

Appendix F

Infiltration Evaluation

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GeoTek, Inc.
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October 2, 2024
Project No. 4038-CR

Blue Fern West, LLC

18300 Redmond Way, Suite 120
Redmond, Washington 98052

Attention: Mr. Shane Bouchard

Subject: **Infiltration Evaluation**
Proposed Single-Family Residential Development
Catavina Project
Assessor's Parcel Number (APN) 620-170-009
38105 Portola Avenue
Palm Desert, Riverside County, California

References: See Page 6

Dear Mr. Bouchard:

As requested and authorized, GeoTek, Inc. (GeoTek) has performed an Infiltration Evaluation in order to provide infiltration test results for three (3) proposed stormwater basins associated with the subject single-family residential development. The intent of this study is to evaluate the infiltration properties of the subsurface soils within the proposed project storm water disposal areas (basins). This report presents the results of this evaluation.

Site Description

The approximately 79.12-acre rectangular shaped project site is located at 38105 Portola Avenue, in the City of Palm Desert, Riverside County, California (see Figure 1). The site is currently occupied by an abandoned golf course and associated improvements. A clubhouse, a storage warehouse building and a parking area occupy the east central portion of the site. A vehicle maintenance building, a storage equipment building, and two cell towers are located on the southeast corner of the site. A restroom building and a pump house are located in the central portion of the site. A water well is understood to be associated with the pump house. There are two large, dry ponds located in the northern and central sections of the site, and several concrete-paved cart paths traverse the site. Power lines extend along the eastern boundary of the site in a north-south direction.

The site can be identified as Riverside County Assessor's Parcel Number (APN) 620-170-009.

Topographically, the site can be considered as having relatively flat terrain. Site drainage is generally directed to the south. Site elevations vary from about 270 to 285 feet above mean sea level.

The site is bound by Frank Sinatra Drive, followed by residential development and vacant land to the north. Vacant land, followed by Portola Avenue, Desert Willow Golf Resort Maintenance Department and The Palm Desert Golf Academy at Desert Willow Golf Resort bound the site to the east. A mobile home park and Palm Desert Green Golf Course bound the site to the west. A mobile home park bounds the site to the south.

Project Description

Based upon review of a *Conceptual Site Plan*, prepared by MSA Consulting, Inc. and dated August 23, 2024, site development for the project will consist of a 556-lot, single-family residential development. Other project improvements are anticipated to include parks/open spaces, storm water disposal facilities (basins), underground utilities, interior street/parking/drive areas and landscape/hardscape improvements.

The three (3) proposed basins are planned in the central and southeastern portions of the subject site (see Figure 2).

Field Exploration

Six (6) percolation test borings, Borings I-1 through I-6, were excavated within the area of the proposed basins.

The borings were excavated to depths of about five (5) feet each below the existing grades. Logs of the borings are presented in Appendix A. The approximate locations of the borings are indicated on the attached Infiltration Test Location Map, Figure 2.

All borings were approximately 8-inches in diameter. Four-inch diameter slotted PVC pipes encapsulated in filter sock were inserted into the four (4) percolation test holes. The annular space between the test hole sidewalls and PVC pipe was filled with gravel.

Soil/Geologic Conditions

Dune sand deposits were encountered in all borings and extended to the maximum depth explored (5 feet). These materials consisted of poorly graded sands (SP soil type based upon the Unified Soil Classification System). The logs of the borings are presented in Appendix A.

Groundwater

Groundwater or perched water was not encountered nor observed in any of the borings conducted for this evaluation. Groundwater was not encountered in any of the previous excavations performed at the site to a maximum depth of 51.5 feet below the ground surface (ESS, 2015a).

Infiltration Testing

Following pre-soaking of the test holes in general conformance with the referenced document (County of Riverside, 2011), percolation testing was performed in the lower approximate 24 inches in each of the percolation borings. The percolation testing was conducted in general conformance with the referenced document prepared by the County of Riverside. The percolation rates were converted to an infiltration rate via the Porchet Method.

The infiltration rate for each of the borings is presented in the follow table after the water level had stabilized.

Boring No.	Infiltration Rate (inches per hour)	Depth of Boring (feet)
Boring I-1	35.53	5
Boring I-2	53.51	5
Boring I-3	48.62	5
Boring I-4	16.73	5
Boring I-5	56.86	5
Boring I-6	62.03	5

Copies of the percolation data sheets and infiltration conversion sheets (Porchet Method) are included in Appendix B.

