SUNSHINE CANYON LANDFILL

January 31, 2017

Mr. Martins Aiyetiwa
Senior Civil Engineer, Environmental Programs Division
County of Los Angeles| Department of Public Works,
900 S. Fremont
Alhambra, CA 91803

Subject: Sunshine Canyon Landfill, Quarterly Vegetation Report
Fourth Quarter 2016 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 fourth quarter of 2016. The intent of these reports will continue to be 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

Hydroseeding activities were conducted during the third quarter of 2016 (See '3Q2016 Hydroseed Application' on Drawing 1).

As of the date of this report, no vegetation growth has been observed on the hydroseeded areas.

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 fourth quarter of 2016.

2.2 County

No vegetation activities were conducted on the permanent slope areas on the County portion of the site during the fourth quarter of 2016 (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 – 4Q2016

During the fourth quarter of 2016, 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 Decks B and A

On the November 8, 2016, vegetation meeting, we discussed the sage mitigation proposal for Deck B and Deck A. It was agreed we'd work on the restoration for Deck B. The work for the mitigation is schedule to begin in the second quarter of 2017.

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 fourth quarter of 2016, and, as noted in multiple JMA progress reports, the conditions in this mitigation area have remained unchanged for some time.

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 fourth quarter of 2016 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, Fourth Quarter 2016

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 B AND A (Middle and Upper Decks)	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 B AND A (Middle and Upper Decks)	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 B AND A	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 B AND 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 B AND A	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, Fourth Quarter 2016

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 and Recommendations for City South Sage Mitigation Pilot Project Area – Fourth Quarter 2016

Architerra personnel inspected the pilot project area during the fourth quarter of 2016. The inspection report is included in Attachment 3 along with photos of the area taken at the photo stations. Recommendations from Architerra are presented in Table 3 below along with the proposed actions.

Table 3 – Architerra Recommendations and Proposed Actions – City South Sage Pilot Project Area, Fourth Quarter 2016

RECOMMENDATION		PROPOSED ACTION
1	Keep irrigation off	Irrigation has been off and will remain off until recommended otherwise
2	Install new straw wattles to prevent erosion from storm water flow. The recommended placement of the straw wattles is shown in a figure included in Attachment 3	The placement of new straw wattles will be evaluated in the first quarter of 2017

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 fourth quarter of 2016 based on this methodology is included in Attachment 4.

7.0 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 2016.

Please do not hesitate to contact me at (818) 362-2075 if you have any questions.

Sincerely,

Ricky Dhupar
Environmental Specialist
Sunshine Canyon Landfill

Cc: Mr. David Thompson, 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 – 4Q2016
Attachment 4	JMA Quarterly Monitoring Report - Coastal Sage Scrub Pilot Study, 4Q2016

Drawings

Drawing 1	4Q2016 Site Vegetation Areas

ATTACHMENT 1

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SUNSHINE CANYON LANDFILL MITIGATION SITES

Progress Report

City-Side Sage Mitigation Area

Submittal Date: January 20, 2017	**Inspection Date:** January 18, 2017
To: Patti Costa	**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*) cover is currently thriving due to the increased rainfall in 2016/2017 to-date. Other native species such as *Encelia Californica*, *Artemisia californica, and Salvia sp.* also appear to be rebounding and the plants that were observed appear to be thriving as well. Few seedlings of native-endemic species were observed; however, an increase in seedlings is expected this spring due to the increase in rainfall.

Few wildlife species were observed during the monitoring, likely due to cold and wet weather. Species observed included sage sparrow and California towhee.

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

Weed Conditions

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

Comments: Overall weed growth is low due; however, annual grasses such as barnyard grass (*Echinochloa crus-galli)* are emerging due to the seasonal rains.

Middle Deck

General Comments:

There is minimal change to report on the Middle Deck from previous monitoring reports. Evidence of seed mix coverage is no longer discernible.

Currently, approximately 30% of the middle deck is dominated by sage scrub

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plantings/seedlings, 35% by non-native grasses, and approximately 35% is bare ground, much of which appears to be a result of recent grading near the southwest corner for an apparent installation of a gas pipeline. The vegetated areas within the Middle Deck continue to be dominated by non-native herbaceous species such as (but not limited to) brome grasses, wild oats, mustards, and Russian thistle. Emergent annual grasses and Russian thistle currently dominate the non-native cover. There is a decent mixture of native species to note consisting of 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 [ ] Weeds flowering [ ] Weeds setting seed [X] Weed desiccant/dormant

Comments: Non-native grasses and forbs consisting of brome grasses and wild oats (*Avena fatua*) dominate the vegetation cover within the middle deck.

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.

Brome grasses and Russian thistle generally dominate the non-native cover throughout the upper deck. Buckwheat is the dominant native plant that is present, however, in low densities. Natural recruitment is low, due to poor soil conditions and a previous general lack of water. Vegetation cover is expected to noticeably increase this spring with the increased rainfall this season.

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 [ ] Weeds flowering [ ] Weeds setting seed [ ] Weed desiccant/dormant

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Comments: Weeds continue to grow without any level of control within the upper deck. Emerging annual grasses and Russian thistle are currently dominant.

RECOMMENDATIONS

Lower Deck

• **Continue to monitor.** Continue to monitor the lower deck quarterly to document the vegetation cover from the coastal sage pilot study.

Middle and Upper Decks

• **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.

