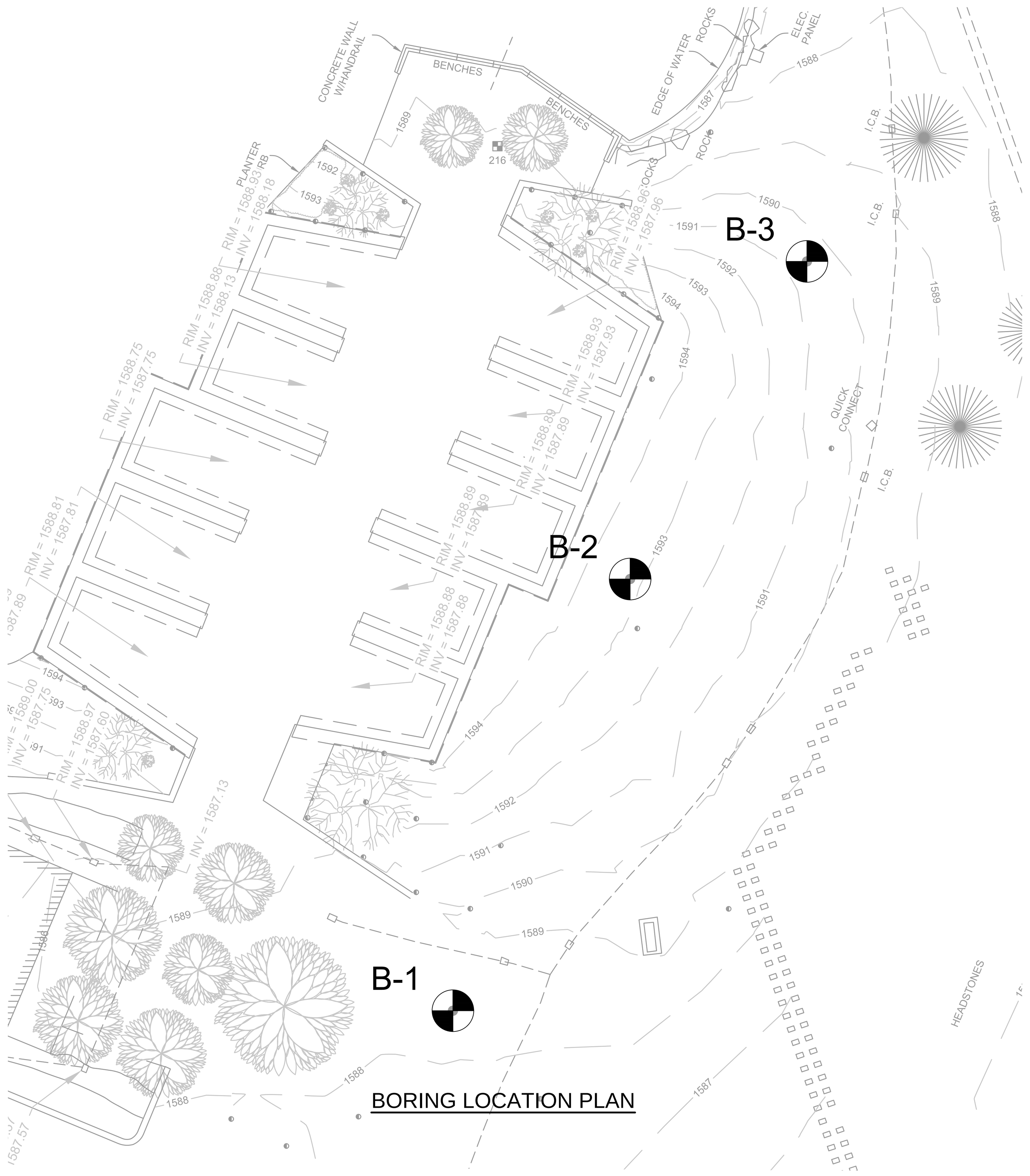


BORING LOCATION PLAN

FIELD LOG OF BORING B - 1
Sheet 1 of 2

AGI Aragon Geotechnical, Inc.