The reported infiltration rates are the measured rate without any factor of safety applied. Over the lifetime of the water quality facility, the infiltration rates may be affected by silt build up and biological activities, as well as local variations in near surface soil conditions. A suitable factor of safety should be applied to the field rates in the design of the infiltration systems.



It should be noted that the infiltration rates provided above were performed in relatively undisturbed native soils. Infiltration rates will vary and are mostly dependent on the underlying consistency of the site soils and relative density. Infiltration rates will be impacted by weight of equipment travelling over the soils, placement of engineered fill and other various factors. GeoTek, Inc. assumes no responsibility or liability for the ultimate design or performance of the storm water facilities.

Representatives of GeoTek should observe the soils exposed at the bottom of the stormwater disposal basins during construction/earthwork operations to confirm suitability and that the conditions exposed are as anticipated for the proposed stormwater disposal basin.

LIMITATIONS

The earth materials observed on the project site appear to be representative of the tested areas; however, soil materials vary in character between excavations and natural outcrops or conditions exposed during site construction. Site conditions may vary due to seasonal changes or other factors. GeoTek, Inc. assumes no responsibility or liability for work, testing or recommendations performed or provided by others.

GeoTek's conclusions and recommendations are professional opinions that are limited to the extent of the available data. Observations during construction are important to allow for any change in recommendations found to be warranted. These opinions have been derived in accordance with current standards of practice and no warranty is expressed or implied. Standards of practice are subject to change with time.

The opportunity to be of service on this project is sincerely appreciated. If you should have any questions, please do not hesitate to contact GeoTek.

Respectfully submitted,
GeoTek, Inc.



Edward H. LaMont
CEG 1892, Exp. 07/31/26
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Bruce A. Hick
GE 2284, Exp. 12/31/24
Geotechnical Engineer

Anna M. Scott
Project Geologist

- Enclosures:
- Figure 1 – Site Location and Topography Map
 - Figure 2 – Infiltration Test Location Map
 - Appendix A – Logs of Exploratory Borings
 - Appendix B – Percolation Data Sheets and Conversion Sheets (Porchet Method)

Distribution: (1) Addressee via email (PDF file)

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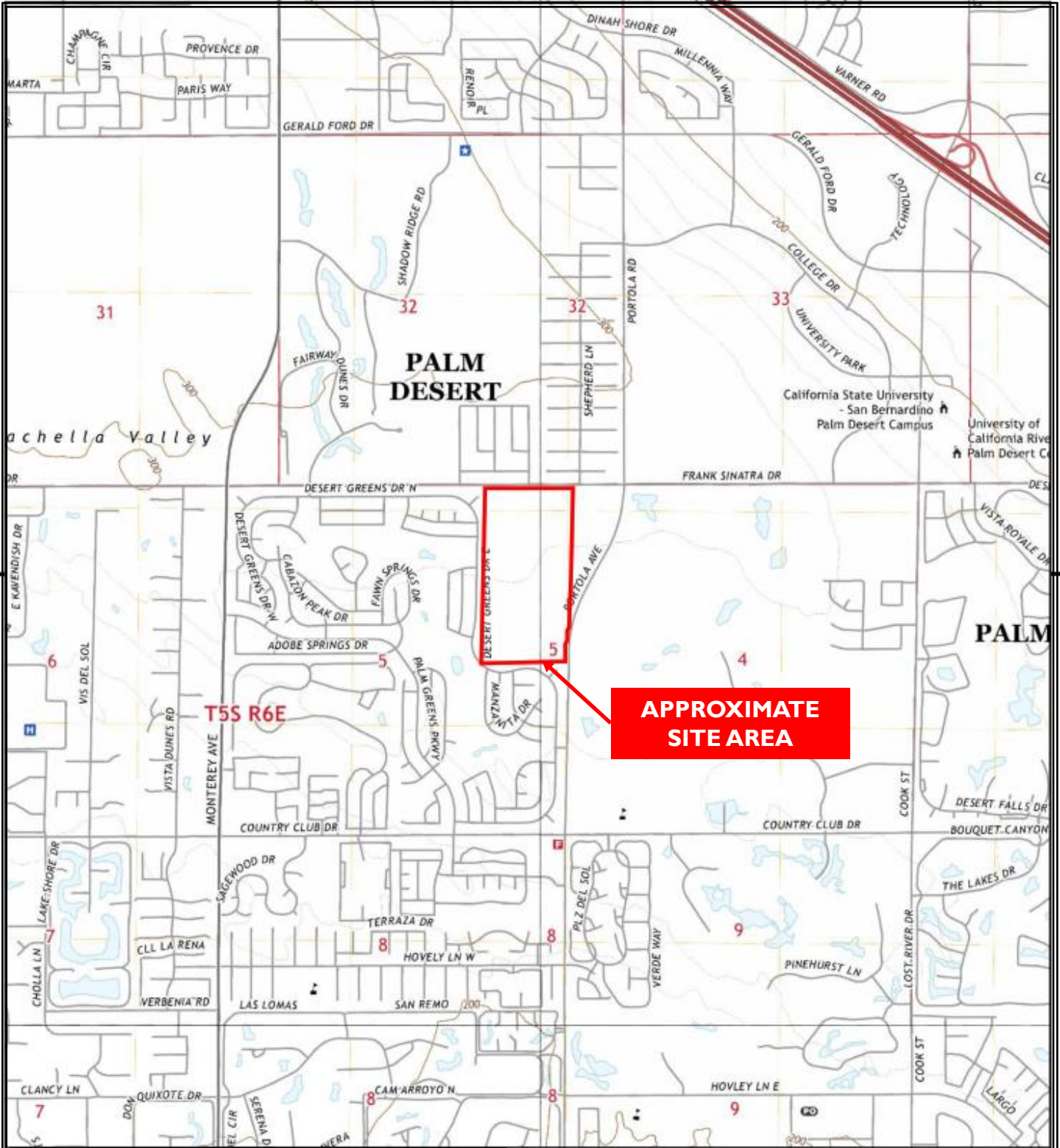
REFERENCES