• **Plant natives in areas dominated with non-natives.** The vegetated areas on the middle deck that are currently dominated with annual, non-native species have decent soil-texture conditions. These areas are not near as compacted as adjacent areas 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 8-12 inches in depth. Various planting methods (i.e., planting container plants and hydroseeding) may be used to re-establish native plants on the middle and upper decks 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

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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* species that dominate the vegetation cover.

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 non-native and native plant composition with areas of bare ground in the foreground.

Photo 4. Facing west at the easterly-facing slope located between middle and upper decks. The vegetation on the slopes below the upper deck is dominated with mustard and brome grasses. Buckwheat is present in patches as depicted in the foreground of this photograph.

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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. Non-native grasses and some CA buckwheat shrubs are evident in the background.

Photo 6. Facing southwest at upper deck. The area shown in this photo is dominated by emerging brome grasses and Russian thistle; however, some natives such as California buckwheat are present.

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

ATTACHMENT 2

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SUNSHINE CANYON LANDFILL MITIGATION SITES

Progress Report

County-Side Sage Mitigation Area

Submittal Date: January 20, 2017	**Inspection Date:** January 20, 2017
To: Patti Costa	**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 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 highly eroded soils, 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. Emerging brome grasses and shortpod mustard (*Hirschfeldia incana*) comprise approximately 25 percent of the total cover. California buckwheat dominates the native vegetation coverage with California sagebrush (*Artemisia californica*) as a co-dominant; comprising 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 [X] Moderate [ ] Minimal	[ ] Disease/pests [ ] Plant stress [ ] Excessive herbivory	[ ] 0" – 12" [X] 12" – 24" [ ] 24" and above	[ ] Low [X] Medium [ ] High

Comments:

It should be noted that the plant cover rating above applies where vegetation is dominant in the southeastern portion of the mitigation area. Vegetation cover is moderate in the southeastern portion of the county-sage mitigation area and sparser along the upper slopes where rocky conditions occur. The majority of the northern and upper portions of the mitigation area continue to have minimal coverage. Bare areas and non-native annual grasses are intermixed; however, the northern and upper areas continue to be mostly bare where erosion and rocks are apparent. Native vegetation coverage is good in vegetated areas and the amount of non-native grasses that are present is expected when compared to sparsely covered areas of California buckwheat in the region.

As indicated previously, California buckwheat dominants the native cover with *Encelia californica* as a co-dominant. Establishment of vegetation is problematic 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	[X] Weeds germinating [ ] Weeds flowering [ ] 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 emerging from the fall and winter rains. Other established weeds that were observed include red-stemmed filaree (*Erodium*

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cicutarium) and (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 established sage scrub on the southern half of the county-side mitigation area. Vegetation is dominated with CA buckwheat, with scattered California sunflower (*Encelia californica*). Annual, non-native grasses and forbs dominate the ground cover, as well as Russian thistle.

Photo 2. Facing west at the bare slope on the northern-half of the county-sage mitigation area. Plant growth remains to be problematic due to erosion, a hard soil surface layer, and boron toxicity.

ATTACHMENT 3

ARCHITERRA design group
landscape architecture and planning

ARCHITERRA DESIGN GROUP **FIELD OBSERVATION REPORT**

DATE OF VISIT:	01/16/17
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:	Clear and Sunny 60°
ESTIMATED % COMPLETED:	100%
CONFORMANCE WITH SCHEDULE (+, -)	

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

A walk through was held this date to review plant establishment of Trial Site, Photo Catalog current growth and review weed abatement. Additional items noted during the site visit are as follows:

City-Side Sage Mitigation (Trial Site):

- Within the last three months the trial site vegetation rejuvenation has improved dramatically. Much like we anticipated, many of the species have begun to push new foliage and are recovering well from the defoliation we saw during the summer and fall months. Specifically, Coast Sunflower (*Encelia californica*), California Sagebrush (*Artemesia 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*), Coyote Bush (*Baccharis pilularis*), and several of the Saltbush species (*Atriplex* sp.) are showing signs of regrowth and even blooming.
- The temporary irrigation system has now been off for over two years and we recommend that it remain off. There were concerns that vegetation was dying off as a result of the drought, however, we have seen dramatic improvement in existing and new established seedling. It is the natural process of the restoration area to thrive or struggle based off seasonal conditions.
- There is regrowth of Russian Thistle (*Salsola* ssp.) and Shortpod Mustard (*Hirshfeldia incana*) are beginning to emerge. These invasive species should be removed prior to them going through their flowering cycle. As noted before, Russian Thistle and California Sagebrush can be mistaken for identity when they are seedlings. Currently the Russian Thistle is still a vibrant blue gray and is easier to identify. Personnel should be trained to clearly identify the difference. In addition, there are many areas that now have newly emerging grass seedlings. It is still a bit early to identify, so removals and/or spraying should be delayed until they can be identified.
- Many new seedlings of Coyote Brush, California Sagebrush, Coast Sunflower, Creeping Wild Rye, were observed throughout the Trial Site, but are more concentrated within the bioswale areas.
- Two years ago, approximately 25 areas were flagged for Saltbush thinning. Many of these areas are showing great results where CSS species have now been able to spread out to their normal growth widths. Previously many of the plants were leggy and lacking in lateral branching. This has also allowed older established plants to set seed and as a result, new seedlings have been identified within the edges of these shrubs.
- Some of the sparse areas have eroded with the recent storms. We recommend the installation of new straw wattles (every twenty linear feet) where surface flow and minor erosion is obvious. This will help to slow the movement of water and also provide additional moisture for seedlings to

germinate. Many of the native plants have benefitted from the friable soils and additional moisture left behind each wattle after the winter and spring rain events.

