SCHOCK GROUP LLC
SURVEYING & LAND DEVELOPMENT SERVICES

Schock Group LLC
1958 Butler Pike, Suite 200
Conshohocken, PA 19428
610-590-7373
SchockGroup.com

STORMWATER MANAGEMENT FEASIBILITY NARRATIVE

FOR

200 S ITHAN AVENUE

APRIL 26, 2021

GPX Realty Partners proposes to develop the land at 200 S Ithan Avenue in Radnor Township. The total tract, which sits along Ithan Avenue and extends back to Trianon Lane, contains 6.95 acres and is composed of four individual parcels. The existing manor house burned down in 2012 and was demolished out of concerns for safety, with the remaining garage portion and pool to be demolished as part of this development. The land is part of the Trianon Subdivision and is being developed in accordance with Radnor Township's Density Modification provisions of the zoning ordinance.

The majority of the site is open lawn with some wooded areas and areas of steep slopes. The site will be developed with nine new single family dwellings on nine new individual residential building lots, with a single new cul-de-sac road serving those nine lots.

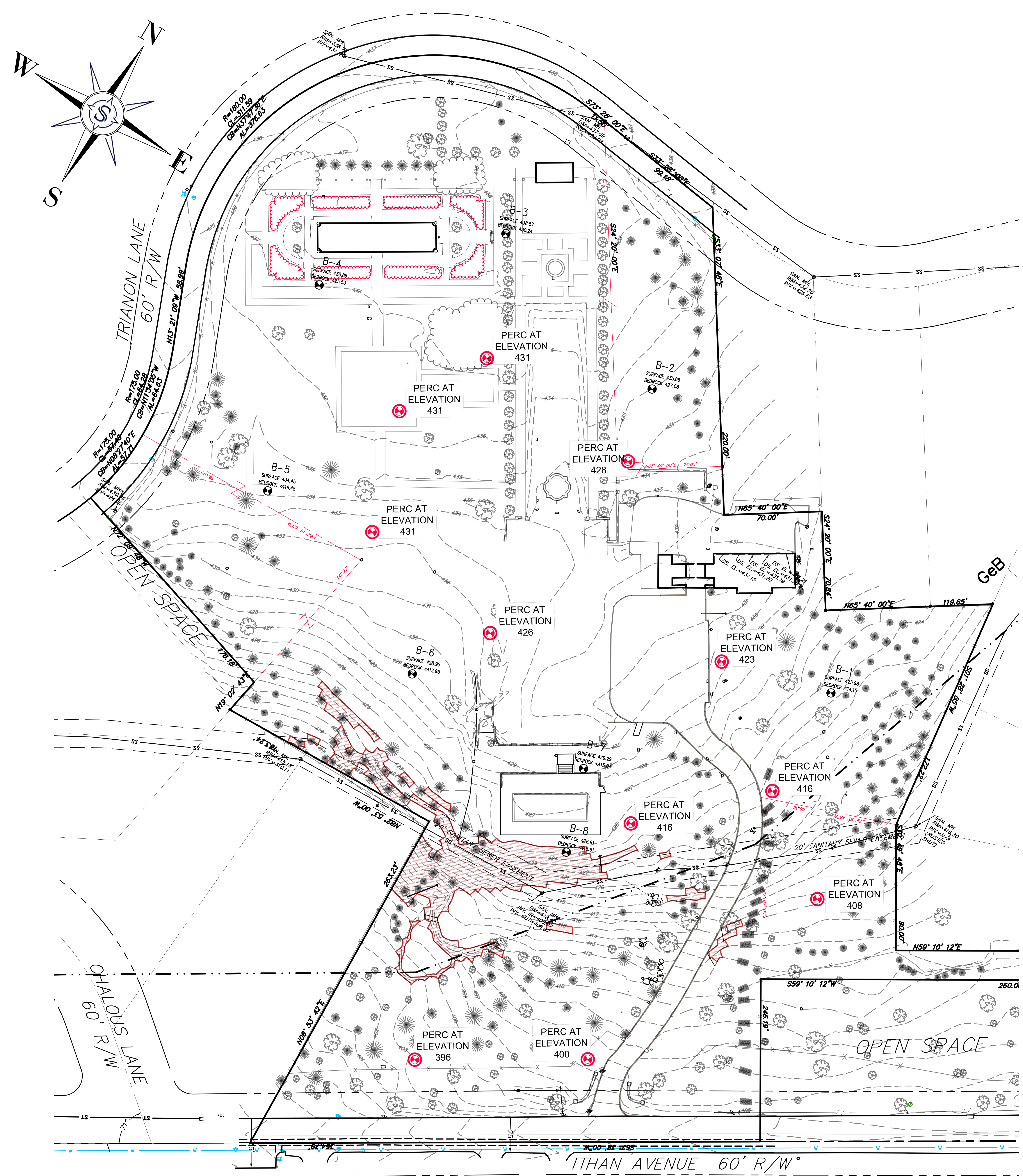
Stormwater management for the proposed development will be provided by several structural BMPs sized to control the increase in storm water runoff from the developed sub-basin. Individual on-lot underground pipe systems are proposed to control the increase in runoff generated by the new single family dwellings and associated improvements. These ground water recharge seepage beds will be installed on each lot in order to spread the areas of recharge throughout the site. A common underground detention/recharge pipe system will be installed to control the increase in runoff generated by the proposed public road and additional discharge from the on-lot systems. The public road will have PennDOT spec inlets installed to collect storm water and direct that water to the common underground detention/recharge pipe basin. Overflow from the proposed detention facilities will be piped to an existing township inlet along Ithan Avenue in accordance with Township stormwater standards.

This site is located in the Radnor Ithan Creek Watershed District 'B-2'. The township Stormwater management ordinance requires that several storm water management guidelines must be met by the proposed stormwater facilities. The ordinance requires that where feasible, the increase in storm water runoff for the 2-year storm event shall be infiltrated into the ground via percolation. Water quality treatment must be also provided based on the township's calculation formula and rate control through the 100-year storm must be provided as follows: the 2-year post-development rate to the 1-year pre development rate, the 5-year post to the 2-year pre, the 10-year post to the 5-year pre, the 25-year post to the 5-year pre, the 50-year post to the 10-year pre, and straight rate control for the 100-year storm event. The proposed stormwater management facilities are intended to be designed to meet these Township requirements as well as the DEP NPDES General Permit requirements.

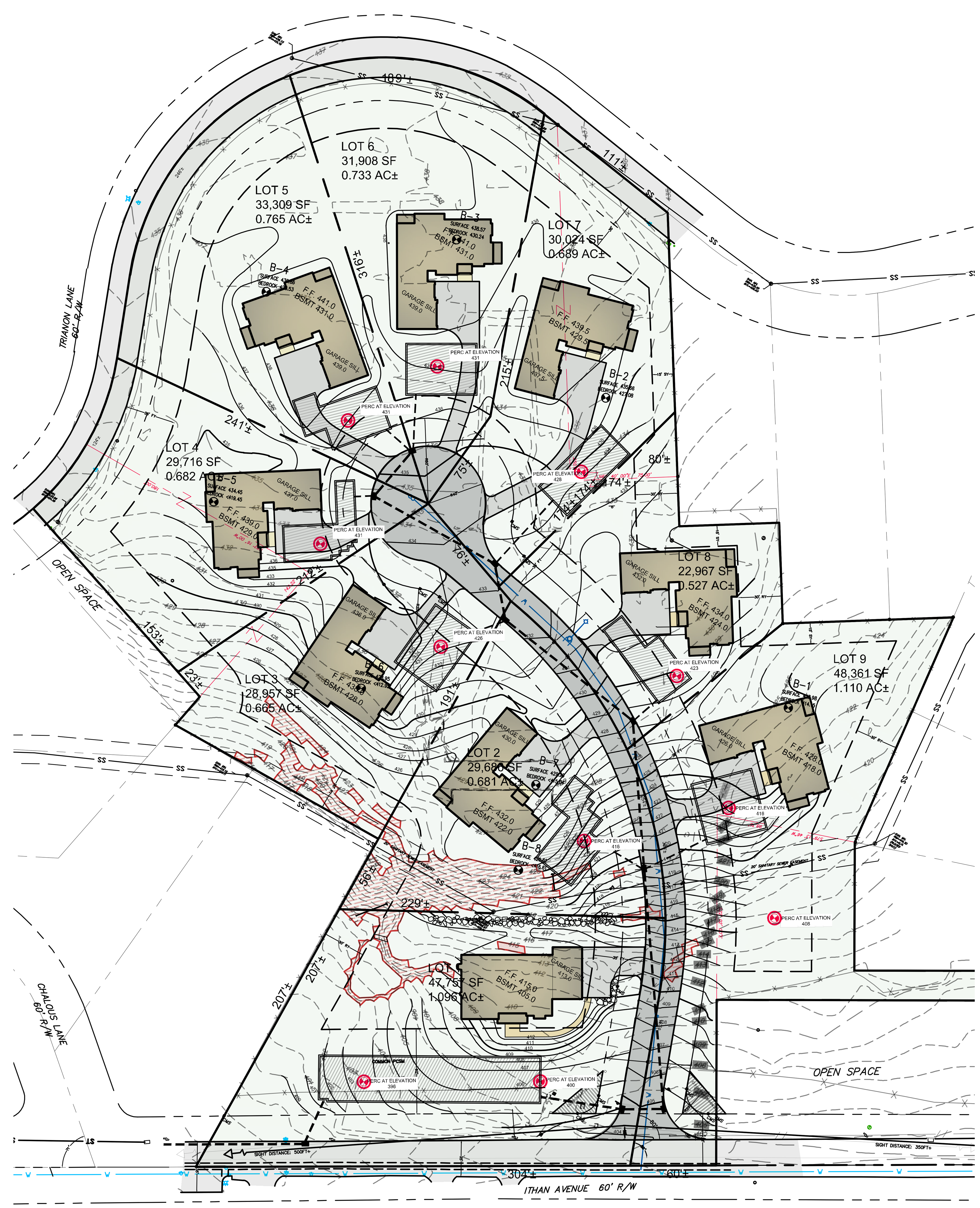
Soil types were obtained via the Web Soil Survey proved by the United States Department of Agriculture and are depicted on the site plan. The majority of soils on the site are of the Glenelg Series consists of deep, well drained soils of uplands. The soils developed in material weathered mainly from granite, gneiss and mica schist. The Glenelg soils have moderate available moisture capacity and moderate permeability. The

majority of the development is proposed within these Glenelg soils, with two of the lots containing portions of Glennville soils.
Stormwater infiltration tests were performed on site by David Blackmore Associates, the results of which are attached to this narrative. The results show good infiltration rates throughout most of the site. Weathered rock limiting zones were noted in two of the test locations however the limiting zones are deep enough to allow the proposed underground detention basins to maintain the minimum two (2) feet distance above any limiting zones as required by Radnor Township Code §245-22.A.1(a). All test pits were able to achieve infiltration above their limiting zones. Per Radnor Township Code §245-22.A.1(c), a system needs to drain within 92 hours to satisfy the infiltration requirement. The lowest drainage rate recorded at the site of 0.25 inches per hour would adequately infiltrate 2ft of water quality volume within that time. The infiltration rate at the two areas being considered for the common system were above expectations and will provide adequate infiltration volumes to meet both township and county NPDES water quality requirements.