County of Riverside, 2011, “Design Handbook for Low Impact Development, Best Management Practices”, dated September.

Earth Systems Southwest, 2015a, “Geotechnical Engineering Report, Proposed Catavina Residential Development, Southwest Corner of Frank Sinatra Drive and Portola Avenue, Palm Desert, Riverside County, California,” File No. 12329-01, dated February 6.

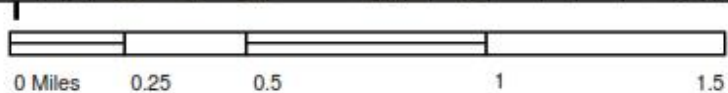
_____, 2015b, “Report of Infiltration Testing, Proposed Catavina Residential Development, Southwest Corner of Frank Sinatra Drive and Portola Avenue, Palm Desert, Riverside County, California,” File No. 12329-01, dated August 21.

MSA Consulting, Inc., 2024, “Conceptual Site Plan, Catavina, Palm Desert, CA”, dated August 23.



**APPROXIMATE
SITE AREA**

Modified from the Cathedral City, Myoma, Rancho Mirage
and La Quinta 2021 7.5-Minute Topographic Map Sheets

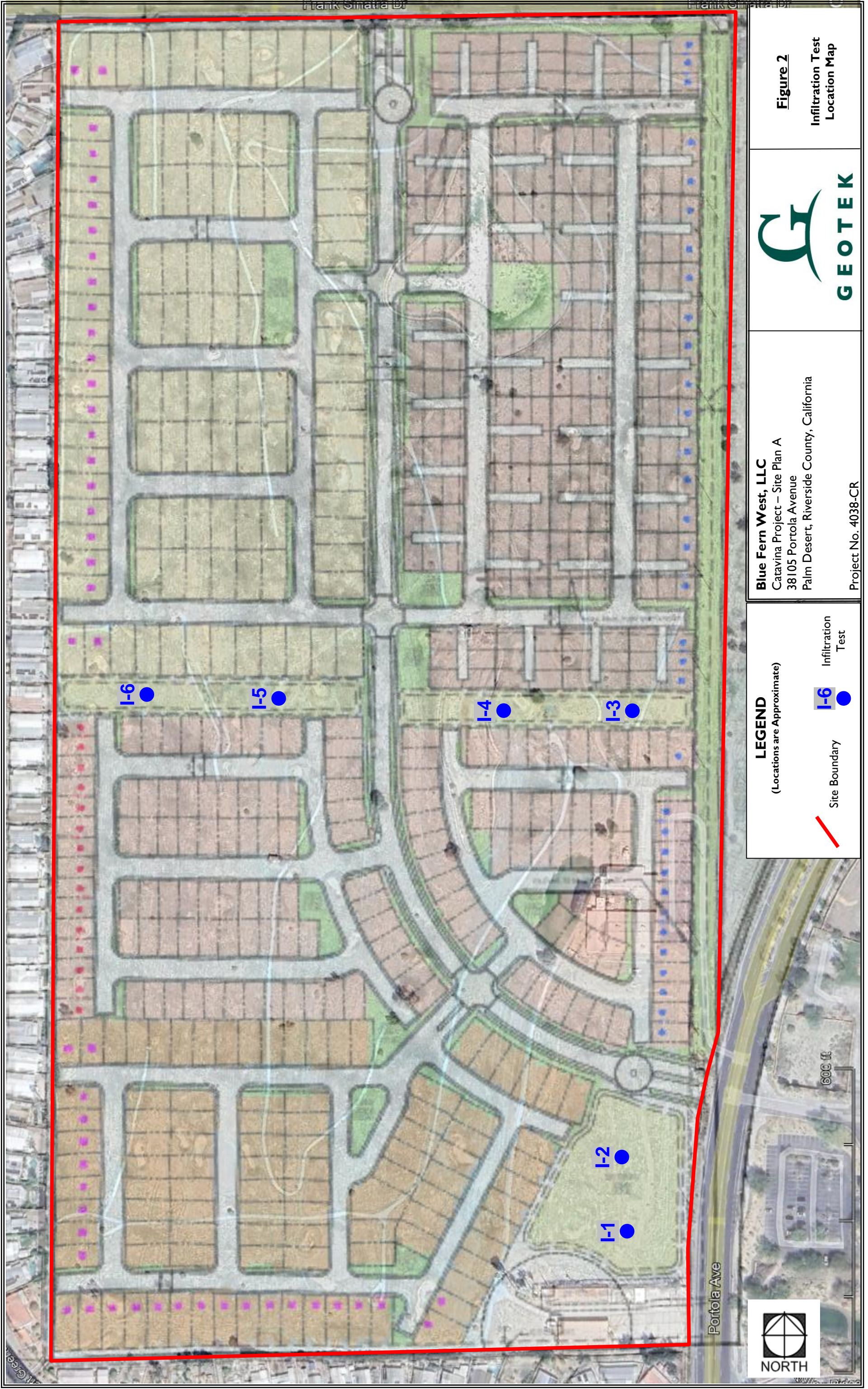


Blue Fern West, LLC
 Assessor's Parcel Number (APN) 620-170-009
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Figure I
 Site Location
 and
 Topography
 Map





Portola Ave



600 ft

LEGEND
(Locations are Approximate)

— Site Boundary

I-6 Infiltration Test

● Infiltration Test

Blue Fern West, LLC
 Catavina Project – Site Plan A
 38105 Portola Avenue
 Palm Desert, Riverside County, California

Project No. 4038-CR