Saltbush emerging from fall/summer dormancy

Black Sage emerging from summer/fall dormancy

Black Sage emerging from summer/fall dormancy

Mexican Elderberry (*Sambucus mexicana*) with new foliage

Black Sage seedling emerging from beneath a Saltbush

California Sagebrush and Coast Sunflower seedlings

Coast Sunflower (*Encelia californica*) thriving in some of the selected Saltbush thinning zones

Coast Sunflower (*Encelia californica*) seedlings emerging behind straw wattle

Coast Sunflower (*Encelia californica*) and California Sagebrush seedlings

Coyote prints within bioswale area

Sparse area with soil erosion

Side-blotched Lizard using straw wattle for refuge

City-Side Sage Mitigation (Deck B):

- A new area was identified last year as part of the on-going revegetation of the decks. During our review of the Trial Site, Deck C, we also visited the new site to review the existing conditions. A good portion of the area is covered with new seedlings, many of them invasive species like Shortpod Mustard (*Hirshfeldia incana*), False Barley/Mouse Barley (*Hordeum murinum*) and established Smilograss (*Piptatherum miliacea*). We recommend that this area be identified/flagged in the field and sprayed with an herbicide soon to minimize the possibility of additional weed seed being added to the restoration area for this upcoming year, 2017.
- Several strategies used at the Trial Site can be applied to the new site. There are some existing stands of CSS that are in great condition and should be protected. Therefore it will be important to flag these areas prior to any work commencing within this deck. The westerly and southerly edges of the site though are devoid of vegetation and would benefit from soil ripping and microtopography berming similar to how the grading was manipulated at the Trial Site Deck.
- Upon review of the new revegetation site, we noticed an abundance of thriving Menzies' Goldenbush (*Isocoma menziesii*) shrubs in several stages of development. This species was not included in the original plant palette for the Trial Site, however it is establishing is significant numbers on Deck B. We recommend that this shrub be included in the palette for future phases.

Menzies' Goldenbush

Close up of invasive plants on Deck B

Deck B Existing Conditions of emerging weeds with Trial Site in background

Deck B bare soil conditions with erosion

Disturbed and compacted access road that was abandoned.

Signed: Gregg K Denson Date: 1/18/17

DISTRIBUTION

Republic Services	☑	Contractor	☑
File ☑ Project Manager (Gregg Denson)	☑	Other _____	☐

ARCHITERRA DESIGN GROUP
10221-A TRADEMARK STREET, RANCHO CUCAMONGA, CA 91730
Phone (909) 484-2800, Fax (909) 484-2802


RECOMMENDED LOCATIONS FOR NEW STRAW WATTLES
ASPHALT
CONCRETE
GW17
GW16
GW13
GW15
GW3
GW2
GW9S
GW9D
1705
1710
1715
1720
1725
1730
1735
6"
12"
3"
15"

Photo Station #1 - January 2016 (East)

Photo Station #1 - January 2017 (East)

Photo Station #1 - January 2016 (North)

Photo Station #1 - January 2017 (North)

Photo Station #1 - January 2016 (West)

Photo Station #1 - January 2017 (West)

Photo Station #2 - January 2016 (East)

Photo Station #2 - January 2017 (East)

Photo Station #2 - January 2016 (North)

Photo Station #2 - January 2017 (North)

Photo Station #2 - January 2016 (South)

Photo Station #2 - January 2017 (South)

Photo Station #3 - January 2016 (East)

Photo Station #3 - January 2017 (East)

Photo Station #3 - January 2016 (North)

Photo Station #3 - January 2017 (North)

Photo Station #3 - January 2016 (West)

Photo Station #3 - January 2017 (West)

Photo Station #4 - January 2016 (South)

Photo Station #4 - January 2017 (South)

Photo Station #4 - January 2016 (East)

Photo Station #4 - January 2017 (East)

Photo Station #4 - January 2016 (West)

Photo Station #4 - January 2017 (West)

Photo Station #5 - January 2016 (East)

Photo Station #5 - January 2017 (East)

Photo Station #5 - January 2016 (North)

Photo Station #5 - January 2017 (North)

Photo Station #5 - January 2016 (West)

Photo Station #5 - January 2017 (West)

Photo Station #6 - January 2016 (East)

Photo Station #6 - January 2017 (East)

Photo Station #6 - January 2016 (North)

Photo Station #6 - January 2017 (North)

Photo Station #6 - January 2016 (West)

Photo Station #6 - January 2017 (West)

Photo Station #7 - January 2016 (South)

Photo Station #7 - January 2017 (South)

Photo Station #7 - January 2016 (West)

Photo Station #7 - January 2017 (West)

Photo Station #7 - January 2016 (North)

Photo Station #7 - January 2017 (North)

Photo Station #8 - January 2016 (East)

Photo Station #8 - January 2017 (East)

Photo Station #8 - January 2016 (North)

Photo Station #8 - January 2017 (North)

Photo Station #8 - January 2016 (West)

Photo Station #8 - January 2017 (West)

