10	4.19	4.34	0.08	0.00	384	494.19
5.450	0.11	4.25	4.40	0.08	0.00	389	494.19
5.500	0.11	4.30	4.46	0.08	0.00	394	494.19
5.550	0.11	4.36	4.52	0.08	0.00	400	494.19
5.600	0.11	4.42	4.58	0.08	0.00	405	494.20
5.650	0.11	4.47	4.63	0.08	0.00	410	494.20
5.700	0.11	4.53	4.69	0.08	0.00	415	494.20
5.750	0.11	4.58	4.75	0.08	0.00	420	494.20
5.800	0.11	4.64	4.81	0.08	0.00	425	494.21
5.850	0.11	4.70	4.87	0.08	0.00	430	494.21
5.900	0.11	4.75	4.92	0.09	0.00	435	494.21
5.950	0.12	4.81	4.98	0.09	0.00	440	494.21
6.000	0.12	4.86	5.04	0.09	0.00	445	494.22
6.050	0.12	4.92	5.09	0.09	0.00	451	494.22
6.100	0.12	4.97	5.15	0.09	0.00	456	494.22
6.150	0.12	5.03	5.21	0.09	0.00	461	494.22
6.200	0.12	5.09	5.27	0.09	0.00	466	494.23
6.250	0.12	5.15	5.34	0.09	0.00	472	494.23

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: SUB-6A (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
6.300	0.13	5.22	5.40	0.09	0.00	478	494.23
6.350	0.13	5.28	5.47	0.10	0.00	484	494.23
6.400	0.13	5.35	5.54	0.10	0.00	490	494.24
6.450	0.13	5.42	5.61	0.10	0.00	496	494.24
6.500	0.14	5.49	5.69	0.10	0.00	503	494.24
6.550	0.14	5.56	5.77	0.10	0.00	510	494.25
6.600	0.14	5.64	5.84	0.10	0.00	517	494.25
6.650	0.14	5.72	5.92	0.10	0.00	524	494.25
6.700	0.15	5.80	6.01	0.10	0.00	531	494.26
6.750	0.15	5.88	6.09	0.11	0.00	538	494.26
6.800	0.15	5.96	6.17	0.11	0.00	546	494.26
6.850	0.15	6.04	6.26	0.11	0.00	554	494.27
6.900	0.15	6.13	6.35	0.11	0.00	562	494.27
6.950	0.16	6.22	6.44	0.11	0.00	569	494.28
7.000	0.16	6.30	6.53	0.11	0.00	578	494.28
7.050	0.16	6.39	6.62	0.12	0.00	586	494.28
7.100	0.16	6.48	6.72	0.12	0.00	594	494.29
7.150	0.17	6.58	6.82	0.12	0.00	603	494.29
7.200	0.17	6.67	6.91	0.12	0.00	611	494.30
7.250	0.17	6.77	7.01	0.12	0.00	620	494.30
7.300	0.17	6.86	7.11	0.12	0.00	629	494.30
7.350	0.18	6.96	7.21	0.13	0.00	638	494.31
7.400	0.18	7.06	7.31	0.13	0.00	647	494.31
7.450	0.18	7.16	7.42	0.13	0.00	656	494.32
7.500	0.18	7.26	7.52	0.13	0.00	665	494.32
7.550	0.19	7.36	7.63	0.13	0.00	674	494.33
7.600	0.19	7.46	7.73	0.13	0.00	684	494.33
7.650	0.19	7.57	7.84	0.14	0.00	693	494.34
7.700	0.19	7.67	7.95	0.14	0.00	703	494.34
7.750	0.19	7.78	8.06	0.14	0.00	713	494.34
7.800	0.20	7.89	8.17	0.14	0.00	723	494.35
7.850	0.20	7.99	8.28	0.14	0.00	732	494.35
7.900	0.20	8.10	8.39	0.15	0.00	742	494.36
7.950	0.20	8.21	8.51	0.15	0.00	752	494.36
8.000	0.21	8.32	8.62	0.15	0.00	762	494.37
8.050	0.21	8.43	8.74	0.15	0.00	773	494.37
8.100	0.21	8.55	8.85	0.15	0.00	783	494.38
8.150	0.22	8.66	8.98	0.16	0.00	794	494.38
8.200	0.22	8.79	9.10	0.16	0.00	805	494.39
8.250	0.23	8.91	9.24	0.16	0.00	817	494.39
8.300	0.23	9.05	9.37	0.16	0.00	829	494.40
8.350	0.24	9.19	9.52	0.17	0.00	842	494.41

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: SUB-6A (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
8.400	0.24	9.33	9.67	0.17	0.00	855	494.41
8.450	0.25	9.48	9.82	0.17	0.00	868	494.42
8.500	0.25	9.63	9.98	0.17	0.00	882	494.43
8.550	0.26	9.79	10.14	0.18	0.00	897	494.43
8.600	0.26	9.95	10.31	0.18	0.00	912	494.44
8.650	0.27	10.12	10.48	0.18	0.00	927	494.45
8.700	0.27	10.29	10.66	0.19	0.00	943	494.46
8.750	0.28	10.46	10.84	0.19	0.00	959	494.46
8.800	0.28	10.64	11.03	0.19	0.00	975	494.47
8.850	0.29	10.82	11.21	0.20	0.00	992	494.48
8.900	0.29	11.01	11.41	0.20	0.00	1,009	494.49
8.950	0.30	11.20	11.60	0.20	0.00	1,026	494.50
9.000	0.30	11.39	11.80	0.20	0.00	1,044	494.50
9.050	0.31	11.60	12.01	0.20	0.00	1,063	494.51
9.100	0.32	11.82	12.23	0.20	0.00	1,082	494.51
9.150	0.32	12.05	12.46	0.20	0.00	1,103	494.52
9.200	0.33	12.29	12.69	0.20	0.00	1,124	494.52
9.250	0.33	12.53	12.94	0.20	0.00	1,146	494.53
9.300	0.34	12.79	13.20	0.20	0.00	1,170	494.53
9.350	0.34	13.06	13.47	0.20	0.00	1,194	494.54
9.400	0.35	13.34	13.75	0.20	0.00	1,219	494.54
9.450	0.35	13.64	14.04	0.20	0.00	1,246	494.55
9.500	0.36	13.94	14.35	0.20	0.00	1,273	494.55
9.550	0.36	14.25	14.66	0.20	0.00	1,301	494.56
9.600	0.37	14.57	14.98	0.20	0.00	1,330	494.57
9.650	0.37	14.91	15.31	0.20	0.00	1,360	494.57
9.700	0.38	15.25	15.66	0.20	0.00	1,391	494.58
9.750	0.38	15.60	16.01	0.20	0.00	1,423	494.59
9.800	0.39	15.97	16.38	0.20	0.00	1,456	494.59
9.850	0.39	16.34	16.75	0.20	0.00	1,489	494.60
9.900	0.40	16.73	17.14	0.20	0.00	1,524	494.61
9.950	0.40	17.13	17.54	0.20	0.00	1,560	494.62
10.000	0.41	17.53	17.94	0.20	0.00	1,596	494.63
10.050	0.42	17.95	18.36	0.20	0.00	1,634	494.63
10.100	0.43	18.39	18.80	0.20	0.00	1,673	494.64
10.150	0.43	18.84	19.25	0.20	0.00	1,714	494.65
10.200	0.44	19.31	19.72	0.20	0.00	1,756	494.66
10.250	0.45	19.80	20.21	0.20	0.00	1,800	494.67
10.300	0.47	20.31	20.72	0.20	0.00	1,847	494.68
10.350	0.48	20.85	21.26	0.20	0.00	1,895	494.69
10.400	0.49	21.40	21.81	0.20	0.00	1,945	494.70
10.450	0.50	21.98	22.39	0.20	0.00	1,997	494.72

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: SUB-6A (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
10.500	0.51	22.58	22.99	0.20	0.00	2,051	494.73
10.550	0.52	23.20	23.61	0.20	0.00	2,106	494.74
10.600	0.53	23.84	24.25	0.20	0.00	2,164	494.75
10.650	0.54	24.51	24.91	0.20	0.00	2,224	494.77
10.700	0.55	25.19	25.60	0.20	0.00	2,286	494.78
10.750	0.56	25.90	26.31	0.20	0.00	2,349	494.80
10.800	0.57	26.63	27.03	0.20	0.00	2,415	494.81
10.850	0.58	27.38	27.78	0.20	0.00	2,482	494.83
10.900	0.60	28.15	28.56	0.20	0.00	2,552	494.84
10.950	0.61	28.94	29.35	0.20	0.00	2,623	494.86
11.000	0.62	29.76	30.16	0.20	0.00	2,696	494.87
11.050	0.63	30.60	31.01	0.20	0.00	2,772	494.89
11.100	0.66	31.49	31.90	0.20	0.00	2,852	494.91
11.150	0.69	32.43	32.84	0.20	0.00	2,937	494.93
11.200	0.73	33.45	33.86	0.20	0.00	3,029	494.95
11.250	0.77	34.55	34.96	0.20	0.00	3,128	494.97
11.300	0.81	35.72	36.13	0.20	0.00	3,234	494.99
11.350	0.85	36.98	37.39	0.20	0.00	3,347	495.02
11.400	0.90	38.32	38.73	0.20	0.00	3,467	495.05
11.450	0.93	39.74	40.15	0.20	0.00	3,595	495.08
11.500	0.98	41.25	41.66	0.20	0.00	3,731	495.11
11.550	1.11	42.93	43.33	0.20	0.00	3,882	495.14
11.600	1.32	44.90	45.35	0.20	0.02	4,064	495.19
11.650	1.60	47.30	47.82	0.20	0.05	4,287	495.24
11.700	2.00	50.32	50.90	0.20	0.09	4,561	495.30
11.750	2.35	53.99	54.67	0.20	0.14	4,893	495.38
11.800	2.77	58.32	59.10	0.20	0.19	5,285	495.47
11.850	3.13	63.19	64.21	0.20	0.30	5,740	495.59
11.900	3.56	68.58	69.88	0.20	0.45	6,249	495.71
11.950	4.67	75.16	76.81	0.20	0.62	6,851	495.87
12.000	6.48	84.10	86.32	0.20	0.90	7,682	496.08
12.050	7.15	94.65	97.73	0.20	1.34	8,677	496.37
12.100	7.34	104.95	109.14	0.20	1.89	9,701	496.70
12.150	6.45	113.41	118.74	0.20	2.46	10,447	497.01
12.200	4.70	118.31	124.56	0.20	2.92	10,929	497.24
12.250	3.85	120.23	126.86	0.20	3.11	11,119	497.34
12.300	3.28	120.66	127.36	0.20	3.15	11,161	497.36
12.350	2.88	120.19	126.81	0.20	3.10	11,115	497.33
12.400	2.44	119.10	125.51	0.20	3.00	11,008	497.28
12.450	2.08	117.52	123.63	0.20	2.85	10,852	497.21
12.500	1.66	115.53	121.26	0.20	2.66	10,656	497.11
12.550	1.39	113.29	118.58	0.20	2.45	10,434	497.00

Stormwater Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: SUB-6A (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
12.600	1.14	110.85	115.82	0.20	2.28	10,230	496.91
12.650	1.03	108.37	113.02	0.20	2.12	10,024	496.82
12.700	0.96	106.03	110.36	0.20	1.96	9,818	496.73
12.750	0.92	103.86	107.91	0.20	1.82	9,583	496.65
12.800	0.87	101.87	105.66	0.20	1.69	9,367	496.58
12.850	0.84	100.04	103.58	0.20	1.57	9,168	496.51
12.900	0.79	98.28	101.67	0.20	1.49	9,003	496.46
12.950	0.76	96.59	99.83	0.20	1.42	8,851	496.42
13.000	0.71	94.95	98.06	0.20	1.35	8,704	496.37
13.050	0.68	93.36	96.34	0.20	1.29	8,562	496.33
13.100	0.65	91.84	94.70	0.20	1.22	8,426	496.29
13.150	0.64	90.40	93.13	0.20	1.16	8,296	496.25
13.200	0.62	89.03	91.65	0.20	1.11	8,163	496.22
13.250	0.61	87.75	90.27	0.20	1.05	8,038	496.18
13.300	0.60	86.54	88.96	0.20	1.01	7,920	496.15
13.350	0.59	85.41	87.74	0.20	0.96	7,810	496.12
13.400	0.58	84.34	86.58	0.20	0.91	7,705	496.09
13.450	0.57	83.34	85.49	0.20	0.87	7,607	496.06
13.500	0.56	82.39	84.47	0.20	0.83	7,514	496.04
13.550	0.55	81.49	83.50	0.20	0.80	7,427	496.01
13.600	0.54	80.64	82.58	0.20	0.77	7,345	495.99
13.650	0.53	79.80	81.70	0.20	0.74	7,270	495.97
13.700	0.52	78.99	80.85	0.20	0.72	7,197	495.95
13.750	0.51	78.20	80.01	0.20	0.70	7,125	495.94
13.800	0.49	77.43	79.20	0.20	0.68	7,055	495.92
13.850	0.48	76.68	78.41	0.20	0.66	6,987	495.90
13.900	0.47	75.94	77.64	0.20	0.64	6,921	495.88
13.950	0.46	75.23	76.88	0.20	0.62	6,856	495.87
14.000	0.45	74.52	76.14	0.20	0.60	6,793	495.85
14.050	0.44	73.84	75.42	0.20	0.59	6,731	495.83
14.100	0.43	73.17	74.72	0.20	0.57	6,670	495.82
14.150	0.43	72.52	74.03	0.20	0.55	6,612	495.80
14.200	0.42	71.90	73.37	0.20	0.53	6,555	495.79
14.250	0.42	71.29	72.74	0.20	0.52	6,501	495.78
14.300	0.41	70.71	72.12	0.20	0.50	6,448	495.76
14.350	0.41	70.15	71.53	0.20	0.49	6,397	495.75
14.400	0.40	69.60	70.96	0.20	0.47	6,345	495.74
14.450	0.40	69.07	70.40	0.20	0.46	6,295	495.72
14.500	0.39	68.56	69.86	0.20	0.45	6,247	495.71
14.550	0.39	68.07	69.34	0.20	0.43	6,201	495.70
14.600	0.38	67.59	68.84	0.20	0.42	6,155	495.69
14.650	0.38	67.12	68.35	0.20	0.41	6,111	495.68

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: SUB-6A (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
14.700	0.37	66.67	67.87	0.20	0.40	6,069	495.67
14.750	0.37	66.23	67.41	0.20	0.38	6,028	495.66
14.800	0.36	65.81	66.96	0.20	0.37	5,987	495.65
14.850	0.36	65.40	66.53	0.20	0.36	5,948	495.64
14.900	0.35	64.99	66.10	0.20	0.35	5,910	495.63
14.950	0.35	64.60	65.69	0.20	0.34	5,873	495.62
15.000	0.34	64.22	65.29	0.20	0.33	5,837	495.61
15.050	0.34	63.85	64.90	0.20	0.32	5,802	495.60
15.100	0.33	63.48	64.51	0.20	0.31	5,768	495.59
15.150	0.33	63.13	64.14	0.20	0.30	5,734	495.58
15.200	0.32	62.78	63.78	0.20	0.29	5,702	495.58
15.250	0.32	62.44	63.42	0.20	0.28	5,670	495.57
15.300	0.31	62.11	63.07	0.20	0.27	5,639	495.56
15.350	0.31	61.79	62.73	0.20	0.27	5,608	495.55
15.400	0.30	61.47	62.39	0.20	0.26	5,578	495.55
15.450	0.30	61.16	62.07	0.20	0.25	5,549	495.54
15.500	0.29	60.85	61.75	0.20	0.24	5,520	495.53
15.550	0.29	60.55	61.43	0.20	0.23	5,491	495.52
15.600	0.28	60.26	61.12	0.20	0.23	5,464	495.52
15.650	0.28	59.97	60.82	0.20	0.22	5,436	495.51
15.700	0.27	59.69	60.52	0.20	0.21	5,410	495.50
15.750	0.26	59.41	60.22	0.20	0.20	5,383	495.50
15.800	0.26	59.12	59.93	0.20	0.20	5,358	495.49
15.850	0.25	58.83	59.64	0.20	0.20	5,332	495.49
15.900	0.25	58.54	59.34	0.20	0.19	5,305	495.48
15.950	0.24	58.25	59.04	0.20	0.19	5,279	495.47
16.000	0.24	57.95	58.73	0.20	0.19	5,252	495.47
16.050	0.24	57.66	58.43	0.20	0.18	5,225	495.46
16.100	0.23	57.36	58.12	0.20	0.18	5,198	495.45
16.150	0.23	57.06	57.82	0.20	0.17	5,171	495.45
16.200	0.23	56.77	57.52	0.20	0.17	5,144	495.44
16.250	0.22	56.47	57.21	0.20	0.17	5,118	495.44
16.300	0.22	56.18	56.92	0.20	0.16	5,092	495.43
16.350	0.22	55.90	56.62	0.20	0.16	5,066	495.42
16.400	0.22	55.61	56.33	0.20	0.16	5,040	495.42
16.450	0.21	55.33	56.04	0.20	0.15	5,015	495.41
16.500	0.21	55.05	55.76	0.20	0.15	4,989	495.40
16.550	0.21	54.77	55.47	0.20	0.15	4,964	495.40
16.600	0.21	54.50	55.19	0.20	0.14	4,939	495.39
16.650	0.21	54.23	54.91	0.20	0.14	4,915	495.39
16.700	0.20	53.96	54.64	0.20	0.14	4,890	495.38
16.750	0.20	53.69	54.36	0.20	0.13	4,866	495.38

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: SUB-6A (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
16.800	0.20	53.43	54.09	0.20	0.13	4,842	495.37
16.850	0.20	53.16	53.82	0.20	0.13	4,819	495.36
16.900	0.19	52.90	53.55	0.20	0.12	4,795	495.36
16.950	0.19	52.64	53.29	0.20	0.12	4,772	495.35
17.000	0.19	52.39	53.03	0.20	0.12	4,748	495.35
17.050	0.19	52.13	52.76	0.20	0.11	4,725	495.34
17.100	0.19	51.88	52.51	0.20	0.11	4,702	495.34
17.150	0.18	51.63	52.25	0.20	0.11	4,680	495.33
17.200	0.18	51.38	51.99	0.20	0.10	4,657	495.33
17.250	0.18	51.13	51.74	0.20	0.10	4,635	495.32
17.300	0.18	50.89	51.49	0.20	0.10	4,613	495.32
17.350	0.17	50.64	51.24	0.20	0.09	4,591	495.31
17.400	0.17	50.40	50.99	0.20	0.09	4,569	495.30
17.450	0.17	50.16	50.74	0.20	0.09	4,547	495.30
17.500	0.17	49.92	50.50	0.20	0.08	4,525	495.29
17.550	0.17	49.68	50.26	0.20	0.08	4,504	495.29
17.600	0.16	49.45	50.01	0.20	0.08	4,483	495.28
17.650	0.16	49.21	49.77	0.20	0.08	4,461	495.28
17.700	0.16	48.98	49.53	0.20	0.07	4,440	495.27
17.750	0.16	48.75	49.30	0.20	0.07	4,419	495.27
17.800	0.15	48.52	49.06	0.20	0.07	4,399	495.26
17.850	0.15	48.29	48.83	0.20	0.06	4,378	495.26
17.900	0.15	48.06	48.59	0.20	0.06	4,357	495.25
17.950	0.15	47.84	48.36	0.20	0.06	4,337	495.25
18.000	0.15	47.61	48.13	0.20	0.06	4,316	495.24
18.050	0.14	47.39	47.90	0.20	0.05	4,295	495.24
18.100	0.14	47.17	47.67	0.20	0.05	4,274	495.24
18.150	0.14	46.95	47.45	0.20	0.05	4,254	495.23
18.200	0.14	46.73	47.23	0.20	0.04	4,234	495.23
18.250	0.14	46.52	47.01	0.20	0.04	4,215	495.22
18.300	0.14	46.32	46.80	0.20	0.04	4,195	495.22
18.350	0.14	46.11	46.59	0.20	0.04	4,177	495.21
18.400	0.14	45.91	46.39	0.20	0.03	4,158	495.21
18.450	0.14	45.72	46.19	0.20	0.03	4,140	495.20
18.500	0.14	45.52	45.99	0.20	0.03	4,122	495.20
18.550	0.14	45.34	45.80	0.20	0.03	4,105	495.20
18.600	0.14	45.15	45.61	0.20	0.02	4,087	495.19
18.650	0.13	44.97	45.42	0.20	0.02	4,070	495.19
18.700	0.13	44.79	45.24	0.20	0.02	4,054	495.18
18.750	0.13	44.61	45.06	0.20	0.02	4,037	495.18
18.800	0.13	44.44	44.88	0.20	0.02	4,021	495.18
18.850	0.13	44.27	44.70	0.20	0.01	4,006	495.17

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: SUB-6A (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
18.900	0.13	44.10	44.53	0.20	0.01	3,990	495.17
18.950	0.13	43.94	44.36	0.20	0.01	3,975	495.17
19.000	0.13	43.78	44.20	0.20	0.01	3,960	495.16
19.050	0.13	43.62	44.04	0.20	0.01	3,945	495.16
19.100	0.13	43.46	43.88	0.20	0.00	3,931	495.16
19.150	0.13	43.31	43.72	0.20	0.00	3,916	495.15
19.200	0.13	43.15	43.56	0.20	0.00	3,902	495.15
19.250	0.13	43.00	43.41	0.20	0.00	3,888	495.15
19.300	0.13	42.85	43.25	0.20	0.00	3,874	495.14
19.350	0.13	42.69	43.10	0.20	0.00	3,860	495.14
19.400	0.12	42.53	42.94	0.20	0.00	3,846	495.14
19.450	0.12	42.37	42.78	0.20	0.00	3,832	495.13
19.500	0.12	42.21	42.62	0.20	0.00	3,817	495.13
19.550	0.12	42.05	42.46	0.20	0.00	3,803	495.13
19.600	0.12	41.89	42.29	0.20	0.00	3,788	495.12
19.650	0.12	41.72	42.13	0.20	0.00	3,773	495.12
19.700	0.12	41.55	41.96	0.20	0.00	3,758	495.12
19.750	0.12	41.39	41.79	0.20	0.00	3,743	495.11
19.800	0.12	41.22	41.63	0.20	0.00	3,728	495.11
19.850	0.12	41.05	41.46	0.20	0.00	3,713	495.10
19.900	0.12	40.88	41.28	0.20	0.00	3,697	495.10
19.950	0.12	40.70	41.11	0.20	0.00	3,682	495.10
20.000	0.12	40.53	40.94	0.20	0.00	3,666	495.09
20.050	0.12	40.35	40.76	0.20	0.00	3,650	495.09
20.100	0.12	40.18	40.59	0.20	0.00	3,634	495.09
20.150	0.11	40.00	40.41	0.20	0.00	3,618	495.08
20.200	0.11	39.82	40.23	0.20	0.00	3,602	495.08
20.250	0.11	39.64	40.05	0.20	0.00	3,586	495.08
20.300	0.11	39.46	39.87	0.20	0.00	3,570	495.07
20.350	0.11	39.28	39.69	0.20	0.00	3,554	495.07
20.400	0.11	39.10	39.51	0.20	0.00	3,537	495.06
20.450	0.11	38.91	39.32	0.20	0.00	3,521	495.06
20.500	0.11	38.73	39.14	0.20	0.00	3,504	495.06
20.550	0.11	38.54	38.95	0.20	0.00	3,487	495.05
20.600	0.11	38.36	38.76	0.20	0.00	3,470	495.05
20.650	0.11	38.17	38.58	0.20	0.00	3,454	495.04
20.700	0.11	37.98	38.39	0.20	0.00	3,437	495.04
20.750	0.11	37.79	38.20	0.20	0.00	3,419	495.04
20.800	0.11	37.60	38.01	0.20	0.00	3,402	495.03
20.850	0.11	37.41	37.81	0.20	0.00	3,385	495.03
20.900	0.11	37.21	37.62	0.20	0.00	3,368	495.02
20.950	0.11	37.02	37.43	0.20	0.00	3,350	495.02

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: SUB-6A (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
21.000	0.11	36.83	37.23	0.20	0.00	3,333	495.02
21.050	0.11	36.63	37.04	0.20	0.00	3,315	495.01
21.100	0.11	36.43	36.84	0.20	0.00	3,297	495.01
21.150	0.10	36.24	36.64	0.20	0.00	3,280	495.00
21.200	0.10	36.04	36.45	0.20	0.00	3,262	495.00
21.250	0.10	35.84	36.25	0.20	0.00	3,244	495.00
21.300	0.10	35.64	36.04	0.20	0.00	3,226	494.99
21.350	0.10	35.44	35.84	0.20	0.00	3,208	494.99
21.400	0.10	35.23	35.64	0.20	0.00	3,189	494.98
21.450	0.10	35.03	35.44	0.20	0.00	3,171	494.98
21.500	0.10	34.82	35.23	0.20	0.00	3,152	494.98
21.550	0.10	34.62	35.03	0.20	0.00	3,134	494.97
21.600	0.10	34.41	34.82	0.20	0.00	3,115	494.97
21.650	0.10	34.20	34.61	0.20	0.00	3,097	494.96
21.700	0.10	33.99	34.40	0.20	0.00	3,078	494.96
21.750	0.10	33.78	34.19	0.20	0.00	3,059	494.95
21.800	0.10	33.57	33.98	0.20	0.00	3,040	494.95
21.850	0.10	33.36	33.77	0.20	0.00	3,021	494.95
21.900	0.10	33.15	33.56	0.20	0.00	3,002	494.94
21.950	0.10	32.94	33.34	0.20	0.00	2,983	494.94
22.000	0.10	32.72	33.13	0.20	0.00	2,963	494.93
22.050	0.10	32.51	32.91	0.20	0.00	2,944	494.93
22.100	0.10	32.29	32.70	0.20	0.00	2,924	494.92
22.150	0.09	32.07	32.48	0.20	0.00	2,905	494.92
22.200	0.09	31.85	32.26	0.20	0.00	2,885	494.92
22.250	0.09	31.63	32.04	0.20	0.00	2,865	494.91
22.300	0.09	31.41	31.82	0.20	0.00	2,845	494.91
22.350	0.09	31.19	31.60	0.20	0.00	2,825	494.90
22.400	0.09	30.97	31.37	0.20	0.00	2,805	494.90
22.450	0.09	30.74	31.15	0.20	0.00	2,785	494.89
22.500	0.09	30.52	30.93	0.20	0.00	2,765	494.89
22.550	0.09	30.29	30.70	0.20	0.00	2,745	494.88
22.600	0.09	30.07	30.47	0.20	0.00	2,724	494.88
22.650	0.09	29.84	30.25	0.20	0.00	2,704	494.88
22.700	0.09	29.61	30.02	0.20	0.00	2,683	494.87
22.750	0.09	29.38	29.79	0.20	0.00	2,663	494.87
22.800	0.09	29.15	29.56	0.20	0.00	2,642	494.86
22.850	0.09	28.92	29.33	0.20	0.00	2,621	494.86
22.900	0.09	28.68	29.09	0.20	0.00	2,600	494.85
22.950	0.09	28.45	28.86	0.20	0.00	2,579	494.85
23.000	0.09	28.22	28.62	0.20	0.00	2,558	494.84
23.050	0.09	27.98	28.39	0.20	0.00	2,537	494.84

Stormwater Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: SUB-6A (OUT) Storm Event: 100 year
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
23.100	0.08	27.74	28.15	0.20	0.00	2,515	494.83
23.150	0.08	27.51	27.91	0.20	0.00	2,494	494.83
23.200	0.08	27.27	27.67	0.20	0.00	2,472	494.82
23.250	0.08	27.03	27.44	0.20	0.00	2,451	494.82
23.300	0.08	26.79	27.19	0.20	0.00	2,429	494.81
23.350	0.08	26.54	26.95	0.20	0.00	2,407	494.81
23.400	0.08	26.30	26.71	0.20	0.00	2,386	494.80
23.450	0.08	26.06	26.47	0.20	0.00	2,364	494.80
23.500	0.08	25.81	26.22	0.20	0.00	2,342	494.79
23.550	0.08	25.57	25.98	0.20	0.00	2,320	494.79
23.600	0.08	25.32	25.73	0.20	0.00	2,297	494.78
23.650	0.08	25.07	25.48	0.20	0.00	2,275	494.78
23.700	0.08	24.83	25.23	0.20	0.00	2,253	494.77
23.750	0.08	24.58	24.98	0.20	0.00	2,230	494.77
23.800	0.08	24.32	24.73	0.20	0.00	2,208	494.76
23.850	0.08	24.07	24.48	0.20	0.00	2,185	494.76
23.900	0.08	23.82	24.23	0.20	0.00	2,162	494.75
23.950	0.08	23.57	23.97	0.20	0.00	2,139	494.75
24.000	0.08	23.31	23.72	0.20	0.00	2,116	494.74

Summary for Hydrograph Addition at 'SUB-6A'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C-6A

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PDA-1C-6A	8,259	12.100	2.14
Flow (In)	SUB-6A	8,259	12.100	2.14

Subsection: Pond Inflow Summary | Return Event: 10 years
Label: SUB-6A (IN) | Storm Event: 10 year
Scenario: Post-Development 10 year

Summary for Hydrograph Addition at 'SUB-6A'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C-6A

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PDA-1C-6A	16,312	12.100	4.06
Flow (In)	SUB-6A	16,312	12.100	4.06

Subsection: Pond Inflow Summary — Return Event: 25 years
Label: SUB-6A (IN) — Storm Event: 25 year
Scenario: Post-Development 25 year

Summary for Hydrograph Addition at 'SUB-6A'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C-6A

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PDA-1C-6A	20,919	12.100	5.14
Flow (In)	SUB-6A	20,919	12.100	5.14

Subsection: Pond Inflow Summary | Return Event: 100 years
Label: SUB-6A (IN) | Storm Event: 100 year
Scenario: Post-Development 100 year

Summary for Hydrograph Addition at 'SUB-6A'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C-6A

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PDA-1C-6A	30,362	12.100	7.34
Flow (In)	SUB-6A	30,362	12.100	7.34

APPENDIX B

NYSDEC STORMWATER SIZING CALCULATIONS

RUNOFF REDUCTION VOLUME, WATER QUALITY VOLUME AND STREAM CHANNEL PROTECTION SIZING CALCULATIONS

The Summit Club at Armonk
Bedford Road
Town of North Castle, NY

JMC Project:	**20101**
Drawing Reference:	**DA-1, DA-2**
Computed by:	**MT**
Checked by:	**XX**

Date Printed: 3/8/2024

WATER QUALITY VOLUME WORKSHEET
FOR REDEVELOPMENT PROJECTS

JMC Project: **20101**
Design Point: **1C**

The Summit Club at Armonk

Drainage Area: **DA-1C-2A,2B,5,6A,RB,7,10A,1(**

Initial Water Quality Treatment Volume

DESCRIPTION	Design Storm	Area	Existing Impervious Area	New Impervious Area	Percent Impervious	Runoff Coefficient	Total Required WQ Volume
SYMBOL	P	A	I_E	I_N	%I	R_V	WQ_V
VALUE	1.5	98.03	8.49	4.03	12.77	0.164946214	**88,043**
UNITS	In	Ac	Ac	Ac	%	CF	CF
VALUE	Enhanced Phosphorus Removal (WQ_V = 1-yr Storm Runoff)						

Runoff Reduction Techniques (Area)

DESCRIPTION	Total Area	Impervious Area
SYMBOL	A	I
Conservation of Natural Areas		
Sheetflow to Riparian Buffers or Filter Strips		
Vegetated Swale		
Tree Planting / Tree Pit		
Disconnection of Rooftop Runoff		
Stream Daylighting		
TOTAL		
UNITS	Ac	Ac

Net Water Quality Treatment Volume for Standard Practices (25% I_E + 100% I_N)

DESCRIPTION	Design Storm	Area	Existing Impervious Area	New Impervious Area	Percent Impervious	Runoff Coefficient	Total Required WQ Volume
SYMBOL	P	A	I_E	I_N	%I	R_V	WQ_V
VALUE	1.5	98.03	2.12	4.03	6.27	0.106457274	**56,824**
UNITS	In	Ac	Ac	Ac	%	CF	CF

Net Water Quality Treatment Volume = Adjusted WQv - Provided RRv

Initial Water Quality Treatment Volume	88,043	CF
Adjusted Water Quality Treatment Volume	56,824	CF
Provided Runoff Reduction Volume	35,975	CF
Net Water Quality Treatment Volume	20,848	CF

Date Printed: 3/8/2024

RUNOFF REDUCTION VOLUME WORKSHEET

JMC Project:	**20101**
Design Point:	**1C**

The Summit Club at Armonk	Drainage Area:	**PDA-1C's**

Total Water Quality Treatment Volume

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Initial Water Quality Volume	WQ_V	**88,043**	CF
Adjusted Water Quality Volume	WQ_V	**56,824**	CF

Minimum Runoff Reduction Volume

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number] **or** [1-yr Storm Depth]	P	1.5	In
Total Area of *new* Impervious Cover	Aic	4.03	Ac
Hydrologic Soil Group (HSG) Specific Reduction Factor	S	0.35	
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.95	CF
Impervious Cover targeted for Runoff Reduction [S x Aic]	Ai	1.41	Ac
TOTAL VOLUME Required [$RR_V = (P \times R_V \times Ai) / 12$]	RR_V	**7,289**	CF

Runoff Reduction Techniques (Volume)

GREEN INFRASTRUCTURE PRACTICE / SMP	*SYMBOL*	*VALUE*	*UNITS*
Infiltration Basin 1C-2A	RR_V	16,537	CF
Infiltration Basin 1C-10A	RR_V	14,753	CF
Subsurface Infiltration System 1C-6A	RR_V	4,685	CF
	RR_V		CF
	RR_V		CF
	RR_V		CF
	RR_V		CF
	RR_V		CF
	RR_V		CF
	RR_V		CF
	RR_V		CF
TOTAL	RR_V	**35,975**	CF

Runoff Reduction

Is Total RR_V > Adjusted WQ_V?	**NO**
Is Total RR_V > Minimum RR_V?	**YES**

Date Printed: 3/8/2024

INFILTRATION WORKSHEET

JMC Project:	**20101**
Design Point:	**1C-2**
Drainage Area:	**PDA-1C-2A**

Infiltration Basin 1C-2A

Site Data for Drainage Area to be Treated by Practice			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number]	P	1.5	In
Impervious Area	I	3.00	Ac
Area	A	6.71	Ac
Percent Impervious	%I	44.71	%
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.45	CF
TOTAL VOLUME Required [WQ_V = (P x R_V x A) / 12]	WQ_V	**16,537**	CF
Design Storm [1-yr Storm Depth]	P		In
TOTAL VOLUME Required *(TMDL)* [WQ_V = 1-yr Storm Runoff]	WQ_V		CF

Water Quality Volume Provided			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
1 Year Storm Entering System	Q_1 IN	26,823	CF
1 Year Storm Exiting System	Q_1OUT	0	CF
Runoff Volume Infiltrated		**26,823**	CF

Runoff Reduction			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
100% Runoff Reduction capacity	RR_V	**26,823**	CF
Total Area of Infiltration Basin Provided	A_p	**8,634.00**	SF

Runoff Reduction			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
100% Runoff Reduction capacity	RR_V	**16,537**	CF

INFILTRATION WORKSHEET

JMC Project:	**20101**
Design Point:	**1C-10**
Drainage Area:	**PDA-1C-10A**

Infiltration Basin 1C-10A

Site Data for Drainage Area to be Treated by Practice			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number]	P	1.5	In
Impervious Area	I	2.62	Ac
Area	A	7.08	Ac
Percent Impervious	%I	36.96	%
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.38	CF
TOTAL VOLUME Required [WQ_V = (P x R_V x A) / 12]	WQ_V	**14,753**	CF
Design Storm [1-yr Storm Depth]	P		In
TOTAL VOLUME Required *(TMDL)* [WQ_V = 1-yr Storm Runoff]	WQ_V		CF

Water Quality Volume Provided			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
1 Year Storm Entering System	Q_1 IN	23,970	CF
1 Year Storm Exiting System	Q_1OUT	0	CF
Runoff Volume Infiltrated		**23,970**	CF

Runoff Reduction			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
100% Runoff Reduction capacity	RR_V	**23,970**	CF
Total Area of Infiltration Basin Provided	A_p	**3,892.00**	SF

Runoff Reduction			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
100% Runoff Reduction capacity	RR_V	**14,753**	CF

Date Printed: 3/8/2024

INFILTRATION WORKSHEET

JMC Project:	**20101**
Design Point:	**1C-6**
Drainage Area:	**PDA-1C-6A**

Subsurface Infiltration System 1C-6A

Site Data for Drainage Area to be Treated by Practice			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number]	P	1.5	In
Impervious Area	I	0.90	Ac
Area	A	0.97	Ac
Percent Impervious	%I	93.33	%
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.89	CF
TOTAL VOLUME Required [WQ_V = (P x R_V x A) / 12]	WQ_V	**4,685**	CF
Design Storm [1-yr Storm Depth]	P		In
TOTAL VOLUME Required *(TMDL)* [WQ_V = 1-yr Storm Runoff]	WQ_V		CF

Water Quality Volume Provided			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
1 Year Storm Entering System	Q_1 IN	8,259	CF
1 Year Storm Exiting System	Q_1OUT	0	CF
Runoff Volume Infiltrated		**8,259**	CF

Runoff Reduction			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
100% Runoff Reduction capacity	RR_V	**8,259**	CF
Total Area of Infiltration Basin Provided	A_p	**5,174.00**	SF

Runoff Reduction			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
100% Runoff Reduction capacity	RR_V	**4,685**	CF

Date Printed: 3/8/2024

PROPRIETARY PRACTICE WORKSHEET

JMC Project:	**20101**
Design Point:	**1C-2**
Sub-Drainage Area:	**PDA-1C-2B-a**

Water Quality Structure 1C-2B-a

Rainfall Distribution Type: **III**

Coefficients for the equation unit peak $[R = I_a / P]$ $[C_i = A \times R^2 + B \times R + C]$		**A**	**B**	**C**
	C_0	-1.774	0.3301	2.4577
	C_1	1.8622	-0.7397	-0.4627
	C_2	-0.0648	0.2276	-0.1932

Site Data for Drainage Area to be Treated by Practice

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number]	P	1.5	In
Impervious Area	I	0.91	Ac
Area	A	1.13	Ac
Percent Impervious	%I	79.87	%
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.77	CF
TOTAL VOLUME Required $[WQ_V = (P \times R_V \times A) / 12]$	WQ_V	**4,749**	CF
Design Storm [1-yr Storm Depth]	P		In
TOTAL VOLUME Required *(TMDL)* $[WQ_V$ = 1-yr Storm Runoff]	WQ_V		CF

Water Quality Peak Flow Calculation

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Volume	WQ_V	4,749	CF
Design Storm [90% Rainfall Event Number] or [1-yr Storm Depth]	P	1.5	In
Time of Concentration	t_c	0.1000	Hr
Runoff Volume $[Q = WQ_V / (A \times 3630)]$	Q	1.15	In
Curve Number $[CN = 1000 / (10 + 5P + 10Q - 10 \times (Q^2 + 1.25 QP)^{½}]$	CN	96.67	
Curve Number	CN	97	
Initial Abstraction $[I_a = 200 / CN - 2]$	I_a	0.07	In
Ratio $[R = I_a / P]$	R	0.05	
$C_0 = A \times R^2 + B \times R + C$	C_0	2.47	
$C_1 = A \times R2 + B \times R + C$	C_1	-0.49	
$C_2 = A \times R2 + B \times R + C$	C_2	-0.18	
Unit Peak Discharge	q_u	601.20	$cfs/mi^2/in$
Peak Discharge $[Q_p = q_u \times A \times Q / 640]$	Q_p	**1.23**	cfs

Proposed Device

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Peak Flow Provided	Q_p	**1.8**	cfs
Water Quality Volume Provided $[WQ_V = 640 \times 3600 \times Q_P / q_u]$	WQ_V	**6,898**	CF
Model Designation		CS-4	
Quantity		1	

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PROPRIETARY PRACTICE WORKSHEET

JMC Project:	**20101**
Design Point:	**1C-2**
Sub-Drainage Area:	**PDA-1C-2B-b**

Water Quality Structure 1C-2B-b

Rainfall Distribution Type:	**III**

Coefficients for the equation unit peak
[$R = I_a / P$]
[$C_i = A \times R^2 + B \times R + C$]

	A	B	C
C_0	-1.774	0.3301	2.4577
C_1	1.8622	-0.7397	-0.4627
C_2	-0.0648	0.2276	-0.1932

Site Data for Drainage Area to be Treated by Practice

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number]	P	1.5	In
Impervious Area	I	2.50	Ac
Area	A	3.52	Ac
Percent Impervious	%I	71.21	%
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.69	CF
TOTAL VOLUME Required [$WQ_V = (P \times R_V \times A) / 12$]	WQ_V	**13,233**	CF
Design Storm [1-yr Storm Depth]	P		In
TOTAL VOLUME Required *(TMDL)* [WQ_V = 1-yr Storm Runoff]	WQ_V		CF

Water Quality Peak Flow Calculation

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Volume	WQ_V	13,233	CF
Design Storm [90% Rainfall Event Number] **or** [1-yr Storm Depth]	P	1.5	In
Time of Concentration	t_c	0.1000	Hr
Runoff Volume [$Q = WQ_V / (A \times 3630)$]	Q	1.04	In
Curve Number [$CN = 1000 / (10 + 5P + 10Q - 10 \times (Q^2 + 1.25\,QP)^{½}$]	CN	95.30	
Curve Number	CN	95	
Initial Abstraction [$I_a = 200 / CN - 2$]	I_a	0.10	In
Ratio [$R = I_a / P$]	R	0.07	
$C_0 = A \times R^2 + B \times R + C$	C_0	2.47	
$C_1 = A \times R2 + B \times R + C$	C_1	-0.50	
$C_2 = A \times R2 + B \times R + C$	C_2	-0.18	
Unit Peak Discharge	q_u	625.95	cfs/mi^2/in
Peak Discharge [$Q_p = q_u \times A \times Q / 640$]	Q_p	**3.57**	cfs

Proposed Device

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Peak Flow Provided	Q_p	**4.1**	cfs
Water Quality Volume Provided [$WQ_V = 640 \times 3600 \times Q_P / q_u$]	WQ_V	**14,907**	CF
Model Designation		CS-6	
Quantity		1	

Date Printed: 3/8/2024

PROPRIETARY PRACTICE WORKSHEET

JMC Project:	**20101**
Design Point:	**1C**
Drainage Area:	**PDA-1C-2A**

Water Quality Structure 1C-2A (Pretreatment)

Rainfall Distribution Type: **III**

Coefficients for the equation unit peak $[R = I_a / P]$ $[C_i = A \times R^2 + B \times R + C]$		A	B	C
	C_0	-1.774	0.3301	2.4577
	C_1	1.8622	-0.7397	-0.4627
	C_2	-0.0648	0.2276	-0.1932

Site Data for Drainage Area to be Treated by Practice

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number]	P	1.5	In
Impervious Area	I	3.00	Ac
Area	A	6.71	Ac
Percent Impervious	%I	44.71	%
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.45	CF
TOTAL VOLUME Required $[WQ_V = (P \times R_V \times A) / 12]$	WQ_V	**16,537**	CF
Design Storm [1-yr Storm Depth]	P		In
TOTAL VOLUME Required *(TMDL)* $[WQ_V$ = 1-yr Storm Runoff]	WQ_V		CF

Water Quality Peak Flow Calculation

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Volume	WQ_V	16,537	CF
Design Storm [90% Rainfall Event Number] **or** [1-yr Storm Depth]	P	1.5	In
Time of Concentration	t_c	0.1000	Hr
Runoff Volume $[Q = WQ_V / (A \times 3630)]$	Q	0.68	In
Curve Number $[CN = 1000 / (10 + 5P + 10Q - 10 \times (Q^2 + 1.25\, QP)^{½}]$	CN	89.91	
Curve Number	CN	90	
Initial Abstraction $[I_a = 200 / CN - 2]$	I_a	0.22	In
Ratio $[R = I_a / P]$	R	0.15	
$C_0 = A \times R^2 + B \times R + C$	C_0	2.47	
C_1 = A x R2 + B x R + C	C_1	-0.53	
C_2 = A x R2 + B x R + C	C_2	-0.16	
Unit Peak Discharge	q_u	689.40	$cfs/mi^2/in$
Peak Discharge $[Q_p = q_u \times A \times Q / 640]$	Q_p	**4.91**	cfs

Proposed Device

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Peak Flow Provided	Q_p	**7.3**	cfs
Water Quality Volume Provided $[WQ_V = 640 \times 3600 \times Q_P / q_u]$	WQ_V	**24,230**	CF
Model Designation		CS-6	
Quantity		1	

Date Printed: 3/8/2024

PROPRIETARY PRACTICE WORKSHEET

JMC Project:	**20101**
Design Point:	**1C**
Drainage Area:	**PDA-1C-10A**

Water Quality Structure 1C-10A (Pretreatment)

Rainfall Distribution Type:	**III**

Coefficients for the equation unit peak [$R = I_a / P$] [$C_i = A \times R^2 + B \times R + C$]		A	B	C
	C_0	-1.774	0.3301	2.4577
	C_1	1.8622	-0.7397	-0.4627
	C_2	-0.0648	0.2276	-0.1932

Site Data for Drainage Area to be Treated by Practice

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number]	P	1.5	In
Impervious Area	I	2.62	Ac
Area	A	7.08	Ac
Percent Impervious	%I	36.96	%
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.38	CF
TOTAL VOLUME Required [$WQ_V = (P \times R_V \times A) / 12$]	WQ_V	**14,753**	CF
Design Storm [1-yr Storm Depth]	P		In
TOTAL VOLUME Required *(TMDL)* [WQ_V = 1-yr Storm Runoff]	WQ_V		CF

Water Quality Peak Flow Calculation

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Volume	WQ_V	14,753	CF
Design Storm [90% Rainfall Event Number] **or** [1-yr Storm Depth]	P	1.5	In
Time of Concentration	t_c	0.1000	Hr
Runoff Volume [$Q = WQ_V / (A \times 3630)$]	Q	0.57	In
Curve Number [$CN = 1000 / (10 + 5P + 10Q - 10 \times (Q^2 + 1.25\ QP)^{½}$]	CN	87.84	
Curve Number	CN	88	
Initial Abstraction [$I_a = 200 / CN - 2$]	I_a	0.28	In
Ratio [$R = I_a / P$]	R	0.18	
$C_0 = A \times R^2 + B \times R + C$	C_0	2.46	
C_1 = A x R2 + B x R + C	C_1	-0.54	
C_2 = A x R2 + B x R + C	C_2	-0.15	
Unit Peak Discharge	q_u	692.77	$cfs/mi^2/in$
Peak Discharge [$Q_p = q_u \times A \times Q / 640$]	Q_p	**4.40**	cfs

Proposed Device

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Peak Flow Provided	Q_p	**7.3**	cfs
Water Quality Volume Provided [$WQ_V = 640 \times 3600 \times Q_P / q_u$]	WQ_V	**24,112**	CF
Model Designation		CS-6	
Quantity		1	

Date Printed: 3/8/2024

PROPRIETARY PRACTICE WORKSHEET

JMC Project:	**20101**
Design Point:	**1C**
Drainage Area:	**PDA-1C-6A**

Water Quality Structure 1C-6A (Pretreatment)

Rainfall Distribution Type:	**III**

		A	**B**	**C**
Coefficients for the equation unit peak	C_0	-1.774	0.3301	2.4577
$[R = I_a / P]$	C_1	1.8622	-0.7397	-0.4627
$[C_i = A \times R^2 + B \times R + C]$	C_2	-0.0648	0.2276	-0.1932

Site Data for Drainage Area to be Treated by Practice

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number]	P	1.5	In
Impervious Area	I	0.90	Ac
Area	A	0.92	Ac
Percent Impervious	%I	97.81	%
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.93	CF
TOTAL VOLUME Required $[WQ_V = (P \times R_V \times A) / 12]$	WQ_V	**4,673**	CF
Design Storm [1-yr Storm Depth]	P		In
TOTAL VOLUME Required *(TMDL)* $[WQ_V$ = 1-yr Storm Runoff]	WQ_V		CF

Water Quality Peak Flow Calculation

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Volume	WQ_V	4,673	CF
Design Storm [90% Rainfall Event Number] **or** [1-yr Storm Depth]	P	1.5	In
Time of Concentration	t_c	0.1000	Hr
Runoff Volume $[Q = WQ_V / (A \times 3630)]$	Q	1.40	In
Curve Number $[CN = 1000 / (10 + 5P + 10Q - 10 \times (Q^2 + 1.25\ QP)^{½}]$	CN	99.09	
Curve Number	CN	98	
Initial Abstraction $[I_a = 200 / CN - 2]$	I_a	0.04	In
Ratio $[R = I_a / P]$	R	0.03	
$C_0 = A \times R^2 + B \times R + C$	C_0	2.47	
$C_1 = A \times R2 + B \times R + C$	C_1	-0.48	
$C_2 = A \times R2 + B \times R + C$	C_2	-0.19	
Unit Peak Discharge	q_u	575.13	$cfs/mi^2/in$
Peak Discharge $[Q_p = q_u \times A \times Q / 640]$	Q_p	**1.16**	cfs

Proposed Device

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Peak Flow Provided	Q_p	**2.0**	cfs
Water Quality Volume Provided $[WQ_V = 640 \times 3600 \times Q_P / q_u]$	WQ_V	**8,012**	CF
Model Designation		CS-4	
Quantity		1	

Date Printed: 3/8/2024

APPENDIX C

SOIL TESTING DATA

CARLIN • SIMPSON & ASSOCIATES, LLC
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31 May 2023

Summit Club Partners, LLC
16 Hobby Farm Drive
Armonk, NY

Attn: Mr. Jeffrey B Mendell

Re: Report on Subsurface Soil and Foundation Investigation
Proposed Development
568 & 570 Bedford Rd.
North Castle, NY (CSA Job #22-85)

Dear Mr. Mendell:

In accordance with our proposal dated 23 May 2022, our supplemental proposal dated 4 August 2022, and your subsequent authorization, we have completed a Subsurface Soil and Foundation Investigation for the referenced site. The purpose of this study was to determine the nature and engineering properties of the subsurface soil and groundwater conditions for the new development, to recommend a practical foundation scheme, to determine the allowable bearing capacity of the site soils, and to preliminary determine the site soils permeability.

We understand that the planned construction will consist of six (6) multi-family residential buildings, an amenities building, and a new wastewater and water treatment facility. To guide us in our study, you have provided us with a site plan that indicates the location of the proposed construction.

Our scope of work for this project included the following:

1. Reviewed the proposed layout, the existing site conditions, the expected soil conditions, and planned this study.

2. Reviewed our subsurface investigation performed at the subject site in 2012 and 2013.

3. Retained Environmental Technical Drilling Inc. to advance thirty five (35) soil borings at the subject site.

4. Retained Traficante Excavating to excavate seventeen (17) test pits at the subject site.

5. Performed five (5) infiltration tests at the subject site, to preliminarily determine the site soils permeability.

6. Laid out the boring and test pit locations in the field, provided full time inspection of the explorations, obtained soil samples, and prepared detailed logs and a Boring & Test Pit Location Plan.

7. Performed soil identification tests on selected soil samples in our laboratory.

8. Analyzed the field and laboratory test data and prepared this report containing the results of this study.

1.0 SITE DESCRIPTION

The project site is located on the Summit Club at Armonk property on Bedford Road in North Castle, Westchester County, New York. The subject property is currently occupied by a golf club with a clubhouse building, tennis courts, and a few smaller out-structures. The proposed development area is also occupied by an asphalt paved parking lot and driveways as well as grass lawn areas and wooded areas. There are numerous existing underground utilities located throughout the property.

The existing site grades generally slope down from northeast to southwest and vary from approximately elevation +675.0 to +420.0.

2.0 PROPOSED CONSTRUCTION

We understand that the planned construction will consist of six (6) multi-family residential buildings, an amenities building, and a new wastewater and water treatment facility. The proposed multi-family residential building finished floor elevations range from +647.5 to +639.5. Each multi-family building will have below grade parking garage with a finished garage floor elevation ranging from +636.5 to +628.5. Existing site grades in the area of the proposed residential buildings range from +650.0 to +620.0. We anticipate that cuts and fills ranging up to 14 feet will be required to achieve the proposed garage finished floor elevations.

The proposed amenities building is located to the south of the planned multi-family residential buildings. The planned finished floor elevation is +633.65. Based on the plans the amenities building will have a walk out basement on to the pool deck. The proposed basement elevation of the amenities building is approximately +620.0. The pool deck will also have a finished elevation of +620.0. Existing site grades in the area of the proposed amenities building range from +630.0 to +617.0. We anticipate that fills up to 3 feet and cuts up to 10 feet will be required to achieve the proposed basement and pool deck elevation.

The proposed construction will also include a new wastewater and water treatment facility. This proposed facility will include an above-ground 105,000-gallon potable water tank, a maintenance building, a water treatment building, a sewage treatment building, and several small structures. The finished floor elevations of these proposed structures were unknown at the time of writing this report. However, the provided proposed grading plan has spot grades that are located at the door of each building. We anticipate that the finished floor elevations will be close to these spot elevations.

In order to achieve the planned site grades, retaining walls and soil/rock slopes are planned throughout the site. The new site retaining walls will range up to approximately six (6) feet in height. The soil/rock slopes will range up to approximately 38 feet in height. Site development will also include stormwater management areas, new utilities, a new pool and new paved driveways and parking areas.

The following evaluation is based on information that has been provided to our office as of the date of this report. Once the construction plans have been further developed, a copy of the plans should be forwarded to our office so that we can review them along with the recommendations in this report. At that time, any changes or additional recommendations can be provided, if required.

3.0 SUBSURFACE CONDITIONS

To determine the subsurface soil and groundwater conditions at the site thirty-five (35) borings (R-1 through R-7, ST-1, ST-2, ST-4, B-101 through B-121, and B-201 through B-203) and seventeen (17) test pits (DH-A through DH-D, TP-E through TP-H, DH-I through DH-P, and INF-C) were performed for the referenced project. The borings were performed by Environmental Technical Drilling, Inc. using hollow stem augers and split spoon sampling. The test pits were excavated by Traficante Excavating, Inc. Detailed boring and test pit logs have been prepared and are included in this report.

The borings and test pits were completed during several site visits conducted from August 2022 through March 2023. All test pit and boring operations were performed under the full-time inspection of Carlin-Simpson & Associates. Our field engineer visually identified all of the soil samples obtained during the boring operations and selected samples were tested in our laboratory. The results of these tests are also included in this report.

As part of this study, we also reviewed the subsurface investigation performed by this office in 2012 and 2013. The boring and test pit locations can be found on the attached Boring and Test Pit Location Plan and the summary table is also included at the end of this report.

3.1 Soil and Rock

The soil descriptions shown on the boring and test pit logs are based on the Burmister Classification System. In this system, the soil is divided into three components: Sand (S), Silt ($) and Gravel (G). The major component is indicated in all capital letters, the lesser in lower case letters.

The following modifiers indicate the quantity of each lesser component:

Modifier	Quantity
trace (t)	0 -10%
little (l)	10% - 20%
some (s)	20% - 35%
and (a)	35% - 50%

When the site soils are plastic, the following indicators are used:

Plasticity	Plasticity Index	Indicator
None	0 - 1	SILT
Slight	1 - 5	Clayey SILT
Low	5 - 10	SILT & CLAY
Medium	10 - 20	CLAY & SILT
High	20 - 40	Silty CLAY
Very High	40+	CLAY

The subsurface soil and rock conditions encountered in the borings and test pits can be summarized as follows:

Stratum 1A
Topsoil

The surface layer in 29 of the 35 borings and each of the test pits consists of topsoil that ranges from approximately 1 to 15 inches in thickness.

Stratum 1B
Asphalt

The surface layer in 2 borings is asphalt that ranges from 2 to 6 inches in thickness.

Stratum 2
Existing Fill

At the surface in 4 borings and beneath the surface layers in 21 of the 35 borings and 13 of the 17 test pits is existing fill that generally consists of loose to medium dense brown, dark brown coarse to fine SAND, trace (to some) Silt, trace (to some) coarse to fine Gravel. Debris (i.e. wood, brick, asphalt, and roots) was noted within this stratum in portions of the site. The existing fill extends to depths ranging from 1’3” to 10’0” below existing ground surface at the boring and test pit locations.

Stratum 3
Silty Sand or Sandy Silt

Below the surface layers in 14 of the 35 borings and 4 of the 17 test pits and underlying the existing fill in the remaining test pits and borings is medium dense to dense brown, gray coarse to fine SAND, trace (to some) Silt, trace (to and) coarse to fine Gravel or medium stiff to stiff brown SILT some (to and), coarse to fine Sand, trace (to little) coarse to fine Gravel.

Stratum 4
Completely Weathered Gneiss

Underlying the Silty Sand or Sandy Silt is highly to completely weathered Gneiss. This layer is soil like in state, however, there could be denser pockets that cannot be conventionally excavated. The completely weathered Gneiss was encountered at depths ranging from about 2’6” to 14’0” below the existing ground surface and transitions to hard Gneiss bedrock with depth.

Stratum 5 Gneiss Bedrock	Auger or bucket refusal on probable Gneiss bedrock was encountered in each of the borings and 16 of the 17 test pits at depths ranging from 0’10” to 17’6” below the existing ground surface. The upper 5’0” of the Gneiss bedrock was cored at boring locations B-101, R-2, and R-3A starting at depths ranging from 10’0” to 11’2” below the existing ground surface. The rock core recovery ranged from 0% to 97% and the rock quality designation (RQD) of the recovered cores ranged from 0% to 67%. Based on the RQD and visual inspection, the upper portion of the bedrock ranges from very poor quality in a crushed condition to fair quality in a blocky and seamy condition.

3.2 Bedrock

Based on our experience and the boring and test pit observations, the in-situ bedrock at the site will range from completely weathered rock in a soil-like state, to block and seamy in a fair condition. The rock generally transitions into harder bedrock with increasing depth. The completely weathered rock was encountered at depths ranging from 2’6” to 14’0” below the ground surface (elevations +639.5 to +461.5). Auger or bucket refusal on harder bedrock was encountered at depths ranging from 0’10” to 17’6” below the existing ground surface (elevation +669.5 to +461.3). The bedrock observations are summarized in Tables 1 through 3 and Table 10 below.

We anticipate that bedrock will be encountered when excavating for the basement subgrade elevations in Building 1 and Building 6. In addition, there is large cut up to 20 foot located to the east of Building 6. This area is highlighted on the attached Boring and Test Pit Location Plan (Figure 2). There is limited subsurface data in the referenced area. We recommend that additional borings or test pits be performed in this area to further evaluate the amount of rock to be excavated.