Project: *RNC COLUMBARIUM -- 5,000 NICHES*
Location: *RIVERSIDE, RIVERSIDE COUNTY, CALIF.*

Date(s) Drilled:	**6/25/15**	Logged By:	**L. Arguello; M. Doerschlag**
Drilled By:	**California-Pacific Drilling**	Total Depth:	**20.3 Ft.**
Rig Make/Model:	**L10T Track**	Hammer Type:	**Automatic trip**
Drilling Method:	**Hollow-Stem Auger**	Hammer Weight/Drop:	**140 Lb./30 In.**
Hole Diameter:	**7½ In.**	Surface Elevation:	**± 1588.4 Ft. AMSL per site plan**

Comments: South end of proposed improvement area.

DEPTH (ft.)	ELEVATION (MSL DATUM)	SAMPLE INTERVALS TYPE, "N" or (Blows/ft.)	USCS	GEOTECHNICAL DESCRIPTION	DRY DENSITY (pcf)	WATER CONTENT (%)	OTHER TESTS
0			SM	Turf Grasses Silty Sand with Clay: Dark yellowish brown; loose; moist; fine to coarse grained with ~45-50% fines; massive; not sticky. [Fill]			BULK: MAX, EI, SHEAR, SULFATE, CHLORIDE, pH, RESISTIVITY
	1585	RING 4 5 8 (13)	SM	← Silty sand with clay, as above, not visibly porous.	117.7	11.1	
5		RING 12 30 50 (80)	SM	Silty Sand with Clay: Yellowish brown; dense to very dense; moist; fine to coarse grained with around 25% fines; moderately cemented and cohesive; not visibly porous. [Very old alluvium]	132.7	8.1	CONSOL
		RING 17 35 50/5"	SM	← Silty sand with clay, few fine carbonate threads, not visibly porous.	127.5	8.7	CONSOL
	1580	RING 35 50/5"	SM	← Silty sand with clay, slightly increased fines proportion, not visibly porous.	130.8	7.9	
10		RING 15 17 25 (42)	SM	← Silty sand with clay, becomes medium dense, mostly fine to medium grained, about 40-45% fines, not visibly porous.	122.5	9.6	
	1575		ROCK	Tonalite: Speckled light yellowish gray and black; generally medium-grained equigranular texture with around 20% mafic content; highly weathered; extremely weak and friable; massive; slightly moist cuttings. Easy and smooth drilling. [Granitic bedrock, unit Kvt]			
15							

Continued on following page.

FIELD LOG OF BORING B - 1
Sheet 2 of 2

AGI Aragon Geotechnical, Inc.

Project: *RNC COLUMBARIUM -- 5,000 NICHES*
Location: *RIVERSIDE, RIVERSIDE COUNTY, CALIF.*

DEPTH (ft.)	ELEVATION (MSL DATUM)	SAMPLE INTERVALS TYPE, "N" or (Blows/ft.)	USCS	GEOTECHNICAL DESCRIPTION	DRY DENSITY (pcf)	WATER CONTENT (%)	OTHER TESTS
15		SPT "50/4"	ROCK	Tonalite: Speckled light yellowish gray and black; generally medium-grained equigranular texture with around 20% mafic content; highly weathered; extremely weak and friable; massive; slightly moist cuttings. Easy and smooth drilling. [Granitic bedrock, unit Kvt]			
	1570			← Freshens slightly, small drill rate decrease.			
20		SPT "50/3"		← Speckled white and black, no mottles, dry.			

Bottom of boring at 20.3 feet without refusal.
No groundwater encountered; dry on 6/26/15.
Temporary piezometer installed; backfilled with soil 6/26/15.

FIELD LOG OF BORING B - 2
Sheet 1 of 3

AGI Aragon Geotechnical, Inc.

Project: *RNC COLUMBARIUM -- 5,000 NICHES*
Location: *RIVERSIDE, RIVERSIDE COUNTY, CALIF.*

Date(s) Drilled:	**6/25/15**	Logged By:	**L. Arguello; M. Doerschlag**
Drilled By:	**California-Pacific Drilling**	Total Depth:	**50.0 Ft.**
Rig Make/Model:	**L10T Track**	Hammer Type:	**Automatic trip**
Drilling Method:	**Hollow-Stem Auger**	Hammer Weight/Drop:	**140 Lb./30 In.**
Hole Diameter:	**7½ In.**	Surface Elevation:	**± 1592.8 Ft. AMSL per site plan**

Comments: Approximate center of proposed improvement area.