Photo Station #9 - January 2016 (East)

Photo Station #9 - January 2017 (East)

Photo Station #9 - January 2016 (South)

Photo Station #9 - January 2017 (South)

Photo Station #9 - January 2016 (West)

Photo Station #9 - January 2017 (West)

ATTACHMENT 4

memorandum

date January 20, 2017

to Patty Costa, Sunshine Canyon Landfill

from Greg Ainsworth, Consulting Biologist

subject Coastal Sage Scrub City South C Trial Plot Monitoring Report, Sunshine Canyon Landfill – 4th Quarter, 2016

INTRODUCTION

On January 20, 2017, biologist Greg Ainsworth monitored the coastal sage scrub revegetation area at the Landfill's City South 'C' Trial Plot, which constitutes the fourth quarter monitoring of the trial plot for 2016. The sampling generally followed the methodology described in 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). However, some modifications to the methodology were implemented. The **quadrat** sampling included four 50-meter quadrats that were randomly sampled within each of the three seeded areas: hydroseed, imprint and hand broadcast. These quadrats were randomly selected from a grid that was placed over the entire trial plot and each quadrat was delineated with wood stakes and flagging prior to sampling. 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 was sampled for each of the three seeded areas. The following data was collected for each quadrat:

- **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 conducted at 50 meter transects along the perimeter of each 50 square meter quadrats (A-L). A total of four transects were walked within each planting method (hydroseed, imprint and hand broadcast). Points were taken at approximately every 0.5 meters, while moving clockwise from the southwest corner of each quadrat. The species located precisely at every 0.5 meter point was noted.

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) – 13% (11%)

Percent basil cover (herbs) – 3% (2%)

Percent bare ground – 44% (48%)

Percent rock or other – 5% (4%)

Percent canopy (shrub) – 33% (46%)

Percent canopy (herb) – 7% (<1%)

Average Imprint – Quadrats E, F, G H

Percent basil cover (shrubs) – 20% (15%)

Percent basil cover (herbs) – 3% (3%)

Percent bare ground – 41% (68%)

Percent rock or other – 7% (7%)

Percent canopy (shrub) – 36% (34%)

Percent canopy (herb) – 3% (1%)

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

Percent basil cover (shrubs) – 31% (22%)

Percent basil cover (herbs) –12% (14%)

Percent bare ground – 16% (34%)

Percent rock or other – 5% (3%)

Percent canopy (shrub) – 46% (63%)

Percent canopy (herb) – 8% (1%)

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	1%	
Adenostema fasciculatum	1%	
Achillia mellifoluim		
Artemisia californica	1%	
Atriplex lentiformis	15%	
Atriplex polycarpa	10%	
Atriplex spinosa	3%	
Baccharis pilularis	1%	
Encelia californica	1%	
Eschscholzia californica		
Leymus triticoides		
Mimulus aurantiacus longiflorus		
Nasella pulchra		
Other herb		
Salvia mellifera		
Sisyrinchium bellum		
Vulpia microstachys		
Echinochloa crus-galli		6%
Salsola kali		1%

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

Species	% Cover Shrub	% Cover Herb
Adenostema fasciculatum		
Achillia mellifoluim		
Artemisia californica	1%	
Atriplex lentiformis	14%	
Atriplex polycarpa	13%	
Atriplex spinosa	3%	
Baccharis pilularis	1%	
Encelia californica	1%	
Eschscholzia californica		
Eriogonum fasciculatum		
Leymus triticoides		
Mimulus aurantiacus longiflorus		
Nasella pulchra		
Sisyrinchium bellum		

Salvia apiana	1%	
Salvia leucophylla	1%	
Salvia mellifera	1%	
Echinochloa crus-galli		2%
Salsola kali		1%

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

Species	% Cover Shrub	% Cover Herb
Adenostema fasciculatum		
Achillia mellifoluim		
Artemisia californica	1%	
Atriplex lentiformis	17%	
Atriplex polycarpa	20%	
Atriplex spinosa	1%	
Baccharis pilularis	1%	
Encelia californica	5%	
Eschscholzia californica		
Leymus triticoides		1%
Mimulus aurantiacus longiflorus		
Nasella pulchra		
Other herb		
Salvia apiana		
Salvia leucophylla	1%	
Salvia mellifera		
Sisyrinchium bellum		
Echinochloa crus-galli		7%
Vulpia microstachys		
Salsola kali		

DISCUSSION

In general, the vegetation within the pilot study area is currently thriving as a direct result on the 2016 fall and winter rains. Many of the *Atriplex* species that were noted as declining previously have defoliated, some of which may be deceased; however, there is a substantial amount of new growth that has emerged as well. Although the overall percent cover of the shrubs has decreased when compared to previous quarterly monitoring, it is encouraging to see that many of the plants are flourishing with new growth. It should be noted that percent cover is based on living plants; therefore, perennial species (primarily *Atriplex*) that were entirely defoliated were not counted. For example, approximately 30 percent of the *Atriplex lentiformis* plants in Quadrat D were completely defoliated. These plants likely had foliage present during the previous quarterly monitoring in 2016, which is why the percent cover of shrubs has decreased overall when comparing the 2016 4th quarter results with previous 2016 quarterly monitoring results. This defoliation of many of the *Atriplex* plants is evident in the Photograph Log (below). Few seedlings of native species was observed; however, several native coastal sage scrub species, most notably California sunflower (*Encelia californica),* are emerging with healthy new growth. Other native species such as black sage (*Salvia mellifera)* and purple sage (*S. leucophylla*) are flourishing; however, as indicated, few new seedlings were observed. Non-native barnyard grass (*Echinochloa crus-galli*) is establishing, primarily in low areas where water pools.