Penetration into the bedrock and completely weathered rock with excavation equipment will depend on the degree of weathering and fracturing in the rock. The upper few feet of rock may be “rippable” by using large construction equipment, but we anticipate that the “rippability” of the bedrock will be variable and limited. It should not be assumed that the completely weathered rock (very dense material in a soil-like state) can be excavated with conventional equipment. Harder rock will be encountered in the completely weathered rock stratum, and the use of hydraulic hammers and/or rock blasting will be required to excavate the harder bedrock. Additional recommendations related to rock removal are discussed in Section 5.1 of this report.

3.3 Groundwater

During this investigation, groundwater was encountered in 7 of the 35 borings and 4 of the 17 test pits at depths ranging from 3’0” to 10’0” below the existing ground surface (elevations +621.0 to +467.0). Trapped water was encountered within the existing fill stratum in borings B-104, B-106, B-202, and B-203 at depths ranging from 2’0” and 9’0” below the existing ground surface (approximate elevation +620.0 and +543.0).

In addition, evidence of seasonal high groundwater, i.e. mottling, was encountered in borings B-109, B-112, R-1 and test pits TP-I and TP-J at depths ranging from 1’3” to 7’0” below the existing ground surface (approximate elevations +624.0 to +470.0). The groundwater observations are summarized in Tables 1 through 3, and Table 10 below.

During construction, we expect that perched or trapped water may be encountered within the existing fill and/or along the soil/rock interface, especially during wet periods. Groundwater on the subject site will be controlled by the topography and the underlying bedrock surface. Groundwater may daylight through the cut rock face during construction. Proper groundwater control measures will be required in the event that water is encountered in site excavations. Groundwater may also be diverted with the use of cutoff drains if needed.

The amenities building has a finished basement floor and pool deck elevation of +620.0. Trapped groundwater was encountered in borings B-104 and B-106 at a depth of 3’0” and 2’0” below the existing ground surface (approximate elevation +619.0 and +620.0), respectively. Groundwater will likely be encountered during construction of the pool and utilities in this area.

The proposed maintenance building has a walkout basement at approximately +556.0. Trapped water was encountered in boring B-202 at a depth of 9’0” below the existing ground surface (approximate elevation +556.0). Water may likely be encountered during the construction of this building.

Variations in the location of the long-term water table may occur as a result of changes in precipitation, evaporation, surface water runoff, and other factors not immediately apparent at the time of this exploration.

4.0 SUMMARY OF DESIGN RECOMMENDATIONS

Below is a summary of the major design and construction considerations for this project. Additional recommendations are provided in the following sections of this report.

- *Subsurface Conditions (Section 3.0)*
  - Existing fill was encountered in portions of the site to depths ranging from 1’3” to 10’0” below the existing ground surface (elevations +671.5 to +471.5).
  - Groundwater was encountered in 7 of the 35 borings and 4 of the 17 test pits at depths ranging from 3’0” to 10’0” below the existing ground surface (elevations +621.0 to +467.0).
  - Completely weathered Gneiss was at depths ranging from 2’6” to 14’0” below the ground surface (elevations +639.5 to +461.5).
  - Harder Gneiss bedrock was encountered at depths ranging from 0’10” to 17’6” below the existing ground surface (elevation +669.5 to +461.3).
  - A summary of the subsurface observations is provided in Tables 1 through 3 and Table 10, below.

- *Building Area Preparation (Section 5.1)*
  - Surface materials (i.e. topsoil) must be stripped from proposed building areas.
  - Use of hydraulic hammers and/or blasting will be required in order to achieve the bottom of the building excavations in portions of the site.
  - When the exposed building subgrade consists of soil, it shall be densified with several passes of a large vibratory roller prior to placing compacted fill or once the planned building subgrade has been achieved in cut areas.
  - In the event that water infiltrates the building excavation, preparation of wet and sensitive subgrades with geotextile fabric and clean stone may also be necessary.
  - The existing fill is not suitable for support of the proposed building foundations or floor slabs.
  - Where the existing fill is encountered it shall be completely removed and replaced with new structural fill.
  - New backfill shall be compacted to at least 95% of its Maximum Modified Dry Density (ASTM D1557).

- *Building Foundation Recommendations (Section 5.2)*
  - Special construction procedures must be employed if the building foundation bears on dissimilar material (i.e. soil and rock).
  - The new foundations may be designed as spread footing type foundations bearing on virgin soil, engineer-approved compacted fill, completely weathered rock or bedrock.
  - Net design bearing pressures are as follows:
    - Virgin Soil or Engineer-approved structural fill is 4,000 psf.
    - Transition Zones in Soil/Rock is 4,000 psf.
    - Completely Weathered Rock/ Gneiss Bedrock is 10,000 psf.
  - Minimum depth for frost protection is 42 inches.
  - Seismic Site Class is D or Stiff Soil Profile.

- *Building Floor Slab Recommendations (Section 5.3)*
  - The virgin soil, new compacted fill, and bedrock can be used for support of the proposed floor slabs.
  - The floor slabs may be designed as slab on grade.
  - Modulus of subgrade reaction is 200 pci.

- *Additional Site Recommendations (Section 6.0)*
  - *Stormwater Management Systems (Section 6.1)*
    - Several stormwater management areas are proposed for this site.
    - Infiltration testing was performed in the stormwater management areas and can be found in Section 6.1 below.
  - *New Retaining Walls (Section 6.2)*
    - Existing fill is not suitable for support of the proposed retaining walls in its current state. Where existing fill is encountered it shall be partially removed and replaced with new structural fill.
    - A cast-in-place steel reinforced concrete wall, a mechanically stabilized earth (MSE) wall are good alternatives for this project.

- *Pavement (Section 6.5)*
  - Densified existing fill, virgin soil, new compacted fill, and weathered rock may be used to support the pavement.
  - The use of hydraulic hammers and/or blasting will be required in areas to achieve proposed site grades.

5.0 NEW BUILDING EVALUATION

We understand that the planned construction will consist of six (6) multi-family residential buildings, an amenities building, and a new wastewater and water treatment facility.

Multi- Family Residential Buildings

The proposed construction will consist of six (6) multi-family residential buildings. The proposed multi-family residential building finished floor elevations range from +647.5 to +639.5. Each multi-family building will have below grade parking garage with a finished garage floor elevation ranging from +636.5 to +628.5. We anticipate that cuts and fills ranging up to 14 feet will be required to achieve the proposed garage finished floor elevations. A summary of the borings performed for the proposed multi-family buildings is provided in Table 1 below.

Table 1 – Summary of Boring Observations for the Residential Buildings

Boring No.	Applicable Structure	Approx Ground Surface Elevation	Depth to Groundwater (Elevation)	Depth to Bottom of Existing Fill (Elevation)	Depth to Bedrock (Elevation)
B-115	Building 2	+627.0	NE to 7’3”	NE	CWR @ 6’6” (+620.5) AR @ 7’3” (+619.8)
B-116	Building 1	+632.0	NE to 4’0”	NE	CWR @ 2’6” (+629.5) AR @ 4’0” (+621.0)
B-118	Building 4	+629.0	NE to 17’6”	NE	CWR @ 8’0” (+623.0) AR @ 17’6” (+611.5)
B-119	Building 5	+625.0	NE to 6’3”	NE	AR @ 6’3” (+618.8)
B-120	Building 6	+647.5	NE to 9’0”	7’0” (+640.5)	CWR @ 8’0” (+639.5) AR @ 9’2” (+638.3)
R-1	Building 1	+631.0	10’0” (+621.0) SHGW @ 7’0” (+624.0)	2’0” (+629.0)	CWR @ 14’0” (+617.0)
R-2	Building 2	+628.0	NE to 10’0”	2’0” (+626.0)	C @ 10’0” (+618.0)
R-3	Building 3	+627.0	NE to 3’6”	NE	AR @ 3’6” (+623.5)
R-3A	Building 3	+626.0	NE to 10’0”	-	CWR @ 7’0” (+619.0) C @ 10’0” (+616.0)
R-4	Building 4	+626.0	NE to 9’6”	NE	CWR @ 6’6” (+619.5) AR @ 9’6” (+616.5)
R-5	Building 5	+638.0	NE to 11’6”	8’0” (+630.0)	CWR @ 9’0” (+629.0)
R-6	Building 6	+640.0	NE to 7’6”	2’6” (+637.5)	CWR @ 2’6” (+637.5)

NE – Not Encountered, (-) – Auger through Existing Fill, C – Cored Bedrock, AR – Auger Refusal on Probable Bedrock, CWR – Completely to Highly Weathered Rock, SHGW – Evidence of Seasonal High Groundwater (i.e. Mottling)

Existing fill was encountered in Buildings 1, 2, 5, and 6 to depths ranging from 2’0” to 8’0” (elevations +640.5 to +626.0) below the existing ground surface. In addition as indicated on the existing conditions drawing, in the southwest corner of Building 1 and southeast portion of Building 3 were previously demolished infrastructure. If any debris remains, it shall also be completely removed, this is further discussed in Section 5.1 of this report.

Existing fill is not a suitable bearing material for the proposed multi-family buildings. The consistency and density of the soil fill are not predictable. Certain areas may contain clean dense soil while other areas may contain loose material, void spaces, and/or debris. The existing soil fill creates the possibility of intolerable differential settlements under loading. We anticipate that the majority of the existing fill will be removed when excavating to the garage subgrade elevation. Where existing fill is encountered below the garage subgrade elevation it must be completely removed. This is further discussed in Section 5.1, “Removal of Existing Fill”.

Once the existing fill and any other construction debris is completely removed, the new residential buildings may be designed as shallow spread footings bearing on virgin soil, new structural fill, or bedrock. Recommendations for preparation of the building areas are provided in Section 5.1. Foundation recommendations can be found in Section 5.2. In addition, the new building floor slabs may be designed as a slab on grade bearing on virgin soil, new structural fill, or bedrock. Recommendations for building slab on grades can be found in Section 5.3.

Amenities Building

The proposed amenities building is located to the south of the planned multi-family residential buildings. The planned finished floor elevation is +633.65. Based on the spot elevations on the plans the amenities building will have a walk out basement on to the pool deck at elevation +620.0. We anticipate that cuts up to 3 feet will be required to achieve the proposed basement finished floor elevation and pool deck elevation. A summary of the borings performed for the proposed amenities building provided in Table 2 below.

Table 2 – Summary of Boring Observations for the Amenities Building

Boring No.	Approx Ground Surface Elevation	Depth to Groundwater (Elevation)	Depth to Bottom of Existing Fill (Elevation)	Depth to Bedrock (Elevation)
B-103	+623.0	NE to 8’0”	5’0” (+618.0)	CWR @ 6’6” (+616.5) AR @ 8’0” (+615.0)
B-104	+622.0	** 3’0” (+619.0)	5’0” (+617.0)	CWR @ 6’0” (+616.0) AR @ 7’0” (+615.0)
B-105	+620.0	NE to 9’3”	5’0” (+615.0)	CWR @ 7’0” (+613.0) AR @ 9’0” (+611.0)
B-106	+622.0	** 2’0” (+620.0)	5’0” (+617.0)	CWR @ 6’6” (+615.5) AR @ 7’6” (+614.5)
R-7	+630.0	NE to 9’0”	5’0” (+625.0)	CWR @ 7’0” (+623.0) C @ 9’0” (+621.0)

NE – Not Encountered, AR – Auger Refusal on Probable Bedrock, CWR – Completely to Highly Weathered Rock, (**) – Trapped Groundwater

Existing fill was encountered throughout the proposed amenities building and pool deck area to a depth of 5’0” (elevations +625.0 to +615.0) below the existing ground surface. In addition as indicated on the existing conditions drawing, along the eastern portion of proposed building was a previously demolished building. If any debris remains, it shall be completely removed, this is further discussed in Section 5.1 of this report.

As discussed above in the Residential Buildings section, existing fill is not suitable material for support of the new amenities building. Where the existing fill is encountered below the basement amenities subgrade elevation, it must be completely removed and replaced with new structural fill.

Once the existing fill and any other construction debris is completely removed, the new amenities building may be designed as shallow spread footings bearing on virgin soil, new structural fill, or bedrock. Recommendations for preparation of the building areas are provided in Section 5.1. Foundation recommendations can be found in Section 5.2 of this report. In addition, the new building floor slabs may be designed as a slab on grade bearing on virgin soil, new structural fill, or bedrock. Recommendations for building slab on grades can be found in Section 5.3 of this report.

The amenities building has a finished basement floor and pool deck elevation of +620.0. Trapped groundwater was encountered in borings B-104 and B-106 at a depth of 3’0” and 2’0” below the existing ground surface (approximate elevation +619.0 and +620.0), respectively. Groundwater will likely be encountered during construction of the pool and utilities in this area. Where groundwater is encountered proper groundwater control measures (i.e. sumps and pumps) will be required. This is further discussed in Section 5.1 “Handling Groundwater and Wet Subgrades.”

Wastewater and Water Treatment Facility

The proposed construction will also include a new wastewater and water treatment facility. The new facility will be located to the west of the proposed residential development. The new facility will consist of a new 105,000-gallon potable water tank, a new maintenance building, a water treatment building, and a new wastewater treatment building. A summary of the borings performed for the proposed wastewater and water treatment facility is provided in Table 3 below.

Table 3 – Summary of Boring Observations for the Wastewater/ Water Treatment Facility

Boring No.	Applicable Structure	Approx Ground Surface Elevation	Depth to Groundwater (Elevation)	Depth to Bottom of Existing Fill (Elevation)	Depth to Bedrock (Elevation)
B-101	Tank	+563.0	NE to 11’2”	5’0” (+558.0)	CWR @ 7’0” (+556.0) C @ 11’2” (+551.8)
B-102	Tank	+565.0	NE to 9’6”	5’0” (+560.0)	CWR @ 8’0” (+557.0) AR @ 9’6” (+555.5)

Boring No.	Applicable Structure	Approx Ground Surface Elevation	Depth to Groundwater (Elevation)	Depth to Bottom of Existing Fill (Elevation)	Depth to Bedrock (Elevation)
B-107	Tank	+564.0	NE to 8’6”	5’0” (+559.0)	CWR @ 7’6” (+556.5) AR @ 8’6” (+555.5)
B-108	Tank	+564.0	NE to 8’6”	3’6” (+560.5)	CWR @ 7’0” (+567.0) AR @ 8’6” (+555.5)
ST-1	Wastewater Building	+579.0	NE to 11’6”	NE	CWR @ 5’0” (+572.0) AR @ 11’6” (+567.50)
ST-2	Wastewater Building	+587.0	NE to 11’0”	NE	CWR @ 8’0” (+579.0) AR @ 11’0” (+576.0)
ST-4	Water Treatment Building	+563.0	NE to 16’6”	8’0” (+555.0)	CWR @ 11’6” (+551.5) AR @ 16’6” (+546.5)
B-201	Water Treatment Building	+563.0	NE to 12’0”	10’0” (+553.0)	AR @ 12’0” (+551.0)
B-202	Maintenance Building	+565.0	**9’0” (+556.0)	4’0” (+561.0)	AR @ 16’6” (+548.5)

NE – Not Encountered, (**) – Trapped Groundwater, AR – Auger Refusal on Probable Bedrock, CWR – Completely to Highly Weathered Rock

The finished floor elevations of these proposed structures were unknown at the time of writing this report. However, the proposed grading has spot grades that are located at the door of each building. We anticipate that the finished floor elevations will be close to these elevations.

Therefore the finished floor elevation for the new maintenance building will be approximately elevation +568.0 with a walkout basement elevation of +556.0. The water treatment building will have finished floor elevation of approximately +562.0. The wastewater treatment building will have a finished floor elevation of approximately +577.5.

Based on the boring observations, existing fill was encountered throughout the proposed wastewater and water treatment structure areas to depth ranging from 3’6” to 10’0” (approximately elevations +561.0 to +553.0) below the existing ground surface. As discussed above, the existing fill is not suitable for support of the new structures. Where existing fill is encountered within the area of the proposed buildings, it shall be completely removed and replaced with new structural fill as described in Section 5.1 of this report.

In our opinion, if the wastewater and water treatment building subgrades are prepared as outlined in this report, each of the building foundations may be designed as a shallow spread foundation bearing on virgin soil, new structural fill, or bedrock. Recommendations for preparation of the building areas are provided in Section 5.1. Foundation recommendations can be found in Section 5.2 of this report. In addition, the new building floor slabs may be designed as a slab on grade bearing on virgin soil, new structural fill, or bedrock. Recommendations for building slab on grades can be found in Section 5.3 of this report.

We also anticipate that the proposed above-ground 105,000-gallon potable water tank will be constructed with a ring-wall foundation. The ring-wall foundation may be lowered to bear below the existing fill on the virgin soil or bedrock strata. Ringwall foundation recommendations can be found in Section 5.2 of this report.

5.1 Building Area Preparation

In order to prepare the site for construction, all surface materials such as vegetation and topsoil shall be removed from the planned building areas, extending at least ten (10) feet beyond the new construction limits, where practical.

As part of the site development, the existing structures will also be or already have been demolished. All debris resulting from the demolition of these structures must be completely removed from the new building footprints, extending at least ten (10) feet beyond the new building limits, where practical. This shall include the complete removal of all foundations, floor slabs, utilities, pavement, and miscellaneous debris. Where the removal of existing structures or associated materials extends below the planned building, the resulting excavations shall be backfilled with new compacted fill as described below.

Existing utilities, where they are encountered within the planned building areas, should be either abandoned or rerouted around the new structures. Once the utility has been rerouted or abandoned, the section of pipe and any associated structure within the building areas should be completely removed. The removal of the pipe and structure must also include any loose fill around the pipe or structure. After the pipe, associated structure, and associated loose backfill have been removed, the resulting excavation shall be backfilled with new controlled fill as described below.

Rock Removal - Blasting

In order to develop the site, rock or weathered rock cuts will be required. Based on our experience, the in-situ bedrock and weathered bedrock will be variable, ranging from completely weathered to block and seamy bedrock. To excavate the rock or weathered rock strata, the top 1 to 5 feet of rock may be “rippable” by using large construction equipment. We anticipate that the “rippability” of the bedrock will be variable and limited. The use of hydraulic hammers and/or blasting will be required to excavate the harder, blocky and seamy rock.

The blasting operation shall be monitored by a seismologist using a seismograph. The maximum peak particle velocity on any one component of an instrument measuring three-component motion shall not exceed the limits indicated in Table 4 below.

Table 4 – Distance Versus Peak Particle Velocity Method

Distance from Blast in Feet	Peak Particle Velocity of any One-Component in Inches per Second
0 to 100	1.50
100 to 200	1.25
200 to 500	1.00
500 to 1,000	0.50
Over 1,000	0.25

Each blast will be monitored independently to insure that this criterion is not exceeded. The monitoring results shall be provided to the blasting contractor as soon as possible so that the blasting program can be modified if necessary.

We recommend that a minimum of four (4) monitoring points be established, to the north, east, south and west of the planned blast area. The seismograph sensors should be placed near the closest structure and at any structures identified during the pre-blast survey that are considered to be susceptible to vibration damage. Where possible, the seismograph sensors should be placed on the bedrock surface. This will require shallow excavations through the overburden soils in the monitoring areas.

Prior to the start of any construction, a Blasting Management Plan shall be prepared by the blasting contractor for this project. This plan shall be in accordance with State regulations and the Explosive Materials Code, NFPA No. 495, National Fire Prevention Association. Additionally, all blasting should adhere to the provisions of 29 CFR Ch. XVII Section 1910.109 for explosives and blasting agents, the Town of North Castle Municipal Code, and any other local requirements.

Prior to any blasting work being done, a licensed professional engineer shall be retained to perform a detailed pre-blast condition survey of existing structures located within 500 feet of the planned blast area. The pre-blast condition survey shall be conducted in accordance with the requirements of local authorities. A copy of all reports prepared by the licensed engineer shall be submitted to the Town Engineer and the owner's representative in a timely manner. In addition, the permit holder shall request a pre-blast meeting with the Fire Inspector to review and finalize the proposed blasting plan. No blasting shall be conducted unless a pre-blast meeting has been held with the Fire Inspector and the Fire Inspector is satisfied that the proposed blasting plan is reasonable.

Prior to the beginning of blasting, a notice will be sent to all residential and commercial property owners within a 500-foot radius of the blast area. This notification will be given at least 3 days before blasting takes place. A contact person will be established and named in this notice to respond to all concerns raised by nearby residents during the blasting phase of the project. The contact person will respond to any inquiries within 24 hours. In addition, prior to each blast, the blaster or his designee shall be responsible for notifying all persons in the general area that blasting operations are scheduled to begin within a specified period of time. In addition, the blaster shall sound a recognized whistle, siren or horn loud enough to be heard throughout the designated blast zone approximately three minutes prior to blasting and again 30 seconds prior to blasting, warning all persons that blasting is imminent.

The blasting contractor should avoid over-blasting the rock. Over-blasting will disturb the deeper intact rock that will be used as bearing material for the proposed foundations and floor slabs. Any material that is over-blasted will have to be removed and replaced with new structural fill under the full-time inspection of Carlin-Simpson & Associates. Carlin-Simpson & Associates will be responsible for determining what material is to be removed and will direct the contractor during the excavation.

Removal of Existing Fill (Where Required)

As discussed above, the existing fill is not a suitable bearing material for the new building foundations and floor slabs. Where existing fill is encountered in the building areas, it must be completely removed and replaced as described below.

Based on the boring and test pit observations and the proposed construction, we anticipate that some of the existing fill will be removed during the excavation to the planned subgrade elevations. If existing fill remains below the planned subgrade elevation, the excavation shall extend through the existing fill down to the virgin soil. At the bottom of the excavation, the removal of the unsuitable material shall extend horizontally beyond the building limits a minimum distance of 1’0” plus a distance equal to the depth of the excavation below the planned foundation bearing elevation. For example, if the removal of the existing fill extends vertically 3’0” below the planned foundation bearing elevation, the excavation must extend horizontally a minimum of 4’0” (1’0” plus 3’0”) beyond the new building limits at that location.

The removal of the existing fill from the proposed building areas shall be performed under the full time inspection of Carlin-Simpson & Associates. The on-site representative from Carlin-Simpson & Associates shall direct the contractor during this operation to ensure that all of the unsuitable material has been removed from the proposed building areas.

During the removal of the unsuitable material, the contractor should segregate the potentially re-usable existing soil/fill material from the non-reusable fill (i.e. debris and topsoil). The on-site representative from Carlin-Simpson & Associates shall evaluate the suitability of the excavated materials for use as compacted fill during the excavation and prior to its re-use. Potentially usable fill should be stockpiled and covered with tarps or plastic sheeting for protection from excess moisture. Any fill material that is or becomes wet must be dried prior to its re-use.

Densification of Subgrade Soils (Proofrolling)

After the surface materials and existing fill have been removed and prior to the placement of new structural fill, the exposed subgrade soil must be graded level and proofrolled by several passes of a vibratory drum roller. Where existing fill is not present within the building area, the existing soil subgrades that are either at or below the planned subgrade elevation shall be densified by several passes of a large vibratory drum roller. The proofrolling is necessary to densify the underlying soils. Proofrolling must be performed prior to the excavation for new foundations and/or the installation of new compacted fill.

A representative from Carlin-Simpson & Associates shall observe the proofrolling operation. If any excessive movement is noted during the proofrolling, the soft soil shall be removed and replaced with new compacted fill. The Carlin-Simpson & Associates representative shall be responsible for determining what material, if any, is to be removed and will direct the contractor during this operation. The proofrolling may be eliminated, if in the opinion of the geotechnical engineer, the proofrolling will cause pumping or otherwise disturb the stability of the subgrade or if the subgrade consists of bedrock.

Handling Groundwater and Wet Subgrades

The amenities building has a finished basement floor and pool deck elevation of +620.0. Trapped groundwater was encountered in borings B-104 and B-106 at a depth of 3’0” and 2’0” below the existing ground surface (approximate elevation +619.0 and +620.0), respectively. Groundwater will likely be encountered during construction of the pool and utilities in this area. Where groundwater is encountered proper groundwater control measures (i.e. sumps and pumps) will be required.

The proposed maintenance building has a walkout basement at approximately +556.0. Trapped water was encountered in boring B-202 at a depth of 9’0” below the existing ground surface (approximate elevation +556.0). Water may likely be encountered during the construction of this building.

During this investigation, groundwater was encountered in 7 of the 35 borings and 4 of the 17 test pits at depths ranging from 3’0” to 10’0” below the existing ground surface (elevations +621.0 to +467.0). For most building areas, groundwater is not expected to be encountered during construction. However, perched or trapped groundwater may be present in the existing fill, silty site soils, along the soil/rock interface, and/or in the bedrock fractures. Groundwater may also daylight through the cut rock face during construction. In the event that perched or trapped groundwater is encountered, dewatering will be required to construct the foundations and to prepare the subgrade.

Proper groundwater control measures (i.e. sumps and pumps) will be required in the event that water is encountered in the building excavations. Where required, temporary groundwater control measures shall consist of one (1) or more sumps and pumps. The sumps shall consist of a perforated pipe at least eight (8) inches in diameter, surrounded by crushed stone and filter fabric. The sump pits must be installed just outside the planned excavation area and at least two (2) feet below the lowest anticipated subgrade elevation. The sumps and pumps must be set and in operation prior to excavating below the water table. The pumps shall be used to temporarily lower the surrounding groundwater level and keep the building excavation relatively dry.

In the event that the exposed subgrade soil within the planned building areas becomes wet or soft, stabilizing the subgrade surface may be required in order to construct the foundations and floor slab. The subgrade may be stabilized with geotextile filter fabric and crushed stone. The geotextile filter fabric shall consist of Mirafi 500X or equivalent. Adjacent layers of geotextile filter fabric should be overlapped a minimum of 6 inches. As necessary, approximately 12 inches of 3/4-inch clean crushed stone will be installed on top of the filter fabric layer to provide a firm working surface, provide protection for the geotextile filter fabric, minimize pumping, and to stabilize the subgrade soil. Carlin Simpson and Associates will determine the need for stabilization and will direct the contractor during construction.

Installation of New Structural Fill

New fill required to achieve final grades shall consist of either engineer-approved on-site soil or imported sand and gravel. The new fill shall be placed in layers not exceeding one (1) foot in thickness and each layer shall be compacted to at least 95% of its Maximum Modified Dry Density (ASTM D1557). Each layer must be compacted, tested, and approved by the Carlin-Simpson & Associates field representative prior to placing subsequent layers. The suitability of the on-site soil and rock for reuse as compacted fill is discussed in Section 6.7 below.

If imported structural fill will be required during construction, the imported structural fill shall meet the following specified gradation:

US Standard Sieve Size	Percent Finer By Weight
3-inch	100
No. 4	30-80
No. 40	10-50
No. 200	0-20

5.2 New Building Foundations

Once the planned building areas have been prepared as described in Section 5.1 above, the new foundations may be constructed on the virgin site soils, new compacted fill, and bedrock.

Bedrock Special Construction Procedures

Where rock and soil is encountered in the foundation excavations, “Special Construction Procedures” must be employed. When continuous wall footings or closely spaced column footings (20 feet or less) bear on dissimilar material (i.e. rock and soil) the potential for differential movement exists. A footing bearing in rock will not move, whereas a footing bearing on soil will settle slightly due to the compressive nature of all soils when subjected to new loads. The area between movement and non-movement will develop a (shear) stress point. Cracks in foundations and walls will be the result from such movement. Therefore, continuous wall footings must bear either entirely on rock or entirely on soil for any individual structure. Alternatively, for larger structures, transition zones can be constructed to create a gradual transition from a soil to a rock bearing subgrade.

Where rock and soil both exist at the bearing elevation in a foundation excavation, the footings must either be lowered to bear entirely on rock, or a minimum of 18 inches of rock must be removed from below planned footing bottom. The over-excavated 18 inches must then be filled with a granular material having a maximum particle size of 1/2-inch and containing at least 10% but not more than 30% material by weight passing a No. 200 sieve. The fill shall be placed in six (6) inch layers and each layer shall be compacted to at least 95% of its Maximum Modified Dry Density (ASTM D-1557). This procedure will create a “cushion” atop the rock and reduce the potential for differential movement. For soft, rippable rock, this procedure will not be required.

Adjacent column footings greater than 20 feet apart may bear on dissimilar material (i.e. soil and rock). Any individual column footing must bear entirely on the same type bearing material (i.e. all soil or all rock). In addition, new footings constructed on sloping bedrock must be keyed into the bedrock surface.

If during the excavation for continuous foundations, the transition from soil to rock is gradual (i.e. from medium dense soil to dense weathered rock to very dense rock) over a distance of 20 feet or more, the “Special Construction Procedures” may not be required. This would have to be evaluated in the field on a case-by-case basis by the representative from Carlin-Simpson & Associates at the time of construction.

Where the transition from rock to soil is abrupt within the excavation for continuous wall foundations, transition zones can be constructed by over-excavating the rock in steps and increasing the “soil cushion” thickness over a distance of 24 feet or more. To construct the transition zone, the bedrock is over-excavated in a series of steps, each step being six (6) inches in depth and at least eight (8) feet in length. The first step is six (6) inches deep, the second step is 12 inches deep, and the final step is 18 inches deep. The over-excavation is then backfilled with the soil cushion material described above. Conformation of transition zones must be performed under the full-time inspection of Carlin-Simpson and Associates. A detail of transition zones, Figure 3, can be found at the end of this report.

Foundation Design Parameters

All new building foundations may be designed as shallow spread footings using net design bearing pressures as listed in Table 5 below. All of the exterior footings shall bear at the minimum depth listed below for protection from frost. Interior column footings may bear on the virgin soil, new structural fill, completely weathered rock or bedrock just below the floor slabs provided the structure is heated during winter. The footings shall have minimum dimensions as listed below.

Table 5 – Building Foundation Design Parameters

Description	Value
Foundation Bearing Material	Virgin Soil, New Compacted Fill, Completely Weathered Rock, Bedrock
Net Design Bearing Pressure *Virgin Soil/New Compacted Fill* *Transition Zones in Soil/Rock* *Completely Weathered Rock/ Gneiss Bedrock*	 4,000 psf 4,000 psf 10,000 psf
Minimum Frost Depth	42 inches
Minimum Column Dimension	30 inches
Minimum Wall Dimension	18 inches

The excavations for the new foundations shall be performed under the full-time inspection of Carlin-Simpson & Associates. The on-site representative shall confirm that the foundation bearing material is capable of supporting the design bearing pressure.

Prior to the placement of formwork, reinforcement steel, and concrete, the bearing subgrade soil shall be cleaned of all loose soil and where soil is encountered at the subgrade elevation, it shall be compacted with several passes of a small vibratory drum trench compactor (i.e. Wacker Model RT560), a heavy vibratory plate tamper (i.e. Wacker BPU 3545A or equivalent), or "jumping jack" style tamper (i.e. Wacker Model BS 600). This must be performed under the observation of Carlin-Simpson & Associates. If instability is observed during the compaction of the bearing subgrade, the soft soil shall be removed and replaced with new compacted fill.

Ring Wall Foundation – Above Grade Water Tank

We understand that the new above grade 105,000-gallon water tank foundation will likely be designed utilizing a ring-wall foundation. The new tank foundations may be designed as a shallow spread foundation lowered to bear directly on virgin soil, completely weathered rock, or bedrock using the net design bearing pressures in Table 5 below.

Alternatively, where lowering the footings to bear on virgin soil or bedrock is not practical, the existing fill can be completely removed from beneath the "zone of influence" of the new tank foundations and replaced with new structural fill. At the bottom of the excavation, the removal of the existing fill shall extend horizontally beyond the foundation a minimum distance of 1'0" plus a distance equal to the depth of the excavation below the planned foundation bearing elevation on each side of the foundation. Once the existing fill is completely removed as described, the excavation can then be backfilled to the planned subgrade elevation as described above. The foundation design parameters in Table 5 above shall be used for design.

The ringwall foundation design must also consider the potential overturning of the tank caused by wind loads. The movement of the tank under wind loading must be computed and the foundation must be designed to withstand that load. For a ringwall foundation, the resistance to overturning is provided by the weight of the footing and the soil above the footing. The backfill placed above the new footings must consist of a dense graded aggregate (DGA). This backfill shall be installed in loose layers not exceeding one (1) foot in thickness and each layer shall be compacted to at least 95% of its Maximum Modified Dry Density (ASTM D-1557). The DGA shall meet the following gradation:

US Standard Sieve Size	Percent Finer By Weight
1 ½ inch	100
¾ inch	55-90
No. 40	25-50
No. 50	5-20
No. 200	3-10

The proper placement of new fill within the tank area and adjacent to the ringwall foundation is critical to the performance of the tank and for minimizing settlement. Carlin-Simpson & Associates must be retained to monitor and test the placement of fill within the tank area and adjacent to the ringwall foundations.

The soil within the tank area, adjacent to the ringwall, will exert a horizontal pressure against the ringwall. This pressure is based on the soil density and coefficient of earth pressure at rest (k_o), which is applicable to non-yielding walls. Values for these parameters can be found in Table 6 below.

Table 6 – Ringwall Foundation Earth Pressures Design Parameters

Soil Type	**On-Site Soils**
Moist Unit Weight (γ)	130 pcf
Friction Angle (ϕ, deg)	30
Cohesion (c, psf)	0
Coefficient of Earth Pressure at Rest (k_o)	0.5
Coefficient of Passive Earth Pressure (k_p)	3.0
Equivalent Fluid Pressure*	162.5 psf/ft
Foundation Sliding Coefficient	
Virgin Soil/ New Compacted Fill	0.45
Completely Weathered/ Bedrock	0.55

(*) – A factor of safety of 2.5 is applied.

5.3 Floor Slabs on Grade

New fill for the floor slabs shall consist of either suitable on-site soil or imported sand and gravel. In the event that backfill soil is imported; it shall meet the gradation in Section 5.1 "Installation of New Structural Fill". The new fill shall be placed in layers not exceeding one (1) foot in loose thickness and each layer shall be compacted to at least 92% of its Maximum Modified Dry Density (ASTM D1557). Fill layers shall be compacted, tested, and approved before placing subsequent layers.

The floor slabs may be designed as a slab on grade bearing on densified virgin soil, new engineer-approved structural fill, completely weathered rock, or bedrock. Floor slab design parameters are provided in Table 7 below. A layer of 3/4-inch crushed stone is recommended beneath the concrete slab for additional support and drainage. For buildings with basements, additional crushed stone and sump pits and pumps are required.

Table 7 – Building Floor Slab Design Parameters

Description	Value
Slabs Subgrade Material	Densified Virgin Soil/ New Structural Fill/ Completely Weathered Rock/ Bedrock
Modulus of Subgrade Reaction (k)	200 pci
Crushed Stone Cushion Thickness:	
New Structural Fill / Virgin Soil/ Building without Basements	6 inches
Completely Weathered/ Bedrock/ Building with Basements	12 inches

5.4 Lower Levels Below Grade – Foundation Walls

We understand that all of the multi-family buildings will have a lower level (i.e. basement or walkout basement). The soil adjacent to these building walls will exert a horizontal pressure against the walls. This pressure is based on the soil density and Coefficient of Earth Pressure at Rest (k_o), which is applicable to non-yielding building walls. Lower-level foundation wall design parameters are listed in Table 8 below.

Table 8 – Foundation Wall Design Parameters

Soil Type	On-Site Soils
Moist Unit Weight (γ)	130 pcf
Friction Angle (ϕ, deg)	30
Cohesion (c, psf)	0
Coefficient of Earth Pressure at Rest (k_o)	0.5
Equivalent Fluid Pressure	65 psf/ft
Foundation Sliding Coefficient	
Virgin Soil/ New Compacted Fill	0.45
Completely Weathered/ Bedrock	0.55

Where lower-level foundation walls are required, we recommend that a footing drain be placed around the exterior of the new building to prevent water from accumulating against the foundation wall. This drain may consist of a minimum 4-inch diameter, rigid wall perforated PVC pipe surrounded by at least 12 inches of 3/4-inch clean crushed stone. The stone shall be wrapped in a geotextile fabric, such as Mirafi 140N or equivalent. The foundation drainpipe should be extended to daylight, if possible, or to the stormwater collection system. The foundation drainpipe should not be connected to the interior sub slab drainage system. The outside face of the foundation wall, where it extends below grade, must be dampproofed or waterproofed.

Outside the building, the backfill placed adjacent to the foundation walls and above the footing drain shall consist of either clean crushed stone or an imported sand and gravel mixture containing less than 10% by weight passing a No. 200 sieve and placed in layers not exceeding 12 inches in thickness. This clean sand and gravel or crushed stone backfill shall extend a minimum of 12 inches horizontally from the back face of the foundation walls, and shall extend vertically up the wall face to 2 feet below the finished ground surface elevation. Where retained soils are not covered by concrete or pavement and are exposed to weather, the top 2 feet of backfill should consist of low permeable soil. This will help to minimize water infiltration behind the wall. Surface grades should be sloped away from the building to prevent water from accumulating adjacent to the wall.

Beyond this point, the foundation walls should be backfilled with suitable soil placed in layers up to 12 inches in thickness. The suitability of the on-site soil for reuse as compacted fill is discussed in a separate section below. The new fill should be compacted with a vibratory drum trench compactor (i.e. Wacker Model RT560), a heavy vibratory plate tamper (i.e. Wacker BPU 3545A or equivalent), or "jumping jack" style tamper (i.e. Wacker Model BS 600) to at least 92% of its Maximum Modified Dry Density (ASTM D1557). Heavy equipment should not be operated near the building walls as damage to the walls could occur.

5.5 Settlement

Settlement of individual footings, designed in accordance with recommendations presented in this report, is expected to be within tolerable limits for the proposed structure. For footings placed on natural soils or new compacted fill approved by Carlin-Simpson & Associates and constructed in accordance with the requirements outlined in this report, maximum total settlement is expected to be on the order of 1-inch or less. Maximum differential settlement between adjacent columns or load bearing walls is expected to be ½-inch.

The above settlement values are based on our engineering experience with similar soil conditions and the anticipated structural loading. These estimated settlements are intended to guide the structural engineer with their design. It is critical that Carlin-Simpson & Associates be retained to observe the foundation bearing surfaces and to confirm the recommended bearing pressures during construction.

5.6 Seismic Design Considerations

From site-specific test boring data, the Site Class was determined from New York State Building Code. The site-specific data used to determine the Site Class typically includes soil test borings to determine Standard Penetration resistances (N-values). Based on estimated average N-values in the upper 100 feet of soil profile, the site can be classified as Site Class D – Stiff Soil Profile.

New structures should be designed to resist stress produced by lateral forces computed in accordance with Section 1613 of the New York State Building Code. The values in Table 9 shall be used for this project.

Table 9 – Seismic Design Values

Description	**Value**
Mapped Spectral Response Acceleration for Short Periods, [Fig 1613.2.1 (1)]	S_S=0.280g
Mapped Spectral Response Acceleration at 1-Second Period, [Fig 1613.2.1 (2)]	S_1=0.060g
Site Coefficient [Table 1613.2.3 (1)]	F_a= 1.58
Site Coefficient [Table 1613.2.3 (2)]	F_v= 2.40
Max Considered Earthquake Spectral Response for Short Periods [Eq 16-36]	S_{MS}=0.441g
Max Considered Earthquake Spectral Response at 1-Second Period [Eq 16-37]	S_{M1}=0.145g
Design Spectral Response Acceleration for Short Periods [Eq 16-38]	S_{DS}=0.294g
Design Spectral Response Acceleration for 1-Second Period [Eq 16-39]	S_{D1}=0.096g

We expect that the proposed buildings will be a multi-family residential buildings and amenities building with a Risk Category of II. All proposed wastewater and water treatment buildings are essential buildings with a Risk Category of IV. Based on this assumption and the above Seismic Design Values, the Seismic Design Category (SDC) is for the multi-family residential buildings and amenities building is B and the wastewater and water treatment buildings SDC is C. The Risk Category and SDC should be verified by the project structural engineer. In the event that the structure has a different Risk Category, the SDC should be updated in accordance with Section 1613 of the New York State Building Code.

6.0 SITE EVALUATION

Our recommendations for the proposed site development including new stormwater management areas, soil and rock slopes, retaining walls, new underground utilities, pavement for new driveways and parking areas, temporary construction excavations, and the suitability of the existing site soils for reuse as structural fill are provided below. A summary of the boring and test pit observations for the site are provided in Table 1, 2 and 3 above and in Table 10 below.

Table 10 – Summary of Boring and Test Pit Observations for Site Development

Boring/ Test Pit No.	**Approx Ground Surface Elevation**	**Depth to Groundwater (Elevation)**	**Depth to Bottom of Existing Fill (Elevation)**	**Depth to Bedrock (Elevation)**
B-109	+475.0	8’0” (+467.0) SHGW @ 5’0” (+470.0)	2’0” (+473.0)	CWR @ 13’6” (+461.5) AR @ 13’9” (+461.3)
B-110	+474.0	3’6” (+470.5)	2’6” (+471.5)	CWR @ 9’6” (+464.5) AR @ 11’0” (+463.0)
B-111	+482.0	3’6” (+478.5)	1’6” (+480.5)	CWR @ 8’6” (+473.5) AR @ 10’6” (+471.5)

Boring/ Test Pit No.	Approx Ground Surface Elevation	Depth to Groundwater (Elevation)	Depth to Bottom of Existing Fill (Elevation)	Depth to Bedrock (Elevation)
B-112	+481.0	4’0” (+477.0) SHGW @ 3’0” (+478.0)	1’6” (+479.5)	CWR @ 11’0” (+470.0) AR @ 12’6” (+468.5)
B-113	+472.0	NE to 9’10”	NE	CWR @ 5’6” (+466.5) AR @ 9’10” (+462.2)
B-114	+622.0	NE to 3’6”	NE	AR @ 3’6 (+618.5)
B-117	+624.0	NE to 7’9”	NE	CWR @ 6’6” (+617.5) AR @ 7’9” (+616.25)
B-121	+674.0	NE to 4’6”	2’6” (+671.5)	AR @ 4’6” (+669.5)
B-203	+552.0	**9’0” (+543.0)	10’0” (+542.0)	CWR @ 10’0” (+542.0) AR @ 10’2” (+541.8)
DH-A	+500.0	3’0” (+497.0)	2’3” (+497.75)	CWR @ 6’6” (+493.5) AR @ 8’6” (+491.5)
DH-B	+500.0	4’0” (+596.0)	2’6” (+597.5)	CWR @ 4’9” (+495.25) AR @ 5’6” (+494.5)
DH-C	+563.0	NE to 6’6”	1’3” (+651.75)	CWR @ 5’6” (+557.5) AR @ 6’6” (+556.5)
DH-D	+563.0	NE to 7’6”	NE	CWR @ 7’0” (+556.0) AR @ 7’6” (+555.5)
TP-E	+618.0	NE to 1’6”	1’6” (+616.0)	AR @ 1’6” (+616.0)
TP-F	+621.0	NE to 2’3”	2’3” (+618.75)	AR @ 2’3” (+618.75)
TP-G	+618.0	NE to 1’3”	1’3” (+616.75)	AR @ 1’3” (+616.75)
TP-H	+619.0	NE to 3’6”	NE	CWR @ 3’0” (+616.0) AR @ 3’6” (+615.5)
DH-I	+493.2	7’6” (+485.7) SHGW @ 2’6” (+490.0)	NE	NE to 9’0”
DH-J	+492.5	7’6” (+485.0) SHGW @ 1’3” (+491.25)	2’9” (+489.75)	CWR @ 6’9” (+485.75) AR @ 9’3” (+483.25)
DH-K	+624.0	NE to 3’0”	2’9” (+621.25)	AR @ 3’0” (+621.0)
DH -L	+623.0	NE to 8’3”	2’3” (+620.75)	CWR @ 4’9” (+618.25) AR @ 8’3” (+614.75)
DH -M	+624.5	NE to 5’9”	2’3” (+622.25)	AR @ 5’9” (+618.75)
DH -N	+623.1	NE to 2’9”	2’9” (+620.35)	AR @ 2’9” (+620.35)
DH -O	+618.8	NE to 0’10”	NE	AR @ 0’10” (+617.9)
DH -P	+620.5	NE to 5’0”	2’0” (+618.5)	CWR @ 3’3” (+617.25) AR @ 5’0” (+615.5)
INF-C	+560.5	NE to 4’0”	1’3” (+559.25)	AR @ 4’0” (+556.5)

NE – Not Encountered
(**) – Trapped Groundwater
AR – Auger Refusal on Probable Bedrock
CWR – Completely to Highly Weathered Rock
SHGW – Evidence of Seasonal High Groundwater (i.e. Mottling)

6.1 Stormwater Management System

It is our understanding that three stormwater management areas will be constructed at the site. Two of the three stormwater management areas will consist of detention basins and are located to the west of Building #2 and Building #3. The southern basin will have a bottom of basin elevation of +621.75 and the northern basin will have a bottom of basin elevation of +618.5.

During this study, test pits TP-E through TP-H, and DH-K through DH- P were performed in the area of the proposed basins located west of Building #2 and #3. The locations are shown on the attached Boring and Test Pit Location Plan. Based on the test pits performed in the proposed basins, below the topsoil in most of the test pits is existing fill that extends to depths ranging from 1’3” to 2’9” (approximate elevation +621.25 to +616.75). Underlying the existing fill is the virgin silty sand or sandy silt. Bucket refusal on probable bedrock was encountered in each of the test pits performed for the stormwater management areas at depths ranging from 0’10” to 8’3” (approximate elevations +620.35 to +615.5). Groundwater was not encountered in any of the test pits above the bedrock surface.

The third stormwater management area is located to the south of the proposed 105,000-gallon water storage tank. The type of stormwater management and invert or bottom of basin elevation was also unknown at the time of this report. Test pits DH-C, DH-D, and INF-C were performed in the area of the proposed stormwater management. The locations are shown on the attached Boring and Test Pit Location Plan. Based on the test pits performed in the proposed basins, below the topsoil in DH-C and INF-C is 1’3” of existing fill. Below the existing fill and topsoil in each of the test pits is silty sand or sandy silt. Bucket refusal on probable bedrock rock was encountered in each of the test pits at depths ranging from 4’0” to 7’6” (approximate elevations +556.5 to +555.5) below the exiting ground surface. Groundwater was not encountered in any of the test pits above the bedrock surface.

During this study five (5) infiltration tests were conducted at the site. The infiltration tests were performed based on the testing requirements provided in Appendix D of the Stormwater Management Design Manual (January 2015). In addition, the mean permeability coefficient (K_m) was computed for each field infiltration performed at the site. The equation for K_m is provided below. The results are provided below in Table 11.

Table 11 – Summary of Infiltration Test Results

Test Pit No.	Existing Ground Surface Elevation	Test Depth Below Existing Ground Surface (Elevation)	Field Infiltration Rate (in/hr)	Mean Permeability Coefficient, K_m (in/hr)
INF-C	+560.5	*3’0” (+557.5)	6.75	0.49
INF-D	+560.7	*5’3” (+555.5)	22.5	4.18
DH-L	+623.0	*3’9” (+619.3)	3.75	0.25
DH-M	+624.5	*4’9” (+619.8)	9.75	0.78
DH-P	+620.5	*3’3” (+617.3)	46.5	9.3

(*) – Test depth is the bottom of the infiltration test.

$$K_m = 1.142R_t \times \frac{\left[Ln\left(\frac{h_1}{h_2}\right)\right]}{(t_2 - t_1)}$$

Stormwater management areas should be a minimum of three (3) feet above confining layers (i.e. rock), seasonal high groundwater, or the existing groundwater table. Should stormwater management areas be planned in other portions of the site, they should be evaluated on a case-by-case basis. The stormwater management systems must be designed in accordance with the applicable New York State Department of Environmental Conservation (NYSDEC) regulations and the New York State Stormwater Management Design Manual (January 2015). The testing requirements are outlined in Appendix D of the manual.

6.2 New Site Retaining Walls

We understand that several site retaining walls will be required to achieve the planned site grades throughout the site. The types of retaining walls for this project were unknown at the time of this report. However, design options for this site could include cast-in-place steel reinforced concrete walls, mechanically stabilized earth (MSE) walls, or segmental gravity block retaining walls (i.e. redi-rock). The MSE wall consists of segmental concrete block units with geogrid reinforcement.

The following retaining wall recommendations are preliminary and meant to give guidance during the design process. Once the types of walls have been determined, additional recommendations can be provided.

Preparation of Wall Areas

In order to prepare the retaining wall areas for construction, all surface materials including asphalt, concrete, topsoil, and surface vegetation must be completely removed from the new retaining wall areas. The removal of the surface materials shall extend at least 5 feet beyond the proposed construction limits, where practical.

The exposed subgrade at the bottom of the excavation shall then be compacted by several passes with a vibratory drum trench compactor (i.e. Wacker Model RT560) or a vibratory drum roller (i.e. Wacker Model RD-25 Roller). The densification of the subgrade shall be inspected by a representative from Carlin-Simpson & Associates. In the event that soft or unsuitable soil is identified during the densification, the unsuitable material shall be removed, as directed by the Carlin-Simpson & Associates representative and replaced with new compacted fill.

Once the subgrade has been approved by Carlin-Simpson & Associates, the excavation can be backfilled to the planned subgrade elevation with new structural fill. New compacted fill shall consist of either suitable on-site soil or imported sand and gravel. In the event that backfill soil is imported, it shall meet the gradation in Section 5.1 “Installation of New Structural Fill”. The fill shall be placed in 12 inch thick loose layers and compacted to at least 95% of its Maximum Modified Dry Density (ASTM D1557). Each layer must be compacted, tested, and approved before placing subsequent layers. The footings or base of the walls can be designed using a net design bearing pressure as outlined in Table 13 below.

Drainage and Drainage Backfill

Drains must be provided behind the retaining walls to prevent the buildup of hydrostatic pressure against the walls. The drain should consist of a 4-inch perforated pipe surrounded by 12 inches of clean 3/4-inch crushed stone. The pipe and crushed stone shall be wrapped in a geotextile filter fabric (Mirafi 140N or equivalent). The drain pipe should be installed behind the base or foundation of the retaining walls to collect the water behind the walls and be connected into the site stormwater collection system or extended to daylight beyond the wall areas.

Behind the walls, the backfill placed adjacent to the walls and above the footing drain shall consist of freely draining aggregate meeting the requirements of AASHTO No. 57 or 67 Aggregate. This drainage fill shall extend a horizontally a minimum of 12 inches from the back of the walls and shall extend vertically to at least 2 feet below final grade behind the walls. The crushed stone shall be separated from the surrounding soil using a geotextile filter fabric (Mirafi 140N or equivalent).

Retaining Wall Backfill

Fill material used as backfill beyond the drainage zone shall consist of suitable on-site soil approved by Carlin-Simpson & Associates or an imported sand and gravel mixture containing less than 20% material by weight passing a No. 200 sieve. Backfill placed behind the retaining wall shall be placed in 12-inch loose layers. Each layer shall be compacted using a hand guided mechanical tamper to 92% of its Maximum Modified Dry Density (ASTM D1557). Excessive compaction adjacent to the retaining wall must be avoided. Layers shall be tested and approved before placing subsequent layers. Large compaction equipment must not be used within 10 feet of the new wall to prevent potential damage to the wall.

For a MSE retaining wall, fill material used to construct the reinforced soil zone of MSE walls shall consist of one of the following soil types according to their USCS designations (GP, GW, SW, SP, SM). The fill material must also meet the gradation in Table 12 below. The material passing the No. 200 sieve must be either non-plastic or of low plasticity. The maximum particle size shall be limited to 1.5 inches. Materials outside of these criteria, including on-site soils, require approval of the Wall Design Engineer and Carlin-Simpson & Associates.

Table 12 – Gradation Requirements for MSE Wall Reinforcement Zone

Sieve Size	Percent Passing
1.5 inch	100
3/4 inch	75-100
No. 4	20-90
No. 40	0-60
No. 200	0-30

The contractor shall be responsible for providing soil samples and completing all necessary laboratory testing, as required by Carlin-Simpson & Associates, to determine soil design parameters for any imported fill used in the construction of the walls. The wall design engineer must approve the fill to be utilized in the reinforced zone.

Wall Design Considerations

The retaining wall bases shall bear on virgin soil, new compacted fill, completely weathered rock or bedrock. For segmental block walls (MSE), the wall bases must be adequately embedded for internal and global stability. In addition, the soil adjacent to the site retaining walls will exert a horizontal pressure against the walls. This pressure is based on the soil density and the Coefficient of Active Earth Pressure (k_a). The values listed in Table 13 below shall be used for design of the new retaining walls.

Table 13 – Reinforced Concrete and MSE Retaining Wall Design Parameters

Description	**Value**
Foundation Bearing Material	Virgin Soil or New Compacted Fill
Net Design Bearing Pressure	4,000 psf
Backfill Moist Unit Weight	130 pcf
Backfill Friction Angle	30 degrees
Cohesion	0 psf
Active Earth Pressure Coefficient (k_a) *Level Backslope Behind Wall* *2.5H:1V Backslope Behind Wall*	 0.33 0.43
Equivalent Fluid Pressure (EFP) *Level Backslope Behind Wall* *2.5H:1V Backslope Behind Wall*	 42.9 pcf 55.9 pcf
Friction Coefficient	0.45
Minimum Roadway Surcharge	250 psf

Where applicable, additional surcharge loads, such as driveways, parking areas, structures, construction equipment, temporary materials storage, etc. must also be incorporated into the wall design. In Table 13 above, the active earth pressure coefficient (k_a) has been provided for both a level back slope and a 2.5H:1V backslope behind the wall. If the back slope is a different slope the k_a must be recalculated accordingly.

The Wall Design Engineer shall prepare a complete wall design (i.e. drawings, specifications, and calculations), which shall be designed and sealed by a Professional Engineer registered in the State of New York and submitted to Carlin-Simpson & Associates for review. MSE retaining walls shall be designed in accordance with the recommendations of the NCMA Design Manual for Segmental Retaining Walls (Current Edition) and in accordance with AASHTO standards. Carlin-Simpson & Associates can prepare an MSE wall design as an additional service upon request.

The design shall consider the internal stability of the reinforced soil mass and shall be in completed accordance with acceptable engineering practice. In addition, external stability, including sliding, overturning, and bearing, as well as global stability shall be evaluated in accordance with acceptable engineering practice.

The wall design engineer shall be responsible for determining the required geogrid reinforcement lengths and elevations based on his stability analysis (including global stability) and the properties of the geogrid reinforcement used in the design.

6.3 Soil and Rock Slopes

Based on the provided site plan, we understand that soil and/or rock slopes are planned throughout the site. Based on the preliminary grading plan, the slopes on the site will range from approximately 8 to 38 feet in height.

Based on the grading plan that was provided to this office, the proposed slopes are 2.5 horizontal to 1.0 vertical (2.5H:1V) or flatter. Based on the boring and test pit observations, slopes will consist of a combination of soil, completely weathered rock, and rock. Cuts and fills are expected to construct these slopes. Steeper slopes could be considered for rock slopes, in the event that the extent of the poor rock quality is present, soil and/or rock nails and shotcrete would be required.

Soil Slopes

For slopes constructed in soil or completely weathered rock, we recommend a slope angle of 2.5H:1V or flatter. Soil slopes up to 2H:1V are feasible with further evaluation and with stabilization. Steeper soil slopes will be prone to instability (i.e. sloughing or sliding) if not designed and constructed properly and if surface water and groundwater seepage are not properly controlled. Design of the soil slopes at the site is beyond the scope of this investigation.

All new slope construction must be overseen by a qualified geotechnical engineer (Carlin-Simpson & Associates), to ensure that they are properly constructed, surface water and groundwater infiltration is directed away from the top of slope, groundwater seepage exiting the slope is properly mitigated, and appropriate vegetation is established on the completed slope.

New soil slope embankments shall be constructed from the bottom up. End dumping from the top of the slope shall not be permitted. Each fill layer must be benched into the existing embankment for slope stability. In order to prepare the new slope area for construction, the existing surface materials (i.e. topsoil and surface vegetation) shall be completely removed from the planned slopes areas receiving new fill. The removal of the topsoil and vegetation shall extend at least 5 feet beyond the construction limits of the new slope, including in front of the toe of the slope and within the areas to be filled.

After the topsoil, surface vegetation, and unsuitable materials have been removed and prior to the placement of new fill, the exposed subgrade shall be proofrolled by several overlapping passes of a large vibratory drum roller (i.e. Dynapac CA 250 or equivalent). Where the existing subgrade is on a slope, the area shall be leveled to permit proper compaction of the subgrade prior to filling. The proofrolling is required to densify the underlying soils. If any soft or otherwise unsuitable soils are noted, the unsuitable material shall be removed and replaced with new compacted fill. Carlin-Simpson & Associates shall be responsible for determining what material, if any, is to be removed and will direct the contractor during this operation.

The subgrade receiving new fill must be firm and non-yielding prior to the placement of the next fill layer. Fill placed on existing slopes must be keyed or benched into the existing slope for slope stability. For existing slopes 4H:1V or flatter, the existing ground surface should be deeply scarified. For existing slopes steeper than 4H:1V, the ground surface should be benched. Benches into the existing slope should be a minimum width of 8 feet (typical small dozer blade width). The depth of the benches will be dictated by the existing embankment conditions.

The new fill used to construct the slopes shall consist of either engineer-approved on-site soil or imported sand and gravel. Imported sand and gravel shall contain less than 20% by weight passing a No. 200 sieve. The fill shall be placed in layers up to 12 inches in loose thickness and each layer shall be compacted to at least 95% of its Maximum Modified Dry Density (ASTM D1557). Fill layers shall be compacted, tested, and approved before placing subsequent layers.

Erosion control blankets or permanent turf reinforcement mats (TRM) should be used on all slopes steeper than 3H:1V to protect the slope from surface erosion. Vegetation should be established as soon as possible after construction to help stabilize the slope and to minimize surface erosion. A landscape architect should be consulted for recommendations regarding the best type of vegetation for the slopes. The top of slope must be graded to redirect surface water away from the slope and to prevent sheet flow directly over the top of the slope. This can be achieved by constructing swales at the top of slope to redirect the water. Near roadways, curbs and catch basins should be used.

Rock Slopes

We understand that a permanent rock slope is being considered to the east of Building # 5 and Building #6. Based on the grading plans, cuts up to 20 feet will be required to achieve the proposed grades. This area has been highlighted on the attached Boring and Test Pit Location Plan (Figure 2). Very limited boring and test pit information in this area suggests that the overburden extend 2’0” to greater than 6’0” below the existing ground surface followed by completely weathered to slightly weathered Gneiss bedrock. ***Additional borings or test pits must be performed to finalize the design of a rock slope in this area.***

For this site, we anticipate that a rock slope of approximately 1.0 horizontal to 1.0 vertical (1H:1V) or 1.0 horizontal to 1.5 vertical (1H:1.5V) may be achieved with proper anchoring and stabilization methods. In rock, the stability of a slope is dependent upon the quality of the rock, the jointing and shear zones in the rock, the strike and dip of the rock, and groundwater seepage.

