SUNSHINE CANYON
Landfill

14747 San Fernando Road
Sylmar, CA 91342

August 15, 2018

Mr. Martin Aiyetiwa
Senior Civil Engineer
County of Los Angeles, Department of Public Works
900 South Fremont Avenue
Alhambra, CA 91803-1331

Subject: Sunshine Canyon Landfill, Quarterly Vegetation Report
Second Quarter 2018 Vegetation Report

Mr. Aiyetiwa,

This report has been prepared in accordance with the following:

- Condition 18B of the Finding of Conformance;
- Condition 44A of the Condition Use Permit (CUP)
- Los Angeles City Condition [Q] C.8 of the Ordinance No. 172,933.

This report presents the progress of the site's landscaping and revegetation activities for the second quarter of 2018. The intent of these reports is to provide detailed information regarding the site's efforts related to vegetation including vegetation of interim and permanent slopes and activities conducted for the on-site sage mitigation areas.

Architerra Design Group continues to assist site personnel in evaluating current site conditions relating to vegetation and provide recommendations for future efforts. This report includes their assessment of the pilot sage vegetation area as well as recommendations for this area. Architerra's evaluation is in addition to the required quarterly monitoring performed by our consulting biologist.

1.0 Interim Slopes

For the purposes of this report, interim slopes are those defined as slope areas where no activities have taken place for 180 days or longer. CUP Condition 44A requires "a temporary hydroseed vegetation cover on any slope

or landfill area that is projected to be inactive for a period of greater than 180 days".

1.1 Hydroseeding Activities

Based on the results of the trial project completed in August 2017, a 57 acre vegetative cover project using the approved seed mix was completed in mid-December 2017.

2.0 Permanent Slopes

Permanent slopes are defined as those where no landfilling activities will be conducted in the future.

2.1 City

The permanent slopes on the City portion of Sunshine Canyon Landfill are located on the closed City South and City North areas of the site where no overliner will be placed during future cell development (Drawing 1 – Sage Mitigation Area). No vegetation activities were conducted on the permanent slopes on the City portion of the site during the second quarter of 2018.

2.2 County

No vegetation activities were conducted on the permanent slope areas on the County portion of the site during the second quarter of 2018 (Drawing 1 – Sage Mitigation Area).

3.0 Non-Permanent Cut Slopes

Prior quarterly vegetation reports have illustrated one area above the front terminal sedimentation basin and one area near the temporary bypass road as "non-permanent cut slopes". An evaluation of these areas has been conducted and it has been determined that these areas are "permanent slopes" because no landfilling activities will be conducted against these slopes in the future.

4.0 Activities Conducted in Sage Mitigation Areas – 2Q2018

During the second quarter of 2018, the following activities were conducted in the sage mitigation areas at the landfill.

4.1 City South Sage Pilot Project Area – Deck C

The following activities were conducted:

- Maintenance activities removal of invasive plant species and weeding activities.
- Selective pruning of saltbush.

4.2 City South Deck B

The Deck B sage mitigation project began on April 9, 2018 and is anticipated to be completed by the end of the third quarter. Soil samples indicate low pH and high salinity, currently the Deck B is undergoing a leaching schedule. Additional soil amendments and resampling will need to be completed before planting can begin. Pacific Restoration Group, Inc (PRG) has been working with Architerra for the completion of project. A summary of the progress is included in Attachment 3.

4.3 County Sage Mitigation Area

The County sage mitigation area is located on the western side of the County portion of Sunshine Canyon Landfill (Drawing 1). No revegetation activities were conducted in this area during the second quarter of 2018, and, as noted in multiple JMA progress reports, the conditions in this mitigation area have remained unchanged for some time. The attached Achiterra second quarter report includes historical images obtained from Google Earth indicating low vegetation growth over the past few years. Soil samples from this location indicate low pH, high salinity, and Boron present in native soils.

5.0 Assessments of Sage Mitigation Areas

Assessments of the site's sage mitigation areas are conducted by a qualified biologist on a quarterly basis. The following sections present a summary of the recommendations for the sage mitigation areas from JMA (City and

County sage mitigation areas) and Architerra (City South Sage Pilot Project Area (Deck C) and the proposed actions in response to the recommendations.

5.1 JMA Recommendations for City Sage Mitigation Areas

JMA's progress reports for the City Sage Mitigation Areas for the second quarter of 2018 are provided in Attachment 1. These reports include recommendations based on the assessments. Table 1 presents a summary of these recommendations and the proposed actions.

Table 1 – JMA Recommendations and Proposed Actions – City Sage Mitigation Areas, Second Quarter 2018

AREA	RECOMMENDATION		PROPOSED ACTION
LOWER DECK (Deck C)	1	Continue to monitor	Monitoring will be conducted and documented by our consultants on an ongoing basis
DECKS A (Upper Deck)	2	Improve root zone and soil conditions	This will be addressed when the plans for Decks B and A are developed. Actions were taken to address improving the root zone in the pilot project area (Deck C); it is expected these same actions will be incorporated into the plans for Decks B and A
DECKS A (Upper Deck)	3	Plant Natives in Areas Dominated with Non-Natives. Use various planting methods (i.e. container plants and hydroseeding) to re-establish native plants on the middle and upper decks where non-natives currently dominate	This will be addressed when the plans for Decks B and A are developed. Various planting methods were used for the construction of the pilot project on Deck C; it is expected these same actions will be incorporated into the plans for Decks B and A
DECKS C, B AND A (Lower, Middle, and Upper Decks)	4	Weed Control - implement a year-round weed control program to control non-native species	A weed control program is currently in place on Deck C as part of the pilot project and will continue. A weed control program on Decks B and A will be implemented along with the mitigation plans for these areas

DECKS A	5	Reseeding - apply native seeds during the rainy season after soil mounds have been established	This will be addressed when the plans for Decks B and A are developed
DECKS A, B, and C	6	Prohibit access - continue to prohibit vehicle access to mitigation areas	Repairs to the T-post fencing will be made as needed

JMA also recommended that a monitoring biologist should be present during weed control activities or the native plants should be flagged to ensure only non-native species are removed. A monitoring biologist will be consulted prior to any weed control activities to ensure native plants are protected.

5.2 JMA Recommendations for County Sage Mitigation Area

Table 2 presents a summary of the recommendations proposed by JMA based on the assessment of the County Sage Mitigation Area and the proposed actions. Please refer to the full recommendations in the JMA reports in Attachment 2.

Table 2 – JMA Recommendations and Proposed Actions – County Sage Mitigation Area, Second Quarter 2018

AREA	RECOMMENDATION		PROPOSED ACTION
COUNTY SAGE MITIGATION AREA	1	Create benches to control soil erosion and improve soil conditions to improve plant establishment and seed dispersal	This recommendation will be considered at a later date
COUNTY SAGE MITIGATION AREA	2	Reseed and plant container plants	This recommendation will be considered at a later date
COUNTY SAGE MITIGATION AREA	3	Plant within view sheds	This recommendation will be considered at a later date

COUNTY SAGE MITIGATION AREA	4	Use soil amendments	This recommendation will be considered at a later date
COUNTY SAGE MITIGATION AREA	5	Signage	This recommendation will be considered at a later date
COUNTY SAGE MITIGATION AREA	6	Weed control	This recommendation will be considered at a later date
COUNTY SAGE MITIGATION AREA	7	Prohibit access	This recommendation will be considered at a later date
COUNTY SAGE MITIGATION AREA	8	Employee awareness	This recommendation will be considered at a later date

5.3 Architerra Inspection for City South Sage Mitigation Pilot Project Area – Second Quarter 2018

The inspection report is included in Attachment 3 along with photos of the area taken at the photo stations.

5.4 Quarterly Assessment of City South Sage Pilot Project Area

The methodology for assessment of the City South Sage Pilot Project Area developed by JMA was included in the first quarter 2015 Vegetation Report. The evaluation report for the second quarter of 2018 based on this methodology is included in Attachment 4.

6.0 Status of Other Vegetated Areas

Big Cone Douglas Fir Tree Mitigation

As reported in the vegetation report for the first quarter of 2015, 200 Big Cone Douglas fir tree saplings were planted the third week of March 2015. These trees continue to be monitored and maintenance activities will be conducted in this mitigation area for the remainder of 2018.

Please do not hesitate to contact me at (818) 362-2096 if you have any questions.

Sincerely,

Tuong-Phu Ngo, P.E.
Environmental Manager
Sunshine Canyon Landfill

Cc: Mr. David Thompson, SCL LEA
Ms. Shikari Nakagawa-Ota, SCL LEA
Ms. Ly Lam, City of Los Angeles, Department of City Planning
Mr. Nicholas Hendricks, City of Los Angeles, Department of City Planning
Dr. Wen Yang, Los Angeles Regional Water Quality Control Board
Ms. Maria Masis, County of Los Angeles, Department of Regional Planning
Mr. Wayde Hunter, SCL CAC
Mr. Jim Aidukus, UltraSystems
County DPW Landfill Unit

Attachments

Attachment 1	JMA Progress Report, City-Side Sage Mitigation Area
Attachment 2	JMA Progress Report, County-Side Sage Mitigation Area
Attachment 3	Architerra Design Group, Field Observation Report, South City Sage Mitigation Pilot Project – 2Q2018
Attachment 4	JMA Quarterly Monitoring Report - Coastal Sage Scrub Pilot Study, 2Q2018

Drawings

Drawing 1	2Q2018 Site Vegetation Areas

ATTACHMENT 1

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SUNSHINE CANYON LANDFILL MITIGATION SITES

Progress Report

City-Side Sage Mitigation Area

Submittal Date: August 1, 2018	**Inspection Date:** July 24, 2018
To: Tuong-phu Ngo, Environmental Manager	**From:** Greg Ainsworth, Monitoring Biologist **Prepared on behalf of Republic Services*

Lower Deck

General Comments:
Based on a qualitative visual assessment, the saltbush (*Atriplex polycarpa and A. lentiformis*) is entering dormancy and appears excessively dry due to several weeks of hot weather conditions. Other native species such as *Encelia Californica*, *Artemisia californica, and Salvia sp.* are also becoming dormant for the season. Seedlings of *Atriplex lentiformis* are scattered throughout the pilot study area, and this species appears to be regenerating more than other natives.

Wildlife species observed during the monitoring included house finch, American crow, California towhee, ash-throated flycatcher, western fence lizard and side-blotched lizard.