Based on the infiltration tests performed, the site will be able to meet and exceed the required infiltration requirements of Radnor township and PADEP for the impervious areas being proposed as part of the development at 200 S Ithan Avenue. The infiltration report is attached to this narrative.



PERC TEST LOCATIONS – EXISTING CONDITIONS



PERC TEST LOCATIONS – PROPOSED CONDITIONS

LINETYPE LEGEND

PROPERTY LINE
ADJOINER PROPERTY LINE
EASEMENT LINE
RIGHT-OF-WAY LINE
BUILDING SETBACK
CONCRETE EDGE
ASPHALT EDGE
EXISTING CURB TO REMAIN
EXISTING ADJACENT BUILDING
SOILS LINE
EASEMENT LINE
BUILDING SETBACK
FENCE LINE
OVERHEAD ELECTRIC
E — ELECTRIC LINE
G — GAS LINE
T/C — TELECOM LINE
W — WATER LINE
SS — SANITARY LINE
ST — EXISTING STORM PIPES
378 — EXISTING 2' CONTOUR
380 — EXISTING 10' CONTOUR

SCALE: 1" = 50'

50 0 50 100 200

SYMBOL LEGEND

TG TOP OF GRATE ELEV.	ELECTRIC BOX
INV. INVERT ELEVATION	FIRE HYDRANT
TW TOP OF WALL ELEV.	FIRE VALVE
BW BOTTOM OF WALL ELEV.	GAS VALVE
TBC TOP BACK OF CURB ELEV.	EVERGREEN TREE
BC BOTTOM BACK OF CURB ELEV.	STORM INLET
IRON PIN	TELEPHONE BOX
CONCRETE MONUMENT	GAS METER
SANITARY MANHOLE	ELECTRIC MANHOLE
WATER VALVE	POSTED SIGN
BOLLARD	PARKING SPACE COUNT
CLEANOUT	HANDICAP PARKING SPACE
STORM MANHOLE	LIGHT POLE
AC UNIT	

PROJECT CONSISTS OF LOTS 1, 52, 57 & 58 OF THE TRIANON SUBDIVISION

TOTAL TRACT AREA 6.946 ACRES

LOT 1:
TAX MAP No. 36–24–189:000
TAX PARCEL No. 36–04–02700–03
AREA: 0.348 AC.

LOT 52:
TAX MAP No. 36–24–187:000
TAX PARCEL No. 36–04–02700–51
AREA: 0.374 AC.

LOT 57:
TAX MAP No. 36–24–184:000
TAX PARCEL No. (NO NUMBER)
AREA 0.344 AC.

LOT 58:
TAX MAP NO. 36–24–116:000
TAX PARCEL NO. 36–04–02344–00
AREA: 5.880 AC

Schock Group llc
1958 BUTLER PIKE, SUITE 200
CONSHOHOCKEN, PA 19428
610.590.7373 | SCHOCKGROUP.COM

LOCATIONS OF EXISTING UTILITIES ON THIS PLAN HAVE BEEN DEVELOPED FROM FIELD LOCATIONS OF VISIBLE ABOVE GROUND UTILITY STRUCTURES AND INFORMATION FURNISHED BY THE UTILITY COMPANIES. ALL LOCATIONS SHOULD BE CONSIDERED APPROXIMATE. COMPLETENESS OR ACCURACY OF THE LOCATIONS AND DEPTH OF ALL STRUCTURES CANNOT BE GUARANTEED.

CONTRACTORS MUST VERIFY ALL LOCATIONS AND DEPTHS OF ALL UNDERGROUND UTILITIES BEFORE STARTING ANY WORK.

BEFORE STARTING ANY WORK THE CONTRACTOR SHALL NOTIFY ALL AFFECTED UTILITY COMPANIES THROUGH THE PA ONE CALL SYSTEM THREE DAYS PRIOR TO THE START OF ANY WORK.

EXISTING CONDITIONS PLAN - STORMWATER PERC TEST LOCATION MAP

PROJECT STAGE: PRELIMINARY SUBDIVISION / LAND DEVELOPMENT

PROJECT NAME:

200 S. ITHAN AVENUE

RADNOR TOWNSHIP * DELAWARECOUNTY * PENNSYLVANIA

REV.	DATE	DESCRIPTION

OWNER/APPLICANT: GPX REALTY PARTNERS, 357 SOUTH GULPH ROAD, KING OF PRUSSIA, PA 19406

DRAWN BY: TED
CHECKED BY: DRF
ONE-CALL:
SCALE: 1" = 40'
DATE: APRIL 7, 2021
REVISED:
FILE NO. 1082
SHEET NO. 1 OF 1

INFILTROMETER DATA

Project Identification	5184G1	Constants	Area, in^2
Test Location	IT-1 (A)	Inner ring	50.3
Tested By	Z.Heim	Annular space	62.9
Depth of Testing	4.50'		
Test Elevation	431.00	Inner ring penetration	2 in
		Outer ring penetration	4 in

No.	Start or End	Date	Time	Elpd Time, hr (Total)	Water Measurements				Liq Temp ºF	Infiltration Rate		Remarks
					Inner		Annular			Inner	Annular	
					level (h), in	Δh, in	level (h), in	Δh, in		in / h	in / h	
1	S	4/14/2021	9:43 AM	0.50	7.00		7.00					
	E		10:13 AM	(.50)	4.00	3.00	3.9375	3.06		6.00	6.13	
2	S		10:13 AM	0.17	7.00		7.00					
	E		10:23 AM	(.67)	6.1875	0.81	6.125	0.88		4.88	5.25	
3	S		10:23 AM	0.17	7.00		7.00					
	E		10:33 AM	(.83)	6.0625	0.94	6.00	1.00		5.62	6.00	
4	S		10:33 AM	0.17	7.00		7.00					
	E		10:43 AM	(1.00)	6.00	1.00	6.00	1.00		6.00	6.00	
5	S		10:43 AM	0.17	7.00		7.00					
	E		10:53 AM	(1.17)	6.00	1.00	6.000	1.00		6.00	6.00	
6	S		10:53 AM	0.17	7.00		7.00					
	E		11:03 AM	(1.33)	6.00	1.00	6.06	0.94		6.00	5.62	
7	S		11:03 AM	0.17	7.00		7.00					
	S		11:13 AM	(1.50)	6.000	1.00	6.00	1.00		6.00	6.00	
8	S		11:13 AM	0.17	7.00		7.00					
	E		11:23 AM	(1.67)	6.0625	0.94	6.00	1.00		5.63	6.00	
9	S		11:23 AM	0.17	7.00		7.00					
	E		11:33 AM	(1.83)	6.00	1.00	6.00	1.00		6.00	6.00	
10	S		11:33 AM	0.17	7.00		7.00					
	E		11:43 AM	(2.00)	6.00	1.00	6.00	1.00		6.00	6.00	
11	S		11:43 AM	0.17	7.00		7.00					
	E		11:53 AM	(2.17)	6.00	1.00	6.00	1.00		6.00	6.00	
12	S		11:53 AM	0.17	7.00		7.00					
	E		12:03 PM	(2.33)	6.00	1.00	6.00	1.00		6.00	6.00	
13	S		12:03 PM	0.17	7.00		7.00					
	E		12:13 PM	(2.50)	6.00	1.00	6.00	1.00		6.00	6.00	
14	S		12:13 PM	0.17	7.00		7.00					
	E		12:23 PM	(2.67)	6.00	1.00	6.00	1.00		6.00	6.00	
15	S		12:23 PM	0.17	7.00		7.00					
	E		12:33 PM	(2.83)	6.00	1.00	6.00	1.00		6.00	6.00	
16	S		12:33 PM	0.17	7.00		7.00					
	E		12:43 PM	(3.00)	6.00	1.00	6.00	1.00		6.00	6.00	
17	S		12:43 PM	0.17	7.00		7.00					
	E		12:53 PM	(3.17)	6.00	1.00	6.00	1.00		6.00	6.00	
18	S		12:53 PM	0.12	7.00		7.00					
	E		1:00 PM	(3.28)	6.00	1.00	6.00	1.00		8.57	8.57	
19	S		1:00 PM	0.17	7.00		7.00					
	E		1:10 PM	(3.45)	6.00	1.00	5.125	1.88		6.00	11.25	
20	S		1:10 PM	0.17	7.00		7.00					
	E		1:20 PM	(3.62)	6.00	1.00	6.00	1.00		6.00	6.00	
21	S		1:20 PM	0.17	7.00		7.00					
	E		1:30 PM	(3.78)	5.9375	1.06	6.00	1.00		6.38	6.00	
22	S		1:30 PM	0.17	7.00		7.00					
	E		1:40 PM	(3.95)	6.00	1.00	6.00	1.00		6.00	6.00	
23	S											
	E											
24	S											
	E											
25	S											
	E											
26	S											
	E											
27	S											
	E											
28	S											
	E											
29	S											
	E											
30	S											
	E											
31	S											
	E											
									Infiltration (in\hr)	**6.09**		

INFILTROMETER DATA

Project Identification	5184G1	Constants	Area, in^2
Test Location	IT-1 (B)	Inner ring	50.3
Tested By	Z.Heim	Annular space	62.9
Depth of Testing	4.50'		
Test Elevation	431.00	Inner ring penetration	2 in
		Outer ring penetration	4 in