General Rock Slope Excavation Procedures

The excavation of the soil and rock slopes shall be carefully advanced in stages. The general procedure for constructing the proposed slopes shall be as follows:

1. The soil slope and bench at the top of the slope shall be constructed first. The soil slope above the top of the rock slope shall be graded on a 3H:1V slope or flatter angle.

2. A pre-split line shall be drilled along the proposed rock slope face line. The spacing shall be determined by the blasting contractor and submitted to Carlin-Simpson & Associates for review.

3. The removal of rock can than begin. The rock at the planned slope face shall be removed in stages of about 10 feet vertically.

4. Carlin-Simpson & Associates will inspect the exposed face of each stage and a rock-anchoring plan will be prepared (if required). The plan will outline anchor locations inclinations and lengths.
5. The required rock anchors will be installed prior to removing the next stage of rock.

6. The process will continue is stages until the excavation is completed.

The blasting contractor should avoid over-blasting the rock. Over-blasting will disturb the deeper intact rock that will be used as bearing material for the proposed foundations and floor slabs. Any material that is over-blasted will have to be removed and replaced with new structural fill under the full-time inspection of Carlin-Simpson & Associates. Carlin-Simpson & Associates will be responsible for determining what material is to be removed and will direct the contractor during the excavation.

Carlin-Simpson & Associates can prepare specifications for the construction of soil and rock slopes and for the removal of bedrock as an additional service upon request.

6.4 Utilities

New utilities may bear in the densified existing fill, virgin site soils, new compacted fill, completely weathered rock, or bedrock. The bottom of all trenches should be excavated clean and shaped so a hard bottom is provided for the pipe support. If any soft or unsuitable soil conditions are encountered during construction, the unsuitable materials must be removed and replaced with new compacted fill.

Trench hammering or blasting may be required to install the new utilities in portions of the site where weathered rock is encountered above the planned utility invert elevation. Where rock is encountered in the utility excavations, it must be removed to at least six (6) inches below planned pipe invert. The over-excavated six (6) inches shall then be filled with new sandy fill and compacted to at least 92% of its Maximum Modified Dry Density (ASTM D-1557) to act as a cushion on the rock.

For areas where existing fill is encountered within the utility excavations, the subgrade at bottom of the utility excavation shall be compacted in place with a vibratory drum trench compactor or “jumping jack” style tamper. Carlin-Simpson & Associates must evaluate these areas for the presence of soft or unsuitable material within the existing fill matrix. If instability is observed, portions of this fill may have to be removed and replaced with new compacted fill. Carlin-Simpson & Associates will determine this during construction.

In the event that the trench bottom becomes soft due to the inflow of surface or trapped water, the soft soil shall be removed and the excavation filled with a minimum of six (6) inches of 3/4-inch clean crushed stone to provide a firm base for support of the pipe. Sump pits and pumps should be adequate to keep the excavations dry.

After the utility is installed, the trench must be backfilled with compacted fill. The fill shall consist of suitable on-site soil or imported sand and gravel. Imported fill shall contain less than 20% by weight passing a No. 200 sieve. Large rock fragments and boulders must not be placed directly against the pipe. Controlled compacted fill shall be placed in one (1) foot loose layers and each layer shall be compacted to at least 92% of its Maximum Modified Dry Density (ASTM D-1557). The backfill must be free of topsoil, debris, and large boulders or rock fragments.

6.5 Pavement

We understand that the proposed construction will also include new paved roads and parking areas. Densified existing fill, virgin soil, completely weathered bedrock, bedrock, and new compacted fill may be used to support the pavement.

To prepare the new pavement areas, the existing surface materials (i.e. topsoil, vegetation, etc.) must be removed from the planned pavement areas. In the proposed pavement areas, the existing structures and debris resulting from the demolition of these structures must be completely removed from the new pavement area, extending at least five (5) feet beyond the new paving limits, where practical. After all debris has been removed, the exposed subgrade soil that is either at or below the planned subgrade elevation shall be proofrolled with a large vibratory drum roller (i.e. Dynapac 250 or equivalent) to densify the underlying soils. The on-site representative from Carlin-Simpson & Associates shall witness the proofrolling operation. If any excessive movement is noted during the proofrolling, the soft or unsuitable soil shall be removed and replaced with new compacted fill.

Areas where existing fill is encountered shall be compacted in place. Carlin-Simpson & Associates must evaluate these areas for the presence of soft or unsuitable material within the existing fill matrix. Portions of this fill may have to be removed and replaced with new compacted fill. Carlin-Simpson & Associates will determine this during construction.

Where new fill is required to achieve final grades, it shall consist of either suitable on-site soil or imported sand and gravel. Imported sand and gravel shall contain less than 20% by weight passing a No. 200 sieve. New fill shall be placed in layers not exceeding one (1) foot in loose thickness and each layer shall be compacted to at least 92% of its Maximum Modified Dry Density (ASTM D-1557).

Asphalt Pavement Section

After the planned subgrade has been proofrolled and new compacted fill has been placed as required, the new pavement subbase may be placed on the existing site soils, bedrock, and new compacted fill. Dense graded aggregate (DGA) is recommended for the subbase layer for drainage and additional pavement support.

Where rock is encountered at the subgrade elevation in the cut areas, the subgrade stone should be increased to a depth of 12-inches. In addition to providing supplementary drainage, finger drains extending from the catch basin may be required. This must be evaluated by Carlin-Simpson & Associates at the time of construction. A typical finger drain section consists of an 18 to 24-inch-wide trench excavated 12-18 inches below the subgrade surface. Each drain should extend 20-30 feet from the catch basin. A six-inch layer of ¾" clean crushed stone is placed at the bottom of the trench. A 4-inche diameter perforated PVC pipe is then placed on the stone and the trench is backfilled with ¾" clean crushed stone. A minimum of six (6) inches of ¾-inch clean crushed stone should be provided around the pipe. The subgrade should be pitched toward the drainage trench to facilitate drainage. The drainpipes should be sloped toward and connected to finger drain stormwater basins.

We recommend that the following pavement section be used for the parking lots and driveways. This pavement section is subject to local government approval.

Light Duty – Parking Lots

1.5"	Asphalt Top Course	NYSDOT, Type 6F
2.5"	Asphalt Base Course	NYSDOT, Type 3
6"	Stone Subbase (DGA)	NYSDOT, Type 1
	Approved Compacted Subgrade (Minimum CBR = 10)	

Medium Duty – Driveways/Roadways

2"	Asphalt Top Course	NYSDOT, Type 6F
3"	Asphalt Base Course	NYSDOT, Type 3
8"	Stone Subbase (DGA)	NYSDOT, Type 1
	Approved Compacted Subgrade (Minimum CBR = 10)	

Based on the boring data, we anticipate that the densified existing site soils, weathered bedrock, and new compacted fill will provide a CBR value that is equal to or greater than 10, which can adequately support the above pavement sections.

Rigid (Concrete) Pavement

We expect that the proposed construction may also include rigid concrete pavement in portions of the site. The new concrete pavement should be designed for light vehicles (autos, pickup trucks, vans) and occasional delivery or trash pick-up truck traffic. This pavement section is subject to local government approval.

5.5”	Concrete Section	4,000 psi
6”	Gravel Subbase Course	NYSDOT Type 4
	Approved Compacted Subgrade (Minimum CBR = 10)	

The rigid concrete pavement should be reinforced with welded wire fabric or reinforcing steel bars for crack control. Contraction joints should also be provided with a maximum spacing of 10 feet. The project structural engineer or the site engineer shall determine the type, size, and spacing of the reinforcement based on the anticipated loading.

6.6 Temporary Construction Excavations and Excavation Protection

Temporary construction excavations shall be conducted in accordance with the most recent OSHA guidelines or applicable federal, state or local codes. A qualified person should evaluate the excavations at the time of construction to determine the appropriate soil or rock type and the allowable slope configuration. Based on the boring data, we believe the site soil and bedrock would have the following classifications as defined by the OSHA guidelines.

Soil/ Rock Type	Possible Classification	Maximum Slope or Bench
Existing Fill	“C”	1½H:1V
Virgin Soil	“B” or “C”	1H:1V or 1½H:1V
Completely Weathered Rock	“B”	1H:1V
Bedrock	“A”	3/4H:1V

Temporary support (i.e. trench boxes, sheeting and shoring, etc.) should be used for any excavation that cannot be sloped or benched in accordance with the applicable regulations, where necessary to protect adjacent utilities and structures, or where saturated soils or water seepage is encountered within the excavation.

A New York State licensed professional engineer must design all temporary and permanent support systems. The contractor will select the shoring type and submit design calculations for the proposed shoring method to Carlin-Simpson & Associates for review. The soil adjacent to the temporary support system will exert a horizontal pressure against the system. This pressure is based on the soil unit weight, coefficient of active earth pressure, and depth of the excavation. Support of Excavation design parameters are listed in Table 14 below.

Table 14 – Temporary Sheeting and Shoring Design Parameters

Description	Soil	Completely Weathered Rock
Moist Unit Weight (pcf)	130	140
Friction Angle (ϕ, deg)	30	36-38
Cohesion (c, psf)	0	0
Active Earth Pressure Coefficient (k_a)[1]	0.33	0.26-0.24
Equivalent Fluid Pressure (pcf)	42.9	36.4-33.6
Passive Earth Pressure Coefficient (k_p)[1]	3.0	3.9-4.2

6.7 Suitability of the In-Situ Soil and Rock for Use as Compacted Fill

The suitability of each stratum for use as compacted fill is discussed below.

Stratum 1A Topsoil — Topsoil is not suitable for use as structural fill. During construction, it shall be stripped from the construction areas. The topsoil may be reused in non-structural, non-sloped landscape areas or hauled offsite.

Stratum 1B Asphalt — Asphalt is not suitable for use as compacted fill in the proposed building areas. However, the existing asphalt pavement may be reused as subgrade material and mixed with soil for use as in the parking lot and driveway areas. The asphalt should be stripped from the work area and stockpiled if to be reused or hauled off site for disposal. Prior to using the asphalt for compacted fill, the material shall be crushed into pieces smaller than 4 inches and mixed with soil. In pavement fill areas, the existing asphalt may be broken up into 4-inch sized pieces and left in place.

Stratum 2 Existing Fill — The existing fill generally consists of brown, dark brown coarse to fine SAND, trace (to some) Silt, trace (to some) coarse to fine Gravel. Debris (i.e. wood, brick, asphalt, and roots) was noted within this stratum in portions of the site. The existing fill is generally suitable for reuse as compacted fill provided that it remains relatively dry for optimum compaction and that any debris has been removed prior to its reuse.

Stratum 3 Silty Sand or Sandy Silt — The virgin soils consist of brown, gray coarse to fine SAND, trace (to some) Silt, trace (to and) coarse to fine Gravel or brown SILT some (to and), coarse to fine Sand, trace (to little) coarse to fine Gravel. The higher silt content soils will be moisture sensitive. However, this stratum is generally suitable for reuse as compacted fill, as long as it remains relatively dry for optimum compaction.

<u>Stratum 4/5</u> Weathered Gneiss Bedrock or Gneiss Bedrock	Excavated rock or completely weathered rock may be used as fill material provided that the material is well graded and has been approved prior to use by Carlin-Simpson & Associates. All rock fill (including large cobbles and boulders) must be well blended with smaller rock fragments and/or soil. Gradation limits, i.e. maximum particle size for rock placed, will depend on the location of placement as shown in Table 15 below. Excavated rock (and boulders) that are too large for use as structural fill should be processed through a crusher to provide suitable fill material. Rock fill shall be placed in maximum 12 inch thick layers and compacted with multiple passes of a large vibratory roller to a firm and non-yielding state as determined by the on-site representative from Carlin-Simpson & Associates. Rock fill should not be used where it will interfere with the installation of foundations, utilities, or geogrid reinforcement. Also, it shall not be used as backfill directly against concrete walls or utilities.

The boring data indicates that the on-site soils contain a varying percentage of silt (10% to greater than 50%). The higher silt content soils will be moisture sensitive. If the soil becomes too wet, it will be difficult to achieve adequate compaction. In addition, the site soils that extend below the groundwater table are completely saturated and therefore, unsuitable for reuse.

Proper moisture conditioning of the soil will be required. New compacted fill should be within 2% (+/-) of its optimum moisture content at the time of placement. In the event that the on-site material is too wet at the time of placement and cannot be adequately compacted, the soil should be aerated and allowed to dry or the material removed and a drier cleaner fill material used. In the event that the on-site material is too dry at the time of placement and cannot be adequately compacted, water may be needed to increase the soil moisture content for proper compaction.

The in-situ soils which exist throughout the site may become soft and weave if exposed to excessive moisture and construction traffic. The instability will occur quickly when exposed to these elements and it will be difficult to stabilize the subgrade. We recommend that adequate site drainage be implemented early in the construction schedule and if the subgrade becomes wet, the contractor should limit construction activity until the soil has dried.

Excavated boulders, weathered rock, and rock may be used as fill material in designated areas, provided that the material conforms to the required gradation, is well graded, and has been approved prior to use by Carlin-Simpson & Associates. All rock fill must be well blended with smaller rock fragments and/or soil. The recommended maximum particle size for rock placed as fill is shown in Table 15 below. Excavated rock, too large for use as structural fill, should be processed through a crusher to provide suitable fill material.

Table 15 – Rock Fill Gradation Limitations

Location		Maximum Particle Size
Building Area	Within 2 feet of Finished Floor	3 inches
	More than 2 feet below Finished Floor	6 inches
	More than 6 feet below Finished Floor	12 inches
Outside Building Area (i.e. Pavement and Sidewalk Areas)	Within 18 inches of Finished Grade	3 inches
	More than 18 inches below Finished Grade	6 inches
	More than 3 feet below Finished Grade	12 inches

The minimum compaction requirements for the various areas of the site are summarized in Table 16 below.

Table 16 – Minimum Compaction Requirements

Area	Maximum Modified Dry Density (ASTM D-1557)
Below Foundations	95%
Below Floor Slabs	92%
Retaining Wall Subgrade	95%
Retaining Wall Backfill	92%
Soil Slopes	95%
Pavement Areas	92%
Exterior Slabs and Sidewalks	92%
Utility Trenches	92%
Landscape Areas – Non-Sloped	90%

7.0 GENERAL

The findings, conclusions and recommendations presented in this report represent our professional opinions concerning subsurface conditions at the site. The opinions presented are relative to the dates of our sitework and should not be relied on to represent conditions at later dates or at locations not explored. The opinions included herein are based on information provided to us, the data obtained at specific locations during the study and our past experience. If additional information becomes available that might impact our geotechnical opinions, it will be necessary for Carlin-Simpson & Associates to review the information, reassess the potential concerns, and re-evaluate our conclusions and recommendations.

Regardless of the thoroughness of a geotechnical exploration, there is the possibility that conditions between borings and test pits will differ from those encountered at specific boring or test pit locations, that conditions are not as anticipated by the designers and/or the contractors, or that either natural events or the construction process have altered the subsurface conditions. These variations are an inherent risk associated with subsurface conditions in this region and the approximate methods used to obtain the data. These variations may not be apparent until construction.

The professional opinions presented in this geotechnical report are not final. Field observations and foundation installation monitoring by the geotechnical engineer, as well as soil density testing and other quality assurance functions associated with site earthwork and foundation construction, are an extension of this report. Therefore, Carlin-Simpson & Associates should be retained by the Owner to observe all earthwork and foundation construction, to document that the conditions anticipated in this study actually exist, and to finalize or amend our conclusions and recommendations Carlin-Simpson & Associates is not responsible or liable for the conclusions and recommendations presented in this report if Carlin-Simpson & Associates does not perform the observation and testing services.

Therefore, in order to preserve continuity in this project, the Owner shall retain the services of Carlin-Simpson & Associates to provide full time geotechnical related monitoring and testing during construction. At a minimum, this shall include the observation and testing of the following: 1) the removal of existing fill and unsuitable soil, where required; 2) the proofrolling of the subgrade soil prior to the placement of new compacted fill; 3) the placement and compaction of controlled fill; 4) the excavation for the new foundations; 5) the construction of retaining walls; (6) the construction of soil and rock slopes; and 7) the preparation of the subgrade for the floor slabs and pavement areas.

This report has been prepared in accordance with generally accepted geotechnical engineering practice. No other warranty is expressed or implied. The evaluations and recommendations presented in this report are based on the available project information, as well as on the results of the exploration. Carlin-Simpson & Associates should be given the opportunity to review the final drawings and site plans for this project to determine if changes to the recommendations outlined in this report are needed. Should the nature of the project change, these recommendations should be re-evaluated.

This report is provided for the exclusive use of Summit Club Partners, LLC and the project specific design team and may not be used or relied upon in connection with other projects or by other third parties. Carlin-Simpson & Associates disclaims liability for any such third-party use or reliance without express written permission. Use of this report or the findings, conclusions or recommendations by others will be at the sole risk of the user. Carlin-Simpson & Associates is not responsible or liable for the interpretation by others of the data in this report, nor their conclusions, recommendations or opinions.

If the conditions encountered during construction vary significantly from those stated in this report, this office should be notified immediately so that additional recommendations can be made.

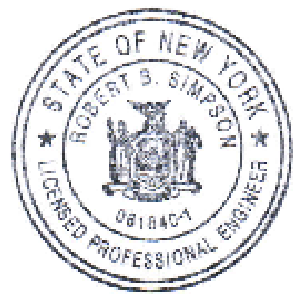
Thank you for allowing us to assist you with this project. Should you have any questions or comments, please contact this office.

Very truly yours,

CARLIN-SIMPSON & ASSOCIATES, LLC

CATHERINE K. ANDERSEN, P.E.
Project Engineer

ROBERT B. SIMPSON, P.E.
Principal



CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG DRAFT	BORING NUMBER R-1

Project:	Proposed Development, 568 & 570 Bedford Rd, North Castle, NY	SHEET NO.:	1 of 1
Client:	Summit Club Partners, LLC	JOB NUMBER:	22-85
Drilling Contractor:	Environmental Technical Drilling	ELEVATION:	+631.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM:	Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE:	1/Aug/22
1/Aug/22	1530	10'0'	HSA	DIA.	3 1/4"	1 3/8"			FINISH DATE:	1/Aug/22
Mottling @ 7'0"				WGHT		140#			DRILLER:	MK
				FALL		30"			INSPECTOR:	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	IDENTIFICATION	REMARKS
			1	**Topsoil** 0'2"	
1		S-1	1	**FILL (Brown coarse to fine SAND,**	Rec = 15"
			7	**little (+) Silt, little coarse to fine Gravel)**	moist
2			6	FILL (Br cf S, l (+) $, l cf G) 2'0"	
			5		
3		S-2	5	Br cf S, t $, a cf G	Rec = 13"
			3		moist
4			2		
5					
			9		
6		S-3	6	same, l (+) cf G	Rec = 19"
			7	**Brown coarse to fine SAND, trace Silt,**	moist
7			8	**little coarse to fine Gravel**	
			5		
8		S-4	4	same, slightly mttled br, gr, or a $, l (-) cf G	Rec = 19"
			5		moist
9			5		slightly mottled
10					
			5		
11		S-5	10	same, br	Rec = 24"
			11		wet
12			15		
13					
14				14'0"	
				Brown, orange, gray coarse to fine SAND,	
15				**little Silt, some coarse to fine Gravel**	
			18	**(Decomposed rock)**	
16		S-6	30	Br, or ,gr cf S, l $, s cf G)	Rec = 10"
			50/3"	(Decomposed rock)	wet
17				17'0"	
				End of Boring @ 17'0"	
18					
19					
20					
21					
22					

CARLIN - SIMPSON & ASSOCIATES Sayreville, N.J.	TEST BORING LOG DRAFT	BORING NUMBER R-2
Project: Proposed Development, 568 & 570 Bedford Rd, North Castle, NY		**SHEET NO.:** 1 of 1
Client: Summit Club Partners, LLC		**JOB NUMBER:** 22-85
Drilling Contractor: Environmental Technical Drilling		**ELEVATION:** +628.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	
DATE	TIME	DEPTH	CASING	TYPE	Case	SS			DATUM: Topo
				DIA.	4"	1 3/8"			START DATE: 02 Aug 22
				WGHT		140#			FINISH DATE: 02 Aug 22
				FALL		30"			DRILLER: MK
									INSPECTOR: JP

Depth (ft.)	Casing Blows pre Foot	Sample Number	Blows on Sample Spoon per 6"	Sy	IDENTIFICATION	REMARKS
			8		**Topsoil** 0'1"	
1		S-1	15		**FILL (Brown, gray coarse to fine SAND,**	Rec = 13"
			13		**little Silt, some coarse to fine Gravel)**	moist
2			11		FILL (Br, gr cf S, l $, s cf G) 2'0"	
			6			
3		S-2	7		Br cf S, s $, l cf G	Rec = 18"
			11			moist
4			17			
			14			
5		S-3	15		same	Rec = 20"
			15		**Brown coarse to fine SAND, some Silt,**	moist
6			15		**little coarse to fine Gravel**	
			18			
7		S-4	17		same, s (+) $, t (-) cf G	Rec = 17"
			14			moist
8			19			set casing
			8			
9		S-5	26		same, br, dk gr	Rec = 9"
			50/3"		9'3"	moist
10						rollerbit refusal 10'0"
11						
12						
		Run			**Gray Gneiss with intrusive quartz**	Run #1
13		#1			**blocky and seamy, moderately weathered**	10'0"-15'0"
					rock	Run = 60"
14						Rec = 55" = 92%
						RQD = 34" = 57%
15						
					End of Boring @ 15'0"	
16						
17						
18						
19						
20						
21						
22						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG DRAFT	BORING NUMBER R-3
Project: Proposed Development, 568 & 570 Bedford Rd, North Castle, NY		**SHEET NO.:** 1 of 1
Client: Summit Club Partners, LLC		**JOB NUMBER:** 22-85
Drilling Contractor: Environmental Technical Drilling		**ELEVATION:** +627.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE		
									DATUM:	Topo
DATE	**TIME**	**DEPTH**	**CASING**	**TYPE**	HSA	SS			**START DATE:**	1/Aug/22
				DIA.	3 1/4"	1 3/8"			**FINISH DATE:**	1/Aug/22
				WGHT		140#			**DRILLER:**	MK
				FALL		30"			**INSPECTOR:**	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			2		**Topsoil** 0'4"	
1		S-1	3		Br cf S, s (-) $, l cf G	Rec = 18"
			7			moist
2			8		**Brown coarse to fine SAND, some (-) Silt,**	
			6		**little coarse to fine Gravel**	
3		S-2	27		same, br, gr	Rec = 12"
			50/1"		3'6"	moist
4					**End of Boring @ 3'6"**	auger refusal 3'6"
						moved 10' north
5						auger refusal 3'6"
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN - SIMPSON & ASSOCIATES Sayreville, N.J.	TEST BORING LOG DRAFT	BORING NUMBER R-3A

Project:	**Proposed Development, 568 & 570 Bedford Rd, North Castle, NY**	**SHEET NO.:**	1 of 1
Client:	**Summit Club Partners, LLC**	**JOB NUMBER:**	22-85
Drilling Contractor:	**Environmental Technical Drilling**	**ELEVATION:**	+626.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM:	Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS	DBL		START DATE:	02 Aug 22
				DIA.	4"	1 3/8"	2"		FINISH DATE:	02 Aug 22
				WGHT		140#			DRILLER:	MK
				FALL		30"			INSPECTOR:	JP

Depth (ft.)	Casing Blows pre Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
1						
2						
3						
4						
5						
6						
7					7'0"	Start weathered rock
8						
9						
10						
11						
12					**Highly to completely weathered rock**	
13		Run #1				Run #1 10'0"-15'0" Run = 60"
14						Rec = 0" RQD = 0"
15					15'0"	
16		S-1	10 9		Wt, rd br, or cf S, l $, a cf G	Rec = 8"
17			11 30		(Decomposed rock)	moist
18						
19						
20						
21		S-2	50/5"		same	Rec = 4" moist
22					**End of Boring @ 23'0"** 23'0"	Rollerbit refusal

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG DRAFT	BORING NUMBER R-4
Project: Proposed Development, 568 & 570 Bedford Rd, North Castle, NY		SHEET NO.: 1 of 1
Client: Summit Club Partners, LLC		JOB NUMBER: 22-85
Drilling Contractor: Environmental Technical Drilling		ELEVATION: +626.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM:	Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE:	1/Aug/22
				DIA.	3 1/4"	1 3/8"			FINISH DATE:	1/Aug/22
				WGHT		140#			DRILLER:	MK
				FALL		30"			INSPECTOR:	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION		REMARKS
			1		**Topsoil**	0'4"	
1		S-1	11		Br, or cf S, a $, l (+) cf G		Rec = 7"
			18				moist
2			5				
			4				
3		S-2	5		same		Rec = 15"
			10		**Brown, orange coarse to fine SAND,**		moist
4			15		**and Silt, little (+) coarse to fine Gravel**		
5							
			11				
6		S-3	13		same		Rec = 19"
			15			6'6"	moist
7			33		Dk gr, br cf S, l $, a (-) cf G		
			25		(Decomposed rock)		
8		S-4	30		**Dark gray, brown coarse to fine SAND,**		Rec = 11"
			28		**little Silt, and (-) coarse to fine Gravel**		moist
9			50/5"				
						9'6"	Auger refusal 9'6"
10					**End of Boring @ 9'6"**		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG DRAFT	BORING NUMBER R-5

Project:	**Proposed Development, 568 & 570 Bedford Rd, North Castle, NY**	**SHEET NO.:**	1 of 1
Client:	**Summit Club Partners, LLC**	**JOB NUMBER:**	22-85
Drilling Contractor:	**Environmental Technical Drilling**	**ELEVATION:**	+638.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE		
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			DATUM:	Topo
				DIA.	3 1/4"	1 3/8"			START DATE:	1/Aug/22
				WGHT		140#			FINISH DATE:	1/Aug/22
				FALL		30"			DRILLER:	MK
									INSPECTOR:	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			1		**Topsoil** 0'2"	
1		S-1	1		FILL (Br cf S, l (+) $, l cf G)	Rec = 19"
			4			moist
2			3			
			4			
3		S-2	4		FILL (same, t (+) $)	Rec = 17"
			9			moist
4			5		**FILL (Brown coarse to fine SAND,**	
					little (+) Silt, little coarse to fine Gravel)	
5						
			4			
6		S-3	3		FILL (same)	Rec = 10"
			2			moist
7			1			
			3			
8		S-4	6		8'0"	Rec = 11"
			12		**Brown coarse to fine SAND, little (+) Silt,**	moist
9			35		**some coarse to fine Gravel** 9'0"	
						Auger refusal 9'6"
10					**Gray coarse to fine SAND, little Silt,**	moved 10' south
			33		**some coarse to fine Gravel**	
11		S-5	50/4"		Gr cf S, l $, s cf G	Rec = 7"
					(Decomposed rock) 11'6"	moist
12					**End of Boring @ 11'6"**	Auger refusal 11'6"
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG DRAFT	BORING NUMBER R-6

Project:	Proposed Development, 568 & 570 Bedford Rd, North Castle, NY	SHEET NO.:	1 of 1
Client:	Summit Club Partners, LLC	JOB NUMBER:	22-85
Drilling Contractor:	Environmental Technical Drilling	ELEVATION:	+640.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM:	Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE:	1/Aug/22
				DIA.	3 1/4"	1 3/8"			FINISH DATE:	1/Aug/22
				WGHT		140#			DRILLER:	MK
				FALL		30"			INSPECTOR:	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			2			
1			2		**Topsoil** 0'10"	
		S-1	4		**FILL (Brown coarse to fine SAND,**	Rec = 20"
2			4		**some (+) Silt, trace (+) coarse to fine**	moist
			2		**Gravel)** 2'6"	
3		S-2	14		Gr, br cf S, l $, s (+) cf G	Rec = 10"
			30		(Decomposed rock)	moist
4			50			
					Gray, brown coarse to fine SAND,	
5					**little Silt, some (+) coarse to fine Gravel**	
			20		**(Decomposed rock)**	
6		S-3	47		same	Rec = 10"
			50/3"			moist
7						
					7'6"	Auger refusal 7'6"
8					**End of Boring @ 7'6"**	
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN - SIMPSON & ASSOCIATES Sayreville, N.J.	TEST BORING LOG DRAFT	BORING NUMBER R-7
Project: Proposed Development, 568 & 570 Bedford Rd, North Castle, NY		**SHEET NO.:** 1 of 1
Client: Summit Club Partners, LLC		**JOB NUMBER:** 22-85
Drilling Contractor: Environmental Technical Drilling		**ELEVATION:** +630.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	
DATE	**TIME**	**DEPTH**	**CASING**	**TYPE**	Cas	SS			**DATUM:** Topo
				DIA.		1 3/8"			**START DATE:** 02 Aug 22
				WGHT		140#			**FINISH DATE:** 02 Aug 22
				FALL		30"			**DRILLER:** MK
									INSPECTOR: JP

Depth (ft.)	Casing Blows pre Foot	Sample Number	Blows on Sample Spoon per 6"	Sy	IDENTIFICATION	REMARKS
			5		**Topsoil** 0'3"	
1		S-1	6		FILL (Br, gr cf S, s (-) $, l (+) cf G)	Rec = 17"
			6			moist
2			7			
			4			
3		S-2	7		FILL (same, gr)	Rec = 4"
			9		**FILL (Brown, gray coarse to fine SAND,**	moist
4			5		**some (-) Silt, little (+) coarse to fine Gravel)**	
			6			
5		S-3	8		5'0"	Rec = 10"
			13		Br cf S, s $, l cf G	moist
6			10		**Brown coarse to fine SAND, some Silt,**	
			8		**little coarse to fine Gravel**	
7		S-4	6		same 7'0"	Rec = 15"
			10		Br, gr cf S, l $, l cf G	moist
8			10		**Brown, gray coarse to fine SAND,**	
			15		**little Silt, little coarse to fine Gravel**	
9		S-5	50/6"		**(Decomposed rock)** 9'0"	Rec = 1"
						moist
10						
11						
		Run			**Gray Gneiss with pegmatite intrusion**	Run #1
12		#1			**blocky and seamy, moderately weathered**	9'0"-14'0"
					rock	Run = 60"
13						Rec = 57" = 95%
						RQD = 40" = 67%
14					14'0"	
					End of Boring @ 14'0"	
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER ST-1

Project:	**Prop Sewage Treatment & Maintenance Facilities, 568&570 Bedford Rd**	**SHEET NO.:**	1 of 1
Client:	**Summit Club Partners, LLC**	**JOB NUMBER:**	22-85
Drilling Contractor:	**Environmental Technical Drilling**	**ELEVATION:**	+579.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE		
DATE	TIME	DEPTH	CASING	TYPE	CAS	SS			**DATUM:**	Topo
No Groundwater Encountered				DIA.	4"	1 3/8"			**START DATE:**	29/Aug/22
				WGHT		140#			**FINISH DATE:**	29/Aug/22
				FALL		30"			**DRILLER:**	Mike
									INSPECTOR:	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			4		**Topsoil** 0'3"	
1		**S-1**	10		Br cf S, s (-) $, s cf G	Rec = 12"
			13			moist
2			50/3"		**Brown coarse to fine Sand, some (-) Silt, some coarse to fine Gravel**	moved 7', spoon refusal at 9'
						Boulder
3						
			5			
4		**S-2**	6		same, l (-) $, a cf G	Rec = 8"
			6			moist
5			12		5'0"	
			23			
6		**S-3**	21		Completely weathered rock	Rec = 13"
			16			moist
7			20		**Gneiss, Completely Weathered**	
			35			
8		**S-4**	37		same, weathered rock	Rec = 18"
			19			moist
9			23			
10						
			28		same, weathered rock	Rec = 7"
11		**S-5**	50/3"			moist
					11'6"	
12					**End of Boring @ 11'6"**	Rollerbit refusal at 11'6"
						on likely harder bedrock
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER ST-2

Project:	Prop Sewage Treatment & Maintenance Facilities, 568&570 Bedford Rd	**SHEET NO.:**	1 of 1
Client:	Summit Club Partners, LLC	**JOB NUMBER:**	22-85
Drilling Contractor:	Environmental Technical Drilling	**ELEVATION:**	+587.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE		
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			**DATUM:**	Topo
No Groundwater Encountered				DIA.	3 1/4"	1 3/8"			**START DATE:**	29/Aug/22
				WGHT		140#			**FINISH DATE:**	29/Aug/22
				FALL		30"			**DRILLER:**	Mike
									INSPECTOR:	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			5		**Topsoil** 0'2"	
1		**S-1**	22		Br cf S, s $, l (-) cf G	Rec = 4"
			50/2"			moist
2						Boulder
3						
			14			
4		**S-2**	17		same	Rec = 15"
			14		**Brown coarse to fine SAND, some Silt,**	moist
5			10		**little (-) coarse to fine Gravel**	
			19			
6		**S-3**	50/3"		same	Rec = 8"
						moist
7						Spoon walked
						Boulder
8					8'0"	
			19			
9		**S-4**	21		Completely weathered rock	Rec = 13"
			49		**Gneiss, Completely Weathered**	moist
10			50/1"			
		S-5	50/4"		same, weathered rock	Rec = 4"
11					11'0"	moist
					End of Boring @ 11'0"	Auger refusal @ 11'0"
12						on likely harder bedrock
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER ST-4

Project:	**Prop Sewage Treatment & Maintenance Facilities, 568&570 Bedford Rd**	**SHEET NO.:**	1 of 1
Client:	**Summit Club Partners, LLC**	**JOB NUMBER:**	22-85
Drilling Contractor:	**Environmental Technical Drilling**	**ELEVATION:**	+563.0

GROUNDWATER					**CASING**	**SAMPLE**	**CORE**	**TUBE**	**DATUM:**	Topo
DATE	**TIME**	**DEPTH**	**CASING**	**TYPE**	**HSA**	**SS**			**START DATE:**	29/Aug/22
No Groundwater Encountered				**DIA.**	**3 1/4"**	**1 3/8"**			**FINISH DATE:**	29/Aug/22
				WGHT		**140#**			**DRILLER:**	Mike
				FALL		**30"**			**INSPECTOR:**	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			9			
1		**S-1**	9		FILL (Gr, bk cf S, t (+) $, s (-) cf G, w/wood, asphalt)	Rec = 20"
			14			moist
2			16			
3						
						Boulder to 4'-6'
4					**FILL (Gray, black coarse to fine SAND, trace (+) Silt, some (-) coarse to fine Gravel, with wood, brick, asphalt)**	
5						
			5			
6		**S-2**	8		FILL (same, s $, l cf G, w/wood, brick)	Rec = 20"
			4			moist
7			5			
			9		FILL (same, s $, l cf G, w/wood, brick)	
8		**S-3**	10		8'0"	Rec = 15"
			14		Br cf S, l (+) $, l (+) cf G	moist
9			50/3"			Boulder
10					**Brown coarse to fine SAND, little (+) Silt, little (+) coarse to fine Gravel**	
			4			
11		**S-4**	11		same	Rec = 15"
			11		11'6"	moist
12			30		Br cf S, l $, l cf G, Gneiss, completely weathered	
13						
						Dense
14					**Gneiss, Completely Weathered**	
15						
		S-5	50/6"		same	Rec = 6"
16						moist
					16'6"	Auger refusal @ 16'6"
17					**End of Boring @ 16'6"**	on likely harder bedrock
18						
19						
20						
21						
22						

CARLIN - SIMPSON & ASSOCIATES Sayreville, N.J.	TEST BORING LOG	BORING NUMBER B-101

Project:	**Proposed Development, 568 Bedford Ave, North Castle NY**	**SHEET NO.:**	1 of 1
Client:	**Summit Club Partners, LLC**	**JOB NUMBER:**	22-85
Drilling Contractor:	**Environmental Technical Drilling**	**ELEVATION:**	+563.0

GROUNDWATER					**CASING**	**SAMPLE**	**CORE**	**TUBE**	**DATUM:**	Topo
DATE	**TIME**	**DEPTH**	**CASING**	**TYPE**	**Cas**	**SS**			**START DATE:**	07 Nov 22
No groundwater encountered				**DIA.**	**4"**	**1 3/8"**			**FINISH DATE:**	07 Nov 22
				WGHT		**140#**			**DRILLER:**	M Kane
				FALL		**30"**			**INSPECTOR:**	JP

Depth (ft.)	Casing Blows pre Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
1		**S-1**	3 5		FILL (Br cf S, s (-) $, l (-) cf G)	Rec = 10"
2			4 4			moist
3		**S-2**	2 2		FILL (same, w/roots)	Rec = 13"
4			4 8		**FILL (Brown coarse to fine SAND, some (-) Silt, little (-) coarse to fine Gravel with roots)**	moist
5					5'0"	
6		**S-3**	8 18		Br cf S, s (-) $, s (-) cf G	Rec = 11"
7			14 18		**Brown coarse to fine SAND, some (-) Silt, some (-) coarse to fine Gravel** 7'0"	moist
8		**S-4**	25 30		Br cf G a (-), cf S, t $	Rec = 10"
9			30 30		**Gneiss, Completely Weathered**	moist
10					**Brown coarse to fine GRAVEL and (-), coarse to fine Sand, trace Silt**	
11		**S-5**	12 43 50/2"		same, weathered rock 11'2"	Rec = 8" moist
12						
13						
14						Run #1 12'6"-17'6"
15		**Run #1**			**Gray, white Gneiss with granite intrusions blocky and seamy, moderately weathered**	Run = 60" Rec = 95% RQD = 67%
16						
17					17'6"	
18					**End of Boring @ 17'6"**	
19						
20						
21						
22						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-102
Project: Proposed Development, 568 Bedford Ave, North Castle NY		SHEET NO.: 1 of 1
Client: Summit Club Partners, LLC		JOB NUMBER: 22-85
Drilling Contractor: Environmental Technical Drilling		ELEVATION: +565.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE		
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			DATUM:	Topo
No groundwater encountered				DIA.	3 1/4"	1 3/8"			START DATE:	7/Nov/22
				WGHT		140#			FINISH DATE:	7/Nov/22
				FALL		30"			DRILLER:	M Kane
									INSPECTOR:	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION		REMARKS
			1		**Topsoil**	0'1"	
1		S-1	2		FILL (Dk br cf S, s $, t cf G)		Rec = 10"
			5				moist
2			3		**FILL (Dark brown coarse to fine SAND, some Silt, trace coarse to fine Gravel)**		
			3				
3		S-2	2		FILL (same)		Rec = 7"
			3				moist
4			5				
5						5'0"	
			10				
6		S-3	7		Br cf S, s $, l (-) cf G		Rec = 24"
			9		**Brown coarse to fine SAND, some Silt,**		moist
7			9		**little (-) coarse to fine Gravel**		
			12				
8		S-4	11		same	8'0"	Rec = 10"
			33		**Gneiss, Completely Weathered**		moist
9			50/2"		**Brown, gray coarse to fine SAND,**		
					little Silt, and (-) coarse to fine Gravel	9'6"	Auger refusal 9'6"
10					**End of Boring @ 9'6"**		Probable bedrock
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-103
Project: Proposed Development, 568 Bedford Ave, North Castle NY		SHEET NO.: 1 of 1
Client: Summit Club Partners, LLC		JOB NUMBER: 22-85
Drilling Contractor: Environmental Technical Drilling		ELEVATION: +623.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM:	Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE:	7/Nov/22
No groundwater encountered				DIA.	3 1/4"	1 3/8"			FINISH DATE:	7/Nov/22
				WGHT		140#			DRILLER:	M Kane
				FALL		30"			INSPECTOR:	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			1		**Topsoil** 0'1"	
1		S-1	2		FILL (Br cf S, l $, l cf G)	Rec = 2"
			3			moist
2			2		**FILL (Brown coarse to fine SAND, little Silt, little coarse to fine Gravel)**	
			2			
3		S-2	3		FILL (same, br, gr w/c pkts)	Rec = 13"
			4			moist
4			2			
						Auger refusal 5'0"
5					5'0"	move 5 feet west
			7		**Brown coarse to fine SAND, little (+) Silt, little coarse to fine Gravel**	
6		S-3	10			Rec = 9"
			15		Br cf S, l (+) $, l cf G 6'6"	moist
7			23		**Gneiss, Completely Weathered**	
		S-4	50/3"		**Gray coarse to fine GRAVEL some, coarse to fine Sand, little (-) Silt**	
8					8'0"	Auger refusal 8'0"
					End of Boring @ 8'0"	Probable bedrock
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-104
Project: Proposed Development, 568 Bedford Ave, North Castle NY		SHEET NO.: 1 of 1
Client: Summit Club Partners, LLC		JOB NUMBER: 22-85
Drilling Contractor: Environmental Technical Drilling		ELEVATION: +622.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE		
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			DATUM:	Topo
Trapped water in existing fill at 3'0"				DIA.	3 1/4"	1 3/8"			START DATE:	8/Nov/22
				WGHT		140#			FINISH DATE:	8/Nov/22
				FALL		30"			DRILLER:	M Kane
									INSPECTOR:	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION		REMARKS
			3		**Topsoil**	0'2"	
1		S-1	8		FILL (Br cf S, l (+) $, l (-) cf G)		Rec = 12"
			8				moist
2			5		**FILL (Brown coarse to fine SAND,**		
			3		**little (+) Silt, little (-) coarse to fine Gravel)**		
3		S-2	6		FILL (same, br, gr a (-) $)		Rec = 14"
			6				moist - wet
4			9				trapped water in Fill
5						5'0"	
			3		**Brown coarse to fine SAND, some Silt,**		
6		S-3	4		**little (-) coarse to fine Gravel**	6'0"	Rec = 11"
			50/6"				moist
7					**Gneiss, Completely Weathered**	7'0"	Auger refusal 7'0"
					End of Boring @ 7'0"		Probable bedrock
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-105
Project: Proposed Development, 568 Bedford Ave, North Castle NY		SHEET NO.: 1 of 1
Client: Summit Club Partners, LLC		JOB NUMBER: 22-85
Drilling Contractor: Environmental Technical Drilling		ELEVATION: +620.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE		
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			DATUM:	Topo
No groundwater encountered				DIA.	3 1/4"	1 3/8"			START DATE:	8/Nov/22
				WGHT		140#			FINISH DATE:	8/Nov/22
				FALL		30"			DRILLER:	M Kane
									INSPECTOR:	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION		REMARKS
			3		**Topsoil**	0'1"	
1		S-1	5		FILL (Br cf S, s $, t (+) cf G)		Rec = 9"
			5				moist
2			5		**FILL (Brown coarse to fine SAND,**		
			5		**some Silt, trace (+) coarse to fine Gravel)**		
3		S-2	4		FILL (same, gr, br a (-) $)		Rec = 18"
			3				moist
4			3				
5						5'0"	
			14		Br, gr cf S, t (+) $, a (-) cf G		
6		S-3	20		**Brown, gray coarse to fine SAND,**		Rec = 10"
			16		**trace (+) Silt, and (-) coarse to fine Gravel**		moist
7			19			7'0"	
			39				
8		S-4	30		Br cf S, l $, s (-) cf G)		Rec = 15"
			18		**Gneiss, Completely Weathered**		moist
9			20		**Brown coarse to fine SAND, little Silt,**		Lots of Mica
		S-5	50/3"		**some (-) coarse to fine Gravel**	9'3'	Rec = 2"
10					**End of Boring @ 9'3"**		moist
							Auger refusal 9'0"
11							probable bedrock
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-106

Project:	**Proposed Development, 568 Bedford Ave, North Castle NY**	**SHEET NO.:**	1 of 1
Client:	**Summit Club Partners, LLC**	**JOB NUMBER:**	22-85
Drilling Contractor:	**Environmental Technical Drilling**	**ELEVATION:**	+622.0

GROUNDWATER					**CASING**	**SAMPLE**	**CORE**	**TUBE**	**DATUM:**	Topo
DATE	**TIME**	**DEPTH**	**CASING**	**TYPE**	**HSA**	**SS**			**START DATE:**	8/Nov/22
Trapped water in existing fill at 2'0"				**DIA.**	**3 1/4"**	**1 3/8"**			**FINISH DATE:**	8/Nov/22
				WGHT		**140#**			**DRILLER:**	M Kane
				FALL		**30"**			**INSPECTOR:**	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION		REMARKS
			2		**Topsoil**	0'1"	
1		**S-1**	1		FILL (Br cf S, s $, l (-) cf G, w/wood, root)		Rec = 7"
			3		**FILL (Brown coarse to fine SAND,**		moist
2			3		**some Silt, little (-) Gravel, with wood,**		
			3		**root)**		
3		**S-2**	8		FILL (same, l (+) cf G)		Rec = 15"
			10				moist
4			15				wet @ 2'0", trapped water
5						5'0"	
			10		**Brown coarse to fine SAND, little (+) Silt,**		
6		**S-3**	17		**little coarse to fine Gravel**		Rec = 15"
			14		Br cf S, l (+) $, l cf G	6'6"	moist
7			50/5"		**Gneiss, Completely Weathered**		
					Light gray, white coarse to fine GRAVEL		Auger refusal 7'6"
8					**some, coarse to fine Sand, little (-) Silt**	7'6"	probable bedrock
					End of Boring @ 7'6"		
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-107

Project:	**Proposed Development, 568 Bedford Ave, North Castle NY**	**SHEET NO.:**	1 of 1
Client:	**Summit Club Partners, LLC**	**JOB NUMBER:**	22-85
Drilling Contractor:	**Environmental Technical Drilling**	**ELEVATION:**	+564.0

GROUNDWATER					**CASING**	**SAMPLE**	**CORE**	**TUBE**		
DATE	**TIME**	**DEPTH**	**CASING**	**TYPE**	**HSA**	**SS**			**DATUM:**	Topo
No groundwater encountered				**DIA.**	**3 1/4"**	**1 3/8"**			**START DATE:**	8/Nov/22
				WGHT		**140#**			**FINISH DATE:**	8/Nov/22
				FALL		**30"**			**DRILLER:**	M Kane
									INSPECTOR:	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			3		**Topsoil** 0'2"	
1		**S-1**	2		FILL (Dk br cf S, s $, l cf G)	Rec = 8"
			4			moist
2			4		**FILL (Dark brown coarse to fine SAND, some Silt, little coarse to fine Gravel)**	
			3			
3		**S-2**	3		FILL (same, br)	Rec = 11"
			6			moist
4			5			
5					5'0"	
			5			
6		**S-3**	7		Br cf S, l (+) $, l cf G	Rec = 17"
			11		**Brown coarse to fine SAND, little (+) Silt,**	moist
7			18		**little coarse to fine Gravel**	Mica
			20		7'6"	
8		**S-4**	33			Rec = 6"
			50/2"		**Gneiss, Completely Weathered** 8'6"	moist
9					**End of Boring @ 8'6"**	Auger refusal 8'6"
						Probable bedrock
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-108

Project:	**Proposed Development, 568 Bedford Ave, North Castle NY**	**SHEET NO.:**	1 of 1
Client:	**Summit Club Partners, LLC**	**JOB NUMBER:**	22-85
Drilling Contractor:	**Environmental Technical Drilling**	**ELEVATION:**	+564.0

GROUNDWATER					**CASING**	**SAMPLE**	**CORE**	**TUBE**		
DATE	**TIME**	**DEPTH**	**CASING**	**TYPE**	**HSA**	**SS**			**DATUM:**	Topo
No groundwater encountered				**DIA.**	**3 1/4"**	**1 3/8"**			**START DATE:**	8/Nov/22
				WGHT		**140#**			**FINISH DATE:**	8/Nov/22
				FALL		**30"**			**DRILLER:**	M Kane
									INSPECTOR:	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION		REMARKS
			1		**Topsoil**	0'3"	
1		**S-1**	3		FILL (Dk br cf S, s $, l (-) cf G)		Rec = 9"
			4				moist
2			4		**FILL (Dark brown coarse to fine SAND, some Silt, little (-) coarse to fine Gravel)**		
			4				
3		**S-2**	5		FILL (same, br)		Rec = 15"
			9			3'6"	moist
4			15		Br cf S, l (+) $, l cf G		Auger walking
5					**Brown coarse to fine SAND, little (+) Silt, little coarse to fine Gravel**		
			15				
6		**S-3**	16		same		Rec = 18"
			10				moist
7			22			7'0"	Mica
			53				
8		**S-4**	50/5"		**Gneiss, Completely Weathered**		Rec = 6"
						8'6"	moist
9					**End of Boring @ 8'6"**		Auger refusal 8'6"
							probable bedrock
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ				TEST BORING LOG					BORING NUMBER B-109	
Project:	Proposed Development, 568 Bedford Ave, North Castle NY								**SHEET NO.:**	1 of 1
Client:	Summit Club Partners, LLC								**JOB NUMBER:**	22-85
Drilling Contractor:	Environmental Technical Drilling								**ELEVATION:**	+475.0
GROUNDWATER					**CASING**	**SAMPLE**	**CORE**	**TUBE**	**DATUM:**	Topo
DATE	**TIME**	**DEPTH**	**CASING**	**TYPE**	HSA	SS			**START DATE:**	8/Nov/22
8/Nov/22	1315	12'6"	HSA	**DIA.**	3 1/4"	1 3/8"			**FINISH DATE:**	8/Nov/22
8/Nov/22	1350	8'0"	HSA	**WGHT**		140#			**DRILLER:**	M Kane
Seasonal high groundwater at 5'0"				**FALL**		30"			**INSPECTOR:**	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	IDENTIFICATION		REMARKS
1		S-1	1 / 3	**Topsoil**	0'10"	Rec = 13"
2			4 / 6	**FILL (Dark brown coarse to fine SAND, some Silt, little (-) coarse to fine Gravel)**	2'0"	moist
3		S-2	9 / 9	Br cf S, s (-) $, l (-) cf G		Rec = 19"
4			10 / 10			moist
5						
6		S-3	6 / 6	same, slightly mttld br, gr, or a (-) $		Rec = 24"
7			8 / 8	**Brown coarse to fine SAND, some (-) Silt, little (-) coarse to fine Gravel**		moist
8		S-4	6 / 3	same, s (+) $		Rec = 12"
9			2 / 4			wet
10						
11		S-5	9 / 49	same, gr s (-) $, l (+) cf G		Rec = 24"
12			15 / 19			moist wet at bottom
13			43	same	13'6"	
14		S-6	50/3"	**Gneiss, Completely Weathered**	13'9"	Rec = 5"
15				**End of Boring @ 13'9"**		wet Auger refusal 13'9" probable bedrock
16						
17						
18						
19						
20						
21						
22						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-110
Project: Proposed Development, 568 Bedford Ave, North Castle NY		SHEET NO.: 1 of 1
Client: Summit Club Partners, LLC		JOB NUMBER: 22-85
Drilling Contractor: Environmental Technical Drilling		ELEVATION: +474.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM:	Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE:	9/Nov/22
9/Nov/22	1000	3'6"	Open	DIA.	3 1/4"	1 3/8"			FINISH DATE:	9/Nov/22
				WGHT		140#			DRILLER:	M Kane
				FALL		30"			INSPECTOR:	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			3		**Topsoil** 0'6"	
1		**S-1**	4		FILL (Br cf S, l (+) $, t cf G)	Rec = 12"
			9		**FILL (Brown coarse to fine SAND,**	moist
2			3		**little (+) Silt, trace coarse to fine Gravel)**	
			4		2'6"	
3		**S-2**	5		Gr cf S, s (+) $, l cf G	Rec = 16"
			5			moist - wet
4			7			
5					**Gray coarse to fine SAND, some (+) Silt,**	
			3		**little coarse to fine Gravel**	
6		**S-3**	2		No Rec	Rec = 0
			2			wet
7			1			
			1			
8		**S-4**	1		same, gr, br	Rec = 24"
			1			wet
9			2			
					9'6"	
10						
		S-5	50/5"		**Gneiss, Completely Weathered**	Rec = 1"
11					11'0"	wet
		S-6	50/0"		**End of Boring @ 11'0"**	Auger walked, moved 5' N
12						Auger refusal 11'0"
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-111

Project:	**Proposed Development, 568 Bedford Ave, North Castle NY**	**SHEET NO.:**	1 of 1
Client:	**Summit Club Partners, LLC**	**JOB NUMBER:**	22-85
Drilling Contractor:	**Environmental Technical Drilling**	**ELEVATION:**	+482.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE		
									DATUM:	Topo
DATE	**TIME**	**DEPTH**	**CASING**	**TYPE**	**HSA**	**SS**			**START DATE:**	9/Nov/22
9/Nov/22	**1145**	**3'6"**	**HSA**	**DIA.**	**3 1/4"**	**1 3/8"**			**FINISH DATE:**	9/Nov/22
				WGHT		**140#**			**DRILLER:**	M Kane
				FALL		**30"**			**INSPECTOR:**	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION		REMARKS
			1		**Topsoil**	0'4"	
1		**S-1**	2		**FILL (Brown coarse to fine SAND,**		Rec = 8"
			3		**little (+) Silt, little coarse to fine Gravel)**	1'6"	moist
2			13		Gr cf S, s (-) $, l (+) cf G		
			8				Boulder
3		**S-2**	10		same		Rec = 13"
			10				moist - wet
4			12				
					Gray coarse to fine SAND, some (-) Silt,		
5					**little (+) coarse to fine Gravel**		
			14				
6		**S-3**	11		same, br l (+) $		Rec = 9"
			8				wet
7			4				
			3				
8		**S-4**	5		same, br, gr s $		Rec = 19"
			4			8'6"	wet
9			25				
					Gneiss, Completely Weathered		
10							
		S-5	50/6"		CWR	10'6"	Rec = 3"
11					**End of Boring @ 10'6"**		wet
							Auger refusal 10'6"
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-112
Project: Proposed Development, 568 Bedford Ave, North Castle NY		SHEET NO.: 1 of 1
Client: Summit Club Partners, LLC		JOB NUMBER: 22-85
Drilling Contractor: Environmental Technical Drilling		ELEVATION: +481.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE		
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			DATUM:	Topo
9/Nov/22		4'0"	HSA	DIA.	3 1/4"	1 3/8"			START DATE:	9/Nov/22
Seasonal high groundwater at 3'0"				WGHT		140#			FINISH DATE:	9/Nov/22
				FALL		30"			DRILLER:	M Kane
									INSPECTOR:	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION		REMARKS
			1		**Topsoil**	0'6"	
1		S-1	3		**FILL (Dark brown coarse to fine SAND,**		Rec = 8"
			6		**some (-) Silt, little coarse to fine Gravel)**	1'6"	moist
2			12		Br, gr cf S, l (+) $, l cf G		
			9				
3		S-2	7		same, slightly mttld		Rec = 18"
			9				moist
4			11				slightly mottled
			11		**Brown, gray coarse to fine SAND,**		
5		S-3	15		same **little (+) Silt, little coarse to fine Gravel**		Rec = 13"
			12				moist- wet
6			12				
			10				
7		S-4	9		same, s $		Rec = 15"
			9				moist - wet
8			6				
			9				
9		S-5	7		same	9'0"	Rec = 10"
			5		Dk br, gr cf S, l $, l cf G		wet
10			7		**Dark brown, gray coarse to fine SAND,**		Lots of Mica
			4		**little Silt, little coarse to fine Gravel**		decomposed rock
11		S-6	13		same	11'0"	Rec = 11"
			28				wet
12			33		**Gneiss, Completely Weathered**		
		S-7	50/6"		CWR	12'6"	Rec = 3"
13					**End of Boring @ 12'6"**		moist
							probable bedrock
14							
15							
16							
17							
18							
19							
20							
21							
22							

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-113

Project:	**Proposed Development, 568 Bedford Ave, North Castle NY**	**SHEET NO.:**	1 of 1
Client:	**Summit Club Partners, LLC**	**JOB NUMBER:**	22-85
Drilling Contractor:	**Environmental Technical Drilling**	**ELEVATION:**	+472.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE		
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			DATUM:	Topo
No groundwater encountered				DIA.	3 1/4"	1 3/8"			START DATE:	9/Nov/22
				WGHT		140#			FINISH DATE:	9/Nov/22
				FALL		30"			DRILLER:	M Kane
									INSPECTOR:	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION		REMARKS
			2		**Topsoil**	0'4"	
1		**S-1**	3		Br cf S, s (-) $, l cf G		Rec = 18"
			5				moist
2			5		**Brown coarse to fine SAND, some (-) Silt,**		
			5		**little coarse to fine Gravel**		
3		**S-2**	11		same, l $		Rec = 15"
			16			3'6"	moist
4			28		Gr, or cf G s, cf S, l (-) $		
			20		**Gray, orange coarse to fine GRAVEL**		
5		**S-3**	40		**some, coarse to fine Sand, little (-) Silt**		Rec = 16"
			30			5'6"	moist
6			35		Gneiss, Completely Weathered		
			17				
7		**S-4**	19		same		Rec = 12"
			58				moist
8			52		**Gneiss, Completely Weathered**		
			60				
9		**S-5**	39		same,		Rec = 11"
			35				moist
10			50/4"			9'10"	
					End of Boring @ 9'10"		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-114
Project: Proposed Development, 568 Bedford Ave, North Castle NY		**SHEET NO.:** 1 of 1
Client: Summit Club Partners, LLC		**JOB NUMBER:** 22-85
Drilling Contractor: Environmental Technical Drilling		**ELEVATION:** +622.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE		
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			DATUM:	Topo
No groundwater encountered				DIA.	3 1/4"	1 3/8"			START DATE:	10/Nov/22
				WGHT		140#			FINISH DATE:	10/Nov/22
				FALL		30"			DRILLER:	M Kane
									INSPECTOR:	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION		REMARKS
			1				
1			2		**Topsoil**	0'8"	
		S-1	2		Br cf S, s $, t cf G, w/roots (tree)		Rec = 9"
2			1		**Brown coarse to fine SAND, some Silt,**		moist
			2		**trace coarse to fine Gravel, with roots, tree**		
3		S-2	4		same	3'0"	Rec = 5"
			50/3"		**Gray, orange coarse to fine SAND,**	3'6"	moist
4					**trace Silt, and coarse to fine Gravel**		Auger refusal 3'6"
					End of Boring @ 3'6"		probable bedrock
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-115
Project: Proposed Development, 568 Bedford Ave, North Castle NY		SHEET NO.: 1 of 1
Client: Summit Club Partners, LLC		JOB NUMBER: 22-85
Drilling Contractor: Environmental Technical Drilling		ELEVATION: +627.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE		
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			DATUM:	Topo
No groundwater encountered				DIA.	3 1/4"	1 3/8"			START DATE:	10/Nov/22
				WGHT		140#			FINISH DATE:	10/Nov/22
				FALL		30"			DRILLER:	M Kane
									INSPECTOR:	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION		REMARKS
			1		**Topsoil**	0'4"	
1		S-1	3		Br cf S, s $, l (-) cf G		Rec = 10"
			2				moist
2			4				
			7				
3		S-2	10		same, l (+) $, l (+) cf G		Rec = 18"
			10		**Brown coarse to fine SAND, some Silt,**		moist
4			29		**little (-) coarse to fine Gravel**		
5							
			7				
6		S-3	12		same		Rec = 19"
			23			6'6"	moist
7			23				
		S-4	50/3"		**Gneiss, Completely Weathered**	7'3"	Rec = 2"
8					**End of Boring @ 7'3"**		moist
							Auger Refusal @ 7'3"
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-116