Native Plant Cover:	**Plant Health Issues:**	**Height of Native Species:**	**Native Species Richness:**
[ ] Dense	[ ] Disease/pests	[ ] 0" – 12"	[X] Low
[X] Moderate	[ ] Plant stress	[ ] 12" – 24"	[ ] Medium
[ ] Minimal	[ ] Herbivory	[X] 24" and above	[ ] High

Weed Conditions

[ ] Dense weed coverage	[X] Weeds germinating /vegetative growth
[X] Moderate weed coverage (seeding in high density)	[X] Weeds flowering
[ ] Minimal weed coverage	[ ] Weeds setting seed
	[ ] Weed desiccant/dormant

Comments: With the exception of Russian thistle (*Kali tragus*), annual weeds such as mustard (*Hirshfeldia incana*) and brome grasses (*Bromus* sp.) have senesced throughout the Lower Deck. Based on the amount of senesced weeds that are present, it does not appear that any weeding had been conducted since the prior monitoring period. Seedlings of Russian thistle are scattered throughout the lower deck.

Middle Deck

General Comments:

The Middle Deck appears to have been planted by seed with native vegetation. Planting has

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occurred primarily in areas where native species establishment was previously problematic. Large boulders have been strategically positioned within the planting area. Straw waddles have been installed to control erosion, and based on the growth that has been observed at the lower deck pilot study, water collects around the waddles which increases the germination rate and establishment of native seedlings.

Approximately 35% of the Middle Deck is dominated by sage scrub plantings/seedlings, 30% by non-native grasses, and approximately 40% is was recently seeded with native species. There is a decent mixture of native species that have established on the Middle Deck from previous planting efforts that include California buckwheat (*Eriogonum fasciculatum foliosium*), black sage (*Salvia mellifera*), purple needlegrass (*Nessella pulchra*), California sagebrush, and chamise (*Adenostoma fasciculatum*).

Native Plant Cover:	**Plant Health Issues:**	**Height of Species:**	**Native Species Richness:**
[ ] Dense [ ] Moderate [X] Minimal	[ ] Disease/pests [ ] Plant stress [ ] Excessive herbivory	[ ] 0" – 12" [ ] 12" – 24" [X] 24" and above	[X] Low [ ] Medium [ ] High

Weed Conditions

[ ] Dense weed coverage [X] Moderate weed coverage (seeding in high density) [ ] Minimal weed coverage	[X] Weeds germinating /vegetative growth [X] Weeds flowering [ ] Weeds setting seed [ ] Weed desiccant/dormant

Comments: Weed coverage is relatively low within the middle deck; however, senesced brome grass mats are scattered in areas where native species have established.

UPPER DECK

General Comments: Overall, the Upper Deck continues to be sparsely covered with native vegetation, and total vegetation coverage is sparse due to compacted and poor soil conditions. Specifically, the soils to the north of the central access road are heavily compacted and gravelly and vegetation coverage in this area is especially sparse. Evidence of previous seeding is no longer discernible.

Wild oats (*Avena fatua*), brome grasses and mustard have senesced, but continue to dominate the non-native cover throughout the upper deck. Seedlings of Russian thistle have emerged in various location within the upper deck where soil are less compacted. Buckwheat is the dominant native plant that appears to be present. Overall natural recruitment within the Upper Deck is low, due to poor soil conditions and a general lack of water.

Native Plant Cover:	**Plant Health Issues:**	**Height of Species:**	**Native Species Richness:**
[ ] Dense [ ] Moderate [X] Minimal	[ ] Disease/pests [ ] Plant stress [ ] Excessive herbivory	[ ] 0" – 12" [ ] 12" – 24" [X] 24" and above	[X] Low [ ] Medium [ ] High

Weed Conditions

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[ ] Dense weed coverage [X] Moderate weed coverage (seeding in high density) [ ] Minimal weed coverage	[X] Weeds germinating /vegetative growth [X] Weeds flowering [ ] Weeds setting seed [ ] Weed desiccant/dormant

Comments: Weeds continue to grow without any level of control within the Upper Deck. Russian thistle is currently dominate, surrounded by mats of senesced wild oats, brome grasses and mustard.

RECOMMENDATIONS

Lower and Middle Decks

• **Weed control.** Implement a year-round weed control program to control non-native species. The weed control program should incorporate both chemical and mechanical control practices. Following weed control, any dead material harboring seeds should be removed to an off-site location to the extent feasible.

A monitoring biologist should be present during weed control activities or flag the native plants that should remain to ensure only non-native species are removed. A biologist should verify that the weed removal methodology is sound and does not encourage re-colonizing of non-natives. Weeding is best performed just before, or at the onset of flowering, but before seed set. If seeds are already present, additional care should be taken to remove the plants with the seeds attached, or the seeds should be removed from the plants prior to the plant removal. A consistent weed abatement schedule will reduce the potential for non-natives to set seed. Soil disturbance should be limited by hand weeding, where possible, and weeds should be disposed of off-site to avoid any reinfestation through reseeding or from plant propagules. If hand weeding is not possible, the monitoring biologist should be consulted regarding the appropriate method of weed removal. If there continues to be high incidence of weed infestation, weed control may need to be increased to every four to six weeks. Otherwise, weeds should continue to be monitored and controlled on a quarterly basis.

• **Prohibit access.** Continue to prohibit vehicle access to mitigation areas.

Upper Deck

• **Improve root zone and soil conditions.** Continue to investigate ways to import the soil layer to improve the root penetration and saturation zone to enable plant growth in heavily compacted areas. Consider applying soil in random undulations or uneven mounds to improve soil porosity and filtration and to control soluble salts from leaching from existing layer.

If permissible, prior to seeding (broadcast, hydroseeding, or drilling) native species, incorporate a soil amendment or mulch with high organic content by tilling into the top 12 inches of the existing compacted soils to improve soil texture, drainage, porosity, and aerobic conditions. If an organic mulch or soil amendment is not feasible or available, incorporate available soil from on-borrow sites within the landfill that have the appropriate, so long as these borrowed soils have been determined to not have toxic conditions such as boron or high salinity.

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• **Plant natives in areas dominated with non-natives.** The vegetated areas on the Upper Deck that are currently dominated with annual, non-native species, as well as with native shrubs, have decent soil-texture conditions. These areas are not near as compacted as areas within the Upper Deck that are gravelly and mostly void of vegetation. In general, the soil texture within the vegetated areas with non-native vegetation is friable down to approximately 4-8 inches in depth. Various planting methods (i.e., broadcast, imprint, and hydroseeding) may be used to re-establish native plants on the Upper Deck where non-natives currently dominate.

• **Weed control.** Implement a year-round weed control program to control non-native species. The weed control program should incorporate both chemical and mechanical control practices. Following weed control, any dead material harboring seeds should be removed to an off-site location to the extent feasible.

A monitoring biologist should be present during weed control activities or flag the native plants that should remain to ensure only non-native species are removed. A biologist should verify that the weed removal methodology is sound and does not encourage re-colonizing of non-natives. Weeding is best performed just before, or at the onset of flowering, but before seed set. If seeds are already present, additional care should be taken to remove the plants with the seeds attached, or the seeds should be removed from the plants prior to the plant removal. A consistent weed abatement schedule will reduce the potential for non-natives to set seed. Soil disturbance should be limited by hand weeding, where possible, and weeds should be disposed of off-site to avoid any reinfestation through reseeding or from plant propagules. If hand weeding is not possible, the monitoring biologist should be consulted regarding the appropriate method of weed removal. If there continues to be high incidence of weed infestation, weed control may need to be increased to every four to six weeks. Otherwise, weeds should continue to be monitored and controlled on a quarterly basis.

• **Reseeding.** Following the application of soil mounds as previously described, apply native seed (by means of broadcast seeding, hydroseeding or drilling) during the rainy season, between December and March, or prior to a forecasted rain event.

• **Prohibit access.** Continue to prohibit vehicle access to mitigation areas.

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Progress Report

City-Side Sage Mitigation Area

Photo Locations

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Progress Report

City-Side Sage Mitigation Area

Photo 1. Facing west at lower deck. View of *Atriplex lentiformis* entering dormancy with the pilot study area in the background.

Photo 2. Facing east at lower deck from western boundary.

Photo 3. Facing east at middle deck with lower deck visible in background. View of the area where seeding is occurring.

Photo 4. Facing west at the easterly-facing slope located between middle and upper decks. The vegetation on the slopes is dominated with mustard and brome grasses, both of which have senesced, as well as patches of California buckwheat.

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Progress Report

City-Side Sage Mitigation Area

Photo 5. Facing northeast at upper deck. This area is compacted and gravelly and continues to be problematic for supporting vegetation. Senesced non-native grasses, CA buckwheat, and Russian thistle are evident in the background.

Photo 6. Facing southwest at upper deck. The area shown in this photo is dominated by Russian thistle and senesced wild oats and brome grasses.

Photo 7. Facing southeast at the upper deck at the disturbed area that is currently dominated with brome grasses and Russian thistle.

ATTACHMENT 2

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SUNSHINE CANYON LANDFILL MITIGATION SITES

Progress Report

County-Side Sage Mitigation Area

Submittal Date: August 1, 2018	**Inspection Date:** August 24, 2018
To: Tuong-phu Ngo, Environmental Manager	**From:** Greg Ainsworth, Monitoring Biologist ***Prepared on behalf of Republic Services***

STATUS OF HYDROSEEDING

Conditions:

[ ] Fully covered [ ] Moderately covered [X] Barely covered

Comments:

Conditions on the county-side sage mitigation area remain relatively unchanged. Areas that are moderately covered with vegetation (native and non-native) are concentrated. A substantial portion of the county-side mitigation area continues to be bare and problematic for establishment of vegetation, primarily because of erosion, steep slopes and toxic soils (See Recommendations).

Native plant coverage is similar to the previous quarterly monitoring reports. The southern-half of the mitigation area contains the most vegetation that is noteworthy, which consists of the highest concentration of native species (mostly California buckwheat, *Eriogonum fasciculatum*). Native plant coverage is assumed to be a direct result of hydroseeding; however, some natural recruitment is apparent based on the dense cover where native vegetation is present and the various sizes of shrubs. Due to rocky (hydrophobic) soil conditions, soil erosion and Boron toxic soils on the northern-half of the county-side mitigation area, minimal plant growth is present.

SEED MIX

Conditions: [ ] No sign of germination [ ] No cover of native plants from seed mix [ ] Sparse cover of native plants from seed mix	[ ] Dense cover of native plants from seed mix [X] Moderate cover of native plants from seed mix (where vegetation is present)

Comments:

Similar to the hydroseeded areas, the other areas that are moderately covered with vegetation are concentrated. A substantial portion of the county-side mitigation area continues to be bare and problematic for vegetation to become established. However, in areas where vegetation is present, there is a moderate coverage of native species, mostly California buckwheat.

Germination and plant growth from hydroseeding or seed mix is not discernible. Similar to

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previous monitoring periods, a moderate cover of native plants exists within vegetated areas. Annual non-native grasses and forbs currently dominate the understory and serve as ground cover in most of the vegetated areas. Brome grasses (*Bromus sp.*), wild oats (*Avena fatua*) and shortpod mustard (*Hirschfeldia incana*) are currently senesced, but still comprise approximately 25 percent of the vegetation cover. California buckwheat dominates the native vegetation coverage, with California sagebrush (*Artemisia californica*) and California sunflower (*Encelia californica*) as co-dominants. These native species comprise of approximately 75 percent of the native vegetation cover (in areas where vegetation is present). Other less dominant native species observed include golden bush (*Ericameria linearifolia*), coyote brush (*Baccharis pilularis*), black sage (*Salvia millifera*), laurel sumac (*Malosma laurina*), and a small cluster of arroyo willow (*Salix lasiolepis*) trees that continue to thrive along the v-ditch that extends east-west through the center of the mitigation site.