Selective thinning of *Atriplex* in the spring will help establishment of native shrub seedlings, primarily in the plot on the northwest portion of the pilot study are where these plants are very dense. Quadrats H, I and L have the greatest amount of relative cover, mostly comprised of *Atriplex lentiformis and A. polycarpa*. The Hand broadcast seeding method has the highest percentage of shrub canopy cover at 46 percent, compared to 33 percent and 36 percent for hydroseed nd imprint seeding methods, respectively. That said, the northwest portion of the hand broadcast plots is at a low-point compared to the rest of the pilot study area and water tends to pool and is most abundant within the hand broadcast plots, especially Quadrats I and J. As noted in past monitoring reports, both the quadrat method and the point intercept method confirm that *Atriplex lentiformis* has the greatest amount of relative cover throughout the trial site, with *Atriplex polycarpa* as a co-dominant overall. The abundant cover of these two *Atriplex* species is also evident by a general visual observation of the plant cover throughout the trial site. 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	Species	Size (sq. meters)	% basal (shrub)	% basal (herb.)	% Bare	% Rock/ unusable	% canopy (shrub)	% canopy (herb.)	Photo #
A		50	7%	10%	50%	10%			1
	Atriplex lentiformis						30%		
	Atriplex polycarpa						15%		
	Atriplex spinosa						1%		
	Baccharis pilularis						1%		
	Echinochloa crus-galli							20	
	Other herb								
Quadrat	Species	Size (sq. meters)	% basal (shrub)	% basal (herb.)	% Bare	% Rock/ unusable	% canopy (shrub)	% canopy (herb.)	Photo #
B		50	20%	1%	15%	1%			2
	Atriplex lentiformis						15%		
	Atriplex polycarpa						15%		
	Encelia californica						3%		
	Sisyrinchium bellum								
	Echinochloa crus-galli							3	
	Salsola kali							1	
Quadrat	Species	Size (sq. meters)	% basal (shrub)	% basal (herb.)	% Bare	% Rock/ unusable	% canopy (shrub)	% canopy (herb.)	Photo #
C		50	3%	0%	65%	3%			3
	Atriplex lentiformis						10%		
	Atriplex polycarpa						5%		
	Atriplex spinosa						10%		
	Salvia millifera						3%		
	Mimulus aurantiacus longiflorus								

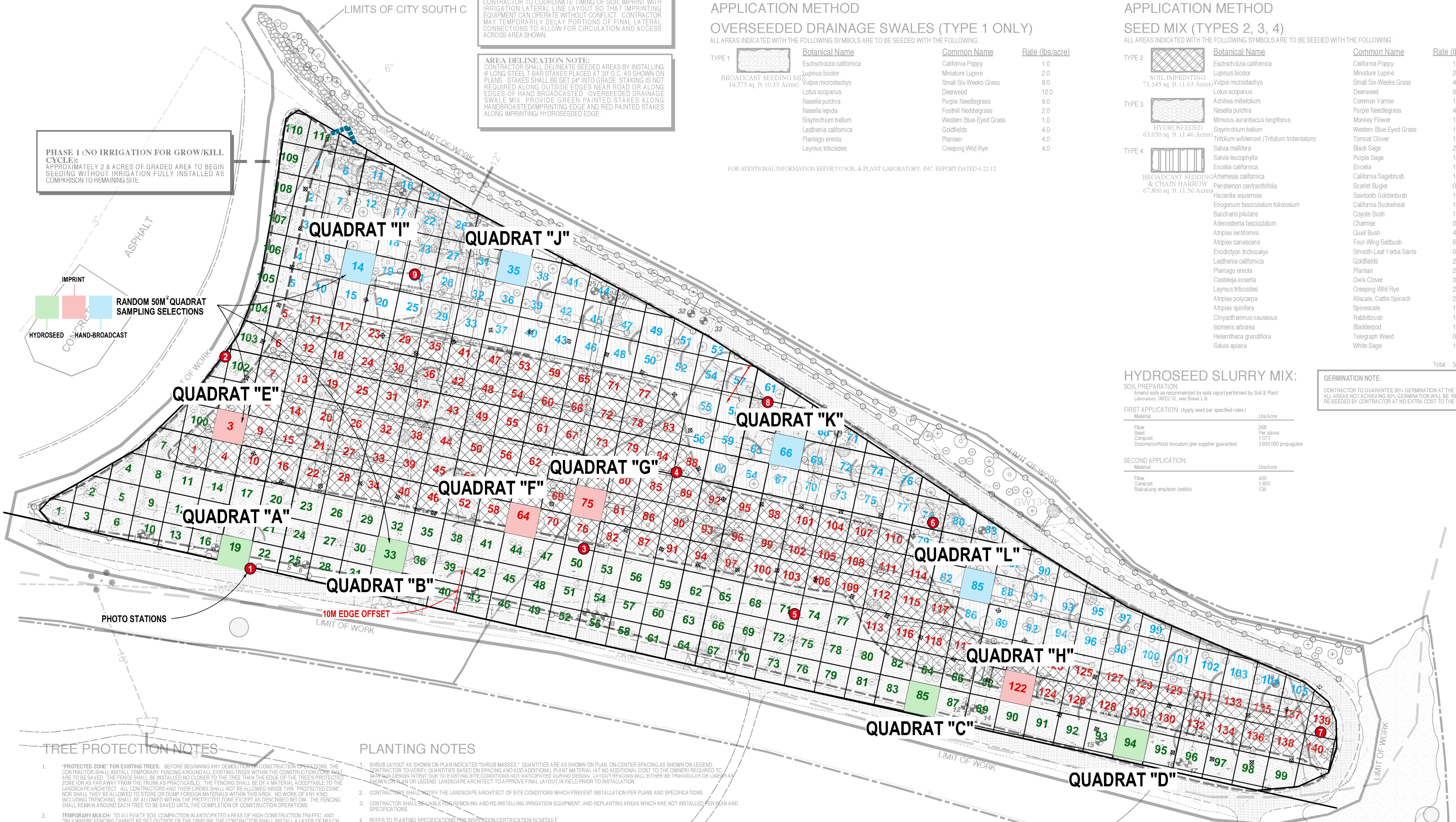
Quadrat	Species	Size (sq. meters)	% basal (shrub)	% basal (herb.)	% Bare	% Rock/ unusable	% canopy (shrub)	% canopy (herb.)	Photo #
D		50	20%	1%	45%	3%			4
	Atriplex lentiformis						35%		
	Atriplex polycarpa						5%		
	Achillia mellifoluim								
	Artemisia californica						1%		
	Acmispon glaber						1%		
	Nassella pulchra								