Project:	Proposed Development, 568 Bedford Ave, North Castle NY	SHEET NO.:	1 of 1
Client:	Summit Club Partners, LLC	JOB NUMBER:	22-85
Drilling Contractor:	Environmental Technical Drilling	ELEVATION:	+632.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM:	Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE:	10/Nov/22
No groundwater encountered				DIA.	3 1/4"	1 3/8"			FINISH DATE:	10/Nov/22
				WGHT		140#			DRILLER:	M Kane
				FALL		30"			INSPECTOR:	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			7		**Topsoil** 0'2"	
1		S-1	15		Br cf S, s $, l (+) cf G	Rec = 10"
			12		**Brown coarse to fine SAND, some Silt,**	moist
2			45		**little (+) coarse to fine Gravel**	
			11		2'6"	
3		S-2	40		Br, gr cf S l, cf S, t $	Rec = 8"
			50/1"		**Gneiss, Completely Weathered**	moist
4					4'0"	Auger refusal 4'0"
					End of Boring @ 4'0"	probable bedrock
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-117

Project:	**Proposed Development, 568 Bedford Ave, North Castle NY**	**SHEET NO.:**	1 of 1
Client:	**Summit Club Partners, LLC**	**JOB NUMBER:**	22-85
Drilling Contractor:	**Environmental Technical Drilling**	**ELEVATION:**	+624.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE		
DATE	**TIME**	**DEPTH**	**CASING**						**DATUM:**	Topo
				TYPE	**HSA**	**SS**			**START DATE:**	10/Nov/22
No groundwater encountered				**DIA.**	**3 1/4"**	**1 3/8"**			**FINISH DATE:**	10/Nov/22
				WGHT		**140#**			**DRILLER:**	M Kane
				FALL		**30"**			**INSPECTOR:**	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			2		**Topsoil** 0'2"	
1		**S-1**	2		Br cf S, l (+) $, l (-) cf G	Rec = 4"
			2			moist
2			2			
			1		**Brown coarse to fine SAND, little (+) Silt,**	
3		**S-2**	2		same **little (-) coarse to fine Gravel**	Rec = 10"
			4			moist
4			6			
			10			
5		**S-3**	11		5'0"	Rec = 10"
			26		Br, gr cf S, l $, s (-) cf G	moist
6			39		**Brown, gray coarse to fine SAND,**	
			25		**little Silt, some (-) coarse to fine Gravel** 6'6"	
7		**S-4**	28			Rec = 15"
			45		**Gneiss, Completely Weathered**	moist
8			50/3"		7'9"	
					End of Boring @ 7'9"	
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-118

Project:	**Proposed Development, 568 Bedford Ave, North Castle NY**	**SHEET NO.:**	1 of 1
Client:	**Summit Club Partners, LLC**	**JOB NUMBER:**	22-85
Drilling Contractor:	**Environmental Technical Drilling**	**ELEVATION:**	+629.0

GROUNDWATER					**CASING**	**SAMPLE**	**CORE**	**TUBE**	**DATUM:**	Topo
DATE	**TIME**	**DEPTH**	**CASING**	**TYPE**	**HSA**	**SS**			**START DATE:**	11/Nov/22
No Water Encountered				**DIA.**	**3 1/4"**	**1 3/8"**			**FINISH DATE:**	11/Nov/22
				WGHT		**140#**			**DRILLER:**	M Kane
				FALL		**30"**			**INSPECTOR:**	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION		REMARKS
			2		**Topsoil**	0'4"	
1		**S-1**	2		Br cf S, s $, t cf G		Rec = 9"
			2				moist
2			4				
			3				
3		**S-2**	11		same, l (+) $, s (-) cf G		Rec = 15"
			15				moist
4			15		**Brown coarse to fine SAND, some Silt,**		
					trace coarse to fine Gravel		
5							
			13				
6		**S-3**	8		same, s $		Rec = 5"
			8				moist
7			9			7'0"	
			10		**Orange, brown, white coarse to fine SAND,**		
8		**S-4**	11		**trace (-) Silt, some coarse to fine Gravel**	8'0"	Rec = 16"
			22		Decomposed rock		moist
9			35				
10							
			20				
11		**S-5**	36		same, a cf G, decomposed rock		Rec = 13"
			42				moist
12			50/3"				
13					**Gneiss, Completely Weathered**		
14							
15							
			27				
16		**S-6**	60		same, decomposed rock		Rec = 15"
			50/3"				moist
17							
						17'6"	Auger refusal 17'6"
18					**End of Boring @ 17'6"**		bedrock
19							
20							
21							
22							

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-119
Project: Proposed Development, 568 Bedford Ave, North Castle NY		SHEET NO.: 1 of 1
Client: Summit Club Partners, LLC		JOB NUMBER: 22-85
Drilling Contractor: Environmental Technical Drilling		ELEVATION: +625.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE		
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			DATUM:	Topo
No Groundwater Encountered				DIA.	3 1/4"	1 3/8"			START DATE:	11/Nov/22
				WGHT		140#			FINISH DATE:	11/Nov/22
				FALL		30"			DRILLER:	M Kane
									INSPECTOR:	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			1		**Topsoil** 0'4"	
1		**S-1**	1		Br cf S, s $, t cf G	Rec = 8"
			1			moist
2			6			
			3			
3		**S-2**	4		same **Brown coarse to fine SAND, some Silt,**	Rec = 13"
			6		**trace coarse to fine Gravel**	moist
4			21			Lots of Mica
5						
			12			
6		**S-3**	12		same 6'0"	Rec = 8"
			50/3"		**Gray coarse to fine GRAVEL little, coarse**	moist
7					**to fine Sand, trace Silt** 6'3"	
					End of Boring @ 6'3"	
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-120
Project: Proposed Development, 568 Bedford Ave, North Castle NY		SHEET NO.: 1 of 1
Client: Summit Club Partners, LLC		JOB NUMBER: 22-85
Drilling Contractor: Environmental Technical Drilling		ELEVATION: +647.5

GROUNDWATER					CASING	SAMPLE	CORE	TUBE		
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			DATUM:	Topo
No Groundwater Encountered				DIA.	3 1/4"	1 3/8"			START DATE:	11/Nov/22
				WGHT		140#			FINISH DATE:	11/Nov/22
				FALL		30"			DRILLER:	M Kane
									INSPECTOR:	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			1		**Topsoil** 0'6"	
1		S-1	2		FILL (Br cf S, s $, t cf G)	Rec = 8"
			2			moist
2			3			
			2			
3		S-2	3		FILL (same)	Rec = 10"
			1			moist
4			2		**FILL (Brown coarse to fine SAND,**	
					some Silt, trace coarse to fine Gravel)	
5						
			2			
6		S-3	2		FILL (same, l (+) $)	Rec = 10"
			4			moist
7			3		7'0"	
			2		**Brown coarse to fine SAND, little Silt,**	
8		S-4	2		**little (+) coarse to fine Gravel** 8'0"	Rec = 6"
			32		Or, wt, gr cf G l (+), cf S, t (+) $	moist
9			50/2"			
		S-5	50/2"		**Gneiss, Completely Weathered** 9'2"	Rec = 1"
10					**End of Boring @ 9'2"**	moist
						Auger refusal 9'0"
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-121

Project:	**Proposed Development, 568 Bedford Ave, North Castle NY**	**SHEET NO.:**	1 of 1
Client:	**Summit Club Partners, LLC**	**JOB NUMBER:**	22-85
Drilling Contractor:	**Environmental Technical Drilling**	**ELEVATION:**	+674.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE		
									DATUM:	Topo
DATE	**TIME**	**DEPTH**	**CASING**	**TYPE**	**HSA**	**SS**			**START DATE:**	11/Nov/22
No groundwater encountered				**DIA.**	**3 1/4"**	**1 3/8"**			**FINISH DATE:**	11/Nov/22
				WGHT		**140#**			**DRILLER:**	M Kane
				FALL		**30"**			**INSPECTOR:**	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			3			
1		S-1	7		FILL (Br cf S, s (-) $, l (+) cf G)	Rec = 14"
			10		**FILL (Brown coarse to fine SAND,**	moist
2			14		**some (-) Silt, little (+) coarse to fine**	
			13		**Gravel)** 2'6"	
3		S-2	10		Gr cf G s, cf S, t (+) $	Rec = 5"
			7		**Gray coarse to fine GRAVEL some, coarse**	moist
4			10		**to fine Sand, trace (+) Silt**	
		S-3	50/6"		same 4'6"	Rec = 2"
5					**End of Boring @ 4'6"**	moist
						Auger refusal 4'6"
6						Likely bedrock
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-201

Project:	Proposed Development, 568&570 Bedford Rd, North Castle, NY	SHEET NO.:	1 of 1
Client:	Summit Club Partners, LLC	JOB NUMBER:	22-85
Drilling Contractor:	Environmental Technical Drilling	ELEVATION:	+563.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM:	Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE:	21/Mar/23
				DIA.	3 1/4"	1 3/8"			FINISH DATE:	21/Mar/23
				WGHT		140#			DRILLER:	M Kane
				FALL		30"			INSPECTOR:	JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			29		**Asphalt** 0'6"	
1		**S-1**	13		FILL (Br cf S, l $, s (-) cf G)	Rec = 4"
			14			moist
2			15			
			21			
3		**S-2**	20		FILL (same, gr)	Rec = 10"
			11			moist
4			10			
					FILL (Brown coarse to fine SAND,	
5					**little Silt, some (-) coarse to fine Gravel**	
			4		**with wood)**	
6		**S-3**	6		FILL (same, br, l cf G)	Rec = 6"
			26			moist
7			8			
			7			
8		**S-4**	5		FILL (same, dk br, w/wood)	Rec = 11"
			7			moist
9			7			
10					10'0"	
			8			
11		**S-5**	11		Br cf S, l (-) $, a cf G	Rec = 8"
			13		**Brown coarse to fine SAND, little (-) Silt,**	moist
12			50/2"		**and coarse to fine Gravel** 12'0"	Auger refusal @ 12'0"
					End of Boring @ 12'0"	
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN - SIMPSON & ASSOCIATES Sayreville, N.J.	TEST BORING LOG	BORING NUMBER B-202
Project: Proposed Development, 568&570 Bedford Rd, North Castle, NY		**SHEET NO.:** 1 of 1
Client: Summit Club Partners, LLC		**JOB NUMBER:** 22-85
Drilling Contractor: Environmental Technical Drilling		**ELEVATION:** +565.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			
3/21/2023		9'0"	HSA	DIA.	3 1/4"	1 3/8"			
				WGHT		140#			
				FALL		30"			

DATUM:	Topo
START DATE:	21 Mar 23
FINISH DATE:	21 Mar 23
DRILLER:	M Kane
INSPECTOR:	JP

Depth (ft.)	Casing Blows pre Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			41		**Asphalt** 0'2"	
1		S-1	16		FILL (Br cf S, l $, s (-) cf G)	Rec = 8"
			21			moist
2			26		**FILL (Brown coarse to fine SAND, little Silt,**	
			17		**some (-) coarse to fine Gravel)**	
3		S-2	12		FILL (same, gr l (+) $, l cf G)	Rec = 24"
			9			moist
4			9		4'0"	
5						
			43			
6		S-3	29		Gr cf S, l (-) $, a cf G	Rec = 6"
			X			moist
7			X			
8						
9					**Gray coarse to fine SAND, little (-) Silt,**	
			11		**and coarse to fine Gravel**	
10		S-4	39		same, br, gr	Rec = 18"
			37			wet
11			10			
12						
13						
			11			
14		S-5	9		same, br, wt	Rec = 15"
			49			wet
15			40			
16						
					16'6"	Rollerbit refusal 16'6"
17					**End of Boring @ 16'6"**	
18						
19						
20						
21						
22						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-203
Project: Proposed Development, 568&570 Bedford Rd, North Castle, NY		SHEET NO.: 1 of 1
Client: Summit Club Partners, LLC		JOB NUMBER: 22-85
Drilling Contractor: Environmental Technical Drilling		ELEVATION: +552.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			DATUM: Topo
21/Mar/23		9'0"	HSA	DIA.	3 1/4"	1 3/8"			START DATE: 21/Mar/23
				WGHT		140#			FINISH DATE: 21/Mar/23
				FALL		30"			DRILLER: M Kane
									INSPECTOR: JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			.WOH			
1		S-1	2		FILL (Br cf S, s $, l cf G, w/brick)	Rec = 16"
			3			moist
2			5			
			11			
3		S-2	11		FILL (same, gr, br l $, s cf G)	Rec
			13			moist
4			8			
					FILL (Brown coarse to fine SAND, some Silt, little coarse to fine Gravel, with brick)	
5						
			7			
6		S-3	4		FILL (same)	Rec = 1"
			16			moist
7			5			
			4			
8		S-4	3		FILL (same, dk br s $, l cf G, w/wood)	Rec = 10"
			5			wet at bottom
9			35			
10					10'0"	
		S-5	50/2"		**Gneiss, Completely Weathered** 10'2"	Rec = 1"
11					**End of Boring @ 10'2"**	wet
						auger refusal 10'0"
12						
13						
14						
15						
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17						
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19						
20						
21						
22						

CARLIN-SIMPSON & ASSOCIATES, LLC
Consulting Engineers
Geotechnical & Environmental

Proposed Development
568 & 570 Bedford Rd.
North Castle, NY
22-85

13 December 2022

TEST PIT LOGS

DH-A (Elev. +500.0)

0'0"-0’8"	Dark brown topsoil	
0’8”-2’3”	FILL (Dark brown coarse to fine SAND, little (+) Silt, little (-) medium to fine Gravel, with mixed topsoil)	loose, moist
2’3"-6’6"	Dark brown, gray coarse to fine SAND, some (-) Silt, little (-) coarse to fine Gravel	dense, moist
6’6"-8’6”	Gray brown completely to highly weathered rock, coarse to fine SAND, trace (+) Silt, some coarse to fine Gravel	rippable, moist
8’6”	Dark Gray Gneiss Bedrock	unrippable
	Groundwater encountered at 3’0”	

Proposed Development
568 & 570 Bedford Rd.
North Castle, NY
22-85

13 December 2022

DH-B (Elev. +500.0)

0’0”-0’8”	Dark brown topsoil	
0’8”-2’6”	FILL (Dark brown coarse to fine SAND, little (+) Silt, little (-) medium to fine Gravel	loose, moist
2’6”-4’9”	Brown, gray coarse to fine SAND, little (+) Silt, little (+) coarse to fine Gravel, with many cobbles and boulders	dense, moist
4’9”-5’6”	Gray, brown completely to highly weathered rock, coarse to fine SAND, trace (+) Silt, and coarse to fine Gravel	rippable, moist
5’6”	Dark Gray Gneiss Bedrock	unrippable
	Groundwater encountered @ 4’0”	

Proposed Development
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DH-C (Elev. +563.0)

0'0"-0'8"	Dark brown topsoil	
0'8"-1'3"	FILL (Dark gray coarse to fine SAND, little (+) Silt, little (-) medium to fine Gravel)	medium dense, moist
1'3"-4'6"	Brown, gray coarse to fine SAND, some (+) Silt, little medium to fine Gravel, with occasional cobbles	medium dense, moist
4'6"-5'6"	Brown SILT and (-), coarse to fine Sand, little (-) Medium to fine Gravel	medium stiff, moist
5'6"-6'6"	Gray, brown highly to completely weathered rock, coarse to fine Sand, trace (+) Silt, some coarse to fine Gravel	rippable, moist
6'6"	Dark Gray Gneiss Bedrock	unrippable
	No groundwater encountered	

13 December 2022

DH-D (Elev. +563.0)

0’0”-0’10”	Dark brown topsoil	
0’10”-3’3”	Brown coarse to fine SAND, little (+) Silt, little (+) coarse to fine Gravel, with occasional cobble	medium dense, moist
3’3”-4’9”	Brown SILT and (-), coarse to fine Sand, little (-) coarse to fine Gravel	medium stiff, moist
4’9”-7’0”	Brown coarse to fine SAND, little (-) Silt, some (-) coarse to fine Gravel, with cobbles	dense, moist Very dense @ 6’0’
7’0”-7’6”	Gray, brown highly to completely weathered rock, coarse to fine Sand, trace (+) Silt, some coarse to fine Gravel	rippable, moist
7’6”	Dark Gray Gneiss Bedrock	unrippable
	No groundwater encountered	

TP-E (Elev. +618.0)

0’0”-0’8”	Dark brown topsoil	
0’8”-1’6”	FILL (Dark brown coarse to fine SAND, little Silt, little (+) medium to fine Gravel)	medium dense, moist
1’6”	Dark Gray Gneiss Bedrock	unrippable
	No groundwater encountered	

13 December 2022

TP-F (Elev. +621.0)

0’0”-0’8”	Dark brown topsoil	
0’8”-2’3”	FILL (Dark gray, brown coarse to fine SAND, little (+) Silt, with many cobbles)	medium dense, moist
2’3”	Dark Gray Gneiss Bedrock	unrippable
	No groundwater encountered	

TP-G (Elev. +618.0)

0’0”-0’6”	Dark brown topsoil	
0’6”-1’3”	FILL (Dark brown coarse to fine SAND, little Silt, little coarse to fine Gravel, with many boulders)	dense, moist
1’3”	Dark Gray Gneiss Bedrock	unrippable
	No groundwater encountered	

TP-H (Elev. +619.0)

0’0”-0’8”	Dark brown topsoil	
0’8’-3’0”	Brown coarse to fine SAND, little (+) Silt, little (+) coarse to fine Gravel, with many cobbles and boulders	medium dense, moist
3’0”-3’6”	Dark gray highly weathered rock, coarse to fine SAND, trace Silt, some coarse to fine Gravel	rippable, moist
3’6”	Dark Gray Gneiss Bedrock	unrippable
	No groundwater encountered	

Proposed Development
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DH-I (Elev. +493.2)

0'0"-1'3"	Dark brown topsoil	
1'3"-2'6"	Brown coarse to fine SAND, some (+) Silt, trace fine Gravel	medium dense, moist to wet
2'6"-4'3"	Mottled light gray, orange brown, red brown coarse to fine SAND, little (+) Silt, little (-) coarse to fine Gravel	medium dense, moist to wet
4'3"-8'0"	Dark gray, brown coarse to fine SAND, little (+) Silt, little (+) coarse to fine Gravel, with occasional cobbles	medium dense, moist to wet
8'0"-9'0"	Dark gray coarse to fine SAND, little Silt, little (+) medium to fine Gravel, weathered rock	medium dense, moist to wet

Groundwater encountered @ 7'6" (moderate inflow)
Evidence of Seasonal High Groundwater (i.e. mottling) @ 2'6"

DH-J (Elev. +492.5)

0'0"-1'3"	Dark brown topsoil	
1'3"-3'0"	Mottled light gray, orange brown, red brown coarse to fine SAND, little (+) Silt, little (-) medium to fine Gravel	medium dense, moist
3'0"-6'9"	Dark gray, brown coarse to fine SAND, little Silt, little (+) medium to fine Gravel	medium dense, moist to wet
6'9"-9'3"	Dark gray, orange brown decomposed rock coarse to fine SAND, some (+) Silt, trace (-) fine Gravel (soft for decomposed rock)	medium dense, moist to wet

Groundwater encountered @ 7'6" (moderate inflow)
Evidence of Seasonal High Groundwater (i.e. mottling) @ 1'3"

15 February 2023

<u>DH-K (Elev. +624.0)</u>

0’0”-0’6”	Dark brown topsoil	
0’6”-2’9”	FILL (Dark brown coarse to fine SAND, some (-) Silt, little coarse to fine Gravel, with couple cobbles)	loose, moist
2’9”-3’0”	Brown SILT some (+), coarse to fine Sand, trace fine Gravel	medium stiff, moist
3’0”	Gneiss bedrock	unrippable
	No groundwater encountered	

<u>DH-L (Elev. +623.0)</u>

0’0”-1’0”	Dark brown topsoil	
1’0”-2’3”	FILL (Dark brown coarse to fine SAND, some (-) Silt, little (+) coarse to fine Gravel, with couple cobbles	loose, moist
2’3”-3’6”	Brown coarse to fine SAND, and (+) Silt, trace (+) medium to fine Gravel	medium dense, moist
3’6”-4’9”	Brown coarse to fine SAND, little (+) Silt, little medium to fine Gravel, with weathered rock fragments	medium dense, moist
4’9”-8’3”	Dark gray coarse to fine SAND, little (-) Silt, little (+) coarse to fine Gravel, completely to highly weathered rock	rippable
	No Groundwater Encountered	

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DH-M (Elev. +624.5)

0’0”-0’4”	Brown topsoil	
0’4”-2’3”	FILL (Dark gray, dark brown coarse to fine SAND, some Silt, little (+) coarse to fine Gravel, with cobbles)	medium dense, moist
2’3”-5’9”	Brown, gray coarse to fine SAND, some (+) Silt, little coarse to fine Gravel	medium dense, moist
5’9”	Dark gray, brown Gneiss	unrippable
	No groundwater encountered	

DH-N (Elev. + 623.1)

0’0”-1’0”	Dark brown topsoil	
1’0”-2’9”	FILL (Brown, dark brown coarse to fine SAND, little (+) Silt, little (+) coarse to fine Gravel, with many large boulders)	loose, moist
2’9”	Gray, brown Gneiss	unrippable
	No groundwater encountered	

DH-O (Elev. +618.8)

0’0”-0’10”	Dark brown topsoil	
0’10”	Dark gray Gneiss bedrock	unrippable
	No groundwater encountered	

Proposed Development
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DH-P (Elev. +620.5)

0’0”-1’3”	Dark brown topsoil	
1’3”-2’0”	FILL (Dark gray, brown coarse to fine SAND, little (+) Silt, little (-) coarse to fine Gravel)	medium dense, moist
2’0”-3’3”	Dark brown coarse to fine SAND, little Silt, little coarse to fine Gravel, with many weathered rock fragments	medium dense, moist
3’3”-5’0”	Dark gray highly to completely weathered rock	unrippable
	No groundwater encountered	

INF-C (Elev. +560.5)

0’0”-0’6”	Dark brown topsoil	
0’6”- 1’3”	FILL (Dark gray, brown coarse to fine SAND, little (+) Silt, little (-) coarse to fine Gravel)	medium dense, moist
1’3”- 4’0”	Brown coarse to fine Sand, and (-) Silt, little medium to fine Gravel	medium dense, moist
4’0”	Dark gray, brown unrippable bedrock	
	No groundwater encountered	

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-1

Project:	Proposed Renovations, Byrnwood Club Development, North Castle, NY	SHEET NO.:	1 of 1
Client:	JBM Realty	JOB NUMBER:	12-175
Drilling Contractor:	General Borings, Inc.	ELEVATION:	+661.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM:	
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE:	18 Dec 12
No water encountered				DIA.	3 1/4"	1 3/8"			FINISH DATE:	18 Dec 12
				WGHT		140#			DRILLER:	T. McGovern
				FALL		30"			INSPECTOR:	JB

Depth (ft.)	Casing Blows per Foot	Sample No.	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			7		**Clay Tennis Court** 0'6"	
1		S-1	9		Br $ a (+), cf S, l (-) mf G	Rec = 17"
			12			moist
2			14			
			19		same	
3		S-2	23		**Brown SILT and (+), coarse to fine**	Rec = 15"
			50/3"		**Sand, little (-) medium to fine Gravel**	moist
4						possible weathered rock in tip
5					5'0"	
			29		Br cf S, l (+) $ (completely weathered gneiss)	
6		S-3	75/4"			Rec = 6"
					Brown coarse to fine SAND, little (+)	moist
7					**Silt (completely weathered Gneiss)**	
		S-4	70/3"			Rec = 3"
8					8'0"	moist
					End of Boring @ 8'0"	Auger refusal @ 8'0"
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-2

Project:	**Proposed Renovations, Byrnwood Club Development, North Castle, NY**	**SHEET NO.:**	1 of 1
Client:	**JBM Realty**	**JOB NUMBER:**	12-175
Drilling Contractor:	**General Borings, Inc.**	**ELEVATION:**	+628.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE		
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			DATUM:	
No water encountered				DIA.	3 1/4"	1 3/8"			START DATE:	18 Dec 12
				WGHT		140#			FINISH DATE:	18 Dec 12
				FALL		30"			DRILLER:	T. McGovern
									INSPECTOR:	JB

Depth (ft.)	Casing Blows per Foot	Sample No.	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			2		**Topsoil** 0'6"	
1		S-1	3		Br $ a (+), cf S, t mf G	Rec = 15"
			2			moist
2			2			
			3		same	
3		S-2	9			Rec = 16"
			11		**Brown SILT and (+), coarse to fine**	moist
4			15		**Sand, trace medium to fine Gravel**	
5						
			10		same	
6		S-3	12			Rec = 17"
			16			moist
7			50/3"		7'0"	weathered rock in tip
					End of Boring @ 7'0"	Auger refusal @ 7'0"
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-3

Project:	**Proposed Renovations, Byrnwood Club Development, North Castle, NY**	**SHEET NO.:**	1 of 1
Client:	**JBM Realty**	**JOB NUMBER:**	12-175
Drilling Contractor:	**General Borings, Inc.**	**ELEVATION:**	+620.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE		
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			DATUM:	
No water encountered				DIA.	3 1/4"	1 3/8"			START DATE:	18 Dec 12
				WGHT		140#			FINISH DATE:	18 Dec 12
				FALL		30"			DRILLER:	T. McGovern
									INSPECTOR:	JB

Depth (ft.)	Casing Blows per Foot	Sample No.	Blows on Sample Spoon per 6"	IDENTIFICATION	REMARKS
			3	**Topsoil** 0'6"	
1		S-1	6	Br $ a (-), cf S, t mf G	Rec = 17"
			6	**Brown SILT and (-), coarse to fine**	moist
2			14	**Sand, trace medium to fine Gravel** 2'0"	
		S-2	25/5"	Lt br cf G a, cf S, t $ (completely weathered gneiss)	Rec = 5"
3				**Light brown coarse to fine GRAVEL**	moist
				and, coarse to fine Sand, trace	
4				**Silt (completely weathered Gneiss)**	
			23	Br cf G s, cf S, t $ (completely weathered gneiss)	
5		S-3	75/3"	4'9"	Rec = 6"
				End of Boring @ 4'9"	moist
6					Auger refusal @ 4'9"
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-4

Project:	Proposed Renovations, Byrnwood Club Development, North Castle, NY	SHEET NO.:	1 of 1
Client:	JBM Realty	JOB NUMBER:	12-175
Drilling Contractor:	General Borings, Inc.	ELEVATION:	+628.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM:	
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE:	18 Dec 12
No water encountered				DIA.	3 1/4"	1 3/8"			FINISH DATE:	18 Dec 12
				WGHT		140#			DRILLER:	T. McGovern
				FALL		30"			INSPECTOR:	JB

Depth (ft.)	Casing Blows per Foot	Sample No.	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			2		**Topsoil** 0'6"	
1		S-1	1		Br cf S, a $, t f G	Rec = 14"
			2		**Brown coarse to fine SAND, and**	moist
2			2		**Silt, trace fine Gravel** 2'0"	
			10		Gr cf S t $, a cf G (completely weathered gneiss)	
3		S-2	20			Rec = 13"
			45			moist
4			35			weathered rock 3'-4'
5						
			9		Br cf S, l $, s (+) cf G (completely weathered gneiss)	
6		S-3	11			Rec = 17"
			13		**Brown coarse to fine SAND, little**	moist
7			10		**Silt, some (+) coarse to fine Gravel**	
			18		same **(completely weathered Gneiss)**	
8		S-4	26			Rec = 14"
			30			moist
9			43			
10						
		S-5	75/6"		same 10'6"	Refusal on spoon @ 10'6"
11					**End of Boring @ 10'6"**	
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-5

Project:	**Proposed Renovations, Byrnwood Club Development, North Castle, NY**	**SHEET NO.:**	1 of 1
Client:	**JBM Realty**	**JOB NUMBER:**	12-175
Drilling Contractor:	**General Borings, Inc.**	**ELEVATION:**	+623.0

GROUNDWATER					**CASING**	**SAMPLE**	**CORE**	**TUBE**	**DATUM:**	
DATE	**TIME**	**DEPTH**	**CASING**	**TYPE**	**HSA**	**SS**			**START DATE:**	18 Dec 12
No water encountered				**DIA.**	**3 1/4"**	**1 3/8"**			**FINISH DATE:**	18 Dec 12
				WGHT		**140#**			**DRILLER:**	T. McGovern
				FALL		**30"**			**INSPECTOR:**	JB

Depth (ft.)	Casing Blows per Foot	Sample No.	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			2		Br cf S, s (+) $, t f G	
1		S-1	2		**Brown coarse to fine SAND,**	Rec = 17"
			3		**some (+) Silt, trace fine Gravel**	moist
2			13		2'0"	
			22		Br cf S, l $, s cf G	
3		S-2	10			Rec = 17"
			16		**Brown coarse to fine SAND, little**	moist
4			26		**Silt, some coarse to fine Gravel**	weathered rock in tip
					(completely weathered Gneiss)	
5						
			23		same, weathered gneiss	
6		S-3	62			Rec = 18"
			55			moist
7			81			weathered rock
8						
					8'6"	Auger refusal @ 8'6"
9					**End of Boring @ 8'6"**	
10						
11						
12						
13						
14						
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16						
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20						
21						
22						

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-6
Project: Proposed Renovations, Byrnwood Club Development, North Castle, NY		SHEET NO.: 1 of 1
Client: JBM Realty		JOB NUMBER: 12-175
Drilling Contractor: General Borings, Inc.		ELEVATION: +617.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			DATUM:
No water encountered				DIA.	3 1/4"	1 3/8"			START DATE: 19 Dec 12
				WGHT		140#			FINISH DATE: 19 Dec 12
				FALL		30"			DRILLER: T. McGovern
									INSPECTOR: KWA

Depth (ft.)	Casing Blows per Foot	Sample No.	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			2		**Topsoil** 0'6"	
1		**S-1**	6		FILL (Br cf S, l $) 1'0"	Rec = 10"
			5		**FILL (Brown coarse to fine SAND,**	moist
2			10		**little Silt)**	
			12		Br cf S, s $, a (-) cf G	
3		**S-2**	11			Rec = 11"
			11		same	moist
4			52		**Brown coarse to fine SAND, some**	
					Silt, and (-) coarse to fine Gravel	
5						
		S-3	75/2"		5'6"	No recovery
6					**End of Boring @ 5'6"**	Auger refusal @ 5'6"
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
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20						
21						
22						

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-7
Project: Proposed Renovations, Byrnwood Club Development, North Castle, NY		**SHEET NO.:** 1 of 1
Client: JBM Realty		**JOB NUMBER:** 12-175
Drilling Contractor: General Borings, Inc.		**ELEVATION:** +628.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM:	
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE:	19 Dec 12
No water encountered				DIA.	3 1/4"	1 3/8"			FINISH DATE:	19 Dec 12
				WGHT		140#			DRILLER:	T. McGovern
				FALL		30"			INSPECTOR:	KWA

Depth (ft.)	Casing Blows per Foot	Sample No.	Blows on Sample Spoon per 6"	IDENTIFICATION	REMARKS
			2	**Topsoil** 0'6"	
1		S-1	4	Br cf S, l $,l f G	Rec = 18"
			4		moist
2			5		
			13	same	
3		S-2	28	**Brown coarse to fine SAND,**	Rec = 17"
			21	**little Silt, little fine Gravel**	moist
4			22		
5				5'0"	
			12	Br cf S, l $, t f G (completely weathered gniess)	
6		S-3	14		Rec = 15"
			19		moist
7			28	**Brown coarse to fine SAND, little**	very dense augering 7'-10'
				Silt, trace fine Gravel (completely	
8				**weathered Geniss)**	
9					
10					
			75	same	
11		S-4	50/3"		Rec = 6"
					moist
12					very dense augering 10'-15'
13					
14					
15					
		S-4	50/2"	same 15'2"	No recovery
16				**End of Boring @ 15'2"**	Spoon bouncing @ 15'2"
17					
18					
19					
20					
21					
22					

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-8

Project:	Proposed Renovations, Byrnwood Club Development, North Castle, NY	**SHEET NO.:**	1 of 1
Client:	JBM Realty	**JOB NUMBER:**	12-175
Drilling Contractor:	General Borings, Inc.	**ELEVATION:**	+609.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM:	
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE:	19 Dec 12
19 Dec 12	1130	3'3"	None	DIA.	3 1/4"	1 3/8"			FINISH DATE:	19 Dec 12
				WGHT		140#			DRILLER:	T. McGovern
				FALL		30"			INSPECTOR:	KWA

Depth (ft.)	Casing Blows per Foot	Sample No.	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			2		**Brown Topsoil** 0'6"	
1		S-1	4		FILL (Br cf S, a $, t cf G)	Rec = 4"
			8			moist
2			7			
			10		FILL (same)	
3		S-2	11			No recovery
			11		**FILL (Brown coarse to fine SAND,**	moist
4			13		**and Silt, trace coarse to fine Gravel)**	
5						
			13		FILL (same) 5'6"	
6		S-3	8		Mtld gr, or br Cy $ s, cf S, w/t roots	Rec = 18"
			7		**Mottled gray, orange brown Clayey**	moist
7			8		**SILT some, coarse to fine Sand, with** 7'0"	
			8		**roots**	
8		S-4	8		Gr br cf S, s (+) $, l cf G	Rec = 15"
			7			wet
9			8		**Gray brown coarse to fine SAND,**	
					some (+) Silt, little coarse to fine	
10					**Gravel**	
			15		same, l cf G	
11		S-5	25			Rec = 16"
			26			wet
12			35		12'0"	
					End of Boring @ 12'0"	
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-9

Project:	**Proposed Renovations, Byrnwood Club Development, North Castle, NY**	**SHEET NO.:**	1 of 1
Client:	**JBM Realty**	**JOB NUMBER:**	12-175
Drilling Contractor:	**General Borings, Inc.**	**ELEVATION:**	+674.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE		
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			**DATUM:**	
No water encountered				DIA.	3 1/4"	1 3/8"			**START DATE:**	19 Dec 12
				WGHT		140#			**FINISH DATE:**	19 Dec 12
				FALL		30"			**DRILLER:**	T. McGovern
									INSPECTOR:	KWA

Depth (ft.)	Casing Blows per Foot	Sample No.	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			8		**Clay Tennis Court** 0'6"	
1		S-1	8		FILL (Br cf S, s $, s (+) cf G)	Rec = 17"
			8			moist
2			17			
			17		FILL (same)	
3		S-2	12			Rec = 15"
			7		**FILL (Brown coarse to fine Sand,**	moist
4			13		**some Silt, some (+) coarse to fine**	
					Gravel)	
5						
			10		FILL (Br cf S, s $, l cf G)	
6		S-3	4			Rec = 15"
			5			moist
7			11		7'0"	
		S-4	50/3"		**Highly to moderately weathered** 7'6"	Rec = 3"
8					**Gneiss**	moist
					Eknd of Boring @ 7'6"	Auger refusal @ 7'0"
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-10

Project:	**Proposed Renovations, Byrnwood Club Development, North Castle, NY**	**SHEET NO.:**	1 of 1
Client:	**JBM Realty**	**JOB NUMBER:**	12-175
Drilling Contractor:	**General Borings, Inc.**	**ELEVATION:**	+638.8

GROUNDWATER					**CASING**	**SAMPLE**	**CORE**	**TUBE**	**DATUM:**	
DATE	**TIME**	**DEPTH**	**CASING**	**TYPE**	**HSA**	**SS**			**START DATE:**	19 Dec 12
No water encountered				**DIA.**	**3 1/4"**	**1 3/8"**			**FINISH DATE:**	19 Dec 12
				WGHT		**140#**			**DRILLER:**	T. McGovern
				FALL		**30"**			**INSPECTOR:**	JB

Depth (ft.)	Casing Blows per Foot	Sample No.	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			2		**Topsoil** 0'1"	
1		**S-1**	3		Br cf $ s, cf S, l cf G	Rec = 15"
			6		**Brown coarse to fine SILT some, coarse to**	moist
2			50/3"		**fine Sand, little coarse to fine Gravel** 2'0"	Auger refusal @ 2'0"
3						
		Run #1			**Gray, white Gneiss**	Run #1
4						2'0"-7'0"
						Run = 60"
5					5'0"	Rec = 52" = 86%
					Soil seam	RQD = 53%
6					5'8"	
					Gray, white Gneiss	
7					7'0"	
					End of Boring @ 7'0"	
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-11

Project:	**Proposed Renovations, Byrnwood Club Development, North Castle, NY**	**SHEET NO.:**	1 of 1
Client:	**JBM Realty**	**JOB NUMBER:**	12-175
Drilling Contractor:	**General Borings, Inc.**	**ELEVATION:**	+640.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE		
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			DATUM:	
No water encountered				DIA.	3 1/4"	1 3/8"			START DATE:	19 Dec 12
				WGHT		140#			FINISH DATE:	19 Dec 12
				FALL		30"			DRILLER:	T. McGovern
									INSPECTOR:	KWA

Depth (ft.)	Casing Blows per Foot	Sample No.	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			2		**Topsoil**	
1		S-1	3		0'9"	Rec = 20"
			3		Br cf S, l (+) $	moist
2			7			
			5		same, dk br	
3		S-2	6		**Brown coarse to fine SAND,**	Rec = 17"
			8		**little (+) Silt**	moist
4			23		4'0"	
5					**Completely to highly weathered**	
					Gneiss	
6					5'6"	Auger refusal @ 5'6"
					End of Boring @ 5'6"	
7						
8						
9						
10						
11						
12						
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14						
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19						
20						
21						
22						

Byrnwood Club Development
Bedford Road
Town of New Castle, NY
(12-175)

3 January 2013

TEST PIT LOGS

TP-1	Elevation +662		
0-0’9”	Brown Topsoil		
0’9”-2’0”	Brown coarse to fine SAND, and Silt, trace (+) medium to fine Gravel	medium dense	moist
2’0”	Gneiss bedrock No water encountered		

TP-2	Elevation +672		
0-1’10”	FILL (Brown coarse to fine SAND, some silt, little (-) coarse to fine Gravel, with topsoil)	medium dense	moist
1’10”-4’4”	Light brown coarse to fine SAND, some (+) Silt	medium dense	moist
4’4”	Gneiss bedrock No water encountered		

TP-3	Elevation +672		
0-0’9”	Dark brown Topsoil with surface debris		
0’9”-2’2”	Brown coarse to fine SAND, some Silt	medium dense	moist
2’2”	Gneiss bedrock No water encountered		

Byrnwood Club Development
Bedford Road
Town of New Castle, NY
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TEST PIT LOGS

TP-4	Elevation +672		
0-0’6”	Brown Topsoil		
0’6”-3’6”	Brown coarse to fine SAND, and (-) Silt, some coarse to fine Gravel	medium dense	moist
3’6”	Gneiss bedrock No water encountered		

TP-5	Elevation +670		
0-0’7”	Brown Topsoil		
0’7”-3’8”	Light brown coarse to fine SAND, some (+) Silt	medium dense	moist
3’8”-4’9”	Brown coarse to fine SAND, some Silt (completely weathered gneiss)	dense	moist
4’9”	Gneiss bedrock No water encountered		

Byrnwood Club Development
Bedford Road
Town of New Castle, NY
(12-175)

3 January 2013

TEST PIT LOGS

TP-6	Elevation +672		
0-0'10"	Brown Topsoil		
0'10"-2'10"	Light brown coarse to fine SAND, some (-) Silt, little coarse to fine Gravel	medium dense	moist
2'10"-4'7"	Brown coarse to fine SAND, some Silt, little coarse to fine Gravel (completely weathered gneiss)	dense	moist
4'7"	Gneiss bedrock No water encountered		

TP-7	Elevation +620		
0-0'9"	Brown Topsoil		
0'9"-2'8"	Brown coarse to fine SAND, some Silt, trace coarse to fine Gravel	medium dense	moist
2'8"	Probable Gneiss bedrock		
	Test pit abandoned No water encountered		

TP-8	Elevation +614		
0-0'8"	Dark brown Topsoil		
0'8"-5'0"	Mottled orange brown, gray coarse to fine SAND, and (-) Silt	medium dense	moist
	Groundwater encountered @ 4'1"	slow inflow	

Byrnwood Club Development
Bedford Road
Town of New Castle, NY
(12-175)

3 January 2013

TEST PIT LOGS

TP-9	Elevation +628		
0-0'4"	Topsoil		
0'4"-6'9"	FILL (Brown coarse to fine SAND, some (+) Silt, some (+) coarse to fine Gravel, with cobbles and boulders)	medium dense	moist
6'9"	FILL (Gray coarse to fine SAND, trace (+) Silt)	medium dense	moist
	Possible cover over for utility Test pit was abandoned		
	No water encountered		

TP-10	Elevation +625		
0-0'4"	Topsoil		
0'4"-3'0"	FILL (Boulders with topsoil)	loose	moist
3'0"-8'0"	Brown coarse to fine SAND, some (+) Silt	medium dense	moist
	No water encountered		

Byrnwood Club Development
Bedford Road
Town of New Castle, NY
(12-175)

3 January 2013

TEST PIT LOGS

TP-11	Elevation +642		
0-0'6"	Brown Topsoil		
0'6"-3'9"	Brown coarse to fine SAND, some Silt, little coarse to fine Gravel, with occasional cobbles and boulders	medium dense	moist
3'9"-6'0"	Brown coarse to fine SAND, little (+) Silt, some coarse to fine Gravel (completely weathered gneiss)	dense	moist
6'0"	Weathered Gneiss bedrock No water encountered		

TP-12	Elevation +635		
0-0'6"	Brown Topsoil		
0'6"-5'0"	FILL (Brown coarse to fine SAND, some (+) Silt, little (-) coarse to fine Gravel, with trace of debris)	loose	moist
5'0"-6'6"	Orange brown, gray coarse to fine SAND and Silt	dense	moist
	Refusal on boulder No water encountered		

Byrnwood Club Development
Bedford Road
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4 January 2013

TEST PIT LOGS

TP-13	Elevation +636		
0-0’9”	Brown Topsoil with roots		
0’9”-6’3”	Brown coarse to fine SAND, and Silt, little coarse to fine Gravel	medium dense	moist
6’3”-7’5”	Brown coarse to fine SAND, some (+) Silt, little (-) coarse to fine Gravel	dense	moist
7’5”	Gneiss bedrock		
	Groundwater encountered @ 4’10”	slow inflow	

TP-14	Elevation +625		
0-0’3”	Brown Topsoil		
0’3”-3’4”	FILL (Gray brown coarse to fine SAND, some Silt, little coarse to fine Gravel, with cobbles and boulders)	loose	moist
3’4”-5’0”	FILL (Brown coarse to fine SAND, little Silt)	medium dense	moist
5’0”	Gneiss bedrock No water encountered		

Byrnwood Club Development
Bedford Road
Town of New Castle, NY
(12-175)

4 January 2013

TEST PIT LOGS

TP-15	Elevation +668		
0-0’3”	Brown Topsoil		
0’3”-1’8”	Brown coarse to fine SAND, some (+) Silt, some (-) coarse to fine Gravel, with occasional cobbles and boulders	medium dense	moist
1’8”	Gneiss bedrock No water encountered		

TP-16	Elevation +651		
0-0’8”	Dark brown Topsoil		
0’8”-1’10”	FILL (Brown coarse to fine SAND, some (+) Silt, trace medium to fine Gravel, with cobbles)	medium dense	moist
1’10”-4’10”	Brown coarse to fine SAND, some (+) Silt, trace medium to fine Gravel	medium dense	moist
4’10”	Gneiss bedrock No water encountered		

Byrnwood Club Development
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4 January 2013

TEST PIT LOGS

TP-17	Elevation +655		
0-0'3"	Topsoil		
0'3"-1'0"	Brown coarse to fine SAND, some (+) Silt, little coarse to fine Gravel	medium dense	moist
	Encountered irrigation pipes Test pit abandoned No water encountered		

TP-18	Elevation +670		
0-0'10"	Brown Topsoil		
0'10"-7'0"	Brown SILT and, coarse to fine Sand, little (-) medium to fine Gravel	medium dense	moist
	No water encountered		

Brynwood Club Development
Bedford Road
Town of North Castle, NY
(12-175)

13 September 2013

TEST PIT LOGS

TP-19

0-2'5"	FILL (Brown coarse to fine SAND, some Silt, some coarse to fine Gravel, with topsoil, cobbles, boulders)	loose	moist
2'5"-7'0"	Brown coarse to fine SAND, some Silt, little coarse to fine Gravel	medium dense	moist

No water encountered

TP-20

0-0'6"	Brown Topsoil		
0'6"-4'3"	Brown, orange brown coarse to fine SAND, some Silt, little coarse to fine Gravel	medium dense	moist
4'3"-8'0"	Orange brown coarse to fine SAND, little (-) Silt, some coarse to fine Gravel, with occasional cobbles	medium dense	moist

No water encountered

Brynwood Club Development
Bedford Road
Town of North Castle, NY
(12-175)

13 September 2013

TEST PIT LOGS

TP-21

0-0'6"	Dark brown Topsoil		
0'6"-1'4"	FILL (Brown coarse to fine SAND, some (-) Silt, trace medium to fine Gravel, with few roots)	medium dense	moist
1'4"-7'0"	Brown coarse to fine SAND, little Silt, trace (+) coarse to fine Gravel, with occasional cobbles	medium dense	moist
7'0"	Possible weathered bedrock		
	No water encountered		

TP-22

0-1'6"	Dark brown Topsoil, with roots		
1'6"-2'8"	Mottled gray brown, orange brown Clayey SILT, little medium to fine Sand	medium dense	moist
2'8"-3'6"	Brown coarse to fine SAND, some (+) Silt, little medium to fine Gravel	medium dense	moist
3'6"-6'0"	Brown coarse to fine SAND, little (+) Silt, come coarse to fine Gravel	medium dense	wet
6'0"-7'6"	Gray brown SILT little, coarse to fine Sand, trace medium to fine Gravel	medium dense	wet
	Groundwater encountered @ 4'6"	slow inflow	

Brynwood Club Development
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(12-175)

13 September 2013

TEST PIT LOGS

TP-23

0-0'7"	Brown Topsoil		
0'7"-3'10"	Brown coarse to fine SAND, and (-) Silt, little (-) coarse to fine Gravel	dense	moist
3'10"	Weathered bedrock		
	No water encountered		

TP-24

0-0'8"	Brown Topsoil		
0'8"-6'8"	Brown coarse to fine SAND, some (+) Silt, little (-) coarse to fine Gravel, with occasional cobbles	medium dense	moist
6'8"	Possible weathered bedrock or boulder		
	No water encountered		

TP-25

0-0'4"	Brown Topsoil		
0'4"-3'4"	Brown coarse to fine SAND, and Silt, trace medium to fine Gravel	medium dense	moist
3'4"	Possible bedrock or boulder		
	No water encountered		

Brynwood Club Development
Bedford Road
Town of North Castle, NY
(12-175)

13 September 2013

TEST PIT LOGS

TP-26

0-0'6"	Brown Topsoil		
0'6"-2'8"	FILL (Brown coarse to fine SAND, some (-) Silt, little coarse to fine Gravel, with cobbles and boulders)	medium dense	moist
2'8"-4'0"	FILL (Brown Topsoil, with trace roots)		
4'0"-5'6"	FILL (Dark gray brown Clayey SILT, and, coarse to fine Sand, with trace roots, trace debris)	medium stiff	moist
5'6"-8'0"	Brown coarse to fine SAND, and (-) Silt, trace coarse to fine Gravel	medium dense	moist
	No water encountered		

TP-27

0-0'9"	Brown Topsoil, with roots		
0'9"-4'4"	Light brown coarse to fine SAND, little Silt, trace coarse to fine Gravel	medium dense	dry
4'4"	Probable weathered bedrock		
	No water encountered		

Brynwood Club Development
Bedford Road
Town of North Castle, NY
(12-175)

13 September 2013

TEST PIT LOGS

TP-28

0-0’4”	Brown Topsoil		
0’4”-8‘6”	FILL (Brown coarse to fine SAND, little Silt, little coarse to fine Gravel, with organics, debris)	loose	moist
8’6”-9’0”	FILL (Gray coarse to fine SAND, some Silt, little coarse to fine Gravel, with organics)	medium dense	wet
	Groundwater encountered @ 8’0”		

GENERAL NOTES:

1. GENERAL LAYOUT WAS OBTAINED FROM A DRAWING PREPARED BY JOHN MEYER CONSULTING, PC ENTITLED "TEST PIT PLAN, BRYNWOOD CLUB, BEDFORD ROAD (NY 22), TOWN OF NORTH CASTLE NEW YORK," DRAWING TP-1, DATED DECEMBER 17, 2012.
2. BORING, TEST PIT, PERMEABILITY TEST, AND PERCOLATION TEST LOCATIONS WERE LAID OUT IN THE FIELD BY CARLIN-SIMPSON & ASSOCIATES (CSA).
3. BORINGS (B-1 THROUGH B-11) WERE PERFORMED BY GENERAL BORINGS INC. ON 18 & 19 DECEMBER 2012 UNDER THE FULL TIME INSPECTION OF CSA.
4. THE BOREHOLE PERMEABILITY TEST (BP-4) WAS PERFORMED BY CSA ON 18 & 19 DECEMBER 2012.
5. PERCOLATION TESTS (P-1, P-2, AND P-3) WERE PERFORMED BY CSA ON 3 JANUARY 2013.
6. TEST PITS (TP-1 THROUGH TP-18) WERE PERFORMED BY TRAFICANTE CONTRACTING, INC ON 3 & 4 JANUARY 2013 UNDER THE FULL TIME INSPECTION OF CSA.
7. TEST PITS (TP-19 THROUGH TP-28) WERE PERFORMED BY BRYNWOOD CLUB PERSONNEL IN SEPTEMBER 2013 UNDER THE FULL TIME INSPECTION OF CSA.
8. LOCATIONS ARE APPROXIMATE.

LEGEND:

- BORING LOCATION (DEC. 2012)
- TEST PIT LOCATION (JAN. 2013)
- TEST PIT LOCATION (SEPT. 2013)
- PERCOLATION TEST LOCATION (JAN. 2013)
- BOREHOLE PERMEABILITY TEST LOCATION (DEC. 2012)

ROBERT B. SIMPSON, P.E.
PROFESSIONAL ENGINEER

LICENSE NO. SIGNATURE

BORING & TEST PIT LOCATION PLAN

BRYNWOOD CLUB DEVELOPMENT
NORTH CASTLE, NEW YORK

DRAWN	SCALE
MRA	1" = 120'
CHECKED	DATE
RBS	16 OCT 13
PROJECT NO.	DWG NO.
12-175	FIG -1
APPROVED	

CARLIN-SIMPSON AND ASSOCIATES
61 Main Street
Sayreville, NJ 08872

Consulting Geotechnical and
Environmental Engineers

GENERAL NOTES:

1. GENERAL LAYOUT WAS OBTAINED FROM A DRAWING DATE 11-23-2020, LATEST REVISION DATED 05-09-2022, PREPARED BY JMC PLLC, ENTITLED "OVERALL EXISTING CONDITIONS MAPS", DWG NO. C-010.
2. BORING LOCATIONS ST-X'S PERFORMED IN AUGUST 2022 AND WERE LAID OUT IN THE FIELD BY CARLIN-SIMPSON & ASSOCIATES (CSA).
3. BORINGS R-X'S AND B-1XX'S WERE PERFORMED IN AUGUST 2022 AND NOVEMBER 2022. BORINGS B-2XX'S WERE PERFORMED IN MARCH 2023 AT SURVEYED LOCATIONS.
4. BORINGS R-X'S, B-1XX'S, B-2XX'S AND ST-X'S WERE PERFORMED BY ENVIRONMENTAL TECHNICAL DRILLING INC. UNDER THE FULL TIME INSPECTION OF CSA.
5. TEST PITS DH-XX'S WERE PERFORMED BY THE SUMMIT CLUB MAINTENANCE PERSONNEL IN DECEMBER 2022 AND FEBRUARY 2023. TEST PITS WERE LAID OUT IN THE FIELD BY CARLIN SIMPSON AND ASSOCIATES.
6. LOCATIONS ARE APPROXIMATE.

LEGEND:

- BORING LOCATION (R-X'S, B-1XX'S, ST-X'S, AND B-2XX'S).
- TEST PIT LOCATION (DH-XX'S).
- BORING LOCATION PERFORMED BY CSA IN DECEMBER 2012.
- TEST PIT LOCATION PERFORMED BY CSA IN JANUARY 2013.
- BORING LOCATION PERFORMED BY JMC IN 2016.
- TEST PIT LOCATION PERFORMED BY JMC IN 2016.

ROBERT B. SIMPSON, P.E.
PROFESSIONAL ENGINEER

WESTERN HALF BORING & TEST PIT LOCATION PLAN

PROPOSED DEVELOPMENT
568 & 570 BEDFORD ROAD
NORTH CASTLE, NEW YORK

DRAWN	SCALE
MW	1" = 80'
CHECKED	DATE
RBS	05.04.2023
PROJECT NO.	DWG NO.
22-85	FIG - 1
APPROVED	

CARLIN-SIMPSON AND ASSOCIATES, LLC
61 Main Street
Sayreville, NJ 08872

Consulting Geotechnical and Environmental Engineers

GENERAL NOTES:

1. GENERAL LAYOUT WAS OBTAINED FROM A DRAWING DATE 11-23-2020, LATEST REVISION DATED 05-09-2022, PREPARED BY JMC PLLC, ENTITLED "SITE GRADING PLAN", DWG NO. C-200/201.
2. BORING LOCATIONS ST-X'S PERFORMED IN AUGUST 2022 AND WERE LAID OUT IN THE FIELD BY CARLIN-SIMPSON & ASSOCIATES (CSA).
3. BORINGS R-X'S AND B-1XX'S WERE PERFORMED IN AUGUST 2022 AND NOVEMBER 2022. BORINGS B-2XX'S WERE PERFORMED IN MARCH 2023 AT SURVEYED LOCATIONS.
4. BORINGS R-X'S, B-1XX'S, B-2XX'S AND ST-X'S WERE PERFORMED BY ENVIRONMENTAL TECHNICAL DRILLING INC. UNDER THE FULL TIME INSPECTION OF CSA.
5. TEST PITS DH-XX'S WERE PERFORMED BY THE SUMMIT CLUB MAINTENANCE PERSONNEL IN DECEMBER 2022 AND FEBRUARY 2023. TEST PITS WERE LAID OUT IN THE FIELD BY CARLIN SIMPSON AND ASSOCIATES.
6. LOCATIONS ARE APPROXIMATE.

LEGEND:

- BORING LOCATION (R-X'S, B-1XX'S, ST-X'S, AND B-2XX'S).
- TEST PIT LOCATION (DH-XX'S).
- BORING LOCATION PERFORMED BY CSA IN DECEMBER 2012.
- TEST PIT LOCATION PERFORMED BY CSA IN JANUARY 2013.

ROBERT B. SIMPSON, P.E.
PROFESSIONAL ENGINEER

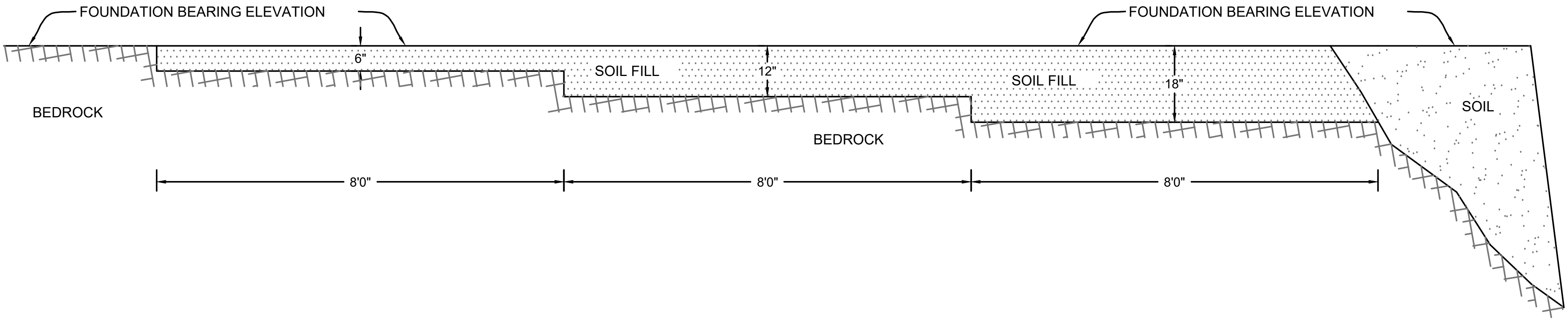
EASTERN BORING & TEST PIT LOCATION PLAN

PROPOSED DEVELOPMENT
568 & 570 BEDFORD ROAD
NORTH CASTLE, NEW YORK

DRAWN	SCALE
MW	1" = 60'
CHECKED	DATE
RBS	05.04.2023
PROJECT NO.	DWG NO.
22-85	FIG - 2
APPROVED	

CARLIN-SIMPSON AND ASSOCIATES, LLC
61 Main Street
Sayreville, NJ 08872

Consulting Geotechnical and
Environmental Engineers



NOTES:

1. EXCAVATE ROCK IN A SERIES OF STEPS. EACH STEP SHALL BE 6-INCHES DEEP AND A MINIMUM OF 8-FEET IN LENGTH, FOR A TOTAL DISTANCE OF 24-FEET FROM EDGE OF SOIL/ROCK INTERFACE.

2. BACKFILL OVER-EXCAVATION WITH SOIL FILL. SOIL FILL SHALL BE PLACED IN MAXIMUM 6-INCH LAYERS AND EACH LAYER SHALL BE COMPACTED TO AT LEAST 95% OF ITS MAXIMUM MODIFIED DRY DENSITY (ASTM D1557).

3. SOIL FILL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1/2-INCH AND CONTAIN AT LEAST 15% BUT LESS THAN 30% BY WEIGHT PASSING A NO. 200 SIEVE.