OVERALL NATIVE PLANT CONDITIONS

Plant Cover:	**Plant Health Issues:**	**Height:**	**Species Richness:**
[ ] Dense [ ] Moderate [X] Minimal	[ ] Disease/pests [ ] Plant stress [ ] Excessive herbivory	[ ] 0" – 12" [X] 12" – 24" [ ] 24" and above	[ ] Low [X] Medium [ ] High

Comments:

Vegetation cover on the "county slope" is most prevalent on the southern half of the restoration area, with the greatest density of vegetation in the center. The majority of the northern and upper portions of the mitigation area continue to have minimal coverage due to erosion, rocky soils and boron toxicity. Bare areas and non-native annual grasses are intermixed, but characterizes the northern half of the restoration area. Native vegetation density and richness is good in vegetated areas, and the non-native grasses cover is typical of the native, undisturbed areas that surround the landfill.

As indicated previously, California buckwheat dominants the native cover with *Encelia californica* as a co-dominant. Establishment and regeneration of native vegetation is problematic on the upper and northern portions of the restoration area due to rocky soils with poor soil structure, and boron toxicity has made plant growth (i.e., seed germination and recruitment) difficult. The species richness is low to medium within vegetated areas; however, species richness is considerably low when considering the entire county-sage mitigation area.

WEED CONDITIONS

Conditions:	
[ ] Dense weed coverage [X] Moderate weed coverage (seeding in high density) [ ] Minimal weed coverage	[ ] Weeds germinating [X] Weeds flowering [X] Weeds setting seed [ ] Weed desiccant/dormant

Comments:

Annual, non-native weed species consist primarily of brome grasses (*Bromus* sp.), shortpod mustard, and wild oats (*Avena fatua*), all of which are currently senesced. Other established weedy species that were observed include red-stemmed filaree (*Erodium cicutarium*) and

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(native) telegraph weed (*Heterotheca grandiflora*). Russian thistle (*Salsola kali*) and tree tobacco (*Nicotiana glauca*) are scattered within the vegetated areas, but in less densities than the other non-native species noted above.

MISCELLANEOUS

Conditions:

[ ] Trash [ ] Vandalism [ ] Erosion

Comments:

None

RECOMMENDATIONS

• **Create benches.** Consider creation of benches throughout the mitigation area to control soil erosion and to improve soil conditions to improve plant establishment and seed dispersal. This technique has been widely used on steep slopes and in areas where soil erosion is problematic. This technique also allows for opportunities to introduce a high quality soil layer above the poor soils that exist.

• **Reseed and plant container plants.** If creation of benches is feasible, planting methods should include Hydroseeding and broadcast seeding just before a forecasted rain event and planting with container plants with supplemental irrigation during the period of establishment. Container plants should only be planted if temporary irrigation source is available.

• **Plant within view sheds**. Consider planting native species on upper portion of the slope that is visible from public view sheds with appropriate native species. Planting should occur prior to fall/winter rains.

• **Use soil amendments.** Incorporate a soil amendment or mulch with high organic content in select areas as determined by a restoration specialist.

• **Signage.** Install signs indicating that the area is undergoing revegetation.

• **Weed control.** Continue weed control program as needed on a quarterly basis.

• **Prohibit access.** Continue to prohibit vehicle access to mitigation area. Extend fencing around southeastern and southern boundary of lower deck and review fencing on the upper deck to determine if additional area can be reasonably enclosed.

• **Employee awareness.** Conduct an employee awareness program to inform staff on the importance of preserving all restoration areas.

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Progress Report

County-Side Sage Mitigation Area

Photo Locations

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Progress Report

County-Side Sage Mitigation Area

Photo 1. Facing west at the county sage slope. Senesced grasses and forbes, and California buckwheat are currently the dominant species.

Photo 2. Facing west at the northern-half of the county sage hill, where plant growth has been problematic due to poor soil conditions.

ATTACHMENT 3

ARCHITERRA design group
landscape architecture and planning

ARCHITERRA DESIGN GROUP **FIELD OBSERVATION REPORT**

DATE OF VISIT:	07/11/18
PROJECT:	**Sunshine Canyon Mitigation Sites**
PROJECT NUMBER:	1214
PROJECT MANAGER:	Gregg Denson
SITE INSPECTION #:	
PURPOSE OF VISIT:	Review site conditions/Photo Catalog
TIME OF SITE VISIT:	10:00am
WEATHER/TEMPERATURE:	Cloudy and Humid 98°
ESTIMATED % COMPLETED:	100%
CONFORMANCE WITH SCHEDULE (+, -)	

WORK IN PROGRESS:	Weed abatement / Monitoring Period /Construction Observation
PRESENT ON SITE:	Gregg Denson

A site visit walk and evaluation has been completed to review the Venturan CSS vegetation establishment on the Trial Site (Deck C), Deck B and County Mitigation Slopes. Additional items noted during the site visit are as follows:

City-Side Sage Mitigation (Trial Site):

- Recommendations were made to remove Russian Thistle (*Salsola* ssp.), Shortpod Mustard (*Hirshfeldia incana*), Red Brome Grass (*Bromus madritensis*), False Barley *(Hordeum murinum),* Tree Tobacco (*Nicotiana glauca*), and Tamarix and Eucalyptus Species. However, the trial site area still contains many of these species. As a result, many of the invasive weeds have gone to seed and are into their dormancy stage. Russian Thistle and Eucalyptus are actively growing on the deck and should be removed as soon as possible. Other invasive weeds should be carefully removed so that weed seed is contained within burlap or containers and is not spread out over the deck area. In addition, the PM10 Berm area is densely populated with invasive Mustard. This area should also be cleared out to prevent further spreading onto Deck C. The maintenance contractor should use caution when removing invasive weeds so that juvenile CSS plants remain in place. Identification of targeted invasive species are key to successful removal without disturbance of CSS species.
- Within the last week, temperatures have spiked well over 100º and as a result, many of the CSS natives are defoliating and going into summer dormancy. Some of these include, Coast Sunflower (*Encelia californica*), Black Sage (*Salvia mellifera*), Purple Sage (*Salvia leucophylla*), White Sage (*Salvia apiana*), Creeping Wild Rye (*Leymus triticoides*), Deerweed (*Lotus scoparius*), Mexican Elderberry (*Sambucus mexicana*). California Buckwheat (*Eriogonum fasciculatum*) is actively growing and flowering.
- During the 2017-2018 winter period, many new seedlings of California Sagebrush and California Sunflower spread out from parent plants and established, helping to begin closing the CSS canopy within some areas of the open deck. However, some areas still

remain open, devoid of vegetation. This may be the result of the full exposure and rapid evapotranspiration after rainfall leaving little to no moisture for germination, or perhaps it is the soil chemistry that is inhibiting growth. ADG will continue to monitor these areas and perhaps take soil samples for examining potential deficiencies.

Dormant Saltbush and California Sagebrush on exposed soil

Coast Sunflower seedlings going into summer dormancy

Dormant Coast Sunflower amongst Mustard and Brome Grass

Dormant Coast Sunflower (*Encelia californica*) along northern swale

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Dormant Deerweed

Seedlings of Coast Sunflower (*Encelia californica*) beginning to go into summer dormancy

Healthy Black Sage with dried flower stalks/seeds

Blooming California Buckwheat – limited in numbers, but easy to find and identify now

Saltbush seedling (lower right) adjacent to larger Saltbush shrub (2-3 years)

Diversity of CSS species woven together at middle portion of deck

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Phone (909) 484-2800, Fax (909) 484-2802

Invasive Tamarix at far east end of site adjacent to blower, remove ASAP

Eucalyptus seedlings growing on the deck (3-4 taller ones that need to be removed)

Purple Sage growing in location of a former container planted Mexican Elderberry (Cage support stakes and irrigation bubbler still present)

Disturbed soil and excavation by larger animals. Similar disturbances are visible throughout the deck area in many locations

San Diegan Tiger Whiptail Lizards (*Aspidoscelis tigris stejnegeri*) scurrying under protective canopy – Several individuals spotted

Plenty of ant activity on the deck

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Phone (909) 484-2800, Fax (909) 484-2802

Several ant mounds exposed along the perimeter gravel access road

City-Side Sage Mitigation (Deck B):

- Deck B construction was suspended in Spring/Summer 2018 due to unfavorable results of the soils testing. Current construction activities include irrigating deck to leach soils and help reduce salinity. An irrigation watering schedule has been provided to the contractor and it is estimated that it will take close to 80 days to complete the targeted application amount recommended by Waypoint Analytical (May 11, 2018 report).
- Soil amendments to help correct pH and other deficiencies have also been applied.
- Prior to planting of the deck, additional soils testing will take place to see how much the soil condition has changed. If conditions improve, planting will follow.
- Planting of the deck (seeding and containers) will be postponed under Fall 2018, giving time for soils to improve. Weather conditions in the fall will also be more favorable for plant germination.

View east along drainage channel and on grade gas pipe. Irrigation laterals are installed.

Creeping Wild Rye (*Leymus triticoides*) growing from underneath straw wattle

View of deck look north east with boulders set into graded swales

Little to no establishment of any vegetation has occurred within the graded areas (fill dirt)

Isolated portion of site where Mustard and Saltbush have germinated

Minimal soil import grading occurred between the established patches of CCS vegetation. Where import soils become deeper in profile, there is no evidence of any germination.

View looking south towards flare.

County Sage Mitigation Slopes:

As a follow up to our site visit on June 5th, ADG provided some photo images and previous soils testing for the slope area, including growth trails that were completed in 2014. Soils testing results reported low pH, very acidic soil, high salinity and Boron present in the sampling test areas. ADG noted that slope areas that currently have vegetation cover exhibited high pH values and lower salinity. Over the last ten years, the barren slope areas have not changed in terms of vegetation coverage. They have remained mostly barren. Recent placement of erosion control blankets has vegetation growing through it. That growth follows the striation of vegetation that was previously established. Aerial photos (taken from Google Earth) have been provided in this report for comparison.