Figure 2
 Infiltration Test
 Location Map

APPENDIX A

LOGS OF EXPLORATORY BORINGS

**Proposed Single-Family Residential Development
Catavina Project
38105 Portola Avenue
Palm Desert, Riverside County, California
Project No. 4038-CR**



GeoTek, Inc.
LOG OF EXPLORATORY BORING

CLIENT: Blue Fern West, LLC
PROJECT NAME: Catavina Project - Site Plan A
PROJECT NO.: 4038-CR
COORDINATES: 33.765995, -116.374095

DRILLER: 2R Drilling
DRILL METHOD: Hollow Stem
HAMMER: 140#/30"
ELEVATION: 264 ft amsl

LOGGED BY: JC
OPERATOR: Victor Z.
RIG TYPE: GT-16 Track
DATE: 9/19/2024

Depth (ft)	SAMPLES			USCS Symbol	Boring No.: I-1 MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing		
	Sample Type	Blows/ 6 in	Sample Number			Water Content (%)	Dry Density (pcf)	Others
0				SP	Dune Sand Deposits: F-m SAND, light greyish brown, slightly moist, trace silt Sand becomes f with trace m, moist			
5					BORING TERMINATED AT 6.0 FEET No groundwater encountered Boring backfilled with soil cuttings			
10								
15								
20								
25								
30								

LEGEND	Sample type:		---Ring		---SPT		---Small Bulk		---Large Bulk		---No Recovery		---Water Table
	Lab testing:	AL = Atterberg Limits	EI = Expansion Index	SA = Sieve Analysis	RV = R-Value Test	SR = Sulfate/Resistivity Test	SH = Shear Test	HC = Consolidation	MD = Maximum Density				