No.	Start or End	Date	Time	Elpd Time, hr (Total)	Water Measurements				Liq Temp ºF	Infiltration Rate		Remarks
					Inner		Annular			Inner	Annular	
					level (h), in	Δh, in	level (h), in	Δh, in		in / h	in / h	
1	S	4/14/2021	12:34 PM	0.43	7.00		7.00					
	E		1:00 PM	(.43)	4.9375	2.06	3.9375	3.06		4.76	7.07	
2	S		1:00 PM	0.17	7.00		7.00					
	E		1:10 PM	(.60)	5.625	1.38	5.625	1.38		8.25	8.25	
3	S		1:10 PM	0.17	7.00		7.00					
	E		1:20 PM	(.77)	6.0625	0.94	6.0625	0.94		5.62	5.62	
4	S		1:20 PM	0.17	7.00		7.00					
	E		1:30 PM	(.93)	6.00	1.00	6.00	1.00		6.00	6.00	
5	S		1:30 PM	0.17	7.00		7.00					
	E		1:40 PM	(1.10)	6.0625	0.94	6.00	1.00		5.63	6.00	
6	S		1:40 PM	0.17	7.00		7.00					
	E		1:50 PM	(1.27)	6.0625	0.94	6.00	1.00		5.62	6.00	
7	S		1:50 PM	0.17	7.00		7.00					
	S		2:00 PM	(1.43)	6.00	1.00	6.00	1.00		6.00	6.00	
8	S		2:00 PM	0.17	7.00		7.00					
	E		2:10 PM	(1.60)	6.00	1.00	6.00	1.00		6.00	6.00	
9	S		2:10 PM	0.17	7.00		7.00					
	E		2:20 PM	(1.77)	6.125	0.88	6.00	1.00		5.25	6.00	
10	S		2:20 PM	0.17	7.00		7.00					
	E		2:30 PM	(1.93)	6.125	0.88	6.00	1.00		5.25	6.00	
11	S		2:30 PM	0.17	7.00		7.00					
	E		2:40 PM	(2.10)	6.125	0.88	6.00	1.00		5.25	6.00	
12	S		2:40 PM	0.17	7.00		7.00					
	E		2:50 PM	(2.27)	6.125	0.88	6.00	1.00		5.25	6.00	
13	S		2:50 PM	0.17	7.00		7.00					
	E		3:00 PM	(2.43)	6.125	0.88	6.00	1.00		5.25	6.00	
14	S		3:00 PM	0.17	7.00		7.00					
	E		3:10 PM	(2.60)	6.125	0.88	6.00	1.00		5.25	6.00	
15	S		3:10 PM	0.17	7.00		7.00					
	E		3:20 PM	(2.77)	6.125	0.88	6.00	1.00		5.25	6.00	
16	S		3:20 PM	0.17	7.00		7.00					
	E		3:30 PM	(2.93)	6.125	0.88	6.00	1.00		5.25	6.00	
17	S		3:30 PM	0.17	7.00		7.00					
	E		3:40 PM	(3.10)	6.125	0.88	6.00	1.00		5.25	6.00	
18	S		3:40 PM	0.17	7.00		7.00					
	E		3:50 PM	(3.27)	6.00	1.00	6.00	1.00		6.00	6.00	
19	S		3:50 PM	0.17	7.00		7.00					
	E		4:00 PM	(3.43)	6.00	1.00	6.00	1.00		6.00	6.00	
20	S		4:00 PM	0.17	7.00		7.00					
	E		4:10 PM	(3.60)	6.125	0.88	6.00	1.00		5.25	6.00	
21	S		4:10 PM	0.17	7.00		7.00					
	E		4:20 PM	(3.77)	6.125	0.88	6.00	1.00		5.25	6.00	
22	S											
	E											
23	S											
	E											
24	S											
	E											
25	S											
	E											
26	S											
	E											
27	S											
	E											
28	S											
	E											
29	S											
	E											
30	S											
	E											
31	S											
	E											
									Infiltration (in\hr)	**5.63**		

INFILTROMETER DATA

Project Identification	5064I1	Constants	Area, in^2
Test Location	IT-2 (A)	Inner ring	50.3
Tested By	Z.Heim	Annular space	62.9
Depth of Testing	5.57'		
Test Elevation	431.00	Inner ring penetration	2 in
		Outer ring penetration	4 in

No.	Start or End	Date	Time	Elpd Time, hr (Total)	Water Measurements				Liq Temp °F	Infiltration Rate		Remarks
					Inner		Annular			Inner	Annular	
					level (h), in	Δh, in	level (h), in,	Δh, in		in / h	in / h	
1	S	4/14/2021	9:15 AM	0.40	7.00		7.00					
	E		9:39 AM	(.40)	5.000	2.00	5.000	2.00		5.00	5.00	
2	S		9:39 AM	0.18	7.00		7.00					
	E		9:50 AM	(.58)	6.125	0.88	6.125	0.88		4.77	4.77	
3	S		9:50 AM	0.17	7.00		7.00					
	E		10:00 AM	(.75)	6.375	0.63	6.00	1.00		3.75	6.00	
4	S		10:00 AM	0.17	7.00		7.00					
	E		10:10 AM	(.92)	6.125	0.88	6.125	0.88		5.25	5.25	
6	S		10:10 AM	0.17	7.00		7.00					
	E		10:20 AM	(1.08)	6.125	0.88	6.125	0.88		5.25	5.25	
8	S		10:20 AM	0.17	7.00		7.00					
	E		10:30 AM	(1.25)	6.375	0.63	6.375	0.63		3.75	3.75	
9	S		10:30 AM	0.17	7.00		7.00					
	E		10:40 AM	(1.42)	6.375	0.63	6.375	0.63		3.75	3.75	
10	S		10:40 AM	0.17	7.00		7.00					
	E		10:50 AM	(1.58)	6.25	0.75	6.25	0.75		4.50	4.50	
11	S		10:50 AM	0.17	7.00		7.00					
	E		11:00 AM	(1.75)	6.375	0.63	6.25	0.75		3.75	4.50	
12	S		11:00 AM	0.17	7.00		7.00					
	E		11:10 AM	(1.92)	6.25	0.75	6.25	0.75		4.50	4.50	
13	S		11:10 AM	0.17	7.00		7.00					
	E		11:20 AM	(2.08)	6.4375	0.56	6.4375	0.56		3.37	3.37	
14	S		11:20 AM	0.17	7.00		7.00					
	E		11:30 AM	(2.25)	6.250	0.75	6.25	0.75		4.50	4.50	
15	S		11:30 AM	0.17	7.00		7.00					
	E		11:40 AM	(2.42)	6.4375	0.56	6.4375	0.56		3.38	3.38	
16	S		11:40 AM	0.17	7.00		7.00					
	E		11:50 AM	(2.58)	6.4375	0.56	6.4375	0.56		3.37	3.37	
17	S		11:50 AM	0.17	7.00		7.00					
	E		12:00 PM	(2.75)	6.4375	0.56	6.4375	0.56		3.38	3.38	
18	S		12:00 PM	0.17	7.00		7.00					
	E		12:10 PM	(2.92)	6.4375	0.56	6.4375	0.56		3.38	3.38	
19	S		12:10 PM	0.17	7.00		7.00					
	E		12:20 PM	(3.08)	6.4375	0.56	6.4375	0.56		3.37	3.37	
20	S											
	E											
21	S											
	E											
21	S											
	E											
21	S											
	E											
21	S											
	E											
21	S											
	E											
21	S											
	E											
21	S											
	E											
									Infiltration (in\hr)	**3.37**		

INFILTROMETER DATA

Project Identification	5064I1	Constants	Area, in^2
Test Location	IT-2 (B)	Inner ring	50.3
Tested By	Z.Heim	Annular space	62.9
Depth of Testing	5.57'		
Test Elevation	431.00	Inner ring penetration	2 in
		Outer ring penetration	4 in

No.	Start or End	Date	Time	Elpd Time, hr (Total)	Water Measurements				Liq Temp °F	Infiltration Rate		Remarks
					Inner		Annular			Inner in / h	Annular in / h	
					level (h), in	Δh, in	level (h), in,	Δh, in				
1	S	4/14/2021	9:15 AM	0.40	7.00		7.00					
	E		9:39 AM	(.40)	5.000	2.00	5.000	2.00		5.00	5.00	
2	S		9:39 AM	0.18	7.00		7.00					
	E		9:50 AM	(.58)	6.125	0.88	6.125	0.88		4.77	4.77	
3	S		9:50 AM	0.17	7.00		7.00					
	E		10:00 AM	(.75)	6.375	0.63	6.00	1.00		3.75	6.00	
4	S		10:00 AM	0.17	7.00		7.00					
	E		10:10 AM	(.92)	6.125	0.88	6.125	0.88		5.25	5.25	
6	S		10:10 AM	0.17	7.00		7.00					
	E		10:20 AM	(1.08)	6.125	0.88	6.125	0.88		5.25	5.25	
8	S		10:20 AM	0.17	7.00		7.00					
	E		10:30 AM	(1.25)	6.375	0.63	6.375	0.63		3.75	3.75	
9	S		10:30 AM	0.17	7.00		7.00					
	E		10:40 AM	(1.42)	6.375	0.63	6.375	0.63		3.75	3.75	
10	S		10:40 AM	0.17	7.00		7.00					
	E		10:50 AM	(1.58)	6.25	0.75	6.25	0.75		4.50	4.50	
11	S		10:50 AM	0.17	7.00		7.00					
	E		11:00 AM	(1.75)	6.375	0.63	6.25	0.75		3.75	4.50	
12	S		11:00 AM	0.17	7.00		7.00					
	E		11:10 AM	(1.92)	6.25	0.75	6.25	0.75		4.50	4.50	
13	S		11:10 AM	0.17	7.00		7.00					
	E		11:20 AM	(2.08)	6.4375	0.56	6.4375	0.56		3.37	3.37	
14	S		11:20 AM	0.17	7.00		7.00					
	E		11:30 AM	(2.25)	6.250	0.75	6.25	0.75		4.50	4.50	
15	S		11:30 AM	0.17	7.00		7.00					
	E		11:40 AM	(2.42)	6.4375	0.56	6.4375	0.56		3.38	3.38	
16	S		11:40 AM	0.17	7.00		7.00					
	E		11:50 AM	(2.58)	6.4375	0.56	6.4375	0.56		3.37	3.37	
17	S		11:50 AM	0.17	7.00		7.00					
	E		12:00 PM	(2.75)	6.4375	0.56	6.4375	0.56		3.38	3.38	
18	S		12:00 PM	0.17	7.00		7.00					
	E		12:10 PM	(2.92)	6.4375	0.56	6.4375	0.56		3.38	3.38	
19	S		12:10 PM	0.17	7.00		7.00					
	E		12:20 PM	(3.08)	6.4375	0.56	6.4375	0.56		3.37	3.37	
20	S											
	E											
21	S											
	E											
21	S											
	E											
21	S											
	E											
21	S											
	E											
21	S											
	E											
21	S											
	E											
21	S											
	E											
									Infiltration (in\hr)	**3.37**		