Signed: Gregg Denson Date: 7/12/18

DISTRIBUTION

Republic Services	☑	Contractor	☑
Project Manager (Gregg Denson)	☑	Other_____	☐

County Mitigation Slopes - Photo 2007


County Mitigation Slope - Photo 2011


County Mitigation Slopes - Photo 2013


County Mitigation Slopes - Photo 2015

County Mitigation Slopes - Photo 2017

Additional Soils Testing from (6) six other samples taken from Deck B

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00914

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Send To: Pacific Restoration Group
PO Box 429

Perris , CA 92572

Project : Sunshine Landfill

Purchase Order :
Report Date : 05/22/2018
Date Received : 05/18/2018

REPORT OF ANALYSIS

Date Sampled :

Lab Number: 16084
Sample Id : #1

Analysis	Result	Quantitation Limit	Method	Date and Time Test Started	Analyst
ECe , dS/m	21.7	0.100	SATURATED PASTE	05/21/2018 08:00	AEH
pH , s.u.	2.92		SATURATED PASTE	05/21/2018 08:00	AEH

Method Reference:
Methods of Soil Analysis, Part 3 - Chemical Methods, 2nd Ed. Rev. Soil Science Society of America, Black, C.A et al. 1982, p. 420.

Comments:

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Project : Sunshine Landfill

Purchase Order :
Report Date : 05/22/2018
Date Received : 05/18/2018

REPORT OF ANALYSIS

Date Sampled :

Lab Number: 16085
Sample Id : #2

Analysis	Result	Quantitation Limit	Method	Date and Time Test Started	Analyst
ECe , dS/m	12.6	0.100	SATURATED PASTE	05/21/2018 08:00	AEH
pH , s.u.	3.16		SATURATED PASTE	05/21/2018 08:00	AEH

Method Reference:
Methods of Soil Analysis, Part 3 - Chemical Methods, 2nd Ed. Rev. Soil Science Society of America, Black, C.A et al. 1982, p. 420.

Comments:

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Purchase Order :
Report Date : 05/22/2018
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REPORT OF ANALYSIS

Date Sampled :

Lab Number: 16086
Sample Id : #3

Analysis	Result	Quantitation Limit	Method	Date and Time Test Started	Analyst
ECe , dS/m	15.8	0.100	SATURATED PASTE	05/21/2018 08:00	AEH
pH , s.u.	2.94		SATURATED PASTE	05/21/2018 08:00	AEH

Method Reference:
Methods of Soil Analysis, Part 3 - Chemical Methods, 2nd Ed. Rev. Soil Science Society of America, Black, C.A et al. 1982, p. 420.

Comments:

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Account Number
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Send To: Pacific Restoration Group
PO Box 429

Perris , CA 92572

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Project : Sunshine Landfill

Purchase Order :
Report Date : 05/22/2018
Date Received : 05/18/2018

REPORT OF ANALYSIS

Date Sampled :

Lab Number: 16087
Sample Id : #4

Analysis	Result	Quantitation Limit	Method	Date and Time Test Started	Analyst
ECe , dS/m	19.3	0.100	SATURATED PASTE	05/21/2018 08:00	AEH
pH , s.u.	2.78		SATURATED PASTE	05/21/2018 08:00	AEH

Method Reference:
Methods of Soil Analysis, Part 3 - Chemical Methods, 2nd Ed. Rev. Soil Science Society of America, Black, C.A et al. 1982, p. 420.

Comments:

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Project : Sunshine Landfill

Purchase Order :
Report Date : 05/22/2018
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REPORT OF ANALYSIS

Date Sampled :

Lab Number: 16088
Sample Id : #5

Analysis	Result	Quantitation Limit	Method	Date and Time Test Started	Analyst
ECe , dS/m	15.1	0.100	SATURATED PASTE	05/21/2018 08:00	AEH
pH , s.u.	3.94		SATURATED PASTE	05/21/2018 08:00	AEH

Method Reference:
Methods of Soil Analysis, Part 3 - Chemical Methods, 2nd Ed. Rev. Soil Science Society of America, Black, C.A et al. 1982, p. 420.

Comments:

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Project : Sunshine Landfill

Purchase Order :
Report Date : 05/22/2018
Date Received : 05/18/2018

REPORT OF ANALYSIS

Date Sampled :

Lab Number: 16089
Sample Id : #6

Analysis	Result	Quantitation Limit	Method	Date and Time Test Started	Analyst
ECe , dS/m	13.5	0.100	SATURATED PASTE	05/21/2018 08:00	AEH
pH , s.u.	3.16		SATURATED PASTE	05/21/2018 08:00	AEH

Method Reference:
Methods of Soil Analysis, Part 3 - Chemical Methods, 2nd Ed. Rev. Soil Science Society of America, Black, C.A et al. 1982, p. 420.

Comments:

Photo Station #1 - July 2017 (East)

Photo Station #1 - July 2018 (East)

Photo Station #1 - July 2017 (North)

Photo Station #1 - July 2018 (North)

Photo Station #1 - July 2017 (West)

Photo Station #1 - July 2018 (West)

Photo Station #2 - July 2017 (East)

Photo Station #2 - July 2018 (East)

Photo Station #2 - July 2017 (North)

Photo Station #2 - July 2018 (North)

Photo Station #2 - July 2017 (South)

Photo Station #2 - July 2018 (South)

Photo Station #3 - July 2017 (East)

Photo Station #3 - July 2018 (East)

Photo Station #3 - july 2017 (North)

Photo Station #3 - July 2018 (North)

Photo Station #3 - July 2017 (West)

Photo Station #3 - July 2018 (West)

Photo Station #4 - July 2017 (South)

Photo Station #4 - July 2018 (South)

Photo Station #4 - July 2017 (East)

Photo Station #4 - July 2018 (East)

Photo Station #4 - July 2017 (West)

Photo Station #4 - July 2018 (West)

Photo Station #5 - July 2017 (East)

Photo Station #5 - July 2018 (East)

Photo Station #5 - July 2017 (North)

Photo Station #5 - July 2018 (North)

Photo Station #5 - July 2017 (West)

Photo Station #5 - July 2018 (West)

Photo Station #6 - July 2017 (East)

Photo Station #6 - July 2018 (East)

Photo Station #6 - July 2017 (North)

Photo Station #6 - July 2018 (North)

Photo Station #6 - July 2017 (West)

Photo Station #6 - July 2018 (West)

Photo Station #7 - July 2017 (South)

Photo Station #7 - July 2018 (South)

Photo Station #7 - July 2017 (West)

Photo Station #7 - July 2018 (West)

Photo Station #7 - July 2017 (North)

Photo Station #7 - July 2018 (North)

Photo Station #8 - July 2017 (East)

Photo Station #8 - July 2018 (East)

Photo Station #8 - July 2017 (North)

Photo Station #8 - July 2018 (North)

Photo Station #8 - July 2017 (West)

Photo Station #8 - July 2018 (West)

Photo Station #9 - July 2017 (East)

Photo Station #9 - July 2018 (East)

Photo Station #9 - July 2017 (South)

Photo Station #9 - July 2018 (North)

Photo Station #9 - July 2017 (West)

Photo Station #9 - July 2018 (West)

ATTACHMENT 4

memorandum

date July 29, 2018

to Tuong-phu Ngo, Environmental Manager, Republic Services

from Greg Ainsworth, Consulting Biologist

subject Coastal Sage Scrub City South C Trial Plot Monitoring Report, Sunshine Canyon Landfill – 2nd Quarter, 2018

INTRODUCTION

On August 23, 2018, biologist Greg Ainsworth monitored the coastal sage scrub revegetation area at the Landfill's City South 'C' Trial Plot, which constitutes the 2nd quarter monitoring of the trial plot for 2018. The sample methodology generally followed the *Methodology for Monitoring Percent Cover and Species Richness within Each Seeded Application Method on the Coastal Sage Scrub Pilot Project at the Sunshine Canyon Landfill* (JMA, April 23, 2014). Quadrat sampling of the sage pilot study area consists of four, 50-meter quadrats that are randomly sampled within each of the following three seeded areas: hydroseed, imprint and hand broadcast. The quadrats were randomly selected prior to the first initial monitoring event from a grid that was placed over the entire trial plot, and each quadrat is delineated in the field with wooden stakes. As shown on the attached planting plan, each quadrat that was sampled was given a corresponding letter from A-L.

A total of 200 meters were sampled for each of the three seeded areas and the following data was collected in each quadrat that was sampled:

- **Percent basil cover (shrubs)** –Visual estimate of the amount of basil cover within each quadrat for all shrub species.
- **Percent basil cover (herbs)** – Visual estimate of the amount of basil cover within each quadrat for all herb species.
- **Percent bare ground** – Visual estimate of the amount of available bare ground with no vegetation, but suitable for plant growth.
- **Percent rock or other** – Visual estimate of the amount of unavailable ground for supporting plant growth. Inhibitors generally included rocks and boulders, irrigation lines and valve boxes, and mulch.
- **Percent canopy** – Visual estimate of the percent canopy of each shrub and herbaceous species.
- **Photographs** – A photograph was taken from the southwest corner (facing northeast) of each quadrat.

To obtain estimate cover of each species, the point intercept method was used, which consisted of data collection points every 0.5 meter along the perimeter of each quadrat. Sampling began at the southwest corner of each quadrat and continued around the quadrat in a clockwise direction. The species located precisely at every 0.5-meter point was tallied, including areas of bare ground, rock and other.

RESULTS

Below are the average data collected for the hydroseed, imprint, and hand broadcast application areas. The number in parenthesis represents the previous quarterly monitoring results.

Quadrat Sampling:

Average Hydroseed – Quadrats A, B, C, D

Percent basil cover (shrubs) – 17% (17%)

Percent basil cover (herbs) – 17% (17%)

Percent bare ground – 44% (44%)

Percent rock or other – 5% (5%)

Percent canopy (shrub) – 39% (50%)

Percent canopy (herb) – 9% (8%)

Average Imprint – Quadrats E, F, G H

Percent basil cover (shrubs) – 24% (24%)

Percent basil cover (herbs) – 11% (11%)

Percent bare ground – 43% (43%)

Percent rock or other – 8% (8%)

Percent canopy (shrub) – 36% (41%)

Percent canopy (herb) – 20% (20%)

Average Hand Broadcast – Quadrats I, J, K L (average)

Percent basil cover (shrubs) – 26% (26%)

Percent basil cover (herbs) –23% (23%)

Percent bare ground – 18% (18%)

Percent rock or other – 3% (5%)

Percent canopy (shrub) – 46% (58%)

Percent canopy (herb) – 24% (27%)

Point Intercept:

The representation of each species within a quadrat was estimated by broad cover classes (<1%, 1-5%, 5-25%, 25-50%, 50-75% and >75%). The percent cover of each species based on the point intercept method is as follows:

Hydroseed– Quadrats A, B, C, D (average)

Species	% Cover Shrub	% Cover Herb
Acmispon glaber		
Adenostema fasciculatum		
Achillia mellifoluim		
Artemisia californica	1%	
Atriplex lentiformis	14%	
Atriplex polycarpa	20%	
Atriplex spinosa	1%	
Baccharis pilularis		
Encelia californica	5%	
Eschscholzia californica		
Leymus triticoides		
Mimulus aurantiacus longiflorus		
Nasella pulchra		
Other herb		2%
Salvia mellifera		
Sisyrinchium bellum		
Vulpia microstachys		
Echinochloa crus-galli		
Salsola kali		3%
Hordeum vulgare		4%
Bromus sp.		3%
Hirshfeldia incana		3%