GeoTek, Inc.
LOG OF EXPLORATORY BORING

CLIENT: Blue Fern West, LLC
PROJECT NAME: Catavina Project - Site Plan A
PROJECT NO.: 4038-CR
COORDINATES: 33.768718, -116.374045

DRILLER: 2R Drilling
DRILL METHOD: Hollow Stem
HAMMER: 140#/30"
ELEVATION: 275 ft amsl

LOGGED BY: JC
OPERATOR: Victor Z.
RIG TYPE: GT-16 Track
DATE: 9/19/2024

Depth (ft)	SAMPLES			USCS Symbol	Boring No.: I-3 MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing		
	Sample Type	Blows/ 6 in	Sample Number			Water Content (%)	Dry Density (pcf)	Others
0				SP	Dune Sand Deposits: F-m SAND with trace c sand, light greyish brown, slightly moist, trace silt Moist			
5					BORING TERMINATED AT 6.0 FEET No groundwater encountered Boring backfilled with soil cuttings			
10								
15								
20								
25								
30								

LEGEND	Sample type:	<input type="checkbox"/> ---Ring	<input type="checkbox"/> ---SPT	<input type="checkbox"/> ---Small Bulk	<input checked="" type="checkbox"/> ---Large Bulk	<input type="checkbox"/> ---No Recovery	<input type="checkbox"/> ---Water Table	
	Lab testing:	AL = Atterberg Limits	EI = Expansion Index	SA = Sieve Analysis	RV = R-Value Test	SR = Sulfate/Resistivity Test	SH = Shear Test	HC = Consolidation

GeoTek, Inc.
LOG OF EXPLORATORY BORING

CLIENT: Blue Fern West, LLC
PROJECT NAME: Catavina Project - Site Plan A
PROJECT NO.: 4038-CR
COORDINATES: 33.768763, -116.374885

DRILLER: 2R Drilling
DRILL METHOD: Hollow Stem
HAMMER: 140#/30"
ELEVATION: 273 ft amsl

LOGGED BY: JC
OPERATOR: Victor Z.
RIG TYPE: GT-16 Track
DATE: 9/19/2024

Depth (ft)	SAMPLES			USCS Symbol	Boring No.: I-4 MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing		
	Sample Type	Blows/ 6 in	Sample Number			Water Content (%)	Dry Density (pcf)	Others
0				SP	Dune Sand Deposits: F-m SAND with trace c sand, light greyish brown, slightly moist, trace to few silt Moist			
5					BORING TERMINATED AT 6.0 FEET No groundwater encountered Boring backfilled with soil cuttings			
10								
15								
20								
25								
30								

LEGEND	Sample type:	<input type="checkbox"/> ---Ring	<input type="checkbox"/> ---SPT	<input type="checkbox"/> ---Small Bulk	<input checked="" type="checkbox"/> ---Large Bulk	<input type="checkbox"/> ---No Recovery	<input type="checkbox"/> ---Water Table	
	Lab testing:	AL = Atterberg Limits	EI = Expansion Index	SA = Sieve Analysis	RV = R-Value Test	SR = Sulfate/Resistivity Test	SH = Shear Test	HC = Consolidation

GeoTek, Inc.
LOG OF EXPLORATORY BORING

CLIENT: Blue Fern West, LLC
PROJECT NAME: Catavina Project - Site Plan A
PROJECT NO.: 4038-CR
COORDINATES: 33.768839, -116.377199

DRILLER: 2R Drilling
DRILL METHOD: Hollow Stem
HAMMER: 140#/30"
ELEVATION: 273 ft amsl

LOGGED BY: JC
OPERATOR: Victor Z.
RIG TYPE: GT-16 Track
DATE: 9/19/2024

Depth (ft)	SAMPLES			USCS Symbol	Boring No.: I-6	Laboratory Testing		
	Sample Type	Blows/ 6 in	Sample Number			Water Content (%)	Dry Density (pcf)	Others
MATERIAL DESCRIPTION AND COMMENTS								
0				SP	Dune Sand Deposits: F SAND with trace m sand, light greyish brown, slightly moist, trace silt Moist			
5					BORING TERMINATED AT 6.0 FEET			
					No groundwater encountered Boring backfilled with soil cuttings			
10								
15								
20								
25								
30								