	Salsola ssp.							1%	
Quadrat	Species	Size (sq. meters)	% basal (shrub)	% basal (herb.)	% Bare	% Rock/ unusable	% canopy (shrub)	% canopy (herb.)	Photo #
E		50	20%	3%	38%	5%			5
	Atriplex lentiformis						15%		
	Atriplex polycarpa						15%		
	Atriplex spinosa						5%		
	Echinochloa crus-galli							3%	
Quadrat	Species	Size (sq. meters)	% basal (shrub)	% basal (herb.)	% Bare	% Rock/ unusable	% canopy (shrub)	% canopy (herb.)	Photo #
F		50	10%	7%	55%	5%			6
	Atriplex lentiformis						10%		
	Atriplex polycarpa						5%		
	Atriplex spinosa						5%		
	Artemisia californica						1%		
	Echinochloa crus-galli								
Quadrat	Species	Size (sq. meters)	% basal (shrub)	% basal (herb.)	% Bare	% Rock/ unusable	% canopy (shrub)	% canopy (herb.)	Photo #
G		50	15%	0%	35%	5%			7
	Atriplex lentiformis						40%		
	Atriplex polycarpa						5%		
	Atriplex spinosa						1%		
	Salvia apiana						1%		
	Achillia mellifoluim								
	Salsola kali							1%	
	Echinochloa crus-galli								
Quadrat	Species	Size (sq. meters)	% basal (shrub)	% basal (herb.)	% Bare	% Rock/ unusable	% canopy (shrub)	% canopy (herb.)	Photo #
H		50	35%	3%	35%	15%			8
	Atriplex lentiformis						20%		
	Atriplex polycarpa						35%		
	Baccharis pilularis						3%		
	Eriogonum fasciculatum						3%		
	Mimulus aurantiacus longiflorus								
	Salvia leucophylla						1%		
	Acmispon glaber								
	Encelia californica						3%		
	Salvia mellifera						1%		
	Leymus triticoides							5%	
	Echinochloa crus-galli							10%	

Quadrat	Species	Size (sq. meters)	% basal (shrub)	% basal (herb.)	% Bare	% Rock/ unusable	% canopy (shrub)	% canopy (herb.)	Photo #
I		50	40%	15%	15%	5%			9
	Atriplex polycarpa						15%		
	Atriplex lentiformis						30%		
	Baccharis pilularis						1%		
	Artemisia californica						1%		
	Encelia californica						5%		
	Salvia mellifera						3%		
	Salvia leucophylla						2%		
	Vulpia microstachys								
	Sisyrinchium bellum								
	Nasella pulchra								
	Leymus triticoides								
	Encelia californica						1%		
Quadrat	Species	Size (sq. meters)	% basal (shrub)	% basal (herb.)	% Bare	% Rock/ unusable	% canopy (shrub)	% canopy (herb.)	Photo #
J		50	35%	17%	10%	5%			10
	Atriplex lentiformis						3%		
	Atriplex polycarpa						15%		
	Atriplex spinosa						1%		
	Encelia californica						15%		
	Artemisia californica						5%		
	Vulpia microstachys								
	Eriogonum fasciculatum						1%		
	Echinochloa crus-galli							14%	
	Leymus triticoides							3%	
Quadrat	Species	Size (sq. meters)	% basal (shrub)	% basal (herb.)	% Bare	% Rock/ unusable	% canopy (shrub)	% canopy (herb.)	Photo #
K		50	25%	15%	15%	5%			11
	Atriplex lentiformis						30%		
	Adenostema fasciculatum								
	Artemisia californica						2%		
	Baccharis pilularis						1%		
	Atriplex polycarpa						3%		
	Encelia farinosa								
	Vulpia microstachys								
	Salsola kali								
	Leymus triticoides							15%	
	Echinochloa crus-galli								
	Other herb								

Quadrat	Species	Size (sq. meters)	% basal (shrub)	% basal (herb.)	% Bare	% Rock/ unusable	% canopy (shrub)	% canopy (herb.)	Photo #
L		50	25%	0%	25%	5%			12
	Atriplex lentiformis						20%		
	Atriplex polycarpa						30%		
	Baccharis pilularis						1%		
	Artemisia californica						2%		
	Encelia californica						1%		
	Salvia apiana						1%		
	Salvia leucophylla						1%		
	Salvia mellifera						1%		
	Poa annua								
	Salsola kali								
	Leymus triticoides							1%	

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.
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PLANTING NOTES

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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.