INFILTROMETER DATA

Project Identification	5064I1	Constants	Area, in^2
Test Location	IT-3 (A)	Inner ring	50.3
Tested By	Z.Heim	Annular space	62.9
Depth of Testing	3.83'		
Test Elevation	433.6'	Inner ring penetration	2 in
		Outer ring penetration	4 in

No.	Start or End	Date	Time	Elpd Time, hr (Total)	Water Measurements				Liq Temp °F	Infiltration Rate		Remarks
					Inner		Annular			Inner	Annular	
					level (h), in	Δh, in	level (h), in	Δh, in		in / h	in / h	
1	S	4/14/2021	1:00 PM	0.50	7.00		7.00					
	E		1:30 PM	(.50)	6.50	0.50	6.50	0.50		1.00	1.00	
2	S		1:30 PM	0.50	7.00		7.00					
	E		2:00 PM	(1.00)	6.50	0.50	6.50	0.50		1.00	1.00	
3	S		2:00 PM	0.50	7.00		7.00					
	E		2:30 PM	(1.50)	6.50	0.50	6.50	0.50		1.00	1.00	
4	S		2:30 PM	0.50	7.00		7.00					
	E		3:00 PM	(2.00)	6.50	0.50	6.50	0.50		1.00	1.00	
6	S		3:00 PM	0.50	7.00		7.00					
	E		3:30 PM	(2.50)	6.625	0.38	6.625	0.38		0.75	0.75	
8	S		3:30 PM	0.50	7.00		7.00					
	E		4:00 PM	(3.00)	6.50	0.50	6.50	0.50		1.00	1.00	
9	S											
	E											
10	S											
	E											
11	S											
	E											
12	S											
	E											
13	S											
	E											
14	S											
	E											
15	S											
	E											
16	S											
	E											
17	S											
	E											
18	S											
	E											
19	S											
	E											
									(in\hr)	**0.94**		

INFILTROMETER DATA

Project Identification	5064I1	Constants	Area, in^2
Test Location	IT-3 (B)	Inner ring	50.3
Tested By	Z.Heim	Annular space	62.9
Depth of Testing	3.83'		
Test Elevation	433.6'	Inner ring penetration	2 in
		Outer ring penetration	4 in

No.	Start or End	Date	Time	Elpd Time, hr (Total)	Water Measurements				Liq Temp °F	Infiltration Rate		Remarks
					Inner		Annular			Inner	Annular	
					level (h), in	Δh, in	level (h), in	Δh, in		in / h	in / h	
1	S	4/14/2021	1:00 PM	0.50	7.00		7.00					
	E		1:30 PM	(.50)	6.75	0.25	6.875	0.13		0.50	0.25	
2	S		1:30 PM	0.50	7.00		7.00					
	E		2:00 PM	(1.00)	6.875	0.13	6.875	0.13		0.25	0.25	
3	S		2:00 PM	0.50	7.00		7.00					
	E		2:30 PM	(1.50)	6.875	0.13	6.875	0.13		0.25	0.25	
4	S		2:30 PM	0.50	7.00		7.00					
	E		3:00 PM	(2.00)	6.875	0.13	6.875	0.13		0.25	0.25	
6	S		3:00 PM	0.50	7.00		7.00					
	E		3:30 PM	(2.50)	6.750	0.25	6.875	0.13		0.50	0.25	
8	S		3:30 PM	0.50	7.00		7.00					
	E		4:00 PM	(3.00)	6.875	0.13	6.875	0.13		0.25	0.25	
9	S											
	E											
10	S											
	E											
11	S											
	E											
12	S											
	E											
13	S											
	E											
14	S											
	E											
15	S											
	E											
16	S											
	E											
17	S											
	E											
18	S											
	E											
19	S											
	E											
									(in\hr)	**0.31**		

INFILTROMETER DATA

Project Identification	5064I1	Constants	Area, in^2
Test Location	IT-4 (A)	Inner ring	50.3
Tested By	Z.Heim	Annular space	62.9
Depth of Testing	1.00'		
Test Elevation	432.00	Inner ring penetration	2 in
		Outer ring penetration	4 in

No.	Start or End	Date	Time	Elpd Time, hr (Total)	Water Measurements				Liq Temp °F	Infiltration Rate		Remarks
					Inner		Annular			Inner in / h	Annular in / h	
					level (h), in	Δh, in	level (h), in	Δh, in				
1	S	4/14/2021	8:50 AM	0.50	8.00		7.00					
	E		9:20 AM	(.50)	6.75	1.25	6.875	0.13		2.50	0.25	
2	S		9:20 AM	0.50	8.00		7.00					
	E		9:50 AM	(1.00)	6.875	1.13	6.88	0.13		2.25	0.25	
3	S		9:50 AM	0.50	8.00		7.00					
	E		10:20 AM	(1.50)	7.00	1.00	6.875	0.13		2.00	0.25	
4	S		10:20 AM	0.50	8.00		7.00					
	E		10:50 AM	(2.00)	6.75	1.25	6.875	0.13		2.50	0.25	
6	S		10:50 AM	0.50	8.00		7.00					
	E		11:20 AM	(2.50)	6.75	1.25	6.875	0.13		2.50	0.25	
8	S		11:20 AM	0.50	8.00		7.00					
	E		11:50 AM	(3.00)	6.75	1.25	6.875	0.13		2.50	0.25	
9	S		11:50 AM	0.50	8.00		7.00					
	E		12:20 PM	(3.50)	6.75	1.25	6.875	0.13		2.50	0.25	
10	S		12:20 PM	0.50	8.00		7.00					
	E		12:50 PM	(4.00)	6.00	2.00	6.875	0.13		4.00	0.25	
11	S											
	E											
12	S											
	E											
13	S											
	E											
14	S											
	E											
15	S											
	E											
16	S											
	E											
17	S											
	E											
18	S											
	E											
19	S											
	E											
20	S											
	E											
									(in\hr)	**2.88**		

INFILTROMETER DATA

Project Identification	5064I1	Constants	Area, in^2
Test Location	IT-4 (B)	Inner ring	50.3
Tested By	Z.Heim	Annular space	62.9
Depth of Testing	1.00'		
Test Elevation	432.00	Inner ring penetration	2 in
		Outer ring penetration	4 in

No.	Start or End	Date	Time	Elpd Time, hr (Total)	Water Measurements				Liq Temp °F	Infiltration Rate		Remarks
					Inner		Annular			Inner	Annular	
					level (h), in	Δh, in	level (h), in	Δh, in		in / h	in / h	
1	S	4/14/2021	8:50 AM	0.50	8.00		7.00					
	E		9:20 AM	(.50)	6.75	1.25	6.875	0.13		2.50	0.25	
2	S		9:20 AM	0.50	8.00		7.00					
	E		9:50 AM	(1.00)	6.875	1.13	6.88	0.13		2.25	0.25	
3	S		9:50 AM	0.50	8.00		7.00					
	E		10:20 AM	(1.50)	7.00	1.00	6.875	0.13		2.00	0.25	
4	S		10:20 AM	0.50	8.00		7.00					
	E		10:50 AM	(2.00)	6.75	1.25	6.875	0.13		2.50	0.25	
6	S		10:50 AM	0.50	8.00		7.00					
	E		11:20 AM	(2.50)	6.75	1.25	6.875	0.13		2.50	0.25	
8	S		11:20 AM	0.50	8.00		7.00					
	E		11:50 AM	(3.00)	6.75	1.25	6.875	0.13		2.50	0.25	
9	S		11:50 AM	0.50	8.00		7.00					
	E		12:20 PM	(3.50)	6.75	1.25	6.875	0.13		2.50	0.25	
10	S		12:20 PM	0.50	8.00		7.00					
	E		12:50 PM	(4.00)	6.00	2.00	6.875	0.13		4.00	0.25	
11	S											
	E											
12	S											
	E											
13	S											
	E											
14	S											
	E											
15	S											
	E											
16	S											
	E											
17	S											
	E											
18	S											
	E											
19	S											
	E											
20	S											
	E											
									(in\hr)	**2.88**		

INFILTROMETER DATA

Project Identification	5064I1	Constants	Area, in^2
Test Location	IT-5 (A)	Inner ring	50.3
Tested By	Z.Heim	Annular space	62.9
Depth of Testing	6.50'		
Test Elevation	426.00	Inner ring penetration	2 in
		Outer ring penetration	4 in

No.	Start or End	Date	Time	Elpd Time, hr (Total)	Water Measurements				Liq Temp °F	Infiltration Rate		Remarks
					Inner		Annular			Inner	Annular	
					level (h), in	Δh, in	level (h), in	Δh, in		in / h	in / h	
1	S	4/15/2021	8:30 AM	0.50	4.00		3.00					
	E		9:00 AM	(.50)	2.50	1.50	1.250	1.75		3.00	3.50	
2	S		9:00 AM	0.50	4.00		3.00					
	E		9:30 AM	(1.00)	2.750	1.25	1.75	1.25		2.50	2.50	
3	S		9:30 AM	0.50	4.00		3.00					
	E		10:00 AM	(1.50)	2.88	1.13	2.125	0.88		2.25	1.75	
4	S		10:00 AM	0.50	4.00		3.00					
	E		10:30 AM	(2.00)	2.88	1.13	2.000	1.00		2.25	2.00	
6	S		10:30 AM	0.50	4.00		3.00					
	E		11:00 AM	(2.50)	2.88	1.13	2.000	1.00		2.25	2.00	
8	S		11:00 AM	0.50	4.00		3.00					
	E		11:30 AM	(3.00)	2.88	1.13	2.000	1.00		2.25	2.00	
9	S		11:30 AM	0.50	4.00		3.00					
	E		12:00 PM	(3.50)	2.88	1.13	2.000	1.00		2.25	2.00	
10	S		12:00 PM	0.50	4.00		3.00					
	E		12:30 PM	(4.00)	2.88	1.13	2.000	1.00		2.25	2.00	
11	S											
	E											
12	S											
	E											
13	S											
	E											
14	S											
	E											
15	S											
	E											
16	S											
	E											
17	S											
	E											
18	S											
	E											
19	S											
	E											
20	S											
	E											
									(in\hr)	**2.25**		

INFILTROMETER DATA

Project Identification	5064I1	Constants	Area, in^2
Test Location	IT-5 (B)	Inner ring	50.3
Tested By	Z.Heim	Annular space	62.9
Depth of Testing	6.50'		
Test Elevation	426.00	Inner ring penetration	2 in
		Outer ring penetration	4 in