Imprint – Quadrats E, F, G H (average)

Species	% Cover Shrub	% Cover Herb
Adenostema fasciculatum		
Achillia mellifoluim		
Artemisia californica		
Atriplex lentiformis	14%	
Atriplex polycarpa	17%	
Atriplex spinosa	1%	
Baccharis pilularis		
Encelia californica	2%	
Eschscholzia californica		
Eriogonum fasciculatum		
Leymus triticoides		
Mimulus aurantiacus longiflorus		
Nasella pulchra		
Sisyrinchium bellum		
Salvia apiana		

Salvia leucophylla	1%	
Salvia mellifera		
Echinochloa crus-galli		
Salsola kali		2%
Bromus sp.		15%
Hirshfeldia incana		3%
Centaurea melitensis		
Leymus triticoides		
Other herb		1%

Hand Broadcast – Quadrats I, J, K L (average)

Species	**% Cover Shrub**	**% Cover Herb**
Adenostema fasciculatum	1%	
Achillia mellifoluim		
Artemisia californica	1%	
Atriplex lentiformis	15%	
Atriplex polycarpa	13%	
Atriplex spinosa	1%	
Baccharis pilularis	1%	
Encelia californica	7%	
Eriogonum fasciculatum		
Eschscholzia californica		
Leymus triticoides		9%
Mimulus aurantiacus longiflorus		
Nasella pulchra		
Other herb		
Salvia apiana		
Salvia leucophylla	1%	
Salvia mellifera	1%	
Sisyrinchium bellum		
Hirshfeldia incana		9%
Vulpia microstachys		
Salsola kali		3%
Bromus sp.		17%

DISCUSSION

There was not a substantial change in the density or richness of species within the pilot study area compared to the 1st quarter monitoring period of 2018. It appears that weed control has not been conducted, based on the increase of non-native weeds throughout the pilot study area. Most notably, mats of dense brome grass (*Bromus sp.*) have developed in several of the quadrats, including an increase of mustard (*Hershfeldia incana*) since the last monitoring visit. These non-natives have dropped seed and are currently senesced. As depicted in several of the photos (attached), the density much of the *Atriplex lentiformis* has chlorotic leaves and is entering seasonal dormancy. This species has the highest amount of seedlings throughout the pilot study area and is of highest concentration.

Quadrats H, I and L have the greatest amount of relative cover, mostly comprised of *A. lentiformis and A. polycarpa*, because these plots are located at a low, relatively flat portion of the pilot study area, where water generally accumulates after rain events. The hand broadcast seeding method has the highest percentage of shrub canopy cover (i.e., *A. lentiformis*) compared to hydroseed and imprint seeding methods. That said, the northwest portion of the hand broadcast area (quadrats I and J) is at a low-point compared to the rest of the pilot study area, and as indicated above, water tends to pool in this area and therefore has the greatest density of vegetation compared to other areas. As noted in past monitoring reports, both the quadrat method and the point intercept method confirm that *A. lentiformis* has the highest relative cover of all plant species in the pilot study site, with *A. polycarpa* as a co-dominant. The qualitative monitoring results also confirm that these species are of highest abundance. Selective thinning of *Atriplex* in select areas will create openings and opportunities for natural recruitment and establishment of other native shrub species. Photographs of each quadrat are provided on the following pages, as well as the raw data obtained within each quadrat sampled.

Photograph Log

Quadrat A. Facing northeast from southwest corner.

Quadrat B. Facing northeast from southwest corner.

Quadrat C. Facing northeast from southwest corner.

Quadrat D. Facing northeast from southwest corner.

Quadrat E. Facing northeast from southwest corner.

Quadrat F. Facing northeast from southwest corner.

Quadrat G. Facing northeast from southwest corner.

Quadrat H. Facing northeast from southwest corner.

Quadrat I. Facing northeast from southwest corner.

Quadrat J. Facing northeast from southwest corner.

Quadrat K. Facing northeast from southwest corner.

Quadrat L. Facing northeast from southwest corner.

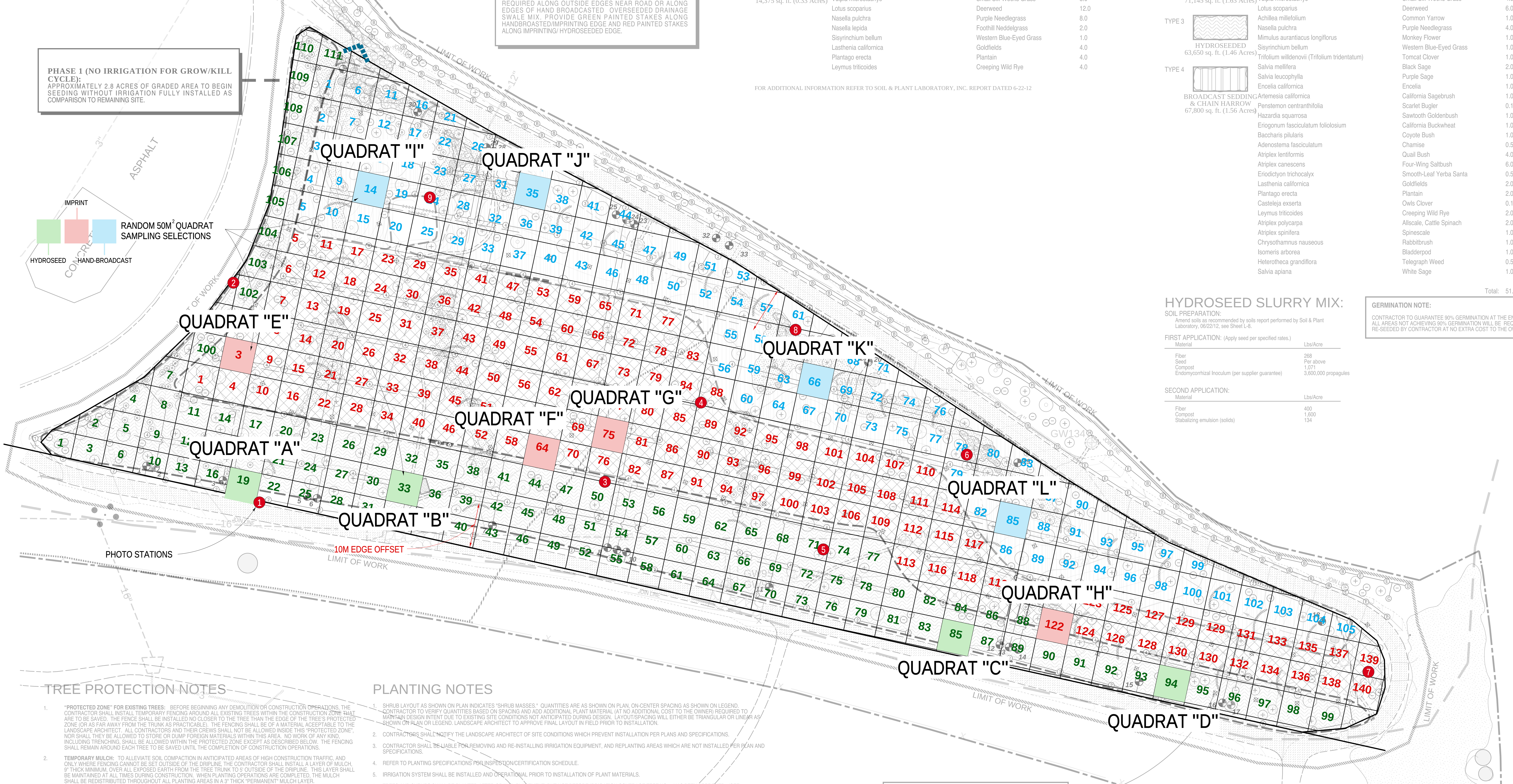
Quadrat Method: Raw Data

Quadrat A	Species	Size (sq. meters)	% basal (shrub)	% basal (herb.)	% Bare	% Rock/ unusable	% canopy (shrub)	% canopy (herb.)
	Encelia california		12%	35%	25%	2%	7%	
	Atriplex lentiformis						5%	
	Atriplex polycarpa						38%	
	Bromus sp							40%
Quadrat B	Species	Size (sq. meters)	% basal (shrub)	% basal (herb.)	% Bare	% Rock/ unusable	% canopy (shrub)	% canopy (herb.)
	Encelia california		25%	15%	35%	2%	8%	
	Atriplex lentiformis						14%	
	Atriplex polycarpa						10%	
	Russian thistle							2%
	Bromus sp.							10%
	Mustard							10%
Quadrat C	Species	Size (sq. meters)	% basal (shrub)	% basal (herb.)	% Bare	% Rock/ unusable	% canopy (shrub)	% canopy (herb.)
	Atriplex lentiformis		11%	2%	75%	4%	2%	
	Atriplex polycarpa						13%	
	Atriplex spinosa						1%	
	Black sage						2%	
	Bromus sp.							3%
Quadrat D	Species	Size (sq. meters)	% basal (shrub)	% basal (herb.)	% Bare	% Rock/ unusable	% canopy (shrub)	% canopy (herb.)
	Encelia california		20%	15%	40%	3%	12%	
	Atriplex lentiformis						18%	
	Atriplex polycarpa						8%	
	Artemisia california						3%	
	Tocalote							3%
	Bromus sp.							3%
	Mustard							12%
	Russian thistle							4%
	Deerweed							3
AVERAGE			17%	17%	44%	3%	39%	9%
Quadrat E	Species	Size (sq. meters)	% basal (shrub)	% basal (herb.)	% Bare	% Rock/ unusable	% canopy (shrub)	% canopy (herb.)
	Atriplex lentiformis		20%	5%	50%	4%	14%	
	Atriplex polycarpa						12%	
	Encelia california						4%	
	Atriplex spinosa						3%	
	Mustard							8%
	bromus sp.							10%