LEGEND	Sample type:	---Ring	---SPT	---Small Bulk	---Large Bulk	---No Recovery	---Water Table	
	Lab testing:	AL = Atterberg Limits	EI = Expansion Index	SA = Sieve Analysis	RV = R-Value Test	SR = Sulfate/Resistivity Test	SH = Shear Test	HC = Consolidation

APPENDIX B

PERCOLATION DATA AND CONVERSION SHEETS

**Proposed Single-Family Residential Development
Catavina Project
38105 Portola Avenue
Palm Desert, Riverside County, California
Project No. 4038-CR**



PERCOLATION DATA SHEET

Project: Catavina Project - Site Plan A

Job No.: 4038-CR

Test Hole No.: I-1 **Tested By:** JC

Date: 9/19/2024

Depth of Hole As Drilled: 60 **Before Test:** 60

After Test: 60

Reading No.	Time	Time Interval (Min)	Total Depth of Hole (Inches)	Initial Water Level (Inches)	Final Water Level (Inches)	Δ in Water Level (Inches)	Rate (Minutes per Inch)	Comments
Trial	11:30 AM		60	24			N/A	Pre-soaked with 5+ gallons
	11:55 AM	25			0	24.00		of clear water prior to Trials
Trial	11:56 AM		60	24			N/A	
	12:21 PM	25			0	24.00		Testing intervals adjusted
1	12:22 PM		60	24			0.09	for rapid infiltration rates
	12:24 PM	2			1.56	22.44		
2	12:25 PM		60	24			0.11	
	12:27 PM	2			6	18.00		
3	12:28 PM		60	24			0.15	
	12:30 PM	2			10.8	13.20		
4	12:31 PM		60	24			0.17	
	12:33 PM	2			12	12.00		
5	12:34 PM		60	24			0.17	
	12:36 PM	2			12.12	11.88		
6	12:37 PM		60	24			0.17	
	12:39 PM	2			12.12	11.88		



PERCOLATION DATA SHEET

Project: Catavina Project - Site Plan A

Job No.: 4038-CR

Test Hole No.: I-2 **Tested By:** JC

Date: 9/19/2024

Depth of Hole As Drilled: 60 **Before Test:** 60

After Test: 60

Reading No.	Time	Time Interval (Min)	Total Depth of Hole (Inches)	Initial Water Level (Inches)	Final Water Level (Inches)	Δ in Water Level (Inches)	Rate (Minutes per Inch)	Comments
Trial	11:30 AM		60	24			N/A	Pre-soaked with 5+ gallons of clear water prior to Trials
	11:55 AM	25			0	24.00		
Trial	11:56 AM		60	24			N/A	Testing intervals adjusted for rapid infiltration rates
	12:21 PM	25			0	24.00		
1	12:22 PM		60	24			0.06	
	12:23 PM	1			7.56	16.44		
2	12:24 PM		60	24			0.09	
	12:25 PM	1			13.44	10.56		
3	12:26 PM		60	24			0.09	
	12:27 PM	1			12.6	11.40		
4	12:28 PM		60	24			0.10	
	12:29 PM	1			13.92	10.08		
5	12:30 PM		60	24			0.10	
	12:31 PM	1			14.4	9.60		
6	12:32 PM		60	24			0.11	
	12:33 PM	1			14.52	9.48		



PERCOLATION DATA SHEET

Project: Catavina Project - Site Plan A

Job No.: 4038-CR

Test Hole No.: I-3 **Tested By:** JC

Date: 9/19/2024

Depth of Hole As Drilled: 60 **Before Test:** 60

After Test: 60

Reading No.	Time	Time Interval (Min)	Total Depth of Hole (Inches)	Initial Water Level (Inches)	Final Water Level (Inches)	Δ in Water Level (Inches)	Rate (Minutes per Inch)	Comments
Trial	11:30 AM		60	24			N/A	Pre-soaked with 5+ gallons of clear water prior to Trials
	11:55 AM	25			0	24.00		
Trial	11:56 AM		60	24			N/A	Testing intervals adjusted for rapid infiltration rates
	12:21 PM	25			0	24.00		
1	12:22 PM		60	24			0.07	
	12:23 PM	1			9.24	14.76		
2	12:24 PM		60	24			0.08	
	12:25 PM	1			12	12.00		
3	12:26 PM		60	24			0.09	
	12:27 PM	1			12.84	11.16		
4	12:28 PM		60	24			0.11	
	12:29 PM	1			14.88	9.12		
5	12:30 PM		60	24			0.11	
	12:31 PM	1			15.12	8.88		
6	12:32 PM		60	24			0.11	
	12:33 PM	1			15.24	8.76		