No.	Start or End	Date	Time	Elpd Time, hr (Total)	Water Measurements				Liq Temp °F	Infiltration Rate		Remarks
					Inner		Annular			Inner	Annular	
					level (h), in	Δh, in	level (h), in	Δh, in		in / h	in / h	
1	S	4/15/2021	8:30 AM	0.50	4.00		3.00					
	E		9:00 AM	(.50)	2.50	1.50	1.25	1.75		3.00	3.50	
2	S		9:00 AM	0.50	4.00		3.00					
	E		9:30 AM	(1.00)	3.00	1.00	1.625	1.38		2.00	2.75	
3	S		9:30 AM	0.50	4.00		3.00					
	E		10:00 AM	(1.50)	3.125	0.88	2.00	1.00		1.75	2.00	
4	S		10:00 AM	0.50	4.00		3.00					
	E		10:30 AM	(2.00)	3.125	0.88	2.00	1.00		1.75	2.00	
6	S		10:30 AM	0.50	4.00		3.00					
	E		11:00 AM	(2.50)	3.125	0.88	2.00	1.00		1.75	2.00	
8	S		11:00 AM	0.50	4.00		3.00					
	E		11:30 AM	(3.00)	3.125	0.88	2.00	1.00		1.75	2.00	
9	S		11:30 AM	0.50	4.00		3.00					
	E		12:00 PM	(3.50)	3.125	0.88	2.00	1.00		1.75	2.00	
10	S		12:00 PM	0.50	4.00		3.00					
	E		12:30 PM	(4.00)	3.125	0.88	2.00	1.00		1.75	2.00	
11	S											
	E											
12	S											
	E											
13	S											
	E											
14	S											
	E											
15	S											
	E											
16	S											
	E											
17	S											
	E											
18	S											
	E											
19	S											
	E											
20	S											
	E											
									(in\hr)	**1.75**		

INFILTROMETER DATA

Project Identification	5064I1	Constants	Area, in^2
Test Location	IT-6 (A)	Inner ring	50.3
Tested By	Z.Heim	Annular space	62.9
Depth of Testing	6.00'		
Test Elevation	453.2'	Inner ring penetration	2 in
		Outer ring penetration	4 in

No.	Start or End	Date	Time	Elpd Time, hr (Total)	Water Measurements				Liq Temp °F	Infiltration Rate		Remarks
					Inner		Annular			Inner in / h	Annular in / h	
					level (h), in	Δh, in	level (h), in	Δh, in				
1	S	4/15/2021	9:27 AM	0.50	7.00		7.00					
	E		9:57 AM	(.50)	6.75	0.25	6.75	0.25		0.50	0.50	
2	S		9:57 AM	0.50	7.00		7.00					
	E		10:27 AM	(1.00)	6.7500	0.25	6.750	0.25		0.50	0.50	
3	S		10:27 AM	0.50	7.00		7.00					
	E		10:57 AM	(1.50)	6.88	0.13	6.75	0.25		0.25	0.50	
4	S		10:57 AM	0.50	7.00		7.00					
	E		11:27 AM	(2.00)	6.88	0.13	6.75	0.25		0.25	0.50	
6	S		11:27 AM	0.50	7.00		7.00					
	E		11:57 AM	(2.50)	6.88	0.13	6.750	0.25		0.25	0.50	
8	S		11:57 AM	0.50	7.00		7.00					
	E		12:27 PM	(3.00)	6.88	0.13	6.75	0.25		0.25	0.50	
9	S		12:27 PM	0.50	7.00		7.00					
	E		12:57 PM	(3.50)	6.88	0.13	6.75	0.25		0.25	0.50	
10	S		12:57 PM	0.50	7.00		7.00					
	E		1:27 PM	(4.00)	6.88	0.13	6.75	0.25		0.25	0.50	
11	S											
	E											
12	S											
	E											
13	S											
	E											
14	S											
	E											
15	S											
	E											
16	S											
	E											
17	S											
	E											
18	S											
	E											
19	S											
	E											
20	S											
	E											
21	S											
	E											
21	S											
	E											
21	S											
	E											
21	S											
	E											
21	S											
	E											
21	S											
	E											
									Infiltration (in\hr)	**0.25**		

INFILTROMETER DATA

Project Identification	5064I1	Constants	Area, in^2
Test Location	IT-6 (B)	Inner ring	50.3
Tested By	Z.Heim	Annular space	62.9
Depth of Testing	6.00'		
Test Elevation	453.2'	Inner ring penetration	2 in
		Outer ring penetration	4 in

No.	Start or End	Date	Time	Elpd Time, hr (Total)	Water Measurements				Liq Temp °F	Infiltration Rate		Remarks
					Inner		Annular			Inner	Annular	
					level (h), in	Δh, in	level (h), in	Δh, in		in / h	in / h	
1	S	4/15/2021	9:25 AM	0.50	7.00		7.00					
	E		9:55 AM	(.50)	5.75	1.25	5.50	1.50		2.50	3.00	
2	S		9:55 AM	0.50	7.00		7.00					
	E		10:25 AM	(1.00)	3.00	4.00	5.750	1.25		8.00	2.50	
3	S		10:25 AM	0.50	7.00		7.00					
	E		10:55 AM	(1.50)	6.00	1.00	5.75	1.25		2.00	2.50	
4	S		10:55 AM	0.50	7.00		7.00					
	E		11:25 AM	(2.00)	6.25	0.75	5.75	1.25		1.50	2.50	
6	S		11:25 AM	0.50	7.00		7.00					
	E		11:55 AM	(2.50)	6.125	0.88	5.750	1.25		1.75	2.50	
8	S		11:55 AM	0.50	7.00		7.00					
	E		12:25 PM	(3.00)	6.25	0.75	6.00	1.00		1.50	2.00	
9	S		12:25 PM	0.50	7.00		7.00					
	E		12:55 PM	(3.50)	6.25	0.75	6.00	1.00		1.50	2.00	
10	S		12:55 PM	0.50	7.00		7.00					
	E		1:25 PM	(4.00)	6.25	0.75	6.00	1.00		1.50	2.00	
11	S											
	E											
12	S											
	E											
13	S											
	E											
14	S											
	E											
15	S											
	E											
16	S											
	E											
17	S											
	E											
18	S											
	E											
19	S											
	E											
20	S											
	E											
21	S											
	E											
21	S											
	E											
21	S											
	E											
21	S											
	E											
21	S											
	E											
21	S											
	E											
21	S											
	E											
									Infiltration (in\hr)	**1.55**		

INFILTROMETER DATA

Project Identification	5064I1	Constants	Area, in^2
Test Location	IT-7 (A)	Inner ring	50.3
Tested By	Z.Heim	Annular space	62.9
Depth of Testing	6.50'		
Test Elevation	419.00	Inner ring penetration	2 in
	Test Elevation raised to 6.50' due to refusal on weathered rock	Outer ring penetration	4 in

No.	Start or End	Date	Time	Elpd Time, hr (Total)	Water Measurements				Liq Temp °F	Infiltration Rate		Remarks
					Inner		Annular			Inner in / h	Annular in / h	
					level (h), in	Δh, in	level (h), in	Δh, in				
1	S	4/15/2021	10:55 AM	0.50	7.00		7.00					
	E		11:25 AM	(.50)	5.75	1.25	5.8125	1.19		2.50	2.38	
2	S		11:25 AM	0.50	7.00		7.00					
	E		11:55 AM	(1.00)	6.0625	0.94	6.125	0.88		1.88	1.75	
3	S		11:55 AM	0.50	7.00		7.00					
	E		12:25 PM	(1.50)	6.00	1.00	6.0625	0.94		2.00	1.88	
4	S		12:25 PM	0.50	7.00		7.00					
	E		12:55 PM	(2.00)	6.00	1.00	6.0625	0.94		2.00	1.88	
6	S		12:55 PM	0.50	7.00		7.00					
	E		1:25 PM	(2.50)	6.00	1.00	6.125	0.88		2.00	1.75	
8	S		1:25 PM	0.50	7.00		7.00					
	E		1:55 PM	(3.00)	6.0625	0.94	6.1875	0.81		1.88	1.63	
9	S		1:55 PM	0.50	7.00		7.00					
	E		2:25 PM	(3.50)	6.125	0.88	6.125	0.88		1.75	1.75	
10	S		2:25 PM	0.50	7.00		7.00					
	E		2:55 PM	(4.00)	6.125	0.88	6.125	0.88		1.75	1.75	
11	S											
	E											
12	S											
	E											
13	S											
	E											
14	S											
	E											
15	S											
	E											
16	S											
	E											
17	S											
	E											
18	S											
	E											
19	S											
	E											
20	S											
	E											
21	S											
	E											
									(in\hr)	**1.84**		

INFILTROMETER DATA

Project Identification	5064I1	Constants	Area, in^2
Test Location	IT-7 (B)	Inner ring	50.3
Tested By	Z.Heim	Annular space	62.9
Depth of Testing	6.50'		
Test Elevation	419.00	Inner ring penetration	2 in
	Test Elevation raised to 6.50' due to refusal on weathered rock	Outer ring penetration	4 in