Quadrat F	Species	Size (sq. meters)	% basal (shrub)	% basal (herb.)	% Bare	% Rock/ unusable	% canopy (shrub)	% canopy (herb.)
	Atriplex lentiformis		18%	25%	55%	5%	14%	
	Atriplex polycarpa						19%	
	Bromus sp.							30%
	Russian thistle							1%
	Purple nightshade							1%
Quadrat G	Species	Size (sq. meters)	% basal (shrub)	% basal (herb.)	% Bare	% Rock/ unusable	% canopy (shrub)	% canopy (herb.)
	Atriplex lentiformis		25%	10%	35%	3%	5%	
	Atriplex polycarpa						23%	
	Encelia california						3%	
	Bromus sp.							16%
Quadrat H	Species	Size (sq. meters)	% basal (shrub)	% basal (herb.)	% Bare	% Rock/ unusable	% canopy (shrub)	% canopy (herb.)
	Atriplex lentiformis		32%	3%	30%	20%	25%	
	Atriplex polycarpa						17%	
	Encelia california						4%	
	Purple sage						2%	
	Mustard							5%
AVERAGE			24%	11%	43%	8%	36%	20%
Quadrat I	Species	Size (sq. meters)	% basal (shrub)	% basal (herb.)	% Bare	% Rock/ unusable	% canopy (shrub)	% canopy (herb.)
	Atriplex lentiformis		47%	30%	5%	2%	18%	
	Atriplex polycarpa						12%	
	Encelia california						8%	
	Purple sage						1%	
	Black sage						1%	
	Artemisia california						1%	
	Bromus sp.							24%
	Mustard							10%
Quadrat J	Species	Size (sq. meters)	% basal (shrub)	% basal (herb.)	% Bare	% Rock/ unusable	% canopy (shrub)	% canopy (herb.)
	Atriplex lentiformis		25%	35%	5%	2%	24%	
	Atriplex polycarpa						3%	
	Atriplex spinosa						1%	
	Encelia california						12%	
	bromus sp.							40%
	Mustard							6%
	Russian thistle							1%
Quadrat K	Species	Size (sq. meters)	% basal (shrub)	% basal (herb.)	% Bare	% Rock/ unusable	% canopy (shrub)	% canopy (herb.)
	Atriplex polycarpa		10%	25%	27%	3%	18%	
	Artemisia california						2%	
	Atriplex lentiformis						2%	
	Coyote bush						2%	
	Leymus triticoides							27%
	Mustard							1%

Quadrat L	Species	Size (sq. meters)	% basal (shrub)	% basal (herb.)	% Bare	% Rock/ unusable	% canopy (shrub)	% canopy (herb.)
	Atriplex polycarpa		22%	3%	35%	3%	10%	
	Atriplex lentiformis						12%	
	Artemisia california						1%	
	Encelia california						15%	
	Deerweed						1%	
	Mustard							8%
	bromus sp.							3%
	Leymus triticoides							1%
AVERAGE			26%	23%	18%	3%	46%	24%

City South ‘C’ Trial Plot Planting Plan and Quadrat Layout



PHASE 1 (NO IRRIGATION FOR GROW/KILL CYCLE):
APPROXIMATELY 2.8 ACRES OF GRADED AREA TO BEGIN SEEDING WITHOUT IRRIGATION FULLY INSTALLED AS COMPARISON TO REMAINING SITE.

TYPE 2 SEED MIX NOTE:
CONTRACTOR TO COORDINATE TIMING OF SOIL IMPRINT WITH IRRIGATION LATERAL LINE LAYOUT SO THAT IMPRINTING EQUIPMENT CAN OPERATE WITHOUT CONFLICT. CONTRACTOR MAY TEMPORARILY DELAY PORTIONS OF FINAL LATERAL CONNECTIONS TO ALLOW FOR CIRCULATION AND ACCESS ACROSS AREA SHOWN.

AREA DELINEATION NOTE:
CONTRACTOR SHALL DELINEATE SEEDED AREAS BY INSTALLING 6' LONG STEEL T-BAR STAKES PLACED AT 30' O.C. AS SHOWN ON PLANS. STAKES SHALL BE SET 24" INTO GRADE. STAKING IS NOT REQUIRED ALONG OUTSIDE EDGES NEAR ROAD OR ALONG EDGES OF HAND BROADCASTED OVERSEEDED DRAINAGE SWALE MIX. PROVIDE GREEN PAINTED STAKES ALONG HANDBROASTED/IMPRINTING EDGE AND RED PAINTED STAKES ALONG IMPRINTING/ HYDROSEEDED EDGE.

APPLICATION METHOD
OVERSEEDED DRAINAGE SWALES (TYPE 1 ONLY)

ALL AREAS INDICATED WITH THE FOLLOWING SYMBOLS ARE TO BE SEEDED WITH THE FOLLOWING:

TYPE 1 — BROADCAST SEEDING MIX 14,375 sq. ft. (0.33 Acres)

Botanical Name	Common Name	Rate (lbs/acre)
Eschscholzia californica	California Poppy	1.0
Lupinus bicolor	Miniature Lupine	2.0
Vulpia microstachys	Small Six-Weeks Grass	8.0
Lotus scoparius	Deerweed	12.0
Nasella pulchra	Purple Needlegrass	8.0
Nasella lepida	Foothill Neddelgrass	2.0
Sisyrinchium bellum	Western Blue-Eyed Grass	1.0
Lasthenia californica	Goldfields	4.0
Plantago erecta	Plantain	4.0
Leymus triticoides	Creeping Wild Rye	4.0

FOR ADDITIONAL INFORMATION REFER TO SOIL & PLANT LABORATORY, INC. REPORT DATED 6-22-12

APPLICATION METHOD
SEED MIX (TYPES 2, 3, 4)

ALL AREAS INDICATED WITH THE FOLLOWING SYMBOLS ARE TO BE SEEDED WITH THE FOLLOWING:

TYPE 2 — SOIL IMPRINTING 71,145 sq. ft. (1.63 Acres)
TYPE 3 — HYDROSEEDED 63,650 sq. ft. (1.46 Acres)
TYPE 4 — BROADCAST SEDDING & CHAIN HARROW 67,800 sq. ft. (1.56 Acres)

Botanical Name	Common Name	Rate (lbs/acre)
Eschscholzia californica	California Poppy	1.0
Lupinus bicolor	Miniature Lupine	2.0
Vulpia microstachys	Small Six-Weeks Grass	4.0
Lotus scoparius	Deerweed	6.0
Achillea millefolium	Common Yarrow	1.0
Nasella pulchra	Purple Needlegrass	4.0
Mimulus aurantiacus longiflorus	Monkey Flower	1.0
Sisyrinchium bellum	Western Blue-Eyed Grass	1.0
Trifolium willdenovii (Trifolium tridentatum)	Tomcat Clover	1.0
Salvia mellifera	Black Sage	2.0
Salvia leucophylla	Purple Sage	1.0
Encelia californica	Encelia	1.0
Artemesia californica	California Sagebrush	1.0
Penstemon centranthifolia	Scarlet Bugler	0.1
Hazardia squarrosa	Sawtooth Goldenbush	1.0
Eriogonum fasciculatum foliolosium	California Buckwheat	1.0
Baccharis pilularis	Coyote Bush	1.0
Adenostema fasciculatum	Chamise	0.5
Atriplex lentiformis	Quail Bush	4.0
Atriplex canescens	Four-Wing Saltbush	6.0
Eriodictyon trichocalyx	Smooth-Leaf Yerba Santa	0.5
Lasthenia californica	Goldfields	2.0
Plantago erecta	Plantain	2.0
Casteleja exserta	Owls Clover	0.1
Leymus triticoides	Creeping Wild Rye	2.0
Atriplex polycarpa	Allscale, Cattle Spinach	2.0
Atriplex spinifera	Spinescale	1.0
Chrysothamnus nauseous	Rabbitbrush	1.0
Isomeris arborea	Bladderpod	1.0
Heterotheca grandiflora	Telegraph Weed	0.5
Salvia apiana	White Sage	1.0
	Total:	51.7

HYDROSEED SLURRY MIX:

SOIL PREPARATION:
Amend soils as recommended by soils report performed by Soil & Plant Laboratory, 06/22/12, see Sheet L-8.

FIRST APPLICATION: (Apply seed per specified rates.)

Material	Lbs/Acre
Fiber	268
Seed	Per above
Compost	1,071
Endomycorrhizal Inoculum (per supplier guarantee)	3,600,000 propagules

SECOND APPLICATION:

Material	Lbs/Acre
Fiber	400
Compost	1,600
Stabalizing emulsion (solids)	134

GERMINATION NOTE:
CONTRACTOR TO GUARANTEE 90% GERMINATION AT THE END OF 90 DAYS. ALL AREAS NOT ACHIEVING 90% GERMINATION WILL BE REQUIRED TO BE RE-SEEDED BY CONTRACTOR AT NO EXTRA COST TO THE OWNER.