LIMITS OF CITY SOUTH C

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

ARCHITERRA DESIGN GROUP
LANDSCAPE ARCHITECTURE
SITE PLANNING
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Rancho Cucamonga, CA 91730
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Richard Krumwiede
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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

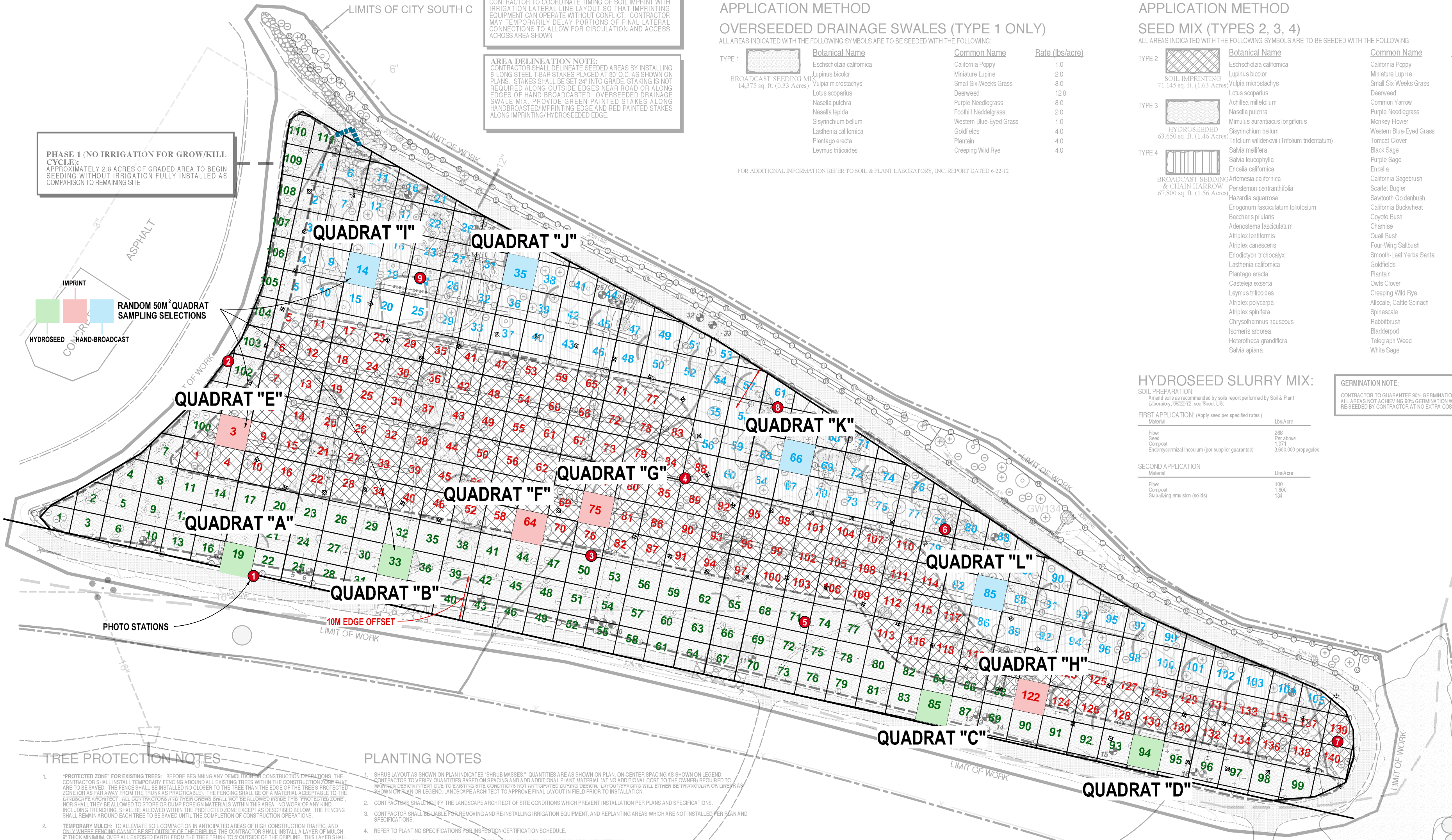
CITY SOUTH C TRIAL PLOT
SUNSHINE CANYON LANDFILL
14747 SAN FERNANDO ROAD
SYLMAR, CA 91342

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



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)

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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-6.

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.

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

TREE PROTECTION NOTES

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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.