No.	Start or End	Date	Time	Elpd Time, hr (Total)	Water Measurements				Liq Temp °F	Infiltration Rate		Remarks
					Inner		Annular			Inner in / h	Annular in / h	
					level (h), in	Δh, in	level (h), in	Δh, in				
1	S	4/15/2021	11:00 AM	0.50	7.00		7.00					
	E		11:30 AM	(.50)	4.50	2.50	5.3725	1.63		5.00	3.26	
2	S		11:30 AM	0.17	7.00		7.00					
	E		11:40 AM	(.67)	6.3125	0.69	6.5625	0.44		4.13	2.63	
3	S		11:40 AM	0.17	7.00		7.00					
	E		11:50 AM	(.83)	6.50	0.50	6.5625	0.44		3.00	2.62	
4	S		11:50 AM	0.17	7.00		7.00					
	E		12:00 PM	(1.00)	6.50	0.50	6.6250	0.38		3.00	2.25	
6	S		12:00 PM	0.17	7.00		7.00					
	E		12:10 PM	(1.17)	6.43	0.57	6.5625	0.44		3.41	2.63	
8	S		12:10 PM	0.17	7.00		7.00					
	E		12:20 PM	(1.33)	6.3250	0.68	6.5625	0.44		4.05	2.62	
9	S		12:20 PM	0.17	7.00		7.00					
	E		12:30 PM	(1.50)	6.500	0.50	6.5625	0.44		3.00	2.63	
10	S		12:30 PM	0.17	7.00		7.00					
	E		12:40 PM	(1.67)	6.500	0.50	6.5625	0.44		3.00	2.63	
11	S		12:40 PM	0.17	7.00		7.00					
	E		12:50 PM	(1.83)	6.500	0.50	6.625	0.38		3.00		
12	S		12:50 PM	0.17	7.00		7.00					
	E		1:00 PM	(2.00)	6.500	0.50	6.5625	0.44		3.00		
13	S		1:00 PM	0.17	7.00		7.00					
	E		1:10 PM	(2.17)	6.56	0.44	6.5625	0.44		2.63		
14	S		1:10 PM	0.17	7.00		7.00					
	E		1:20 PM	(2.33)	6.563	0.44	6.625	0.38		2.62		
15	S		1:20 PM	0.17	7.00		7.00					
	E		1:30 PM	(2.50)	6.56	0.44	6.5625	0.44		2.63		
16	S		1:30 PM	0.17	7.00		7.00					
	E		1:40 PM	(2.67)	6.500	0.50	6.5625	0.44		3.00		
17	S		1:40 PM	0.17	7.00		7.00					
	E		1:50 PM	(2.83)	6.563	0.44	6.69	0.31		2.62		
18	S		1:50 PM	0.17	7.00		7.00					
	E		2:00 PM	(3.00)	6.50	0.50	6.625	0.38		3.00		
19	S		2:00 PM	0.17	7.00		7.00					
	E		2:10 PM	(3.17)	6.500	0.50	6.5625	0.44		3.00		
20	S		2:10 PM	0.17	7.00		7.00					
	E		2:20 PM	(3.33)	6.50	0.50	6.5625	0.44		3.00		
21	S		2:20 PM	0.17	7.00		7.00					
	E		2:30 PM	(3.50)	6.56	0.44	6.6875	0.31		2.63		
22	S											
	E											
23	S											
	E											
									(in\hr)	**2.91**		

INFILTROMETER DATA

Project Identification	5064I1	Constants	Area, in^2
Test Location	IT-8 (A)	Inner ring	50.3
Tested By	Z.Heim	Annular space	62.9
Depth of Testing	6.00'		
Test Elevation	416.00	Inner ring penetration	2 in
	Test Elevation raised to 6.00' due to refusal on weathered rock	Outer ring penetration	4 in

No.	Start or End	Date	Time	Elpd Time, hr (Total)	Water Measurements				Liq Temp °F	Infiltration Rate		Remarks
					Inner		Annular			Inner	Annular	
					level (h), in	Δh, in	level (h), in	Δh, in		in / h	in / h	
1	S	4/16/2021	10:15 AM	0.50	7.00		7.00					
	E		10:45 AM	(.50)	5.75	1.25	5.75	1.25		2.50	2.50	
2	S		10:45 AM	0.50	7.00		7.00					
	E		11:15 AM	(1.00)	5.75	1.25	5.75	1.25		2.50	2.50	
3	S		11:15 AM	0.50	7.00		7.00					
	E		11:45 AM	(1.50)	6.125	0.88	6.125	0.88		1.75	1.75	
4	S		11:45 AM	0.50	7.00		7.00					
	E		12:15 PM	(2.00)	6.3125	0.69	6.375	0.63		1.38	1.25	
6	S		12:15 PM	0.50	7.00		7.00					
	E		12:45 PM	(2.50)	6.25	0.75	6.25	0.75		1.50	1.50	
8	S		12:45 PM	0.50	7.00		7.00					
	E		1:15 PM	(3.00)	6.375	0.63	6.375	0.63		1.25	1.25	
9	S		1:15 PM	0.50	7.00		7.00					
	E		1:45 PM	(3.50)	6.25	0.75	6.25	0.75		1.50	1.50	
10	S		1:45 PM	0.50	7.00		7.00					
	E		2:15 PM	(4.00)	6.25	0.75	6.25	0.75		1.50	1.50	
11	S											
	E											
12	S											
	E											
13	S											
	E											
14	S											
	E											
15	S											
	E											
16	S											
	E											
17	S											
	E											
18	S											
	E											
19	S											
	E											
20	S											
	E											
21	S											
	E											
									(in\hr)	**1.44**		

INFILTROMETER DATA

Project Identification	5064I1	Constants	Area, in^2
Test Location	IT-8 (B)	Inner ring	50.3
Tested By	Z.Heim	Annular space	62.9
Depth of Testing	6.00'		
Test Elevation	416.00	Inner ring penetration	2 in
	Test Elevation raised to 6.00' due to refusal on weathered rock	Outer ring penetration	4 in

No.	Start or End	Date	Time	Elpd Time, hr (Total)	Water Measurements Inner level (h), in	Inner Δh, in	Annular level (h), in	Annular Δh, in	Liq Temp ºF	Infiltration Rate Inner in / h	Annular in / h	Remarks
1	S	4/16/2021	10:15 AM	0.50	7.00		7.00					
	E		10:45 AM	(.50)	5.00	2.00	5.00	2.00		4.00	4.00	
2	S		10:45 AM	0.17	7.00		7.00					
	E		10:55 AM	(.67)	6.50	0.50	6.50	0.50		3.00	3.00	
3	S		10:55 AM	0.17	7.00		7.00					
	E		11:05 AM	(.83)	6.50	0.50	6.50	0.50		3.00	3.00	
4	S		11:05 AM	0.17	7.00		7.00					
	E		11:15 AM	(1.00)	6.50	0.50	6.50	0.50		3.00	3.00	
6	S		11:15 AM	0.17	7.00		7.00					
	E		11:25 AM	(1.17)	6.50	0.50	6.50	0.50		3.00	3.00	
8	S		11:25 AM	0.17	7.00		7.00					
	E		11:35 AM	(1.33)	6.50	0.50	6.5625	0.44		3.00	2.62	
9	S		11:35 AM	0.17	7.00		7.00					
	E		11:45 AM	(1.50)	6.500	0.50	6.5625	0.44		3.00	2.63	
10	S		11:45 AM	0.17	7.00		7.00					
	E		11:55 AM	(1.67)	6.50	0.50	6.5625	0.44		3.00	2.63	
11	S		11:55 AM	0.17	7.00		7.00					
	E		12:05 PM	(1.83)	6.50	0.50	6.5625	0.44		3.00	2.62	
12	S		12:05 PM	0.17	7.00		7.00					
	E		12:15 PM	(2.00)	6.375	0.63	6.50	0.50		3.75	3.00	
13	S		12:15 PM	0.17	7.00		7.00					
	E		12:25 PM	(2.17)	6.50	0.50	6.50	0.50		3.00	3.00	
14	S		12:25 PM	0.17	7.00		7.00					
	E		12:35 PM	(2.33)	6.625	0.38	6.625	0.38		2.25	2.25	
15	S		12:35 PM	0.17	7.00		7.00					
	E		12:45 PM	(2.50)	6.50	0.50	6.50	0.50		3.00	3.00	
16	S		12:45 PM	0.17	7.00		7.00					
	E		12:55 PM	(2.67)	6.625	0.38	6.625	0.38		2.25	2.25	
17	S		12:55 PM	0.17	7.00		7.00					
	E		1:05 PM	(2.83)	6.500	0.50	6.50	0.50		3.00	3.00	
18	S		1:05 PM	0.17	7.00		7.00					
	E		1:15 PM	(3.00)	6.50	0.50	6.625	0.38		3.00	2.25	
19	S		1:15 PM	0.17	7.00		7.00					
	E		1:25 PM	(3.17)	6.50	0.50	6.50	0.50		3.00	3.00	
20	S		1:25 PM	0.17	7.00		7.00					
	E		1:35 PM	(3.33)	6.50	0.50	6.50	0.50		3.00	3.00	
21	S		1:35 PM	0.17	7.00		7.00					
	E		1:45 PM	(3.50)	6.50	0.50	6.50	0.50		3.00	3.00	
22	S		1:45 PM	0.17	7.00		7.00					
	E		1:55 PM	(3.67)	6.50	0.50	6.50	0.50		3.00	3.00	
23	S		1:55 PM	0.17	7.00		7.00					
	E		2:05 PM	(3.83)	6.50	0.50	6.50	0.50		3.00	3.00	
24	S		2:05 PM	0.17	7.00		7.00					
	E		2:15 PM	(4.00)	6.50	0.50	6.50	0.50		3.00	3.00	
25	S											
	E											
26	S											
	E											
27	S											
	E											
28	S											
	E											
29	S											
	E											
									Infiltration (in\hr)	**3.00**		

INFILTROMETER DATA

Project Identification	5064I1	Constants	Area, in^2
Test Location	IT-9 (A)	Inner ring	50.3
Tested By	Z.Heim	Annular space	62.9
Depth of Testing	8.00'		
Test Elevation	408.00	Inner ring penetration	2 in
	Test Elevation raised to 6.00' due to refusal on weathered rock	Outer ring penetration	4 in

No.	Start or End	Date	Time	Elpd Time, hr (Total)	Water Measurements				Liq Temp °F	Infiltration Rate		Remarks
					Inner		Annular			Inner in / h	Annular in / h	
					level (h), in	Δh, in	level (h), in	Δh, in				
1	S	4/17/2021	8:45 AM	0.50	5.00		4.00					
	E		9:15 AM	(.50)	4.375	0.63	3.125	0.88		1.25	1.75	
2	S		9:15 AM	0.50	5.00		4.00					
	E		9:45 AM	(1.00)	4.75	0.25	3.375	0.63		0.50	1.25	
3	S		9:45 AM	0.50	5.00		4.00					
	E		10:15 AM	(1.50)	4.75	0.25	3.375	0.63		0.50	1.25	
4	S		10:15 AM	0.50	5.00		4.00					
	E		10:45 AM	(2.00)	4.75	0.25	3.375	0.63		0.50	1.25	
6	S		10:45 AM	0.50	5.00		4.00					
	E		11:15 AM	(2.50)	4.75	0.25	3.375	0.63		0.50	1.25	
8	S		11:15 AM	0.50	5.00		4.00					
	E		11:45 AM	(3.00)	4.75	0.25	3.375	0.63		0.50	1.25	
9	S		11:45 AM	0.50	5.00		4.00					
	E		12:15 PM	(3.50)	4.625	0.38	3.375	0.63		0.75	1.25	
10	S		12:15 PM	0.50	5.00		4.00					
	E		12:45 PM	(4.00)	4.75	0.25	3.375	0.63		0.50	1.25	
11	S											
	E											
12	S											
	E											
13	S											
	E											
14	S											
	E											
15	S											
	E											
16	S											
	E											
17	S											
	E											
18	S											
	E											
19	S											
	E											
20	S											
	E											
21	S											
	E											
									(in\hr)	**0.56**		