ROBERT B. SIMPSON, P.E.
PROFESSIONAL ENGINEER

LICENSE NO. SIGNATURE DATE

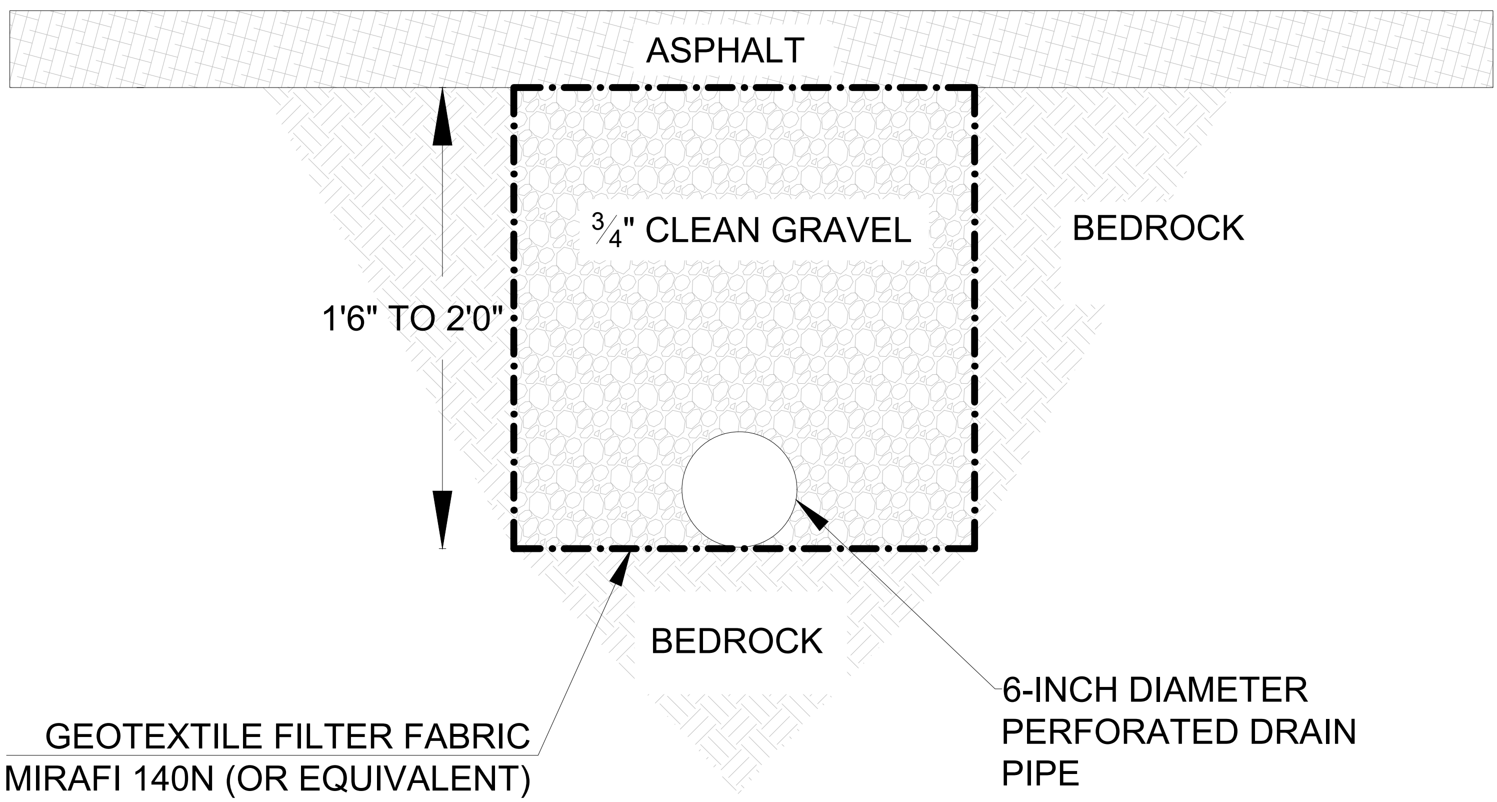
TRANSITION ZONE DETAIL (ROCK TO SOIL)

PROPOSED DEVELOPMENT
568 AND 570 BEDFORD ROAD
NORTH CASTLE, NEW YORK

DRAWN SR	SCALE NTS
CHECKED RBS	DATE 05.17.2023
PROJECT NO. 22-85	DWG NO. FIG-3
APPROVED	

CARLIN-SIMPSON AND ASSOCIATES
61 Main Street
Sayreville, NJ 08872

Consulting Geotechnical and Environmental Engineers



ROBERT B. SIMPSON, P.E.
PROFESSIONAL ENGINEER

LICENSE NO. SIGNATURE DATE

TYPICAL UNDERDRAIN PIPE DETAIL

PROPOSED DEVELOPMENT
568 & 570 BEDFORD ROAD
NORTH CASTLE, NEW YORK

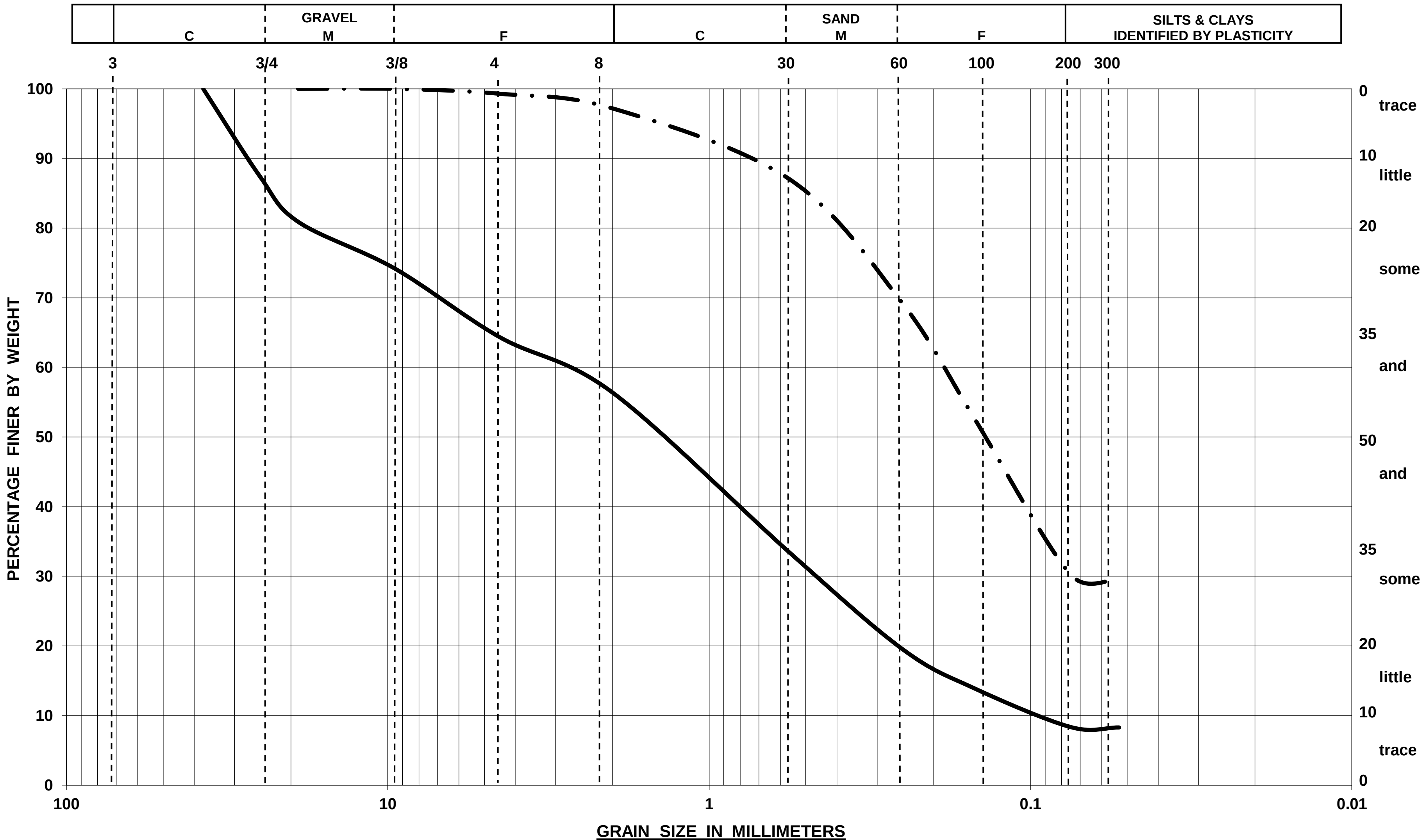
DRAWN CKA	SCALE 1" = 10'
CHECKED RBS	DATE 05.30.2023
PROJECT NO. 22-85	DWG NO. FIG -4
APPROVED	

CARLIN-SIMPSON AND ASSOCIATES
61 Main Street
Sayreville, NJ 08872

Consulting Geotechnical and Environmental Engineers

CARLIN-SIMPSON & ASSOCIATES, LLC
SAYREVILLE, NJ 08872

SIEVE ANALYSIS

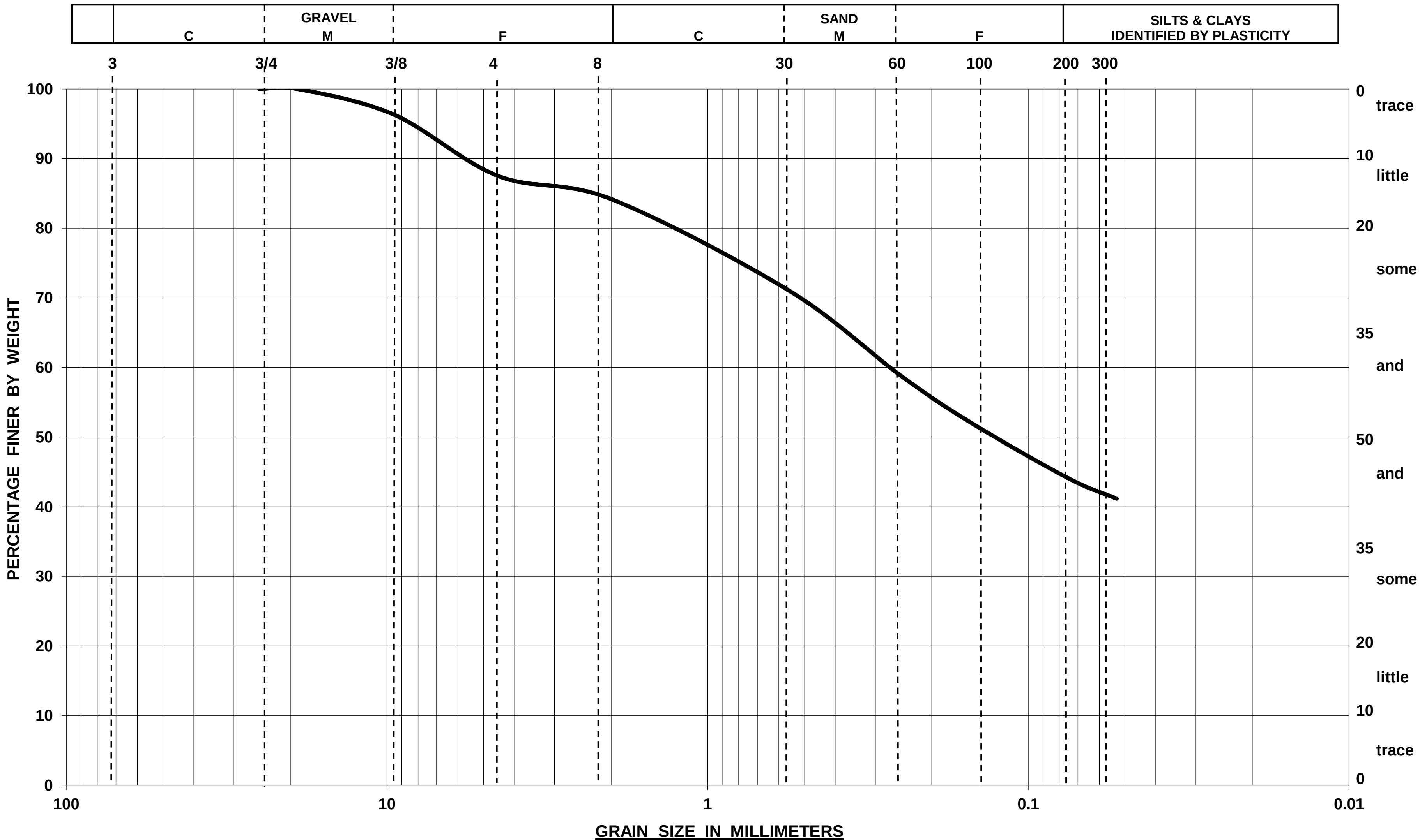


SYMBOL	BORING	SAMPLE	DEPTH	DESCRIPTION	NAT MC
———	R-1	S-2	2'-4'	Brown coarse to fine Sand, trace (+) Silt, and coarse to fine Gravel	3.7%
— ·	R-2	S-4	6'-8"	Brown coarse to fine SAND, some(+) Silt, trace (-) medium to fine Gravel	7.6%

PROJECT Proposed Development, 568 & 570 Bedford Road, North Castle, NY **BY** BGH **DATE** 9-Jan-23 **JOB NO** 22-85

CARLIN-SIMPSON & ASSOCIATES, LLC
SAYREVILLE, NJ 08872

SIEVE ANALYSIS

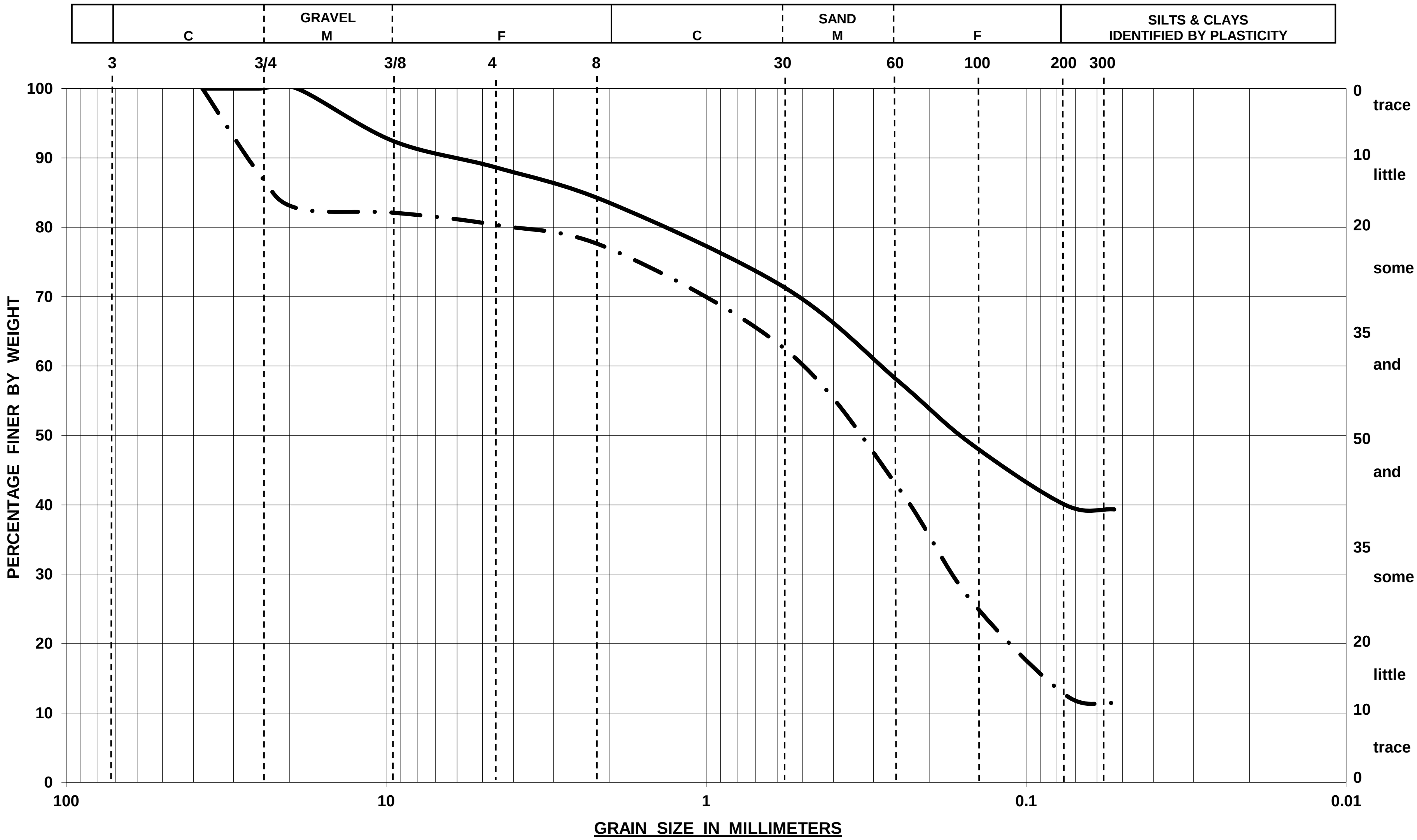


SYMBOL	BORING	SAMPLE	DEPTH	DESCRIPTION	NAT MC
——	R-4	S-1	0'-2'	Brown, orange coarse to fine Sand, and Silt, little medium to fine Gravel	9.0%

PROJECT Proposed Development, 568 & 570 Bedford Road, North Castle, NY **BY** BGH **DATE** 7-Jan-23 **JOB NO** 22-85

CARLIN-SIMPSON & ASSOCIATES, LLC
SAYREVILLE, NJ 08872

SIEVE ANALYSIS

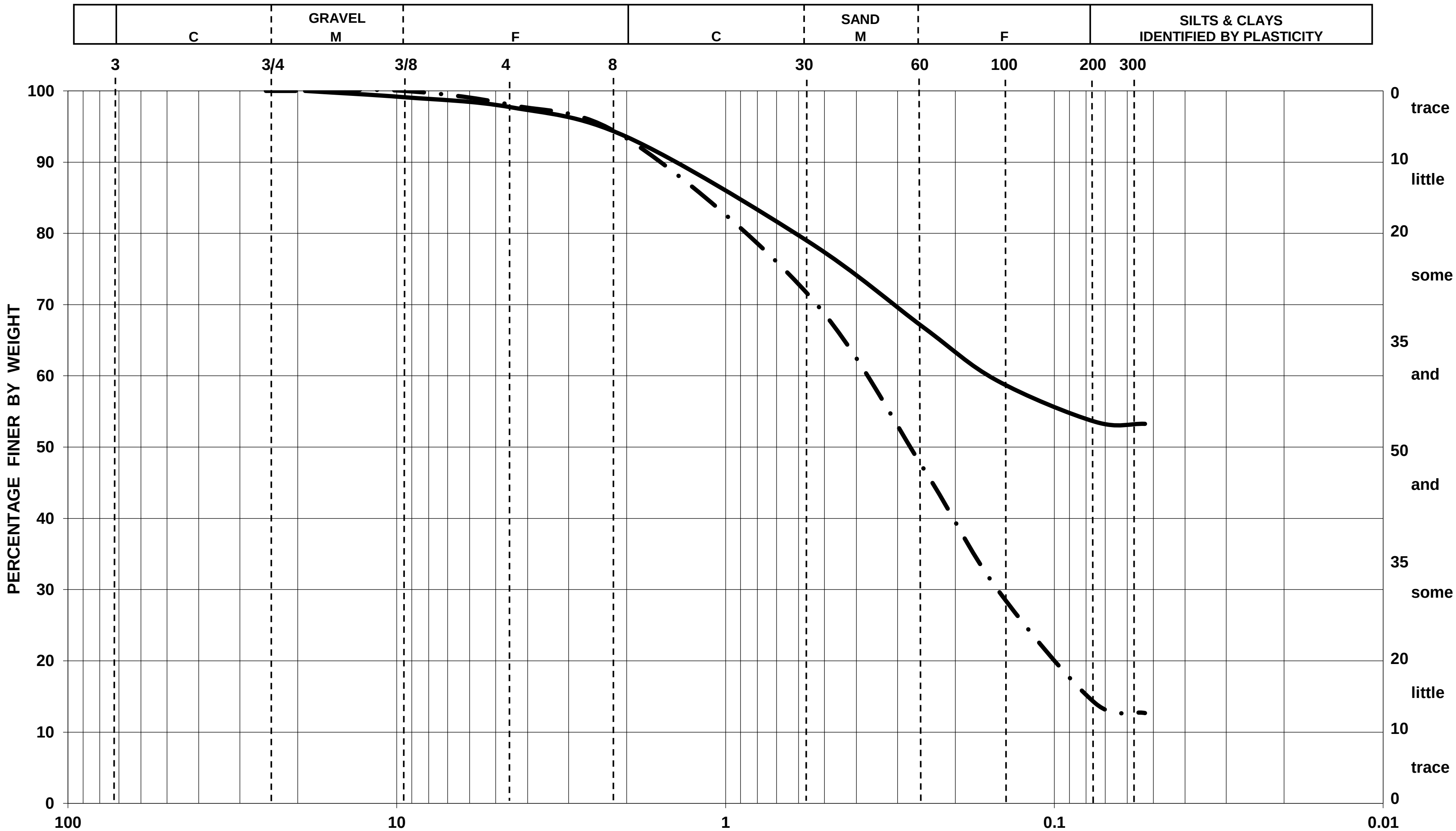


SYMBOL	BORING	SAMPLE	DEPTH	DESCRIPTION	NAT MC
———	INF-C	Perc Material	3'0"	Brown coarse to fine Sand, and(-) Silt, little medium to fine Gravel	19.5%
— ·	INF-D	Perc Material	5'3"	Brown coarse to fine SAND, little(-) Silt, some(-) coarse to fine Gravel	11.7%

PROJECT Proposed Development, 568 & 570 Bedford Road, North Castle, NY **BY** BGH **DATE** 28-Feb-23 **JOB NO** 22-85

CARLIN-SIMPSON & ASSOCIATES, LLC
SAYREVILLE, NJ 08872

SIEVE ANALYSIS



SYMBOL	BORING	SAMPLE	DEPTH	DESCRIPTION	NAT MC
———	DH-L	Perc Material	3'9"	Brown SILT and(+), coarse to fine Sand, trace medium to fine Gravel	21.0%
— ·	DH-P	Perc Material	3'3"	Brown coarse to fine SAND, little Silt, trace medium to fine Gravel	14.4%

PROJECT Proposed Development, 568 & 570 Bedford Road, North Castle, NY **BY** BGH **DATE** 28-Feb-23 **JOB NO** 22-85

Byrnwood Club Development
Bedford Road
Town of New Castle, NY
(12-175)

18 -19 December 2012

<u>Borehole Permeability Test (B-4)</u>

Ground Surface Elevation: +628.0
Top of Casing Elevation: +631.5
Bottom of Test Hole Elevation: +621.0
Test Hole Depth from Ground Surface Elevation: 7’0” (84”)

<u>Pre-Soak:</u>

Start Date: 18 Dec 2012 Time: 1545 Water Level*: 4’4”
End Date: 19 Dec 2012 Time: 0900 Water Level*: 7’1”

33” drop H_2O in 1035 minutes (17 hr. 15 min.) = <u>0.03 inches per minute</u>

<u>Test:</u>

Start Date: 19 Dec 2012 Time: 1000 Water Level*: 4’3”
End Date: 19 Dec 2012 Time: 1515 Water Level*: 5’3.5”

12.5” drop H_2O in 315 minutes (5 hr. 15 min.) = <u>0.04 inches per minute</u>

Time	Water Level*	Interval Water Level Drop (Inches)	Cumulative Water Level Drop (Inches)
1000	4’3”	0	0
1100	4’6”	3	3
1200	4’8”	2	5
1300	4’10”	2	7
1400	5’1”	3	10
1515	5’3.5”	2.5	12.5

Water Level* - Depth below top of casing (elevation +631.5)

Byrnwood Club Development
Bedford Road
Town of New Castle, NY
(12-175)

3 January 2013

<u>Percolation Test P-1</u>
(Elevation +620)

Test hole depth 42” from ground surface elevation

<u>Pre-Soak</u>

0-10 min, 22” drop of H2O (pipe drained)
22” drop H2O in 10 minutes = 2.20 inches per minute

<u>Test Run #1</u>

5 min, 15” drop H2O (re-filled pipe)

<u>Test Run #2</u>

5 min, 14” drop H2O (re-filled pipe)

<u>Test Run #3</u>

5 min, 12” drop H2O (re-filled pipe)

<u>Final Test Reading</u>

Start @ 1245, 14” from top of pipe
Finish @ 1300, 36” drop from top of pipe (pipe drained)
22” drop H2O in 15 minutes = 1.46 inches per minute

<u>Percolation Hole P-2</u>
(Elevation + 612)

Test hole depth 20” from ground elevation
Groundwater @ 0’6” below surface
Percolation test unable to be performed

Byrnwood Club Development
Bedford Road
Town of New Castle, NY
(12-175)

3 January 2013

Percolation Test P-3
(Elevation + 616)

Test hole depth 32" from ground surface elevation

Pre-Soak

0-24 min, 17" drop of H_2O (pipe drained)
17" drop H_2O in 24 minutes = 0.71 inches per minute

Test Run #1

5 min, 5" drop H_2O (re-filled pipe)

Test Run #2

5 min, 5" drop H_2O (re-filled pipe)

Test Run #3

5 min, 4" drop H_2O (re-filled pipe)

Final Test Reading

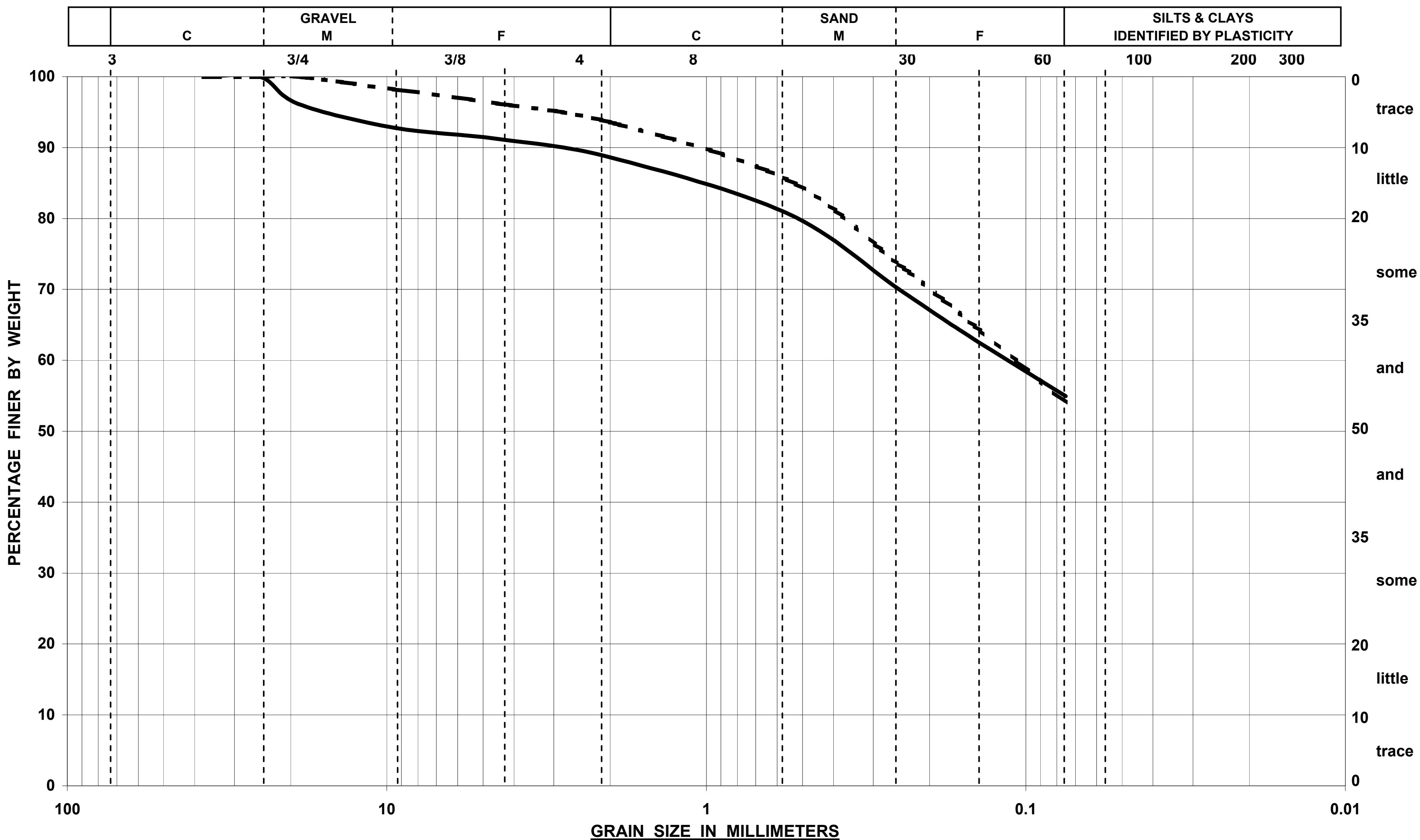
Start @ 1535, 15" from top of pipe
Finish @ 1605, 28" drop from top of pipe
13" drop H_2O in 30 minutes = 0.43 inches per minute

Percolation Hole P-4
(Elevation + 615)

Test hole depth 24" from ground elevation
Groundwater @ 1'10" below surface
Percolation test unable to be performed

CARLIN-SIMPSON & ASSOCIATES
SAYREVILLE, NJ 08872

SIEVE ANALYSIS

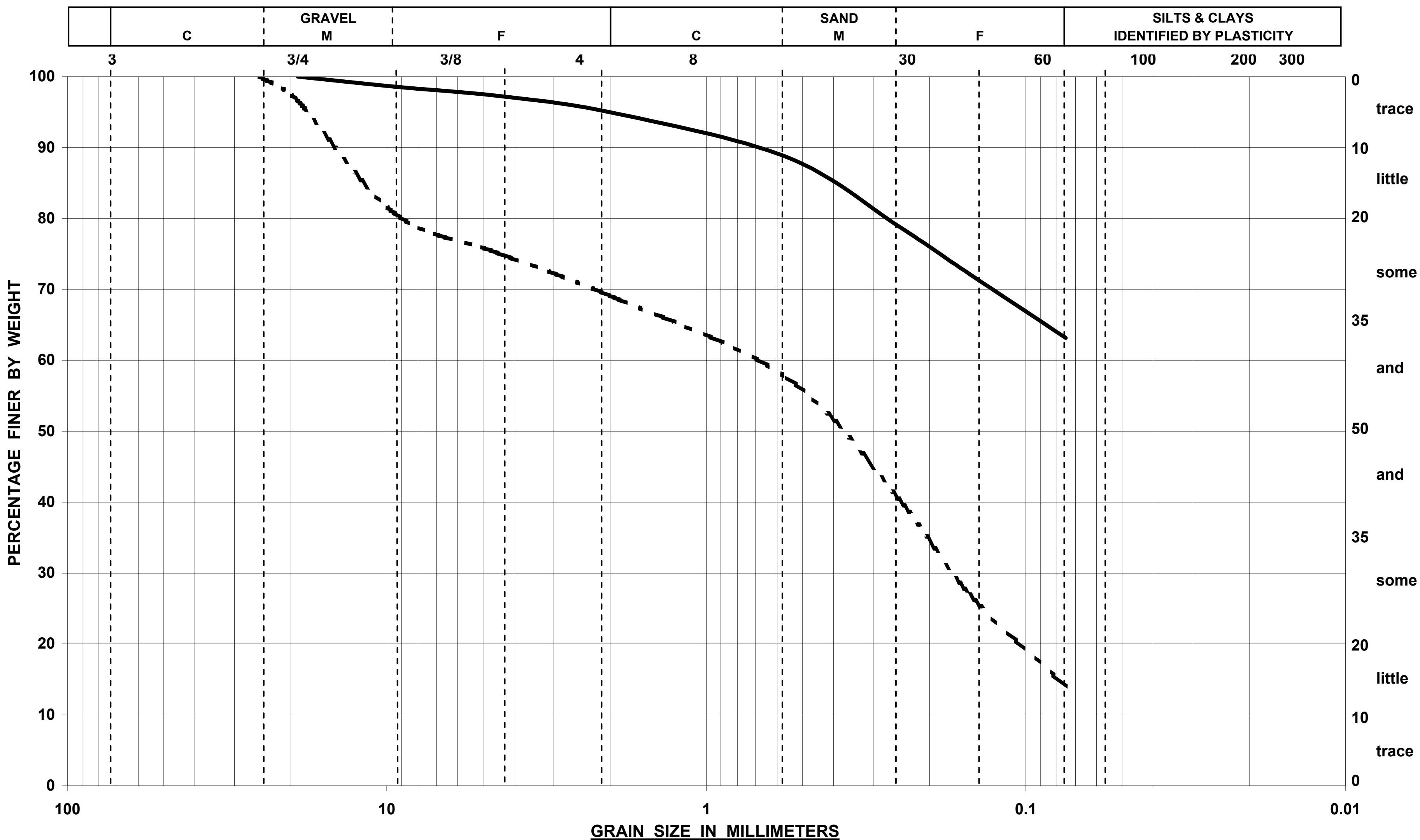


SYMBOL	BORING	SAMPLE	DEPTH	DESCRIPTION	NAT MC
———	B-1	S-1	0' 0" - 2' 0"	Brown SILT and (+), coarse to fine Sand, little (-) medium to fine Gravel	14.0%
— -	B-2	S-2	2' 0" - 4' 0"	Brown SILT and (+), coarse to fine Sand, trace medium to fine Gravel	14.2%

PROJECT Brynwood Club, Bedford Road, North Castle, NY **BY** MW **DATE** 7-Jan-13 **JOB NO** 12-175

CARLIN-SIMPSON & ASSOCIATES
SAYREVILLE, NJ 08872

SIEVE ANALYSIS



SYMBOL	BORING	SAMPLE	DEPTH	DESCRIPTION	NAT MC
———	B-3	S-1	0' 0" - 2' 0"	Brown SILT and (-), coarse to fine Sand, trace medium to fine Gravel	24.2%
— -	B-4	S-3	5' 0" - 7' 0"	Brown coarse to fine SAND, little Silt, some (+) medium to fine Gravel	12.1%

PROJECT Brynwood Club, Bedford Road, North Castle, NY **BY** MW **DATE** 7-Jan-13 **JOB NO** 12-175

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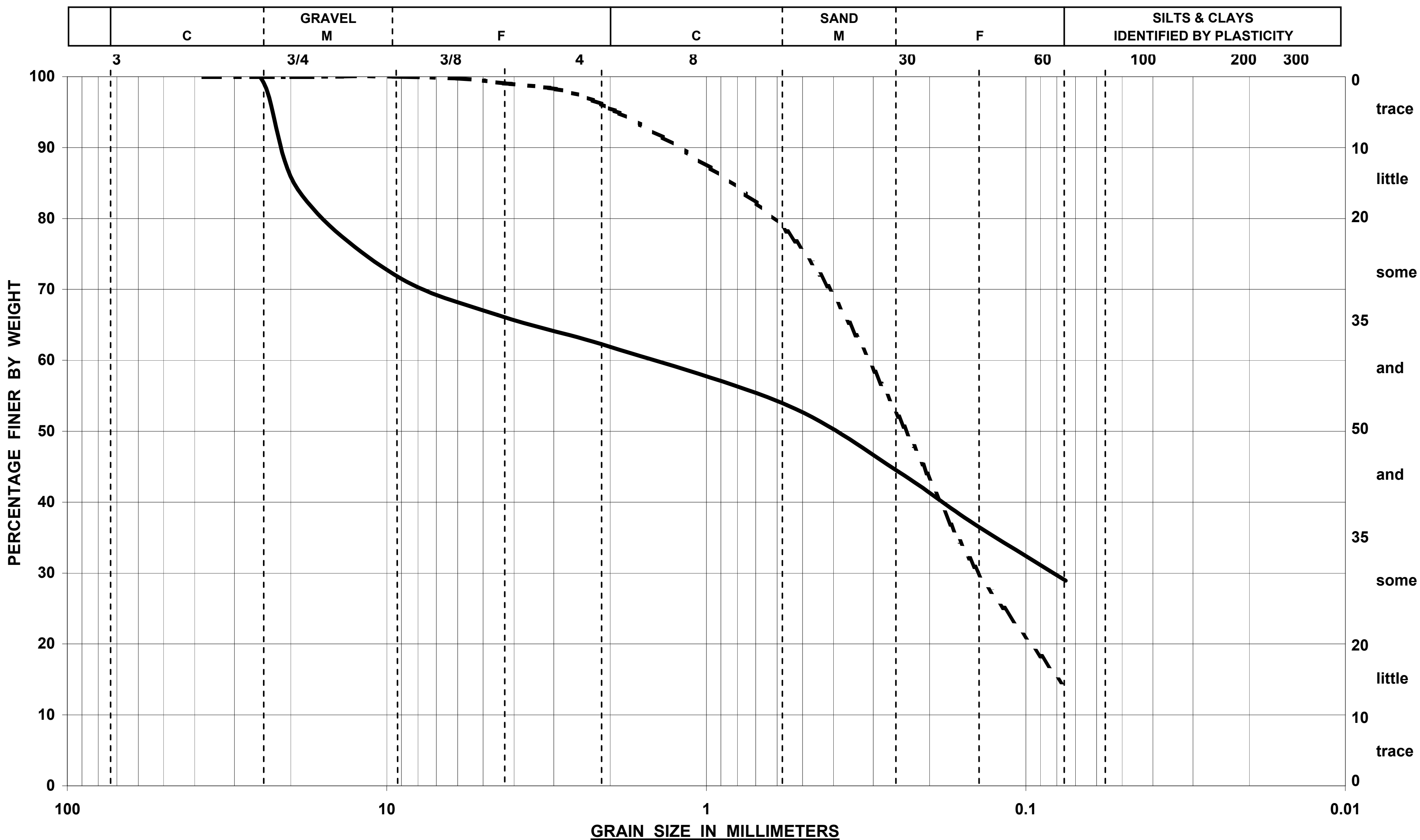
SAYREVILLE, NJ 08872

SIEVE ANALYSIS

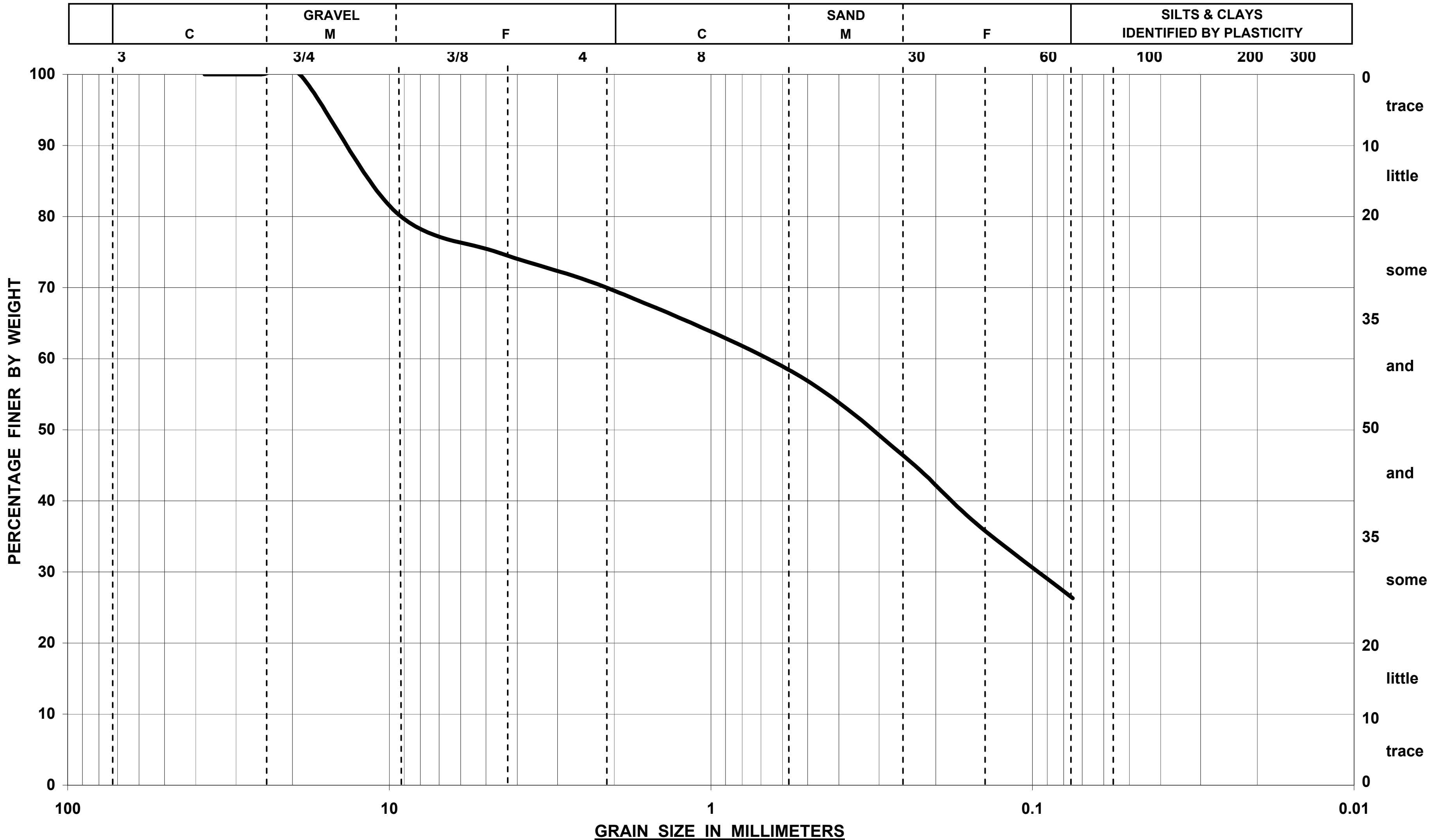


SYMBOL	BORING	SAMPLE	DEPTH	DESCRIPTION	NAT MC
———	B-6	S-2	2' 0" - 4' 0"	Brown coarse to fine Sand, some Silt, and (-) coarse to fine Gravel	9.9%
— -	B-7	S-3	5' 0" - 7' 0"	Brown coarse to fine SAND, little Silt, trace fine Gravel	8.7%

PROJECT Brynwood Club, Bedford Road, North Castle, NY BY MW DATE 10-Jan-13 JOB NO 12-175

CARLIN-SIMPSON & ASSOCIATES
SAYREVILLE, NJ 08872

SIEVE ANALYSIS



SYMBOL	BORING	SAMPLE	DEPTH	DESCRIPTION	NAT MC
———	B-9	S-2	2' 0" - 4' 0"	FILL (brown coarse to fine Sand, some Silt, some (+) medium to fine Gravel	15.0%

PROJECT Brynwood Club, Bedford Road, North Castle, NY **BY** MW **DATE** 7-Jan-13 **JOB NO** 12-175

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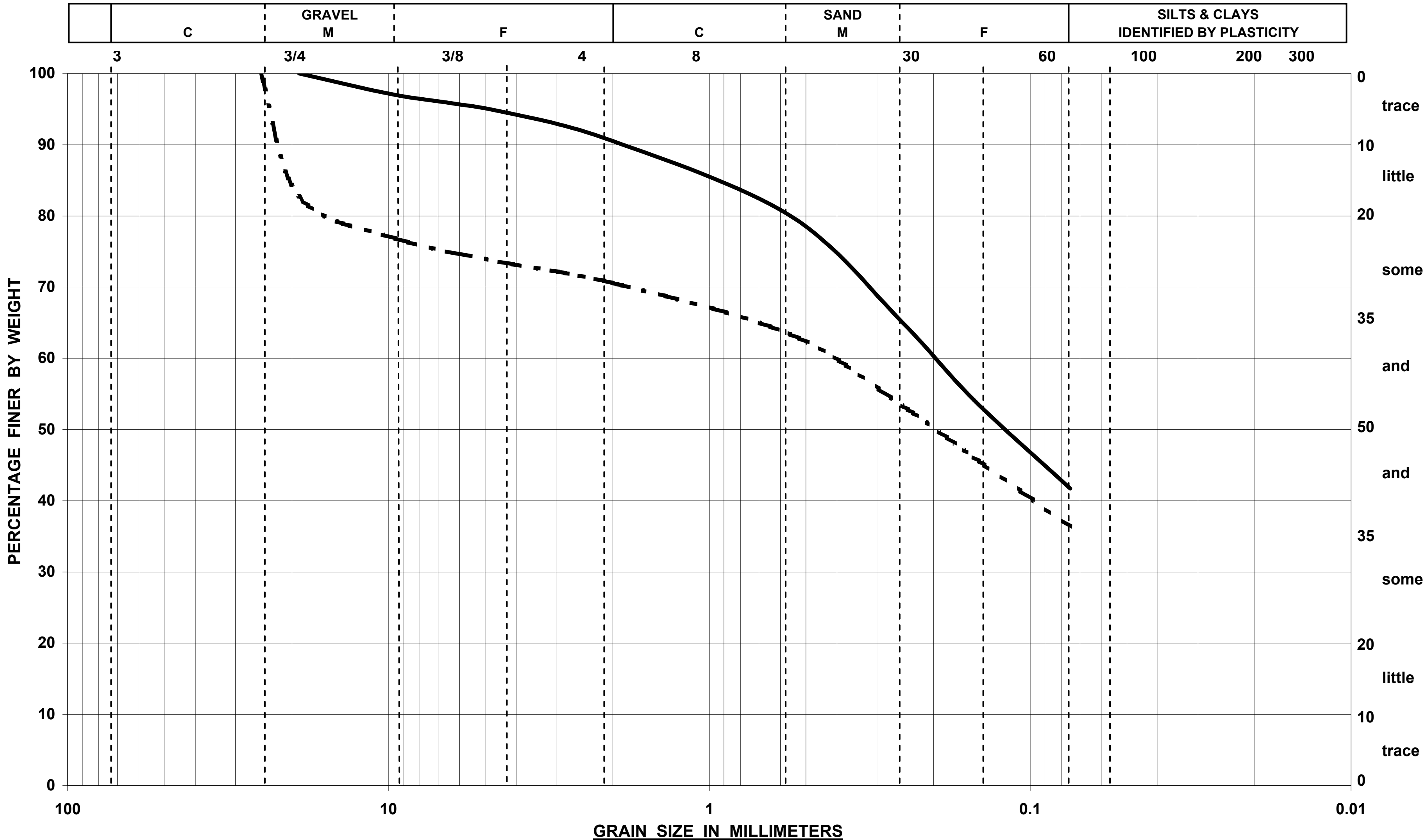
SAYREVILLE, NJ 08872

SIEVE ANALYSIS

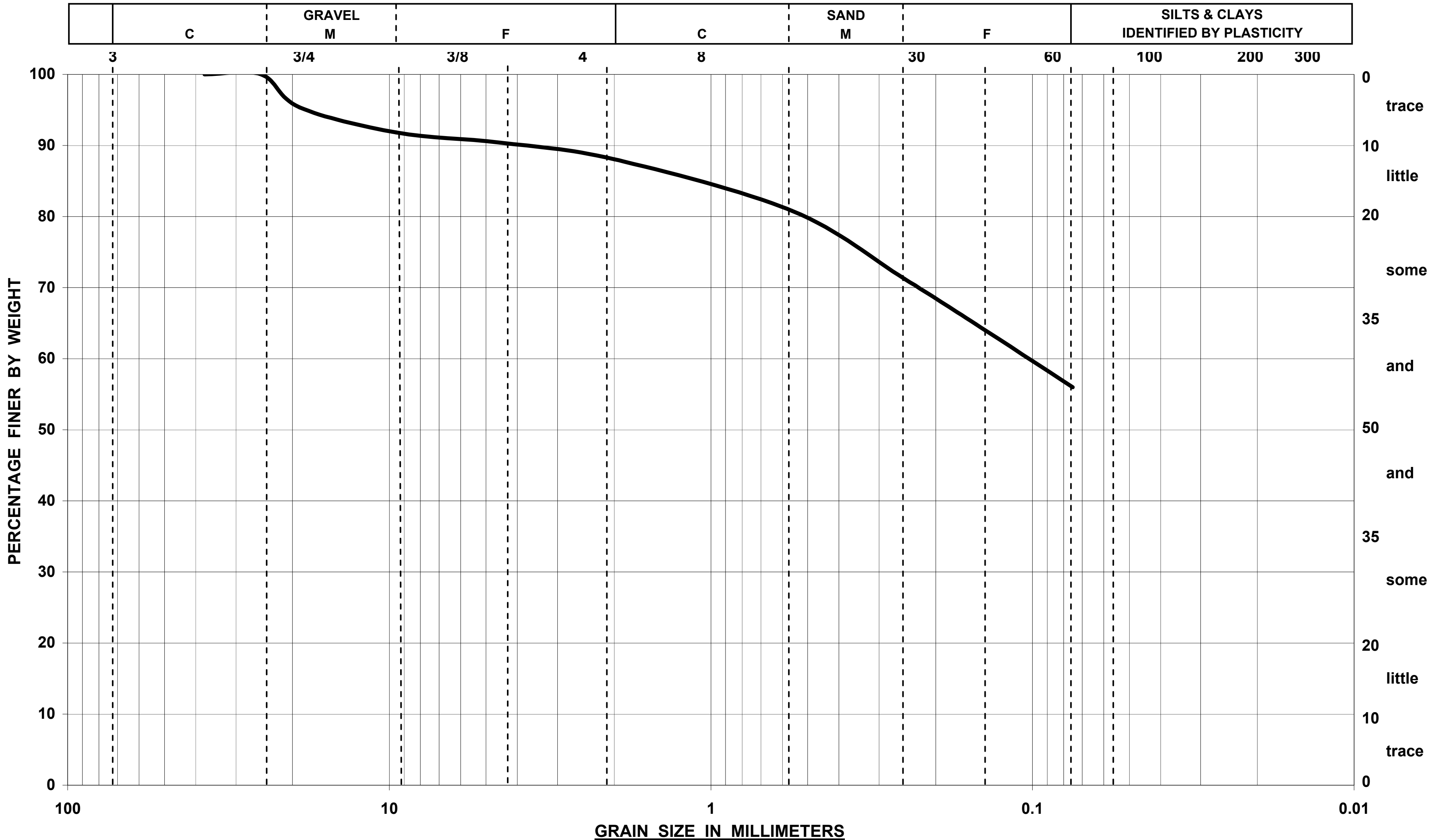


SYMBOL	Test Pit	SAMPLE	DEPTH	DESCRIPTION	NAT MC
———	TP-1	S-1		Brown coarse to fine SAND, and Silt, trace (+) medium to fine Gravel	18.2%
— -	TP-4	S-1		Brown coarse to fine Sand, and (-) Silt, some coarse to fine Gravel	14.0%

PROJECT Brynwood Club, Bedford Road, North Castle, NY **BY** MW **DATE** 7-Jan-13 **JOB NO** 12-175

CARLIN-SIMPSON & ASSOCIATES
SAYREVILLE, NJ 08872

SIEVE ANALYSIS



SYMBOL	Test Pit	SAMPLE	DEPTH	DESCRIPTION	NAT MC
——	TP-18	S-1	0' 10" - 7' 0"	Brown SILT and, coarse to fine Sand, little (-) medium to fine Gravel	18.0%

PROJECT	Brynwood Club, Bedford Road, North Castle, NY	BY	MW	DATE	7-Jan-13	JOB NO	12-175

CARLIN • SIMPSON & ASSOCIATES

Consulting Geotechnical and Environmental Engineers

61 Main Street, Sayreville, New Jersey 08872
Tel. (732) 432-5757
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Principal:
Robert B. Simpson, P.E.

Associates:
Robert H. Barnes, P.E.
Meredith R. Anke, P.E.
Kurt W. Anke
Eric J. Shaw

13 February 2013
Revised 16 October 2013

Brynwood Partners, LLC
c/o Corigin Holdings
505 Fifth Avenue, 22nd Floor
New York, NY 10017

Attn: Ms. Megan Maciejowski

Re: Report on Subsurface Soil and Foundation Investigation
Brynwood Club Development
Bedford Road
Town of North Castle, NY (12-175)

Dear Ms. Maciejowski:

In accordance with our proposals dated 20 November 2012 and 9 September 2013 and your subsequent authorization, we have completed a Subsurface Soil and Foundation Investigation for the referenced site. The purpose of this study is to preliminarily determine the nature and engineering properties of the subsurface soil and bedrock as well as the groundwater conditions for the planned development, to recommend a practical foundation scheme, to determine the allowable bearing capacity of the site soils, and to determine the subsurface soil and groundwater conditions and soil permeability in the new stormwater management areas.

We understand that the planned construction will consist of 21 new structures, roadways, parking areas, retaining walls, tennis courts, underground utilities, and a stormwater management system. To guide us in our study, you have provided us with a site plan that indicates the existing site conditions and the location of the planned new development.

Our scope of work for this project included the following:

1. Reviewed the proposed layout, the existing site conditions, the expected soil conditions, and planned this study.

2. Retained General Borings, Inc. to advance 11 test borings at the subject site.

3. Retained Traficante Contracting Inc. to excavate 18 test pits at the subject site.

4. Inspected ten (10) supplemental test pits that were excavated at the site by Brynwood Club personnel.

5. Laid out the boring and test pit locations in the field, provided full time inspection of the explorations, obtained soil samples, and prepared detailed logs and a Boring and Test Pit Location Plan.

6. Performed three (3) field percolation tests and one (1) borehole permeability test.

7. Performed soil identification tests on selected soil samples in our laboratory.

8. Analyzed the field and laboratory test data and prepared this report containing the results of this study.

SITE DESCRIPTION

The project site is located on the Brynwood Club property on Bedford Road in North Castle, Westchester County, New York. The subject property is currently occupied by a golf club with a clubhouse building, tennis courts, and a few smaller out-structures. The proposed development area is also occupied by an asphalt paved parking lot and driveways as well as grass lawn areas and wooded areas. There are numerous existing underground utilities located throughout the property.

Within the proposed development area, the existing site grades vary from approximately elevation +610.0 at the southwest corner of the subject site and the westernmost portion of the site, to elevation +640.0 on the east side of the existing clubhouse building, to elevation +674.5 in the existing tennis court area in the northeastern portion of the property.

SUBSURFACE CONDITIONS

To determine the subsurface soil, bedrock, and groundwater conditions, we advanced 11 test borings and 28 test pits at the site. The borings and test pits were performed at the locations shown on the enclosed Boring and Test Pit Location Plan. Detailed logs have been prepared and are included in this report. Our field engineer visually identified all soil samples and selected soil samples were tested in our laboratory. The results of these tests are also included in this report.

Soil

The soil descriptions shown on the boring and test pit logs are based on the Burmister Classification System. In this system, the soil is divided into three components: Sand (S), Silt ($) and Gravel (G). The major component is indicated in all capital letters, the lesser in lower case letters. The following modifiers indicate the quantity of each lesser component:

Modifier	**Quantity**
trace (t)	0 -10%
little (l)	10% - 20%
some (s)	20% - 35%
and (a)	35% - 50%

The subsurface soil conditions observed in the borings and test pits can be summarized as follows:

Stratum 1
Topsoil

The surface layer at most of the boring and test pit locations consists of brown topsoil that typically ranges from about 0’3” to 1’6” in thickness.

Stratum 2
Existing Fill

Beneath the topsoil and at the surface in three (3) of the borings (B-6, B-8, and B-9) and ten (10) of the test pits (TP-2, TP-9, TP-10, TP-12, TP-14, TP-16, TP-19, TP-21, TP-26, and TP-28) is existing fill that consists of loose to medium dense brown coarse to fine SAND, little (to and) Silt, trace (to some) coarse to fine Gravel. Cobbles, boulders, topsoil, roots, and debris were also present within the fill at some of the test locations. The existing fill was encountered to depths ranging from 1’0” to more than 9’0” beneath the existing ground surface. Test pits TP-9 and TP-28 were terminated in the fill at final depths of 6’9” and 9’0” beneath the ground surface, respectively.

Stratum 3
Sandy Silt or Silty Sand

Underlying the topsoil and existing fill is virgin soil that is comprised of medium dense to dense brown, light brown, or gray brown SILT some (to and), coarse to fine Sand, trace (to little) coarse to fine Gravel or coarse to fine SAND, little (to and) Silt, trace (to and) coarse to fine Gravel, with occasional cobbles and boulders. The Sandy Silt or Silty Sand stratum continued to depths ranging from 2’0” to 12’0” below the existing ground surface. Boring B-8 and test pits TP-8, TP-10, TP-12, TP-19, TP-20, TP-22, and TP-26 were terminated in this stratum at final depths ranging from 5’0” to 12’0” beneath the ground surface.

Stratum 4
Sand or Sandy Gravel

Below the Sandy Silt or Silty Sand at several test locations is completely weathered Gneiss bedrock that generally consists of dense to very dense brown or gray brown coarse to fine SAND, little (to some) Silt, trace (to some) coarse to fine Gravel or coarse to fine GRAVEL and, coarse to fine Sand, trace Silt. Where encountered in the borings and test pits, the completely weathered bedrock was present at depths ranging from 2’0” to 7’0” beneath the ground surface and continued to depths ranging from 4’7” to 15’2” below the existing ground surface.

Stratum 5 Gneiss Bedrock	Gneiss bedrock was encountered at 27 of the 39 test locations. Where encountered in the borings and test pits, gneiss bedrock was observed at depths ranging from 1'8" to 15'2" beneath the existing ground surface. In general, the quality of the bedrock will improve with depth. At boring B-10, the bedrock was cored between the depths of 2'0" and 7'0". The core recovery was 86% and the Rock Quality Designation (RQD) of the recovered core was 53%. This indicates that the quality of the upper five (5) feet of the Gneiss bedrock is fair. The Gneiss bedrock is moderately weathered and in a blocky and seamy condition.

Groundwater

Observations for groundwater were made during sampling and upon completion of the drilling operations at each boring location. In auger drilling operations, water is not introduced into the boreholes, and the groundwater position can often be determined by observing water flowing into or out of the boreholes. Furthermore, visual observation of the soil samples retrieved during the auger drilling and in the test pits can often be used in evaluating the groundwater conditions.

Groundwater was encountered in test pit TP-8 at a depth of 4'1" (+609.9), in test pit TP-13 at a depth of 4'10" (+631.2), in boring B-8 at a depth of 3'3" (+608.3), in test pit TP-22 at a depth of 4'6" (+470.5), and in test pit TP-28 at a depth of 8'0" (+491.0) beneath the ground surface. Groundwater was not encountered in any of the other borings or test pits that were performed at the subject site during this investigation.

Variations in the location of the long-term water table may occur as a result of changes in precipitation, evaporation, surface water runoff, and other factors not immediately apparent at the time of this exploration. Based on the site conditions, trapped groundwater may be encountered in the silty site soils and/or along the soil/rock interface during wet periods. Proper groundwater control measures will be required in the event that trapped water is encountered in the site excavations.