PERCOLATION DATA SHEET

Project: Catavina Project - Site Plan A

Job No.: 4038-CR

Test Hole No.: I-4 **Tested By:** JC

Date: 9/19/2024

Depth of Hole As Drilled: 60 **Before Test:** 60

After Test: 60

Reading No.	Time	Time Interval (Min)	Total Depth of Hole (Inches)	Initial Water Level (Inches)	Final Water Level (Inches)	Δ in Water Level (Inches)	Rate (Minutes per Inch)	Comments
Trial	11:30 AM		60	24			N/A	Pre-soaked with 5+ gallons of clear water prior to Trials
	11:55 AM	25			0	24.00		
Trial	11:56 AM		60	24			N/A	
	12:21 PM	25			0	24.00		
1	12:22 PM		60	24			N/A	
	12:32 PM	10			0	24.00		
2	12:33 PM		60	24			0.44	
	12:43 PM	10			1.44	22.56		
3	12:44 PM		60	24			0.46	
	12:54 PM	10			2.04	21.96		
4	12:55 PM		60	24			0.47	
	1:05 PM	10			2.52	21.48		
5	1:06 PM		60	24			0.47	
	1:16 PM	10			2.64	21.36		
6	1:17 PM		60	24			0.47	
	1:27 PM	10			2.64	21.36		



PERCOLATION DATA SHEET

Project: Catavina Project - Site Plan A

Job No.: 4038-CR

Test Hole No.: I-5 **Tested By:** JC

Date: 9/19/2024

Depth of Hole As Drilled: 60 **Before Test:** 60

After Test: 60

Reading No.	Time	Time Interval (Min)	Total Depth of Hole (Inches)	Initial Water Level (Inches)	Final Water Level (Inches)	Δ in Water Level (Inches)	Rate (Minutes per Inch)	Comments
Trial	11:30 AM		60	24			N/A	Pre-soaked with 5+ gallons of clear water prior to Trials
	11:55 AM	25			0	24.00		
Trial	11:56 AM		60	24			N/A	Testing intervals adjusted for rapid infiltration rates
	12:21 PM	25			0	24.00		
1	12:22 PM		60	24			0.06	
	12:23 PM	1			7.32	16.68		
2	12:24 PM		60	24			0.07	
	12:25 PM	1			9.12	14.88		
3	12:26 PM		60	24			0.09	
	12:27 PM	1			12.72	11.28		
4	12:28 PM		60	24			0.09	
	12:29 PM	1			13.44	10.56		
5	12:30 PM		60	24			0.10	
	12:31 PM	1			13.92	10.08		
6	12:32 PM		60	24			0.10	
	12:33 PM	1			14.04	9.96		



PERCOLATION DATA SHEET

Project: Catavina Project - Site Plan A

Job No.: 4038-CR

Test Hole No.: I-5 **Tested By:** JC

Date: 9/19/2024

Depth of Hole As Drilled: 60 **Before Test:** 60

After Test: 60

Reading No.	Time	Time Interval (Min)	Total Depth of Hole (Inches)	Initial Water Level (Inches)	Final Water Level (Inches)	Δ in Water Level (Inches)	Rate (Minutes per Inch)	Comments
Trial	11:30 AM		60	24			N/A	Pre-soaked with 5+ gallons
	11:55 AM	25			0	24.00		of clear water prior to Trials
Trial	11:56 AM		60	24			N/A	
	12:21 PM	25			0	24.00		Testing intervals adjusted
1	12:22 PM		60	24			0.08	for rapid infiltration rates
	12:23 PM	1			11.04	12.96		
2	12:24 PM		60	24			0.09	
	12:25 PM	1			12.72	11.28		
3	12:26 PM		60	24			0.09	
	12:27 PM	1			13.08	10.92		
4	12:28 PM		60	24			0.09	
	12:29 PM	1			13.2	10.80		
5	12:30 PM		60	24			0.09	
	12:31 PM	1			13.32	10.68		
6	12:32 PM		60	24			0.09	
	12:33 PM	1			13.32	10.68		



Client: Blue Fern West, LLC
Project: Catavina Project
Project No: 4038-CR
Date: 9/19/2024

Boring No. I-1

Percolation to Infiltration Rate (Porchet Method)