INFILTROMETER DATA

Project Identification	5064I1	Constants	Area, in^2
Test Location	IT-9 (B)	Inner ring	50.3
Tested By	Z.Heim	Annular space	62.9
Depth of Testing	8.00'		
Test Elevation	408.00	Inner ring penetration	2 in
	Test Elevation raised to 6.00' due to refusal on weathered rock	Outer ring penetration	4 in

No.	Start or End	Date	Time	Elpd Time, hr (Total)	Water Measurements				Liq Temp °F	Infiltration Rate		Remarks
					Inner		Annular			Inner in / h	Annular in / h	
					level (h), in	Δh, in	level (h), in	Δh, in				
1	S	4/17/2021	8:45 AM	0.50	5.00		4.00					
	E		9:15 AM	(.50)	4.500	0.50	3.125	0.88		1.00	1.75	
2	S		9:15 AM	0.50	5.00		4.00					
	E		9:45 AM	(1.00)	4.75	0.25	3.75	0.25		0.50	0.50	
3	S		9:45 AM	0.50	5.00		4.00					
	E		10:15 AM	(1.50)	4.88	0.13	3.75	0.25		0.25	0.50	
4	S		10:15 AM	0.50	5.00		4.00					
	E		10:45 AM	(2.00)	4.75	0.25	3.75	0.25		0.50	0.50	
6	S		10:45 AM	0.50	5.00		4.00					
	E		11:15 AM	(2.50)	4.75	0.25	3.75	0.25		0.50	0.50	
8	S		11:15 AM	0.50	5.00		4.00					
	E		11:45 AM	(3.00)	4.75	0.25	3.75	0.25		0.50	0.50	
9	S		11:45 AM	0.50	5.00		4.00					
	E		12:15 PM	(3.50)	4.750	0.25	3.75	0.25		0.50	0.50	
10	S		12:15 PM	0.50	5.00		4.00					
	E		12:45 PM	(4.00)	4.75	0.25	3.75	0.25		0.50	0.50	
11	S											
	E											
12	S											
	E											
13	S											
	E											
14	S											
	E											
15	S											
	E											
16	S											
	E											
17	S											
	E											
18	S											
	E											
19	S											
	E											
20	S											
	E											
21	S											
	E											
									(in\hr)	**0.50**		

INFILTROMETER DATA

Project Identification	5064I1	Constants	Area, in^2
Test Location	IT-10 (A)	Inner ring	50.3
Tested By	Z.Heim	Annular space	62.9
Depth of Testing	4.50'		
Test Elevation	398.30	Inner ring penetration	2 in
	Test Elevation raised to 4.50' due to refusal on weathered rock	Outer ring penetration	4 in

No.	Start or End	Date	Time	Elpd Time, hr (Total)	Water Measurements				Liq Temp ºF	Infiltration Rate		Remarks
					Inner		Annular			Inner	Annular	
					level (h), in	Δh, in	level (h), in	Δh, in		in / h	in / h	
1	S	4/16/2021	10:05 AM	0.50	7.00		7.00					
	E		10:35 AM	(.50)	4.75	2.25	5.75	1.25		4.50	2.50	
2	S		10:35 AM	0.17	7.00		7.00					
	E		10:45 AM	(.67)	6.38	0.63	6.75	0.25		3.75	1.50	
3	S		10:45 AM	0.17	7.00		7.00					
	E		10:55 AM	(.83)	6.38	0.63	6.75	0.25		3.75	1.50	
4	S		10:55 AM	0.17	7.00		7.00					
	E		11:05 AM	(1.00)	6.38	0.63	6.75	0.25		3.75	1.50	
6	S		11:05 AM	0.17	7.00		7.00					
	E		11:15 AM	(1.17)	6.25	0.75	6.25	0.75		4.50	4.50	
8	S		11:15 AM	0.17	7.00		7.00					
	E		11:25 AM	(1.33)	6.25	0.75	6.2500	0.75		4.50	4.50	
9	S		11:25 AM	0.17	7.00		7.00					
	E		11:35 AM	(1.50)	6.250	0.75	6.2500	0.75		4.50	4.50	
10	S		11:35 AM	0.17	7.00		7.00					
	E		11:45 AM	(1.67)	6.38	0.63	6.3800	0.62		3.75	3.72	
11	S		11:45 AM	0.17	7.00		7.00					
	E		11:55 AM	(1.83)	6.38	0.63	6.3800	0.62		3.75	3.72	
12	S		11:55 AM	0.17	7.00		7.00					
	E		12:05 PM	(2.00)	6.250	0.75	6.25	0.75		4.50	4.50	
13	S		12:05 PM	0.17	7.00		7.00					
	E		12:15 PM	(2.17)	6.38	0.63	6.25	0.75		3.75	4.50	
14	S		12:15 PM	0.17	7.00		7.00					
	E		12:25 PM	(2.33)	6.375	0.63	6.250	0.75		3.75	4.50	
15	S		12:25 PM	0.17	7.00		7.00					
	E		12:35 PM	(2.50)	6.38	0.63	6.25	0.75		3.75	4.50	
16	S		12:35 PM	0.17	7.00		7.00					
	E		12:45 PM	(2.67)	6.250	0.75	6.125	0.88		4.50	5.25	
17	S		12:45 PM	0.17	7.00		7.00					
	E		12:55 PM	(2.83)	6.375	0.63	6.25	0.75		3.75	4.50	
18	S		12:55 PM	0.17	7.00		7.00					
	E		1:05 PM	(3.00)	6.38	0.63	6.125	0.88		3.75	5.25	
19	S		1:05 PM	0.17	7.00		7.00					
	E		1:15 PM	(3.17)	6.38	0.63	6.13	0.88		3.75	5.25	
20	S		1:15 PM	0.17	7.00		7.00					
	E		1:25 PM	(3.33)	6.25	0.75	6.13	0.88		4.50	5.25	
21	S		1:25 PM	0.17	7.00		7.00					
	E		1:35 PM	(3.50)	6.25	0.75	6.13	0.88		4.50	5.25	
22	S											
	E											
23	S											
	E											
24	S											
	E											
25	S											
	E											
26	S											
	E											
27	S											
	E											
28	S											
	E											
29	S											
	E											
									Infiltration (in\hr)	**4.50**		

INFILTROMETER DATA

Project Identification	5064I1	Constants	Area, in^2
Test Location	IT-10 (B)	Inner ring	50.3
Tested By	Z.Heim	Annular space	62.9
Depth of Testing	4.50'		
Test Elevation	398.30	Inner ring penetration	2 in
	Test Elevation raised to 4.50' due to refusal on weathered rock	Outer ring penetration	4 in

No.	Start or End	Date	Time	Elpd Time, hr (Total)	Water Measurements				Liq Temp ºF	Infiltration Rate		Remarks
					Inner		Annular			Inner	Annular	
					level (h), in	Δh, in	level (h), in	Δh, in		in / h	in / h	
1	S	4/16/2021	10:05 AM	0.50	7.00		7.00					
	E		10:35 AM	(.50)	5.50	1.50	5.25	1.75		3.00	3.50	
2	S		10:35 AM	0.17	7.00		7.00					
	E		10:45 AM	(.67)	6.50	0.50	6.25	0.75		3.00	4.50	
3	S		10:45 AM	0.17	7.00		7.00					
	E		10:55 AM	(.83)	6.375	0.63	6.75	0.25		3.75	1.50	
4	S		10:55 AM	0.17	7.00		7.00					
	E		11:05 AM	(1.00)	6.375	0.63	6.25	0.75		3.75	4.50	
6	S		11:05 AM	0.17	7.00		7.00					
	E		11:15 AM	(1.17)	6.25	0.75	6.13	0.88		4.50	5.25	
8	S		11:15 AM	0.17	7.00		7.00					
	E		11:25 AM	(1.33)	6.25	0.75	6.250	0.75		4.50	4.50	
9	S		11:25 AM	0.17	7.00		7.00					
	E		11:35 AM	(1.50)	6.125	0.88	6.00	1.00		5.25	6.00	
10	S		11:35 AM	0.17	7.00		7.00					
	E		11:45 AM	(1.67)	6.125	0.88	6.00	1.00		5.25	6.00	
11	S		11:45 AM	0.17	7.00		7.00					
	E		11:55 AM	(1.83)	6.625	0.38	6.50	0.50		2.25	3.00	
12	S		11:55 AM	0.17	7.00		7.00					
	E		12:05 PM	(2.00)	6.625	0.38	6.50	0.50		2.25	3.00	
13	S		12:05 PM	0.17	7.00		7.00					
	E		12:15 PM	(2.17)	6.625	0.38	6.50	0.50		2.25	3.00	
14	S		12:15 PM	0.17	7.00		7.00					
	E		12:25 PM	(2.33)	6.625	0.38	6.50	0.50		2.25	3.00	
15	S		12:25 PM	0.17	7.00		7.00					
	E		12:35 PM	(2.50)	6.625	0.38	6.50	0.50		2.25	3.00	
16	S		12:35 PM	0.17	7.00		7.00					
	E		12:45 PM	(2.67)	6.625	0.38	6.375	0.63		2.25	3.75	
17	S		12:45 PM	0.17	7.00		7.00					
	E		12:55 PM	(2.83)	6.625	0.38	6.50	0.50		2.25	3.00	
18	S		12:55 PM	0.17	7.00		7.00					
	E		1:05 PM	(3.00)	6.625	0.38	6.50	0.50		2.25	3.00	
19	S		1:05 PM	0.17	7.00		7.00					
	E		1:15 PM	(3.17)	6.625	0.38	6.375	0.63		2.25	3.75	
20	S		1:15 PM	0.17	7.00		7.00					
	E		1:25 PM	(3.33)	6.625	0.38	6.50	0.50		2.25	3.00	
21	S		1:25 PM	0.17	7.00		7.00					
	E		1:35 PM	(3.50)	6.625	0.38	6.50	0.50		2.25	3.00	
22	S											
	E											
23	S											
	E											
24	S											
	E											
25	S											
	E											
26	S											
	E											
27	S											
	E											
28	S											
	E											
29	S											
	E											
									Infiltration (in\hr)	**2.25**		

INFILTROMETER DATA

Project Identification	5064I1	Constants	Area, in^2
Test Location	IT-11 (A)	Inner ring	50.3
Tested By	Z.Heim	Annular space	62.9
Depth of Testing	6.50'		
Test Elevation	401.30	Inner ring penetration	2 in
	Test Elevation raised to 6.50' due to refusal on weathered rock	Outer ring penetration	4 in