DEPTH (ft.)	ELEVATION (MSL DATUM)	SAMPLE INTERVALS TYPE, "N" or (Blows/ft.)	USCS	GEOTECHNICAL DESCRIPTION	DRY DENSITY (pcf)	WATER CONTENT (%)	OTHER TESTS
0			SM	Turf Grasses Silty Sand with Clay: Dark yellowish brown; generally medium dense; moist; fine to coarse grained with ~40% fines; massive; not sticky. No trash or organics noted. [Fill]			
	1590	RING 6 10 18 (28)	SM	← Silty sand with clay, as above, not visibly porous.	130.0	9.2	
5		RING 15 12 16 (28)	SM	← Silty sand with clay, as above, not visibly porous.	129.2	9.4	
		RING 5 5 6 (11)	SM	← Silty sand with clay, becomes loose, not visibly porous.	117.6	10.5	
	1585	RING 12 11 15 (26)	SM	← Silty sand with clay, returns to medium dense, ~20% fines and with irregular reduced dark brownish gray zones in shoe.	121.4	9.2	
10		RING 10 11 11 (22)	SM	Silty Sand: Yellowish brown; medium dense; moist; fine to coarse grained with traces of gravel to 1" diameter and clay binder; mildly cemented and cohesive; not visibly porous. [Very old alluvium]	126.2	8.2	CONSOL
	1580	RING 4 6 7 (13)	SM	← Silty sand, locally grades loose and with only 10-15% fines including clayey grain films, low cohesion, not macroscopically porous.	112.2	4.1	CONSOL
15							

Continued on following page.

FIELD LOG OF BORING B - 2
Sheet 2 of 3

AGI Aragon Geotechnical, Inc.

Project: *RNC COLUMBARIUM -- 5,000 NICHES*
Location: *RIVERSIDE, RIVERSIDE COUNTY, CALIF.*

DEPTH (ft.)	ELEVATION (MSL DATUM)	SAMPLE INTERVALS TYPE, "N" or (Blows/ft.)	USCS	GEOTECHNICAL DESCRIPTION	DRY DENSITY (pcf)	WATER CONTENT (%)	OTHER TESTS
15		SPT 10 50/6"	SM	Silty Sand with Clay: At 15 feet becomes olive brown; very dense; slightly moist to moist; fine to coarse grained with about 30-35% fines; cemented and cohesive. May be part residual soil. Approximate lower bedrock contact. [Very old alluvium]			
	1575		ROCK	Tonalite: Speckled light yellowish gray and black, soon freshening to white and black by around 20 feet; generally medium-grained equigranular texture with around 20% mafic content; highly weathered; extremely weak and friable; massive; slightly moist cuttings. Easy and smooth drilling. [Granitic bedrock, unit Kvt]			
20		SPT "50/4"					
	1570						
25		SPT "50/4"		← Similar to 20' sample. Not mottled.			
	1565						
30		SPT "50/4"		← Contains some very fine, distinct FeO mottles or rusty clots, sample is slightly moist.			
	1560						
35							

Continued on following page.

FIELD LOG OF BORING B - 2
Sheet 3 of 3

AGI Aragon Geotechnical, Inc.

Project: *RNC COLUMBARIUM -- 5,000 NICHES*
Location: *RIVERSIDE, RIVERSIDE COUNTY, CALIF.*

DEPTH (ft.)	ELEVATION (MSL DATUM)	SAMPLE INTERVALS TYPE, "N" or (Blows/ft.)	USCS	GEOTECHNICAL DESCRIPTION	DRY DENSITY (pcf)	WATER CONTENT (%)	OTHER TESTS
35			ROCK	Tonalite: Speckled white and black; generally medium-grained equigranular texture with around 20% mafic content; continued highly weathered; extremely weak and friable; massive. Drill cuttings only slightly moist. Easy and smooth drilling. [Granitic bedrock, unit Kvt]			
	1555						
40				← Freshens slightly, small drill rate decrease. Auger cuttings only slightly moist.			
	1550						
45				← Drill rate slows slightly, remains highly weathered. Slightly moist cuttings during drilling.			
	1545						
50							

Bottom of boring at 50.0 feet without refusal.
Groundwater measured depth 39.5 ft. at 1430 hrs. on 6/26/15.
Temporary piezometer installed; backfilled with soil 6/26/15.

FIELD LOG OF BORING B - 3
Sheet 1 of 2

AGI Aragon Geotechnical, Inc.