TREE PROTECTION NOTES

1. **"PROTECTED ZONE" FOR EXISTING TREES:** BEFORE BEGINNING ANY DEMOLITION OR CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL INSTALL TEMPORARY FENCING AROUND ALL EXISTING TREES WITHIN THE CONSTRUCTION ZONE THAT ARE TO BE SAVED. THE FENCE SHALL BE INSTALLED NO CLOSER TO THE TREE THAN THE EDGE OF THE TREE'S PROTECTED ZONE (OR AS FAR AWAY FROM THE TRUNK AS PRACTICABLE). THE FENCING SHALL BE OF A MATERIAL ACEEPTABLE TO THE LANDSCAPE ARCHITECT. ALL CONTRACTORS AND THEIR CREWS SHALL NOT BE ALLOWED INSIDE THIS "PROTECTED ZONE", NOR SHALL THEY BE ALLOWED TO STORE OR DUMP FOREIGN MATERIALS WITHIN THIS AREA. NO WORK OF ANY KIND, INCLUDING TRENCHING, SHALL BE ALLOWED WITHIN THE PROTECTED ZONE EXCEPT AS DESCRIBED BELOW. THE FENCING SHALL REMAIN AROUND EACH TREE TO BE SAVED UNTIL THE COMPLETION OF CONSTRUCTION OPERATIONS.
2. **TEMPORARY MULCH:** TO ALLEVIATE SOIL COMPACTION IN ANTICIPATED AREAS OF HIGH CONSTRUCTION TRAFFIC, AND ONLY WHERE FENCING CANNOT BE SET OUTSIDE OF THE DRIPLINE, THE CONTRACTOR SHALL INSTALL A LAYER OF MULCH, 9" THICK MINIMUM, OVER ALL EXPOSED EARTH FROM THE TREE TRUNK TO 5' OUTSIDE OF THE DRIPLINE. THIS LAYER SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. WHEN PLANTING OPERATIONS ARE COMPLETED, THE MULCH SHALL BE REDISTRIBUTED THROUGHOUT ALL PLANTING AREAS IN A 3" THICK "PERMANENT" MULCH LAYER.
3. **NECESSARY WORK:** WHEN IT BECOMES NECESSARY TO ENTER THE "PROTECTED ZONE", SUCH AS FOR FINE GRADING, IRRIGATION INSTALLATION, AND PLANTING OPERATIONS, THE CONTRACTOR SHALL STRICTLY ADHERE TO THE FOLLOWING RULES:
   - A. EVERY EFFORT SHALL BE MADE TO PRESERVE THE EXISTING GRADE AROUND LARGE TREES IN AS WIDE AN AREA AS POSSIBLE.
   - B. TRENCHING WITHIN THE DRIPLINE OF EXISTING TREES SHALL BE PERFORMED BY HAND, AND WITH EXTREME CARE NOT TO SEVER ROOTS 1-1/2" IN DIAMETER AND LARGER. WHERE ROOTS 1-1/2" IN DIAMETER AND LARGER ARE ENCOUNTERED, THE CONTRACTOR SHALL TUNNEL UNDER SAID ROOTS. EXPOSED ROOTS THAT HAVE BEEN TUNNELED UNDER SHALL BE WRAPPED IN WET BURLAP AND KEPT MOIST WHILE THE TRENCH IS OPEN.
   - C. WHERE ROOTS 2" IN DIAMETER OR LARGE MUST BE CUT DUE TO EXTENSIVE GRADE CHANGES, THOSE ROOTS MUST BE EXPOSED BY HAND DIGGING AND CUT CLEANLY. RAGGED CUTS GENERALLY DO NOT HEAL PROPERLY, AND MAY LEAVE THE TREE OPEN TO PESTS AND PATHOGENS.
   - D. WHERE TRENCHING NEAR TREES HAS ALREADY OCCURRED FROM PREVIOUS CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL MAKE EVERY EFFORT TO CONFINE HIS TRENCHING OPERATIONS TO THE PREVIOUSLY-CREATED TRENCHES, WHILE ADHERING TO THE CONDITIONS SET FORTH IN 3B.
4. **POTENTIAL CONFLICTS:** THE CONTRACTOR SHALL NOTIFY THE OWNER AND ARBORIST SHOULD ANY POTENTIAL CONFLICTS ARISE BETWEEN THESE SPECIFICATIONS AND/OR LARGE ROOTS ENCOUNTERED IN THE FIELD, AND CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL NOT TAKE ANY ACTION IN SUCH CONFLICTS WITHOUT THE ARBORIST'S WRITTEN APPROVAL. THE ARBORIST SHALL HAVE FINAL AUTHORITY OVER ALL METHODS NECESSARY TO HELP ENSURE THE PROTECTION AND SURVIVAL OF EXISTING TREES.
6. **LANDSCAPE AND IRRIGATION (NATIVE OAKS ONLY):** ANY FUTURE LANDSCAPE AND IRRIGATION SHOULD ADHERE TO THE FOLLOWING GUIDELINES:
   - A. NO IRRIGATION OR PLANTING SHOULD OCCUR CLOSER THAN 8'-10' FROM THE TRUNK.
   - B. WHERE IRRIGATION DOES OCCUR WITHIN THE PROTECTED ZONE, DRIP IRRIGATION SHOULD BE USED WHEREVER POSSIBLE. ADDITIONALLY, ONLY LOW-WATER USING PLANTS SHOULD BE PLANTED WITHIN THE PROTECTED ZONE, SPACED FAR APART CLOSE TO THE TREE. PLANTS MAY BE SPACED CLOSER TOGETHER NEAR THE EDGE OF THE PROTECTED ZONE.

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PLANTING NOTES

1. SHRUB LAYOUT AS SHOWN ON PLAN INDICATES "SHRUB MASSES." QUANTITIES ARE AS SHOWN ON PLAN, ON-CENTER SPACING AS SHOWN ON LEGEND. CONTRACTOR TO VERIFY QUANTITIES BASED ON SPACING AND ADD ADDITIONAL PLANT MATERIAL (AT NO ADDITIONAL COST TO THE OWNER) REQUIRED TO MAINTAIN DESIGN INTENT DUE TO EXISTING SITE CONDITIONS NOT ANTICIPATED DURING DESIGN. LAYOUT/SPACING WILL EITHER BE TRIANGULAR OR LINEAR AS SHOWN ON PLAN OR LEGEND. LANDSCAPE ARCHITECT TO APPROVE FINAL LAYOUT IN FIELD PRIOR TO INSTALLATION.
2. CONTRACTORS SHALL NOTIFY THE LANDSCAPE ARCHITECT OF SITE CONDITIONS WHICH PREVENT INSTALLATION PER PLANS AND SPECIFICATIONS.
3. CONTRACTOR SHALL BE LIABLE FOR REMOVING AND RE-INSTALLING IRRIGATION EQUIPMENT, AND REPLANTING AREAS WHICH ARE NOT INSTALLED PER PLAN AND SPECIFICATIONS.
4. REFER TO PLANTING SPECIFICATIONS FOR INSPECTION/CERTIFICATION SCHEDULE.
5. IRRIGATION SYSTEM SHALL BE INSTALLED AND OPERATIONAL PRIOR TO INSTALLATION OF PLANT MATERIALS.
6. TREES AND SHRUBS SHALL BE PLANTED AFTER GRAVEL PLACEMENT, BUT NOT BEFORE IRRIGATION COVERAGE TEST NO. 1 HAS BEEN APPROVED. (SEE SPECIFICATIONS).
7. LANDSCAPE CONTRACTOR SHALL TAKE FOUR (4) SOIL SAMPLES FROM THE SITE AT LOCATIONS APPROVED BY THE LANDSCAPE ARCHITECT. THE SAMPLES SHALL BE TAKEN AT A DEPTH OF 6" AFTER ROUGH GRADING AND SUBMITTED TO AN APPROVED SOIL AND PLANT LABORATORY FOR AGRICULTURAL SUITABILITY TESTING. THE COST OF TESTING SHALL BE INCLUDED IN THE CONTRACTOR'S BID.
8. THE RECOMMENDATIONS OF THE SOIL REPORT SHALL SUPERSEDE THE SOIL PREPARATION AND BACKFILL MIX SPECIFICATIONS (SEE SPECIFICATIONS). THE CONTRACTOR SHALL SUBMIT A COPY OF ALL SOILS REPORTS TO THE LANDSCAPE ARCHITECT PRIOR TO MODIFICATION OF THESE SPECIFICATIONS.
9. SHREDDED MULCH INSTALLATION: INSTALL SHREDDED MULCH WITHIN BASINS OF ALL TREE AND SHRUB CONTAINER PLANTS PERDETAILS AND SPECIFICATIONS UNLESS OTHERWISE INDICATED ON PLANS.
10. CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS AND/OR REPLACEMENT OF ANY DAMAGED LANDSCAPE AREAS BEYOND THE LIMIT OF WORK, INCLUDING REPAIRING ANY IRRIGATION LINES/SPRINKLER HEADS, THAT IS A DIRECT RESULT OF THE LANDSCAPE CONSTRUCTION AND/OR HIS SUB-CONTRACTOR. REPLACEMENT ITEMS SHALL BE EXACT DUPLICATION OF ORIGINAL WORK OR PLANTS, UNLESS OTHERWISE APPROVED BY THE LANDSCAPE ARCHITECT.
11. CLEAN-UP SHALL TAKE PLACE ON A DAILY BASIS UNLESS OTHERWISE APPROVED BY THE OWNER'S REPRESENTATIVE.
12. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL GRADES AND FLOW LINES AS SHOWN ON THE GRADING PLAN.
13. SOIL AMENDMENTS SHALL BE PLACED AND INCORPORATED INTO SOILS AS DESIGNATED IN THE SOILS TEST COMPLETED BY SOILS AND PLANT LABORATORY, INC. DATED JUNE 22, 2012 PRIOR TO INSTALLATION OF PLANTS AND SEEDING. ANY ADDITIONAL SOIL AMENDMENTS NEEDED AS A RESULT OF THE SOIL TESTING, AS REQUIRED BY CONTRACTOR, SHALL BE PLACED PRIOR TO SEEDING AND PLANTING OF CONTAINER PLANTS.
14. PLANT MATERIAL SHALL BE FROM LOCAL SOURCES, AND WHERE POSSIBLE, FROM WITHIN SUNSHINE CANYON REGION.
15. CONTAINER PLANTS SHALL BE OBTAINED FROM A LOCAL SUPPLIER OR COMMERCIAL NURSERY EXPERIENCED IN THE PROPAGATION OF NATIVE PLANT SPECIES. PRIOR TO DELIVERY, THE ROOT SYSTEMS OF THE PLANTS WILL BE INSPECTED BY THE RESTORATION SPECIALIST TO ENSURE THAT ROOTS ARE STRAIGHT AND WELL ESTABLISHED. ROOT-BOUND PLANTS (THOSE WITH COILED ROOTS) WILL NOT BE ACCEPTED.
16. CONTAINER PLANTS SHALL BE INSTALLED ONLY BETWEEN NOVEMBER 1 AND MARCH 1 AND WHEN NATURAL RAINFALL OR IRRIGATION HAS MOISTENED THE SOIL. IN ALL PLANTING AREAS THE SOIL SURFACE WILL CONTAIN RESIDUAL MOISTURE WITHIN THE ROOT ZONE OF THE CONTAINER PLANTS TO BE INSTALLED. IF THE SOIL DOES NOT CONTAIN SUFFICIENT MOISTURE, THEN PRIOR TO INSTALLATION THE PLANTING AREA WILL BE WATERED FOR THREE CONSECUTIVE DAYS TO ADEQUATELY SATURATE THE SOIL TO A MINIMUM DEPTH OF ONE AND ONE-HALF TIMES THE DEPTH OF THE CONTAINERS TO BE PLANTED. WHEN THE SOIL HAS DRAINED TO FIELD CAPACITY (FULL MOISTURE CONTENT AFTER DRAINAGE OF SOIL PORE SPACE), AND WHEN THE SOIL IS DRY ENOUGH TO SUPPORT FOOT TRAFFIC, THE PLANTS INDICATED FOR THE SITE WILL BE PLANTED USING THE FOLLOWING PROCEDURE:
    - WITH A STANDARD EXCAVATION DEVICE (SHOVEL, AUGER, ETC.) EXCAVATE A HOLE SOMEWHAT WIDER THAN THE CONTAINER AND ONE INCH LESS THAN THE DEPTH OF THE CONTAINER TO THE CROWN OF THE ROOT BALL.
    - EACH PLANTING HOLE WILL BE FILLED WITH WATER AND ALLOWED TO DRAIN UNTIL NO FREE MOISTURE REMAINS IN THE HOLE.
    - IMMEDIATELY AFTER DRAINING, THE PLANT WILL BE REMOVED CAREFULLY FROM ITS CONTAINER AND THE ROOT VOLUME LOOSENED SOMEWHAT WITH GENTLE PRESSURE ON THE SIDES OF THE ROOT MASS.
    - THE PLANT WILL IMMEDIATELY BE PLACED IN THE PLANTING HOLE SO THAT THE TOP OF THE CONTAINER SURFACE WILL BE SLIGHTLY HIGHER THAN THE SOIL SURFACE AFTER REFILLING.
    - BACKFILL THE HOLE WITH NATIVE SOIL, MINIMIZING LARGE ORGANIC AND ROCK MATTER THAT MAY INHIBIT ROOT GROWTH.
    - FIRMLY PRESS DOWN SOIL AROUND THE ROOT-BALL TO ELIMINATE AIR SPACE WITHIN THE SOIL AND TO ENSURE GOOD ROOT TO SOIL CONTACT.
    - MAKE SURE THAT THE CROWN OF THE ROOT MASS IS AT OR SLIGHTLY ABOVE GRADE.
    - CREATE A STRUCTURAL BASIN AT THE OUTSIDE EDGE OF THE ROOT BALL TO SEQUESTER RAINWATER IN A LOCATION WHERE IT WILL INFILTRATE THE ROOT BALL.
    - DO NOT CREATE A DEPRESSION THAT WILL CAUSE WATER TO POND IN DIRECT CONTACT WITH THE STEM OF THE PLANT.