Time Interval, $\Delta t =$ 2
 Final Depth to Water, $D_F =$ 47.88
 Test Hole Radius, $r =$ 4
 Initial Depth to Water, $D_O =$ 36
 Total Test Hole Depth, $D_T =$ 60

Equation - $I_t = \frac{\Delta H (60r)}{\Delta t (r+2H_{avg})}$

$H_O = D_T - D_O =$ 24
 $H_F = D_T - D_F =$ 12.12
 $\Delta H = \Delta D = H_O - H_F =$ 11.88
 $H_{avg} = (H_O + H_F) / 2 =$ 18.06

$I_t =$ 35.53 Inches per Hour



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Boring No. I-2

Percolation to Infiltration Rate (Porchet Method)

Time Interval, $\Delta t =$ 1
 Final Depth to Water, $D_F =$ 45.48
 Test Hole Radius, $r =$ 4
 Initial Depth to Water, $D_O =$ 36
 Total Test Hole Depth, $D_T =$ 60

Equation -
$$I_t = \frac{\Delta H (60r)}{\Delta t (r+2H_{avg})}$$

$H_O = D_T - D_O =$ 24
 $H_F = D_T - D_F =$ 14.52
 $\Delta H = \Delta D = H_O - H_F =$ 9.48
 $H_{avg} = (H_O + H_F) / 2 =$ 19.26

$I_t =$ 53.51 Inches per Hour



Client: Blue Fern West, LLC
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Boring No. I-3

Percolation to Infiltration Rate (Porchet Method)

Time Interval, $\Delta t =$ 1
 Final Depth to Water, $D_F =$ 44.76
 Test Hole Radius, $r =$ 4
 Initial Depth to Water, $D_O =$ 36
 Total Test Hole Depth, $D_T =$ 60

Equation - $I_t = \frac{\Delta H (60r)}{\Delta t (r+2H_{avg})}$

$H_O = D_T - D_O =$ 24
 $H_F = D_T - D_F =$ 15.24
 $\Delta H = \Delta D = H_O - H_F =$ 8.76
 $H_{avg} = (H_O + H_F) / 2 =$ 19.62

$I_t =$ 48.62 Inches per Hour



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Boring No. I-4

Percolation to Infiltration Rate (Porchet Method)

Time Interval, $\Delta t =$ 10
 Final Depth to Water, $D_F =$ 57.36
 Test Hole Radius, $r =$ 4
 Initial Depth to Water, $D_O =$ 36
 Total Test Hole Depth, $D_T =$ 60

Equation - $I_t = \frac{\Delta H (60r)}{\Delta t (r+2H_{avg})}$

$H_O = D_T - D_O =$ 24
 $H_F = D_T - D_F =$ 2.64
 $\Delta H = \Delta D = H_O - H_F =$ 21.36
 $H_{avg} = (H_O + H_F) / 2 =$ 13.32

$I_t =$ 16.73 Inches per Hour



Client: Blue Fern West, LLC
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Boring No. I-5

Percolation to Infiltration Rate (Porchet Method)

Time Interval, $\Delta t =$ 1
 Final Depth to Water, $D_F =$ 45.96
 Test Hole Radius, $r =$ 4
 Initial Depth to Water, $D_O =$ 36
 Total Test Hole Depth, $D_T =$ 60

Equation - $I_t = \frac{\Delta H (60r)}{\Delta t (r+2H_{avg})}$

$H_O = D_T - D_O =$ 24
 $H_F = D_T - D_F =$ 14.04
 $\Delta H = \Delta D = H_O - H_F =$ 9.96
 $H_{avg} = (H_O + H_F) / 2 =$ 19.02

$I_t =$ 56.86 Inches per Hour



Client: Blue Fern West, LLC
Project: Catavina Project
Project No: 4038-CR
Date: 9/19/2024

Boring No. I-6

Percolation to Infiltration Rate (Porchet Method)

Time Interval, $\Delta t =$ 1
 Final Depth to Water, $D_F =$ 46.68
 Test Hole Radius, $r =$ 4
 Initial Depth to Water, $D_O =$ 36
 Total Test Hole Depth, $D_T =$ 60

Equation - $I_t = \frac{\Delta H (60r)}{\Delta t (r+2H_{avg})}$

$H_O = D_T - D_O =$ 24
 $H_F = D_T - D_F =$ 13.32
 $\Delta H = \Delta D = H_O - H_F =$ 10.68
 $H_{avg} = (H_O + H_F) / 2 =$ 18.66

$I_t =$ 62.03 Inches per Hour