Bedrock

Bedrock was encountered in 27 of the 39 explorations that were performed at the site during this investigation. Completely weathered bedrock was encountered at ten (10) test locations at depths ranging from 2'0" to 7'0" below the existing ground surface. Harder bedrock was encountered in the remaining locations and below the completely weathered rock at depths ranging from 1'8" to 15'2" beneath the ground surface. These depths correspond to bedrock elevations ranging between approximately elevation +471.0 and elevation +669.8.

Based on the boring and test pit data and the site plans provided to this office, bedrock was encountered above the planned finished floor elevation in portions of the site. The observed depth to bedrock at each boring and test pit location is summarized in Table 1 in the following section of this report.

The bedrock encountered at the site consists of weathered Gneiss. Based on our experience, the in-situ bedrock will range from highly weathered, fractured rock to massive, intact rock. Penetration into the bedrock with excavation equipment will depend of the degree of weathering and fracturing in the rock. We anticipate that the "rippability" of the bedrock will be variable and very limited. Based on our observations, harder rock will be encountered and blasting and/or the use of hydraulic hammers will be required to excavate the harder, intact bedrock. Rock removal is discussed further in a separate section of this report.

EVALUATION

At the time of this report, the proposed layout, the proposed finished floor elevations, and the site grading were preliminary. Therefore, the following evaluation is preliminary in nature and has been generalized for the expected development. The recommendations below are intended for planning purposes only and are not intended for final design and construction. Additional subsurface investigation will be required for the proposed buildings and retaining walls. Preliminarily, we estimate that an additional 12 to 15 explorations will be required for this project. Once the site plans have been further developed, a copy shall be forwarded to our office so that we can review it along with the recommendations in this report. At that time, we will provide specific recommendations for additional subsurface investigation. After the supplemental investigation has been completed, additional geotechnical recommendations will be provided for the project site. As a result, the recommendations within this report are subject to change.

Based on the preliminary site plans, we understand that the planned construction will consist of 21 new structures that will include seven (7) golf residences, seven (7) club villas, five (5) golf cottages, one (1) fairway residences building, and one (1) clubhouse building. The proposed construction will also include new asphalt paved roadways and parking areas, retaining walls, tennis courts, underground utilities, and a stormwater management system.

The grading plan provided to this office indicates that the proposed finished floor elevations vary across the site. In addition, the fairway residences, golf cottages, and golf residences will have basements. Based on the existing and proposed grades, cuts ranging up to approximately 14'0" and fills ranging up to approximately 10'0" are expected to achieve the proposed floor slab subgrade elevations. In the proposed pavement areas, cuts ranging up to approximately 6'0" and fills ranging up to approximately 8'0" are expected to achieve the proposed pavement subgrade elevations.

The boring and test pit data indicates that there is existing fill (Stratum 2) present in portions of the site to depths ranging from 1'0" to more than 9'0" below the existing ground surface. The existing fill generally consists of loose to medium dense Sand with varying amounts of Silt and Gravel and occasional cobbles, boulders, topsoil, roots, and debris. Underlying the existing fill is medium dense to dense Sandy Silt or Silty Sand (Stratum 3). The Sandy Silt or Silty Sand is underlain by dense to very dense completely weathered Gneiss bedrock (Stratum 4) in areas followed by more competent Gneiss bedrock (Stratum 5), which was encountered at depths ranging from 2'0" to 15'2" beneath the existing ground surface. The existing fill and bedrock observations are summarized in Table 1 below.

Table 1 - Summary of Boring and Test Pit Data

Boring or Test Pit No.	Approximate Ground Surface Elevation	Depth to Bottom of Existing Fill (Elevation)	Depth to Weathered Bedrock (Elevation)	Depth to Bedrock or Auger Refusal (Elevation)
B-1	+661.0	NE	5’0” (+656.0)	8’0” (+653.0)
B-2	+628.0	NE	NE	7’0” (+621.0)
B-3	+620.0	NE	2’0” (+618.0)	4’9” (+615.3)
B-4	+628.0	NE	2’0” (+626.0)	10’6” (+617.5)
B-5	+623.0	NE	2’0” (+621.0)	8’6” (+614.5)
B-6	+617.0	1’0” (+616.0)	NE	5’6” (+611.5)
B-7	+628.0	NE	5’0” (+623.0)	15’2” (+612.8)
B-8	+609.0	5’6” (+603.5)	NE	NE to 12’0”
B-9	+674.0	7’0” (+667.0)	7’0” (+667.0)	7’6” (+666.5)
B-10	+638.8	NE	NE	2’0” (+636.8)
B-11	+640.0	NE	4’0” (+636.0)	5’6” (+634.5)
TP-1	+662.0	NE	NE	2’0” (+660.0)
TP-2	+672.0	1’10” (+670.2)	NE	4’4” (+667.7)
TP-3	+672.0	NE	NE	2’2” (+669.8)
TP-4	+672.0	NE	NE	3’6” (+668.5)
TP-5	+670.0	NE	3’8” (+666.3)	4’9” (+665.3)
TP-6	+672.0	NE	2’10” (+669.2)	4’7” (+667.4)
TP-7	+620.0	NE	NE	2’8” (+617.3)
TP-8	+614.0	NE	NE	NE to 5’0”
TP-9	+628.0	>6’9” (<+621.3)	NE	NE to 6’9”
TP-10	+625.0	3’0” (+622.0)	NE	NE to 8’0”
TP-11	+642.0	NE	3’9” (+638.3)	6’0” (+636.0)
TP-12	+635.0	5’0” (+630.0)	NE	NE to 6’6”
TP-13	+636.0	NE	NE	7’5” (+628.6)
TP-14	+625.0	5’0” (+620.0)	NE	5’0” (+620.0)
TP-15	+668.0	NE	NE	1’8” (+666.3)
TP-16	+651.0	1’10” (+649.2)	NE	4’10” (+646.2)
TP-17	+655.0	NE	NE	NE to 1’0”
TP-18	+670.0	NE	NE	NE to 7’0”
TP-19	+427.0	2’5” (+424.6)	NE	NE to 7’0”
TP-20	+415.0	NE	NE	NE to 8’0”
TP-21	+478.0	1’4” (+476.7)	NE	7’0” (+471.0)
TP-22	+475.0	NE	NE	NE to 7’6”
TP-23	+496.0	NE	NE	3’10” (+492.2)
TP-24	+564.0	NE	NE	6’8” (+557.3)
TP-25	+633.0	NE	NE	3’4” (+629.7)
TP-26	+669.0	5’6” (+663.5)	NE	NE to 8’0”

Boring or Test Pit No.	Approximate Ground Surface Elevation	Depth to Bottom of Existing Fill (Elevation)	Depth to Weathered Bedrock (Elevation)	Depth to Bedrock or Auger Refusal (Elevation)
TP-27	+561.0	NE	NE	4’4” (+556.7)
TP-28	+499.0	>9’0” (<+490.0)	NE	NE to 9’0”

Notes: NE – Not Encountered
B-8: Groundwater at +608.3
TP-8: Groundwater at +609.9
TP-9: Terminated in the Existing Fill
TP-13: Groundwater at +631.2
TP-22: Groundwater at +470.5
TP-28: Groundwater at +491.0
TP-28: Terminated in the Existing Fill

Removal of Existing Structures from New Building and Pavement Areas

Building Areas

The site plan indicates that existing structures are present in some of the proposed building areas. The existing structures will be removed as part of the proposed development. All debris resulting from the demolition of these items must be completely removed from the new building areas, extending at least ten (10) feet beyond the new building limits, where practical. This shall include the complete removal of all foundations, walls, slabs, utilities, sidewalks, pavement, and miscellaneous debris. Where the removal of existing items or associated materials extends below the planned building, the resulting excavations shall be backfilled with new compacted fill as described below.

Existing utilities, where they are encountered within the planned building areas, should be either abandoned or rerouted around the new structures. Once the utility has been rerouted or abandoned, the section of pipe and any associated structure within the building areas should be completely removed. The removal of the pipe and structure must also include any loose fill around the pipe or structure. After the pipe, associated structure, and associated loose backfill have been removed, the resulting excavation shall be backfilled with new controlled fill as described below.

New compacted fill shall consist of either suitable on-site soil or imported sand and gravel. Imported sand and gravel fill shall contain less than 20% by weight passing a No. 200 sieve. The fill shall be placed in layers not exceeding one (1) foot in loose thickness. In the proposed building area, new fill shall be compacted to at least 95% of its Maximum Modified Dry Density (ASTM D1557). Each layer shall be compacted, tested, and approved prior to placing subsequent layers.

Pavement Areas

In the proposed pavement areas, any existing structures and debris resulting from the demolition of the structures must be completely removed from the new pavement areas, extending at least five (5) feet beyond the new paving limits, where practical. The excavations resulting from the removal of existing items shall be backfilled using controlled compacted fill. New fill shall consist of either suitable on-site soil or imported sand and gravel placed in one (1) foot loose layers and compacted to at least 92% of its Maximum Modified Dry Density (ASTM D1557).

Implications of Existing Fill

The boring and test pit data indicates that existing fill is present in portions of the site. Where encountered in the borings and test pits, the fill extended to depths ranging from 1'0" to more than 9'0" beneath the existing ground surface. These depths correspond to elevations ranging from approximately +424.6 to elevation +670.2. The depth of the existing fill is expected to be variable and may be deeper in unexplored areas of the site and around the existing site buildings.

The existing fill is not an acceptable bearing material for the new building foundations or floor slabs. The consistency and density of the fill material are not predictable. Certain areas may contain clean dense soils while other areas may contain loose material, topsoil, and/or debris. The existing fill creates the possibility of intolerable differential settlements under loading.

To eliminate the potential for damaging differential settlements, we recommend that the existing fill be completely removed from the new building areas. Based on the existing grades and the proposed finished floor elevations, we expect that some of the existing fill will be removed during the planned building excavations. However, existing fill is expected to be encountered below the planned subgrade elevation in portions of the site. Undercutting of the subgrade will be required in these areas to remove the existing fill or otherwise unsuitable materials from the building areas. The over-excavated areas shall then be replaced with new structural fill, as necessary, to achieve the planned subgrade elevations.

To further evaluate the existing fill conditions in and around the planned building areas, we recommend that a series of supplemental test pits be performed at the time of construction. The test pits should be conducted under the full time observation of a Carlin-Simpson & Associates representative. These test pits will allow us to confirm the consistency, thickness, and horizontal limits of the existing fill material.

Provided that the existing fill and any other unsuitable materials encountered during construction are removed, it is our opinion that the new structural fill and virgin soils can adequately support the new building foundations and floor slabs.

Rock Removal - Blasting Issues

As discussed above, bedrock was encountered at 27 of the 39 test locations during this study. The bedrock was encountered at depths ranging from 1'8" to 15'2" beneath the ground surface. These depths correspond to bedrock elevations ranging between approximately elevation +611.5 and elevation +669.8. Based on the site plans provided to this office, bedrock was encountered above the planned finished floor elevation in portions of the site. Bedrock may also be encountered at higher elevations in the unexplored areas of the site.

The bedrock encountered in the borings and test pits consists of weathered Gneiss. Based on our experience, the in-situ bedrock will range from highly weathered, fractured rock to massive, intact rock. To excavate the rock, the upper 1’0” to 5’0” of rock may be “rippable” by using large construction equipment. The use of hydraulic hammers and/or blasting will be required in order to achieve deeper excavations. Zones of weathered rock may exist deeper than 5’0” but conditions are expected to be highly variable. Hard rock will be encountered during construction.

In order to develop the site, rock removal will be required in areas to achieve the proposed grades. Rock removal may also be required for the new pavement and utilities in portions of the site. Rock blasting will likely be required to achieve the proposed grades in areas. Nearby buildings and existing underground utilities could be affected by the blasting.

The Blasting Contractor should avoid over-blasting the rock. Over-blasting will disturb the deeper intact rock that will be used as bearing material for the proposed foundations and floor slab.

The blasting operation will be monitored by a seismologist using a seismograph. The Peak Particle Velocity emanating from any blast will be restricted to 2.0 in/sec. Each blast will be monitored to insure that this criteria is not exceeded.

The U.S. Bureau of Mines [Nicholas et al (1971)] has established that a threshold of 4.0 in/sec will likely crack plaster and thus they recommend that the safe vibrational criterion be 2.0 in/sec. This criterion has been used successfully in the industry. Each blast will be monitored independently to insure that this criterion is not exceeded. The monitoring results shall be provided to the Blasting Contractor as soon as possible so that the blasting program can be modified if necessary.

We recommend that a minimum of four (4) monitoring points be established, to the north, east, south and west of the planned blast area. The seismograph sensors should be placed near the closest structure and at any structures identified during the pre-blast survey that are considered to be susceptible to vibration damage.

Prior to the start of any construction, a Blasting Management Plan shall be prepared by the Blasting Contractor for this project. This plan shall be in accordance with State regulations and the Explosive Materials Code, NFPA No. 495, National Fire Prevention Association. Additionally, all blasting should adhere to the provisions of 29 CFR Ch. XVII Section 1910.109 for explosives and blasting agents and to all local requirements.

Prior to any blasting work being done, a licensed professional engineer shall be retained to perform a detailed pre-blast survey of existing structures located within 500 feet of the planned blast area. The pre-blast survey shall be conducted in accordance with the requirements of local authorities. A copy of all reports prepared by the licensed engineer shall be submitted to the Town Engineer and the Owner’s representative in a timely manner.

Prior to the beginning of blasting, a notice will be sent to all residential and commercial property owners within a 500 foot radius of the blast area. This notification will be given at least 48 hours before blasting takes place. A contact person will be established and named in this notice to respond to all concerns raised by nearby residents during the blasting phase of the project. The contact person will respond to any inquiries within 24 hours.

<u>Preparation of New Building Areas and Removal of Existing Fill</u>

In order to prepare the building areas for construction, all surface materials such as topsoil, asphalt, and surface vegetation shall be removed from the planned building areas, extending at least ten (10) feet beyond the new construction limits, where feasible.

The boring data indicates that existing fill is present within portions the proposed building areas. Fill material may also be present in other unexplored portions of the site. Where encountered in the test borings, the existing fill extended to depths ranging from about 1'0" to 7'0" below the existing ground surface. As shown in Table 1 above, the approximate bottom of the fill material ranges from elevation +603.5 to elevation +670.2. The existing fill is expected to vary in thickness across the site and may extend deeper in the unexplored areas and around the existing site structures.

After the surface materials are removed, the existing fill shall be excavated from the new building areas. The removal of the existing fill from the new building areas shall extend through the existing fill, down to the virgin soil or weathered bedrock. At the bottom of the excavation, the removal of the unsuitable material shall extend horizontally beyond the building lines a minimum distance of three (3) feet plus a distance equal to the depth of the excavation below the planned finished floor elevation. For example, if the removal of the existing fill extends vertically five (5) feet below the planned finished floor elevation, the excavation must extend horizontally a minimum of eight (8) feet (3 feet plus 5 feet) beyond the new building line at that location.

The removal of the existing fill from the planned building areas shall be performed under the full time observation of Carlin-Simpson & Associates. The on-site representative from Carlin-Simpson & Associates shall direct the Contractor during this operation to ensure that all of the unsuitable material has been removed from the proposed building areas.

During the removal of the unsuitable material from the building areas, the Contractor should segregate the potentially re-usable existing fill material from the non-reusable fill (i.e. debris and topsoil). The on-site representative from Carlin-Simpson & Associate shall evaluate the suitability of the excavated materials for use as structural fill during the excavation and prior to its re-use. Potentially usable fill should be stockpiled and covered with tarps or plastic sheeting for protection from excess moisture. Any fill material that is wet must be dried prior to its re-use.

After the surface materials and existing fill have been removed and prior to the placement of new structural fill, the exposed subgrade must be graded level and proofrolled by several passes of a vibratory drum roller. The proofrolling operation is necessary to densify the underlying soils. Carlin-Simpson & Associates shall be retained to observe the proofrolling of the subgrade. If any soft or otherwise unsuitable soils are noted, the unsuitable material shall be removed and replaced with new structural fill. Carlin-Simpson & Associates shall be responsible for determining what material, if any, is to be removed and will direct the contractor during this operation.

New structural fill required to achieve final grades shall consist of either suitable on-site soil or imported sand and gravel. Imported fill shall contain less than 20% by weight passing a No. 200 sieve. The structural fill shall be placed in layers not exceeding one (1) foot in loose thickness and each layer shall be compacted to at least 95% of its Maximum Modified Dry Density (ASTM D1557). Each layer must be compacted, tested, and approved prior to placing subsequent layers. The suitability of the excavated soil for reuse as structural fill is discussed in a following section of this report.

After the installation of structural fill has been completed to the required subgrade elevations, the virgin soil and new structural fill may be used to support the proposed building foundations and floor slabs.

New Building Foundations

According to the boring data, the foundation bearing materials will consist of medium dense to dense virgin soil, weathered bedrock, and new structural fill. Foundations for the proposed structures may be designed as a shallow spread footing bearing on the virgin soil, weathered bedrock, or new structural fill utilizing a net allowable bearing pressure of 4,000 psf (2.0 TSF).

Exterior footings shall bear at a depth of at least 42 inches below finished outside grade for protection from frost. Interior column footings may bear on the virgin soil, weathered bedrock, or new structural fill just below the floor slab provided the building is heated during winter. Column footings shall have a minimum dimension of 30 inches. The wall footings shall have a minimum width of 18 inches.

Prior to the placement of formwork, reinforcement steel, and concrete, the bearing subgrade soil shall be cleaned of all loose soil and compacted with several passes of a small vibratory drum trench compactor (i.e. Wacker Model RT560), a heavy vibratory plate tamper (i.e. Wacker BPU 3545A or equivalent), or "jumping jack" style tamper (i.e. Wacker Model BS 600). This must be performed under the inspection of a representative from Carlin-Simpson & Associates. If instability is observed during the compaction of the bearing subgrade, the soft soil shall be removed and replaced with new compacted fill.

Where rock is encountered in the foundation excavations, "Special Construction Procedures" must be employed. When continuous wall footings or closely spaced column footings (20 feet or less) bear on dissimilar material (i.e. rock and soil) the potential for differential movement exists. A footing bearing in rock will not move, whereas a footing bearing on soil will settle slightly due to the compressive nature of all soils when subjected to new loads. The area between movement and non-movement will develop a (shear) stress point. Cracks in foundations and walls will be the result from such movement. Therefore, continuous wall footings must bear either entirely on rock or entirely on soil for any individual building. Alternatively, for larger structures, transition zones can be constructed to create a gradual transition from a soil to a rock bearing subgrade.

Adjacent column footings greater than 20 feet apart may bear on dissimilar material (i.e. soil and rock). Any individual column footing must bear entirely on the same type bearing material (i.e. all soil or all rock).

Where rock and soil both exist at the bearing elevation within a foundation excavation, the footings must either be lowered to bear entirely on rock, or a minimum of 18 inches of rock must be removed from below planned footing bottom. The over-excavated 18 inches must then be filled with a granular material having a maximum particle size of ½-inch and containing at least 15% but not more than 30% material by weight passing a No. 200 sieve. The fill shall be placed in six (6) inch layers and each layer shall be compacted to at least 95% of its Maximum Modified Dry Density (ASTM D1557). This procedure will create a "cushion" atop the rock and reduce the potential for differential movement. For soft, rippable rock, this procedure will not be required.

If during the excavation for continuous foundations, the transition from soil to rock is gradual (i.e. from medium dense soil to dense weathered rock to very dense rock) over a distance of 20 feet or more, the "Special Construction Procedures" may not be required. This would have to be evaluated in the field on a case-by-case basis by the representative from Carlin-Simpson & Associates at the time of construction.

Where the transition from rock to soil is abrupt within the excavation for continuous wall foundations, transition zones can be constructed by over-excavating the rock in steps and increasing the "soil cushion" thickness over a distance of 24 feet or more. To construct the transition zone, the bedrock is over-excavated in a series of steps, each step being six (6) inches in depth and at least eight (8) feet in length. The first step is six (6) inches deep, the second step is 12 inches deep, and the final step is 18 inches deep. The over-excavation is then backfilled with the soil cushion material described above.

Floor Slab

After the footings and foundation walls are installed, fill will be required to backfill the excavations and to raise grades in the building areas to the slab subgrade elevations. New fill for the floor slab shall consist of either suitable on-site soil or imported sand and gravel containing less than 20% material by weight passing a No. 200 sieve. The fill shall be placed in layers not exceeding one (1) foot in loose thickness and each layer shall be compacted to at least 92% of its Maximum Modified Dry Density (ASTM D1557). Fill layers shall be compacted, tested, and approved before placing subsequent layers.

The floor may be designed as a slab on grade, bearing on virgin soil, weathered bedrock, bedrock, or new structural fill. We recommend a Modulus of Subgrade Reaction (k) of 200 pounds per cubic inch (pci) be used for design. A six (6) inch layer of 3/4-inch crushed stone is recommended beneath the concrete slab for additional support and drainage. In the event that the floor slab is constructed directly on Gneiss bedrock, a minimum of 12 inches of crushed stone or DGA should be provided beneath the floor slab for drainage and to act as a cushion on the rock. Sump pits and pumps are recommended where basements are planned.

Settlement

Settlement of individual footings, designed in accordance with recommendations presented in this report, is expected to be within tolerable limits for the proposed structure. For footings placed on natural soils or new compacted fill approved by Carlin-Simpson & Associates and constructed in accordance with the requirements outlined in this report, maximum total settlement is expected to be on the order of 1/2-inch or less. Maximum differential settlement between adjacent columns or load bearing walls is expected to be half the total settlement.

The above settlement values are based on our engineering experience with similar soil conditions and the anticipated structural loading, and are to guide the Structural Engineer with his design. To minimize difficulties during the foundation installation phase, it is critical that Carlin-Simpson & Associates be retained to observe the foundation bearing surfaces and to confirm the recommended bearing pressures and that the existing fill and unsuitable materials have been removed from beneath the new foundations.

Foundation Walls

In the event that foundation walls are required, the soil adjacent to the building walls will exert a horizontal pressure against the walls. This pressure is based on the soil density and Coefficient of Earth Pressure at Rest (k_o), which is applicable to non-yielding building walls. We estimate that the backfill material will have an in-place (moist) density of about 130 pcf and a k_o of 0.5. Based on these properties, the soil will produce an Equivalent Fluid Pressure of 65 pcf against the building walls.

For sliding, the coefficient of friction between concrete and the virgin site soils or new structural fill is 0.45. For clean sound rock, a friction coefficient of 0.55 can be used. Where passive lateral earth pressure is to be included in the design of the wall, a design value of 195 psf/ft may be used. This is based on a Coefficient of Passive Earth Pressure (k_p) of 3.0, an in-place soil backfill density of 130 pcf, and a factor of safety of 2.0.

Where foundation walls are required, we recommend that a footing drain be placed around the exterior of the new structure to prevent water from accumulating against the foundation wall. This drain may consist of a minimum four (4) inch diameter, rigid wall perforated PVC pipe surrounded by at least 12 inches of 3/4-inch clean crushed stone. The stone shall be wrapped in a geotextile fabric, Mirafi 140N or equivalent. The foundation drainpipe should be extended to daylight or to the stormwater collection system. The outside face of the foundation wall, where it extends below grade, must be damp proofed or waterproofed.

The foundation walls should be backfilled with suitable structural fill placed in layers up to one (1) foot in loose thickness. The new fill should be compacted with a vibratory drum trench compactor (i.e. Wacker Model RT560), a heavy vibratory plate tamper (i.e. Wacker BPU 3545A or equivalent) or “jumping jack” style tamper (i.e. Wacker Model BS 600) to at least 92% of its Maximum Modified Dry Density (ASTM D1557). Heavy equipment should not be operated near the wall as damage to the wall could occur.

Outside the structure, the backfill placed adjacent to the foundation walls and above the footing drain shall consist of either clean crushed stone or an imported sand and gravel mixture containing less than 10% by weight passing a No. 200 sieve and placed in layers not exceeding one (1) foot in thickness. This clean sand and gravel or crushed stone backfill shall extend a minimum of one (1) foot horizontally from the back face of the foundation walls, and shall extend vertically up the wall face to two (2) feet below the finished ground surface elevation.

Beyond this point, the foundation walls should be backfilled with suitable soil placed in layers up to one (1) foot in thickness. The new fill should be compacted with a vibratory drum trench compactor (i.e. Wacker Model RT560), a heavy vibratory plate tamper (i.e. Wacker BPU 3545A or equivalent), or "jumping jack" style tamper (i.e. Wacker Model BS 600) to at least 92% of its Maximum Modified Dry Density (ASTM D1557). Heavy equipment should not be operated near the walls as damage to the walls could occur. Material excavated from the cut areas on site will be suitable for reuse as compacted fill, provided that it remains relatively dry enough to be adequately compacted to the required density and does not contain any debris or organic material (i.e. topsoil and roots).

Seismic Design Considerations

From site-specific test boring data, the Site Class was determined from Table 1615.1.1 of the New York State Building Code. The site-specific data used to determine the Site Class typically includes soil test borings to determine Standard Penetration resistances (N-values). Based on the average N-values in the upper 100 feet of soil profile, the site can be classified as Site Class C – Very Dense Soil and Soft Rock Profile.

New structures should be designed to resist stress produced by lateral forces computed in accordance with Section 1615 of the New York State Building Code. The values in Table 2 shall be used for this project. Based on the information obtained from the borings, it is our opinion that the potential for liquefaction of the native soils at the site due to earthquake activity is relatively low.

Table 2 – Seismic Design Parameter Values

Mapped Spectral Response Acceleration for Short Periods, [Fig 1615 (1)]	S_S=0.347g
Mapped Spectral Response Acceleration at 1-Second Period, [Fig 1615 (2)]	S_{S1}=0.070g
Site Coefficient [Table 1615.1.2 (1)]	F_a=1.20
Site Coefficient [Table 1615.1.2 (2)]	F_v=1.70
Max Considered Earthquake Spectral Response for Short Periods [Eq 16-16]	S_{MS}=0.416g
Max Considered Earthquake Spectral Respond at 1-Second Period [Eq 16-17]	S_{M1}=0.119g
Design Spectral Response Acceleration for Short Periods [Eq 16-18]	S_{DS}=0.278g
Design Spectral Response Acceleration for 1-Second Period [Eq 16-19]	S_{D1}=0.079g

Site Retaining Walls

In order to develop the site, retaining walls will be required in areas. The site retaining walls may be designed as either cast-in-place steel reinforced concrete walls or geogrid reinforced modular block (MSE) walls. The preliminary site plans show five (5) retaining walls. The maximum exposed height of these walls ranges from approximately seven (7) feet to 12 feet but the top and bottom wall elevations were not finalized at the time of this report.

The following recommendations are preliminary in nature based on the boring and test pit data from other areas of the project site during this investigation. The recommendations below are intended for planning purposes only and are not intended for final design and construction. A supplemental subsurface investigation is required for the proposed retaining walls so that additional design recommendations can be provided.

In the event that existing fill materials are present within the proposed wall areas, these materials must be completely removed from the limits of new wall construction. The removal of the topsoil or other unsuitable fill materials shall extend horizontally a minimum distance of five (5) feet beyond the front face of the new wall or extend horizontally a minimum distance equivalent to the vertical depth of the required excavation below the proposed wall base or foundation bearing elevation, whichever is greater. This is required to ensure that all unsuitable material has been removed from beneath the wall base or foundation zone of influence, which shall be defined by an imaginary plane projecting downward and away from the front edge of the wall base or foundation on a one horizontal to one vertical (1H:1V) projection.

The foundations for the new retaining wall may be placed on the virgin soil, weathered bedrock, or on new compacted fill approved by Carlin-Simpson & Associates. New compacted fill shall consist of either suitable on-site soil or imported sand and gravel. Imported fill shall contain less than 20% by weight passing the No. 200 sieve. The fill shall be placed in one (1) foot thick loose layers and compacted to at least 95% of its Maximum Modified Dry Density. Preliminarily, the footings or base of the wall can be designed using a net design bearing pressure of 4,000 psf (2.0 TSF).

For MSE walls, the wall base or foundation must be adequately embedded for internal and global stability. The embedment depth will be determined by the Wall Design Engineer. For reinforced concrete walls, the footing or base of the wall shall bear at least 42 inches below finished grade of the outside face of the wall for protection from frost. The wall foundation or base may bear at shallower depths when installed directly on the bedrock since rock is not susceptible to frost. Where both soil and rock are encountered within the wall foundation or base excavation, the “Special Construction Procedures” discussed above for the building foundations must be utilized.

Drains must be provided behind the retaining walls to prevent the buildup of hydrostatic pressure against the walls. The drain should consist of a 4-inch diameter perforated PVC pipe, surrounded with 3/4-inch clean crushed stone and wrapped in a geotextile fabric, Mirafi 140N or equivalent. The drain should be installed behind the base or foundation of the retaining wall to collect the water behind the wall and be connected into the site stormwater collection system or extended to daylight beyond the wall area.

Backfill placed directly behind the retaining walls shall consist of either suitable on-site soil or imported sand and gravel containing less than 20% by weight passing a No. 200 sieve. Each layer shall be compacted using a hand guided mechanical tamper to 92% of its

Maximum Modified Dry Density (ASTM D1557). Excessive compaction adjacent to the retaining walls must be avoided. Layers shall be tested and approved before placing subsequent layers. Large compaction equipment must not be used within ten (10) feet of the new walls to prevent potential damage to the walls.

The soil adjacent to the site retaining walls will exert a horizontal pressure against the walls. This pressure is based on the soil density and the Coefficient of Active Earth Pressure (k_a). We estimate that the backfill material will have an in-place (moist) density of about 130 pcf and an angle of internal friction (ϕ) of 30^o. For design, soil cohesion is assumed to be zero for the foundation soil, retained soil, and reinforced backfill. The active earth pressure coefficient (k_a) is 0.33 provided the grade behind the wall is level. Based on these properties, the retained soil will produce an Equivalent Fluid Pressure of 42.9 pcf against the retaining walls. If a sloping grade exists behind the new walls, the k_a and the Equivalent Fluid Pressure must be adjusted accordingly. In addition, any surcharge loads from structures, vehicles, or other retaining walls (i.e. tiered walls) must be considered in the wall design.

For sliding, the friction coefficient between mass concrete and the virgin site soils or new compacted fill is 0.45. For clean sound rock, a friction coefficient of 0.55 can be used. Where passive lateral earth pressure is to be included in the design of the wall, a maximum design value of 195 psf/ft may be used. This is based on a Coefficient of Passive Earth Pressure (k_p) of 3.0, an in-place soil backfill density of 130 pcf, and a factor of safety of 2.0.

The Wall Design Engineer shall prepare a complete wall design (i.e. drawings, specifications, and calculations), which shall be designed and sealed by a Professional Engineer registered in the State of New York and submitted to Carlin-Simpson & Associates for review and approval. MSE retaining walls shall be designed in accordance with the recommendations of the NCMA Design Manual for Segmental Retaining Walls (Current Edition).

The MSE wall design shall consider the internal stability of the reinforced soil mass and shall be in completed accordance with acceptable engineering practice. In addition, external stability, including sliding, overturning, and bearing, as well as global slope stability shall be evaluated in accordance with acceptable engineering practice.

The MSE Wall Designer Engineer shall be responsible for determining the required geogrid reinforcement lengths and elevations based on his stability analysis (including global stability) and the properties of the geogrid reinforcement used in the design. We anticipate that in the critical areas of the wall, global stability will be the controlling design criteria for the design of the geogrid reinforcement.

Stormwater Management Areas

We understand that the planned development will include one or more stormwater management areas. The preliminary grading plan shows a proposed infiltration basin with a forebay in the western portion of the project site. The plan also indicates that the basin will have a bottom elevation at +610.0. We also understand that there is an alternate stormwater management area in the southwestern portion of the site, near the proposed fairway residences building. In addition, stormwater management areas will likely be required throughout the golf course property. However, at the time this report was prepared, the proposed stormwater management system had not been designed and the location, grades, and invert elevations of the system had not been finalized.

During this study, four (4) borings, one (1) test pit, one (1) borehole permeability test, and four (4) percolation tests were performed within or near the planned stormwater management areas. An addition ten (10) test pits (TP-19 through TP-28) were excavated at potential stormwater management areas throughout the golf course property. The tests were performed at the locations shown on the attached Boring and Test Pit Location Plan. The proposed test depths were provided by the project Site Engineer. The test depths were modified, however, based on the depth to bedrock encountered at the test locations.

The soil conditions encountered within the proposed infiltration basin area consist of a surface layer of topsoil (Stratum 1), approximately 0’6” to 0’9” in thickness, followed by existing fill (Stratum 2) in boring B-6. Below the topsoil and fill is virgin soil that consists of layers of Sandy Silt, Silty Sand, Sandy Gravel, Gravelly Sand, or Silty Gravelly Sand (Strata 3 and 4) followed by Gneiss bedrock (Stratum 5). Bedrock was encountered in the proposed infiltration basin area at depths ranging from 2’8” to 8’6” beneath the ground surface. These depths correspond to bedrock elevations ranging between elevation +611.5 and elevation +617.3, which is above the proposed bottom elevation of the infiltration basin.

In the alternate stormwater management area, the topsoil was underlain by approximately 5’6” of existing fill (Stratum 2) followed by layers of Sandy Silt and Silty Sand (Stratum 3). Groundwater was encountered in this portion of the site at depths ranging from 0’6” to 3’3” below the ground surface, which corresponds to groundwater levels ranging from approximately elevation +608.3 to elevation +613.2.

The subsurface soil and groundwater conditions encountered in the potential stormwater management areas throughout the golf course property vary across the site. The boring and test pit observations are summarized in Table 1 above.

In December 2012 and January 2013, permeability tests were performed within the proposed stormwater management areas. One (1) borehole permeability test (BP-4) and four (4) percolation tests (P-1 through P-4) were performed. The infiltration rates at the test locations are summarized in Table 3 below.

Table 3 – Field Permeability Test Results

Permeability Test No.	Permeability Test Depth (Elevation)	Permeability Rate	Soil Description
BP-4	7’0” (+621.0)	2.4 in/hour	Brown coarse to fine SAND, little Silt, some (+) coarse to fine Gravel
P-1	3’6” (+616.5)	>20 in/hour	Brown coarse to fine GRAVEL and, coarse to fine Sand, trace Silt
P-2	1’8” (+610.3)	NR	*Groundwater encountered 0’6” below the ground surface*

Permeability Test No.	Permeability Test Depth (Elevation)	Permeability Rate	Soil Description
P-3	2’8” (+613.3)	>20 in/hour	Brown coarse to fine SAND, some Silt, and (-) coarse to fine Gravel
P-4	2’0” (+613.0)	NR	*Groundwater encountered 1’10” below the ground surface*

NR – Not Recorded

Based on the field tests, the virgin soil in the areas of tests P-1 and P-3 has a permeability rate that exceeds 20 inches per hour. However, these tests were performed at elevations of +616.5 and +613.3, which are approximately 6’6” and 3’3” higher than the planned bottom of the proposed infiltration basin. Bedrock was encountered at depths of 4’9” (+615.3) and 5’6” (+611.5) below the surface at these test locations. In the event the virgin soil in the areas of tests P-1 and P-3 can be utilized for the stormwater management system, a permeability rate of 10 inches per hour should be used for preliminary design. This design permeability rate includes a factor of safety of 2.0.

Field permeability tests could not be performed at test locations P-2 and P-4 during this study since groundwater was encountered at depths of 0’6” (+611.5) and 1’10” (+613.2) below the ground surface, respectively. Should stormwater management areas be planned in other portions of the site, they must be evaluated on a case-by-case basis.

The stormwater management system should be designed in accordance with the applicable New York State Department of Conservation (NYSDEC) regulations and the New York State Stormwater Management Design Manual (August 2010). The testing requirements are outlined in Appendix D of the manual. The testing that was performed during this preliminary study was for initial feasibility testing for the stormwater management areas. Therefore, additional testing within the proposed subsurface system areas will be required to confirm the soil conditions and infiltration rates at the bottom of the system and to finalize the design of the system.

<u>Pavement</u>

We understand that the proposed construction will also include new asphalt paved driveways and parking areas. Based on the preliminary grading plan provided to this office, cuts ranging up to approximately 6’0” and fills ranging up to approximately 8’0” are anticipated to achieve the proposed pavement subgrade elevations. To prepare the new pavement areas, the existing surface materials (i.e. topsoil, vegetation, asphalt, etc.) must be removed from the planned pavement areas.

After all surface materials have been removed; the exposed subgrade that is either at or below the planned subgrade elevation shall be proofrolled with a large vibratory drum roller (i.e. Dynapac 250 or equivalent) to densify the underlying soils. The on-site representative from Carlin-Simpson & Associates shall witness the proofrolling operation. If any excessive movement is noted during the proofrolling, the soft or unsuitable soil shall be removed and replaced with new compacted fill.

Areas where existing fill is encountered shall be compacted in place. Carlin-Simpson & Associates must evaluate these areas for the presence of soft or unsuitable material within the existing fill matrix. Portions of this fill may have to be removed and replaced with new compacted fill. Carlin-Simpson & Associates will determine this during construction.

Where new fill is required to achieve final grades, it shall consist of either suitable on-site soil or imported sand and gravel. Imported sand and gravel shall contain less than 20% by weight passing a No. 200 sieve. New fill shall be placed in layers not exceeding one (1) foot in loose thickness and each layer shall be compacted to at least 92% of its Maximum Modified Dry Density (ASTM D1557). After the planned subgrade has been proofrolled and new compacted fill has been placed as required, the new pavement subbase may be placed on the existing site soils and new compacted fill.

When new fill is placed on a sloped subgrade, the fill layers must be benched a minimum of three (3) feet into the existing embankment. Fill layers shall be placed in horizontal layers, beginning at the base of the slope. End dumping over the top of a slope is not permitted.

The new pavement subbase may be placed on engineer-approved densified existing fill, virgin soil, or new compacted fill. A minimum of six (6) inches of dense graded aggregate (DGA) is recommended for the subbase layer for drainage and additional pavement support. We recommend that the following pavement sections be used for the parking lots and driveways. These pavement sections are subject to local government approval.

<u>Parking Lots (Light Duty)</u>

1 ½"	Asphalt Wearing Surface Course	NYSDOT, Type 6F
2"	Asphalt Base Course	NYSDOT, Type 1
6"	Stone Subbase (DGA)	NYSDOT, Type 4
	Approved Compacted Subgrade (Minimum CBR = 10)	

<u>Driveways (Medium Duty)</u>

1 ½"	Asphalt Wearing Surface Course	NYSDOT, Type 6F
2 ½"	Asphalt Base Course	NYSDOT, Type 1
8"	Stone Subbase (DGA)	NYSDOT, Type 4
	Approved Compacted Subgrade (Minimum CBR = 10)	

Based on the boring and test pit data, we anticipate that the existing site soils and new compacted fill will provide a CBR value that is equal to or greater than 10, which can adequately support the above pavement sections.

<u>Utilities</u>

New utilities may bear in the virgin soil, existing fill, new compacted fill, weathered rock, or rock. The bottom of all trenches should be excavated clean so a hard bottom is provided for pipe support. If any soft areas or unsuitable existing fill conditions are encountered during the construction operation, these materials must be removed and replaced with new compacted fill.

In the event that the trench bottom becomes soft due to the inflow of surface or trapped water, the soft soil shall be removed and the excavation filled with a minimum of six (6) inches of 3/4-inch clean crushed stone to provide a firm base for support of the pipe. Sump pits and pumps should be adequate to keep the excavations dry.

After the utility is installed, the trench must be backfilled with compacted fill. The fill shall consist of suitable on-site soil or imported sand and gravel containing less than 20% by weight passing a No. 200 sieve. Large rock fragments must not be placed directly against the pipe. Controlled compacted fill shall be placed in one (1) foot loose layers and each layer shall be compacted to at least 92% of its Maximum Modified Dry Density (ASTM D1557). The backfill must be free of topsoil, debris and large boulders or rock fragments.

Temporary Construction Excavations

Temporary construction excavations shall be conducted in accordance with the most recent OSHA guidelines or applicable federal, state, or local codes. Based on the results of the borings and test pits, we believe the site soils and rock would have the following classifications as defined by OSHA guidelines.

Soil/Rock Type	**Possible Classification**
On Site Fill	Type "C"
Virgin Sandy Soils	Type "B" or "C"
Weathered or Intact Bedrock	Type "A" or Stable Rock

Further evaluation of the site soil deposits will be required in the field by a qualified person at the time of the excavation to determine the proper OSHA classification and allowable slope configuration. Temporary support (i.e. sheeting and shoring) should be used for any excavation that cannot be sloped or benched in accordance with the applicable regulations.

Suitability of the In-Situ Soils for Use as Compacted Fill

The suitability of each soil stratum for use as compacted fill is discussed below.

Stratum 1 Topsoil — Topsoil is not suitable for use as compacted fill. During construction, it may be stockpiled on site for later use in the landscaped areas or removed from the site.

Stratum 2 Existing Fill — The existing fill that was encountered at the site generally consists of brown coarse to fine Sand, little (to and) Silt, trace (to some) coarse to fine Gravel with occasional cobbles, boulders, topsoil, roots, and debris. Some of the existing fill may be suitable for use as compacted fill at the site provided that it remains relatively dry for optimum compaction and that any debris (i.e. concrete, wood, etc.) and organic material (i.e. topsoil, roots, etc.) have been removed prior to its reuse.

Strata 3 & 4
Sandy Silt, Silty Sand, Sand, or Sandy Gravel

The virgin site soils that may be excavated during construction consist of layers of Sandy Silt, Silty Sand, Sand or Sandy Gravel with occasional cobbles and boulders. This material is generally suitable for use as compacted fill, provided that it remains relatively dry for optimum compaction. Large cobbles and boulders shall not be used as new structural fill in the proposed building areas or in utility trenches.

Stratum 5
Gneiss Bedrock

Excavated rock may also be used as fill material for the building and paved areas provided that the material conforms to the required gradation, is well-graded, and has been approved prior to use by Carlin-Simpson & Associates. All rock fill must be well blended with smaller rock fragments and/or soil. Open voids within the rock fill matrix must be avoided. Small boulders up to 24 inches in diameter may be placed in parking lot fills deeper than ten (10) feet below the finished pavement. Boulders must not be clustered and must be sufficiently surrounded with soil fill. We recommend that the boulders and excavated rock be processed by a crusher to provide suitable fill material for the building and pavement areas.

Rock fill shall be placed in 12-inch loose layers and compacted with multiple passes of a large vibratory roller to a firm and non-yielding state as determined by the on-site representative from Carlin-Simpson & Associates. Rock fill should not be used where it will interfere with the installation of foundations or utilities. Also, it shall not be used as backfill directly against concrete walls or utilities. Use of rock fill within the planned building and pavement areas shall be limited to the gradations limitations provided in Table 4 below.

Table 4 - Gradation Limitations for Rock Fill

Area	Location	Maximum Particle Size
Building Area	Within 4 feet of Finished Floor	3 inches
	More than 4 feet below Finished Floor	12 inches
Pavement Area	Within 4 feet of Finished Grade	6 inches
	More than 4 feet below Finished Grade	18 inches
	More than 10 feet below Finished Grade	24 inches

Proper moisture conditioning of the soil will be required. In the event that the on-site material is too wet at the time of placement and cannot be adequately compacted, the soil should be aerated and allowed to dry or the material removed and a drier cleaner fill material used. In the event that the on-site material is too dry at the time of placement and cannot be adequately compacted, water may be needed to increase the soil moisture content for proper compaction.

The in-situ soils which exist throughout the site may become soft and weave if exposed to excessive moisture and construction traffic. The instability will occur quickly when exposed to these elements and it will be difficult to stabilize the subgrade. We recommend that adequate site drainage be implemented early in the construction schedule and if the subgrade becomes wet, the Contractor should limit construction activity until the soil has dried.

GENERAL

The findings, conclusions and recommendations presented in this report represent our professional opinions concerning subsurface conditions at the site. The opinions presented are relative to the dates of our site work and should not be relied on to represent conditions at later dates or at locations not explored. The opinions included herein are based on information provided to us, the data obtained at specific locations during the study and our past experience. If additional information becomes available that might impact our geotechnical opinions, it will be necessary for Carlin-Simpson & Associates to review the information, reassess the potential concerns, and re-evaluate our conclusions and recommendations. Additional subsurface exploration may be required.

Regardless of the thoroughness of a geotechnical exploration, there is the possibility that conditions between borings and test pits will differ from those encountered at specific boring or test pit locations, that conditions are not as anticipated by the designers and/or the contractors, or that either natural events or the construction process have altered the subsurface conditions. These variations are an inherent risk associated with subsurface conditions in this region and the approximate methods used to obtain the data. These variations may not be apparent until construction.

The professional opinions presented in this geotechnical report are not final. Field observations and foundation installation monitoring by the geotechnical engineer, as well as soil density testing and other quality assurance functions associated with site earthwork and foundation construction, are an extension of this report. Therefore, Carlin-Simpson & Associates should be retained by the Owner to observe all earthwork and foundation construction, to document that the conditions anticipated in this study actually exist, and to finalize or amend our conclusions and recommendations Carlin-Simpson & Associates is not responsible or liable for the conclusions and recommendations presented in this report if Carlin-Simpson & Associates does not perform these observation and testing services.

Therefore, in order to preserve continuity in this project, the Owner must retain the services of Carlin-Simpson & Associates to provide full time geotechnical related monitoring and testing during construction. At a minimum, this shall include the observation and testing of the following: 1) the removal of existing fill and unsuitable soil, where required; 2) the proofrolling of the subgrade soil prior to the placement of new compacted fill; 3) the placement and compaction of controlled fill; 4) the excavation for the building foundations; 5) the preparation of the subgrade for the floor slabs and pavement areas; and 6) the construction of the proposed retaining walls.

This report has been prepared in accordance with generally accepted geotechnical engineering practice. No other warranty is expressed or implied. The evaluations and recommendations presented in this report are based on the available project information, as well as on the results of the exploration. Carlin-Simpson & Associates should be given the opportunity to review the final drawings and site plans for this project to determine if changes to the recommendations outlined in this report are needed. Should the nature of the project change, these recommendations should be re-evaluated.

This report is provided for the exclusive use of Brynwood Partners, LLC and the project specific design team and may not be used or relied upon in connection with other projects or by other third parties. Carlin-Simpson & Associates disclaims liability for any such third party use or reliance without express written permission. Use of this report or the findings, conclusions or recommendations by others will be at the sole risk of the user. Carlin-Simpson & Associates is not responsible or liable for the interpretation by others of the data in this report, nor their conclusions, recommendations or opinions.

If the conditions encountered during construction vary significantly from those stated in this report, this office should be notified immediately so that additional recommendations can be made.

Thank you for allowing us to assist you with this project. Should you have any questions or comments, please contact this office.

Very truly yours,

CARLIN-SIMPSON & ASSOCIATES

M. Anke

MEREDITH R. ANKE, P.E.
Project Engineer

Robert Simpson

ROBERT B. SIMPSON, P.E.

File No. 12-175

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-1
Project: Proposed Renovations, Byrnwood Club Development, North Castle, NY		SHEET NO.: 1 of 1
Client: JBM Realty		JOB NUMBER: 12-175
Drilling Contractor: General Borings, Inc.		ELEVATION: +661.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			DATUM:
No water encountered				DIA.	3 1/4"	1 3/8"			START DATE: 18 Dec 12
				WGHT		140#			FINISH DATE: 18 Dec 12
				FALL		30"			DRILLER: T. McGovern
									INSPECTOR: JB

Depth (ft.)	Casing Blows per Foot	Sample No.	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			7		**Clay Tennis Court** 0'6"	
1		S-1	9		Br $ a (+), cf S, l (-) mf G	Rec = 17" moist
			12			
2			14			
			19		same	
3		S-2	23		**Brown SILT and (+), coarse to fine Sand, little (-) medium to fine Gravel**	Rec = 15" moist
			50/3"			
4						possible weathered rock in tip
5					5'0"	
			29		Br cf S, l (+) $ (completely weathered gneiss)	
6		S-3	75/4"		**Brown coarse to fine SAND, little (+) Silt (completely weathered Gneiss)**	Rec = 6" moist
7						
		S-4	70/3"			Rec = 3"
8					8'0"	moist
					End of Boring @ 8'0"	Auger refusal @ 8'0"
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-2
Project: Proposed Renovations, Byrnwood Club Development, North Castle, NY		SHEET NO.: 1 of 1
Client: JBM Realty		JOB NUMBER: 12-175
Drilling Contractor: General Borings, Inc.		ELEVATION: +628.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 18 Dec 12
No water encountered				DIA.	3 1/4"	1 3/8"			FINISH DATE: 18 Dec 12
				WGHT		140#			DRILLER: T. McGovern
				FALL		30"			INSPECTOR: JB
									DATUM:

Depth (ft.)	Casing Blows per Foot	Sample No.	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			2		**Topsoil** 0'6"	
1		S-1	3		Br $ a (+), cf S, t mf G	Rec = 15"
			2			moist
2			2			
			3		same	
3		S-2	9			Rec = 16"
			11		**Brown SILT and (+), coarse to fine**	moist
4			15		**Sand, trace medium to fine Gravel**	
5						
			10		same	
6		S-3	12			Rec = 17"
			16			moist
7			50/3"		7'0"	weathered rock in tip
					End of Boring @ 7'0"	Auger refusal @ 7'0"
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-3

Project:	**Proposed Renovations, Byrnwood Club Development, North Castle, NY**	**SHEET NO.:**	1 of 1
Client:	**JBM Realty**	**JOB NUMBER:**	12-175
Drilling Contractor:	**General Borings, Inc.**	**ELEVATION:**	+620.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM:	
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE:	18 Dec 12
No water encountered				DIA.	3 1/4"	1 3/8"			FINISH DATE:	18 Dec 12
				WGHT		140#			DRILLER:	T. McGovern
				FALL		30"			INSPECTOR:	JB

Depth (ft.)	Casing Blows per Foot	Sample No.	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			3		**Topsoil** 0'6"	
1		S-1	6		Br $ a (-), cf S, t mf G	Rec = 17"
			6		**Brown SILT and (-), coarse to fine**	moist
2			14		**Sand, trace medium to fine Gravel** 2'0"	
		S-2	25/5"		Lt br cf G a, cf S, t $ (completely weathered gneiss)	Rec = 5"
3					**Light brown coarse to fine GRAVEL**	moist
					and, coarse to fine Sand, trace	
4					**Silt (completely weathered Gneiss)**	
			23		Br cf G s, cf S, t $ (completely weathered gneiss)	
5		S-3	75/3"		4'9"	Rec = 6"
					End of Boring @ 4'9"	moist
6						Auger refusal @ 4'9"
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-4

Project:	**Proposed Renovations, Byrnwood Club Development, North Castle, NY**	**SHEET NO.:**	1 of 1
Client:	**JBM Realty**	**JOB NUMBER:**	12-175
Drilling Contractor:	**General Borings, Inc.**	**ELEVATION:**	+628.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE		
DATE	**TIME**	**DEPTH**	**CASING**	**TYPE**	HSA	SS			**DATUM:**	
No water encountered				**DIA.**	3 1/4"	1 3/8"			**START DATE:**	18 Dec 12
				WGHT		140#			**FINISH DATE:**	18 Dec 12
				FALL		30"			**DRILLER:**	T. McGovern
									INSPECTOR:	JB

Depth (ft.)	Casing Blows per Foot	Sample No.	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			2		**Topsoil** 0'6"	
1		S-1	1		Br cf S, a $, t f G	Rec = 14"
			2		**Brown coarse to fine SAND, and**	moist
2			2		**Silt, trace fine Gravel** 2'0"	
			10		Gr cf S t $, a cf G (completely weathered gneiss)	
3		S-2	20			Rec = 13"
			45			moist
4			35			weathered rock 3'-4'
5						
			9		Br cf S, l $, s (+) cf G (completely weathered gneiss)	
6		S-3	11			Rec = 17"
			13		**Brown coarse to fine SAND, little**	moist
7			10		**Silt, some (+) coarse to fine Gravel**	
			18		same **(completely weathered Gneiss)**	
8		S-4	26			Rec = 14"
			30			moist
9			43			
10						
		S-5	75/6"		same 10'6"	Refusal on spoon @ 10'6"
11					**End of Boring @ 10'6"**	
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-5
Project: Proposed Renovations, Byrnwood Club Development, North Castle, NY		SHEET NO.: 1 of 1
Client: JBM Realty		JOB NUMBER: 12-175
Drilling Contractor: General Borings, Inc.		ELEVATION: +623.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			DATUM:
No water encountered				DIA.	3 1/4"	1 3/8"			START DATE: 18 Dec 12
				WGHT		140#			FINISH DATE: 18 Dec 12
				FALL		30"			DRILLER: T. McGovern
									INSPECTOR: JB

Depth (ft.)	Casing Blows per Foot	Sample No.	Blows on Sample Spoon per 6"	IDENTIFICATION	REMARKS
			2	Br cf S, s (+) $, t f G	
1		S-1	2	**Brown coarse to fine SAND,**	Rec = 17"
			3	**some (+) Silt, trace fine Gravel**	moist
2			13	2'0"	
			22	Br cf S, l $, s cf G	
3		S-2	10		Rec = 17"
			16	**Brown coarse to fine SAND, little**	moist
4			26	**Silt, some coarse to fine Gravel**	weathered rock in tip
				(completely weathered Gneiss)	
5					
			23	same, weathered gneiss	
6		S-3	62		Rec = 18"
			55		moist
7			81		weathered rock
8					
				8'6"	Auger refusal @ 8'6"
9				**End of Boring @ 8'6"**	
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-6
Project: Proposed Renovations, Byrnwood Club Development, North Castle, NY		SHEET NO.: 1 of 1
Client: JBM Realty		JOB NUMBER: 12-175
Drilling Contractor: General Borings, Inc.		ELEVATION: +617.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM:
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 19 Dec 12
No water encountered				DIA.	3 1/4"	1 3/8"			FINISH DATE: 19 Dec 12
				WGHT		140#			DRILLER: T. McGovern
				FALL		30"			INSPECTOR: KWA

Depth (ft.)	Casing Blows per Foot	Sample No.	Blows on Sample Spoon per 6"	IDENTIFICATION	REMARKS
			2	**Topsoil** 0'6"	
1		S-1	6	FILL (Br cf S, l $) 1'0"	Rec = 10"
			5	**FILL (Brown coarse to fine SAND,**	moist
2			10	**little Silt)**	
			12	Br cf S, s $, a (-) cf G	
3		S-2	11		Rec = 11"
			11	same	moist
4			52	**Brown coarse to fine SAND, some**	
				Silt, and (-) coarse to fine Gravel	
5					
		S-3	75/2"	5'6"	No recovery
6				**End of Boring @ 5'6"**	Auger refusal @ 5'6"
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-7

Project:	**Proposed Renovations, Byrnwood Club Development, North Castle, NY**	**SHEET NO.:**	1 of 1
Client:	**JBM Realty**	**JOB NUMBER:**	12-175
Drilling Contractor:	**General Borings, Inc.**	**ELEVATION:**	+628.0

GROUNDWATER					**CASING**	**SAMPLE**	**CORE**	**TUBE**	**DATUM:**	
DATE	**TIME**	**DEPTH**	**CASING**	**TYPE**	**HSA**	**SS**			**START DATE:**	19 Dec 12
No water encountered				**DIA.**	**3 1/4"**	**1 3/8"**			**FINISH DATE:**	19 Dec 12
				WGHT		**140#**			**DRILLER:**	T. McGovern
				FALL		**30"**			**INSPECTOR:**	KWA

Depth (ft.)	Casing Blows per Foot	Sample No.	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			2		**Topsoil** 0'6"	
1		S-1	4		Br cf S, l $,l f G	Rec = 18"
			4			moist
2			5			
			13		same	
3		S-2	28		**Brown coarse to fine SAND,**	Rec = 17"
			21		**little Silt, little fine Gravel**	moist
4			22			
5					5'0"	
			12		Br cf S, l $, t f G (completely weathered gniess)	
6		S-3	14			Rec = 15"
			19			moist
7			28		**Brown coarse to fine SAND, little**	very dense augering 7'-10'
					Silt, trace fine Gravel (completely	
8					**weathered Geniss)**	
9						
10						
			75		same	
11		S-4	50/3"			Rec = 6"
						moist
12						very dense augering 10'-15'
13						
14						
15						
		S-4	50/2"		same 15'2"	No recovery
16					**End of Boring @ 15'2"**	Spoon bouncing @ 15'2"
17						
18						
19						
20						
21						
22						

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-8

Project:	**Proposed Renovations, Byrnwood Club Development, North Castle, NY**	**SHEET NO.:**	1 of 1
Client:	**JBM Realty**	**JOB NUMBER:**	12-175
Drilling Contractor:	**General Borings, Inc.**	**ELEVATION:**	+609.0

GROUNDWATER					**CASING**	**SAMPLE**	**CORE**	**TUBE**	**DATUM:**	
DATE	**TIME**	**DEPTH**	**CASING**	**TYPE**	**HSA**	**SS**			**START DATE:**	19 Dec 12
19 Dec 12	**1130**	**3'3"**	**None**	**DIA.**	**3 1/4"**	**1 3/8"**			**FINISH DATE:**	19 Dec 12
				WGHT		**140#**			**DRILLER:**	T. McGovern
				FALL		**30"**			**INSPECTOR:**	KWA

Depth (ft.)	Casing Blows per Foot	Sample No.	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			2		**Brown Topsoil** 0'6"	
1		**S-1**	4		FILL (Br cf S, a $, t cf G)	Rec = 4"
			8			moist
2			7			
			10		FILL (same)	
3		**S-2**	11			No recovery
			11		**FILL (Brown coarse to fine SAND,**	moist
4			13		**and Silt, trace coarse to fine Gravel)**	
5						
			13		FILL (same) 5'6"	
6		**S-3**	8		Mtld gr, or br Cy $ s, cf S, w/t roots	Rec = 18"
			7		**Mottled gray, orange brown Clayey**	moist
7			8		**SILT some, coarse to fine Sand, with** 7'0"	
			8		**roots**	
8		**S-4**	8		Gr br cf S, s (+) $, l cf G	Rec = 15"
			7			wet
9			8		**Gray brown coarse to fine SAND,**	
					some (+) Silt, little coarse to fine	
10					**Gravel**	
			15		same, l cf G	
11		**S-5**	25			Rec = 16"
			26			wet
12			35		12'0"	
					End of Boring @ 12'0"	
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-9

Project:	Proposed Renovations, Byrnwood Club Development, North Castle, NY	**SHEET NO.:**	1 of 1
Client:	JBM Realty	**JOB NUMBER:**	12-175
Drilling Contractor:	General Borings, Inc.	**ELEVATION:**	+674.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM:	
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE:	19 Dec 12
No water encountered				DIA.	3 1/4"	1 3/8"			FINISH DATE:	19 Dec 12
				WGHT		140#			DRILLER:	T. McGovern
				FALL		30"			INSPECTOR:	KWA