Project: *RNC COLUMBARIUM -- 5,000 NICHES*
Location: *RIVERSIDE, RIVERSIDE COUNTY, CALIF.*

Date(s) Drilled:	**6/25/15**	Logged By:	**L. Arguello; M. Doerschlag**
Drilled By:	**California-Pacific Drilling**	Total Depth:	**20.3 Ft.**
Rig Make/Model:	**L10T Track**	Hammer Type:	**Automatic trip**
Drilling Method:	**Hollow-Stem Auger**	Hammer Weight/Drop:	**140 Lb./30 In.**
Hole Diameter:	**7½ In.**	Surface Elevation:	**± 1590.5 Ft. AMSL per site plan**

Comments: North end of proposed improvement area.

DEPTH (ft.)	ELEVATION (MSL DATUM)	SAMPLE INTERVALS TYPE, "N" or (Blows/ft.)	USCS	GEOTECHNICAL DESCRIPTION	DRY DENSITY (pcf)	WATER CONTENT (%)	OTHER TESTS
0	1590		SM	Turf Grasses Silty Sand with Clay: Dark yellowish brown; medium dense; moist; fine to coarse grained with ~45-50% fines; massive; not sticky. Appears free of organics or debris. [Fill]			
		RING 10 8 10 (18)	SM	← Silty sand with clay, as above, not visibly porous. Approximate contact	125.3	9.6	
5	1585	RING 10 13 32 (45)	SM	Silty Sand with Clay: Yellowish brown; medium dense; moist; fine to coarse grained with typical 30-35% fines; mildly to moderately cemented and cohesive; not visibly porous. [Very old alluvium]	123.7	6.2	
		RING 18 18 17 (35)	SM	← Silty sand with clay, slightly moist, not visibly porous.	119.7	2.1	
		RING 18 50/3"	SM	← Silty sand with clay, becomes very dense, cemented, and cohesive. Not visibly porous.	119.6	4.8	
10	1580	SPT 35 50/5"	SM	← Silty sand with clay, as at 8 ft. but grading only slightly moist, not visibly porous.			
15							

Continued on following page.

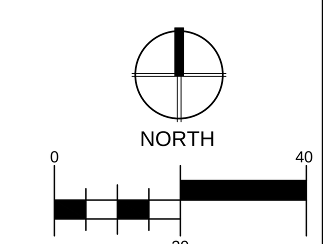
FIELD LOG OF BORING B - 3
Sheet 2 of 2

AGI Aragon Geotechnical, Inc.

Project: *RNC COLUMBARIUM -- 5,000 NICHES*
Location: *RIVERSIDE, RIVERSIDE COUNTY, CALIF.*

DEPTH (ft.)	ELEVATION (MSL DATUM)	SAMPLE INTERVALS TYPE, "N" or (Blows/ft.)	USCS	GEOTECHNICAL DESCRIPTION	DRY DENSITY (pcf)	WATER CONTENT (%)	OTHER TESTS
15	1575	SPT 5 10 11 N=21	SM	Silty Sand: Yellowish brown; medium dense; slightly moist; sample at 15 feet is fine to coarse grained but with much lower fines (~15%) than preceding intervals, with traces of clay; apparently massive; not macroscopically porous. [Very old alluvium] Estimated contact.			
			ROCK	Tonalite: Inferred speckled light yellowish gray and black, rapidly becoming white and black; generally medium-grained equigranular texture with around 20% mafic content; highly weathered; extremely weak and friable; massive; dry cuttings. No mottles at 20 ft. Easy and smooth drilling. [Granitic bedrock, unit Kvt]			
20		SPT "50/3"					

Bottom of boring at 20.3 feet without refusal.
No groundwater encountered; dry on 6/26/15.
Temporary piezometer installed; backfilled with soil 6/26/15.



GRAPHIC SCALE: 1" = 20'

three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
three eighths inch = one foot
one quarter inch = one foot
one eighth inch = one foot

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Revisions: | Date

CONSULTANTS:

ARCHITECT/ENGINEERS:

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Drawing Title	SUBSURFACE INVESTIGATION - BORING LOGS AND GEOTECHNICAL NOTES
Approved: Project Director	
Project Title	Expand Columbarium A
Location	Riverside National Cemetery, 22495 Van Buren Blvd, Riverside CA 92518
Date	May 26, 2016
Checked	CZ
Drawn	CZ/JM
Project Number	901CM3040
Building Number	
Drawing Number	B-101
Dwg.	3 of 47

NCA DESIGN AND CONSTRUCTION SERVICE

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