HYDROSEEDED AREA AND SOIL IMPRINT AREA DELINEATION. RED MARKER POSTS SHALL BE PLACED AT 30' O.C. SEE AREA DELINEATION NOTE ABOVE.

PLANTING LEGEND:

SYMBOL CALLOUT	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	QTY
SHRUBS					
S-1	Artemisia californica	California Sagebrush	1 gal.	50/Acre	234
S-2	Baccharis pilularis	Coyote Bush	1 gal.	45/Acre	210
S-3	Mimulus auranticus longiflorus	Monkey Flower	1 gal.	30/Acre	140
S-4	Sambucus mexicana	Blue Elderberry	5 gal.	15/Acre	70
EX-1	Existing Vegetation to remain				

PHOTO SUBMITTAL NOTE:
ALL PLANT MATERIAL, INCLUDING TREES, SHRUBS, AND VINES, SHALL BE INSPECTED AND APPROVED BY THE RESTORATION SPECIALIST AND/OR LANDSCAPE ARCHITECT, VIA PHOTO SUBMITTALS, PRIOR TO DELIVERY TO SITE. PHOTO SUBMITTALS SHALL INCLUDE NURSERY SUPPLIER AND DATE OF PHOTOS. ANY MATERIAL DELIVERED TO SITE WITHOUT APPROVAL IS SUBJECT TO REJECTION. PHOTO SUBMITTALS SHALL BE SENT TO RESTORATION SPECIALIST AND/OR LANDSCAPE ARCHITECT A MINIMUM OF 48 HOURS PRIOR TO SHIPMENT OF MATERIAL. SUBMITTALS SHOULD INCLUDE SOME TYPE OF SCALE REFERENCE IN PHOTO (I.E. PERSON, MEASURING TAPE, ETC.). TREES SHALL BE NOTED WITH HEIGHT (FROM FINISH GRADE IN CONTAINER) AND CANOPY HEAD SIZE. LANDSCAPE ARCHITECT SHALL BE NOTIFIED OF SCHEDULED NURSERY DELIVERY TIMES A MINIMUM OF 24 HOURS PRIOR TO SHIPMENT. REFER TO PLANTING SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS REGARDING QUALITY OF NURSERY STOCK.

SPOTTING OF THE PLANTS:
ALL PLANTS SHALL BE SPOTTED IN GROUPS THROUGHOUT THE SEEDED SITE FOR A NATURAL APPEARANCE AS SHOWN. UNDER THE DIRECTION OF THE RESTORATION SPECIALIST AND/OR THE LANDSCAPE ARCHITECT, MODIFICATIONS MAY BE MADE TO EACH AREA TO ENSURE STRUCTURAL DIVERSITY BASED ON THE SPECIES AND PLANT SIZES. THE SPACING DISTANCES GIVEN IN THE PLANTING PALETTE CAN BE USED AS GUIDELINES FOR AVERAGE DISTANCES, BUT THE LANDSCAPE CONTRACTOR SHALL AVOID REGULAR PATTERNS TO ENSURE A NATURAL APPEARANCE.

PLAN CROSS REFERENCES

FOR NOTES AND LEGENDS, SEE THIS SHEET
FOR DETAILS, SEE SHEET L-8
FOR CORRESPONDING GRADING PLAN SEE SHEET L-2
FOR CORRESPONDING IRRIGATION PLAN SEE SHEET L-5

NORTH

ARCHITERRA DESIGN GROUP
LANDSCAPE ARCHITECTURE
SITE PLANNING
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CLARB CERTIFIED LANDSCAPE ARCHITECT
Richard Krumwiede
CA Lic. # 2834
AZ Lic. # 29115
NV Lic. # 446
TX. Lic.# 1884

L.A. SEAL

LICENSED LANDSCAPE ARCHITECT — Richard W. Krumwiede 2834 — Signature — 7-31-14 Renewal Date — 9-28-12 Date — STATE OF CALIFORNIA

PROJECT / CLIENT

CITY SOUTH C TRIAL PLOT
SUNSHINE CANYON LANDFILL
14747 SAN FERNANDO ROAD
SYLMAR, CA 91342

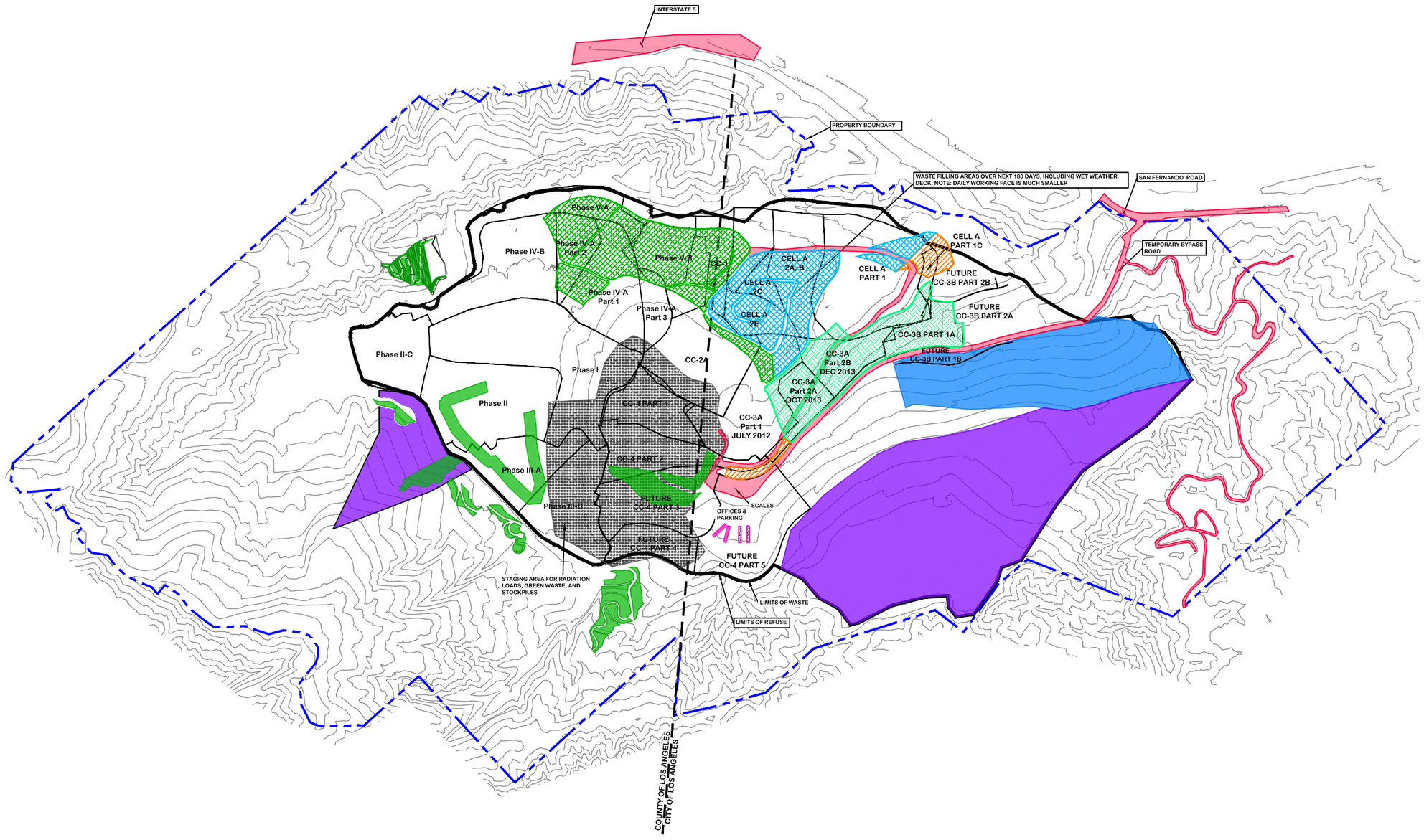
SHEET TITLE

PLANTING PLAN

REVISIONS

DRAWN BY	GPD/JGG
CHECKED BY	JRC
DATE	9/28/12
SCALE	1" = 30'
JOB NUMBER	1214
SHEET NUMBER	L-7

DRAWING 1



NORTH

GRAPHIC SCALE

500' 0' 250' 500' 1000' 2000'

LEGEND

- 1500 EXISTING 50 FT CONTOUR
- PROPERTY BOUNDARY
- EXISTING APPROVED LINERS
- EXISTING ROADS
- LIMITS OF REFUSE

VEGETATION STATUS MD ACTIVITY
2nd QUARTER 2018

	NON-PERMANENT CUT SLOPES WITH JUTE MATE OR STRAW WATTLES, SAGE SEED MIX (NOT MITIGATION AREA)
	SAGE MITIGATION AREA, FINAL SLOPES
	INTERIM COVER HYDROSEEDING (PRE-2008)
	CURRENT AND NEXT QUARTER ACTIVE AREAS. ALSO INCLUDES ROADS AND BUILDINGS.
	4Q2017 HYDROSEED APPLICATION
	VEGETATION PILOT PROJECT USING INTERIM SEED MIX
	CLOSURE TURF
	POSI-SHELL INSTALLATION
	VEGETATIVE COVER USING INTERIM SEED MIX
	VEGETATIVE COVER OVER DISKED POSI-SHELL

FOR_REVIEW_ONLY

EXISTING TOPOGRAPHY PREPARED BY COOPER AERIAL SURVEYS DATED FEBRUARY 5, 2018

REV. NO.	DATE	DESCRIPTION	APPROVED BY
REV1	DATE1	DESCRIPTION	DRAWN1
REV2	DATE2	DESCRIPTION2	DRAWN2
REV3	DATE3	DESCRIPTION3	DRAWN3
REV4	DATE4	DESCRIPTION4	DRAWN4
REV5	DATE5	DESCRIPTION5	DRAWN5
REV6	DATE6	DESCRIPTION6	DRAWN6

DATE OF ISSUE: APRIL 2018
DESIGNED BY: C BARRETT
DRAWN BY: C BARRETT
CHECKED BY: C BARRETT
APPROVED BY: C BARRETT

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REPUBLIC SERVICES

SUNSHINE CANYON LANDFILL
SYLMAR, CALIFORNIA
SITE VEGETATION STATUS AND ACTIVITY

Q2 2018

DWG NO. 1

PROJECT NO. 2014.0023

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