Depth (ft.)	Casing Blows per Foot	Sample No.	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			8		**Clay Tennis Court** 0'6"	
1		S-1	8		FILL (Br cf S, s $, s (+) cf G)	Rec = 17"
			8			moist
2			17			
			17		FILL (same)	
3		S-2	12			Rec = 15"
			7		**FILL (Brown coarse to fine Sand,**	moist
4			13		**some Silt, some (+) coarse to fine**	
					Gravel)	
5						
			10		FILL (Br cf S, s $, l cf G)	
6		S-3	4			Rec = 15"
			5			moist
7			11		7'0"	
		S-4	50/3"		**Highly to moderately weathered** 7'6"	Rec = 3"
8					**Gneiss**	moist
					Eknd of Boring @ 7'6"	Auger refusal @ 7'0"
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-10
Project: Proposed Renovations, Byrnwood Club Development, North Castle, NY		**SHEET NO.:** 1 of 1
Client: JBM Realty		**JOB NUMBER:** 12-175
Drilling Contractor: General Borings, Inc.		**ELEVATION:** +638.8

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM:	
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE:	19 Dec 12
No water encountered				DIA.	3 1/4"	1 3/8"			FINISH DATE:	19 Dec 12
				WGHT		140#			DRILLER:	T. McGovern
				FALL		30"			INSPECTOR:	JB

Depth (ft.)	Casing Blows per Foot	Sample No.	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION		REMARKS
			2		**Topsoil**	0'1"	
1		S-1	3		Br cf $ s, cf S, l cf G		Rec = 15"
			6		**Brown coarse to fine SILT some, coarse to**		moist
2			50/3"		**fine Sand, little coarse to fine Gravel**	2'0"	Auger refusal @ 2'0"
3							
		Run #1			**Gray, white Gneiss**		Run #1
4							2'0"-7'0"
							Run = 60"
5						5'0"	Rec = 52" = 86%
					Soil seam		RQD = 53%
6						5'8"	
					Gray, white Gneiss		
7						7'0"	
					End of Boring @ 7'0"		
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-11

Project:	**Proposed Renovations, Byrnwood Club Development, North Castle, NY**	**SHEET NO.:** 1 of 1
Client:	**JBM Realty**	**JOB NUMBER:** 12-175
Drilling Contractor:	**General Borings, Inc.**	**ELEVATION:** +640.0

GROUNDWATER					**CASING**	**SAMPLE**	**CORE**	**TUBE**	**DATUM:**
DATE	**TIME**	**DEPTH**	**CASING**	**TYPE**	**HSA**	**SS**			**START DATE:** 19 Dec 12
No water encountered				**DIA.**	**3 1/4"**	**1 3/8"**			**FINISH DATE:** 19 Dec 12
				WGHT		**140#**			**DRILLER:** T. McGovern
				FALL		**30"**			**INSPECTOR:** KWA

Depth (ft.)	Casing Blows per Foot	Sample No.	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			2		**Topsoil**	
1		S-1	3		0'9"	Rec = 20"
			3		Br cf S, l (+) $	moist
2			7			
			5		same, dk br	
3		S-2	6		**Brown coarse to fine SAND,**	Rec = 17"
			8		**little (+) Silt**	moist
4			23		4'0"	
5					**Completely to highly weathered Gneiss**	
6					5'6"	Auger refusal @ 5'6"
					End of Boring @ 5'6"	
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

Byrnwood Club Development
Bedford Road
Town of New Castle, NY
(12-175)

3 January 2013

TEST PIT LOGS

TP-1	Elevation +662		
0-0’9”	Brown Topsoil		
0’9”-2’0”	Brown coarse to fine SAND, and Silt, trace (+) medium to fine Gravel	medium dense	moist
2’0”	Gneiss bedrock No water encountered		

TP-2	Elevation +672		
0-1’10”	FILL (Brown coarse to fine SAND, some silt, little (-) coarse to fine Gravel, with topsoil)	medium dense	moist
1’10”-4’4”	Light brown coarse to fine SAND, some (+) Silt	medium dense	moist
4’4”	Gneiss bedrock No water encountered		

TP-3	Elevation +672		
0-0’9”	Dark brown Topsoil with surface debris		
0’9”-2’2”	Brown coarse to fine SAND, some Silt	medium dense	moist
2’2”	Gneiss bedrock No water encountered		

Byrnwood Club Development
Bedford Road
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TEST PIT LOGS

TP-4	Elevation +672		
0-0’6”	Brown Topsoil		
0’6”-3’6”	Brown coarse to fine SAND, and (-) Silt, some coarse to fine Gravel	medium dense	moist
3’6”	Gneiss bedrock No water encountered		

TP-5	Elevation +670		
0-0’7”	Brown Topsoil		
0’7”-3’8”	Light brown coarse to fine SAND, some (+) Silt	medium dense	moist
3’8”-4’9”	Brown coarse to fine SAND, some Silt (completely weathered gneiss)	dense	moist
4’9”	Gneiss bedrock No water encountered		

Byrnwood Club Development
Bedford Road
Town of New Castle, NY
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3 January 2013

TEST PIT LOGS

TP-6	Elevation +672		
0-0'10"	Brown Topsoil		
0'10"-2'10"	Light brown coarse to fine SAND, some (-) Silt, little coarse to fine Gravel	medium dense	moist
2'10"-4'7"	Brown coarse to fine SAND, some Silt, little coarse to fine Gravel (completely weathered gneiss)	dense	moist
4'7"	Gneiss bedrock No water encountered		

TP-7	Elevation +620		
0-0'9"	Brown Topsoil		
0'9"-2'8"	Brown coarse to fine SAND, some Silt, trace coarse to fine Gravel	medium dense	moist
2'8"	Probable Gneiss bedrock		
	Test pit abandoned No water encountered		

TP-8	Elevation +614		
0-0'8"	Dark brown Topsoil		
0'8"-5'0"	Mottled orange brown, gray coarse to fine SAND, and (-) Silt	medium dense	moist
	Groundwater encountered @ 4'1"	slow inflow	

Byrnwood Club Development
Bedford Road
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TEST PIT LOGS

TP-9	Elevation +628		
0-0'4"	Topsoil		
0'4"-6'9"	FILL (Brown coarse to fine SAND, some (+) Silt, some (+) coarse to fine Gravel, with cobbles and boulders)	medium dense	moist
6'9"	FILL (Gray coarse to fine SAND, trace (+) Silt)	medium dense	moist
	Possible cover over for utility Test pit was abandoned		
	No water encountered		

TP-10	Elevation +625		
0-0'4"	Topsoil		
0'4"-3'0"	FILL (Boulders with topsoil)	loose	moist
3'0"-8'0"	Brown coarse to fine SAND, some (+) Silt	medium dense	moist
	No water encountered		

Byrnwood Club Development
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TEST PIT LOGS

TP-11	Elevation +642		
0-0'6"	Brown Topsoil		
0'6"-3'9"	Brown coarse to fine SAND, some Silt, little coarse to fine Gravel, with occasional cobbles and boulders	medium dense	moist
3'9"-6'0"	Brown coarse to fine SAND, little (+) Silt, some coarse to fine Gravel (completely weathered gneiss)	dense	moist
6'0"	Weathered Gneiss bedrock No water encountered		

TP-12	Elevation +635		
0-0'6"	Brown Topsoil		
0'6"-5'0"	FILL (Brown coarse to fine SAND, some (+) Silt, little (-) coarse to fine Gravel, with trace of debris)	loose	moist
5'0"-6'6"	Orange brown, gray coarse to fine SAND and Silt	dense	moist
	Refusal on boulder No water encountered		

Byrnwood Club Development
Bedford Road
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4 January 2013

TEST PIT LOGS

TP-13	Elevation +636		
0-0’9”	Brown Topsoil with roots		
0’9”-6’3”	Brown coarse to fine SAND, and Silt, little coarse to fine Gravel	medium dense	moist
6’3”-7’5”	Brown coarse to fine SAND, some (+) Silt, little (-) coarse to fine Gravel	dense	moist
7’5”	Gneiss bedrock		
	Groundwater encountered @ 4’10”	slow inflow	

TP-14	Elevation +625		
0-0’3”	Brown Topsoil		
0’3”-3’4”	FILL (Gray brown coarse to fine SAND, some Silt, little coarse to fine Gravel, with cobbles and boulders)	loose	moist
3’4”-5’0”	FILL (Brown coarse to fine SAND, little Silt)	medium dense	moist
5’0”	Gneiss bedrock No water encountered		

Byrnwood Club Development
Bedford Road
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4 January 2013

TEST PIT LOGS

TP-15	Elevation +668		
0-0'3"	Brown Topsoil		
0'3"-1'8"	Brown coarse to fine SAND, some (+) Silt, some (-) coarse to fine Gravel, with occasional cobbles and boulders	medium dense	moist
1'8"	Gneiss bedrock No water encountered		

TP-16	Elevation +651		
0-0'8"	Dark brown Topsoil		
0'8"-1'10"	FILL (Brown coarse to fine SAND, some (+) Silt, trace medium to fine Gravel, with cobbles)	medium dense	moist
1'10"-4'10"	Brown coarse to fine SAND, some (+) Silt, trace medium to fine Gravel	medium dense	moist
4'10"	Gneiss bedrock No water encountered		

Byrnwood Club Development
Bedford Road
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4 January 2013

TEST PIT LOGS

TP-17	Elevation +655		
0-0’3”	Topsoil		
0’3”-1’0”	Brown coarse to fine SAND, some (+) Silt, little coarse to fine Gravel	medium dense	moist
	Encountered irrigation pipes Test pit abandoned No water encountered		

TP-18	Elevation +670		
0-0’10”	Brown Topsoil		
0’10”-7’0”	Brown SILT and, coarse to fine Sand, little (-) medium to fine Gravel	medium dense	moist
	No water encountered		

Brynwood Club Development
Bedford Road
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13 September 2013

TEST PIT LOGS

TP-19

0-2'5"	FILL (Brown coarse to fine SAND, some Silt, some coarse to fine Gravel, with topsoil, cobbles, boulders)	loose	moist
2'5"-7'0"	Brown coarse to fine SAND, some Silt, little coarse to fine Gravel	medium dense	moist
	No water encountered		

TP-20

0-0'6"	Brown Topsoil		
0'6"-4'3"	Brown, orange brown coarse to fine SAND, some Silt, little coarse to fine Gravel	medium dense	moist
4'3"-8'0"	Orange brown coarse to fine SAND, little (-) Silt, some coarse to fine Gravel, with occasional cobbles	medium dense	moist
	No water encountered		

Brynwood Club Development
Bedford Road
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TEST PIT LOGS

TP-21

0-0’6”	Dark brown Topsoil		
0’6”-1’4”	FILL (Brown coarse to fine SAND, some (-) Silt, trace medium to fine Gravel, with few roots)	medium dense	moist
1’4”-7’0”	Brown coarse to fine SAND, little Silt, trace (+) coarse to fine Gravel, with occasional cobbles	medium dense	moist
7’0”	Possible weathered bedrock		
	No water encountered		

TP-22

0-1’6”	Dark brown Topsoil, with roots		
1’6”-2’8”	Mottled gray brown, orange brown Clayey SILT, little medium to fine Sand	medium dense	moist
2’8”-3’6”	Brown coarse to fine SAND, some (+) Silt, little medium to fine Gravel	medium dense	moist
3’6”-6’0”	Brown coarse to fine SAND, little (+) Silt, come coarse to fine Gravel	medium dense	wet
6’0”-7’6”	Gray brown SILT little, coarse to fine Sand, trace medium to fine Gravel	medium dense	wet
	Groundwater encountered @ 4’6”	slow inflow	

Brynwood Club Development
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TEST PIT LOGS

TP-23

0-0'7"	Brown Topsoil		
0'7"-3'10"	Brown coarse to fine SAND, and (-) Silt, little (-) coarse to fine Gravel	dense	moist
3'10"	Weathered bedrock		
	No water encountered		

TP-24

0-0'8"	Brown Topsoil		
0'8"-6'8"	Brown coarse to fine SAND, some (+) Silt, little (-) coarse to fine Gravel, with occasional cobbles	medium dense	moist
6'8"	Possible weathered bedrock or boulder		
	No water encountered		

TP-25

0-0'4"	Brown Topsoil		
0'4"-3'4"	Brown coarse to fine SAND, and Silt, trace medium to fine Gravel	medium dense	moist
3'4"	Possible bedrock or boulder		
	No water encountered		

Brynwood Club Development
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TEST PIT LOGS

TP-26

0-0’6”	Brown Topsoil		
0’6”-2’8”	FILL (Brown coarse to fine SAND, some (-) Silt, little coarse to fine Gravel, with cobbles and boulders)	medium dense	moist
2’8”-4’0”	FILL (Brown Topsoil, with trace roots)		
4’0”-5’6”	FILL (Dark gray brown Clayey SILT, and, coarse to fine Sand, with trace roots, trace debris)	medium stiff	moist
5’6”-8’0”	Brown coarse to fine SAND, and (-) Silt, trace coarse to fine Gravel	medium dense	moist
	No water encountered		

TP-27

0-0’9”	Brown Topsoil, with roots		
0’9”-4’4”	Light brown coarse to fine SAND, little Silt, trace coarse to fine Gravel	medium dense	dry
4’4”	Probable weathered bedrock		
	No water encountered		

Brynwood Club Development
Bedford Road
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13 September 2013

TEST PIT LOGS

TP-28

0-0’4”	Brown Topsoil		
0’4”-8‘6”	FILL (Brown coarse to fine SAND, little Silt, little coarse to fine Gravel, with organics, debris)	loose	moist
8’6”-9’0”	FILL (Gray coarse to fine SAND, some Silt, little coarse to fine Gravel, with organics)	medium dense	wet
	Groundwater encountered @ 8’0”		

Byrnwood Club Development
Bedford Road
Town of New Castle, NY
(12-175)

18 -19 December 2012

Borehole Permeability Test (B-4)

Ground Surface Elevation: +628.0
Top of Casing Elevation: +631.5
Bottom of Test Hole Elevation: +621.0
Test Hole Depth from Ground Surface Elevation: 7'0" (84")

Pre-Soak:

Start Date: 18 Dec 2012 Time: 1545 Water Level*: 4'4"
End Date: 19 Dec 2012 Time: 0900 Water Level*: 7'1"

33" drop H_2O in 1035 minutes (17 hr. 15 min.) = 0.03 inches per minute

Test:

Start Date: 19 Dec 2012 Time: 1000 Water Level*: 4'3"
End Date: 19 Dec 2012 Time: 1515 Water Level*: 5'3.5"

12.5" drop H_2O in 315 minutes (5 hr. 15 min.) = 0.04 inches per minute

Time	Water Level*	Interval Water Level Drop (Inches)	Cumulative Water Level Drop (Inches)
1000	4'3"	0	0
1100	4'6"	3	3
1200	4'8"	2	5
1300	4'10"	2	7
1400	5'1"	3	10
1515	5'3.5"	2.5	12.5

Water Level* - Depth below top of casing (elevation +631.5)

Byrnwood Club Development
Bedford Road
Town of New Castle, NY
(12-175)

3 January 2013

<u>Percolation Test P-1</u>
(Elevation +620)

Test hole depth 42” from ground surface elevation

<u>Pre-Soak</u>

0-10 min, 22” drop of H2O (pipe drained)
22” drop H2O in 10 minutes = 2.20 inches per minute

<u>Test Run #1</u>

5 min, 15” drop H2O (re-filled pipe)

<u>Test Run #2</u>

5 min, 14” drop H2O (re-filled pipe)

<u>Test Run #3</u>

5 min, 12” drop H2O (re-filled pipe)

<u>Final Test Reading</u>

Start @ 1245, 14” from top of pipe
Finish @ 1300, 36” drop from top of pipe (pipe drained)
22” drop H2O in 15 minutes = 1.46 inches per minute

<u>Percolation Hole P-2</u>
(Elevation + 612)

Test hole depth 20” from ground elevation
Groundwater @ 0’6” below surface
Percolation test unable to be performed

Byrnwood Club Development
Bedford Road
Town of New Castle, NY
(12-175)

3 January 2013

Percolation Test P-3
(Elevation + 616)

Test hole depth 32" from ground surface elevation

Pre-Soak

0-24 min, 17" drop of $H2O$ (pipe drained)
17" drop $H2O$ in 24 minutes = 0.71 inches per minute

Test Run #1

5 min, 5" drop $H2O$ (re-filled pipe)

Test Run #2

5 min, 5" drop $H2O$ (re-filled pipe)

Test Run #3

5 min, 4" drop $H2O$ (re-filled pipe)

Final Test Reading

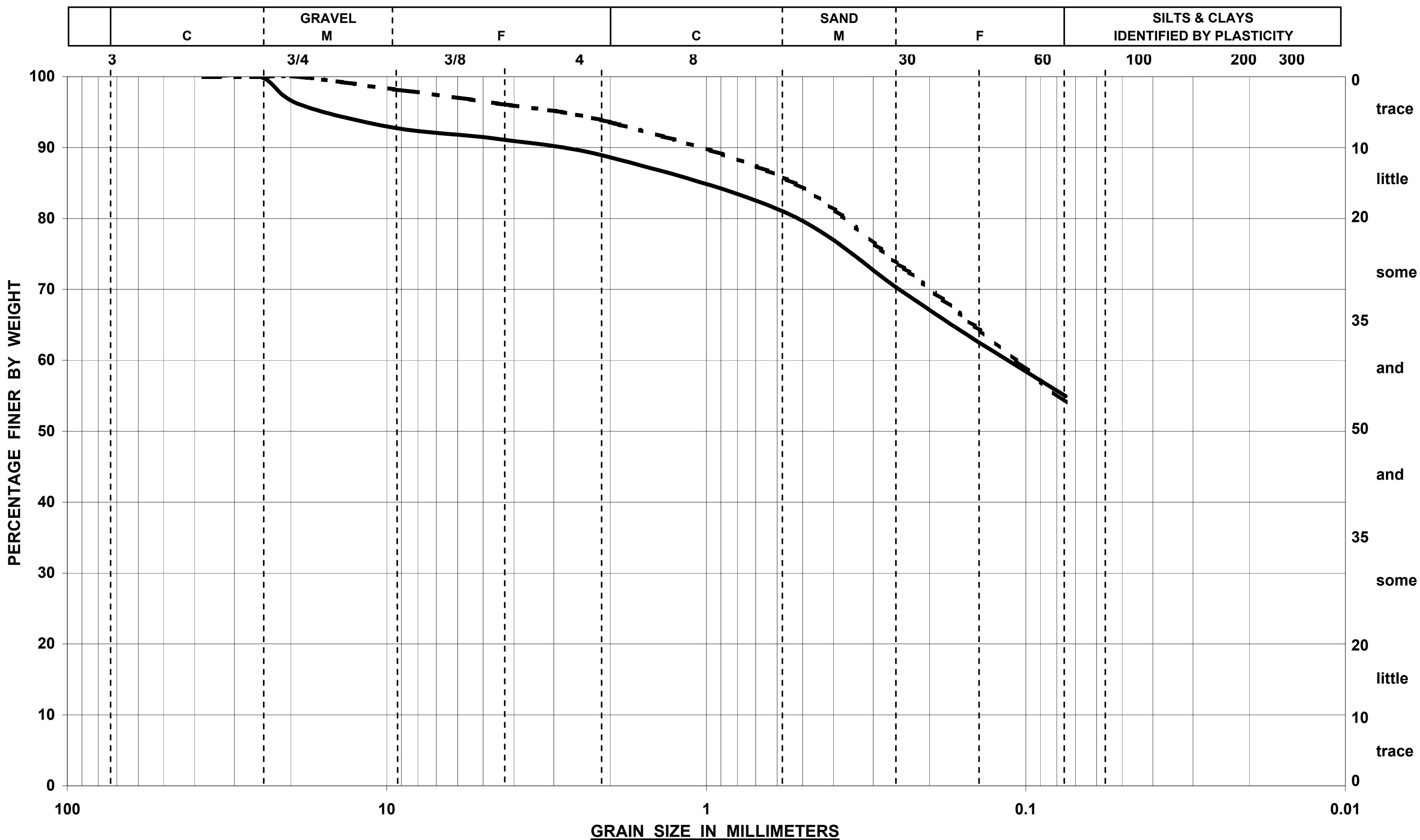
Start @ 1535, 15" from top of pipe
Finish @ 1605, 28" drop from top of pipe
13" drop H2O in 30 minutes = 0.43 inches per minute

Percolation Hole P-4
(Elevation + 615)

Test hole depth 24" from ground elevation
Groundwater @ 1'10" below surface
Percolation test unable to be performed

CARLIN-SIMPSON & ASSOCIATES
SAYREVILLE, NJ 08872

SIEVE ANALYSIS

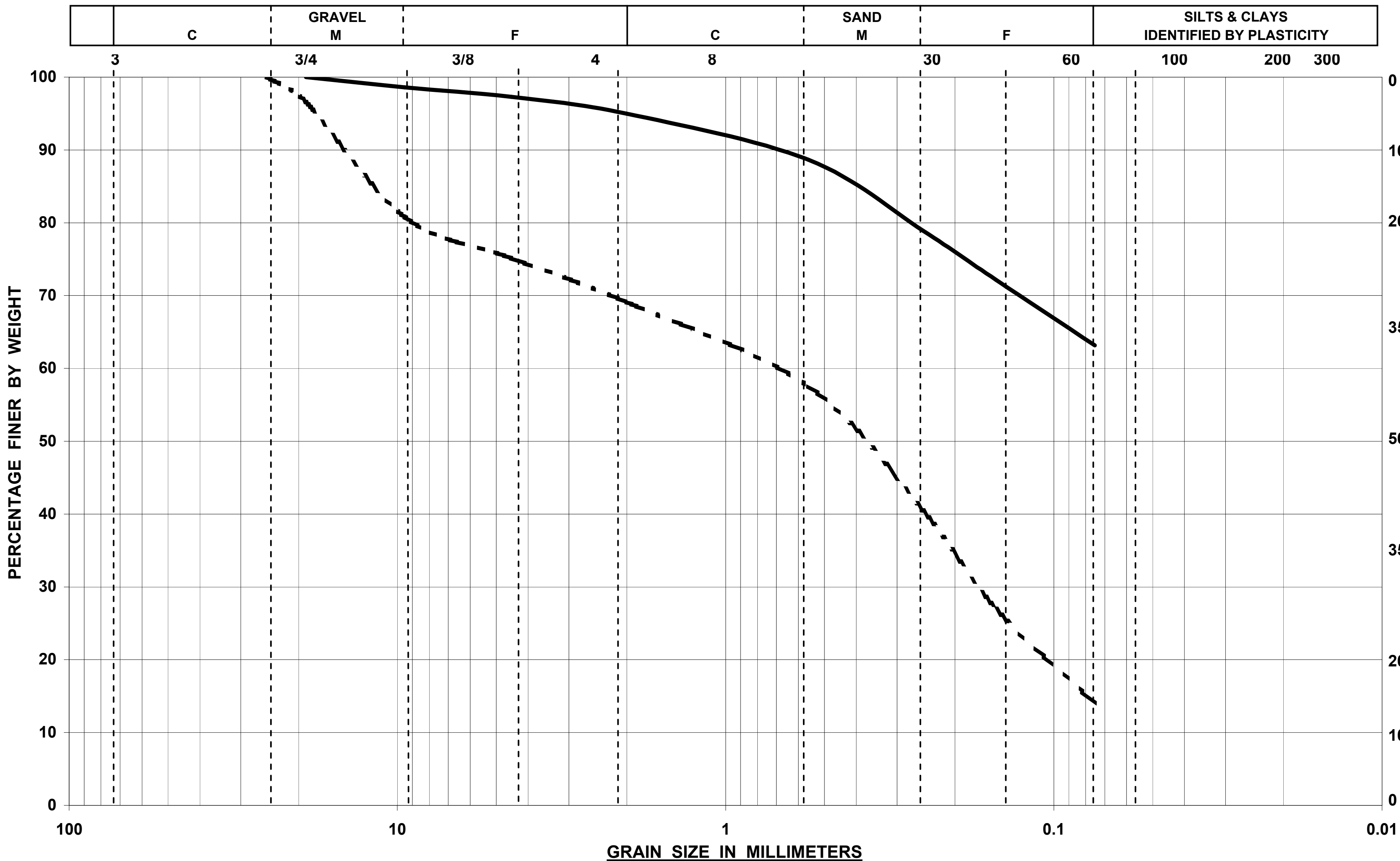


SYMBOL	BORING	SAMPLE	DEPTH	DESCRIPTION	NAT MC
———	B-1	S-1	0' 0" - 2' 0"	Brown SILT and (+), coarse to fine Sand, little (-) medium to fine Gravel	14.0%
— -	B-2	S-2	2' 0" - 4' 0"	Brown SILT and (+), coarse to fine Sand, trace medium to fine Gravel	14.2%

PROJECT	Brynwood Club, Bedford Road, North Castle, NY	BY	MW	DATE	7-Jan-13	JOB NO	12-175

CARLIN-SIMPSON & ASSOCIATES
SAYREVILLE, NJ 08872

SIEVE ANALYSIS

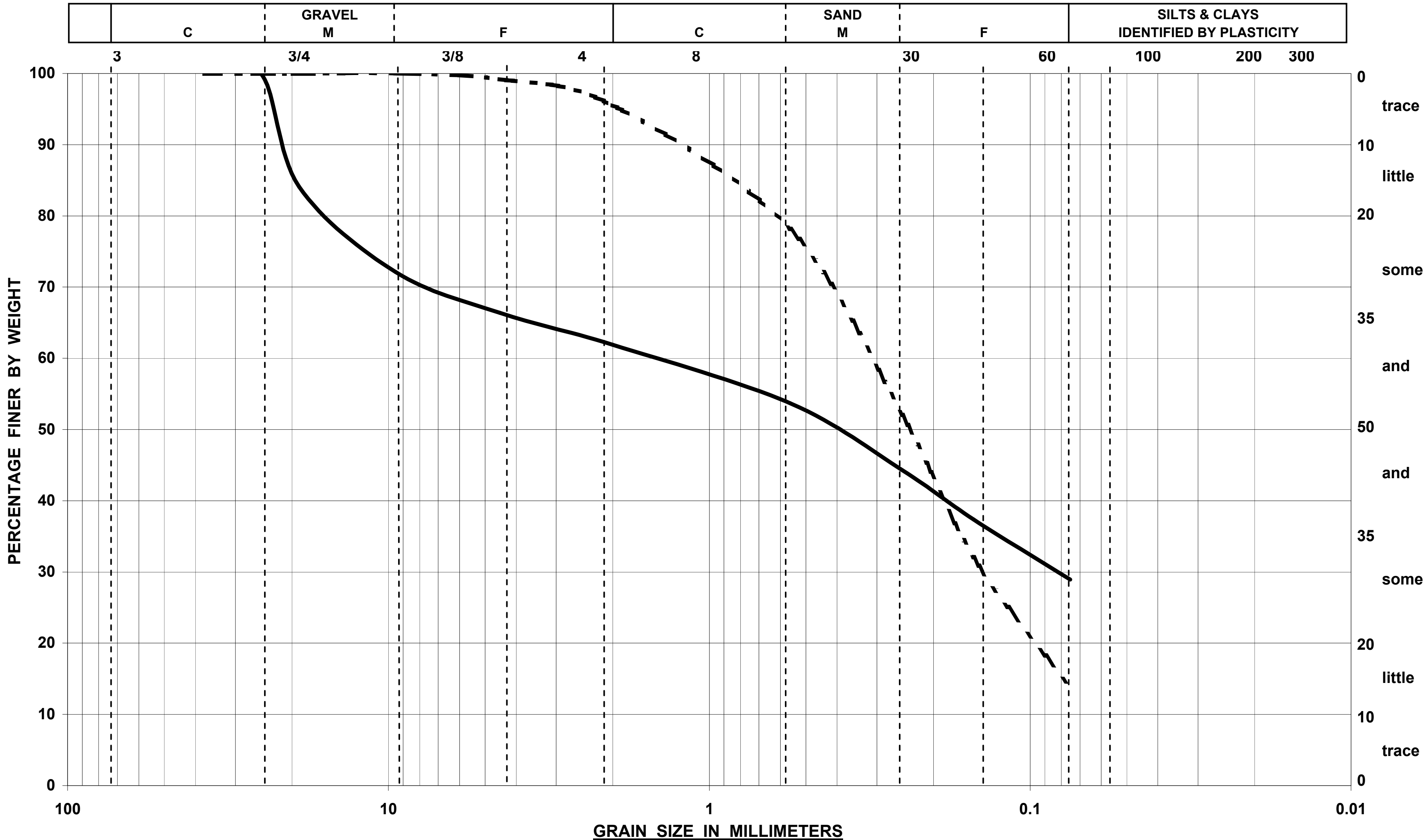


SYMBOL	BORING	SAMPLE	DEPTH	DESCRIPTION	NAT MC
———	B-3	S-1	0' 0" - 2' 0"	Brown SILT and (-), coarse to fine Sand, trace medium to fine Gravel	24.2%
— -	B-4	S-3	5' 0" - 7' 0"	Brown coarse to fine SAND, little Silt, some (+) medium to fine Gravel	12.1%

PROJECT	Brynwood Club, Bedford Road, North Castle, NY	BY	MW	DATE	7-Jan-13	JOB NO	12-175

CARLIN-SIMPSON & ASSOCIATES
SAYREVILLE, NJ 08872

SIEVE ANALYSIS

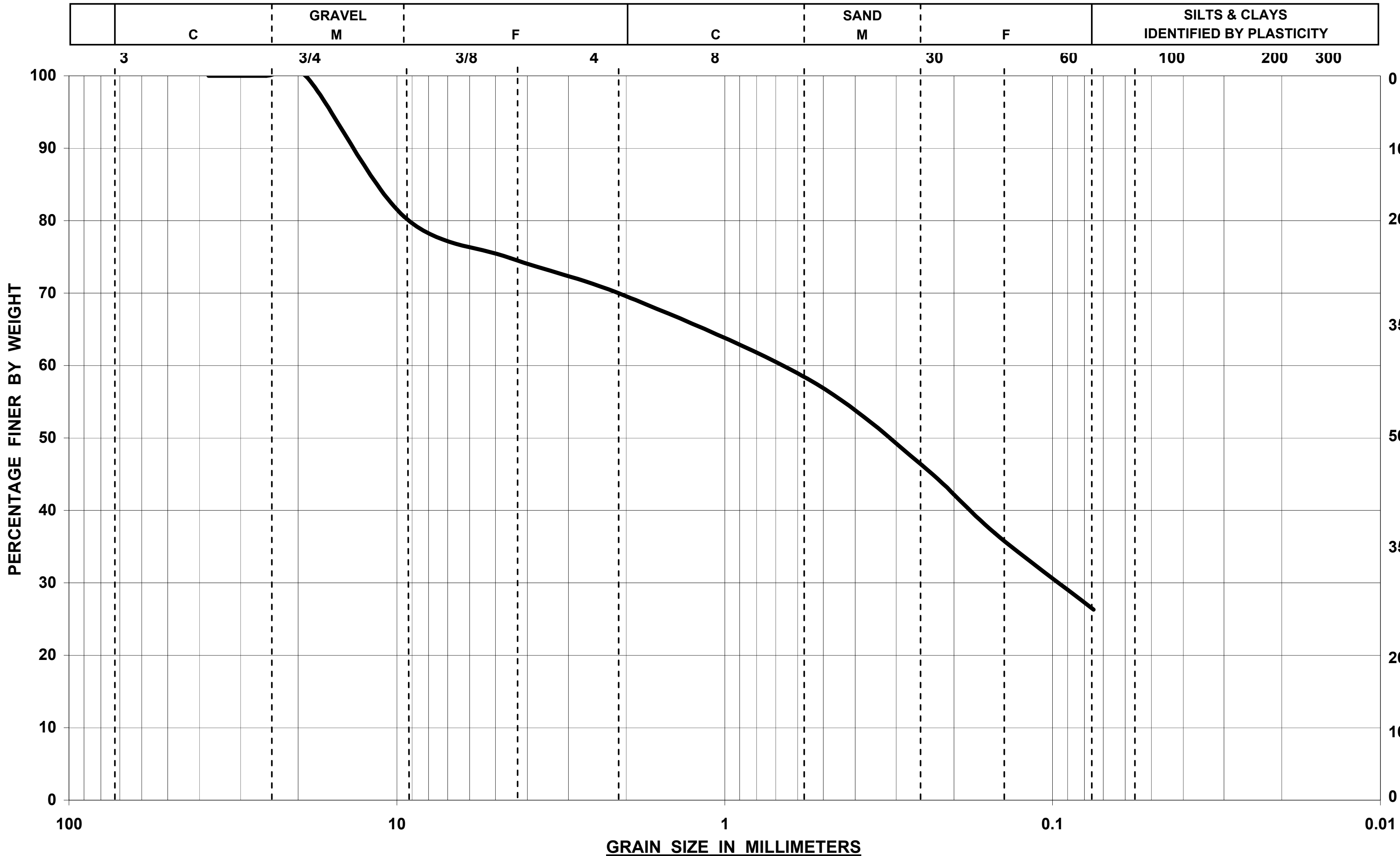


SYMBOL	BORING	SAMPLE	DEPTH	DESCRIPTION	NAT MC
———	B-6	S-2	2' 0" - 4' 0"	Brown coarse to fine Sand, some Silt, and (-) coarse to fine Gravel	9.9%
— -	B-7	S-3	5' 0" - 7' 0"	Brown coarse to fine SAND, little Silt, trace fine Gravel	8.7%

PROJECT Brynwood Club, Bedford Road, North Castle, NY **BY** MW **DATE** 10-Jan-13 **JOB NO** 12-175

CARLIN-SIMPSON & ASSOCIATES
SAYREVILLE, NJ 08872

SIEVE ANALYSIS

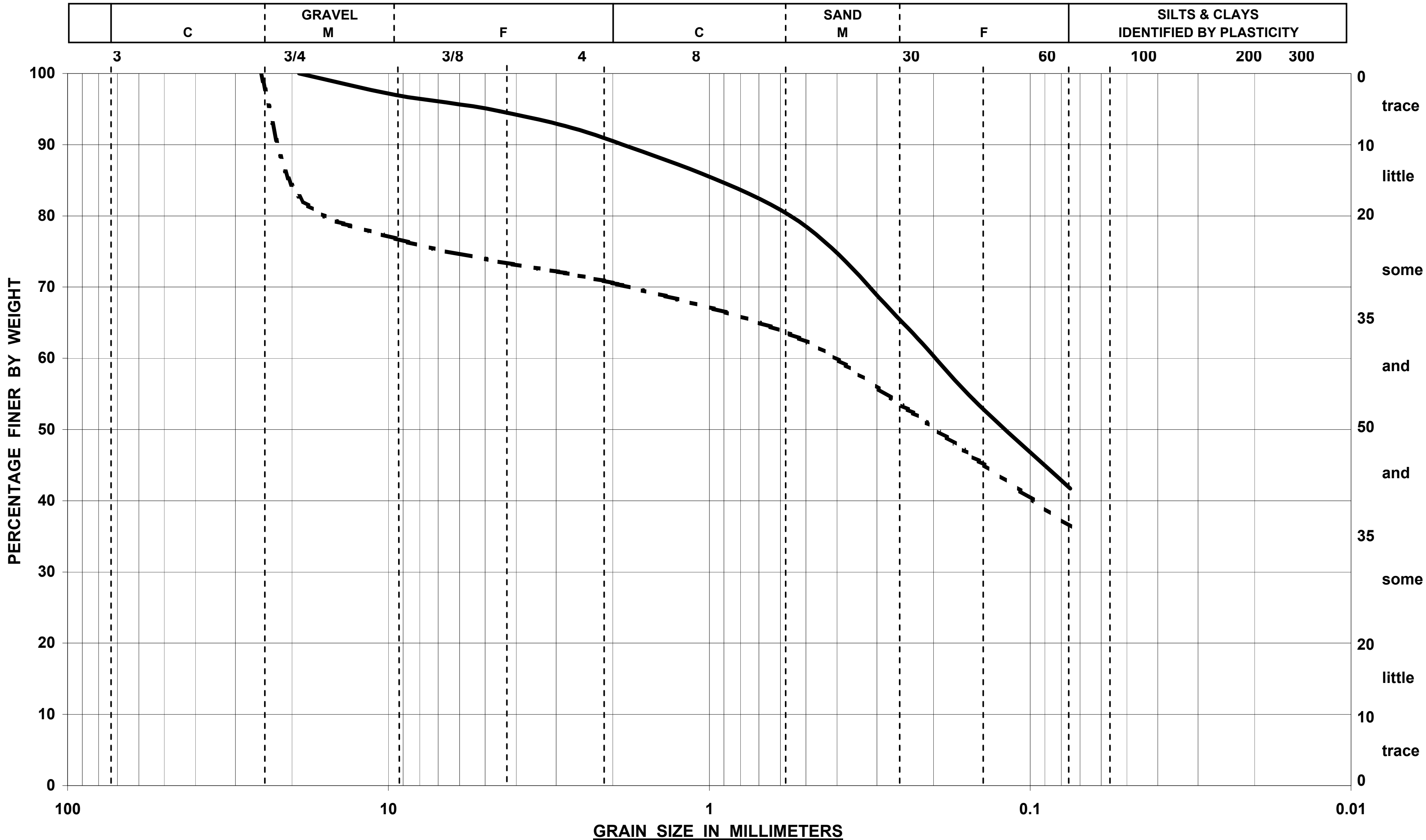


SYMBOL	BORING	SAMPLE	DEPTH	DESCRIPTION	NAT MC
——	B-9	S-2	2' 0" - 4' 0"	FILL (brown coarse to fine Sand, some Silt, some (+) medium to fine Gravel	15.0%

PROJECT Brynwood Club, Bedford Road, North Castle, NY BY MW DATE 7-Jan-13 JOB NO 12-175

CARLIN-SIMPSON & ASSOCIATES
SAYREVILLE, NJ 08872

SIEVE ANALYSIS

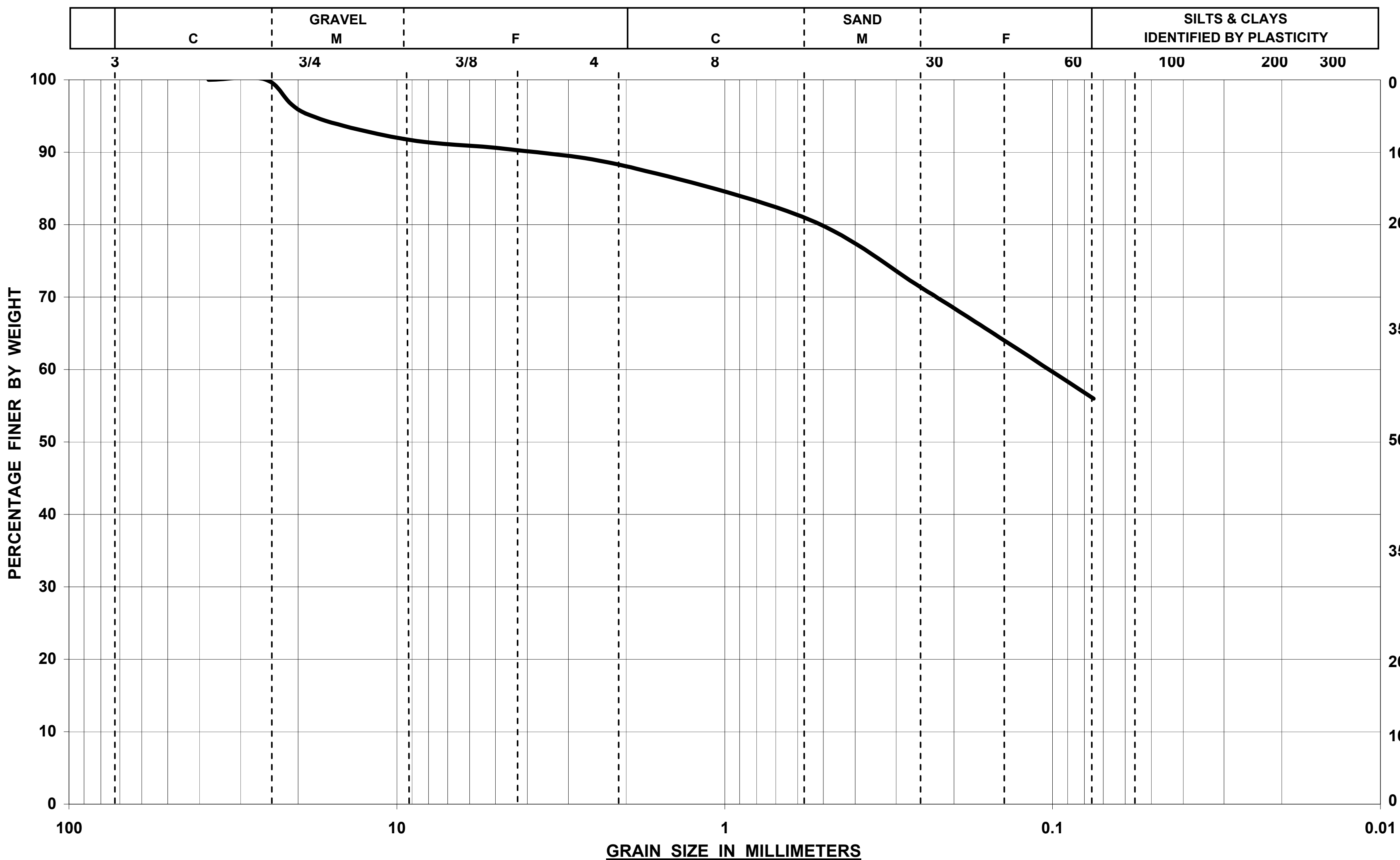


SYMBOL	Test Pit	SAMPLE	DEPTH	DESCRIPTION	NAT MC
———	TP-1	S-1		Brown coarse to fine SAND, and Silt, trace (+) medium to fine Gravel	18.2%
— -	TP-4	S-1		Brown coarse to fine Sand, and (-) Silt, some coarse to fine Gravel	14.0%

PROJECT Brynwood Club, Bedford Road, North Castle, NY BY MW DATE 7-Jan-13 JOB NO 12-175

CARLIN-SIMPSON & ASSOCIATES
SAYREVILLE, NJ 08872

SIEVE ANALYSIS



SYMBOL	Test Pit	SAMPLE	DEPTH	DESCRIPTION	NAT MC
———	TP-18	S-1	0' 10" - 7' 0"	Brown SILT and, coarse to fine Sand, little (-) medium to fine Gravel	18.0%

PROJECT Brynwood Club, Bedford Road, North Castle, NY BY MW DATE 7-Jan-13 JOB NO 12-175

GENERAL NOTES:

1. GENERAL LAYOUT WAS OBTAINED FROM A DRAWING PREPARED BY JOHN MEYER CONSULTING, PC ENTITLED "TEST PIT PLAN, BRYNWOOD CLUB, BEDFORD ROAD (NY 22), TOWN OF NORTH CASTLE NEW YORK," DRAWING TP-1, DATED DECEMBER 17, 2012.

2. BORING, TEST PIT, PERMEABILITY TEST, AND PERCOLATION TEST LOCATIONS WERE LAID OUT IN THE FIELD BY CARLIN-SIMPSON & ASSOCIATES (CSA).

3. BORINGS (B-1 THROUGH B-11) WERE PERFORMED BY GENERAL BORINGS INC. ON 18 & 19 DECEMBER 2012 UNDER THE FULL TIME INSPECTION OF CSA.

4. THE BOREHOLE PERMEABILITY TEST (BP-4) WAS PERFORMED BY CSA ON 18 & 19 DECEMBER 2012.

5. PERCOLATION TESTS (P-1, P-2, AND P-3) WERE PERFORMED BY CSA ON 3 JANUARY 2013.

6. TEST PITS (TP-1 THROUGH TP-18) WERE PERFORMED BY TRAFICANTE CONTRACTING, INC ON 3 & 4 JANUARY 2013 UNDER THE FULL TIME INSPECTION OF CSA.

7. TEST PITS (TP-19 THROUGH TP-28) WERE PERFORMED BY BRYNWOOD CLUB PERSONNEL IN SEPTEMBER 2013 UNDER THE FULL TIME INSPECTION OF CSA.

8. LOCATIONS ARE APPROXIMATE.

LEGEND:

- BORING LOCATION (DEC. 2012)
- TEST PIT LOCATION (JAN. 2013)
- TEST PIT LOCATION (SEPT. 2013)
- PERCOLATION TEST LOCATION (JAN. 2013)
- BOREHOLE PERMEABILITY TEST LOCATION (DEC. 2012)

ROBERT B. SIMPSON, P.E.
PROFESSIONAL ENGINEER

LICENSE NO. SIGNATURE

BORING & TEST PIT LOCATION PLAN

BRYNWOOD CLUB DEVELOPMENT
NORTH CASTLE, NEW YORK

DRAWN	SCALE
MRA	1" = 120'
CHECKED	DATE
RBS	16 OCT 13
PROJECT NO.	DWG NO.
12-175	FIG -1
APPROVED	

CARLIN-SIMPSON AND ASSOCIATES
61 Main Street
Sayreville, NJ 08872

Consulting Geotechnical and
Environmental Engineers

APPENDIX D

TEMPORARY & PERMANENT EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE CHECKLIST

Temporary Erosion and Sediment Control Inspection and Maintenance Checklist

Erosion and Sediment Control Measure	Inspection/Maintenance Intervals	Inspection/Maintenance Requirements
Stabilized Construction Entrance	Daily	• Periodic top dressing with additional aggregate as required • Clean sediment in public right-of-ways immediately
Silt Fence	Weekly + After Each Rain	• Remove & redistribute sediment when bulges develop in the silt fence.
Inlet Protection	Weekly + After Each Rain	• Remove sediment as necessary and replace filter fabric, crushed stone etc. • Any broken and damaged components should be replaced. • Check all materials for proper anchorage and secure as necessary.
Concrete Washout	Daily	• Damaged or leaking facilities shall be deactivated and repaired or replaced immediately.
	After Each Rain	• Pump excess rainwater that has accumulated over hardened concrete to a stabilized area.
		• Remove accumulated hardened material when 75% of the storage capacity of the structure is filled. Replace plastic liner with each cleaning of the washout facility.

Temporary Erosion and Sediment Control Inspection and Maintenance Checklist (Cont'd)

Erosion and Sediment Control Measure	Inspection/Maintenance Intervals	Inspection/Maintenance Requirements
Level Spreader	Weekly + After Each Rain	• Remove sediment accumulated as needed to ensure the level spreader operates properly and large flows are prevented from carrying sediment over the level lip. • Check for rilling within/around the level spreader and repair as required.
Temporary Sediment Basin	Weekly + After Each Rain	• Remove and redistribute sediment when it reaches an elevation indicated on the construction documents. • Check for rilling within and around the sediment basin and repair as required. • Remove all sediment and debris from the outlet control structure as maybe required.

Permanent Stormwater Management Practice Inspection and Maintenance Checklist

Stormwater Management Practice	Inspection/Maintenance Intervals	Inspection/Maintenance Requirements
Rip-Rap Apron/Energy Dissipator and Check Dams	Annually + After Major Storms	• Check for evidence of flows going around the structure. • Check for evidence at downstream toe and repair as needed. • Clean sediment and install additional aggregate as necessary.
Stormwater Management Basin	Monthly	• Check Permanent Pool for undesirable vegetative growth and floatings or floatable debris. Remove as needed. • Check Dry Pond areas for adequate vegetation, undesirable vegetative growth, low flow channels are clear of obstructions, standing water or wet spots and sediment and/or trash accumulation. Repair/remove as necessary.
Stormwater Management Basin	Annually + After Major Storms	• Check adequacy of vegetation and ground cover; for evidence of embankment erosion, animal burrows, unauthorized plantings and cracking, bulging or sliding of dam, clear/properly functioning drains, seeps/leaks on downstream face, failure of slope protection or riprap. Repair/remove as necessary. • Confirm emergency spillway is clear of obstructions and debris. • Confirm all inlets and outlet structures/pipes are operating properly.

Permanent Stormwater Management Practice Inspection and Maintenance Checklist (Cont'd)

Stormwater Management Practice	Inspection/Maintenance Intervals	Inspection/Maintenance Requirements
Drain Inlets	Monthly	• Check for blockage and/or erosion at top of each inlet. Repair/remove as necessary. • Check for sediment and debris collected within sumps and clean out as necessary.
Subsurface Stormwater Management Infiltration Facility	Annually + After Major Storms (See Maintenance Guidelines in Appendix D)	• Check level of sediment and debris accumulated within the system. • Check structural integrity of the system pipes, structures, etc. for cracking, bulging or deterioration. Repair/remove as necessary. • Confirm all inlets and outlet structures/pipes are operating properly.
Hydrodynamic Water Quality Structure	(See Maintenance Guidelines in Appendix D)	• Open access cover for visual inspection and measure the distance from the standing water surface to the sediment pile with a measuring stick or tape. If less than 4 feet, insert hose from vacuum truck into the sump and screen through both access covers to clean out the standing water, layer of oil, sediment, trash, etc. • The screen must be powerwashed to ensure it is free of trash and debris.

The owner/operator responsible for inspection and maintenance as outlined above:

Summit Club Partners, LLC
Mr. Jeff Mendell
10 Glenville Street, 1st Floor
Greenwich, CT 06831
Phone: 203-813-3264
Fax:
Email: jbmendell@greenwichdp.com

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Isolator® Row
O&M Manual

ADS StormTech™

The Isolator® Row

Introduction

An important component of any Stormwater Pollution Prevention Plan is inspection and maintenance. The StormTech Isolator Row is a technique to inexpensively enhance Total Suspended Solids (TSS) and Total Phosphorus (TP) removal with easy access for inspection and maintenance.

The Isolator Row

The Isolator Row is a row of StormTech chambers, either SC-160, SC-310, SC-310-3, SC-740, DC-780, MC-3500 or MC-7200 models, that is surrounded with filter fabric and connected to a closely located manhole for easy access. The fabric-wrapped chambers provide for sediment settling and filtration as stormwater rises in the Isolator Row and passes through the filter fabric. The open bottom chambers and perforated sidewalls (SC-310, SC- 310-3 and SC-740 models) allow stormwater to flow both vertically and horizontally out of the chambers. Sediments are captured in the Isolator Row protecting the adjacent stone and chambers storage areas from sediment accumulation.

ADS geotextile fabric is placed between the stone and the Isolator Row chambers. The woven geotextile provides a media for stormwater filtration, a durable surface for maintenance, prevents scour of the underlying stone and remains intact during high pressure jetting. A non-woven fabric is placed over the chambers to provide a filter media for flows passing through the chamber's sidewall. The non-woven fabric is not required over the SC-160, DC-780, MC-3500 or MC-7200 models as these chambers do not have perforated side walls.

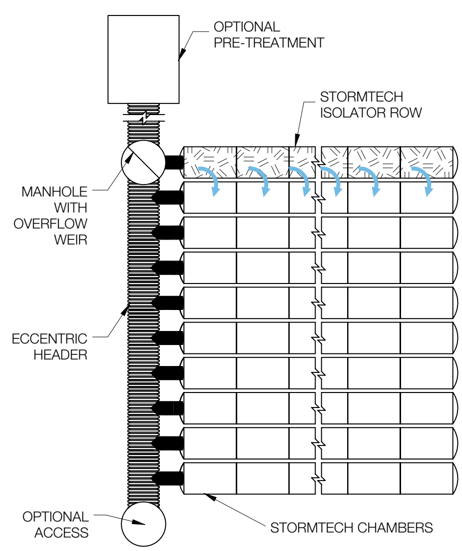
The Isolator Row is designed to capture the "first flush" runoff and offers the versatility to be sized on a volume basis or a flow-rate basis. An upstream manhole provides access to the Isolator Row and includes a high/low concept such that stormwater flow rates or volumes that exceed the capacity of the Isolator Row bypass through a manifold to the other chambers. This is achieved with an elevated bypass manifold or a high-flow weir. This creates a differential between the Isolator Row row of chambers and the manifold to the rest of the system, thus allowing for settlement time in the Isolator Row. After Stormwater flows through the Isolator Row and into the rest of the chamber system it is either exfiltrated into the soils below or passed at a controlled rate through an outlet manifold and outlet control structure.

The Isolator Row may be part of a treatment train system. The treatment train design and pretreatment device selection by the design engineer is often driven by regulatory requirements. Whether pretreatment is used or not, StormTech recommend using the Isolator Row to minimize maintenance requirements and maintenance costs.

Note: *See the StormTech Design Manual for detailed information on designing inlets for a StormTech system, including the Isolator Row.*

Looking down the Isolator Row from the manhole opening, woven geotextile Fabric is shown between the chamber and stone base.

StormTech Isolator Row with Overflow Spillway (*not to scale*)



Isolator Row Inspection/Maintenance

Inspection

The frequency of inspection and maintenance varies by location. A routine inspection schedule needs to be established for each individual location based upon site specific variables. The type of land use (i.e. industrial, commercial, residential), anticipated pollutant load, percent imperviousness, climate, etc. all play a critical role in determining the **actual frequency of inspection and maintenance practices.**

At a minimum, StormTech recommends annual inspections. Initially, the Isolator Row should be inspected every 6 months for the first year of operation. For subsequent years, the inspection should be adjusted based upon previous observation of sediment deposition.

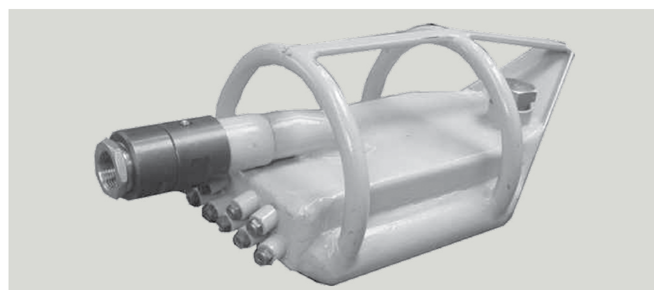
The Isolator Row incorporates a combination of standard manhole(s) and strategically located inspection ports (as needed). The inspection ports allow for easy access to the system from the surface, eliminating the need to perform a confined space entry for inspection purposes.

If upon visual inspection it is found that sediment has accumulated, a stadia rod should be inserted to determine the depth of sediment. When the average depth of sediment exceeds 3 inches throughout the length of the Isolator Row, clean-out should be performed.

Maintenance

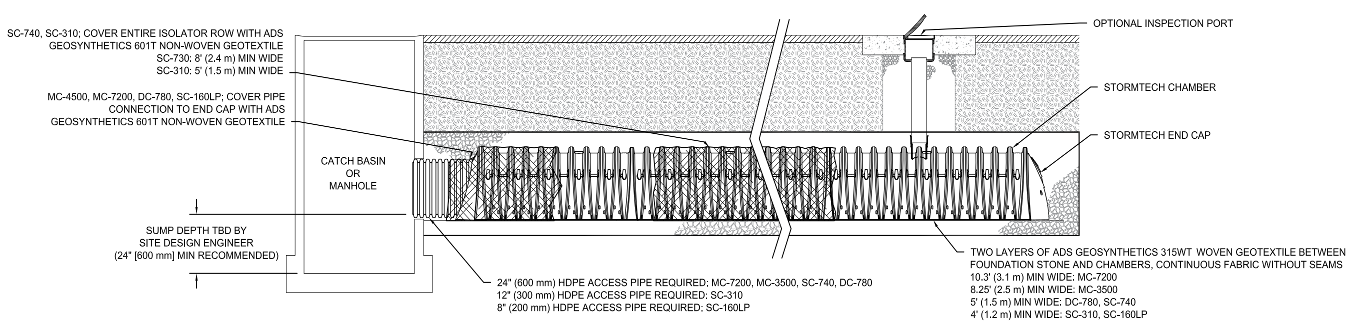
The Isolator Row was designed to reduce the cost of periodic maintenance. By “isolating” sediments to just one row, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout. If entry into the manhole is required, please follow local and OSHA rules for a confined space entries.

Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45” are best. JetVac reels can vary in length. For ease of maintenance, ADS recommends Isolator Row lengths up to 200" (61 m). **The JetVac process shall only be performed on StormTech Isolator Rows that have AASHTO class 1 woven geotextile (as specified by StormTech) over their angular base stone.**



StormTech Isolator Row (not to scale)

Note: *Non-woven fabric is only required over the inlet pipe connection into the end cap for SC-160LP, DC-780, MC-3500 and MC-7200 chamber models and is not required over the entire Isolator Row.*



Isolator Row Step By Step Maintenance Procedures

Step 1

Inspect Isolator Row for sediment.

A) Inspection ports (if present)
   i. Remove lid from floor box frame
   ii. Remove cap from inspection riser
   iii. Using a flashlight and stadia rod,measure depth of sediment and record results on maintenance log.
   iv. If sediment is at or above 3 inch depth, proceed to Step 2. If not, proceed to Step 3.

B) All Isolator Row
   i. Remove cover from manhole at upstream end of Isolator Row
   ii. Using a flashlight, inspect down Isolator Row through outlet pipe
      1. Mirrors on poles or cameras may be used to avoid a confined space entry
      2. Follow OSHA regulations for confined space entry if entering manhole
   iii. If sediment is at or above the lower row of sidewall holes (approximately 3 inches), proceed to Step 2. If not, proceed to Step 3.

Step 2

Clean out Isolator Row using the JetVac process.

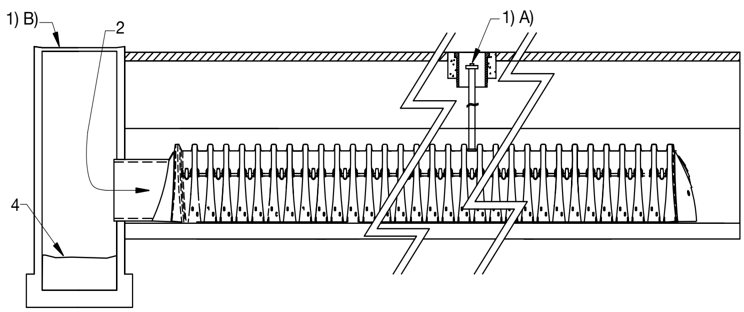
A) A fixed floor cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable
B) Apply multiple passes of JetVac until backflush water is clean
C) Vacuum manhole sump as required

Step 3

Replace all caps, lids and covers, record observations and actions.

Step 4

Inspect & clean catch basins and manholes upstream of the StormTech system.