No.	Start or End	Date	Time	Elpd Time, hr (Total)	Water Measurements				Liq Temp °F	Infiltration Rate		Remarks
					Inner		Annular			Inner in / h	Annular in / h	
					level (h), in	Δh, in	level (h), in	Δh, in				
1	S	4/17/2021	10:35 AM	0.50	7.00		7.00					
	E		11:05 AM	(.50)	6.25	0.75	5.875	1.13		1.50	2.25	
2	S		11:05 AM	0.50	7.00		7.00					
	E		11:35 AM	(1.00)	6.625	0.38	6.4375	0.56		0.75	1.13	
3	S		11:35 AM	0.50	7.00		7.00					
	E		12:05 PM	(1.50)	6.4375	0.56	6.3125	0.69		1.13	1.38	
4	S		12:05 PM	0.50	7.00		7.00					
	E		12:35 PM	(2.00)	6.375	0.63	6.375	0.63		1.25	1.25	
6	S		12:35 PM	0.50	7.00		7.00					
	E		1:05 PM	(2.50)	6.3125	0.69	6.1875	0.81		1.38	1.63	
8	S		1:05 PM	0.50	7.00		7.00					
	E		1:35 PM	(3.00)	6.3125	0.69	6.1875	0.81		1.38	1.63	
9	S		1:35 PM	0.50	7.00		7.00					
	E		2:05 PM	(3.50)	6.3125	0.69	6.1875	0.81		1.38	1.63	
10	S											
	E											
11	S											
	E											
12	S											
	E											
13	S											
	E											
14	S											
	E											
15	S											
	E											
16	S											
	E											
17	S											
	E											
18	S											
	E											
19	S											
	E											
20	S											
	E											
21	S											
	E											
									(in\hr)	**1.34**		

INFILTROMETER DATA

Project Identification	5064I1	Constants	Area, in^2
Test Location	IT-11 (B)	Inner ring	50.3
Tested By	Z.Heim	Annular space	62.9
Depth of Testing	6.50'		
Test Elevation	401.30	Inner ring penetration	2 in
	Test Elevation raised to 6.50' due to refusal on weathered rock	Outer ring penetration	4 in

No.	Start or End	Date	Time	Elpd Time, hr (Total)	Water Measurements				Liq Temp °F	Infiltration Rate		Remarks
					Inner		Annular			Inner in / h	Annular in / h	
					level (h), in	Δh, in	level (h), in	Δh, in				
1	S	4/17/2021	10:40 AM	0.50	7.00		7.00					
	E		11:10 AM	(.50)	6.25	0.75	5.75	1.25		1.50	2.50	
2	S		11:10 AM	0.50	7.00		7.00					
	E		11:40 AM	(1.00)	6.3125	0.69	6.125	0.88		1.38	1.75	
3	S		11:40 AM	0.50	7.00		7.00					
	E		12:10 PM	(1.50)	6.4375	0.56	6.1875	0.81		1.13	1.63	
4	S		12:10 PM	0.50	7.00		7.00					
	E		12:40 PM	(2.00)	6.3125	0.69	6.25	0.75		1.38	1.50	
6	S		12:40 PM	0.50	7.00		7.00					
	E		1:10 PM	(2.50)	6.3125	0.69	6.25	0.75		1.38	1.50	
8	S		1:10 PM	0.50	7.00		7.00					
	E		1:40 PM	(3.00)	6.3125	0.69	6.25	0.75		1.38	1.50	
9	S		1:40 PM	0.50	7.00		7.00					
	E		2:10 PM	(3.50)	6.3125	0.69	6.25	0.75		1.38	1.50	
10	S											
	E											
11	S											
	E											
12	S											
	E											
13	S											
	E											
14	S											
	E											
15	S											
	E											
16	S											
	E											
17	S											
	E											
18	S											
	E											
19	S											
	E											
20	S											
	E											
21	S											
	E											
									(in\hr)	**1.38**		

INFILTROMETER DATA

Project Identification	4791i1	Constants	Area, in^2
Test Location	IT 07	Inner ring	50.3
Tested By	Z.Heim	Annular space	62.9
Depth of Testing	3.67 Feet		
		Inner ring penetration	2 in
		Outer ring penetration	4 in

No.	Start or End	Date	Time	Elpd Time, hr (Total)	Water Measurements				Liq Temp °F	Infiltration Rate		Remarks
					Inner		Annular			Inner	Annular	
					level (h), in	Δh, in	level (h), in	Δh, in		in / h	in / h	
1	S	11/24/2017	10:55 AM	0.17	7.00		7.00					
	E		11:05 AM	(.17)	6.000	1.00	6.75	0.25		6.00	1.50	
2	S		11:05 AM	0.08	7.00		7.00					
	E		11:10 AM	(.25)	6.25	0.75	6.75	0.25		9.00	3.00	
3	S		11:10 AM	0.08	7.00		7.00					
	E		11:15 AM	(.33)	5.50	1.50	6.75	0.25		18.00	3.00	
4	S		11:15 AM	0.17	7.00		7.00					
	E		11:25 AM	(.50)	5.375	1.63	6.50	0.50		9.75	3.00	
6	S		11:25 AM	0.17	7.00		7.00					
	E		11:35 AM	(.67)	5.50	1.50	6.375	0.63		9.00	3.75	
8	S		11:35 AM	0.17	7.00		7.00					
	E		11:45 AM	(.83)	5.50	1.50	6.50	0.50		9.00	3.00	
9	S		11:45 AM	0.17	7.00		7.00					
	E		11:55 AM	(1.00)	5.500	1.50	6.50	0.50		9.00	3.00	
10	S		11:55 AM	0.17	7.00		7.00					
	E		12:05 PM	(1.17)	5.375	1.63	6.50	0.50		9.75	3.00	
11	S		12:05 PM	0.17	7.00		7.00					
	E		12:15 PM	(1.33)	5.375	1.63	6.50	0.50		9.75	3.00	
12	S		12:15 PM	0.17	7.00		7.00					
	E		12:25 PM	(1.50)	5.50	1.50	6.50	0.50		9.00	3.00	
13	S		12:25 PM	0.17	7.00		7.00					
	E		12:35 PM	(1.67)	5.50	1.50	6.50	0.50		9.00	3.00	
14	S		12:35 PM	0.17	7.00		7.00					
	E		12:45 PM	(1.83)	5.375	1.63	6.375	0.63		9.75	3.75	
15	S		12:45 PM	0.17	7.00		7.00					
	E		12:55 PM	(2.00)	5.50	1.50	6.625	0.38		9.00	2.25	
16	S		12:55 PM	0.17	7.00		7.00					
	E		1:05 PM	(2.17)	5.500	1.50	6.625	0.38		9.00	2.25	
17	S		1:05 PM	0.17	7.00		7.00					
	E		1:15 PM	(2.33)	5.375	1.63	6.25	0.75		9.75	4.50	
18	S		1:15 PM	0.17	7.00		7.00					
	E		1:25 PM	(2.50)	5.50	1.50	6.375	0.63		9.00	3.75	
19	S		1:25 PM	0.17	7.00		7.00					
	E		1:35 PM	(2.67)	5.375	1.63	6.375	0.63		9.75	3.75	
20	S		1:35 PM	0.17	7.00		7.00					
	E		1:45 PM	(2.83)	5.50	1.50	6.50	0.50		9.00	3.00	
21	S		1:45 PM	0.17	7.00		7.00					
	E		1:55 PM	(3.00)	5.50	1.50	6.625	0.38		9.00	2.25	
21	S		1:55 PM	0.17	7.00		7.00					
	E		2:05 PM	(3.17)	5.50	1.50	6.625	0.38		9.00	2.25	
21	S		2:05 PM	0.17	7.00		7.00					
	E		2:15 PM	(3.33)	5.375	1.63	6.25	0.75		9.75	4.50	
21	S		2:15 PM	0.17	7.00		7.00					
	E		2:25 PM	(3.50)	5.50	1.50	6.50	0.50		9.00	3.00	
21	S		2:25 PM	0.17	7.00		7.00					
	E		2:35 PM	-(10.92)	5.500	1.50	6.50	0.50		9.00	3.00	
21	S											
	E											
21	S											
	E											
									Infiltration (in\hr)	**9.19**		

INFILTROMETER DATA

Project Identification _____ Constants Area, cm^2 Liq depth, cm Liquid containers No. Vol / ΔH

Test Location _____ Inner ring 706.9

Tested By _____ Annular space 2120.6

pH _____ Liquid Used _____

Depth to water table _____ Inner ring penetration _____ Liquid level maintained using:

Ground Temp _____ @ depth (cm) _____ Outer ring penetration _____ float valve

No.	Start or End	Date	Time	Elpd Time Δ / (total) (hr)	Flow Readings Inner level, ml	Inner flow, cm^3	Annular level, ml	Annular flow, cm^3	Liq Temp ºC	Infiltration Rate Inner cm / h	Annular cm / h	Remarks
1	S											
	E											
2	S											
	E											
3	S											
	E											
4	S											
	E											
5	S											
	E											
6	S											
	E											
7	S											
	E											
8	S											
	E											
9	S											
	E											
10	S											
	E											
11	S											
	E											
12	S											
	E											
13	S											
	E											
14	S											
	E											
15	S											
	E											
16	S											
	E											
									Average Rate			
									Infiltration (in\hr)			

Formulas: V_{IR} = Inner Infiltration Rate: $V_{IR} = \Delta V_{IR} / (A_{IR} * \Delta t)$

V_A = Annular space infiltration rate: $V_A = \Delta V_A / (A_A * \Delta t)$

V = volume IR = inner ring A = annular ring A = area t - time Δ = difference

V_{IR} = the difference of the flow divided by the area multiplied by the interval of time

NOTE: When recording Inner height and Annular height, record the total volume of liquid that has left the cylinders (i.e. if cylinders are refilled, add the volume added to all subsequent readings).

EXAMPLE		Inner height, cm	Inner flow, cm^3	interval readings cm3
S	0	5.08		0
E	0.25	5.08	1350	1350
S	0.25	5.08		1350
E	0.5	5.08	2650	1300
S	0.25	5.08		0 (refill cyl)
E	0.75	5.08	3950	1300

$V_{IR} = \frac{(2650cm^3 - 1350cm^3)}{(706.9cm^2 \times 0.25hr)} = \frac{7.36\ cm/hr}{2.5\ cm/in} = 2.90\ in/hr$

This is the total accumulated flow from the graduated cylinder readings

This is a measurement to verity the liquid depth is a constant

Should the depth change - record the new data, and restart with the previous height and cylinders at 0

(This is an unlikely event that would occur if the floats fail to work properly)