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

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

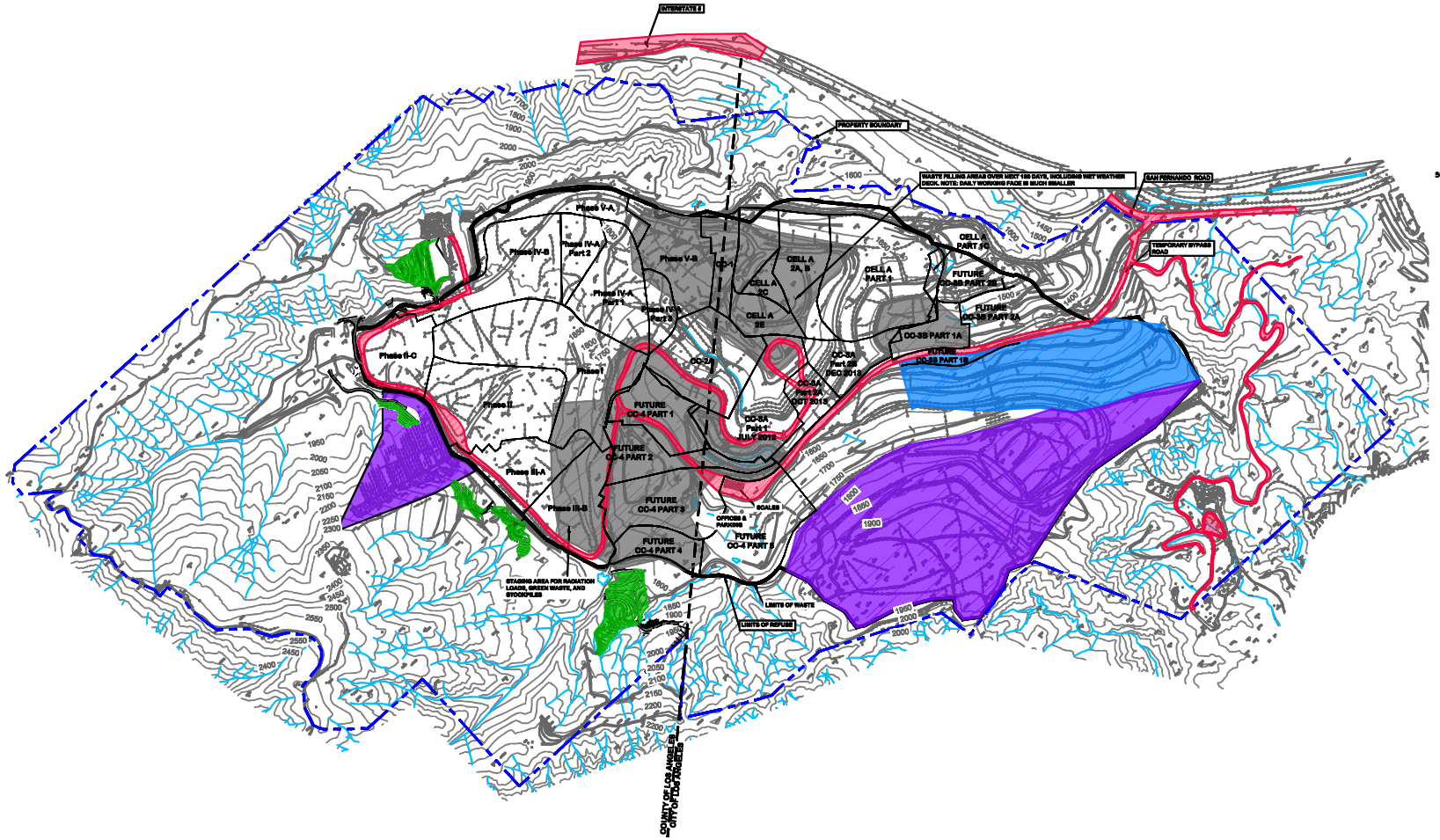
PROJECT / CLIENT

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



GRAPHIC SCALE

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

LEGEND

- 1500 EXISTING 50 FT CONTOUR
- EXISTING 10 FT CONTOUR
- PROPERTY BOUNDARY
- EXISTING APPROVED LINERS
- EXISTING ROADS
- LIMITS OF REFUSE

VEGETATION STATUS MD ACTIVITY 4th QUARTER 2016	
	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.
	3Q2016 HYDROSEED APPLICATION

FOR_REVIEW_ONLY

EXISTING TOPOGRAPHY PREPARED BY COOPER AERIAL SURVEYS DATED FEBRUARY 24, 2016

REV. NO.	DATE	DESCRIPTION	APPROVED BY
REV1	DATE1	DESCRIPTION1	DRAWN1
REV2	DATE2	DESCRIPTION2	DRAWN2
REV3	DATE3	DESCRIPTION3	DRAWN3
REV4	DATE4	DESCRIPTION4	DRAWN4
REV5	DATE5	DESCRIPTION5	DRAWN5
REV6	DATE6	DESCRIPTION6	DRAWN6

DATE OF ISSUE: JAN 2017
DESIGNED BY: C. BARRETT
DRAWN BY: C. BARRETT
CHECKED BY: C. BARRETT
APPROVED BY: C. BARRETT

DIGALERT 811

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REPUBLIC SERVICES

SUNSHINE CANYON LANDFILL
SYLMAR, CALIFORNIA
SITE VEGETATION STATUS AND ACTIVITY

Q4 2016

DWG NO. 1

PROJECT NO. 2014.0023

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