Sample Maintenance Log

Date	Stadia Rod Readings		Sedi-ment Depth (1)–(2)	Observations/Actions	Inspector
	Fixed point to chamber bottom (1)	Fixed point to top of sediment (2)			
3/15/11	6.3 ft	none		New installation. Fixed point is CI frame at grade	DJM
9/24/11		6.2	0.1 ft	Some grit felt	SM
6/20/13		5.8	0.5 ft	Mucky feel, debris visible in manhole and in Isolator Row, maintenance due	NV
7/7/13	6.3 ft		0	System jetted and vacuumed	DJM

adspipe.com
800-821-6710

Cascade Separator® Inspection and Maintenance Guide

CASCADE
separator®

Maintenance

The Cascade Separator® system should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects sediment and debris will depend upon on-site activities and site pollutant characteristics. For example, unstable soils or heavy winter sanding will cause the sediment storage sump to fill more quickly but regular sweeping of paved surfaces will slow accumulation.

Inspection

Inspection is the key to effective maintenance and is easily performed. Pollutant transport and deposition may vary from year to year and regular inspections will help ensure that the system is cleaned out at the appropriate time. At a minimum, inspections should be performed twice per year (i.e. spring and fall). However, more frequent inspections may be necessary in climates where winter sanding operations may lead to rapid accumulations, or in equipment wash-down areas. Installations should also be inspected more frequently where excessive amounts of trash are expected.

A visual inspection should ascertain that the system components are in working order and that there are no blockages or obstructions in the inlet chamber, flumes or outlet channel. The inspection should also quantify the accumulation of hydrocarbons, trash and sediment in the system. Measuring pollutant accumulation can be done with a calibrated dipstick, tape measure or other measuring instrument. If absorbent material is used for enhanced removal of hydrocarbons, the level of discoloration of the sorbent material should also be identified during inspection. It is useful and often required as part of an operating permit to keep a record of each inspection. A simple form for doing so is provided in this Inspection and Maintenance Guide.

Access to the Cascade Separator unit is typically achieved through one manhole access cover. The opening allows for inspection and cleanout of the center chamber (cylinder) and sediment storage sump, as well as inspection of the inlet chamber and slanted skirt. For large units, multiple manhole covers allow access to the chambers and sump.

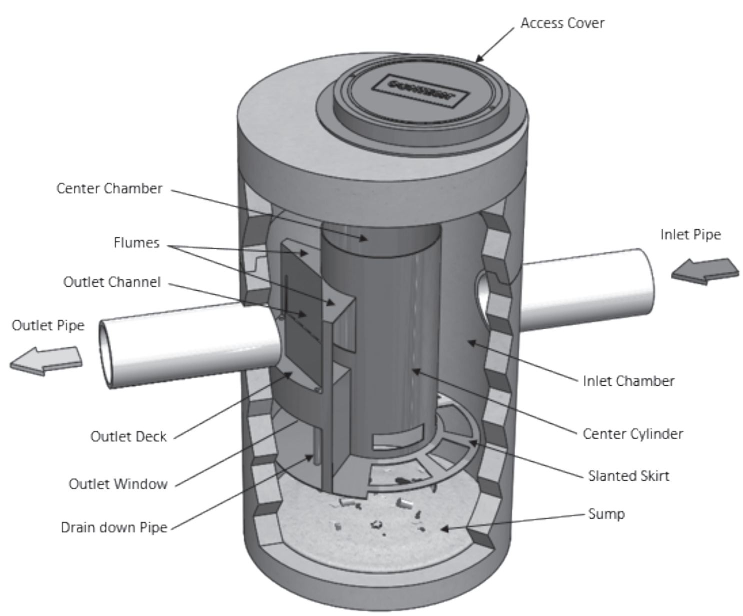
The Cascade Separator system should be cleaned before the level of sediment in the sump reaches the maximum sediment depth and/or when an appreciable level of hydrocarbons and trash has accumulated. If sorbent material is used, it must be replaced when significant discoloration has occurred. Performance may be impacted when maximum sediment storage capacity is exceeded. Contech recommends maintaining the system when sediment level reaches 50% of maximum storage volume. The level of sediment is easily determined by measuring the distance from the system outlet invert (standing water level) to the top of the sediment pile. To avoid underestimating the level of sediment in the chamber, the measuring device must be lowered to the top of the sediment pile carefully. Finer, silty particles at the top of the pile typically offer less resistance to the end of the rod than larger particles toward the bottom of the pile. Once this measurement is recorded, it should be compared to the chart in this document to determine if the height of the sediment pile off the bottom of the sump floor exceeds 50% of the maximum sediment storage.

Cleaning

Cleaning of a Cascade Separator system should be done during dry weather conditions when no flow is entering the system. The use of a vacuum truck is generally the most effective and convenient method of removing pollutants from the system. Simply remove the manhole cover and insert the vacuum tube down through the center chamber and into the sump. The system should be completely drained down and the sump fully evacuated of sediment. The areas outside the center chamber and the slanted skirt should also be washed off if pollutant build-up exists in these areas.

In installations where the risk of petroleum spills is small, liquid contaminants may not accumulate as quickly as sediment. However, the system should be cleaned out immediately in the event of an oil or gasoline spill. Motor oil and other hydrocarbons that accumulate on a more routine basis should be removed when an appreciable layer has been captured. To remove these pollutants, it may be preferable to use absorbent pads since they are usually less expensive to dispose than the oil/water emulsion that may be created by vacuuming the oily layer. Trash and debris can be netted out to separate it from the other pollutants. Then the system should be power washed to ensure it is free of trash and debris.

Manhole covers should be securely seated following cleaning activities to prevent leakage of runoff into the system from above and to ensure proper safety precautions. Confined space entry procedures need to be followed if physical access is required. Disposal of all material removed from the Cascade Separator system must be done in accordance with local regulations. In many locations, disposal of evacuated sediments may be handled in the same manner as disposal of sediments removed from catch basins or deep sump manholes. Check your local regulations for specific requirements on disposal. If any components are damaged, replacement parts can be ordered from the manufacturer.



Cascade Separator® Maintenance Indicators and Sediment Storage Capacities

Model Number	Diameter		Distance from Water Surface to Top of Sediment Pile		Sediment Storage Capacity	
	ft	m	ft	m	y^3	m^3
CS-3	3	0.9	1.5	0.5	0.4	0.3
CS-4	4	1.2	1.5	0.5	0.7	0.5
CS-5	5	1.3	1.5	0.5	1.1	0.8
CS-6	6	1.8	1.5	0.5	1.6	1.2
CS-8	8	2.4	1.5	0.5	2.8	2.1
CS-10	10	3.0	1.5	0.5	4.4	3.3
CS-12	12	3.6	1.5	0.5	6.3	4.8

Note: The information in the chart is for standard units. Units may have been designed with non-standard sediment storage depth.

A Cascade Separator unit can be easily cleaned in less than 30 minutes.

A vacuum truck excavates pollutants from the systems.

Cascade Separator® Inspection & Maintenance Log

Cascade Model:			Location:		
Date	Depth Below Invert to Top of Sediment[1]	Floatable Layer Thickness[2]	Describe Maintenance Performed	Maintenance Personnel	Comments

1. The depth to sediment is determined by taking a measurement from the manhole outlet invert (standing water level) to the top of the sediment pile. Once this measurement is recorded, it should be compared to the chart in the maintenance guide to determine if the height of the sediment pile off the bottom of the sump floor exceeds 50% of the maximum sediment storage. Note: to avoid underestimating the volume of sediment in the chamber, the measuring device must be carefully lowered to the top of the sediment pile.
2. For optimum performance, the system should be cleaned out when the floating hydrocarbon layer accumulates to an appreciable thickness. In the event of an oil spill, the system should be cleaned immediately.

SUPPORT

- Drawings and specifications are available at www.ContechES.com.
- Site-specific design support is available from our engineers.

CONTECH®
ENGINEERED SOLUTIONS
800.925.5240
www.ContechES.com

APPENDIX E

CONTRACTOR'S CERTIFICATION

JMC Project 20101
The Summit Club at Armonk
568 & 570 Bedford Road (NY-22)
Armonk, NY

CONTRACTOR'S CERTIFICATION

"I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

Company Name: ____

Address: ____

Telephone Number: ____

Name and Title: ____

Signature: ____Date: ________________

Permit Identification No.:____

Name and Title of Trained Contractor:_______________________________________

Elements of the SWPPP Contractor is responsible for:___________________________

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APPENDIX F

TEMPORARY SEDIMENT BASIN DESIGN DATA SHEETS

TEMPORARY SEDIMENT BASIN DESIGN DATA SHEET

Computed by MT Date 6/8/21 Checked by ________ Date 06/08/21
Project Summit Club at Armonk Basin # ________
Location ________ Total Area draining to basin (≤50 Ac.) 13.56 Acres

BASIN SIZE DESIGN

1. Sediment storage zone volume = 1,000 cu. ft. x number of disturbed acres = 13,560 cu. ft., Top of Zone Elev. 622
2. Dewatering zone volume = 3,600 cu. ft. x number of drainage area acres = 48,816 cu. ft., Top of Zone Elev. 625
3. Length to width ratio = 3.5:1
4. A. Cleanout at 50% of sediment storage zone volume, Elev. 621.50
   B. Distance below top of riser 0.5 feet
5. Minimum surface area is larger of 0.01 $Q_{(10)}$ .369 or, 0.015 DA = 2.034 use .369 acres

DESIGN OF SPILLWAYS & ELEVATIONS

Runoff

6. $Q_{p(10)}$ = 36.90 cfs (Attach runoff computation sheets)

Pipe Spillway (Q_{ps})

7. Min. pipe spillway cap., Q_{ps} = 0.2 x 13.56 Drainage Area, acres = 2.71 cfs
   Note: If there is no emergency spillway, then required $Q_{ps} = Q_{p(10)}$ = ________ cfs.
8. H, head = 3 ft. Barrel length = 32 ft
9. Barrel: Diam. 24 inches; Q_{ps} = (Q) 2.71 x (cor.fac.) 27.5 = 74.5 cfs.
10. Riser: Diam. 42 inches; Length 1 ft.; h = 1 ft. Crest Elev. 622
11. Trash Rack: Diameter = 60 inches; H, height = 19 inches

Emergency Spillway Design

12. Emergency Spillway Flow, $Q_{es} = Q_p - Q_{ps}$ = 36.90 - 74.5 = 0 cfs.
13. Width ________ ft.; H_p ________ ft Crest elevation ________; Design High Water Elev. ________
    Entrance channel slope ________ % ; Top of Dam Elev. ________
    Exit channel slope ________ %

ANTI-SEEP COLLAR/SEEPAGE DIAPHRAGM DESIGN

Collars:

14. y = 1 ft.; z = 3 :1; pipe slope = 1 %, L_s = 7.29 ft.
    Use 1 collars, 2 - 2 inches square; projection = 0.5 ft.

Diaphragms:

________ width ________ ft. height ________ ft.

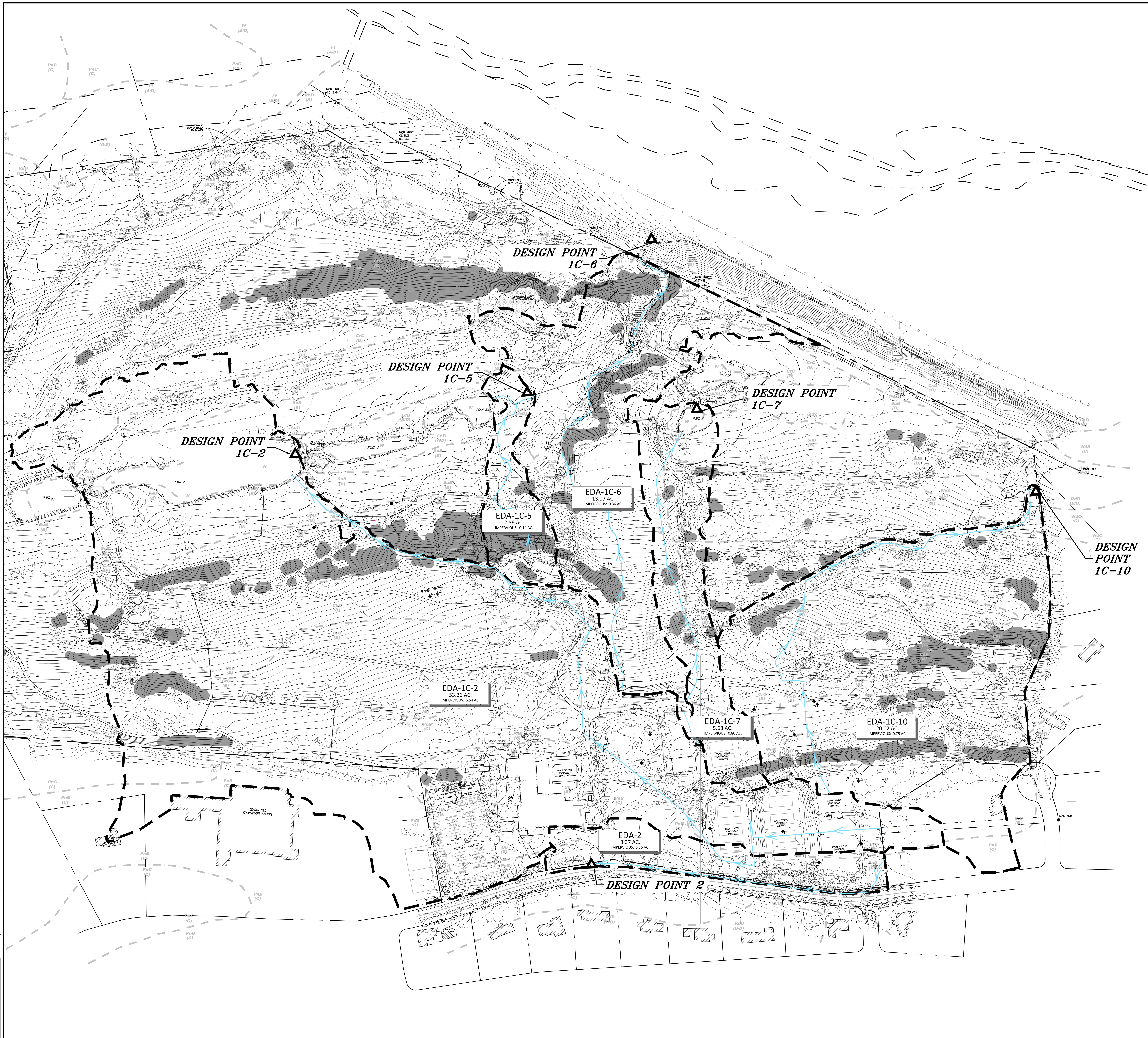
DEWATERING ORIFICE SIZING

(Determined from the Dewatering Device Standard)

15. Dewatering orifice diameter = 5 inches. Skimmer ___ or Riser x (check one)
16. Design dewatering time 2 days (Min. 2 days required)

APPENDIX G

DRAWINGS



EXISTING DRAINAGE LEGEND

- EXISTING GRADE
- FLAGGED WETLANDS WITH FLAG NUMBERS
- EXISTING STONE WALL
- WATERSHED BOUNDARY LINE
- BOUNDARY OF COVER TYPE LINE
- FLOW PATH LINE
- NwC (B) — SOIL DESIGNATION AND HYDROLOGIC SOIL GROUP

SOIL TYPE TABLE

DESIGNATION	HYDROLOGIC GROUP	DESCRIPTION
Ub	B	UDORTHENTS, SMOOTHED
PnB	C	PAXTON FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES
CrC	B	CHARLTON–CHATFIELD COMPLEX, 0 TO 15 PERCENT SLOPES, VERY ROCKY
PnC	C	PAXTON FINE SANDY LOAM, 8 TO 15 PERCENT SLOPES
CsD	B	CHARLTON–CHATFIELD COMPLEX, 15 TO 35 PERCENT SLOPES, VERY ROCKY

No.	Revision	Date	By
1.	RESPONSE TO TOWN COMMENTS	06/14/2021	NC
2.	RESPONSE TO TOWN COMMENTS	01/10/2022	NC
3.	RESPONSE TO TOWN COMMENTS	03/28/2022	NC
4.	RESPONSE TO TOWN COMMENTS	07/24/2023	NC
5.	MAINTENANCE BUILDING SUBMISSION	03/11/2024	MT

Previous Editions Obsolete

APPLICANT/OWNER:
SUMMIT CLUB PARTNERS, LLC
568 BEDFORD ROAD (NY-22)
ARMONK, NY 10504

ARCHITECT:
GRANOFF ARCHITECTS
330 RAILROAD AVENUE
GREENWICH, CT 06830

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

EXISTING DRAINAGE AREA MAP

THE SUMMIT CLUB AT ARMONK
(RESIDENTIAL PHASE)
568 & 570 BEDFORD ROAD (NY-22)
TOWN OF NORTH CASTLE, NEW YORK

Drawn:	NC	Approved:	AG
Scale:	1" = 60'		
Date:	06/14/2021		
Project No:	20101		
20101-DRAINAGE	EDA	--	

Drawing No:
DA-1

PROPOSED DRAINAGE LEGEND

- EXISTING GRADE
- PROPOSED FINISHED GRADE
- FLAGGED WETLANDS WITH FLAG NUMBERS
- EXISTING STONE WALL
- WATERSHED BOUNDARY LINE
- LIMIT OF SOIL GROUPS LINE
- FLOW PATH LINE
- PROPOSED BUILDING LINE
- PROPOSED CONCRETE CURB
- PROPOSED MANHOLE (MH)
- EXISTING DRAIN INLET
- PROPOSED DRAIN INLET (DI)
- PROPOSED END SECTION (ES)
- RIP RAP ENERGY DISSIPATOR
- NwC (B) SOIL DESIGNATION AND HYDROLOGIC SOIL GROUP

SOIL TYPE TABLE

DESIGNATION	HYDROLOGIC GROUP	DESCRIPTION
Ub	B	UDORTHENTS, SMOOTHED
PnB	C	PAXTON FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES
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CsD	B	CHARLTON-CHATFIELD COMPLEX, 15 TO 35 PERCENT SLOPES, VERY ROCKY

No.	Revision	Date	By
1.	RESPONSE TO TOWN COMMENTS	06/14/2021	NC
2.	RESPONSE TO TOWN COMMENTS	01/10/2022	NC
3.	RESPONSE TO TOWN COMMENTS	03/28/2022	NC
4.	RESPONSE TO TOWN COMMENTS	07/24/2023	NC
5.	MAINTENANCE BUILDING SUBMISSION	03/11/2024	MT

Previous Editions Obsolete

APPLICANT/OWNER:
SUMMIT CLUB PARTNERS, LLC
568 BEDFORD ROAD (NY-22)
ARMONK, NY 10504

ARCHITECT:
GRANOFF ARCHITECTS
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GREENWICH, CT 06830

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

PROPOSED DRAINAGE AREA MAP

THE SUMMIT CLUB AT ARMONK
(RESIDENTIAL PHASE)
568 & 570 BEDFORD ROAD (NY-22)
TOWN OF NORTH CASTLE, NEW YORK

Drawn:	NC	Approved:	AG
Scale:	1" = 60'		
Date:	06/14/2021		
Project No:	20101		
20101-DRAINAGE	PDA	--	

Drawing No: DA-2

Town of North Castle Planning Department
17 Bedford Road Armonk, New York 10504
(914) 273-3542 (914) 273-3554 (fax)

PRELIMINARY SITE PLAN COMPLETENESS REVIEW FORM

This form represents the standard requirements for a completeness review for all preliminary site plans. Failure to provide all of the information requested will result in a determination that the site plan application is incomplete. The review of the site plan for completeness will be based on the requirements of the Town of North Castle Town Code.

Project Name on Plan: The Summit Club at Armonk - Golf Course Phase (Maintenance Building)

☒ Initial Submittal ☐ Revised Preliminary

Street Location: 568 & 570 Bedford Road (NY-22), Armonk, NY 10504

Zoning District: R-2A/ GCCFO Property Acreage: Approx. 156 Acres Tax Map Parcel ID: 101.02/1/28.1 & 28.2

Date: 03/11/2024

DEPARTMENTAL USE ONLY

Date Filed: __________ Staff Name: ________________________

Preliminary Plan Completeness Review Checklist
Items marked with a "☒" are complete, items left blank "☐" are incomplete and must be completed, "NA" means not applicable.

☐ 1. A complete application for site development plan approval form

☐ 2. Plan prepared by a registered architect or professional engineer

☐ 3. Map showing the applicant's entire property and adjacent properties and streets

☐ 4. A locator map at a convenient scale

☐ 5. The proposed location, use and design of all buildings and structures

☐ 6. Proposed division of buildings into units of separate occupancy, detailed breakdowns of all proposed floor space by type of use and floor level

☐ 7. Existing topography and proposed grade elevations

☐ 8. Location of drives

- ☐ 9. Location of any outdoor storage
- ☐ 10. Location of all existing and proposed site improvements, including drains, culverts, retaining walls and fences
- ☐ 11. Description of method of water supply and sewage disposal and location of such facilities
- ☐ 12. Location, design and size of all signs
- ☐ 13. Location and design of lighting, power and communication facilities
- ☐ 14. In an industrial district, specific uses proposed, number of employees for which buildings are designed, type of power to be used for any manufacturing process, type of wastes or by-products to be produced by any manufacturing process and proposed method of disposal of such wastes or by-products
- ☐ 15. In a multifamily district, floor plans of each dwelling unit shall be shown, and elevations and cross sections also may be required
- ☐ 16. The name and address of the applicant, property owner(s) if other than the applicant and of the planner, engineer, architect, surveyor and/or other professionals engaged to work.
- ☐ 17. Submission of a Zoning Conformance Table depicting the plan's compliance with the minimum requirements of the Zoning District
- ☐ 18. If a tree removal permit is being sought, submission of a plan depicting the location and graphical removal status of all Town-regulated trees within the proposed area of disturbance. In addition, the tree plan shall be accompanied by a tree inventory includes a unique ID number, the species, size, health condition and removal status of each tree.
- ☐ 19. If a wetlands permit is being sought, identification of the wetland and the 100-foot wetland buffer.

More information about the items required herein can be obtained from the North Castle Planning Department. A copy of the Town Code can be obtained from Town Clerk or on the North Castle homepage: http://www.northcastleny.com

__________ On this date, all items necessary for a technical review of the proposed site plan have been submitted and constitute a COMPLETE APPLICATION.

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Adam R. Kaufman, AICP
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Application for Site Development Plan Approval

Application Name

The Summit Club at Armonk - Golf Course Phase (Maintenance Building)

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Important General Information

- Prior to submitting an application, the "Notice to Applicants" should be reviewed.

- To appear before the Planning Board, all required application materials shall be submitted not later than **12:00 P.M., Monday, fourteen (14) days** prior to the date of the Planning Board meeting at which the application is scheduled to be heard or as otherwise noted by the Planning Board Secretary. Continuing Business can be submitted 12 days prior to the Next Planning Board meeting by the close of business. Except where noted.
  If all required application materials, including the pertinent application fee and escrow monies are not submitted by that deadline, the application shall be automatically removed from the agenda.
  At the discretion of the Planning Board Chairman, the application may be rescheduled, if appropriate, for the next available Planning Board meeting or the application may be removed from future agendas altogether. Without prior authorization from the Planning Board, application submissions shall not be accepted at Planning Board meetings.

- At the time of submission, all required application materials shall be submitted. **Piecemeal** submissions **shall not** be accepted. Substitution of previously submitted materials shall not be permitted.

- All submissions shall be dated, with revision dates identified on new submissions.

- All submissions shall be accompanied by a cover letter describing the project and/or any changes as compared to previous submissions.

- To be considered complete for Planning Board hearing purposes, an application package shall contain the information identified in Parts IV and V of this application form.

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AT THE TIME OF SUBMISSION TO THE PLANNING DEPARTMENT PLEASE MAKE SURE THE FOLLOWING IS PROVIDED

- ✓ SUBMISSION OF A SINGLE PDF FILE (PLANS, APPLICATION FORM, OTHER PAPERWORK) ON A DISK, THUMBDRIVE OR EMAIL

- ✓ COVER LETTER DESCRIBING THE PROJECT OR CHANGES TO THE PROJECT

- ✓ ALL PLANS ARE SIGNED AND SEALED BY A LICENSED NYS PROFESSIONAL

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NOTICE TO APPLICANTS

In the Town of North Castle, the Planning Board is responsible for the review and approval of all applications concerning site plans, subdivisions and lot line changes; some applications concerning special use permits, wetlands permits and tree removal permits; and the environmental review of those applications over which it has jurisdiction. The Planning Board may also have an advisory role in connection with some applications before the Town Board, such as those involving other categories of special use permits and zoning amendments.

The Planning Board is composed of five volunteer members – all residents of North Castle – who are appointed by the Town Board for five-year terms. As part of the review of some applications, the Planning Board is assisted on an as-needed basis by other lay boards of the Town, such as the Conservation Board (CB), the Zoning Board of Appeals (ZBA), the Open Space Committee and the Architectural Review Board (ARB). As part of the review of most applications, the Planning Board is also assisted by the Director of Planning, the Town Engineer, the Town Attorney and other special consultants when required.

FEES:

If you submit an application for Planning Board review, you will be required to reimburse the Town for the cost of professional review services, including legal and engineering services, incurred in connection with the review of your application. The charges for professional planning review services have been $120/hour. If other types of professional consultant review services are required, those charges will be in accord with fees usually charged for such services and pursuant to a contractual agreement between the Town and such professional.

At the time of submission of an application, the Planning Board will require the establishment of an escrow account from which withdrawals shall be made to reimburse the Town for the cost of consultant fees and professional staff services.

ESCROW ACCOUNT:

Escrow Accounts are established for each application. Monies will be deducted from the account for professional review services rendered. Monthly escrow disbursement summaries will be mailed for your reference regarding your project. When the balance in such escrow account is reduced to one-third (1/3) of its initial amount, a letter will be mailed to the applicant and the applicant shall deposit additional funds into such account to restore its balance to the amount of the initial deposit. Additional information on these requirements is provided in the North Castle Town Code (see Sections 355-79B and 275-36.C).

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PROCEDURE:

Prior to submitting an application to the Planning Board for review and approval, prospective applicants should schedule an appointment with the Planning Board Secretary at (914) 273-3542 for a consultation with the Town Planner and the Town Engineer. When the appointment is made, a verbal description of the proposal should be provided to the Planning Board Secretary. The Town of North Castle is providing the services of the Director of Planning and the Town Engineer for ***initial*** consultation at no cost to the applicant so that it is possible to conduct the application review as efficiently as possible for the benefit of the applicant as well as the Planning Board.

After meeting with the Town Planner and Town Engineer, prospective applicants should prepare one complete set of application documents and plans. This set will be reviewed for completeness by the Town Planner. If determined to be incomplete, the Planning Department will submit a checklist indicating which items have not been adequately addressed. If determined to be complete, the checklist will be initialed and the Applicant should submit the remainder of the required application packages.

Once the checklist has been initialed and all application packages have been submitted, the Planning Board Secretary will schedule the application for the first available opening on the Planning Board's meeting agenda. However, if the required application material packages, including the pertinent application fee are not received at the Planning Board office by 12:00 PM, Monday, 14 days prior to the date of the Planning Board meeting at which you are scheduled to appear (or otherwise scheduled by the Planning Board Secretary), your application will be automatically removed from the agenda. At the discretion of the Planning Board Chairman, your application may be rescheduled, if appropriate, for the next available Planning Board meeting or the application may be removed from future agendas altogether. Additional requirements pertinent to each type of application are provided on the individual application forms, which you should carefully review prior to submitting your application.

When an application is deemed complete and submitted for review, it will be forwarded to the Planning Board Members and its professional advisors in advance of the meeting to allow adequate time for review, preparation of written reports and site inspections as necessary. Your application may also be forwarded to other boards and staff of the Town as well as to agencies outside of the Town, if required. Compliance with State Environmental Quality Review (SEQR) procedures is also required as part of the processing of all applications.

At your first appearance before the Planning Board, the Applicant will describe the project and the Planning Board will discuss any preliminary issues. The Planning Board discussion may be continued at future meetings, or if the Planning Board review has progressed sufficiently, the Application may be scheduled for a public hearing (if one is required) The public hearing may occur at a single Planning Board meeting, or it may be adjourned and continued at another Planning Board meeting. Because the nature and complexity of each application varies

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considerably, it is not possible to predict in advance the length of time needed to secure Planning Board approval. There are certain steps that you can take, however, to expedite the review process. These include, but are not limited to, the following:

- Be thoroughly familiar with the requirements pertinent to your application. Carefully review relevant provisions of the North Castle Town Code and the application form for your particular type of application. Be sure to check on what other types of approvals may be required in addition to that of the Planning Board. Approvals by other Town boards or departments as well as agencies outside of the Town may be required before you will be allowed to proceed with your project.

- Make sure that your application materials are accurately prepared and contain all required information. The information that we initially request is required, so make sure that your submission is complete. If supplementary information is requested as the review process continues, make sure that it is submitted in a timely fashion so the Planning Board can continue to move your application along.

- Follow up to make sure that your application materials are being submitted on time, or deliver them to the Planning office yourself.

- Attend the Planning Board meeting at which your application will be discussed and be on time for the meeting. If you cannot appear personally, make sure that your representative will be there and is thoroughly familiar with your application.

If the Application is approved by the Planning Board, a resolution of approval will be adopted by the Planning Board. It is the Applicant's responsibility to address any and all conditions of approval. Permits from the Building Department cannot be issued until all conditions have been addressed and the plans have been signed by the Planning Board Chair and the Town Engineer.

ON LINE AGENDAS & PLANNING DEPARTMENT MEMORANDA CAN BE REVIEWED AT

WWW.NORTHCASTLENY.COM

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INFORMATION REGARDING PUBLIC HEARINGS

1. The North Castle Assessor's Office shall prepare a list of neighbors to be notified for the neighbor notifications and public hearings - **A minimum of one week's notice is required** . The fee is $50.00 which includes the list of neighbors and two sets of labels for mailing. The Assessor's Office may be reached Monday – Friday from 8:30 a.m.– 4:30 p.m. at 273-3324. You may also e-mail your request to assessor@northcastleny.com

   When requesting your list please reference the list of application types below so that you can tell the Assessor's office how many feet on all sides of the property to create the list for.

   Subdivisions - All lots zoned R-10, R-5 and R-2F shall notice all neighbors within 200 feet from all sides of their property. All other zoning districts shall notice neighbors within 500 feet from all sides of their property. Public hearing notice must be published in the newspaper.

   Special Use Permit for Structures over 800 sq ft. & Accessory Apartment - All Zoning Districts shall notice all neighbors within 250 feet from all sides of their property. Public hearing notice must be published in the newspaper.

   Site Plan, Non Residential - All Zoning Districts shall notice all neighbors within 250 feet from all sides of their property. Public hearing notice must be published in the newspaper.

   Site Plan, Residential/ Neighbor Notification – All zoning districts R-3/4A or smaller shall notice all neighbors within 250' from all sides of their property. All zoning districts zoned R-1A or larger shall notice all neighbors within 500' from all sides of the property. No public hearing required, no publication in the newspaper required.

   Wetlands Permit - All Zoning Districts shall notice all abutting property owners. Public hearing notice must be published in the newspaper.

2. The Director of Planning will prepare a Public Notice. The applicant and or professional will review, sign, date and return to the Planning Department Secretary. If there are any changes necessary, please edit and return for corrections. The corrections will be made and emailed back to the applicant who will forward it to the Journal Newspaper, when applicable.

   If notification to the newspaper is not required, please continue to #3.

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You may email your public notice to legals@lohud.com. Please request an affidavit of publication which must be submitted to the Planning Board secretary prior to the public hearing. The Journal News requires three days prior notice before 12 noon, not counting weekends and holidays, for ad placement. Make sure the notice placement of the ad in the Greater Westchester Area. This notice cannot be published any sooner than 20 days prior to the meeting and must be published no less than 10 days prior to the meeting.

If you have any questions regarding your publication you may call 888-516-9220:
Email Address: legals@lohud.com

It is suggested that you purchase the newspaper for your records the day the notice is published.

3. Send out the Public Hearing Notice/ Neighbor Notification by First Class Mail. Notice shall be mailed by the applicant in official envelopes provided by the North Castle Planning Department; the list of noticed neighbors will be prepared by the Assessor's Office. This must be sent out no less than 10 days prior to the meeting and no more than 20 days prior to the meeting date. A Certificate of Mailing (PS Form 3817 or 3877) shall be filled out and post marked by the Post Office on the day of mailing. Neighbor Notifications – no publication in the newspaper required.

4. The Friday before the meeting or no later than 12:00 p.m. the day of the meeting the following **must** be submitted.

   - List of Neighbors prepared by the Assessor's Office
   - Certificate of Mailing – PS form 3817 or 3877 post marked by the US Post Office
   - Affidavit of publication from the Newspaper (only if published in the newspaper)

UNITED STATES POSTAL SERVICE®

Firm Mailing Book For Accountable Mail

Name and Address of Sender	Check type of mail or service	
	☐ Adult Signature Required ☐ Adult Signature Restricted Delivery ☐ Certified Mail ☐ Certified Mail Restricted Delivery ☐ Collect on Delivery (COD) ☐ Insured Mail ☐ Priority Mail ☐ Priority Mail Express ☐ Registered Mail ☐ Return Receipt for Merchandise ☐ Signature Confirmation ☐ Signature Confirmation Restricted Delivery	Affix Stamp Here *(if issued as an international certificate of mailing or for additional copies of this receipt).* ***Postmark with Date of Receipt.***

USPS Tracking/Article Number	Addressee (Name, Street, City, State, & ZIP Code™)	Postage	(Extra Service) Fee	Handling Charge	Actual Value if Registered	Insured Value	Due Sender if COD	ASR Fee	ASRD Fee	RD Fee	RR Fee	SC Fee	SCRD Fee	SH Fee
1.														
2.														
3.														
4.				Handling Charge - if Registered and over $50,000 in value				Adult Signature Required	Adult Signature Restricted Delivery	Restricted Delivery	Return Receipt	Signature Confirmation	Signature Confirmation Restricted Delivery	Special Handling
5.														
6.														
7.														
8.														

Total Number of Pieces Listed by Sender	Total Number of Pieces Received at Post Office	Postmaster, Per *(Name of receiving employee)*

Complete in Ink

Privacy Notice: For more information on USPS privacy policies, visit *usps.com/privacypolicy.*

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APPLICATIONS REQUIRING PLANNING BOARD APPROVAL
SCHEDULE OF APPLICATION FEES

Type of Application	Application Fee
Site Development Plan	$200.00
Each proposed Parking Space	$10 x 15 spaces = $150.00
Special Use Permit (each)	$200 (each)
Preliminary Subdivision Plat	$300 1st Lot $200 (each additional lot)
Final Subdivision Plat	$250 1st Lot $100 (each additional lot)
Tree Removal Permit	$75
Wetlands Permit	$50 (each)
Short Environmental Assessment Form	$50
Long Environmental Assessment Form	$100
Recreation Fee	$10,000 Each Additional Lot
Discussion Fee	$200.00

Prior to submission of a sketch or preliminary subdivision Plat, an applicant or an applicant's representative wishes to discuss a subdivision proposal to the Planning Board, a discussion fee of $200.00 shall be submitted for each informal appearance before the board.

Any amendment to previously approved applications requires new application forms and Fes

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PLANNING BOARD SCHEDULE OF ESCROW ACCOUNT DEPOSITS

Type of Application Deposit*	Amount of Initial Escrow Account
Concept Study	$500.00
Site Plan Waiver for Change of Use	$500.00
Site Development Plan for:	
Multifamily Developments	$3,000.00 plus $100.00 per proposed dwelling unit
Commercial Developments	$3,000.00 plus $50.00 for each required parking space $50.00x15 spaces = $750.00 Escrow = $3,750.00
1 or 2 Family Projects	$2,000.00
Special Use Permit	$2,000.00 plus $50.00 for each required parking space
Subdivision:	
Lot Line Change resulting in no new lots	$1,500.00
All Others	$3,000.00 plus $200.00 per proposed new lot in excess of two (2)
Preparation or Review of Environmental Impact Statement	$15,000.00

* If a proposed action involves multiple approvals, a single escrow account will be established. The total amount of the initial deposit shall be the sum of the individual amounts indicated. When the balance in such escrow account is reduced to one-third (1/3) of its initial amount, the applicant shall deposit additional funds into such account to restore its balance to the amount of the initial deposit.

Applicant Signature

Date: 3/11/24

I. IDENTIFICATION OF PROPERTY OWNER, APPLICANT AND PROFESSIONAL REPRESENTATIVES

Name of Property Owner: Summit Country Club, LLC (Mr. Jeffrey B. Mendell)

Mailing Address: 568 & 570 Bedford Road, Armonk, NY 10504

Telephone: (914) 391-2900 Fax: ________ e-mail jbmendell@gmail.com

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Name of Applicant (if different): (Same As Owner)

Address of Applicant: ________

Telephone: ________ Fax: ________ e-mail ________

Interest of Applicant, if other than Property Owner:

____

Is the Applicant (if different from the property owner) a Contract Vendee?

Yes ☐ No ☒

If yes, please submit affidavit sating such. If no, application cannot be reviewed by Planning Board

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Name of Professional Preparing Site Plan:
JMC Planning Engineering Landscape Architecture & Land Surveying PLLC (David P. Lombardi, PE)

Address: 120 Bedford Road, Armonk, NY 10504

Telephone: (914) 273-5225 Fax: (914) 273-2102 e-mail dlombardi@jmcpllc.com

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Name of Other Professional: Granoff Architects (Kenneth S. Andersen, AIA)

Address: 330 Railroad Avenue, Greenwich, CT 06830

Telephone: (203) 625-9460 Fax: ________ e-mail ka@granoffarchitects.com

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Name of Attorney (if any): DelBello Donnellan Weingarten Wise & Wiederkehr, LLP (Mark P. Weingarten, Esq.)

Address: 1 North Lexington Avenue, Floor 11, White Plains, NY 10601

Telephone: (914) 681-0200 Fax: (914) 684-0288 e-mail mpw@ddw-law.com

Applicant Acknowledgement

By making this application, the undersigned Applicant agrees to permit Town officials and their designated representatives to conduct on-site inspections in connection with the review of this application.

The Applicant also agrees to pay all expenses for the cost of professional review services required for this application.

It is further acknowledged by the Applicant that all bills for the professional review services shall be mailed to the Applicant, unless the Town is notified in writing by the Applicant at the time of initial submission of the application that such mailings should be sent to a designated representative instead.

Signature of Applicant: ______________________ Date: 03/11/2024

Signature of Property Owner: ______________________ Date: 03/11/2024

MUST HAVE BOTH SIGNATURES

II. IDENTIFICATION OF SUBJECT PROPERTY

Street Address: 568 & 570 Bedford Road (NY-22)

Location (in relation to nearest intersecting street):

±250 feet (north, south, east or west) of Upland Lane

Abutting Street(s): Bedford Road (NY-22)

Tax Map Designation (NEW): Section 101.02 Block 1 Lot 28.1 & 28.2

Tax Map Designation (OLD): Section 2 Block 8 Lot 7.C1A

Zoning District: R-2A/GCCFO Total Land Area Approx. 156 Acres

Land Area in North Castle Only (if different) ______

Fire District(s) Armonk School District(s) Byram Hills Central

Is any portion of subject property abutting or located within five hundred (500) feet of the following:

The boundary of any city, town or village?
No X Yes (adjacent) ____ Yes (within 500 feet) ____
If yes, please identify name(s): ______

The boundary of any existing or proposed County or State park or any other recreation area?
No X Yes (adjacent) ____ Yes (within 500 feet) ____

The right-of-way of any existing or proposed County or State parkway, thruway, expressway, road or highway?
No ____ Yes (adjacent) X Yes (within 500 feet) ____
(Interstate 684)

The existing or proposed right-of-way of any stream or drainage channel owned by the County or for which the County has established channel lines?
No ____ Yes (adjacent) ____ Yes (within 500 feet) X
(Byram River - located across I-684)

The existing or proposed boundary of any county or State owned land on which a public building or institution is situated?
No X Yes (adjacent) ____ Yes (within 500 feet) ____

The boundary of a farm operation located in an agricultural district?
No X Yes (adjacent) ____ Yes (within 500 feet) ____

Does the Property Owner or Applicant have an interest in any abutting property?
No X Yes ____

If yes, please identify the tax map designation of that property:

______

III. DESCRIPTION OF PROPOSED DEVELOPMENT

Proposed Use: Golf Course Phase (Maintenance Building)

Gross Floor Area: Existing N/A S.F. Proposed 9,048 S.F.

Proposed Floor Area Breakdown:

Retail ____ S.F.; Office 264 S.F.;

Industrial ____ S.F.; Institutional ____ S.F.;

Other Nonresidential 8,784 S.F.; Residential ____ S.F.;

Number of Dwelling Units: N/A

Number of Parking Spaces: Existing N/A Required 15 (Maintenance Staff) Proposed 15

Number of Loading Spaces: Existing N/A Required N/A Proposed N/A

Earthwork Balance: Cut TBD C.Y. Fill TBD C.Y.

Will Development on the subject property involve any of the following:

Areas of special flood hazard? No X Yes ____
(If yes, application for a Development Permit pursuant to Chapter 177 of the North Castle Town Code may also be required)

Trees with a diameter at breast height (DBH) of 8" or greater?

No ____ Yes X
(If yes, application for a Tree Removal Permit pursuant to Chapter 308 of the North Castle Town Code may also be required.)

Town-regulated wetlands? No ____ Yes X
Approximately 250 s.f. of Town-regulated wetland buffer disturbance for site grading (requesting an Administrative Wetland Permit).
(If yes, application for a Town Wetlands Permit pursuant to Chapter 340 of the North Castle Town Code may also be required.)

State-regulated wetlands? No X Yes ____
(If yes, application for a State Wetlands Permit may also be required.)

IV. SUBMISSION REQUIREMENTS

The site development plan application package shall include all materials submitted in support of the application, including but not limited to the application form, plans, reports, letters and SEQR Environmental Assessment Form. **Submission of the following shall be required:**

- One (1) PDF set of the site development plan application package in a single PDF file .
- A check for the required application fee and a check for the required Escrow Account, both made payable to "Town of North Castle" in the amount specified on the "Schedule of Application Fees."

(continued next page)

V. INFORMATION TO BE INCLUDED ON SITE DEVELOPMENT PLAN

The following checklist is provided to enable the Applicant to determine if he/she has provided enough information on the site development plan for the Planning Board to review his/her proposal. Applicants are advised to review ARTICLE VIII, Site Development Plan of the North Castle Town Code for a complete enumeration of pertinent requirements and standards prior to making application for site development plan approval.

The application for site development plan approval will not be accepted for Planning Board review unless all items identified below are supplied and **so indicated with a check mark in the blank line provided.** If a particular item is not relevant to the subject property or the development proposal, **the letters "NA" should be entered instead**. In addition, the project will not be scheduled on a Planning Board agenda until the Applicant receives an initialed "site plan checklist" from the Planning Department.

The information to be included on a site development plan shall include:

Legal Data:

✓ Name of the application or other identifying title.

✓ Name and address of the Property Owner and the Applicant, (if different).

✓ Name, address and telephone number of the architect, engineer or other legally qualified professional who prepared the plan.

✓ Names and locations of all owners of record of properties abutting and directly across any and all adjoining streets from the subject property, including the tax map designation of the subject property and abutting and adjoining properties, as shown on the latest tax records.

✓ Existing zoning, fire, school, special district and municipal boundaries.

✓ Size of the property to be developed, as well as property boundaries showing dimensions and bearings as determined by a current survey; dimensions of yards along all property lines; name and width of existing streets; and lines of existing lots, reservations, easements and areas dedicated to public use.

✓ Reference to the location and conditions of any covenants, easements or deed restrictions that cover all or any part of the property, as well as identification of the document where such covenants, easements or deed restrictions are legally established.

✓ Schedule of minimum zoning requirements, as well as the plan's proposed compliance with those requirements, including lot area, frontage, lot width, lot depth, lot coverage, yards, off-street parking, off-street loading and other pertinent requirements.

✓ Locator map, at a convenient scale, showing the Applicant's entire property in relation to surrounding properties, streets, etc., within five hundred (500) feet of the site.

✓ North arrow, written and graphic scales, and the date of the original plan and all revisions, with notation identifying the revisions.

✓ A signature block for Planning Board endorsement of approval.

Existing Conditions Data:

✓ Location of existing use and design of buildings, identifying first floor elevation, and other structures.

✓ Location of existing parking and truck loading areas, with access and egress drives thereto.

✓ Location of existing facilities for water supply, sanitary sewage disposal, storm water drainage, and gas and electric service, with pipe sizes, grades, rim and inverts, direction of flow, etc. indicated.

✓ Location of all other existing site improvements, including pavement, walks, curbing, retaining walls and fences.

✓ Location, size and design of existing signs.

✓ Location, type, direction, power and time of use of existing outdoor lighting.

N/A Location of existing outdoor storage, if any.

✓ Existing topographical contours with a vertical interval of two (2) feet or less.

✓ Location of existing floodplains, wetlands, slopes of 15% or greater, wooded areas, landscaped areas, single trees with a DBH of 8" or greater, rock outcrops, stone walls and any other significant existing natural or cultural features.

Proposed Development Data:

✓ Proposed location of lots, streets, and public areas, and property to be affected by proposed easements, deed restrictions and covenants.

✓ Proposed location, use and architectural design of all buildings, including proposed floor elevations and the proposed division of buildings into units of separate occupancy.

✓ Proposed means of vehicular and pedestrian access to and egress from the site onto adjacent streets.

N/A Proposed sight distance at all points of vehicular access.

✓ Proposed number of employees for which buildings are designed

✓ Proposed streets, with profiles indicating grading and cross-sections showing the width of the roadway; the location and width of sidewalks; and the location and size of utility lines.

✓ Proposed location and design of any pedestrian circulation on the site and off-street parking and loading areas, including handicapped parking and ramps, and including details of construction, surface materials, pavement markings and directional signage.

✓ Proposed location and design of facilities for water supply, sanitary sewage disposal, storm water drainage, and gas and electric service, with pipe sizes, grades, rim and inverts, direction of flow, etc. indicated.

✓ Proposed location of all structures and other uses of land, such as walks, retaining walls, fences, designated open space and/or recreation areas and including details of design and construction.

N/A Location, size and design of all proposed signs.

TBD Location, type, direction, power and time of use of proposed outdoor lighting.

TBD Location and design of proposed outdoor garbage enclosure.

✓ Location of proposed outdoor storage, if any.

N/A Location of proposed landscaping and buffer screening areas, including the type (scientific and common names), size and amount of plantings.

N/A Type of power to be used for any manufacturing

✓ Type of wastes or by-products to be produced and disposal method

N/A In multi-family districts, floor plans, elevations and cross sections

✓ The proposed location, size, design and use of all temporary structures and storage areas to be used during the course of construction.

✓ Proposed grade elevations, clearly indicating how such grades will meet existing grades of adjacent properties or the street.

✓ Proposed soil erosion and sedimentation control measures.

N/A For all proposed site development plans containing land within an area of special flood hazard, the data required to ensure compliance with Chapter 177 of the North Castle Town Code.

✓ For all proposed site development plans involving clearing or removal of trees with a DBH of 8" or greater, the data required to ensure compliance with Chapter 308 of the North Castle Town Code.

✓ For all proposed site development plans involving disturbance to Town-regulated wetlands, the data required to ensure compliance with Chapter 340 of the North Castle Town Code.

Town of North Castle Building Department
17 Bedford Road
Armonk, New York 10504-1898
Telephone: (914) 273-3000 ext. 44 Fax: (914) 273-3554
www.northcastleny.com

TOWN OF NORTH CASTLE TREE REMOVAL APPLICATION PERMIT

WHEN A PERMIT IS REQUIRED

The Town of North Castle finds and declares that the preservation of Trees is necessary to protect the health, safety and general welfare of the Town of North Castle because trees provide shade, impede soil erosion, aid water absorption and retention, inhibit excess runoff and flooding, enhance air quality, offer a natural barrier to noise, provide a natural habitat for wildlife, provide screening, enhance property values and add to the aesthetic quality of the community.

A tree removal permit is required under the following circumstances:

1. Removal of a tree within a property's regulated setback zone or landscape buffer zone (All trees 8" or greater DBH – Diameter at Breast Height).

   The regulated setback zone refers to the area of vegetative screening or landscaping measured from each property line of a residentially zoned property toward the interior of such property.

   R-4A One-Family Residence District: 25 feet.
   R-2A One-Family Residence District: 15 feet.
   R-1.5A One-Family Residence District: 12 feet.
   R-1A One-Family Residence District: 10 feet.
   All other residential districts: 5 feet

2. Removal of a Significant Tree that's 24 inches or greater DBH at 4 feet.

3. Removal of any tree in wetlands, within clearing lines, or Conservation Easements.

3. Any cutting of more than 5 trees of 8 inches in diameter or more in any one quarter-acre area, within a 12 month period with such area being measured as a square with each side measuring 104 feet.

4. Removal of any street tree within the Right of Way.

5. Removal in any calendar year of more than ten (10) trees on any lot.

Town of North Castle Building Department

17 Bedford Road

Armonk, New York 10504-1898

Telephone: (914) 273-3000 ext. 44 Fax: (914) 273-3554

www.northcastleny.com

Tree Removal Application

NOTE: TWO (2) SETS OF ALL REQUIRED DOCUMENTS MUST BE SUBMITTED WITH THIS APPLICATION

Section I- PROJECT ADDRESS: 568 & 570 Bedford Road (NY-22), Armonk, NY 10504 DATE: 03/11/2024

Section II- CONTACT INFORMATION: (Please print clearly. All information must be current)

APPLICANT: Summit Country Club, LLC (Mr. Jeffrey B. Mendell)

ADDRESS: 568 & 570 Bedford Road, Armonk, NY 10504

PHONE: (914) 391-2900 MOBILE: EMAIL: jbmendell@gmail.com

PROPERTY OWNER: (Same As Applicant)

ADDRESS:

PHONE: MOBILE: EMAIL:

Tree Company: TBD

ADRESS:

PHONE: MOBILE: EMAIL:

Section III- REGULATED ACTIVITY: (Check all that apply)

- [ ] Removal of a tree within a property's regulated setback zone or landscaped buffer zone.
- [x] Removal of a significant tree.
- [ ] Removal of any tree in the wetlands, within clearing lines, or conservation easements.
- [x] Clearing/Thinning.
- [ ] Removal of any tree within the right of way.
- [x] Removal in any calendar year of more than ten (10) trees on any lot.

Section IV- DESCRIPTION OF WORK: (Please include how many trees will be removed)

The construction of a proposed maintenance building in the "utility complex area" to serve the existing golf course with associated off-street parking and stormwater management improvements. The removal of 31 Town-regulated trees and approximately 250 s.f. of Town-regulated wetland buffer disturbance (requesting an Administrative Wetland Permit) is required for the construction of the project.

Section V- FUTURE PLANS:

Do you have any intention of tearing down the house to build a new house within the next six (6) months. ☐ Yes ☑ No

Town of North Castle Building Department

Section V- FUTURE PLANS: (Continued)

Do you have any intention to expand the house over 1500 square feet within the next six (6) months? ☐ Yes ☑ No

Section VI- RESTRICTION:

Is there any conservation easements on your deed? ☑ Yes ☐ No

Section VII- PERMIT FEES: ($50 application fee and a $25 Certificate of Compliance fee)

Section VIII- APPLICANT CERTIFICATION

I hereby certify that I have read the instructions & examined this application and know the same to be true & correct. All provisions of laws & ordinances covering this type of work will be complied with whether specified herein or not. The granting of a permit does not presume to give authority to violate or cancel the provisions of any other state or local law regulating construction or land use or the performance of construction.

Signature: [signature] Date: 3/11/24

Section IX- AFFIDAVIT OF OWNER AUTHORIZATION: **(To be notarized)**

STATE OF NEW YORK }
COUNTY OF WESTCHESTER } SS:

The applicant Jeffrey B. Mendell has proper consent from said owner to make this application as submitted and said owner agrees to all terms and conditions placed upon same.

Owner's Name (PRINT) Jeffrey B. Mendell Owner's Signature [signature]

Sworn to before me this 11th day of March, 2024 Kimberly Romanino

KIMBERLY ROMANINO
NOTARY PUBLIC-STATE OF NEW YORK
No. 01RO6134291
Qualified In Putnam County
My Commission Expires September 26, 2025

OFFICE USE ONLY – DO NOT WRITE BELOW THIS LINE

Zone:________ Section:________ Block:________ Lot:________

Building Department Checklist:

Does this permit require RPRC approval? ☐ Yes ☐ No

Has a plan delineating all improvements, site grading and disturbance proposed on the subject property. ☐ Yes ☐ No

GC License Work. Comp. Liability. Ins. Disability Two sets of documents

Permit Fee $75.00 Payment type: Check #: ____________ Cash

Name on check: ____________________ Received By: ____________________ Date:________

Reviewed By: ____________________ Date: ____________________

Building Inspector Approval: ____________________ Date: ____________

Conditions: ____

Short Environmental Assessment Form
Part 1 - Project Information

Instructions for Completing

Part 1 – Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 – Project and Sponsor Information

An Environmental Impact Statement (EIS) was prepared for the project and the Planning Board issued their New York State Environmental Quality Review Act (SEQRA) Findings Statement on April 22, 2015

Name of Action or Project:

The Summit Club at Armonk - Golf Course Phase (Maintenance Building)

Project Location (describe, and attach a location map):

568 & 570 Bedford Road (NY 22), Armonk, NY 10504

Brief Description of Proposed Action:

The construction of a proposed maintenance building in the "utility complex area" to serve the existing golf course with associated off-street parking and stormwater management improvements. The removal of 31 Town-regulated trees and approximately 250 s.f. of Town-regulated wetland buffer disturbance (requesting an Administrative Wetland Permit) is required for the construction of the project.

Name of Applicant or Sponsor: Summit Country Club, LLC (Mr. Jeffrey B. Mendell)	Telephone: (914) 391-2900 E-Mail: jbmendell@gmail.com

Address:

568 & 570 Bedford Road

City/PO:	State:	Zip Code:
Armonk	NY	10504

	NO	YES
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.	☑	☐
2. Does the proposed action require a permit, approval or funding from any other government Agency? If Yes, list agency(s) name and permit or approval:	☐	☐

3. a. Total acreage of the site of the proposed action? ±156 acres
b. Total acreage to be physically disturbed? ±1.23 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? ±156 acres

(This area was previously included in the total disturbance area for the Residential Application)

4. Check all land uses that occur on, are adjoining or near the proposed action:

5. ☐ Urban ☐ Rural (non-agriculture) ☐ Industrial ☑ Commercial ☑ Residential (suburban)
☐ Forest ☐ Agriculture ☐ Aquatic ☑ Other(Specify): Golf Course & Community/Institutional (School)
☐ Parkland

	NO	YES	N/A
5. Is the proposed action,			
a. A permitted use under the zoning regulations?	☐	☑	☐
b. Consistent with the adopted comprehensive plan?	☐	☑	☐

	NO	YES
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	☐	☑
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area? If Yes, identify: ______	☑	☐
8. a. Will the proposed action result in a substantial increase in traffic above present levels?	☑	☐
b. Are public transportation services available at or near the site of the proposed action?	☑	☐
c. Are any pedestrian accommodations or bicycle routes available on or near the site of the proposed action?	☑	☐
9. Does the proposed action meet or exceed the state energy code requirements? If the proposed action will exceed requirements, describe design features and technologies: ______	☐	☑
10. Will the proposed action connect to an existing public/private water supply? If No, describe method for providing potable water: ______	☐	☑
11. Will the proposed action connect to existing wastewater utilities? If No, describe method for providing wastewater treatment: Connection to a new on-site sewage treatment plant with associated NYSDEC SPEDES Permit.	☑	☐
12. a. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places?	☑	☐
b. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? (Archaeological Survey prepared for EIS - No Significant Findings)	☐	☑
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency?	☐	☑
b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody?	☑	☐
If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres: ______		

14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply: ☐ Shoreline ☑ Forest ☐ Agricultural/grasslands ☑ Early mid-successional ☑ Wetland ☐ Urban ☑ Suburban		
15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered?	NO ☑	YES ☐
16. Is the project site located in the 100-year flood plan?	NO ☐	YES ☑
17. Will the proposed action create storm water discharge, either from point or non-point sources? If Yes,	NO ☐	YES ☑
a. Will storm water discharges flow to adjacent properties?	☐	☑
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)? If Yes, briefly describe:	☐	☑
18. Does the proposed action include construction or other activities that would result in the impoundment of water or other liquids (e.g., retention pond, waste lagoon, dam)? If Yes, explain the purpose and size of the impoundment:	NO ☐	YES ☑
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility? If Yes, describe:	NO ☑	YES ☐
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste? If Yes, describe:	NO ☑	YES ☐

I CERTIFY THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Applicant/sponsor/name: JMC Planning Engineering Landscape Architecture & Land Surveying, PLLC, (Paul R. Sysak, RLA - Owners Agent) Date: 03/11/2024

Signature: Paul Sysak Title: Senior Project Manager

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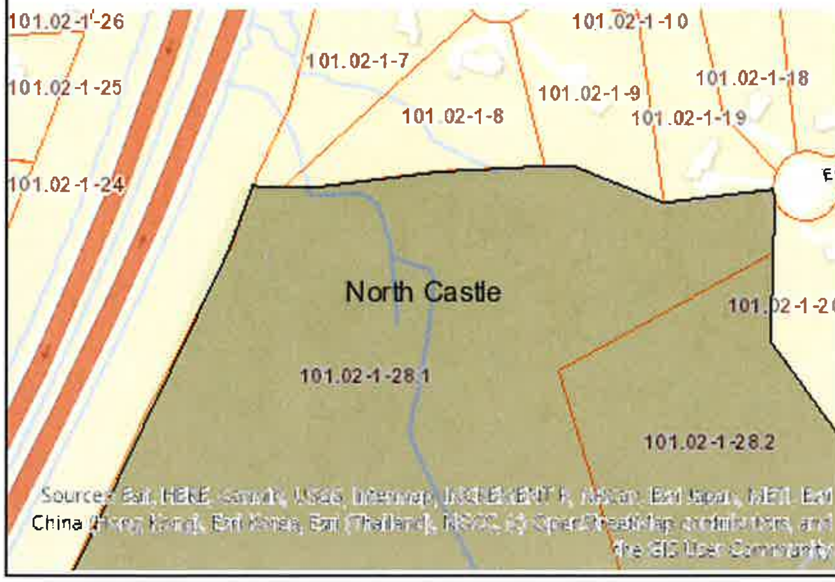
PRINT FORM

EAF Mapper Summary Report

Monday, March 4, 2024 9:17 AM



Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.

Part 1 / Question 7 [Critical Environmental Area]	No
Part 1 / Question 12a [National or State Register of Historic Places or State Eligible Sites]	No
Part 1 / Question 12b [Archeological Sites]	Yes
Part 1 / Question 13a [Wetlands or Other Regulated Waterbodies]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
Part 1 / Question 15 [Threatened or Endangered Animal]	No
Part 1 / Question 16 [100 Year Flood Plain]	Yes
Part 1 / Question 20 [Remediation Site]	No